

Analysis Report

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver (Controller Unit) for a RC car. The sample supplied operated on 71 channels, normally at 2405 - 2475MHz. The channels are separated with 1MHz spacing.

The EUT is powered by 2 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 96.8dB μ V/m at 3m (Peak), 83.8dB 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 86.8dB μ V/m at 3m in frequency 2.475GHz.

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

The worst case of SAR Exclusion Threshold Level:

$$\begin{aligned} &= 3.0 * (\text{min. test separation distance, mm}) / \text{sqrt(freq. in GHz)} \\ &= 3.0 * 5 / \text{sqrt}(2.483.5) \text{ mW} \\ &= 9.52 \text{ mW} \end{aligned}$$

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 average 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.