

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a PJ Masks 9" Gekko RC Vehicle 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

Modulation Type: GFSK

Antenna Gain: 0dBi

The nominal conducted output power specified: 1.0 dBm (± 3 dB)

The nominal radiated output power (e.i.r.p) specified: 1.0 dBm (± 3 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 99.0 dB μ V/m at 3m in the frequency 2410MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 3.77dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 98.2 dB μ V/m at 3m in the frequency 2473MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 2.97dBm

which is within the production variation.

The maximum conducted output power specified is 4dBm= 2.512mW

The source- based time-averaging conducted output power
= 2.512 * Duty cycle mW < 2.512 mW (Duty cycle < 100%)

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. power of the source-based time-averaging 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.

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

The duration of one cycle = 0.7913ms

Effective period of the cycle = 0.15072ms

DC = 0.15072ms / 0.7913ms = 0.1905 or 19.05%