

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Receiver Unit) for a RC sound effect toy. The sample supplied operated on 21 channels, normally at 2418 - 2462MHz. The frequency channels are as follows.

2418	2420	2422	2424	2426	2428	2430
2434	2436	2438	2440	2442	2444	2446
2450	2452	2454	2456	2458	2460	2462

The EUT is powered by 3 x 1.5V LR44 button cell batteries. After switching on the EUT, which can be generated different sound effects based on the switches pressed in corresponding the controller.

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 89.4dBμV/m at 3m (Peak), 70.3dBμV/m at 3m (Average)

Maximum allowed production tolerance: +/- 5dB

According to the KDB 447498:

Based on the maximum average field strength of production tolerance was 75.3dBμV/m at 3m in frequency 2.462GHz.

Thus, it below calculated field strength according to minimum SAR exclusion threshold level as follows:

The worst case of SAR Exclusion Threshold Level:

$$= 3.0 * (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$$

$$= 3.0 * 5 / \sqrt{2.483.5} \text{ mW}$$

$$= 9.52 \text{ mW}$$

According to the KDB 412172 D01:

$$\text{EIRP} = [(\text{FS} * \text{D})^2 * 1000 / 30]$$

Calculated Field Strength for 9.52mW is 105dBuV/m @3m

Since maximum average field strength plus production tolerance $\leq 105\text{dBuV/m @3m}$ and antenna gain is $\geq 0.0\text{dBi}$, it is concluded that maximum Conducted Power and Field Strength are well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.