

Reference:**[Bluetooth part]**

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1mW/cm² uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$ 1.40 mW (Maximum average output power)

Time average was used for the above value in consideration of 6-minutes time-averaging

Burst power average was used for the above value in consideration of worst condition.

$G =$ 4.365 Numerical Antenna gain; equal to 6.4 dBi

$r =$ 20 cm (Separation distance)

$$\text{Power Density Result } S = 0.00122 \text{ mW/cm}^2$$

Reference:**[Bluetooth Low Energy part]**

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1mW/cm² uncontrolled exposure limit. The Friis formula used was:

$$S = \frac{P \times G}{4 \times \pi \times r^2}$$

Where

$P =$ 1.06 mW (Maximum average output power)

Time average was used for the above value in consideration of 6-minutes time-ave

Burst power average was used for the above value in consideration of worst condit

$G =$ 4.365 Numerical Antenna gain; equal to 6.4dBi

$r =$ 20 cm (Separation distance)

$$\text{Power Density Result } S = 0.00092 \text{ mW/cm}^2$$

Therefore, if WLAN 5GHz and Bluetooth transmit simultaneously,

$$\begin{aligned} S &= 0.01629 \text{ mW/cm}^2 + 0.00122 \text{ mW/cm}^2 \\ &= 0.01751 \text{ mW/cm}^2 \end{aligned}$$

Therefore, if WLAN 5GHz and Bluetooth Low Energy transmit simultaneously,

$$\begin{aligned} S &= 0.01629 \text{ mW/cm}^2 + 0.00092 \text{ mW/cm}^2 \\ &= 0.01721 \text{ mW/cm}^2 \end{aligned}$$

Even taking into account the tolerance, this device can be satisfied with the limits.

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