

## 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.**

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

**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 $\mu$ V/m at 3m (Peak), 61.2dB $\mu$ 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 $\mu$ 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:

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

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

$$= 9.52 \text{ mW}$$

According to the KDB 412172 D01:

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

Calculated Field Strength for 9.52mW is 105dB $\mu$ V/m @3m

Since maximum average field strength plus production tolerance <= 105dB $\mu$ 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.