

## Analysis Report

The equipment under test (EUT) is a portable transmitter for a RC Monster car/Thunder Tumbler operating at 27.145 MHz which is controlled by a crystal. The EUT is powered by a 9.0V 6F22 size battery. For more detail information pls. refer to the user manual.

Antenna Type: telescope antenna with unique antenna connector

Antenna Gain: 0dBi

The nominal conducted output power specified: -25dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -27dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 72.2dB $\mu$ V/m at 3m in the frequency 27.145MHz

The EIRP = [(FS\*D) ^2 / 30] mW= -23.03dBm

The ERP = EIRP – 2.15 = -25.2 dBm

which is within the production variation.

The maximum conducted output power specified is -22dBm = 0.0063mW

The source- based time-averaging conducted output power

= 0.0063 \* Duty Cycle mW= 0.0039 mW < 0.1 mW

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

= [474 \* (1 + log100/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 duty cycle is simply the on-time divided by the period:

The duration of one cycle = 18.78ms

Effective period of the cycle = 1.56msx 4 + 540 $\mu$ s x 10 = 11.64ms

DC = 11.64ms / 18.78ms = 0.620 or 62.0%