

Analysis Report

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

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 switch 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 91.4dB μ V/m at 3m

Maximum allowed production tolerance: +/- 3dB

According to the KDB 447498:

Based on the maximum field strength of production tolerance was 94.4dB μ V/m at 3m in frequency 2.413GHz.

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

The worst case of SAR Exclusion Threshold Level:

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

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

= 9.52 mW

According to the KDB 412172 D01:

EIRP = $[(FS*D)^2 * 1000 / 30]$

Calculated Field Strength for 9.52mW is 105dB μ V/m @3m

Since maximum average field strength plus production tolerance < = 105dB μ V/m @3m and antenna gain is > = 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.