**3GPP TSG- Meeting #110 *R4-2403895***

**Athens, GR, 26 Feb – 01 Mar, 2024**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0733** | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CR to 38.101-2 on RMC for UL 256QAM | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_RF\_FR2\_req\_Ph3-Core | | | | |  | ***Date:*** | | | 5 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The RMC for UL 256QAM is absent | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add RMC for UL 256QAM in Annex A.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The RMC for UL 256QAM is not available | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | Annex A.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.521-2 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* START OF CHANGES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### A.2.3.7 CP-OFDM 64QAM

Table A.2.3.7-1: Reference Channels for CP-OFDM 64QAM

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Allocated resource blocks (LCRB) | DFT-s-OFDM Symbols per slot (Note 1) | Modulation | MCS Index (Note 2) | Payload size | Transport block CRC | LDPC Base Graph | Number of code blocks per slot (Note 3) | Total number of bits per slot | Total modulated symbols per slot |
| Unit |  |  |  |  | Bits | Bits |  |  | Bits |  |
|  | 1 | 11 | 64QAM | 19 | 408 | 16 | 2 | 1 | 792 | 132 |
|  | 16 | 11 | 64QAM | 19 | 6400 | 24 | 1 | 1 | 12672 | 2112 |
|  | 32 | 11 | 64QAM | 19 | 12808 | 24 | 1 | 2 | 25344 | 4224 |
|  | 33 | 11 | 64QAM | 19 | 13064 | 24 | 1 | 2 | 26136 | 4356 |
|  | 62 | 11 | 64QAM | 19 | 24576 | 24 | 1 | 3 | 49104 | 8184 |
|  | 66 | 11 | 64QAM | 19 | 26120 | 24 | 1 | 4 | 52272 | 8712 |
|  | 124 | 11 | 64QAM | 19 | 49176 | 24 | 1 | 6 | 98208 | 16368 |
|  | 132 | 11 | 64QAM | 19 | 53288 | 24 | 1 | 7 | 104544 | 17424 |
|  | 148 | 11 | 64QAM | 19 | 59432 | 24 | 1 | 8 | 117216 | 19536 |
|  | 248 | 11 | 64QAM | 19 | 98376 | 24 | 1 | 12 | 196416 | 32736 |
|  | 264 | 11 | 64QAM | 19 | 106576 | 24 | 1 | 13 | 209088 | 34848 |
| NOTE 1: PUSCH mapping Type-A and single-symbol DM-RS configuration Type-1 with 2 additional DM-RS symbols, such that the DM-RS positions are set to symbols 2, 7, 11. DMRS is [TDM'ed] with PUSCH data. DM-RS symbols are not counted.  NOTE 2: MCS Index is based on MCS table 5.1.3.1-1 defined in 38.214.  NOTE 3: If more than one Code Block is present, an additional CRC sequence of L = 24 Bits is attached to each Code Block (otherwise L = 0 Bit)  NOTE 4: Indexes of active UL slots are given by Table A.2.3-1 with TDD UL-DL configuration specified in A2.3 for the requirements requiring at least one sub frame (1ms) for the measurement period. For other requirements, indexes of active UL slots are given by the slots satisfying mod(slot index+1, 5) = 0 with TDD UL-DL configuration specified in A.3.3.1.  NOTE 5: The RMCs apply to all channel bandwidth where LCRB ≤ NRB. | | | | | | | | | | |

Table A.2.3.7-2: Void

### A.2.3.8 DFT-s-OFDM 256QAM

Table A.2.3.8-1: Reference Channels for DFT-s-OFDM 256QAM

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Allocated resource blocks (LCRB) | DFT-s-OFDM Symbols per slot (Note 1) | Modulation | MCS Index (Note 2) | Payload size | Transport block CRC | LDPC Base Graph | Number of code blocks per slot (Note 3) | Total number of bits per slot | Total modulated symbols per slot |
| Unit |  |  |  |  | Bits | Bits |  |  | Bits |  |
|  | 1 | 11 | 256QAM | 22 | 808 | 16 | 1 | 1 | 1056 | 132 |
|  | 16 | 11 | 256QAM | 22 | 12552 | 24 | 1 | 2 | 16896 | 2112 |
|  | 32 | 11 | 256QAM | 22 | 25104 | 24 | 1 | 3 | 33792 | 4224 |
|  | 60 | 11 | 256QAM | 22 | 47112 | 24 | 1 | 6 | 63360 | 7920 |
|  | 64 | 11 | 256QAM | 22 | 50184 | 24 | 1 | 6 | 67584 | 8448 |
|  | 120 | 11 | 256QAM | 22 | 94248 | 24 | 1 | 12 | 126720 | 15840 |
|  | 128 | 11 | 256QAM | 22 | 100392 | 24 | 1 | 12 | 135168 | 16896 |
|  | 144 | 11 | 256QAM | 22 | 112648 | 24 | 1 | 14 | 152064 | 19008 |
|  | 243 | 11 | 256QAM | 22 | 188576 | 24 | 1 | 23 | 256608 | 32076 |
|  | 256 | 11 | 256QAM | 22 | 200808 | 24 | 1 | 24 | 270336 | 33792 |
| NOTE 1: PUSCH mapping Type-A and single-symbol DM-RS configuration Type-1 with 2 additional DM-RS symbols, such that the DM-RS positions are set to symbols 2, 7, 11. DMRS is [TDM'ed] with PUSCH data. DM-RS symbols are not counted.  NOTE 2: MCS Index is based on MCS table 5.1.3.1-2 defined in 38.214.  NOTE 3: If more than one Code Block is present, an additional CRC sequence of L = 24 Bits is attached to each Code Block (otherwise L = 0 Bit)  NOTE 4: Indexes of active UL slots are given by Table A.2.3-1 with TDD UL-DL configuration specified in A2.3 for the requirements requiring at least one sub frame (1ms) for the measurement period. For other requirements, indexes of active UL slots are given by the slots satisfying mod(slot index+1, 5) = 0 with TDD UL-DL configuration specified in A.3.3.1.  NOTE 5: The RMCs apply to all channel bandwidth where LCRB ≤ NRB. | | | | | | | | | | |

### A.2.3.9 CP-OFDM 256QAM

Table A.2.3.9-1: Reference Channels for CP-OFDM 256QAM

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Allocated resource blocks (LCRB) | DFT-s-OFDM Symbols per slot (Note 1) | Modulation | MCS Index (Note 2) | Payload size | Transport block CRC | LDPC Base Graph | Number of code blocks per slot (Note 3) | Total number of bits per slot | Total modulated symbols per slot |
| Unit |  |  |  |  | Bits | Bits |  |  | Bits |  |
|  | 1 | 11 | 256QAM | 22 | 808 | 16 | 1 | 1 | 1056 | 132 |
|  | 16 | 11 | 256QAM | 22 | 12552 | 24 | 1 | 2 | 16896 | 2112 |
|  | 32 | 11 | 256QAM | 22 | 25104 | 24 | 1 | 3 | 33792 | 4224 |
|  | 33 | 11 | 256QAM | 22 | 25608 | 24 | 1 | 4 | 34848 | 4356 |
|  | 62 | 11 | 256QAM | 22 | 48168 | 24 | 1 | 6 | 65472 | 8184 |
|  | 66 | 11 | 256QAM | 22 | 51216 | 24 | 1 | 7 | 69696 | 8712 |
|  | 124 | 11 | 256QAM | 22 | 96264 | 24 | 1 | 12 | 130944 | 16368 |
|  | 132 | 11 | 256QAM | 22 | 102416 | 24 | 1 | 13 | 139392 | 17424 |
|  | 148 | 11 | 256QAM | 22 | 114776 | 24 | 1 | 14 | 156288 | 19536 |
|  | 248 | 11 | 256QAM | 22 | 192624 | 24 | 1 | 23 | 261888 | 32736 |
|  | 264 | 11 | 256QAM | 22 | 204976 | 24 | 1 | 25 | 278784 | 34848 |
| NOTE 1: PUSCH mapping Type-A and single-symbol DM-RS configuration Type-1 with 2 additional DM-RS symbols, such that the DM-RS positions are set to symbols 2, 7, 11. DMRS is [TDM'ed] with PUSCH data. DM-RS symbols are not counted.  NOTE 2: MCS Index is based on MCS table 5.1.3.1-2 defined in 38.214.  NOTE 3: If more than one Code Block is present, an additional CRC sequence of L = 24 Bits is attached to each Code Block (otherwise L = 0 Bit)  NOTE 4: Indexes of active UL slots are given by Table A.2.3-1 with TDD UL-DL configuration specified in A2.3 for the requirements requiring at least one sub frame (1ms) for the measurement period. For other requirements, indexes of active UL slots are given by the slots satisfying mod(slot index+1, 5) = 0 with TDD UL-DL configuration specified in A.3.3.1.  NOTE 5: The RMCs apply to all channel bandwidth where LCRB ≤ NRB. | | | | | | | | | | |

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