RF Exposure

The equipment under test (EUT) is a Radio Module with 2.4G FHSS technology operating in 2402-2480MHz. The EUT is powered by DC power supply (5.0V). For more detailed features description, please refer to the user's manual.

2.4G Function

Antenna Type: Unique (non-standard) antenna connector
Antenna Gain: 2.15 dBi max (This information is provided by applicant, and the applicant is responsible for the authenticity of the provided information.)
Modulation Type: GFSK

The nominal conducted output power specified: 11.85dBm(tolerance: +/-3dB).
The nominal radiated output power (e.i.r.p) specified: 14.0dBm (tolerance: +/-3dB).

The maximum conducted output power for the EUT is 14.13dBm in the frequency 2441MHz which is within the production variation.
The minimum conducted output power for the EUT is 13.17dBm in the frequency 2402MHz which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting devices is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, According to the KDB 447498 D04 V01 and OET 65, the simple calculation as below:

The source-based time averaged maximum radiated power = 14.0dBm+3dB= 17.0dBm = 50.1mW

The maximum ERP= 14dBm+3dB-2.15dB= 14.85dBm= 30.6mW

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

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

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