

# INTERTEK TESTING SERVICES

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## Analysis Report

The equipment under test (EUT) is a SOUND BAR HOME THEATER SYSTEM HT-SB38 with BT 3.0, 2.1 with EDR function operating in 2402-2480MHz, and BT 4.0 function operating in 2402-2480MHz. The NFC tag is passive. The EUT is powered by AC 100-240V, 50/60Hz. HT-SB38 SOUND BAR HOME THEATER SYSTEM consists of HT-SB38 (SOUND BAR HOME THEATER SYSTEM) and CP-SW38 (ACTIVE SUBWOOFER SYSTEM), the sound bar and subwoofer will link automatically wirelessly when turned on as it is already pre-linked at the factory. For more detail information pls. refer to the user manual.

Modulation Type: GFSK,  $\pi/4$ DQPSK, 8DPSK for BT 3.0, 2.1 with EDR and GFSK for BT 4.0

Bluetooth Version: 4.0 and 3.0, 2.1 with EDR

Antenna Type: Integral antenna (Gain: 0 dBi)

The nominal radiated output power (e.i.r.p) specified: -3dBm (Tolerance: +/-3dB)

The maximum radiated emission for the EUT is 94.8dB $\mu$ V/m for BT4.0 at 3m in the frequency

$$2.480\text{GHz} = [(FS \cdot D)^2 / 30] \text{ mW}$$

= -0.5dBm which is within the production variation

The minimum radiated emission for the EUT is 89.8dB $\mu$ V/m for BT 3.0, 2.1+EDR at 3m in the

$$\text{frequency } 2.441\text{GHz} = [(FS \cdot D)^2 / 30] \text{ mW}$$

= -5.4dBm which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting devices 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:

For Maximum Permissible Exposure (MPE) evaluation of the product, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in FCC Part 1.1310.

The maximum radiated output power specified is 0dBm = 1.0mW

The source- based time-averaging conducted output power

$$= 1.0 \cdot \text{Duty cycle mW} \leq 1.0 \text{ mW (Duty Cycle} \leq 100\%)$$

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated as follow:

$$= 1.0 \text{ mW} / 4\pi R^2$$

$$= 0.0002 \text{ mW/cm}^2$$

The MPE limit is 1.0 mWcm<sup>2</sup> for general population and uncontrolled exposure in the Bluetooth 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.

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The following RF exposure statement 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.”**