

MPE Calculation

Worst Case Mode	Frequency range (MHz)			Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirment (mW/cm ²)
BT (1Mbps)	2402.00	~	2480.00	0.00	2.02	2.02	1.593	0.0004	1.000
BT (2,3Mbps)	2402.00	~	2480.00	-3.00	2.02	-0.98	0.798	0.0002	1.000
Bluetooth LE	2402.00	~	2480.00	2.00	2.02	4.02	2.524	0.0006	1.000

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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 1.593 / (4 \times 20^2 \times \pi) \\
 &= 0.0004 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenn

▪ 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

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2.4GHz WLAN - 802.11b	2412.00	~	2462.00	15.00	2.02	17.02	50.351	0.0101	1.000
5.1GHz WLAN - 802.11a	5180.00	~	5240.00	10.00	3.60	13.60	22.909	0.0046	1.000
5.8GHz WLAN - 802.11ac(VHT80)	5775.00		5775.00	11.00	3.60	14.60	28.841	0.0058	1.000

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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 50.351 / (4 \times 20^2 \times \pi) \\
 &= 0.0101 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

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