

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a J-BOX operating at 915.95MHz – 927.00MHz. The EUT was powered by DC 10V from the control board. For more detailed features description, please refer to the user's manual.

Antenna Type: Integral Antenna

Antenna Gain: 1.81dBi

Modulation Type: FSK

The normal radiated output power (e.i.r.p) is: 8.81dBm (tolerance: +/-2dB).

The normal conducted output power is 7.0dBm (tolerance: +/-2dB).

The maximum conducted output power for the EUT is 7.59dBm in the frequency 921.80MHz which is within the production variation.

The minimum conducted output power for the EUT is 7.40dBm in the frequency 915.95MHz 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 and OET 65, the simple calculation as below:

The source-based time averaged maximum radiated power = 8.81dBm+2dB= 10.81dBm = 12.05mW

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 1868.538mW for general population and uncontrolled exposure in the 915.95MHz 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.

Note: EIRP is higher than ERP, thus EIRP is compared with the Exclusion Threshold.