

5 FCC §2.1091 & §15.247(i) - RF Exposure

5.1 Applicable Standards

According to FCC §15.247(i), 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.

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)
Limits for General Population/Uncontrolled Exposure				
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

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 antenna

5.2 MPE Results

Maximum rated output power at antenna input terminal (dBm): 4.5

Maximum rated output power at antenna input terminal (mW): 2.82

Prediction distance (cm): 20

Prediction frequency (MHz): 2405

Maximum Antenna Gain, typical (dBi): 7

Maximum Antenna Gain (numeric): 5.01

Power density of prediction frequency at 20.0 cm (mW/cm²): 0.0028

FCC MPE limit for uncontrolled exposure at prediction frequency (mW/cm²): 1.0

The device is compliant with the requirement MPE limit for uncontrolled exposure. The maximum power density at the distance of 20 cm is 0.0028 mW/cm². Limit is 1.0 mW/cm².