

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Master Unit) for a RC Toy. The sample supplied operated on 3 channels, normally at 2450 - 2470MHz. The channels are 2450MHz, 2460MHz and 2470MHz.

The EUT is powered by 2 x 1.5V AA batteries. After switching on the EUT, the Slave unit will be flashed light and generated sound effect.

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 84.0dB μ V/m at 3m (Peak), 66.8dB μ V/m at 3m (Average) Maximum allowed production tolerance: +/- 3dB

According to the KDB 447498:

Based on the maximum average field strength of production tolerance was 69.8dB μ V/m at 3m in frequency 2.460GHz.

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

The worst case of SAR Exclusion Threshold Level:

$$\begin{aligned} &= 3.0 * (\text{min. test separation distance, mm}) / \text{sqrt}(\text{freq. in GHz}) \\ &= 3.0 * 5 / \text{sqrt}(2.483.5) \text{ mW} \\ &= 9.52 \text{ mW} \end{aligned}$$

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 105dBuV/m @3m and antenna gain is \geq 0.0dBi, 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.