**3GPP TSG-RAN4 Meeting #102-e *DRAFT R4-2207480***

**Electronic Meeting, 21 February – 3 March 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **37.145-1** | **CR** | **XXXX** | **rev** |  | **Current version:** | **15.12.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Big CR for TS 37.145-1 Maintenance (Rel-15, CAT F) | | | | | | | | | |
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| ***Source to WG:*** | MCC, Huawei | | | | | | | | | |
| ***Source to TSG:*** | RAN4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI15 | | | | |  | ***Date:*** | | | 2021-03-07 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | This big CR merges endorsed draft CR to TS 37.145-1 in RAN4#102-e. The reason for change in endorsed draft CR is copied below:  **R4-2204452: BS OBUE requirements clarification, rel-15**  In RAN4#101e, corrections of NOTE for OBUE requirement tables for NR specs were agreed. Similar corections are required for MSR specs. | | | | | | | | |
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| ***Summary of change:*** | | The summary of change in endorsed draft CR is copied below.  **R4-2204452: BS OBUE requirements clarification, rel-15**  Added clarification text in NOTE in tables for OBUE requirements.  Deleted unnecessary text in NOTE in tables for OBUE requirements. | | | | | | | | |
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| ***Consequences if not approved:*** | | The consequences if not approved for endorsed draft CR are coppied below.  **R4-2204452: BS OBUE requirements clarification, rel-15**  Without the clarification text, how to derive “cumulative sum” is not clear when measurement bandwidthes are different.  Unnecessary text in the NOTE which is never applied could cause misunderstanding. | | | | | | | | |
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| ***Clauses affected:*** | | 6.6.4.5.2.2, 6.6.5.5.2, 6.6.5.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 37.105 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

***<Start of change>***

Table 6.6.4.5.2.2-1: *basic limits* for spectrum emission mask values,  
Prated,c,cell - 10\*log10(NTXU,countedpercell) ≥ 34 dBm for 1,28 Mcps TDD

|  |  |  |
| --- | --- | --- |
| Frequency offset of measurement filter centre frequency, f\_offset | *basic limit* | Measurement bandwidth |
| 0.815 MHz ≤ f\_offset < 1.015 MHz | -18.5 dBm | 30 kHz |
| 1.015 MHz ≤ f\_offset < 1.815 MHz |  | 30 kHz |
| 1.815 MHz ≤ f\_offset < 2.3 MHz | -26.5 dBm | 30 kHz |
| 2.3 MHz ≤ f\_offset < f\_offsetmax | -11.5 dBm | 1 MHz |
| NOTE: For a *multi-band TAB connector* with *Inter RF Bandwidth gap* less than 8MHz, the *basic limit* within the *Inter RF Bandwidth gap* is calculated as a cumulative sum of emissions from the two adjacent carriers on each side of the *Inter RF Bandwidth gap*, where the contribution from the far-end *RF Bandwidth* shall be scaled according to the measurement bandwidth of the near-end *RF Bandwidth*. | | |

Table 6.6.4.5.2.2-2: *basic limits* for spectrum emission mask values,  
26 dBm ≤ Prated,c,cell - 10\*log10(NTXU,countedpercell) < 34 dBm for 1,28 Mcps TDD

|  |  |  |
| --- | --- | --- |
| Frequency offset of measurement filter centre frequency, f\_offset | *basic limit* | Measurement bandwidth |
| 0.815 MHz ≤ f\_offset < 1.015 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) -52.5 dB | 30 kHz |
| 1.015 MHz ≤ f\_offset < 1.815 MHz |  | 30 kHz |
| 1.815 MHz ≤ f\_offset < 2.3 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) -60.5 dB | 30 kHz |
| 2.3 MHz ≤ f\_offset < f\_offsetmax | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 45.5 dB | 1 MHz |
| NOTE: For a *multi-band TAB connector* with *Inter RF Bandwidth gap* less than 8MHz, the *basic limit* within the *Inter RF Bandwidth gap* is calculated as a cumulative sum of emissions from the two adjacent carriers on each side of the *Inter RF Bandwidth gap*, where the contribution from the far-end *RF Bandwidth* shall be scaled according to the measurement bandwidth of the near-end *RF Bandwidth*. | | |

Table 6.6.4.5.2.2-3: *basic limits* for spectrum emission mask values,  
Prated,c,cell - 10\*log10(NTXU,countedpercell) < 26 dBm for 1,28 Mcps TDD

|  |  |  |
| --- | --- | --- |
| Frequency offset of measurement filter centre frequency, f\_offset | Maximum level | Measurement bandwidth |
| 0.815 MHz ≤ f\_offset < 1.015 MHz | -26.5 dBm | 30 kHz |
| 1.015 MHz ≤ f\_offset < 1.815 MHz |  | 30 kHz |
| 1.815 MHz ≤ f\_offset < 2.3 MHz | -34.5 dBm | 30 kHz |
| 2.3 MHz ≤ f\_offset < f\_offsetmax | -19.5 dBm | 1 MHz |
| NOTE: For a *multi-band TAB connector* with *Inter RF Bandwidth gap* less than 8MHz, the *basic limit* within the *Inter RF Bandwidth gap* is calculated as a cumulative sum of emissions from the two adjacent carriers on each side of the *Inter RF Bandwidth gap*, where the contribution from the far-end *RF Bandwidth* shall be scaled according to the measurement bandwidth of the near-end *RF Bandwidth*. | | |

***<Next change>***

Table 6.6.5.5.2-1: WA BS OBUE in BC1 and BC3 bands ≤ 3 GHz applicable 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 | -12.5 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, 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 ≥ 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*, 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: 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: WA BS OBUE in BC1 and BC3 bands > 3 GHz applicable for: BS not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| 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, 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 ≥ 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*, 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: 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: WA BS OBUE in BC1 and BC3 bands ≤ 1 GHz applicable for: BS supporting NR and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |  |  |
| 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 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. 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.  NOTE 3: The requirement is not applicable when Δfmax < 10 MHz. | | | |

***<Next change>***

Table 6.6.5.5.2-3: MR BS OBUE in BC1 bands ≤ 3 GHz applicable for: BS with maximum output power 31 < Prated,c,cell-10\*log10(NTXU,countedpercell) ≤ 38 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| 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 < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz |  | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 63.5 dB | 30 kHz |
| 1 MHz ≤ Δf ≤ 2.6 MHz | 1.5 MHz ≤ f\_offset < 3.1 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 50.5 dB | 1 MHz |
| 2.6 MHz ≤ Δf ≤ 5 MHz | 3.1 MHz ≤ f\_offset < 5.5 MHz | min(Prated,c,cell - 10\*log10(NTXU,countedpercell) - 50.5 dB, -13.5 dBm) | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax, 10 MHz) | 5.5 MHz ≤ f\_offset < min (f\_offsetmax, 10.5 MHz) | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 54.5 dB | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | Prated,c,cell - 10\*log10(NTXU,countedpercell) -56 dB (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, 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 ≥ 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 (Prated,c,cell - 10\*log10(NTXU,countedpercell) - 56 dB)/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*, 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: 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. | | | |

***<Next change>***

Table 6.6.5.5.2-4: MR BS OBUE in BC1 bands > 3 GHz applicable for: BS with maximum output power 31 < Prated,c,cell-10\*log10(NTXU,countedpercell) ≤ 38 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| 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 < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz |  | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 63.2 dB | 30 kHz |
| 1 MHz ≤ Δf ≤ 2.6 MHz | 1.5 MHz ≤ f\_offset < 3.1 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 50.2 dB | 1 MHz |
| 2.6 MHz ≤ Δf ≤ 5 MHz | 3.1 MHz ≤ f\_offset < 5.5 MHz | min(Prated,c,cell - 10\*log10(NTXU,countedpercell) - 50.2 dB, -13.2dBm) | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax, 10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax ,10.5 MHz) | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 54.2 dB | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | Prated,c,cell - 10\*log10(NTXU,countedpercell) -56 dB (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, 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 ≥ 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 (Prated,c,cell - 10\*log10(NTXU,countedpercell) - 56 dB)/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*, 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: 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. | | | |

***<Next change>***

Table 6.6.5.5.2-5: MR BS OBUE in BC1 bands ≤ 3 GHz applicable for: BS with maximum output power Prated,c,cell-10\*log10(NTXU,countedpercell) ≤ 31 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| 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 < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz |  | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -32.5 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤ 5 MHz | 1.5 MHz ≤ f\_offset < 5.5 MHz | -19.5 dBm | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax,10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | -23.5 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -25 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, 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 ≥ 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 -25 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*, 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: 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. | | | |

***<Next change>***

Table 6.6.5.5.2-6: MR BS OBUE in BC1 bands > 3 GHz applicable for: BS with maximum output power Prated,c,cell - 10\*log10(NTXU,countedpercell) ≤ 31 dBm

|  |  |  |  |
| --- | --- | --- | --- |
| 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 < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz |  | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -32.2 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤ 5 MHz | 1.5 MHz ≤ f\_offset < 5.5 MHz | -19.2 dBm | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax,10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | -23.2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -25 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, 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 ≥ 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 -25 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*, 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: 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. | | | |

***<Next change>***

Table 6.6.5.5.3-1: WA BS OBUE in BC2 bands applicable for: BS not supporting NR; or BS supporting NR in Band n3 or n8

|  |  |  |  |
| --- | --- | --- | --- |
| 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, 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 ≥ 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*, 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 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: WA BS OBUE in BC2 bands ≤ 1 GHz applicable for: BS supporting NR, not operating NR in band n8, and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| 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. 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.*  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. | | | |

***<Next change>***

Table 6.6.5.5.3-3: MR BS OBUE in BC2 bands applicable for: BS with maximum output power 31 < Prated,c,cell-10\*log10(NTXU,countedpercell) ≤ 38 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| 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 < 0.6 MHz  (Note 1) | 0.015 MHz ≤ f\_offset < 0.615 MHz |  | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 8) | 1.015 MHz ≤ f\_offset < 1.5 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 63.5 dB | 30 kHz |
| 1 MHz ≤ Δf ≤ 2.8 MHz | 1.5 MHz ≤ f\_offset < 3.3 MHz | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 50.5 dB | 1 MHz |
| 2.8 MHz ≤ Δf ≤ 5 MHz | 3.3 MHz ≤ f\_offset < 5.5 MHz | min(Prated,c,cell - 10\*log10(NTXU,countedpercell) - 50.5 dB, -13.5 dBm) | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax, 10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | Prated,c,cell - 10\*log10(NTXU,countedpercell) - 54.5 dB | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | Prated,c,cell - 10\*log10(NTXU,countedpercell) -56 dB (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 6.6.5.3-5 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, 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 ≥ 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 (Prated,c,cell - 10\*log10(NTXU,countedpercell) - 56 dB)/MHz.  NOTE 3: 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*, 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 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 6.6.5.5.3-3a: MR BS OBUE in BC2 bands applicable for: BS with maximum output power 31 < Prated,c,cell-10\*log10(NTXU,countedpercell) ≤ 38 dBm, supporting NR, and not supporting UTRA

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| 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 | Prated,c,cell - 10\*log10(NTXU,countedpercell)-51.5 dB - (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) | Prated,c,cell - 10\*log10(NTXU,countedpercell)- 61.5 dB | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | Min(Prated,c,cell - 10\*log10(NTXU,countedpercell) – 60 dB, -25 dBm) (Note 11) | 100 kHz |
| 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*. 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 Min(Prated,c,cell - 10\*log10(NTXU,countedpercell) – 60 dB, - 25 dBm) / 100 kHz.  NOTE 2: For MSR *multi band TAB connector* with *Inter RF Bandwidth gap* < 2×ΔfOBUE the *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*.  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 6.6.5.5.3-5 apply for 0 MHz ≤ Δf < 0.15 MHz. | | | |

Table 6.6.5.5.3-4: MR BS OBUE in BC2 bands applicable for: BS with maximum output power Prated,c,cell-10\*log10(NTXU,countedpercell ≤ 31 dBm and not supporting NR

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| 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 < 0.6 MHz  (Note 1) | 0.015 MHz ≤ f\_offset < 0.615 MHz |  | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz |  | 30 kHz |
| (Note 8) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -32.5 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤ 5 MHz | 1.5 MHz ≤ f\_offset < 5.5 MHz | -19.5 dBm | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax,10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | -23.5 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -25 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 6.6.5.5.3-6 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, 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 ≥ 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 -25 dBm/MHz.  NOTE 3: 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*, 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 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 6.6.5.5.3-4a: MR BS OBUE in BC2 bands applicable for: BS with maximum output power Prated,c,cell-10\*log10(NTXU,countedpercell) ≤ 31 dBm, supporting NR, and not supporting UTRA

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| --- | --- | --- | --- |
| 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 | -20.5 dBm – 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) | -27.5 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -29 dBm (Note 11) | 100 kHz |
| 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*. 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 -29dBm/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*.  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 6.6.5.5.3-5 apply for 0 MHz ≤ Δf < 0.15 MHz. | | | |

***<End of change>***