

FCC §1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)**Applicable Standard**

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

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: f = frequency in MHz

* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = output power to antenna

G= Antenna Gain

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Radio Band	Antenna Gain		Conducted Power				Time-Averaged Transmit Power (mW)	Evaluation Distance (cm)	Calculated Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	(numeric)	Time Slot	(dBm)	(mW)	Duty factor				
GSM850	-2.97	0.505	1 slot	33.1	2042	1/8	255.25	20	0.0256	0.55
	-2.97	0.505	2 slot	33.1	2042	1/4	510.5	20	0.0513	0.55
PCS1900	-1.97	0.635	1 slot	30.5	1122	1/8	140.25	20	0.0177	1.0
	-1.97	0.635	2 slot	30.3	1072	1/4	268	20	0.0339	1.0

Result: The MPE of device complies at 20 cm distance.