

## **Certification Exhibit**

**FCC ID: QHC-KVEVDOZ41  
IC: 4393B-KVEVDOZ41**

**FCC Rule Part: 15.247  
IC Radio Standards Specification: RSS-210**

**ACS Project Number: 13-0462**

Manufacturer: Itron  
Model: 570973-001

## **RF Exposure**

**General Information:**

Applicant: Itron  
 Device Category: Mobile  
 Environment: General Population/Uncontrolled Exposure

The 570973-001 Kv2c-AMPZ is designed to be integrated into 2S, 9S, 12S, 16S and 45S electric utility meter forms and be collocated and transmit simultaneously with the on-board Sierra Wireless CDMA modem SL5011 (FCC ID: N7NSL5011 / IC: 2417C-SL5011).

**Technical Information:****Table 1: Technical Information (Including Collocated Transmitter On-Board)**

	<b>Itron 802.15.4 (Zigbee) module Model 570973-001 FCC ID: QHC-KVEVDOZ41 IC: 4393B-KVEVDOZ41</b>	<b>Sierra Wireless CDMA modem Model SL5011 FCC ID: N7NSL5011 IC: 2417C-SL5011</b>
<b>Antenna Type</b>	PCB embedded inverted F	Under Glass Ribbon External Monopole
<b>Antenna Gain</b>	3.3 dBi	Under Glass Ribbon: 850 Band: 0 dBi 1900 Band: 0 dBi External Monopole: 850 Band: 3 dBi 1900 Band: 4 dBi
<b>Conducted Power</b>	56.23 mW	850 Band: 748.17 mW* 1900 Band: 767.36 mW*
<b>Maximum Peak EIRP</b>	120.23 mW	850 Band: 1492.79 mW 1900 Band: 1927.52 mW
<b>Maximum Peak ERP</b>	73.45 mW	850 Band: 912.01 mW 1900 Band: 1177.61 mW

\* Power provided for FCC ID: N7NSL5011 / IC: 2417C-SL5011 is power as listed on the certification and measured in the original certification report.

**MPE Calculation**

The Power Density (mW/cm<sup>2</sup>) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW)

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 (appropriate units, e.g., cm)

**Table 2: MPE Calculation (Including Collocated Devices)**

MPE Calculator for Mobile Equipment Limits for General Population/Uncontrolled Exposure*							
Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm <sup>2</sup> )	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )
2475	17.5	1.00	56.23	3.3	2.138	20	0.024
824.7	28.74	0.55	748.17	3.0	1.995	20	0.297
1880	28.85	1.00	767.36	4.0	2.512	20	0.383

**Summation of Power Densities – Simultaneous Transmissions**

This device contains multiple transmitters which can operate simultaneously and is collocated with additional transmitters in host integration; therefore the maximum RF exposure is determined by the summation of MPE ratios. The limit is such that the summation of MPE ratios is ≤ 1.0.

The summation of MPE ratios is as follows:

SL5011 Modem Operating in the 850 Band:

802.15.4 MPE Ratio + SL5011 850 MPE Ratio  
 $(0.024 / 1.0) + (0.297 / 0.55) = (0.024) + (0.540) = 0.564$   
 $0.564 < 1$

SL5011 Modem Operating in the 1900 PCS Band:

802.15.4 MPE Ratio + SL5011 1900 MPE Ratio  
 $(0.024 / 1.0) + (0.383 / 1.0) = (0.024) + (0.383) = 0.407$   
 $0.407 < 1$

**RF Exposure**

In accordance with FCC requirements of human exposure to radio frequency fields, the radiating element shall be installed such that a minimum separation distance of 20 centimeters will be maintained.

**Conclusion**

This device complies with the MPE requirements by providing adequate separation between the device, any radiating structure and the general population.