RF Exposure

The equipment under test (EUT) is a Wireless Subwoofer with 2.4GHz Transmitter function operating in 2404-2476MHz. The EUT is powered by 120V/60Hz. For more detail information pls. refer to the user manual.

Standalone SAR evaluation for 2.4GHz transmitter

2.4GHz transmitter:
Antenna Type: Integral Antenna.
Antenna Gain: 1.5 dBi.
Modulation Type: GFSK.

The nominal conducted output power specified: -7.5dBm (+/-4dB)
The nominal radiated output power (e.i.r.p) specified: -6dBm (+/-4dB)

The minimum peak radiated emission for the EUT is 88.9dBμV/m at 3m in the frequency 2404MHz
The EIRP = [(FS*D) ^2 / 30] mW = -6.33dBm
which is within the production variation.

The maximum peak radiated emission for the EUT is 88.5dBμV/m at 3m in the frequency 2441MHz
The EIRP = [(FS*D) ^2 / 30] mW = -6.73dBm
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 = -2dBm = 0.6mW

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:
= 0.6mW/ 4πR^2
= 0.0001 mW/cm^2
<1mW/cm^2

The MPE limit is 1.0 mW/cm^2 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.