Maximum Permissible Exposure

According to §1.1307, 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 Maximum Permissive Exposure (MPE)

f = frequency in MHz *

= Plane-wave equivalent power density

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time |E|², |H|² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f²)*	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

Equation from page 18 of OET Bulletin 65, Edition 97-01

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 \quad \text{or} \quad R = \sqrt{PG / 4\pi S}$$

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

Duty cycle= 50%

Maximum peak output power at antenna input terminal: 43.89 (dBm)

Maximum peak output power at antenna input terminal: 24500 (mW)

Predication frequency:462.775 (MHz)

Antenna Gain (typical): 4 (dBi)

antenna gain: 2.51 (numeric)

MPE limit for uncontrolled exposure at prediction frequency: 0.31 (mW/cm2)

MPE limit for uncontrolled exposure at prediction distance：89cm

RF Exposure Requirements:

Proposed RF exposure safety information to include in User's Manual:

CAUTION: The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other transmitter/antenna system.   The antenna should be mounted so as to maintain a distance of at least 89CM between the antenna and bystanders, when operated in a typical installation and a 4 dBi antenna.