§15.247 (i) and §1.1307(b) (1) - MAXIMUN PERMISSIBLE EXPOSURE

Standard Applicable

According to §15.247 (i) 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.

Radio frequency radiation exposure was calculated based on § 1.1310 limits.

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 (minute)
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

Test Data

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$
S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW) .
G = power gain of the antenna in the direction of interest relative to an isotropic radiator,
        the power gain factor, is normally *numeric* gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For 802.11b Mode:

Maximum peak output power at antenna input terminal: 19.78(dBm)
Maximum peak output power at antenna input terminal: 95.06 (mW)
Prediction distance: 20 (cm)
Predication frequency: 2442 (MHz)
Antenna Gain (typical): 2.0 (dBi)
Antenna Gain (typical): 1.585 (numeric)
The worst case is power density at predication frequency at 20 cm: 0.03 (mW/cm^2)
MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm^2)

For 802.11g Mode:

Maximum peak output power at antenna input terminal: <u>19.32 (dBm)</u>
Maximum peak output power at antenna input terminal: <u>85.51 (mW)</u>
Prediction distance: <u>20 (cm)</u>
Predication frequency: <u>2442 (MHz)</u>
Antenna Gain (typical): <u>2.0(dBi)</u>
Antenna Gain (typical): <u>1.585 (numeric)</u>
The worst case is power density at predication frequency at 20 cm: <u>0.027 (mW/cm^2)</u>
MPE limit for general population exposure at prediction frequency: <u>1.0 (mW/cm^2)</u>

Result: EUT complies with 20 cm distance.