**3GPP TSG- Meeting #**

**, , -**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | draftCR on FRC for 8Rx UEs TDD 2 layers in CBW 5MHz to 30MHz | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_ENDC\_RF\_FR1\_enh2-Perf | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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:*** | | New 8Rx CA demodulation requirements for rank 2 are introduced to 38.101-4. New FRCs need to be added. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The summary of changes in this CR as below:   * update FRC in Clause   A.3.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No new FRCs for FR1 8Rx CA demodulation requirements will be defined | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | A.3.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

# A.3 DL reference measurement channels

## A.3.2 Reference measurement channels for PDSCH performance requirements

### A.3.2.2 TDD

#### A.3.2.2.2 Reference measurement channels for SCS 30 kHz FR1

**<Start of changes>**

Table A.3.2.2.2-36: PDSCH Reference Channel for TDD CC with UL-DL pattern FR1.30-1 and CA scenario



|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | | Unit |  | Value | | | | |
| Reference channel | |  | R.PDSCH.2-36.1 TDD | R.PDSCH.2-36.2 TDD | R.PDSCH.2-36.3 TDD | R.PDSCH.2-36.4 TDD | R.PDSCH.2-36.5 TDD | R.PDSCH.2-36.6 TDD |
| Channel bandwidth | | MHz | 5 | 10 | 15 | 20 | 25 | 30 |
| Subcarrier spacing | | kHz | 30 | 30 | 30 | 30 | 30 | 30 |
| Allocated resource blocks | | PRBs | 11 | 24 | 38 | 51 | 65 | 78 |
| Number of consecutive PDSCH symbols | |  |  |  |  |  |  |  |
| For Slot i, if mod(i, 10) = 7 for i from {0,…,39} | |  | 4 | 4 | 4 | 4 | 4 | 4 |
| For Slot i, if mod(i, 10) = {0,1,2,3,4,5,6} for i from {1,…,39} | |  | 12 | 12 | 12 | 12 | 12 | 12 |
| Allocated slots per 2 frames | |  | 31 | 31 | 31 | 31 | 31 | 31 |
| MCS table | |  | 64QAM | 64QAM | 64QAM | 64QAM | 64QAM | 64QAM |
| MCS index | |  | 19 | 19 | 19 | 19 | 19 | 19 |
| Modulation | |  | 64QAM | 64QAM | 64QAM | 64QAM | 64QAM | 64QAM |
| Target Coding Rate | |  | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Number of MIMO layers | |  | 2 | 2 | 2 | 2 | 2 | 2 |
| Number of DMRS REs | |  |  |  |  |  |  |  |
| For Slot i, if mod(i, 10) = 7 for i from {0,…,39} | |  | 6 | 6 | 6 | 6 | 6 | 6 |
| For Slot i, if mod(i, 10) = {0,1,2,3,4,5,6} for i from {1,…,39} | |  | 12 | 12 | 12 | 12 | 12 | 12 |
| Overhead for TBS determination | |  | 0 | 0 | 0 | 0 | 0 | 0 |
| Information Bit Payload per Slot | |  |  |  |  |  |  |  |
| For Slots 0 and Slot i, if mod(i, 10) = {8,9} for i from {0,…,39} | | Bits | N/A | N/A | N/A | N/A | N/A | N/A |
| For Slot i, if mod(i, 10) = 7 for i from {0,…,39} | | Bits | 2792 | 6144 | 9736 | 13064 | 16392 | 19968 |
| For Slot i, if mod(i, 10) = {0,1,2,3,4,5,6} for i from {1,…,39} | | Bits | 8712 | 18960 | 30216 | 40976 | 52224 | 62504 |
| Transport block CRC per Slot | |  |  |  |  |  |  |  |
| For Slots 0 and Slot i, if mod(i, 10) = {8,9} for i from {0,…,39} | | Bits | N/A | N/A | N/A | N/A | N/A | N/A |
| For Slot i, if mod(i, 10) = 7 for i from {0,…,39} | | Bits | 16 | 16 | 16 | 24 | 24 | 24 |
| For Slot i, if mod(i, 10) = {0,1,2,3,4,5,6} for i from {1,…,39} | | Bits | 24 | 24 | 24 | 24 | 24 | 24 |
| Number of Code Blocks per Slot | |  |  |  |  |  |  |  |
| For Slots 0 and Slot i, if mod(i, 10) = {8,9} for i from {0,…,39} | | CBs | N/A | N/A | N/A | N/A | N/A | N/A |
| For Slot i, if mod(i, 10) = 7 for i from {0,…,39} | | CBs | 1 | 1 | 2 | 2 | 2 | 3 |
| For Slot i, if mod(i, 10) = {0,1,2,3,4,5,6} for i from {1,…,39} | | CBs | 2 | 3 | 4 | 5 | 7 | 8 |
| Binary Channel Bits Per Slot | |  |  |  |  |  |  |  |
| For Slots 0 and Slot i, if mod(i, 10) = {8,9} for i from {0,…,39} | | Bits | N/A | N/A | N/A | N/A | N/A | N/A |
| For Slots i = 20, 21 | | Bits | 16632 | 36288 | 57456 | 77112 | 98280 | 117936 |
| For Slot i, if mod(i, 10) = 7 for i from {0,…,39} | | Bits | 5544 | 12096 | 19152 | 25704 | 32760 | 39312 |
| For Slot i, if mod(i, 10) = {0,1,2,3,4,5,6} for i from {1,…,19,22,…,39} | | Bits | 17424 | 38016 | 60192 | 80784 | 102960 | 123552 |
| Max. Throughput averaged over 2 frames | | Mbps | 12.320 | 26.825 | 42.739 | 57.930 | 73.781 | 88.374 |
|  | Note 1: SS/PBCH block is transmitted in slot #0 with periodicity 20 ms  Note 2: Slot i is slot index per 2 frames | | | | | | | |

**<End of changes>**