

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a 2.1 Channel Sound bar with Built-in Subwoofer with Bluetooth functions. It is powered by AC 100-240V, 50/60Hz. The EUT contains a certified USB dongle which has Bluetooth and WIFI functions. The Bluetooth function in the EUT and USB dongle transmitter (Bluetooth and WIFI) can't transmit at the same time. For more detail information pls refer to the user manual.

Bluetooth Version: 4.2(without BLE)

Antenna Type: Integral antenna.

Antenna Gain: 1.0dBi.

Modulation Type: GFSK, $\pi/4$ DQPSK, 8DPSK.

The nominal conducted output power specified: 0dBm (+/-4dB)

The nominal radiated output power (e.i.r.p) specified: 1.0dBm (+/- 4dB)

The maximum conducted output power for the EUT is 0.30dBm in the frequency 2441MHz which is within the production variation.

The minimum conducted output power for the EUT is -1.27dBm in the frequency 2402MHz which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting device is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, According to the KDB 447498 and OET 65, the simple calculation as below:

The maximum radiated power = 5dBm = 3.16mW

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna for 2.4GHz band can be calculated according to OET 65 as follow:

$$= 3.16\text{mW} / 4\pi R^2$$

$$= 0.0006 \text{ mW/cm}^2$$

$$< 1\text{mW/cm}^2$$

The MPE limit is 1.0 mW/cm² for general population and uncontrolled exposure in the 2.4GHz frequency range according to FCC Part 1.1310. 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 structure and body of the user or nearby persons.

The following RF exposure statement or similar sentence is proposed to be included in the user manual:

“FCC RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”