§1.1307(b) (1) & §2.1091 - RF EXPOSURE

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

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

MPE Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of 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

23 dBi Antenna Gain

Maximum peak output power at antenna input terminal (dBm): 33.51(dBm)
Maximum peak output power at antenna input terminal (mW): 2243.88 (mW)
Predication distance (cm): 200 cm
Predication frequency (MHz): 10460 (MHz)
Maximum Antenna Gain, typical (dBi): 23 (dBi)
Maximum Antenna Gain (numeric): 199.53 (numeric)
Power density of predication frequency at 200 cm (mW/cm^2): 0.891 (mW/cm^2)
MPE limit for uncontrolled exposure at predication frequency (mW/cm^2): 1.00 (mW/cm^2)

Result

The power density of predication frequency at 200 cm is 0.891 mW/cm^2 for a 23 dBi antenna which was according to calculation under the MPE limit for uncontrolled exposure of 1.00 mW/cm^2.