

# Analysis Report

Report No.: 14020671HKG-002

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 9.0 V DC source (1 x 9V battery). The EUT has a left joystick to make the left wheel move forward and reverse and a right joystick to make the right wheel move forward and reverse.

After switching ON the EUT and the receiver of the RC Car, activating the joystick on the EUT can control the receiver moving forward, backward, left or right.

Antenna Type: External integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 76.1dB $\mu$ 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 79.1dB $\mu$ V/m at 3m in frequency 49.860MHz, thus;

$$\text{The EIRP} = [(\text{FS}^* \text{D})^2 * 1000 / 30] = 0.0244 \text{mW}$$

Thus;

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.0244mW.

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

$$= [474 * (1 + \log 100/f(MHz))] / 2$$

$$= 308.6 \text{mW}$$

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.