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.

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

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

5.3 GHz Band

Maximum peak output power at antenna input terminal (dBm):	4.29
Maximum peak output power at antenna input terminal (mW):	2.685
Prediction distance (cm):	20
Prediction frequency (MHz):	5260
Maximum Antenna Gain, typical (dBi):	25
Maximum Antenna Gain (numeric):	316.227
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.1689
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

.

5.6 GHz Band

Maximum peak output power at antenna input terminal (dBm):	4.97
Maximum peak output power at antenna input terminal (mW):	3.141
Prediction distance (cm):	20
Prediction frequency (MHz):	5700
Maximum Antenna Gain, typical (dBi):	25
Maximum Antenna Gain (numeric):	316.227
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.1975
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

Beamforming

5.3 GHz Band

Maximum peak output power at antenna input terminal (dBm):	0.623
Maximum peak output power at antenna input terminal (mW):	1.1542
Prediction distance (cm):	20
Prediction frequency (MHz):	5295
Maximum Antenna Gain, typical (dBi):	25
Maximum Antenna Gain (numeric):	316.227
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.0726
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

5.6 GHz Band

Maximum peak output power at antenna input terminal (dBm):	1.43
Maximum peak output power at antenna input terminal (mW):	1.3899
Prediction distance (cm):	20
Prediction frequency (MHz):	5530
Maximum Antenna Gain, typical (dBi):	25
Maximum Antenna Gain (numeric):	316.227
Power density of prediction frequency at 20.0 cm (mW/cm^2):	0.0874
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

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