# 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 this chapter, in particular §1.1307(b).

#### Limits for Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(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

#### 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 antenna

Maximum peak output power at antenna input terminal (dBm): 45.64

Maximum peak output power at antenna input terminal (mW): 36643.75746

Prediction distance (cm): 120

Prediction frequency (MHz): 390.15

Maximum Antenna Gain, typical (dBi): 0

Maximum Antenna Gain (numeric): 1
Power density of prediction frequency at 120 cm (mW/cm²): 0.2025

FCC MPE limit for uncontrolled exposure at prediction frequency (mW/cm<sup>2</sup>): 0.2601

Maximum peak output power at antenna input terminal (dBm): 45.38

Maximum peak output power at antenna input terminal (mW): 34514.37

Prediction distance (cm): 120

Prediction frequency (MHz): 429.85

Maximum Antenna Gain, typical (dBi): 0

Maximum Antenna Gain (numeric): 1

Power density of prediction frequency at 120 cm (mW/cm<sup>2</sup>): 0.191

FCC MPE limit for uncontrolled exposure at prediction frequency (mW/cm<sup>2</sup>): 0.287

### 4.3 Conclusion

The device complies with the MPE requirements by providing a safe separation distance of at least 120 cm between the antenna with maximum 0 dBi gain, including any radiating structure, and any persons when normally operated.