

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Car Unit) for a RC Car. The sample supplied operated on 22 channels, normally at 2411 - 2472MHz. The channels are shown in below table.

2411	2413	2420	2422	2424
2426	2428	2432	2435	2437
2439	2441	2443	2445	2451
2453	2455	2457	2461	2468
2470	2472			

The EUT is powered by 3 x 1.5V AAA batteries. After switching on the EUT, the car 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 102.4dB μ V/m at 3m (Peak), 78.3dB 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 81.3dB μ V/m at 3m in frequency 2.441GHz.

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

The worst case of SAR Exclusion Threshold Level:

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

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

$$= 9.52 \text{ mW}$$

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.