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## **Certification Exhibit**

**FCC ID: SK9ACT1  
IC: 864G-ACT1**

**FCC Rule Part: 15.247  
ISED Canada's Radio Standards Specification: RSS-247**

**TÜV SÜD Project Number: 72124754**

**Manufacturer: Itron, Inc.  
Model: ACT1**

## **Manual**

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# Electricity Product Information Letter



**Date: April 6, 2017**

**PIL #:**

**Product Line: OpenWay® Riva™ CENTRON®**

**Distribution:**

- Itron Internal**                       **Customers**  
 **Distributors / Manufacturer Reps**

## Installation of OpenWay Riva CENTRON Meter Remote Antenna Flex Coupler

Itron is announcing the availability of a remote antenna solution for use with the OpenWay Riva CENTRON meter. This assembly is designed for installation configurations where it is necessary to extend the RF antenna inside the meter; for example, basement installations or metal enclosures. This antenna does not provide any amplification of the RF signal, but provides a method to relocate the transceiver. Some signal attenuation is expected with this configuration.

The assembly consists of an Itron flex coupler that fits the outer cover of the meter. This allows for attaching customer provided remote fixed antennas and cabling. See Figure 1 below for a photo of the flex coupler assembly.



*Figure 1: Flex Coupler Assembly*

## Approved customer supplied antenna specifications

Since each customer deployment will be unique with regards to the required cabling and type of antenna, the cabling and antennas will be customer provided.

*Note: Under ISED Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by ISED. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.*

*This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.*

Remarque: En vertu de la réglementation ISED Canada, cet émetteur radio ne peut fonctionner qu'avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par l'ISED. Pour réduire les interférences radio potentielles avec d'autres utilisateurs, le type d'antenne et son gain devraient être choisis de façon à ce que la puissance éloignée isotrope équivalente (e.i.r.p.) ne soit pas supérieure à celle nécessaire à une communication réussie.

Cet émetteur radio (identifiez le périphérique par numéro de certification ou numéro de modèle si Catégorie II) a été approuvé par l'ISED pour fonctionner avec les types d'antennes répertoriés ci-dessous avec le gain maximal admissible et l'impédance d'antenne requise pour chaque type d'antenne indiqué. Les types d'antenne non inclus dans cette liste, ayant un gain supérieur au gain maximal indiqué pour ce type, sont strictement interdits pour être utilisés avec cet appareil.

Customer supplied remote antennas should meet the following specifications.

**Elevated Feed Point Whip Antenna**

Frequency: 890 - 960 MHz

VSWR: 2.0:1 or less

Maximum Gain: 3.0 dBi

**Low Profile Radome Antenna**

Frequency: 806 - 960 MHz

VSWR: 2.0:1 or less

Maximum Gain: 2.14 dBi

**Dual Band Tri Mode Stub Antenna**

Frequency: 700 - 960 MHz

VSWR: 2.0:1 or less

Maximum Gain: 2.0 dBi

## **Customer supplied cabling recommendation**

The Itron flex antenna is supplied with an SMA male connector. Customer supplied cabling that attaches to the Itron flex antenna should meet the following specifications.

RG58C Coaxial Cable, SMA Male / Female  
50 Ohm RF (Radio Frequency) transmission  
Male to female gender combination  
Crimp style SMA connector

## **Antenna Installation Guidelines**

For optimal performance, several guidelines should be followed in the installation of this remote antenna.

These include:

- Mounting the antenna in the proximity to the nearest structure.
- For inside installations, remote antennas may be mounted in the proximity of an available window, or routed to the outside if the signal strength is not great enough.
- Mounted so the cable between meter and antenna will not be compromised or damaged.

## Flex Antenna Installation Procedure

1. Clean the meter cover where the flex antenna will be installed. Wipe area with alcohol wipes and let dry one minute.
2. When using the flex antenna with Velcro mount, a recommended 3M Adhesion Promoter (K-520) Stock Number JT-2800-1252-0 or similar type adhesion promoter should be used to clean the antenna surface prior to attaching the Velcro strip. This will help ensure proper adhesion of the Velcro to the antenna.
3. Affix the flex antenna to the outer cover as shown in Figure 1.
4. Install the remote antenna at the designated location, following the Installation Guidelines above.
5. Once installed to the antenna, wrap the connectors in cold flow tape. Tape should be wrapped tightly and in a continuous manner and should cover the cable one inch past the end of the connector where it attaches to both the flex circuit patch and the antenna.
6. Secure the cable to the side of the structure.

Part Number	Description
514258-001	Flex Coupler for OpenWay Riva CENTRON and OpenWay CENTRON with adhesive mount
514258-004	Flex Coupler for OpenWay Riva CENTRON and OpenWay CENTRON with Velcro mount separate; not adhered to the antenna

Please contact your Account Manager for ordering instructions.

Should you have any questions please call Itron Support at 1-877-487-6602.

Steve Wright

Sr. Product Manager, Electric Metering

**ACT1**  
**Meter Module**  
**Technical Reference Guide**  
Effective Date: July, 2016

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## Revision History

The following table describes the changes to this document for each revision of the ACT1 meter module:

Revision	Date	Description of Change
A	July, 2016	Initial Release

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## Labeling

The following requirements will be applied to any products that use this module:

The end product or host label will include the following text:

- **Contains:**
- **FCC ID: SK9ACT1**
- **IC: 864G-ACT1, Model: ACT1**

The user's manual for any product that contains this module will contain the following text. If the device is large enough, then this will also be placed on the label.

“This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.”

## Regulatory Compliance

The user's manual for any product that contains this module will contain the following text:

### FCC Part 15, Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



**Changes or modifications to this device not expressly approved by Itron, Inc. could void the user's authority to operate the equipment.**

## Innovation, Science and Economic Development Canada (ISED)

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe B répond à la norme Canadienne sur le matériel brouilleur. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif ne peut pas causer d'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.

ACT1 Meter Module

Under Innovation, Science and Economic Development Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Innovation, Science and Economic Development Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

*Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.*

### **RF Exposure (FCC/ISED)**

“This equipment complies with radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.”

“Cet équipement est conforme aux limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec tout autre antenne ou transmetteur.”

### **Miscellaneous**

The user's manual for any product that contains this module will contain the following text:

#### **Professional Installation**

This module is intended for professional installation by the integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

#### **Modification and Repairs**

To ensure FCC compliance and system performance, this device, antenna and/or coaxial assembly shall not be changed or modified without the express written approval of Itron. Any unauthorized modification will void the user's authority to operate the equipment. **WARNING!** This device contains no user serviceable parts. Attempts to repair this device by unauthorized personnel may subject the person to shock hazard if removal of protective covers is attempted. Unauthorized repair will void the warranty and/or maintenance contract with your company.

#### **General Description**

The Itron ACT1 is an electricity metering module which includes a 902.4 MHz to 927.6 MHz transmitter as well as WiFi. The module operates on AC as well as DC voltage which is supplied by a host device.

### **Recycling Information**

The product you have purchased contains circuit boards. At the end of the modules useful life, under various state and local laws, it may be illegal to dispose of certain components into the municipal waste system. Check with your local solid waste officials for details about recycling options or proper disposal.

### **About this Manual**

This technical reference guide describes the installation of the ACT1 for the Itron OPENWAY RIVA CENTRON meter.

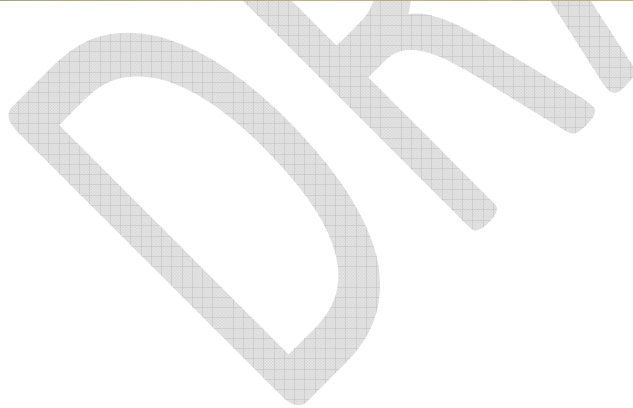
## Installation

The ACT1 module will be installed in the Itron OPENWAY RIVA CENTRON electric meter.

Shown are the meter base with metrology board, the board to board connector, the ACT1 module, the display and the inner and outer cover.



Install the display on the ACT1 module by pushing metal pins of display into module connector.



Insert module into upper section of inner cover and connect two wired connectors to module.



Connect metrology and the ACT1 module using the board to board connector.



Install lower inner cover.



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Install outer cover.

