

Analysis Report

Report No.: 14050069HKG-001

The Equipment Under Test (EUT) is a transmitter of a RC Car operating at 49.860 MHz as dictated by a crystal. The EUT is powered by a 3.0 V DC source (2 x 1.5V AAA batteries). The EUT has a on/off switch and a pair of control keys to control the RC Car to go forward and backward.

After switching ON the EUT and the receiver of the RC Car, activating the control keys on the EUT can control the receiver moving forward and backward.

Antenna Type: External integral antenna

Antenna Gain: 0dBi

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

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 0.0465\text{mW}$
Thus;

Conducted power = Radiated Power (EIRP) – Antenna Gain
So;

Conducted Power = 0.0465mW.

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

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

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.