

INTERTEK TESTING SERVICES

Analysis Report

The equipment under test (EUT) is a Bluetooth Accessory with Bluetooth function operating in 2402-2480MHz. For more detail information pls. refer to the user manual.

FIRMWARE VERSION IDENTIFICATION NO. (FVIN): 1.0.3.279.4

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

Bluetooth Version: 4.1(dual-mode)

Antenna Type: Integral antenna

Antenna Gain: 2 dBi

The nominal conducted output power specified: 2.0dBm (Tolerance: +/-4dB)

The nominal radiated output power (e.i.r.p) specified: 4.0dBm (Tolerance: +/-4dB)

According to the KDB 447498 D01:

The maximum measured conducted emission for the EUT is 3.82dBm at the frequency 2.440GHz in Bluetooth low energy mode which is within the production variation

The minimum measured conducted emission for the EUT is 2.32dBm at the frequency 2.402GHz in classic Bluetooth mode which is within the production variation

The maximum conducted output power specified is 6dBm = 3.98mW

The maximum source- based time-averaging conducted output power
= 3.98 * Duty cycle mW = 3.98 mW (Duty cycle ≤ 1)

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

Maximum evaluation result:

$$\begin{aligned} &= [(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \\ &= 3.98/5 \cdot \sqrt{2.480} \\ &= 1.25 \end{aligned}$$

Since the result is $1.25 \leq 3.0$ for 1-g SAR ≤ 7.5 for 10-g extremity SAR, so the EUT is considered to comply with SAR requirement without testing.