

MPE Calculation

RF feature(Mode)	Frequency range (MHz)			Tune-up Max power(dBm)	ANT Gain (dBi)	Cable loss between transmitter and antenna(dB)	Duty Factor(dB)	Adjusted EIRP to tune-up max(dBm)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
GSM 850(1TX slot)	824.20	~	848.80	33.00	0.44	1.96	-9.03	22.45	0.035 0	0.549 0
GSM 850(4TX slot)	824.20	~	848.80	28.00	0.44	1.96	-3.01	23.47	0.044 3	0.549 0
GSM 1900(1TX slot)	1 850.20	~	1 909.80	31.00	1.51	2.96	-9.03	20.52	0.022 5	1.000 0
GSM 1900(4TX slot)	1 850.20	~	1 909.80	26.00	1.51	2.96	-3.01	21.54	0.028 4	1.000 0
WCDMA 850	826.40	~	846.60	24.00	0.44	1.96	NA	22.48	0.035 3	0.550 0
WCDMA 1700	1 712.40	~	1 752.60	24.00	0.83	2.90	NA	21.93	0.031 1	1.000 0
WCDMA 1900	1 852.40	~	1 907.60	24.00	1.51	2.96	NA	22.55	0.035 8	1.000 0
LTE Band 2	1 850.00		1 910.00	23.00	1.51	2.96	NA	21.55	0.028 5	1.000 0
LTE Band 4	1 710.00		1 755.00	23.00	0.83	2.90	NA	20.93	0.024 7	1.000 0
LTE Band 5	824.00		849.00	23.00	0.44	1.96	NA	21.48	0.028 0	0.549 0
LTE Band 12(17)	699.00	~	716.00	23.00	0.13	1.81	NA	21.32	0.027 0	0.466 0
LTE Band 13	777.00	~	787.00	23.00	-0.36	1.91	NA	20.73	0.023 6	0.518 0
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Note1: Please refer to the tune-up porcedure for tune-up max.

Note2: EIRP(Adjusted EIRP to Tune- up Max) = Tune-up power(dBm) + Antenna gain(dBi) + Cable loss(dB) + Duty factor(dB)

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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 22.450 / (4 \times 20^2 \times \pi) \\
 &= 0.035 \text{ mW/cm}^2
 \end{aligned}$$

- 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)	Averaging 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