Itron

Knowledge to Shape Your Future

OpenWay® Belt Clip Reader

User Guide

User Guide

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Identification
OpenWay Belt Clip Reader User Guide
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Suggestions
If you have comments or suggestions on how we may improve this documentation, send them to TechnicalCommunicationsManager@itron.com
If you have questions or comments about the software or hardware product, contact Itron Technical Support:

Contact

- Internet: www.itron.com
- E-mail: support@itron.com
- Phone: 1 800 635 8725

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CHAPTER 1

Introduction

Welcome to the OpenWay® Belt Clip Reader (OBCR) User Guide. This document details the features and functions of the OBCR and shows you how to use this hardware.

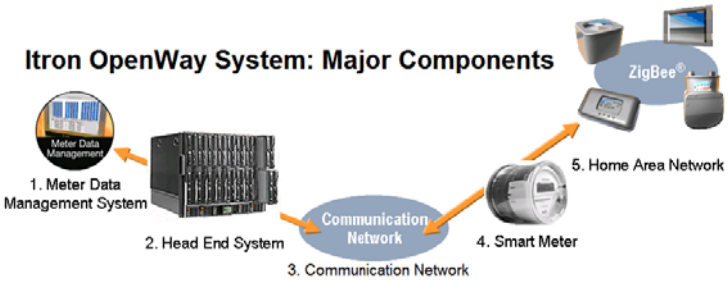
OpenWay® System Overview

Evolving energy markets have brought many changes, among them an expanded capability for tracking energy use on a real-time (or near real- time) basis. Transition from a regulated utility structure to a competitive market has led to wholesale market price volatility and the necessity for accurate real-time consumption information. AMI metering can supply this type of energy data as well as ways to analyze power consumption that customers as well as utilities need, to control costs and improve efficiencies in this evolving market. In order to facilitate this need, Itron has developed the next-generation of the AMI solution.

Itron's AMI solution involves five parts that work together as a complete whole:

- A meter data management (MDM) system that provides a single, scaleable repository for metering-based data along with standard interfaces to other utility systems such as CIS, OMS, GIS, and workforce management.
- The head end system which collects the data from the network.
- A data collection network. This is the LAN to backhaul interface. This provides bi-directional communication of data and commands between the utility and home or commercial facility. The collection network can be publicly or privately owned and can operate using open and proprietary standards.
- A smart meter able to collect and store energy interval data for its own service type plus interface with and collect and temporarily store data from other devices such as other meters and home gateways. It can also initiate and respond to two-way communications with the utility.

- A Home Area Network (HAN) able to collect data from, communicate with and control various energy-using appliances throughout the home such as air conditioners and hot water heaters. This also has two-way communications with the utility.



The illustration above shows:

1. A **Meter Data Management System**, (but the upstream application could be any utility application used to manage meter data) that can communicate using IP-based Web Services methods.
2. The is the **Head End System** and the heart of the OpenWay by Itron Advanced Meter Infrastructure solution.
3. The **Communication Network** is a self-healing mesh built around OpenWay Cell Relay and RFLAN technologies.
4. The OpenWay CENTRON electricity meter is a **Smart Meter** that can retrieve data from other devices (like gas meters and ZigBee enabled devices) and pass the information up to through the communication network to the . The meter can be managed remotely, upgrade remotely and some models can be connected or disconnected remotely.

The **Home Area Network** is made up of smart appliances that can be managed by the utility's application through the head end system, communication network and smart meters using ZigBee radio technology.

The AMI Cell Relay is a network centric device that provides communication between a Wide Area Network (WAN) and a Local Area Network (LAN). By definition, the Cell Relay will provide connectivity in the form of bridging between two separate physical network technologies.

The WAN connection typically will be a TCP/IP centric interface that will provide the physical transport layer 1 support for the Cell Relay. The LAN connection of the Cell Relay will consist of a physical layer Radio Frequency (RF) meshing technology between the meter and the Cell Relay. At the application layer the AMI Cell Relay will provide ANSI C12.22 address resolution and message forwarding.

Related Documents

For more information about Itron's software programs that you may use with your OpenWay® Belt Clip Reader, please see the following documents:

- **Endpoint-Link Pro Field Service Representatives Guide (TDC-0734-XXX)** This document should be used by Field Employees using handheld devices in conjunction with the Endpoint-Link Pro application.
- **Endpoint-Link Pro Handhand Installation Guide (TDC-XXXX-XXX)** Content to be determined - Jay Stockbridge still working on this.
- **Endpoint-Link Endpoint Programming Guide (TDC-0744-XXX)** This document describes how to program and read ERTs using the Endpoint-Link handheld as part of the ERT installation process.
- **Endpoint-Link Software Installation Guide (TDC-0758-000)** This document is describes howto install the Endpoint-Link mobile application and related third party software on a CE.NET handheld.

CHAPTER 2

OpenWay® Belt Clip Reader Basics

The OpenWay® Belt Clip Reader is a cell-phone sized piece of hardware that is designed to support meter and endpoint reading and installation activities. Because of its size and mounting options, it is easy and comfortable to use.

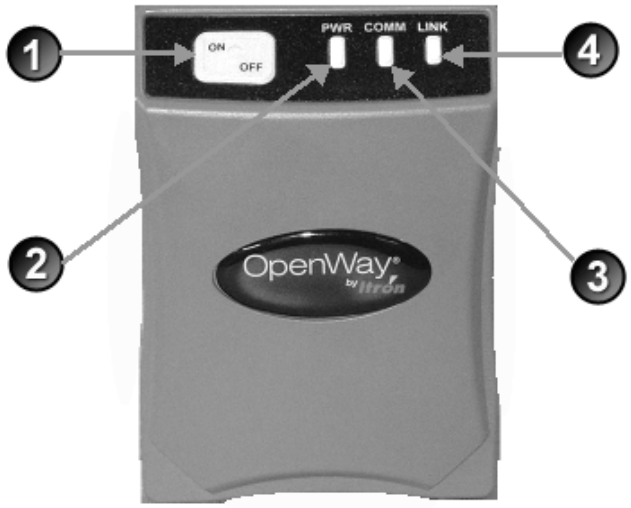
Components of your OpenWay® Belt Clip Reader

Your OpenWay Belt Clip Reader comes packaged with the following items:

- OpenWay Belt Clip Reader
- Belt Clip Attachment
- Communication Cable
- Charging Cradle
- A/C Power Adaptor
- Automotive Power Adaptor
- The OpenWay® Belt Clip Reader User Guide

Features of your OpenWay® Belt Clip Reader

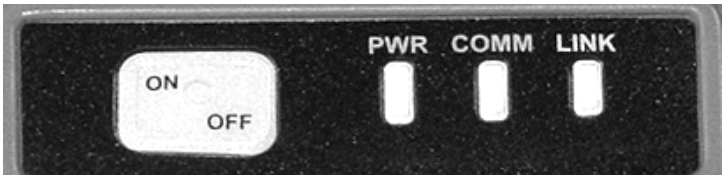
The OBCR is small and easy to use and comes equipped with the following functions and features.



- (1) **Power Switch** This switch allows you to turn your OBCR off and on. For more information, see Powering Up the OpenWay® Belt Clip Reader on page XX.
- (2) **Power LED** This LED flashes in different colors and styles, depending on the power status of your OBCR. For more information, see LED Status Indicators on page XX.
- (3) **Communications LED** This LED flashes in different colors and styles, depending on the Bluetooth connectivity of your OBCR. For more information, see LED Status Indicators on page XX.
- (4) **Link LED** This LED flashes in different colors and styles, depending on the Zigbee connectivity of your OBCR. For more information, see LED Status Indicators on page XX.

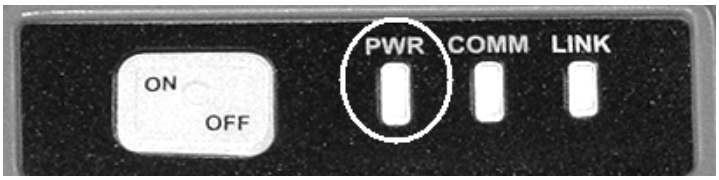
LED Status Indicators

The Belt Clip Reader has three LED status indicators located at the top of the reader: PWR, COMM, and LINK. These LEDs light up when a particular function of the device is active.



Power Indicator LED

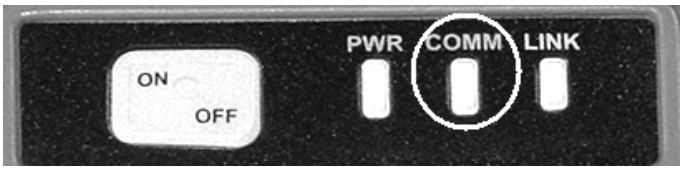
The Power Indicator LED flashes in different colors and styles, depending on the power status of your OBCR.



Power Status	LED Status Indicator
On	Flashing green light once every 2 seconds
Off	No light
Low Battery	Flashing red light every 2 seconds
Charging	Double flashing green light every 2 seconds
Charging Complete	Solid green light

Communications Indicator LED

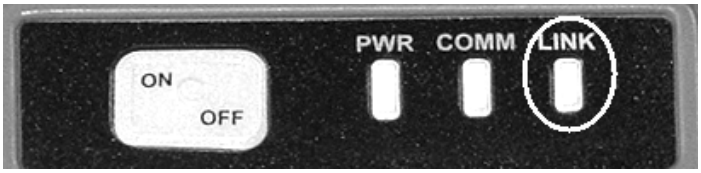
The Communications Indicator LED flashes in different colors and styles, depending on the Bluetooth connectivity status of your OBCR.



Bluetooth Status	LED Status Indicator
On and waiting to connect	Double flashing blue every two seconds
On and connected	Single flashing blue light every two seconds
USB Connection	Single flashing red light every two seconds

Link Indicator LED

The Communications Indicator LED flashes in different colors and styles, depending on the Zigbee connectivity status of your OBCR.



Zigbee Status	LED Status Indicator
Off	No Indicator Activity
Zigbee Radio Enabled	No Indicator Activity
Zigbee Traffic	Flashing yellow light

Communication Ports

The Openway® Belt Clip Reader has one communication port on the bottom of the device. Based on your needs, the communication port has several capabilities available.

Communication Port Function	Method
Hirosi Connection	Power In
	USB
Bluetooth	Wireless serial Port
Bottom Power	Power Input from Cradle

Unpacking your OpenWay® Belt Clip Reader

Your OpenWay® Belt Clip Reader comes packaged with the following items:

- OpenWay® Belt Clip Reader

- Belt Clip

Need to get graphic of this

- Communication Cable

- Charging Cradle
- A/C Power Adaptor

- Automotive Power Adaptor

- The OpenWay® Belt Clip Reader User Guide

When you receive and unpack your OpenWay® Belt Clip Reader, make sure you have all of the above listed components. If any are missing, contact Itron Support Services immediately.

Powering up the OpenWay® Belt Clip Reader

Itron recommends that you power up your OBCR after you have unpacked it.

To turn the power on, press and hold the On/Off button for two seconds. A solid green light appears on the PWR LED for 5 seconds to indicate the power is on.

To turn the power off, press and hold the On/Off button for two seconds. A solid red light appears on the PWR LED for 5 seconds to indicate the unit is powering down.

Itron recommends the following practices when managing your OCBR's power in order to ensure long device life.

Power off manually when not using the computer for extended periods to conserve battery power.

RF devices can consume battery power unnecessarily when not in use. Disable RF devices when not in use.

CHAPTER 3

Mounting the OpenWay® Belt Clip Reader

The OpenWay® BCR provides a cell-phone-like belt attachment that allows for comfortable and ergonomically correct connection to the person wearing it. The OBCR is designed to support activities of walking and driving in support of metering activities as well as implementation activities associated with the installation of new meters and endpoints.

The BCR also supports an attachment configuration such that the user can wear the radio on their arm or shoulder with a nylon mounting attachment to enable optimal radio performance.

The BCR is optimized to breakaway as a hazard without injuring the user when wearing the device.

Mounting your OpenWay Belt Clip Reader

1. Gather your Openway Belt Clip Reader and your Attachment Clip.

2. Turn the Openway Belt Clip reader so the back is facing you.

3. With your opposite hand, grasp the Attachment clip.

4. Slide the Attachment Clip onto the round knob on the back of the OpenWay Belt Clip Radio. The clip should click when it is properly attached to the OpenWay Belt Clip Reader.

5. Attach the OpenWay Belt Clip Reader to your belt. It will stay on safely and securely.

CHAPTER 4

Maintaining your OpenWay® Belt Clip Reader

You OBCR requires very little maintenance and care. Regular cleaning of the device will ensure a long case life. Follow the steps below to clean your OBCR case.

Cleaning the OBCR case

1. Wipe the handheld's case with a damp cloth.
2. To remove stubborn deposits, use a soft-bristle brush. Treat the keypad gently.
3. Blow any water out of the connectors, and then leave the handheld to drain and air-dry. Do not expose it to temperatures above 140° F (60° C).

WARNING! Never use solvents of any kind on the case or keypad.

Your OBCR handheld is rugged and water-resistant. However, you should take the following precautions to ensure that it gives you many years of reliable service.

• Avoid unnecessarily subjecting the handheld to extreme temperature, such as leaving it in a vehicle in bright sunlight.

• Avoid leaving it in damp or dusty places.

• Avoid dropping your handheld or subjecting it to severe impacts.

Battery Overview

The OpenWay® Belt Clip Reader uses a rechargeable lithium-ion (Li-Ion) battery pack as its main power source.

WARNING! Do not use any power source other than the Itron-recommended battery. To do so may cause damage to your OBCR.

After you unpack your OBCR, you should charge the battery to 100 percent capacity before using it. This takes about three and a half hours. This ensures that its power gauge calculations will be correct. Frequent incomplete charges lead to progressively larger errors that only a full charge will rectify.

Whenever you are working near an AC power outlet, use the OBCR with its AC adapter to conserve the battery pack's charge. The AC adapter keeps the battery pack topped-up and supplies a maintenance charge to the backup battery.

Itron recommends the following practices to ensure long battery life:

- Charge the handheld at room temperature (approximately 68° F/20° C) for best charge results.
- Charge the handheld at the end of each work day.
- At the beginning of each work day check the charge status.

The battery will not charge in an environment that is 32º F or less.

Conserving your Battery

The OBCR will automatically shut down after 30 minutes of time has lapsed where the radio has lost connectivity (or has remained inactive) and is no longer connected to a host.

When connected via AC power or USB cable, the OBCR will not revert to standby operation.

Charging your Battery

The AC power adapter supplied with your OBCR to power it from an external AC power source is also used to charge the main battery. Follow the steps below to charge your battery.

To charge the battery via USB Port

1. Connect the Hirosi end of the USB cable to the OBCR.

2. Connect opposite end to your PC USB port.

When connected only to the PC via USB, the OBRC will connect with both simultaneous charging and communications - in this case power is pulled from the USB host.

Note: in this case the charge times may be much longer as the USB host can only supply limited current. Bluetooth communications is not possible when the USB cable is connected.

To charge the battery via the Automotive Charger

1. Connect the Hirosi end of the automotive charger to the OBCR.
2. Connect the opposite end to your car charger.

Bluetooth communication is possible with this method.

To charge the battery via the Cradle (PICTURE still needed)

1. Connect the cradle's AC adapter to an AC electrical outlet.
2. Place the OBCR in the cradle.

If the unit is plugged into the (powered) cradle, then power comes from that source. In this case, Bluetooth communications is possible. However if the USB cable is connected, power is still drawn from the cradle but communications will be through USB and Bluetooth is disabled.

Replacing your Battery

The OBCR uses a Lithium Ion rechargeable battery which is not user replaceable. Please return OBCR to Itron for battery replacement.

Checking your Battery Power Level

The Openway® Belt Clip Reader battery power level can be checked to see how much life is remaining.

Checking the OBCR Battery Power Level

1. Make sure the OBCR is completely powered down.
2. Press the On/Off button for less than 1 second. The PWR LED flashes green to indicate the power level of the battery.

Power Level	PWR LED Power Indicator
90% or more	Four green flashes
75% or more	Three green flashes
50% or more	Two green flashes
25% or more	One green flash
25% or less	Four red flashes

Storing your OpenWay® Belt Clip Reader

Your OpenWay® Belt Clip Reader can be safely stored for two weeks or less with simple preparation that will ensure safe storage. Follow the steps below to prepare your OBCR for short-term storage.

To store your OpenWay® Belt Clip Reader

1. Connect the OBCR to external power, and allow the battery pack to fully charge. The Charge Status LED will flash green twice (quickly) every two seconds when charging and will be solid green when charging is complete.
2. Remove external power, exit all applications, turn off the unit, and place it in storage.

Upon removal from storage, the battery pack requires additional charging.

Daily Operation

Itron recommends the following daily measures to help maximize the service life of your OpenWay® Belt Clip Reader and resolve problems you might experience.

Perform the following tasks each day of handheld operation.

- Inspect the handheld for broken, loose, or missing parts and fasteners, taking corrective action as required.
- Make sure the BCR is operated and stored within the recommended temperature range.
    - Operating temperature: -4° F to 140° F (-20° C to 60° C)
    - Storage temperature: -40° F to 158° F (-40° C to 70° C)

Conserve battery pack energy when possible to maximize battery life during daily use.

- Shallow or partial discharge and charge cycles are preferred, compared to draining the battery pack completely and recharging it. Charging after a shallow or partial discharge will not degrade battery pack life or performance.

Avoid prolonged exposure to temperature extremes.

- Cold temperature extremes may result in reduced available energy from the battery pack. This energy is recoverable as the battery pack warms to 68° F (20° C).
- Extended exposure to warm temperature extremes can result in permanent reduction in available energy from the battery pack.
- Charging is disabled below 32° F (0° C) and above 113° F (45° C) to protect the lithium-ion batteries in the pack.

Exit all external applications at the end of each work day.

- This ensures that all applications which have initiated communications with the BCR have terminated their Bluetooth links.

CHAPTER 5

Safety

Your OBCR is ergonomically designed for safe, comfortable use. However, as with all equipment, you should follow good working practices while using it.

Some people experience discomfort while using computers. If ignored, this discomfort can lead to Repetitive Stress Injury (RSI), which is also known as cumulative trauma disorder or repetitive motion injury.

Minimize the risk by following these guidelines:

- Maintain good posture while using the handheld. Keep your fingers and body relaxed whenever possible.
- Avoid keeping your muscles tense for long periods. Change tasks often to avoid prolonged muscle strain. Support the handheld while using it.
- Reduce eyestrain by adjusting the backlight to suit your working environment. Look away from the screen periodically and focus your eyes on distant objects. Have your eyes checked regularly.
- Take frequent short breaks. Use these breaks to exercise the muscles in your hands, arms, shoulders, neck, and back.

AC Power Adapter

The AC Power Adapter is safe and simple to use. There are some safety features and instructions that you need to follow in order to ensure your safety and extend the life of the AC Power Adapter.

- Use the adapter indoors only.
- Avoid spilling liquid on the adapter. Do not connect it if it is damp.
- Ensure ventilation around the adapter is not restricted while it is in use.

- Use only the specific AC adapter supplied. Do not substitute an alternative or unapproved type-this may damage the BCR and void the warranty.
- Inspect the AC adapter before use. Do not use it if there are any signs of damage or deterioration.
- Make sure all connectors are firmly connected.
- Avoid mechanical strain to cables and connectors.
- Make sure the green LED is illuminated while the adapter is in use.
- In the event of overloading, the AC adapter is designed to be fail-safe and may stop functioning.
- Do not try to use the AC adapter to power any other equipment.
- Avoid use in dusty, damp, or contaminated environments.

WARNING! The AC Power Adapter contains hazardous voltage. It contains no user-serviceable parts. Do not try to open or modify the AC Power Adapter.

CHAPTER 6

Troubleshooting

If you have a problem with your OpenWay® Belt Clip Reader, review the appropriate troubleshooting steps listed below. After that, if you still have not resolved the problem, contact an Itron customer service representative.

Problem	Possible Solutions
Battery does not charge	• Verify the connection and power to the charging cradle (if used). • Check the BCR is fully seated in the Cradle (if used). The BCR should power on when connected to external power, and the Charge Status LED should flash. • If charging from USB, try a different USB port, it may be bad or is not capable of providing sufficient current for charging. • Check the battery information from the external user application. Make sure there are no errors or anomalies. If the screen reports any failures.
Battery power drains quickly	• Ensure that the battery indicates a full charge following an overnight charge (solid green Charge Status LED). • Typical useful life of the FC200 battery pack is between 300 and 500 charge/discharge cycles. When the battery has reached 70 percent of its original capacity, it should be replaced. • If the battery does not last following a full charge, return to an approved Itron Service center to have battery replaced.

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Electromagnetic Compatibility

Only approved accessories may be used with this equipment. In general, all cables must be high quality, shielded, correctly terminated one, and normally restricted to two meters in length. OpenWay Belt Clip Reader and Cradle AC adapters employ special provisions to avoid radio interference and should not be altered or substituted for.
Unapproved modifications or operations beyond or in conflict with these instructions for use may void authorization to operate the equipment.

USA
RADIO INTERFERENCE, FCC Statement
NOTE: 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 the 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 to receiving antenna.
- Increase in the separation between equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canada
English
This digital apparatus does not exceed Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications, standard ICES-003.
Francais
Avis de conformité aux norms du Ministère des Communications du Canada.
Le Present appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicable aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Mastère des Communications du Canada, NMB-003.