

Analysis Report (Bluetooth)

Report No.: 14040046HKG-002

The Equipment Under Test (EUT) is a Tablet, equipped with HDMI, WiFi, Bluetooth 3.0/4.0 (BLE), SD and USB Interface. The EUT operates in frequency range from 2412MHz to 2462MHz at 802.11b,g,n HT20 (11 channels with 5MHz spacing) and also operates in the frequency range 2402MHz to 2480MHz at Bluetooth 3.0 (79 channels with 1MHz spacing) while 2402MHz to 2480MHz at Bluetooth 4.0 BLE (40 channels with 2MHz spacing). The EUT is powered by an external AC/DC adaptor (5VDC output) or/and 3.7VDC (1x 3.7V 3000mAh rechargeable battery). The adaptor accepts 100-120VAC only.

WiFi and Bluetooth portions are in the same module sharing a single antenna.

WiFi 802.11b, 802.11g, 802.11n (HT20):
2412MHz – 2462MHz, 11 channels, 5MHz spacing

Bluetooth 4.0 BLE
2402MHz – 2480MHz, 40 channels, 2MHz spacing

Bluetooth 3.0
2402MHz – 2480MHz, 79 channels, 1MHz spacing

Antenna Type: Internal integral antenna
Antenna Gain: 0dBi

When the Bluetooth was stand-alone emitting, the Bluetooth portion emission is as below.

Operating Mode	Nominal Radiated Field Strength	Production Tolerance	Antenna Gain
Bluetooth 4.0 BLE	101.2dBμV/m at 3m	±3dB	0dBi
Bluetooth 3.0	90.4dBμV/m at 3m	±3dB	0dBi

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 104.2dBμV/m at 3m in frequency 2.4GHz, thus;

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 7.891 \text{ mW}$

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

Conducted Power = 7.891 mW.

The SAR Exclusion Threshold Level:

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

= $3.0 * 5 / \sqrt{2.480}$ 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.