

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a R/C Car operating at 2.4G Band. The EUT can be powered by DC9.6V (1 x 9.6V rechargeable battery). For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.

Antenna Gain: 0dBi.

The normal radiated output power (e.i.r.p) is: -20.0dBm (tolerance: +/- 3dB).

The normal conducted output power is -20.0dBm (tolerance: +/- 3dB).

Modulation Type: GFSK.

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 74.9dBμV/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -20.33dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 74.6dBμV/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -20.63dBm

which is within the production variation.

The maximum conducted output power specified is -17dBm = 0.02 mW

The source- based time-averaging conducted output power

= $0.02 \cdot \text{Duty cycle}$ mW < 0.02 mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

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

= $3.0 \cdot 5 / \sqrt{(2.480)}$ 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 = 15.0725ms

Effective period of the cycle = 2.6087ms

DC = $2.6087\text{ms} / 15.0725\text{ms}$ = 0.1731 or 17.31%