# FCC§1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Report No.: R1DG140504004-00

## **Applicable Standard**

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

#### (A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)	
0.3-3.0	614	1.63	(100)*	6	
3.0-30	1842/f	4.89/f	$(900/f^2)*$	6	
30-300	61.4	0.163	1.0	6	
300-1500			f/300	6	
1500-100,000			5	6	

f = frequency in MHz

## Result

### **Calculated Formulary:**

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

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)

Frequency	Ante	Antenna Gain		Conducted Power		Power	MPE Limit
(MHz)	(dBi)	(numeric)	(dBm)	(mW)	Distance (cm)	Density (mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
3650-3675	17	50.12	25	316.23	20	3.15	5

Note: Maximum target power is 25 dBm

#### **Radiation Exposure Statement:**

To comply with FCC RF exposure requirements, a minimum separation distance of 20cm is required between the antenna and all public persons.

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<sup>\* =</sup> Plane-wave equivalent power density