

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)	Requirement (mW/cm ²)
Bluetooth LE(1Mbps)	2402.00	~	2480.00	11.00	4.56	15.56	35.975	0.0072	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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 35.975 / (4 \times 20^2 \times \pi) \\
 &= 0.0072 \text{ mW/cm}^2
 \end{aligned}$$

- 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)	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

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2.4GHz WLAN - 802.11b	2412.00	~	2462.00	17.00	4.56	21.56	143.219	0.0285	1.000
5.1GHz WLAN - 802.11a	5180.00	~	5240.00	16.50	4.58	21.08	128.234	0.0256	1.000
5.3GHz WLAN - 802.11a	5260.00	~	5320.00	16.50	4.13	20.63	115.612	0.0231	1.000
5.5GHz WLAN - 802.11a	5500.00	~	5720.00	16.50	3.91	20.41	109.901	0.0219	1.000
5.7GHz WLAN - 802.11a	5745.00	~	5825.00	16.50	4.41	20.91	123.311	0.0246	1.000

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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 143.219 / (4 \times 20^2 \times \pi) \\
 &= 0.0285 \text{ mW/cm}^2
 \end{aligned}$$

- Note

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