

MPE Calculation : WCDMA, LTE

RF function or Mode	Frequency range (MHz)			Max. Target Power (dBm)	Conducted Power (dBm)	EIRP (dBm)	Adjusted EIRP to Tune up Max (dBm)	Adjusted EIRP to Tune up Max (mW)	Maximum power density (mW/cm ²)	Requirment (mW/cm ²)
WCDMA1700	1712.40	~	1752.60	23.70	23.55	23.60	23.75	237.14	0.0472	1.0000
WCDMA1900	1852.40	~	1907.60	23.70	23.47	23.48	23.71	234.96	0.0468	1.0000
LTE Band 12(QPSK)	699.70	~	715.30	23.70	23.68	22.77	22.79	190.11	0.0379	0.4664
LTE Band 12(16QAM)	699.70	~	715.30	22.70	22.69	21.92	21.93	155.96	0.0311	0.4664
LTE Band 4(QPSK)	1710.70	~	1754.30	23.70	22.90	23.58	24.38	274.16	0.0546	1.0000
LTE Band 4(16QAM)	1710.70	~	1754.30	22.70	22.65	22.75	22.80	190.55	0.0380	1.0000
LTE Band 2(QPSK)	1850.70	~	1909.30	23.70	23.06	21.84	22.48	177.01	0.0353	1.0000
LTE Band 2(16QAM)	1850.70	~	1909.30	22.70	22.67	20.90	20.93	123.88	0.0247	1.0000
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The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 23.75 / (4 \times 20^2 \times \pi) \\
 &= 0.0472 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(20cm)

▪ Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averageing time (minutes)
0.3 ~ 1.34	614	1.63	*100	30
1.34 ~ 30	824/f	2.19 / f	*180 / f ²	30
30 ~ 300	27.5	0.073	0.2	30
300 ~ 1,500			f / 1500	30
1,500 ~ 100,000			1.0	30

Conclusion : The exposure condition of this device is compliant with FCC