

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a Radio Module operating at 2402-2480MHz. The EUT is powered by DC 3.3V. For more detailed features description, please refer to the user's manual.

Antenna Type: removable antenna

Antenna Gain: 2.0dBi

Modulation Type: GFSK

The nominal conducted output power specified: 20dBm (± 1 dB)

The nominal radiation output power specified: 22dBm (± 1 dB)

The maximum conducted output power for the EUT is 19.96dBm in the frequency 2440MHz which is within the production variation.

The minimum conducted output power for the EUT is 19.70dBm in the frequency 2402MHz which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting device is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, According to the KDB 447498 and OET 65, the simple calculation as below:

The source-based time averaged maximum radiated power = 23dBm = 199.53mW

At the distance (R) of 20cm to 40cm and in 0.3 GHz to 6 GHz, MPE Exclusion Threshold Level:

$$P_{th}(\text{mW}) = ERP_{20\text{ cm}}(\text{mW}) = \begin{cases} 2040f & 0.3\text{ GHz} \leq f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \leq f \leq 6\text{ GHz} \end{cases}$$

The MPE limit is 3060mW for general population and uncontrolled exposure in the 2.4GHz frequency range according to FCC Part 1.1307. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons