

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a Functional Decor operating at 433.92MHz. The EUT is powered by DC 3.0 V from 2*AA battery. For more detailed features description, please refer to the user's manual.

Antenna Type: Integral Antenna

Antenna Gain: 3.0dBi Max

Modulation Type: FSK

The nominal radiated output power (e.i.r.p) specified: -25dBm (+/- 2dB)

Max e.i.r.p = e.i.r.p-2.15 = -23-2.15 = -25.15dBm=0.0031mw

The maximum peak radiated emission for the EUT is 69.77dBμV/m at 3m in the frequency 433.92MHz.

The EIRP = [(FS*D) ^2 / 30] mW = -25.43dBm

The ERP= EIRP-2.15 = -27.58 dBm

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:

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 885mW for general population and uncontrolled exposure in the 433.92MHz 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.