**3GPP TSG-RAN4 WG4 Meeting #96-e *R4-2012697***

**Electronic Meeting, 17-28 Aug., 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-4** | **CR** | **-** | **rev** | **-** | **Current version:** | **16.1.0** |  |
|  |
| *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:***  | draft CR: FR1 EN-DC power imbalance requirements |
|  |  |
| ***Source to WG:*** | NTT DOCOMO, INC |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_perf\_enh-Perf |  | ***Date:*** | 2020-08-25 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
|  |  |
| ***Reason for change:*** | Revised Rel-16 NR performance requirements enhancement WI RP-200472 is approved in RAN#87-e meeting. FR1 CA and EN-DC power imbalance requirements are agreed to be defined.  |
|  |  |
| ***Summary of change:*** | Addition of FR1 EN-DC power imbalance requirements. |
|  |  |
| ***Consequences if not approved:*** | The WI will be incomplete. |
|  |  |
| ***Clauses affected:*** | 9.5B (New) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **x** |  |  Test specifications | TS 38.521-4  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |

|  |  |
| --- | --- |
| ***This CR's revision history:*** |  |

<< Start of Changes >>

## 9.1 General

This clause covers the UE demodulation performance requirements for EN-DC, NE-DC, inter-band NR-DC between FR1 and FR2, and inter-band NR CA between FR1 and FR2.

<<Unchanged Sections Skipped>>

## 9.5B Power imbalance requirements for DC

### 9.5B.1 EN-DC

#### 9.5B.1.1 General

##### 9.5B.1.1.1 Applicability of requirements

TBD

#### 9.5B.1.2 Intra-band contiguous EN-DC within FR1

The requirements in this section verify the ability of intra-band contiguous EN-DC UE to demodulate the signal transmitted by the NR SCG in the presence of a stronger E-UTRA MCG. The parameters specified in Table 5.xx are valid for all intra-band contiguous EN-DC power imbalance tests unless otherwise stated. The test setup for E-UTRA MCG CC is specified in Clause 9.1.2. During the test, only the PDSCH performance on the NR SCG CC shall be verified.

##### 9.5B.1.2.1 2Rx requirements

###### 9.5B.1.2.1.1 FDD

The performance requirements are specified in Table 9.5B.1.2.1.1-1 and the downlink physical channel setup according to Annex C.3.1.

Table 9.5B.1.2.1.1-1: Minimum performance with 15 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number | Bandwidth (MHz) | Reference channel | Power at Antenna Port in dBm/Hz | Reference valueFraction of MaximumThroughput (%) |
| SCG CC | MCG CC | SCG CC | MCG CC | SCG CC | SCG CC |
| 1 | TBD | NA | TBD | TBD | TBD | 85 |

###### 9.5B.1.2.1.2 TDD

The performance requirements are specified in Table 9.5B.1.2.1.2-1 [and Table 9.5B.1.2.1.2-2] and the downlink physical channel setup according to Annex C.3.1.

Table 9.5B.1.2.1.2-1: Minimum performance with 30 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number | Bandwidth (MHz) | Reference channel | Power at Antenna Port in dBm/Hz | Reference valueFraction of MaximumThroughput (%) |
| SCG CC | MCG CC | SCG CC | MCG CC | SCG CC | SCG CC |
| 1 | TBD | NA | TBD | TBD | TBD | 85 |

[Table 9.5B.1.2.1.2-2: Minimum performance with 15 kHz SCS]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number | Bandwidth (MHz) | Reference channel | Power at Antenna Port in dBm/Hz | Reference valueFraction of MaximumThroughput (%) |
| SCG CC | MCG CC | SCG CC | MCG CC | SCG CC | SCG CC |
| 1 | TBD | NA | TBD | TBD | TBD | 85 |

##### 9.5B.1.2.2 4Rx requirements

###### 9.5B.1.2.2.1 FDD

###### 9.5B.1.2.2.2 TDD

#### 9.5B.1.3 Intra-band non-contiguous EN-DC within FR1

<< End of Changes >>