

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Waterproof Bluetooth Speaker with Bluetooth technology operating in 2402-2480MHz. The EUT is powered by DC 3.7V rechargeable battery which can be charged by DC 5V from USB port. The USB port only used for charging purpose. For more detail information pls. refer to the user manual.

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

Bluetooth Version: V5.0 +EDR(without BLE)

Antenna Type: PCB antenna.

Antenna Gain: -0.58dBi

The nominal conducted output power specified: -1.4dBm (Tolerance: +/-5dB)

The nominal radiated output power specified: -1.98dBm (Tolerance: +/-5dB)

According to the KDB 447498:

The maximum peak radiated emission for the EUT is 97.1dB μ V/m at 3m in the frequency 2402MHz.

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = 1.87dBm
which is within the production variation.

The minimum peak radiated emission for the EUT is 89.2dB μ V/m at 3m in the frequency 2480MHz.

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -6.03dBm
which is within the production variation.

The maximum conducted output power specified is 3.6dBm = 2.29mW

The source-based time-averaging conducted output power
= 2.29 * Duty factor mW (where Duty Factor ≤ 1)
= 2.29 mW

The SAR Exclusion Threshold Level:

= $3.0 * (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$
= $3.0 * 5 / \sqrt{2.480}$ mW
= 9.53 mW

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.