

## INTERTEK TESTING SERVICES

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### Analysis Report

The equipment under test (EUT) is a portable transmitter for a Toy RC Monster Spinning Car operating at 49.860 MHz which is controlled by a crystal. The EUT is powered by one 9.0V 6F22 size battery. For more detail information pls. refer to the user manual.

Antenna1: Integral antenna with plastic enclosure, Gain: 0dBi

Antenna2: telescope antenna with unique antenna connector, Gain: 0dBi

The nominal conducted output power specified: -22.0dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -24.15dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The EUT with Ant 1 worst-case peak radiated emission is 72.5dBμV/m at 3m in the frequency 49.860MHz

The EIRP =  $[(FS \cdot D)^2 / 30]$  mW = -22.73dBm

The ERP = EIRP - 2.15 = -24.88 dBm which is within the production variation.

The EUT with Ant 2 worst-case peak radiated emission is 72.3dBμV/m at 3m in the frequency 49.860MHz

The EIRP =  $[(FS \cdot D)^2 / 30]$  mW = -22.93dBm

The ERP = EIRP - 2.15 = -25.08 dBm which is within the production variation.

The maximum conducted output power specified is -19.0dBm = 0.013mW

The source- based time-averaging conducted output power  
=  $0.013 \cdot \text{Duty Cycle}$  mW = 0.007842 mW < 0.1mW

The SAR Exclusion Threshold Level for 49.860MHz when the minimum test separation distance is < 50mm:

=  $474 \cdot [1 + \log(100/f(\text{MHz}))]/2$   
= 308.6mW

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 = 18.90ms

Effective period of the cycle = 1.60ms x 4 + 500μs x 10 = 11.40ms

DC = 11.40ms / 18.90ms = 0.6032 or 60.32%

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