**3GPP TSG-RAN4 Meeting #111 *draftR4-2410604***

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

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-1** | **CR** | draft | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  |
| *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 on SL-U A-MPR for NS\_28, NS\_29, NS\_30, NS\_54, NS\_64, NS\_65, NS\_66, NS\_67, NS\_68, NS\_69, and NS\_71. |
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| ***Source to WG:*** | LG Electronics |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_SL\_enh2-Core |  | ***Date:*** | 2024-05-23 |
|  |  |  |  |  |
| ***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 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)Rel-20 (Release 20)* |
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| ***Reason for change:*** | Only 5 NS values are specified in Rel-18 SL-U. The remaining NS values are needed to be defined based on the RAN4 agreements.* RAN4#110 agreement
	+ If SL is agreed as Rel-19 RAN4-led package and the remaining NS values are included, specify them in Rel-19. If not, specify them in Rel-18 maintenance.
* RAN4#110bis agreement
	+ RAN4 targets to complete the A-MPR requirements for SL-U in RAN4#111 meeting (May) based on the available A-MPR simulation results

Based on the TR 38.786 and agreement in RAN4#110bis, A-MPRs for NS\_28, NS\_29, NS\_30, NS\_54, NS\_64, NS\_65, NS\_66, NS\_67, NS\_68, and NS\_69 are specified. NS\_71 A-MPR is specified with same NS\_67 A-MPR as NR-U.Remove A-MPRs for NS\_53, NS\_58 and NS\_63 because these are not applicable to SL. |
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| ***Summary of change:*** | 1. Specify SL-U A-MPR requirements for NS\_28, NS\_29, NS\_30, NS\_54, NS\_64, NS\_65, NS\_66, NS\_67, NS\_68, NS\_69, and NS\_71.
2. Remove A-MPRs for NS\_53, NS\_58 and NS\_63
3. Fix Typo of table number in NS\_31 and NS\_61.
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| ***Consequences if not approved:*** | The remaining SL-U A-MPR requirements for NS\_28, NS\_29, NS\_30, NS\_54, NS\_64, NS\_65, NS\_66, NS\_67, NS\_68, NS\_69 and NS\_71 are missed. And, A-MPR requirements for NS\_53, NS\_58 and NS\_63 are kept incorrectly. |
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| ***Clauses affected:*** |  6.2E.3F.1~6, 6.2E.3F.8~17(new) |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS38.521-1 |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | It is revison of R4-2408734 and merges R4-2408732. |

< START OF CHANGE #1 >

### 6.2E.3F UE additional maximum output power reduction for Sidelink Unlicensed

#### 6.2E.3F.1 General

Additional emission requirements can be signalled by the network or pre-configured radio parameters. Each additional emission requirement is associated with a unique network signalling (NS) value indicated in RRC signalling by an NR frequency band number of the applicable operating band and an associated value in the field *additionalSpectrumEmission.* Throughout this specification, the notion of indication or signalling of an NS value refers to the corresponding indication of an NR frequency band number of the applicable operating band, the IE field *freqBandIndicatorNR* and an associated value of *additionalSpectrumEmission* in the relevant RRC information elements [7]*.*

To meet the additional requirements, additional maximum power reduction (A-MPR) is allowed for the maximum output power as specified in Table 6.2E.1F-1. Unless stated otherwise, the total reduction to UE maximum output power is max(MPR, A-MPR) where MPR is defined in clause 6.2E.2F.

Table 6.2E.3F.1-1 specifies the additional requirements with their associated network signalling values and the allowed A-MPR and applicable operating band(s) for each NS value. The mapping of NR frequency band numbers and values of the *additionalSpectrumEmission* to network signalling labels is specified in Table 6.2E.3F.1-1A.

Table 6.2E.3F.1-1: Additional maximum power reduction (A-MPR)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Network signalling label | Requirements (clause) | NR Band | Channel bandwidth (MHz) | Resources blocks (*N*RB) | A-MPR (clause) |
| NS\_01 |  | n46, n96 | 20, 40, 60, 80 |  | N/A |
| NS\_28 | 6.5F.3.3.1, 6.2F.1 | n46 | 20, 40, 60, 80 |  | 6.2E.3F.8 |
| NS\_29 | 6.5F.3.3.2, 6.2F.1 | n46 | 20, 40, 60, 80 |  | 6.2E.3F.9 |
| NS\_30 | 6.5F.3.3.3, 6.2F.1 | n46 | 20, 40, 60, 80 |  | 6.2E.3F.10 |
| NS\_31 | 6.5F.3.3.4, 6.2F.1 | n46 | 20, 40, 60, 80 |  | 6.2E.3F.2 |
| NS\_54 | 6.5F.3.3.5, 6.2F.1 | n96 | 20, 40, 60, 80 |  | 6.2E.3F.11 |
| NS\_61 | 6.5F.3.3.7, 6.2F.1 | n96 | 20, 40, 60, 80, 100 |  | 6.2E.3F.6 |
| NS\_64 | 6.5F.3.3.9, 6.2F.1 | n102 | 20, 40, 60, 80, 100 |  | 6.2E.3F.14 |
| NS\_65 | 6.2F.1 | n102 | 20, 40, 60, 80, 100 |  | 6.2E.3F.15 |
| NS\_66 | 6.5F.3.3.5, 6.2F.1 | n96 | 20, 40, 60, 80, 100 |  | 6.2E.3F.16 |
| NS\_67 | 6.5F.3.3.5, 6.2F.1 | n96 | 20, 40, 60, 80, 100 |  | 6.2E.3F.17 |
| NS\_68 | 6.2F.1 | n102 | 20, 40, 60, 80, 100 |  | 6.2E.3F.18 |
| NS\_69 | 6.5F.3.3.8 | n102 | 20, 40, 80 |  | 6.2E.3F.19 |
| NS\_71 | 6.5F.3.3.5, 6.2F.1 | n96 | 20, 40, 60, 80, 100 |  | 6.2E.3F.17 |
| NOTE 1: The A-MPR shall apply to all active 20 MHz sub-bands contiguously allocated in the channel. |

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[The NS\_01 label with the field *additionalPmax* [7] absent is default for all NR bands.]

Table 6.2E.3F.1-1A: Mapping of network signaling label

|  |  |
| --- | --- |
| NR band | Value of additionalSpectrumEmission |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| n46 | NS\_01 | NS\_28 | NS\_29 | NS\_30 | NS\_31 |  |  | Reserved |
| n96 | NS\_01 |  | NS\_54 |  |  | NS\_61 |  | Reserved |
| n102 | NS\_01 |  |  |  |  |  |  | Reserved |
| NOTE: *additionalSpectrumEmission* corresponds to an information element of the same name defined in clause 6.3.2 of TS 38.331 [7]. |

Table 6.2E.3F.1-1B: Mapping of extended network signaling label

|  |  |
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| NR band | Value of extendedAdditionalSpectrumEmission |
| **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
| n96 | NS\_66 | NS\_67 | NS\_71 |  |  |  |  |  |
| n102 | NS\_64 | NS\_65 | NS\_68 | NS\_69 |  |  |  |  |
| NOTE: *extendedAdditionalSpectrumEmission* corresponds to an information element of the name [EXTENDED\_ additionalSpectrumEmission] defined in clause 6.3.2 of TS 38.331 [7]. |

< END OF CHANGE #1 >

< START OF CHANGE #2 >

#### 6.2E.3F.2 A-MPR for NS\_31

When NS\_31 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.2-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.2-1: A-MPR for NS\_31 NR SL-U UE power class 5

|  |  |  |  |
| --- | --- | --- | --- |
| Pre-coding | Modulation | RB Allocation (Note 4) | RB Allocation (Note 3) |
|  |  | Outer RB set configuration5 | Inner RB set configuration5 |
|  |  | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full/Partial |
| CP-OFDM | QPSK | ≤ 5.5 | ≤ 6.5 | ≤ 4.5 | ≤ 6.5 | See Table 6.2E.2F-1 |
|  | 16 QAM | ≤ 5.5 | ≤ 7.0 | ≤ 4.5 | ≤ 7.0 |  |
|  | 64 QAM | ≤ 5.5 | ≤ 7.0 | ≤ 4.5 | ≤ 7.0 |  |
|  | 256 QAM | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 |  |
| 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 or when not all transmitted sub-bands for wideband operation are transmitted.NOTE 3: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5220, 5280, 5300, 5320, 5500, 5520, 5540, 5560, 5580, 5600, 5620, 5640, 5660, 5680, 5745, 5765, 5785, and 5805 MHz.NOTE 4: Applicable for all valid channels and bandwidths other than those enumerated in NOTE 3.NOTE 5: Contiguous sub-band configuration in Table 6.2E.2F-3 applies. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.2-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.2-2: A-MPR for NS\_31 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
|  | RB Allocation |
| Outer RB set configuration2 | Inner RB set configuration2 |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 12.5 | ≤ 12.5 |
| NOTE 1: The MPR shall apply to all SCS in all active 20 MHz sub-bands contiguously or non-contiguously allocated in the channel. NOTE 2: Outer sub-band configuration and inner sub-band configuration in Table 6.2E.2F-3 apply.NOTE 3: VoidNOTE 4: Void |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.2-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.2-3: A-MPR for NS\_31 for S-SSB transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
|  | RB Allocation  |
| Outer RB set configuration | Inner RB set configuration |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 13.5 | ≤ 10.0 | ≤ 10.0 | ≤ 10.0 |
| 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.NOTE 2: VoidNOTE 3: Void |

#### 6.2E.3F.3 Void

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#### 6.2E.3F.4 Void

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#### 6.2E.3F.5 Void

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#### 6.2E.3F.6 A-MPR for NS\_61

When NS\_61 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.6-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.6-1: A-MPR for NS\_61 NR 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 | ≤ 7.5 | ≤ 10.0 | ≤ 6.5 | ≤ 6.5 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
|  | 16 QAM | ≤ 7.5 | ≤ 10.5 | ≤ 6.5 | ≤ 6.5 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
|  | *64 QAM* | ≤ 7.5 | ≤ 10.5 | ≤ 6.5 | ≤ 6.5 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
|  | 256 QAM | ≤ 8.0 | ≤ 10.5 | ≤ 8.0 | ≤ 7.0 | ≤ 8.0 | ≤ 7.0 | ≤ 8.0 | ≤ 7.0 | ≤ 8.0 | ≤ 7.0 |
| 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 |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.6-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.6-2: A-MPR for NS\_61 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 60MHz | 80MHz | 100MHz |
| Contiguous/Non-contiguous | ≤12.5 | ≤12.5 | ≤12.5 | ≤12.5 | ≤12.5 |
| 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. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.6-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.6-3: A-MPR for NS\_61 for S-SSB transmission for NR 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 | ≤13.5 | ≤15.5 | ≤13.5 | ≤15.5 | ≤13.5 | ≤13.5 | ≤13.5 | ≤13.5 | ≤13.5 | ≤13.5 |
| 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. |

#### 6.2E.3F.7 A-MPR for SL-U con-current operation

For NR SL-U inter-band con-current operation, the allowed additional maximum power reduction (A-MPR) for the maximum output power shall be applied per each component carrier. The A-MPR requirements in clause 6.2.3 apply for NR Uu operation in licensed band, and the A-MPR requirements in clause 6.2E.3F apply for NR sidelink operation in unlicensed band, n46, n96 and n102.

< END OF CHANGE #2 >

< START OF CHANGE #3 >

#### 6.2E.3F.8 A-MPR for NS\_28

When NS\_28 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2F.3F.8-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.8-1: A-MPR for NS\_28 NR SL-U UE power class 5

|  |  |  |  |
| --- | --- | --- | --- |
| Pre-coding | Modulation | RB Allocation (Note 3) | RB Allocation (Note 4) |
|  |  | Outer RB set configuration5 | Inner RB set configuration5 |
|  |  | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full/Partial |
| CP-OFDM | QPSK | ≤ 6.0 | ≤ 7.0 | ≤ 4.0 | ≤ 5.0 | Table 6.2E.2F-1 |
|  | 16 QAM | ≤ 6.0 | ≤ 7.5 | ≤ 4.0 | ≤ 5.0 |
|  | 64 QAM | ≤ 6.5 | ≤ 7.5 | ≤ 4.5 | ≤ 5.5 |
|  | 256 QAM | ≤ 8.0 | ≤ 8.5 | ≤ 7.5 | ≤ 7.5 |
| 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 or when not all transmitted sub-bands for wideband operation are transmitted.NOTE 3: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5160, 5340, 5480, and 5700 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5170, 5190, 5310, 5330, 5490, and 5510 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5300, 5320, 5500, 5520, 5680 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5190, 5210, 5290, 5310, 5510, and 5530 MHz. NOTE 4: Applicable for all valid channels other than those enumerated under NOTE 3.NOTE 5: Contiguous outer sub-band configuration and contiguous inner sub-band configuration in Table 6.2E.2F-3 apply.NOTE 6: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.8-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.8-2: A-MPR for NS\_28 for PSFCH transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer/Inner RB sets |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 15.0 | ≤ 12.5 | Table 6.2E.2F-4(TS38.101-1) |
| 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.NOTE 2: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5160, 5340, and 5480 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5170, 5190, 5310, 5330, and 5490 MHz, 60 MHz hannels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5220, 5280, 5300, 5320, 5500, 5520, 5540, 5680 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5190, 5210, 5290, 5310, 5510, 5530, and 5610 MHz. NOTE 3: Applicable for all valid channels other than those enumerated under NOTE 3. NOTE 5: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.8-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.8-3: A-MPR for NS\_28 for S-SSB transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer/Inner RB sets |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 13.5 | ≤ 10.0 | ≤ 10.0 | ≤ 8.5 | Table 6.2E.2F-5(TS38.101-1) |
| 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.NOTE 2: Applicable for 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz. NOTE 3: Applicable for all valid channels and bandwidths other than those enumerated under NOTE 2. NOTE 5: In current release larger CBW than 80MHz are not applicable for this network signalling. |

#### 6.2E.3F.9 A-MPR for NS\_29

When NS\_29 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.9-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.9-1: A-MPR for NS\_29 NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
| Pre-coding | Modulation | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 60MHz | 80MHz |
| Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) |
| CP-OFDM | QPSK | ≤ 4.5 | ≤ 7.5 | ≤ 3.5 | ≤ 4.5 | ≤ 3.5 | ≤ 4.0 | ≤ 3.5 | ≤ 4.0 |
| 16 QAM | ≤ 5.0 | ≤ 7.5 | ≤ 4.0 | ≤ 4.5 | ≤ 4.0 | ≤ 4.0 | ≤ 4.0 | ≤ 4.0 |
| *64 QAM* | ≤ 5.5 | ≤ 7.5 | ≤ 5.5 | ≤ 5.5 | ≤ 5.5 | ≤ 5.0 | ≤ 5.5 | ≤ 5.0 |
| 256 QAM | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 |
| 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.NOTE 3: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.9-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.9-2: A-MPR for NS\_29 for PSFCH transmission for NR SL-U UE 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) |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 11.0 | ≤12.5 | ≤13.5 | ≤15.5 |
| 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.NOTE 2: Larger CBW than 80MHz are not applicable for this network signalling. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.9-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.9-3: A-MPR for NS\_29 for S-SSB transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 60MHz | 80MHz |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 |
| Contiguous/Non-contiguous | ≤ 11.5 | ≤ 8.0 | ≤12.0 | ≤10.0 | ≤12.0 | ≤10.0 | ≤12.5 | ≤10.0 |
| 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. |

#### 6.2E.3F.10 A-MPR for NS\_30

When NS\_30 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.10-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.10-1: A-MPR for NS\_30 NR SL-U UE power class 5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pre-coding | Modulation | RB Allocation3 | RB Allocation4 | RB Allocation (Note 5) |
|  |  | Outer RB set configuration | Inner RB set configuration | Outer RB set configuration | Inner RB set configuration |
|  |  | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full/Partial |
| CP-OFDM | QPSK | ≤ 10.0 | ≤ 12.0 | ≤ 7.0 | ≤ 7.5 | ≤ 6.0 | ≤ 7.0 | ≤ 3.0 | ≤ 2.0 | Table 6.2E.2F-1 |
|  | 16 QAM | ≤ 10.0 | ≤ 12.5 | ≤ 7.0 | ≤ 7.5 | ≤ 6.0 | ≤ 7.0 | ≤ 3.0 | ≤ 2.0 |
|  | 64 QAM | ≤ 10.0 | ≤ 13.0 | ≤ 7.0 | ≤ 7.5 | ≤ 6.0 | ≤ 7.0 | ≤ 4.0 | ≤ 3.0 |
|  | 256 QAM | ≤ 10.5 | ≤ 13.5 | ≤ 7.5 | ≤ 8.0 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 |
| 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 or when not all transmitted sub-bands for wideband operation are transmitted.NOTE 3: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5160, 5340, and 5480 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5170, 5190, 5310, 5330, and 5490 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5300, 5320, 5500, and 5520 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5190, 5210, 5290, 5310, 5510, and 5530 MHz.NOTE 4: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5180 and 5320 MHz, and 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5510 MHz, and 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5220, 5280, 5540, and 5680 MHz.NOTE 5: Applicable for all valid channels other than those enumerated under NOTE 3 and NOTE 4.NOTE 6: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.10-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.10-2: A-MPR for NS\_30 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | RB Allocation /Centre frequency of CBW (MHz) |
| RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer RB set configuration | Inner RB set configuration |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 36.0 | ≤ 16.0 | ≤ 15.5 | ≤ 12.5 |
| 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.NOTE 2: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5160, 5340, and 5480 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5170, 5190, 5310, 5330, 5490, and 5510 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5300, 5320, 5500, and 5520 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5190, 5210, 5290, 5310, 5510, and 5530 MHz.NOTE 3: Applicable for all valid channels other than those enumerated under NOTE 2.NOTE 4: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.10-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.10-3: A-MPR for NS\_30 for S-SSB transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer RB set configuration | Inner RB set configuration |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 |
| Contiguous/ Non-contiguous sub-band RB sets | ≤ 35.5 | ≤ 28.0 | ≤ 13.5 | ≤ 11.0 | ≤ 13.0 | ≤ 11.0 | ≤ 10.5 | ≤ 8.5 |
| 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.NOTE 2: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5160, 5340, and 5480 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5170, 5190, 5310, 5330, and 5490 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5180, 5200, 5300, 5320, 5500, and 5520 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5190, 5210, 5290, 5310, 5510, and 5530 MHz.NOTE 3: Applicable for all valid channels other than those enumerated under NOTE 2.NOTE 4: In current release larger CBW than 80MHz are not applicable for this network signalling. |

#### 6.2E.3F.11 A-MPR for NS\_54

When NS\_54 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.11-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.11-1: A-MPR for NS\_54 NR SL-U UE power class 5

|  |  |  |  |
| --- | --- | --- | --- |
| Pre-coding | Modulation | RB Allocation (Note 3) | RB Allocation (Note 4) |
|  |  | Outer RB set configuration5 | Inner RB set configuration5 |
|  |  | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full/Partial |
| CP-OFDM | QPSK | ≤ 4.5 | ≤ 6.0 | ≤ 4.5 | ≤ 2.0 | Table 6.2E.2F-1 |
|  | 16 QAM | ≤ 4.5 | ≤ 6.0 | ≤ 4.5 | ≤ 3.0 |
|  | 64 QAM | ≤ 5.5 | ≤ 6.0 | ≤ 5.5 | ≤ 5.5 |
|  | 256 QAM | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 | ≤ 7.5 |
| 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 or when not all transmitted sub-bands for wideband operation are transmitted.NOTE 3: Applicable for 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz.NOTE 4: Applicable for all valid channels other than those enumerated under NOTE 3.NOTE 5: Contiguous outer sub-band configuration and contiguous inner sub-band configuration in Table 6.2E.2F-3 apply.NOTE 6: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.11-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.11-2: A-MPR for NS\_54 for PSFCH transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer/Inner RB sets |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 15.0 | ≤ 12.5 | Table 6.2E.2F-4 |
| 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.NOTE 2: Applicable for 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz. NOTE 3: Applicable for all valid channels and bandwidths other than those enumerated under NOTE 2. NOTE 5: In current release larger CBW than 80MHz are not applicable for this network signalling. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.11-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.11-3: A-MPR for NS\_54 for S-SSB transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer/Inner RB sets |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 13.5 | ≤ 10.0 | ≤ 10.0 | ≤ 8.5 | Table 6.2E.2F-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.NOTE 2: Applicable for 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 MHz, and 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz. NOTE 3: Applicable for all valid channels and bandwidths other than those enumerated under NOTE 2. NOTE 5: In current release larger CBW than 80MHz are not applicable for this network signalling. |

#### 6.2E.3F.12 A-MPR for NS\_64

When NS\_64 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.12-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.12-1: A-MPR for NS\_64 NR SL-U UE power class 5

|  |  |  |  |
| --- | --- | --- | --- |
| Pre-coding | Modulation | RB Allocation3 | RB Allocation4 |
|  |  | Outer RB set configuration | Inner RB set configuration | Outer RB set configuration | Inner RB set configuration |
|  |  | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) |
| CP-OFDM | QPSK | ≤ 14.0 | ≤ 15.0 | ≤ 9.0 | ≤ 11.5 | ≤ 9.0 | ≤ 11.5 | ≤ 8.5 | ≤ 11.5 |
|  | 16 QAM | ≤ 14.0 | ≤ 15.0 | ≤ 9.0 | ≤ 11.5 | ≤ 9.0 | ≤ 11.5 | ≤ 8.5 | ≤ 11.5 |
|  | 64 QAM | ≤ 14.0 | ≤ 15.0 | ≤ 9.0 | ≤ 11.5 | ≤ 9.0 | ≤ 11.5 | ≤ 8.5 | ≤ 11.5 |
|  | 256 QAM | ≤ 15.0 | ≤ 15.0 | ≤ 9.0 | ≤ 11.5 | ≤ 9.0 | ≤ 11.5 | ≤ 8.5 | ≤ 11.5 |
| 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 or when not all transmitted sub-bands for wideband operation are transmitted.NOTE 3: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5955 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 MHz, 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz, and 100 MHz channels centered at the nearest NR-ARFCN corresponding to 5995 MHz. NOTE 4: Applicable for all valid channels other than those enumerated under NOTE 3. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.12-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.12-2: A-MPR for NS\_64 for PSFCH transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
|  | Outer RB set configuration | Inner RB set configuration | Outer RB set configuration | Inner RB set configuration |
| Contiguous/Non-contiguous sub-band RB sets | ≤36.0 | ≤32.0 | ≤13.5 | ≤12.5 |
| NOTE 1: The A-MPR shall apply to all SCS in all active 20 MHz sub-bands contiguously allocated in the channel.NOTE 2: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5955 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 and 5995 MHz, 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz, and 100 MHz channels centered at the nearest NR-ARFCN corresponding to 5995 and 6055 MHz. NOTE 3: Applicable for all valid channels other than those enumerated under NOTE 2. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.12-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.12-3: A-MPR for NS\_64 for S-SSB transmission for NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
|  | RB Allocation2 | RB Allocation3 |
| Outer RB set configuration | Inner RB set configuration | Outer RB set configuration | Inner RB set configuration |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 | > 2 | 2 | > 2 | 2 |
| Contiguous/ Non-contiguous sub-band RB sets | ≤ 35.0 | ≤ 32.0 | ≤ 24.0 | ≤ 13.0 | ≤ 11.5 | ≤ 15.5 | ≤ 10.0 | ≤ 12.5 |
| 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.NOTE 2: Applicable for 20 MHz channels centered at the nearest NR-ARFCN corresponding to 5955 MHz, 40 MHz channels centered at the nearest NR-ARFCN corresponding to 5965 MHz, 60 MHz channels centered at the nearest NR-ARFCN corresponding to 5975 and 5995 MHz, 80 MHz channels centered at the nearest NR-ARFCN corresponding to 5985 MHz and 100 MHz channels centered at the nearest NR-ARFCN corresponding to 5995 and 6055 MHz. NOTE 3: Applicable for all valid channels other than those enumerated under NOTE 2. |

#### 6.2E.3F.13 A-MPR for NS\_65

When NS\_65 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.13-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.13-1: A-MPR for NS\_65 NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
| Pre-coding | Modulation | RB Allocation  |
|  |  | Outer RB set configuration3 | Inner RB set configuration3 |
|  |  | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) |
| CP-OFDM | QPSK | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
|  | 16 QAM | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
|  | 64 QAM | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
|  | 256 QAM | ≤ 7.0 | ≤ 7.5 | ≤ 7.0 | ≤ 7.5 |
| 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 or when not all transmitted sub-bands for wideband operation are transmitted.NOTE 3: Contiguous outer sub-band configuration and contiguous inner sub-band configuration in Table 6.2E.2F-3 apply. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.13-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.13-2: A-MPR for NS\_65 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
|  | RB Allocation2 |
| Outer RB set configuration | Inner RB set configuration |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 16.0 | ≤ 12.5 |
| 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. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.13-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.13-3: A-MPR for NS\_65 for S-SSB transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
|  | RB Allocation  |
| Outer RB set configuration | Inner RB set configuration |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 13.5 | ≤ 10.0 | ≤ 10.0 | ≤ 8.5 |
| 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. |

#### 6.2E.3F.14 A-MPR for NS\_66

When NS\_66 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.14-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.14-1: A-MPR for NS\_66 NR 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 | ≤ 16.5 | ≤ 19.0 | ≤ 13.5 | ≤ 16.0 | ≤ 11.5 | ≤ 14.0 | ≤ 10.0 | ≤ 12.5 | ≤ 9.0 | ≤ 11.5 |
| 16 QAM | ≤ 16.5 | ≤ 19.0 | ≤ 13.5 | ≤ 16.0 | ≤ 11.5 | ≤ 14.0 | ≤ 10.0 | ≤ 12.5 | ≤ 9.0 | ≤ 11.5 |
| *64 QAM* | ≤ 16.5 | ≤ 19.0 | ≤ 13.5 | ≤ 16.0 | ≤ 11.5 | ≤ 14.0 | ≤ 10.0 | ≤ 12.5 | ≤ 9.0 | ≤ 11.5 |
| 256 QAM | ≤ 16.5 | ≤ 19.0 | ≤ 13.5 | ≤ 16.0 | ≤ 11.5 | ≤ 14.0 | ≤ 10.0 | ≤ 12.5 | ≤ 9.0 | ≤ 11.5 |
| 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. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.14-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.14-2: A-MPR for NS\_66 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 60MHz | 80MHz | 100MHz |
| Contiguous/Non-contiguous | ≤ 20.5 | ≤17.5 | ≤15.5 | ≤14.5 | ≤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. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.14-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.14-3: A-MPR for NS\_66 for S-SSB transmission for NR 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 | ≤ 21.0 | ≤ 24.5 | ≤ 21.0 | ≤24.5 | ≤19.0 | ≤21.5 | ≤19.0 | ≤21.5 | ≤19.0 | ≤21.5 |
| 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. |

#### 6.2E.3F.15 A-MPR for NS\_67 or NS\_71

When NS\_67 or NS\_71 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.15-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.15-1: A-MPR for NS\_67 or NS\_71 NR 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. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.15-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.15-2: A-MPR for NS\_67 or NS\_71 for PSFCH transmission for NR 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. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.15-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.15-3: A-MPR for NS\_67 or NS\_71 for S-SSB transmission for NR 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. |

#### 6.2E.3F.16 A-MPR for NS\_68

When NS\_68 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.16-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.16-1: A-MPR for NS\_68 NR 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 | ≤ 7.5 | ≤ 10.0 | ≤ 6.0 | ≤ 7.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
| 16 QAM | ≤ 7.5 | ≤ 10.0 | ≤ 6.0 | ≤ 7.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
| *64 QAM* | ≤ 7.5 | ≤ 10.0 | ≤ 6.0 | ≤ 7.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
| 256 QAM | ≤ 7.5 | ≤ 10.0 | ≤ 6.0 | ≤ 7.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 |
| 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. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.16-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.16-2: A-MPR for NS\_68 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 60MHz | 80MHz | 100MHz |
| Contiguous/Non-contiguous | ≤ 13.5 | ≤ 13.5 | ≤ 13.5 | ≤ 13.5 | ≤ 13.0 |
| 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. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.16-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.16-3: A-MPR for NS\_68 for S-SSB transmission for NR 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 | ≤ 13.5 | ≤ 15.5 | ≤ 13.5 | ≤ 15.5 | ≤12.0 | ≤12.5 | ≤12.0 | ≤12.5 | ≤12.0 | ≤12.5 |
| 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. |

#### 6.2E.3F.17 A-MPR for NS\_69

When NS\_69 is indicated by the network or pre-configured radio parameters for NR sidelink UE, this clause specifies the allowed Maximum Power Reduction (MPR) power for NR sidelink physical channels and signals due to PSCCH/PSSCH, PSFCH and S-SSB transmission.

For contiguous allocation of PSCCH and PSSCH simultaneous transmission, the allowed A-MPR is specified in Table 6.2E.3F.17-1 for power class 5 NR sidelink UE.

Table 6.2E.3F.17-1: A-MPR for NS\_69 NR SL-U UE power class 5

|  |  |  |
| --- | --- | --- |
| Pre-coding | Modulation | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 80MHz |
| Full (dB) | Partial (dB) | Full (dB) | Partial (dB) | Full (dB) | Partial (dB) |
| CP-OFDM | QPSK | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 8.0 | ≤ 6.5 | ≤ 8.5 |
| 16 QAM | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 8.0 | ≤ 6.5 | ≤ 8.5 |
| *64 QAM* | ≤ 6.0 | ≤ 6.0 | ≤ 6.0 | ≤ 8.0 | ≤ 6.5 | ≤ 8.5 |
| 256 QAM | ≤ 7.5 | ≤ 6.5 | ≤ 7.5 | ≤ 8.0 | ≤ 7.5 | ≤ 8.5 |
| 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.NOTE 3: Channel bandwidth sizes of 60MHz and 100MHz are not applicable for this network signalling. |

For PSFCH transmission with single RB set and multiple RB sets, the allowed A-MPR is specified in Table 6.2E.3F.17-2 for power class 5 NR sidelink UE.

Table 6.2E.3F.17-2: A-MPR for NS\_69 for PSFCH transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 80MHz |
| Contiguous/Non-contiguous sub-band RB sets | ≤ 11.0 | ≤ 12.5 | ≤ 15.0 |
| 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. |

For S-SSB transmission, the allowed A-MPR is specified in Table 6.2E.3F.17-3 for power class 5 NR sidelink UE.

Table 6.2E.3F.17-3: A-MPR for NS\_69 for S-SSB transmission for NR SL-U UE power class 5

|  |  |
| --- | --- |
| RB set configuration | Channel bandwidth (Sub-band allocation) / RB Allocation |
| 20MHz | 40MHz | 80MHz |
| # of S-SSB repetition/RBset | > 2 | 2 | > 2 | 2 | > 2 | 2 |
| Contiguous/ Non-contiguous sub-band RB sets | ≤ 11.5 | ≤ 8.0 | ≤ 11.5 | ≤ 8.0 | ≤12.5 | ≤10.0 |
| 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 #3 >