



Knowledge to Shape Your Future

Endpoint-Link[®] Pro

Field Service Representative's Guide

Identification

Endpoint-Link Pro Field Service Representative's Guide
08/29/2011 TDC-0735-013
Endpoint-Link Pro v5.5

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Getting Started

Before you can use your handheld data collector to complete field orders, you must log on to the Endpoint-Link Pro handheld software. After you log on, the application displays its main menu, which is your starting point for all Endpoint-Link Pro tasks on the handheld. When you finish working in Endpoint-Link Pro, you can either log off the software and leave it running or shut it down completely.



Note Endpoint-Link Pro runs on FC200-series and FC300-series handheld data collection devices. For simplicity, this document uses the term *handheld* inclusively to refer to all FC200-series and FC300-series devices, except where it is necessary to differentiate explicitly between the different types.

This guide assumes that you are familiar with basic Windows CE tasks, such as how to select menus and options with the handheld's stylus.



Note Some Endpoint-Link Pro screens are too large to fit on the handheld's small display. To see everything on these screens, you must use the Windows vertical and/or horizontal scroll bars to move them around within the display.

Starting Endpoint-Link Pro

When Endpoint-Link Pro is installed on a handheld data collector, the installation process places a shortcut on the handheld's desktop screen that you can use to start Endpoint-Link Pro if it is not already running when you turn on the handheld, or if you have shut the application down for any reason.

To log on to Endpoint-Link Pro

1. If necessary, start Endpoint-Link Pro by double-tapping its shortcut on your handheld's display screen.



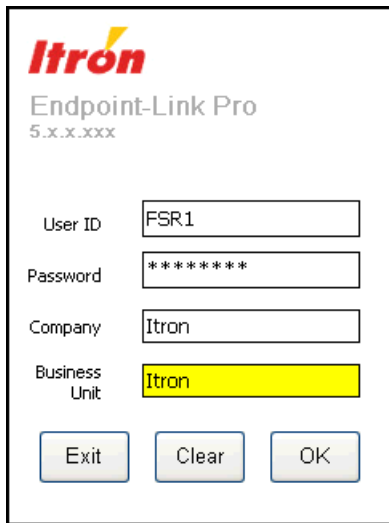
EPL Pro x.x

Note If the Endpoint-Link Pro logon screen is displayed on your handheld's display screen, it means the handheld software is already running. Skip this step and proceed directly to the next one.

The handheld displays the Endpoint-Link Pro logon screen.

2. Enter your user ID (also called your *user name*), password, company name, and business unit name.

For security reasons, the handheld displays a row of asterisks (*) in the **Password** box as you type it in, rather than your actual password.



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Endpoint-Link Pro
5.x.x.xxx

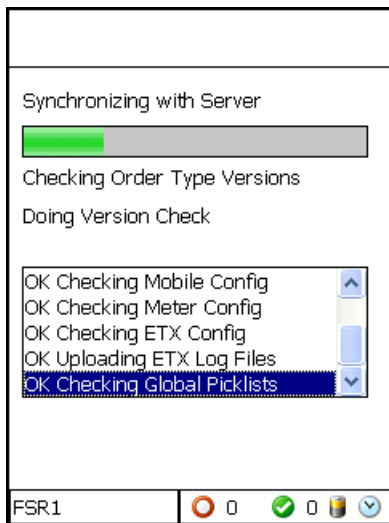
User ID: FSR1
Password: *****
Company: Itron
Business Unit: Itron

Exit Clear OK

Then tap **OK**.

Note The next time you log on to Endpoint-Link Pro, the system automatically displays the information that was last entered in this screen, except for the password.

The handheld software performs a series of routine communication tasks with the Endpoint-Link Pro server, including uploading and downloading work orders, synchronizing its own database with the server's, and checking for software updates.

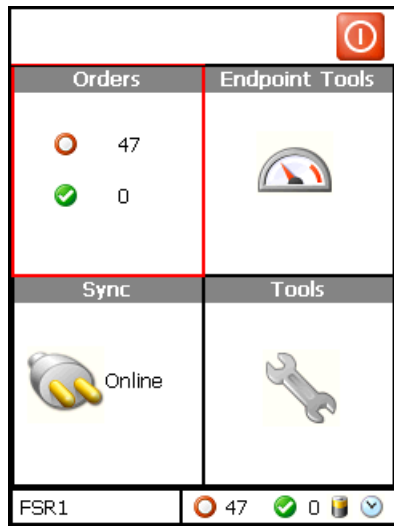


Synchronizing with Server
Checking Order Type Versions
Doing Version Check

OK Checking Mobile Config
OK Checking Meter Config
OK Checking ETX Config
OK Uploading ETX Log Files
OK Checking Global Picklists

FSR1

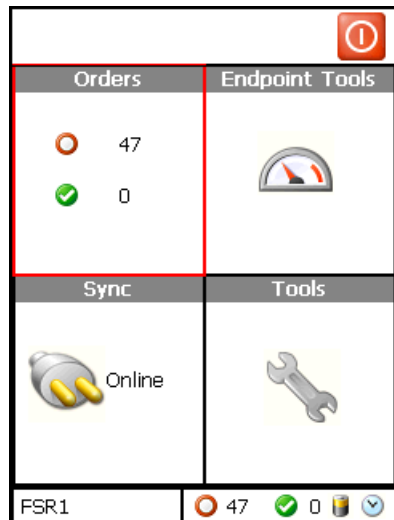
When it is finished, it displays the Endpoint-Link Pro handheld software's main screen.



Note If the handheld software is configured to automatically install software updates and it detects an update file on the server, it downloads and installs the file. In this case, instead of taking you directly to the main screen, it restarts and prompts you again for your password.

The Endpoint-Link Pro Main Screen

The main screen is the starting point for all Endpoint-Link Pro tasks you perform on the handheld.



The main screen consists of four options.

Menu option	Description
Orders	Displays the Orders screen, which lists all orders assigned to you. From this screen you can process orders dispatched to you from the Endpoint-Link Pro server and create new orders for additional work as needed. See Order Processing on page 11.
Sync	Lets you connect to the Endpoint-Link Pro server, upload completed orders from the handheld to the server, and download any new orders that might have been assigned to you since your handheld last communicated with the server. It also updates the handheld's Endpoint-Link Pro software and order types, when updates become available. See The Sync Screen on page 23.
Endpoint Tools	<p>Provides access to the ChoiceConnect Endpoint Tools menu, which includes options for reading, installing, programming, checking, and unlocking endpoints, as well as for viewing their tamper data and other essential information. See ChoiceConnect Endpoint Tools on page 30.</p> <p>If Endpoint-Link Pro is configured for use with an OpenWay or SaveSource belt-clip radio, this option also provides access to the OpenWay Endpoint Tools menu or the SaveSource Endpoint Tools menu. See OpenWay Endpoint Tools on page 74 and SaveSource Endpoint Tools on page 93.</p>
Tools	<p>Displays the Tools menu, which includes options for viewing order and job type statistics, order type information, and information about the Endpoint-Link Pro version installed on the handheld.</p> <p>This menu also includes options for fixing some network communication problems by resetting the handheld's Ethernet connection and for accessing the Admin menu.</p> <p>The Admin menu includes options for viewing radio parameters, viewing the Endpoint-Link Pro handheld software configuration settings, updating the handheld software version, restoring completed work orders for retransmission to the server, deleting all orders and order types on the handheld, and viewing the handheld's log file settings.</p> <p>NOTE The Admin menu is intended for use by mobile device administrators. Access to this menu is by password only. For detailed information about the Admin menu, see <i>Endpoint-Link Pro Server Software User's Guide</i>.</p> <p>See The Tools Menu on page 113.</p>

You can return to the main screen from many of the system's primary menus and screens by tapping the Home button at the top of the screen one or more times.




The Home button takes you back one level in the Endpoint-Link Pro menu hierarchy.

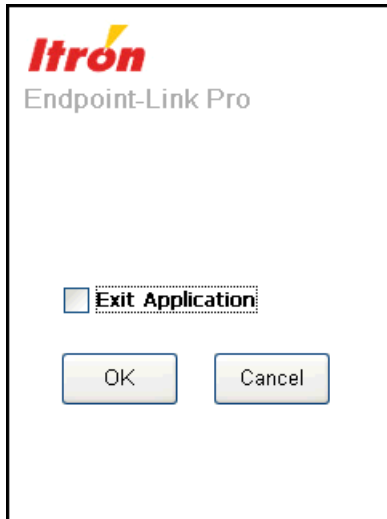
Alternatively, you can use the following handheld keyboard shortcuts to return to the main screen:

- On an FC200, press **Ctrl+H**.
- On an FC300, press the **Orange** key, then **Y**, then **H** (in sequence).

To log off Endpoint-Link Pro

1. From the main screen, tap .

The application prompts you to indicate whether you just want to log off Endpoint-Link Pro or exit the application completely.

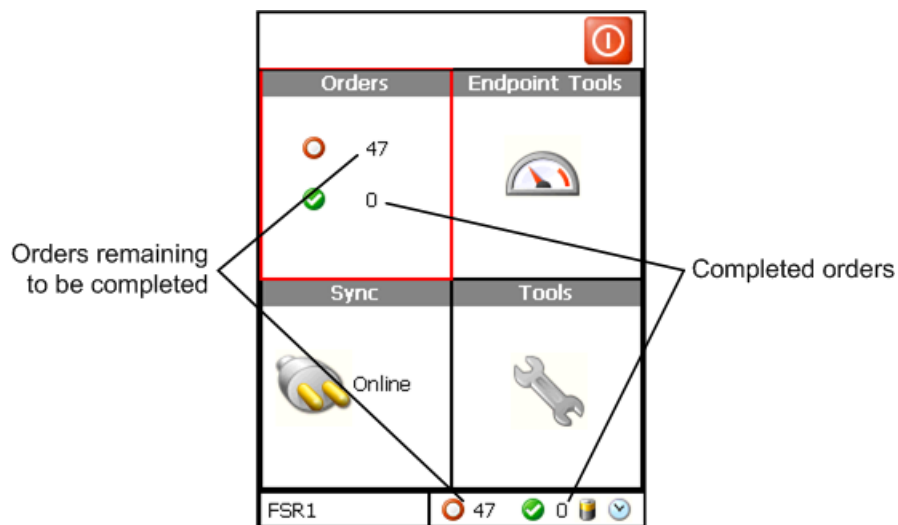


2. Do one of the following:
 - To log off Endpoint-Link Pro and return to the login screen, leave **Exit Application** unchecked and tap **OK**.
The handheld displays the logon screen.
 - or*
 - To log off and shut down Endpoint-Link Pro, select **Exit Application** and tap **OK**.
The handheld displays the Windows CE desktop.

Uploading and Downloading Orders

When you place a handheld into its dock (also called a *cradle*) and log on to Endpoint-Link Pro, the system automatically *syncs* (synchronizes) the work orders on the handheld with those on the Endpoint-Link Pro server. It sends any completed orders on the handheld to the server and sends to the handheld any new orders dispatched to you on the server.

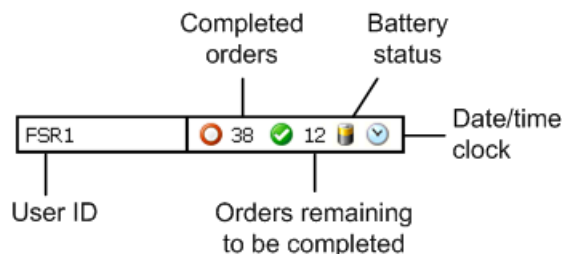
The Orders box of the main screen lists the number of completed orders and the number remaining to be completed. These numbers also appear in the status bar at the bottom of all Endpoint-Link Pro windows.



The Status Bar

Besides the number of complete orders and the number remaining to be completed, the status bar also displays:

- The user ID of the Endpoint-Link Pro user who is currently logged on
- A battery icon that displays the status of the handheld battery and (if connected) the OpenWay belt-clip radio battery
- A clock icon that displays the current date and time, as set on the server.

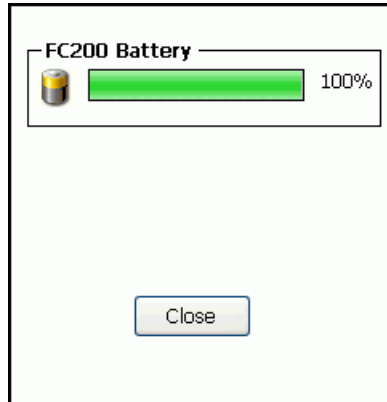


To display the handheld battery status

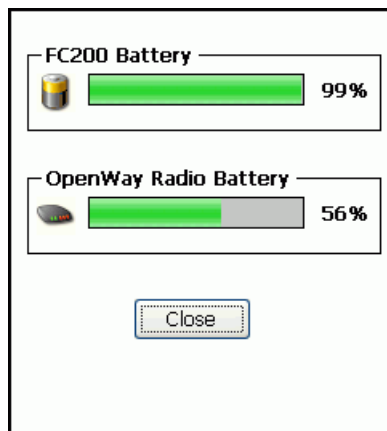
1. Tap the battery icon on the status bar.



The handheld checks the status of its battery and displays it in a separate screen.



If the handheld is connected to an OpenWay Zigbee belt-clip radio, it also displays the status of the radio's battery.



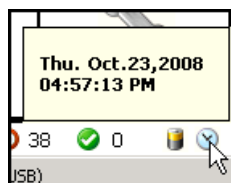
2. Tap **Close** to close the battery status screen and return to the screen from which you displayed it.

To display the date and time

- Tap the clock icon on the status bar.



The handheld retrieves the date and time from the Endpoint-Link Pro server and displays them in a pop-up box.



Selecting Menu Options, Buttons, Icons, and Data Boxes

The instructions in this guide require you to activate a variety of menu options, data entry boxes, and command buttons. Endpoint-Link Pro lets you do this in several ways, to suit your personal preferences.

- You can use the handheld's stylus to tap or double-tap the desired item.
- You can use the **Tab** key to move the focus (highlight) from one data box or command button to the next. When you have highlighted the desired item, press **Enter** to select it.
- You can use the up-arrow and down-arrow keys to move the focus among menu options. When you have highlighted the desired option, press **Enter** to select it.
- You can press the number key that corresponds to the option number of the desired menu option. This provides a single-key equivalent to highlighting the option with the stylus, mouse pointer, or arrow keys and then pressing **Enter**.

Entering Information into Data Entry Fields

Data entry fields are text boxes into which you type information required by Endpoint-Link Pro to perform some tasks.

In addition, Endpoint-Link Pro supports the use of barcode scanners to enter information such as endpoint IDs and meter IDs into data entry fields. You can configure Endpoint-Link Pro to support:

- An *external* Intermec SF51 barcode scanner on any Bluetooth-enabled FC200-series or FC300-series handheld.
- The *internal* scanner on any FC300-series handheld equipped with one.
- An Intermec SF51 scanner on a Bluetooth-enabled laptop computer.

To enter information into a data entry field

1. Select the data entry field (text box) you want to type the information into (see [Selecting Menu Options, Buttons, Icons, and Data Boxes](#) on page 8).

The text cursor appears in the selected field, which the system highlights.

Note By default, the system selects the first (topmost) field in a data entry screen when it first displays the screen.

2. Do one of the following:
 - Type the desired information using the keys on the handheld keypad.
 - If using a scanner, scan the corresponding bar code on the endpoint or meter for the information you want to enter.

The system translates the barcode into text, which it enters into the field.

For information about using an FC300's internal barcode scanner, see [Using the FC300's Internal Scanner](#), below.

For information about using an external barcode scanner connected to a handheld, see the scanner manufacturer's user documentation.

Using the FC300's Internal Scanner

FC300 handheld models are equipped with internal scanners that let field personnel scan bar codes on endpoints and meters without the need for a separate, external barcode scanner.

To scan a bar code with the FC300's internal scanner

1. In an Endpoint-Link Pro workflow, place the cursor in a scannable data entry field, such as an endpoint ID or meter ID field.
2. Point the top of the handheld at the barcode label. Hold the handheld at a slight angle, six to ten inches from the label.
3. Press and hold down the handheld's **F2** key.

The handheld projects a red light beam.

4. Direct the light beam at the bar code.

You may have to change the distance and orientation of the handheld relative to the bar code to successfully read the code. These may vary according to the size of the bar code, whether or not you are scanning through a plastic or glass cover, and so on.

When you have found the correct distance and angle, the scanner reads the bar code and enters it into the data entry field at the cursor's location.

Note Itron provides two antenna types for its FC300 handhelds.

8¼-inch antenna. Use this antenna when reading endpoints at long range (more than six feet away). It can also be used for endpoint programming and reading endpoints at short range (less than six feet away). However, it is not ideal for use with the internal scanner.

2½-inch antenna. Use this antenna when scanning/imaging is required during endpoint programming, and when reading endpoints at short range (less than six feet away).

Order Processing

The Orders Screen

Use the Orders screen to view and complete orders assigned to you, and to create new orders for additional work, when you are at a job site.

To display the Orders screen

Do one of the following:









- From the main screen, tap **Orders**.
- On an FC200, press **Ctrl+O** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **O** on the handheld keyboard.

State	Project ID	Order
	EPLP00000000003	19
	EPLP00000000028	19
	EPLP00000000029	19
	EPLP00000000030	19
	EPLP00000000031	19
	EPLP00000000032	19
	EPLP00000000033	19
	EPLP00000000034	19
	EPLP00000000035	19
	EPLP00000000036	19
	EPLP00000000037	19

The Orders screen lists the orders dispatched to you, as contained in your handheld's Endpoint-Link Pro database.




Orders Screen Buttons

The following table describes the Orders screen command buttons.

Button	Name	Description
	Home	Returns you to the main screen. See The Endpoint-Link Pro Main Screen on page 3.
	Create Order	Creates a new order. See Creating Orders on page 19.
 	Sort	Indicates that the order list is sorted according to the default sort order, as set on the server. To sort the list by column, tap the heading of that column. Tapping a column once arranges the orders in ascending order (from the lowest alphanumeric value to the highest); tapping it again arranges the orders in descending order, and vice versa. A green cross on this button indicates that a non-default sort order is in effect. Tap this button to return to the default sort order. See Sorting Orders on page 14.
 	Search	Displays the Search screen, which lets you filter the order list by data field (column value). A green cross on this button indicates that a search filter is in effect. To remove the filter, tap this button and then tap Remove . See Searching the Order List by Field on page 14.
 	Filter	Filters the order list by completion status and date. A green cross on this button indicates that a completion status and/or date filter is in effect. To remove the filter, tap this button to display the Filter screen. Select Exclude Completed and Show All Dates , and tap OK . See Filtering the Order List on page 15.

Order State Icons

The following table explains the meanings of the order state icons, as displayed in the **State** column.

Icon	Name	Description
	Dispatched	Indicates that the order has been dispatched to you for completion but has not yet been completed.
	Completed	Indicates the order has been completed. Note Completed orders appear in the order list only if the list has been filter to include them. See Filtering the Order List on page 15.
	Can't Complete	Indicates the FSR has set the order's state to Can't Complete.

To display order details

1. From the Orders screen, double-tap the order you are interested in.

The application displays the order details screen.

The screenshot shows a mobile application interface for viewing order details. At the top left, there is a clipboard icon and a green checkmark. Below this is a tabbed interface with three tabs: 'Account Info' (selected), 'Customer Info', and 'Met'. The 'Account Info' tab displays the following fields:

- Account Nbr: 1234567-1234567-123
- Account Name: JOHN DOE
- House Nbr: 100000
- Apartment/Bldg-Suite: (empty)
- Street: CENTRAL STREET
- City: ANYTOWN
- High Limit: 1725

At the bottom of the screen, there is a status bar showing 'FSR1', a red circle with '38', a green checkmark with '12', and a blue circle with a white checkmark.



This screen includes the following tab pages:

- Order Info
 - Account Info
 - Customer Info
 - Meter Info
 - Gas
 - Electric
 - Water
 - Completion Info
 - Cannot Complete Info
2. To view all tabs, tap the scroll arrows to the right of the tab names.
 3. To view a tab page's contents, select it by tapping the tab name. The fields on the tab pages are for display only—you cannot modify them from this screen.

Note The data fields in the example shown here might differ from the ones that appear in your orders.

Order Action Buttons

The following buttons appear at the top of the order details screen.

Button	Name	Description
	Order List	Order List Returns you to the order list. Note If you have started work on an order, but have not completed it, returning to the order list discards any information you have entered for the order.
	Process Order	Opens the displayed order for processing.

Sorting Orders

By default, orders in the order list appear in the order (sequence) in which they were sent from the server. You can change the sequence of orders if you wish, so the orders appear in sequence according to the contents of any of the order list column.

You can sort the order list in ascending or descending order by tapping a column heading.

For example, to sort by ascending order number, tap the **Order Number** column heading once. Tap it again to sort by descending order number.

Likewise, when you tap the **Customer** column heading once, it will sort the orders alphabetically. Tap it again and the orders will be sorted in descending alphabetical order.

The sort order button at the top of the screen appears with a green plus sign to indicate when the order list is sorted in a sequence other than the default order.



Searching the Order List by Field

Use the Orders screen's search button to search through the order list by data field (each column in the order list corresponds to an order data field).



The search button limits the list to show only the order or orders that contain the desired information in the field you are interested in. The appears with a green plus sign to indicate when search criteria are in effect.



To search for orders by field

1. From the Orders screen, tap the Search button.



The handheld displays the Search screen.

Search

Select a Field

STREET_NAME
▼

Lakeshore

Set

Remove

Cancel

2. Select an item from the **Select a Field** drop-down list.

In the text box below the drop-down list, type the text characters you want the application to use as a search criterion. It will list all orders in which those characters appear in the specified field (column) in the order you typed them in.

3. Tap **Set** to run the search.

The order list displays orders that match your search criteria.

A green cross on the Search button indicates that the search criteria are in effect.



4. To remove the search filter, tap the Search button again, and then tap **Remove**.

Filtering the Order List

Use the Filter button to limit orders shown in the order list by completion status and/or date.



The Filter button appears with a green plus sign to indicate when a filter is in effect.

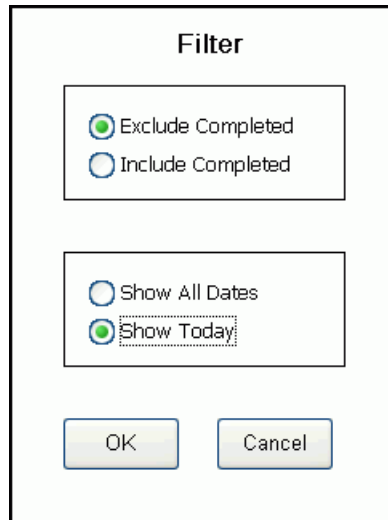


To filter the order list

1. From the Orders screen, tap the Filter button.



The handheld displays the Filter screen.



2. Choose the desired order completion filter.
 - **Exclude Completed** limits the order list to orders that have not been completed.
 - **Include Completed** includes both completed and uncompleted orders in the list.
3. Choose the desired order timing filter.
 - **Show All Dates** includes orders regardless of the date on which they were dispatched.
 - **Show Today** limits the order list to orders dispatched to you today and on past dates.
4. Tap **OK**.

The order list displays orders that match your filter criteria.


A green cross on the Filter button indicates that a filter is in effect.



5. To remove the filter, tap this button again to display the Filter screen, select **Exclude Completed** and **Show Today**, and tap **OK**.

Completing Orders

To open a work order, double-tap it in the order list. This displays the order details screen, from which can you review and verify the order information. At that point, you can decide whether to process the order or return to the order list to select another order.

 **Note** Once you start start the process of completing an order (see [To complete an order](#) on page 17), the application highlights that order by default in the Orders screen.

After you have completed an order, the application displays the next order or returns you to the order list, where you can select the next order.

By default, completed orders do not appear in the order list, but you can set the order list filter to include them, if you wish (see [Filtering the Order List](#) on page 15).

While processing an order you cannot start another order until you complete or quit the order you are working on.

This chapter provides general information about using the Endpoint-Link Pro Orders screen to process work orders. The actual work order processing screens vary according to the type of order.

For information about programming and reading endpoints see [The Endpoint Tools Menu](#) on page 27.

To complete an order

1. From the Orders screen, double-tap an order in the list to display the order details screen.
2. Tap the Process Order button.



The handheld displays the first order processing screen.

The screenshot shows a handheld device screen with the following content:

- Title: **Press Next to Select This Order for Work**
- House Nbr: 100000
- Street: DRUMORE WAY
- Cust Name: JOHN DOE
- Meter Nbr: 99999999
- Location: (empty field)
- Meter Type: GAS
- Buttons: Restart, Next

3. Tap **Next** and proceed through the rest of the order processing screens.

Tip If you are prompted for meter readings, the system requires entry of the first reading. If there is only one meter, tap **Next** without entering figures for the other reading boxes.

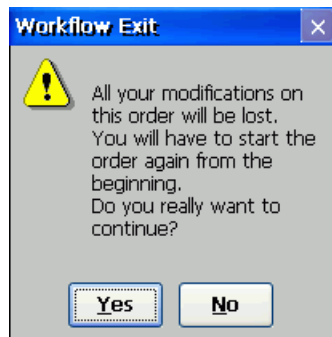
- When you tap **Finish** on the final screen in the order, as shown below, you will be returned to the order details screen.

- Tap the Order List button to return to the order list.



The order's state changes to *completed* (✓). The order will be returned to the server during the next sync process (see [The Sync Screen](#) on page 23).

Note If you tap the Order List button before you complete the order, the handheld displays this message:



Tap **Yes** to discard all information you have completed for the order and return to the order list.

Tap **No** to return to the order.

Creating Orders

You can create orders on your handheld as needed. The order you create is immediately available to work on.

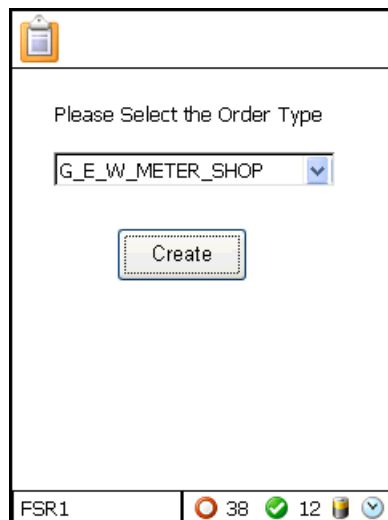
When you create an order, Endpoint-Link Pro assigns it a temporary order number beginning with the letters GEN. The next time your handheld connects to the Endpoint-Link Pro server, the server replaces the temporary order number with a permanent order number beginning with the letters EPLP.

When you create an order, Endpoint-Link Pro prompts you to specify an order type. Order types are downloaded to the handheld in two ways:

- When orders are downloaded to the handheld from the server, the order types for those orders are also sent to the handheld.
- Some order types may be configured as *auto-download* order types. The server sends new auto-download order types to the handheld automatically when they become available, during routine communications and synchronization. See [The Sync Screen](#) on page 23.

To create an order

1. From the Orders screen, tap .

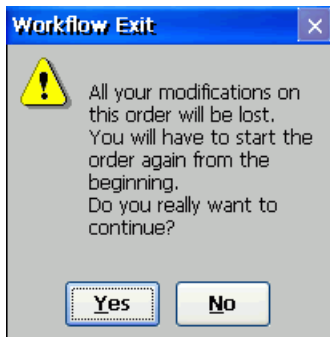


2. Select an order type, and then tap **Create**.

Note The contents of this screen depend on the type of order you are creating and how your company has configured Endpoint-Link Pro.

3. Enter the required information, and then tap .
The handheld displays the first screen for the selected order type.
4. Proceed through the rest of the order processing screens.
Tap **Finish** when you complete the order to return to the Orders screen.

Note If you tap the Order List button before you complete the order, the handheld displays this message:



Tap **Yes** to discard all information you have completed for the order and return to the order list.

Tap **No** to return to the order.



Caution If you fail to complete the order, the system deletes it, along with any information you have entered for it so far.

Working with Repeating Orders

Repeating orders are intended primarily for use in utility meter shops. They allow the handheld user to quickly create and complete multiple orders of the same order type.

To use this feature, your utility must have set up one or more order types that enable the creation of repeating orders. When you open or create and complete an order of a repeating order type, it prompts you at the end of the workflow to indicate whether you want to create another order of the same type. If you do, Endpoint-Link Pro creates a duplicate of the order you just completed and takes you directly to the first screen of the new order's workflow.

You can repeat this cycle as many times as you want.

To complete repeating orders

- Do one of the following:
 - Open and complete an order that is of a repeating order type.
See [Completing Orders](#) on page 17.
 - Create a new order that is of a repeating order type.
See [Creating Orders](#) on page 19.

A repeating order type requires you—usually, but not always, in the last screen of the workflow—to indicate whether you want to create another order of the same type.

Job SH Information
Enter the Following Information

Diff Job Type?

Quit?

- Do one of the following:
 - To create another order of the same job type, set the fields as follows:
Diff Job Type? = No
Quit? = No
The handheld creates the new order, assigns it to you, and immediately takes you to the first screen of the new order's workflow.
 - To create another order of a different job type, set the fields as follows:
Diff Job Type? = Yes

Quit? = No

The handheld prompts you to specify the new job type, then creates the new order and takes you to the first screen of its workflow.

- If you are finished creating repeating orders, set the fields as follows:

Diff Job Type? = No or Yes (does not matter)

Quit? = Yes

The handheld returns you to the order list.

The Sync Screen

During your work day, as you complete orders on the handheld and new orders are dispatched to you at the server, the handheld's order list gets "out of sync" with the server's list. The server's list does not show your completed orders, the handheld's list does not include any new orders dispatched to you at the server, and any of your orders that have been returned or redispached to other FSRs at the server remain on your handheld.

Through the synchronization (*sync*) process:

- The handheld returns your completed orders, if any, to the server.
- The server sends to the handheld any new orders dispatched to you.
- The server removes from the handheld any orders that a dispatcher has "returned" at the server or dispatched to another FSR.

Also during the sync process, the server performs other routine maintenance tasks on the handheld, such as installing or modifying order types, changing meter configuration information, changing handheld settings, and installing software updates when they become available.

If your handheld is configured to use Endpoint-Link Pro's auto-synchronization feature, it runs the synchronization process automatically, when you log on to the handheld software. In addition, you can use Endpoint-Link Pro's **Sync with Server** option to run the synchronization process on demand, at any time.

Endpoint-Link Pro also provides an **End of Day** option. As the name indicates, this option is designed to be run at the end of each work day. Like **Sync with Server**, **End of Day** runs routine handheld data and software maintenance tasks and returns your completed orders to the server. Unlike **Sync with Server**, it also returns uncompleted orders. Which orders it returns depends on how your Endpoint-Link Pro system is configured.

Using the Sync Screen

The Sync screen provides two synchronization options—

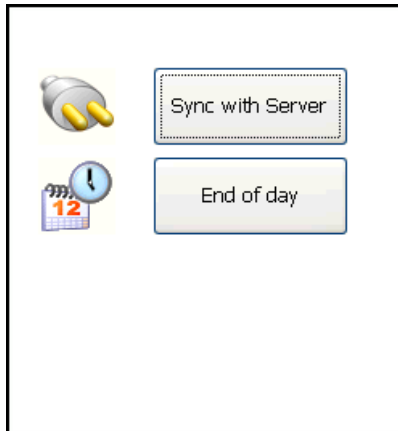
- **Sync with Server** gives you an on-demand way to run the synchronization process at any time.
- **End of Day**, as the name indicates, is designed to be run at the end of each work day.

Like **Sync with Server**, **End of Day** runs routine handheld data and software maintenance tasks and returns your completed orders to the server. Unlike **Sync with Server**, it also returns some uncompleted orders. Which orders it returns depends on how your Endpoint-Link Pro system is configured.

To display the Sync screen

Do one of the following:

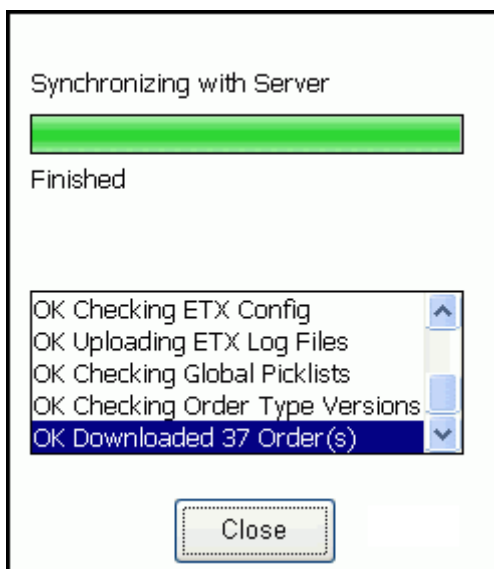
- From the main screen, tap **Sync**
- On an FC200, press **Ctrl+S** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **S** on the handheld keyboard.




To sync the handheld's order list with the server's

1. Prepare the handheld for communications with the server by placing it in its dock (cradle).
2. From the Sync screen, tap **Sync with Server**.

The handheld displays a series of progress messages as it syncs its data with the server's. A Finished message confirms that the process was successful.



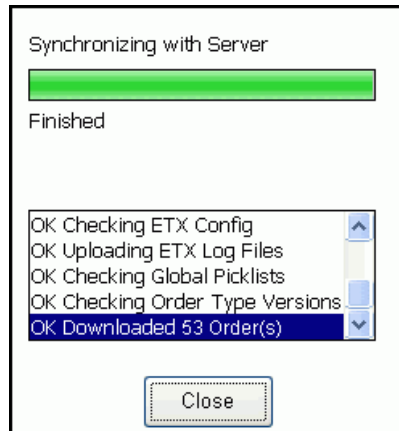
3. Tap **Close** to return to the Sync screen.
4. Tap  to return to the main menu.

5. Tap **Orders** to view the updated order list and verify that it has been updated.

To run the end-of-day process

1. Prepare the handheld for communications with the server by placing it in its dock (cradle).
2. From the Sync screen, tap **End of Day**.

The handheld displays a series of progress messages as it syncs its data with the server's. A Finished message confirms that the process was successful.



3. Tap **Close** to return to the Sync screen.

Resending Attachments

If you include photos as attachments to your custom order workflows, the handheld sends these to the server during the synchronization and end-of-day processes. As the handheld syncs its data with the server's, you may see the following line among its progress messages:

Retry Sending Failed Attachments

This indicates that the handheld was unable to send one or more attachments to the server. This *does not* mean that the completed orders associated with those attachments failed to reach the server. The handheld sends all completed orders to the server before it sends any attachments. In most cases, the orders themselves are successfully sent.

The handheld software saves, in a special directory, attachments that could not be sent and tries sending them again the next time it runs the sync process. How many times it tries sending the attachments is determined by a configuration setting specified by one of your utility's handheld software administrators.

If You Get a Software Update Failure Message...

If this message appears when you run the **Sync with Server** or **End of Day** option:



—it means that the server tried to update the handheld’s software during the sync process, but the update attempt failed because the Endpoint-Link Pro Mobile Desktop is not running.

To start the Mobile Desktop

1. Tap **OK** to close the message box.
2. Close the Sync screen and exit Endpoint-Link Pro.
3. Perform a soft reset on the handheld by holding down the orange function key and the power key together until the handheld’s display screen dims.

When the handheld restarts, it automatically starts the Mobile Desktop.

4. Restart and log back on to Endpoint-Link Pro.

With the Mobile Desktop running, you should be able to run either Sync screen option successfully.

The Endpoint Tools Menus

Endpoint-Link Pro's endpoint tools are intended for use on FC200-series and FC300-series handhelds equipped with internal radios and on those configured to work with Itron OpenWay ZigBee or SaveSource Programmer belt-clip radios. The endpoint tools are arranged in three menus, corresponding to Endpoint-Link Pro's three standard workflows for reading and programming endpoints:

- ChoiceConnect menu

Designed for use with a broad range of Itron's ChoiceConnect endpoints, this menu is enabled on handhelds with internal radios and on laptop computers configured to work with 900MHz belt-clip radios.

The ChoiceConnect workflow menu is not available on handhelds without internal radios.

See [ChoiceConnect Endpoint Tools](#) on page 30.

- OpenWay menu

Designed specifically for reading and programming OpenWay 2.4GZ gas modules, this menu is available on Bluetooth-enabled handhelds configured to work with OpenWay ZigBee belt-clip radios.

See [OpenWay Endpoint Tools](#) on page 74.

- SaveSource menu

This menu's options are designed for reading and programming 200W/WP endpoints. It is available on Bluetooth-enabled handhelds configured to work with SaveSource Programmer belt-clip radios.

See [SaveSource Endpoint Tools](#) on page 93.

Although handhelds can be configured for use with either or both types of belt-clip radio, you can enable only one belt-clip radio at a time. Itron advises that you configure your handhelds only for the type you intend to use. This means that on suitably configured handhelds without internal radios, Endpoint-Link displays only one of the endpoint tools menus, depending on which belt-clip radio type is enabled.

On handhelds with internal radios that are also configured for use with belt-clip radios, Endpoint-Link provides access to *both* the ChoiceConnect menu and either the OpenWay or SaveSource menu.



Note Endpoint-Link Pro windows, dialog boxes, and message boxes appear slightly different on FC200- and FC300-series handhelds. For brevity and consistency, this guide uses illustrations taken from the FC200 version of Endpoint-Link Pro, except in a few cases where it is necessary to distinguish between screens on the different devices.

Formatting Gas and Electric Meter Readings

Endpoints include meter readings in the data they return to a handheld in three Endpoint Tools menu functions:

- **Read Endpoints/Read Module** (depending on which Endpoint Tools menu you are working with)
- **Check Endpoint/Check Module** (depending on which Endpoint Tools menu you are working with)
- **Read Tamper**

In the case of **Read Endpoints/Read Module** and **Read Tamper**, the meter reading data is *unformatted*. It does not indicate which digits are from which dials on the meter, nor does it show the position of the decimal point, if applicable.

For example, an unformatted reading of 3305 from an endpoint could indicate an actual reading of 033.05, 0033.05, 00033.05, 000330.5, or 0003305, depending on whether the meter has three, four, five, six, or seven dials.

Likewise, electric and water meter readings received through the **Check Endpoint** function are unformatted. For some gas meter readings received through the **Check Endpoint** function and for readings received through the **Check Module** function, Endpoint-Link Pro is able to determine the correct format, and it formats these automatically.

In Endpoint Tools functions that return unformatted gas and electric meter readings, Endpoint-Link Pro provides a feature that saves you the inconvenience of mentally converting the readings to the correct format. (This feature is not available for water meter readings). Whenever it retrieves a meter reading from a gas or electric endpoint, the system displays a Format Read button to the right of the received reading.



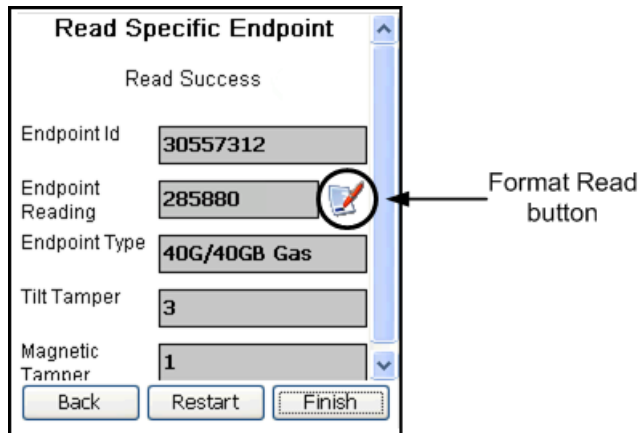
This button displays a dialog box you can use to format the reading to match the meter's dial configuration.

The Format Read button is available any time the Endpoint-Link Pro displays a gas or electric meter reading, regardless of which Endpoint Tools option initiates the reading.

To format a gas or electric endpoint reading

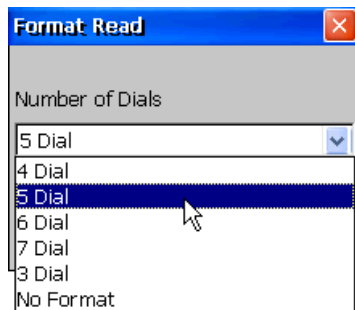
1. When you use an Endpoint Tools option that returns a gas or electric meter reading, the system displays the Format Read button to the right of the unformatted reading.

For example:



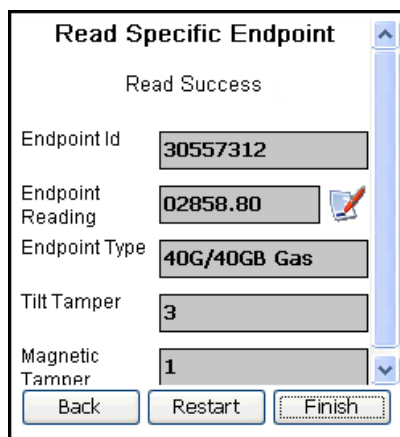
Tap the Format Read button to display the Format Read dialog box.

2. From the **Number of Dials** drop-down list, select the number of dials on the meter.



Then tap **OK**.

The application formats the reading for the number of dials you selected.



ChoiceConnect® Endpoint Tools

The ChoiceConnect Endpoint Tools menu is available on all FC200-series and FC300-series handhelds with internal radios and on laptops configured to use 900MHz belt-clip radios.

The ChoiceConnect Endpoint Tools menu options you have access to are set by your manager. There are four levels of access available, each of which enables you to use Endpoint-Link to perform specific tasks:

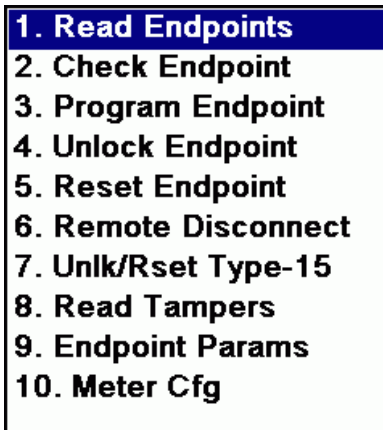
- Read endpoints only
- Read, program, and unlock endpoints
- Read, program, unlock, and reset endpoints
- Read, program, unlock, and reset endpoints, and perform remote connect/disconnects (requires an FC200SR or FC300SR handheld)

Your level of access determines which options appear on the menu.

To display the ChoiceConnect Endpoint Tools menu

If your handheld has an internal radio and *is not* configured for use with an OpenWay or SaveSource belt-clip radio, do one of the following:

- Tap **Endpoint Tools** from the main menu.
- On an FC200, press **Ctrl+E** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **E** on the handheld keyboard.

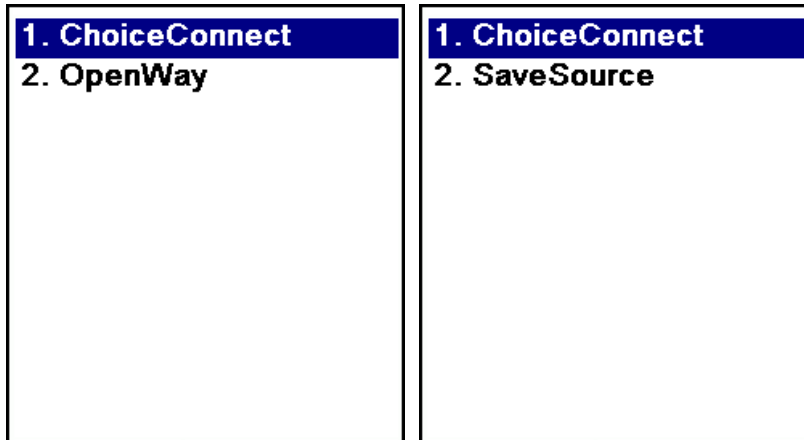


Note This illustration shows all ChoiceConnect Endpoint Tools menu options. Which of these options appear depends on the level of access provided to you by your manager, as does the option number associated with each one.

If your handheld *has* an internal radio and is configured for use with an OpenWay or SaveSource belt-clip radio, do one of the following:

- Tap **Endpoint Tools** from the main menu.
- On an FC200, press **Ctrl+E** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **E** on the handheld keyboard.

This opens one of these Endpoint Tools selection menus.



In this case, double-tap **ChoiceConnect** (or press **1** on the handheld keyboard) to display the ChoiceConnect Endpoint Tools menu.

At any point while performing a workflow task from any of the Endpoint Tools menus, you can tap the Return to Previous Menu button to quit the task and return to the previous menu.



ChoiceConnect Endpoint Tools Menu Options

The following table includes all ChoiceConnect Endpoint Tools command options. For each option, it lists the ChoiceConnect endpoint models that support that option.

Which of these options appear on your handheld depends on the level of access provided to you by your manager.

Option	Supported by...	See...
Read Endpoints	All endpoints	Reading Endpoints on page 34
Check Endpoint	Electric endpoints: - 40E - 45E Gas endpoints: - 40G/40GB - 100G series* Water endpoints: - 40W - 50W - 60WP* - 80W-i*	Checking Endpoints on page 39
Program Endpoint	Electric endpoints: - 40E - 45E Gas endpoints: - 40G/40GB - 100G series* Water endpoints: - 40W - 50W - 60WP* - 80W-i*	Programming Electric Meter Endpoints on page 42 Programming Gas Meter Endpoints on page 46 Programming Water Meter Endpoints on page 50
Unlock Endpoint	Electric endpoints: - 40E - 45E Gas endpoints: - 40G/40GB Water endpoints: - 40W - 50W - 60WP* - 80W-i*	Unlocking Endpoints on page 54

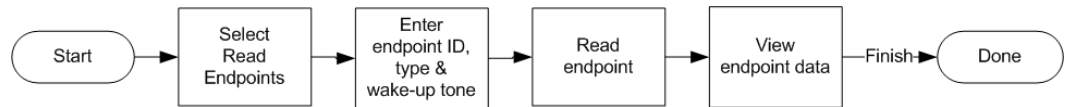
Option	Supported by...	See...
Reset Endpoint	Electric endpoints: - 40E - 45E Gas endpoints: - 40G/40GB - 100G series* Water endpoints: - 40W - 50W - 60WP* - 80W-i*	Resetting Endpoints on page 56
Remote Disconnect	Gas endpoints: - 100G DLN RD	Performing a Remote Connect/Disconnect on page 60
Unlk/Rset Type-15	Electric endpoints: - 40E - 45E Gas endpoints: - 40G/40GB Water endpoints: - 40W - 50W	Resetting Type-15 Endpoints on page 58
Read Tamper	Electric endpoints: - 40E - 45E Gas endpoints: - 40G/40GB - 100G series* Water endpoints: - 40W - 50W	Reading Endpoints' Tamper Indicators on page 69
Endpoint Params	All endpoints	Viewing Endpoint Parameters on page 71
Meter Cfg	All endpoints	Viewing Meter Configuration Information on page 72

* 100G series, 60WP, and 80W-i require an FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio.

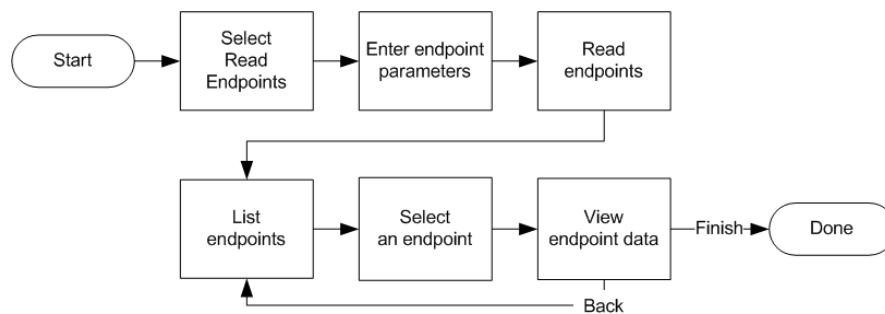
Reading Endpoints

Use the **Read Endpoints** option to retrieve and view meter reading and tamper values for ChoiceConnect endpoints that meet specified parameter criteria.

- If you specify the ID number of a specific endpoint, this option retrieves the applicable information from that endpoint.



- If you leave the ID number unspecified, this option retrieves information for all endpoints within its range that meet the specified criteria.



You can use the **Read Endpoints** command option with all ChoiceConnect endpoint types.

To read a specific endpoint

1. Double-tap **Read Endpoints** on the ChoiceConnect Endpoint Tools menu to display the Read Endpoints screen.

2. Do the following:
 - Enter the endpoint's identification number.
 - Select the endpoint type.

- Select the endpoint's wakeup tone, if required.

Then tap **Next**.

The handheld displays this progress screen while it reads the endpoint.

3. When the read is completed, the handheld displays the following screen.

- If the endpoint is a gas or electric meter endpoint, the Format Read button appears to the right of the **Endpoint Reading** box.



If desired, you can use this button to format the read to match the meter configuration.

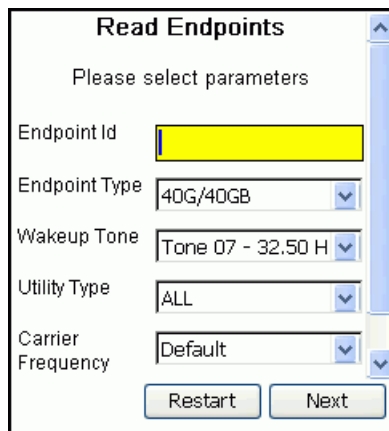
See [Formatting Gas and Electric Meter Readings](#) on page 28.

- If the endpoint is a 60WP endpoint attached to an Itron Cyble K-10 Sensor, the **Endpoint Reading** box shows only the seven leftmost (most-significant) digits of the register reading.

4. Tap **Finish** to return to the Endpoint Tools menu.

To read multiple endpoints

1. Double-tap **Read Endpoints** on the ChoiceConnect Endpoint Tools menu to display the Read Endpoints screen.

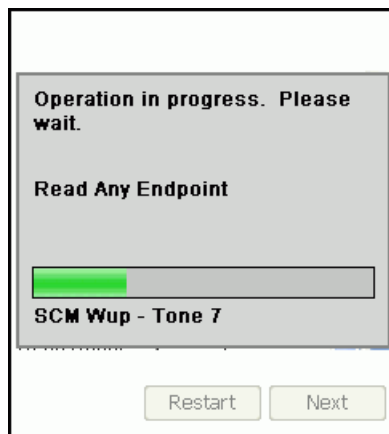


2. Leave the **Endpoint Id** box blank.

Use the screen’s remaining fields to specify characteristics of the endpoints you want the handheld to read, as explained under [Read Endpoints: Parameters](#) on page 38.

Then tap **Next**.

The handheld displays a progress screen while it reads all endpoints within its range that meet the specified criteria.



- When it is done, the handheld displays the Read-Any Results screen, which lists all endpoints in range that met the specified criteria.

ID	Type	Reading	Tmp
51902540	2	285880	21
45493147	7	3622597	10
45985501	8	2974	02
50113044	8	2521773	00
51900807	12	306688	00
53900839	13	724	01
54335437	12	1640	20
54382256	12	555564	30
57979397	13	111111	02
63104733	7	2887491	00

1 of 10

Cancel Select Endpoint

- To find a specific endpoint in the list, type the first few digits of its ID number.

When you pause after typing one or more digits, the system locates and highlights the first endpoint ID that begins with the digits you entered, if it exists. If the sequence of digits you entered does not exist, the system locates the first near-match.


- To see the details for a specific endpoint on the list, double-tap it or select it and then tap **Select Endpoint**.

- The handheld displays the results of the read for that endpoint.

Read Any Endpoint

Read Success

Endpoint Id

Endpoint Reading 

Endpoint Type

Tilt Tamper

Magnetic Tamper

Back Restart Next

- If the endpoint is a gas or electric meter endpoint, the Format Read button appears to the right of the **Endpoint Reading** box.



If desired, you can use this button to format the read to match the meter configuration.

See [Formatting Gas and Electric Meter Readings](#) on page 28.

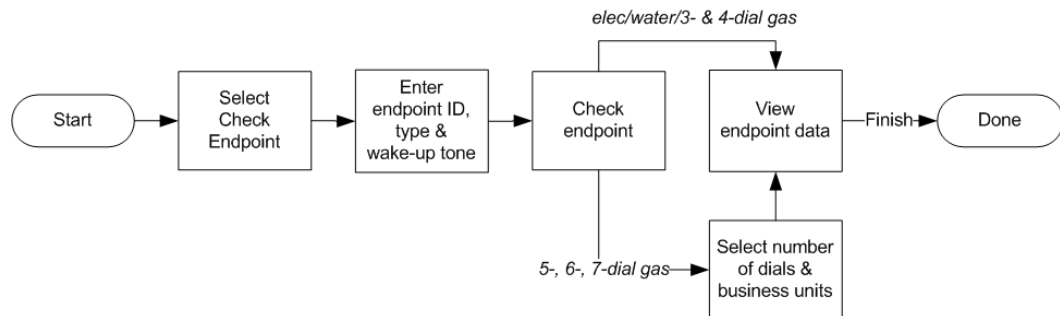
- If the endpoint is a 60WP endpoint attached to an Itron Cyble K-10 Sensor, the **Endpoint Reading** box shows only the seven leftmost (most-significant) digits of the register reading.
5. Tap **Back** to return to the list of endpoints read or **Next** to return to the Endpoint Tools menu.

Read Endpoints: Parameters

Wakeup Tone	The wake-up tone used by the endpoints to be read.
Utility Type	The utility meter type of the endpoints to be read— ALL , GAS , WATER , or ELECTRIC .
Read Mode	The read mode used by the endpoints to be read.
Endpoint Id	(Optional) The ID of the endpoint you want Endpoint-Link Pro to highlight, if it is among the endpoints read.
Carrier Frequency	The radio carrier frequency used by the endpoints to be read, if your utility has endpoints that use different frequencies.
Read Range	<p>The range within which you want the handheld to read endpoints that meet the criteria specified by the parameters in this screen, if required.</p> <ul style="list-style-type: none"> • Normal – Select this option if Long returns readings from too many endpoints. • Long – Select this option if Normal returns readings from too few endpoints and your utility is licensed to use a carrier frequency to transmit a wake-up tone from its handhelds. The licensed carrier frequency enables long-range communications between the utility’s handhelds and high-powered meter endpoint types. These include Itron’s high-powered electrical endpoints, as well as 100G, 60WP, and 80W-i endpoints. • Long Receive Only - Select this option if Normal returns readings from too few endpoints and your utility is not licensed to use a carrier frequency to transmit a wake-up tone to endpoints. This option lets handhelds receive data from endpoints configured to broadcast their data in <i>bubble-up mode</i>—automatically, at regular intervals. Bubble-up mode does not require the handheld to transmit a wake-up tone.

Checking Endpoints

Use the **Check Endpoint** option to retrieve and view basic information stored in an endpoint, including the meter reading, tamper values, and programmed parameters.



You can use the **Check Endpoint** command option with the following ChoiceConnect endpoint types:

- Electric endpoints:
 - 40E
 - 45E
- Gas endpoints:
 - 40G/40GB
 - 100G series
- Water endpoints:
 - 40W
 - 50W
 - 60WP
 - 80W-i

An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required with 100G series, 60WP, and 80W-i endpoints.

To check an endpoint



Note If you are checking a 60WP or 80W-i endpoint, you must first activate its programming mode, as explained under [60WP and 80W-i Endpoint Programming Mode Activation](#) on page 125.

1. Double-tap **Check Endpoint** on the ChoiceConnect Endpoint Tools menu to display the Check Endpoint screen.
2. Do the following:
 - Enter the endpoint identification number.

By default, the **Endpoint Id** field displays the ID of the endpoint that was read immediately before you selected the **Check Endpoint** option, if applicable (see [Reading Endpoints](#) on page 34). Otherwise, this field is blank.

- Select the endpoint type.
- Select the endpoint's wakeup tone, if required.

Check Endpoint

Please enter the following params

Endpoint Id

Endpoint Type

Wakeup Tone

Then tap **Next**.

The handheld displays the following progress screen while it checks the endpoint.

**Operation in progress.
Please wait.**

Full Endpoint Check

Endpoint ID: 30557312

PGM Wup

3. Which screen the system displays next depends on the type of meter the endpoint is installed on.

- If the meter is an electric or water meter, or a gas meter with three or four dials, the handheld displays the information it received from the endpoint.

Note The fields displayed on this screen depend on the type of endpoint selected and its configuration, and may differ from what appears in the example shown here. In addition, if the endpoint is a 60WP endpoint attached to an Itron Cyble K-10 Sensor, the **Endpoint Reading** box shows only the seven leftmost (most-significant) digits of the register reading.

For gas and electric meter endpoints, the Format Read button appears to the right of the **Endpoint Reading** box.



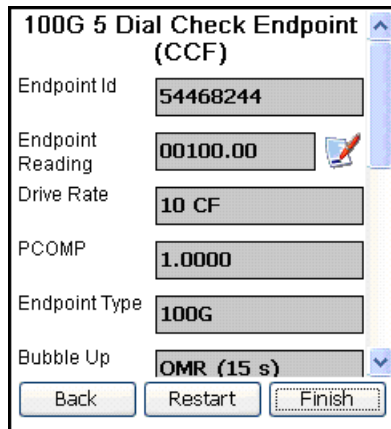
If desired, you can use this button to format the read to match the meter configuration (not required for reads from three- and four-dial gas meters).

See [Formatting Gas and Electric Meter Readings](#) on page 28.

- If the meter is a gas meter with five, six, or seven dials, it prompts you to select the meter's number of dials and its billing units.

Specify the required information, and tap **Next**.

The handheld displays the information it received from the endpoint.



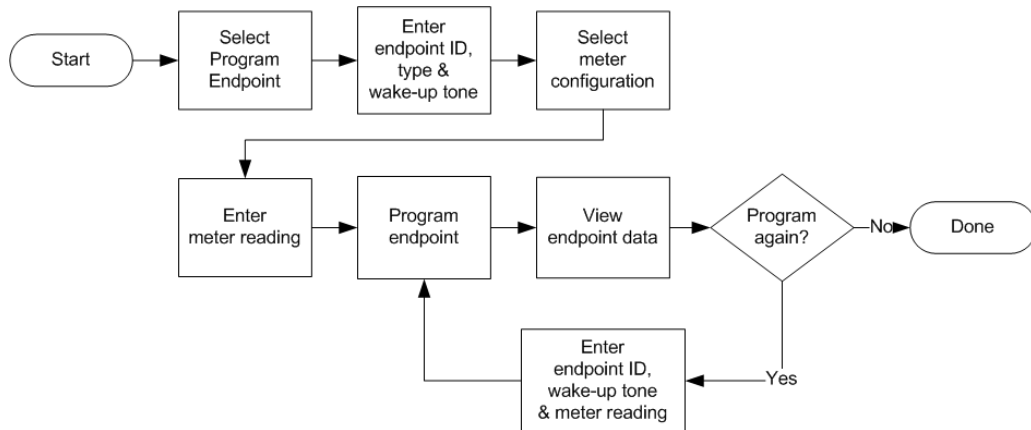
The format of the meter reading and the drive rate reflect the number of dials and the billing units you specified in the previous screen.

4. Tap **Finish** to return to the Endpoint Tools menu.

Programming Electric Meter Endpoints

Some endpoint models require programming before they can accurately record meter data. When you program an endpoint, you provide it with essential information about the meter, including the meter’s configuration and current reading. This information synchronizes the endpoint with the meter and gives it a base point from which to calculate future reads.

Most electric endpoint models are solid-state devices that do not require programming. Use the **Program Endpoint** option to program those that do require programming. These include 40E and 45E endpoints.



To program an electric meter endpoint

1. Double-tap **Program Endpoint** on the ChoiceConnect Endpoint Tools menu to display the Program Endpoint screen.
2. Do the following:

- Enter the endpoint identification number.

By default, the **Endpoint Id** field displays the ID of the endpoint that was read immediately before you selected the **Program Endpoint** option, if applicable (see [Reading Endpoints](#) on page 34). Otherwise, this field is blank.

- Select the endpoint type.
- Select the endpoint's wakeup tone, if required.

Program Endpoint

Please enter the following params:

Endpoint Id

Endpoint Type

Wakeup Tone

Then tap **Next**.

3. Select the applicable meter configuration—

Program Endpoint

Please enter the desired meter configuration

Endpoint Id

Endpoint Type

Wakeup Tone

Meter Configuration

—and tap **Next**.

4. Enter the current meter reading—

Please enter the initial reading

Endpoint Id

Endpoint Type

Wakeup Tone

Meter Configuration

Meter Reading

—and tap **Next**.

5. Review your settings—

Program Endpoint

Ready to program

Endpoint Id

Endpoint Type

Wakeup Tone

Meter Configuration

Meter Reading

—and tap **Next**.

The handheld displays this progress screen while it programs the handheld.

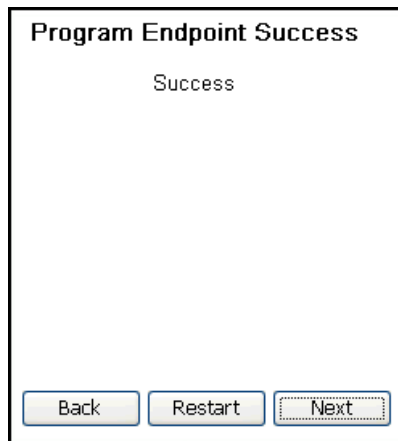
**Operation in progress.
Please wait.**

Program Endpoint

Endpoint ID: 06513728

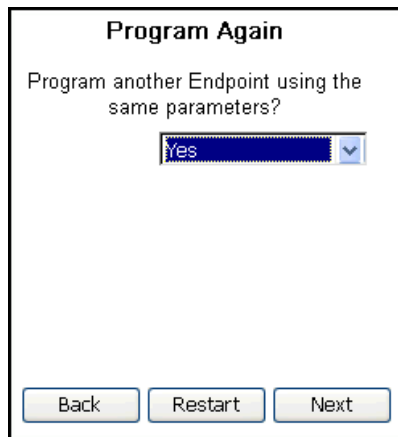
SCM Wup - Tone 7

6. After it programs the endpoint, the handheld displays the Program Endpoint Success screen.



Tap **Next**.

7. The handheld displays the Program Again screen.



Do one of the following:

- To return to the Endpoint Tools menu, select **No** from the drop-down menu.
- To program another endpoint with the same configuration, select **Yes**.

Then tap **Next**.

8. If you selected **Yes** in the previous screen, the handheld prompts you for the next endpoint's ID, wakeup tone, and meter reading.

Program Again

Program another Endpoint using the same parameters.

Endpoint Id

Wakeup Tone

Meter Reading

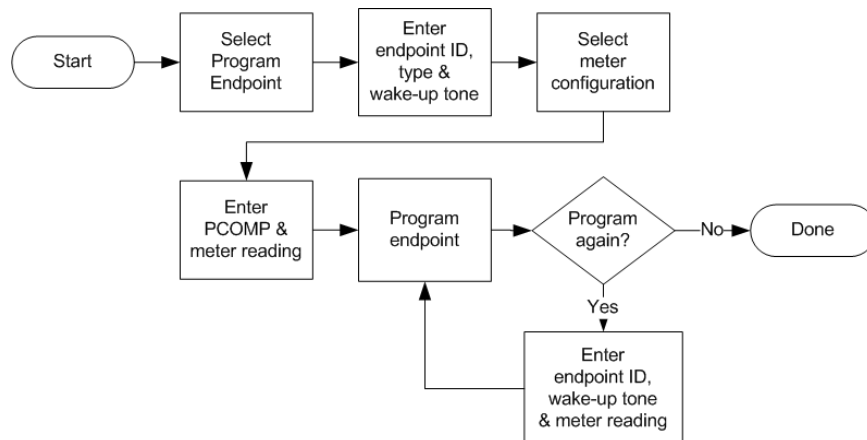
Enter the required information, and tap **Finish**.

Repeat the programming procedure for the next endpoint.

Programming Gas Meter Endpoints

Some endpoint models require programming before they can accurately record meter data. When you program an endpoint, you provide it with essential information about the meter, including the meter's configuration, pressure compensation (PCOMP) value, and current reading. This information synchronizes the endpoint with the meter and gives it a base point from which to calculate future reads.

Use the **Program Endpoint** option to program gas meter endpoints. The procedure varies according to the configuration of the meter associated with the endpoint being programmed.



You can use the **Program Endpoint** command option with all ChoiceConnect 40G/GB and 100G series gas endpoints. An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required with 100G series endpoints.

To program a gas meter endpoint

1. Double-tap **Program Endpoint** on the ChoiceConnect Endpoint Tools menu to display the Program Endpoint screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint type.
 - Select the endpoint's wakeup tone, if required.

Program Endpoint

Please enter the following params:

Endpoint Id

Endpoint Type

Wakeup Tone

Then tap **Next**.

Note If you select **100G M/HH H2R** as the endpoint type, to enable the 100G endpoint's hard-to-read mode, the handheld displays the following warning message:

Warning - 100G Hard to Read

Selecting this mode for hard to read mobile or handheld applications will decrease battery life from

The 100G's average battery life in normal mode is 20 years. In hard-to-read mode, the endpoint's average battery life is 15 years.

Select **Yes** and tap **Next** to confirm that you want to enable the endpoint's hard-to-read mode and continue on to the next screen.

Select **No** and tap **Next** to go back and select a different endpoint type.

3. Select the applicable meter configuration—

Program Endpoint

Please select the desired meter config

Endpoint Id: 30557312

Endpoint Type: 40G/40GB

Wakeup Tone: Tone 07 - 32.50 Hz default

Meter Configuration: 5 Dial, 1000 cubic

Buttons: Back, Restart, Next

—and tap **Next**.

4. Enter the pressure compensation (PCOMP) factor, if required for the selected meter configuration, and the current meter reading, if required—

Endpoint Id: 30557312

Endpoint Type: 40G/40GB

Wakeup Tone: Tone 07 - 32.50 Hz default

Meter Configuration: 5 Dial, 1000 cubic feet

PCOMP: 0.1000

Meter Reading: 61274

Buttons: Back, Restart, Next

—and tap **Next**.

5. Review your settings—

Program Endpoint

Ready to program

Endpoint Id: 30557312

Endpoint Type: 40G/40GB

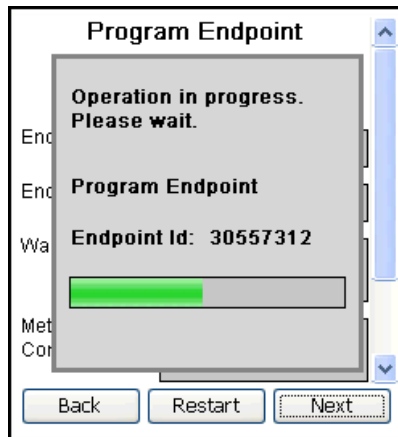
Wakeup Tone: Tone 07 - 32.50 Hz default

Meter Configuration: 5 Dial, 1000 cubic feet

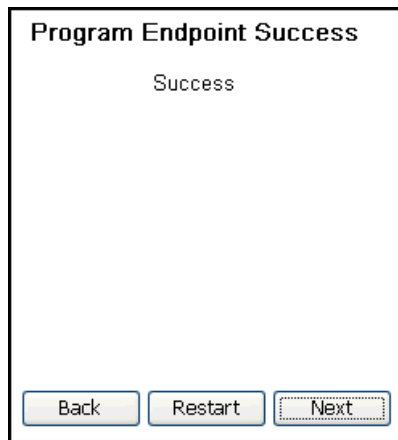
Buttons: Back, Restart, Next

—and tap **Next**.

The handheld displays this progress screen while it programs the endpoint.

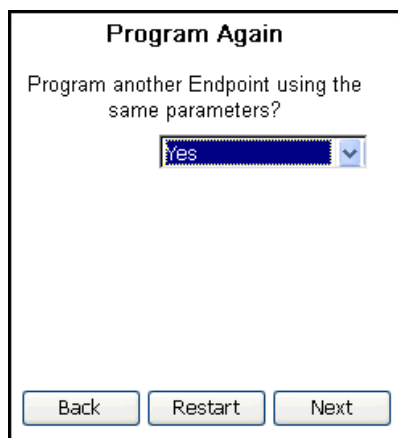


6. After it programs the endpoint, the handheld displays the Program Endpoint Success screen.



Tap **Next**.

7. The handheld displays the Program Again screen.

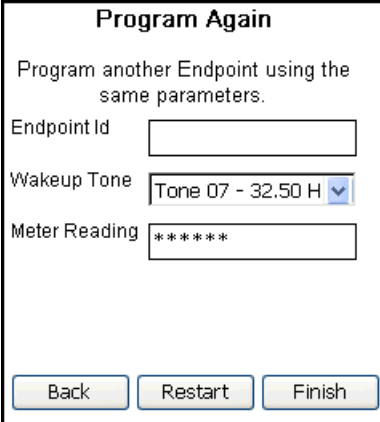


Do one of the following:

- To return to the Endpoint Tools menu, select **No** from the drop-down menu.
- To program another endpoint with the same configuration, select **Yes**.

Then tap **Next**.

- If you selected **Yes** in the previous screen, the handheld prompts you for the next endpoint's ID, wakeup tone, and meter reading.



Program Again

Program another Endpoint using the same parameters.

Endpoint Id

Wakeup Tone

Meter Reading

Enter the required information, and tap **Next**.

Repeat the programming procedure for the next endpoint.

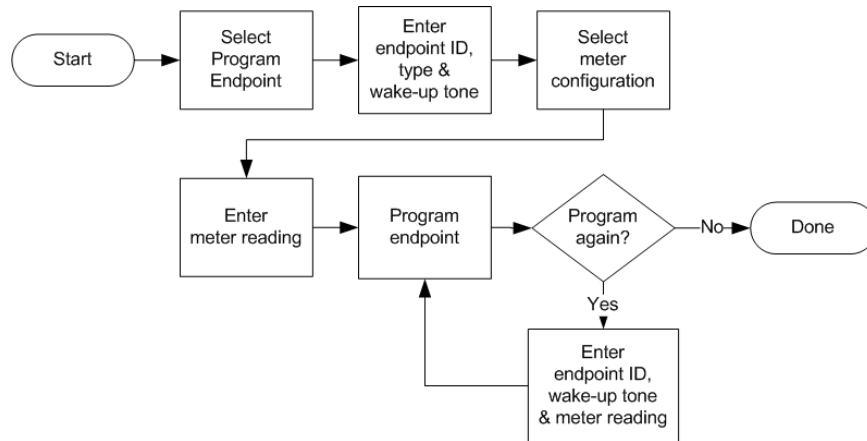
Programming Water Meter Endpoints

Some endpoint models require programming before they can accurately record meter data. When you program an endpoint, you provide it with essential information about the meter, including the meter's configuration and current reading. This information synchronizes the endpoint with the meter and gives it a base point from which to calculate future reads.

Use the **Program Endpoint** option to program water meter endpoints. The procedure varies according to the type of meter associated with the endpoint being programmed.

- When you program an endpoint installed on a meter equipped with a pulser register, such as a Badger, Hersey ER, Precision, or AMCO Digital meter, Endpoint-Link Pro prompts you to enter the meter's current reading.
- When you program an endpoint installed on a meter equipped with an encoded register, such as an AMCO Scancoder, Schlumberger, Hersey Translator, or Sensus meter, the endpoint retrieves the meter reading automatically. Endpoint-Link Pro does not prompt you for a meter reading.
- When you program a 40W or 50W endpoint, Endpoint-Link Pro prompts you to specify the meter's wake-up tone.
- When you program a 60WP, or 80W-i endpoint, Endpoint-Link Pro does not prompt you for a wake-up tone.

- When you program a 60WP or 80W-i endpoint, you must first activate its programming mode with a magnet, as explained in [60WP and 80W-i Endpoint Programming Mode Activation](#) on page 125.



You can use the **Program Endpoint** command option with 40W, 50W, 60W, and 80W-i endpoints. An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required for 60WP and 80W-i endpoints.

To program a water meter endpoint



Note If you are programming a 60WP or 80W-i endpoint:

- You must first activate its programming mode with a magnet, as explained under [60WP and 80W-i Endpoint Programming Mode Activation](#) on page 125.
 - You must use an FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio.
- Double-tap **Program Endpoint** on the ChoiceConnect Endpoint Tools menu to display the Program Endpoint screen.
 - Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint type.

- Select the endpoint's wakeup tone, if required.

Program Endpoint

Please enter the following params:

Endpoint Id

Endpoint Type

Wakeup Tone

Then tap **Next**.

3. Select the applicable meter configuration—

Program Endpoint

Please enter the desired meter configuration

Endpoint Id

Endpoint Type

Wakeup Tone

Meter Configuration

—and tap **Next**.

4. Enter the current meter reading, if required—

Please enter the initial reading

Endpoint Id

Endpoint Type

Wakeup Tone

Meter Configuration

Meter Reading

—and tap **Next**.

Note If the endpoint is a 60WP endpoint attached to an Itron Cyble K-10 Sensor, enter only the seven leftmost (most-significant) digits of the register reading in the **Meter Reading** box.

5. At the **Ready to program** screen, review your settings—

The screenshot shows a handheld device screen titled "Program Endpoint". Below the title, it says "Ready to program". There are several input fields with dropdown menus:

- Endpoint Id: 05579119
- Endpoint Type: Water 40W/50W
- Wakeup Tone: Tone 07 - 32.50 Hz default
- Meter Configuration: Badger RTR
- Meter Reading: (empty field)

At the bottom of the screen, there are three buttons: "Back", "Restart", and "Next".

—and tap **Next**.

The handheld displays this progress screen while it programs the endpoint.

The screenshot shows a handheld device screen with a grey background. The text reads:

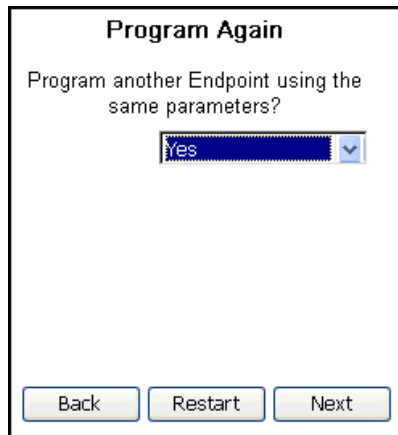
- Operation in progress. Please wait.
- Program Endpoint
- Endpoint ID: 06513728
- A green progress bar is shown below the Endpoint ID.
- SCM Wup - Tone 7

At the bottom of the screen, there are three buttons: "Back", "Restart", and "Next".

6. After it programs the endpoint, the handheld displays the Program Endpoint Success window.

The screenshot shows a handheld device screen titled "Program Endpoint Success". Below the title, it says "Success". At the bottom of the screen, there are three buttons: "Back", "Restart", and "Next".

Tap **Next** to go to the Program Again screen.

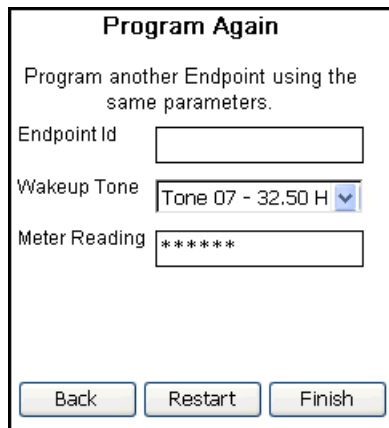


Do one of the following:

- To return to the Endpoint Tools menu, select **No** from the drop-down menu.
- To program another endpoint with the same configuration, select **Yes**.

Then tap **Next**.

7. If you selected **Yes** in the previous screen, the handheld prompts you for the next endpoint's ID, wakeup tone, and meter reading.

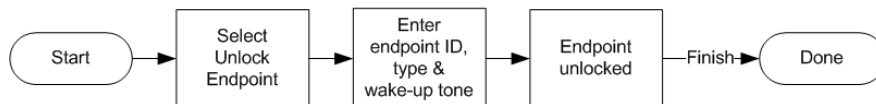


Enter the required information, and tap **Finish**.

Repeat the programming procedure for the next endpoint.

Unlocking Endpoints

The lock level is a security setting on the endpoint that locks it to prevent reprogramming. The **Unlock Endpoint** option lets you unlock endpoints set at lock level 2 so you can reprogram them. The endpoint remains unlocked for five minutes, after which you must unlock it again, if necessary.



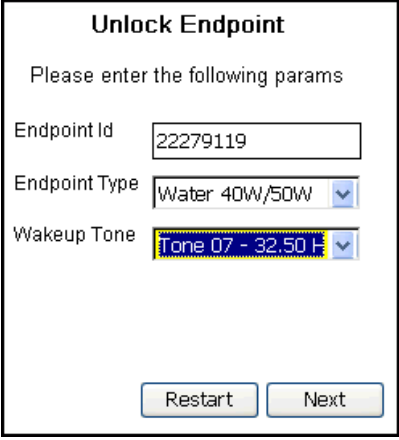
You can use the **Unlock Endpoint** command option with the following ChoiceConnect endpoint types:

- Electric endpoints:
 - 40E
 - 45E
- Gas endpoints:
 - 40G/40GB
- Water endpoints:
 - 40W
 - 50W
 - 60WP
 - 80W-i

An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required for 60WP and 80W-i endpoints.

To unlock an endpoint

1. Double-tap **Unlock Endpoint** on the ChoiceConnect Endpoint Tools menu to display the Unlock Endpoint screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint type.
 - Select the endpoint's wakeup tone, if required.



Unlock Endpoint

Please enter the following params

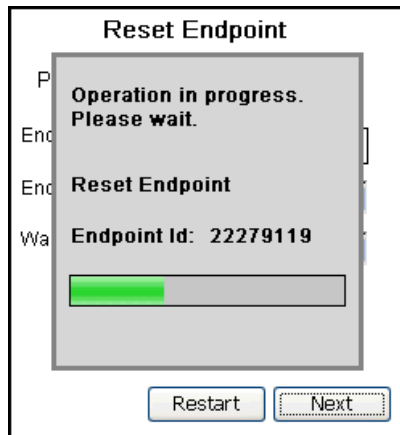
Endpoint Id

Endpoint Type

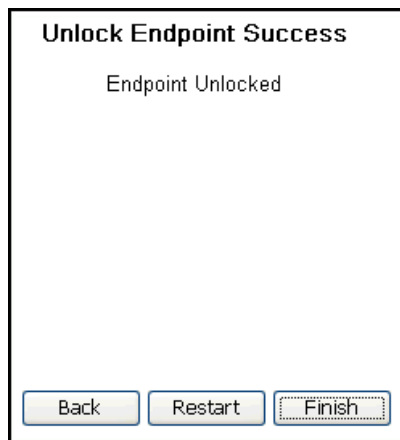
Wakeup Tone

Then tap **Next**.

The handheld displays this progress screen while it unlocks the endpoint.



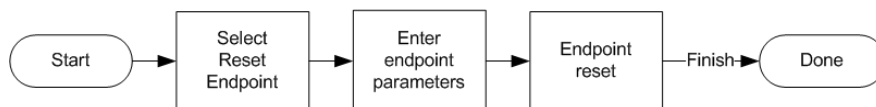
3. When it has finished unlocking the endpoint, the handheld displays this screen.



Tap **Finish** to return to the Endpoint Tools menu.

Resetting Endpoints

Use the **Reset Endpoint** option to reset an endpoint's utility ID to zero.



You can use the **Reset Endpoint** command option with the following ChoiceConnect endpoint types:

- Electric endpoints:
 - 40E
 - 45E
- Gas endpoints:
 - 40G/40GB
 - 100G series

- Water endpoints:
 - 40W
 - 50W
 - 60WP
 - 80W-i

An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required for 100G series, 60WP, and 80W-i endpoints.

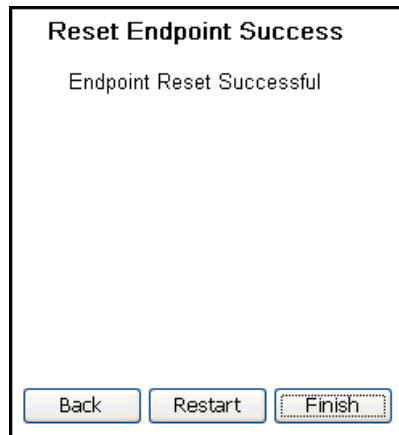
To reset an endpoint

1. Double-tap **Reset Endpoint** on the ChoiceConnect Endpoint Tools menu to display the Reset Endpoint screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint type.
 - Select the endpoint's wakeup tone, if required.

Then tap **Next**.

The handheld displays this progress screen while it resets the endpoint.

- When the reset is complete, the handheld displays the following screen.



Tap **Finish** to return to the Endpoint Tools menu.

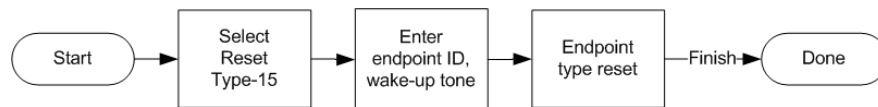
Resetting Type-15 Endpoints

When an endpoint detects an internal malfunction that affects its ability to perform its primary functions, it may change its endpoint type code to a type 15. It identifies itself to the handheld as an endpoint type 15 and in this way indicates that there is a problem.

Use the **Unlk/Rset Type-15** option to reset a type-15 endpoint to its normal type value.



Note The **Unlk/Rset Type-15** option does not apply to 100G and 60W/WP endpoints, which do not use the type 15 endpoint type code.



You can use the **Reset Type-15** command option with the following ChoiceConnect endpoint types:

- Electric endpoints:
 - 40E
 - 45E
- Gas endpoints:
 - 40G/40GB
- Water endpoints:
 - 40W
 - 50W

To reset a type 15 endpoint

- Double-tap **Unlk/Rset Type-15** on the ChoiceConnect Endpoint Tools menu to display the Unlk/Rst Type-15 Endpoint screen.

2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint's wakeup tone.

Unlk/Rst Type-15 Endpoint

Please enter the following params

Endpoint Id

Wakeup Tone

Then tap **Next**.

The handheld displays this progress screen as it resets the endpoint type to its normal value.

**Operation in progress.
Please wait.**

Reset Endpoint

Endpoint ID: 22279119

SCM Wup - Tone 7

3. When the reset is complete, the handheld displays the following screen.

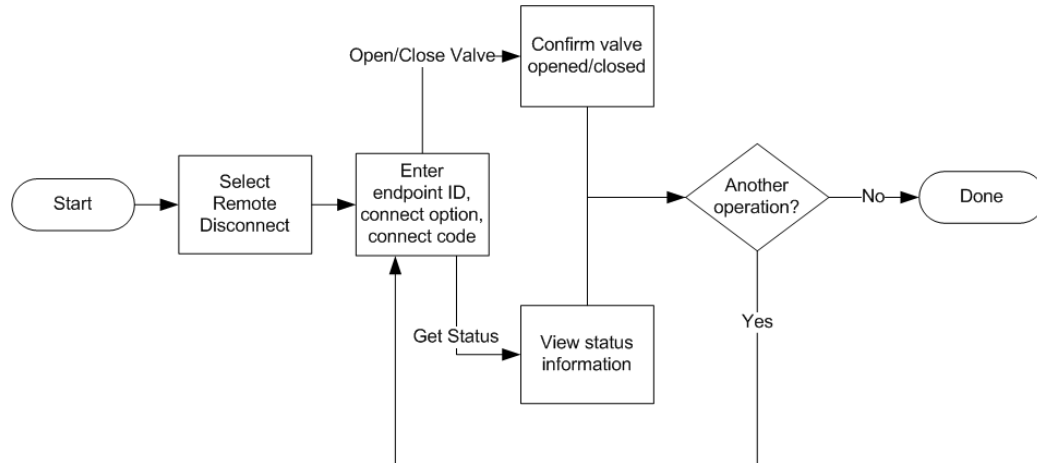
**Unlk/Rst Type-15 Endpoint
Success**

Endpoint Reset Successful

Tap **Finish** to return to the Endpoint Tools menu.

Performing a Remote Connect/Disconnect

Use the **Remote Disconnect** option to connect or disconnect service by opening or closing the valve on a gas meter equipped with a 100G Datalogging Remote Disconnect ERT® Module (100G RD).



An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required for 100G series endpoints.

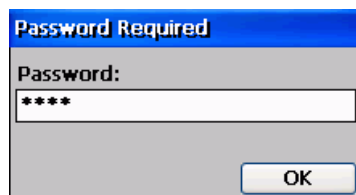


Note The **Remote Disconnect** option may or may not appear on your ChoiceConnect Endpoint Tools menu, depending on your Endpoint-Link Pro user access level.

To determine the status of a 100G endpoint with remote disconnect

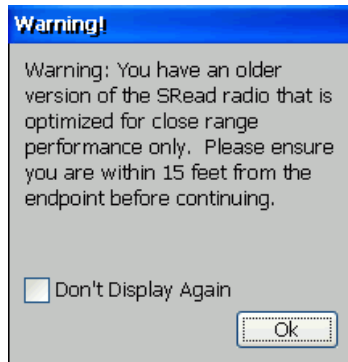
1. Double-tap **Remote Disconnect** on the ChoiceConnect Endpoint Tools menu to display the Reset Endpoint screen.
2. The handheld prompts you to enter a password.

Enter the same password you used to log on to Endpoint-Link Pro.



Then tap **OK**.

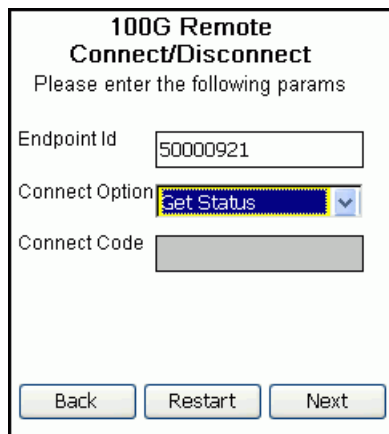
Note If your handheld is an FC200SR equipped with an older version of the SRead (Super Raptor) radio, it displays this message:



If so, you will need to move closer to the endpoint, within the radio's range, to successfully perform any remote disconnect tasks.

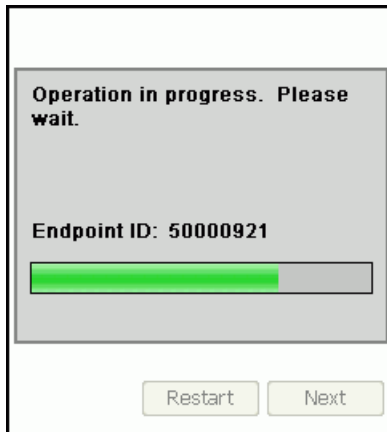
Tap **OK** to continue.

3. The handheld displays the 100G Remote Connect/Disconnect screen.
 - Enter the endpoint identification number.
 - From the **Connect Option** drop-down list, select **Get Status**.

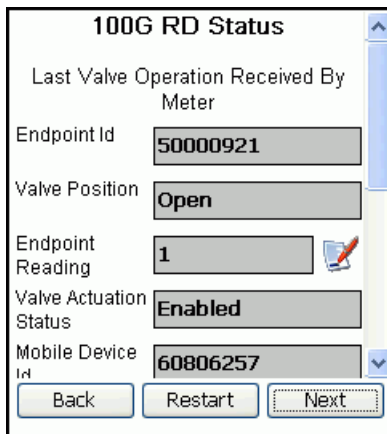
A screenshot of the "100G Remote Connect/Disconnect" screen. The title is "100G Remote Connect/Disconnect" and the subtitle is "Please enter the following params". There are three input fields: "Endpoint Id" with the value "50000921", "Connect Option" with a dropdown menu showing "Get Status", and "Connect Code" which is empty. At the bottom are three buttons: "Back", "Restart", and "Next".

Then tap **Next**.

The handheld displays this progress screen while it retrieves status information from the endpoint.

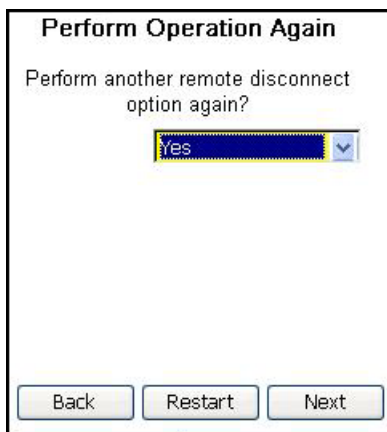


4. When it is finished communicating with the endpoint, the handheld displays the status information.



When you are finished viewing the status information, tap **Next**.

5. The handheld asks if you want to perform another remote connect/disconnect operation.



Do one of the following:

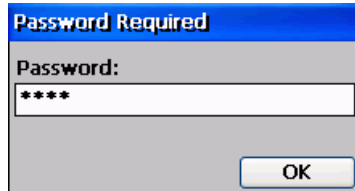
- To return to the Endpoint Tools menu, select **No** from the drop-down menu.

- To return to the 100G Remote Connect/Disconnect screen, select **Yes**.
Then tap **Next**.

To connect service on a 100G endpoint with remote disconnect

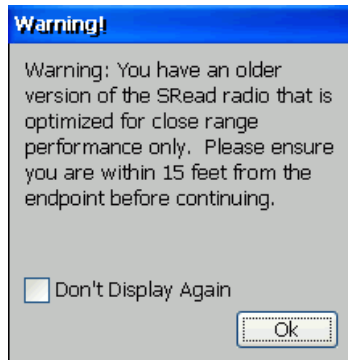
1. Double-tap **Remote Disconnect** on the ChoiceConnect Endpoint Tools menu to display the Reset Endpoint screen.
2. The handheld prompts you to enter a password.

Enter the same password you used to log on to Endpoint-Link Pro.



Then tap **OK**.

Note If your handheld is an FC200SR equipped with an older version of the SRead (Super Raptor) radio, it displays this message:



If so, you will need to move closer to the endpoint, within the radio's range, to successfully perform any remote disconnect tasks.

Tap **OK** to continue.

3. The handheld displays the 100G Remote Connect/Disconnect screen.
 - Enter the endpoint identification number.
 - From the **Connect Option** drop-down list, select **Open Valve**.
 - In the **Connect Code** box, enter the endpoint's connect code.

The connect code is a four-digit number that appears on the endpoint label.

**100G Remote
Connect/Disconnect**
Please enter the following params

Endpoint Id

Connect Option

Connect Code

Then tap **Next**.

The handheld displays this warning message:

Stop! Warning!

Warning: Pilot lights must be checked after opening the valve. Please ensure you have access! Are you sure you want to proceed?

Don't Display Again

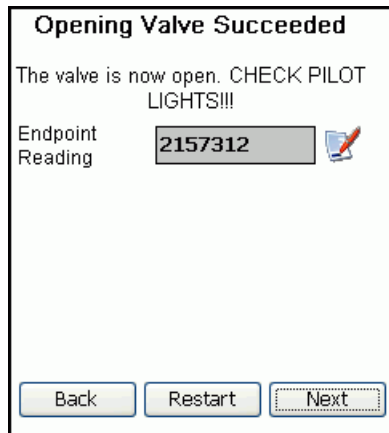
4. Tap **OK**.

The handheld displays this progress screen as it performs the operation.

Operation in progress. Please wait.

Endpoint ID: 50000921

5. When it is finished, the handheld displays this message.



The Format Read button appears to the right of the **Endpoint Reading** box.



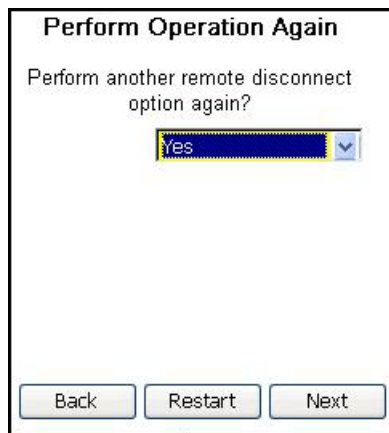
If desired, you can use this button to format the read to match the meter configuration.

See [Formatting Gas and Electric Meter Readings](#) on page 28.

Warning Before proceeding further, make sure the meter's pilot lights are lit.

Then tap **Next**.

6. The handheld asks if you want to perform another remote connect/disconnect operation.

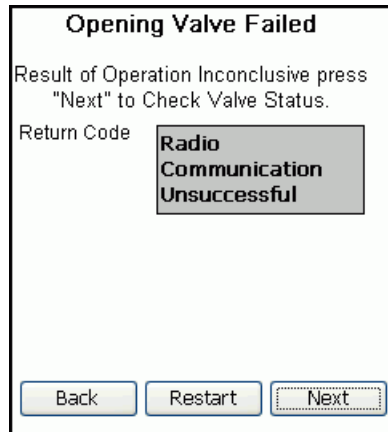


Do one of the following:

- To return to the Endpoint Tools menu, select **No** from the drop-down menu.
- To return to the 100G Remote Connect/Disconnect screen, select **Yes**.

Then tap **Next**.

Note If the attempt to connect service fails, the system displays the Opening Valve Failed screen.

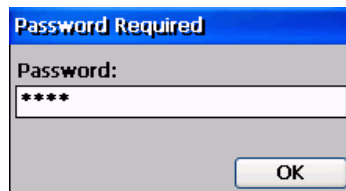


The **Next** button returns you to the 100G Remote Connect/Disconnect screen so you can check the endpoint's status.

To disconnect service on a 100G endpoint with remote disconnect

1. Double-tap **Remote Disconnect** on the ChoiceConnect Endpoint Tools menu to display the Reset Endpoint screen.
2. The handheld prompts you to enter a password.

Enter the same password you used to log on to Endpoint-Link Pro.



Then tap **OK**.

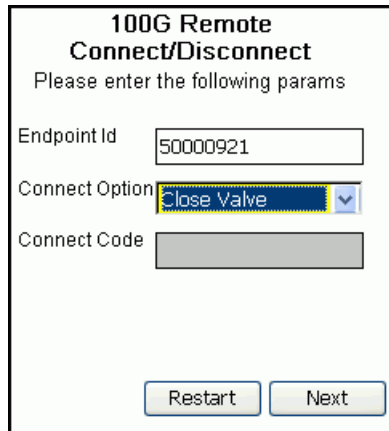
Note If your handheld is an FC200SR equipped with an older version of the SRead (Super Raptor) radio, it displays this message:



If so, you will need to move closer to the endpoint, within the radio's range, to successfully perform any remote disconnect tasks.

Tap **OK** to continue.

3. The handheld displays the 100G Remote Connect/Disconnect screen.
 - Enter the endpoint identification number.
 - From the **Connect Option** drop-down list, select **Close Valve**.



100G Remote Connect/Disconnect
Please enter the following params

Endpoint Id

Connect Option

Connect Code

Then tap **Next**.

The handheld displays this message:



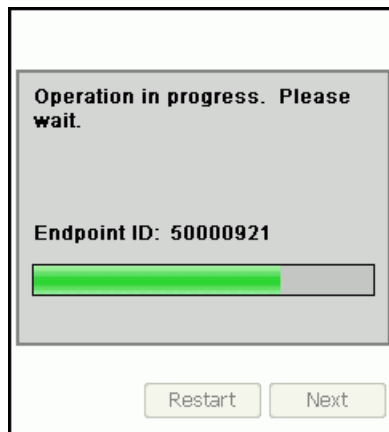
Stop! Warning!

Warning: You are turning off gas supply. Are you sure you want to proceed?

Don't Display Again

4. Tap **OK**.

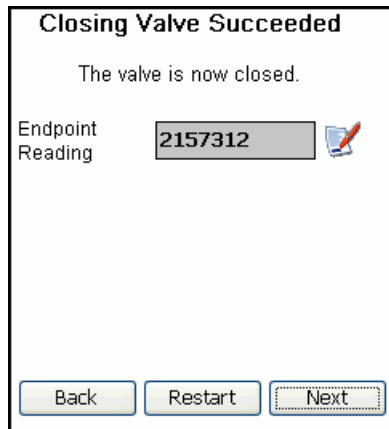
The handheld displays this progress screen as it performs the operation.



Operation in progress. Please wait.

Endpoint ID: 50000921

5. When it is finished, the handheld displays this message.



The Format Read button appears to the right of the **Endpoint Reading** box.

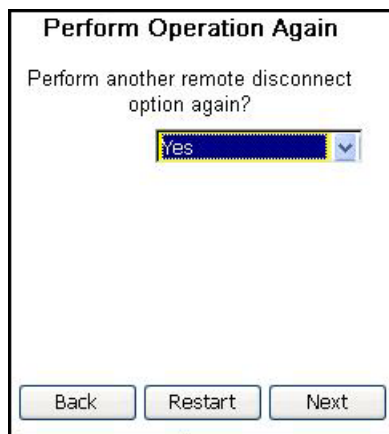


If desired, you can use this button to format the read to match the meter configuration.

See [Formatting Gas and Electric Meter Readings](#) on page 28.

Then tap **Next**.

6. The handheld asks if you want to perform another remote connect/disconnect operation.

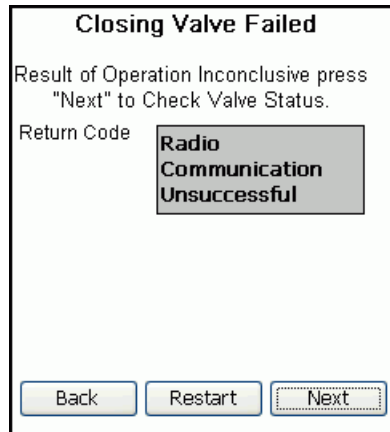


Do one of the following:

- To return to the Endpoint Tools menu, select **No** from the drop-down menu.
- To return to the 100G Remote Connect/Disconnect screen, select **Yes**.

Then tap **Next**.

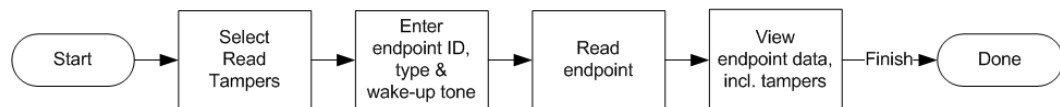
Note If the attempt to disconnect service fails, the system displays the Close Valve Failed screen.



The **Next** button returns you to the 100G Remote Connect/Disconnect screen so you can check the endpoint's status.

Reading Endpoints' Tamper Indicators

Use the **Read Tamper** option to retrieve and view an endpoint's meter reading and tamper values. The tamper information retrieved with this option is more complete than the information returned by the **Read Endpoint** and **Check Endpoint** options.



You can use the **Read Tamper** command option with the following ChoiceConnect endpoint types:

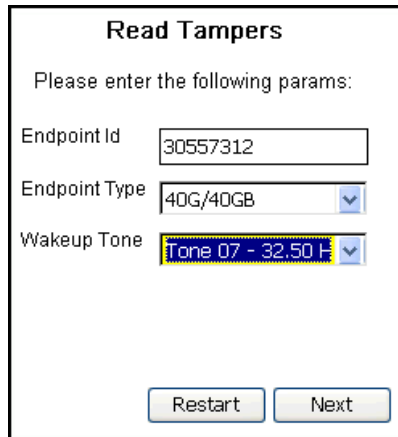
- Electric endpoints:
 - 40E
 - 45E
- Gas endpoints:
 - 40G/40GB
 - 100G series
- Water endpoints:
 - 40W
 - 50W

An FC200SR or FC300SR handheld or a laptop with a 900MHz belt-clip radio is required for 100G series endpoints.

See also [Endpoint Tamper/Event Code Descriptions](#) on page 145.

To read an endpoint's tamper indicators

1. Double-tap **Read Tamper** on the ChoiceConnect Endpoint Tools menu to display the Read Tamper screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint type.
 - Select the endpoint's wakeup tone, if required.



Read Tamper

Please enter the following params:

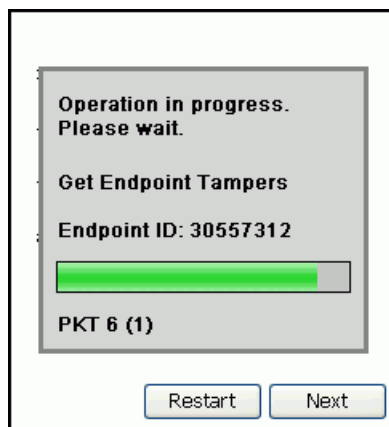
Endpoint Id

Endpoint Type

Wakeup Tone

Then tap **Next**.

The handheld displays this progress screen while it reads the endpoint's tamper information.



**Operation in progress.
Please wait.**

Get Endpoint Tamper

Endpoint ID: 30557312


PKT 6 (1)

- When it is finished, the handheld displays the results.

Read Tamper

Success

Endpoint Id: 30557312

Endpoint Reading: 285880 

Endpoint Type: 40G/40GB Gas

Tilt Tamper Count: 4

Magnetic Tamper: 0

Back Restart Finish

If the endpoint is a gas or electric meter endpoint, the Format Read button appears to the right of the **Endpoint Reading** box.



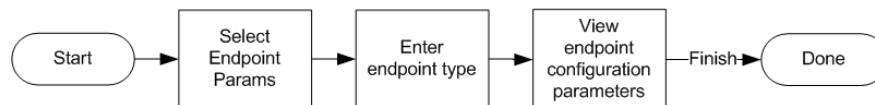
If desired, you can use this button to format the read to match the meter configuration.

See [Formatting Gas and Electric Meter Readings](#) on page 28.

- Tap **Finish** to return to the Endpoint Tools menu.

Viewing Endpoint Parameters

Use the **Endpoint Params** option to view the parameters that are programmed into different endpoint types, as determined by your utility company. This information is for display only and is used primarily for technical support purposes.

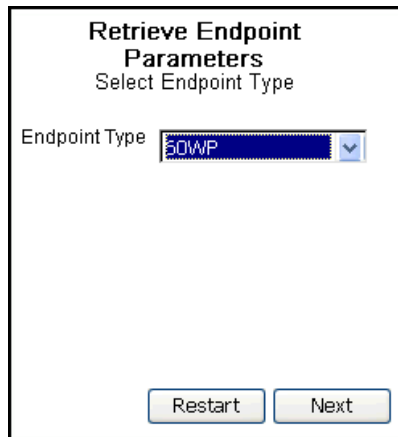


You can use the **Endpoint Params** command option with all ChoiceConnect endpoint types.

To view an endpoint's parameter settings

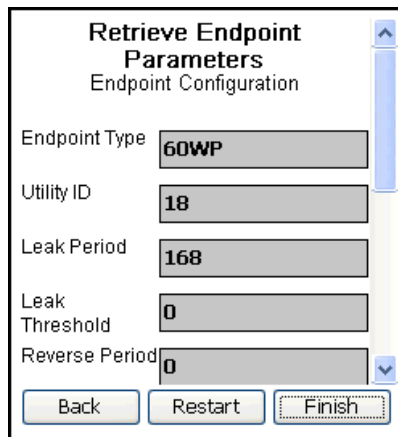
- Double-tap **Endpoint Params** on the ChoiceConnect Endpoint Tools menu to display the Retrieve Endpoint Parameters screen.

2. Select the desired endpoint type.



Then tap **Next**.

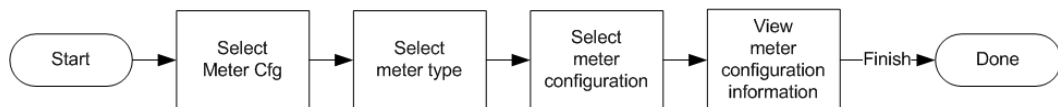
3. The handheld displays the parameters for the selected endpoint type.



Tap **Finish** to return to the Endpoint Tools menu.

Viewing Meter Configuration Information

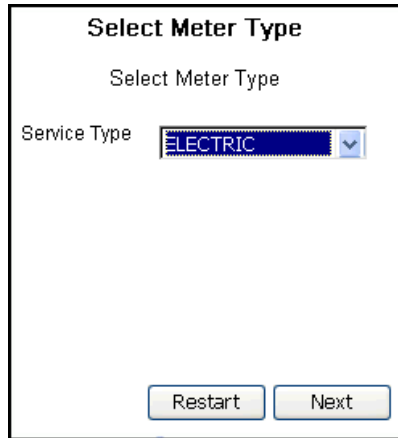
Use the **Meter Cfg** option to view the meter-specific settings that are programmed into endpoints, as determined by your utility company. This information is for display only and is used primarily for technical support purposes.



You can use the **Meter Cfg** command option with all ChoiceConnect endpoint types.

To view a meter's configuration information

1. Double-tap **Meter Cfg** on the ChoiceConnect Endpoint Tools menu to display the Select Meter Type screen.
2. Select the desired meter service type—**ELECTRIC, GAS, or WATER**.



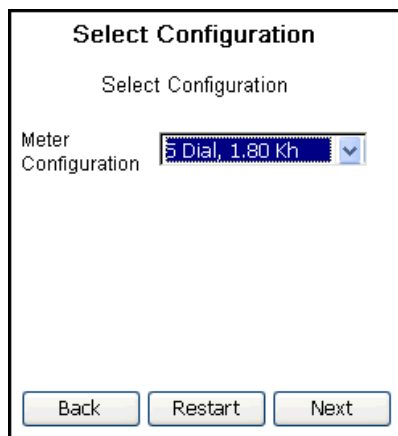
Select Meter Type

Select Meter Type

Service Type

Then tap **Next**.

3. The handheld displays the Select Configuration screen.



Select Configuration

Select Configuration

Meter Configuration

Select the desired meter configuration, and then tap **Next**.

- The handheld displays the configuration details for the specified meter service type and configuration.

Electric Meter Configuration

Electric Meter Configuration

Meter Configuration: 5 Dial, 1.80 Kh

Kh: 1.80

Rollover: 1

Marks: 1

Back Restart Finish

Tap **Finish** to return to the Endpoint Tools menu.

OpenWay Endpoint Tools

For Bluetooth-enabled FC200-series handhelds configured for use with OpenWay ZigBee belt-clip radios, the OpenWay Endpoint Tools menu includes options that are designed specifically for use in reading, programming, and troubleshooting OpenWay 2.4GZ gas modules.

To display the OpenWay Endpoint Tools menu

If your handheld *does not have* an internal radio and is configured for use with an OpenWay ZigBee belt-clip radio, do one of the following:

- Tap **Endpoint Tools** from the main menu.
- On an FC200, press **Ctrl+E** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **E** on the handheld keyboard.

1. Read Module

2. Check Module

3. Program Module

4. Set Mode

5. Reset Network Key

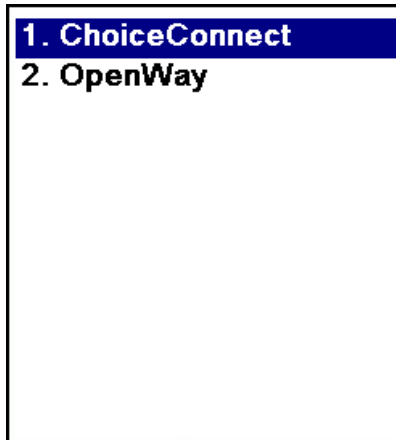
6. Module Params

7. Meter Config

If your handheld *has* an internal radio and is configured for use with an OpenWay ZigBee belt-clip radio, do one of the following—

- Tap **Endpoint Tools** from the main menu.
- On an FC200, press **Ctrl+E** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **E** on the handheld keyboard.

—to display this Endpoint Tools selection menu.



In this case, double-tap **OpenWay** (or press **2** on the handheld keyboard) to display the OpenWay Endpoint Tools menu.

OpenWay Endpoint Tools Menu Options

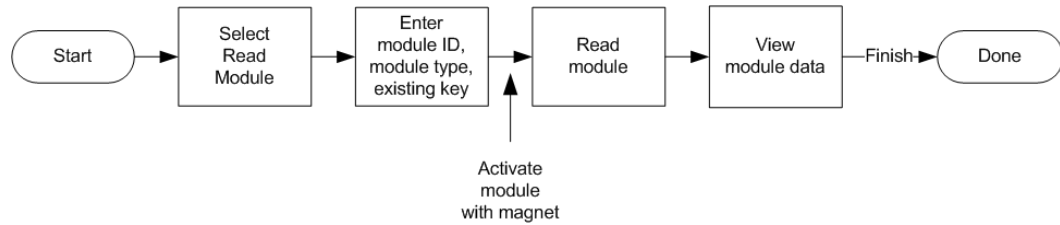
Option	See...
Read Module	Reading OpenWay Modules on page 76
Check Module	Checking OpenWay Modules on page 78
Program Module	Programming OpenWay Modules on page 81
Set Mode	Setting OpenWay Module Activation Modes on page 85
Reset Network Key	Resetting an OpenWay Module's Network Security Key on page 88
Module Params	Viewing OpenWay Module Parameters on page 91
Meter Config	Viewing OpenWay Meter Configuration Information on page 92

At any point while performing a workflow task from any of the Endpoint Tools menus, you can tap the Return to Previous Menu button to quit the task and return to the previous menu.



Reading OpenWay Modules

Use the **Read Module** option to retrieve and view meter reading and tamper values stored in an OpenWay module.



To read an OpenWay module

1. Double-tap **Read Module** on the OpenWay Endpoint Tools menu to display the Read Module screen.
2. Do the following:
 - Enter the module's identification number.
 - Select the module type.
 - Select the existing key type.
 - Select **Factory** if the module has not been programmed.
 - Select **Customer** if it has been programmed.

Read Module

Please enter the following:

Module Id:

Module Type:

Existing Key:

Then tap **Next**.

3. If you selected the **Customer** key type, and if it has been more than 20 minutes since you last performed an OpenWay function, the system prompts you to enter your password.

Enter the same password you used to log on to Endpoint-Link Pro—

Password Required

Password:

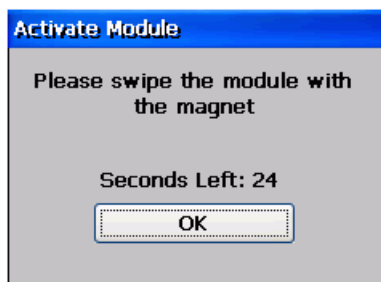
—then tap **OK**.

Note If the password you enter here does not match the password you used to log on to Endpoint-Link Pro, the system displays an *Invalid Credentials* message and continues to prompt you for the correct password. If you enter the wrong password three times in a row, the system displays this message:



Click **OK**. The system logs you off Endpoint-Link Pro and returns you to the login screen.

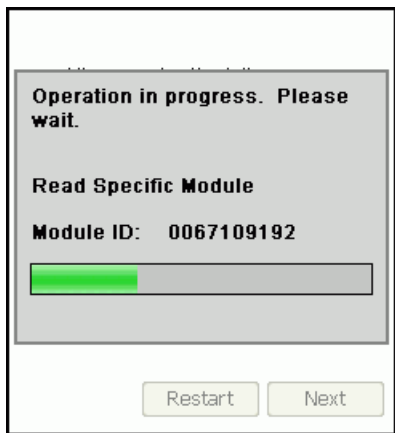
4. The system starts the ZigBee radio and prompts you to activate the module.



Apply a magnet to the module to activate it (see [OpenWay Module Programming Mode Activation](#) on page 129).

Note The Activate Module message may not appear if you previously swiped the endpoint and it is still activated.

5. The module “wakes up,” the Activate Module message box closes, and the system displays its progress as it reads the module.



When the read is completed, the handheld displays the following screen.

The screenshot shows a handheld device screen titled "Read Module". Under the heading "Read Results", there are five input fields with the following values: Endpoint Id (0067109192), Endpoint Type (2.4GZ), Endpoint Reading (444440), Tilt Tamper (6), and Magnetic Tamper (4). At the bottom of the screen are three buttons: "Back", "Restart", and "Finish". A small icon of a notepad and pencil is visible next to the "Endpoint Reading" field.

- If desired, you can use Format Read button to format the read to match the meter configuration.

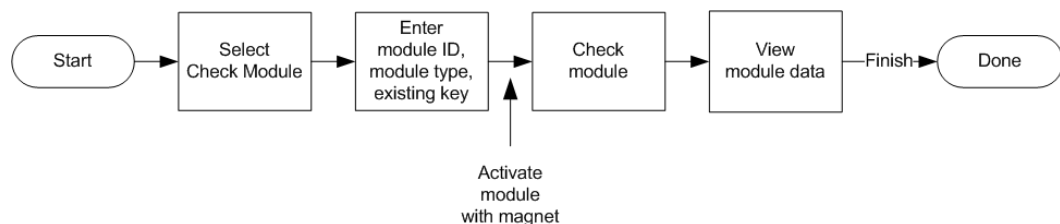


See [Formatting Gas and Electric Meter Readings](#) on page 28.

- Tap **Finish** to return to the Endpoint Tools menu.

Checking OpenWay Modules

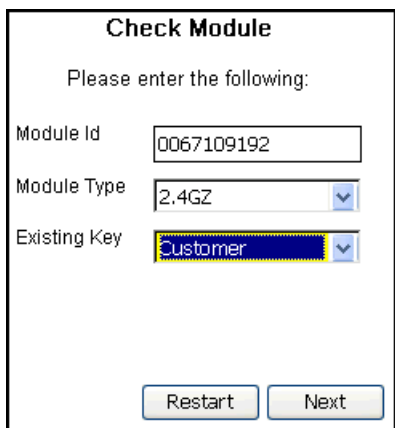
Use the **Check Module** option to retrieve and view all data stored in an OpenWay module.



To check an OpenWay module

- Double-tap **Check Module** on the OpenWay Endpoint Tools menu to display the Check OpenWay Endpoint screen.
- Do the following:
 - Enter the module's identification number.
 - Select the module type.
 - Select the existing key type.
 - Select **Factory** if the module has not been programmed.

– Select **Customer** if it has been programmed.



Check Module

Please enter the following:

Module Id

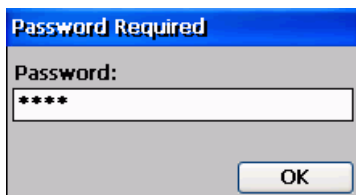
Module Type

Existing Key

Then tap **Next**.

3. If you selected the **Customer** key type, and if it has been more than 20 minutes since you last performed an OpenWay function, the system prompts you to enter your password.

Enter the same password you used to log on to Endpoint-Link Pro—



Password Required

Password:

—then tap **OK**.

Note If the password you enter here does not match the password you used to log on to Endpoint-Link Pro, the system displays an `Invalid Credentials` message and continues to prompt you for the correct password. If you enter the wrong password three times in a row, the system displays this message:

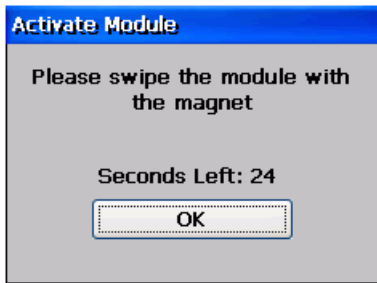


Warning

You have exceeded the maximum number of password attempts, the application will now close.

Click **OK**. The system logs you off Endpoint-Link Pro and returns you to the logon screen.

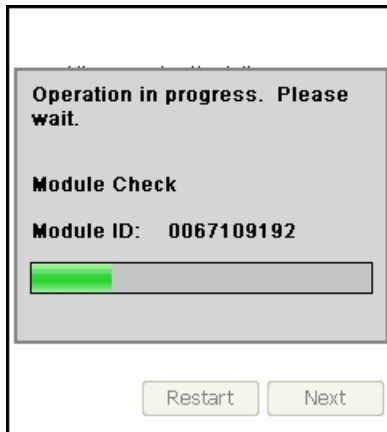
- The system starts the ZigBee radio and prompts you to activate the module.



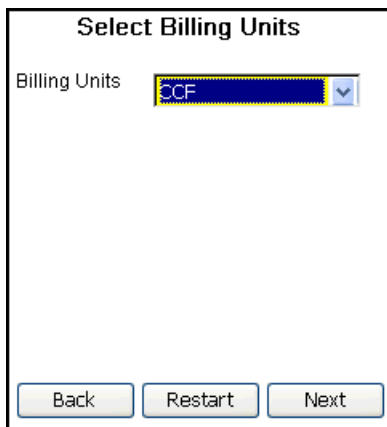
Apply a magnet to the module to activate it (see [OpenWay Module Programming Mode Activation](#) on page 129).

Note The Activate Module message may not appear if you previously swiped the endpoint and it is still activated.

- The module “wakes up,” the Activate Module message box closes, and the system displays its progress as it checks the module.

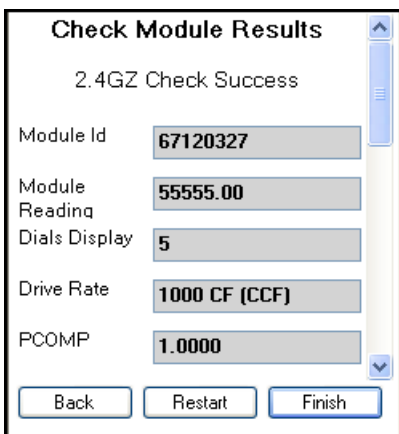


- When the check is completed, the system prompts you to select the meter’s billing units



Specify the required information, and tap **Next**.

- The system displays the information it received from the module.



If desired, you can use Format Read button to format the read to match the meter configuration.

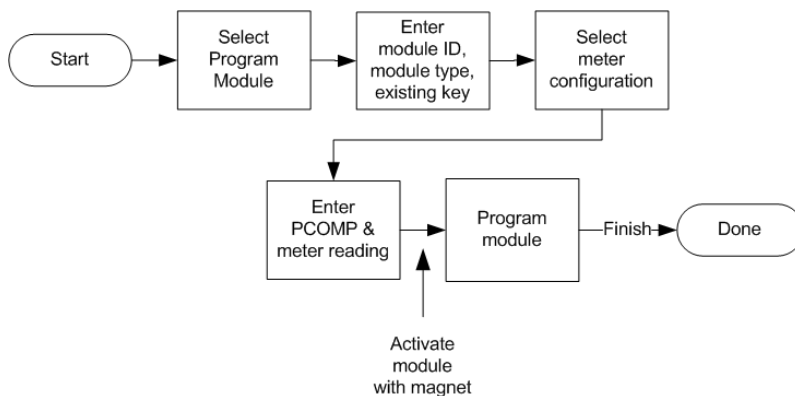


See [Formatting Gas and Electric Meter Readings](#) on page 28.

- Tap **Finish** to return to the Endpoint Tools menu.

Programming OpenWay Modules

Use the **Program Module** option to program OpenWay modules.



To program an OpenWay module

- Double-tap **Program Module** on the OpenWay Endpoint Tools menu to display the Program OpenWay Endpoint screen.
- Do the following:
 - Enter the module’s identification number.
 - Select the module type.
 - Select the existing key type.

- Select **Factory** if the module has not been programmed.
- Select **Customer** if it has been programmed.

Program Module

Please Select Parameters

Module Id

Module Type

Existing Key

Then tap **Next**.

3. The system prompts you for the configuration of the meter the module is installed on. Select the appropriate configuration.

Program Module

Please Select Meter Type

Module Id

Module Type

Meter Configuration

Then tap **Next**.

4. The system prompts you for the meter's PCOMP value and initial reading.

Enter the meter reading, select its PCOMP value from the drop-down list, and if desired, enter any additional utility-defined number (up to four digits) in the **Utility Data** Field.

reading

Module Id: 0067109192

Module Type: 2.4GZ

Meter Configuration: 5 Dial, 40 cubic feet

Meter Reading: 61274

PCOMP: 1.5000

Utility Data: 0

Back Restart Next

Then tap **Next**.

- The system displays the Ready to Program screen.

Program Module

Ready to Program

Module Id: 0067109192

Module Type: 2.4GZ

Meter Configuration: 5 Dial, 40 cubic feet

Meter Reading: 61274

PCOMP: -----

Back Restart Next

Tap **Next**.

- If you selected the **Customer** key type, and if it has been more than 20 minutes since you last performed an OpenWay function, the system prompts you to enter your password.

Enter the same password you used to log on to Endpoint-Link Pro—

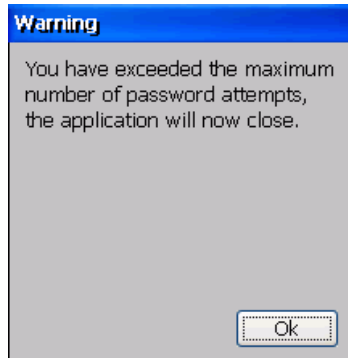
Password Required

Password: ****

OK

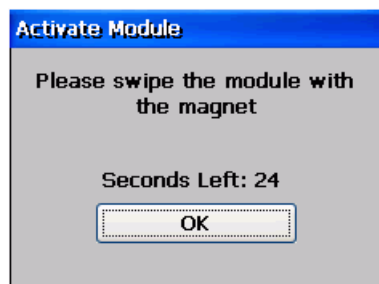
—then tap **OK**.

Note If the password you enter here does not match the password you used to log on to Endpoint-Link Pro, the system displays an *Invalid Credentials* message and continues to prompt you for the correct password. If you enter the wrong password three times in a row, the system displays this message:



Click **OK**. The system logs you off Endpoint-Link Pro and returns you to the login screen.

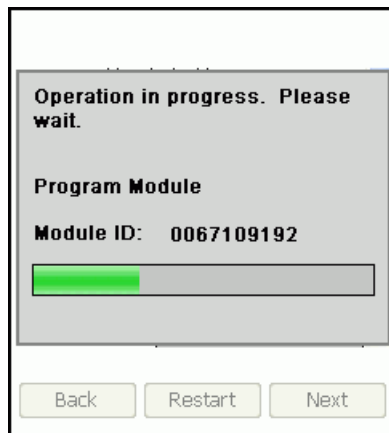
7. The system starts the ZigBee radio and prompts you to activate the module.



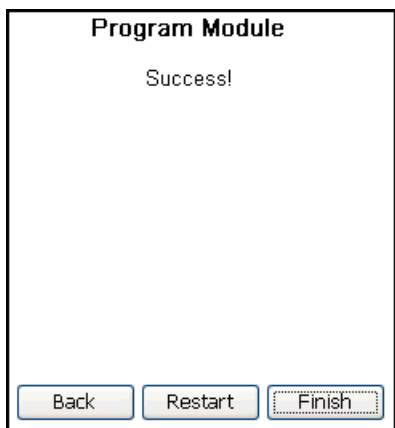
Apply a magnet to the module to activate it (see [OpenWay Module Programming Mode Activation](#) on page 129).

Note The Activate Module message may not appear if you previously swiped the endpoint and it is still activated.

8. The module “wakes up,” the Activate Module message box closes, and the system displays its progress as it programs the module.



When it is finished, the system displays the following screen.



Tap **Finish** to return to the Endpoint Tools menu.

Setting OpenWay Module Activation Modes

OpenWay ZigBee modules are designed to run in different activation modes to help conserve power and extend battery life.

- **Sleep mode**

OpenWay modules leave the factory in sleep mode, which can also be used when returning endpoints to the meter shop. In this mode, the module is essentially turned off—its radio is turned off and it does not count meter pulses.

- **Normal mode**

In this mode, the module's radio is on and it counts pulses from its meter.

- **Snooze mode**

In snooze mode, the module has been configured and is ready for operation. Its radio is turned off, but it counts meter pulses. When it receives a meter pulse, which occurs when gas flows through the meter, the module switches into normal mode.

Snooze mode saves the battery while the meter is idle but leaves the module ready to automatically switch into normal mode when the meter starts recording consumption. For this reason, it is typically used when a module is installed in a new house where it remains idle until a customer moves in and starts using gas.

- **Doze mode**

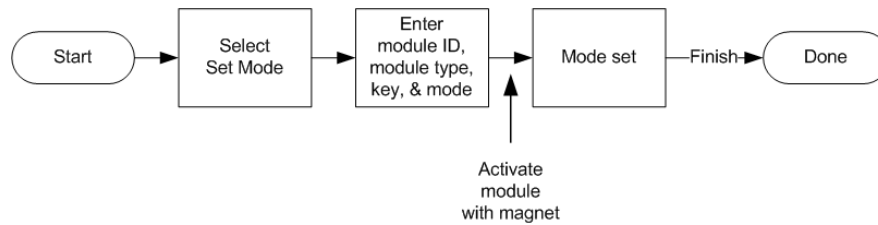
Doze mode is similar to snooze mode, except that in this mode, the module does not switch to normal mode when gas flows through the meter. It is typically used when a module is installed on a new meter, when received from the meter manufacturer. It saves battery life that would otherwise be wasted if the module were continually trying to communicate with the non-existent network.

Activating an OpenWay module with a magnet (called *swiping*) switches it into normal mode from any of the other three modes. A magnet swipe is also required when using the **Set Mode** option on the OpenWay Endpoint Tools menu.

Use **Set Mode** to switch a module from any activation mode into any other mode.



Note While the module is in normal mode, **Set Mode** is the only way you can switch it into sleep, snooze, or doze mode.



To set an OpenWay module's activation mode

1. Double-tap **Set Mode** on the OpenWay Endpoint Tools menu to display the Set Mode screen.
2. Do the following:
 - Enter the module's identification number.
 - Select the module type.
 - Select the existing key type.
 - Select **Factory** if the module has not been programmed.
 - Select **Customer** if it has been programmed.
 - Select the desired activation mode.

Use **Normal** mode if the house is consuming gas and the house area network (HAN) is active.

Set Mode

Please enter the following:

Module Id

Module Type

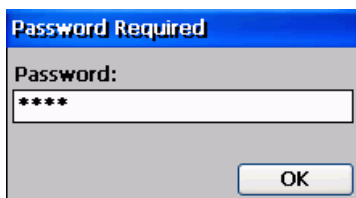
Existing Key

Mode

Then tap **Next**.

3. If you selected the **Customer** key type, and if it has been more than 20 minutes since you last performed an OpenWay function, the system prompts you to enter your password.

Enter the same password you used to log on to Endpoint-Link Pro—



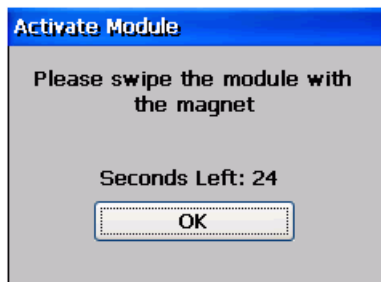
—then tap **OK**.

Note If the password you enter here does not match the password you used to log on to Endpoint-Link Pro, the system displays an `Invalid Credentials` message and continues to prompt you for the correct password. If you enter the wrong password three times in a row, the system displays this message:



Click **OK**. The system logs you off Endpoint-Link Pro and returns you to the login screen.

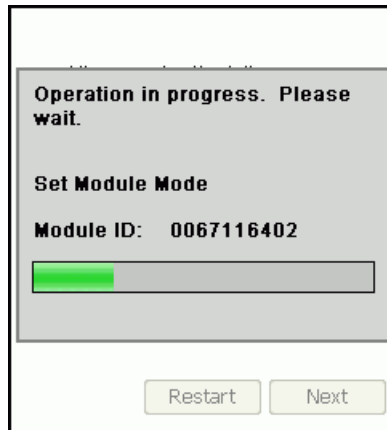
4. The system starts the ZigBee radio and prompts you to activate the module.



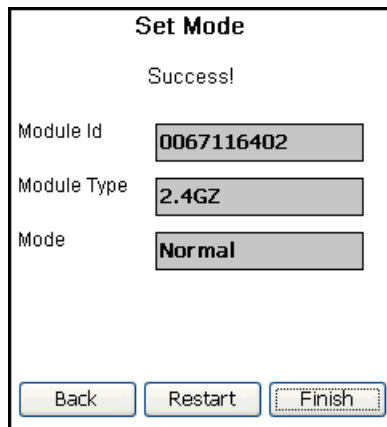
Apply a magnet to the module to activate it (see [OpenWay Module Programming Mode Activation](#) on page 129).

Note The Activate Module message may not appear if you previously swiped the endpoint and it is still activated.

- The module “wakes up,” the Activate Module message box closes, and the system displays its progress as it sets the module’s activation mode.



When it is finished, the system displays the following screen.



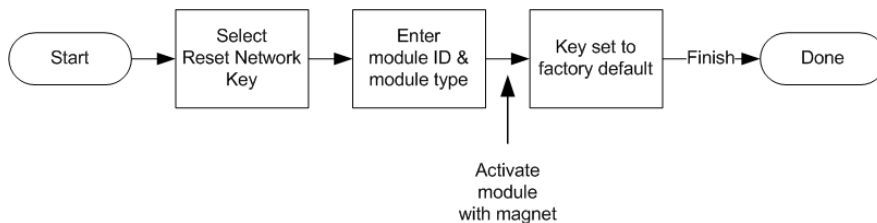
Tap **Finish** to return to the Endpoint Tools menu.

Resetting an OpenWay Module’s Network Security Key

OpenWay 2.4GZ gas modules employ a special code, called a network security key, to insure against accidental or intentional access by unauthorized personnel. A utility company’s OpenWay modules respond only to handhelds that have been configured with the same security key.

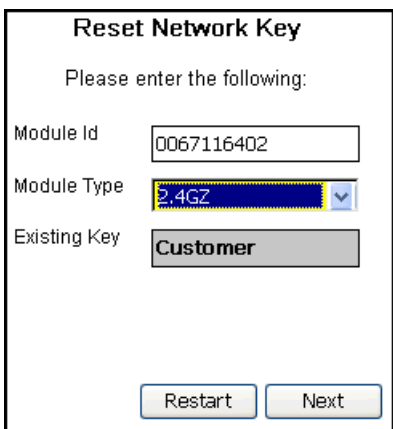
OpenWay modules are configured at the factory with a default network security key. When a module is first programmed, the Endpoint-Link Pro handheld software replaces the factory key with a unique network key, which Itron provides the utility. Thereafter, the module responds only to handhelds that “know” the correct key.

The **Reset Network Key** option lets you reset an OpenWay module’s network security keys to the factory default, if necessary for troubleshooting or if you must return the module to Itron for servicing.



To reset an OpenWay module’s network security key

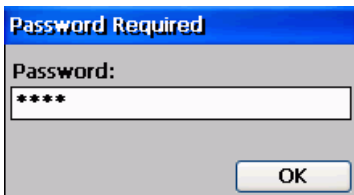
1. Double-tap **Reset Network Key** on the OpenWay Endpoint Tools menu to display the Reset Network Key screen.
2. Do the following:
 - Enter the module’s identification number.
 - Select the module type.



Then tap **Next**.

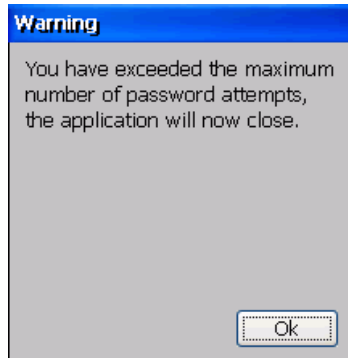
3. If you selected the **Customer** key type, and if it has been more than 20 minutes since you last performed an OpenWay function, the system prompts you to enter your password.

Enter the same password you used to log on to Endpoint-Link Pro—



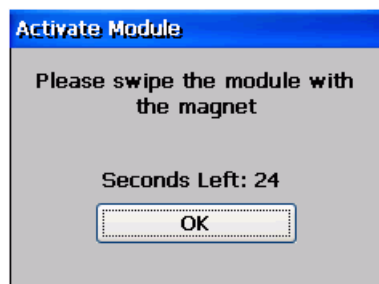
—then tap **OK**.

Note If the password you enter here does not match the password you used to log on to Endpoint-Link Pro, the system displays an *Invalid Credentials* message and continues to prompt you for the correct password. If you enter the wrong password three times in a row, the system displays this message:



Click **OK**. The system logs you off Endpoint-Link Pro and returns you to the logon screen.

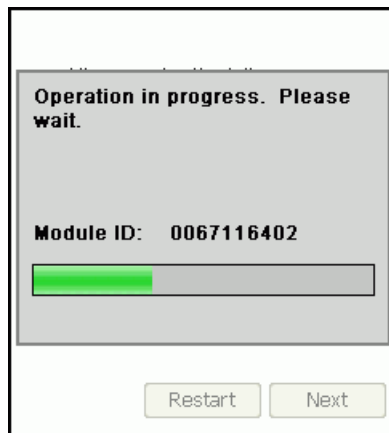
4. The system starts the ZigBee radio and prompts you to activate the module.



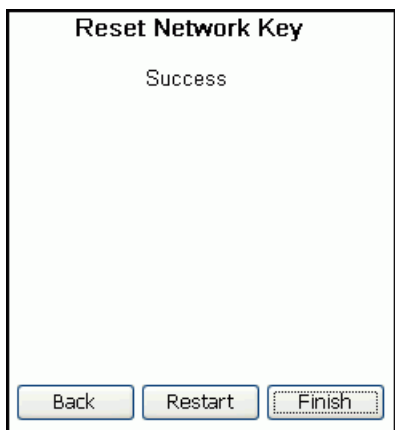
Apply a magnet to the module to activate it (see [OpenWay Module Programming Mode Activation](#) on page 129).

Note The Activate Module message may not appear if you previously swiped the endpoint and it is still activated.

5. The module “wakes up,” the Activate Module message box closes, and the system displays its progress as it sets the module’s activation mode.



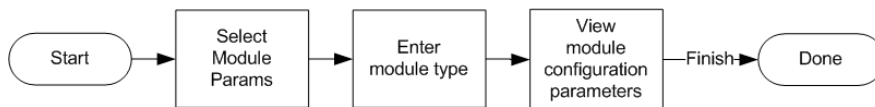
When it is finished, the system displays the following screen.



Tap **Finish** to return to the Endpoint Tools menu.

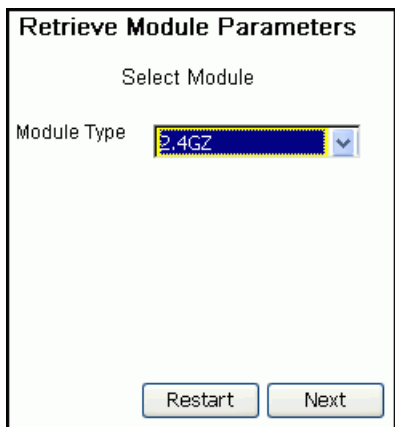
Viewing OpenWay Module Parameters

Use the **Module Params** option to view the parameters that are programmed into OpenWay modules, as determined by your utility company. This information is for display only and is used primarily for technical support purposes.



To view an OpenWay endpoint's parameter settings

1. Double-tap **Module Params** on the OpenWay Endpoint Tools menu to display the Retrieve Module Parameters screen.
2. Select the desired module type.



Then tap **Next**.

3. The system displays the parameters for the selected module type.

Retrieve Module Parameters

Module Type: 2.4GZ

Daily Freeze Time: 09:00

Daily Bubble Up Time: 12:00

Bubble-Up Period: 0 m

Mode: Normal

Utility Data: 0

Back Restart Finish

Tap **Finish** to return to the Endpoint Tools menu.

Viewing OpenWay Meter Configuration Information

Use the **Meter Config** option to view the meter-specific settings that are programmed into OpenWay modules, as determined by your utility company. This information is for display only and is used primarily for technical support purposes.



To view an OpenWay meter's configuration information

1. Double-tap **Meter Config** on the OpenWay Endpoint Tools menu to display the Register Configuration screen.
2. Select the desired meter configuration.

Register Configuration

Select Register Type

Meter Configuration: 5 Dial, 40 cubic fe

Restart Next

Then tap **Next**.

- The system displays the details of the specified meter configuration.

Register Configuration	
Meter Configuration	5 Dial, 40 cubic feet
Count Rate	40
PCOMP	1.0000
Total Digits	7
Digits Right	2
<input type="button" value="Back"/> <input type="button" value="Restart"/> <input type="button" value="Finish"/>	

Tap **Finish** to return to the Endpoint Tools menu.

SaveSource Endpoint Tools

The SaveSource Endpoint Tools menu includes options designed specifically for use in reading, programming, and troubleshooting SaveSource 200W water endpoints. This menu is accessible on Bluetooth-enabled FC200- and FC300-series handhelds and laptop computers configured for use with Water SaveSource Programmer belt-clip radios.

To display the SaveSource Endpoint Tools menu

If your handheld *does not have* an internal radio and is configured for use with a Water SaveSource Programmer belt-clip radio, do one of the following:

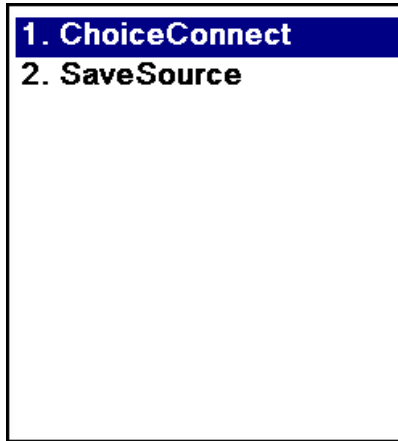
- Tap **Endpoint Tools** from the main menu.
- On an FC200, press **Ctrl+E** on the handheld keyboard.
- On an FC300, press the **Orange** key, then **Y**, then **E** on the handheld keyboard.

1. Read 200W
2. Check 200W
3. Program 200W
4. Set Bubble Up
5. Tx Bubble Up
6. 200W Params
7. Meter Config

If your handheld *has* an internal radio and is configured for use with a Water SaveSource Programmer belt-clip radio, do one of the following—

- Tap **Endpoint Tools** from the main menu.

- On an FC200, press **Ctrl+E** on the handheld keyboard.
 - On an FC300, press the **Orange** key, then **Y**, then **E** on the handheld keyboard.
- to display this Endpoint Tools selection menu.



In this case, double-tap **SaveSource** (or press **2** on the handheld keyboard) to display the SaveSource Endpoint Tools menu.

At any point while performing a workflow task from any of the Endpoint Tools menus, you can tap the Return to Previous Menu button to quit the task and return to the previous menu.

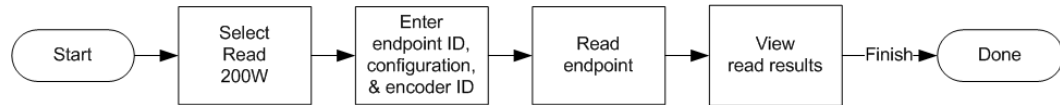


SaveSource Endpoint Tools Menu Options

Option	See...
Read 200W	Reading 200W Endpoints on page 95
Check 200W	Checking 200W Endpoints on page 96
Program 200W	Programming 200W Endpoints on page 98
Set Bubble Up	Enabling or Disabling a 200W Endpoint's Bubble-Up Mode on page 105
Tx Bubble Up	Forcing a 200W Endpoint to Transmit Bubble-Up Data on Demand on page 107
200W Params	Viewing 200W Endpoint Parameters on page 109
Meter Config	Viewing 200W Meter Configuration Information on page 110

Reading 200W Endpoints

Use the **Read 200W** option to retrieve and view meter reading and tamper values from 200W endpoints that meet specified parameter criteria.



To read a 200W endpoint

1. Double-tap **Read 200W** on the SaveSource Endpoint Tools menu to display the Read Endpoint screen.
2. Do the following:

- Enter the endpoint's identification number.
- Select the endpoint's configuration.

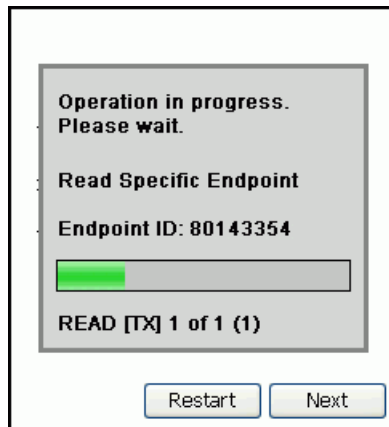
If the endpoint has not been programmed yet, select **Pre-Program Factory**.

Otherwise, select the utility-specific field program setting for your utility (**Field Program**, in the following illustration).

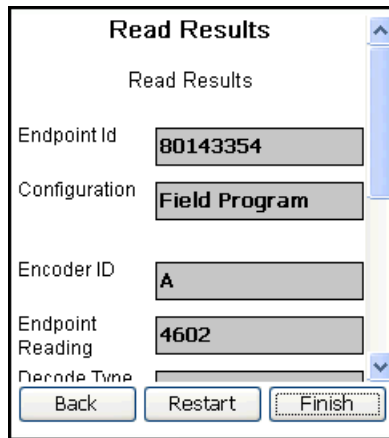
- Select the ID of the encoder you want to read.

Then tap **Next**.

The system displays this progress screen while it reads the endpoint.



- When the read is completed, the system displays the following screen.

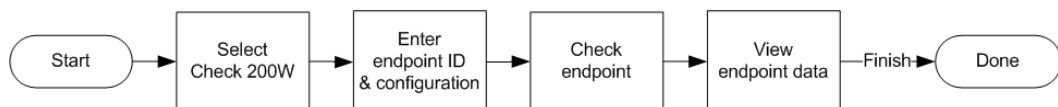


Note If the endpoint is attached to an Itron Cyble K-10 Sensor, the **Endpoint Reading** box shows the seven leftmost (most-significant) digits of the register reading with a 0 as the rightmost (least-significant) digit.

- Tap **Finish** to return to the SaveSource Endpoint Tools menu.

Checking 200W Endpoints

Use the **Check 200W** option to retrieve and view basic information stored in a 200W endpoint, including the meter reading, tamper values, and programmed parameters.



To check a 200W endpoint

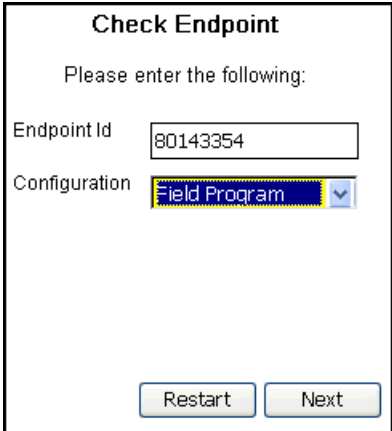
- Double-tap **Check 200W** on the SaveSource Endpoint Tools menu to display the Check Endpoint screen.
- Do the following:

- Enter the endpoint identification number.
- Select the endpoint's configuration.

If the endpoint has not been programmed yet, select **Pre-Program Factory**.

Otherwise, select the utility-specific field program setting for your utility (**Field Program**, in the following illustration).

Note Select **Back to Factory** only if instructed to by Itron personnel. This setting returns the endpoint to its factory default settings and turns off its bubble-up transmitter.



Check Endpoint

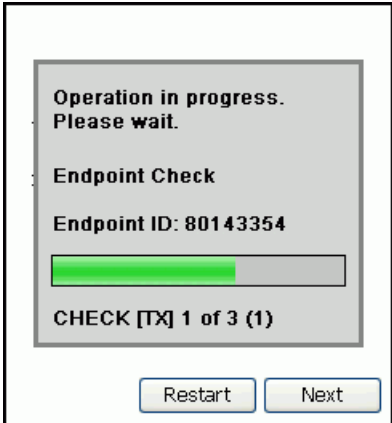
Please enter the following:

Endpoint Id

Configuration

Then tap **Next**.

The system displays the following progress screen while it checks the endpoint.



**Operation in progress.
Please wait.**

Endpoint Check

Endpoint ID: 80143354

CHECK [TX] 1 of 3 (1)

- When the check is completed, the system displays the following screen.

The screenshot shows a 'Check Endpoint' window with the following fields and values:

- Endpoint Id: 80143354
- Endpoint Type: 200W Single Encoder
- Endpoint Reading: 4602
- Register Name A: AMCO Scancoder C700 6 Wheel

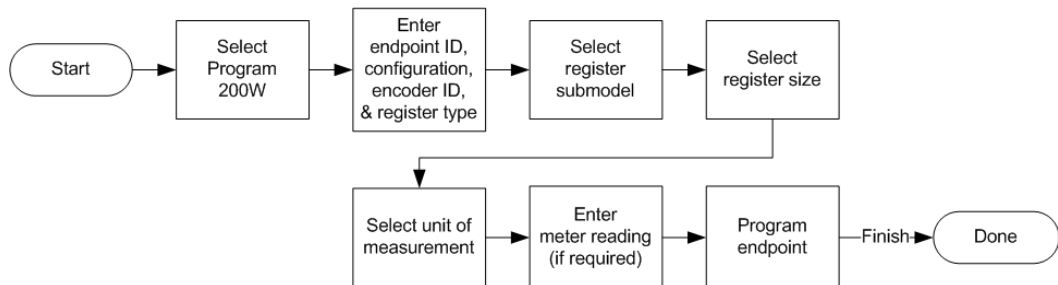
At the bottom of the window are three buttons: 'Back', 'Restart', and 'Finish'.

Note If the endpoint is attached to an Itron Cyble K-10 Sensor, the **Endpoint Reading** box shows the seven leftmost (most-significant) digits of the register reading with a 0 as the rightmost (least-significant) digit.

- Tap **Finish** to return to the SaveSource Endpoint Tools menu.

Programming 200W Endpoints

Use the **Program 200W** option to program 200W endpoints and 200W type 45 leak sensors.



To program a 200W endpoint

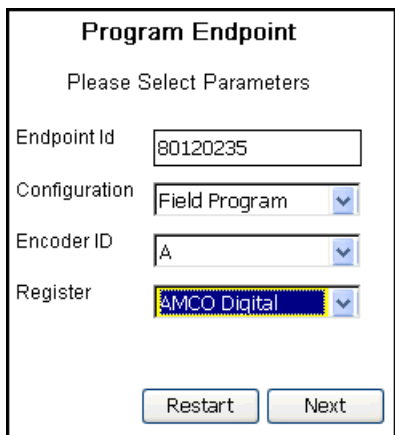
- Double-tap **Program 200W** on the SaveSource Endpoint Tools menu to display the Program Endpoint screen.
- Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint's configuration.

If the endpoint has not been programmed before, select **Pre-Program Factory**.

Note Select **Back to Factory** only if instructed to by Itron personnel. This setting returns the endpoint to its factory default settings and turns off its bubble-up transmitter.

- Select the desired encoder ID.

- Select the meter register type that corresponds to the specified encoder ID.



Program Endpoint
Please Select Parameters

Endpoint Id: 80120235

Configuration: Field Program

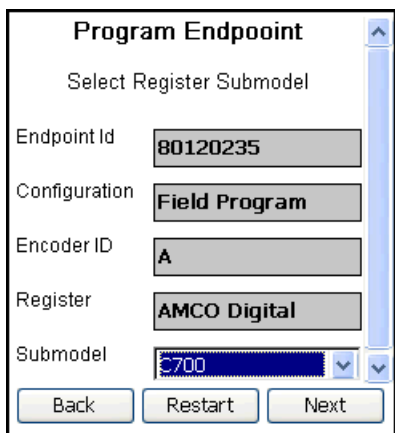
Encoder ID: A

Register: AMCO Digital

Restart Next

Then tap **Next**.

3. Select the applicable register submodel—



Program Endpoint
Select Register Submodel

Endpoint Id: 80120235

Configuration: Field Program

Encoder ID: A

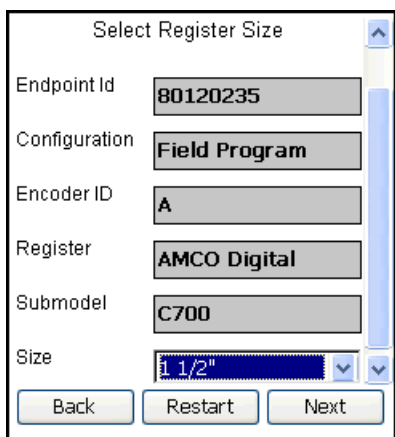
Register: AMCO Digital

Submodel: C700

Back Restart Next

—and tap **Next**.

4. Enter the register size—



Select Register Size

Endpoint Id: 80120235

Configuration: Field Program

Encoder ID: A

Register: AMCO Digital

Submodel: C700

Size: 1 1/2"

Back Restart Next

—and tap **Next**.

5. Enter the register's unit of measurement—

The screenshot shows a configuration screen with the following fields: Endpoint Id (80120235), Configuration (Field Program), Encoder ID (A), Register (AMCO Digital), Submodel (C700), Size (1 1/2"), and Units (0.10 Cubic Meter). The 'Units' field is currently selected, and a dropdown menu is open showing '0.10 Cubic Meter' as the chosen option. At the bottom, there are three buttons: 'Back', 'Restart', and 'Next'.

—and tap **Next**.

6. Enter the meter reading—

The screenshot shows a configuration screen with the following fields: Configuration (Field Program), Encoder ID (A), Register (AMCO Digital), Submodel (C700), Size (1 1/2"), Units (0.10 Cubic Meter), and Meter Reading (4726147). The 'Meter Reading' field is highlighted in yellow. At the bottom, there are three buttons: 'Back', 'Restart', and 'Next'.

—and tap **Next**.

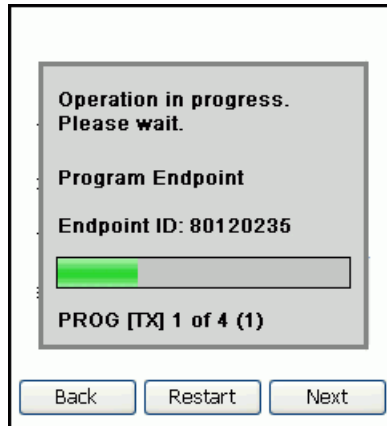
Note If the 200W endpoint you are programming is attached to an Itron Cyble K-10 Sensor, enter only the seven leftmost (most-significant) digits of the register reading in the **Meter Reading** box.

7. The system displays the Ready to Program screen.

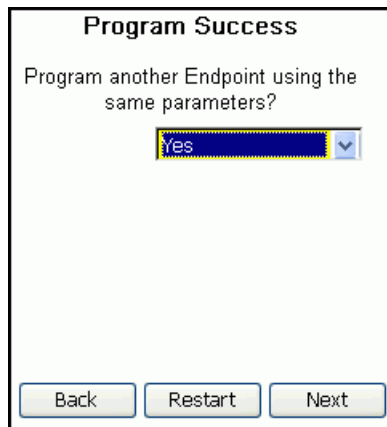
The screenshot shows the 'Program Endpoint' screen with the title 'Ready To Program'. The fields are: Endpoint Id (80120235), Configuration (Field Program A), Encoder ID (A), Register (AMCO Digital), and Submodel (C700). At the bottom, there are three buttons: 'Back', 'Restart', and 'Next'.

Verify your settings and tap **Next**.

The system displays its progress as it programs the endpoint.



8. After it programs the endpoint, the system displays the Program Success screen.



Do one of the following:

- To return to the SaveSource Endpoint Tools menu, select **No** from the drop-down menu.
- To program the *same encoder* on another endpoint with the same configuration, select **Yes**.

Then tap **Next**.

9. If you selected **Yes** in the previous screen, the system prompts you for the next endpoint's ID and meter reading.

Enter the required information, and tap **Next**.

Repeat this programming procedure for the next endpoint.

To program a 200W type 45's leak sensor

1. Double-tap **Program 200W** on the SaveSource Endpoint Tools menu to display the Program Endpoint screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint's configuration.

If the endpoint has not been programmed before, select **Pre-Program Factory**.

Note Select **Back to Factory** only if instructed to by Itron personnel. This setting returns the endpoint to its factory default settings and turns off its bubble-up transmitter.

- In the **Encoder ID** box, select **B**.
- In the **Register** box, select **Itron Leak Sensor**.

Then tap **Next**.

3. The system displays the Select Register Submodel screen.

The screenshot shows a software interface titled "Program Endpoint" with a sub-header "Select Register Submodel". It contains several input fields: "Endpoint Id" with the value "80504421", "Configuration" with "Field Program", "Encoder ID" with "B", and "Register" with "Itron Leak Sensor". The "Submodel" field is a dropdown menu currently showing "Generic". At the bottom, there are three buttons: "Back", "Restart", and "Next".

For encoder B on a 200W Type 45, **Submodel** is always set to **Generic**.
Tap **Next**.

4. The system displays the Select Register Size screen.

The screenshot shows a software interface titled "Select Register Size". It contains several input fields: "Endpoint Id" with "80504421", "Configuration" with "Field Program", "Encoder ID" with "B", and "Register" with "Itron Leak Sensor". The "Submodel" field is a dropdown menu showing "Generic". The "Size" field is a dropdown menu showing "NA". At the bottom, there are three buttons: "Back", "Restart", and "Next".

For encoder B, **Size** is always set to **NA** (not applicable).
Tap **Next**.

5. The system displays the unit of measurement.

The screenshot shows a software interface with several input fields: "Endpoint Id" with "80504421", "Configuration" with "Field Program", "Encoder ID" with "B", "Register" with "Itron Leak Sensor", and "Submodel" with "Generic". The "Size" field is a dropdown menu showing "NA". The "Units" field is a dropdown menu showing "0.00 NA". At the bottom, there are three buttons: "Back", "Restart", and "Next".

For encoder B, **Units** is always set to **0.00 NA** (not applicable).

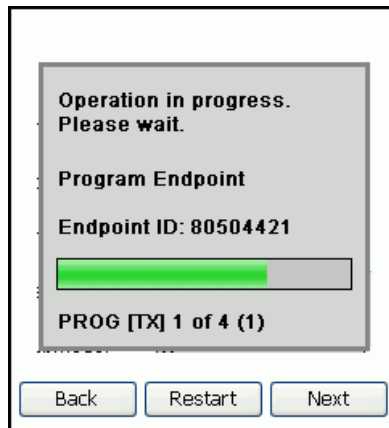
Tap **Next**.

- The system displays the Ready to Program screen.

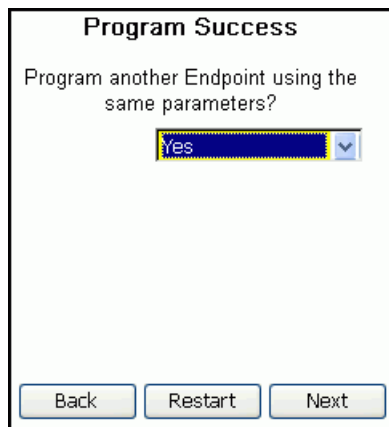


Tap **Next**.

The system displays its progress as it programs the endpoint's leak sensor.



- After it programs the leak sensor, the system displays the Program Success screen.



Do one of the following:

- To return to the SaveSource Endpoint Tools menu, select **No** from the drop-down menu.

- To program the leak sensor on another 200W Type 45 endpoint, select **Yes**. Then tap **Next**.
8. If you selected **Yes** in the previous screen, the system prompts you for the next endpoint's ID.

Program Endpoint

Please Select Parameters

Endpoint Id

Back Restart Next

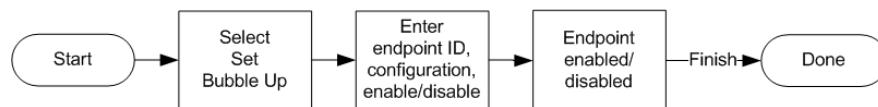
Enter the required information, and tap **Next**.

Repeat this programming procedure for the next endpoint.

Enabling or Disabling a 200W Endpoint's Bubble-Up Mode

Use the **Set Bubble Up** option to turn a 200W endpoint's bubble-up mode on or off.

This function is useful to enable the bubble-up mode on new endpoints from the factory and to disable the feature on endpoints that must be shipped back to the factory for service.



To enable or disable bubble-up on a 200W endpoint

1. Double-tap **Set Bubble Up** on the SaveSource Endpoint Tools menu to display the Set Bubble Up screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint's configuration.

If the endpoint has not been programmed yet, select **Pre-Program Factory**.

Otherwise, select the utility-specific field program setting for your utility (**Field Program**, in the following illustration).

- Select **Enabled** or **Disabled**, as desired.

Set Bubble Up

Please enter the following:

Endpoint Id

Configuration

Bubble Up

Then tap **Next**.

The system displays its progress as it enables or disables the endpoint.

**Operation in progress.
Please wait.**

Enable Bubble Up

Endpoint ID: 80143354

PROG [TX] 1 of 1 (1)

3. When it is finished, it displays one of the following screens.

- If you enabled bubble-up:

Set Bubble Up

Success

Endpoint Id

Bubble Up

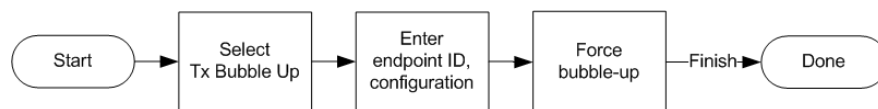
- If you disabled bubble-up:

The screenshot shows a window titled "Set Bubble Up" with a "Success" message. It contains two input fields: "Endpoint Id" with the value "80143354" and "Bubble Up" with the value "Disabled". At the bottom, there are three buttons: "Back", "Restart", and "Finish".

Tap **Finish** to return to the SaveSource Endpoint Tools menu.

Forcing a 200W Endpoint to Transmit Bubble-Up Data on Demand

Use the **Tx Bubble Up** option to force a 200W endpoint running in bubble-up mode to transmit its standard consumption message (SCM) on demand, rather than waiting until the next programmed interval between its bubble-up transmissions has passed.



To force a 200W endpoint to transmit its bubble-up data on demand

1. Double-tap **Tx Bubble Up** on the SaveSource Endpoint Tools menu to display the Tx Bubble Up screen.
2. Do the following:
 - Enter the endpoint identification number.
 - Select the endpoint's configuration.

If the endpoint has not been programmed yet, select **Pre-Program Factory**.

Otherwise, select the utility-specific field program setting for your utility (**Field Program**, in the following illustration).

Tx Bubble Up

Please enter the following:

Endpoint Id

Configuration

Then tap **Next**.

The system displays its progress as it tells the endpoint to transmit a standard consumption message (SCM).

**Operation in progress.
Please wait.**

Endpoint Tx Bubble Up

Endpoint ID: 80143354

3. After it forces the endpoint to transmit its data, the system displays the Program Endpoint Success screen.

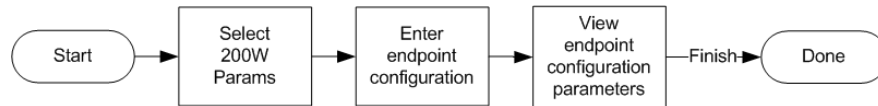
Tx Bubble Up

Success

Tap **Finish** to return to the SaveSource Endpoint Tools menu.

Viewing 200W Endpoint Parameters

Use the **200W Params** option to view the parameters that are programmed into 200W endpoints, as determined by your utility company. This information is for display only and is used primarily for technical support purposes.



To view a 200W endpoint's parameter settings

1. Double-tap **200W Params** on the SaveSource Endpoint Tools menu to display the Retrieve Configuration Parameters screen.
2. Select the endpoint's configuration.
 - If the endpoint has not been programmed yet, select **Pre-Program Factory**.
 - Otherwise, select the utility-specific field program setting for your utility (**Field Program**, in the following illustration).

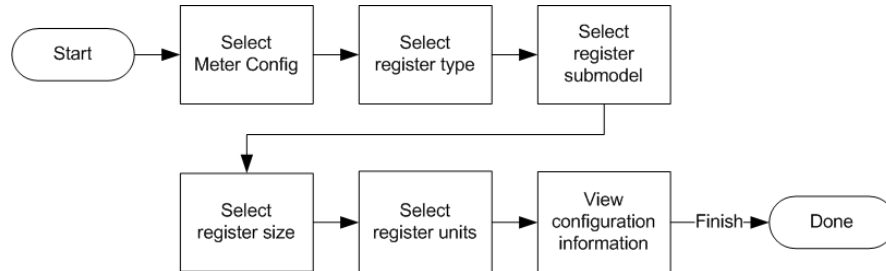
Then tap **Next**.

3. The system displays the parameter settings for the selected endpoint configuration.

Tap **Finish** to return to the SaveSource Endpoint Tools menu.

Viewing 200W Meter Configuration Information

Use the **Meter Config** option to view the meter-specific settings that are programmed into 200W endpoints, as determined by your utility company. This information is for display only and is used primarily for technical support purposes.



To view meter configuration information

1. Double-tap **Meter Config** on the SaveSource Endpoint Tools menu to display the Register Configuration screen.
2. Select the register configuration you are interested in—

—and tap **Next**.

3. The system prompts you to select a register submodel.

Select the desired submodel.

(If you selected **Itron Leak Sensor** as the register type, **Submodel** is always set to **Generic**.)

Tap **Next**.

- The system prompts you for a register size.

Register Configuration

Select Register Size

Register: AMCO Scancoder

Submodel: C700 4 Wheel

Size: 1 1/2"

Back Restart Next

Select the register size you are interested in.

(If you selected **Itron Leak Sensor** as the register type, **Size** is always set to **NA**—not applicable.)

Tap **Next**.

- The system prompts you for a unit of measure.

Register Configuration

Select Units

Register: AMCO Scancoder

Submodel: C700 4 Wheel

Size: 1 1/2"

Units: 1.10 Cubic Meter

Back Restart Next

Select the applicable units for the register.

(If you selected **Itron Leak Sensor** as the register type, **Units** is always set to **0.00 NA**—not applicable.)

Tap **Next**.

6. The system displays the appropriate details for the specified register configuration.

The screenshot shows a 'Register Configuration' dialog box with the following fields and values:

Field	Value
Register	AMCO Scancoder
Submodel	C700 4 Wheel
Size	1 1/2"
Units	0.10 Cubic Meter
Decode Type	78
Driver Number	12

At the bottom of the dialog are three buttons: 'Back', 'Restart', and 'Finish'.

Tap **Finish** to return to the SaveSource Endpoint Tools menu.

The Tools Menu

The Tools menu provides information about order data in the Endpoint-Link Pro database and about the handheld software itself. Use the Tools menu to:

- View order statistics
- View job type statistics
- List the order types on your handheld and their version numbers
- View information about the Endpoint-Link Pro version you are running

The menu also includes options that let you:

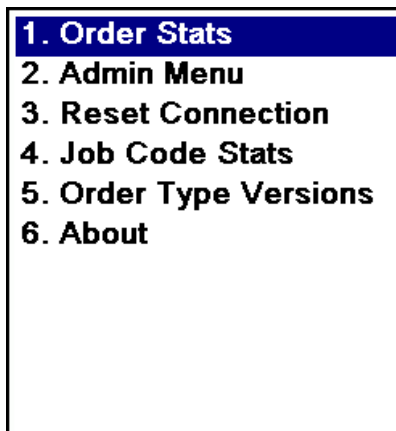
- Fix some network communication problems by resetting the handheld's Ethernet connection.
- Access the Admin menu.



Note The Admin menu is intended for use by mobile device administrators. Access to this menu is by password only. For detailed information about the Admin menu, see the *Endpoint-Link Pro Server Software User's Guide*.

To display the Tools menu

1. Do one of the following:
 - From the main screen, tap **Tools**.
 - On an FC200, press **Ctrl+T** on the handheld keyboard.
 - On an FC300, press the **Orange** key, then **Y**, then **T** on the handheld keyboard.



2. Select the option you want to access.

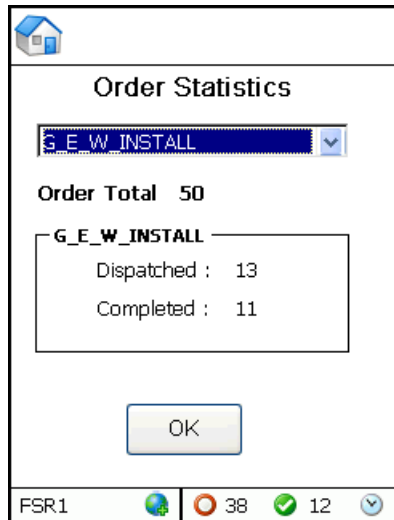
Tools menu option	Description
1. Order Stats	Displays statistics for orders currently stored in the handheld's Endpoint-Link Pro database. See Viewing Order Statistics on page 114.
2. Admin Menu	Provides Endpoint-Link Pro mobile device administrator options. Access to this menu is by password only. For detailed information about the Admin menu, see the <i>Endpoint-Link Pro Server Software User's Guide</i> .
3. Reset Connection	Lets you reset the Ethernet adapter when the handheld is unable to obtain a valid IP address from a DHCP server. See Resetting the Ethernet Connection on page 115.
4. Job Code Stats	Displays a list showing the number of completed orders for each job type code. See Viewing Job Type Code Statistics on page 116.
5. Order Type Versions	Lists the order types in the handheld database and the version number of each. See Viewing the Handheld's Order Type Versions on page 117.
6. About	Displays current Endpoint-Link Pro version number and copyright information. See Viewing Endpoint-Link Pro Software Information on page 118.

Viewing Order Statistics

Use the **Order Stats** option to view statistics about the orders that are currently loaded in your handheld, including the total number of orders and how many have been completed. You can view statistics for all orders or for orders of a specific type, such as installation orders.

To view order statistics

1. Double-tap **Order Stats** on the Tools menu to display the Order Statistics screen.
2. If you want statistics for a particular order type, select it from the order type drop-down list.



The screen lists the total number of orders in the handheld's Endpoint-Link Pro database, the total number of orders of the specified order type dispatched to you, and the number of completed orders of that order type.

3. Tap **OK** to return to the Tools menu.

The Admin Menu

The Admin menu is for use by Endpoint-Link Pro mobile device administrator. Access to this menu is by password only.

For detailed information about the Admin menu, see the *Endpoint-Link Pro Server Software User's Guide*.

Resetting the Ethernet Connection

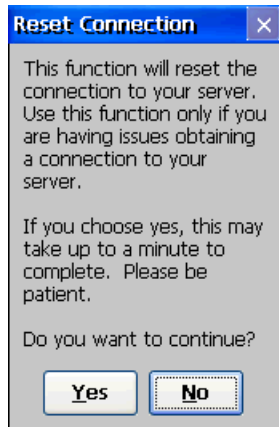
The **Reset Connection** option lets you reset the Ethernet adapter when the handheld is unable to obtain a valid IP address from a DHCP server. On some networks this may happen when the handheld is removed from the dock (cradle) and then placed back in it.

Use **Reset Connection** if communication fails when you try to run the Sync menu's **Sync with Server** or **End of Day** option and the **Reset Conn. On Sync Error** field is set to False (see "Viewing or Editing the Mobile Software Configuration Settings" in the *Endpoint-Link Pro Server Software User's Guide*).

To reset the handheld's Ethernet connection

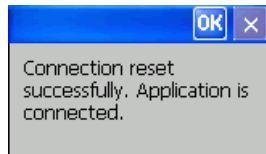
1. Double-tap **Reset Connection** on the Tools menu.

The handheld displays the Reset Connection message box.



2. Tap **Yes**.

The system resets the Ethernet adapter and then displays this message:



3. Tap **OK** to dismiss the message and return to the Tools menu.

Viewing Job Type Code Statistics

Use the **Job Code Stats** option to see how many orders of each job type have been completed on the handheld.

To view your job code statistics

1. Double-tap **Job Code Stats** on the Tools menu to display the Job Code Statistics screen.

The screen lists the number of orders completed so far, broken down by job type code.

Job Code Statistics	
<i>Completed Orders Only</i>	
Job Code	Count
MC	9
EI	7
RC	9
FC	1
CC	3

OK

2. Tap **OK** to return to the Tools menu.

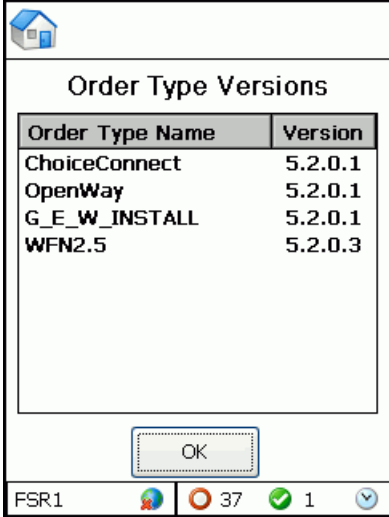
Viewing the Handheld's Order Type Versions

Use the **Order Type Versions** option to see a list of order types in the handheld database and their version numbers.

To view your handheld's order type versions

1. Double-tap **Order Type Versions** on the Tools menu to display the Order Type Versions screen.

The screen lists all order types on the handheld and their version numbers.



Order Type Name	Version
ChoiceConnect	5.2.0.1
OpenWay	5.2.0.1
G_E_W_INSTALL	5.2.0.1
WFN2.5	5.2.0.3

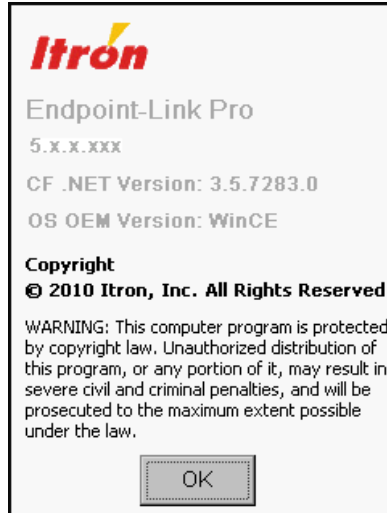
2. Tap **OK** to return to the Tools menu.

Viewing Endpoint-Link Pro Software Information

The **About** option displays current Endpoint-Link Pro version number and copyright information.

To display the About screen

1. Double-tap **About** on the Tools menu.



2. When you are finished viewing Endpoint-Link Pro copyright and version information, tap **OK** to return to the Tools menu.

APPENDIX A

Handheld-Endpoint Orientation

The orientation of a handheld's or 900MHz belt-clip radio's antenna relative to a ChoiceConnect endpoint's internal antenna is important to the success of communications between the two devices. How far you hold the handheld or belt-clip radio (BCR) from the endpoint and the direction and angle of the antenna all affect the device's ability to successfully read and program the endpoint.

Different types of Itron endpoints have different radio transmission and reception characteristics, due to their design and power supply differences. With most endpoint types, you will get the most reliable results when you align the handheld's antenna in the same direction as the endpoint's internal antenna, no more than a foot away from the endpoint—the closer the better.

The information and illustrations provided here apply to most endpoint installations. However, each installation is unique, so you may need to experiment to find the best orientation for your device's antenna in any given situation.

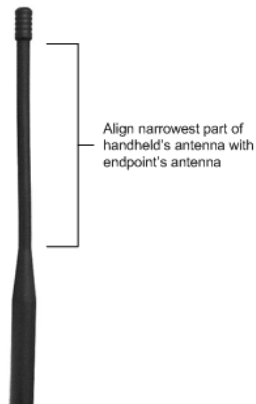
The high-powered endpoints, such as the 60W/WP Water Endpoint and the 100G Gas ERT® Module, have a longer, more variable transmission range. For these, you must experiment to determine the best range for each endpoint. You must use an FC200SR, FC300SR, or 900MHz BCR to read 60WP, 80W-i, and 100-series endpoints.



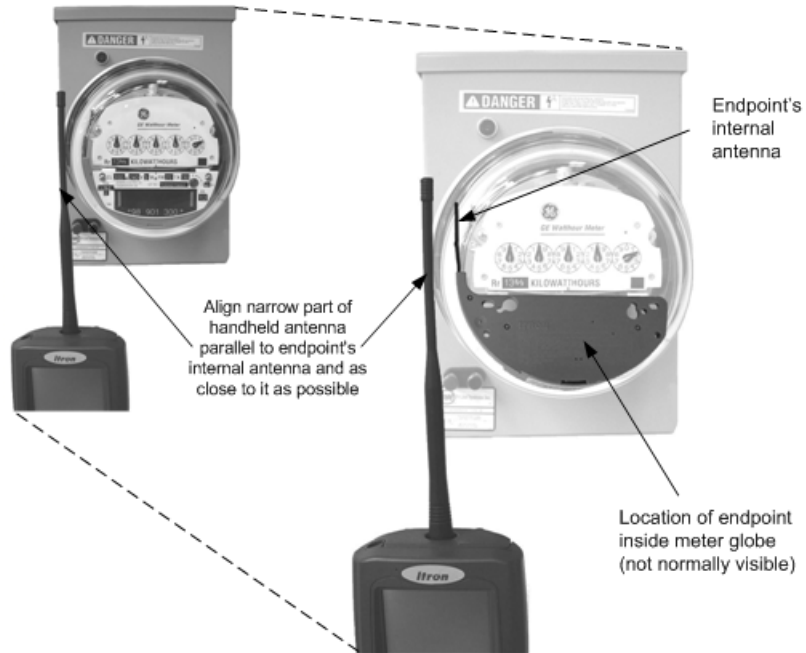
Note To avoid overexposure to radio waves when using an FC200SR, FC300SR, or 900MHz BCR, Itron recommends holding the device eight inches (20 cm) away from your body when transmitting.

Aligning the Handheld's Antenna

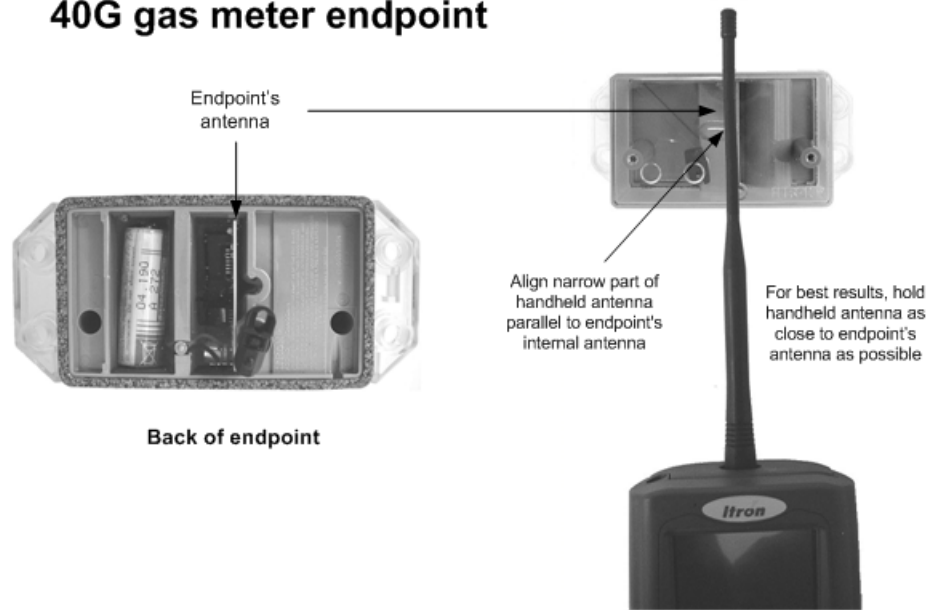
In the following illustrations, it is important to note that the narrowest part of the handheld's or BCR's antenna should be positioned closest to, and aligned parallel with, the endpoint's antenna.



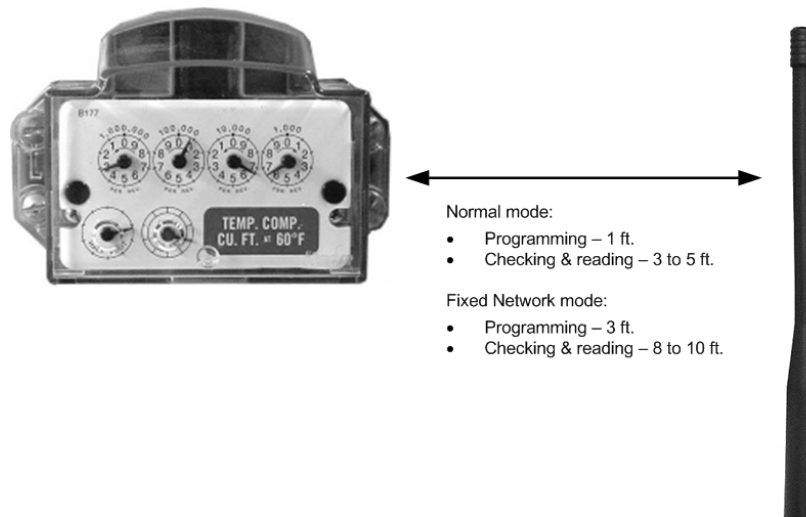
40E & 40ER electric meter endpoints



40G gas meter endpoint



100G Gas ERT[®] Module

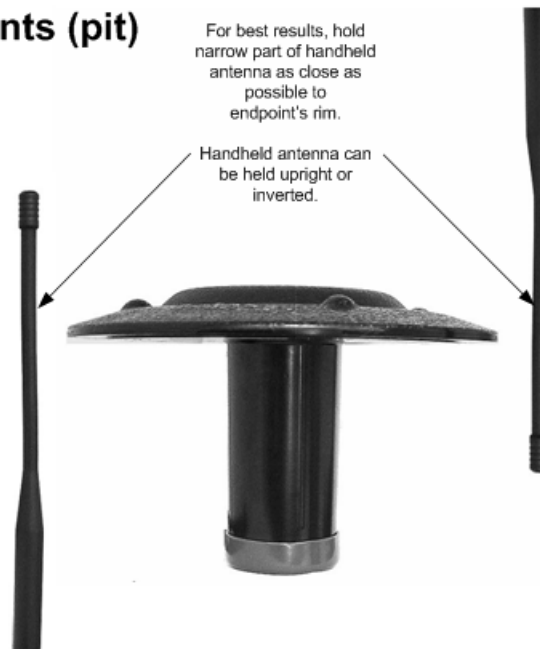


Note An FC200SR handheld, FC300 handheld with SRead radio, or 900MHz Belt-Clip Radio is required for reading and programming 100G ERT Modules.

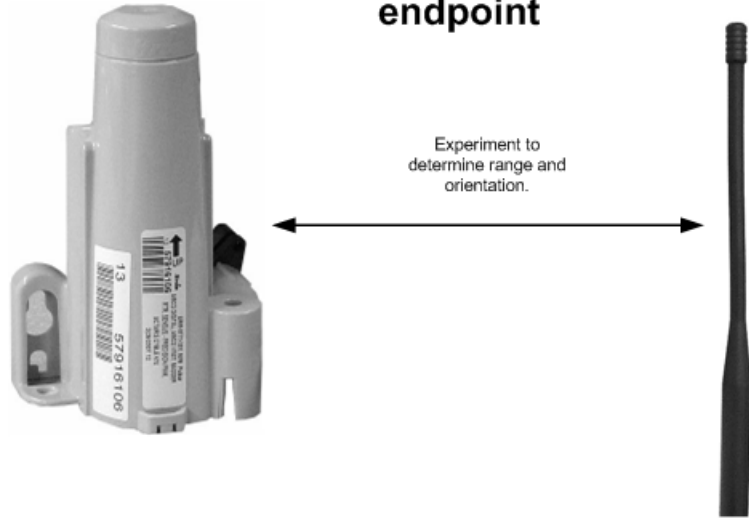
40W & 50W water meter endpoints (remote)



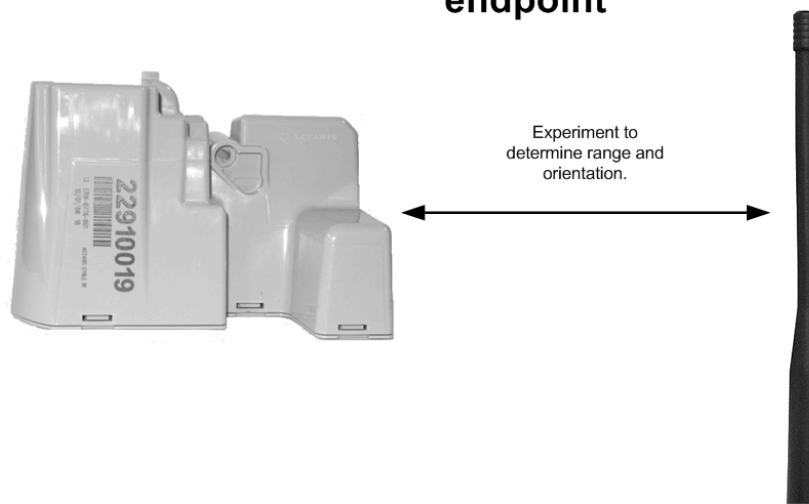
40W & 50W water meter endpoints (pit)




60W/WP water meter endpoint

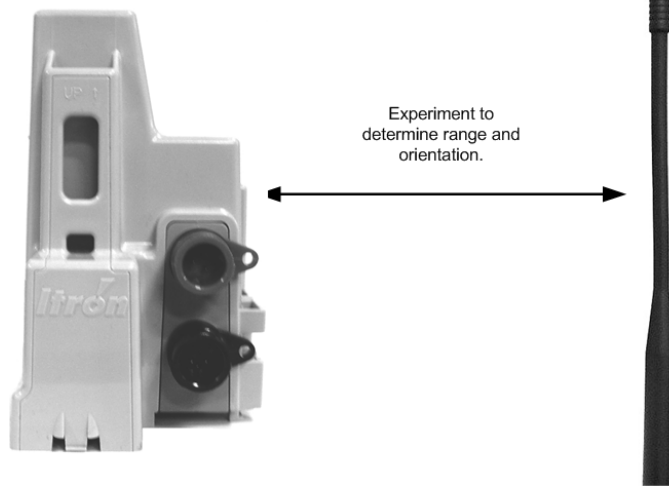


80W-i water meter endpoint



 **Note** An FC200SR handheld, FC300 handheld with SRead radio, or 900MHz Belt-Clip Radio is required for reading and programming 60WP and 80W-i endpoints.

100W Water ERT[®] Module



Note An FC200SR handheld, FC300 handheld with SRead radio, or 900MHz Belt-Clip Radio is required for reading and programming 100W endpoints.

APPENDIX B

60WP and 80W-i Endpoint Programming Mode Activation

Like endpoint types that respond to a wake-up tone from a handheld or other mobile data collection device, Itron's 60WP and 80W-i endpoints must be activated before they can be programmed, reset, unlocked, or checked. Activation "awakens" the endpoint and puts it into programming mode.

But instead of responding to a wake-up tone, a 60WP or 80W-i endpoint requires exposure to a magnet for activation. When activated with a magnet, it goes into *programming mode* for 15 minutes. During this period, you must complete any programming tasks you wish to perform, using Endpoint-Link Pro software running on your handheld data collector or laptop computer.

Fifteen minutes is usually ample time to complete any programming procedure. However, if for some reason you fail to program the endpoint during this period, you must re-activate it and repeat the procedure.

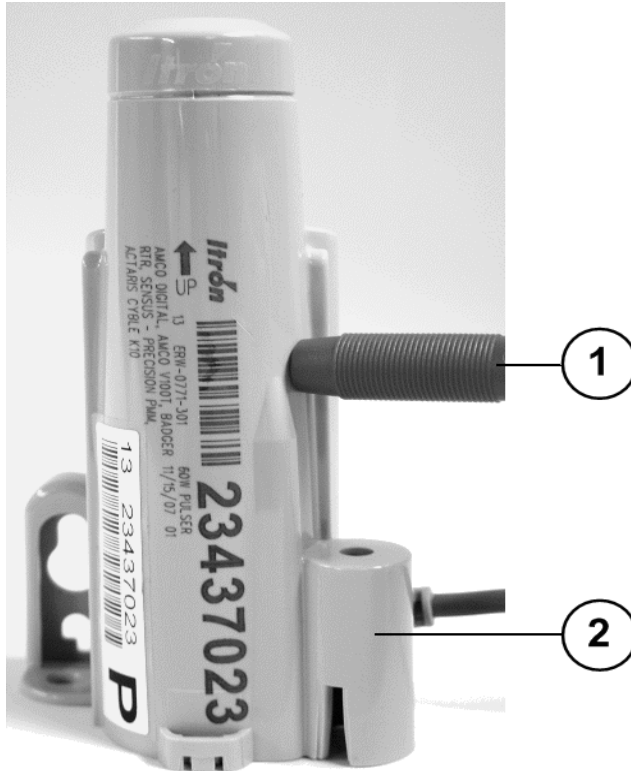
Once you have successfully programmed a 60WP or 80W-i endpoint, it enters its *quiet mode* (or *normal mode*, if quiet mode has been disabled in the Endpoint-Link Pro endpoint configuration).

In quiet mode the endpoint neither transmits nor responds to additional programming commands. Quiet mode is used primarily by meter manufacturers and can be enabled or disabled in the endpoint configuration file. It remains in this mode unless a magnet is re-applied or it detects meter pulses, at which point it starts operating in normal mode.

In normal mode, the endpoint records consumption pulses from the meter and operates according to the settings specified by your utility in the endpoint configuration file.

To activate a 60WP or 80W-i endpoint's programming mode

1. For a 60WP endpoint, hold the pen magnet (1) provided by Itron against and perpendicular to the 60WP housing, from three-fourths of an inch to one inch above the rod-mounting pocket (2).



For an 80W-i endpoint, insert the tip of the pen magnet (1) into the depression beside the screw hole (2) and touching the blue tamper seal. Hold the magnet perpendicular to the endpoint housing for four seconds, and then remove it.



This “awakens” the endpoint and activates its programming mode for about 15 minutes.

2. While the endpoint is in programming mode, use Endpoint-Link Pro to program, reset, unlock, or check the endpoint.

If the 15-minute period elapses before you finish the procedure, use the magnet again to re-activate the endpoint and try again.



Note The blue tamper seal on an 80W-i endpoint contains a magnet. When the endpoint is first installed and the seal is inserted, it activates the endpoint, and the installer has 15 minutes to program the endpoint. After the 15 minutes has passed, activation requires application of the pen magnet, as described here,

APPENDIX C

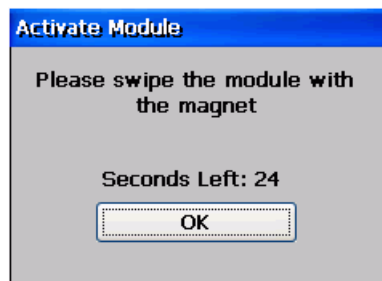
2.4GZ OpenWay[®] Gas Module Programming Mode Activation

In communicating with most endpoint models Endpoint-Link Pro typically establishes a session with the target endpoint and negotiates security and baud rates as needed. Once it has established a session, it initiates requests to read from and write to the endpoint. The session is active until terminated by the FSR, and the endpoint waits while the user decides which action they wish to perform next.

Because 2.4GZ OpenWay Gas Modules are ZigBee[®] end devices, they behave differently from other endpoints Endpoint-Link Pro communicates with. The ZigBee communication standard was designed to accommodate low-power end devices that spend most of their lives “asleep.” These devices “wake up” to transmit data and promptly go back to sleep. This behavior is necessary because these devices typically do not have external power sources and must conserve power to extend battery life.

When you read, check, or program a 2.4GZ OpenWay Gas Module or 2.4ZR OpenWay Range Extender, or set its activation mode, you wake it up by exposing it to a magnet. This causes the module to disconnect from whatever network it is connected to (typically a home area network, or HAN) and establish a connection with the ZigBee radio.

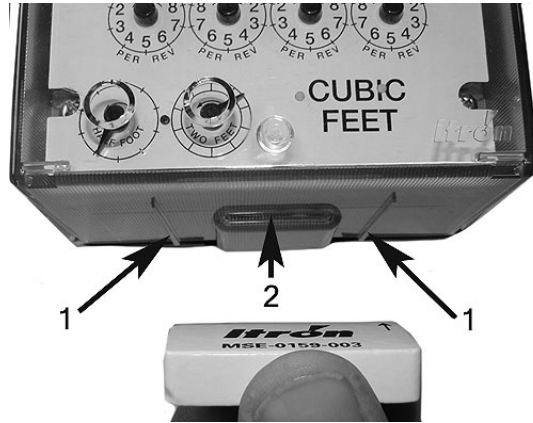
To conserve power and extend module battery life, Endpoint-Link Pro waits until it is ready to communicate before prompting you to wake up the module.



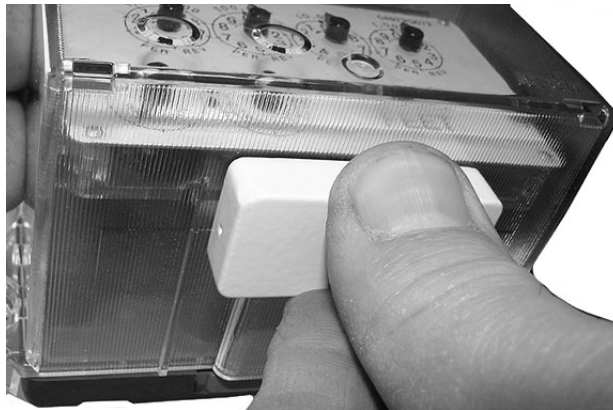
At this point you have 30 seconds to wake up the module. If the 30-second period elapses before you successfully activate the module, communication fails and you must try again.

To activate a 2.4GZ OpenWay Gas Module

On the bottom of the 2.4GZ gas module's cover are two ridges (1) and a stop (2) to ensure the magnet (Itron part number MSE-0159-003) is placed in the correct location to wake-up the module.



- Place the magnet face with the Itron logo and part number flat against the bottom of the cover, with the arrow on the magnet pointing toward the back of the module. Slide the magnet back toward the 2.4GZ back plate until it touches the stop. Hold the magnet in place for five seconds and remove it.



This activates the module long enough to communicate with the handheld.

Programming the 2.4ZR OpenWay Range Extender

Install Itron's battery-powered 2.4ZR OpenWay Range Extender when data is not being exchanged between an OpenWay CENTRON® electric meter and a 2.4GZ OpenWay Gas Module. If both the CENTRON meter and the gas module are working properly, there may be radio frequency (RF) signal constraints preventing the module from communicating with the meter. RF signal constraints may be caused by physical barriers, such as foliage, walls, or vehicles, between the components or there may be too great a distance between the electric meter and the gas module. Installing a range extender between the electric meter and the gas module provides an extension to the gas module's RF range enabling data flow.

To program a 2.4ZR OpenWay Range Extender

Note you must first program the 2.4GZ OpenWay Gas Module with which the range extender will be connected before you can program the extender itself.

1. Start Endpoint-Link Pro and display the OpenWay Endpoint Tools menu.
2. At the location of the 2.4ZR-IPP Range Extender, double-tap **Program Module** on the menu to display the Program Module screen.
3. Do the following:
 - Enter the range extender's identification number.
 - For the module type, select **2.4ZR**.
 - Select the existing key type.
 - Select **Factory** if the module has not been programmed.
 - Select **Customer** if it has been programmed.

Note The key you use to program the 2.4ZR must match the key set for both the OpenWay 2.4GZ module and the CENTRON electric meter that the range extender is to communicate with.

The screenshot shows the 'Program Module' screen with the following fields and options:

- Module Id:** 0067415081
- Module Type:** 2.4ZR
- Existing Key:** Customer
- Buttons: Restart, Next

Then tap **Next**.

4. The system displays the Ready to Program screen.

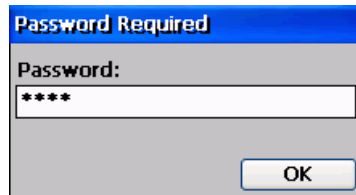
The screenshot shows the 'Program Module' screen with the following fields and options:

- Utility Data:** 0
- Buttons: Back, Restart, Next

If desired, enter any utility-defined number (up to four digits) in the **Utility Data** Field and Tap **Next**.

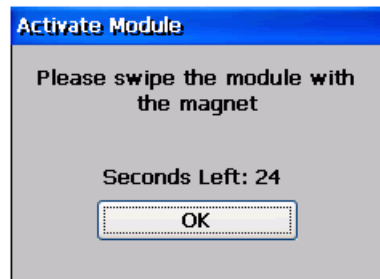
- If you selected the **Customer** key type, and if it has been more than 20 minutes since you last performed an OpenWay function, the system prompts you to enter your password.

Enter the same password you use to log on to Endpoint-Link Pro—



—then tap **OK**.

- The system starts the ZigBee radio and prompts you to activate the range extender.

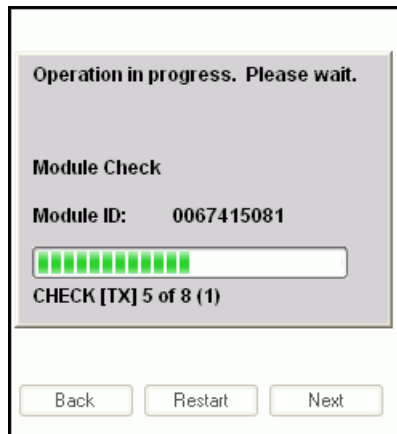


Note The Activate Module message may not appear if you previously swiped the range extender and it is still activated.

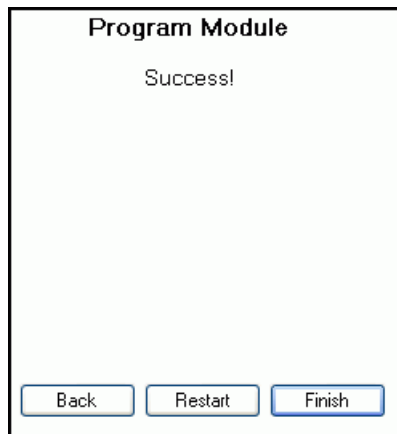
Position and hold an Itron magnet against the barcode label on the side of the range extender until the device’s internal red light blinks three times (about five seconds), and then remove the magnet.



7. The device “wakes up,” the Activate Module message box closes, and the system displays its progress as it programs the range extender.



After a pause, if the range extender succeeds in connecting to the CENTRON electric meter, its internal red light blinks five times, and the handheld displays the following screen:



Tap **Finish** to return to the Endpoint Tools menu.

After another pause, the range extender’s internal amber light blinks from one to five times at one-minute intervals, indicating the signal strength of the connection to the meter.

Note At this point, you have a 10-minute window of time to complete the remaining steps of the procedure.

8. Go to the OpenWay 2.4 GZ gas module. Use the magnet to activate the module (see [To activate an OpenWay module](#) on page 130).

The module’s internal red light blinks three times to indicate it is trying to connect to the range extender. You can see the light behind the gas meter register, through the side of its transparent plastic cover

After a pause, if it succeeds in connecting to the range extender, the module’s light blinks five times.

9. Return to the 2.4ZR-IPP Range Extender.

The range extender's internal green light blinks from one to five times at one-minute intervals, indicating the signal strength of the connection to the OpenWay 2.4GZ gas module. It continues to blink until the 10-minute window of time, which began when the range extender first connected to the CENTRON electric meter (step 6), expires.

APPENDIX D

Working with Dresser Roots Series B3 and LM-MA Registers

This appendix includes special information required for programming and checking endpoints installed for use with some Dresser Roots Series B3 and LM-MA registers. It is divided into two main sections:

- [Programming Endpoints for Series B3 and LM-MA Registers](#), below.
- [Checking Endpoints Installed with Series B3 and LM-MA Registers](#) on page 136.

Programming Endpoints for Series B3 and LM-MA Registers

Use the NUMBER OF DIALS, DRIVE RATE, and PCOMP settings shown in the following tables when programming endpoints installed for use with Dresser Roots Series B3 and LM-MA registers (see [Programming Gas Meter Endpoints](#) on page 46).

Programming for Series B3 Registers

Model	Meter Size	Settings
Counter (CTR) Version	8C – 15C,	5 Dial, 10 cubic feet
	2M – 11M	Pressure compensation factor (PCOMP): NONE
	16M – 56M	6 Dial, 100 cubic feet Pressure compensation factor (PCOMP): NONE
TC	8C – 15C,	5 Dial, 100 cubic feet
	2M – 11M	Pressure compensation factor (PCOMP): NONE
	16M	6 Dial, 1000 cubic feet Pressure compensation factor (PCOMP): NONE

Programming for LM-MA Registers

Model	Meter Size	Settings
Counter (CTR) Version	1.5M – 11M	5 Dial, 10 cubic feet Pressure compensation factor (PCOMP): NONE
	16M – 102M	6 Dial, 100 cubic feet Pressure compensation factor (PCOMP): NONE
TC	1.5M – 11M	5 Dial, 50 cubic feet Pressure compensation factor (PCOMP): NONE
	16M	6 Dial, 500 cubic feet Pressure compensation factor (PCOMP): NONE

Checking Endpoints Installed with Series B3 and LM-MA Registers

Because of the way the following Dresser Roots Series B3 and LM-MA registers send pulses to endpoint modules to indicate gas consumption, the Endpoint-Link Pro software must make special adjustments to the endpoint programming to accommodate them. Use the information in this section to interpret the meter readings displayed during Check Endpoint procedures (see [Checking Endpoints](#) on page 39) on endpoint modules installed with these registers.

As with an endpoint installed on any gas meter, when you perform a Check Endpoint procedure on a meter with a Series B3 or LM-MA register, Endpoint-Link Pro displays the Format Read button beside the endpoint reading.



By default, the system automatically formats the reading. However, to correctly interpret a reading from one of these registers as described on the following pages, first use this button to *unformat* the reading. See [Formatting Gas and Electric Endpoint Readings](#) on page 28.

In addition, as it does when checking any endpoint installed on a gas meter with five, six, or seven dials, Endpoint-Link Pro prompts you to select the meter's number of dials and its billing units.

Select Number of Dial and Billing Units

Number of Dials?

Billing Units ?

Use the following table to determine the correct settings when checking endpoints installed with Series B3 and LM-MA registers.

Dials and Billing Units for Series B3 Registers

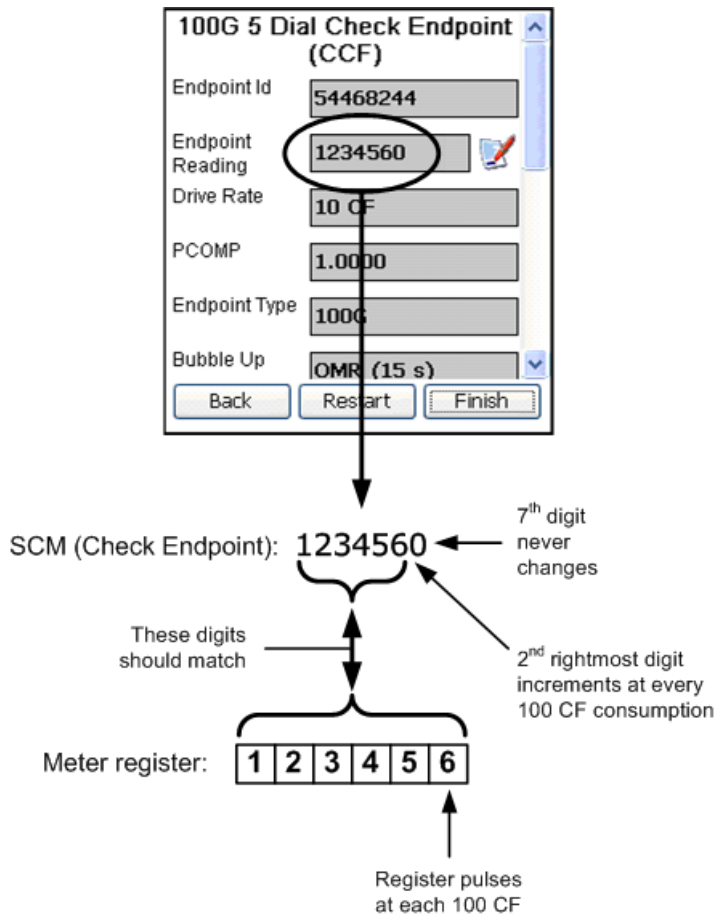
Model	Meter Size	Number of Dials and Billing Units
Counter (CTR) Version	8C – 15C,	5 Dial, CCF
	2M – 11M	
	16M – 56M	6 Dial, CCF
TC	8C – 15C,	5 Dial, CCF
	2M – 11M	
	16M	6 Dial, CCF

Dials and Billing Units for LM-MA Registers

Model	Meter Size	Number of Dials and Billing Units
Counter (CTR) Version	1.5M – 11M	5 Dial, CCF
	16M – 102M	6 Dial, CCF
TC	1.5M – 11M	5 Dial, CCF
	16M	6 Dial, CCF

Series B3 Counter (CTR) Version 16M–56M & LM-MA Counter (CTR) Version 16M–102M

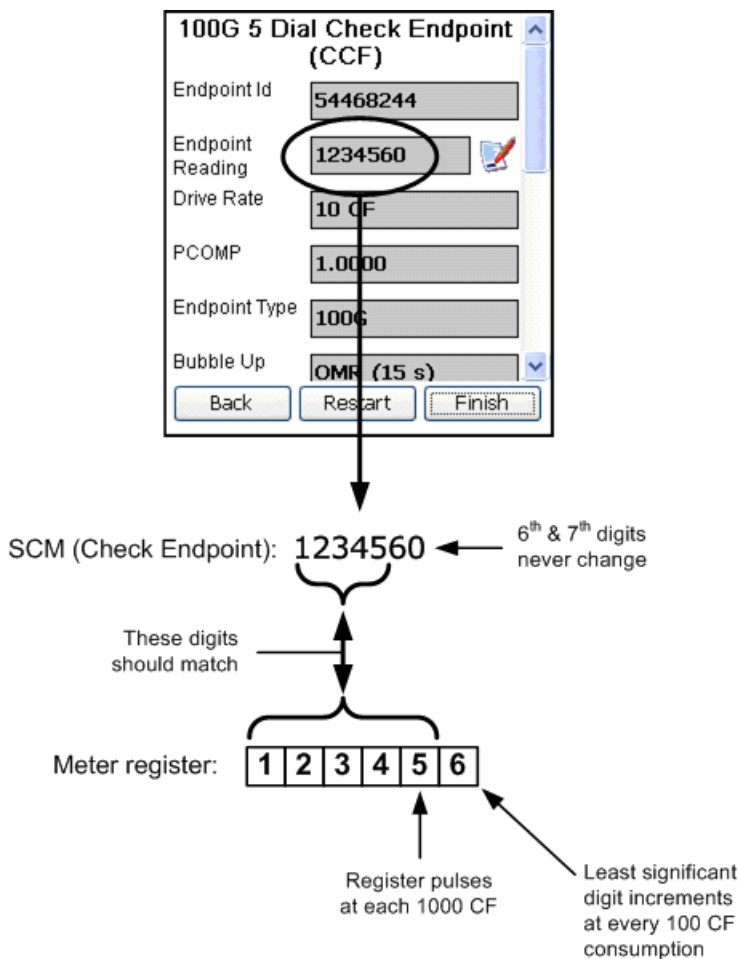
With these registers, each pulse sent to the endpoint indicates 100 cubic feet of gas consumption. However, because these are six-dial registers, and because the standard consumption message (SCM) transmitted by the endpoint has just seven digits, the Endpoint-Link Pro software uses the SCM's *second* rightmost digit to represent the consumption shown by the register's least-significant digit. For these registers, each increment of this digit in the SCM (as seen in the reading returned by the endpoint during a Check Endpoint procedure) indicates 100 cubic feet of gas consumption.



Series B3 TC 16M

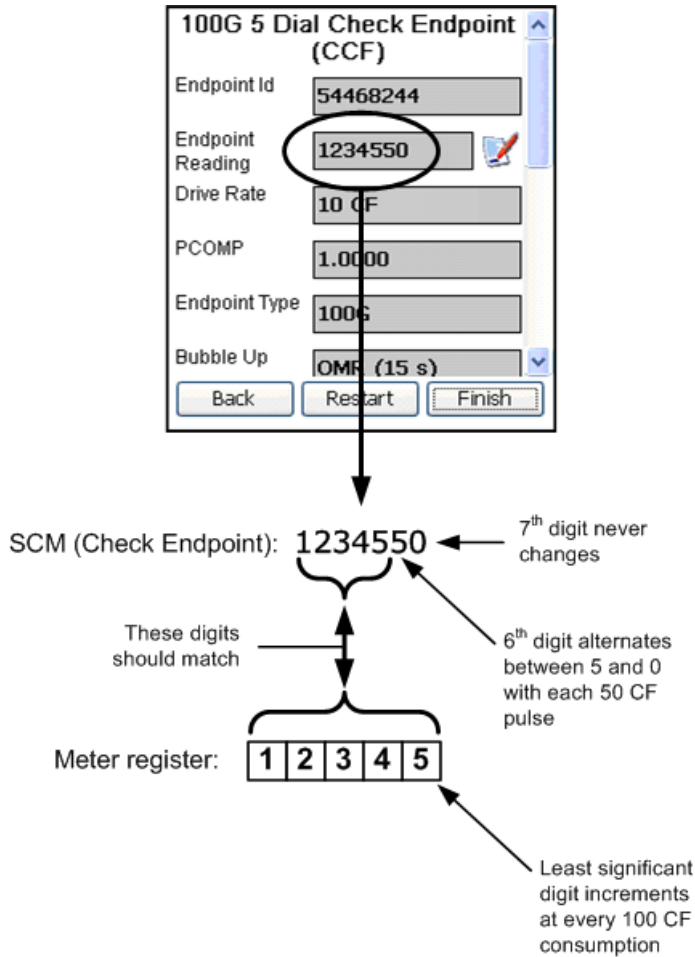
With these registers, each pulse sent to the endpoint indicates 1000 cubic feet of gas consumption. However, because these are six-dial registers, and because the standard consumption message (SCM) transmitted by the endpoint has just seven digits, the Endpoint-Link Pro software uses the SCM's *third* rightmost digit to represent the consumption shown by the register's second least-significant digit. For these registers, each increment of this digit in the SCM (as seen in the reading returned by the endpoint during a Check Endpoint procedure) indicates 1000 cubic feet of gas consumption.

As a result, in a Check Endpoint procedure performed on an endpoint installed with this register, the gas consumption indicated by the SCM as shown on the handheld may appear to be "off" by up to 900 cubic feet, as compared to the reading on the meter. This is to be expected and does not indicate a problem with the endpoint.



LM-MA TC 1.5M–11M

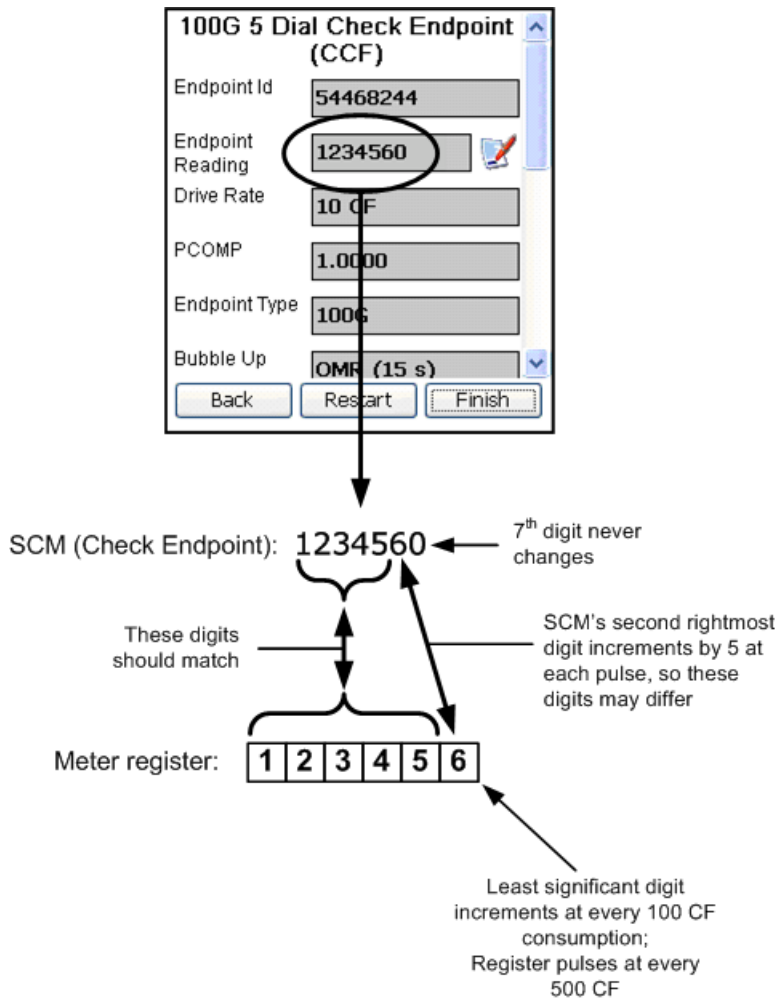
With these registers, each pulse sent to the endpoint indicates 50 cubic feet of gas consumption. The least-significant (units) dial on these five-dial registers corresponds to the third rightmost digit in the standard consumption message (SCM) transmitted by the endpoint. Each increment of this digit in the SCM (as seen in the reading returned by the endpoint during a Check Endpoint procedure) indicates 50 cubic feet of gas consumption.



LM-MA TC 16M

With these registers, each pulse sent to the ERT indicates 500 cubic feet of gas consumption. However, because these are six-dial registers, and because the standard consumption message (SCM) transmitted by the ERT has just seven digits, the Endpoint-Link Pro software uses the SCM's *second* rightmost digit, instead of the third, to represent the consumption shown by the register's least-significant digit. For these registers, the SCM's second rightmost digit (as seen in the reading returned by the ERT during a Check ERT procedure) increments by 5 for each pulse received from the register, indicating 500 cubic feet of gas consumption.

As a result, in a Check ERT procedure performed on an ERT installed with this register, the gas consumption indicated by the SCM as shown on the handheld may appear to be "off" by up to 400 cubic feet, as compared to the reading on the meter. This is to be expected and does not indicate a problem with the ERT or the register.



Restoring the Endpoint-Link Pro Components with iRescue

The iRescue program that comes with Itron FC200-series handhelds lets you back up and restore the contents of their files and registries. Use iRescue to:


- Copy program settings and files from one handheld to another.
- Restore data if the handheld's battery is drained completely before a recharge.
- Restore data following a reset.
- Restore data if files or settings were unintentionally modified or deleted, causing a device malfunction or data loss.

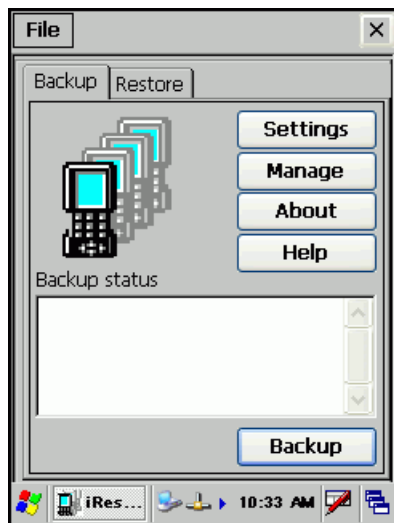
iRescue saves backup data onto the handheld's removable storage media, such as a CompactFlash card.



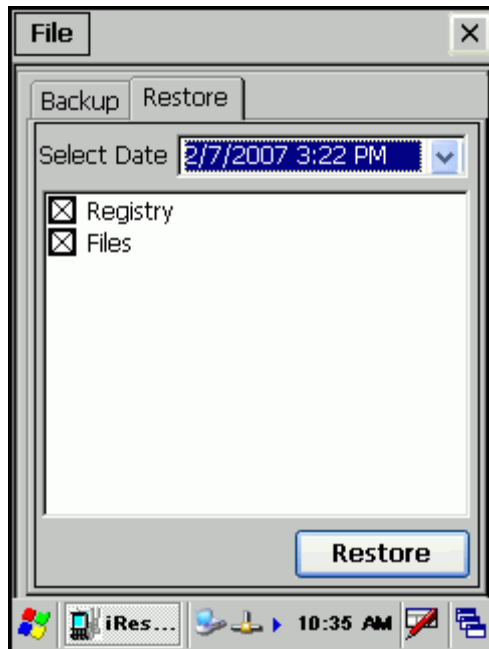
Note For more complete information about using iRescue to backup and restore data on your handheld, see the *FC200 Series Getting Started Guide*.

To restore the Endpoint-Link Pro components

1. From the Windows CE desktop, select  > **Programs** > **iRescue**.



2. Select the **Restore** tab.



3. From the **Select Date** drop-down list, select the date when the desired backup file was created.
4. Select **Files** to view a list of folders and files contained in the backup.
By default, all files and folders are selected for restoration.
5. Clear files that you do not want to restore.
6. Select the **Restore** button to restore the selected files and regsettings.
The program shows its progress in restoring the selected items. When it's done, it asks if you want to reboot the handheld to complete the process.
7. Select **Yes** to reboot immediately and complete the restoration.

Endpoint Tamper/Event Code Descriptions

Tampers by Endpoint

The type of tamper/event available depends on the type of endpoint. Tamper/event conditions are defined as:

- **Cable Cut.** Detects a cut or break in the cable.
- **Cable Cut/Magnetic.** Detects a cut or break in the cable, and detects presence of external magnetic field.
- **Demand Reset.** Meter has detected a button-press demand reset (possible tampering).
- **Detached.** Detects a number of problems including cut cable, poor communications, corrupt data, or that the endpoint was removed from the meter.
- **Inversion.** Detects when the meter is installed upside down and has power applied.
- **Last Interval is Sum (water).** The last interval returned with a datalogging interval read is a summation.
- **Leak Detection (water).** Detects after flow is continuous over seven days (no zero-consumption intervals). The flag is reset to zero on the next zero-consumption interval.
- **Leak Detection/Reverse Flow (water).** Indicates both Leak Detection and Reverse Flow conditions exist. The indicator changes when one condition no longer exists and resets to zero when both conditions no longer exist.
- **Leak Sensor OK (water).** If 1, the endpoint has a leak sensor attached and is working properly. If 0, the endpoint has a leak sensor attached, but it is not communicating.
- **Low Battery.** An electric meter has a low battery warning or an end-of-calendar warning. A water endpoint has a low battery.
- **Low Battery/Detached.** Indicates a *low battery* condition or *detached* condition.
- **Magnetic.** Detects presence of external magnetic field.
- **Meter Error.** Meter has an error or warning that can affect billing date (for example: carryover error).
- **Meter Removal.** Detects when the tilt detector is activated within two seconds after power loss.
- **Meter Warning.** Meter has a warning that may require a site visit, depending on utility practice (for example: reverse energy flow warning).
- **Not Current Read.** The read returned is not the current read (date/time).
- **Pulsar/Encoder (water).** If 1, using an encoder; otherwise, using a pulser.
- **Removal (electric and gas).** Meter has been removed.

- **Removal (water).** Detects a number of problems including cut cable, poor communications, corrupt data, or that the endpoint was removed from the meter.
- **Reverse Flow.** Detects when an hourly index value is less than the previous hourly value. The flag remains set for 40 days. The 40-day counter restarts upon each occurrence of a reverse flow event. The value resets to zero after completing a 40-day cycle with no additional reverse flow occurrences.
- **Reverse Rotation.** Detects when the meter disk rotates backwards for more than four revolutions.
- **Right Size Complete.** The right sizing data collection is complete.
- **Tilt.** Detects a tilt of greater than 60 degrees for more than 0.5 second.

Tampers/Events by Electric Endpoint

The following table lists tampers/events associated with each electric endpoint type:

Endpoint	ERT type	Associated tampers/events
40ER 40ER-1 40ES 40EN	5	<ul style="list-style-type: none"> • Inversion and/or Reverse Rotation • Removal and/or Reverse Rotation
41ER-1	5	<ul style="list-style-type: none"> • Inversion and/or Reverse Rotation • Removal
45ER-1 45ES-1 45EN-1	7	<ul style="list-style-type: none"> • Inversion and/or Reverse Rotation • Removal and/or Reverse Rotation
R300	4	<ul style="list-style-type: none"> • Inversion • Removal
3-Read SCM - 50ESS Note Three standard consumption messages (SCM) are available.	8	1st SCM <ul style="list-style-type: none"> • Inversion • Removal 2nd SCM <ul style="list-style-type: none"> • Demand Reset • Low Battery 3rd SCM <ul style="list-style-type: none"> • Meter Error • Meter Warning
3-Read SCM - 53ESS - 57ESS-HP Note Three standard consumption messages	8	1st SCM <ul style="list-style-type: none"> • Inversion • Removal 2nd SCM <ul style="list-style-type: none"> • Demand Reset • Low Battery

Endpoint	ERT type	Associated tampers/events
(SCM) are transmitted.		3rd SCM <ul style="list-style-type: none"> • Meter Error • Meter Warning
1-Read SCM - 51ESS - 56ESS-HP	7	<ul style="list-style-type: none"> • Inversion • Removal
1-Read SCM - R300C - 54ESS-HP	4	<ul style="list-style-type: none"> • Inversion • Removal
1-Read SCM - 52ESS - 55ESS-HP - R300S - R300-HP Note A single standard consumption message (SCM) is transmitted.	5	<ul style="list-style-type: none"> • Inversion • Removal
2-Read SCM - R300SD - R300CD - R300CD-HP Note Two standard consumption messages (SCM) are transmitted.	4	1st SCM <ul style="list-style-type: none"> • Inversion • Removal 2nd SCM <ul style="list-style-type: none"> • Inversion • Removal
3-Read SCM - R300SD3 Note Three standard consumption messages (SCM) are transmitted.	8	1st SCM <ul style="list-style-type: none"> • Inversion • Removal 2nd SCM <ul style="list-style-type: none"> • Inversion • Removal 3rd SCM <ul style="list-style-type: none"> • Inversion • Removal
3-Read SCM - R300CD3-HP	8	1st SCM <ul style="list-style-type: none"> • Inversion • Removal

Endpoint	ERT type	Associated tampers/events
Note Three standard consumption messages (SCM) are transmitted.		2nd SCM <ul style="list-style-type: none"> • Demand Reset • Low Battery
		3rd SCM <ul style="list-style-type: none"> • Meter Error • Meter Warning

Tampers/Events by Gas Endpoint

The following table lists tampers/events associated with each gas endpoint type:

Endpoint	ERT type	Associated tampers/events
25G - 1 foot	0	<ul style="list-style-type: none"> • Magnetic • Tilt
25G - 2 foot	1	<ul style="list-style-type: none"> • Magnetic • Tilt
40G/40GB	2	<ul style="list-style-type: none"> • Magnetic • Tilt
40G Remote	2	<ul style="list-style-type: none"> • Cable Cut • Cable Cut/Magnetic • Tilt
40G Rotary (remote)	2	<ul style="list-style-type: none"> • Cable Cut (US models) • Cable Cut/Magnetic (Canadian models) • Tilt
100G	12	<ul style="list-style-type: none"> • Magnetic • Tilt
100G Remote	12	<ul style="list-style-type: none"> • Cable Cut • Cable Cut/Magnetic • Tilt

Tampers/Events by Water Endpoint

The following table lists tampers/events associated with each water endpoint type:

Endpoint	ERT type	Associated tampers/events
40W/50W Pulsar Remote (3-wire)	3	<ul style="list-style-type: none"> • Cable Cut Counter value increases by 1 when an event occurs and then latches. Latch state is cleared when ERT is read. • Tilt
40W/50W Pulsar Remote (2-wire)	3	<ul style="list-style-type: none"> • Cable Cut Not supported and should be ignored if changes are seen. • Tilt
40W/50W Pulsar Direct Mount (3-wire)	3	<ul style="list-style-type: none"> • Cable Cut Cable is not accessible; however, function the same as the Remote (3-wire). • Tilt
40W/50W Encoder Remote (3-wire)	3	<ul style="list-style-type: none"> • Cable Cut Counter value increases by 1 when an event occurs. • Tilt
40W/50W Encoder Remote (2-wire)	3	<ul style="list-style-type: none"> • Cable Cut Not supported and should be ignored if changes are seen. • Tilt
40W/50W Encoder Direct Mount (3-wire)	3	<ul style="list-style-type: none"> • Cable Cut Cable is not accessible; however, function the same as the Remote (3-wire). • Tilt
60W/60WP/80W-i	13	<ul style="list-style-type: none"> • Leak Detection/Reverse Flow • Cable Cut
100W/100WP	11	<ul style="list-style-type: none"> • Cable Cut • Reverse Flow

100G Datalogging Remote Disconnect Gas ERT Module Error Codes and Troubleshooting

The following table lists error codes you can receive through Endpoint-Link Pro while performing remote disconnect activities on Itron 100G Datalogging Remote Disconnect ERT® Modules. For each error code it provides a recommended troubleshooting approach.



Note These error codes and troubleshooting procedures apply primarily to the endpoint's remote disconnect function. They are not intended for use in extensive debugging of problems with its datalogging or other functions.

Remote Disconnect error codes	Troubleshooting steps
Failed Closure: Gas Flow After Closure!	The endpoint does not currently support this function. If you get this error code, replace the endpoint and assess valve functionality.
Failed To Close: Valve Stuck	<ol style="list-style-type: none"> 1. Wait one minute to allow battery recovery. 2. Reissue the Close Valve command. <p>If failure continues:</p> <ol style="list-style-type: none"> 3. Change the endpoint, and issue a Get Status command, followed by a Close Valve command. <p>If failure continues after step 3, the valve is in an unknown state and flow may be impaired. In this case:</p> <ol style="list-style-type: none"> 4. Physically turn off the gas. 5. Replace the meter set before physically reopening the valve. When reopening the valve, be sure to take into consideration pilot lights and other possible leakage sources.
Failed To Open: Valve Stuck	<ol style="list-style-type: none"> 1. Wait one minute to allow battery recovery. 2. For best success, keep the handheld or belt-clip radio between two and six feet from the target endpoint. 3. Reissue the Open Valve command. <p>If failure continues:</p> <ol style="list-style-type: none"> 4. Change the endpoint, and issue a Get Status command, followed by an Open Valve command. <p>If failure continues after step 3, the valve is in an unknown state and flow may be impaired. In this case:</p> <ol style="list-style-type: none"> 5. Physically turn off the gas. 6. Replace the meter set before physically reopening the valve. When reopening the valve, be sure to take into consideration pilot lights and other possible leakage sources.

Remote Disconnect error codes	Troubleshooting steps
The valve is already closed.	<p>If you are unsure of the meter's state, or if you suspect that the valve is not closed:</p> <ol style="list-style-type: none"> 1. Issue a Get Status command to verify that the valve is closed. 2. Do whatever else you can to verify that the valve is closed (monitor the least-significant dial on the index, check for flow, and so on). <p>If you have sent previous Close Valve commands, this error code indicates that the valve was successfully closed.</p>
Failure. Valve is in an unknown state.	This error code is not currently supported by the handheld.
The valve is already open.	<p>If you are unsure of the meter's state, or if you suspect that the valve is not open:</p> <ol style="list-style-type: none"> 1. Issue a Get Status command to verify that the valve is open. 2. Do whatever else you can to verify that the valve is open (monitor the least-significant dial on the index, check for flow, and so on). <p>If you have sent previous Open Valve commands, this error code indicates that the valve was successfully opened.</p>
Valve Disabled. You cannot run commands on a disabled valve.	The endpoint must be programmed to enable valve functionality.
Flash write error. (Interval data not being recorded)	Replace the endpoint.
Failed Valve Request (Battery Condition)	<ol style="list-style-type: none"> 1. Wait more than one minute and repeat the operation. <p>If battery condition persists:</p> <ol style="list-style-type: none"> 2. If the temperature is cold, repeat the operation once or twice more. 3. If the temperature is not cold or if step 2 fails, replace the endpoint and issue a Get Status command. Then reissue the Open Valve or Close Valve command. <p>If failure still occurs after steps 1-3:</p> <ol style="list-style-type: none"> 4. Physically turn off the gas. 5. Replace the meter set before physically reopening the valve. When reopening the valve, be sure to take into consideration pilot lights and other possible leakage sources. 6. Reissue the Open Valve or Close Valve command.
Failed Valve Request- Out of Temperature Range	Verify that the meter's temperature is outside the operating temperature range. If it is, and you still want to perform the desired operation, warm or cool the meter and try again (the meter's <i>internal</i> temperature must also be within the operating range).



Warning DO NOT WARM THE METER IN A WAY THAT COULD IGNITE ANY GAS THAT MIGHT BE PRESENT. Even if the meter has been disconnected it may still contain gas, and the meter's temperature will prevent you from shutting it off.

Remote Disconnect error codes	Troubleshooting steps
	<p>If the meter is not outside its operating temperature range:</p> <ol style="list-style-type: none"> 1. Physically turn off the gas. 2. Replace the meter set before physically reopening the valve. When reopening the valve, be sure to take into consideration pilot lights and other possible leakage sources. 3. Reissue the Open Valve or Close Valve command.
Invalid Time Format	Check the time on the handheld or laptop computer and try the operation again.
Interval data sum is greater than the total counts.	<p>The total hourly consumption is larger than the maximum value for the 40-day command. Consider doing a table dump to collect the data.</p> <p>Note This rarely happens.</p>
Interval not available.	<p>You are trying to capture data for an interval that has not occurred. This error should not occur more than 40 days after installation.</p> <p>Note Reprogramming the endpoint clears the datalogging intervals.</p>
Closure Complete (Valve Open/Shut operation)	<p>The meter valve has been closed.</p> <p>Itron recommends periodic inspection of the meter to verify that gas is not flowing.</p>
Open Complete (Valve Open/Shut operation)	<p>The meter valve has been opened.</p> <p>Check pilot lights and other potential sources of gas leakage.</p>
Failed Fault (hardware fault)	<p>Hardware fault errors may occur for many reasons.</p> <p>For example, while the valve is open the meter executes a slight movement of the valve each month to prevent stiction. The meter does not move the valve when it is closed, which could result in gas flow. This in turn causes the endpoint to log a hardware fault.</p> <p>If this error occurs:</p> <ol style="list-style-type: none"> 1. Issue a Get Status command. 2. Repeat the Open Valve or Close Valve command. <p>If the error persists:</p> <ol style="list-style-type: none"> 3. Change the endpoint, and issue a Get Status command, followed by the Open Valve or Close Valve command. <p>If the operation still fails after step 3:</p> <ol style="list-style-type: none"> 4. Physically turn off the gas. 5. Replace the meter set before physically reopening the valve. When reopening the valve, be sure to take into consideration pilot lights and other possible leakage sources. 6. Reissue the Open Valve or Close Valve command. <p>Note Do not infer the valve's open or close state based on the error message. Instead, use the Get Status command to determine the valve's state.</p>

Remote Disconnect error codes	Troubleshooting steps
Unknown Failure	<p>This error may occur for several reasons, of which the following pertain to the remote disconnect function:</p> <ul style="list-style-type: none"> • Incorrect open ID. Retry with correct open ID • Incorrect programming parameters. Retry with correct parameters. <p>Try the operation again. If it still fails, you may need to replace the endpoint.</p>
Endpoint is locked (can't perform requested action).	<p>The endpoint has been hard-locked.</p> <p>The system parameters (message type, bubble-up rate, RF power) can be changed, but the metrology parameters (drive, rollover, PCOMP) cannot.</p>

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