

Analysis Report

Report No.: 18121067HKG-001

The equipment under test (EUT) is a portable BLE sword, which is designed to be operated at the frequency range of 2402 – 2480 MHz with 2 MHz spacing. The EUT is power by DC 4.5V (3 × 1.5V AAA batteries). After being paired with the mobile app, it could interact with the mobile, act as a game controller, adjust the color of sword and produce sound.

Antenna Type: Internal, Integral

Antenna Type: Internal integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 82.9dB 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 85.9dB 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:

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

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

$$= 9.52 \text{ mW}$$

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 at 3m

Since maximum field strength plus production tolerance \leq 105dB μ V/m at 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.