

# INTERTEK TESTING SERVICES

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## RF Exposure

The equipment under test (EUT) is an B/O Toys operating at 2.4G Band. The EUT can be powered by DC 4.5V (3 x 1.5V AAA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: 0dBi

The nominal conducted output power specified: -12.0 dBm ( $\pm 3$ dB)

The nominal radiated output power (e.i.r.p) specified: -12.0 dBm ( $\pm 3$ dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 83.3 dB $\mu$ V/m at 3m in the frequency 2402MHz

The EIRP = [(FS\*D) ^2 / 30] mW = -11.93dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 80.4 dB $\mu$ V/m at 3m in the frequency 2480MHz

The EIRP = [(FS\*D) ^2 / 30] mW = -14.83dBm

which is within the production variation.

The maximum conducted output power specified is -9.0dBm= 0.126mW

The source- based time-averaging conducted output power

=0.126\* Duty cycle mW =0.126 mW\*0.0683=0.54mW

The SAR Exclusion Threshold Level:

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

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.

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

The duration of one cycle = 8.8116ms

Effective period of the cycle = 1391.3 $\mu$ s x1 = 1.3913ms

DC =1.3913ms / 8.8116ms =0.1579 or 15.79%