

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Dolby Atmos Sound Bar System with Wireless Subwoofer with 5.8G Transmitter function operating in 5727-5819MHz. The EUT is powered by AC 100-240V~ 50/60Hz. For more detailed features description, please refer to the user's manual.

Standalone SAR evaluation for 5.8GHz transmitter

5.8GHz transmitter:

Antenna Type: Integral Antenna.

Antenna Gain: 0.5 dBi.

Modulation Type: FSK.

The nominal conducted output power specified: 5dBm (+/-2dB).

The nominal radiated output power (e.i.r.p) specified: 5.5dBm (+/- 2dB).

The maximum conducted output power for the EUT is 6.18dBm in the frequency 5819MHz which is within the production variation.

The minimum conducted output power for the EUT is 5.47dBm in the frequency 5727MHz 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 = 5.5dBm+2dB
= 7.5dBm = 5.623mW

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:

= $5.623\text{mW} / 4\pi R^2$

= 0.0011 mW/cm²

<1mW/cm²

The MPE limit is 1.0 mW/cm² for general population and uncontrolled exposure in the 5.8GHz 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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