3GPP TSG-RAN WG4 Meeting # 102-e draft R4-2206496

Electronic Meeting, 21 Feb – 03 Mar, 2022

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **37.145-1** | **CR** | **0280** | **rev** | **1** | **Current version:** | **17.4.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **x** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CR to TS 37.145-1: implementation of LTE\_upper\_700MHz\_A band 103 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_upper\_700MHz\_A-Perf | | | | |  | ***Date:*** | | | 2022-02-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 this CR to TS 37.145-1, a new band 103 is introduced as the upper 700MHz A block E-UTRA band for the US, based on the LTE\_upper\_700MHz\_A WI (WID: RP-212917).  This band is a 1+1 MHz band (787-788 MHz UL, 757-758 MHz DL; 30 MHz duplex spacing, NB-IoT only; 200 kHz channel bandwidth). Propogation characteristics and the regulatory limits are similar as for the esiting E-UTRA band 13/14. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | * 6.6.6.5.2.5: Tx spur co-ex table updated with band 103. Protection of 700 MHz public safety operation in table 6.6.6.5.2.5-4 updated. * 6.6.6.5.2.6: Tx spur co-location table updated with band 103. * Co-location blocking for MSR operation, UTRA operation, and E-UTRA operation updated in tables 7.5.5.1.2-1, 7.5.5.2-4, 7.5.5.4.2-1 * 7.5.5.4.1: blocking requirement updated with band 103 in tables 7.5.5.4.1-1, 7.5.5.4.1-2, 7.5.5.4.1-3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Implemenation of band 103 would not be complete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.6.6.5.2.5, 6.6.6.5.2.6, 7.5.5.1.2, 7.5.5.2, 7.5.5.4.1, 7.5.5.4.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | TS 37.105 CR#0248 | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 37.145-2 CR#0322 | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*------------------------------ Modified sections ------------------------------*

6.6.6.5.2.5 Co-existence with other systems in the same geographical area

These requirements may be applied for the protection of system operating in frequency ranges other than the *TAB connector* downlink operating band. The limits may apply as an optional protection of such systems that are deployed in the same geographical area as the AAS BS, or they may be set by local or regional regulation as a mandatory requirement for an operating band. It is in some cases not stated in the present document whether a requirement is mandatory or under what exact circumstances that a limit applies, since this is set by local or regional regulation. An overview of regional requirements in the present document is given in clause 4.4.

Some requirements may apply for the protection of specific equipment (UE, MS and/or BS) or equipment operating in specific systems (GSM/EDGE, CDMA, UTRA, E-UTRA, NR, etc.) as listed below. The basic limit any spurious emission are in table 6.6.6.5.2.5-1 for *TAB connector(s)* where requirements for co-existence with the system listed in the first column apply. For *multi-band TAB connector(s)*, the exclusions and conditions in the Note column of table 6.6.6.5.2.5-1 apply for each supported operating band.

Table 6.6.6.5.2.5-1: Spurious emissions *basic limits* for co-existence with systems operating in other frequency bands

| System type operating in the same geographical area | Band for co-existence requirement | *Basic limit* | Measurement Bandwidth | Notes |
| --- | --- | --- | --- | --- |
| GSM900 | 921 ‑ 960 MHz | -57 dBm | 100 kHz | This requirement does not apply to UTRA FDD operating in band VIII.  This requirement does not apply to E-UTRA BS operating in band 8 or NR BS operating in band n8 |
|  | 876 - 915 MHz | -61 dBm | 100 kHz | For the frequency range 880-915 MHz, this requirement does not apply to UTRA FDD operating in band VIII, since it is already covered by the requirement in clause 6.6.6.5.2.4.  For the frequency range 880-915 MHz, this requirement does not apply to E-UTRA BS operating in band 8 or NR BS operating in band n8, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| DCS1800 | 1805 ‑ 1880 MHz | -47 dBm | 100 kHz | This requirement does not apply to UTRA FDD operating in band III.  This requirement does not apply to UTRA TDD operating in Band b and c. For UTRA TDD BS operating in Band f, it applies for 1805 - 1850 MHz  This requirement does not apply to E-UTRA BS operating in band 3 or NR BS operating in band n3. |
|  | 1710 - 1785 MHz | -61 dBm | 100 kHz | This requirement does not apply to UTRA FDD operating in band III, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD operating in Band b and c. For UTRA TDD BS operating in Band f, it applies for 1710 - 1755 MHz  This requirement does not apply to E-UTRA BS operating in band 3 or NR BS operating in band n3, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| PCS1900 | 1930 ‑ 1990 MHz | -47 dBm | 100 kHz | This requirement does not apply to UTRA FDD BS operating in frequency band II or band XXV.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in frequency band 2, band 25 or band 36 or NR BS operating in band n2 or n25. |
|  | 1850 ‑ 1910 MHz | -61 dBm | 100 kHz | This requirement does not apply to UTRA FDD BS operating in frequency band II or band XXV, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in frequency band 2 or 25 or NR BS operating in band n2 or n25, since it is already covered by the requirement in clause 6.6.6.5.2.4. This requirement does not apply to E-UTRA BS operating in frequency band 35. |
| GSM850 or CDMA850 | 869 - 894 MHz | -57 dBm | 100 kHz | This requirement does not apply to UTRA FDD BS operating in frequency band V or XXVI.  This requirement does not apply to E-UTRA BS operating in frequency band 5 or 26 or NR BS operating in band n5 or n26. This requirement applies to E-UTRA BS operating in Band 27 for the frequency range 879-894 MHz. |
|  | 824 ‑ 849 MHz | -61 dBm | 100 kHz | This requirement does not apply to UTRA FDD BS operating in frequency band V or XXVI, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to E-UTRA BS operating in frequency band 5 or 26 or NR BS operating in band n5 or n26, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E‑UTRA BS operating in Band 27, it applies 3 MHz below the Band 27 downlink operating band. |
| UTRA FDD Band I or  E-UTRA Band 1 or NR band n1 | 2110 - 2170 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band I,  This requirement does not apply to E-UTRA BS operating in band 1 or 65 or NR BS operating in band n1 or n65. |
|  | 1920 - 1980 MHz | -49 dBm  (UTRA TDD  -43 dBm for WA BS  -40 dBm for LA BS) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band I, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to E-UTRA BS operating in band 1 or 65 or NR BS operating in band n1 or n65, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band II or  E-UTRA Band 2 or NR band n2 | 1930 - 1990 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band II or band XXV4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 2 or 25 or NR BS operating in band n2 or n25. |
|  | 1850 - 1910 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band II or band XXV, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 2 or 25 or NR BS operating in band n2, since it is already covered by the requirement in clause 6.6.6.5.2.4 |
| UTRA FDD Band III or  E-UTRA Band 3 or NR band n3 | 1805 - 1880 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band III or band IX  For UTRA TDD BS operating in Band f, it applies for 1805- 1850 MHz  This requirement does not apply to E-UTRA BS operating in band 3 or NR BS operating in band n3. |
|  | 1710 - 1785 MHz | -49 dBm  (UTRA TDD  -43 dBm for WA BS  -40 dBm for LA BS) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band III, since it is already covered by the requirement in clause 6.6.6.5.2.4.  For UTRA BS operating in band IX, it applies for 1710 MHz to 1749.9 MHz and 1784.9 MHz to 1785 MHz, while the rest is covered in clause 6.6.6.5.2.4.  This requirement does not apply to E-UTRA BS operating in band 3 or 9 or NR BS operating in band n3, since it is already covered by the requirement in clause 6.6.6.5.2.4.  For UTRA TDD BS operating in Band f, it applies for 1710- 1755 MHz  For E-UTRA BS operating in band 9, it applies for 1710 MHz to 1749.9 MHz and 1784.9 MHz to 1785 MHz, while the rest is covered in clause 6.6.6.5.2.4. |
| UTRA FDD Band IV or  E-UTRA Band 4 | 2110 - 2155 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band IV or band X  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 4, 10 or 66 |
|  | 1710 - 1755 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band IV or band X, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 4, 10 or 66, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band V or  E-UTRA Band 5 or NR band n5 | 869 - 894 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band V or XXVI  This requirement does not apply to E-UTRA BS operating in band 5 or 26 or NR BS operating in band n5 or n26. This requirement applies to E‑UTRA BS operating in Band 27 for the frequency range 879-894 MHz. |
|  | 824 - 849 MHz | -49 dBm  (UTRA TDD  -43 dBm for WA BS  -40 dBm for LA BS) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band V or XXVI, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to E-UTRA BS operating in band 5 or 26 or NR BS operating in band n5 or n26, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E‑UTRA BS operating in Band 27, it applies 3 MHz below the Band 27 downlink operating band. |
| UTRA FDD Band VI or XIX, or  E-UTRA Band 6, 18 or 19 | 860 - 890 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band VI or XIX  For UTRA TDD applicable in Japan  This requirement does not apply to E-UTRA BS operating in band 6, 18, 19. |
|  | 815 - 845 MHz | -49 dBm  (UTRA TDD  -43 dBm) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band VI or XIX, since it is already covered by the requirement in clause 6.6.6.5.2.4.  For UTRA TDD applicable in Japan  This requirement does not apply to E-UTRA BS operating in band 18 between 815-830 MHz, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to E-UTRA BS operating in band 6, 19 between 830-845 MHz, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band VII or  E-UTRA Band 7 or NR band n7 | 2620 - 2690 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band VII,  This requirement does not apply to E-UTRA BS operating in band 7 or NR BS operating in band n7.  This requirement does not apply to E-UTRA BS operating in band 7 or NR BS operating in band n7, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
|  | 2500 - 2570 MHz | -49 dBm  (UTRA TDD  -43 dBm for WA BS  -40 dBm for LA BS) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band VII or E-UTRA BS operation in band 7 or NR BS operating in band n7, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band VIII or  E-UTRA Band 8 or NR band n8 | 925 - 960 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band VIII.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 8 or NR BS operating in band n8. |
|  | 880 - 915 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band VIII, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 8 or NR BS operating in band n8, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band IX or  E-UTRA Band 9 | 1844.9 - 1879.9 MHz | -52 dBm  (UTRA TDD  -43 dBm) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band III or band IX  For UTRA TDD applicable in Japan  This requirement does not apply to E-UTRA BS operating in band 3 or 9 or NR BS operating in band n3. |
|  | 1749. 9 - 1784.9 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band III or band IX, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to E-UTRA BS operating in band 3 or 9 or NR BS operating in band n3, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band X or  E-UTRA Band 10 | 2110 - 2170 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band IV or band X  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 4, 10 or 66 |
|  | 1710 - 1770 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band X, since it is already covered by the requirement in clause 6.6.6.5.2.4. For UTRA FDD BS operating in Band IV, it applies for 1755 MHz to 1770 MHz, while the rest is covered in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 10 or 66 or NR BS operating in band n66, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 4, it applies for 1755 MHz to 1770 MHz, while the rest is covered in clause 6.6.6.5.2.4. |
| UTRA FDD Band XI or XXI or  E-UTRA Band 11 or 21 | 1475.9 - 1510.9 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XI, XXI, or XXXII.  For UTRA TDD applicable in Japan  This requirement does not apply to E-UTRA BS operating in band 11, 21 or 32.  This requirement does not apply to NR BS operating in n92 or n94. |
|  | 1427.9 - 1447.9 MHz | -49 dBm  (UTRA TDD  -43 dBm) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band XI, since it is already covered by the requirement in clause 6.6.6.5.2.4. For UTRA BS operating in band XXXII, this requirement applies for carriers allocated within 1475.9MHz and 1495.9MHz. For UTRA TDD applicable in Japan  This requirement does not apply to E-UTRA BS operating in band 11, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in band 32, this requirement applies for carriers allocated within 1475.9MHz and 1495.9MHz.  This requirement does not apply to NR BS operating in n91, n92, n93 or n94. |
|  | 1447.9 - 1462.9 MHz | -49 dBm  (UTRA TDD  -43 dBm) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to UTRA FDD BS operating in band XXI, since it is already covered by the requirement in clause 6.6.6.5.2.4. For UTRA BS operating in band XXXII, this requirement applies for carriers allocated within 1475.9MHz and 1495.9MHz.  For UTRA TDD applicable in Japan up to 1462.9MHz.  This requirement does not apply to E-UTRA BS operating in band 21, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in band 32, this requirement applies for carriers allocated within 1475.9MHz and 1495.9MHz.  This requirement does not apply to NR BS operating in n92 or n94. |
| UTRA FDD Band XII or  E-UTRA Band 12 or NR band n12 | 729 - 746 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XII  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 12 or 85, nor NR BS operating in band n12. |
|  | 699 - 716 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XII, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 12 or 85, nor NR BS operating in band n12, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E‑UTRA BS operating in Band 29 or NR BS operating in Band n29, it applies 1 MHz below the Band 29 downlink operating band (Note 6) |
| UTRA FDD Band XIII or  E-UTRA Band 13 or NR band n13 | 746 - 756 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XIII  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 13, nor NR BS operating in band n13. |
|  | 777 - 787 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XIII, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 13, nor NR BS operating in band n13, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band XIV or  E-UTRA Band 14 or NR band n14 | 758 - 768 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XIV  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 14. |
|  | 788 - 798 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XIV, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 14, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 17 | 734 - 746 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XII  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 17. |
|  | 704 - 716 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XII, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 17, since it is already covered by the requirement in clause 6.6.4.5.3. For E‑UTRA BS operating in Band 29 or NR BS operating in Band n29, it applies 1 MHz below the Band 29 downlink operating band (Note 6) |
| UTRA FDD Band XX or  E-UTRA Band 20 or NR band n20 | 791 - 821 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XX  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 20 or 28 or NR BS operating in band n20. |
|  | 832 - 862 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XX, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 20 or NR BS operating in band n20, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| UTRA FDD Band XXII or E-UTRA Band 22 | 3510 -3590 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XXII  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 22, 42 or 48. |
|  | 3410 -3490 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XXII, since it is already covered by the requirement in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 22, since it is already covered by the requirement in clause 6.6.4.5.3. This requirement does not apply to E-UTRA BS operating in Band 42 |
| E-UTRA Band 24 or NR band n24 | 1525 - 1559 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 24.  This requirement does not apply to UTRA TDD |
|  | 1626.5 - 1660.5 MHz | -49 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 24, since it is already covered by the requirement in clause 6.6.6.5.2.4. This requirement does not apply to UTRA TDD |
| UTRA FDD Band XXV or  E-UTRA Band 25 or NR band n25 | 1930 - 1995 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band II or band XXV  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 2 or 25 or NR BS operating in band n2 or n25. |
|  | 1850 - 1915 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XXV, since it is already covered by the requirement in clause 6.6.6.5.2.4. For UTRA FDD BS operating in Band II, it applies for 1910 MHz to 1915 MHz, while the rest is covered in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 25, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 2 or NR BS operating in band n2, it applies for 1910 MHz to 1915 MHz, while the rest is covered in clause 6.6.6.5.2.4. |
| UTRA FDD Band XXVI or E-UTRA Band 26 or NR Band n26 | 859-894 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band V or band XXVI  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 5 or 26 or NR BS operating in band n5 or n26. This requirement applies to E-UTRA BS operating in Band 27 for the frequency range 879-894 MHz. |
|  | 814-849 MHz | -49 MHz | 1 MHz | This requirement does not apply to UTRA FDD BS operating in band XXVI, since it is already covered by the requirements in clause 6.6.6.5.2.4.For UTRA FDD BS operating in band V, it applies for 814 MHz to 824 MHz, while the rest is covered in clause 6.6.3.2  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 26 or NR BS operating in band n26, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 5 or NR BS operating in band n5, it applies for 814 MHz to 824 MHz, while the rest is covered in clause 6.6.6.5.2.4. For E‑UTRA BS operating in Band 27, it applies 3 MHz below the Band 27 downlink operating band. |
| E-UTRA Band 27 | 852 - 869 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS operating in Band V or XXVI.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in Band 5, 26 or 27 or NR BS operating in band n5. |
|  | 807 - 824 MHz | -49 dBm | 1 MHz | For UTRA BS operating in Band XXVI, it applies for 807 MHz to 814 MHz, while the rest is covered in clause 6.6.6.5.2.4.  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in Band 27, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 26, it applies for 807 MHz to 814 MHz, while the rest is covered in clause 6.6.6.5.2.4. This requirement also applies to E-UTRA BS operating in Band 28, starting 4 MHz above the Band 28 downlink operating band (Note 5). |
| E-UTRA Band 28 or NR band n28 | 758 - 803 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 20, 28, 44, 67 or 68.  This requirement does not apply to UTRA TDD |
|  | 703 - 748 MHz | -49 MHz | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 28, since it is already covered by the requirement in clause 6.6.6.5.2.4. This requirement does not apply to E-UTRA BS operating in Band 44.  This requirement does not apply to UTRA TDD  For E-UTRA BS operating in Band 67, it applies for 703 MHz to 736 MHz. For E-UTRA BS operating in Band 68, it applies for 728MHz to 733 MHz. |
| E-UTRA Band 29 or NR Band n29 | 717 - 728 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA TDD.  This requirement does not apply to E-UTRA BS operating in Band 29 or 85 |
| E-UTRA Band 30 or NR band n30 | 2350 - 2360 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA TDD.  This requirement does not apply to E-UTRA BS operating in band 30 or 40 or NR BS operating in band n40. |
|  | 2305 - 2315 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA TDD.  This requirement does not apply to E-UTRA BS operating in band 30, since it is already covered by the requirement in clause 6.6.6.5.2.4. This requirement does not apply to E-UTRA BS operating in Band 40 or NR BS operating in band n40. |
| E-UTRA Band 31 | 462.5 -467.5 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA TDD.  This requirement does not apply to E-UTRA BS operating in band 31, 72, 73. |
|  | 452.5 -457.5 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA TDD.  This requirement does not apply to E-UTRA BS operating in band 31, since it is already covered by the requirement in clause 6.6.6.5.2.4. This requirement does not apply to E-UTRA BS operating in band 72 or 73. |
| UTRA FDD Band XXXII or E-UTRA Band 32 | 1452 - 1496 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS operating in Band XI, XXI, or XXXII  This requirement does not apply to UTRA TDD  This requirement does not apply to E-UTRA BS operating in band 11, 21 or 32.  This requirement does not apply to NR BS operating in n92 or n94. |
| UTRA TDD in Band a) or E-UTRA Band 33 | 1900 - 1920 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in Band 33. |
| UTRA TDD in Band a) or E-UTRA Band 34 or NR band n34 | 2010 - 2025 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in Band 34 or NR BS operating in band n34. |
| UTRA TDD Band b) or E-UTRA Band 35 | 1850 - 1910 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in Band 35. |
| UTRA TDD Band b) or E-UTRA Band 36 | 1930 - 1990 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in Band 2 and 36 or NR BS operating in band n2. |
| UTRA TDD Band c) or E-UTRA Band 37 | 1910 - 1930 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This is not applicable to E-UTRA BS operating in Band 37. This unpaired band is defined in ITU-R M.1036, but is pending any future deployment. |
| UTRA TDD in Band d) or E-UTRA Band 38 or NR band n38 | 2570 - 2620 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in Band 38 or 69 or NR BS operating in band n38. |
| UTRA TDD in Band f) or E-UTRA Band 39 or NR band n39 | 1880 - 1920 MHz | -52 dBm | 1 MHz | Applicable in China for UTRA FDD.  This is not applicable to E-UTRA BS operating in Band 39. |
| UTRA TDD in Band e) or E-UTRA Band 40 or NR band n40 | 2300 - 2400 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 30 or 40 or NR BS operating in band n40. |
| E-UTRA Band 41 or NR band n41 | 2496 - 2690 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 41 or 53 or NR BS operating in band n41 or n53. |
| E-UTRA Band 42 | 3400 - 3600 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 22, 42, 43, 48, 52. |
| E-UTRA Band 43 | 3600 - 3800 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA TDD.  This is not applicable to E-UTRA BS operating in Band 42, 43 or 48. |
| E-UTRA Band 44 | 703 - 803 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 28 or 44 |
| E-UTRA Band 45 | 1447 - 1467 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This is not applicable to E-UTRA BS operating in Band 45 |
| E-UTRA Band 46 or NR Band n46 | 5150 - 5925 MHz | -52 dBm | 1 MHz |  |
| E-UTRA Band 48 or NR Band n48 | 3550 – 3700 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 22, 42, 43 or 48. |
| E-UTRA Band 49 | 3550 – 3700 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 22, 42, 43, 48. |
| E-UTRA Band 50 or NR band n50 | 1432 – 1517 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94. |
| E-UTRA Band 51 or NR Band n51 | 1427 – 1432 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n75, n76, n91, n92, n93 or n94. |
| E-UTRA Band 52 | 3300 – 3400 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 42 or 52. |
| E-UTRA Band 53 or NR Band n53 | 2483.5 – 2495 MHz | -52 dBm | 1 MHz | This is not applicable to E-UTRA BS operating in Band 41 or 53 or NR BS operating in band n41 or n53. |
| E-UTRA Band 65 or NR band n65 | 2110 - 2200 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in band 1 or 65 or NR BS operating in band n1 or n65. |
|  | 1920 - 2010 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in band 65 or NR BS operating in band n65, since it is already covered by the requirement in clause 6.6.6.5.2.4.  For E-UTRA BS operating in Band 1 or NR BS operating in band n1, it applies for 1980 MHz to 2010 MHz, while the rest is covered in clause 6.6.6.5.2.4. |
| E-UTRA Band 66 or NR band n66 | 2110 - 2200 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in band 4, 10, 23 or 66. |
|  | 1710 - 1780 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in band 66, since it is already covered by the requirement in clause 6.6.4.5.3. For E-UTRA BS operating in Band 4, it applies for 1755 MHz to 1780 MHz, while the rest is covered in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 10, it applies for 1770 MHz to 1780 MHz, while the rest is covered in clause 6.6.6.5.2.4. |
| E-UTRA Band 67 or NR band n67 | 738 - 758 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in Band 28 or 67. |
| E-UTRA Band 68 | 753 -783 MHz | -52 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in band 28, or 68. |
|  | 698-728 MHz | -49 dBm | 1 MHz | This requirement does not apply to UTRA BS.  This requirement does not apply to E-UTRA BS operating in band 68, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 28, it applies between 698 MHz and 703 MHz, while the rest is covered in clause 6.6.6.5.2.4. |
| E-UTRA Band 69 | 2570 - 2620 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in Band 38 or 69. |
| E-UTRA Band 70 or NR band n70 | 1995 - 2020 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 2, 25 or 70 or NR BS operating in band n2 or n25. |
|  | 1695 – 1710 MHz | -49 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in Band 70, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 71 or NR Band n71 | 617 – 652 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in band n71 |
|  | 663 – 698 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n71, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 72 | 461 – 466 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 31, 72 and or 73. |
|  | 451 – 456 MHz | -49 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 72, since it is already covered by the requirement in clause 6.6.6.5.2.4. This requirement does not apply to E-UTRA BS operating in band 73. |
| E-UTRA Band 73 | 460 - 465 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 31, 72 or 73. |
|  | 450 - 455 MHz | -49 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 73, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 74 or NR Band n74 | 1475 – 1518 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in band n50, n74, n75, n92 or n94. |
|  | 1427 – 1470 MHz | -49 dBm | 1MHz | This requirement does not apply to BS operating in band n50, n51, n74, n75, n76, n91, n92, n93 or n94. |
| E-UTRA Band 75 or NR Band n75 | 1432 – 1517 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94. |
| E-UTRA Band 76 or NR Band n76 | 1427 – 1432 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n75, n76, n91, n92, n93 or n94. |
| NR Band n77 | 3.3 – 4.2 GHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band 22, 42, 43, 48, 52, n77 and n78 |
| NR Band n78 | 3.3 – 3.8 GHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band 22, 42, 43, 48, 52, n77 and n78 |
| NR Band n79 | 4.4 – 5.0 GHz | -52 dBm | 1 MHz |  |
| NR Band n80 | 1710 – 1785 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n3, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n81 | 880 – 915 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n82 | 832 – 862 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n83 | 703 – 748 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n28, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n84 | 1920 – 1980 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n1, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 85 or NR band n85 | 728 - 746 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in band 12/n12, 29 or 85. |
|  | 698 - 716 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band 12/n12 or 85, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E-UTRA BS operating in Band 29 or NR BS operating in Band n29, it applies 1 MHz below the Band 29 downlink operating band (Note 6). |
| NR Band n86 | 1710 – 1780 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n66, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 87 | 420 - 425 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 87 or 88. |
|  | 410 – 415 MHz | -49 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 87, since it is already covered by the requirement in clause 6.6.4.2 |
| E-UTRA Band 88 | 422 - 427 MHz | -52 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 87 or 88. |
|  | 412 - 417 MHz | -49 dBm | 1 MHz | This requirement does not apply to E-UTRA BS operating in band 88, since it is already covered by the requirement in clause 6.6.4.2. This requirement does not apply to E-UTRA BS operating in band 87. |
| NR Band n89 | 824 - 849 MHz | -49 dBm  (UTRA TDD  -43 dBm for WA BS  -40 dBm for LA BS) | 1 MHz  (UTRA TDD 3.84 MHz) | This requirement does not apply to NR BS operating in band n5, since it is already covered by the requirement in clause 6.6.6.5.2.4. For E‑UTRA BS operating in Band 27, it applies 3 MHz below the Band 27 downlink operating band. |
| NR Band n91 | 1427 – 1432 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n75, n76, n91, n92, n93 or n94. |
|  | 832 – 862 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n92 | 1432 – 1517 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94. |
|  | 832 – 862 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n20, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n93 | 1427 – 1432 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n75, n76, n91, n92, n93 or n94. |
|  | 880 – 915 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n94 | 1432 – 1517 MHz | -52 dBm | 1 MHz | This requirement does not apply to BS operating in Band n50, n51, n74, n75, n76, n91, n92, n93 or n94. |
|  | 880 – 915 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n8, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| NR Band n95 | 2010 - 2025 MHz | -52 dBm | 1 MHz |  |
| NR band n96 | 5925 – 7125 MHz | -52 dBm | 1 MHz |  |
| NR Band n97 | 2300 - 2400 MHz | -52 dBm | 1 MHz |  |
| NR Band n98 | 1880 - 1920 MHz | -52 dBm | 1 MHz |  |
| NR Band n99 | 1626.5 – 1660.5 MHz | -49 dBm | 1 MHz | This requirement does not apply to BS operating in band n24, since it is already covered by the requirement in clause 6.6.6.5.2.4. |
| E-UTRA Band 103 | 757 – 758 MHz | -52 dBm | 1 MHz |  |
| 787 – 788 MHz | -49 dBm | 1 MHz |  |
| NOTE 1: The co-existence requirements do not apply for the 10 MHz frequency range immediately outside the downlink operating band (see clause 4.5.). Emission limits for this excluded frequency range may be covered by local or regional requirements.  NOTE 2: The table above assumes that two operating bands, where the frequency ranges would be overlapping, are not deployed in the same geographical area. For such a case of operation with overlapping frequency arrangements in the same geographical area, special co-existence requirements may apply that are not covered by the 3GPP specifications. | | | | |

NOTE 1: As defined in the scope for spurious emissions in this clause, except for the cases where the noted requirements apply to a BS operating in Band 25/n25, Band 27, Band 28/n28 or Band 29, the co-existence requirements in Table 6.6.6.5.2.5-1 do not apply for the 10 MHz frequency range immediately outside the downlink operating band (see Tables 4.5-1 and 4.5-2). Emission limits for this excluded frequency range may be covered by local or regional requirements.

NOTE 2: Table 6.6.6.5.2.5-1 assumes that two operating bands, where the frequency ranges in table 4.4-1 or table 4.4‑2 would be overlapping, are not deployed in the same geographical area. For such a case of operation with overlapping frequency arrangements in the same geographical area, special co-existence requirements may apply that are not covered by the 3GPP specifications.

NOTE 3: For the protection of DCS1800, UTRA Band III, E-UTRA Band 3 or NR Band n3 in China, the frequency ranges of the downlink and uplink protection requirements are 1805 – 1850 MHz and 1710 – 1755 MHz respectively.

NOTE 4: TDD base stations deployed in the same geographical area, that are synchronized and use the same or adjacent operating bands can transmit without additional co-existence requirements. For unsynchronized base stations, special co-existence requirements may apply that are not covered by the 3GPP specifications.

NOTE 5: For Band 28/n28 BS, specific solutions may be required to fulfil the spurious emissions limits for BS for co-existence with Band 27 UL operating band.

NOTE 6: For Band 29 BS, specific solutions may be required to fulfil the spurious emissions limits for BS for co‑existence with UTRA Band XII, E-UTRA Band 12 or NR Band n12 UL operating band, E-UTRA Band 17 UL operating band or E-UTRA Band 85 UL operating band.

The following requirement may be applied for the protection of PHS. This requirement is also applicable at specified frequencies falling between ΔfOBUE below the lowest BS transmitter frequency of the downlink operating band and ΔfOBUE above the highest BS transmitter frequency of the downlink operating band.

The basic limit for any spurious emission is:

Table 6.6.6.5.2.5-2: Spurious emissions *basic limits* for co-existence with PHS

|  |  |  |  |
| --- | --- | --- | --- |
| Frequency range | *Basic limit* | Measurement Bandwidth | Notes |
| 1884.5 ‑ 1915.7 MHz | -41 dBm | 300 kHz | Applicable for co-existence with PHS system operating in 1884.5-1915.7MHz |
| NOTE: The requirement is not applicable in China. | | | |

Table 6.6.6.5.2.5-3: Void

The following requirement shall be applied to *TAB connectors* operating in Bands 13, 14 to ensure that appropriate interference protection is provided to 700 MHz public safety operations. This requirement is also applicable at the frequency range from 10 MHz below the lowest frequency of the BS transmitter operating band up to 10 MHz above the highest frequency of the BS transmitter operating band. The basic limit for any spurious emission is:

Table 6.6.6.5.2.5-4: Spurious emissions *basic limits* for protection of 700 MHz public safety operations

|  |  |  |  |
| --- | --- | --- | --- |
| Operating Band | Band | *Basic limit* | Measurement Bandwidth |
| 13 | 763 - 775 MHz | -46 dBm | 6.25 kHz |
| 13 | 793 - 805 MHz | -46 dBm | 6.25 kHz |
| 14 | 769 - 775 MHz | -46 dBm | 6.25 kHz |
| 14 | 799 - 805 MHz | -46 dBm | 6.25 kHz |
|  |  |  |  |
|  |  |  |  |

*------------------------------ Next modified sections ------------------------------*

6.6.6.5.2.6 Co-location with other Base Stations

These requirements may be applied for the protection of other BS receiver units when GSM900, DCS1800, PCS1900, GSM850, CDMA850, UTRA FDD, UTRA TDD, E-UTRA and/or NR BS are co-located with a BS.

The requirements assume a 30 dB coupling loss between transmitter and receiver and are based on co-location with base stations of the same class.

The basic limit for any spurious emission are in table 6.6.6.5.2.6-1 for a MSR, E-UTRA or UTRA FDD *TAB connector* or tables 6.6.6.5.2.6-2 and 6.6.6.5.2.6-3 for UTRA TDD, where requirements for co-location with a BS type listed in the first column apply, depending on the declared Base Station class. For a *multi-band TAB connector*, the exclusions and conditions in the Notes column of table 6.6.6.5.2.6-1 apply for each supported operating band.

Table 6.6.6.5.2.6-1: Spurious emissions *basic limits* for MSR, E-UTRA or UTRA (FDD) or NR BS co-located with another BS

| Type of co-located BS | Frequency range for co-location requirement | *Basic limit*  (WA BS) | *Basic limit*  (MR BS) | *Basic limit*  (LA BS) | Measurement Bandwidth | Notes |
| --- | --- | --- | --- | --- | --- | --- |
| GSM900 | 876 - 915 MHz | -98 dBm | -91 dBm | MSR -88 dBm,  UTRA, E-UTRA  -70 dBm | 100 kHz |  |
| DCS1800 | 1710 - 1785 MHz | -98 dBm | -91 dBm  (UTRA  -96 dBm) | MSR -88 dBm,  UTRA, E-UTRA  -80 dBm | 100 kHz |  |
| PCS1900 | 1850 - 1910 MHz | -98 dBm | -91 dBm  (UTRA  -96 dBm) | MSR -88 dBm  UTRA, E-UTRA  -80 dBm | 100 kHz |  |
| GSM850 or CDMA850 | 824 - 849 MHz | -98 dBm | -91 dBm | MSR -88 dBm  UTRA, E-UTRA  -70 dBm | 100 kHz |  |
| UTRA FDD Band I or E-UTRA Band 1 or NR band n1 | 1920 - 1980 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band II or E-UTRA Band 2 or NR band n2 | 1850 - 1910 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band III or E-UTRA Band 3 or NR band n3 | 1710 - 1785 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band IV or E-UTRA Band 4 | 1710 - 1755 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band V or E-UTRA Band 5 or NR band n5 | 824 - 849 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band VI, XIX or E-UTRA Band 6, 19 | 830 - 845 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band VII or E-UTRA Band 7 or NR band n7 | 2500 - 2570 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band VIII or E-UTRA Band 8 or NR band n8 | 880 - 915 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band IX or E-UTRA Band 9 | 1749.9 - 1784.9 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band X or E-UTRA Band 10 | 1710 - 1770 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XI or E-UTRA Band 11 | 1427.9 - 1447.9 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band n91, n92, n93 or n94 |
| UTRA FDD Band XII or  E-UTRA Band 12 or NR band n12 | 699 - 716 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XIII or  E-UTRA Band 13 or NR band n13 | 777 - 787 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XIV or  E-UTRA Band 14 or NR band n14 | 788 - 798 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 17 | 704 - 716 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 18 or NR band n18 | 815 - 830 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XX or  E-UTRA Band 20 or NR band n20 | 832 - 862 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XXI or E-UTRA Band 21 | 1447.9 - 1462.9 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band n92 or n94 |
| UTRA FDD Band XXII or E-UTRA Band 22 | 3410 - 3490 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 42 |
| E-UTRA Band 24 or NR band n24 | 1626.5 - 1660.5 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XXV or E-UTRA Band 25 or NR band n25 | 1850 - 1915 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA FDD Band XXVI or E-UTRA Band 26 or NR Band n26 | 814 - 849 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 27 | 807 - 824 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 28 or NR band n28 | 703 - 748 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 44 |
| E-UTRA Band 30 or NR band n30 | 2305 - 2315 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 40 or n40 |
| E-UTRA Band 31 | 452.5 - 457.5 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| UTRA TDD Band a) or E-UTRA Band 33 | 1900 - 1920 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 33 |
| UTRA TDD Band a) or E-UTRA Band 34 or NR band n34 | 2010 - 2025 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 34 or n34 |
| UTRA TDD Band b) or E-UTRA Band 35 | 1850 - 1910 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 35 |
| UTRA TDD Band b) or E-UTRA Band 36 | 1930 - 1990 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 2, n2 and 36 |
| UTRA TDD Band c) or E-UTRA Band 37 | 1910 - 1930 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 37. This unpaired band is defined in ITU-R M.1036, but is pending any future deployment. |
| UTRA TDD Band d) or E-UTRA Band 38 or NR band n38 | 2570 - 2620 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 38 or n38. |
| UTRA TDD Band f) or E-UTRA Band 39 or NR band n39 | 1880 - 1920 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 33 and 39 |
| UTRA TDD Band e) or E-UTRA Band 40 or NR band n40 | 2300 - 2400 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 30 or 40 or n40 |
| E-UTRA Band 41 or NR band n41 | 2496 - 2690 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 41 or 53 or n41 or n53 |
| E-UTRA Band 42 | 3400 - 3600 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 22, 42, 43, 48, 52 |
| E-UTRA Band 43 | 3600 - 3800 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 42 or 43, or 48 |
| E-UTRA Band 44 | 703 - 803 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 28 or 44 |
| E-UTRA Band 45 | 1447 – 1467 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to BS operating in Band 45 |
| E-UTRA Band 46 or NR Band n46 | 5150 – 5925 MHz | N/A | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 48 or NR Band n48 | 3550 – 3700 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm  Note 4 | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to E-UTRA BS operating in Band 42, 43 or 48 |
| E-UTRA Band 49 | 3550 - 3700 MHz | N/A | N/A | (UTRA  -78 dBm) | (UTRA 1 MHz) |  |
| E-UTRA Band 50 or NR Band n50 | 1432 – 1517 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band n51, n74, n75, n91, n92, n93 or n94 |
| E-UTRA Band 51 or NR Band n51 | 1427 – 1432 MHz | N/A | N/A | -88 dBm | 100 kHz | This is not applicable to BS operating in Band n50, n74, n75, n76, n91, n92, n93 or n94 |
| E-UTRA Band 52 | 3300 – 3400 MHz | -96 dBm  (UTRA  -86 dBm) | -91 dBm | -88 dBm  (UTRA  -78 dBm) | 100 kHz  (UTRA 1 MHz) | This is not applicable to E-UTRA BS operating in Band 42 or 52 |
| E-UTRA Band 53 or NR band n53 | 2483.5 - 2495 MHz | N/A | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 41 or 53 or n41 or n53 |
| E-UTRA Band 65 or NR band n65 | 1920 - 2010 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to AAS BS operating in Band 65 or n65 |
| E-UTRA Band 66 or NR band n66 | 1710 - 1780 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 66 or n66 |
| E-UTRA Band 68 | 698 - 728 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 68 |
| E-UTRA Band 70 or NR band n70 | 1695 – 1710 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 71 or NR Band n71 | 663 – 698 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 72 | 451 – 456 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 73 | 450 - 455 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 74 or NR Band n74 | 1427 – 1470 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band n50, n51, n91, n92, n93 or n94 |
| NR Band n77 | 3.3 – 4.2 GHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 22, 42, 43, 48, 52 |
| NR Band n78 | 3.3 – 3.8 GHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz | This is not applicable to BS operating in Band 22, 42, 43, 48, 52 |
| NR Band n79 | 4.4 – 5.0 GHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n80 | 1710 – 1785 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n81 | 880 – 915 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n82 | 832 – 862 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n83 | 703 – 748 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n84 | 1920 – 1980 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 85 or NR band n85 | 698 - 716 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n86 | 1710 – 1780 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 87 | 410 - 415 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 88 | 412 - 417 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n89 | 824 - 849 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n91 | 832 – 862 MHz | N/A | N/A | -88 dBm | 100 kHz |  |
| NR Band n92 | 832 – 862 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n93 | 880 – 915 MHz | N/A | N/A | -88 dBm | 100 kHz |  |
| NR Band n94 | 880 – 915 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR band n95 | 2010 - 2025 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR Band n96 | 5925 - 7125 MHz | N/A | -90 dBm | -87 dBm | 100 kHz |  |
| NR band n97 | 2300 - 2400 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR band n98 | 1880 - 1920 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| NR band n99 | 1626.5 – 1660.5 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |
| E-UTRA Band 103 | 787 – 788 MHz | -96 dBm | -91 dBm | -88 dBm | 100 kHz |  |

*------------------------------ Next modified sections ------------------------------*

##### 7.5.5.1.2 Co-location test requirements

This additional blocking requirement may be applied for the protection of receiver units associated with *TAB connectors* when a E-UTRA, UTRA, CDMA or GSM/EDGE BS operating in a different frequency band are co-located with the AAS BS.

The requirements in this clause assume a 30 dB coupling loss between the interfering transmitter and the *TAB connector* and are based on co-location with base stations of the same class.

For a wanted and an interfering signal coupled to *TAB connector* using the parameters in table 7.5.5.1.2-1, the following requirements shall be met:

- For any measured E-UTRA carrier, the throughput shall be ≥ 95% of the *maximum throughput* of the reference measurement channel defined in clause 7.2.5.3.

- For any measured NR carrier, the throughput shall be ≥ 95% of the *maximum throughput* of the reference measurement channel defined in clause 7.2.5.4.

- For any measured UTRA FDD carrier, the BER shall not exceed 0.001 for the reference measurement channel defined in clause 7.2.5.1.

- For any measured UTRA TDD carrier, the BER shall not exceed 0.001 for the reference measurement channel defined in clause 7.2.5.2.

Table 7.5.5.1.2-1: Blocking requirement for co-location with BS in other frequency bands

| Type of co-located BS | Centre Frequency of Interfering Signal (MHz) | Interfering Signal mean power for WA BS (dBm) | Interfering Signal mean power for MR BS (dBm) | Interfering Signal mean power for LA BS (dBm) | Wanted Signal mean power (dBm)  (Note 1) | Type of Interfering Signal | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| GSM850 or CDMA850 | 869 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| GSM900 | 921 - 960 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| DCS1800 | 1805 - 1880  (Note 4) | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| PCS1900 | 1930 - 1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band I or E-UTRA Band 1 or NR band n1 | 2110 - 2170 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band II or E-UTRA Band 2 or NR band n2 | 1930 - 1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band III or E-UTRA Band 3 or NR band n3 | 1805 - 1880  (Note 4) | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band IV or E-UTRA Band 4 | 2110 - 2155 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band V or E-UTRA Band 5 or NR band n5 | 869 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VI or E-UTRA Band 6 | 875 - 885 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VII or E-UTRA Band 7 or NR band n7 | 2620 - 2690 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VIII or E-UTRA Band 8 or NR band n8 | 925 - 960 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band IX or E-UTRA Band 9 | 1844.9 - 1879.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band X or E-UTRA Band 10 | 2110 - 2170 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XI or E-UTRA Band 11 | 1475.9 - 1495.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XII or E-UTRA Band 12 or NR band n12 | 729 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIIII or E-UTRA Band 13 or NR band n13 | 746 - 756 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIV or E-UTRA Band 14 or NR band n14 | 758 - 768 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 17 | 734 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 18 or NR band n18 | 860 - 875 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIX or E-UTRA Band 19 | 875 - 890 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XX or E-UTRA Band 20 or NR band n20 | 791 - 821 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXI or E-UTRA Band 21 | 1495.9 - 1510.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXII or E-UTRA Band 22 | 3510 - 3590 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 24 or NR band n24 | 1525 - 1559 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXV or E-UTRA Band 25 or NR band n25 | 1930 - 1995 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXVI or E-UTRA Band 26 or NR band n26 | 859 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 27 | 852 - 869 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 28 or NR band n28 | 758 - 803 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 29 or NR Band n29 | 717 - 728 | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier |
| E-UTRA Band 30 or NR band n30 | 2350 - 2360 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 31 | 462.5 - 467.5 | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier | |
| UTRA FDD Band XXXII or E-UTRA Band 32 | 1452 - 1496  (Note 5) | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier | |
| UTRA TDD Band a) or E-UTRA Band 33 | 1900-1920 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band a) or E-UTRA Band 34 or NR band n34 | 2010-2025 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band b) or E-UTRA Band 35 | 1850-1910 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band b) or E-UTRA Band 36 | 1930-1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band c) or E-UTRA Band 37 | 1910-1930 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band d) or E-UTRA Band 38 or NR band n38 | 2570-2620 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band f) or E-UTRA Band 39 or NR band n39 | 1880-1920 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band e) or E-UTRA Band 40 or NR band n40 | 2300-2400 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 41 or NR band n41 | 2496 - 2690 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 42 | 3400 - 3600 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 43 | 3600 - 3800 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 44 | 703 - 803 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 45 | 1447 - 1467 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 46 or NR Band n46 | 5150 - 5925 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 48 or NR Band n48 | 3550 - 3700 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 49 | 3550 - 3700 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 50 or NR band n50 | 1432 – 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 51 or NR band n51 | 1427– 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 52 | 3300 - 3400 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 53 or NR Band n53 | 2483.5 - 2495 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 65 or NR band n65 | 2110 - 2200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 66 or NR band n66 | 2110 - 2200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 67 or NR band n67 | 738 - 758 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 68 | 753 - 783 | +16 | +8 | -6 | PREFSENS + x dB\* | CW carrier | |
| E-UTRA Band 69 | 2570 - 2620 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 70 or NR band n70 | 1995 - 2020 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 71 or or NR band n71 | 617 - 652 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 72 | 461 - 466 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 73 | 460 - 465 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 74 or NR band n74 | 1475 - 1518 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 75 or or NR band n75 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 76 or or NR band n76 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n77 | 3300 - 4200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n78 | 3300 - 3800 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n79 | 4400 - 5000 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 85 or or NR band n85 | 728 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 87 | 420 - 425 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 88 | 422 - 427 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n91 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n92 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n93 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n94 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n96 | 5925 - 7125 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 103 | 757 – 758 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NOTE 1: PREFSENS depends on the RAT, the BS class and the channel bandwidth, see clause 7.2. "x" is equal to 6 in case of UTRA or E-UTRA or NR wanted signals.  NOTE 2: Except for a *TAB connector* operating in Band 13, these requirements do not apply when the interfering signal falls within any of the supported *uplink operating band* or in the ΔfOOB immediately outside any of the supported *uplink operating band*. For a *TAB connector* operating in band 13 the requirements do not apply when the interfering signal falls within the frequency range 768-797MHz.  NOTE 3: Some combinations of bands may not be possible to co-site based on the requirements above. The current state-of-the-art technology does not allow a single generic solution for co-location of UTRA TDD or E-UTRA TDD or NR TDD with E-UTRA FDD on adjacent frequencies for 30 dB BS-BS minimum coupling loss. However, there are certain site-engineering solutions that can be used. These techniques are addressed in TR 25.942 [21].  NOTE 4: In China, the blocking requirement for co-location with DCS1800 and Band III BS is only applicable in the frequency range 1805-1850 MHz.  NOTE 5: For a *TAB connector* operating in band 11 or 21, this requirement applies for interfering signal within the frequency range 1475.9-1495.9 MHz.  NOTE 6: Co-located TDD base stations that are synchronized and using the same or adjacent operating band can receive without special co-location requirements. For unsynchronized base stations, special co-location requirements may apply that are not covered by the 3GPP specifications. | | | | | | | |

*------------------------------ Next modified sections ------------------------------*

Table 7.5.5.2-4: Blocking performance requirement when co-located with BS in other bands

| Type of co-located BS | Centre Frequency of Interfering Signal (MHz) | Interfering Signal mean power for WA BS (dBm) | Interfering Signal mean power for MR BS (dBm) | Interfering Signal mean power for LA BS (dBm) | Wanted Signal mean power (dBm)  (Note 1) | Type of Interfering Signal | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| GSM850 or CDMA850 | 869 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| GSM900 | 921 - 960 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| DCS1800 | 1805 - 1880  (Note 4) | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| PCS1900 | 1930 - 1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band I or E-UTRA Band 1 or NR band n1 | 2110 - 2170 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band II or E-UTRA Band 2 or NR band n2 | 1930 - 1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band III or E-UTRA Band 3 or NR band n3 | 1805 - 1880  (Note 4) | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band IV or E-UTRA Band 4 | 2110 - 2155 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band V or E-UTRA Band 5 or NR band n5 | 869 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VI or E-UTRA Band 6 | 875 - 885 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VII or E-UTRA Band 7 | 2620 - 2690 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VIII or E-UTRA Band 8 or NR band n8 | 925 - 960 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band IX or E-UTRA Band 9 | 1844.9 - 1879.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band X or E-UTRA Band 10 | 2110 - 2170 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XI or E-UTRA Band 11 | 1475.9 - 1495.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XII or E-UTRA Band 12 or NR band n12 | 729 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIIII or E-UTRA Band 13 or NR band n13 | 746 - 756 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIV or E-UTRA Band 14 or NR band n14 | 758 - 768 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 17 | 734 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 18 or NR band n18 | 860 - 875 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIX or E-UTRA Band 19 | 875 - 890 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XX or E-UTRA Band 20 or NR band n20 | 791 - 821 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXI or E-UTRA Band 21 | 1495.9 - 1510.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXII or E-UTRA Band 22 | 3510 - 3590 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 24 or NR band n24 | 1525 - 1559 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXV or E-UTRA Band 25 or NR band n25 | 1930 - 1995 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXVI or E-UTRA Band 26 or NR band n26 | 859 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 27 | 852 - 869 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 28 or NR band n28 | 758 - 803 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 29 or NR Band n29 | 717 - 728 | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier |
| E-UTRA Band 30 or NR band n30 | 2350 - 2360 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 31 | 462.5 - 467.5 | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier | |
| UTRA FDD Band XXXII or E-UTRA Band 32 | 1452 - 1496  (Note 5) | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier | |
| UTRA TDD Band a) or E-UTRA Band 33 | 1900-1920 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band a) or E-UTRA Band 34 or NR band n34 | 2010-2025 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band b) or E-UTRA Band 35 | 1850-1910 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band b) or E-UTRA Band 36 | 1930-1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band c) or E-UTRA Band 37 | 1910-1930 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band d) or E-UTRA Band 38 or NR band n38 | 2570-2620 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band f) or E-UTRA Band 39 or NR band n39 | 1880-1920 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band e) or E-UTRA Band 40 or NR band n40 | 2300-2400 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 41 or NR band n41 | 2496 - 2690 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 42 | 3400 - 3600 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 43 | 3600 - 3800 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 44 | 703 - 803 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 45 | 1447 - 1467 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 46 or NR Band n46 | 5150 - 5925 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 48 or NR Band n48 | 3550 - 3700 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 49 | 3550 - 3700 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 50 or NR band n50 | 1432 – 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 51 or NR band n51 | 1427– 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 53 or NR band n53 | 2483.5 – 2495 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 65 or NR band n65 | 2110 - 2200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 66 or NR band n66 | 2110 - 2200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 67 or NR band n67 | 738 - 758 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 68 | 753 - 783 | +16 | +8 | -6 | PREFSENS + x dB\* | CW carrier | |
| E-UTRA Band 69 | 2570 - 2620 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 70 or NR band n70 | 1995 - 2020 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 71 or or NR band n71 | 617 - 652 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 72 | 461 - 466 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 73 | 460 - 465 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 74 or NR band n74 | 1475 - 1518 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 75 or or NR band n75 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 76 or or NR band n76 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n77 | 3300 - 4200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n78 | 3300 - 3800 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n79 | 4400 - 5000 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 85 or NR band n85 | 728 – 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 87 | 420 - 425 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 88 | 422 - 427 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n91 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n92 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n93 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n94 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n96 | 5925 - 7125 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 103 | 757 – 758 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NOTE 1: PREFSENS depends on, the BS class and the channel bandwidth, see clause 7.2. "x" is equal to 6 in case of UTRA wanted signals.  NOTE 2: Some combinations of bands may not be possible to co-site based on the requirements above. The current state-of-the-art technology does not allow a single generic solution for co-location of UTRA TDD or E-UTRA TDD with E-UTRA FDD on adjacent frequencies for 30 dB BS-BS minimum coupling loss. However, there are certain site-engineering solutions that can be used. These techniques are addressed in TR 25.942 [21].  NOTE 3: In China, the blocking requirement for co-location with DCS1800 and Band III BS is only applicable in the frequency range 1805-1850 MHz.  NOTE 4: For a *TAB connector* operating in band XI or XXI, this requirement applies for interfering signal within the frequency range 1475.9-1495.9 MHz. | | | | | | | |

*------------------------------ Next modified sections ------------------------------*

#### 7.5.5.4 Single RAT E-UTRA operation

##### 7.5.5.4.1 General test requirement

For each measured E-UTRA carrier, the throughput shall be ≥ 95% of the *maximum throughput* of the reference measurement channel, with a wanted and an interfering signal coupled to BS antenna input using the parameters in tables 7.5.5.4.1-1, 7.5.5.4.1-2, 7.5.5.4.1-3 and 7.5.5.4.1-4. The reference measurement channel for the wanted signal is specified in tables 7.2.5.3-1, 7.2.5.3-2 and 7.2.5.3-3 for each channel bandwidth and further specified in TS 36.141 [17], Annex A.

The blocking requirement is always applicable outside the *Base Station RF Bandwidth* or *Maximum Radio Bandwidth*. The interfering signal offset is defined relative to the *Base Station RF Bandwidth edges* or *Maximum Radio Bandwidth* edges.

For a *TAB connector* operating in non-contiguous spectrum within any operating band, the blocking requirement applies in addition inside any *sub-block gap*, in case the *sub-block gap* size is at least as wide as twice the interfering signal minimum offset in table 7.6-2. The interfering signal offset is defined relative to the sub-block edges inside the *sub-block gap*.

For a *multi-band TAB connector*, the requirement in the in-band blocking frequency ranges applies for each supported operating band. The requirement applies in addition inside any *Inter RF Bandwidth gap*, in case the *Inter RF Bandwidth gap* size is at least as wide as twice the interfering signal minimum offset in table 7.6-2.

For a *multi-band TAB connector*, the requirement in the out-of-band blocking frequency ranges apply for each operating band, with the exception that the in-band blocking frequency ranges of all supported operating bands according to tables 7.5.5.4.1-1, 7.5.5.4.1-2 and 7.5.5.4.1-3 shall be excluded from the out-of-band blocking requirement.

Table 7.5.5.4.1-1: Blocking performance requirement for Wide Area BS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Operating Band | Centre Frequency of Interfering Signal (MHz) | | | Interfering Signal mean power (dBm) | Wanted Signal mean power (dBm)  (Note 1) | Interfering signal centre frequency minimum frequency offset from the lower/upper *Base Station RF Bandwidth edge* or sub-block edge inside a *sub-block gap* (MHz) | Type of Interfering Signal |
| 1-7, 9-11, 13, 14, 18, 19, 21-23, 24, 27, 30, 33-45, 48, 50, 52, 65, 66, 68, 70 | (FUL\_low -20) | to | (FUL\_high +20) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +20) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 8, 26, 28 | (FUL\_low -20) | to | (FUL\_high +10) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +10) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 12 | (FUL\_low -20) | to | (FUL\_high +13) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +13) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 17 | (FUL\_low -20) | to | (FUL\_high +18) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +18) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 20, 71 | (FUL\_low -11) | to | (FUL\_high +20) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +20) | to  to | (FUL\_low -11)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 25 | (FUL\_low -20) | to | (FUL\_high +15) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +15) | to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 31, 72, 73, 74 | (FUL\_low -20) | to | (FUL\_high +5) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +5) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 85 | (FUL\_low -20) | to | (FUL\_high +12) | -43 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +12) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| NOTE 1: PREFSENS depends on the channel bandwidth as specified in TS 36.104 [11], clause 7.2.1.  NOTE 2: For a *multi-band TAB connector*, in case of interfering signal that is not in the in-band blocking frequency range of the operating band where the wanted signal is present, or in the in-band blocking frequency range of an adjacent or overlapping operating band, the wanted signal mean power is equal to PREFSENS + 1.4 dB. | | | | | | | |

NOTE 1: Table 7.5.5.4.1-1 assumes that two operating bands, where the *downlink operating band* see clause 4.5 of one band would be within the in-band blocking region of the other band, are not deployed in the same geographical area.

Table 7.5.5.4.1-2: Blocking performance requirement for Local Area BS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Operating Band | Centre Frequency of Interfering Signal (MHz) | | | Interfering Signal mean power (dBm) | Wanted Signal mean power (dBm)  (Note 1) | Interfering signal centre frequency minimum frequency offset from the lower/upper *Base Station RF Bandwidth edge* or sub-block edge inside a *sub-block gap* (MHz) | Type of Interfering Signal |
| 1-7, 9-11, 13-14, 18,19,21-23, 24, 27, 30, 33-45, 48, 50, 51, 52, 65, 66, 68, 70 | (FUL\_low -20) | to | (FUL\_high +20) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +20) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 8, 26, 28 | (FUL\_low -20) | to | (FUL\_high +10) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +10) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 12 | (FUL\_low -20) | to | (FUL\_high +13) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +13) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 17 | (FUL\_low -20) | to | (FUL\_high +18) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +18) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 20, 71 | (FUL\_low -11) | to | (FUL\_high +20) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +20) | to  to | (FUL\_low -11)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 25 | (FUL\_low -20) | to | (FUL\_high +15) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +15) | to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 31, 72, 73, 74 | (FUL\_low -20) | to | (FUL\_high +5) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +5) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 85 | (FUL\_low -20) | to | (FUL\_high +12) | -35 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +12) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| NOTE 1: PREFSENS depends on the channel bandwidth as specified in TS 36.104 [11], clause 7.2.1.  NOTE 2: For a *multi-band TAB connector*, in case of interfering signal that is not in the in-band blocking frequency range of the operating band where the wanted signal is present, or in the in-band blocking frequency range of an adjacent or overlapping operating band, the wanted signal mean power is equal to PREFSENS + 1.4 dB. | | | | | | | |

NOTE 2: Table 7.5.5.4.1-2 assumes that two operating bands, where the *downlink operating band* see clause 4.5 of one band would be within the in-band blocking region of the other band, are not deployed in the same geographical area.

Table 7.5.5.4.1-3: Blocking performance requirement for Medium Range BS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Operating Band | Centre Frequency of Interfering Signal (MHz) | | | Interfering Signal mean power (dBm) | Wanted Signal mean power (dBm)  (Note 1) | Interfering signal centre frequency minimum frequency offset to the lower/upper *Base Station RF Bandwidth edge* or sub-block edge inside a *sub-block gap* (MHz) | Type of Interfering Signal |
| 1-7, 9-11, 13, 14, 18,19, 21-23, 24, 27, 30, 33-45, 48, 50, 52, 65, 66, 68, 70 | (FUL\_low -20) | to | (FUL\_high +20) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +20) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 8, 26, 28 | (FUL\_low -20) | to | (FUL\_high +10) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +10) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 12 | (FUL\_low -20) | to | (FUL\_high +13) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +13) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 17 | (FUL\_low -20) | to | (FUL\_high +18) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +18) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 20, 71 | (FUL\_low -11) | to | (FUL\_high +20) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +20) | to  to | (FUL\_low -11)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 25 | (FUL\_low -20) | to | (FUL\_high +15) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +15) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 31, 72, 73, 74 | (FUL\_low -20) | to | (FUL\_high +5) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +5) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| 85 | (FUL\_low -20) | to | (FUL\_high +12) | -38 | PREFSENS +6 dB (Note 2) | See table 7.5.5.4.1-4 | See table 7.5.5.4.1-4 |
|  | 1  (FUL\_high +12) | to  to | (FUL\_low -20)  12750 | -15 | PREFSENS +6 dB | ⎯ | CW carrier |
| NOTE 1: PREFSENS depends on the channel bandwidth as specified in TS 36.104 [11], clause 7.2.1.  NOTE 2: For a *multi-band TAB connector*, in case of interfering signal that is not in the in-band blocking frequency range of the operating band where the wanted signal is present, or in the in-band blocking frequency range of an adjacent or overlapping operating band, the wanted signal mean power is equal to PREFSENS + 1.4 dB. | | | | | | | |

*------------------------------ Next modified sections ------------------------------*

##### 7.5.5.4.2 Co-location with other base stations

This additional blocking requirement may be applied for the protection of E-UTRA receiver units associated with the *TAB connectors* under test when GSM, CMDA, UTRA or E-UTRA BS operating in a different frequency band are co-located with an E-UTRA BS. The requirement is applicable to all channel bandwidths supported by the E-UTRA BS.

The requirements in this clause assume a 30 dB coupling loss between interfering transmitter and E-UTRA BS receiver and are based on co-location with base stations of the same class.

For each measured E-UTRA carrier, the throughput shall be ≥ 95% of the *maximum throughput* of the reference measurement channel, with a wanted and an interfering signal coupled to the *TAB connector* using the parameters in table 7.5.5.4.2-1 for AAS BS of Wide Area BS class, in table 7.5.5.4.2-2 for AAS BS of Local Area BS class and in table 7.5.5.4.2-3 for AAS BS of Medium Range BS class. The reference measurement channel for the wanted signal is specified in tables 7.2.5.3-1, 7.2.5.3-2 and 7.2.5.3-4 for each channel bandwidth and further specified in annex A of TS 36.141 [17].

Table 7.5.5.4.2-1: Blocking performance requirement for E-UTRA when co-located with BS in other frequency bands

| Type of co-located BS | Centre Frequency of Interfering Signal (MHz) | Interfering Signal mean power for WA BS (dBm) | Interfering Signal mean power for MR BS (dBm) | Interfering Signal mean power for LA BS (dBm) | Wanted Signal mean power (dBm)  (Note 1) | Type of Interfering Signal | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| GSM850 or CDMA850 | 869 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| GSM900 | 921 - 960 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| DCS1800 | 1805 - 1880  (Note 4) | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| PCS1900 | 1930 - 1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band I or E-UTRA Band 1 or NR band n1 | 2110 - 2170 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band II or E-UTRA Band 2 or NR band n2 | 1930 - 1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band III or E-UTRA Band 3 or NR band n3 | 1805 - 1880  (Note 4) | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band IV or E-UTRA Band 4 | 2110 - 2155 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band V or E-UTRA Band 5 or NR band n5 | 869 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VI or E-UTRA Band 6 | 875 - 885 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VII or E-UTRA Band 7 | 2620 - 2690 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band VIII or E-UTRA Band 8 or NR band n8 | 925 - 960 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band IX or E-UTRA Band 9 | 1844.9 - 1879.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band X or E-UTRA Band 10 | 2110 - 2170 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XI or E-UTRA Band 11 | 1475.9 - 1495.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XII or E-UTRA Band 12 or NR band n12 | 729 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIIII or E-UTRA Band 13 or NR band n13 | 746 - 756 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIV or E-UTRA Band 14 or NR band n14 | 758 - 768 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 17 | 734 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 18 or NR band n18 | 860 - 875 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XIX or E-UTRA Band 19 | 875 - 890 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XX or E-UTRA Band 20 or NR band n20 | 791 - 821 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXI or E-UTRA Band 21 | 1495.9 - 1510.9 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXII or E-UTRA Band 22 | 3510 - 3590 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 24 or NR band n24 | 1525 - 1559 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXV or E-UTRA Band 25 or NR band n25 | 1930 - 1995 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA FDD Band XXVI or E-UTRA Band 26 or NR band n26 | 859 - 894 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 27 | 852 - 869 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 28 or NR band n28 | 758 - 803 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 29 or NR Band n29 | 717 - 728 | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier |
| E-UTRA Band 30 or NR band n30 | 2350 - 2360 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 31 | 462.5 - 467.5 | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier | |
| UTRA FDD Band XXXII or E-UTRA Band 32 | 1452 - 1496  (Note 5) | +16 | +8 | -6 | PREFSENS + 6 dB | CW carrier | |
| UTRA TDD Band a) or E-UTRA Band 33 | 1900-1920 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band a) or E-UTRA Band 34 or NR band n34 | 2010-2025 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band b) or E-UTRA Band 35 | 1850-1910 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band b) or E-UTRA Band 36 | 1930-1990 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band c) or E-UTRA Band 37 | 1910-1930 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band d) or E-UTRA Band 38 or NR band n38 | 2570-2620 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band f) or E-UTRA Band 39 or NR band n39 | 1880-1920 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| UTRA TDD Band e) or E-UTRA Band 40 or NR band n40 | 2300-2400 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 41 or NR band n41 | 2496 - 2690 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 42 | 3400 - 3600 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 43 | 3600 - 3800 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 44 | 703 - 803 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 45 | 1447 - 1467 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 46 or NR Band n46 | 5150 - 5925 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 48 or NR Band n48 | 3550 - 3700 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 50 or NR band n50 | 1432 – 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 51 or NR band n51 | 1427– 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 52 | 3300 - 3400 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 53 or NR Band n53 | 2483.5 - 2495 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 65 or NR band n65 | 2110 - 2200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 66 or NR band n66 | 2110 - 2200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 67 or NR band n67 | 738 - 758 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 68 | 753 - 783 | +16 | +8 | -6 | PREFSENS + x dB\* | CW carrier | |
| E-UTRA Band 69 | 2570 - 2620 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 70 or NR band n70 | 1995 - 2020 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 71 or or NR band n71 | 617 - 652 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 72 | 461 - 466 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 73 | 460 - 465 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 74 or NR band n74 | 1475 - 1518 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 75 or or NR band n75 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 76 or or NR band n76 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n77 | 3300 - 4200 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n78 | 3300 - 3800 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n79 | 4400 - 5000 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 85 or NR band n85 | 728 - 746 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 87 | 420 - 425 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 88 | 422 - 427 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n91 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n92 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n93 | 1427 - 1432 | N/A | N/A | -6 | PREFSENS + x dB | CW carrier | |
| NR band n94 | 1432 - 1517 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NR band n96 | 5925 - 7125 | N/A | +8 | -6 | PREFSENS + x dB | CW carrier | |
| E-UTRA Band 103 | 757 – 758 | +16 | +8 | -6 | PREFSENS + x dB | CW carrier | |
| NOTE 1: PREFSENS depends on the BS class and the channel bandwidth, see clause 7.2. "x" is equal to 6 in case of E-UTRA wanted signals.  NOTE 2: Except for a *TAB connector* operating in Band 13, these requirements do not apply when the interfering signal falls within any of the supported *uplink operating band* or in the 10 MHz immediately outside any of the supported *uplink operating band*. For a *TAB connector* operating in band 13 the requirements do not apply when the interfering signal falls within the frequency range 768-797MHz.  NOTE 3: Some combinations of bands may not be possible to co-site based on the requirements above. The current state-of-the-art technology does not allow a single generic solution for co-location of UTRA TDD or E-UTRA TDD with E-UTRA FDD on adjacent frequencies for 30 dB BS-BS minimum coupling loss. However, there are certain site-engineering solutions that can be used. These techniques are addressed in TR 25.942 [21].  NOTE 4: In China, the blocking requirement for co-location with DCS1800 and Band III BS is only applicable in the frequency range 1805-1850 MHz.  NOTE 5: For a *TAB connector* operating in band 11 or 21, this requirement applies for interfering signal within the frequency range 1475.9-1495.9 MHz.  NOTE 6: Co-located TDD base stations that are synchronized and using the same or adjacent operating band can receive without special co-location requirements. For unsynchronized base stations, special co-location requirements may apply that are not covered by the 3GPP specifications. | | | | | | | |

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