**3GPP TSG-RAN4 Meeting #100-e *R4-2115652***

**Online, , 16th Aug 2021 – 27th Aug 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.941** | **CR** |  | **rev** | **-** | **Current version:** | **15.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Draft CR to 37.941: BS OTA test, FR2 Rx OOB test MU value Math correction (14.2.4, 17) | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Keysight Technologies UK Ltd | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | OTA\_BS\_testing-Perf | | | | |  | ***Date:*** | | | 2021-08-23 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In RAN4#99e meeting, TS38.141-2 MU table value correction was agreed on FR2 Rx OOB test. (R4-2108501)  This CR is for correction of derivation math described in TR37.941 which calculates FR2 Rx OOB MU value. Corretion is to remove (TestEquipment MU) from math which already included in (EIS MU) because wanted signal MU is already in (EIS MU) and there is no modulated signal interferer for FR2 Rx OOB test. Corrected math is;  RSS of three value (EIS MU, OOB interferer MU, PA MU) and plus (Broadband effect)  + Broadband noise effect | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | In clause “14.2.4 MU value derivation, FR2”, (Test Equipment MU) is removed from derivation math and “Table 14.2.4-1: MU for out-of-band blocking”, then recalculated value 3.6 as MU value.  In table 17-4, Rx OOB number updated in summary table for FR2 Rx test | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Without this correction, BS type 2-O out of band blocking test system MU value deveriation remains as incorrect value and information. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 14.2.4, 17 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

### 14.2.4 MU value derivation, FR2

It has been agreed that the MU for the out-of-band blocking requirement can be calculated as follows:

+ Broadband noise effect

With







And



Substituting the variables above into the formula, the MU in FR2 for the out-of-band blocking requirement can be calculated as 3.6 dB, as shown in table 14.2.4-1 below.

Table 14.2.4-1: MU for out-of-band blocking

|  |  |
| --- | --- |
| Test System Uncertainty | Standard uncertainty ui (dB)  IAC, CATR |
| MUEIS (Expanded uncertainty) | 2.4 |
| MUOOBint (Additional uncertainty for the OOB interferer signal) | 1.1 |
| MUPA (Uncertainty due to use of PA) | 0.2 |
| Broadband noise effect (Impact of interferer broadband noise) | 0.4 |
| **Combined standard uncertainty (1σ)** | **1.86** |
| **Expanded uncertainty (1.96σ - confidence interval of 95 %)** | **3.6** |

<<Text skipped>>

Table 17-4: RX Measurement Uncertainty values derivation – FR2

|  |  |  |
| --- | --- | --- |
| Requirement | Maximum OTA Test System uncertainty | Clause |
| OTA reference sensitivity level | ±2.4 dB, 24.25 GHz < f ≤ 29.5 GHz  ±2.4 dB, 37 GHz < f ≤ 40 GHz | 10.2.7 |
| OTA adjacent channel selectivity | ±3.4 dB, 24.25 GHz < f ≤ 29.5 GHz  ±3.4 dB, 37 GHz < f ≤ 40 GHz | 10.5.4 |
| OTA in-band blocking (General) | ±3.4 dB, 24.25 GHz < f ≤ 29.5 GHz  ±3.4 dB, 37 GHz < f ≤ 40 GHz | 10.5.4 |
| OTA out-of-band blocking | ±3.6 dB, 24.25 GHz < f ≤ 29.5 GHz  ±3.6 dB, 37 GHz < f ≤ 40 GHz | 14.3 |
| OTA receiver spurious emissions | ±2.5 dB, 30 MHz ≤ f ≤ 6 GHz  ±2.7 dB, 6 GHz < f ≤ 40 GHz  ±5.0 dB, 40 GHz < f ≤ 60 GHz | 12.3.3 |
| OTA receiver intermodulation | ±3.9 dB, 24.25 GHz < f ≤ 29.5 GHz  ±3.9 dB, 37 GHz < f ≤ 40 GHz | 10.6.4 |
| OTA in-channel selectivity | ±3.4 dB, 24.25 GHz < f ≤ 29.5 GHz  ±3.4 dB, 37 GHz < f ≤ 40 GHz | 10.7.4 |
| NOTE: Test System uncertainty values are applicable for normal condition unless otherwise stated. | | |