

INTERTEK TESTING SERVICES

RF Exposure

The equipment under test (EUT) is a VEX 123 Robot with Bluetooth function operating in 2402-2480MHz. The EUT is powered by DC 3.2V by rechargeable battery or DC 5V by USB port. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: 0dBi

Bluetooth Version: 5.1 BLE (Single Mode)

The normal radiated output power (e.i.r.p) is: -13.0dBm (tolerance: +/- 3dB).

The normal conducted output power is -13.0dBm (tolerance: +/- 3dB).

According to the KDB 447498:

The Maximum peak radiated emission for the EUT is 82.5dBμV/m at 3m in the frequency 2402MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -12.73dBm

which is within the production variation.

The Minimum peak radiated emission for the EUT is 80.5dBμV/m at 3m in the frequency 2480MHz

The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -14.73dBm

which is within the production variation.

The maximum conducted output power specified is -10dBm = 0.100mW

The source- based time-averaging conducted output power

= $0.100 \cdot \text{Duty cycle mW}$ = 0.100 mW (Duty cycle = 100%)

The SAR Exclusion Threshold Level:

= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$

= $3.0 \cdot 5 / \sqrt{2.480}$ 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.