

FCC §2.1091&§1.1310- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 2.1091 and subpart 1.1310 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 Occupational/Controlled Exposure

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Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1824/f	4.89/f	*(900/f ²)	≤6
30-300	61.4	0.163	1.0	≤6
300-1500	/	/	f/300	≤6
1500-100,000	/	/	5.0	≤6

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

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

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

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

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

Frequency (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm ²)	Strictest MPE Limit (mW/cm ²)
	(dBi)	(numeric)	(dBm)	(mW)			
400-480	3.5	2.24	43.5	22387.21	55	1.32	1.33

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 55cm from nearby persons.

Result: Compliance