

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: 73.9dB 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 76.9dB 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:
= $[474 * (1 + \log_{10}(f(\text{MHz}))) / 2]$
= 308.6mW

According to the KDB 412172 D01:
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.