

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a OTB Ergonomic Dino Mouse with Bluetooth 5.1 BLE function operating in 2402-2480MHz, 2.4G function operating in 2402-2480MHz. 2.4G and BLE cannot transmit simultaneously. The EUT is powered by DC 3V by AAA battery*2. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: 2.83 dBi

Bluetooth Version: 5.1 BLE (Single Mode)

The nominal conducted output power specified: -6.83 dBm (± 2 dB)

The nominal radiated output power (e.i.r.p) specified: -4 dBm (± 2 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 92.0 dB μ V/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -3.23dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 89.7 dB μ V/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -5.53dBm

which is within the production variation.

The maximum conducted output power specified is -4.83dBm= 0.329mW

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: 2.83 dBi

The nominal conducted output power specified: -10.83 dBm (± 2 dB)

The nominal radiated output power (e.i.r.p) specified: -8 dBm (± 2 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 88.4 dB μ V/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -6.83dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 86.1 dB μ V/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -9.13dBm

which is within the production variation.

The maximum conducted output power specified is -8.83dBm= 0.131mW

The SAR Exclusion Threshold Level:

$$\begin{aligned} P_{th}(\text{mW}) &= ERP_{20\text{cm}} * (d/20\text{cm})^X \quad \left(X = -\log_{10} \left(\frac{60}{ERP_{20\text{cm}} \sqrt{f}} \right) \right) \\ &= 3060 * (0.5/20)^{1.9} \text{ mW} \\ &= 2.72 \text{ mW} \end{aligned}$$

Since max. conducted output power and effective radiated power (ERP) is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

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