

# INTERTEK TESTING SERVICES

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## RF Exposure

The Equipment under Test (EUT) is a VEX Elementary 900 MHz Radio unit, model: 228-2621 operating at 902.44 – 927.84MHz with channel spacing 200KHz. The EUT was powered by joystick controller and the joystick controller was powered by a 3.7V rechargeable battery which can be charged by USB port. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna.

Antenna Gain: 0dBi.

The nominal conducted output power specified: -5dBm +/-3dB.

The nominal radiated output power (e.r.p) specified: -7.15dBm (+/- 3dB)

Modulation Type: GFSK

According to the KDB 447498:

The worst-case Quasi-Peak radiated emission for the EUT is 90.5dB $\mu$ V/m at 3m in the frequency 902.440MHz

The EIRP = [(FS\*D) ^2 / 30] mW = -4.73dBm

The ERP = EIRP – 2.15 = -6.88 dBm

which is within the production variation.

The maximum conducted output power specified is -2dBm = 0.63mW

The source- based time-averaging conducted output power

= 0.63 \* Duty factor mW = 0.14 mW

The SAR Exclusion Threshold Level:

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

= 3.0 \* 5 / sqrt (0.92784) mW

= 15.57 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

The duty cycle is simply the on-time divided by the period:

The duration of one cycle = 25.4ms

Effective period of the cycle = 5.8ms

DC = 5.8ms / 25.4ms = 0.2283 or 22.83%