

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

### 11.1 Applicable Standard

According to FCC §1.1310 and §2.1091 (Mobile Devices) 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

Note: f = frequency in MHz

\* = Plane-wave equivalent power density

### 11.2 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 antenna

**QPSK Modulation:**

Maximum peak output power at antenna input terminal (dBm): 24.0  
Maximum peak output power at antenna input terminal (mW): 251.188  
Prediction distance (cm): 150  
Prediction frequency (MHz): 706.6  
Antenna Gain, typical (dBi): 10  
Maximum Antenna Gain (numeric): 10  
Power density at predication frequency and distance (mW/cm<sup>2</sup>): 0.0089  
MPE limit for uncontrolled exposure at predication frequency (mW/cm<sup>2</sup>): 0.4711

**16QAM Modulation:**

Maximum peak output power at antenna input terminal (dBm): 23.55  
Maximum peak output power at antenna input terminal (mW): 226.46  
Prediction distance (cm): 150  
Prediction frequency (MHz): 707  
Antenna Gain, typical (dBi): 10  
Maximum Antenna Gain (numeric): 10  
Power density at predication frequency and distance (mW/cm<sup>2</sup>): 0.008  
MPE limit for uncontrolled exposure at predication frequency (mW/cm<sup>2</sup>): 0.4713

**11.3 MPE Conclusion**

The highest power density level at 150 cm is 0.0089 mW/cm<sup>2</sup>, which is below the uncontrolled exposure limit of 0.47 mW/cm<sup>2</sup>, the safety distance to meet the FCC RF exposure requirement has been mentioned in the user manual.