

# INTERTEK TESTING SERVICES

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## Analysis Report

The equipment under test (EUT) is a transmitter for a Toy RC Cars Lights And Sounds 2pk operating at 27.145 MHz which is controlled by a crystal. The EUT is powered by two 1.5V AA batteries. For more detail information pls. refer to the user manual.

Antenna Type: integral antenna

Antenna Gain: 0dBi

Modulation Type: Pulse modulation

The nominal conducted output power specified: -40.0dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -42.15dBm (+/- 3dB)

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 54.0dB<sub>UV</sub>/m at 3m in the frequency 27.145MHz

The EIRP = [(FS\*D) ^2 / 30] mW= -41.23dBm

The ERP = EIRP – 2.15 = -43.38dBm

which is within the production variation.

The maximum conducted output power specified is -37.0dBm = 0.0002mW

The source- based time-averaging conducted output power

= 0.0002\* Duty Cycle mW < 0.0002mW (Duty Cycle<100%)

The SAR Exclusion Threshold Level for 27.145MHz when the minimum test separation distance is < 50mm:

$$= 474 * [1 + \log(100/f(MHz))] / 2$$

$$= 371.2 \text{ mW}$$

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.

### Transmitter Duty Cycle Calculation

The duration of one cycle = 956.5μs

Effective period of the cycle = 478.3us

$$\text{DC} = 478.3\text{us} / 956.5\mu\text{s} = 0.5001 \text{ or } 50.01\%$$