

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 2410MHz and 2470MHz with following 32 channels used.

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410	11	2429	21	2450	31	2469
2	2414	12	2430	22	2452	32	2470
3	2415	13	2431	23	2454		
4	2416	14	2433	24	2456		
5	2417	15	2434	25	2458		
6	2418	16	2439	26	2462		
7	2419	17	2441	27	2464		
8	2421	18	2442	28	2465		
9	2426	19	2444	29	2466		
10	2428	20	2446	30	2467		

The EUT is powered by 4 x 1.5VAA Alkaline batteries. After switching on the EUT, the car will rotate, move 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 79.7dB 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 82.7dB 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:

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

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