**3GPP TSG-RAN4 Meeting #111 *R4-2410734***

**Fukuoka, Japan, 20th – 24th May，2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | 38.101-1 | **CR** | 2221 | **rev** | **1** | **Current version:** | 18.5.0 |  |
|  |
| *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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | X | Radio Access Network |  | Core Network |  |

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| ***Title:***  | (TEI) On applicability of diversity characteristic |
|  |  |
| ***Source to WG:*** | Apple |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | TEI18 |  | ***Date:*** | 2024-04-03 |
|  |  |  |  |  |
| ***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 canbe 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)* |
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| ***Reason for change:*** | The description of characteristic is not applicable for UE with 4Rx antenna. |
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| ***Summary of change:*** | * clarify how the reuiqrment should be verified for UE with 4Rx antenna .
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| ***Consequences if not approved:*** | The diversity characteristic description remain unclear. |
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| ***Clauses affected:*** | 7.2 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **x** |  |  Test specifications | TS 38.521-1 |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

## 7.2 Diversity characteristics

The UE is required to be equipped with a minimum of two Rx antenna ports in all operating bands except for the bands n7, n38, n41, n48, n77, n78, n79, n104 where the UE is required to be equipped with a minimum of four Rx antenna ports. This requirement applies when the band is used as a standalone band or as part of a band combination.

Unless otherwise stated, the following applicability rules apply,

* For the single carrier REFSENS requirements in Clause 7, the UE shall be verified with two Rx antenna ports in all supported frequency bands, additional requirements for four Rx ports shall be verified in operating bands where the UE is equipped with four Rx antenna ports, and additional requirements for four and eight Rx ports shall be verified in operating bands where the UE is equipped with eight Rx antenna ports.
* For Rx requirements other than single carrier REFSENS in Clause 7, the UE shall be verified with four Rx antenna ports and skip two Rx antenna ports requirements in operating bands where the UE is equipped with four Rx antenna ports unless it does not mandate and does not support four Rx antenna ports for these bands in a band combination, in which case, it shall be verified with two Rx antenna ports requirements; the UE shall be verified with eight Rx antenna ports and skip both two and four Rx antenna ports requirements in operating bands where the UE is equipped with eight Rx antenna ports unless the UE does not support eight Rx ports for band(s) in a band combination in which case those band(s) shall be verified with four Rx antenna ports, otherwise, the UE shall be verified with two Rx antenna ports requirements.
* The above rules apply for all clauses except for clause 7.9.

A Redcap UE is required to be equipped with a minimum of single Rx antenna port and maximum of two Rx antenna ports. Clause 7 requirements for four Rx antenna ports do not apply to a RedCap UE.