




## **Exhibit: RF Exposure – FCC**

FCC ID: XEY-ZX-DS  
IC: XEY-ZXDS

Client	<b>Verdant Environmental Technologies Inc</b>	
Product	<b>ZX Door Switch</b>	
Standard(s)	FCC Part 15 Subpart 15.247:2016 FCC KDB 447498:2015	

## SAR Calculations: 902.8 – 927.7 MHz FHSS transmitter

The EUT contains a 902 MHz – 928MHz FHSS transmitters. The firmware guarantees simultaneous operation will not occur and therefore antenna co-location testing is not applicable. This device is designed to be operated handheld and for the purpose of demonstrating compliance with MPE requirements and SAR exemption; we present for a worst case 5mm distance and 100 % duty cycle.

### FCC Requirements: SAR test exclusion guidance

As per FCC KDB 447498 D01 Section 4.3.1 a), the 1-g extremity SAR Test Exclusion Threshold for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm is determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] [\sqrt{f(\text{GHz})}] \leq 3.0$$

Performing the calculation, of the worst case mentioned above, using the maximum power measured of 11mW (see page 37 on TR-7169005571-FCC\_ISED\_XEYZX-DS\_8401A-ZXDS.pdf) yields to:

$$\frac{11}{5} \cdot \sqrt{0.927525} = 2.12,$$

2.12 is below the 3.0 worst case limit, so this device complies with FCC requirements

### ISED Requirements: SAR test exclusion guidance

As per Table 1 in RSS-102, Section 2.5.1 the interpolated limits between 1900MHz (7mW) and 2450MHz (4mW) at 5mm (or less) is 5.5mW.

This device has effective isotropic radiated power (as worst-case vertical polarization at 915MHz, see, for instance, note of pag.57 in TR-7169005571-FCC\_ISED\_XEYZX-DS\_8401A-ZXDS.pdf) with a peak value of 96 (dB $\mu$ V/m @ 3 meters) - 95.2 (factor to convert to EIRP at 3 meters) of 0.8dBm, or 1.2mW.

- 1.2mW is less than 5.5mW limit as per section 2.5.1 on RS-102, thus the device meets the exception rules.