

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Car Unit) for a RC car. The operation frequency range is between 2405MHz and 2473MHz with following 8 channels used.

Channel	Frequency (MHz)
0	2405
1	2415
2	2427
3	2437
4	2440
5	2445
6	2450
7	2473

The EUT is powered by 4 x 1.5V 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 in the controller.

Antenna Type: Internal integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 91.8dB μ V/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 94.8dB μ V/m at 3m.

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:

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

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

Since maximum field strength plus production tolerance $\leq 105\text{dBuV/m}$ @3m and antenna gain is $\geq 0.0\text{dBi}$, 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.