

# Analysis Report

Report No.: 14071200HKG-001

The Equipment Under Test (EUT) is a Bluetooth Speaker with PLL Radio and USB/SD. The EUT is using adaptive frequency hopping for Bluetooth module. The Bluetooth portion is operating between 2402MHz and 2480MHz (79 channels with 1MHz channel spacing). When the EUT is switched ON in Bluetooth mode, the display will show "BT" and a LED flashing. The Bluetooth enabled device would be searched and connected the EUT before playing audio. After pairing, the "BT" LED will stay lit. The audio signal will be amplified and fed to internal stereo loudspeaker. The EUT also have FM radio and playback MP3 function. A LED display acts as the visual interface. The EUT is powered by 12V DC from an AC/DC adaptor and/or eight size C batteries (1.5VDC). The AC/DC adaptor can accept 100-240VAC. A USB port (5VDC) is for charging purpose and playback MP3 from USB drive only. A SD card slot is for playback MP3 from SD Card only. The Aux port is for playback MP3 from MP3 device only.

2.4GHz Bluetooth Module:

Modulation Type: GFSK

Antenna Type: Integral, Internal

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

Nominal field strength is 85.7dB $\mu$ V/m @ 3m

Production Tolerance of field strength is +/- 3dB

Antenna gain is 0dBi

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 88.7dB $\mu$ V/m at 3m in frequency 2.4GHz, thus;

The EIRP =  $[(FS^*D)^2 * 1000 / 30] = 0.22\text{mW}$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.22 mW

The SAR Exclusion Threshold Level:

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

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

= 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.