

Analysis Report

The Equipment Under Test (EUT) is a 2.4GHz Transmitter (Controller) for a Car Set. The EUT is powered by 2 x 1.5V AA batteries. The 2.4GHz module is operating on 27 channels, normally at 2407 – 2475 Mhz. The channels are shown in table below.

2407	2409	2411	2413	2415	2417
2419	2421	2423	2431	2433	2435
2437	2439	2441	2443	2445	2447
2459	2461	2463	2465	2467	2469
2471	2473	2475			

The EUT is powered by 2 x 1.5V AA batteries. After switch 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 94.8 dB μ V/m at 3m

Maximum allowed production tolerance: +/- 3dB

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 97.8dB μ V/m at 3m in frequency 2.407GHz.

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 105dB μ V/m @3m

Since maximum field strength plus production tolerance $\leq$ 105dB μ V/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.