

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a wireless optical mouse (Mouse Unit). The EUT was powered by DC 3.0V(2 x 1.5V AAA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.

Antenna Gain: -1dBi.

The nominal radiated output power (e.i.r.p) specified: -1dBm (+/- 3dB)

The nominal conducted output power is 0 dBm (tolerance: +/- 3dB).

Modulation Type: GFSK

According to the KDB 447498:

The maximum peak radiated emission for the EUT is 94.7dB μ V/m at 3m in the frequency 2476MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -0.5dBm

which is within the production variation.

The minimum peak radiated emission for the EUT is 91.6dB μ V/m at 3m in the frequency 2409MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -3.6dBm

which is within the production variation.

The maximum conducted output power specified is 3dBm = 2.0mW

The source- based time-averaging conducted output power
= $2.0 \cdot \text{Duty Cycle}$ mW < 2.0mW (Duty Cycle < 100%)

The SAR Exclusion Threshold Level:

= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$

= $3.0 \cdot 5 / \sqrt{2.476}$ mW

= 9.5 mW

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

Transmitter Duty Cycle Calculation

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 6.12ms

Effective period of the cycle = 0.44ms

DC = $0.44\text{ms} / 6.12\text{ms} = 0.0719$ or 7.19%