

## INTERTEK TESTING SERVICES

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### Analysis Report

The equipment under test (EUT) is a Portable Bluetooth speaker. The EUT was powered by DC 3.7V Internal Lithium battery and charging by USB Port. For more detail information pls. refer to the user manual.

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

Bluetooth Version: 2.1 with EDR

Antenna Type: Integral antenna

Antenna Gain: 0dBi

The nominal radiated output power (e.i.r.p) specified: 6dBm ( Tolerance: +/- 3dB)

The nominal conducted output power specified: 6dBm ( Tolerance: +/- 3dB)

According to the KDB 447498:

The maximum radiated emission for the EUT is 103.5dB $\mu$ V/m at 3m in the frequency 2.441GHz

=  $[(FS \cdot D)^2 / 30]$  mW

= 8.27dBm which is within the production variation.

The minimum radiated emission for the EUT is 99.9dB $\mu$ V/m at 3m in the frequency 2.402GHz

=  $[(FS \cdot D)^2 / 30]$  mW

= 4.67dBm which is within the production variation.

The maximum conducted output power specified is 9dBm = 7.9mW

The source- based time-averaging conducted output power

= 7.9 \* Duty cycle mW = 6.6 mW

The SAR Exclusion Threshold Level:

= 3.0 \* (min. test separation distance, mm) / sqrt(freq. in GHz)

= 3.0 \* 5 / sqrt (2.480) mW

= 9.5 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), transmitter duty cycle is dependent 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 cycle =  $5 / 6 = 0.833$

This requirement is according to KDB 865664 D02