



Excellence in Compliance Testing

Certification Exhibit

**FCC ID: QHC-OW35SE
IC: 4393B-OW35SE**

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

ACS Project Number: 14-0309

**Manufacturer: Itron, Inc.
Model: 574023**

RF Exposure

General Information:

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

The 574023 is designed to be integrated into 1S, 2S and 12S electric utility meter forms and be collocated and transmit simultaneously with the on-board Sierra Wireless LTE modem HL7518, FCC ID: N7NHL7518 and separate Itron module ITR24 FCC ID: SK9ITR24 / 864G-ITR24.

Note: The on-board Sierra Wireless LTE modem HL7518 is not available for use in Canadian territories.

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

	Itron 900 MHz LAN module Model 574023 FCC ID: QHC-OW35SE IC: 4393B-OW35SE	Itron 802.15.4 (Zigbee) module Model ITR24 FCC ID: SK9ITR24 IC: 864G-ITR24	Sierra Wireless LTE modem Model HL7518 FCC ID: N7NHL7518 (IC Not Applicable)
Antenna Type	Inverted F	PCB quarter wave embedded slot	Inverted F
Antenna Gain	2.4dBi	3.8 dBi	Band 13 (700MHz): 3.15 dBi Band 4 (1700MHz): 3.15 dBi
Conducted Power	599.79mW	63.53 mW	Band 13 (700MHz): 201 mW* Band 4 (1700MHz): 211 mW*
Maximum Peak EIRP	1042.32 mW	152.41 mW	Band 13 (700MHz): 415.14 mW Band 4 (1700MHz): 435.80 mW
Maximum Peak ERP	635.33 mW	92.90 mW	Band 13 (700MHz): 253.04 mW Band 4 (1700MHz): 265.63 mW

* Power provided for FCC ID: N7NHL7518 is power as listed on the grant and measured in the original FCC certification filing.

MPE Calculation (FCC)

The Power Density (mW/cm²) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

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 ²)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm ²)
910	27.78	0.61	599.79	2.4	1.738	20	0.207
2475	18.03	1.00	63.53	3.8	2.399	20	0.030
784.5	23.04	0.52	201.37	3.15	2.065	20	0.083
1717.5	23.24	1.00	210.86	3.15	2.065	20	0.087

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:

HL7518 Modem Operating in the 700 MHz Band 13:

900 LAN MPE Ratio + 802.15.4 MPE Ratio + HL7518 700 MPE Ratio

$(0.207 / 0.61) + (0.030 / 1.0) + (0.083 / 0.52) = (0.339) + (0.030) + (0.160) = 0.529$

$0.529 < 1$

HL7518 Modem Operating in the 1700 MHz Band 4:

900 LAN MPE Ratio + 802.15.4 MPE Ratio + HL7518 1700 MPE Ratio

$(0.207 / 0.61) + (0.030 / 1.0) + (0.087 / 1.0) = (0.339) + (0.030) + (0.087) = 0.456$

$0.456 < 1$

Exemption From Routine RF Exposure Evaluation (IC)

The on-board Sierra Wireless LTE modem HL7518 is not available for use in Canadian territories and therefore should not be included in determining compliance with RF exposure.

The Itron 900 MHz LAN module (IC: 4393B-OW35SE) and Itron 802.15.4 Zigbee module (IC: 864G-ITR24) comply with the exemption limits for routine RF exposure evaluation per RSS-102 Issue 5. The source-based, time-averaged maximum EIRP thresholds for exemption from routine RF exposure evaluation are as follows:

Itron 900 MHz LAN module (910 MHz): 1.38 W EIRP

Itron 802.15.4 Zigbee module (2405 MHz): 2.68 W EIRP

