

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a Portable Bluetooth Speaker with Bluetooth function operating in 2402-2480MHz. The EUT is powered by DC 7.2V for rechargeable battery or powered by USB-C port with 5V 2A. For more detailed features description, please refer to the user's manual.

Bluetooth Version: 5.3 EDR

Antenna Type: Integral antenna

Antenna Gain: 2.0 dBi max

Modulation Type: GFSK, p/4-DQPSK

The nominal conducted output power specified: 0dBm (+/-2dB).

The normal radiated output power (e.i.r.p) is: 2.0dBm (tolerance: +/-2dB).

The maximum conducted output power for the EUT is -0.11dBm in the frequency 2480MHz which is within the production variation.

The minimum conducted output power for the EUT is -0.97dBm in the frequency 2402MHz which is within the production variation.

The maximum conducted output power specified is 2dBm= 1.585mW

The maximum effective radiated power specified = $4 \cdot 2.15 = 1.85$ dBm = 1.531mW

The SAR Exclusion Threshold Level:

$$P_{th}(\text{mW}) = \text{ERP}_{20\text{cm}} * (d/20\text{cm})^x \quad (X = -\log_{10} \left(\frac{60}{\text{ERP}_{20\text{cm}} \sqrt{f}} \right))$$
$$= 3060 * (0.5/20)^{1.9} \text{ mW}$$
$$= 2.72 \text{ mW}$$

Since max. power of the source-based time-averaging conducted output power and effective radiated power (ERP) is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

Bluetooth Version: 5.3 BLE mode.

Antenna Type: Integral antenna.

Antenna Gain: 2.0dBi.

Modulation Type: GFSK.

The nominal conducted output power specified: 0dBm (+/-2dB)

The normal radiated output power (e.i.r.p) is: 2.0dBm (tolerance: +/-2dB).

The maximum conducted output power for the EUT is 0.16dBm in the frequency 2480MHz which is within the production variation.

The minimum conducted output power for the EUT is -1.02dBm in the frequency 2402MHz which is within the production variation.

The maximum conducted output power specified is 2dBm= 1.585mW

The maximum effective radiated power specified = $4 \cdot 2.15 = 1.85$ dBm = 1.531mW

The SAR Exclusion Threshold Level:

$$P_{th}(\text{mW}) = \text{ERP}_{20\text{cm}} * (d/20\text{cm})^x \quad (X = -\log_{10} \left(\frac{60}{\text{ERP}_{20 \text{ cm}} \sqrt{f}} \right))$$

$$= 3060 * (0.5/20)^{1.9} \text{ mW}$$

$$= 2.72 \text{ mW}$$

Since max. power of the source-based time-averaging conducted output power and effective radiated power (ERP) is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.