Analysis Report

The equipment under test (EUT) is a 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 battery. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna
Antenna Gain: 0dBi

The nominal conducted output power specified: -36.0dBm (+/- 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 60.0dBμV/m at 3m in the frequency 27.145MHz
The EIRP = [(FS*D) ^2 / 30] mW= -35.23dBm
The ERP = EIRP – 2.15 = -37.38dBm
which is within the production variation.

The maximun conducted output power specified is -33dBm =0.0005mW
The source- based time-averaging conducted output power
= 0.0005* Duty Cycle mW < 0.0005mW (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 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 = 16.9565ms
Effective period of the cycle = 1.4783ms x 4 + 463.8μs x 10 =10.5512ms
DC =10.5512ms / 16.9565ms =0.6223 or 62.23%