

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Controller Unit) for a RC Train. The sample supplied operated on 46 channels, normally at 2420 - 2465MHz. The channels are separated with 1MHz spacing.

The EUT is powered by 3 x 1.5V AAA batteries. After switching on the EUT, the train will be moved forward or backward, control the speed and generated sound effect based on the switches pressed on the EUT.

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 93.1dB μ V/m at 3m (Peak), 72.5dB 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 75.5dB μ V/m at 3m in frequency 2.420GHz.

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

The worst case of SAR Exclusion Threshold Level:

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

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

$$= 9.52 \text{ mW}$$

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 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.