ecom
MOBILE SAFETY

Intrinsically Safe PDA **i.roc® Ci70 -Ex**

Manual

Content

Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

Safety Information ⚠

Your safety is extremely important. Read and follow cautions in this document before handling and operating ecom instruments equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety cautions. This section explains how to identify and understand cautions and notes that are in this document.

⚠

A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Note: Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

Global Services and Support

Warranty Information

To understand the warranty for your ecom instruments product, visit the ecom instruments website at www.ecom-ex.com and click Support.
Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

Web Support

Visit the ecom instruments website at www.ecom-ex.com to download our current manuals (in PDF format).

Telephone Support

For any questions contact your local ecom instruments representative. To search for your local representative visit the ecom instruments website and click Company > Locations.

Who Should Read This Manual

This manual is written for the person who is responsible for installing, configuring, and maintaining the i.roc® Ci70 -Ex Mobile Computer. This manual provides you with information about the features of the i.roc® Ci70 -Ex mobile computer, and how to install, configure, operate, maintain, and troubleshoot it. Before you work with the i.roc® Ci70 -Ex mobile computer, you should be familiar with your network and general networking terms, such as IP address.

1

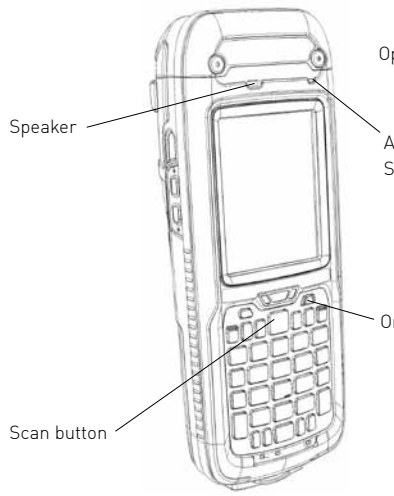
About the Computer Features

This chapter introduces the i.roc® Ci70 -Ex Mobile Computers with Windows® Embedded Handheld operating system. Use this chapter to learn about the basic features and functions of each computer, as well as the available accessories for it.

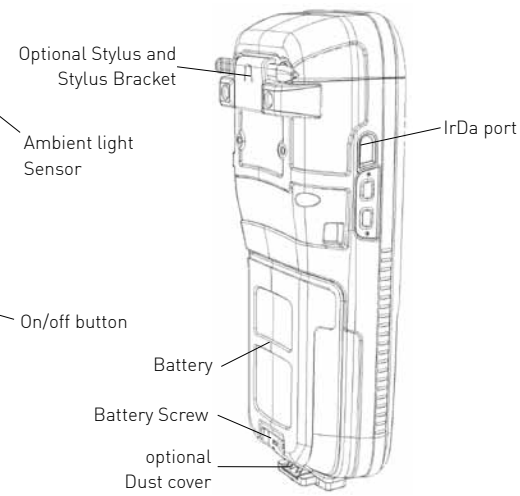
About the i.roc® Ci70 -Ex Mobile Computers

The ergonomically designed ecom instruments i.roc® Ci70 -Ex Mobile Computers are built on the Microsoft Windows Embedded Handheld operating system. They are easy-to-use, and run most software developed for the Windows Embedded platform, including standalone, client-server and browser-based applications.

i.roc® Ci70 -Ex Front View



i.roc® Ci70 -Ex Back View



Overview of i.roc® Ci70 -Ex Features

The i.roc® Ci70 -Ex includes these standard features:

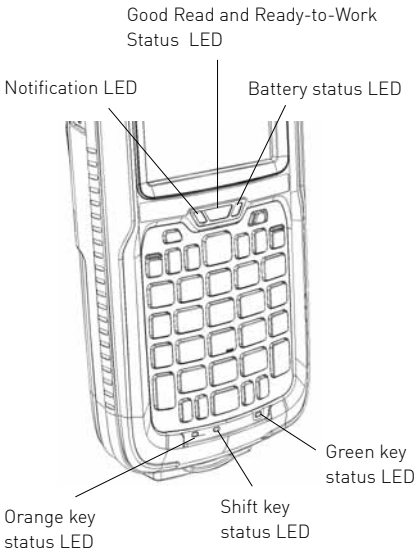
- Multi-processor architecture with 512 MB DRAM and 1GB Flash
- 802.11a/b/g/n and Bluetooth® radios
- Customer-accessible microSD slot for memory cards up to 32 GB
- IrDA port with speeds up to 4 Mbps

The i.roc® Ci70 -Ex Mobile Computer with an IEEE 802.11a/b/g/n radio installed is Wi-Fi® certified for interoperability with other 802.11a/b/g/n wireless LAN devices.

About the Status LEDs

Use the following illustrations and table to understand the status LEDs on your computer. All six status LEDS are not available on every i.roc® Ci70 -Ex computer. For example, the QWERTY versions of the i.roc® Ci70 -Ex do not have a green key status LED.

Location of the i.roc® Ci70 -Ex Status LEDs



Status LED Descriptions

LED	Color	Description
Notification	Amber	This LED is user-programmable
Good Read	Green	The computer successfully decoded a bar code.
Ready-to-Work	Blue	If you have Intermec Terminal Emulator (ITE), the application is running and connected to the host. If you do not have ITE, you can configure the Ready-to-Work indicator to turn on or off to indicate a healthy state.
	Blinking blue	ITE is running but not connected to the host. The computer is unhealthy.
	Off	ITE is not installed or not running. The computer is healthy.
Battery		See "About Battery Status" on page 12.
Key Status	Green	The Green function key is enabled.
	Orange	The Orange function key is enabled.
Shift	Red	The Shift key is enabled.

About Language Provisioning

If your i.roc® Ci70 -Ex computer includes language provisioning, you are prompted to select a language provision when the computer starts for the first time. It may take up to 15 minutes to load your language.
Make sure you select the correct language before you tap Provision. If you need to have the language provisioning changed, you will need to send your computer to an ecom instruments Global Repair Center.

About the Battery ⚠

The computer uses following rechargeable Lithium-ion battery pack as the main power source:

- 3.7 V, 4000 mAH (14.8 Wh) battery AM Ci70 -Ex

⚠
The battery used in this device may present a fire or chemical burn hazard if it is mistreated. Do not disassemble it, heat it above 60 °C (140 °F) or incinerate it. Dispose of used batteries promptly. Keep away from children.

Charge the Battery

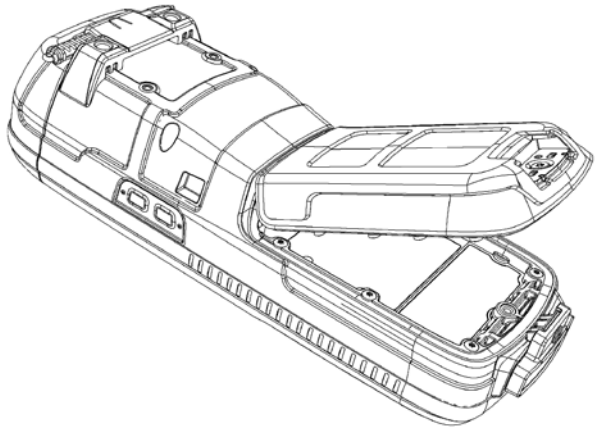
You need to fully charge the battery before using your computer for the first time.

Change the Battery

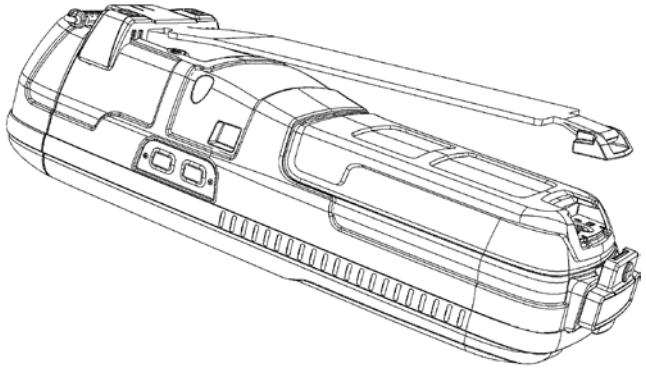
If your battery power is low, you need to either charge the battery in the computer, or replace it with a charged battery.

1 Save your files and close any open applications.
2 Press the Power button and choose Shutdown from the menu to shut down the computer.
3 Detach the handstrap from the computer.

Detaching the Handstrap from an i.roc® Ci70 -Ex



4 Make sure the computer is in standby mode and that the screen has turned off.
5 Remove the battery.
Unscrew the battery's screw using enclosed screwdriver. Lift lower part of the battery to release it from the computer.



6 Insert the top end of a fully charged battery into the computer, and press down firmly on the bottom of the battery. Then tighten the screw. Make sure that the battery is firmly attached.

About Battery Status

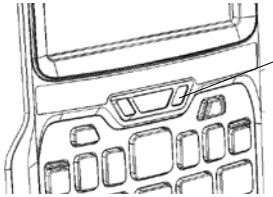
Use the battery icon on the Title bar to see the power status of your battery. If you want more detailed information on your battery such as usage time or voltage, use the Intermec Dashboard. For more information on the Dashboard see "About the Intermec Dashboard" on page 57.

Understanding the Battery Icon Status

Battery Icon Status	
	Battery is fully charged.
	Battery has a high charge.
	Battery has a medium charge. You should be able to work for several more hours before changing batteries.
	Battery is low. You need to charge or replace the battery soon.
	Battery is critically low. You need to replace the battery now.
	Battery is charging.
	The battery is not installed.

You can also use the battery status LED to see the charging status of your battery.

Battery status LED



Understanding the Battery Status LED

LED State	Description
Steady green	The computer is connected to a charger and the battery is more than 95% charged.
Blinking red	The battery is very low. The computer will soon go into Suspend mode. Charge or replace the battery.
Steady red	The computer is connected to a charger and the battery is charging.
Blinking red-amber	The battery charging system has encountered an error. The battery is not charging.
Steady amber	The battery is outside of the allowable charging temperature range. Charging will resume when the battery temperature is back in the acceptable range of 5 °C to 35 °C (41 °F to 95 °F).
Off	The computer is not on external power and the battery is operating normally.

About Battery Life and Conservation

Batteries that are stored outside the computer for long periods of time slowly discharge. ecom instruments recommends storing the battery in a charger to maintain battery performance.

Battery Conservation Tips

When You Want To:	Do This to Save Battery Power:
Use the computer and the Low Battery status icon appears or the Battery light comes on.	• Connect the computer to an external power source. • Or, save your data and press the Power button and select Shutdown. After the computer turns off, remove the battery and insert a fully charged battery.
Stop using the computer for 5 minutes or longer.	Make sure that the low battery icon is not on the screen and the Battery LED is not on. Press the Power button and choose Suspend to suspend the computer.

Store the computer for more than a day.	If you are storing the computer for a few days, like over the weekend, install a charged battery or connect the computer to a power source. If you are storing the computer for longer, remove and charge the battery, and then store both the battery and computer in a cool location. If you store the battery for several months, recharge the battery to keep it at peak performance.
Store the battery outside the computer.	Store the batteries in a charger.

About the Keypad

The i.roc® Ci70 -Ex comes with either a QWERTY numeric keypad or a numeric keypad. The computer has an ambient light sensor that detects low light and turns on the keypad backlight. By default, the keypad backlight is enabled in low light conditions. You can disable the keypad backlight to conserve power. Use Intermec Settings to configure the backlight. For help, see "Use Intermec Settings on the Computer" on page 35.

i.roc® Ci70 -Ex QWERTY Numeric Keypad

i.roc® Ci70 -Ex Numeric Keypad

Enter Characters on the QWERTY Keypad

You need to use the orange modifier key and the Shift key to access all characters and functions on the QWERTY keypad.
To type a character:

- Press the key for that character.
  To type a character or access a function on the overlay:
- Press and then press the key for the character or function. To only type characters or access functions on the overlay:
- Press twice to lock the orange modifier key to stay on, and then press the keys for the characters or functions.
  To type a single uppercase letter:
- Press and then the letter key.
  To type all uppercase letters:
- Press to turn on Caps Lock, and then press the letter keys. You can still type orange modifier characters by pressing and then the key for that character. To turn off Caps Lock, press .

Enter Characters on the Numeric Keypad

You need to use the orange modifier key and the green modifier key to access all characters and functions on the Numeric keypad.

To type a character or access a function printed in orange on the overlay:

- Press and then press the key for the character or function.

To type a character or access a function printed in green on the overlay:

- Press and then press the key for the character or function.

To type letters in the upper right corner of a key:

- Press and then press the key one to three times depending on the position of the letter.

For example, in the upper right corner of the 2 key there are the letters „ABC":

- To type „c" press 2 2 2.
- To type „C" press 1 and then press 2 2 2.

To only type letters:

- Press to lock the green modifier key, and then press the key one to four times depending on the position of the letter.

While the green modifier key is locked, press 1 to toggle between only uppercase and lowercase letters.

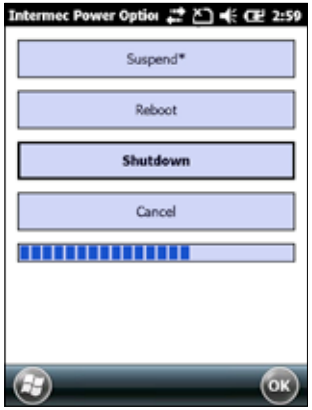
To unlock the green modifier key, press .

Note:
If uppercase letters are enabled and you unlock the green modifier key, you may need to press 1 to type lowercase letters.

About the Power Button

When you press the Power button, a dialog appears with a list of power options. If you do not select a power options setting, the currently selected action (the button outlined in bold) occurs after the timeout.

The Intermec Power Options Default Screen



Use the following table to understand the Intermec Power Options.

Note:
The Real Time Clock (RTC) will persist through all of the power options as long as it receives power from the Real Time Clock battery.

Intermec Power Options

Option	Description
Suspend	Medium power saving mode. The computer powers off all radios and internal devices not involved in saving the system state, but the phone stays on to receive calls. This option is the default setting. You can wake the computer by pressing the Power button, pulling the scanner trigger, receiving a call, scheduling an event such as an alarm, or by connecting external power.
Reboot	The computer does not save the current system state, but the registry and file systems are saved. The computer shuts down all running processes and restarts.
Cancel	The Power Options menu is cancelled.
Screen Off	Lowest power saving mode. The screen turns off, but the phone, all radios, and internal devices stay on. Tap the screen to turn the screen back on.
Shutdown	Very high power saving mode. The computer turns off everything. You must press Power or apply external power to restart the computer.

The Power Options screen is customizable. You can use Intermec Settings to determine which options are available to end users, the timeout until the default choice is selected, the default action if no option is selected, or to disable the Power Options screen. For more information on customizing the screen using Intermec Settings, see "Use Intermec Settings on the Computer" or see the Intermec Settings Command Reference Manual.

About the Intermec Dashboard Button

If the Ready-to-Work light blinks, your computer may be experiencing a problem. Press the Intermec Dashboard button (⓪) to launch the Intermec Dashboard application and view troubleshooting and status information.

You can press the ⓪ button at any time to bring up the Intermec Dashboard. If the computer is not healthy, the current issues are displayed at the top of the screen. If the device is healthy, you can use the Dashboard to view device information. For more information, see "About the Intermec Dashboard".

Configure the Screen Backlight

The display has an ambient light sensor that automatically adjusts the backlight intensity to conserve power and ensure the display is readable. By default, the screen turns off when there is no activity with the computer. Press a key or tap the screen to resume activity.

You can configure the screen backlight to turn off.

1 Tap Start > Settings > Power.
2 Tap Advanced on the horizontal scroll bar.
3 Select the screen power off settings for when the computer is on battery power or external power.

You can configure the screen brightness using Intermec Settings or from the Start menu.

1 Tap Start > Settings > System > Backlight.
2 Adjust the slider to the desired brightness level.
3 Tap OK.

Adjust the Volume

You can adjust the computer volume for your needs and your environment. The volume includes sounds you hear when you tap the screen or read bar codes with the imager. You can set the volume to off, very low, low, medium, high or very high (default).
You can also use the buttons on the right side of the computer to adjust the volume:

- The upper button increases the volume.
- The lower button decreases the volume.

You can adjust the volume settings using Intermec Settings or the horizontal scroll menu.

1 Tap the Volume icon at the top of the screen, and then tap the volume icon on the horizontal scroll menu.
2 Use your stylus or the ⌃ and ⌄ keys to adjust the volume slider to the volume you want, or select Off.

Insert a microSD Card

You can use a microSD card to increase file storage and install software.
The computer supports an optional 32 GB maximum capacity microSD card.

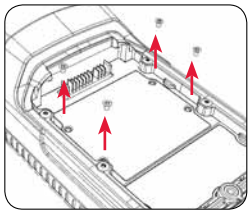
Note:
The computer resets when you open the card access door to insert the microSD card. Make sure you completely close the card access door before you use your computer.

ecom instruments recommends using the following microSD cards:

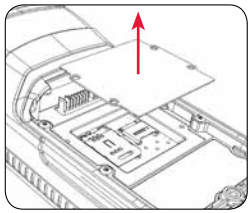
Card Type	Card Size	ecom Part Number
ATP Industrial Grade microSD card	1 GB	A0003477
ATP Industrial Grade microSD card	2 GB	A0003478
ATP Industrial Grade microSD card	4 GB	A0030305
ATP Industrial Grade microSD card	8 GB	A0030306

Install a microSD card in a i.roc® Ci70 -Ex

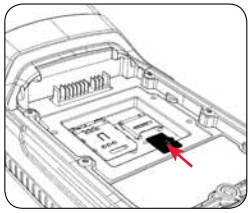
1 Press the Power button to turn off the computer.
2 Remove the handstrap and the battery.
3 Remove the four Phillips screws and open the card access door.



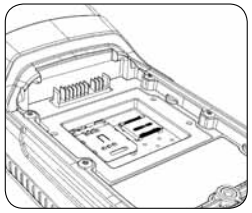
4 Slide the SIM card door to the left to unlock it and open the door.



5 Slide the microSD card door towards the top of the computer to unlock it and open the door.



6 Slide the microSD card into place.



7 Close the microSD card door and slide it towards the bottom of the computer to lock it in place.

8 Close the SIM card door and slide it to the right to lock it in place.

9 Close the card access door. Then replace the cover plate and fasten the four screws.

10 Install the battery. Press down firmly on the bottom of the battery. Then tighten the torx screw.

11 Reattach the handstrap.

12 Press the Power button. The computer cold boots.

Transfer Files To and From Your PC

The i.roc® Ci70 -Ex computer supports these two methods for transferring files to and from your PC:

- Using Microsoft ActiveSync or Windows Mobile Device Center.
- Using the i.roc® Ci70 -Ex computer as a mass storage device.

Use Microsoft ActiveSync to Transfer Files

You can use Microsoft ActiveSync (Windows XP or earlier) or Windows Mobile Device Center (Windows Vista or Windows 7) to establish a connection between your computer and a PC. After you connect to your PC, you can transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync and Windows Mobile Device Center are free applications available from the Microsoft website at www.windowsmobile.com/getstarted.

To establish a partnership between your computer and a PC, you need to physically connect your computer to your PC using these accessories:

- ecom Single Dock Art.-No. AS030301 or
- Intermec Desktop Dock equipped with Ci70 computer cup

Using these accessories, you can transfer files to and from your PC using ActiveSync.

1 Connect your mobile computer to your desktop PC using the adapter and USB cable.
2 Download ActiveSync from the Microsoft website and install ActiveSync on your PC.
3 Follow the onscreen instructions to establish a partnership. When the partnership is established, the Microsoft ActiveSync screen appears on your PC.

Use the Computer as a Mass Storage Device

You can connect the i.roc® Ci70 -Ex computer as a mass storage device to your desktop PC. When connected as a mass storage device, you can easily copy files to and from the mobile computer.

1 Go to www.datalight.com and download the Reliance Nitro Windows Driver (RNWD). You will need to login before you can download the driver.
2 Connect the mobile computer to your desktop PC using a USB cable.
3 Open Intermec Settings on the mobile computer by tapping Start > Settings > System > Intermec Settings.
4 From the Intermec Settings Main Menu, tap Device Settings > USB.
5 From the USB function driver menu, select Mass storage - Flash File Store and tap OK.
6 Copy files to and from your desktop PC to the mobile computer.

2

About the User Interface and Intermec Applications

Use this chapter to learn about the Windows Embedded Handheld user interface and how to interact with the screen. You can also use this chapter to learn about the Intermec applications on your computer, as well as additional Intermec applications you can download.

About the User Interface

The user interface for the Windows Embedded Handheld 6.5 operating system is different from previous versions of Windows Mobile. The interface is touch-friendly and easy to navigate. Use the following sections to understand how to interact with Windows Embedded Handheld 6.5.

About the Home Screen

When you turn on your mobile computer, the Home screen is the first screen that appears. The Home screen contains three navigation bars: the Title bar, the horizontal scroll bar, and the Tile bar.

The Windows Embedded Handheld 6.5 Home Screen

Use the Title bar icons to view the current status of information such as signal strength and battery power remaining. For more information on the Title bar icons, see "Title Bar Status Icons" on page 23.

A horizontal scroll bar appears when you tap an icon in the Title bar. This horizontal scroll bar makes it easy to access the applications associated with the Tile bar icons. The horizontal scroll bar also contains a magnifier which improves the touch experience by making parts of the screen large enough to tap with your finger.
The horizontal scroll bar also replaces tabs within Windows screens and allows for easier navigation.

Clock & Alarms Screen With Horizontal Scroll Bar

Use the Tile bar to navigate between screens and within applications.
The icons available on the Tile bar change depending on the application you are using.

Interact With the Screen
The Windows Embedded Handheld 6.5 interface supports the use of gestures with the finger or stylus to move around the screen. The table below explains the supported gestures.

Gesture	Description
Tap	Represents the left click of a mouse.
Double-tap	Represents the left double-click of a mouse.
Hold	Represents the right click of a mouse when you press and hold on the screen and a context menu appears.
Cancel	The Power Options menu is cancelled.
Flick	Initiates scrolling in the direction (horizontal or vertical) the finger or stylus moves across the screen.
Pan	Press and hold on the screen and then drag in any direction.

Title Bar Status Icons

Tappable icons in the Title bar immediately show you the status of your network, your phone, the volume, the battery, and the time. Use the following table to understand what the icons mean.

Title Bar Status Icon Descriptions

Icon	Description
	You have a new notification.
	You have a new text message.
	You have a new email message.
	You have a new instant message.
	The WWAN module is roaming.
	An alarm is set.
	The microphone is on.
	An internet call is in progress.
	A Bluetooth headset is detected.
	An ActiveSync connection has been established.
	There is a problem with the ActiveSync synchronization.
	An ActiveSync synchronization is in progress over USB.
3G	A UMTS connection is active.
3G+	A 3G+ network is available.
E	An EDGE network is available.
E	Connecting to an EDGE network.
E	An EDGE connection is active.
G	A GPRS network is available.

	Connecting to a GPRS network.
	A GPRS connection is active.
	An HSDPA network is available.
	Connecting to an HSDPA network.
	An HSDPA connection is active.
	Bluetooth is on.
	Wi-Fi is on but not connected, and no networks are detected.
	Wi-Fi is not connected to a network, and other networks are
	Other wireless networks are detected.
	Connected to a wireless network.
	Synchronizing through a Wi-Fi connection.
	Connected to a wireless network, and other networks are detected.
	Information about a new wireless network is available.
	A network connection is active.
	A network connection is inactive.
	The WWAN module has maximum signal strength.
	The WWAN module has no signal.
	The WWAN module capability is off.
	The WWAN module has no service.
	The WWAN module is searching for service.
	Data is being transferred.

	There is no SIM card present in the computer.
	The volume is on.
	The volume is off.
	The battery has a full charge.
	The battery has a high charge.
	The battery has a medium charge.
	The battery has a very low charge.
	The battery is attached to external power and is charging.
	No battery is installed in the computer.
	GPS locator is off.
	GPS locator is on.

Align the Screen

You may need to align your screen if you tap on one area and it registers in a different part of the screen. Make sure you only use the stylus to complete the alignment process.

1 Tap **Start (⊞) > Settings > System > Screen.**
2 Follow the prompts on the screen to complete the alignment process.

About Intermec Applications

ecom instruments provides many useful applications to help you configure, troubleshoot, and connect your computer to other devices and networks. You can also download additional applications from the Intermec website to help you use all of the features of your computer.

Applications Available on the Mobile Computer

Use this table to understand some of the Intermec applications available on your computer.

Intermec Applications Available on the Mobile Computer

Icon	Application	Description
	Bluetooth Audio	Use the Bluetooth Audio application to connect to a Bluetooth headset or hands-free device. For more information, see "Connect to a Bluetooth Audio Device" on page 42.
	iGPS	Use the iGPS application to improve the performance of GPS on your computer. For more information, see Improve GPS Performance on the Computer" on page 33. iGPS is only available on computers with WWAN module.
	Intermec Settings	Use Intermec Settings to configure your computer. You can use Intermec Settings to individually configure a computer or you can use it through SmartSystems to configure all of your computers.
	ISpyWiFi	Use ISpyWiFi to check your 802.11 status and diagnose issues with the connection. For more information, see Check 802.11 Network Status" on page 59.
	Profile Settings	Use Profile Settings to easily configure the computer for a specific use. You can choose predefined values for Power, and Scanning. Tap the Profile Setting you want to use. You will see a message that changes are saved and a check mark appears next to your choice. For more information on modifying Profile Settings options, see Configure Profile Settings With ecom instruments Settings" on page 34.
	ScanDiagnostic	Use the ScanDiagnostic application to troubleshoot problems with the internal or external scanner. For more information, see Use ScanDiagnostic to Troubleshoot the Scanner" on page 61.
	Wireless Center	Use the Wireless Center to turn radios (Wi-Fi, Bluetooth, phone) on and off and configure settings for each radio.
	Wireless Printing	Use the Wireless Printing application to connect to a Bluetooth printer. For more information, see "Connect to a Bluetooth Printer" on page 42.
	Wireless Scanning	Use the Wireless Scanning application to connect to a Bluetooth scanner. For more information, see "Connect to a Bluetooth Scanner" on page 41.

Note:
Installed applications may vary.

3

Use the WWAN Module

You can use the WWAN feature to transmit data through cellular wide-area networks (WANs).

About the optional WWAN Module

The i.roc® Ci70 -Ex mobile computer supports two types of cellular technology:

- CDMA
- UMTS

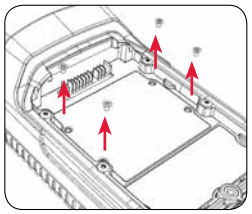
Note:
Your Flexible Network Radio mobile computer supports both CDMA and UMTS technology. Your Flexible Network Radio does not support Network Information and Time Zone (NITZ) messages to automatically set the system time.

Cellular features on the computer include data connectivity. You can also use a Bluetooth headset or hands-free kit for voice over IP (VoIP) applications.
After you turn on the WWAN module and activate service with your wireless carrier, you can customize the WWAN features and network settings.

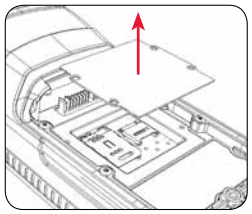
Activate the UMTS Module

You use a SIM card to activate the UMTS WWAN module on your computer. You can purchase the SIM card from your network provider.

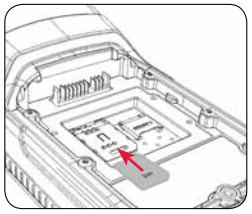
1 Press the Power button to turn off the computer.
2 Unscrew the battery's screw using a torx scredriver. Lift lower part of the battery to release it from the computer.



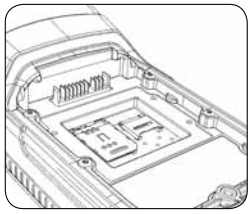
3 Remove the four Phillips screws and open the card access door.



4 Slide the SIM card door to the left to unlock it and open the door.



5 Slide the SIM card into the slot in the card access door.



6 Close the SIM card door and slide it to the right to lock it in place.

7 Close the card access door. Then release cover plate and fasten the four screws.
8 Install the battery. Press down firmly on the bottom of the battery. Then tighten the torx screw.
9 Press the Power button. The computer cold boots.

Activate the CDMA Module

To activate the CDMA radio module in your mobile computer, you need to contact your wireless carrier and set up an account for each mobile computer. The following table lists the carriers that ecom instruments currently supports. If your carrier is not listed in the table, please contact ecom instruments product support to see if it is now supported.

Currently Supported Carriers

Country	Carriers
United States	AT&T, Verizon

Turn the WWAN Module On and Off

Before you can start using your WWAN module, you need to enable it. You can use Wireless Center to enable and disable your WWAN connectivity, as well as Bluetooth and Wi-Fi communications.

1 Tap Start > Settings > Connections > Wireless Center.
2 Tap Phone to turn on the WWAN module
3 (Optional) To configure the WWAN module, tap Menu in the tile bar at the bottom of the screen.
4 Tap OK when you are done configuring the options.
5 Tap OK to close Wireless Center.

About Switching Network Carriers

Your Flexible Network Radio-enabled i.roc® Ci70 -Ex, or mobile computer contains a highly configurable WWAN platform. When you switch network carriers, or perform a clean boot, you need to set your cellular carrier, and your network connection.

Note:
Your cellular carrier and network connection are set independently of each other.
If you select a cellular carrier that is not supported on your current network connection, you must manually switch your network connection.

About the Network Connection

Note: When you perform a clean boot, the selected carrier will default to generic UMTS. When you perform a clean boot, all user-created network connection entries are deleted, and only the generic UMTS remains. After you perform a clean boot, you can find more information about generic UMTS by tapping Start > Settings > Connections > Connections > Tasks tab > Manage Existing Connections > Modem tab.
Your UMTS connection entry can be automatically built from your carrier issued SIM card. To automatically recreate your network connection, install your SIM card and tap Start > Settings > Connections > Connections > Tasks tab > Automatically configure connection.

Switch Network Carriers

Use the Carrier Selection application to quickly change your WWAN radio network carrier on your Flexible Network Radio-enabled i.roc® Ci70 -Ex, mobile computer.

1 Tap Start > Settings > Personal > Carrier Selection.
2 From the Carrier drop-down menu, select the new carrier and tap OK. A dialog box appears asking if you want to switch carriers.
3 Tap Yes to switch carriers.

If the update is successful, the Carrier Selection screen appears and displays the updated carrier information. If the update is unsuccessful, a message box appears. Tap Ok to return to the Carrier Selection screen. If you are switching to a CDMA network, or switching from a CDMA network to a UMTS network, you must add the WWAN connection in Intermec Settings.

1 Tap Start > Settings > System > Intermec Settings >Communications> WWAN Radio.
2 Select Add New WWAN Connection.
3 Enter a Connection Name. In the Phone Number field, enter #777 and tap OK. The Manage WWAN Radio State screen appears.
4 From Active Connection, select your Connection Name and Connect Now and tap OK.

4

Use GPS

When equipped with an optional WWAN module i.roc® Ci70 -Ex computer comes equipped with an integrated Global Positioning System (GPS). The GPS receiver can deliver standards-based National Marine Electronics Association (NMEA) data strings to GPS applications.

About the Integrated GPS on Your Computer

ecom instruments recommends that you use the GPS Intermediate Driver (GPSID) instead of directly accessing the GPS hardware. The GPSID is a Microsoft software component that interacts between applications and the GPS hardware.
As a Microsoft software component, the GPSID:

- allows multiple applications to simultaneously access the GPS data stream.
- provides access to GPS data without requiring applications to recognize and parse NMEA syntax.

Use the GPSID Installed on the Computer

To use the GPSID installed on your mobile computer, you need to configure the GPSID settings.

1 Tap Start > Settings > System > External GPS. The GPS Settings screen appears with Programs selected.

2 Select the COM port that you want your programs to use to get GPS data from your computer.
3 Tap Access in the horizontal scroll bar and select the Manage GPS automatically check box.

4 Tap OK.

Improve GPS Performance on the Computer

Use the iGPS application to improve the performance of the GPS on your i.roc® Ci70 -Ex computer. The integrated GPS module has three operating modes:

- Standalone
- MS Assisted (Mobile Station Assisted)
- gpsOneXTRA™ (WWAN computers only)

In Standalone mode, the GPS module relies solely on GPS satellites to determine position.
In MS Assisted mode, the computer can determine position without receiving GPS signals directly from satellites; instead, the computer receives GPS signals and information provided by the cellular network. Even when the computer can receive a satellite signal, MS Assisted can improve position accuracy and reduce the time to determine initial position (Time-To-First-Fix). Check with your cell phone carrier for availability and pricing for MS Assisted service.
Qualcomm's gpsOneXTRA Assistance technology provides enhanced operation for Standalone GPS. This option enables the UMTS-enabled computer to automatically download a small assistance data file from the XTRA servers through a brief internet access session. To use this option, you must have a valid and activated WAN data connection.

Note:
Internet connection fees may apply.

Another option you can configure with iGPS is the fix interval. The fix interval defines how often the GPS should provide new information. Larger intervals use less power, but many applications require small intervals to work correctly. The default for fix interval, in seconds, is 4. The Flexible Network Radio has a maximum interval of 4.

Note:
Anytime you change the GPS settings, the phone module automatically resets. It will not affect the functionality of the computer.

To improve GPS performance:

1 Go to Start > Settings > System > iGPS.
2 In the Fix Interval tab, enter a value for the fix interval.
The default setting is 4 and should be optimized for most applications.
3 Tap the Fix Type tab and select one of these options: Standalone (1), MS assisted (2), or Enable gpsOneXTRA (check box).
4 Tap OK.

5

Configure the computer

Use this chapter to learn about the available methods for configuring your mobile computer and how to use Intermec Settings. You can also use this chapter to learn how to configure network communications and wireless security.

Note:
Depending on your firmware version of your i.roc Ci70 -Ex, the menu structure may vary.

How to Configure the Computer
You can configure many parameters on the computer such as the bar code symbologies it decodes or the network settings. The values you set for these parameters determine how the computer operates.

There are several ways to configure the computer:

- Directly on the computer. You can use Intermec Settings directly on the computer to change only the settings on that computer. For more information, see the next section, "Use Intermec Settings on the Computer."
- Remotely using Intermec SmartSystems Foundation. When you use Smart Systems, you can remotely configure all of your i.roc® Ci70 -Ex mobile computers as well as other SmartSystems-enabled Intermec computers and peripherals.
- You can use a third-party device management product that supports the computer and Intermec Settings, such as Soti MobiControl or Wavelink Avalanche. For more information, visit the Device Management page on the Intermec website.

You can also configure the computer with configuration bundles that you create using SmartSystems Foundation. For more information, see the SmartSystems Foundation Online Help.

Use Intermec Settings on the Computer
Use Intermec Settings to configure parameters for Intermec applications on the computer as well as some device-specific parameters like volume. You can configure parameters for important functions like data collection and communications.

Start Intermec Settings
Intermec Settings is located on the System screen.

- Tap Start > Settings > System > Intermec Settings. The Intermec Settings Main Menu appears.

About the Structure of Intermec Settings
Use the tables below to help find the parameters in Intermec Settings that you want to configure. Each table contains the parameters for one of the Intermec Settings Main Menu options.

If you see > next to a menu option, there are more screens available in the next level. If

you see ... next to a menu option, there is only one more screen available.
Most parameters are saved as soon as you tap OK. Some settings such as the Serial Port Switch require you to reboot the computer for the changes to take effect.

Bluetooth Scanners Settings

Communications Menu

Communications Options	Parameters You Can Configure
Device Name	Device Name
802.11 Radio	• Radio Enabled • Security Choice • Funk Security • IP Settings • Certificates • Allow Security Changes
Ethernet Adapter	• Not user accessible
Bluetooth	Bluetooth settings (power,discoverable, connectable etc.)
WWAN Radio	• Add new WWAN Connection • Edit WWAN Connections • Manage WWAN Radio State • Carrier Selection • WWAN Information

Device Settings Menu

Device Settings Options	Parameters You Can Configure
Backlight	Backlight settings (display backlight, keypad backlight, light level)
Date and Time	Date and time settings
Features Disabled by Policy	None (read-only)
Good Read	• Bluetooth Scanner • RFID Scanner • Internal scanner • Dock tethered scanner
IDL Runtime Versions	Read-only
Keypad	Handle trigger Scan button remapping
Power Management	• Power button • Battery power • External power • Device off sensor
Profile Settings Application	• Power • Scanning
Screen	• Screen rotation Sensor
Sounds	Volume settings
System Component Versions	System component versions (Read-only)
USB	USB connections

Printers Menu

Printers Options	Parameters You Can Configure
Printer (if connected through Bluetooth)	Printer settings (auto detect printer, memory, display etc.)

Note:
The Printer menu displays settings for the Bluetooth connected printers.
The settings that appear in the menu are dependent on the printer that is paired with the device. The printer needs to be using the Wireless Printer applet.

Core Messaging Menu

Core Messaging Options	Parameters You Can Configure
Servier IP	Server IP (read-only)
Associated Server IP	Associated Server IP
Broadcast Name	Broadcast name
Port	Port (read-only)
Keep Alive Ping Interval	Keep alive ping interval

Smart Systems Information Menu

Smart Systems Information Options	Parameters You Can Configure
Identity	Identity information (hardware version, firmware version, OS version etc.) (read-only)
Administrator	Administrator settings (name, phone and e-mail)
Location	Location settings (country, state, city, campus, detail)
Information	Device notes (read-only)

Device Monitor Menu

Device Monitor Options	Parameters You Can Configure
Device Health Controls	• Enable health data collection • Enable device health appication • Enable blue light (LED) • Set rule file location • Set data refresh periods
Device Health Secreen Captures	Device health sceeen capture settings (directory and screen capture allowed)
Disabled Executables	None (read-only)
Device Wipe	Device wipe settings (enable wipe and interval)

License Manager Menu

License Manager Options	Parameters You Can Configure
About	About settings (read-only)
License Vault	None (displays applications that are licensed)
Head Module settings	• Enable Modules • Setup Modules

Virtual Wedge Menu

Virtual Wedge Options	Parameters You Can Configure
Enable Virtual Wedge	Enable virtual wedge
Virtual Wege Method	Set virtual wedge method
Barcode Scanner Wedge	Bar code scanner wedge settings (bar code scanner grid and label encoding)
Magstripe Reader Wedge	Magstripe Reader Grid

Location Services Menu

Location Services Options	Parameters You Can Configure
Server	Server settings (port and anable server)
Virtual GPS	Virtual GPS settings

Navigate in Intermec Settings
You can easily navigate through the screens in Intermec Settings to find the parameter you need to configure.

To move down a level in Intermec Settings:
- Tap the menu item in the list.

To move back a level in Intermec Settings:
- Tap Back or Cancel on the Tile bar.

To save a parameter setting:
- Tap OK.

To exit Intermec Settings:
- Tap Menu > Exit or OK.

Configure Profile Settings With Intermec Settings
A profile is a set of predefined values that you can easily apply to the computer to ensure optimal performance in a specific scenario. The end user does not need to figure out the right" settings because we have already done that work for you. Profile Settings is available from the Start menu so you can make it available to the end user for easy configuration. Use Intermec Settings to determine the profiles you want the end user to see in the Profile Settings application.

1. Go to Device Settings > Profile Settings Application.
2. Select Power or Scanning.
3. From the Camera, Power, or Scanning submenu, check or clear the Display check box for the settings you want to have available to the end user.
4. Click OK to save your selection.

Restore Default Settings
You can easily restore a menu to its default settings or all of the Intermec Settings parameters to their default settings if necessary.

1. Navigate to the menu that you want to restore to defaults.
2. Tap Menu > Restore Menu Defaults.
3. When prompted, tap Yes to restore the menu default settings.
4. If prompted to refresh the computer, tap Yes.

You can restore defaults settings for all parameters.

1. Tap Menu > Restore All Defaults. The applications asks if you are sure you want to restore all defaults.
2. Tap Yes.

After several minutes, all of the default settings are restored.

Hide Menu Items in Intermec Settings
You can hide items in the Intermec Settings menus if you do not want to have them available for other users to access. Hidden items are not saved when you back up your settings in the SmartSystems console.

On the mobile computer, you can:
- hide menu items by tapping and holding the item, and then choosing Hide Menu Item from the popup list. When asked if you want to hide the menu, tap Yes.
- restore all hidden items in all menus, by tapping Menu > Unhide All Items.

Note:
When you restore default settings in Intermec Settings, only the settings for visible items are restored to defaults. The settings for hidden menu items are not affected.

Use Intermec Settings Remotely With SmartSystems Foundation

Your mobile computer is SmartSystems-enabled, which lets you open Intermec Settings from the SmartSystems console to remotely configure all of your mobile computers. For more information on SmartSystems, see Manage the Computer Using SmartSystems Foundation" on page 98.

1 In the SmartSystems console, select a mobile computer and right-click.
2 From the menu, select Intermec Settings.
3 Configure the settings you need to change. As you choose parameters from the tree structure, help for each parameter appears in the upper right pane of Intermec Settings.
4 When you are done making changes, choose File > Save Settings.

For help using Intermec Settings, click Help > Contents. For information on all of the parameters in Intermec Settings, see the Intermec Settings Command Reference Manual.

About Network Communications

You can easily add the mobile computer to your wireless or wired data collection network. You can connect your computer using:

- 802.11a/b/g/n radio communications.
- Ethernet communications.
- Bluetooth communications.
- USB and serial communications.

Configure 802.11a/b/g/n (Wi-Fi) Radio Communications

Caution Make sure all components with antennas are at least 30 cm (1 ft) apart when power is applied. Failure to comply could result in equipment damage.

The mobile computer contains an 802.11 radio to transfer data using wireless communications and to support the TCP/IP network protocols. This section of the manual assumes that your wireless network is set up, including your access points. By default, the 802.11 radio is disabled. Use the following procedure to enable the Wi-Fi radio using Intermec Settings.

1 Tap Start > Settings > System > Intermec Settings.
2 From the Intermec Settings main menu, tap Communications >802.11 Radio> Radio Enabled.
3 Select the Radio Enabled check box and tap OK. By default, the computer uses Funk security and enables DHCP.
4 Use Intermec Settings to configure any other parameters you need to use for communication with your network.
5 Configure 802.11 security. For help, see "About Wireless Security" on page 44.

Configure Bluetooth Communications

Your mobile computer is Bluetooth™-enabled, which lets you connect to other Bluetooth devices, such as scanners, printers, or audio devices. You need to turn on the Bluetooth radio before you can discover and connect to other Bluetooth devices. By default, the radio is turned off. You can configure Bluetooth communications using Intermec Settings or from the Start menu.

1 Tap Start > Settings > Intermec Settings > Communications > Bluetooth.

2 Select the Turn on Bluetooth check box.

3 (Optional) If you want your computer to be visible to other Bluetooth devices, choose "Discoverable".

4 Tap OK.

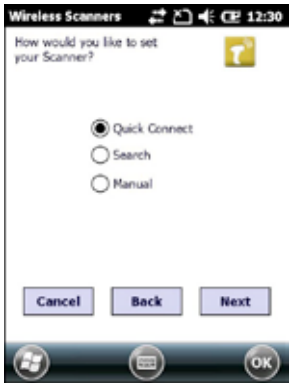
The Bluetooth radio maintains its state through a reboot or cold boot and maintains virtual COM ports. But, if you clean boot your computer you need to recreate pairings to devices.

Connect to a Bluetooth Scanner

You can connect the computer to an Intermec Bluetooth scanner, such as the SF51 or SR61.

1 Tap Start > Settings > System > Wireless Scanning.

2 Tap Add Device.



3 Select Quick Connect, Search, or Manual. Follow the onscreen instruction to add a wireless scanner.

Connect to a Bluetooth Printer

To configure your computer for Bluetooth wireless printing, you need to:

- create an application that opens the wireless printing COM port on your computer. For help, see the Bluetooth Resource Kit, which is part of the Intermec Developer Library (IDL), available from the Intermec website at www.intermec.com/idl.
- select the current wireless printer on your computer. For help, see the next procedure.

Note:

You can also print wirelessly using Microsoft APIs with Bluetooth extensions for Winsock and Bluetooth virtual COM ports. For help, see the Bluetooth Resource Kit documentation.

1 Tap Start > Settings > System > Wireless Printing.

2 Tap Search to find a printer, or tap Manual to enter a device ad dress. Follow the onscreen instructions to select the current wireless printer.

3 (Optional) Tap Print Test Page. The printer prints out a test page.

Connect to a Bluetooth Audio Device

Use the Bluetooth Audio enabler to discover, activate, and connect to Bluetooth audio devices such as a headset. This enables system sounds to be monitored through the headset.

1 Tap Start > Settings > System > Bluetooth Audio.

2 Tap Search to find your Bluetooth headset or hands-free device.

3 Select your device from the list and configure any settings.

4 Click OK when you are done.

Create an ISP Connection

You can create an Internet Service Provider (ISP) connection to send and receive email messages using Messaging (Outlook Email) and view web pages using Internet Explorer Mobile. You need to get your ISP dial-up access telephone number, a user name, and a password from your ISP.

1 Tap Start > Settings > Connections > Connections.

2 Under My ISP, tap Add a new modem connection.

3 Enter a name for the connection, such as ISP Connection."

4 If you are using an external modem connected to your mobile computer with a cable, select Hayes Compatible on COM1 from the Select a modem list.

5 Tap Next.

6 Enter the access phone number and then tap Next.

7 Enter the User name, Password, and Domain (if provided by an ISP or your network administrator).

8 Tap Finish.

9 On the Connections screen, tap Advanced on the horizontal scroll.

10 Tap Dialing Rules.

11 When the Enable Dialing Rules box appears, tap OK.

12 Tap Edit.

13 In the Name field, enter your phone type (Home, Mobile, or Work).

14 Tap OK until you exit the Connections screen.

Create a VPN Server Connection
You can create a Virtual Private Network (VPN) connection to securely connect to servers, such as a corporate network, through the Internet. Before you can create a VPN connection, you need this information from your network administrator:

- User name
- Password
- Domain name
- TCP/IP settings
- Host name or IP address of the VPN server

After you have located this information, you can create a VPN server connection.

1 Tap Start > Settings > Connections > Connections.

2 Under My Work Network, tap Add a new VPN server connection.

3 Step through the screens to set up your VPN connection.

About Wireless Security

The computer provides five types of security for your wireless network:

- Wi-Fi Protected Access 2 (WPA)
- Wi-Fi Protected Access (WPA)
- 802.1x
- LEAP
- WEP

This section explains how to configure wireless security on your mobile computer. ecom instruments recommends that you implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management as appropriate.
You must use either Funk or Microsoft security to implement your security solution. For details, see the next section, Choose Between Microsoft and Funk Security." ecom instruments recommends that you always implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management.
If you are using WPA-802.1x, WPA2-802.1x, or 802.1x security, this section also assumes that your authentication server and authenticators are properly configured.

Note:
Your security choice does not depend on your authentication server. For example, you can choose Funk security if you use Microsoft Active Directory® to issue certificates.

Choose Between Microsoft and Funk Security
The computer supports both Funk and Microsoft security, which dynamically select wireless networks based on your preferences. The option you choose depends on your network security needs.

- If you are using the computer in a static environment that requires a high level of security, you should use Funk security, which offers CCX v4.0 compliance, support for LEAP and TTLS, and configuration for up to four profiles. To use Funk security, you need to select a profile. For help, see the next section, Select a Funk Security Profile."

- If you are primarily using the computer to connect to Wi-Fi hotspots, you may want to use Microsoft security. To use Microsoft security, you need to select it as your security choice. For help, see Select "Microsoft as Your Security Choice" on page 47.

Select a Funk Security Profile

You can define up to four profiles for Funk security. Different profiles let your computer communicate in different networks without having to change all of your security settings. For example, you may want to set up one profile for the manufacturing floor and one for the warehouse. By default, the active profile is Profile 1.

Select a Funk Security Profile
Use the following procedure to select a Funk security profile.

1 Start Intermec Settings.
2 Choose Communications > 802.11 Radio > Funk Security.
3 Choose a profile. A list of configurable settings appears.
4 (Optional) In the Profile Label text box, enter a meaningful name for your profile.
5 Configure your security settings. For help, see the next sections.
6 Repeat Steps 3 through 5 for each profile you want to define.
7 Set an active profile by choosing it in the Active Profile list.
8 Save your settings.

Configure WPA or WPA2 Enterprise (802.1x) Security With Funk
Use these procedures to set WPA-802.1x or WPA2-802.1x security on your computer with Funk security.

1 Make sure the communications and radio parameters on your 70 Series are configured.
2 Make sure Funk is selected as your security choice.
3 Start Intermec Settings.
4 Choose Communications > 802.11 Radio > Funk Security.
5 Select the profile you want to configure.
6 For Association, choose WPA or WPA2. Encryption automatically defaults to TKIP or AES, respectively.
7 For 8021x, choose TTLS, PEAP, EAP-FAST, or TLS.
8 If you choose TTLS, EAP-FAST, or PEAP:
a For Prompt for Credentials, choose Enter credentials now.
b Enter a User Name and User Password.
c For Validate Server Certificate, choose Yes.

Note:
The correct date must be set on your computer when you enable Validate Server Certificate.

9 If you choose TLS:
a Load a user and root certificate on your computer. For help, see "Load a Certificate" on page 50.
b Enter a User Name and Subject Name.
c For Validate Server Certificate, choose Yes.

Configure WPA or WPA2 Personal (PSK) Security With Funk
Use the following procedure to configure WPA-PSK or WPA2-PSK with Funk security.

1 Make sure the communications and radio parameters on your computer are configured.
2 Make sure Funk is selected as your security choice.
3 Start Intermec Settings.
4 Choose Communications > 802.11 Radio > Funk Security.
5 Select the profile you want to configure.
6 For Association, choose WPA or WPA2.
7 For 8021x, choose None.
8 For Pre-Shared Key, enter the pre-shared key or passphrase.
The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters.
The value must match the key value on the access point. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the i.roc® Ci70 -Ex internally converts it to a pre-shared key. This value must match the passphrase on the authenticator.
9 Save your settings.

Configure 802.1x Security With Funk Security
Use the following procedure to configure 802.1x-WEP security with Funk security. ecom instruments recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.
2 Make sure Funk is selected as your security choice.
3 Start Intermec Settings.
4 Choose Communications > 802.11 Radio > Funk Security.
5 Select the profile you want to configure.
6 For Association, choose Open.
7 For Encryption, choose WEP.
8 For 8021x, choose TTLS, PEAP, or TLS.
9 If you chose TTLS or PEAP:
a Enter a User Name.
b For Prompt for Credentials, choose Enter credentials now.
c Enter a User Password.
d For Validate Server Certificate, choose Yes.
10 If you choose TLS:
a Load a user and root certificate on your computer. For help, see "Load a Certificate" on page 50.
b For Validate Server Certificate, choose Yes.
c Enter a User Name and Subject Name.
11 Save your settings.

Configure LEAP Security With Funk
After you configure the communications and radio parameters on your mobile computer and select Funk as your security choice, you can configure LEAP.

1 Start Intermec Settings.
2 Choose Communications > 802.11 Radio > Funk.
3 Select the profile you want to configure.
4 For 8021x, choose LEAP.
5 For Association, choose Open, WPA, WPA2, or Network EAP. Encryption automatically defaults to TKIP if you choose WPA, AES if you choose WPA2, and WEP if you choose Open or Network EAP.
6 For Prompt for Credentials, choose Enter credentials now.
7 Enter a User Name and User Password.
8 Save your settings.

Configure Static WEP Security With Funk Security
Use the following procedure to configure static WEP security with Funk. ecom instruments recommends that you use WPA2-PSK instead of WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.
2 Make sure Funk is selected as your security choice.
3 Start Intermec Settings.
4 Choose Communications > 802.11 Radio > Funk Security.
5 Select the profile you want to configure.
6 For Association, choose Open.
7 For Encryption, choose WEP.
8 For 8021x choose None.
9 Define a value for the keys you want to use. You can define up to four keys (Key 1 through Key 4). Enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio. Set a 5- byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.
10 For Transmit key, choose the key you want to use for transmitting data.
11 Save your settings.

Use Open (No Security) Associations with Funk
Use the following procedure to configure your mobile computer for open security using Funk.

1 Start Intermec Settings.
2 Choose Communications > 802.11 Radio > Funk Security.
3 Select the active profile you are using.
4 For Association, choose Open.
5 For Encryption, choose None.
6 Tap OK. Your settings are saved.

Select Microsoft as Your Security Choice
The default security setting is Funk. If you want to use Microsoft Wireless Zero Configuration (WZC) security, you need to select it as your security choice. After you select Microsoft as your security choice, you will be prompted to save your settings and reset the computer for your change to take effect.

With Microsoft as your security choice, you can configure:
- WPA or WPA2
- 802.1x
- Static WEP

Select Microsoft Security
Use the following procedure to select Microsoft security.

1 Start Intermec Settings. For help, see "Configure the Computer" on page 34.
2 Choose Communications > 802.11 Radio > Security Choice.
3 From the Security Choice list, select Microsoft Security. An alert box appears telling you that you must save your settings and reboot the computer for the new security choice to take effect.
4 Choose Yes. The computer resets and starts with Microsoft Security as the Security Choice.

Configure WPA or WPA2 Enterprise (802.1x) Security With Microsoft
Use these procedures to set WPA-802.1x security on your computer with Microsoft security.

1 Make sure the communications and radio parameters on your computer are configured.
2 Start Intermec Settings.
3 Choose Communications > 802.11 Radio > Microsoft Security.
4 For Infrastructure Mode, choose Infrastructure.
5 For Network Authentication, choose WPA or WPA2. Data Encryption automatically defaults to TKIP for WPA and AES for WPA2.
6 For 802.1x Authentication, choose either TLS, or PEAP.
7 If you choose TLS:
a Load a user and root certificate on your computer. For help, see "Load a Certificate" on p.50.
b Choose Properties. The Certificates dialog box appears.
c Select the certificate you want to use from the list. The User Logon dialog box appears.
d Enter a User Name and Domain and tap OK.
e Tap OK to exit the Certificates dialog box.
f Press OK to save the Microsoft Security settings.
8 If you choose PEAP:
a Load a root certificate of the authentication server on your computer. For help, see "Load a Certificate" on p.50.
b Press OK to save the security settings and the User Logon dialog box appears.
c Enter a User Name, Password, and Domain. Select Save Password if you want to save the password for future authentication sessions.
d Press OK to save the Microsoft Security settings.

Enable WPA or WPA2 Personal (PSK) Security With Microsoft
Use the following procedure to enable WPA-PSK With Microsoft Security.

1 Make sure the communications and radio parameters on your computer are configured.
2 Start Intermec Settings.
3 Choose Communications > 802.11 Radio > Microsoft Security.
4 For Infrastructure Mode, choose Infrastructure.
5 For Network Authentication, choose WPA-PSK. Data Encryption automatically defaults to TKIP for WPA and AES for WPA2.
6 For Pre-Shared Key, enter the pre-shared key or the passphrase. The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the authenticator. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the computer internally converts it to a pre-shared key.
7 Save your settings.

Configure 802.1x Security with Microsoft
Use the following procedure to configure 802.1x security with Microsoft security. ecom instruments recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.
2 Start Intermec Settings.
3 Choose Communications > 802.11 Radio > Microsoft Security.
4 For Infrastructure Mode, choose Infrastructure.
5 For Network Authentication, choose Open.
6 For Data Encryption, choose WEP.
7 For 802.1X Authentication, choose TLS or PEAP.
8 If you choose TLS:
a Load a user and root certificate on your computer. For help, see "Load a Certificate" on page 50.
b Choose Properties. The Certificates dialog box appears.
c Select the certificate you want to use from the list. The User Logon dialog box appears.
d Enter a User Name and Domain and tap OK.
e Tap OK to exit the Certificates dialog box.
f Press OK to save the Microsoft Security settings.
9 If you choose PEAP:
a Load a root certificate of the authentication server on your computer. For help, see "Load a Certificate" on page 50.
b Press OK to save the security settings and the User Logon dialog box appears.
c Enter a User Name, Password, and Domain. Select Save Password if you want to save the password for future authentication sessions.
d Press OK to save the Microsoft Security settings.
10 For Network Key Setting, choose Automatic.
11 Save your settings.

Configure Static WEP Security With Microsoft
Use the following procedure to configure static WEP security with Microsoft security. ecom instruments recommends that you use WPA2-PSK instead of WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.
2 Start Intermec Settings.
3 Choose Communications > 802.11 Radio > Microsoft Security.
4 For Network Authentication, choose Open.
5 For Data Encryption, choose WEP.
6 For Network Key Setting, choose Enter Key and Index.
7 For Network Key Value, enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio. Set a 5-byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be pre ceded by 0x and contain 5 or 13 hex pairs.

8 For Network Key Index, select the key you want to use for data transmission.
9 Save your settings.

Use Open (No Security) Associations With Microsoft

Use the following procedure to configure your mobile computer for open security using Microsoft WZC.

1 Start Intermec Settings.
2 Choose Communications > 802.11 Radio > Microsoft Security.
3 For Network Authentication, choose Open.
4 For Data Encryption, choose Disabled.
5 Tap OK. Your settings are saved.

Load a Certificate

To use transport layer security (TLS) with WPA or 802.1x security, you need a unique client certificate on the computer and a trusted root certificate authority (CA) certificate. Certificates are pieces of cryptographic data that guarantee a public key is associated with a private key. They contain a public key and the entity name that owns the key. Each certificate is issued by a certificate authority.

1 Start Intermec Settings.

2 Go to Start > Settings > System > Intermec Settings.

3 Tap Communications > 802.11 Radio > Certificates. The Certificates screen appears.

4 To import a certificate chain:
a Tap Import Certificates to install the selected certificate.
b In the CertImportUI screen, tap the <<< button next to the Select pfx to import text field.
c Select the root certificate from the list.
d Tap Import Certificate.

5 To import user and root certificates from a Microsoft IAS server:
a Tap Import Certificates.
b Tap Web Enrollment.
c Enter the User, Password, and Server (IP address) to log into the server.
d Tap OK. A dialog box appears asking if you want to load the root certificate.
e Tap OK. The Enrollment Tool message box appears telling you that the certificate has been added.
f Tap OK to close the message box.

6

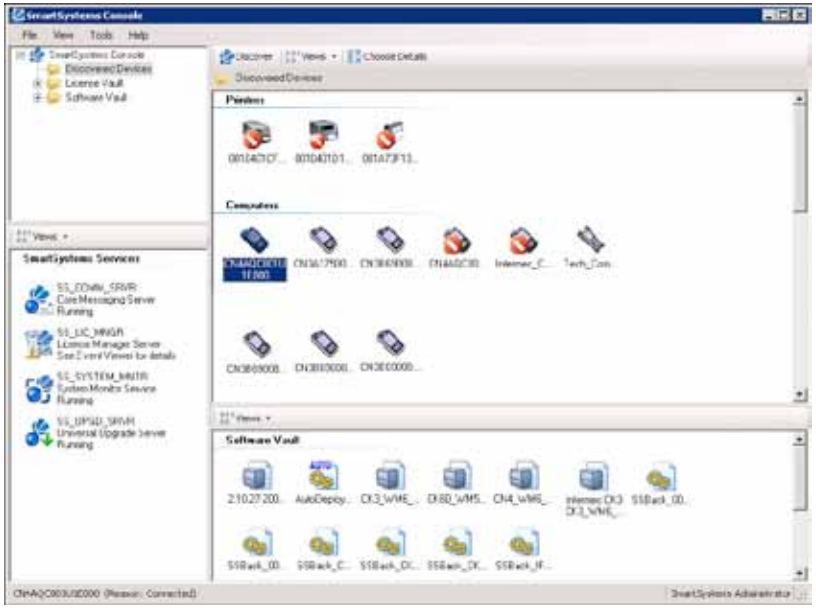
Manage the computer

Use this chapter to learn how to remotely update, configure and monitor your ecom instruments mobile computers. You will also find information on installing and developing software applications as well as how to upgrade the system software.

Manage the Computer in Your Network
When you have multiple mobile computers and peripherals in your network, it is essential to have an easy way to manage updates, configure all of the devices, and remotely troubleshoot problems. Intermec provides a free device management software platform called SmartSystems™ Foundation to help you manage your devices. You can also purchase third-party device management software through a vendor.

Manage the Computer Using SmartSystems Foundation
Intermec SmartSystems Foundation is a software platform that lets you manage all of your SmartSystems-enabled devices simultaneously from a central server. The SmartSystems Foundation console displays all SmartSystems-enabled computers and peripherals in your network.

Intermec SmartSystems Foundation Console



Through the console, you can:

- drag-and-drop configuration bundles, operating system updates, and firmware upgrades to multiple computers.
- save configuration settings from a single device and deploy those settings to many devices simultaneously.
- remotely change settings on SmartSystems-enabled computers and peripherals. The SmartSystems Foundation console can report on asset locations and battery status, making it easier to manage your mobile devices.

With a Provisioning license, SmartSystems Foundation can automatically push software, configuration settings, and other files to connected mobile computers. The license also enables ScanNGo, which makes connecting additional mobile computers to your wireless network as easy as reading bar codes. You can download SmartSystems Foundation from the Intermec website at no charge. For more information, visit www.intermec.com/SmartSystems. To purchase a Provisioning license, contact your local Intermec sales representative.

Manage the Computer Using Third-Party Software
You can use third-party software such as Wavelink Avalanche to centrally manage your ecom instruments devices. Device management software enables you to update software, increase security, track your assets, and troubleshoot devices remotely. You can download the Wavelink Enabler for the mobile computer from the Wavelink website. For more information, visit the Intermec website and search for Wavelink Avalanche or visit www.wavelink.com to download the enabler.

Develop and Install Applications
Use the Intermec Resource Kits to develop applications to run on the mobile computer. The Resource Kits are a library of C++, .NET, Java, and web components grouped by functionality that you can use to create applications for the computer. The Resource Kits are part of the Intermec Developer Library (IDL), and can be downloaded from the Intermec website at www.intermec.com/idl.
For more information, see the Intermec Developer Library Resource Kit Developer Guide.

Package Your Application
For very simple applications, the executable file may be the only file you need to deploy. More typically, you will have a set of files to install.
ecom instruments recommends using .cab files to install your applications. The computer uses standard Windows Mobile .cab files and will install third-party .cab files.

Choose a Target Location
You can have your .cab file place your application in any of these memory locations on the mobile computer:

- The ObjectStore.
- The optional microSD card. Depending on available disk space, you may want to consider installing your application files on the microSD card. Using a card creates the Storage Card folder on the computer.
- The non-volatile Flash File Store. Applications and data in the Flash File Store will persist through a clean boot.

Note:
The Flash File Store is erased if you reflash the operating system image.

Files copied to any of these locations are safe when you cold boot the computer as long as the AutoRun system is installed in the appropriate location. When AutoRun is installed on the computer, all .cab files in the CabFiles folder are automatically extracted after a cold boot. For more information about AutoRun, see the Intermec Developer Library Resource Kit Developer Guide.

Install Applications Using SmartSystems Foundation Console
You can use the SmartSystems console to drag-and-drop Intermec applications onto your mobile computer. The console is part of SmartSystems Foundation.

1. Download your application file from the Intermec website and unzip it on your desktop PC.
2. Double-click the application file to install it. The application file should appear in the Software Vault.
3. From the SmartSystems console in the Software Vault, drag-and-drop the application onto each mobile computer in your network, or drop the application on a group of computers contained in a folder.

Install Applications Using Microsoft ActiveSync
When you only have a few computers to update with applications, you can copy files using Microsoft ActiveSync. This procedure assumes that Microsoft ActiveSync is installed on your PC and is up and running.

1 Connect to the mobile computer via ActiveSync.
2 Copy the .cab files from your development PC to the computer.
3 Reboot or cold boot the computer.
4 After the boot process is finished, browse to the .cab files and tap the files to install them.

Install Applications Using a Storage Card
Use a storage card to install applications on one computer at a time or if you have no network connection.

1 Copy your application file to the storage card.
2 Install the storage card in the mobile computer.
3 On the mobile computer, browse to the Storage Card folder and run your application.

Launch Applications Automatically
There are two ways to launch an application automatically on a cold boot:

- Set up your .cab file to place a shortcut to the application in the \Windows\ StartUp directory at install time.
- Use AutoRun.exe to start your application at boot time. AutoRun ships on the computer and automates other operations.

At boot time, AutoRun executes any commands found in its data file, Autouser.dat. For more information on how to use the AutoRun.exe feature, view the Readme.txt file located in the My Device\Flash File Store\2577 directory on your computer.

Update the System Software
The mobile computer uses SmartSystems bundles to update the operating system (OS) and the system software.
You can use these methods to update your mobile computer:

- You can update individual computers, or multiple computers at the same time using the SmartSystems console. For help, see the next section, Update Individual or Multiple Computers Using the SmartSystems Console".
- You can update individual computers using a microSD card.

Update Individual or Multiple Computers Using the SmartSystems Console
You can use the SmartSystems console to update the operating system or system software on your mobile computer. The console is part of SmartSystems Foundation and is available from the ecom instruments website. Before you can update your mobile computer, you need:

- SmartSystems Foundation. To download SmartSystems Foundation, go to www.intermec.com/SmartSystems and click the Downloads tab.

- the SmartSystems bundles you want to install. These SmartSystems bundles are available from the Intermec website at www.intermec.com. Go to Support > Downloads > OS/Firmware/Drivers list.

After you have located these items, you can update your mobile computer using SmartSystems Foundation.

1 Open the SmartSystems console.
2 Make sure the mobile computer is discovered.
3 Make sure the mobile computer is in a powered dock or that power management is disabled.
4 Download the SmartSystems bundle to your PC.
5 Double-click the SmartSystems bundle on your PC to extract the update files to the software vault.
6 From the SmartSystems console, locate the bundle to install and drag them to each mobile computer (or group in a folder) you want to update. The SmartSystems console installs the update on your mobile computers.

After the download is complete, your mobile computer begins the update process and automatically performs a cold boot. The computer then boots into a special Update Loader mode where the computer has no network connections and is completely unusable. This process can take anywhere from 30 seconds to 15 minutes depending on the update.

After the update is complete, the computer boots again.

Note:
The SmartSystems console indicates that your mobile computer is offline, by displaying a red stop symbol, until the computer reboots and reconnects to the system.

Update Individual Mobile Computers Using a microSD Card
You can transfer upgrade bundles from your desktop PC to your mobile computer using a storage card. Before you can update your mobile computer, you need:

- the SmartSystems bundles you want to install. These SmartSystems bundles are available from the Intermec website at www.intermec.com. Go to Support > Downloads > OS/Firmware/Drivers list.
- a microSD card formatted to FAT or FAT32.

After you have located these items, you can update your mobile computer using a storage card.

1 Download the SmartSystems bundle to your PC and note the download location.
2 On your desktop PC, navigate to the download location and select the folder with the correct firmware version. For example, umts_wwe or umts_tp.
3 Transfer the autoflash.img file into the root directory of the microSD card.
4 Turn off your mobile computer and install the microSD card in your mobile computer. For help, see Insert a MicroSD Card" on page 29.
5 Turn on your mobile computer. The update process begins.
Your mobile computer may restart several times during this process. When the update is complete, the Autoflash Complete message appears.
6 Remove the microSD card.
7 Reboot your mobile computer and follow the setup process.

Note:
If you do not remove the storage card, the update process repeats each time the computer reboots.

7

Troubleshoot and Maintain the computer

If you encounter any problems while using the i.roc® Ci70 -Ex computer, look in this chapter to find a possible solution. You will also find information on routine maintenance.

About the Intermec Dashboard

The Intermec Dashboard is designed to provide proactive monitoring of your mobile computers to prevent downtime. You can easily see the health of the device and can help pinpoint the source of a problem to determine if it is hardware or software related.

Intermec Dashboard displays information such as the status of network connections, battery usage, storage space, and internal devices. It also provides system information such as the operating system, firmware, and hardware configuration.

- Press the Intermec Dashboard button (?) on the computer keypad.

Intermec Dashboard Main Screen

Intermec Dashboard is highly integrated with SmartSystems Foundation. You can use SmartSystems Foundation to remotely monitor the health of your computers. For more information, refer to the SmartSystems online help.

Troubleshoot Your Mobile Computer

Use the troubleshooting tables in this section to fix problems with the Wi-Fi connection, 802.1x security, the imager, or general problems with operating the mobile computer. If you send the computer in for service, it is your responsibility to save the computer data and configuration. ecom instruments is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

Troubleshoot the Wi-Fi Connection

Use this troubleshooting table to help solve problems with your 802.11 radio connection.

Problems With the Wi-Fi Connection

Problem	Solution
When you turn on the computer after it was suspended for a while (10 to 15 minutes or longer), it can no longer send or receive messages over the network.	Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the Keep Alive" message from host to maintain the TCP session while the computer is suspended.

The computer is connected to the network and you move to a new site to collect data. Your computer now shows you are not connected to the network.	Move closer to an access point or to a different location to reestablish communications until you reconnect with the network.
The computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host computer.	There may be a problem with the host computer, or with the connection between the access point and the host computer. Check with the network administrator to make sure the host is running and allowing users to log in to the system.
The computer appears to be connected to the network, but the host computer is not receiving any information from the i.roc® Ci70 -Ex computer.	There may be a problem with the connection between the access point and the host computer. Check with the network administrator or use your access point user's manual.
A network connection icon appears in the toolbar, but then disappears.	The computer may not be communicating with the intended access point. Make sure the network name matches the access point network name. Default network name is INTERMEC." The access point may not be communicating with the server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled.

Troubleshoot 802.1x Security

Use the following table to troubleshoot problems with your 802.1x security that will prevent you from connecting to your network, such as an incorrect password.

Problems With 802.1x Security

Problem	Solution
The computer indicates it is not authenticated.	Make sure that: • the User Name and Password parameters on the computer must match the user name and password on authentication server. You may need to reenter the password on both the computer and authentication server. • on your authentication server, the user and group are allowed and the group policy is allowed to log into the server. For help, see the documentation that shipped with your authentication server software. • the IP address and secret key for access point must match the IP address and secret key on the authentication server. You may need to reenter the IP address and secret key on both your access point and authentication server. • the authentication server software is running on the server PC.
You receive a message saying The server certificate has expired or your system date is incorrect" after you perform a clean boot on the computer.	Date and time are not saved when you perform a clean boot. Reenter the date and time, and then save your changes.

Check 802.11 Network Status

If you have trouble connecting to your 802.11 wireless network:

- Make sure you have correctly set network parameters on the computer.
- Check your wireless security settings.

Follow the next procedure to verify available access points and networks, check signal strength, and view other diagnostics. If you need to contact ecom instruments Product Support, this information can be helpful in troubleshooting wireless network connection issues.

1 Tap Start > iSpyWiFi. The ISpyWiFi application launches.

The ISpyWiFi tab shows:

- MAC address and IP address of the 802.11 radio.
- network association status, including the SSID and MAC address of the access point.
- security configuration.
- radio transmit power and signal strength information.

2 Tap the Scan tab to view a list of available 802.11 networks. The list includes the signal strength, channel, and MAC address for each network.

- Tap Scan to refresh the screen.

3 Tap the Supp tab to view radio supplicant information, including a list of supplicant events and authentication status.

- To verify the settings for the currently active security profile, tap Configure Profile.

Intermec Settings launches for you to configure 802.11 Radio settings.

- To try reconnecting to the network, tap Reconnect.
- To delete the events in the list, tap Clear Events.

4 Tap the Ping tab to run a ping test to the host.
a In the Host field, enter the IP address of the host.
b From the Repetitions list, choose the number of times the computer will ping the host.
c Tap Ping. The graph shows the amount of time it takes for the host to return the ping.

Tap List to see this information in a list format.

5 Tap the RSSI tab to view the received signal strength of the host signal. The information box includes the current signal strength, host SSID name, MAC address, data rate, and transmit power.

- Tap Mark to place an arrow marker above the graph.

6 Tap the Conf tab to set up a log file that lists RSSI history. This screen includes the 802.11 radio driver version and available radio modes.
a Check the Log to File check box.

b (Optional) Change the sample period and number of samples displayed.
c Tap Log File. The Save As screen appears.
d (Optional) Change the name of the saved log file, the folder to which the file will be saved, the content type (log or text), and the location.
e Tap OK.

Troubleshoot Reading Bar Codes

Use this section to troubleshoot problems that may prevent you from being able to read a bar code, such as the symbology not being enabled.

Problems Reading Bar Codes

Problem	Solution
You cannot see the illumination beam or frame from the imager when you press the Scan button and aim the imager at a bar code label.	• You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again. • You may be reading the bar code label straight on." Change the reading angle and try again. • The imager hardware trigger might be disabled in Intermec Settings. To check the setting go to Start > Settings > Systems > Data Collection > Scanner Settings. Hardware trigger should be checked.
When you release a Scan button or handle trigger, the Good Read light does not turn off.	The Good Read light will remain on if you configure the computer to use continuous/edge triggering. If you configure the computer for level triggering and the Good Read light remains on, there may be a problem. Press one of the Scan buttons or pull the trigger again without scanning a bar code label. If the light is still on, contact your local ecom instruments representative.
The scanner will not read the bar code label.	• Aim the scanner beam to cross the entire bar code label in one pass. Vary the scanning angle. • Check the quality of the bar code label. Scan a bar code label that you know will scan. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan. • Make sure the bar code symbology is enabled and configured correctly. Use Intermec Settings to check the symbologies. Expand Data Collection > Symbologies beneath devices listed (scanner, virtual wedge) to check and enable symbologies, then scan the bar code label again. • Make sure the computer application is expecting input from a bar code. You may need to type this information instead. • The scanner may not be turned on or the scanner may be unable to scan a specific bar code. Run the ScanDiagnostic application to help you troubleshoot the problem. For more information, see
The scanner does not read the bar code labels quickly, or the scanning beam seems to be faint or obscured.	The scanner window may be dirty. Clean the window with a solution of ammonia and water. Wipe dry. Do not allow abrasive material to touch the window.
You scan a valid bar code label to enter data for your application. The data decoded by the scan module does not match the data encoded in the bar code label.	The computer may have decoded the bar code label in a symbology other than the label's actual symbology. Try scanning the bar code label again. Make sure you scan the entire label.
The input device attached to the computer does not work well or read bar code labels very quickly.	Set the Scanner Model command to the specific attached input device. Check enabled bar code symbologies and enable only the symbologies being used.

Use ScanDiagnostic to Troubleshoot the Scanner

Use the ScanDiagnostic application to troubleshoot problems such as the inability to read a bar code or a scanner that does not turn on.

1 From the Home menu, tap Start > ScanDiagnostic.
2 From the Scan Health screen, select the scanner you want to troubleshoot and then tap Diagnose.
The application checks to make sure the scanner is enabled and checks settings to make sure they are optimized.
3 From the Scan Test screen, press and hold the Press to Scan button while aiming at the bar code you want to read.
After the computer scans the bar code, it beeps and the label data, data length, and symbology appear on the screen.
4 Press the right arrow button to view any recommended settings.
5 To accept the recommended settings, tap Apply.
6 Tap OK to exit.

Troubleshoot Operating the Computer

Use this section to troubleshoot problems that may prevent you from being able to operate the computer.

Problems Operating the Computer

Problem	Solution
You press the Power button and nothing happens.	Try the following solutions: • Replace or charge the battery. The battery may be completely drained. • Remove the battery and press the Reset button to perform a cold boot. For help, see "Cold Boot the Computer" on page 62.
The computer appears to belocked up and you cannot enter data.	• Press the Power button and select Suspend from the Power Options menu. Press the Power button to turn the screen back on. • Press the Power button and select Reboot from the Power Options menu. • Remove the battery and press the Reset button to perform a cold boot. For help, see "Cold Boot the Computer" on page 62. • Try reloading the firmware. For help, see "Update the System Software" on page 54. • If the computer does not boot or reset, contact your ecom instruments representative for help.

The accelerometer does not appear to be accurate.	You may need to calibrate the accelerometer using the Sensor Calibration application. Tap Start > Settings > System > Sensor Calibration. Rotate the computer to calibrate all six orientations.
You tap the screen and nothing happens.	Align your screen. For help, see "Align the Screen" on page 26.
You cannot type a character on the keypad or you can only type uppercase or lowercase letters.	You may have locked a modifier key on the keypad. Press the necessary key sequence to unlock the key. For help, see "About the Keypad" on page 14.

Find Your Configuration Number
Use the following procedure to help you find the configuration number of your computer.

- Look at the label on the back of the computer.

Find Your Operating System Version
Use the following procedure to find the OS version of your mobile computer.

1. Press the Intermec Dashboard button to launch the Dashboard.
2. Tap the Information bar. The Information Details page appears and displays information such as the firmware version and the OS version.

Reset the Computer
If the computer does not resume after pressing the Power button, or if the computer or an application locks up, you may need to reset the computer. The computer uses the configuration currently saved in flash memory during the boot process. There are three ways to reset the computer:

- Reboot
- Cold boot
- Clean boot

Reboot the Computer
You may need to reboot the computer to correct conditions where an application stops responding to the system.

- Press the Power button and select Reboot from the menu.

The computer systematically shuts down, restarts, and goes through the initialization process.

Cold Boot the Computer
In some cases where the computer completely stops responding, it may be necessary to perform a cold boot or hard reset. Because cold booting may result in data loss, use this method only if all other recovery methods have failed.

Note: Cold booting the computer does not guarantee that cached disk data will be saved, so transactional data may be lost during the reset. All other data, such as configuration and network settings, is preserved.

1. Press and hold both R buttons simultaneously for about 5 seconds. The computer will reboot.
2. Wait while the mobile computer boots. When the cold boot is complete, the Home screen appears.

Location of i.roc® Ci70 -Ex/ Reset Buttons
Reset button

Clean Boot the Computer

Caution A clean boot erases the memory in the mobile computer, including all applications and data files, with the exception of those found in the Flash File Store, or any removable storage.

If the computer seems to be locked up, try cold booting it. If this process does not work, use a clean boot to get the computer up and running for further troubleshooting.

You can perform a clean boot using the mobile computer.

1. During Reeboot immediately press and hold the Power button and Volume Down button (the lower button on the right side).
2. Continue to hold the Power button and the Volume Down button down until you are prompted to release them.
3. Press the Volume Up button on the right side to start the clean boot.
4. Wait for the computer to load files from its ROM.

You can also perform a clean boot using the SmartSystems Console.

- Right-click the i.roc® Ci70 -Ex computer and select Intermec Power Tools > Clean Boot Device.

Clean the Computer
To keep the computer in good working order, you may need to clean the imager window, color camera window, and the touch screen. Clean the windows and the touch screen as often as needed for the environment in which you are using the computer. To clean the computer, use a solution of ammonia and water.

Caution There are no user-serviceable parts inside the i.roc® Ci70 -Ex computer. Opening the computer will void the warranty and may cause damage to the internal components.

1. Press the Power button and choose to suspend the computer.
2. Dip a clean cloth towel in the ammonia solution and wring out the excess.
3. Wipe off the imager window, camera lens, and flash area. Do not allow any abrasive material to touch these surfaces.
4. Wipe dry.

A
Specifications and Default Settings

Physical and Environmental Specifications

i.roc® Ci70 -Ex Physical Dimensions

Dimensions	standard configuration 225 x 85 x 58 mm (8.8 x 3.3 x 2.3 inches) with optional head modules 249 x 85 x 58 mm (9.8 x 3.3 x 2.3 inches)
Weight	standard configuration 980 g (2.16 lb) with battery

Environmental Specifications

Operating temperature	-20 °C to 50 °C (-4 °F to 120 °F)
Storage temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Charging temperature	5 °C to 35 °C (41 °F to 95 °F)
Relative humidity (operating)	5% to 95% non-condensing
Environmental rating	IP65 compliant
Drop Specifications	All corners and sides from 1.2 m (4 ft) per MIL-STD 810G

Power and Electrical Specifications

Battery type	Rechargeable Lithium-ion (Li-ion) battery AM Ci70 -Ex
Battery capacity	3.7 V, 4000 mAh (14.8 Wh)
Electrical rating	x 4.37/4.8 V; 2/1,5 A

Operating System

Microsoft Windows Embedded Handheld 6.5.3

Hardware

Main processor options	TI OMAP3, 1 GHz
Memory	512 MB RAM
Persistent storage	1 GB Flash
Removable storage	up to 32 GB user-accessible microSD card slot
Keypad	QWERTY, Numeric
Imaging options	via optional head modules

Touch Screen Specifications
Transmissive VGA display with high-durability touch screen; 480 x 640 pixels; 8.9 cm (3.5 in) diagonal active area; LED backlight and ambient light sensor.

Standard Communications
- GPS
- 802.11a/b/g/n
- Bluetooth
- USB Full Speed V2.0 Client

Optional Communications
- UMTS
- CDMA

Wireless LAN

Standards compliant	IEEE 802.11a/b/g/n (2.4 GHz and 5 GHz), Single Stream
Data rates	up to 72Mbps
Security	802.11i, WPA, WPA2, 802.1x (EAP-TLS, TTLS, PEAP, EAP-FAST), WEP
Certifications	WPA2™ (Enterprise, Personal), WPA™ (Enterprise, Personal), Wi-Fi, WMM®, WMM Power Save, Cisco Compatible Extensions (CCX 4.0)

Regulatory Approvals
FCC, CE

Communications
Use communications settings to configure how the mobile computer communicates with the network.

Communications Settings

Communications Setting	Default Value
Device Name	ecom instruments CXXX (where XXX indicates the model of mobile computer)
802.11 Radio Settings	
802.11 Radio Setting	Default Value
Security Choice	Funk Allow Security Changes
Enabled Active Profile	Profile 1
DHCP	Enabled
Import Root Certificates	False
Import User Certificates	False
Import Pac Files	False
Radio Bands	b/g (2.4 GHz)
Radio Enabled	Off

Ethernet Adapter Settings

Ethernet Adapter Setting	Default Value
DHCP	Enabled

Bluetooth Settings

Bluetooth Setting	Default Value
Bluetooth Power	Off

WWAN Radio Settings

WWAN Radio Setting	Default Value
WWAN Radio Enabled	Enabled

Serial Port Switch

Serial Port Switch Setting	Default Value
Serial Port Switch	Standard Docking and IrDA

Device Settings
Use device settings to configure settings on the mobile computer.

Device Settings

Device Setting	Default Value
Date	N/A
Time	N/A

Good Read Settings

Good Read Setting	Default Value
Internal Scanner Good Read Beep	One Beep
Tethered Scanner	One Beep
Bluetooth Scanner Good Read Beep	One Beep

Backlight Settings

Backlight Setting	Default Value
Display Backlight Adjustment	Normal
Keypad Backlight	On Based on Light Level
Light Level	Low

Screen Settings

Screen Setting	Default Value
Screen Rotations	Portrait 0 Degrees
Screen Rotation Sensor	Disabled

Sound Settings

Sound Setting	Default Value
Beeper and Voice	Medium
Headset Beeper	Very Low
Vibrate Mode Intensity	1 Strong Pulse
Screen Taps	Off
Key Clicks	Off

Keypad Settings

Keypad Setting	Default Value
Button Remapping	Scanner

Power Management Settings

Power Management Setting	Default Value
Enable Power Button Screen	On
Screen Options Displayed	Hibernate, Suspend, Reboot
Screen Timeout (Seconds)	5
Power Button Behavior	Suspend
Device Turns Off After (Battery Power)	5 minutes
Screen Turns Off After (Battery Power)	Disabled
Device Turns Off After (External Power)	Disabled
Screen Turns Off After (External Power)	Disabled
Device Off Sensor	Disabled

Profiles Settings Application

Profiles Settings	Default Value
Camera	
Disable Camera Scan	Show Option in Profile Settings
Enable Camera Scan	Show Option in Profile Settings
Power	
Always On	Show Option in Profile Settings
Maximize Battery Life	Show Option in Profile Settings
Normal	Show Option in Profile Settings
Scanning	
1D Bar Codes Optimized	Show Option in Profile Settings
Bright Sunlight	Show Option in Profile Settings
Reflective Labels	Show Option in Profile Settings
Standard	Show Option in Profile Settings

GPS Settings

Use GPS settings to configure how the mobile computer communicates with the GPS network.

GPS

GPS Setting	Default Value
Enable Bread Crumbing	Disable

Core Messaging Service Settings

Use core messaging service settings to configure the message routers between client and server software applications.

Core Messaging Service

Core Messaging Service Setting	Default Value
Associated Server IP	Null Broadcast Name
INTERMEC Port	62241
Keep Alive Ping Interval	30 Seconds

Device Monitor Settings

Use device monitor settings to configure how the mobile computer monitors the network.

Device Health Controls

Device Health Setting	Default Value
Enable Health Data Collection	On
Enable Device Health Application	On
Enable Blue Light	Off for Ready-to-Work

Set Rule File Location	\SmartSystems\HealthRules.txt
System Device Health Refresh (seconds)	90
Network Device Health Refresh (seconds)	45

Device Health Screen Captures

Device Health Screen Captures Setting	Default Value
Directory	\SmartSystems\ScreenCapture
Screen Captures Allowed	3

Device Wipe

Device Wipe Setting	Default Value
Enable Wipe	Disabled

Head Modules Settings
Additional settings and intantion are provided separatly on www.intermec.com.

Head Modules Settings

Settings	Default Value
Enable Module	No USB Device No UART Device

Virtual Wedge Settings
Use virtual wedge settings to configure the virtual wedge.

Virtual Wedge Setting

Setting	Default Value
Virtual Wedge	Enable Bar Code Scanner Grid
Null Label Encoding (Code Page)	1252
Magstripe Reader Grid	Null

B
Keypads and Keystrokes

Standard Characters

Use the following tables to learn how to enter standard and other available characters and functions with the keypad. If there is no sequence of keystrokes for a particular character or function, it is only available through the soft input panel (SIP), which you can access by tapping the keyboard icon on the touch screen.

i.roc® Ci70 -Ex Keypads and Keystrokes

i.roc® Ci70 -Ex Alphanumeric Characters

Character	Numeric Keypad	QWERTY Numeric Keypad
a	2	A
b	2 2	B
c	2 2 2	C
d	3	D
e	3 3	E
f	3 3 3	F
g	4	G
h	4 4	H
i	4 4 4	I
j	5	J
k	5 5	K
l	5 5 5	L
m	6	M
n	6 6	N
o	6 6 6	O
p	7	P
q	7 7	Q
r	7 7 7	R
s	7 7 7 7	S
t	8	T
u	8 8	U
v	8 8 8	V
w	9	W
x	9 9	X
y	9 9 9	Y
z	9 9 9 9	Z
A	1 2	⇧ A
B	1 2 2	⇧ B
C	1 2 2 2	⇧ C
D	1 3	⇧ D
E	1 3 3	⇧ E
F	1 3 3 3	⇧ F
G	1 4	⇧ G
H	1 4 4	⇧ H
I	1 4 4 4	⇧ I
J	1 5	⇧ J
K	1 5 5	⇧ K
L	1 5 5 5	⇧ L
M	1 6	⇧ M
N	1 6 6	⇧ N
O	1 6 6 6	⇧ O
P	1 7	⇧ P
Q	1 7 7	⇧ Q
R	1 7 7 7	⇧ R
S	1 7 7 7 7	⇧ S
T	1 8	⇧ T
U	1 8 8	⇧ U
V	1 8 8 8	⇧ V
W	1 9	⇧ W
X	1 9 9	⇧ X
Y	1 9 9 9	⇧ Y
Z	1 9 9 9 9	⇧ Z
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

i.roc® Ci70 -Ex Characters and Funktions

To Enter	Numeric Keypad	QWERTY Numeric Keypad
@ (at symbol)	N/A	Q
& (ampersand)	N/A	U
* (asterisk)	*	*
: (colon)	N/A	I
, (comma)	N/A	,
$ (dollar)	N/A	E
! (exclamation)	N/A	O
- (hyphen)	-	-
% (percent)	N/A	R
. (period)	.	.
+ (plus)	-	-
# (pound)	#	#
? (question mark)	N/A	Y
' (apostrophe)	N/A	W
Forward Tab	→	→
Backspace	←	←
Up Arrow	↑	↑
Down Arrow	↓	↓
Left Arrow	←	←
Right Arrow	→	→
CapsLock	1	⇪
Enter	Enter	Enter
ok	Esc	Esc
Shift	OK →	OK → ⇪
Space	0	Space
Start (Windows)	OK →	
Esc	Esc	Esc
Dashboard		

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