

FCC ID: 2BQKJ-RP-TR206

Maximum Permissible Exposure (MPE)

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 * P * G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Average RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 * P * G}{377 * D^2}$$

From the EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

GSM/LTE

GSM/LTE Antenna Type: External Antenna

Antenna Gain: GSM850: 0.59dBi; GSM1900: -0.49dBi;

LTE: Band 2: -0.49 dBi, Band 4: -0.02 dBi, Band 5:0.59dBi, Band 7: 0.58 dBi,
Band 12: 0.42 dBi, Band 13: 0.62 dBi, Band25:-0.49 dBi, Band 26:0.59 dBi, Band 41: 1.05 dBi

modulation	Max		Antenna		Evaluation result	Power density Limits
	tune-up power		Gain		(mW/cm2)	(mW/cm2)
	(dBm)	(mW)	(dBi)	Numeric		
GSM850	30.5	1122.018	0.59	1.15	0.2557	0.55
PCS1900	28	630.957	-0.49	0.89	0.1121	1
LTE Band 2	22	158.489	-0.49	0.89	0.0282	1
LTE Band 4	22	158.489	-0.02	1.00	0.0314	1
LTE Band 5	23	199.526	0.59	1.15	0.0455	0.56
LTE Band 7	23	199.526	0.58	1.14	0.0454	1
LTE Band 12	23.5	223.872	0.42	1.10	0.0491	0.47
LTE Band 13	24	251.189	0.62	1.15	0.0576	0.52
LTE Band 25	22.5	177.828	-0.49	0.89	0.0316	1
LTE Band 26A	23	199.526	0.59	1.15	0.0455	0.55
LTE Band 26B	22.5	177.828	0.59	1.15	0.0405	0.55
LTE Band 41	23	199.526	1.05	1.27	0.0505	1

Conclusion:

For the max result : $0.2557 \leq 0.47$ for Max Power Density, compliance RF exposure..

Signature:

Date: 2025-07-17



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