Analysis Report

The Equipment Under Test (EUT) is a Bluetooth Stereo Earbuds. The EUT is using adaptive frequency hopping for Bluetooth module. The Bluetooth can support Bluetooth 4.0 BLE and Bluetooth 3.0. The Bluetooth portion operates in frequency range from 2402MHz to 2480MHz   The EUT is powered by 3.7 VDC Li-ion rechargeable battery. The Mirco-USB port is for charging internal rechargeable battery of EUT only. The left earbud and the right earbud are identical in RF circuit. The only differences between the left earbud and the right earbud are audio signal output due to software setting.

2.4GHz Bluetooth Module:
Modulation Type: GFSK
Antenna Type: Integral, Internal
Frequency Range for Bluetooth 3.0: 2402MHz - 2480MHz, 1MHz channel spacing, 79 channels
Nominal field strength is 103.9dBμV/m @ 3m
Production Tolerance of field strength is 100.0 dBμV/m to 104.0 dBμV/m
Antenna gain is 0dBi

2.4GHz Bluetooth Module:
Modulation Type: GFSK
Antenna Type: Integral, Internal
Frequency Range for Bluetooth 4.0(BLE):2402MHz -2480MHz, 2MHz channel spacing, 40 channels.
Nominal field strength is 103.9dBμV/m @ 3m
Production Tolerance of field strength is 100.0 dBμV/m to 104.0 dBμV/m
Antenna gain is 0dBi

Based on the Maximum allowed field strength of production tolerance was 104.0dBμV/m at 3m in frequency 2.4GHz, thus;

The EIRP = [(FS*D) ^2*1000 / 30] = 7.54mW

Conducted power = Radiated Power (EIRP) – Antenna Gain
So;

Conducted Power = 7.54mW

The SAR Exclusion Threshold Level:
= 3.0 * (min. test separation distance, mm) / sqrt(freq. in GHz)
= 3.0 * 5 / sqrt (2.48) 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.