Analysis Report

The equipment under test (EUT) is a transmitter for a Toy RC Flip Stunt Rally operating at 49.860 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: -27.0dBm (+/- 3dB)

The nominal radiated output power (e.r.p) specified: -29.15dBm (+/- 3dB)

Modulation Type: Pulse modulation

According to the KDB 447498:

The worst-case peak radiated emission for the EUT is 67.6dBμV/m at 3m in the frequency 49.86MHz
The EIRP = [(FS*D) ^2 / 30] mW= -27.63dBm
The ERP = EIRP – 2.15 = -29.78dBm
which is within the production variation.

The maximun conducted output power specified is -24dBm =0.004mW
The source- based time-averaging conducted output power
= 0.004* Duty Cycle mW< 0.004mW (Duty Cycle<100%)

The SAR Exclusion Threshold Level for 49.860MHz when the minimum test separation distance is < 50mm:
= 474 * [1 + log(100/f(MHz)]/2
= 308.6 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 = 17.8986ms
Effective period of the cycle = 1.4638ms x 4 + 463.8μs x 10 =10.4932ms
DC =10.4932ms / 17.8986ms =0.5863 or 58.63%