

## 4 FCC §1.1307(b) (1) & §2.1091 - RF EXPOSURE

### 4.1 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

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
<b>Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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

### 4.2 MPE Prediction

Prediction 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

Maximum peak output power at antenna input terminal (dBm): 20 (dBm)

Maximum peak output power at antenna input terminal (mW): 100 (mW)

Predication distance (cm): 100 cm

Predication frequency (MHz): 35500 (MHz)

Maximum Antenna Gain, typical (dBi): 28 (dBi)

Maximum Antenna Gain (numeric): 630.9 (numeric)

Power density of predication frequency at 1m (mW/cm<sup>2</sup>): 0.5 (mW/cm<sup>2</sup>)

MPE limit for uncontrolled exposure at predication frequency (mW/cm<sup>2</sup>): 1.0 (mW/cm<sup>2</sup>)

### 4.3 Result

The power density of predication frequency at 1 m is 0.5 mW/cm<sup>2</sup> for a 28dBi antenna which was according to calculation under the MPE limit for uncontrolled exposure of 1.00 mW/cm<sup>2</sup>, the safety distance has been addressed in the user manual.