

## Analysis Report

The equipment under test (EUT) is a portable transmitter for a Toy RC Bumper Car Set operating at 27.145 MHz which is controlled by a crystal. The EUT is powered by two 1.5V AAA size batteries. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Antenna Gain: 0dBi

The nominal conducted output power specified: -36Bm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -38.15dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 58.9dBμV/m at 3m in the frequency 27.145MHz

The EIRP =  $[(FS \cdot D)^2 / 30]$  mW = -36.33dBm

The ERP = EIRP – 2.15 = -38.48 dBm

which is within the production variation.

The maximum conducted output power specified is -33dBm = 0.0005mW

The source- based time-averaging conducted output power

= 0.0005 \* Duty Cycle mW = 0.00033 mW < 0.1 mW

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

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

= 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 = 18.48ms

Effective period of the cycle = 0.6ms x 10 + 1.56ms x 4 = 12.24ms

DC = 12.24ms / 18.48ms = 0.6623 or 66.23%