

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transmitter (Controller Unit) for a RC Car. The sample supplied operated on 40 channels, normally at 2410 - 2473 MHz. The channels are shown in table below.

2410	2422	2426	2430	2432	2434
2437	2439	2440	2442	2443	2444
2445	2446	2447	2449	2452	2456
2458	2459	2460	2461	2462	2463
2464	2465	2466	2467	2468	2469
2471	2472	2473			

The EUT is powered by 3.0V AA batteries. After switching on the EUT, the car will be moved forward or backward and turned left and right based on the switches pressed on the controller.

Antenna Type: Internal, Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength is 103.5 dB μ V/m at 3m (Peak), 74.5 dB 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 77.5dB μ V/m at 3m in frequency 2.473GHz.

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.