

Analysis Report

The Equipment Under Test (EUT) is portable controller for a RC car set which operates at 49.860MHz. The EUT is power by 1 x 9.0V Alkaline battery.

After switching on the EUT, the car will be moved forward or backward, turned left or right based on the joystick control in the controller.

Antenna Type: External, Dedicated Telescope Antenna

Antenna Gain: 0dBi

Nominal rated field strength: 73.9dBμV/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 76.9dBμV/m at 3m in frequency 49.860MHz, thus;

The worst case of SAR Exclusion Threshold Level for 49.860MHz when the minimum test separation distance is < 50mm:

$$= [474 * (1 + \log_{10}(f(\text{MHz}))) / 2]$$
$$= 308.6\text{mW}$$

According to the KDB 412172 D01:

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

Calculated Field Strength for 308.6mW is 120.1dBuV/m @3m

Since maximum field strength plus production tolerance <= 120.1dBuV/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.