Analysis Report

The equipment under test (EUT) is a transmitter for a Toy RC Xtreme Wall Climber operating at 27.145 MHz which is controlled by a crystal. The EUT is powered by three 1.5V AA battery. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna
Antenna Gain: 0dBi

The nominal conducted output power specified: -50.0dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -52.15dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 44.4dBμV/m at 3m in the frequency 27.145MHz
The EIRP = [(FS*D) ^2 / 30] mW= -50.83dBm
The ERP = EIRP – 2.15 = -52.98dBm
which is within the production variation.

The maximun conducted output power specified is -47dBm =0.00002mW
The source- based time-averaging conducted output power
= 0.00002* Duty Cycle mW < 0.00002mW (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 = 41.6522ms
Effective period of the cycle = 2.0ms x 2 + 1.2174ms x 14 + 521.7μs x10=26.2606ms
DC =26.2606ms / 41.6522ms =0.6305 or 63.05%