

4 FCC §2.1091 - RF Exposure Information

4.1 Applicable Standards

FCC §2.1091, (a) Requirements of this section are a consequence of Commission responsibilities under the National Environmental Policy Act to evaluate the environmental significance of its actions. See subpart I of part 1 of this chapter, in particular §1.1307(b).

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

Limits for Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	842/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	30

f = frequency in MHz

* = Plane-wave equivalent power density

4.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

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

Where: *S* = power density

P = power input to antenna

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

R = distance to the center of radiation of the anten

Maximum peak output power at antenna input terminal (dBm): 26.28

Maximum peak output power at antenna input terminal (mW): 424.62

Prediction distance (cm): 20

Prediction frequency (MHz): 851.1

Maximum Antenna Gain, typical (dBi): 3.0

Maximum Antenna Gain (numeric): 2.0

Power density of prediction frequency at 20 cm (mW/cm²): 0.169

MPE limit for uncontrolled exposure at prediction frequency (mW/cm²): 0.567

Results

The device complies with the MPE requirements by providing a safe separation distance of at least 20 cm between the antenna with maximum 3 dBi gain, including any radiating structure, and any persons when normally operated.