Analysis Report (Bluetooth)

Report No.: 13090970HKG-002

The Equipment Under Test (EUT) is a tablet, equipped with HDMI, WiFi, Bluetooth 3.0/ 4.0, SD and USB Interface. The EUT operates in the 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 (40 channels with 2MHz spacing). The EUT is powered by an external AC/DC adaptor or / and 3.7 VDC (1 x 3.7V 3400mAh rechargeable battery). The adaptor accepts 100-240VAC.

WiFi and Bluetooth portions are in the same module that shares a single antenna.
The applicant declared that the EUT is using non-adaptive frequency hopping in Bluetooth 3.0.
The type of antenna in the EUT is internal, integral.

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

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

Bluetooth 3.0
2402MHz – 2480MHz, 79 channels, 1MHz spacing
The applicant declared that non-adaptive frequency hopping is employed in this model.

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	103.0dBμV/m at 3m	±2dB	0dBi
Bluetooth 3.0	97.8dBμV/m at 3m	±2dB	0dBi

When the WiFi and Bluetooth modules were simultaneously emitting, the Bluetooth portion emission is as below.

Operating Mode	Nominal Radiated Field Strength	Production Tolerance	Antenna Gain
Bluetooth 4.0	84.8dBμV/m at 3m	±2dB	0dBi
Bluetooth 3.0	82.6dBμV/m at 3m	±2dB	0dBi

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 105.0dBμV/m at 3m in frequency 2.4GHz, thus;

The EIRP = [(FS*D) ^2*1000 / 30] = 9.49mW

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

Conducted Power = 9.49mW.

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