

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 2 x 1.5V AA batteries.

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

Antenna Type: External Dedicated Whip Antenna
Antenna Gain: 5dBi
Nominal rated field strength: 64.9dB 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 54.6dB 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 = $[(FS * D) ^2 * 1000 / 30]$

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.