

INTERTEK TESTING SERVICES

Analysis Report

The equipment under test (EUT) is a portable transmitter for a Toy RC Monster Spinning Car operating at 27.145 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.

The EUT have two antenna types, all the electrical aspect are same.

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

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

The nominal conducted output power specified: -33.0dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -35.15dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The EUT with ANT 1 worst-case peak radiated emission for the EUT is 62.1dB μ V/m at 3m in the frequency 27.145MHz

The EIRP = [(FS*D) ^2 / 30] mW= -33.13dBm

The ERP = EIRP – 2.15 = -35.28 dBm which is within the production variation.

The EUT with ANT 2 worst-case peak radiated emission for the EUT is 62.0dB μ V/m at 3m in the frequency 27.145MHz

The EIRP = [(FS*D) ^2 / 30] mW= -33.23dBm

The ERP = EIRP – 2.15 = -35.38 dBm which is within the production variation.

The maximun conducted output power specified is -30dBm = 0.001mW

The source- based time-averaging conducted output power

= 0.001 * Duty Cycle mW< 0.1 mW

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 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 = 18.6ms

Effective period of the cycle = 480 μ s x 10 + 1.44ms x 4 = 10.56ms

DC = 10.56ms / 18.6ms = 0.5677 or 56.77%

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