

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a BLUETOOTH PILL SPEAKER with Bluetooth 5.3 EDR function operating in 2402-2480MHz. The EUT is powered by DC 3.7V from rechargeable battery or DC 5V from adapter. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

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

Antenna Gain: -0.58dBi

Bluetooth Version: 5.3 EDR (Single Mode)

The nominal conducted output power specified: 1.58 dBm (± 2 dB)

The nominal radiated output power (e.i.r.p) specified: 1 dBm (± 2 dB)

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 97.2 dB μ V/m at 3m in the frequency 2441MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 1.97dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 94.7 dB μ V/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -0.53dBm

which is within the production variation.

The maximum conducted output power specified is 3.58dBm= 2.280mW

The source- based time-averaging conducted output power

=2.280* Duty cycle mW <2.280 mW(Duty cycle <100%)

The SAR Exclusion Threshold Level:

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

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.