

INTERTEK TESTING SERVICES

RF Exposure

The Equipment Under Test (EUT) is a Kids Karaoke Station 2 Mic with Remote with 2.4GHz function operating in 2402-2480MHz. The EUT is powered by DC 3V (2*1.5V Size "AA" Batteries). For more detailed features description, please refer to the user's manual.

Antenna Type: Integral Antenna

Modulation: GFSK

Antenna Gain: -0.68dBi Max.

According to the KDB 447498 D01 General RF Exposure Guidance v06

The maximum peak radiated emission for the EUT is 92.7dBμV/m at 3m in the frequency 2402MHz.

The EIRP = $[(FS \cdot D)^2 / 30]$ W = -2.5 dBm
which is within the production variation.

The minimum peak radiated emission for the EUT is 90.8dBμV/m at 3m in the frequency 2480MHz.

The EIRP = $[(FS \cdot D)^2 / 30]$ W = -4.4 dBm
which is within the production variation.

The nominal radiated output power (e.i.r.p) specified: -3.0 dBm (Tolerance: ±2dB)

The nominal conducted output power specified: -2.32 dBm (Tolerance: ±2dB)

The maximum conducted output power specified is -0.32 dBm = 0.93 mW

The source- based time-averaging conducted output power
= $(0.93 \cdot \text{Duty cycle})$ mW < $(0.93 \cdot 1)$ mW (Duty cycle < 100%)

The SAR Exclusion Threshold Level:

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

When $f(\text{GHz})=2.402\text{GHz}$, (min. test separation distance, mm) = 5mm,

Then the (max. power of channel, including tune-up tolerance, mW) = 9.68mW

When $f(\text{GHz})=2.480\text{GHz}$, (min. test separation distance, mm) = 5mm,

Then the (max. power of channel, including tune-up tolerance, mW) = 9.53mW

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.