

Maximum Permissible Exposure (MPE)

According to subpart FCC §1.1307 (b)(1) and §2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
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
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

NOTE:

1. f = frequency in MHz;
2. * = Plane-wave equivalent power density;

The RF Exposure level is calculated using the general equation:

$$S = PG/4\pi R^2$$

Where:

S = power density (W/m²)

P = power input to the antenna (W)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator (Numeric)

R = distance to the center of radiation of the antenna (m)

PG = EIRP (effective isotropic radiated power) [W]

**Result:**

Morlab has received documents from the applicant show:

Max antenna Gain ≤ -1 dBi

Base on the RF power tested in GSM850/GSM1900 mode, Choose the max from Low/Middle/High Channels as below list.

Band	Frequency (MHz)	RF Power (dBm)	Antenna Gain (dBi)	R (cm)	S (mW/cm ²)	Limit (mW/cm ²)	Verdict
GSM850	848.8	31.78	-1	20	0.23808	0.56590	compliance
GSM1900	1909.8	29.55	-1	20	0.14247	1.00000	compliance

So, the power density is kept in all modes.

Regards!

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