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 $\|E\|^2$,$\|H\|^2$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 $\|E\|^2$,$\|H\|^2$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

3.1 For downlink: 617MHz to 652MHz

Frequency (MHz)	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)
For 5M Modulation						
619.5	12.5	17.8	38.0	6309.573	1.239	84.953
634.5	12.5	17.8	38.0	6309.573	1.269	83.943
649.5	12.5	17.8	38.0	6309.573	1.299	82.968
For 20M Modulation						
627	12.5	17.8	38.0	6309.573	1.254	84.444
634.5	12.5	17.8	38.0	6309.573	1.269	83.943
642	12.5	17.8	38.0	6309.573	1.284	83.451

3.2 For downlink: 2350MHz to 2360MHz

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)
For 5M Modulation						
2352.5	12.5	17.8	38.0	6309.573	1.0	94.562
2355	12.5	17.8	38.0	6309.573	1.0	94.562
2357.5	12.5	17.8	38.0	6309.573	1.0	94.562
For 20M Modulation						
2355	12.5	17.8	38.0	6309.573	1.0	94.562

3.3 For downlink: 2496MHz to 2690MHz

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)
For 5M Modulation						
2498.5	12.5	17.8	38.0	6309.573	1.0	94.562
2593	12.5	17.8	38.0	6309.573	1.0	94.562
2687.5	12.5	17.8	38.0	6309.573	1.0	94.562
For 20M Modulation						
2506	12.5	17.8	38.0	6309.573	1.0	94.562
2593	12.5	17.8	38.0	6309.573	1.0	94.562
2680	12.5	17.8	38.0	6309.573	1.0	94.562

Conclusion:

So the recommend use distance away from EUT external antenna is larger than 94.562 centimeter(cm).