

# Appendix B. Maximum Permissible Exposure

FCC ID: XZB-MAXR7102 Page No. : 1 of 3



## 1. Maximum Permissible Exposure

### 1.1. Applicable Standard

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 levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.25 m normally can be maintained between the user and the device.

(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)*	6
30-300	61.4	61.4 0.163 1.0		6
300-1500			F/300	6
1500-100,000			5	6

### (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  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz; \*Plane-wave equivalent power density

#### 1.2. MPE Calculation Method

E (V/m) = 
$$\frac{\sqrt{30 \times P \times G}}{d}$$
 Power Density:  $Pd$  (W/m²) =  $\frac{E^2}{377}$ 

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

FCC ID: XZB-MAXR7102 Page No. : 2 of 3



Report No.: FR121728

## 1.3. Calculated Result and Limit

Antenna Type: Dipole Antenna

Max Conducted AV Power for IEEE 802.11g: 24.30 dBm

Directional Antenna Gain	Antenna Gain	Average Output Power	Average Output Power	Power Density (S)	Limit of Power Density (S)	Test Result
(dBi)	(numeric)	(dBm)	( mW )	(mW/cm²)	(mW/cm²)	
4.81	3.0271	24.3010	269.2177	0.162212	1	Complies

NOTE: Directional gain =1.8dBi + 10log(2)=4.81dBi

FCC ID: XZB-MAXR7102 Page No. : 3 of 3