FCC §1.1307 & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 1.1307 (b)(1), 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

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

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

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

S= power density (in appropriate units, e.g. mW/cm^2);

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);

For worst case:

PCS Band

Mode	Frequency (MHz)	Tune up power (dBm)	Tune up Output Power (mW)	Antenna Gain		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
				(dBi)	(numeric)			
Uplink	1850-1867	-7.00	0.20	8.0	6.31	20	0.0003	1.0
Downlink	1930-1947	16.00	39.81	8.0	6.31	20	0.0500	1.0

The Maximum indoor and outdoor Gain is 8 dBi.

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant