

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Toy RC Speed Bumper Road Rage operating at 2.4G Band. The EUT can be powered by DC 3.0V (2 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 normal radiated output power (e.i.r.p) is: -13.0dBm (tolerance: +/- 3dB).

The normal conducted output power is -13.0dBm (tolerance: +/- 3dB).

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 84.6 dBμV/m at 3m in the frequency 2417MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -10.63dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 80.3dBμV/m at 3m in the frequency 2452MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -14.93dBm
which is within the production variation.

The maximum conducted output power specified is -10.0dBm=0.100mW

The source- based time-averaging conducted output power
=0.100* Duty cycle mW <0.100 mW(Duty cycle <100%)

The SAR Exclusion Threshold Level:

= $3.0 * (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$
= $3.0 * 5 / \sqrt{2.452}$ mW
= 9.58 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 = 10.0435ms

Effective period of the cycle = 652.2μs = 0.6522ms

DC =0.6522ms / 10.0435ms =0.0649 or 6.49%