

6 RF EXPOSURE

Applicable standard: FCC §2.1091 §1.1037

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's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated. Limits for Maximum Permissible Exposure (MPE)

(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/cm ²)	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/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

Test Data

Predication of MPE limit at a given distance

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

$$S = \text{EIRP} / 4\pi R^2$$

Where: S = power density

EIRP= equivalent isotropically radiated power=ERP+2.15dB

R = distance to the center of radiation of the antenna= [(ERP+2.15dB)/4πS]^{1/2}

According to §27.50 , the effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 1000 Watts.

Frequency 2690MHz is between 1500MHz and 100,000MHz, and the Maximum S=1mW/cm²

$$\Rightarrow R=4.22\text{m.}$$

This equipment should be installed and operated with minimum distance 4.22m between the radiator& your body.

Test Result: pass