§15.247 (i) & §2.1091 - RF EXPOSURE

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

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)
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

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm2)
P = output power to antenna
G = Antenna Gain
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Maximum peak output power at antenna input terminal (dBm):	5.91
Maximum peak output power at antenna input terminal (mW):	3.90
Prediction distance (cm):	20.0
Prediction frequency (MHz):	2408.625
Antenna Gain, typical (dBi):	0
Maximum Antenna Gain (numeric):	1.0
The worst case is power density at predication frequency at 20 cm (mW/cm^2):	0. 000776
MPE limit for general population exposure at prediction frequency (mW/cm^2):	1.0

Conclusion:

The highest power density level at 20 cm is 0.000776 mW/cm², which is below the uncontrolled exposure limit of 1.0 mW/cm² at 2408.625 MHz, the 20 cm safety distance has been addressed in the user manual.