

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 3.6V for rechargeable battery or powered by USB-C port with 5V 2A. For more detailed features description, please refer to the user's manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: -0.68dBi

Bluetooth Version: 5.3 EDR (Single Mode)

The nominal conducted output power specified: -5.32 dBm (± 2 dB)

The nominal radiated output power (e.i.r.p) specified: -6.0 dBm (± 2 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 88.8 dB μ V/m at 3m in the frequency 2402MHz

The EIRP = $[(FS^*D)^2 / 30]$ mW = -6.43dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 87.6 dB μ V/m at 3m in the frequency 2480MHz

The EIRP = $[(FS^*D)^2 / 30]$ mW = -7.63dBm
which is within the production variation.

The maximum conducted output power specified is -3.32dBm= 0.466mW

The Maximum effective radiated power specified is -4dBm-2.15=-6.15dBm=0.242mW

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.