

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Toy RC X-Twin Evo operating at 2.4G Band. The EUT can be powered by DC 6.0V (4 x 1.5V AA batteries). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.

Antenna Gain: 0dBi.

The normal peak radiated output power (e.i.r.p) is: 3.0dBm (tolerance: +/- 3dB).

The normal peak conducted output power is 3.0dBm (tolerance: +/- 3dB).

Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 100.8dB μ V/m at 3m in the frequency 2475MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 5.57dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 100.2dB μ V/m at 3m in the frequency 2407MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 4.97dBm

which is within the production variation.

The maximum conducted output power specified is 6dBm = 3.981mW

The source- based time-averaging conducted output power
= $3.981 \cdot \text{Duty cycle}$ mW < 3.981 mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

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

= $3.0 \cdot 5 / \sqrt{(2.475)}$ mW

= 9.53 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.

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

The duration of one cycle = 15.6522ms

Effective period of the cycle = 1.4493ms

DC = $1.4493\text{ms} / 15.6522\text{ms}$ = 0.0926 or 9.26%