**3GPP TSG- Meeting # *R5-255298***

**Bengaluru, India, 25th - 29th August, 2025**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.903** | **CR** | **1042** | **rev** | **1** | **Current version:** | **18.7.3** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | FR2 MU - PC3 update for OBW UL MIMO test in 38.903 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Keysight Technologies UK Ltd | | | | | | | | | |
| ***Source to TSG:*** | R5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI15\_Test, 5GS\_NR\_LTE-UEConTest | | | | |  | ***Date:*** | | | 2025-08-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Certain progress has been made for PC3 MU and TT analysis in discussion R5-253804. Impacted test cases should be updated accordingly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Updated OBW UL MIMO test MUs for PC3 in annex B.15.  Updated status of testability issues in annex B.26. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Test specification will remain incomplete for PC3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | B.15, B.26 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Revision 1:  -Updated coverpage with correct reference to discussion paper.  -Reverted changes for FR2c 400MHz. | | | | | | | | |

## <<< START OF CHANGES >>>

# B.15 Occupied bandwidth

Following tables summarize the MU threshold for EIRP measurements for Occupied bandwidth. The origin MU values for different test setups can be found in following subclauses.

Table B.15-1: MU threshold for beam peak measurement for Occupied bandwidth (SISO)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Power Class | Frequency | Power | BW | MBW/BW | Threshold MU value (NOTE1)  [%CBW] |
| PC3, PC1 | 23.45 GHz ≤ f ≤ 32.125 GHz | P = Max Output Power | 50 MHz | 1.5 | ±0.4 |
| 100 MHz | 1.5 | ±0.4 |
| 200 MHz | 1.5 | ±1.2 |
| 400 MHz | 1.5 | ±1.2 |
| 32.125 GHz < f ≤ 40.8 GHz | P = Max Output Power | 50 MHz | 1.5 | ±0.4 |
| 100 MHz | 1.5 | ±0.4 |
| 200 MHz | 1.5 | ±1.3 |
| 400 MHz | 1.5 | ±1.3 |
| PC3 | 40.8GHz < f <= 44.3GHz | P = Max Output Power | 50 MHz | 1.5 | ±0.65 |
|  |  |  | 100 MHz | 1.5 | ±0.65 |
|  |  |  | 200 MHz | 1.5 | ±1.3 |
|  |  |  | 400 MHz | 1.3 | ±1.5 |
| PC5, PC6 | 23.45 GHz ≤ f ≤ 32.125 GHz | P = Max Output Power | 50 MHz | 1.5 | ±0.4 |
|  |  |  | 100 MHz | 1.5 | ±0.4 |
|  |  |  | 200 MHz | 1.5 | ±1.2 |
|  |  |  | 400 MHz | 1.5 | ±1.2 |
| NOTE 1: Total Expanded MU for IFF for Quiet Zone size ≤ 30cm. | | | | | |

Table B.15-2: MU threshold for beam peak measurement for Occupied bandwidth (MIMO)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Power Class | Frequency | | Power | BW | MBW/BW | Threshold MU value (NOTE1)  [%CBW] |
| PC3 | 23.45 GHz ≤ f ≤ 32.125 GHz | | P = Max Output Power | 50 MHz | 1.5 | ±0.4 |
| 100 MHz | 1.5 | ±0.4 |
| 200 MHz | 1.5 | ±1.2 |
| 400 MHz | 1.5 | ±1.3 |
| 32.125 GHz < f ≤ 40.8 GHz | | P = Max Output Power | 50 MHz | 1.5 | ±0.4 |
| 100 MHz | 1.5 | ±0.4 |
| 200 MHz | 1.5 | ±1.3 |
| 400 MHz | 1.3 | ±1.7 |
|  | 40.8GHz < f <= 44.3GHz | | P = Max Output Power | 50 MHz | 1.5 | ±0.65 |
|  |  | |  | 100 MHz | 1.5 | ±0.65 |
|  |  | |  | 200 MHz | 1.3 | ±1.3 |
|  |  | |  | 400 MHz | TBD | TBD |
|  | | NOTE 1: Total Expanded MU for IFF for Quiet Zone size ≤ 30cm. | | | | |

## <<< Skip unchanged sections >>>

# B.26 FR2 RF test cases with testability issues related to MU

Editor’s note: This informational list of FR2 RF testability issues related to MU is incomplete and ongoing updates.

Table B.26-1: FR2 RF test cases with known testability issues related to MU

|  |  |  |  |
| --- | --- | --- | --- |
| Clause | Requirement | FR2 RF Testability issues related to MU | Notes |
| 6.3.1 | Minimum output power | Low UL power | For several test points (details in sub-clause 6.3.1.5), Core requirement cannot be tested due to testability issue and test requirement includes relaxation to achieve impact from test system noise to measurement result = 1.0 dB (Minimum requirement + relaxation). |
| 6.3.2 | Transmit OFF power | Low UL power | For all FR2 bands and channel bandwidths, Core requirement cannot be tested due to testability issue and test requirement includes relaxation to achieve impact from test system noise to measurement result = 1.0 dB (Minimum requirement + relaxation). |
| 6.3.4.3 | Relative Power Tolerance | Starting power at ramp up/ramp down/alternating sub-test is TBD (6.3.4.3 MU dependent) | Testability issue due to narrow range for 1 dB TPC step core requirement and therefore testing is not recommended. |
| 6.3D.2 | Transmit OFF power for UL MIMO | The testability of this test case is pending further analysis on relaxation of the requirement for other than Band n257. | For several test points (see 6.3D.2.5 for details), Core requirement cannot be tested due to testability issue and test requirement includes relaxation to achieve impact from test system noise to measurement result = 1.0 dB (Minimum requirement + relaxation). |
| 6.5.1 | Occupied bandwidth | High SNR required for measurement | To avoid testability issues, MBW has been reduced from 2\*CBW (typical used value in FR1) down to 1.5\*CBW in general and even down to 1.3\*CBW for PC3 400MHz in FR2c. |
| 6.5.2.1 | Spectrum Emission Mask | Low Spurious Emission power | Testability in FR2b for PC1 is FFS.  For PC1 in FR2a, to avoid defining relaxations, accepted to use influence of noise remarkable higher than 1dB in the MTSU calculation. |
| 6.5.2.3 | Adjacent channel leakage ratio | Low adjacent channel power | Relaxation due to testability limits applied for several TC IDs and MPR values as defined in subclause 6.5.2.3.5 |
| 6.5.3.2 | Additional spurious emissions | Low Spurious Emission power | Relaxation due to testability limit applied to test requirements as per subclause 6.5.3.2.5 |
| 6.5D.2.1 | Occupied bandwidth for UL MIMO | High SNR required for measurement | Testability is FFS for PC3 FR2c 400 MHz and other power classes. |
| 7.4 | Maximum input power | High DL power | The test requirements deviate from minimum requirements by 26dB relaxation for 24.25 ~ 29.5 GHz and 34 dB relaxation for 37 ~ 40 GHz. |
| 7.5 | Adjacent channel selectivity (case 1) | High DL power | For several test points, Core requirement cannot be tested due to testability issue and test requirement for wanted signal and interferer includes relaxation to achieve feasible interferer power level. See details in subclause 7.5.5 |
| 7.6.2 | In-band blocking | High DL power | For several test points, Core requirement cannot be tested due to testability issue and test requirement for wanted signal and interferer includes relaxation to achieve feasible interferer power level. See details in subclause 7.6.2.5 |
| 7.9 | Receiver spurious emissions | Low Spurious Emission power | The testability of this test case is pending further analysis on relaxation of the requirement for band other than n257, n258, n259, n260 and n261 |

## <<< END OF CHANGES >>>