RF Exposure

The Equipment Under Test (EUT) is a 30” 2.0-CHANNEL SOUNDBAR with Bluetooth functions. The EUT is powered by 100-240~ 50/60Hz. The Key For more detailed features description, please refer to the user’s manual.

Bluetooth Version: 5.0 (Dual mode)
Antenna Type: Integral antenna.
Antenna Gain: 0dBi.
Modulation Type: GFSK, π/4-DQPSK and 8-DPSK
The nominal conducted output power specified: -8dBm (+/-4dB)
The nominal radiated output power (e.i.r.p) specified: -8dBm (+/- 4dB)

According to the KDB 447498:

The maximun peak radiated emission for the EUT is 88.8dBμV/m at 3m in the frequency 2480MHz (EDR mode)
The EIRP = [(FS*D) ^2 / 30] mW = -6.43dBm
which is within the production variation.

The minimum peak radiated emission for the EUT is 83.6dBμV/m at 3m in the frequency 2402MHz (BLE mode)
The EIRP = [(FS*D) ^2 / 30] mW = -11.63dBm
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 maximun radiated output power specified is -4.0dBm = 0.398 mW

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:
= 0.398mW/ 4πR^2
= 0.0000792 mW/cm^2

The MPE limit is 1.0 mW/cm^2 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.