

MPE Calculation

RF feature(Mode)	Frequency range (MHz)			Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
Bluetooth(1 Mbps)	2 402.00	~	2 480.00	6.85	1.99	8.84	7.656	0.002	1.000
Bluetooth(2, 3 Mbps)	2 402.00	~	2 480.00	6.85	1.99	8.84	7.656	0.002	1.000
Bluetooth LE(1 Mbps)	2 402.00	~	2 480.00	7.00	1.99	8.99	7.926	0.002	1.000
WLAN(802.11b)	2 412.00	~	2 462.00	16.00	1.99	17.99	62.951	0.013	1.000
WLAN(802.11g)	2 412.00	~	2 462.00	14.00	1.99	15.99	39.720	0.008	1.000
WLAN(802.11n-HT20)	2 412.00	~	2 462.00	13.50	1.99	15.49	35.400	0.008	1.000
WLAN(802.11n-HT40)	2 422.00	~	2 452.00	13.00	1.99	14.99	31.551	0.007	1.000
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Note: Please refer to the operation description for Max tune-up 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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 7.656 / (4 \times 20^2 \times \pi) \\
 &= 0.002 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(2

▪ 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

MPE Calculation

RF feature(Mode)	Frequency range (MHz)			Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
WCDMA Band 5	826.40	~	846.60	23.50	0.68	24.18	261.819	0.053	0.550
WCDMA Band 2	1 852.40	~	1 907.60	23.50	2.36	25.86	385.479	0.077	1.000
LTE Band 12	699.70	~	715.30	24.00	2.68	26.68	465.587	0.093	0.466
LTE Band 4	1 710.70	~	1 754.30	24.00	1.59	25.59	362.243	0.073	1.000
LTE Band 2	1 850.70	~	1 909.30	24.00	2.36	26.36	432.514	0.087	1.000
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		~							

Note: Please refer to the operation description for Max tune-up power.

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The MPE sample calculation for this exposure is shown below.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 261.819 / (4 \times 20^2 \times \pi) \\
 &= 0.053 \text{ mW/cm}^2
 \end{aligned}$$

- Note

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EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(2

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

RF Exposure Compliance for simultaneous operations

- Worst case for simultaneous operations
- WLAN 2.4GHz 802.11b + LTE band 12

RF feature or mode(Worst case)	WLAN(802.11b)	LTE	-	-	-	-	-	Σ of MPE ratios
Band(Worst case)	2.4GHz	Band 12	-	-	-	-	-	
Power Density (mW/cm2)	0.013	0.093	-	-	-	-	-	
Requirement (mW/cm2)	1.000	0.466	-	-	-	-	-	
MPE ratio (Power Density/Requirement)	0.013	0.200	-	-	-	-	-	
Worst case(MPE ratio)	0.013	0.200	-	-	-	-	-	0.213

- Requirement = Σ of MPE ratios ≤ 1

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