

Radio Frequency Human Exposure Evaluation:

The Highest radiated Power measured was 107.8dBuV/m at 2440MHz,
107.8dBuV/m is equivalent to 18.07mW i.e. 12.57 dBm

The highest RF Conducted output power of the module was measured 10.46 dBm at 2440 MHz
According to §1.1310 of the FCC rules, the power density limit for General Population/Uncontrolled Exposure at 2440 MHz is 1 mW/cm². The maximum permissible exposure (MPE) is calculated to show the required separation distance that must be maintained during installation to maintain compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$Pd = P * G / (4 * \pi * R^2)$$

Where:

Pd = Power Density

P = Output Power at the Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

To solve for the minimum mounting distance required:

$$R = \text{Sqrt} ((P * G) / (4 * \pi * Pd))$$

For the module, the calculation is as follows:

$$Pd = 0.0022 \text{ mW/cm}^2$$

$$P = \text{Output Power} = 11.22 \text{ mW}$$

$$G = \text{Worst Case Gain} = 1$$

$$R = \text{Sqrt} ((11.22 * 1) / (4 * \pi * 1))$$

$$R = 0.944 \text{ cm, which is less than 20cm}$$