# 4 FCC §15.407(f) & §2.1091 - RF Exposure

## 4.1 Applicable Standard

According to FCC §15.407(f) and §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.

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
	Limits for Ge	eneral Population/Uncor	trolled Exposure	
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

Limits for	General	Popu	lation/	Uncontro	olled	Exposure
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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 antenna

## 4.3 MPE Results

W52 Band:

Maximum peak output power at antenna input terminal (dBm):	<u>22.51</u>
Maximum peak output power at antenna input terminal (mW):	178.238
Prediction distance (cm):	<u>20</u>
Prediction frequency (MHz):	<u>5230</u>
Maximum Antenna Gain, typical (dBi):	<u>3</u>
Maximum Antenna Gain (numeric):	<u>1.995</u>
Power density of prediction frequency at 20.0 cm (mW/cm <sup>2</sup> ):	0.071
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> ):	<u>1</u>

## W58 Band:

Maximum peak output power at antenna input terminal (dBm):	22.77
Maximum peak output power at antenna input terminal (mW):	189.234
Prediction distance (cm):	<u>20</u>
Prediction frequency (MHz):	<u>5785</u>
Maximum Antenna Gain, typical (dBi):	<u>3</u>
Maximum Antenna Gain (numeric):	<u>1.995</u>
Power density of prediction frequency at 20.0 cm (mW/cm <sup>2</sup> ):	<u>0.0751</u>
MPE limit for uncontrolled exposure at prediction frequency (mW/cm <sup>2</sup> ):	<u>1</u>

The device meets FCC MPE requirement for uncontrolled exposure environment at 20 cm distance.