**3GPP TSG-RAN WG1 Meeting #107-e *R1-21xxxxx***

**e-Meeting, November 11–19, 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.212** | **CR** |  | **rev** | **-** | **Current version:** | **16.7.0** |  |
|  | | | | | | | | |
| *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 | **X** | Core Network |  |

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| ***Title:*** | Introduction of NR DL 1024QAM for FR1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_DL1024QAM\_FR1-Core | | | | |  | ***Date:*** | | | 2021-11-29 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Inclusion of Rel-17 NR DL 1024QAM for FR1. | | | | | | | | |
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| ***Summary of change:*** | | Support of Rel-17 NR DL 1024QAM for FR1:  1. Update section 5.4.2.1 to reflect that the maximum moduldation order is assumed for DL-SCH when 1024QAM is configured by higher layers parameters. | | | | | | | | |
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| ***Consequences if not approved:*** | | Rel-17 NR DL 1024QAM for FR1 will be incomplete. | | | | | | | | |
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| ***Clauses affected:*** | | 5.4.2.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.201, TS 38.211, TS 38.214 | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

#### 5.4.2.1 Bit selection

The bit sequence after encoding  from Clause 5.3.2 is written into a circular buffer of length  for the -th coded block, where  is defined in Clause 5.3.2.

For the -th code block, let  if  and  otherwise, where, ,  is determined according to Clause 6.1.4.2 in [6, TS 38.214] for UL-SCH and Clause 5.1.3.2 in [6, TS 38.214] for DL-SCH/PCH, assuming the following:

- maximum number of layers for one TB for UL-SCH is given by X, where

- if the higher layer parameter *maxMIMO-Layers* of *PUSCH-ServingCellConfig* of the serving cell is configured, X is given by that parameter

- elseif the higher layer parameter *maxRank* of *pusch-Config* of the serving cell is configured, X is given by the maximum value of *maxRank* across all BWPs of the serving cell

- otherwise, X is given by the maximum number of layers for PUSCH supported by the UE for the serving cell

- maximum number of layers for one TB for DL-SCH/PCH is given by the minimum of X and 4, where

- if the higher layer parameter *maxMIMO-Layers* of *PDSCH-ServingCellConfig* of the serving cell is configured, X is given by that parameter

- otherwise, X is given by the maximum number of layers for PDSCH supported by the UE for the serving cell

- if the higher layer parameter *mcs-Table-r17* or *mcs-TableDCI-1-2-r17* given by a *pdsch-Config* for at least one DL BWP of the serving cell is set to 'qam1024', maximum modulation order is assumed for DL-SCH, else if the higher layer parameter *mcs-Table* or *mcs-TableDCI-1-2* given by a *pdsch-Config* for at least one DL BWP of the serving cell is set to 'qam256', maximum modulation order  is assumed for DL-SCH; otherwise a maximum modulation order  is assumed for DL-SCH;

< Unchanged parts are omitted >