

Analysis Report

14041337HKG-001

The Equipment Under Test (EUT) is a CD Audio System that can accept audio sources including CD, FM Tuner, analog line-in and Bluetooth devices. The Bluetooth module in the EUT is operating in the frequency range from 2402MHz to 2480MHz (79 channels with 1MHz channel spacing). The audio signal is amplified and fed to the supplied passive external stereo loudspeakers. The EUT contains a USB port (charging only). The EUT is powered by 120VAC.

Antenna Type: Internal integral antenna

Antenna Gain: 0dBi

Nominal rated field strength: 108.8dB μ V/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

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

For the Bluetooth module of tested model : CD6697BL, the maximum field strength measured (FS) was 111.8 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 5/6. 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:

$$\begin{aligned}\text{The radiated power} &= (FS \cdot D)^2 / 30 \\ &= 45.4 \text{ mW}\end{aligned}$$

$$\begin{aligned}\text{The radiated (EIRP) source-based time-averaging output power} \\ &= (45.4 \cdot 5/6) \text{ mW} \\ &= 37.8 \text{ mW}\end{aligned}$$

$$\begin{aligned}\text{The power density at 20 cm from the antenna} \\ &= \text{EIRP} / 4\pi R^2 \\ &= 0.0075 \text{ mW cm}^{-2}\end{aligned}$$

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 CD Audio System at least 20cm from nearby persons.”