

Analysis Report

Report No.: HK20051541

The Equipment Under Test (EUT) is portable controller for Remote Controlled car set which operates at 49.860MHz. The EUT is power by 4.5V (3x 1.5V AAA 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: External, Dedicated Whip Antenna

Antenna Gain: 0dBi

Nominal rated field strength: 68.3dB 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 71.3dB μ V/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:

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

Calculated Field Strength for 308.6mW is 120.1dB μ V/m @3m

Since maximum field strength plus production tolerance <= 120.1dB 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.