**3GPP TSG-RAN4 Meeting #102-e *DRAFT R4-2207483***

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

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.145-2** | **CR** | **XXXX** | **rev** |  | **Current version:** | **15.13.0** |  |
|  | | | | | | | | |
| *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 37.145-2 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:  **R4-2204455: 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. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The summary of change in endorsed draft CR is copied below.  **R4-2204455: 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. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The consequences if not approved for endorsed draft CR are coppied below.  **R4-2204455: 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. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.7.5.5.2, 6.7.5.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 6.7.5.5.2-1: 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** | **Test requirement (Notes 1 and 2)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.2 MHz | 0.015 MHz ≤ f\_offset < 0.215 MHz | -3.2 dBm | 30 kHz |
| 0.2 MHz ≤ Δf < 1 MHz | 0.215 MHz ≤ f\_offset < 1.015 MHz | -3.2-15(f\_offset/MHz-0.215)dBm | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -15.2 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤  min(Δfmax, 10 MHz) | 1.5 MHz ≤ f\_offset < min(f\_offsetmax, 10.5 MHz) | -2.2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -6 dBm (NOTE 5) | 1 MHz |
| NOTE 1: For MSR RIB supporting non-contiguous spectrum operation within any operating band the test requirement 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 test requirement within sub-block gaps shall be -6 dBm/MHz.  NOTE 2: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the test requirementwithin 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 6.7.5.5.2-2: 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** | **Test requirement (Notes 1 and 2)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.2 MHz | 0.015 MHz ≤ f\_offset < 0.215 MHz | -3 dBm | 30 kHz |
| 0.2 MHz ≤ Δf < 1 MHz | 0.215 MHz ≤ f\_offset < 1.015 MHz | -3-15(f\_offset/MHz-0.215)dBm | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -15 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤  min(Δfmax, 10 MHz) | 1.5 MHz ≤ f\_offset < min(f\_offsetmax, 10.5 MHz) | -2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -6 dBm (NOTE 5) | 1 MHz |
| NOTE 1: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be -6 dBm/MHz.  NOTE 2: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.2-2a: 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 | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | 3.8 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) | -3.2 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -7 dBm (Note 5) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band, the minimum requirement 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 minimum requirement within sub-block gaps shall be -7dBm/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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. | | | |

***<Next change>***

Table 6.7.5.5.2-3: MR BS OBUE in BC1 bands ≤ 3 GHz applicable for: BS with maximum output power 40 < Prated,c,TRP ≤ 47 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency offset of measurement filter ‑3dB point, Δf** | **Frequency offset of measurement filter centre frequency, f\_offset** | **Test requirement (Notes 1 and 2)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz | Prated,c,TRP - 56.2 dB - (5/3)\*(f\_offset-0,015) dB | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz | Prated,c,TRP - 51.2 dB-15\*(f\_offset-0,015) dB | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | Prated,c,TRP – 63.2 dB | 30 kHz |
| 1 MHz ≤ Δf ≤ 2.6 MHz | 1.5 MHz ≤ f\_offset < 3.1 MHz | Prated,c,TRP –50.2 dB | 1 MHz |
| 2.6 MHz ≤ Δf ≤ 5 MHz | 3.1 MHz ≤ f\_offset < 5.5 MHz | min(Prated,c,TRP – 50.2 dB, -4.2dBm) | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax, 10 MHz) | 5.5 MHz ≤ f\_offset < min (f\_offsetmax, 10.5 MHz) | Prated,c,TRP –54.2 dB | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | Prated,c,TRP-56 dB | 1 MHz |
| NOTE 1: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be (Prated,c,TRP - 56 dB)/MHz.  NOTE 2: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.2-3a: MR BS OBUE in BC1 bands ≤ 3 GHz applicable for: BS with maximum output power 40 < Prated,c,TRP ≤ 47 dBm BS, supporting NR and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | Prated,c,TRP-51.2dB-(7/5)\*(f\_offset-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,TRP-58.2dB | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | Min(Prated,c,TRP-60dB, -16dBm) (Note 5) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band the minimum requirement 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 minimum requirement within sub-block gaps shall be Min(Prated,c,TRP -60dB, -16dBm)/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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. | | | |

Table 6.7.5.5.2-4: MR BS OBUE in BC1 bands > 3 GHz applicable for: BS with maximum output power 40 < Prated,c,TRP ≤ 47 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency offset of measurement filter ‑3dB point, Δf** | **Frequency offset of measurement filter centre frequency, f\_offset** | **Test requirement (Notes 1 and 2)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz | Prated,c,TRP – 56 dB - (5/3)\*(f\_offset - 0,015) dB | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz | Prated,c,TRP – 51 dB - 15\*(f\_offset - 0,015)d B | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | Prated,c,TRP – 63 dB | 30 kHz |
| 1 MHz ≤ Δf ≤ 2.6 MHz | 1.5 MHz ≤ f\_offset < 3.1 MHz | Prated,c,TRP –50 dB | 1 MHz |
| 2.6 MHz ≤ Δf ≤ 5 MHz | 3.1 MHz ≤ f\_offset < 5.5 MHz | min(Prated,c,TRP – 50 dB, -4dBm) | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax, 10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax ,10.5 MHz) | Prated,c,TRP –54 dB | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | Prated,c,TRP-56 dB | 1 MHz |
| NOTE 1: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be (Prated,c,TRP - 56 dB)/MHz.  NOTE 2: For MSR multi-band *RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.2-4a: MR BS OBUE in BC1 bands > 3 GHz applicable for: BS with maximum output power 40 < Prated,c,TRP ≤ 47 dBm BS, supporting NR, and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | Prated,c,TRP – 51 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,TRP -58 dB | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | Min(Prated,c,TRP -60dB, -16dBm) (Note 5) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band the minimum requirement 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 minimum requirement within sub-block gaps shall be Min(Prated,c,TRP -60dB, -16dBm)/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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. | | | |

Table 6.7.5.5.2-5: MR BS OBUE in BC1 bands ≤ 3 GHz applicable for: BS with maximum output power Prated,c,TRP ≤ 40 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency offset of measurement filter ‑3dB point, Δf** | **Frequency offset of measurement filter centre frequency, f\_offset** | **Test requirement (Notes 1 and 2)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz | -16.2 - 5/3(f\_offset/MHz - 0.015) dBm | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz | -11.2 -15(f\_offset/MHz - 0.015) dBm | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -23.2 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤ 5 MHz | 1.5 MHz ≤ f\_offset < 5.5 MHz | -10.2 dBm | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax,10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | -14.2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -16dBm (Note 5) | 1 MHz |
| NOTE 1: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be -16 dBm/MHz.  NOTE 2: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.2-5a: MR BS OBUE in BC1 bands ≤ 3 GHz applicable for: BS with maximum output power Prated,c,TRP ≤ 40 dBm, supporting NR, and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | -11.2 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) | -18.2 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -20 dBm (Note 8) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band the minimum requirement 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 minimum requirement within sub-block gaps shall be -20dBm/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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. | | | |

Table 6.7.5.5.2-6: MR BS OBUE in BC1 bands > 3 GHz applicable for: BS with maximum output power Prated,c,TRP ≤ 40 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency offset of measurement filter ‑3dB point, Δf** | **Frequency offset of measurement filter centre frequency, f\_offset** | **Test requirement (Notes 1 and 2)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.6 MHz | 0.015 MHz ≤ f\_offset < 0.615 MHz | -16-5/3(f\_offset/MHz-0.015) dBm | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz | -11-15(f\_offset/MHz-0.015) dBm | 30 kHz |
| (Note 3) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -23 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤ 5 MHz | 1.5 MHz ≤ f\_offset < 5.5 MHz | -10 dBm | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax,10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | -14 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -16dBm (Note 5) | 1 MHz |
| NOTE 1: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be -16 dBm/MHz.  NOTE 2: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.2-6a: MR BS OBUE in BC1 bands > 3 GHz applicable for: BS with maximum output power Prated,c,TRP ≤ 40 dBm, supporting NR, and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | -11 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) | -18 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -20 dBm (Note 5) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band the minimum requirement 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 minimum requirement within sub-block gaps shall be -20dBm/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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. | | | |

***<Next change>***

Table 6.7.5.5.3-1: 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** | **Test requirement (Notes 2 and 3)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.2 MHz  (Note 1) | 0.015 MHz ≤ f\_offset < 0.215 MHz | -3.2 dBm | 30 kHz |
| 0.2 MHz ≤ Δf < 1 MHz | 0.215 MHz ≤ f\_offset < 1.015 MHz | -3.2-15(f\_offset/MHz-0.215) dBm | 30 kHz |
| (Note 8) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -15.2 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤  min(Δfmax, 10 MHz) | 1.5 MHz ≤ f\_offset < min(f\_offsetmax, 10.5 MHz) | -2.2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -6 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 6.7.5.5.3-2 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 2: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *minimum requirement* within sub-block gaps shall be -6 dBm/MHz.  NOTE 3: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz operation the *test requirement* 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 | | | |

***<Next change>***

Table 6.7.5.5.3-2a: 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 | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | 3.8 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) | -3.2 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -7 dBm (Note 10) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band, the minimum requirement 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 minimum requirement within sub-block gaps shall be -7dBm/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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 6.7.5.5.3-2 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 4: Void.  NOTE 5: The requirement is not applicable when Δfmax < 10 MHz. | | | |

***<Next change>***

Table 6.7.5.5.3-3: MR BS OBUE in BC2 bands applicable for: BS with maximum output power 40 < Prated,c,TRP ≤ 47 dBm and not supporting NR

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency offset of measurement filter ‑3dB point, Δf** | **Frequency offset of measurement filter centre frequency, f\_offset** | **Test requirement (Notes 2 and 3)** | **Measurement bandwidth** |
| 0 MHz ≤ Δf < 0.6 MHz  (Note 1) | 0.015 MHz ≤ f\_offset < 0.615 MHz | Prated,c,TRP-56.2dB-(5/3)\*(f\_offset-0,015)dB | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz | Prated,c,TRP-51.2dB-15\*(f\_offset-0,215)dB | 30 kHz |
| (Note 8) | 1.015 MHz ≤ f\_offset < 1.5 MHz | Prated,c,TRP - 63.2 dB | 30 kHz |
| 1 MHz ≤ Δf ≤ 2.8 MHz | 1.5 MHz ≤ f\_offset < 3.3 MHz | Prated,c,TRP - 50.2 dB | 1 MHz |
| 2.8 MHz ≤ Δf ≤ 5 MHz | 3.3 MHz ≤ f\_offset < 5.5 MHz | min(Prated,c,TRP - 50.2 dB, -4.2dBm) | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax, 10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | Prated,c,TRP - 54.2 dB | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | Prated,c,TRP -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 6.7.5.5.3-5 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 2: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be (Prated,c,TRP - 56 dB)/MHz.  NOTE 3: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.3-3a: MR BS OBUE in BC2 bands applicable for: BS with maximum output power 40 < Prated,c,TRP ≤ 47 dBm, supporting NR, and not supporting UTRA,

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | Prated,c,TRP – 51.2dB - 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,TRP -58.2dB | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | Min(Prated,c,TRP -60dB, -16dBm) (Note 5) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band the minimum requirement 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 minimum requirement within sub-block gaps shall be Min(Prated,c,TRP -60dB, -16dBm)/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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 6.7.5.5.3-5 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 4: Void.  NOTE 5: The requirement is not applicable when Δfmax < 10 MHz. | | | |

Table 6.7.5.5.3-4: MR BS OBUE in BC2 bands applicable for: BS with maximum output power Prated,c,TRP ≤ 40 dBm

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Test requirement (Notes 2 and 3) | Measurement bandwidth |
| 0 MHz ≤ Δf < 0.6 MHz  (Note 1) | 0.015 MHz ≤ f\_offset < 0.615 MHz | -16.2dBm-5/3(f\_offset/MHz-0.015)dB | 30 kHz |
| 0.6 MHz ≤ Δf < 1 MHz | 0.615 MHz ≤ f\_offset < 1.015 MHz | -11.2dBm-15(f\_offset/MHz-0.215)dB | 30 kHz |
| (Note 8) | 1.015 MHz ≤ f\_offset < 1.5 MHz | -23.2 dBm | 30 kHz |
| 1 MHz ≤ Δf ≤ 5 MHz | 1.5 MHz ≤ f\_offset < 5.5 MHz | -10.2 dBm | 1 MHz |
| 5 MHz ≤ Δf ≤ min(Δfmax,10 MHz) | 5.5 MHz ≤ f\_offset < min(f\_offsetmax,10.5 MHz) | -14.2 dBm | 1 MHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.5 MHz ≤ f\_offset < f\_offsetmax | -16 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 6.7.5.5.3-6 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 2: For MSR RIB supporting non-contiguous spectrum operation within any operating band the *test requirement* 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 *test requirement* within sub-block gaps shall be -16 dBm/MHz.  NOTE 3: For MSR *multi-band RIB* with *Inter RF Bandwidth gap* < 2×ΔfOBUE MHz the *test requirement* 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 6.7.5.5.3-4a: MR BS OBUE in BC2 bands applicable for: BS maximum output power Prated,c,TRP ≤ 40 dBm, supporting NR, and not supporting UTRA

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency offset of measurement filter ‑3dB point, Δf | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement (Note 1, 2) | Measurement bandwidth (Note 7) |
| 0 MHz ≤ Δf < 5 MHz | 0.05 MHz ≤ f\_offset < 5.05 MHz | -11.2 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) | -18.2 dBm | 100 kHz |
| 10 MHz ≤ Δf ≤ Δfmax | 10.05 MHz ≤ f\_offset < f\_offsetmax | -20 dBm (Note 5) | 100 kHz |
| NOTE 1: For AAS BS supporting non-contiguous spectrum operation within any operating band the minimum requirement 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 minimum requirement within sub-block gaps shall be -20dBm/100 kHz.  NOTE 2: For AAS BS supporting multi-band operation with Inter RF Bandwidth gap < 2×ΔfOBUE the minimum requirement 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 6.7.5.5.3-6 apply for 0 MHz ≤ Δf < 0.15 MHz.  NOTE 4: Void.  NOTE 5: The requirement is not applicable when Δfmax < 10 MHz. | | | |

***<End of change>***