LAMPIRAN II
KEPUTUSAN MENTERI KOMUNIKASI DAN
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TENTANG
STANDAR TEKNIS ALAT TELEKOMUNIKASI
DAN/ATAU PERANGKAT TELEKOMUNIKASI
BERGERAK SELULER BERBASIS STANDAR
TEKNOLOGI LONG TERM EVOLUTION DAN
STANDAR TEKNOLOGI *INTERNATIONAL MOBILE TELECOMMUNICATIONS-2020*

STANDAR TEKNIS ALAT TELEKOMUNIKASI DAN/ATAU PERANGKAT
TELEKOMUNIKASI *BASE STATION* BERBASIS STANDAR TEKNOLOGI
LONG TERM EVOLUTION

BAB I
KETENTUAN UMUM

A. Definisi
    1. Perangkat Telekomunikasi *Base Station* (BS) Berbasis Standar
        Teknologi *Long Term Evolution*, yang selanjutnya disebut BS LTE
        adalah perangkat yang berfungsi untuk menyediakan konektivitas,
        manajemen, dan kontrol terhadap *Subscriber Station*, termasuk
        antenanya yang berbasis pada teknologi radio akses yang
        dikembangkan oleh *The 3rd Generation Partnership Project* (3GPP)
        untuk jaringan *mobile* LTE yang memenuhi spesifikasi *International
        Mobile Telecommunications Advanced* (IMT-Advanced).
    2. *BS Single Standard Radio LTE* (BS SSR LTE) yang adalah BS yang
        beroperasi hanya untuk jaringan *mobile LTE.*
    3. *BS Multi Standard Radio LTE* (BS MSR LTE) adalah BS yang beroperasi
        hanya untuk jaringan *mobile 4G* sendiri atau jaringan *mobile LTE*
        bersama dengan jaringan *mobile* lainnya dengan persyaratan yang
        harus dipenuhi berupa persyaratan *conducted* pada tiap-tiap konektor
        antena.

4. BS *Multi Standard Radio* LTE dengan *Antenna Active Systems* (BS MSR LTE-AAS) adalah BS yang beroperasi hanya untuk jaringan *mobile* 4G sendiri atau jaringan *mobile* LTE bersama dengan jaringan *mobile* lainnya dengan persyaratan yang harus dipenuhi berupa persyaratan *conducted* pada tiap-tiap konektor antena dan OTA pada *Radiated Interface Boundary* (RIB) atau hanya OTA pada *Radiated Interface Boundary* (RIB).

5. *BS Output Power* adalah level *power* rata-rata per *carrier* yang dinyatakan oleh pembuat perangkat yang terdapat pada konektor antena perangkat selama pemancar ON.

6. *Adjacent Channel Leakage Power Ratio* yang selanjutnya disebut ACLR adalah rasio dari *power* rata-rata terfilter pada kanal frekuensi sendiri terhadap *power* rata-rata terfilter di wilayah frekuensi di sampingnya.

7. *Operating Band Unwanted Emission Limits* adalah *unwanted emission* pada tiap *band* operasi downlink ditambah Δf_{OBUE} di atas dan Δf_{OBUE} di bawah.

8. *Transmit Spurious Emission* adalah emisi pada satu atau beberapa titik frekuensi radio yang berada di luar lebar kanal yang dibutuhkan (*necessary bandwidth*) dan besarnya dapat diturunkan tanpa berdampak pada transmisi informasi terkait, termasuk pada kategori *spurious emission* adalah *harmonic emissions*, *parasitic emissions*, *intermodulation products*, dan *frequency conversion products*.

9. *Reference Sensitivity Level* adalah adalah daya rata-rata minimum yang diterima pada tiap-tiap port antena BS untuk semua kategori SS LTE yang harus menghasilkan *throughput* lebih dari atau sama dengan 95% dari *throughput* maksimum yang didapat dengan pengukuran referensi (*reference measurement channel*) dengan parameter yang telah didefinisikan.

10. *Receiver Spurious Emission* adalah *power* emisi terbangkitkan atau terkuatkan di penerima yang muncul di konektor antena.

11. *Receiver Intermodulation* adalah ukuran kemampuan perangkat untuk menerima *wanted signal* pada kanal yang ditentukan dengan adanya dua *Interfering Signals* yang memiliki hubungan dengan *wanted signal*.

12. *Wide Area Base Stations* diperuntukkan untuk skenario *Macro Cell* dengan *minimum coupling loss* antara BS dan SS sebesar 70 dB.

13. *Medium Range Base Stations* diperuntukkan untuk skenario *Micro Cell* dengan *minimum coupling loss* antara BS dan SS sebesar 53 dB.

14. *Local Area Base Stations* diperuntukkan untuk skenario *Pico Cell* dengan *minimum coupling loss* antara BS dan SS sebesar 45 dB.

15. *Home Base Stations* diperuntukkan untuk skenario *Femto Cell*.

16. Direktur Jenderal adalah Direktur Jenderal Sumber Daya dan Perangkat Pos dan Informatika.

B. Singkatan

1.	3GPP	:	*The 3rd Generation Partnership Project*
2.	AAS	:	*Antenna Active Systems*
3.	AC	:	*Alternating Current*
4.	ACLR	:	*Adjacent Channel Leakage Ratio*
5.	BS	:	*Base Station*
6.	BW	:	*Bandwidth*
7.	CISPR	:	*Comité Internationale Spécial des Perturbations Radioelectrotechnique*
8.	CW	:	*Continuous Wave*
9.	dB	:	*decibel*
10.	dBm	:	*decibel-milliwatts*
11.	DC	:	*Direct Current*
12.	EMC	:	*Electromagnetic Compatibility*
13.	EN	:	*European Standard*
14.	ETSI	:	*European Telecommunications Standards Institute*
15.	E-UTRA	:	*Evolved UMTS Terrestrial Radio Access*
16.	f	:	*Frequency*
17.	FDD	:	Frequency Division Duplex
18.	FRC	:	*Fixed Reference Channel*
19.	GHz	:	*Giga Hertz*
20.	Hz	:	*Hertz*
21.	IEC	:	*International Electrotechnical Commission*
22.	kHz	:	*kilo Hertz*
23.	Mcps	:	*Megachips-per-second*
24.	MHz	:	*Mega Hertz*
25.	MSR	:	*Multi Standard Radio*
26.	NB-IoT	:	*Narrowband – Internet of Things*

27.	NR	:	*New Radio*
28.	OTA	:	*Over-The-Air*
29.	OBUE	:	*Operating Band Unwanted Emissions*
30.	P	:	*Power*
31.	RB	:	*Resource Block*
32.	RF	:	*Radio Frequency*
33.	RIB	:	*Radiated Interface Boundary*
34.	RRC	:	*Root Raised Cosine*
35.	SELV	:	*Safety Extra Low Voltage*
36.	SNI	:	*Standar Nasional Indonesia*
37.	SS	:	*Subscriber Station*
38.	SSR	:	*Single Standard Radio*
39.	TDD	:	*Time Division Duplex*
40.	TS	:	*Technical Specification*
41.	UTRA	:	*UMTS Terrestrial Radio Access*
42.	V	:	Volt

BAB II

PERSYARATAN TEKNIS

A. Persyaratan Umum

1. Catu Daya

BS LTE dapat dicatu dengan daya AC atau DC.

Untuk BS LTE yang dicatu daya AC, semua tolok ukur parameter harus terpenuhi saat menggunakan catu daya tegangan AC 220 V ± 10% dan frekuensi 50 Hz ± 2%. Bila menggunakan catu daya eksternal (misalnya *converter* daya AC/DC), catu daya eksternal tidak boleh mempengaruhi kemampuan perangkat untuk memenuhi semua tolok ukur parameter teknis.

2. Persyaratan Keselamatan Listrik

Penilaian keselamatan listrik perangkat harus memenuhi persyaratan yang ditentukan dalam SNI IEC 60950-1:2016, SNI IEC 62368-1:2014, atau IEC 62368-1 dengan parameter yang harus dipenuhi adalah:

a. tegangan berlebih atau kuat listrik atau kuat dielektrik; dan

b. arus bocor atau arus sentuh.

Pengujian parameter dilakukan berdasarkan asumsi berikut:

a. Perangkat dicatu secara terus-menerus dengan sebuah catu daya eksternal khusus (konverter AC/DC atau adaptor/pengisi daya) atau dengan catu daya AC; dan

b. Perangkat beroperasi dengan SELV pada lingkungan dimana kelebihan tegangan dari jaringan telekomunikasi tidak mungkin terjadi. SELV merujuk pada tegangan yang tidak melebihi 42,4 V puncak atau 60 V DC.

Untuk penilaian keselamatan Perangkat Telekomunikasi BS LTE yang dilakukan dengan pendekatan berbasis risiko, proses yang ditentukan dalam IEC 62368-1 berikut harus digunakan:

a. Identifikasi sumber energi dalam Perangkat Telekomunikasi BS LTE;

b. Klasifikasi sumber energi (dampak pada tubuh atau material yang mudah terbakar, seperti kemungkinan cedera atau pengapian);

c. Identifikasi usaha perlindungan terhadap sumber energi; dan

d. Mempertimbangkan efektifitas usaha perlindungan dengan mempertimbangkan kriteria pemenuhan atau standar yang ditentukan dalam standar IEC 62368-1

3. Persyaratan EMC

BS LTE harus diklasifikasikan sebagai *fixed equipment,* atau *vehicular equipment. Fixed equipment* adalah perangkat yang dipasang secara tetap (*fixed location permanently*) atau dicatu daya menggunakan catu daya AC. *Vehicular equipment* adalah perangkat yang digunakan dalam kendaraan dan dicatu daya menggunakan baterai utama kendaraan.

a. Kekebalan

Persyaratan kekebalan sesuai dengan peraturan perundang-undangan yang berlaku.

b. Emisi

i. BS LTE wajib memenuhi SNI IEC CISPR 32:2015, IEC CISPR 32, atau ETSI EN 301 489-50 yang merujuk pada ETSI EN 301 489-1.

ii. Pengukuran emisi berikut ini harus dilakukan pada BS LTE apabila memungkinkan sesuai SNI IEC CISPR 32:2015, IEC CISPR 32, atau ETSI EN 301 489-50:

1) Emisi radiasi pada *enclosure of ancillary equipment* yang tidak tergabung dengan perangkat harus memenuhi persyaratan yang ditentukan pada Tabel A.4 dan A.5 untuk kelas B dan Tabel A.2 dan A.3 untuk kelas A pada SNI IEC CISPR 32:2015. Klasifikasi kelas A dan B sesuai dengan klausul 4 pada SNI IEC CISPR 32:2015;

2) Emisi konduksi pada port daya DC untuk *fixed equipment* dan *vehicular equipment* harus memenuhi persyaratan yang ditentukan pada Tabel A.9 pada SNI IEC CISPR 32:2015;

3) Emisi konduksi pada port daya AC untuk *fixed equipment* harus memenuhi persyaratan yang ditentukan pada Tabel A.9 untuk kelas A atau A.10 untuk kelas B pada SNI IEC CISPR 32:2015 (peralatan dengan port daya DC yang ditenagai oleh converter daya AC/DC khusus atau adaptor yang didefinisikan sebagai peralatan bertenaga listrik AC [Klausul 3.1.1 dari SNI IEC CISPR 32:2015]). Klasifikasi kelas A dan B sesuai dengan klausul 4 pada SNI IEC CISPR 32:2015;

4) Emisi konduksi pada port jaringan kabel (*wired network port*) untuk *fixed equipment* harus memenuhi persyaratan yang ditentukan pada Tabel A.11 untuk kelas A atau A.12 untuk kelas B pada SNI IEC CISPR 32:2015. Klasifikasi kelas A dan B sesuai dengan klausul 4 pada SNI IEC CISPR 32:2015.

B. Persyaratan Utama

Persyaratan utama yang wajib dipenuhi BS LTE dengan parameter sebagai berikut:

1. Frekuensi Kerja

BS LTE hanya dapat beroperasi pada pita frekuensi radio yang tertera pada Tabel 1.

Tabel 1. Frekuensi Kerja BS LTE.

E-UTRA *operating band*	Uplink (MHz)	Downlink (MHz)	Mode Dupleks
1	1920 MHz – 1980 MHz	2110 MHz – 2170 MHz	FDD
3	1710 MHz – 1785 MHz	1805 MHz – 1880 MHz	FDD
5	824 MHz – 849 MHz	869 MHz – 894 MHz	FDD
8	880 MHz – 915 MHz	925 MHz – 960 MHz	FDD
28	703 MHz – 748 MHz	758 MHz – 803 MHz	FDD
40	2300 MHz – 2400 MHz		TDD
41	2496 MHz – 2690 MHz		TDD
42	3400 MHz – 3600 MHz		TDD

2. Lebar kanal (*Channel Bandwidth*)

    Lebar pita *(bandwidth)* transmisi untuk setiap kanal (*channel bandwidth*) adalah:

    a. 1,4 MHz;

    b. 3 MHz;

    c. 5 MHz;

    d. 10 MHz;

    e. 15 MHz; atau

    f.   20 MHz.

3. BS LTE digolongkan sebagai salah satu dari *Wide Area BS*, *Medium Range BS*, *Local Area BS*, atau *Home BS*.

4. Parameter Uji

    BS LTE harus memenuhi Parameter uji sesuai dengan tipenya:

    a. Tabel 2 untuk BS SSR LTE;

    b. Tabel 57 untuk BS MSR LTE; atau

    c. Tabel 58 untuk BS MSR LTE-AAS.

Tabel 2. Parameter Uji dan Batas Nilai BS SSR LTE

Parameter Uji	Batas Nilai
Base station Output Power	Sesuai dengan: a) Tabel 3; b) Klausul 6.2 ETSI TS 136 104; c) Klausul 4.2.5 ETSI EN 301 908-14; atau d) Klausul 6.2 pada dokumen ETSI TS 136 141
ACLR	Sesuai dengan: a) Tabel 4 sampai dengan Tabel 6; b) Klausul 6.6.2 ETSI TS 136 104; c) Klausul 4.2.3 ETSI EN 301 908-14; atau d) Klausul 6.6.2 pada dokumen ETSI TS 136 141
Operating Band Unwanted Emissions	Sesuai dengan: a) Tabel 7 sampai dengan Tabel 42; b) Klausul 6.6.3 ETSI TS 136 104; c) Klausul 4.2.2 ETSI EN 301 908-14; atau d) Klausul 6.6.3 pada dokumen ETSI TS 136 141
Transmitter Spurious Emission [3] [4]	Sesuai dengan: a) Tabel 43 sampai dengan 46; b) Klausul 6.6.4 ETSI TS 136 104; c) Klausul 4.2.4 ETSI EN 301 908-14; atau d) Klausul 6.6.4 pada dokumen ETSI TS 136 141
Reference Sensitivity Level	Sesuai dengan: a) *Throughput* ≥ 95 % dari *throughput* maksimal dengan referensi pengukuran sesuai dengan Tabel 47 sampai dengan Tabel 50; b) Klausul 7.2 ETSI TS 136 104; c) Klausul 4.2.14 ETSI EN 301 908-14; atau Klausul 7.2 pada dokumen ETSI TS 136 141
Receiver Spurious Emission	Sesuai dengan: a) Tabel 51; b) Klausul 7.7 ETSI TS 136 104; c) Klausul 4.2.7 ETSI EN 301 908-14; atau d) Klausul 7.7 pada dokumen ETSI TS 136 141
Receiver Intermodulation	Sesuai dengan: a) *Throughput* ≥ 95 % dari *throughput* maksimal dengan referensi pengukuran sesuai dengan Tabel 52 sampai dengan Tabel 56; b) Klausul 7.8 ETSI TS 136 104; c) Klausul 4.2.9 ETSI EN 301 908-14; atau d) Klausul 7.8 pada dokumen ETSI TS 136 141
Radiated Emission	Sesuai dengan: a) Klausul 4.2.3 ETSI EN 301 908-1; b) Klausul 8.2.1 ETSI TS 136 113; atau c) Klausul 8.2.1 3GPP TS 36.113
Catatan: 1) ETSI TS 136 141 dapat diganti dengan 3GPP TS 36.141 2) ETSI TS 136 104 dapat diganti dengan 3GPP TS 36.104 3) Parameter *Transmitter Spurious Emission* untuk *Co-location* dengan BS lain termasuk *voluntary*. 4) Batasan nilai *spurious emissions* untuk BS yang bekerja pada pita frekuensi radio 3,5 GHz mengacu pada Lampiran Keputusan Menteri ini dan regulasi lain yang terkait.	

Tabel 3. Batas Nilai *Base Station Output Power*

Limit Condition	*Output Power*	*Carrier Frequency*
Normal	+2,7 dB dan -2,7 dB dari daya keluaran rata-rata yang dinyatakan oleh pembuat perangkat	f ≤ 3,0 GHz
	+3,0 dB dan -3,0 dB dari daya keluaran rata-rata yang dinyatakan oleh pembuat perangkat	3,0 GHz < f < 4,2 GHz

Tabel 4. Batas Nilai ACLR

No	*BS type*	*ACLR Limits*
1	Wide Area BS	-15 dBm/MHz; atau Tabel 5 dan Tabel 6
2	Medium Range BS	-25 dBm/MHz; atau Tabel 5 dan Tabel 6
3	Local Area bs	-32 dBm/MHz; atau Tabel 5 dan Tabel 6
4	Home BS	-50 dBm/MHz; atau Tabel 5 dan Tabel 6

Tabel 5. *Base Station* ACLR *in paired spectrum*

Channel bandwidth of E-UTRA lowest/highest carrier transmitted $BW_{Channel}$ (MHz)	BS adjacent channel centre frequency offset below the lowest or above the highest carrier centre frequency transmitted	Assumed adjacent channel carrier (informative)	Filter on the adjacent channel frequency and corresponding filter bandwidth	ACLR limit
1,4; 3; 5; 10; 15; 20	$BW_{Channel}$	E-UTRA of same BW	Square (BW_{Config})	44,2 dB
	2 x $BW_{Channel}$	E-UTRA of same BW	Square (BW_{Config})	44,2 dB
	$BW_{Channel}/2 + 2,5$ MHz	3,84 Mcps UTRA	RRC (3,84 Mcps)	44,2 dB
	$BW_{Channel}/2 + 7,5$ MHz	3,84 Mcps UTRA	RRC (3,84 Mcps)	44,2 dB

NOTE 1: $BW_{Channel}$ and BW_{Config} are the channel bandwidth and transmission bandwidth configuration of the E-UTRA lowest/highest carrier transmitted on the assigned channel frequency.

NOTE 2: The RRC filter shall be equivalent to the transmit pulse shape filter defined in ETSI TS 125 104 [2], with a chip rate as defined in this table.

Tabel 6. *Base Station* ACLR *in unpaired spectrum with synchronized operation*

Channel bandwidth of E-UTRA lowest/highest carrier transmitted $BW_{Channel}$ (MHz)	BS adjacent channel centre frequency offset below lowest or above the highest carrier centre frequency transmitted	Assumed adjacent channel carrier (informative)	Filter on the adjacent channel frequency and corresponding filter bandwidth	ACLR limit
1,4; 3	$BW_{Channel}$	E-UTRA of same BW	Square (BW_{Config})	44,2 dB
	$2 \times BW_{Channel}$	E-UTRA of same BW	Square (BW_{Config})	44,2 dB
	$BW_{Channel}/2 + 0,8$ MHz	1,28 Mcps UTRA	RRC (1,28 Mcps)	44,2 dB
	$BW_{Channel}/2 + 2,4$ MHz	1,28 Mcps UTRA	RRC (1,28 Mcps)	44,2 dB
5; 10; 15; 20	$BW_{Channel}$	E-UTRA of same BW	Square (BW_{Config})	44,2 dB
	$2 \times BW_{Channel}$	E-UTRA of same BW	Square (BW_{Config})	44,2 dB
	$BW_{Channel}/2 + 0,8$ MHz	1,28 Mcps UTRA	RRC (1,28 Mcps)	44,2 dB
	$BW_{Channel}/2 + 2,4$ MHz	1,28 Mcps UTRA	RRC (1,28 Mcps)	44,2 dB
	$BW_{Channel}/2 + 2,5$ MHz	3,84 Mcps UTRA	RRC (3,84 Mcps)	44,2 dB

Channel bandwidth of E-UTRA lowest/highest carrier transmitted $BW_{Channel}$ (MHz)	BS adjacent channel centre frequency offset below lowest or above the highest carrier centre frequency transmitted	Assumed adjacent channel carrier (informative)	Filter on the adjacent channel frequency and corresponding filter bandwidth	ACLR limit
	$BW_{Channel}/2 + 7,5$ MHz	3,84 Mcps UTRA	RRC (3,84 Mcps)	44,2 dB
	$BW_{Channel}/2 + 5$ MHz	7,68 Mcps UTRA	RRC (7,68 Mcps)	44,2 dB
	$BW_{Channel}/2 + 15$ MHz	7,68 Mcps UTRA	RRC (7,68 Mcps)	44,2 dB
NOTE 1: $BW_{Channel}$ and BW_{Config} are the channel bandwidth and transmission bandwidth configuration of the E-UTRA lowest/highest carrier transmitted on the assigned channel frequency. NOTE 2: The RRC filter shall be equivalent to the transmit pulse shape filter defined in ETSI TS 125 ETSI TS 125 105 [3], with a chip rate as defined in this table.				

Tabel 7. *Wide Area* BS *operating band unwanted emission limits for 1,4 MHz channel bandwidth (E UTRA bands 3 & 8)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 0,05 MHz	0,015 MHz ≤ f_offset < 0,065 MHz	$6,5\,\text{dBm} - 60 \times \left(\frac{f_{offset}}{MHz} - 0,015 \right)\,\text{dB}$	30 kHz
0,05 MHz ≤ Δf < 0,15 MHz	0,065 MHz ≤ f_offset < 0,165 MHz	$3,5\,\text{dBm} - 160 \times \left(\frac{f_{offset}}{MHz} - 0,065 \right)\,\text{dB}$	30 kHz
0,15 MHz ≤ Δf < 0,2 MHz	0,165 MHz ≤ f_offset < 0,215 MHz	-12,5 dBm	30 kHz
0,2 MHz ≤ Δf < 1 MHz	0,215 MHz ≤ f_offset < 1,015 MHz	$-12,5\,\text{dBm} - 15 \times \left(\frac{f\_offset}{MHz} - 0,215 \right)\,\text{dB}$	30 kHz
	1,015 MHz ≤ f_offset < 1,5 MHz	-24,5 dBm	30 kHz
1 MHz ≤ Δf ≤ 2,8 MHz	1,5 MHz ≤ f_offset < 3,3 MHz	-11,5 dBm	1 MHz
2,8 MHz ≤ Δf ≤ $Δf_{max}$	3,3 MHz ≤ f_offset < f_offset_{max}	-15 dBm	1 MHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ⃞f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -15 dBm/1 MHz. NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 8. *Wide Area* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth (*E UTRA *bands 3 & 8)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 0,05 MHz	0,015 MHz ≤ f_offset < 0,065 MHz	$6,5\,\text{dBm} - 60 \times \left(\dfrac{f_{offset}}{MHz} - 0,015 \right) \text{dB}$	30 kHz
0,05 MHz ≤ Δf < 0,15 MHz	0,065 MHz ≤ f_offset < 0,165 MHz	$3,5\,\text{dBm} - 160 \times \left(\dfrac{f_{offset}}{MHz} - 0,065 \right) \text{dB}$	30 kHz
0,15 MHz ≤ Δf < 0,2 MHz	0,165 MHz ≤ f_offset < 0,215 MHz	-12,5 dBm	30 kHz
0,2 MHz ≤ Δf < 1 MHz	0,215 MHz ≤ f_offset < 1,015 MHz	$-12,5\,\text{dBm} - 15 \times \left(\dfrac{f\_offset}{MHz} - 0,215 \right) \text{dB}$	30 kHz
	1,015 MHz ≤ f_offset < 1,5 MHz	-24,5 dBm	30 kHz
1 MHz ≤ Δf ≤ 6 MHz	1,5 MHz ≤ f_offset < 6,5 MHz	-11,5 dBm	1 MHz
6 MHz ≤ Δf ≤ Δf_max	6,5 MHz ≤ f_offset < f_offset_max	-15 dBm	1 MHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz.

NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.

Tabel 9. *Wide Area* BS *operating band unwanted emission limits for 5* MHz*, 10* MHz*, 15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands 1, 3, 8)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1, 2 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 0,2 MHz	0,015 MHz ≤ f_offset < 0,215 MHz	-12,5 dBm	30 kHz
0,2 MHz ≤ Δf < 1 MHz	0,215 MHz ≤ f_offset < 1,015 MHz	$-12,5\,\text{dBm} - 15 \times \left(\dfrac{f\_offset}{MHz} - 0,215 \right) \text{dB}$	30 kHz
	1,015 MHz ≤ f_offset < 1,5 MHz	-24,5 dBm	30 kHz
1 MHz ≤ Δf ≤ min(10 MHz, Δf_max)	1,5 MHz ≤ f_offset < min(10,5 MHz, f_offset_max)	-11,5 dBm	1 MHz
10 MHz ≤ Δf ≤ Δf_max	10,5 MHz ≤ f_offset < f_offset_max	-15 dBm	1 MHz

NOTE 1: The requirement is not applicable when Δf_max < 10 MHz.

NOTE 2: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz.

NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.

Tabel 10. *Wide Area* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E UTRA *bands* 40 & 41*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$+0,5 \text{ dBm} - \frac{10}{1,4} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-9,5 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf$_{max}$	3,3 MHz ≤ f_offset < f_offset$_{max}$	-15 dBm	1 MHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz. NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 11. *Wide Area* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E UTRA *bands 42)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$+0,8 \text{ dBm} - \frac{10}{1,4} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-9,2 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf$_{max}$	3,3 MHz ≤ f_offset < f_offset$_{max}$	-15 dBm	1 MHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz. NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 12. *Wide Area* BS *operating band unwanted emission limits*
for 3 MHz *channel bandwidth (*E UTRA *bands 40 & 41)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-3{,}5\,\text{dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right) \text{dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-13,5 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf$_{max}$	6,5 MHz ≤ f_offset < f_offset$_{max}$	-15 dBm	1 MHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is □f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz. NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 13. *Wide Area* BS *operating band unwanted emission limits*
for 3 MHz *channel bandwidth (*E UTRA *bands 42)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-3{,}2\,\text{dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right) \text{dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-13,2 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf$_{max}$	6,5 MHz ≤ f_offset < f_offset$_{max}$	-15 dBm	1 MHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is □f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz. NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 14. *Wide Area* BS *operating band unwanted emission limits for 5* MHz, *10* MHz, *15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands 40 & 41)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1, 2 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-5,5 \, \text{dBm} - \frac{7}{5} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf_{max})	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	-12,5 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf_{max}	10,5 MHz ≤ f_offset < f_offset$_{max}$	-15 dBm	1 MHz
NOTE 1: The requirement is not applicable when Δf_{max} < 10 MHz.			
NOTE 2: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz.			
NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 15. *Wide Area* BS *operating band unwanted emission limits for 5* MHz, *10* MHz, *15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands 42)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1, 2 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-5,2 \, \text{dBm} - \frac{7}{5} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf_{max})	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	-12,2 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf_{max}	10,5 MHz ≤ f_offset < f_offset$_{max}$	-15 dBm	1 MHz
NOTE 1: The requirement is not applicable when Δf_{max} < 10 MHz.			
NOTE 2: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be-15 dBm/1 MHz.			
NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap, where the contribution from the far-end sub-block or Base Station RF Bandwidth shall be scaled according to the measurement bandwidth of the near-end sub-block or Base Station RF Bandwidth.			

Tabel 16. *Wide Area* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E UTRA *band 28)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$+0,5 \text{ dBm} - \frac{10}{1,4} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-9,5 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf_max	2,85 MHz ≤ f_offset < f_offset_max	-16 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -16 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 17. *Wide Area* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth (*E UTRA *band 28)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-3,5 \text{ dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-13,5 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf_max	6,05 MHz ≤ f_offset < f_offset_max	-16 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -16 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 18. *Wide Area* BS *operating band unwanted emission limits for 5* MHz*, 10* MHz*, 15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *band 28)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1, 2 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-5,5 \text{ dBm} - \frac{7}{5} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
5 MHz ≤ Δf < 10 MHz	5,05 MHz ≤ f_offset < 10,05 MHz	-12,5 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf_max	10,05 MHz ≤ f_offset < f_offset_max	-16 dBm	100 kHz
NOTE 1: The requirement is not applicable when Δf_max < 10 MHz.			
NOTE 2: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap, where the contribution from the far-end sub-block shall be scaled according to the measurement bandwidth of the near-end sub-block. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -16 dBm/100 kHz.			
NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 19. *Local Area* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E-UTRA *bands ≤ 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$-19,5 \text{ dBm} - \frac{10}{1,4} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) dB$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-29,5 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf$_{max}$	2,85 MHz ≤ f_offset < f_offset$_{max}$	-31 dBm	100 kHz

Tabel 20. *Local Area* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E-UTRA *bands > 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$-19,2 \text{ dBm} - \frac{10}{1,4} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) dB$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-29,2 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf$_{max}$	2,85 MHz ≤ f_offset < f_offset$_{max}$	-31 dBm	100 kHz

Tabel 21. *Local Area* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth (*E-UTRA *bands ≤ 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-23,5 \text{ dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) dB$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-33,5 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf$_{max}$	6,05 MHz ≤ f_offset < f_offset$_{max}$	-35 dBm	100 kHz

Tabel 22. *Local Area* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth (*E-UTRA *bands > 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-23,2 \text{ dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) dB$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-33,2 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf$_{max}$	6,05 MHz ≤ f_offset < f_offset$_{max}$	-35 dBm	100 kHz

Tabel 23. *Local Area* BS *operating band unwanted emission limits for 5* MHz*, 10* MHz*, 15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands ≤ 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-28,5 \text{ dBm} - \frac{7}{5} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) dB$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf$_{max}$)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	-35,5 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf$_{max}$	10,05 MHz ≤ f_offset < f_offset$_{max}$	-37 dBm (note)	100 kHz
NOTE: The requirement is not applicable when Δf$_{max}$ < 10 MHz.			

Tabel 24. *Local Area* BS *operating band unwanted emission limits for 5* MHz*, 10* MHz*, 15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands > 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-28{,}2\ \text{dBm} - \frac{7}{5} \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right) \text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf_{max})	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	-35,2 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf_{max}	10,05 MHz ≤ f_offset < f_offset$_{max}$	-37 dBm (note)	100 kHz
NOTE: The requirement is not applicable when Δf_{max} < 10 MHz.			

Tabel 25. *Home* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E-UTRA *bands ≤ 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$-28{,}5\ \text{dBm} - \frac{6}{1{,}4} \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right) \text{dB}$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-34,5 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf_{max}	3,3 MHz ≤ f_offset < f_offset$_{max}$	P - 52 dB, 2 dBm ≤ P ≤ 20 dBm -50 dBm, P < 2 dBm (note)	1 MHz
NOTE: For Home BS, the parameter P is defined as the aggregated maximum power of all transmit antenna ports of Home BS.			

Tabel 26. *Home* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth (*E-UTRA *bands > 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$-28{,}2\ \text{dBm} - \frac{6}{1{,}4} \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right) \text{dB}$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-34,2 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf_{max}	3,3 MHz ≤ f_offset < f_offset$_{max}$	P - 52 dB, 2 dBm ≤ P ≤ 20 dBm -50 dBm, P < 2 dBm (note)	1 MHz
NOTE: For Home BS, the parameter P is defined as the aggregated maximum power of all transmit antenna ports of Home BS.			

Tabel 27. *Home* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth (*E-UTRA *bands ≤ 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-32{,}5\ \text{dBm} - 2 \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right) \text{dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-38,5 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf_{max}	6,5 MHz ≤ f_offset < f_offset$_{max}$	P - 52 dB, 2 dBm ≤ P ≤ 20 dBm -50 dBm, P < 2 dBm (note)	1 MHz
NOTE: For Home BS, the parameter P is defined as the aggregated maximum power of all transmit antenna ports of Home BS.			

Tabel 28. *Home* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth (*E-UTRA *bands > 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-32,2 \text{ dBm} - 2 \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{ dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-38,2 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf_max	6,5 MHz ≤ f_offset < f_offset_max	P - 52 dB, 2 dBm ≤ P ≤ 20 dBm -50 dBm, P < 2 dBm (note)	1 MHz
NOTE: For Home BS, the parameter P is defined as the aggregated maximum power of all transmit antenna ports of Home BS.			

Tabel 29. *Home* BS *operating band unwanted emission limits for 5* MHz*, 10* MHz*, 15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands ≤ 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-34,5 \text{ dBm} - \frac{6}{5} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf_max)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset_max)	-40,5 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf_max	10,5 MHz ≤ f_offset < f_offset_max	P - 52 dB, 2 dBm ≤ P ≤ 20 dBm -50 dBm, P < 2 dBm (notes 1 and 2)	1 MHz
NOTE 1: For Home BS, the parameter P is defined as the aggregated maximum power of all transmit antenna ports of Home BS. NOTE 2: The requirement is not applicable when Δf_max < 10 MHz.			

Tabel 30. *Home* BS *operating band unwanted emission limits for 5* MHz*, 10* MHz*, 15* MHz *and 20* MHz *channel bandwidth (*E-UTRA *bands > 3* GHz)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-34,2 \text{ dBm} - \frac{6}{5} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{ dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf_max)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset_max)	-40,2 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf_max	10,5 MHz ≤ f_offset < f_offset_max	P - 52 dB, 2 dBm ≤ P ≤ 20 dBm -50 dBm, P < 2 dBm (notes 1 and 2)	1 MHz
NOTE 1: For Home BS, the parameter P is defined as the aggregated maximum power of all transmit antenna ports of Home BS. NOTE 2: The requirement is not applicable when Δf_max < 10 MHz.			

Tabel 31. *Medium Range* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth, 31 < $P_{rated,c}$ ≤ 38* dBm *(E-UTRA bands ≤ 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$P_{rated,c} - 43{,}5\text{dB} - \dfrac{10}{1{,}4} \times \left(\dfrac{f\_offset}{MHz} - 0{,}05\right)$ dB	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	$P_{max,c}$ - 53,5 dB	100 kHz
2,8 MHz ≤ Δf ≤ Δf_max	2,85 MHz ≤ f_offset < f_offset_max	-25 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is □f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -25 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 32. *Medium Range* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth, 31 < $P_{rated,c}$ ≤ 38* dBm *(E-UTRA bands > 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$P_{rated,c} - 43{,}2\text{dB} - \dfrac{10}{1{,}4} \times \left(\dfrac{f\_offset}{MHz} - 0{,}05\right)$ dB	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	$P_{max,c}$ - 53,2 dB	100 kHz
2,8 MHz ≤ Δf ≤ Δf_max	2,85 MHz ≤ f_offset < f_offset_max	-25 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is □f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -25 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 33. *Medium Range* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth, $P_{rated,c}$ ≤ 31* dBm *(E-UTRA bands ≤ 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$-12{,}5\text{ dB} - \dfrac{10}{1{,}4} \times \left(\dfrac{f\_offset}{MHz} - 0{,}05\right)$ dB	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-22,5 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf_max	2,85 MHz ≤ f_offset < f_offset_max	-25 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is □f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -25 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 34. *Medium Range* BS *operating band unwanted emission limits for 1,4* MHz *channel bandwidth, $P_{rated,c} \leq 31$* dBm *(E-UTRA bands > 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 1,4 MHz	0,05 MHz ≤ f_offset < 1,45 MHz	$-12,2 \text{ dBm} - \frac{10}{1,4} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
1,4 MHz ≤ Δf < 2,8 MHz	1,45 MHz ≤ f_offset < 2,85 MHz	-22,2 dBm	100 kHz
2,8 MHz ≤ Δf ≤ Δf_max	2,85 MHz ≤ f_offset < f_offset_max	-25 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -25 dBm/100 kHz.				
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.				

Tabel 35. *Medium Range* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth, 31 < $P_{rated,c} \leq 38$* dBm *(E-UTRA bands ≤ 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$P_{rated,c} - 47,5\text{dB} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{ dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	$P_{max,c}$ - 57,5 dB	100 kHz
6 MHz ≤ Δf ≤ Δf_max	6,05 MHz ≤ f_offset < f_offset_max	min($P_{max,c}$ -59 dB, -25 dBm)	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be min($P_{max,c}$ -59 dB, -25 dBm)/100 kHz.				
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.				

Tabel 36. *Medium Range* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth, 31 < $P_{rated,c} \leq 38$* dBm *(E-UTRA bands > 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$P_{rated,c} - 47,2\text{dB} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{ dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	$P_{max,c}$ - 57,2 dB	100 kHz
6 MHz ≤ Δf ≤ Δf_max	6,05 MHz ≤ f_offset < f_offset_max	Min($P_{max,c}$ -59 dB, -25 dBm)	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be min($P_{max,c}$ -59 dB, -25 dBm)/100 kHz.				
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.				

Tabel 37. *Medium Range* BS *operating band unwanted emission limits for 3* MHz *channel bandwidth, $P_{rated,c} \leq 31$* dBm *(E-UTRA bands ≤ 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-16,5 \text{ dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-26,5 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf_max	6,05 MHz ≤ f_offset < f_offset_max	-28 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is Δf ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -28 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 38. *Medium Range* BS *operating band unwanted emission limits for 3 MHz channel bandwidth, $P_{rated,c} \leq 31$* dBm *(E-UTRA bands > 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 2)	Measurement bandwidth
0 MHz ≤ Δf < 3 MHz	0,05 MHz ≤ f_offset < 3,05 MHz	$-16,2 \text{ dBm} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
3 MHz ≤ Δf < 6 MHz	3,05 MHz ≤ f_offset < 6,05 MHz	-26,2 dBm	100 kHz
6 MHz ≤ Δf ≤ Δf_max	6,05 MHz ≤ f_offset < f_offset_max	-28 dBm	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is Δf ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -28 dBm/100 kHz.			
NOTE 2: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 39. *Medium Range* BS *operating band unwanted emission limits for 5, 10, 15 and 20* MHz *channel bandwidth, 31 < $P_{rated,c} \leq 38$* dBm *(E-UTRA bands ≤ 3* GHz)

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$P_{rated,c} - 51,5 \text{ dB} - \frac{10}{3} \times \left(\frac{f\_offset}{MHz} - 0,05 \right) \text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf_max)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset_max)	$P_{max,c}$ - 58,5 dB	100 kHz
10 MHz ≤ Δf ≤ Δf_max	10,05 MHz ≤ f_offset < f_offset_max	min($P_{max,c}$ - 60 dB, -25 dBm) (note 2)	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is Δf ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be min($P_{max,c}$ -60 dB, -25 dBm)/100 kHz.			
NOTE 2: The requirement is not applicable when Δf_max < 10 MHz.			
NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 40. *Medium Range* BS *operating band unwanted emission limits for 5, 10, 15 and 20* MHz *channel bandwidth, 31 < $P_{rated,c}$ ≤ 38* dBm *(*E-UTRA *bands > 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$P_{rated,c} - 51,2\text{dB} - \dfrac{7}{5} \times \left(\dfrac{f\_offset}{MHz} - 0,05\right)$ dB	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf$_{max}$)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	$P_{max,c}$ - 58,2 dB	100 kHz
10 MHz ≤ Δf ≤ Δf$_{max}$	10,05 MHz ≤ f_offset < f_offset$_{max}$	min($P_{max,c}$ -60 dB, -25 dBm) (note 2)	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be min($P_{max,c}$ -60 dB, -25 dBm)/100 kHz.			
NOTE 2: The requirement is not applicable when Δf$_{max}$ < 10 MHz.			
NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 41. *Medium Range* BS *operating band unwanted emission limits for 5, 10, 15 and 20* MHz *channel bandwidth, $P_{rated,c}$ ≤ 31* dBm *(*E-UTRA *bands ≤ 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-20,5 \text{ dB} - \dfrac{7}{5} \times \left(\dfrac{f\_offset}{MHz} - 0,05\right) \text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf$_{max}$)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	-27,5 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf$_{max}$	10,05 MHz ≤ f_offset < f_offset$_{max}$	-29 dBm (note 2)	100 kHz
NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is ☐f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -29 dBm/100 kHz.			
NOTE 2: The requirement is not applicable when Δf$_{max}$ < 10 MHz.			
NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.			

Tabel 42. *Medium Range* BS *operating band unwanted emission limits for 5, 10, 15 and 20* MHz *channel bandwidth, P$_{rated,c}$ ≤ 31* dBm *(*E-UTRA *bands > 3* GHz*)*

Frequency offset of measurement filter -3 dB point, Δf	Frequency offset of measurement filter centre frequency, f_offset	Test requirement (notes 1 and 3)	Measurement bandwidth
0 MHz ≤ Δf < 5 MHz	0,05 MHz ≤ f_offset < 5,05 MHz	$-20{,}2\text{ dB} - \frac{7}{5} \times \left(\frac{f\_offset}{MHz} - 0{,}05 \right)\text{dB}$	100 kHz
5 MHz ≤ Δf < min(10 MHz, Δf$_{max}$)	5,05 MHz ≤ f_offset < min(10,05 MHz, f_offset$_{max}$)	-27,2 dBm	100 kHz
10 MHz ≤ Δf ≤ Δf$_{max}$	10,05 MHz ≤ f_offset < f_offset$_{max}$	-29 dBm (note 2)	100 kHz

NOTE 1: For a BS supporting non-contiguous spectrum operation within any operating band the test requirement within sub-block gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks on each side of the sub-block gap. Exception is f ≥ 10 MHz from both adjacent sub-blocks on each side of the sub-block gap, where the test requirement within sub-block gaps shall be -29 dBm/100 kHz.

NOTE 2: The requirement is not applicable when Δf$_{max}$ < 10 MHz.

NOTE 3: For BS supporting multi-band operation with Inter RF Bandwidth gap < 20 MHz the test requirement within the Inter RF Bandwidth gaps is calculated as a cumulative sum of contributions from adjacent sub-blocks or Base Station RF Bandwidth on each side of the Inter RF Bandwidth gap.

Tabel 43. Batas Nilai BS *Spurious emissions limits*

Frequency range	Maximum Level	Measurement Bandwidth	Notes
9 kHz ↔ 150 kHz	-36 dBm	1 kHz	Note 1
150 kHz ↔ 30 MHz	-36 dBm	10 kHz	Note 1
30 MHz ↔ 1 GHz	-36 dBm	100 kHz	Note 1
1 GHz ↔ 12,75 GHz	-30 dBm	1 MHz	Note 2
12,75 GHz ↔ 5th harmonic of the upper frequency edge of the downlink operating band	-30 dBm	1 MHz	Notes 2 and 3
12,75 GHz ↔ 26 GHz	-30 dBm	1 MHz	Notes 2 and 4

NOTE 1: Bandwidth as in Recommendation ITU-R SM.329-12 , section 4.1.

NOTE 2: Bandwidth as in Recommendation ITU-R SM.329-12 , section 4.1. Upper frequency as in Recommendation ITU-R SM.329-12 , section 2.5 table 1-1.

NOTE 3: Shall apply only for bands 22, 42 and 43.

NOTE 4: Applies only to band 46.

Tabel 44. *Spurious emissions limits for protection of other systems*

Protected system	Frequency range for co-existence requirement	Maximum Level	Measurement Bandwidth	Exclusions and conditions
GSM900	921 MHz to 960 MHz	-57 dBm	100 kHz	This requirement shall not apply to E-UTRA BS operating in band 8.
	876 MHz to 915 MHz	-61 dBm	100 kHz	For the frequency range 880 MHz to 915 MHz, this requirement shall not apply to E-UTRA BS operating in band 8, since it is already covered by the requirement in clause 4.2.4.2.3.
DCS1800	1 805 MHz to 1 880 MHz	-47 dBm	100 kHz	This requirement shall not apply to E-UTRA BS operating in band 3.
	1 710 MHz to 1 785 MHz	-61 dBm	100 kHz	This requirement shall not apply to E-UTRA BS operating in band 3, since it is already covered by the requirement in clause 4.2.4.2.3.
UTRA FDD band I, E-UTRA band 1 or NR band n1	2 110 MHz to 2 170 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 1 or 65.
	1 920 MHz to 1 980 MHz	-49 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 1 or 65, since it is already covered by the requirement in clause 4.2.4.2.3.
UTRA FDD band III, E-UTRA band 3 or NR band n3	1 805 MHz to 1 880 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 3.
	1 710 MHz to 1 785 MHz	-49 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 3, since it is already covered by the requirement in clause 4.2.4.2.3.
UTRA FDD band VIII,	925 MHz to 960 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 8.

Protected system	Frequency range for co-existence requirement	Maximum Level	Measurement Bandwidth	Exclusions and conditions
E-UTRA band 8 or NR band n8	880 MHz to 915 MHz	-49 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 8, since it is already covered by the requirement in clause 4.2.4.2.3.
E-UTRA band 28 or NR band n28	758 MHz to 803 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 20, 28, 67 or 68.
	703 MHz to 748 MHz	-49 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 28, since it is already covered by the requirement in clause 4.2.4.2.3. For BS operating in band 67, it applies from 703 MHz to 736 MHz. For E-UTRA BS operating in band 68, it applies for 728 MHz to 733 MHz.
UTRA TDD in band e), E-UTRA band 40 or NR band n40	2 300 MHz to 2 400 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 40.
E-UTRA band 41 or NR band n41	2 500 MHz to 2 690 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 41.
E-UTRA band 42	3 400 MHz to 3 600 MHz	-52 dBm	1 MHz	This requirement shall not apply to E-UTRA BS operating in band 22, 42 or 43.

NOTE 1: Where the table has two entries for the same or overlapping frequency ranges, both limits shall be applied.
NOTE 2: As set out in the definition in clause 4.2.4.1, except for the cases where the noted requirements apply to a BS operating in band 28, the co-existence requirements in this table shall not apply for the 10 MHz frequency range immediately outside the downlink operating band (see table 1-1). This is also the case when the downlink operating band is adjacent to the band for the protected system in the table.
NOTE 3: The co-existence requirement is specified for the full frequency range defined for band 32 in ETSI TS 136 141 .
NOTE 4: The co-existence requirement is specified for the full frequency range defined for band 46 in ETSI TS 136 141 .

Tabel 45. BS *emissions limits for Spurious protection of the* BS *receiver*

BS class	Frequency range	Maximum Level	Measurement Bandwidth	Exclusions and conditions
Wide Area BS	F_{UL_low} to F_{UL_high}	-96 dBm	100 kHz	
Medium Range BS	F_{UL_low} to F_{UL_high}	-91 dBm	100 kHz	
Local Area BS	F_{UL_low} to F_{UL_high}	-88 dBm	100 kHz	
Home BS	F_{UL_low} to F_{UL_high}	-88 dBm	100 kHz	

NOTE 1: F_{UL_low} are F_{UL_high} are the lowest and highest frequency of the E-UTRA BS uplink operating band respectively.
NOTE 2: For band 28 BS, this requirement shall only apply in the uplink frequency range where the BS receiver is allowed to operate according to table 1-1.

Tabel 46. *Spurious emissions limits for protection of a Home* BS *receiver*

Protected system	Frequency range	Maximum Level	Measurement Bandwidth	Exclusions and conditions
UTRA FDD band I, E-UTRA band 1	1 920 MHz to 1 980 MHz	-71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 1 or 65, since it is already covered by the requirement in clause 4.2.4.2.3.
UTRA FDD band III, E-UTRA band 3	1 710 MHz to 1 785 MHz	-71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 3, since it is already covered by the requirement in clause 4.2.4.2.3.
UTRA FDD band VIII, E-UTRA band 8	880 MHz to 915 MHz	-71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 8, since it is already covered by the requirement in clause 4.2.4.2.3.

Protected system	Frequency range	Maximum Level	Measurement Bandwidth	Exclusions and conditions
E-UTRA band 28	703 MHz to 748 MHz	-71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 28, since it is already covered by the requirement in clause 4.2.4.2.3. For E-UTRA BS operating in band 67, it shall apply for 703 MHz to 736 MHz. For E-UTRA BS operating in band 68, it shall apply for 728 MHz to 733 MHz.
UTRA TDD band e) E-UTRA band 40	2 300 MHz to 2 400 MHz	- 71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 40, since it is already covered by the requirement in clause 4.2.4.2.3.
E-UTRA band 41	2 500 MHz to 2 690 MHz	- 71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 41, since it is already covered by the requirement in clause 4.2.4.2.3.
E-UTRA band 42	3 400 MHz to 3 600 MHz	- 71 dBm	100 kHz	This requirement shall not apply to Home BS operating in band 22, 42 or 43, since it is already covered by the requirement in clause 4.2.4.2.3.

Tabel 47. E-UTRA *Wide Area* BS *reference sensitivity levels*

E-UTRA channel bandwidth [MHz]	Reference measurement channel, as specified in clause A.1 of ETSI TS 136 141	Reference sensitivity level, $P_{REFSENS}$ [dBm]	
		f ≤ 3,0 GHz	3,0 GHz < f ≤ 4,2 GHz
1	FRC A1-1	-106,1	-105,8
3	FRC A1-2	-102,3	-102,0
3	FRC A1-6 for E-UTRA with NB-IoT in-band operation (note 3)	-102,3 (note 2)	N/A
5	FRC A1-3	-100,8	-100,5
5	FRC A1-7 for E-UTRA with NB-IoT in-band operation	-100,8 (note 2)	N/A
10	FRC A1-3 (note 1)	-100,8	-100,5
10	FRC A1-7 for E-UTRA with NB-IoT in-band operation (note 4)	-100,8 (note 2)	N/A
15	FRC A1-3 (note 1)	-100,8	-100,5
15	FRC A1-7 for E-UTRA with NB-IoT in-band operation (note 4)	-100,8 (note 2)	N/A
20	FRC A1-3 (note 1)	-100,8	-100,5
20	FRC A1-7 in for E-UTRA with NB-IoT in-band operation (note 4)	-100,8 (note 2)	N/A
NOTE 1: $P_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.			
NOTE 2: The requirements apply to BS that supports E-UTRA with NB-IoT in-band operation.			
NOTE 3: $P_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-6 mapped to the 12 E-UTRA resource blocks adjacent to the NB-IoT PRB.			
NOTE 4: $P_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-7 mapped to the 24 E-UTRA resource blocks adjacent to the NB-IoT PRB (location of which is specified in ETSI TS 136 141 , clause 4.7.3), and for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.			

Tabel 48. E-UTRA *Local Area* BS *reference sensitivity levels*

E-UTRA channel bandwidth [MHz]	Reference measurement channel	Reference sensitivity level, P$_{REFSENS}$ [dBm]		
		f ≤ 3,0 GHz	3,0 GHz < f ≤ 4,2 GHz	4,2 GHz < f ≤ 6,0 GHz
1,4	FRC A1-1 in clause A.1	-98,1	97,8	
3	FRC A1-2 in clause A.1	-94,3	94,0	
3	FRC A1-6 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 4)	-94,3 (note 3)		
5	FRC A1-3 in clause A.1	-92,8	92,5	
5	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation	-92,8 (note 3)		
10	FRC A1-3 in clause A.1 (note 1) FRC A1-8 in clause A.1 (note 2)	-92,8	92,5	94,7
10	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 5)	-92,8 (note 3)		
15	FRC A1-3 in clause A.1 (note 1)	-92,8	92,5	
15	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 5)	-92,8 (note 3)		
20	FRC A1-3 in clause A.1 FRC A1-9 in clause A.1 (note 2)	-92,8	92,5	94,7
20	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 5)	-92,8 (note 3)		

NOTE 1: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

NOTE 2: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be tested for at least one interlace of FRC A1-8 (if supported) and A1-9. This reference measurement channel is only applied for band 46.

NOTE 3: The requirements apply to BS that supports E-UTRA with NB-IoT in-band operation.

NOTE 4: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-6 mapped to the 12 E-UTRA resource blocks adjacent to the NB-IoT PRB.

NOTE 5: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-7 mapped to the 24 E-UTRA resource blocks adjacent to the NB-IoT PRB (location of which is specified in clause 4.7.3 of ETSI TS 136 141), and for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

Tabel 49. E-UTRA *Home* BS *reference sensitivity levels*

E-UTRA channel bandwidth [MHz]	Reference measurement channel	Reference sensitivity level, $P_{REFSENS}$ [dBm]	
		f ≤ 3,0 GHz	3,0 GHz < f ≤ 4,2 GHz
1,4	FRC A1-1 in clause A.1	-98,1	-97,8
3	FRC A1-2 in clause A.1	-94,3	-94,0
3	FRC A1-6 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 3)	-94,3 (note 2)	
5	FRC A1-3 in clause A.1	-92,8	-92,5
5	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation	-92,8 (note 2)	
10	FRC A1-3 in clause A.1 (note 1)	-92,8	-92,5
10	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 4)	-92,8 (note 2)	
15	FRC A1-3 in clause A.1 (note 1)	-92,8	-92,5
15	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 4)	-92,8 (note 2)	
20	FRC A1-3 in clause A.1 (note 1)	-92,8	-92,5
20	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 4)	-92,8 (note 2)	

NOTE 1: $P_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

NOTE 2: The requirements apply to BS that supports E-UTRA with NB-IoT in-band operation.

NOTE 3: $P_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-6 mapped to the 12 E-UTRA resource blocks adjacent to the NB-IoT PRB.

NOTE 4: $P_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-7 mapped to the 24 E-UTRA resource blocks adjacent to the NB-IoT PRB (location of which is specified in clause 4.7.3 of ETSI TS 136 141), and for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

Tabel 50. E-UTRA *Medium Range* BS *reference sensitivity levels*

E-UTRA channel bandwidth [MHz]	Reference measurement channel	Reference sensitivity level, P$_{REFSENS}$ [dBm]		
		f ≤ 3,0 GHz	3,0 GHz < f ≤ 4,2 GHz	4,2 GHz < f ≤ 6,0 GHz
1,4	FRC A1-1 in clause A.1	-101,1	97,8	
3	FRC A1-2 in clause A.1	-97,3	94,0	
3	FRC A1-6 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 4)	-97,3 (note 3)		
5	FRC A1-3 in clause A.1	-95,8	92,5	
5	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation	-95,8 (note 3)		
10	FRC A1-3 in clause A.1 (note 1) FRC A1-8 in clause A.1 (note 2)	-95,8	92,5	97,7
10	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 5)	-95,8 (note 3)		
15	FRC A1-3 in clause A.1 (note 1)	-95,8	92,5	
15	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 5)	-95,8 (note 3)		
20	FRC A1-3 in clause A.1 (note 1) FRC A1-9 in clause A.1 (note 2)	-95,8	92,5	97,7
20	FRC A1-7 in clause A.1 for E-UTRA with NB-IoT in-band operation (note 5)	-95,8 (note 3)		

NOTE 1: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

NOTE 2: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be tested for at least one interlace of FRC A1-8 (if supported) and A1-9. This reference measurement channel is only applied for band 46.

NOTE 3: The requirements apply to BS that supports E-UTRA with NB-IoT in-band operation.

NOTE 4: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-6 mapped to the 12 E-UTRA resource blocks adjacent to the NB-IoT PRB.

NOTE 5: P$_{REFSENS}$ is the power level of a single instance of the reference measurement channel. This requirement shall be met for a single instance of FRC A1-7 mapped to the 24 E-UTRA resource blocks adjacent to the NB-IoT PRB (location of which is specified in clause 4.7.3 of ETSI TS 136 141), and for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

Tabel 51. *General spurious emission test requirement*

Frequency range	Maximum level	Measurement Bandwidth	Exclusions and conditions
30 MHz to 1 GHz	-57 dBm	100 kHz	
1 GHz to 12,75 GHz	-47 dBm	1 MHz	
12,75 GHz to 5th harmonic of the upper frequency edge of the downlink operating band	-47 dBm	1 MHz	Shall apply only for bands 22, 42 and 43.
12,75 GHz - 26 GHz	-47 dBm	1 MHz	Shall apply only for band 46
NOTE: The frequency range between $2,5 \times BW_{Channel}$ below the first carrier frequency and $2,5 \times BW_{Channel}$ above the last carrier frequency transmitted by the BS, where $BW_{Channel}$ is the channel bandwidth according to ETSI TS 136 141 , table 5.6-1, may be excluded from the requirement. However, frequencies that are more than 10 MHz below the lowest frequency of any of the supported downlink operating band or more than 10 MHz above the highest frequency of any of the supported downlink operating band (see table 1-1) shall not be excluded from the requirement. For BS capable of multi-band operation, the excluded frequency range applies for all supported operating bands. For BS capable of multi-band operation where multiple bands are mapped on separate antenna connectors, the single-band requirements apply and the excluded frequency range is only applicable for the operating band supported on each antenna connector.			

Tabel 52. *Intermodulation performance requirement for* E-UTRA

BS class	Wanted signal mean power (dBm)	Interfering signal mean power	Type of interfering signal
Wide area BS	$P_{REFSENS}$ + 6 dB (seenote)	-52 dBm	See table 4.2.9.2-2
Medium Range BS	$P_{REFSENS}$ + 6 dB (see note)	-47 dBm	
Local Area BS	$P_{REFSENS}$ + 6 dB (see note)	-44 dBm	
Home BS	$P_{REFSENS}$ + 14 dB (see note)	-36 dBm	
NOTE: $P_{REFSENS}$ depends on the channel bandwidth as specified in clause 4.2.14.2. For E-UTRA channel bandwidths 10 MHz, 15 MHz and 20 MHz this requirement shall apply only for a FRC A1-3 (see ETSI TS 136 141 [1], clause A.1) mapped to the frequency range at the channel edge adjacent to the interfering signals.			

Tabel 53. *Narrowband intermodulation performance requirement for Wide Area* BS *for* E-UTRA

E-UTRA channel bandwidth of the lowest/highest carrier received (MHz)	Wanted signal mean power (dBm)	Interfering signal mean power (dBm)	Interfering RB centre frequency offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (kHz)	Type of interfering signal
1,4	$P_{REFSENS}$ + 6 dB (note 1)	-52	±270	CW
		-52	±790	1,4 MHz E-UTRA signal, 1 RB (note 2)
3	$P_{REFSENS}$ + 6 dB (note 1)	-52	±270	CW
		-52	±780	3 MHz E-UTRA signal, 1 RB (note 2)
5	$P_{REFSENS}$ + 6 dB (note 1)	-52	±360	CW
		-52	±1 060	5 MHz E-UTRA signal, 1 RB (note 2)
10	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-52	±325	CW
		-52	±1 240	5 MHz E-UTRA signal, 1 RB (note 2)

E-UTRA channel bandwidth of the lowest/highest carrier received (MHz)	Wanted signal mean power (dBm)	Interfering signal mean power (dBm)	Interfering RB centre frequency offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block gap (kHz)	Type of interfering signal
15	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-52	±380	CW
		-52	±1 600	5 MHz E-UTRA signal, 1 RB (note 2)
20	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-52	±345	CW
		-52	±1 780	5 MHz E-UTRA signal, 1 RB (note 2)
NOTE 1: $P_{REFSENS}$ is related to the channel bandwidth as specified in clause 4.2.14.2.				
NOTE 2: Interfering signal consisting of one resource block positioned at the stated offset, the channel bandwidth of the interfering signal is located adjacently to the channel bandwidth of the lower/upper Base Station RF Bandwidth edge.				
NOTE 3: This requirement shall apply only for an FRC A1-3 (see ETSI TS 136 141 [1], clause A.1) mapped to the frequency range at the channel edge adjacent to the interfering signals.				

Tabel 54. *Narrowband intermodulation performance requirement for Local Area* BS *for* E-UTRA

E-UTRA channel bandwidth of the lowest/ highest carrier received (MHz)	Wanted signal mean power (dBm)	Interfering signal mean power (dBm)	Interfering RB centre frequency offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block (kHz)	Type of interfering signal
1,4	$P_{REFSENS}$ + 6 dB (note 1)	-44	±270	CW
		-44	±790	1,4 MHz E-UTRA signal, 1 RB (note 2)
3	$P_{REFSENS}$ + 6 dB (note 1)	-44	±270	CW
		-44	±780	3 MHz E-UTRA signal, 1 RB (note 2)
5	$P_{REFSENS}$ + 6 dB (note 1)	-44	±360	CW
		-44	±1 060	5 MHz E-UTRA signal, 1 RB (note 2)
10	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-44	±325	CW
		-44	±1 240	5 MHz E-UTRA signal, 1 RB (note 2)
15	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-44	±380	CW
		-44	±1 600	5 MHz E-UTRA signal, 1 RB (note 2)
20	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-44	±345	CW
		-44	±1 780	5 MHz E-UTRA signal, 1 RB (note 2)
NOTE 1: $P_{REFSENS}$ is related to the channel bandwidth as specified in clause 4.2.14.2.				
NOTE 2: Interfering signal consisting of one resource block positioned at the stated offset, the channel bandwidth of the interfering signal is located adjacently to the lower/upper Base Station RF Bandwidth edge.				
NOTE 3: This requirement shall apply only for an FRC A1-3 (ETSI TS 136 141 [1], clause A.1) mapped to the frequency range at the channel edge adjacent to the interfering signals.				

Tabel 55. *Narrowband intermodulation performance requirement for Home* BS *for* E-UTRA

E-UTRA channel bandwidth (MHz)	Wanted signal mean power (dBm)	Interfering signal mean power (dBm)	Interfering RB centre frequency offset from the channel edge of the wanted signal (kHz)	Type of interfering signal
1,4	$P_{REFSENS}$ + 14 dB (note 1)	-36	270	CW
		-36	790	1,4 MHz E-UTRA signal, 1 RB (note 2)
3	$P_{REFSENS}$ + 14 dB (note 1)	-36	270	CW
		-36	780	3 MHz E-UTRA signal, 1 RB (note 2)
5	$P_{REFSENS}$ + 14 dB (note 1)	-36	360	CW
		-36	1 060	5 MHz E-UTRA signal, 1 RB (note 2)
10	$P_{REFSENS}$ + 14 dB (notes 1 and 3)	-36	325	CW
		-36	1 240	5 MHz E-UTRA signal, 1 RB (note 2)
15	$P_{REFSENS}$ + 14 dB (notes 1 and 3)	-36	380	CW
		-36	1 600	5 MHz E-UTRA signal, 1 RB (note 2)
20	$P_{REFSENS}$ + 14 dB (notes 1 and 3)	-36	345	CW
		-36	1 780	5 MHz E-UTRA signal, 1 RB (note 2)
NOTE 1: $P_{REFSENS}$ is related to the channel bandwidth as specified in clause 4.2.14.2.				
NOTE 2: Interfering signal consisting of one resource block positioned at the stated offset, the channel bandwidth of the interfering signal is located adjacently to the channel edge of the wanted signal.				
NOTE 3: This requirement shall apply only for an FRC A1-3 (ETSI TS 136 141 [1], clause A.1) mapped to the frequency range at the channel edge adjacent to the interfering signals.				

Tabel 56. *Narrowband intermodulation performance requirement for Medium Range* BS *for* E-UTRA

E-UTRA channel bandwidth of the lowest/ highest carrier received (MHz)	Wanted signal mean power (dBm)	Interfering signal mean power (dBm)	Interfering RB centre frequency offset from the lower/upper Base Station RF Bandwidth edge or sub-block edge inside a sub-block (kHz)	Type of interfering signal
1,4	$P_{REFSENS}$ + 6 dB (note 1)	-47	±270	CW
		-47	±790	1,4 MHz E-UTRA signal, 1 RB (note 2)
3	$P_{REFSENS}$ + 6 dB (note 1)	-47	±270	CW
		-47	±780	3 MHz E-UTRA signal, 1 RB (note 2)
5	$P_{REFSENS}$ + 6 dB (note 1)	-47	±360	CW
		-47	±1 060	5 MHz E-UTRA signal, 1 RB (note 2)
10	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-47	±325	CW
		-47	±1 240	5 MHz E-UTRA signal, 1 RB (note 2)
15	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-47	±380	CW
		-47	±1 600	5 MHz E-UTRA signal, 1 RB (note 2)
20	$P_{REFSENS}$ + 6 dB (notes 1 and 3)	-47	±345	CW
		-47	±1 780	5 MHz E-UTRA signal, 1 RB (note 2)
NOTE 1: $P_{REFSENS}$ is related to the channel bandwidth as specified in clause 4.2.14.2.				
NOTE 2: Interfering signal consisting of one resource block positioned at the stated offset, the channel bandwidth of the interfering signal is located adjacently to the lower/upper Base Station RF Bandwidth edge.				
NOTE 3: This requirement shall apply only for an FRC A1-3 (see ETSI TS 136 141 [1], clause A.1) mapped to the frequency range at the channel edge adjacent to the interfering signals.				

Tabel 57. Parameter Uji dan Batas Nilai BS MSR LTE

Parameter Uji	Batas Nilai
Base station Output Power	Sesuai dengan: a) Klausul 6.2 ETSI TS 137 104; b) Klausul 4.2.5 ETSI EN 301 908-18; atau c) Klausul 6.2 pada dokumen ETSI TS 137 141
ACLR	Sesuai dengan: a) Klausul 6.6.4 ETSI TS 137 104; b) Klausul 4.2.3 ETSI EN 301 908-18; atau c) Klausul 6.6.4 pada dokumen ETSI TS 137 141
Operating Band Unwanted Emissions	Sesuai dengan: a) Klausul 6.6.2 ETSI TS 137 104; b) Klausul 4.2.2 ETSI EN 301 908-18; atau c) Klausul 6.6.2 pada dokumen ETSI TS 137 141
Transmitter Spurious Emission [3] [4]	Sesuai dengan: a) Klausul 6.6.1 ETSI TS 137 104; b) Klausul 4.2.4 ETSI EN 301 908-18; atau c) Klausul 6.6.1 pada dokumen ETSI TS 137 141
Reference Sensitivity Level	Sesuai dengan: a) Klausul 7.2 ETSI TS 137 104; b) Klausul 4.2.12 ETSI EN 301 908-18; atau c) Klausul 7.2 pada dokumen ETSI TS 137 141
Receiver Spurious Emission	Sesuai dengan: a) Klausul 7.6 ETSI TS 137 104; b) Klausul 4.2.7 ETSI EN 301 908-18; atau c) Klausul 7.6 pada dokumen ETSI TS 137 141
Receiver Intermodulation	Sesuai dengan: a) Klausul 7.7 ETSI TS 137 104; b) Klausul 4.2.10 ETSI EN 301 908-18; atau c) Klausul 7.7 pada dokumen ETSI TS 137 141
Radiated Emission	Sesuai dengan: a) Klausul 4.2.3 ETSI EN 301 908-1; b) Klausul 8.2.1 ETSI TS 137 113; atau c) Klausul 8.2.1 3GPP TS 37.113

Catatan:
1) ETSI TS 137 141 dapat diganti dengan 3GPP TS 37.141
2) ETSI TS 137 104 dapat diganti dengan 3GPP TS 37.104
3) Parameter *Transmitter Spurious Emission* untuk *Co-location* dengan BS lain termasuk *voluntary*.
4) Batasan nilai *spurious emissions* untuk BS yang bekerja pada pita frekuensi radio 3,5 GHz mengacu pada Lampiran Keputusan Menteri ini dan regulasi lain yang terkait.

Tabel 58. Parameter Uji dan Batas Nilai BS MSR LTE-AAS

Parameter Uji	Batas Nilai
Radiated Transmit Power	Sesuai dengan: a) Klausul 9.2 ETSI TS 137 105; atau b) Klausul 6.2 pada dokumen ETSI TS 137 145-2
Base station Output Power	Sesuai dengan: a) Klausul 6.2 ETSI TS 137 105; atau b) Klausul 6.2 pada dokumen ETSI TS 137 145-1
OTA Base station Output Power	Sesuai dengan: a) Klausul 9.3 ETSI TS 137 105; atau b) Klausul 6.3 pada dokumen ETSI TS 137 145-2
ACLR	Sesuai dengan: a) Klausul 6.6.3 ETSI TS 137 105; atau b) Klausul 6.6.3 pada dokumen ETSI TS 137 145-1
OTA ACLR	Sesuai dengan: a) Klausul 9.7.3 ETSI TS 137 105; atau b) Klausul 6.7.3 pada dokumen ETSI TS 137 145-2
Operating Band Unwanted Emissions	Sesuai dengan: a) Klausul 6.6.5 ETSI TS 137 105; atau b) Klausul 6.6.5 pada dokumen ETSI TS 137 145-1
OTA Operating Band Unwanted Emissions	Sesuai dengan: a) Klausul 9.7.5 ETSI TS 137 105; atau b) Klausul 6.7.5 pada dokumen ETSI TS 137 145-2
Transmitter Spurious Emission [4] [5]	Sesuai dengan: a) Klausul 6.6.6 ETSI TS 137 105; atau b) Klausul 6.6.6 pada dokumen ETSI TS 137 145-1
OTA Transmitter Spurious Emission [4] [5]	Sesuai dengan: a) Klausul 9.7.6 ETSI TS 137 105; atau b) Klausul 6.7.6 pada dokumen ETSI TS 137 145-2
Reference Sensitivity Level	Sesuai dengan: a) Klausul 7.2 ETSI TS 137 105; atau b) Klausul 7.2 pada dokumen ETSI TS 137 145-1
OTA Reference Sensitivity Level	Sesuai dengan: a) Klausul 10.3 ETSI TS 137 105; atau b) Klausul 7.3 pada dokumen ETSI TS 137 145-2
Receiver Spurious Emission	Sesuai dengan: a) Klausul 7.6 ETSI TS 137 105; atau b) Klausul 7.6 pada dokumen ETSI TS 137 145-1
OTA Receiver Spurious Emission	Sesuai dengan: a) Klausul 10.7 ETSI TS 137 105; atau b) Klausul 7.7 pada dokumen ETSI TS 137 145-2
Receiver Intermodulation	Sesuai dengan: a) Klausul 7.7 ETSI TS 137 105; atau b) Klausul 7.7 pada dokumen ETSI TS 137 145-1
OTA Receiver Intermodulation	Sesuai dengan: a) Klausul 10.8 ETSI TS 137 105; atau b) Klausul 7.8 pada dokumen ETSI TS 137 145-2
Radiated Emission	Sesuai dengan: a) Klausul 4.2.3 ETSI EN 301 908-1; b) Klausul 8.2.1 ETSI TS 137 113; atau c) Klausul 8.2.1 3GPP TS 37.113

Catatan:
1) ETSI TS 137 105 dapat diganti dengan 3GPP TS 37.105
2) ETSI TS 137 145-1 dapat diganti dengan 3GPP TS 37.145-1
3) ETSI TS 137 145-2 dapat diganti dengan 3GPP TS 37.145-2
4) Parameter *Transmitter Spurious Emission* untuk *Co-location* dengan BS lain termasuk *voluntary*.

Parameter Uji	Batas Nilai
Radiated Transmit Power	Sesuai dengan: a) Klausul 9.2 ETSI TS 137 105; atau b) Klausul 6.2 pada dokumen ETSI TS 137 145-2

5) Batasan nilai *spurious emissions* untuk BS yang bekerja pada pita frekuensi radio 3,5 GHz mengacu pada Lampiran Keputusan Menteri ini dan regulasi lain yang terkait.

BAB III

METODE PENGUJIAN

Pengujian Persyaratan Utama terhadap Alat Telekomunikasi dan/atau Perangkat Telekomunikasi BS LTE dilaksanakan sesuai dengan:

a. Tabel 59 dan Tabel 60;

b. Tabel 59 dan Tabel 61;

c. Tabel 59 dan Tabel 62; atau

d. metode pengujian yang ditetapkan oleh Direktur Jenderal

Tabel 59. Metode Pengujian Persyaratan Umum.

Persyaratan	Metode Pengujian
Keselamatan Listrik	Sesuai dengan SNI SNI IEC 60950-1:2016, SNI IEC 62368-1:2014, dan/atau IEC 62368-1.
EMC (emisi)	Sesuai dengan ETSI EN 301 489-1, ETSI EN 301 489-50, SNI IEC CISPR 32:2015, dan/atau IEC CISPR 32.

Tabel 60. Metode Pengujian Persyaratan Utama BS SSR LTE

Parameter Uji	Metode Pengujian
Base station Output Power	Sesuai dengan: a) Klausul 5.3.4 ETSI EN 301 908-14; atau b) Klausul 6.2 pada dokumen ETSI TS 136 141
ACLR	Sesuai dengan: a) Klausul 5.3.2 ETSI EN 301 908-14; atau b) Klausul 6.6.2 pada dokumen ETSI TS 136 141
Operating Band Unwanted Emissions	Sesuai dengan: a) Klausul 5.3.1 ETSI EN 301 908-14; atau b) Klausul 6.6.3 pada dokumen ETSI TS 136 141
Transmitter Spurious Emission [3)]	Sesuai dengan: a) Klausul 5.3.3 ETSI EN 301 908-14; atau b) Klausul 6.6.4 pada dokumen ETSI TS 136 141
Reference Sensitivity Level	Sesuai dengan: a) Klausul 5.3.13 ETSI EN 301 908-14; atau b) Klausul 7.2 pada dokumen ETSI TS 136 141
Receiver Spurious Emission	Sesuai dengan: a) Klausul 5.3.6 ETSI EN 301 908-14; atau b) Klausul 7.7 pada dokumen ETSI TS 136 141
Receiver Intermodulation	Sesuai dengan a) Klausul 5.3.8 ETSI EN 301 908-14; atau b) Klausul 7.8 pada dokumen ETSI TS 136 141
Radiated Emission	Sesuai dengan: a) Klausul 4.2.3 ETSI EN 301 908-1; b) Klausul 8.2.1 ETSI TS 136 113; atau c) Klausul 8.2.1 3GPP TS 36.113
Catatan: 1) ETSI TS 136 141 dapat diganti dengan 3GPP TS 36.141 2) ETSI TS 136 104 dapat diganti dengan 3GPP TS 36.104 3) Parameter *Transmitter Spurious Emission* untuk *Co-location* dengan BS lain termasuk *voluntary*.	

Tabel 61. Metode Pengujian Persyaratan Utama BS MSR LTE

Parameter Uji	Metode Pengujian
Base station Output Power	Sesuai dengan a) Klausul 5.3.4 ETSI EN 301 908-18; atau b) Klausul 6.2 pada dokumen ETSI TS 137 141
ACLR	Sesuai dengan a) Klausul 5.3.2 ETSI EN 301 908-18; atau b) Klausul 6.6.4 pada dokumen ETSI TS 137 141
Operating Band Unwanted Emissions	Sesuai dengan a) Klausul 5.3.1 ETSI EN 301 908-18; atau b) Klausul 6.6.2 pada dokumen ETSI TS 137 141
Transmitter Spurious Emission [3)	Sesuai dengan a) Klausul 5.3.3 ETSI EN 301 908-18; atau b) Klausul 6.6.1 pada dokumen ETSI TS 137 141
Reference Sensitivity Level	Sesuai dengan a) Klausul 5.3.11 ETSI EN 301 908-18; atau b) Klausul 7.2 pada dokumen ETSI TS 137 141
Receiver Spurious Emission	Sesuai dengan a) Klausul 5.3.6 ETSI EN 301 908-18; atau b) Klausul 7.6 pada dokumen ETSI TS 137 141
Receiver Intermodulation	Sesuai dengan a) Klausul 5.3.9 ETSI EN 301 908-18; atau b) Klausul 7.7 pada dokumen ETSI TS 137 141
Radiated Emission	Sesuai dengan a) Klausul 4.2.3 ETSI EN 301 908-1; b) Klausul 8.2.1 ETSI TS 137 113; atau c) Klausul 8.2.1 3GPP TS 37.113

Catatan:
1) ETSI TS 137 141 dapat diganti dengan 3GPP TS 37.141
2) ETSI TS 137 104 dapat diganti dengan 3GPP TS 37.104
3) Parameter *Transmitter Spurious Emission* untuk *Co-location* dengan BS lain termasuk *voluntary*.

Tabel 62. Metode Pengujian Persyaratan Utama BS MSR LTE-AAS

Parameter Uji	Metode Pengujian
Radiated Transmit Power	Sesuai dengan Klausul 6.2 pada dokumen ETSI TS 137 145-2;
Base station Output Power	Sesuai dengan Klausul 6.2 pada dokumen ETSI TS 137 145-1:
OTA Base station Output Power	Sesuai dengan Klausul 6.3 pada dokumen ETSI TS 137 145-2;
ACLR	Sesuai dengan Klausul 6.6.3 pada dokumen ETSI TS 137 145-1;
OTA ACLR	Sesuai dengan Klausul 6.7.3 pada dokumen ETSI TS 137 145-2;
Operating Band Unwanted Emissions	Sesuai dengan Klausul 6.6.5 pada dokumen ETSI TS 137 145-1;
OTA Operating Band Unwanted Emissions	Sesuai dengan Klausul 6.7.5 pada dokumen ETSI TS 137 145-2;
Transmitter Spurious Emission [4]	Sesuai dengan Klausul 6.6.6 pada dokumen ETSI TS 137 145-1;
OTA Transmitter Spurious Emission [4]	Sesuai dengan Klausul 6.7.6 pada dokumen ETSI TS 137 145-2;
Reference Sensitivity Level	Sesuai dengan Klausul 7.2 pada dokumen ETSI TS 137 145-1;
OTA Reference Sensitivity Level	Sesuai dengan Klausul 7.3 pada dokumen ETSI TS 137 145-2;
Receiver Spurious Emission	Sesuai dengan Klausul 7.6 pada dokumen ETSI TS 137 145-1;
OTA Receiver Spurious Emission	Sesuai dengan Klausul 7.7 pada dokumen ETSI TS 137 145-2;
Receiver Intermodulation	Sesuai dengan Klausul 7.7 pada dokumen ETSI TS 137 145-1;
OTA Receiver Intermodulation	Sesuai dengan Klausul 7.8 pada dokumen ETSI TS 137 145-2'
Radiated Emission	Sesuai dengan a) Klausul 4.2.3 ETSI EN 301 908-1; b) Klausul 8.2.1 ETSI TS 137 113; atau c) Klausul 8.2.1 3GPP TS 37.113

Catatan:
1) ETSI TS 137 105 dapat diganti dengan 3GPP TS 37.105
2) ETSI TS 137 145-1 dapat diganti dengan 3GPP TS 37.145-1
3) ETSI TS 137 145-2 dapat diganti dengan 3GPP TS 37.145-2
4) Parameter *Transmitter Spurious Emission* untuk *Co-location* dengan BS lain termasuk *voluntary*.