

## Appendix B. Maximum Permissible Exposure

# 1. Maximum Permissible Exposure

## 1.1. Limit of Maximum Permissible Exposure

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 0.2 m normally can be maintained between the user and the device.

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	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	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6
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 <sup>2</sup> )	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 1: f = frequency in MHz ; *Plane-wave equivalent power density				
Note 2: For the applicable limit, see FCC 1.1310				

## 1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power Density: Pd (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = 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

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

### 1.3. Result of Maximum Permissible Exposure

<b>Exposure Environment</b>	General Population / Uncontrolled Exposure				
<b>Temp</b>	24°C		<b>Humidity</b>	64%	
<b>Test Engineer</b>	Satoshi Yang		<b>Test Date</b>	Nov. 01, 2014	
<b>Test results</b>					
<b>Maximum EIPR Power of Test Frequency (GHz)</b>	<b>Average EIRP Power (dBm)</b>	<b>Average EIRP Power (mW)</b>	<b>Power Density (S) (mW/cm<sup>2</sup>)</b>	<b>Separation Distance (cm)</b>	<b>Limit of Power Density (S) (mW/cm<sup>2</sup>)</b>
LRP    60.16    GHz	27.30	536.78	0.107	20	1.00