

MPE Calculation : Bluetooth

| RF function or Mode | Frequency range (MHz) | Max Target Power (dBm) | ANT Gain (dBi) | Maximum EIRP (dBm) | Maximum EIRP (mW) | Maximum power density (mW/cm ²) | Requriment (mW/cm ²) |
|---------------------|-----------------------|------------------------|----------------|--------------------|-------------------|---|----------------------------------|
| Bluetooth(1Mbps) | 2402.00 ~ 2480.00 | 0.50 | -2.68 | -2.18 | 0.606 | 0.0002 | 1.000 |
| Bluetooth(2&3Mbps) | 2402.00 ~ 2480.00 | -1.00 | -2.68 | -3.68 | 0.429 | 0.0001 | 1.000 |
| | ~ | | | | | | |
| | ~ | | | | | | |
| | ~ | | | | | | |
| | ~ | | | | | | |
| | ~ | | | | | | |
| | ~ | | | | | | |

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.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 0.606 / (4 \times 20^2 \times \pi) \\
 &= 0.0002 \text{ mW/cm}^2
 \end{aligned}$$

- 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