

MPE Calculation : LTE, WCDMA, GSM

RF function or Mode	Frequency range (MHz)			Tune-up Max Conducted power(dBm) ^{Note 1}	Conducted power(dBm)	Maximum EIRP (dBm)	Adjusted EIRP to tune-up Max(dBm)	Maximum power density (mW/cm ²)	Requiriment (mW/cm ²)
LTE Band 2	1850.00	~	1910.00	23.00	21.95	20.20	21.250	0.0266	1.000
LTE Band 4	1710.00	~	1755.00	23.00	22.34	17.24	17.900	0.0123	1.000
LTE Band 5	824.00	~	849.00	23.00	21.77	19.72	20.950	0.0248	0.549
LTE Band 13	777.00	~	787.00	23.00	22.13	18.08	18.950	0.0157	0.518
LTE Band 12(17)	699.00	~	716.00	23.00	22.08	17.19	18.110	0.0129	0.466
WCDMA 850	826.40	~	846.60	24.00	22.46	19.67	21.210	0.0263	0.550
WCDMA 1700	1712.40	~	1752.60	24.00	22.08	17.30	19.220	0.0167	1.000
WCDMA 1900	1852.40	~	1907.60	24.00	22.28	18.32	20.040	0.0201	1.000
GSM 850 ^{Note 2}	824.20	~	848.80	26.00	24.19	21.41	23.220	0.0418	0.549
GSM 1900 ^{Note 2}	1850.20	~	1909.80	23.00	21.91	16.60	17.690	0.0117	1.000

Note1: Please refer to the tune-up procedure for the max target power.

Note2: For GSM mode, the MPE was estimated using the time-averaged power.

Where, Adjusted EIRP to tune-up Max = Measured EIRP + (Tune-up Max conducted power - conducted power)

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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 21.25 / (4 \times 20^2 \times \pi) \\
 &= 0.0266 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

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

▪ 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