

Analysis Report

Report No.: HK12110333-1(R1)

The Equipment Under Test (EUT) is a 2.4GHz Bluetooth speaker, which is operating between 2402MHz and 2480MHz (79 channels with 1MHz channel spacing). The EUT is powered by 100-240VAC. When the EUT is switched ON, the LED will flash. It is required to press the pairing button to pair with the corresponding device before playing audio. After pairing, the LED will stay lit. The EUT has an AUX IN jack to connect corresponding device to play audio.

Antenna Type: Integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 104.0 dB μ V/m at 3m

Maximum allowed field strength error: +/- 3dB

Modulation Type: GFSK

For Maximum Permissible Exposure (MPE) evaluation of the speaker unit, the maximum power density at 20 cm from this mobile transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65.

For the wireless speaker system unit of tested model of XW-BTS1-W, XW-BTS1-K, the worst-case field strength measured (FS) was 104.0 dB μ V/m. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters. And the maximum source-based time-averaging duty factor is 3.125%. From these data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:

Based on the Maximum allowed field strength error was +/-3dB, thus the maximum allowed field strength shall be considered;

Maximum allowed field strength was 107.0 dB μ V/m, thus;

$$\begin{aligned} \text{The radiated power} &= (FS \cdot D)^2 / 30 \\ &= 15.036 \text{ mW} \end{aligned}$$

$$\begin{aligned} \text{The power density at 20 cm from the antenna} &= \text{EIRP} / 4\pi R^2 \\ &= 0.00299 \text{ mW cm}^{-2} \end{aligned}$$

In the frequency range of 1,500 - 100,000MHz, the MPE limit is 1.0 mWcm⁻² for general population and uncontrolled exposure. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structures and body of the user or nearby persons. The following RF exposure statement is proposed to be included in the user manual:

“ FCC RF Radiation Exposure Statement

Caution: To maintain compliance with the FCC’s RF exposure guidelines, place the baby unit at least 20cm from nearby persons.”