

# Analysis Report

Report No.: 19120523HKG-001

The Equipment Under Test (EUT) is a Swimming Pool Sensor. The EUT sense the water quality of the swimming pool and report data via Bluetooth BLE link when the EUT is paired with a smart device.

The EUT operates at frequency range of 2402MHz to 2480MHz with 2MHz channel spacing for Bluetooth BLE portion (40 channels). The EUT is powered by 3.7VDC internal battery.

Bluetooth Portion

Modulation Type: GFSK

Antenna Type: Internal, Internal

Frequency Range: 2402MHz to 2480MHz, 2MHz channel spacing, 40 channels

Antenna Gain: -1 dBi

Peak EIRP range: 4dBm to 10dBm

Maximum Average EIRP = 0 dBm

According to the KDB 447498:

Based on the Maximum Average EIRP = 0 dBm, thus;

$$\begin{aligned}\text{Maximum Average Conducted power} &= \text{Maximum Average EIRP} - \text{Antenna Gain} \\ &= 0 \text{ dBm} + 1 \text{ dBi} = 1 \text{ dBm}\end{aligned}$$

So;

Maximum Average Conducted Power = 1.26 mW.

The SAR Exclusion Threshold Level:

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

$$= 3.0 * 5 / \text{sqrt}(2.480) \text{ mW}$$

$$= 9.53 \text{ mW}$$

Since the above Maximum Average Conducted output power is well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.