

## **Certification Exhibit**

**FCC ID: QHC-060203A  
IC: 4393B-060203A**

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

**ACS Project Number: 13-0256**

**Manufacturer: Itron  
Model: OW31SASL5BE-1**

## **RF Exposure**

**General Information:**

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

The OW31SASL5BE-1 is designed to be integrated into 1S, 2S and 12S electric utility meter forms and be collocated and transmit simultaneously with Sierra Wireless CDMA modem SL5011, FCC ID: N7NSL5011 / IC: 2417C-SL5011 and Itron 802.15.4 Zigbee module ITR24, FCC ID: SK9ITR24 / IC: 864G-ITR24.

**Technical Information:****Table 1: Technical Information (Including Collocated Transmitters On Board / In Host)**

	Itron 900 MHz LAN module Model OW31SASL5BE-1 FCC ID: QHC-060203A IC: 4393B-060203A	Itron 802.15.4 (Zigbee) module Model ITR24 FCC ID: SK9ITR24 IC: 864G-ITR24	Sierra Wireless CDMA modem Model SL5011 FCC ID: N7NSL5011 IC: 2417C-SL5011
<b>Antenna Type</b>	Slot	PCB quarter wave embedded slot	Slot
<b>Antenna Gain</b>	0 dBi	3.8 dBi	850 Band: -3.5 dBi 1900 Band: 2.5 dBi
<b>Conducted Power</b>	10.59 mW	63.53 mW	850 Band: 748.17 mW* 1900 Band: 767.36 mW*
<b>Maximum Peak EIRP</b>	10.59 mW	152.41 mW	850 Band: 334.20 mW 1900 Band: 1364.58 mW
<b>Maximum Peak ERP</b>	6.47 mW	92.90 mW	850 Band: 204.17 mW 1900 Band: 833.68 mW

\* Power provided for FCC ID: N7NSL5011 is power as listed on the grant and measured in the original FCC certification filing.

**MPE Calculation**

The Power Density ( $\text{mW}/\text{cm}^2$ ) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g.  $\text{mW}/\text{cm}^2$ )

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 ( $\text{mW}/\text{cm}^2$ )	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain ( $\text{mW eq.}$ )	Distance (cm)	Power Density ( $\text{mW}/\text{cm}^2$ )
910	10.25	0.61	10.59	0	1.000	20	0.002
2475	18.03	1.00	63.53	3.8	2.399	20	0.030
824.7	28.74	0.55	748.17	-3.5	0.447	20	0.066
1880	28.85	1.00	767.36	2.5	1.778	20	0.271

**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  $\leq 1.0$ .

The summation of MPE ratios is as follows:

SL5011 Modem Operating in the 850 Band:

900 LAN MPE Ratio + 802.15.4 MPE Ratio + SL5011 850 MPE Ratio  
 $(0.002 / 0.61) + (0.030 / 1.0) + (0.066 / 0.55) = (0.003) + (0.030) + (0.120) = 0.152$   
 $0.152 < 1$

SL5011 Modem Operating in the 1900 PCS Band:

900 LAN MPE Ratio + 802.15.4 MPE Ratio + SL5011 1900 MPE Ratio  
 $(0.002 / 0.61) + (0.030 / 1.0) + (0.271 / 1.0) = (0.003) + (0.030) + (0.271) = 0.303$   
 $0.303 < 1$

**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.