

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Speaker Bluetooth Square 3inch with BT5.0 (Dual Mode) function operating in 2402-2480MHz. The EUT is powered by 5V/500mA. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Modulation Type: GFSK, $\pi/4$ -DQPSK and 8-DPSK

Antenna Gain: -0.58dBi

Bluetooth Version: 5.0 (Dual Mode)

The nominal conducted output power specified: -0.58 dBm (± 2 dB)

The nominal radiated output power (e.i.r.p) specified: 0.0 dBm (± 2 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 96.9 dB μ V/m at 3m in the frequency 2402MHz (BLE mode)

The EIRP = [(FS*D) ^2 / 30] mW = 1.67dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 93.3 dB μ V/m at 3m in the frequency 2480MHz (EDR mode)

The EIRP = [(FS*D) ^2 / 30] mW = -1.93dBm

which is within the production variation.

The maximum conducted output power specified is 1.42dBm= 1.387mW

The source- based time-averaging conducted output power

=1.387* Duty cycle mW <1.387 mW(Duty cycle <100%)

The SAR Exclusion Threshold Level:

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

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.