



FCC ID: OJF-GX-PLA40

## RF Exposure Compliance Requirement

### 1. Standard requirement

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 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 0.2m 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/cm <sup>2</sup> )	Averaging Times  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
1500-100000			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/cm <sup>2</sup> )	Averaging Times  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/500	30
1500-100000			1.0	30

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

## 2. MPE Calculation Method

$$S \text{ (mW/cm}^2\text{)} = P * G / 4\pi * R^2$$

S= Power Density (mW/cm<sup>2</sup>)

P=Peak RF conducted output Power (mW)

G=EUT Antenna numeric gain (numeric)

R= Separation distance between radiator and human body (cm);

$$R = \sqrt{(P * G) / 4\pi * S}$$

From the maximum EUT RF output power, as well as the gain of the used antenna, according to the RF power density limit above, the minimum distance between the antenna and human body will be calculated.

## 3. Calculated Result

For downlink:

CDMA Band(1930MHz ~ 1995MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.15	32734	5.0	255.2553
Middle	21	125	45.62	36475	5.0	269.4467
Highest	21	125	45.81	38107	5.0	275.4086

WCDMA Band(1930MHz ~ 1995MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.26	33574	5.0	258.5096
Middle	21	125	45.78	37844	5.0	274.4566
Highest	21	125	45.50	35481	5.0	265.7499

WCDMA Band( 2110MHz ~ 2155MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.44	34995	5.0	263.9236
Middle	21	125	45.85	38459	5.0	276.6777
Highest	21	125	45.88	36141	5.0	268.2102

GSM Band(1930MHz ~ 1995MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.47	35237	5.0	264.8346
Middle	21	125	45.14	32659	5.0	254.9627
Highest	21	125	46.06	40365	5.0	283.4508

LTE Band( 728MHz ~7 57MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.62	36475	2.4433	385.4512
Middle	21	125	45.65	36728	2.4750	384.3007
Highest	21	125	45.50	35481	2.5067	375.3245

LTE Band(1930MHz ~ 1995MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.44	34995	5.0	263.9236
Middle	21	125	45.90	38905	5.0	278.2774
Highest	21	125	45.72	37325	5.0	272.5681

LTE Band( 2110MHz ~ 2155MHz):

Frequency (MHz) F	Maximum Antenna Gain (dBi)	Maximum Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit of Power Density (S) (mW/cm <sup>2</sup> )	Minimum Distance to human body (cm)
Lowest	21	125	45.64	36644	5.0	270.0702
Middle	21	125	45.80	38019	5.0	275.0905
Highest	21	125	45.64	36644	5.0	270.0702

**Conclusion:**

So the recommend use distance away from EUT external antenna is larger than 3.86meter.