

# Analysis Report

Report No.:13020016HKG-002

The Equipment Under Test (EUT) is an Amplified Wireless Streaming Music System, equipped with a 2.4GHz WiFi transceiver (SG901) which is operating in the frequency range between 2412MHz and 2462MHz (11 channels with 5 MHz channel spacing). The EUT can accept digitized audio signal from LAN network, USB port and wireless WiFi. The EUT has built-in digital power amplifiers driving internal stereo loudspeaker and mono subwoofer. The mini-USB port is for factory maintenance only and not accessible by end-user. The EUT is powered by 100-240VAC (universal input with earth pin).

In 802.11b mode, the EUT employs Direct-Sequence Spread Spectrum (DSSS) modulation with maximum bit rate 11Mbps.

In 802.11g mode, the EUT employs Orthogonal Frequency Division Multiplexing (OFDM) modulation with maximum bit rate 54Mbps.

In 802.11n mode, the EUT employs modulation type according to MCS<sub>n</sub> (Modulation and Coding Scheme) setting where n is 0 to 7, with maximum bit rate 65Mbps at n=7. The EUT can only support 20MHz bandwidth modulation in 802.11n mode.

The RF output power is below +10dBm for all types of modulation during test.

Antenna Type: Internal, Integral (2412MHz – 2462MHz, 11 channels, 5MHz spacing)

Antenna Gain: 0dBi

Nominal rated field strength: 103.2dB $\mu$ V/m at 3m (maximum at 802.11b)

Maximum allowed field strength of production tolerance: +1dB / -4dB

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 104.2dB $\mu$ V/m at 3m in frequency 2.4GHz, thus;

The EIRP =  $[(FS \cdot D)^2 \cdot 1000 / 30] = 8mW$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 8mW.

The SAR Exclusion Threshold Level:

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

=  $3.0 \cdot 5 / \text{sqrt}(2.462) \text{ mW}$

= 9.56 mW

Since the above conducted output power is below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.

Note: All configuration and setting of data rate for each 802.11b/802.11g/802.11n mode have been considered and worst case test data are shown on this report.