

Analysis Report

The Equipment Under Test (EUT), is a portable 27MHz Transmitter for a RC Car. The sample supplied operated on a single channel, 27.149MHz.

The EUT is powered by 2 x 1.5V AA 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. Light will be emitted from the car when it is moving forward.

Antenna Type: External Whip Antenna

Antenna Gain: 0dBi

Nominal rated field strength: 67.9dB μ V/m at 3m (Quasi-Peak)

Maximum allowed field strength of production tolerance: +/- 3dB

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 70.9dB μ V/m at 3m in frequency 27.145MHz, thus;

The worst case of SAR Exclusion Threshold Level for 27.145MHz when the minimum test separation distance is < 50mm:

$$= [474 * (1 + \log_{10}(100/f(MHz)))]/2$$

$$= 371.2\text{mW}$$

According to the KDB 412172 D01:

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

Calculated Field Strength for 371.2mW is 120.9dB μ V/m @3m

Since maximum field strength plus production tolerance \leq 120.9dB μ V/m @3m and antenna gain is \geq 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.