

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a 2.0 Channel Soundbar Home Theater System with Bluetooth FHSS technology operating in 2402-2480MHz. The EUT is powered by AC 100-240V~ 50/60Hz. For more detail information pls. refer to the user manual.

Bluetooth Version: 5.0 EDR

Antenna Type: Integral Antenna

Antenna Gain: 2.2dBi

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

The normal conducted output power is: 2.0dBm (tolerance: +/-4dB).

The normal radiated output power (e.i.r.p) is: 4.2dBm (tolerance: +/-4dB).

The maximum conducted output power for the EUT is 2.21dBm in the frequency 2.480GHz which is within the production variation.

The minimum conducted output power for the EUT is 2.08dBm in the frequency 2.441GHz 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:

The source-based time averaged maximum radiated power = $4.2\text{dBm} + 4\text{dB} = 8.2\text{dBm}$
= 6.6mW

ERP = EIRP-2.15dB = $8.2\text{dBm} - 2.15\text{dB} = 6.05\text{dBm} = 4.0\text{mW}$

At the distance (R) of 20cm to 40cm and in 0.3 GHz to 6 GHz, MPE Exclusion Threshold Level:

$$P_{th} (\text{mW}) = ERP_{20 \text{ cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

The MPE limit is 3060mW for general population and uncontrolled exposure in the 2.4GHz frequency range according to FCC Part 1.1307. 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.