Client	Viconics Electronics Inc.
Product	W2A (Zigbee and Wi-Fi)
Standard(s)	FCC KDB 447498, RSS-102

Maximum Permissible Exposure.

This device has a peak rated conducted power output of 0.039 W (15.8 dBm) with a peak Antenna gain of 2.2 dBi. This is worst case of the Zigbee and Wi-Fi, which do not simultaneously transmit. This is an effective isotropic radiated power of 18 dBm, or 0.063 W. This device also has a typically low duty cycle, however the worst case duty cycle of 100% is presumed for the purpose of demonstrating compliance.

This device is designed for use at distances typically larger than 20 cm, however the worst case of 20cm is presumed for the purpose of demonstrating compliance.

As per RSS-102, Section 2.5.2, the at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31 x 10-2 $f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

For 2.45 GHz, this $1.31 \times 10^{-2} \times 2450^{0.6834}$ W
Which is 0.0131 x 207.09 W
Which is 2.71 W.

The device is source based time averaged of 0.063 mW, which is below the 2.7 W requirement.

As per FCC KDB 447498 D01, 7.1 which references FCC 2.1019(d)(2) for distances greater than 20 cm, which references FCC 1.1310 Table 1, and presuming general population, the equation is Power density(mW/cm^2) must be less 1 mW/cm^2.

As per the worst case calculations on the next page, the device 0.02 mW/cm^2 , which is below the 1 mW/cm^2 requirement.

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal:	18.00	(dBm)	
Maximum peak output power at antenna input terminal:	63.09573445	(mW)	
Antenna gain(typical):	2.2	(dBi)	
Maximum antenna gain:	1.659586907	(numeric)	
Time Averaging:	100	(%)	
Prediction distance:	20	(cm)	
Prediction frequency:	2450	(MHz)	
MPE limit for uncontrolled exposure at prediction frequency:	1	(mW/cm^2)	
Power density at prediction frequency:	0.020832	(mW/cm^2)	
Margin of compliance:	-16.8	(dB)	
This equates to	0.208319606	W/m^2	PASS
For information This equates to	8.862081658	V/m	