**3GPP TSG-RAN4 Meeting #97-e *draft R4-2017433***

**Online, , 2nd Nov 2020 - 13th Nov 2020**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **37.145-1** | **CR** | **0232** | **rev** | **1** | **Current version:** | **15.7.0** |  |
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| *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 |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** |  | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | AASenh\_BS\_LTE\_UTRA-Perf, TEI15 | | | | |  | ***Date:*** | | | 2020-10-23 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *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:*** | | In relation to the following 3 CRs for UTRA+EUTRA+NR Capability Set to Rel-16 which were postponed last meeting, it was observed that the OBUE applicability table was not mirrored to the AAS specifications for Rel-15.  The below proposal CRs are fixinig this aspect for Rel-16, while this CRs is addressing missing OBUE applicability table for Rel-15.   |  |  | | --- | --- | | 1 | CR to TS 37.105: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16 | | 2 | CR to TS 37.145-1: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16 | | 3 | CR to TS 37.145-2: Introduction of new BS capability set for NR+EUTRA+UTRA, Rel-16 |   NOTE: Referring to related section in TS 37.104 Rel-16 specification, the OBUE applicabiltiy table captured the following band exceptions: band 1, 7, 38, 65. Below we provide some clarification on modifications applied in this CR:   * Bands 7 and 38 was introduced based on the ECC decision for non-AAS BS products – so it is not applicable to AAS.   Band 65 was introduced for Rel-16, so it is not applicable to the Rel-15 CR. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 6.6.5.5.2, 6.6.5.5.3: OBUE applicability table introduced for Band Category 1, 2, 3; table headers updated to align with MSR. | | | | | | | | |
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| ***Consequences if not approved:*** | | AAS BS specification would be misaligned with the MSR BS specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.6.5.5.2, 6.6.5.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 37.105 CR#0212 | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 37.145-2 CR#0264 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*------------------------------ Next modified section ------------------------------*

##### 6.6.5.5.2 Basic Limits for MSR Band Categories 1 and 3

For an AAS BS of Wide Area BS class operating in Band Category 1 or Band Category 3, the requirement applies outside the *Base Station RF Bandwidth edges*. In addition, for a Wide Area BS operating in non-contiguous spectrum, it applies inside any sub-block gap. In addition, for an AAS BS of Wide Area BS class operating in multiple bands, it applies inside any *Inter RF Bandwidth gap*.

For an AAS BS of Medium Range BS class operating in Band Category 1 the requirement applies outside the *Base Station RF Bandwidth edges*. In addition, for a Medium Range BS operating in non-contiguous spectrum, it applies inside any sub-block gap. In addition, for an AAS BS of Medium Range BS class operating in multiple bands, it applies inside any *Inter RF Bandwidth gap*.

For an AAS BS of Local Area BS class operating in Band Category 1 the requirement applies outside the *Base Station RF Bandwidth edges*. In addition, for a Local Area BS operating in non-contiguous spectrum, it applies inside any sub-block gap. In addition, for an AAS BS of Local Area BS class operating in multiple bands, it applies inside any *Inter RF Bandwidth gap*.

Outside the *Base Station RF Bandwidth edges*, emissions *basic limits* are specified in tables 6.6.2.5.1-1 to 6.6.2.5.1-4 below, where:

- Δf is the separation between the *Base Station RF Bandwidth edge* frequency and the nominal -3 dB point of the measuring filter closest to the carrier frequency.

- f\_offset is the separation between the *Base Station RF Bandwidth edge* frequency and the centre of the measuring filter.

- f\_offsetmax is the offset to the frequency ΔfOBUE outside the downlink operating band.

- Δfmax is equal to f\_offsetmax minus half of the bandwidth of the measuring filter.

For a *multi-band TAB connector*, inside any *Inter RF Bandwidth gap*s with Wgap < 2\* ΔfOBUE, a combined *basic* limit shall be applied which is the cumulative sum of the test requirements specified at the *Base Station RF Bandwidth edges* on each side of the *Inter RF Bandwidth gap*. The *basic limit* for *Base Station RF Bandwidth edge* is specified in tables 6.6.5.5.2-1 to 6.6.5.5.2-8, where in this case:

- Δf is the separation between the *Base Station RF Bandwidth edge* frequency and the nominal -3 dB point of the measuring filter closest to the carrier frequency.

- f\_offset is the separation between the *Base Station RF Bandwidth edge* frequency and the centre of the measuring filter.

- f\_offsetmax is equal to the *Inter RF Bandwidth gap* divided by two.

- Δfmax is equal to f\_offsetmax minus half of the bandwidth of the measuring filter.

For a *multi-band TAB connector*, the operating band unwanted emission limits apply also in a supported operating band without any carriers transmitted, in the case where there are carriers transmitted in another operating band. In this case where there is no carrier transmitted in an operating band, no cumulative *basic limits* are applied in the *inter-band gap* between a supported downlink band with carrier(s) transmitted and a supported downlink band without any carrier transmitted and

- In case the *Inter RF Bandwidth gap* between a supported downlink band with carrier(s) transmitted and a supported downlink band without any carrier transmitted is less than 2\*ΔfOBUE MHz, f\_offsetmax shall be the offset to the frequency ΔfOBUE outside the outermost edges of the two supported downlink operating bands and the operating band unwanted emission limit of the band where there are carriers transmitted, as defined in the tables of the present subclause, shall apply across both supported downlink bands.

- In other cases, the operating band unwanted emission limit of the band where there are carriers transmitted, as defined in the tables of the present subclause for the largest frequency offset (Δfmax), shall apply from ΔfOBUE below the lowest frequency, up to ΔfOBUE above the highest frequency of the supported downlink operating band without any carrier transmitted.

Inside any sub-block gap for a *TAB connector* operating in non-contiguous spectrum, a combined *basic limit* shall be applied which is the cumulative sum of the test requirements specified for the adjacent sub blocks on each side of the sub block gap. The *basic limit* for each sub block is specified in tables 6.6.5.5.2-1 to 6.6.5.5.2-8, where in this case:

- Δf is the separation between the sub block edge frequency and the nominal -3 dB point of the measuring filter closest to the sub block edge frequency.

- f\_offset is the separation between the sub block edge frequency and the centre of the measuring filter.

- f\_offsetmax is equal to the sub block gap bandwidth divided by two.

- Δfmax is equal to f\_offsetmax minus half of the bandwidth of the measuring filter.

Applicability of Wide Area operating band unwanted emission requirements in tables 6.6.5.5.2-1/2, 6.6.5.5.2-2a and 6.5.5.2-2b is specified in table 6.6.5.5.2-0.

Table 6.6.5.2.2-0: Applicability of operating band unwanted emission requirements for BC1 and BC3 Wide Area BS

|  |  |  |
| --- | --- | --- |
| NR band operation | UTRA supported (NOTE 1) | Applicable requirement table |
| None | Y/N | 6.6.5.5.2-1/2 |
| In certain regions (NOTE 2), band 1 | N | 6.6.5.5.2-1/2 |
| Any | N | 6.6.5.5.2-1/2 |
| Any below 1 GHz | N | 6.6.5.5.2-2a |
| Any above 1 GHz except for certain regions (NOTE 2), band 1 | N | 6.5.5.2-2b |
| NOTE 1: NR operation with UTRA is not supported in this version of specification.  NOTE 2: Applicable only for operation in regions where Category B limits as defined in ITU-R Recommendation SM.329 [35] are used for which category B option 2 operating band unwanted emissions requirements as defined in TS 36.104 [4] and TS 38.104 [36] are applied. | | |

Table 6.6.5.5.2-1: Wide Area operating band unwanted emission mask (UEM) for BC1 and BC3 bands ≤ 3 GHz for BS not supporting NR (except for BS operating in Band 1 in Europe)

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *basic limit* (Notes 1 and 2) | Measurement bandwidth |
| 0 MHz ≤ Δf < 0.2 MHz | 0.015 MHz ≤ f\_offset < 0.215 MHz | -12.5 dBm | 30 kHz |
| 0.2 MHz ≤ Δf < 1 MHz | 0.215 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -24.5 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤  min(Δfmax, 10 MHz) | 1.5 MHz ≤ f\_offset < min(f\_offsetmax, 10.5 MHz) | -11.5 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -15 dBm (Note 5) | 1 MHz |
| NOTE 1: For MSR *TAB connector* supporting non-contiguous spectrum operation within any operating band the *basic limit* within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is f ≥ 10 MHz from both adjacent sub blocks on each side of the sub-block gap, where the *basic limit* within sub-block gaps shall be -15 dBm/MHz.  NOTE 2: For MSR *multi-band TAB connector* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *basic limit* within the *Inter RF Bandwidth gap*s is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the *Inter RF Bandwidth gap*.  NOTE 3: This frequency range ensures that the range of values of f\_offset is continuous.  NOTE 5: The requirement is not applicable when Δfmax < 10 MHz. | | | |

Table 6.6.5.5.2-2: : Wide Area operating band unwanted emission mask (UEM) for BC1 and BC3 bands > 3 GHz for BS not supporting NR or BS supporting NR in Band n1

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *basic limit* (Notes 1 and 2) | Measurement bandwidth |
| 0 MHz ≤ Δf < 0.2 MHz | 0.015 MHz ≤ f\_offset < 0.215 MHz | -12.2 dBm | 30 kHz |
| 0.2 MHz ≤ Δf < 1 MHz | 0.215 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -24.2 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤  min(Δfmax, 10 MHz) | 1.5 MHz ≤ f\_offset < min(f\_offsetmax, 10.5 MHz) | -11.2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -15 dBm (Note 5) | 1 MHz |
| NOTE 1: For MSR *TAB connector* supporting non-contiguous spectrum operation within any operating band the *basic limit* within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is f ≥ 10 MHz from both adjacent sub blocks on each side of the sub-block gap, where the *basic limit* within sub-block gaps shall be -15 dBm/MHz.  NOTE 2: For MSR *multi-band TAB connector* with *Inter RF Bandwidth gap* < 2\* ΔfOBUE MHz the *basic limit* within the *Inter RF Bandwidth gap*s is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the *Inter RF Bandwidth gap*.  NOTE 3: This frequency range ensures that the range of values of f\_offset is continuous.  NOTE 5: The requirement is not applicable when Δfmax < 10 MHz. | | | |

Table 6.6.5.5.2-2a: Wide Area operating band unwanted emission mask (UEM) for BS supporting NR and not supporting UTRA in BC1 and BC3 bands below 1GHz

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *Basic limit* (Note 1, 2) | Measurement bandwidth |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz |  | 100 kHz |
| 5 MHz ≤ Δf <  min(10 MHz, Δfmax) | 5.05 MHz ≤ f\_offset <  min(10.05 MHz, f\_offsetmax) | -12.5 dBm |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -16 dBm (Note 3) |
| NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is f ≥ 10MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be ‑16 dBm/100 kHz.  NOTE 2: For a *multi-band connector* with Inter RF Bandwidth gap < 2\*ΔfOBUE the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.  NOTE 3: The requirement is not applicable when Δfmax < 10 MHz. | | | |

Table 6.6.5.5.2-2b: Wide Area operating band unwanted emission mask (UEM) for BS supporting NR (except operation in band n1) and not supporting UTRA in BC1 and BC3 bands > 1GHz

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *Basic limit* (Note 1, 2) | Measurement bandwidth |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz |  | 100 kHz |
| 5 MHz ≤ Δf <  min(10 MHz, Δfmax) | 5.05 MHz ≤ f\_offset <  min(10.05 MHz, f\_offsetmax) | -12.5 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -15 dBm (Note 3) | 1MHz |
| NOTE 1: For a BS supporting non-contiguous spectrum operation within any *operating band*, the emission limits within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is f ≥ 10MHz from both adjacent sub blocks on each side of the sub-block gap, where the emission limits within sub-block gaps shall be ‑15 dBm/1 MHz.  NOTE 2: For a *multi-band connector* with Inter RF Bandwidth gap < 2\*ΔfOBUE the emission limits within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or RF Bandwidth.  NOTE 3: The requirement is not applicable when Δfmax < 10 MHz. | | | |

*------------------------------ Unchanged part omitted ------------------------------*

*------------------------------ Next modified section ------------------------------*

##### 6.6.5.5.3 Basic Limits for MSR Band Category 2

For a *TAB connector* operating in Band Category 2 the requirement applies outside the *Base Station RF Bandwidth edges*. In addition, for a *TAB connector* operating in non-contiguous spectrum, it applies inside any sub-block gap.

Outside the *Base Station RF Bandwidth edges*, *basic limits* are specified in tables 6.6.5.5.3-1 to 6.6.5.5.3-8, where:

- Δf is the separation between the *Base Station RF Bandwidth edge* frequency and the nominal -3dB point of the measuring filter closest to the carrier frequency.

- f\_offset is the separation between the *Base Station RF Bandwidth edge* frequency and the centre of the measuring filter.

- f\_offsetmax is the offset to the frequency ΔfOBUE MHz outside the downlink operating band.

- Δfmax is equal to f\_offsetmax minus half of the bandwidth of the measuring filter.

For a *multi-band TAB connector*, inside any *Inter RF Bandwidth gap*s with Wgap < 2×ΔfOBUE MHz, a combined *basic* limit shall be applied which is the cumulative sum of the test requirements specified at the *Base Station RF Bandwidth edges* on each side of the *Inter RF Bandwidth gap*. The *basic limit* for *Base Station RF Bandwidth edge* is specified in tables 6.6.5.5.3-1 to 6.6.5.5.3-8, where in this case:

- Δf is the separation between the *Base Station RF Bandwidth edge* frequency and the nominal -3 dB point of the measuring filter closest to the carrier frequency.

- f\_offset is the separation between the *Base Station RF Bandwidth edge* frequency and the centre of the measuring filter.

- f\_offsetmax is equal to the *Inter RF Bandwidth gap* divided by two.

- Δfmax is equal to f\_offsetmax minus half of the bandwidth of the measuring filter.

For a *multi-band TAB connector* and where there is no carrier transmitted in an operating band, no cumulative *basic limits* are applied in the *inter-band gap* between a supported downlink band with carrier(s) transmitted and a supported downlink band without any carrier transmitted and

- In case the *inter-band gap* between a supported downlink band with carrier(s) transmitted and a supported downlink band without any carrier transmitted less than is 2×ΔfOBUE MHz, f\_offsetmax shall be the offset to the frequency ΔfOBUE MHz outside the outermost edges of the two supported downlink operating bands and the operating band unwanted emission limit of the band where there are carriers transmitted, as defined in the tables of the present subclause, shall apply across both supported downlink bands.

- In other cases, the operating band unwanted emission limit of the band where there are carriers transmitted, as defined in the tables of the present subclause for the largest frequency offset (Δfmax), shall apply from ΔfOBUE MHz below the lowest frequency, up to ΔfOBUE MHz above the highest frequency of the supported downlink operating band without any carrier transmitted.

Inside any sub-block gap for a *TAB connector* operating in non-contiguous spectrum, a combined *basic* limit shall be applied which is the cumulative sum of the test requirement specified for the adjacent sub blocks on each side of the sub block gap. The *basic limit* for each sub block is specified in tables 6.6.5.5.3-1 to 6.6.5.5.3-8, where in this case:

- Δf is the separation between the sub block edge frequency and the nominal -3 dB point of the measuring filter closest to the sub block edge.

- f\_offset is the separation between the sub block edge frequency and the centre of the measuring filter.

- f\_offsetmax is equal to the sub block gap bandwidth divided by two.

- Δfmax is equal to f\_offsetmax minus half of the bandwidth of the measuring filter.

Applicability of Wide Area operating band unwanted emission requirements in tables 6.6.5.5.3-1, 6.6.5.5.3-1a and 6.6.5.5.3-1b is specified in table 6.6.5.5.3-0.

Table 6.6.5.5.3-0: Applicability of operating band unwanted emission requirements for BC1 and BC3 Wide Area BS

|  |  |  |
| --- | --- | --- |
| NR band operation | UTRA supported (NOTE 1) | Applicable requirement table |
| None | Y/N | 6.6.5.5.3-1 |
| In certain regions (NOTE 2), band 1 | N | 6.6.5.5.3-1 |
| Any | N | 6.6.5.5.3-1 |
| Any below 1 GHz | N | 6.6.5.5.3-1a |
| Any above 1 GHz except for certain regions (NOTE 2), band 1 | N | 6.6.5.5.3-1b |
| NOTE 1: NR operation with UTRA is not supported in this version of specification.  NOTE 2: Applicable only for operation in regions where Category B limits as defined in ITU-R Recommendation SM.329 [35] are used for which category B option 2 operating band unwanted emissions requirements as defined in TS 36.104 [4] and TS 38.104 [36] are applied. | | |

Table 6.6.5.5.3-1: Wide Area BS operating band unwanted emission mask (UEM) for BC2 for BS not supporting NR (except for BS operating in Band 3 or 8 in Europe)

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *basic limit* (Notes 2 and 3) | Measurement bandwidth |
| 0 MHz ≤ Δf < 0.2 MHz  (Note 1) | 0.015 MHz ≤ f\_offset < 0.215 MHz | -12.5 dBm | 30 kHz |
| 0.2 MHz ≤ Δf < 1 MHz | 0.215 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 8) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -24.5 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤  min(Δfmax, 10 MHz) | 1.5 MHz ≤ f\_offset < min(f\_offsetmax, 10.5 MHz) | -11.5 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -15 dBm (Note 10) | 1 MHz |
| NOTE 1: For operation with an E-UTRA 1.4 or 3 MHz carrier adjacent to the *Base Station RF Bandwidth edge*, the limits in table 6.6.5.5.3-2 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 2: For MSR *TAB connector* supporting non-contiguous spectrum operation within any operating band the *basic limit* within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap. Exception is f ≥ 10 MHz from both adjacent sub blocks on each side of the sub-block gap, where the *basic limit* within sub-block gaps shall be -15 dBm/MHz.  NOTE 3: For MSR *multi-band TAB connector* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz operation the *basic limit* within the *Inter RF Bandwidth gap*s is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the *Inter RF Bandwidth gap*.  NOTE 8: This frequency range ensures that the range of values of f\_offset is continuous.  NOTE 10: The requirement is not applicable when Δfmax < 10 MHz | | | |

Table 6.6.5.5.3-1a: Wide Area operating band unwanted emission mask (UEM) for BS supporting NR (except operation in band n8 in Europe) but not supporting UTRA in BC2 bands below 1GHz

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *Basic limit* (Note 1, 2) | Measurement bandwidth (Note 10) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | -5.5 – 7/5(f\_offset/MHz – 0.05) dB | 100 kHz |
| 5 MHz ≤ Δf <  min(10 MHz, Δfmax) | 5.05 MHz ≤ f\_offset <  min(10.05 MHz, f\_offsetmax) | -12.5 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -16 dBm (Note 11) | 100 kHz |
| NOTE 1: For MSR *TAB connector* supporting non-contiguous spectrum operation within any operating band, the *basic limit* within *sub-block gaps* is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the sub block gap, where the contribution from the far-end sub-block or *RF Bandwidth* shall be scaled according to the measurement bandwidth of the near-end sub-block or *RF Bandwidth*. Exception is f ≥ 10MHz from both adjacent sub blocks on each side of the *sub-block gap*, where the *basic limit* within sub-block gaps shall be -16dBm/100kHz.  NOTE 2: For MSR *multi band TAB connector* with *Inter RF Bandwidth gap* < 2×ΔfOBUEthe *basic limit* within the *Inter RF Bandwidth gaps* is calculated as a cumulative sum of contributions from adjacent sub-blocks or RF Bandwidth on each side of the *Inter RF Bandwidth gap*, where the contribution from the far-end sub-block or *RF Bandwidth* shall be scaled according to the measurement bandwidth of the near-end sub-block or *RF Bandwidth.*  NOTE 3: For operation with an E-UTRA 1.4 or 3 MHz carrier adjacent to the *Base Station RF Bandwidth edge*, the limits in table 6.6.5.2.3-2 apply for 0 MHz ≤ Δf < 0.15 MHz. | | | |

Table 6.6.5.5.3-1b: Wide Area operating band unwanted emission mask (UEM) for BS supporting NR (except operation in band n3 in Europe) but not supporting UTRA in BC2 bands above 1GHz

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | *Basic limit* (Note 1, 2) | Measurement bandwidth (Note 10) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | -5.5 – 7/5(f\_offset/MHz – 0.05) dB | 100 kHz |
| 5 MHz ≤ Δf <  min(10 MHz, Δfmax) | 5.05 MHz ≤ f\_offset <  min(10.05 MHz, f\_offsetmax) | -12.5 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -15 dBm (Note 11) | 1MHz |
| NOTE 1: For MSR *TAB connectors* supporting non-contiguous spectrum operation within any operating band, the *basic limit*  within *sub-block gaps* is calculated as a cumulative sum of contributions from adjacent sub blocks on each side of the *sub block gap*, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is f ≥ 10MHz from both adjacent sub blocks on each side of the *sub-block gap*, where the *basic limit* within sub-block gaps shall be -15dBm/1MHz.  NOTE 2: For MSR *multi band TAB connector* with *Inter RF Bandwidth gap* < 2×ΔfOBUEthe *basic limit* within the *Inter RF Bandwidth gaps* is calculated as a cumulative sum of contributions from adjacent sub-blocks or *RF Bandwidth* on each side of the *Inter RF Bandwidth gap*, where the contribution from the far-end sub-block or *RF Bandwidth* shall be scaled according to the measurement bandwidth of the near-end sub-block or *RF Bandwidth.*  NOTE 3: For operation with an E-UTRA 1.4 or 3 MHz carrier adjacent to the *Base Station RF Bandwidth edge*, the limits in table 6.6.5.5.3-2 apply for 0 MHz ≤ Δf < 0.15 MHz. | | | |

*------------------------------ Unchanged part omitted ------------------------------*

*----------------------------- End of modified section ------------------------------*