

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is an Model R/C Car operating at 2.4G Band. The EUT can be powered by DC 3.0V (2 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: 2.0 dBm (± 3 dB)

The nominal radiated output power (e.i.r.p) specified: 2.0 dBm (± 3 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 99.5 dB μ V/m at 3m in the frequency 2442MHz

The EIRP = [(FS*D) ^2 / 30] mW = 4.27dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 97.2 dB μ V/m at 3m in the frequency 2410MHz

The EIRP = [(FS*D) ^2 / 30] mW = 1.97dBm

which is within the production variation.

The maximum conducted output power specified is 5.0dBm= 3.162mW

The source- based time-averaging conducted output power =3.162* Duty cycle mW =3.162 mW*0.0719=0.227mW

The SAR Exclusion Threshold Level:

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

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 = 12.087ms

Effective period of the cycle = 869.6 μ s x1 = 0.8696ms

DC =0.8696ms / 12.087ms =0.0719 or 7.19%