

Analysis Report

The Equipment Under Test (EUT) is a transmitter of a RF controlled car, which is operating at 49.86MHz as dictated by a crystal. The EUT is powered by 1 x 9.0VDC Alkaline battery. After switching on the EUT and the corresponding car(Receiver), activating the control keys on the EUT can control the car moving forward, backward, left and right.

Antenna Type: External, Dedicate, Telescope-type Antenna

Antenna Gain: 0dBi

Nominal rated field strength: 78.9 dB 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 81.9dB μ V/m at 3m in frequency 49.860GHz, thus;

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 0.046mW$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.046mW.

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

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

Since the above conducted output power is well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.