

Analysis Report

Report No.: 17020818HKG-001

The Equipment Under Test (EUT) is Wireless Earbuds which consist of a pair of Bluetooth earphone (Left and Right channel). Only Right Channel Earbud (master) can connect to a Bluetooth device such as a smartphone. After pairing Right Channel Earbud (master) with a Bluetooth device, Left Channel Earbud (slave) will connect to Right Channel Earbud (master) via Bluetooth link automatically. Then stereo signal will split to Left and Right Earbuds accordingly. The EUT occupies a frequency range of 2402MHz to 2480MHz (79 channels with channel spacing of 1MHz). The EUT is powered by 3.7VDC internal rechargeable battery. The rechargeable battery can be charged by USB port (5VDC). The circuit of Left and Right Earbuds are identical, except Right Channel Earbud has a microphone. The EUT cannot support Bluetooth 4.0 BLE as declared by applicant.

Bluetooth Portion

Modulation Type: GFSK

Antenna Type: Internal, Integral

Frequency Range: 2402MHz to 2480MHz, 1MHz channel spacing, 79 channels

Antenna Gain: 0dBi

Normal rated field strength: 94.8 dB μ V/m @ 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 97.8 dB μ V/m at 3m in frequency 2.4GHz, thus;

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 1.808 \text{ mW}$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 1.808 mW.

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.