SGS-CSTC Standards Technical Services Co., Ltd.

FCC ID: PX8TC-2000

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 radia 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^2)	Averaging Times $\lvert E \rvert^2$, $\lvert H \rvert^2$ 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^2)	Averaging Times $\lvert E \rvert^2$, $\lvert H \rvert^2$ 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

$S \ (mW/cm^2) = P*G/4Pi*R^2$

S = Power Density (mW/cm^2)

P = Peak RF conducted output Power (mW)

G = EUT Antenna numeric gain (numeric)

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

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

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:

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/cm²)	Minimum Distance to human body (cm)
Lowest	21	125	50.63	115611.22422	5.0	479.7060
Middle	21	125	50.47	111429.45336	5.0	470.9504
Highest	21	125	50.66	116412.60294	5.0	481.3657

WCDMA:

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/cm²)	Minimum Distance to human body (cm)
Lowest	21	125	50.62	115345.32578	5.0	479.1541
Middle	21	125	50.53	112979.59147	5.0	474.2149
Highest	21	125	50.65	116144.86138	5.0	480.8119

For uplink:

CDMA:

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^2)	Minimum Distance to human body (cm)
Lowest	21	125	11.1	12.88249	5.0	5.0638
Middle	21	125	10.9	12.30268	5.0	4.9485
Highest	21	125	10.3	10.71519	5.0	4.6182

WCDMA:

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^2)	Minimum Distance to human body (cm)
Lowest	21	125	10.6	11.48154	5.0	4.7805
Middle	21	125	10.8	12.02264	5.0	4.8919
Highest	21	125	10.3	10.71519	5.0	4.6188

For uplink(Distribution):

CDMA:

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^2)	Minimum Distance to human body (cm)
Lowest	21	125	10.7	11.74898	5.0	4.8359
Middle	21	125	10.4	10.96478	5.0	4.6717
Highest	21	125	10.2	10.47129	5.0	4.5654

WCDMA:

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^2)	Minimum Distance to human body (cm)
Lowest	21	125	11.1	12.88250	5.0	5.0638
Middle	21	125	10.9	12.30269	5.0	4.9485
Highest	21	125	10.8	12.02264	5.0	4.8919

Conclusion:

So the recommend use distance away from EUT external antenna is larger than 4.82 meter.