

Analysis Report

The Equipment Under Test (EUT), is a portable BT BLE Robot, which was designed to be operated at the frequency range of 2402-2480MHz. The channels are separated by 2 MHz spacing.

The EUT is powered by 1 x 3.6V Rechargeable battery. After switch on the EUT and paired with smartphone, the robot will be moved forward or backward and turned left and right, adjust the colour of light and produce sound based on the switches pressed in the smartphone app.

Antenna Type: Internal integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 99.3dB 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 102.3dB μ V/m at 3m.

Thus, it below calculated field strength according to minimum SAR exclusion threshold level as follows:

The worst case of SAR Exclusion Threshold Level:

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

$$= 3.0 * 5 / \sqrt{2.483.5} \text{ mW}$$

$$= 9.52 \text{ mW}$$

According to the KDB 412172 D01:

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

Calculated Field Strength for 9.52mW is 105dB μ V/m @3m

Since maximum field strength plus production tolerance \leq 105dB 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.