**3GPP TSG-RAN WG4 Meeting #111 R4-2408835**

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

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.786** | **CR** | **0005** | **rev** |  | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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:*** | Big CR to TR 38.786 UE NR sidelink evolution after RAN4#111 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_SL\_enh2-Core | | | | |  | ***Date:*** | | | 2024-05-27 |
|  |  | | | |  | |  | | |  |
| ***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 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:*** | | This CR is to capture the endorsed draft CRs in the RAN4#111 meeting. To provide a formal CR as a formal version for TR 38.786. Note that the endorsed draft CRs in RAN4#110bis meeting has been captured in the formal CR of R4-2408827. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Below draft CRs are agreed in RAN4#111.  R4-2408829 draftCR to TR 38.786 for Rel-18 A-MPR simulation results, OPPO  R4-2409051 draft CR to TR 38.786 on SL-U A-MPR for remaining NS values, add NS\_71, LG Electronics Finland | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The endorsed draft CRs are not captured correctly | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.3.2, 6.1.3.6, 6.1.3.15 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.101-1 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

< START OF CHANGE #1 >

<<<<<<<<<<< Start of changes in section 6 >>>>>>>>>>

#### 6.1.3.2 A-MPR for SL-U with NS\_29

##### 6.1.3.2.1 A-MPR for simultaneous PSSCH/PSCCH transmission

6.1.3.2.1.1 LG Electronics’ simulation results (R4-2404862)

<Unchanged parts omitted>

6.1.3.2.1.2 OPPO’ simulation results (R4-2408830)

For NS\_29, the emission requirement and PSD requirement differ with different channel bandwidth and hence simulation are down with different channel bandwidth. The simulation result is shown below:

Table 1 Simulation results for 20 and 40MHz

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 20MHz channel bandwidth | | | | 40MHz channel bandwidth | | | |
| 15 kHz contiguous | 30 kHz contiguous | 15 kHz Interlaced | 30 kHz Interlaced | 15 kHz contiguous | 30 kHz contiguous | 15 kHz Interlaced | 30 kHz Interlaced |
| QPSK | 4.03 | 4.11 | 4.19 | 4.28 | 3.22 | 3.22 | 3.14 | 3.38 |
| 16QAM | 4.03 | 4.03 | 4.20 | 4.28 | 3.70 | 3.70 | 3.54 | 3.38 |
| 64QAM | 4.97 | 5.23 | 4.37 | 4.28 | 5.05 | 4.97 | 5.05 | 4.11 |
| 256QAM | 8.80 | 8.61 | 7.86 | 7.49 | 8.61 | 8.80 | 7.40 | 6.48 |

Table 2 Simulation results for 600 and 800MHz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | contiguous | | Interlaced | | Contiguous Bitmap | | | | | | | | Interlaced Bitmap | | | | | | | |
|  |  | 60MHz | 80 MHz | 60 | 80 | 100 | 110 | 010 | 1100 | 1000 | 1110 | 0100 | 0110 | 100 | 110 | 010 | 1100 | 1000 | 1110 | 0100 | 0110 |
| Contiguous | QPSK | 3.2 | 3.2 | 3.2 | 3.3 | 3.5 | 2.8 | 3.6 | 2.8 | 3.5 | 2.8 | 3.5 | 2.8 | 5.9 | 3.0 | 6.0 | 2.9 | 5.9 | 2.6 | 5.9 | 2.9 |
| 16QAM | 3.7 | 3.7 | 3.2 | 3.3 | 3.5 | 3.6 | 3.6 | 3.6 | 3.5 | 3.6 | 3.5 | 3.7 | 6.0 | 3.0 | 6.0 | 3.0 | 6.0 | 3.0 | 6.0 | 3.0 |
| 64QAM | 5.2 | 5.1 | 4.1 | 3.9 | 5.1 | 4.8 | 5.2 | 4.7 | 5.1 | 4.9 | 5.1 | 4.9 | 6.0 | 4.2 | 6.0 | 4.2 | 5.9 | 4.1 | 5.9 | 4.2 |
| 256QAM | 8.6 | 8.5 | 6.6 | 6.5 | 7.5 | 7.7 | 8.5 | 7.3 | 7.4 | 8.0 | 7.5 | 8.5 | 6.6 | 6.8 | 6.6 | 6.8 | 6.6 | 6.7 | 6.6 | 6.8 |

<Unchanged parts omitted>

#### 6.1.3.6 A-MPR for SL-U with NS\_54

##### 6.1.3.6.1 A-MPR for simultaneous PSSCH/PSCCH transmission

6.1.3.6.1.1 LG Electronics’ simulation results (R4-2404862)

<Unchanged parts omitted>

6.1.3.6.1.2 OPPO’ simulation results (R4-2408830)

For NS\_54, the band edge spectrum emission limit -27 dBm/MHz is the dominant factor and hence the band edge will suffer lager A-MPR while for the channels in the middle of the band can have smaller A-MPR. The requirement is shown as below.

Table 3 Spectrum emission limit for NS\_54

|  |  |  |
| --- | --- | --- |
| **Frequency band**  **(MHz)** | **Spectrum emission limit**  **(dBm)** | **Measurement bandwidth** |
| f ≤ 5925 | -27 | 1 MHz |
| f ≥ 7125 | -27 |  |

For the A-MPR simulation result, they are captured below for edge channel and non-edge channel. For QPSK and 16QAM single CC with smaller bandwidth, the edge effect is more obvious. For higher order modulation as 64QAM and 256QAM, the dominant factor is more like EVM and hence no big difference found for edge and non-edge channel.

Table 4 A-MPR for single CC NS\_54 edge channel

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| case | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| QPSK | 4.4 | 4.4 | 3.5 | 3.5 | 3.2 | 3.2 | 3.2 | 4.5 | 4.6 | 3.5 | 3.5 | 3.2 | 3.3 | 3.2 |
| 16QAM | 4.4 | 4.4 | 3.7 | 3.7 | 3.7 | 3.7 | 3.6 | 4.4 | 4.6 | 3.5 | 3.5 | 3.2 | 3.3 | 3.2 |
| 64QAM | 5.0 | 5.2 | 5.1 | 5.0 | 5.2 | 5.1 | 5.1 | 4.5 | 4.6 | 4.1 | 4.4 | 4.1 | 3.9 | 4.0 |
| 256QAM | 8.8 | 8.6 | 8.6 | 8.8 | 8.6 | 8.5 | 8.7 | 7.9 | 7.5 | 7.6 | 7.9 | 6.6 | 6.5 | 6.8 |

Table 5 A-MPR for single CC NS\_54 non-edge channel

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| case | 1 | 2 | 3 | 4 | 5 | 6 |
| QPSK | 3.2 | 3.1 | 3.2 | 3.2 | 3.2 | 3.2 |
| 16QAM | 3.7 | 3.6 | 3.7 | 3.7 | 3.7 | 3.7 |
| 64QAM | 5.0 | 5.2 | 5.1 | 5.0 | 5.2 | 5.1 |
| 256QAM | 8.8 | 8.6 | 8.6 | 8.8 | 8.6 | 8.5 |

The wide-band operation simulation result is further provided below:

Table 6 A-MPR for Wideband operation NS\_54 edge channel

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bitmap | 10 | 100 | 110 | 010 | 1100 | 1000 | 1110 | 0100 | 0110 | 10000 | 11000 | 11100 | 11110 | 01000 | 01100 | 01110 | 00100 |
| Contiguous | QPSK | 3.5 | 3.0 | 3.0 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| 16QAM | 3.5 | 3.5 | 3.6 | 3.5 | 3.6 | 3.5 | 3.6 | 3.5 | 3.7 | 3.5 | 3.6 | 3.5 | 3.6 | 3.5 | 3.6 | 3.7 | 3.6 |
| 64QAM | 5.1 | 5.1 | 4.8 | 5.2 | 4.7 | 5.1 | 4.9 | 5.1 | 4.9 | 5.1 | 4.7 | 4.8 | 5.0 | 5.1 | 4.8 | 5.0 | 5.2 |
| 256QAM | 7.4 | 7.5 | 7.7 | 8.5 | 7.3 | 7.4 | 8.0 | 7.5 | 8.5 | 7.4 | 7.3 | 7.6 | 8.0 | 7.4 | 7.7 | 8.5 | 8.5 |
| Interlace | QPSK | 3.7 | 3.1 | 3.1 | 2.8 | 2.7 | 2.8 | 2.6 | 2.6 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.6 | 2.7 | 2.8 | 2.6 |
| 16QAM | 3.7 | 3.1 | 3.1 | 2.9 | 3.0 | 2.9 | 3.0 | 2.9 | 3.0 | 2.9 | 3.0 | 3.0 | 2.8 | 2.9 | 3.0 | 3.0 | 2.8 |
| 64QAM | 4.1 | 4.1 | 4.2 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.1 | 4.2 | 4.1 | 4.0 | 4.1 | 4.2 | 4.1 | 4.1 |
| 256QAM | 6.5 | 6.6 | 6.8 | 6.6 | 6.8 | 6.6 | 6.7 | 6.6 | 6.8 | 6.6 | 6.8 | 6.7 | 6.6 | 6.6 | 6.8 | 6.7 | 6.5 |

Table 7 A-MPR for Wideband operation NS\_54 non-edge channel

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bitmap | 10 | 100 | 110 | 010 | 1100 | 1000 | 1110 | 0100 | 0110 |
| Contiguous | QPSK | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
| 16QAM | 3.5 | 3.5 | 3.6 | 3.5 | 3.6 | 3.5 | 3.6 | 3.5 | 3.7 |
| 64QAM | 5.1 | 5.1 | 4.8 | 5.2 | 4.7 | 5.1 | 4.9 | 5.1 | 4.9 |
| 256QAM | 7.4 | 7.5 | 7.7 | 8.5 | 7.3 | 7.4 | 8.0 | 7.5 | 8.5 |
| Interlace | QPSK | 2.6 | 2.6 | 2.7 | 2.8 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 16QAM | 2.9 | 2.9 | 3.0 | 2.9 | 3.0 | 2.9 | 3.0 | 2.9 | 3.0 |
| 64QAM | 4.1 | 4.1 | 4.2 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 |
| 256QAM | 6.5 | 6.6 | 6.8 | 6.6 | 6.8 | 6.6 | 6.7 | 6.6 | 6.8 |

#### 6.1.3.15 A-MPR for SL-U with NS\_67 or NS\_71

##### 6.1.3.15.1 A-MPR for simultaneous PSSCH/PSCCH transmission

6.1.3.15.1.1 LG Electronics’ simulation results (R4-2404862)

Table 6.1.3.15.1.1-1 shows the A-MPR simulation results for the agreed scenarios with different center frequencies.

Table 6.1.3.15.1.1-1: NS\_67 or NS\_71-PSSCH/PSCCH A-MPR simulation results for SL-U power class 5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| '20MHz'  (7115) | Scenario # | #1 | #7 | #2 | #8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 'QPSK' | 12.74 | 14.69 | 12.74 | 14.70 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '16QAM' | 12.73 | 14.69 | 12.74 | 14.70 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '64QAM' | 12.74 | 14.70 | 12.74 | 14.71 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '256QAM' | 12.74 | 14.70 | 12.74 | 14.70 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '40MHz'  (5965) | Scenario # | #3 | #9 | #13 | #30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 'QPSK' | 9.42 | 11.78 | 12.74 | 14.69 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '16QAM' | 9.42 | 11.77 | 12.74 | 14.69 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '64QAM' | 9.42 | 11.78 | 12.74 | 14.69 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '256QAM' | 9.42 | 11.78 | 12.74 | 14.69 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| '60MHz'  (7095) | Scenario # | #4 | #10 | #14 | #31 | #15 | #32 | #16 | #33 |  |  |  |  |  |  |  |  |  |  |
| 'QPSK' | 7.61 | 9.89 | 12.74 | 15.18 | 9.42 | 12.26 | 12.73 | 15.17 |  |  |  |  |  |  |  |  |  |  |
| '16QAM' | 7.61 | 9.89 | 12.74 | 15.18 | 9.42 | 12.26 | 12.73 | 15.17 |  |  |  |  |  |  |  |  |  |  |
| '64QAM' | 7.61 | 9.89 | 12.74 | 15.19 | 9.42 | 12.26 | 12.73 | 15.17 |  |  |  |  |  |  |  |  |  |  |
| '256QAM' | 7.61 | 10.35 | 12.74 | 15.18 | 9.42 | 12.26 | 12.73 | 15.18 |  |  |  |  |  |  |  |  |  |  |
| '80MHz'  (5985) | Scenario # | #5 | #11 | #17 | #34 | #18 | #35 | #19 | #36 | #20 | #37 | #21 | #38 |  |  |  |  |  |  |
| 'QPSK' | 6.30 | 8.96 | 12.73 | 15.19 | 9.42 | 12.26 | 7.61 | 10.35 | 12.73 | 15.17 | 9.42 | 12.25 |  |  |  |  |  |  |
| '16QAM' | 6.30 | 8.96 | 12.74 | 15.19 | 9.42 | 12.26 | 7.61 | 10.35 | 12.73 | 15.17 | 9.42 | 12.25 |  |  |  |  |  |  |
| '64QAM' | 6.30 | 8.96 | 12.74 | 15.19 | 9.42 | 12.26 | 7.61 | 10.35 | 12.73 | 15.17 | 9.42 | 12.25 |  |  |  |  |  |  |
| '256QAM' | 6.30 | 8.96 | 12.74 | 15.18 | 9.42 | 12.26 | 7.60 | 10.36 | 12.73 | 15.17 | 9.42 | 12.25 |  |  |  |  |  |  |
| '100MHz'  (7075) | Scenario # | #6 | #12 | #22 | #39 | #23 | #40 | #24 | #41 | #25 | #42 | #26 | #43 | #27 | #44 | #28 | #45 | #29 | #46 |
| 'QPSK' | 5.47 | 8.05 | 12.74 | 15.18 | 9.42 | 12.26 | 7.60 | 10.35 | 6.30 | 8.96 | 12.73 | 15.17 | 9.42 | 12.25 | 7.60 | 9.88 | 12.73 | 15.17 |
| '16QAM' | 5.47 | 8.05 | 12.74 | 15.18 | 9.42 | 12.26 | 7.60 | 10.35 | 6.30 | 8.96 | 12.73 | 15.16 | 9.42 | 12.25 | 7.60 | 10.34 | 12.73 | 15.18 |
| '64QAM' | 5.47 | 8.05 | 12.74 | 15.20 | 9.42 | 12.26 | 7.61 | 10.35 | 6.30 | 8.96 | 12.73 | 15.17 | 9.41 | 12.25 | 7.60 | 9.88 | 12.73 | 15.17 |
| '256QAM' | 5.47 | 8.05 | 12.73 | 15.19 | 9.42 | 12.26 | 7.60 | 10.35 | 6.30 | 8.96 | 12.74 | 15.17 | 9.42 | 12.25 | 7.60 | 9.88 | 12.73 | 15.16 |

Table 6.1.3.15.1.1-2 shows the maximum value of simulation results considering combinations of Outer/Inner sub-band configuration and Full/Partial RB allocation.

Table 6.1.3.15.1.1-2: NS\_67 or NS\_71-PSSCH/PSCCH A-MPR simulation results for SL-U power class 5

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pre-coding | Modulation | Channel bandwidth (Sub-band allocation) / RB Allocation | | | | | | | | | |
| 20MHz | | 40MHz | | 60MHz | | 80MHz | | 100MHz | |
| Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) |
| CP-OFDM | QPSK | 12.74 | 15.19 | 9.42 | 12.26 | 7.61 | 10.35 | 6.30 | 8.96 | 5.47 | 8.05 |
| 16 QAM | 12.74 | 15.19 | 9.42 | 12.26 | 7.61 | 10.35 | 6.30 | 8.96 | 5.47 | 8.05 |
| *64 QAM* | 12.74 | 15.20 | 9.42 | 12.26 | 7.61 | 10.35 | 6.30 | 8.96 | 5.47 | 8.05 |
| 256 QAM | 12.74 | 15.19 | 9.42 | 12.26 | 7.61 | 10.36 | 6.30 | 8.96 | 5.47 | 8.05 |

Considering implementation margin and VLP UE, Table 6.1.3.15.1.1-3 can be proposed for SL-U NS\_67 or NS\_71 PSSCH/PSCCH A-MPR.

* maximum (6dB, simulated A-MPR + implementation margin)

Table 6.1.3.15.1.1-3 : NS\_67 or NS\_71 PSSCH/PSCCH A-MPR for SL-U UE power class 5

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pre-coding | Modulation | Channel bandwidth (Sub-band allocation) / RB Allocation | | | | | | | | | |
| 20MHz | | 40MHz | | 60MHz | | 80MHz | | 100MHz | |
| Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) |
| CP-OFDM | QPSK | ≤ 13.5 | ≤ 16.0 | ≤ 10.5 | ≤ 13.5 | ≤ 8.5 | ≤ 11.5 | ≤ 7.0 | ≤ 10.0 | ≤ 6.5 | ≤ 9.0 |
| 16 QAM | ≤ 13.5 | ≤ 16.0 | ≤ 10.5 | ≤ 13.5 | ≤ 8.5 | ≤ 11.5 | ≤ 7.0 | ≤ 10.0 | ≤ 6.5 | ≤ 9.0 |
| *64 QAM* | ≤ 13.5 | ≤ 16.0 | ≤ 10.5 | ≤ 13.5 | ≤ 8.5 | ≤ 11.5 | ≤ 7.0 | ≤ 10.0 | ≤ 6.5 | ≤ 9.0 |
| 256 QAM | ≤ 13.5 | ≤ 16.0 | ≤ 10.5 | ≤ 13.5 | ≤ 8.5 | ≤ 11.5 | ≤ 7.0 | ≤ 10.0 | ≤ 6.5 | ≤ 9.0 |
| NOTE 1: The A-MPR shall apply to all SCS in all active 20 MHz sub-bands contiguously allocated in the channel.  NOTE 2: Full allocation A-MPR applies when all RB’s in a 20 MHz channel or all RB’s in all sub-bands for wideband operation are fully allocated and all sub-bands are transmitted. Partial allocation A-MPR applies when one or more RB’s in one or more sub-bands are not allocated but when all sub-bands within the channel are transmitted. When not all sub-bands within the channel are transmitted, the A-MPR associated with the channel bandwidth according to the bandwidth of the contiguously transmitted sub-bands and according to the allocation type applies. | | | | | | | | | | | |

##### 6.1.3.15.2 A-MPR for S-SSB transmission

6.1.3.15.2.1 LG Electronics’ simulation results (R4-2404862)

Table 6.1.3.15.2.1-1 shows the A-MPR simulation results for the agreed scenarios with different center frequencies.

Table 6.1.3.15.2.1-1: NS\_67 or NS\_71 S-SSB A-MPR simulation results for SL-U power class 5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario # | #1 | #2 | #3 | #4 | #5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ‘20MHz’  (7115) | 12.70 | 15.23 | 19.13 | 13.26 | 16.18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #6 | #7 | #8 | #9 | #10 | #11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ‘40MHz’  (5965) | 9.74 | 12.25 | 16.14 | 12.65 | 15.28 | 19.13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #12 | #13 | #14 | #15 | #16 | #17 | #18 | #19 | #20 | #21 |  |  |  |  |  |  |  |  |  |  |
| ‘60MHz’  (7095) | 9.20 | 11.46 | 10.24 | 13.16 | 13.17 | 16.18 | 13.22 | 16.18 | 10.20 | 13.27 |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #22 | #23 | #24 | #25 | #26 | #27 | #28 | #29 | #30 | #31 | #32 | #33 | #34 | #35 | #36 | #37 | #38 | #39 |  |  |
| '80MHz'  (5985) | 9.83 | 10.17 | 8.52 | 11.43 | 10.11 | 13.16 | 13.30 | 16.15 | 10.16 | 13.24 | 13.18 | 16.17 | 8.61 | 11.44 | 10.11 | 13.24 | 10.19 | 13.24 |  |  |
| Scenario # | #40 | #41 | #42 | #43 | #44 | #45 | #46 | #47 | #48 | #49 | #50 | #51 | #52 | #53 | #54 | #55 | #56 | #57 | #58 | #59 |
| '100MHz'  (7075) | 10.65 | 9.20 | 7.52 | 10.10 | 8.52 | 11.45 | 10.21 | 13.17 | 13.28 | 16.30 | 8.49 | 11.38 | 10.13 | 13.25 | 13.16 | 16.20 | 13.23 | 16.22 | 10.05 | 10.21 |
| Scenario # | #60 | #61 | #62 | #63 | #64 | #65 | #66 | #67 | #68 | #69 | #70 | #71 | #72 | #73 | #74 | #75 | #76 | #77 |  |  |
| '100MHz'  (7095) | 8.50 | 11.34 | 8.52 | 11.44 | 8.68 | 11.48 | 8.70 | 11.40 | 10.23 | 13.26 | 10.17 | 13.15 | 10.19 | 13.14 | 10.21 | 13.26 | 9.07 | 10.26 |  |  |

Table 6.1.3.15.2.1-2 shows the maximum value of simulation results considering combinations of Outer/Inner sub-band configuration and Full/Partial RB allocation.

Table 6.1.3.15.2.1-2: NS\_67 or NS\_71 S-SSB A-MPR simulation results for SL-U power class 5

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation / (dB) | | | | | | | | | |
| 20MHz | | 40MHz | | 60MHz | | 80MHz | | 100MHz | |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 |
| Contiguous/ Non-contiguous sub-band RB sets | 15.23 | 19.13 | 15.28 | 19.13 | 13.22 | 16.18 | 13.30 | 16.17 | 13.28 | 16.30 |

Considering implementation margin and VLP UE, Table 6.1.3.15.2.1-3 can be proposed for SL-U NS\_67 S-SSB A-MPR.

* maximum (6dB, simulated A-MPR + implementation margin)

Table 6.1.3.15.2.1-3 : NS\_67 or NS\_71 S-SSB A-MPR for SL-U UE power class 5

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation | | | | | | | | | |
| 20MHz | | 40MHz | | 60MHz | | 80MHz | | 100MHz | |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 |
| Contiguous/Non-contiguous | ≤ 18.5 | ≤ 21.5 | ≤18.0 | ≤21.5 | ≤16.0 | ≤18.5 | ≤16.0 | ≤18.5 | ≤16.0 | ≤18.5 |
| NOTE 1: The A-MPR shall apply to all SCS in all active 20 MHz sub-bands contiguously or non-contiguously allocated in the channel. | | | | | | | | | | |

##### 6.1.3.15.3 A-MPR for PSFCH transmission

6.1.3.15.3.1 LG Electronics’ simulation results (R4-2404862)

Table 6.1.3.15.3.1-1 shows the A-MPR simulation results for the agreed scenarios with different center frequencies.

Table 6.1.3.15.3.1-1: NS\_67 or NS\_71 PSFCH A-MPR simulation results for SL-U power class 5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario # | #1 | #2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ‘20MHz’ | 14.44 | 14.78 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #3 | #4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ‘40MHz’ | 11.26 | 14.42 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #5 | #6 | #7 | #8 | #9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ‘60MHz’ | 11.13 | 11.66 | 14.74 | 14.71 | 11.68 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #10 | #11 | #12 | #13 | #14 | #15 | #16 | #17 | #18 |  |  |  |  |  |  |  |  |  |  |
| '80MHz' | 12.23 | 10.32 | 11.73 | 14.82 | 11.70 | 14.83 | 10.54 | 11.72 | 11.73 |  |  |  |  |  |  |  |  |  |  |
| Scenario # | #19 | #20 | #21 | #22 | #23 | #24 | #25 | #26 | #27 | #28 | #29 | #30 | #31 | #32 | #33 | #34 | #35 | #36 | #37 |
| '100MHz' | 11.33 | 9.85 | 10.40 | 11.71 | 14.79 | 10.34 | 11.65 | 14.71 | 14.71 | 10.78 | 10.22 | 10.18 | 10.19 | 10.60 | 11.72 | 11.72 | 11.72 | 11.67 | 10.67 |

Table 6.1.3.15.3.1-2 shows the maximum value of simulation results considering combinations of Outer/Inner sub-band configuration and Full/Partial RB allocation.

Table 6.1.3.15.3.1-2: NS\_67 or NS\_71 PSFCH A-MPR simulation results for SL-U power class 5

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation | | | | |
| 20MHz  (Full/Partial) | 40MHz  (Full/Partial) | 60MHz  (Full/Partial) | 80MHz  (Full/Partial) | 100MHz  (Full/Partial) |
| Contiguous/Non-contiguous sub-band RB sets | 14.83 | 11.73 | 11.13 | 12.23 | 11.33 |

Considering implementation margin and VLP UE, Table 6.1.3.15.3.1-3 can be proposed for SL-U NS\_67 PSFCH A-MPR.

* maximum (6dB, simulated A-MPR + implementation margin)

Table 6.1.3.15.3.1-3 : NS\_67 or NS\_71 PSFCH A-MPR for SL-U UE power class 5

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation | | | | |
| 20MHz | 40MHz | 60MHz | 80MHz | 100MHz |
| Contiguous/Non-contiguous | ≤17.5 | ≤14.5 | ≤14.0 | ≤14.0 | ≤14.0 |
| NOTE 1: The A-MPR shall apply to all SCS in all active 20 MHz sub-bands contiguously or non-contiguously allocated in the channel. | | | | | |

<end of change>