

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a Bluetooth Speaker. The EUT was powered by DC 6V (Lead-acid rechargeable battery, 6V 4.5Ah), EUT can be charging by external adaptor, but it's can't working when charging. For more detail information pls. refer to the user manual.

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

Bluetooth Version: 2.1 with EDR function and without AFH mode

Antenna Type: Integral antenna

Antenna Gain: 0dBi

The nominal radiated output power (e.i.r.p) is: 0dBm (tolerance: +/- 3dB).

The nominal conducted output power is: 0dBm (tolerance: +/- 3dB).

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 94.2dB μ V/m at 3m in the frequency 2441MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -1.0dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 93.7dB μ V/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -1.5dBm

which is within the production variation.

The maximum conducted output power specified is 3dBm = 2.0mW

The source- based time-averaging conducted output power

= 2.0 * Duty factor mW= 1.7 mW

The SAR Exclusion Threshold Level:

= 3.0 * (min. test separation distance, mm) / sqrt(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.

Transmitter Duty Cycle Calculation

Based on the Bluetooth Specification (BT version: 2.1 with EDR function and without AFH mode), transmitter ON time is independent of packet type (DH1, DH3 and DH5) For one period for a pseudo-random hopping through all 79 RF channels, for DH5:

One hopset consists of 5 TX slot and 1 RX slot.

Duty factor = $5 / 6 = 0.833$

This requirement is according to KDB 865664 D02