Limit

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'guidelines.

According to §1.1310 and 2.1093 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

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	3

f = frequency in MHz

*=plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

$S = PG/4\prod R^2$

Where:S = power density (in appropriate units, e.g. mW/cm_2)

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)

Maximum RF Conducted Output power: 32.47(dBm)

Maximum RF Conducted Output power:1766(mW)

Prediction distance: >20 (cm)

Predication frequency:824.2 (MHz)

Antenna Gain (typical): 1.0(dBi)

Antenna Gain (typical): 1.26 (numeric)

The worst case is power density at predication frequency at 20 cm :0.44 (mW/cm^2)

MPE limit for general population exposure at prediction frequency:0.55(mW/cm^2)

0.44(mW/cm^2) <0.55 (mW/cm^2)

Result: Pass