

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transmitter (Train Unit) for a RC Train. The sample supplied operated on 16 channels, normally at 2413 - 2471MHz. The channels are shown in below table.

2413	2435	2436	2438
2439	2440	2441	2442
2443	2444	2445	2467
2468	2469	2470	2471

The EUT is powered by 6 x 1.5V C batteries. After switching on the EUT, the Train will be moved forward or backward and turned left and right based on the switches pressed in the controller.

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 98.7dB μ V/m at 3m (Peak), 61.2dB 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 64.2dB μ V/m at 3m in frequency 2.471GHz.

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 105dB μ V/m @3m

Since maximum average field strength plus production tolerance \leq 105dB μ V/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.