

Analysis Report

The Equipment Under Test (EUT) is a plug in 2.4GHz Bluetooth transceiver for 4.0 Robot. The EUT is powered by 4X1.5V Size C Alkaline Batteries. The Bluetooth module in the EUT is operating in the frequency range from 2402MHz to 2480MHz (40 channels with 2MHz channel spacing).

After pairing with smart device with the application through Bluetooth, The EUT can be controlled by the command listed in the application. Also, the EUT can be controlled by voice input without pairing with any device by speaking out with specific commands listed on the command card. The EUT will be respond respectively according to the commands. The EUT is able to move forward, backward, left/right turn. The arm of the EUT can be move upward, downward, front and back. There are mainly three parts under the command card: Main menu, Motion Control and Settings.

Antenna Type: Internal antenna

Antenna Gain: 0dBi

Nominal rated field strength: 85.2dBμV/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 88.2dBμV/m at 3m in frequency 2.4GHz, thus;

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 0.198\text{mW}$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.198mW.

The SAR Exclusion Threshold Level:

= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in}}$

GHz) = $3.0 \cdot 5 / \sqrt{2.480} \text{ mW}$

= 9.53 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.