Intermec

User's Manual

5023
Data Collection PC™

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Manual Change Record

This page records the changes to this manual. The manual was originally released as version 001.

Version	Date	Description of Change
002	8/01	Revised contents to complement the newest revision of the *502X Data Collection PC System Manual* (Part No. 071479). The system manual was revised to include changes made for the 5020 Release 3.0 firmware. All material applicable to the 5023 Release 1.0 firmware remains unchanged. The 502X Software Developer's Kit and Support Files now ships as part of the Windows CE/Pocket PC Developer's Kit (Part No. 069511) and no longer ships with this manual.
003	6/02	Added the *5023 Data Collection PC User's Manual Addendum* (Part No. 072758-001), which describes new functionality included in firmware release 3.0.

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Before You Begin

This section introduces you to standard warranty provisions, safety precautions, warnings and cautions, document formatting conventions, and sources of additional product information. A documentation roadmap is also provided to guide you in finding the appropriate information.

Warranty Information

To receive a copy of the standard warranty provision for this product, contact your local Intermec support services organization. In the U.S.A. call 1-800-755-5505, and in Canada call 1-800-668-7043. Otherwise, refer to the Worldwide Sales & Service list that ships with this manual for the address and telephone number of your Intermec sales organization.

Safety Summary

Your safety is extremely important. Read and follow all warnings and cautions in this book before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

Do not repair or adjust alone Do not repair or adjust energized equipment alone under any circumstances. Someone capable of providing first aid must always be present for your safety.

First aid Always obtain first aid or medical attention immediately after an injury. Never neglect an injury, no matter how slight it seems.

Resuscitation Begin resuscitation immediately if someone is injured and stops breathing. Any delay could result in death. To work on or near high voltage, you should be familiar with approved industrial first aid methods.

Energized equipment Never work on energized equipment unless authorized by a responsible authority. Energized electrical equipment is dangerous. Electrical shock from energized equipment can cause death. If you must perform authorized emergency work on energized equipment, be sure that you comply strictly with approved safety regulations.

Warnings, Cautions, and Notes

The warnings, cautions, and notes in this manual use the following format.

Warning
A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.

Avertissement
Un avertissement vous avertit d'une procédure de fonctionnement, d'une méthode, d'un état ou d'un rapport qui doit être strictement respecté pour éviter l'occurrence de mort ou de blessures graves aux personnes manupulant l'équipement.

Caution
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.

Conseil
Une précaution vous avertit d'une procédure de fonctionnement, d'une méthode, d'un état ou d'un rapport qui doit être strictement respecté pour empêcher l'endommagement ou la destruction de l'équipement, ou l'altération ou la perte de données.

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

About This Manual

This manual contains all of the information necessary to install, operate, configure, and maintain the 5023 Data Collection PC™. Use this manual in conjunction with the *502X Data Collection PC System Manual* (Part No. 071479), which includes detailed configuration, management, and programming information for all 502X computers.

This manual was written for analysts and programmers who operate, program, and connect the 5023 to a network or system. A basic understanding of Windows programming and data communications is necessary.

Terminology

You should be aware of how these terms are being used in this manual:

Term	Description
5023	These terms indicate any 5023 Data Collection PC.
Unit Management	The term "unit management" indicates the Unit Management suite of applications.
Computer Host	The terms "computer" and "host" indicate a personal computer or other computer that communicates with the 5023.
DCS 30X	The term DCS 30X is used throughout the manual to indicate a member of the DCS 30X data collection server family. The DCS 30X is a newer data collection server that replaces the Model 200 Controller. Unless otherwise noted, you can use either the DCS 30X or the Model 200 Controller.

Format Conventions for Input From a Keyboard or Keypad

This table describes the formatting conventions for input from computer keyboards and 5023 keypads:

Convention	Description
`Special` text	Shows the command as you should enter it into the 5023 PC. See "Format Conventions for Commands" later in this chapter.
Italic text	Indicates that you must replace the parameter with a value. See "Format Conventions for Commands" later in this chapter.
Ctrl	Bold text represents a key on your keypad. For example, **Tab** represents the Tab key and **M** represents the letter M key.
Ctrl-**Z**	When two keys are joined with a dash, press them simultaneously. For example, if you see the command **Ctrl**-**C**, press the two keys at the same time.

Format Conventions for Input From a Keyboard or Keypad (continued)

Convention	Description
↵	Shows the key you must press on the 5023. For example, "press ↵" directs you to press the right Enter key on the 5023 keypad.
Alt ◄ 9	Shows a series of 5023 keys you must press and release in the order shown. For example, "Press Alt ◄ 9 to access the Configure menu."

Format Conventions for Bar Codes

You can scan the bar codes listed in this manual to enter data or perform a command. The bar code labels in this manual are printed in the Code 39 symbology. Each bar code includes the name and human-readable interpretation. For example:

Part Number——————Name

——————Bar code (Code 39)

1234——————Human-readable interpretation

The asterisks (*) at the beginning and end of the human-readable interpretation are the start and stop codes for a Code 39 bar code label. If you are creating bar code labels with a bar code utility, it may automatically supply the asterisks as the start and stop code, so that you only need to type the actual text of the command.

Format Conventions for Commands

This manual includes sample commands that are shown exactly as you should type them on your 5023. The manual also describes the syntax for many commands, defining each parameter in the command. This example illustrates the format conventions used for commands:

- Scan a bar code label with this syntax:

  `+/$+command`

  where:

+/	is the syntax for the Enter Accumulate Mode command.
$+	is the syntax for the Change Configuration command.
command	is the syntax for the command you want to change.

This table defines the conventions used in the example:

Convention	Description
`Special` font	Commands appear in this font. You enter the command exactly as it is shown.
Italic text	Italics indicate a variable, which you must replace with a real value, such as a number, filename, or keyword.
where	This word introduces a list of the command's parameters and explains the values you can specify for them.

Other Intermec Manuals

You may need additional information when working with the 5023 Data Collection PC in a data collection system. Please visit our Web site at www.intermec.com to access many of our current manuals in PDF format. To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

1

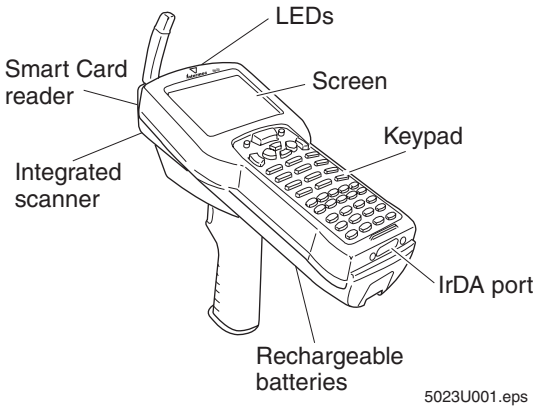
Learning About the 5023

This chapter introduces the Intermec 5023 Data Collection PC and explains how to use the screen and keypad, what the icons and audio signals mean, how to manage the batteries, how to use the SmartCard reader, and how to scan a bar code label.

What Is the 5023 Data Collection PC?

Engineered to take full advantage of the Microsoft® Windows® CE operating system, the 5023 Data Collection PC™ incorporates Intermec's high-performance wireless LAN technology, bar code scanning, and power management features into a hand-held computer.

The 5023 supports standard programming tools, such as Visual Basic, Visual C++, JScript, and HTML. You can use a Web browser on your desktop PC to access Unit Management and remotely configure and manage information on 5023 PCs.



Integrated scanner The 5023 comes with an integrated scanner.

IrDA (Infrared Data Association) port You can use serial communications through the IrDA port to communicate with other IrDA-capable devices. You can also use the IrDA port to communicate with RS-232 devices, such as modems, PCs, and printers, using a D5020 Communications Dock or L5020 Serial Communications Adapter.

Keypad The 43-key elastomeric keypad has alphanumeric functions, full numeric keys, and 10 dedicated function keys.

LEDs Red and green LEDs indicate a variety of operating conditions.

Radio The 5023 comes with an IEEE 802.11b High Rate (HR) direct sequence radio installed with an adjustable antenna.

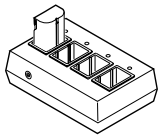
Rechargeable batteries The 5023 uses a rechargeable lithium-ion main battery pack (sold separately) and a rechargeable coin cell bridge battery to maintain power while you change the main battery.

Screen The backlit, 320 x 240 pixel grayscale screen is angled for easy viewing.

SmartCard reader The 5023 comes with a SmartCard reader installed.

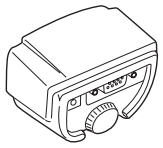
Accessories

You can use these accessories (sold and ordered separately) with the 5023:



Z2400 Battery Charger The battery charger lets you charge up to four main battery packs at one time. The charger senses when a main battery pack is fully charged and does not overcharge it, ensuring long and consistent battery life.

D5020 IrDA and Serial Communications Docks You can use the communications dock to transfer data to and from another device using IrDA or RS-232 serial communications. You can also use the dock to charge the 5023 batteries.



L5020 Serial Communications Adapter The serial communications adapter converts IrDA data to a wired RS-232 data stream. When this adapter is connected, it allows the 5023 to communicate with a host computer or other device using an RS-232 serial port. You can also connect a power supply (Part No. 065236) to the adapter to charge the 5023 batteries.

Cables You may need to purchase cables for serial data communications between the 5023 and peripheral devices. For more information, see "Physical and Environmental Specifications" in Appendix A.

Note: You also need a main battery pack. See your Intermec sales representative for the battery packs that are currently available.

Getting Started

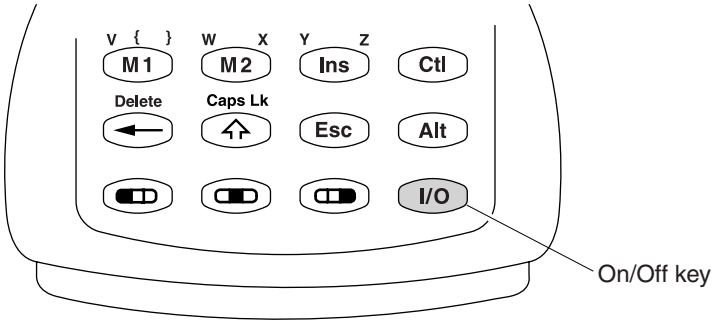
To use the 5023 in your data collection system, you need to follow the following steps.

To configure and connect the 5023

1. Charge and install a main battery pack in the 5023. For help, see "Understanding the Main Battery Pack" later in this chapter.
2. Turn on the 5023 and use the Fast Config or Configuration applications to set up general network parameters. When you are finished, the 5023 will be communicating in your network. For help, see Chapter 2, "Configuring the 5023."
3. Customize the 5023 with the Control Panel applets. For help, see Chapter 3, "Customizing the 502X Using the Control Panel," in the *502X Data Collection PC System Manual* (Part No. 071479).
4. Install applications on the 5023. For help, see "Using Application Manager" in Chapter 4 of the 502X system manual.
5. After the 5023 is connected to your network, you can remotely configure symbologies and other operating parameters with Unit Management or through an SNMP management station. For help with Unit Management, see Chapter 4, "Using Unit Manager," in the 502X system manual. For help with SNMP, see "Configuring the 502X by Using SNMP" in Chapter 2 of the 502X system manual.

Turning On the 5023

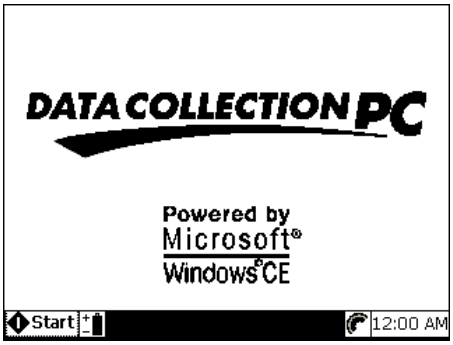
The 5023's On/Off key is the yellow I/O key in the lower right corner of the keypad.



5023U094.eps

To turn on the 5023

- Press I/O. The 5023 desktop appears.

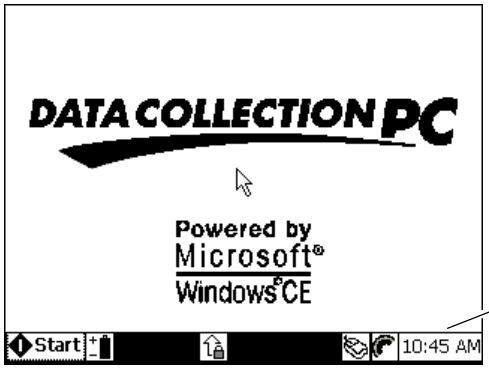


When you press I/O to turn off the 5023, the PC does not actually shut off but goes into a Suspend mode. In Suspend mode, the 5023 continues to power all memory and turns off the power to most of the hardware. This mode is referred to as "off" in the rest of this manual. When you press I/O to turn on the 5023, the 5023 resumes exactly where it was when you turned it off.

Changing the main battery pack while the 5023 is turned off does not affect it as long as the bridge battery is fully charged. The bridge battery saves the contents of memory while you change the main battery pack.

Using the 5023 Screen

You can use the screen for many functions, including viewing data, running applications, and monitoring the 5023's status. The screen is 320 x 240 pixels.



Icons appearing at the bottom of the screen keep you informed of the status of special keys, battery power, and RF and network communications. This portion of the 5023 screen is referred to as the Notification Tray. For help, see "Understanding the System and Application Icons" later in this chapter.

To make the screen easier to see, you can adjust the backlight and contrast from the keypad. For help, see the next section.

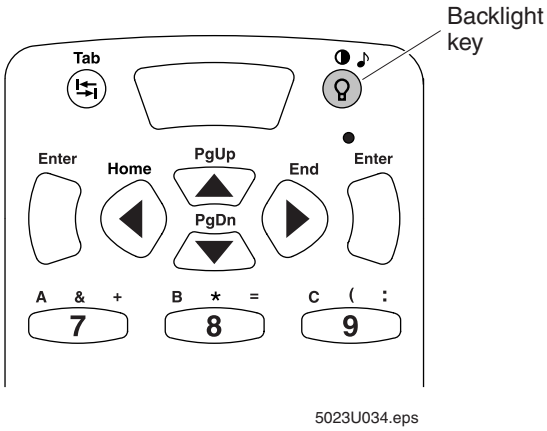
Note: If you are using the 5023 in a cold environment, the liquid crystal display (LCD) may respond and display information more slowly than in a warm environment.

Adjusting the Screen With the Backlight Key

The Backlight key is a multifunction control that you can use to

- turn the screen backlight on and off.
- adjust the screen contrast.

You can also adjust the speaker volume with the Backlight key. For more information, see "Adjusting the Speaker Volume Using the Backlight Key" later in this chapter.



5023U034.eps

To turn the backlight on and off

- Press . Turn the backlight on to more easily see the 5023's screen in dimly-lit environments.

Note: The 5023 uses battery power at a faster rate when the backlight is turned on.

To change the screen contrast

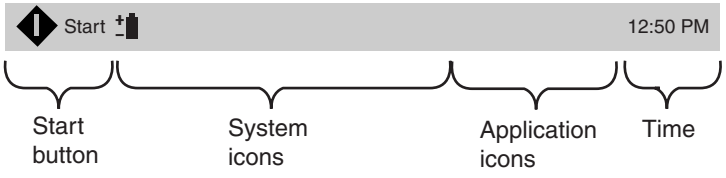
- Press . Each time you press , it makes the screen contrast one level darker.

There are 34 contrast levels. If the contrast is at the darkest level and you press , the contrast changes to the lightest contrast level. You can hold down the contrast key for repeated contrast changes.

Note: The Backlight key temporarily changes the backlight and contrast. These changes are saved until a cold boot is performed. When you perform a cold boot, 5023 configuration parameters are reset to the factory default values. For more information, see "Booting the 5023" in Chapter 4.

Understanding the System and Application Icons

You can use the system and application icons to monitor the status of RF and network communications, special keys, and battery power. As you use the 5023, the icons are turned on and off in the Notification Tray to indicate the current status.



5020U050.eps

Icon	Description
	Full Charge Indicates the main battery pack is at or near full charge. Battery is charged 75% to 100% of capacity.
	Half Charge Indicates the main battery pack is in the middle of the battery charge range.
	Low Charge Warns that the main battery pack is at a critically low level and needs to be charged.
	Unknown Main Battery Status Indicates the main battery pack is charging or the status is not known.
	Shift Appears when you press ⇧. The key is enabled until you press another key. When you press a second key, the key combination is entered into the 5023 and the icon disappears.
	Caps Lock Appears when you press ⇧ for a second or two. A tone sounds, indicating that Caps Lock has been enabled. Press ⇧ for a second or two to disable Caps Lock, and the icon disappears.
	Left Modifier Appears when you press and when the 5023 is locked in Left Modifier mode. The icon disappears when the next key is pressed or when you unlock . For help, see "Using Modifier Keys" later in this chapter.
	Center Modifier Appears when you press and when the 5023 is locked in Center Modifier mode. The icon disappears when the next key is pressed or when you unlock . For help, see "Using Modifier Keys" later in this chapter.
	Right Modifier Appears when you press and when the 5023 is locked in Right Modifier mode. The icon disappears when the next key is pressed or when you unlock . For help, see "Using Modifier Keys" later in this chapter.

Understanding the System and Application Icons (continued)

Icon	Description
Ctl	**Ctl** Appears when you press Ctl. The key is enabled until you press another key. When you press a second key, the key combination is entered into the 5023 and the icon disappears.
Alt	**Alt** Appears when you press Alt. The key is enabled until you press another key. When you press a second key, the key combination is entered into the 5023 and the icon disappears.
	**Radio Connected** Indicates that the 5023 is connected to an access point. If the Radio Connect icon is not displayed, the 5023 is not connected to an access point.
	**Radio Not Connected** Indicates that the 5023 is unable to connect to an access point. You may be out of range of an access point, you may be about to go out of range of an access point, or the access point may have recently been turned off.
	**Data buffered in** Indicates that the 5023 is in contact with a DCS 30X and data is stored in the receiving buffer. If there is a connection problem, the icon flashes.
	**Data buffered out** Indicates that the 5023 is in contact with a DCS 30X and data is stored in the transmitting buffer. If there is a connection problem, the icon flashes.
	**Data buffered in and out** Indicates that the 5023 is in contact with a DCS 30X and data is stored in the receiving and transmitting buffer. If there is a connection problem, the icon flashes.
	**No data** Indicates that the 5023 is in contact with a DCS 30X and no data currently resides in the data buffer.
	**No UDP connection** Indicates that the 5023 is not in contact with a DCS 30X and no data currently resides in the data buffer.
	**Intrynsic HTTP Server** Appears in the Application icons area of the Notification Tray when the Intrynsic HTTP Server Loader is running.
	**Device Connected** Appears in the Application icons area of the Notification Tray when the 5023 is communicating with another device through a serial connection.
	**Pointer** Appears in the Application icons area of the Notification Tray when the pointer is enabled.

Understanding the Audio Signals

The 5023 has internal speakers to sound audio signals or beep sequences. For example, you hear a beep tone each time you enter or scan a valid command.

You can change the speaker volume to meet the needs of your working environment. For example, use a quiet beep in a library or a loud beep in a manufacturing plant. There are two ways to change the audio volume:

- Use the Backlight key (press ) on the keypad. For help, see "Adjusting the Speaker Volume Using the Backlight Key" in the next section.
- Use the Speaker Volume configuration command. For help, see "Speaker Volume" in Chapter 7 of the 502X system manual.

The next table explains the purpose of each audio signal you may hear.

Audio Signal	Description
Beep	You entered a valid command or data, the data you entered was stored, or a label was decoded.
Repeating beep every 15 seconds	You need to replace or recharge the battery pack. For help, see "Learning About the Batteries" later in this chapter.
Three beeps	You entered or scanned an invalid command or data.
Four beeps	The 5023 has finished its reboot process.
"Critical stop"	You pressed  to turn off the 5023 and it will shut down only after a short delay, or an error message has appeared.

The 5023 also uses default Windows CE sounds for many functions. For more information, see "Changing the Volume and Enabling Sounds" in Chapter 3 of the 502X system manual.

Adjusting the Speaker Volume Using the Backlight Key

You can use the Backlight key to change the volume of the 5023's audio signals. For a detailed description of the Speaker Volume command, see Chapter 7, "Configuration Command Reference," in the 502X system manual.

To change the speaker volume

- To change the volume of the 5023's audio signals, press  . Each time you press , it makes the volume one level louder.

There are six volume levels including an off setting. If the volume is at the loudest level and you press , the volume is turned off. If you press again, the volume changes to the quietest level.

Note: The Backlight key changes the beep volume temporarily. This change is saved until a cold boot is performed. When you perform a cold boot, many 5023 configuration parameters are reset to the factory default values. For more information, see "Booting the 5023" in Chapter 4.

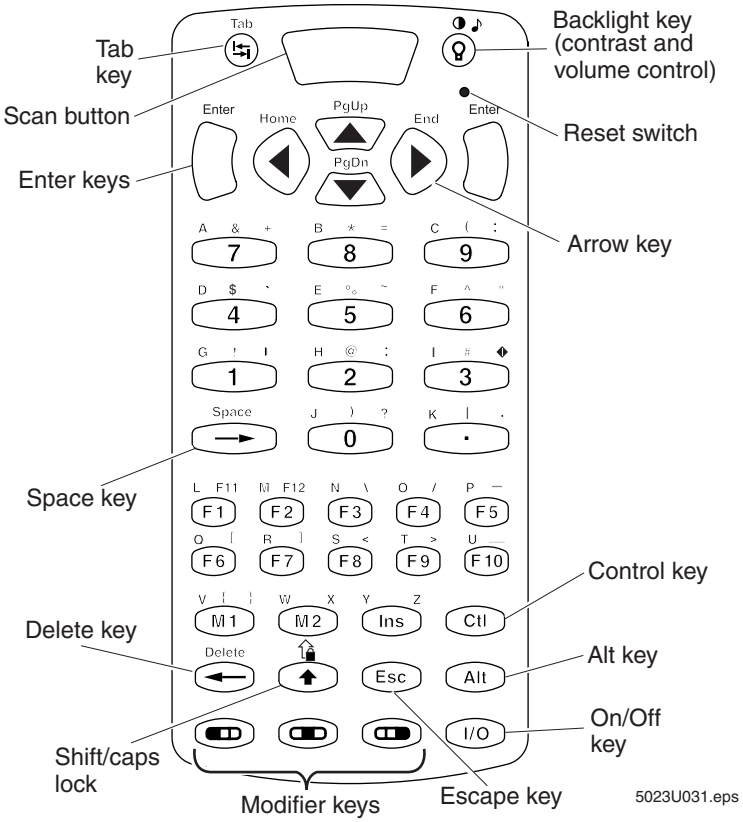
Using the Keypad

The 5023 ships with an English alphanumeric keypad overlay with a standard character set. To simplify keypad navigation and operation, this overlay does not include printed punctuation marks, though all are fully functional and can be accessed through special keys and key combinations.

You can also use the Programmer's Keypad Overlay, an English alphanumeric keypad overlay with a full character set including punctuation marks (ships with this manual).

Finding the Special Keys

Before you use the 5023's keypad, make sure you can find all of the different types of keys on the keypad. The full character set is shown next. The special keys that you use to type characters or perform functions are explained in the next sections.



Typing Characters or Accessing Functions on the Keypad

Characters, symbols, and functions are printed in three places on or above the keys. The keys are also color-coded to make key combinations easy to remember.

Position on the keypad	Color	To type the character or access the function
Printed on the key	White	Press the key.
Left side above the key	Orange	Press the orange key, and then the key.
Centered above the key	Lime	Press the lime key, and then the key.
Right side above the key	Green	Press the green key, and then the key.

Using the Shift and Caps Lock Key

To type alphabetic characters as uppercase letters, press the Shift key before each letter you type. You can also use the Caps Lock function to type all alphabetic characters as uppercase letters. Caps Lock is described later in this section. To type punctuation marks and symbols that normally appear on the upper level of a standard keyboard, press Shift before pressing the key for the mark or symbol.

To enable Caps Lock

- Press Lime Shift or press Shift until the tone sounds. The Caps Lock icon appears in the Notification Tray. All alphabetic characters typed appear as uppercase letters. Caps Lock remains enabled until you disable it.

To type a lowercase letter with Caps Lock enabled

- Press Shift Orange and an alphabetic character key. For example, press Shift Orange 6 to type a lowercase letter f. Caps Lock remains enabled.

To disable Caps Lock

- Press Lime Shift or press Shift until the tone sounds. The Caps Lock icon disappears from the Notification Tray.

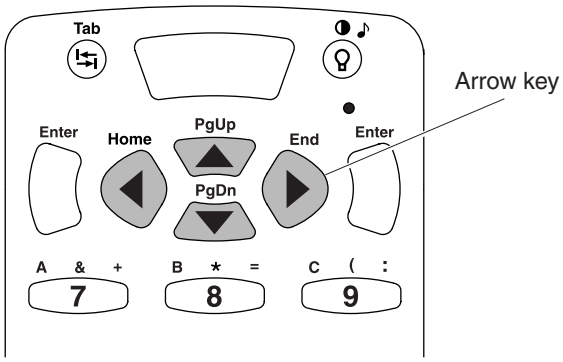
Note: The default setting for Caps Lock is enabled. You can also use the Keypad Caps Lock configuration command to enable or disable Caps Lock on the 5023. For help, see “Keypad Caps Lock” in Chapter 7 of the 502X system manual.

On the 5023 keypad, Shift can behave as both a standard shift key and as a Caps Lock key. That is why there are two Notification Tray icons for this key and only one for the other modifier keys.

Since Shift and Caps Lock are two keys folded into one, both key modifiers, ⇧ and ⇪, could be in effect at the same time. In this case, alphabetic keys appear as lowercase (the shift cancels the caps lock), while other keys appear as the upper case of a standard keypad.

Using the Arrow Keys

You can press the 5023's arrow keys to select a file, folder, or function or to move the cursor around an application screen. Use the arrow keys to move the cursor up, down, right, or left on the screen or to change the selected button, field, or tab.

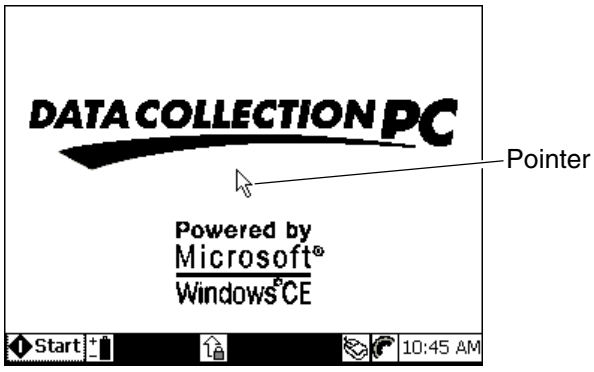


5023U096.eps

To Do This	Press
Move the cursor up one row or line	▲
Move the cursor down one row or line	▼
Move the cursor one character to the right	▶
Move the cursor one character to the left	◀

Using the Pointer

Instead of using the ⇆ or arrow keys to select fields or buttons on the 5023 desktop, you can enable a pointer.



To enable the pointer

- Press Alt Ctl. The pointer appears, and the Pointer Enabled icon appears in the Notification Tray.

To disable the pointer

- Press Alt Ctl when the pointer is onscreen. The pointer and the Pointer Enabled icon disappear.

To move the pointer

- Press ▲, ▼, ◀, or ▶ to move the pointer around the desktop. You can press two arrow keys at the same time to move the pointer diagonally.

To open a menu or select a menu item

- Move the pointer over the menu title or item to highlight it and press ⬭.

To open a folder or start an application

- Move the pointer over the icon to highlight it and press ⬭ twice quickly (like double-clicking a mouse).

Using Modifier Keys

The standard Windows modifier keys are ⇧, Alt, and Ctl. In addition, unique 5023 modifier keys (◀, ●, and ▶) are located in the bottom row of the keypad. These keys are used to access color-coded characters and functions shown on the keypad.

To easily perform multi-key sequences with one hand, the six modifier keys are "sticky." When you press a modifier key, it remains in effect until you press a key to which it could apply. While a modifier key is in effect, its icon appears in the Notification Tray.

There are two rules used to determine when a sticky modifier key is no longer in effect:

- ⇧, Alt, or Ctl is released after the next non-modifier key is pressed and released, or after you press the same modifier key again.
- ◀, ●, or ▶ is released after the next key is pressed and released, another modifier key is pressed, or the same modifier key is pressed again.

When a modifier key is no longer in effect, its icon disappears from the Notification Tray.

Using the 5023 Modifier Keys

You use the left (◀), center (●), and right (▶) modifier keys to access characters or perform functions that do not have a physical key on the 5023 keypad.

When you press ◀ , ● , or ▶ , the modifier key is enabled until you press another key. The icon appears in the Notification Tray to remind you that the key is enabled. When you press another key, the key combination is entered and the icon disappears.

Locking or Unlocking a Modifier Key

The ◀, ●, ▶, and ⇧ modifier keys can also be locked. The Alt and Ctl keys do not lock.

To lock a modifier key

- Press a modifier key for a second or two to lock it. A tone sounds and the corresponding icon appears, which indicates that the key has been locked. When a modifier key is locked, it affects all subsequent keystrokes until it is unlocked. Do not press any other keys when trying to lock a modifier key.

To unlock a modifier key

- Press the modifier key until a tone sounds, and then release the key.

or,

- Press another modifier key until it locks.

Note: Only one modifier key may be locked at a time.

Overriding a Modifier Key

You can temporarily override a locked modifier key by tapping the key. Tapping a locked modifier will undo its lock for one character. For example, if the shift key is locked (⇧) and you press the ⇧ key and then press an alpha key, a lowercase letter appears rather than the uppercase letter that would have appeared with the ⇧ key enabled. After the temporary override is complete, the original, locked modifier is restored.

Note: ⇧, Alt, and Ctl are independent of one another. All three keys can be in effect at the same time.

Keypad Navigation Shortcuts

You can use the following keypad shortcuts to navigate in the 5023 desktop.

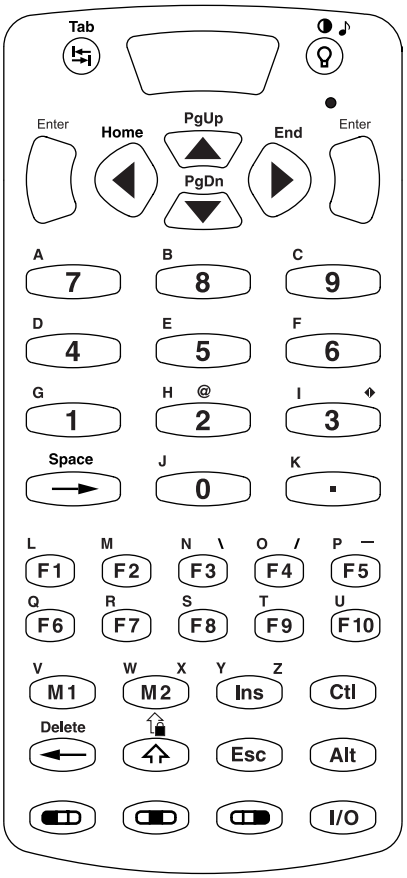
Shortcut	Function Performed
Alt	Accesses application menus.
Alt Alt	Opens the leftmost menu in an application. Press the arrow keys to open the other menus or change selections in a menu.
Alt Ctl	Enables or disables the pointer.
Alt Esc or Alt ⇥	Opens the Task Manager so that you can switch between running programs. For help, see "Switching Between Programs With Task Manager" later in this chapter.
Ctl Esc	Places focus on the Start button in the Notification Tray. When the Start button is selected, you can use the arrow keys to select other icons in the Tray, or you can press ⏎ to open the Start menu. If focus is already on an icon in the Notification Tray, pressing Ctl Esc returns you to the 5023 desktop.
Ctl (◀, ▶, ▲, or ▼) →	Selects multiple files that are not adjacent. Use the → key to select the next file you want to include.
◀, ▶, ▲, or ▼	Selects a file, folder, or function. Moves the pointer.
▶ or Ctl ⇥	Changes tabs in a dialog box.
◀ or ⇧ Ctl ⇥	Moves backward between tabs in a dialog box.

Keypad Navigation Shortcuts (continued)

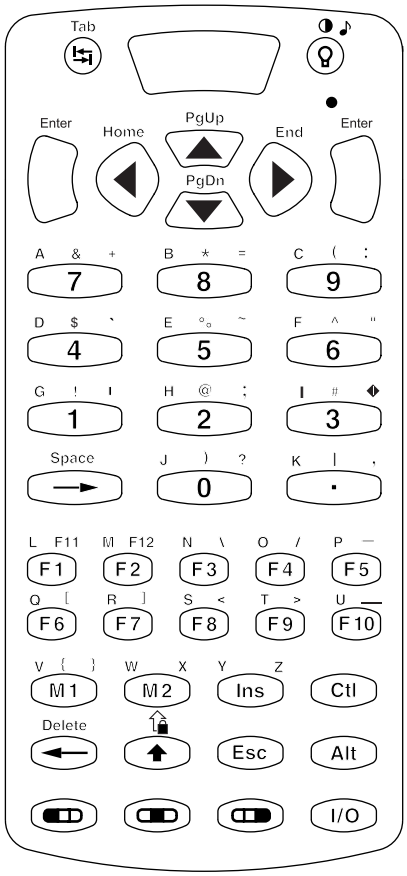
Shortcut	Function Performed
(◀, ▶, ▲, or ▼)	Selects adjacent files.
3	Opens the Start menu.
or	Activates or opens the selected item.
	Navigates in a dialog box.
	Marks or clears check boxes.

English Keypads

Standard



Full



5023U032.eps

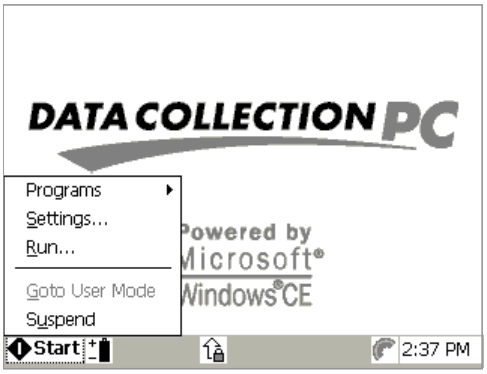
Using the Start Menu

You can select the Start menu to run applications, open the Control Panel applets, change operating modes, or turn off the 5023.

To open the Start menus and select an option

1. Do one of the following:
   - Press Ctl Esc to place the focus on the Start button and then press ⎕.
   - Press ⊟ 3.

   The Start menu appears.



   You can choose from these options:

   Programs Choose an application from the Programs list to start it. For more information, see "Programs in the Start Menu" later in this section.

   Settings Select Settings to open the Control Panel applets. For help, see Chapter 3, "Customizing the 502X Using the Control Panel," in the 502X system manual.

   Run Type the path to an application in the Run dialog box entry field and press ⎕ to start it. You can also browse the Windows directory to find the application you want or press the arrow keys to choose from the most recently run applications.

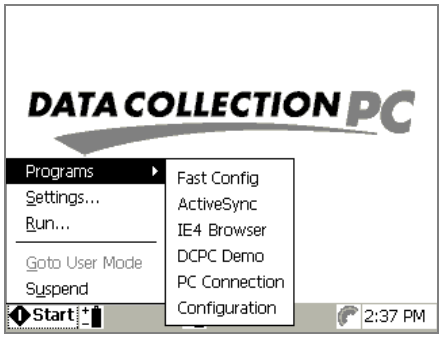
   Goto User Mode When you set a password for the 5023, you can choose this option to change operating modes. For more information, see "Managing Your Passwords" in Chapter 4 of the 502X system manual.

   Suspend Choose this option to turn off the 5023.

2. Press ▲ or ▼ to select an option and press ⎕.

Programs in the Start Menu

When you choose Programs from the Start menu, the Programs list appears.



Fast Config Select Fast Config to quickly set or enable basic network parameters and to connect the 5023 to your network. For help, see "Using Fast Config" in Chapter 2.

ActiveSync After you have established a serial connection to a desktop PC with PC Connection, you can use ActiveSync to establish a partnership between the 5023 and your desktop PC for device management activities. For help, see "Using ActiveSync" in Chapter 5 of the 502X system manual.

IE4 Browser Choose this option to open Internet Explorer 4.0. You can use Internet Explorer for Web browser-based data collection applications. For help, see "Using Internet Explorer" in Chapter 5 of the 502X system manual.

DCPC Demo Select DCPC Demo to verify correct operation of the 5023. For help, see "Verifying That the 5023 Is Operating Correctly" in the *5023 Data Collection PC Quick Start Guide* (Part No. 070505).

PC Connection Use PC Connection to establish a serial connection to a desktop PC. You need to establish this connection before you can use ActiveSync. For help, see "Using ActiveSync" in Chapter 5 of the 502X system manual.

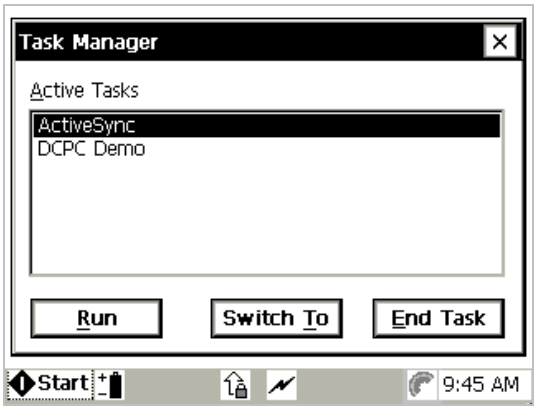
Configuration Choose the Configuration application to view and change all 5023 parameters. For help, see "Using the Configuration Application" in Chapter 2.

Switching Between Programs With Task Manager

If you have several programs running at the same time, you can switch between them using Task Manager.

To open Task Manager and switch between running applications

1. Make sure that the Alt or Ctl icons are not displayed and then press Alt Esc or Alt ⇆. The Task Manager dialog box appears with the active application selected.



2. To change the active application, do one of the following:
   - Press ▲ or ▼ to choose another application from the list and press ⏎. The Task Manager dialog box closes and your selection becomes the active application.
   - Press ▲ or ▼ to choose another application from the list and press ⇆ to select the End Task button. Press ⏎. The application you selected is closed and the next application on the list becomes active.
   - Press ⇆ to select the Run button and press ⏎. The Run dialog box appears. Type the path to an application in the entry field and press ⏎ to start it. You can also browse the Windows directory to find the application you want or press the arrow keys to choose from the most recently run applications.

Learning About the Batteries

Warning
The lithium-ion battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F) or incinerate.

Avertissement
Le bloc-batterie au lithium utilisé dans cet appareil peut présenter un risque d'incendie ou de brûlure chimique en cas de mauvais traitement. Ne désassemblez pas, ne chauffez pas à une température supérieure à 100°C (212°F) et n'incinérez pas ce bloc-batterie.

There are two rechargeable batteries in the 5023:

Main Battery Pack This lithium-ion battery provides the main power source to operate the 5023 and charges the bridge battery when needed. For more information, see "Understanding the Main Battery Pack" later in this section.

Bridge Battery This manganese-dioxide lithium coin cell bridge battery backs up all memory and the real-time clock while you change the main battery pack. For more information, see "Understanding the Bridge Battery" later in this section.

To get the best performance from the 5023's batteries, follow these guidelines:

- Check the battery charge levels regularly, and charge the main battery pack when its charge becomes low. For help, see "Checking the Battery Charge Levels" and "Charging the Main Battery Pack" later in this section.
- ALWAYS keep a charged main battery pack in the 5023. When you remove the main battery pack for charging, insert another charged main battery pack so you can continue to operate the 5023 without interruption and maximize the bridge battery charge life.
- To extend the life of the main battery charge, use the Automatic Shutoff feature to turn off the 5023 if it is inactive for a preset length of time. For help, see "Automatic Shutoff" in Chapter 7 of the 502X system manual.
- To store the 5023 for an extended period, install a fully charged main battery pack to maintain data, the real time clock, and system context for a maximum of one week.

If you are using the 5023 in cold temperatures, see "Power Management in Cold Environments" later in this section.

Note: ALWAYS keep a main battery pack installed in the 5023. Leaving the 5023 without a battery pack for longer than it takes to install a charged battery reduces the bridge battery's ability to hold a charge and could eventually result in data loss.

Understanding the Main Battery Pack

The main battery pack is the main power source for the 5023 and charges the bridge battery when required. If the main battery pack charge goes low, you need to replace it with a fully charged battery pack or charge it as soon as possible.

Replace the main battery pack with Intermec Part No. 068537 only. The use of any other battery pack may present a risk of fire or explosion. Contact your local Intermec sales representative for replacement battery packs. DISPOSE OF USED BATTERY PACKS PROMPTLY. KEEP AWAY FROM CHILDREN.

To learn how to remove and install the main battery pack, see the next section. ALWAYS turn off the 5023 BEFORE removing the main battery pack.

Note: ALWAYS keep a main battery pack installed in the 5023. Leaving the 5023 without a battery pack for longer than it takes to install a charged battery reduces the bridge battery's ability to hold a charge and could eventually result in data loss.

Removing and Installing the Main Battery Pack

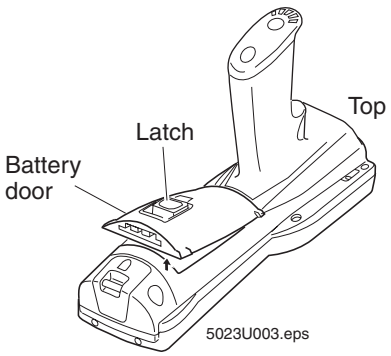
CAUTION

Caution
Removing the battery pack while the 5023 is on may cause loss of data.

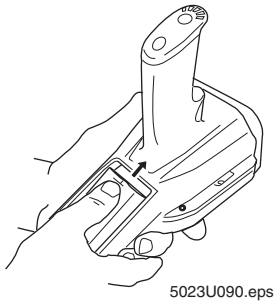
Conseil
Ne détachez pas le jeu de piles pendant que le lecteur est actif car cela pourrait entraîner la perte de données.

To remove the main battery pack

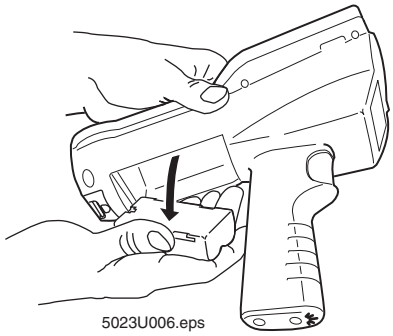
1. Press I/O to turn off the 5023.
2. Open the battery door by pushing up on the battery door latch and sliding it toward the top end of the 5023. Lift up the edge of the battery door to remove it.



3. Push the main battery pack up until it unlocks from the connectors on the bottom of the battery compartment.

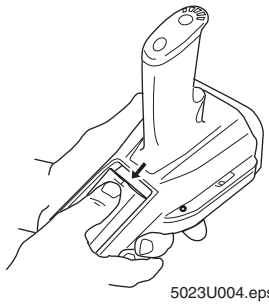


4. Tilt the 5023 to one side and let the main battery pack drop out of the compartment into your hand. Continue with the next instructions to install a charged main battery pack.



To install the main battery pack

1. Place the main battery pack into the upper (larger) half of the battery compartment.
2. Push the main battery pack down until it locks into the connectors on the bottom of the battery compartment.



3. Insert the top edge of the battery door into the top of the battery compartment. Push the door down to close it over the battery compartment.
4. Push the battery door latch down and slide it toward the bottom end of the 5023 to lock the door in place.

Charging the Main Battery Pack

You should regularly check the main battery charge status. If the Low Charge icon appears or if the main battery charge level drops below 50%, you should immediately charge or replace the main battery pack. For help, see "Checking the Battery Charge Levels" later in this chapter.

If the main battery charge drops to a critical level, the Main Battery Very Low message box appears. For help, see "Recognizing Low Battery Warnings" later in this chapter.

Note: ALWAYS turn off the 5023 before removing the main battery pack. If you remove a battery pack to charge it, ALWAYS install a spare charged battery pack in the 5023 to extend the life of the bridge battery.

To charge the main battery pack

Do one of the following:

- Remove the main battery pack from the 5023, and place the battery pack in the Z2400 Battery Charger. The Z2400 can fully charge the battery pack in about 4 hours. For help, see the *Z2400 Battery Charger Instruction Sheet* (Part No. 069994).
- Remove the main battery pack from the 5023, and place the battery pack in the D5020 Communications Dock fast charge battery slot. Be sure the D5020 is connected to an external power supply. Using this method, the D5020 can fully charge the main battery pack in about 3 hours. For help, see the *D5020 Communications Dock Getting Started Guide* (Part No. 068976).
- Leave the main battery pack in the 5023, and place the 5023 in a D5020 Communications Dock connected to an external power supply. Using this method, the D5020 can fully charge the main battery pack in about 15 hours. For help, see the D5020 getting started guide.
- Leave the main battery pack in the 5023, and install an L5020 Serial Communications Adapter on the 5023 and connect it to an external power supply. The L5020 can fully charge the main battery pack in about 15 hours. For help, see the *L5020 Serial Communications Adapter Quick Reference Guide* (Part No. 068978).

You can continue to operate the 5023 while it is in the D5020 dock or when an L5020 has been installed.

Note: You need to charge the 5023 batteries in an environment where the temperature is between 0°C and 40°C (32°F and 104°F). The main and bridge batteries will not charge in environments outside this temperature range.

Understanding the Bridge Battery

The bridge battery is a 90 mAh manganese-dioxide lithium battery that is designed to back up all memory and the real-time clock while you remove a discharged main battery pack and insert a charged main battery pack. When you turn the 5023 back on, the 5023 resumes where it was when you turned it off.

ALWAYS keep a charged main battery pack installed in the 5023 to maximize the bridge battery life. Leaving the 5023 without a main battery pack for longer than it takes to install a charged battery reduces the bridge battery's ability to hold a charge and could eventually result in data loss.

The bridge battery is designed to maintain the 5023 configuration only while you are changing the main battery pack. It is not intended to retain data for extended periods of time.

Note: Proper maintenance of the 5023's bridge battery is the user's responsibility. Failure to follow the guidelines provided will result in reduced performance and potential failure. To request service or support call 1-800-755-5505 in the U.S.A. or 1-800-668-7043 in Canada. Outside the U.S.A. or Canada, contact your local Intermec service supplier.

Charging the Bridge Battery

CAUTION

Caution
There is a risk of data loss if the main battery pack is removed and the bridge battery is not fully charged. Do not rely on the bridge battery to maintain the contents of RAM until the bridge battery is fully charged.

Conseil
Vous risquez de perdre des données si le bloc-batterie principal est enlevé, alors que la batterie en pont n'est pas entièrement chargée. En effet, la batterie en pont ne peut pas conserver le contenu de la mémoire vive (RAM), tant qu'elle n'est pas entièrement chargée.

The main battery pack charges the bridge battery with the 5023 turned on or off. The 5023 continuously monitors the bridge battery voltage level and charges the bridge battery to maximum voltage whenever necessary. If the main battery pack is low or discharged and you are not connected to AC power, it will not be able to charge the bridge battery.

You should regularly check the bridge battery charge status. For help, see "Checking the Battery Charge Levels" later in this chapter.

If the bridge battery charge drops to a critical level, the Bridge Battery Very Low message box appears. For help, see "Recognizing Low Battery Warnings" later in this chapter.

To charge the bridge battery

- Do one of the following:
  - Turn off the 5023 and install a fully charged main battery pack. The main battery pack fully charges the bridge battery in approximately 72 hours. After the bridge battery has been fully charged, the main battery pack still has most of its power remaining.
  - Place the 5023 in a D5020 Communications Dock connected to an external AC power supply.
  - Install an L5020 Serial Communications Adapter on the 5023 and connect the adapter to an external AC power supply.

Note: To charge the bridge battery, you need to place the 5023 in an environment where the temperature is between 0°C and 40°C (32°F and 104°F). The bridge battery will not charge in environments outside this temperature range.

Checking the Battery Charge Levels

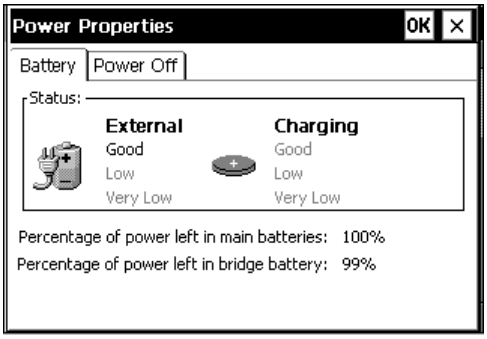
There are two ways to check the battery charge levels:

- Open the Power applet to view the Power Properties window, which gives the charge status of the main and bridge batteries. For help, see "To open the Power applet" in the next section.
- Look at the Main Battery Charge icon, which is always shown in the Notification Tray. For help, see "To check the Main Battery Charge icon" later in this section.

To open the Power applet

1. Press  to open the Start menu and press ▼ to select Settings.
2. Press  . The Control Panel appears.

3. Press ▼ to select the Power applet and press ⎕. The Power Properties information box appears, showing main and bridge battery charge status.



   Press ⎕ to close the Power Properties information box and return to the Control Panel.

4. Press Alt twice. The File menu appears.
5. Press ▼ to select Close and press ⎕ to return to the 5023 desktop.

To check the Main Battery Charge icon

- Look in the Notification Tray next to the Start button. The Main Battery Charge icon is always shown here.

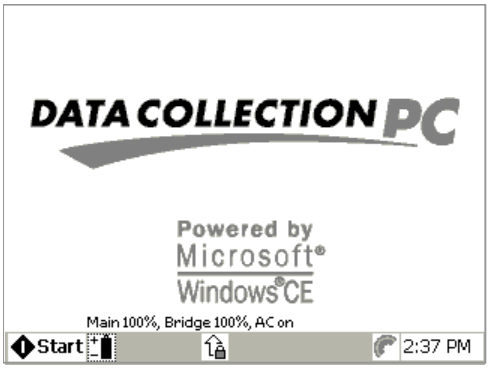
Icon	Description
	**Full Charge** The main battery pack is at or near full charge. Battery is charged 75% to 100% of capacity.
	**Half Charge** The main battery pack is charged to about 50% capacity.
	**Low Charge** The main battery pack is at a critically low level and needs to be charged immediately.
	**Unknown Main Battery Status** Indicates the main battery pack is charging or the status is not known.

Note: If the Low Charge icon appears, you should immediately turn off the 5023 and charge the main battery pack. For help, see "Charging the Main Battery Pack" earlier in this chapter.

You can also put focus on the Main Battery Charge icon to open the Power applet.

To place focus on the Main Battery Charge icon

1. Press Ctl Esc. The focus is placed on the Start button.
2. Press ▶ to move the focus to the Main Battery Charge icon. A message briefly appears near the icon showing the percentage of charge remaining in the main and bridge batteries and whether or not AC power is currently being applied.



Note: When the focus is on an item in the Notification Tray, you can return to the 5023 desktop by pressing Ctl Esc at any time.

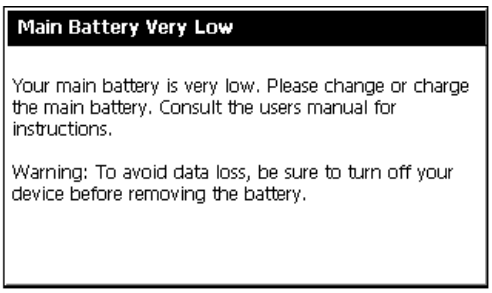
3. Do one of the following:
   - Press Ctl Esc to remove focus from the icon and return to the 5023 desktop.
   - Leave the focus on the Main Battery charge icon and press ⬭. The Power Properties information box appears, showing main and bridge battery status. Press ⬭ to close the Power Properties information box and return to the 5023 desktop.

Recognizing Low Battery Warnings

The following low battery warnings appear if the main or bridge battery charge levels fall to critical levels.

Main Battery Very Low Warning

The 5023 beeps every 15 seconds, the Power applet starts, the Low Charge icon appears in the Notification Tray, and the Main Battery Very Low dialog box appears.

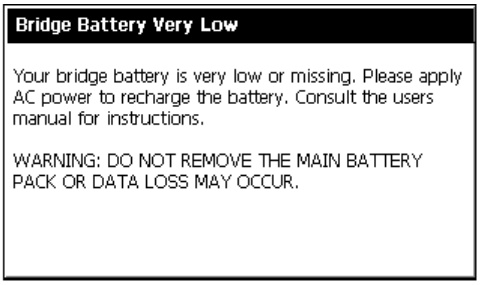


What You Need to Do

1. Press Esc to close the message box.
2. Press Esc to close the Power applet.
3. Exit any running applications.
4. Press I/O to suspend the 5023.
5. Replace the main battery pack with a spare charged battery pack, charge the main battery pack, or attach an external power supply.

Bridge Battery Very Low Warning

The Bridge Battery Very Low dialog box appears once every 15 minutes.



What You Need to Do

1. Press Esc to close the message box.
2. Apply AC power to charge the bridge battery. The bridge battery will be fully charged in approximately 72 hours. Do not remove the main battery pack until the Power applet indicates the bridge battery has at least a 50% charge or data loss may occur.

   You can remove the 5023 from AC power after the main battery pack is charged.

Power Management in Cold Environments

If you use the 5023 in a cold temperature environment, battery life will be reduced. Battery life depends on temperature, battery model, input device, battery pack age, frequency of use, and duty cycle factors. Follow these guidelines for battery maintenance if you are using the 5023 in a cold environment:

- If you need to replace or charge the main battery pack, let the main battery pack warm up to room temperature for a half hour before you charge it.
- Store the battery chargers and spare main battery packs in a warm (office) environment to ensure the most efficient operation.
- If you use the 5023 for extended periods of time in a sub-freezing environment, you may need to
  - change the main battery pack more often.
  - change the main battery pack in the sub-freezing environment to keep condensation from forming in the 5023.
  - move the 5023 out of the sub-freezing environment to allow the bridge battery to charge.
  - monitor the bridge battery charge closely to ensure that it remains as close to fully charged as possible.
- Charge the 5023 batteries in an environment where the temperature is between 0°C and 40°C (32°F and 104°F). The main and bridge batteries will not charge in environments outside this temperature range.
- Store the 5023 in an environment where the temperature is between 0°C and 40°C (32°F and 104°F) to ensure that the bridge battery charge circuit functions properly.

Using an External Power Supply

You can operate the 5023 using an external power supply with any one of the following accessories:

- D5020 Communications Dock connected to an external power supply
- L5020 Serial Communications Adapter connected to an external power supply

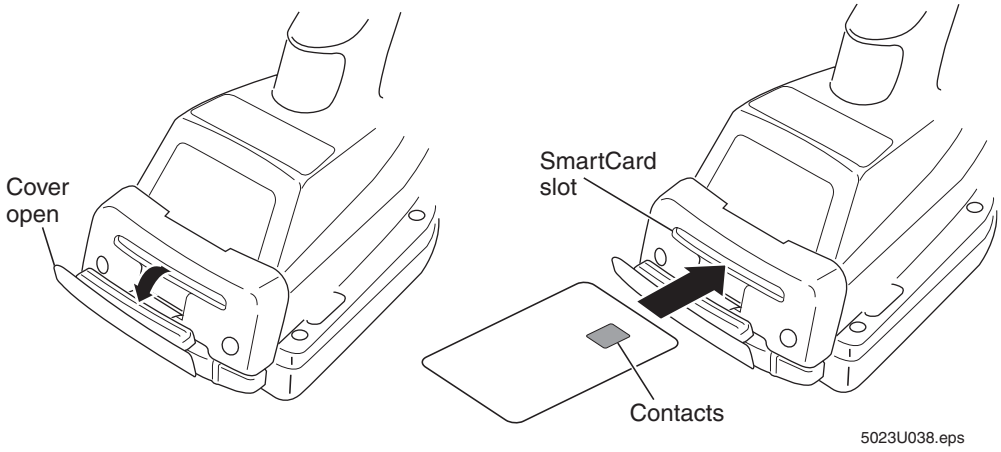
You can use the external power supply to operate the 5023 and to charge the 5023's batteries at the same time. For help, see the accessory quick reference guides.

Using the SmartCard Reader

The 5023 comes with a SmartCard reader installed.

To insert a SmartCard

1. Gently pull on the edges of the reader slot access door to open it.
2. With the contacts oriented as shown, slide the SmartCard into the reader slot until it stops. Do not force the card into the slot.



For help with reading the SmartCard, see the documentation that came with your application.

Scanning a Bar Code Label

The integrated laser scanner emits a beam of laser light that is visible on a bar code label as you scan it. The 5023 decodes the bar code label and enters the data or command you scanned.

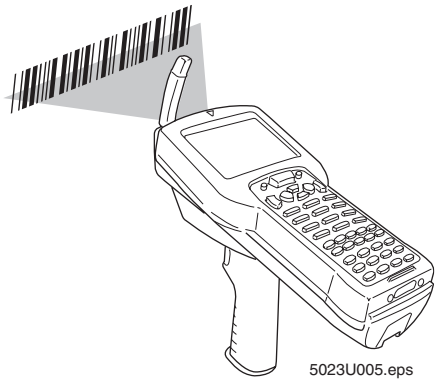
Refer to the 5020/5023 Safety Supplement (Part No. 069395) for additional laser safety information.

Warning
Do not look directly into the window area or at a reflection of the laser beam while the laser is scanning. Long-term exposure to the laser beam can damage your vision.

Avertissement
Ne regardez pas directement la réflexion d'un rayon laser ou dans la fenêtre du laser lorsque celui-ci est en opération. Si vous regardez trop longtemps un rayon laser, cela peut endommager votre vue.

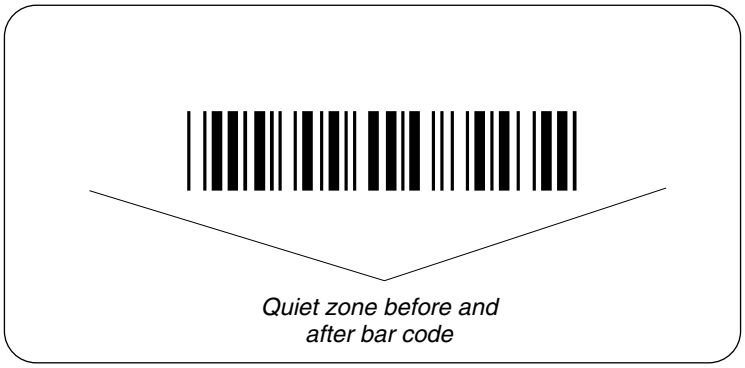
To scan a bar code label

1. Press I/O to turn on the 5023.
2. Hold the 5023 at a slight angle a few inches from the bar code label. The laser scan window must be pointing toward the label.
3. Pull the trigger on the handle and direct the beam so that it falls across all bars in the bar code label. After the 5023 successfully reads the label, you hear a beep and the green LED is lit. The LED turns off in less than one second unless you start scanning another label. The scanner stays on or turns off depending on the scanning options you have configured.



4. Release the Scan button or trigger.

To successfully read a bar code label, the laser beam in the scan module must see all the bars in a label and a "quiet zone" at each end of the label. A quiet zone is a clean, non-printed space.



5020U048.eps

You will have the best success if you hold the 5023 so that the horizontal reading angle is near zero and the vertical reading angle is near 20 degrees. To get the best scan angle, hold the 5023 so that the scan module is pointing toward the bar code label, and tilt the 5023 up or down slightly (20 degrees).

Optimum scan angles vary with the type and print quality of the bar code label, the distance of the scanner from the label, and the lighting in the area.

Note: You should not scan the bar code label "straight on." In a 2-degree conical "dead zone" directly above the label, the laser beam may reflect back into the scanner window and prevent the 5023 from reading the label. At certain angles and straight on, you may not see the laser beam.

Scanning Options

You can set several configuration command parameters to configure the laser scanner to meet your needs. There are several ways to set the scanner commands on the 5023. For help, see Chapter 2, "Configuring the 5023." For help using the scanner configuration commands, see Chapter 7, "Configuration Command Reference," in the 502X system manual.

The available parameters are:

Decode Security Defines the security level to use when decoding bar codes. When you select a lower decode security level, the 5023 can decode bar codes with poorer print quality.

Mode Defines how the scanner operates when you press the Scan button or activate a tethered laser scanner. In One-Shot mode, the laser turns on and stays on until you release the button or scanner trigger or until a label is decoded. In Automatic mode, you can continuously scan bar code labels without having to release the button or scanner trigger between labels.

Redundancy Defines the number of scans (voting) the scanner takes of the same label. Voting requires the 5023 to decode the same bar code label multiple times during a single scanner event and compare the decoded information for a match before signaling a good read.

Timeout Mode Defines the maximum length of time the scanner stays on each time you press the Scan button or activate a tethered laser scanner.

Trigger Mode Sets the triggering to level or edge mode. In level triggering mode, the laser turns on when the scanner is activated and stays on until you release the Scan button or the trigger on a cabled scanner. In edge triggering mode, the laser turns on when the scanner is activated and stays on until you activate the scanner a second time or the scanner timeout turns it off.

Preamble Sets the preamble that precedes any data you scan with the 5023. Common preambles include a data location number or an operator number.

Postamble Sets the postamble that is appended to any data you scan with the 5023. Common postambles include cursor controls such as tabs or carriage return line feeds.

Where Do You Go From Here?

You can use this manual to learn how to perform these tasks:

Task or Feature	See This Chapter
Configuring parameters	Chapter 2, "Configuring the 5023"
Connecting the 5023 to your network	Chapter 3, "Connecting the 5023"
Solving problems with operations and maintaining your 5023	Chapter 4, "Troubleshooting and Maintenance"
List of physical and environmental specifications	Appendix A, "5023 Specifications"

For help with remotely managing your 5023, developing and installing applications, and understanding configuration and reader commands, please see the 502X system manual.

2

Configuring the 5023

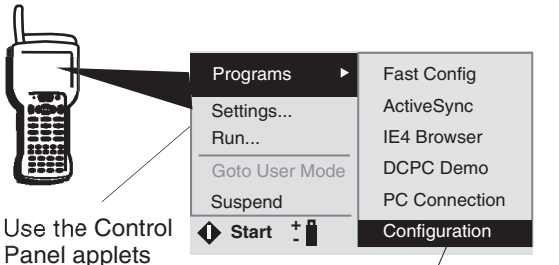
This chapter explains how to configure the 5023 using several different methods.

How to Configure the 5023

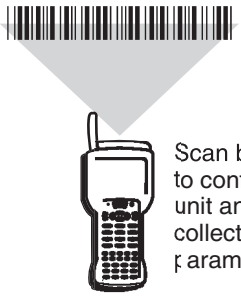
You can set many operating characteristics of the 5023 Data Collection PC, such as the bar code symbologies it decodes or settings for network connections. These characteristics are controlled by configuration parameters. The values that you set for the parameters determine how the computer operates.

There are several ways to configure the 5023:

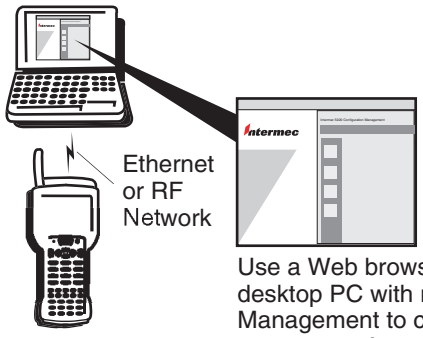
Use Applications on the 5023



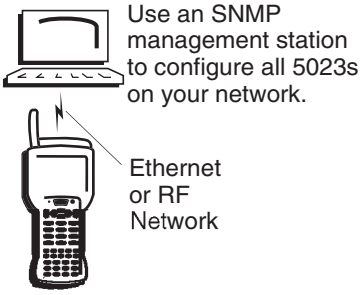
Scan Bar Codes



Use Web Browser



Use SNMP Commands



5023U010.eps

Use the Fast Config Application When first setting up the 5023, use Fast Config to set or enable most basic network parameters and get the 5023 connected to your network. For help, see "Using Fast Config" later in this chapter.

Use the Configuration Application You can use the Configuration application to configure all parameters. The 5023 does not need to be connected to your network to use its Configuration application. For help, see "Using the Configuration Application" later in this chapter.

Scan Bar Codes You can scan bar code labels to configure basic scanning parameters including symbology enabling and scanner operation. For help, see "Configuring the 5023 by Scanning Bar Code Labels" later in this chapter.

Use Control Panel Applets You can change local unit settings such as memory allocation or dialing properties using the Control Panel applets. For help with the Control Panel, see Chapter 3, "Customizing the 502X Using the Control Panel," in the *502X Data Collection PC System Manual* (Part No. 071479).

Use the Configuration Management Application After the 5023 is communicating in your network, you can use a Web browser on a desktop PC and the Configuration Management application in Unit Management to configure all parameters and remotely manage your 5023. You can configure parameters for all 5023s on your network one at a time using Configuration Management from your desktop. For help, see "Using Configuration Management" in Chapter 4 of the 502X system manual.

Use SNMP Commands After the 5023 is communicating in your network, you can use an SNMP management station to send SNMP commands to the 5023. For help, see "Configuring the 502X by Using SNMP" in Chapter 2 of the 502X system manual.

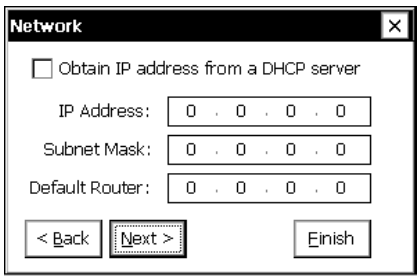
Using Fast Config

The Fast Config application is designed to help you quickly enter basic network parameters and get the 5023 connected to your wired or RF network. Fast Config presents a series of dialog boxes that allows you to set network parameters including

- date and time.
- baud rate of a host PC serial port.
- DHCP server enabling.
- IP address, subnet mask, and default router.
- primary and secondary WINS addresses.
- primary and secondary DNS addresses.
- network name and WEP key for the 802.11b HR radio.
- device name.

To set parameters for data collection, SNMP, UDP Plus, and advanced features of an RF network, use the Configuration application. For help, see "Using the Configuration Application" later in this chapter. For more information on configuration parameters, see Chapter 7, "Configuration Command Reference," in the 502X system manual.

A typical Fast Config dialog box looks like this:



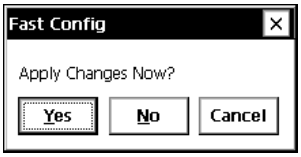
Press ⇆ to move from field to field. Press the arrow keys to move the cursor within a field. Enter information with the keypad. For help, see "Using the Keypad" in Chapter 1.

Most of the Fast Config dialog boxes have three buttons: Next, Back, and Finish. The Next button is the default selection. Press ↵ to proceed to the next dialog box.

Press ⇆ to select the Back or Finish buttons:

- Select Back and press ↵ to return to the previous dialog box. For example, you could go back if you think you entered incorrect information.
- Select Finish and press ↵ to close Fast Config. For example, you could choose Finish if you needed to change an item in only one of the dialog boxes.

If you make changes in a dialog box and press ⎕, a confirmation dialog box appears:



The Yes button is the default selection. Press ⎕ to immediately apply all changes you made in the current dialog box.

Press ⇆ to select the No or Cancel buttons:

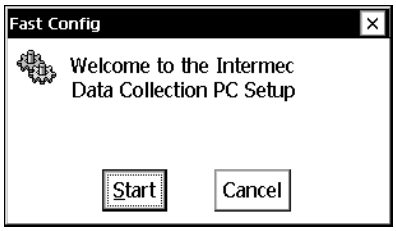
- Select the No button and press ⎕ to continue without applying the changes you made in the current dialog box. For example, you could select No if you think you entered incorrect information and wanted to keep the previous settings intact.
- Select the Cancel button and press ⎕ to return to the current dialog box.

You can also exit Fast Config at any time by pressing Esc. All pending changes will be lost.

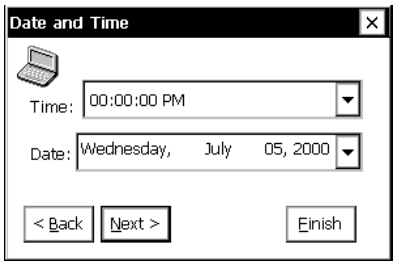
Note: The 5023 must be in range of an access point to use Fast Config.

To set network parameters using Fast Config

1. Press I/O to turn on the 5023.
2. Press ⊟ 3 to open the Start menu.
3. Press ▲ to select Programs and press ▶. The Programs menu appears.
4. Press ▶ to select Fast Config and press ⎕. The Welcome screen appears.

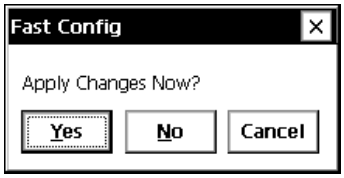


5. Press ⎕ to start Fast Config. The Date and Time screen appears.



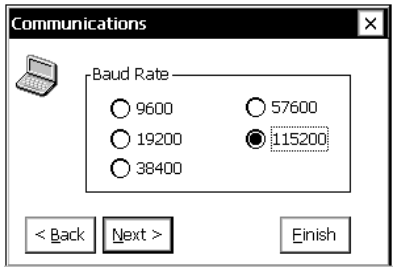
Press ⇆ to move from field to field. Set the correct time and date using the arrow keys. For more information, see "Using the Keypad" in Chapter 1.

6. Press ⎕. A confirmation dialog box appears, prompting you to apply the changes.

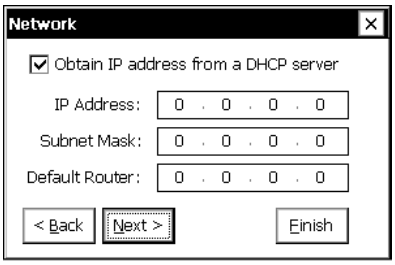


7. Press ⎕ to continue. The Communications dialog box appears with the default baud rate (115200) selected.

Note: If your 5023 is not connected to a D5020 Communications Dock or an L5020 Serial Communications Adapter, a baud rate error message appears. Press ⎕ to clear the error message. The Communications dialog box appears without a baud rate selected.

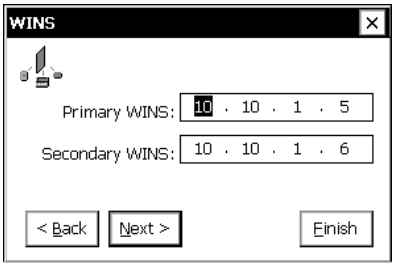


8. Press ⎕ to accept the default baud rate. The confirmation dialog box appears. Press ⎕. The Network dialog box appears.



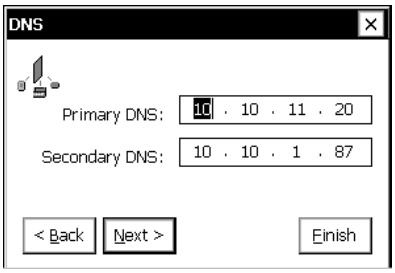
9. If you are using a DHCP server, press ⎕. The WINS dialog box appears.

   If you are not using a DHCP server, press → to clear the check mark from the box. You must enter values in the IP Address, Subnet Mask, and Default Router fields. Press ⇆ to move the cursor from field to field. Enter values with the number keys and use the arrow keys to move within a field. When finished, press ⎕. The confirmation dialog box appears. Press ⎕. The WINS dialog box appears.



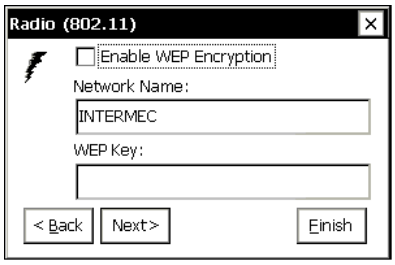
10. If your DHCP server is configured to automatically set the Primary and Secondary WINS addresses, press ⎕. The DNS dialog box appears.

    If your server will not automatically set the WINS addresses, enter them now. When finished, press ⎕. The confirmation dialog box appears. Press ⎕. The DNS dialog box appears.



11. If your DHCP server is configured to automatically set the Primary and Secondary DNS addresses, press ⎕. The Radio dialog box appears.

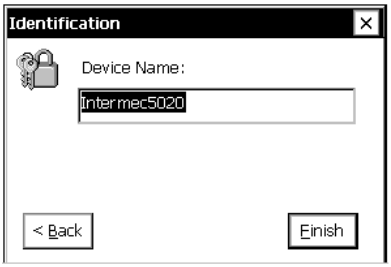
    If your server will not automatically set the DNS addresses, enter them now. When finished, press ⎕. The confirmation dialog box appears. Press ⎕. The Radio dialog box appears.



12. Press ⇆ to move from field to field in the Radio dialog box. Enter information with the alphanumeric keys. For help, see "Using the Keypad" in Chapter 1.

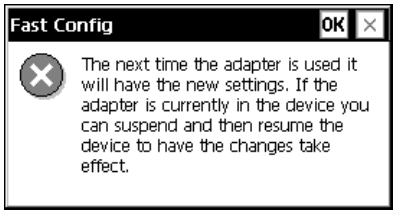
Note: To enable WEP encryption, press ⇨ to place a check mark in the box. For WEP 64 encryption, the WEP key must be 5 characters in length. For WEP 128, the WEP key must be 13 characters in length. Other WEP parameters must be set using the Configuration application. For help, see "Using the Configuration Application" later in this chapter.

13. Press ⎕. The confirmation dialog box appears. Press ⎕. The Identification dialog box appears.

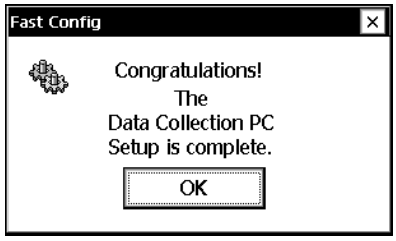


14. Enter a name for the 5023 in the Device Name field. When finished, press ⎕. The confirmation dialog box appears. Press ⎕. An alert message appears.

Note: You may not need to enter a name for your 5023. If this is true, press ⎕. An alert message appears.



15. The alert message reminds you that you must turn the 5023 off and back on again to enable the changes. Press ⎕. The Congratulations message appears.



16. Press ⎕ to close Fast Config. Press I/O twice to turn the 5023 off and back on again.

The 5023 should now be communicating with your RF network. When the 5023 is in range of the access point, the icon appears and remains on in the Notification Tray indicating that the 5023 is communicating with the access point. If you see the icon, the 5023 is unable to connect to the access point. See Chapter 4, "Troubleshooting and Maintenance," for help.

If you are using a UDP Plus network, you need to use the Configuration application to set UDP parameters and enable the network. For help, see "Enabling UDP Plus" in Chapter 3.

Using the Configuration Application

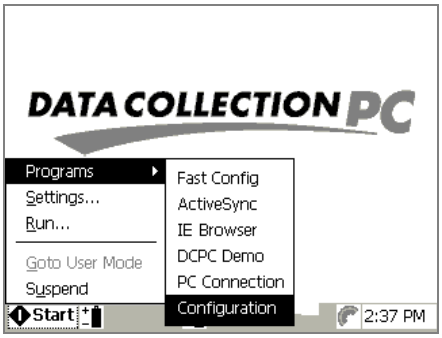
You can use the Configuration application to

- view, change, or set all parameters in real time.
- restore factory defaults to a selected group of parameters or all parameters as needed.
- view system and terminal information.

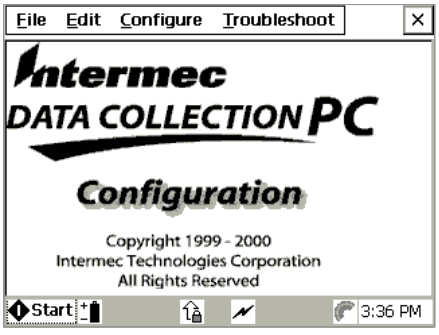
Note: You can also extend and customize the Configuration application. For help, see Appendix D, "Extending the Configuration Applications," in the 502X system manual.

To use the Configuration application

1. Press  to open the Start menu.
2. Press ▼ to highlight Programs and then press ▶.
3. Press ▼ to highlight Configuration.



4. Press . The Configuration main screen appears.



The Configuration main screen includes four menu options:

File Choose the File menu to close a menu or screen, apply changes, refresh the screen to the previous settings, restore factory defaults, and exit the Configuration application.

Edit The Edit menu options undo, cut, copy, and paste are reserved for future use.

Configure Choose this menu to view and set data collection, unit, IE browser, network, and SNMP parameters. For help using the Configure menu, see the next section.

Troubleshoot Choose this option to check the charge status of the main and bridge batteries or view terminal version information. For help, see "Viewing Terminal Information" later in this chapter.

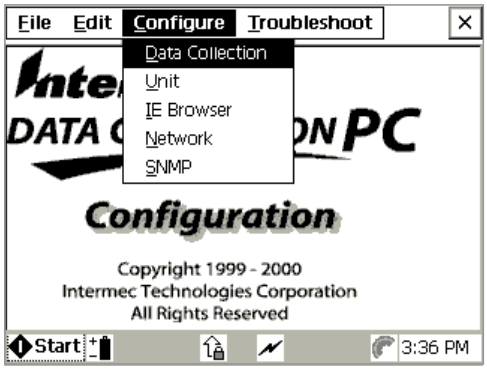
5. To select a menu, press Alt plus the application menu shortcut. For example, to select the Configure menu, press Alt 9.
6. Use ▼ and ▲ to select a menu option and then press ⏎.
7. To exit the Configuration application, press Alt 6 to open the File menu. Press ▼ to highlight Exit and then press ⏎.

Viewing and Changing Parameters

Select items in the Configuration menu to view parameter groups and change the configuration settings of your 5023.

To view and change parameter settings in the Configuration application

1. If the Configuration application is not open, press 3. Choose Programs and then Configuration.
2. Press Alt 9 to open the Configure menu.



The Configure menu lists these five parameter groups:

Data Collection Includes bar code symbologies, scanner parameters, decode options, and virtual wedge settings.

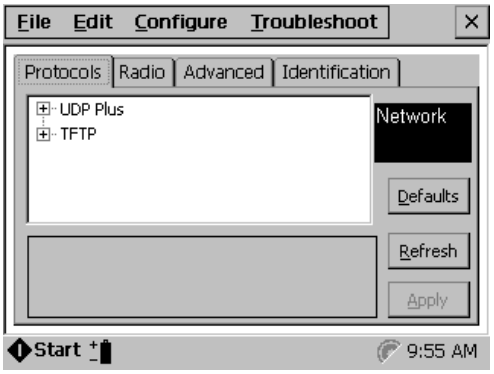
Unit Includes display, audio, and keypad options; date and time; serial port baud rate; and power management.

Internet Explorer (IE) Browser Includes browser connection, home page and cache settings, and function key URLs.

Network Includes all network settings such as Ethernet protocols and radio options.

SNMP Includes SNMP security, trap, and identification parameters.

3. Use ▼ and ▲ to select a parameter group and press ⏎. The configuration screen for that group appears. For example, the Network screen is shown here.

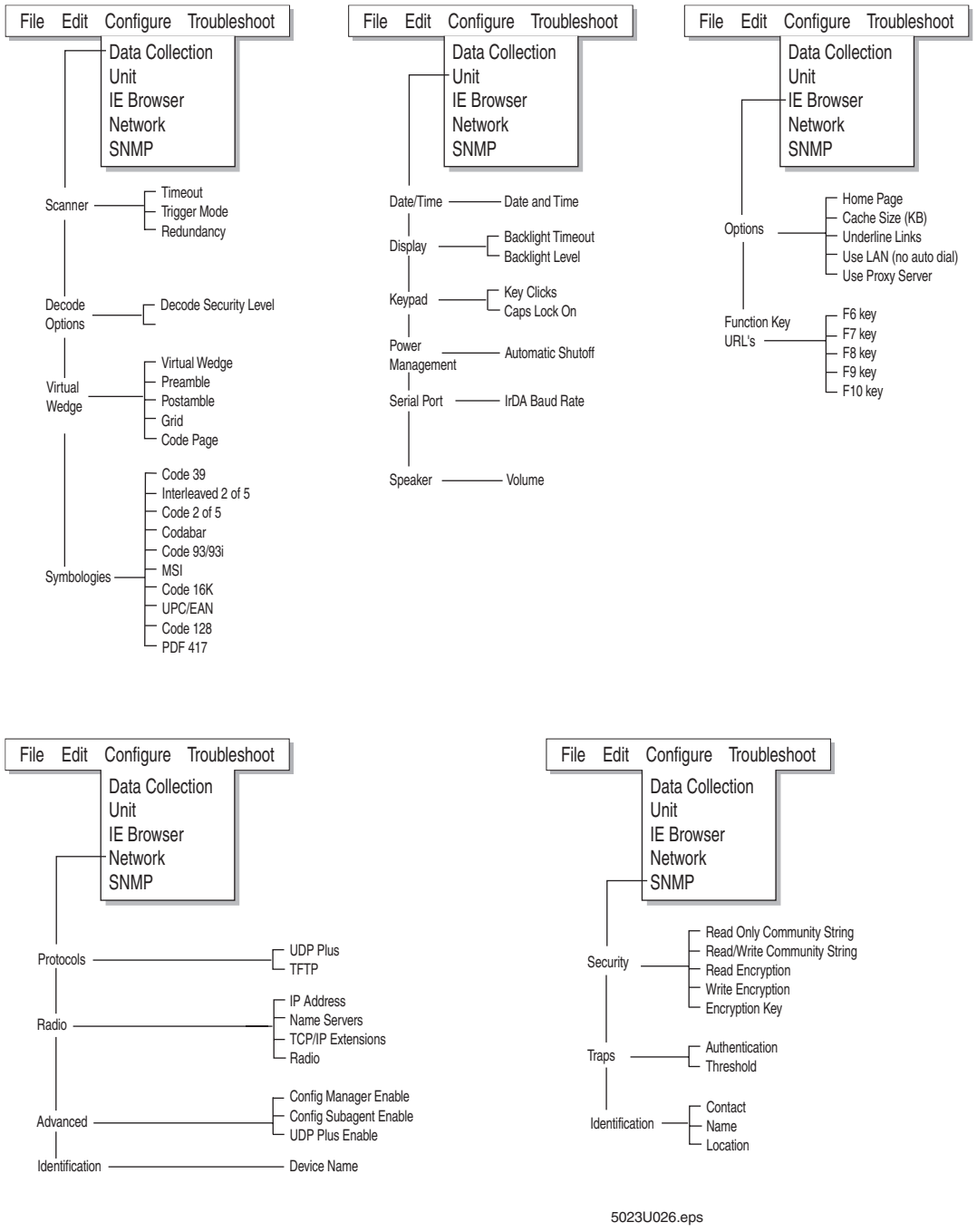


4. Use the ⇆ and arrow keys to navigate in the configuration screen. Make the changes you need for each parameter. For help, see the next section.
5. To save your changes in each configuration screen, press ⇆ to select the Apply button and then press ⏎.
6. To exit the Configuration application, press Alt 6 to open the File menu. Press ▼ to highlight Exit and then press ⏎.
7. If you changed any network settings, press I/O twice to make the changes effective.

Note: If you changed the UDP Plus Enable parameter, warm boot the 5023. For help, see "Booting the 5023" in Chapter 4.

See the next illustration to see how the parameters are listed in each of the five groups. The illustration shows the first level of parameters in each group. To find a parameter not shown in the illustration, see the command name in Chapter 7 of the 502X system manual.

Configuration Parameters at a Glance



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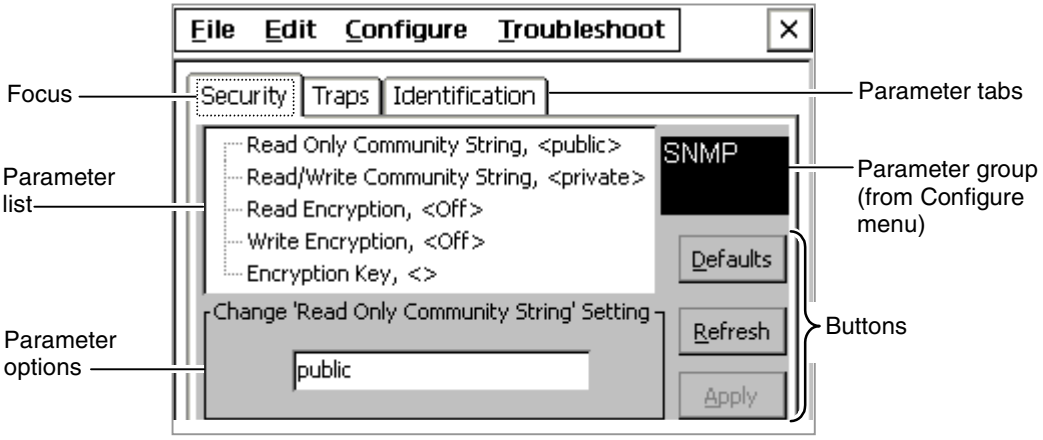
Navigating in the Parameter Screens

This section explains how to navigate around the parameter screens, change parameters, and apply changes. The next illustration shows the different areas and buttons on each parameter screen.



The focus in this illustration is the box around the Security parameter tab, indicating that the tab is the active section of the screen. When you move the focus to the parameter list or parameter options area, the focus changes to highlight the parameter or option. When you move the focus to a button, the button box outline appears darker.

Read-only parameters will not appear in the parameter options area.

Here is a summary of the keys you use to navigate in the Configuration application. Detailed instructions are also listed next.

To Do This	Press
Move the focus from one area to the next within a tab	Tab
Move the focus in reverse order within a tab	Shift Tab
Select the next parameter tab. If the focus is on a tab, you can also press ◀ or ▶ to select the next parameter tab.	Ctl Tab
Move up and down in the parameter list Toggle through the options in a drop-down list Move the focus through the options in an option button list	▼ and ▲
Expand a parameter list for a parameter marked with a plus sign ⊞	▶
Close or collapse a parameter list for a parameter marked with a negative sign ⊟	◀
Scroll a tab to the right to view information	Ctl ▶

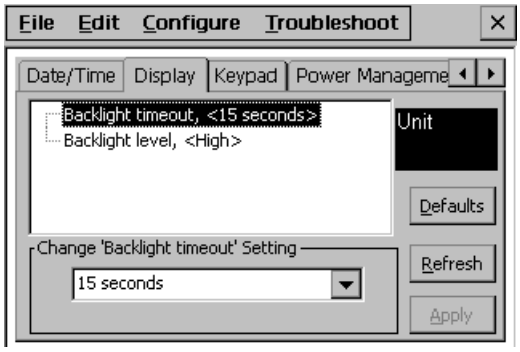
To select another parameter tab

- With the focus on a parameter tab, press ◀ or ▶.
- If the focus is not on the tab, press Ctl ⇆ to select the next tab. For example, press Ctl ⇆ to move the focus from an item in the Date/Time tab to the Display tab.

To select a parameter

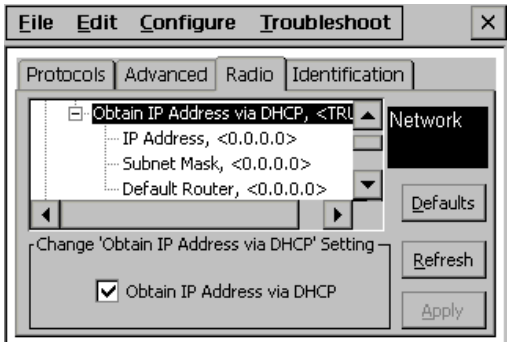
1. Press ⇆ until the first parameter in the parameter list is highlighted.
2. Press ▲ or ▼ to select a parameter in the list.

   For example, press ⇆ to move the focus from the Display tab to the first parameter, Backlight Timeout. Press ▼ to select the next parameter, Backlight Level.



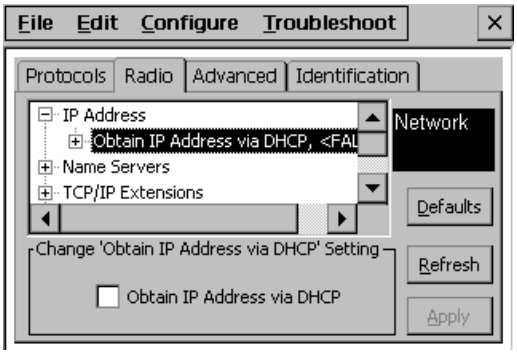
To view an expanded parameter list ⊞

1. Press ⇆ to move the focus to the parameter list area.
2. Press ▲ or ▼ to select a parameter that is marked with a plus sign ⊞.
3. Press ▶. The expanded parameter list appears. For example, if the focus is on the parameter Obtain IP Address via DHCP, press ▶ to see the expanded parameter list.



To close or collapse an expanded parameter list ⊟

1. Press ▲ or ▼ to select a parameter that is marked with a negative sign ⊟.
2. Press ◀ to close the expanded list. For example, if the focus is on the parameter Obtain IP Address via DHCP, press ◀ to close the parameter list.

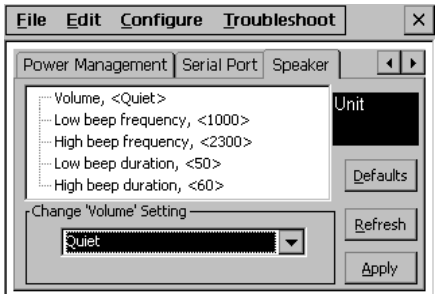


To change a parameter

1. Press ⇆ to move the focus to the parameter list area.
2. Press ▲ or ▼ to select a parameter. If necessary, press ▶ to expand a parameter list. Parameter values that you can change will appear in the options area as you select them.
3. Press ⇆ to move the focus to the options area.
4. Change the parameter. There are four types of entry fields:

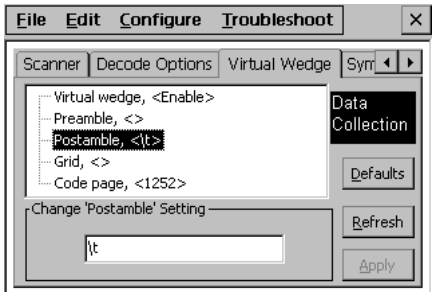
   - Drop-down list:

     Press ▲ or ▼ to toggle through the options until the option you want is highlighted.



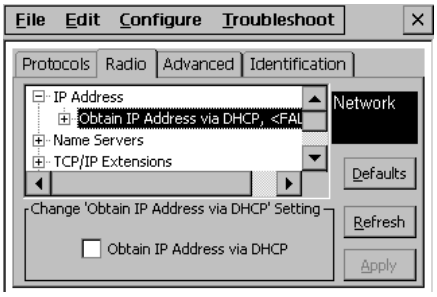
   - Entry field or box:

     Type or scan a value. To enter an IP address, use the ◀ or ▶ keys to move the cursor between segments of the IP address field. To edit the data in an entry field, use the arrow keys, →, or ←.



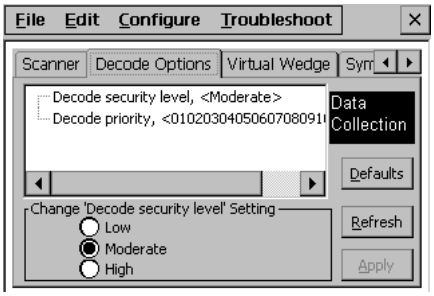
- Check box

  Press → to check or clear the option.



- Option button list

  Press ▲ or ▼ to move the focus to the option you want to select.



5. Repeat Steps 1 through 4 to change another parameter in the same parameter tab.
6. Press ⇥ to move the focus to the Apply button and then press ⎕. A message box appears, asking you to confirm the changes.
7. Press ⎕ to confirm the changes and exit the message box.

Refreshing Parameter Settings

You can refresh or reset any parameters until you press the Apply button to save the changes. A refresh discards all unapplied edits and resets the values to the previous saved value. A refresh also refetches and synchronizes the values for read-only parameters like DHCP status and access point name. After you apply changes, you cannot refresh the parameters to the previous settings. However, read-only parameters are always updated when you refresh.

To refresh settings

1. Press ⇥ to move the focus to the Refresh button or choose Refresh from the File menu.
2. Press ⎕ to refresh the parameters in the current screen. A message box appears to confirm the refresh. For example, if the Scanner configuration screen is displayed on the 5023 screen and you choose refresh, the 5023 only refreshes the scanner parameters.
3. Press ⎕ to choose Yes or press ▶ to select No and then press ⎕.
4. Press ⇥ to move the focus to the Apply button and then press ⎕. A message box appears to confirm the changes.
5. Press ⎕ to exit the message box.

Restoring Factory Defaults

In the Configuration application, there are two ways to restore factory default parameters:

- You can select the Defaults button in a parameter screen to restore the defaults to all the parameters listed on that screen.
- You can select Restore Factory Defaults from the File menu to restore the defaults to all parameters.

Note: Because using the Restore Factory Defaults option resets all network parameters, a loss of network communications may result. This option should only be used by your network administrator or by Intermec support personnel. After using this option, a warm boot may be necessary to restart the 5023.

For a list of the default values, see Appendix A, "502X Default Configuration," in the 502X system manual.

To restore factory defaults in the current Configuration screen

1. Press ⇆ to move the focus to the Defaults button.
2. Press ↵ to restore the default parameters in the current screen. For example, if the Scanner parameters tab is onscreen and you choose to restore the defaults, the 5023 sets only the Scanner parameters to the factory defaults. A confirming message box appears.
3. Press ↵ to choose Yes or press ▶ to select No and then press ↵.
4. Press ⇆ to select the Apply button and then press ↵. A confirming message box appears.
5. Press ↵ to close the box and restore defaults to the parameters in the current screen.

To restore factory defaults to all parameters

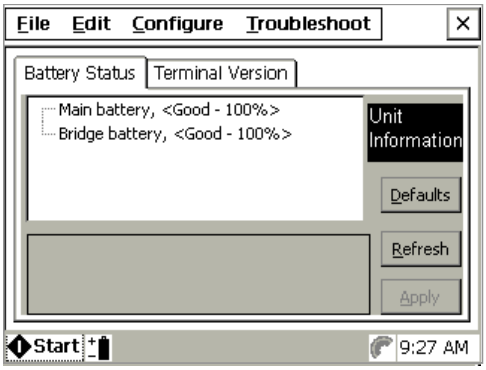
1. Be sure a Configuration menu is onscreen (not the Configuration main screen).
2. Press Alt + 6 to open the File menu.
3. Press ▼ to choose Restore Factory Defaults and press ↵. A confirming message box appears.
4. Press ↵ to close the message box and restore all parameters to their default conditions.

Viewing Terminal Information

Choose Unit Information in the Troubleshoot menu to view battery charge status and terminal information.

To view terminal information

1. If the Configuration application is not open, press Fn 3. Choose Programs and then Configuration.
2. Press Alt Fn F9 to open the Troubleshoot menu and press ↓. The Unit Information screen appears.



The Battery Status tab shows the charge level of the main and bridge batteries.

3. Press ◀ or ▶ to move the focus to the Terminal Version tab, which shows the 5023's
   - model number.
   - serial number.
   - manufacturing software version.
   - current software version.
   - current software build.
   - PCB part number.
   - RFID part number (where applicable).
   - last day serviced.
4. Press Esc to close the Unit Information screen and return to the main Configuration application screen.

Configuring the 5023 by Scanning Bar Code Labels

You can configure the 5023 by scanning bar code labels listed in the 502X system manual or by creating your own Code 39 or Code 93 bar code labels. For configuration bar codes listed by name, see Chapter 7, "Configuration Command Reference," in the 502X system manual.

Here are the commands that you can configure or enable using bar code labels:

- Automatic Shutoff
- Beep (Speaker) Volume
- Codabar
- Code 2 of 5
- Code 39
- Code 93/93i
- Code 128
- Decode Security
- Display Backlight Timeout
- Interleaved 2 of 5
- Keypad Caps Lock
- Keypad Clicker
- MSI
- PDF 417
- Postamble
- Preamble
- Scanner Redundancy
- Scanner Timeout
- Scanner Trigger
- UPC/EAN

You need to configure all other commands using the Configuration application, the Configuration Management application in Unit Management, or SNMP.

When you scan bar code configuration commands, the 5023 sounds an audio signal unless the beep volume is turned off. There are two beep sequences:

- Four beeps means you scanned a valid configuration command.
- Three beeps means you scanned an invalid configuration command.

You can create bar code labels that contain more than one configuration command. For example, you can create one bar code label to configure the computer for

- One-Shot Scanner mode (SB0).
- Scanner Redundancy set to high (SR2).

One-Shot Scanner Mode, Set Scanner Redundancy to High

$+SB0SR2

When you create bar code labels to set one or more configuration commands, follow these rules:

- The bar code label must be printed using Code 39 or Code 93/93i symbology.
- The bar code label must include the start and stop character. Most bar code printing utilities automatically include the start and stop character.
- The bar code label must start with $+ (Change Configuration command).
- Each configuration command must include the command syntax and the value for the command. For example, BV is the command syntax for Beep Volume and the value 4 sets the speaker volume to loud.
- If you set one configuration command to a string of ASCII characters and another configuration command follows, you must enclose the value in quotation marks. If you do not include the quotation marks, the computer will interpret everything after the first command as data and will not find the second configuration command.

  For example, to set the preamble to BV, use $+ADBV (no quotation marks are needed). To set the preamble to BV and turn off the beep volume, use $+AD"BV"BV0, or change the order and use $+BV0ADBV. To clear the preamble and postamble from a single label, use $+AD""AE.
- To include quotation marks when you set a value, the entire value must be enclosed in quotation marks. Type two sets of quotation marks ("") to include one quotation mark as the value for a command. For example, to set the preamble to ABC"D, use $+AD"ABC""D".

Configuring the 5023 Remotely

After the 5023 is communicating in your network, you can configure it by

- using a Web browser and the Configuration Management application in Unit Management.
- sending SNMP commands from an SNMP management station.

You can use a Web browser on a desktop PC and the Unit Management applications to configure all parameters and remotely manage your 5023. You can configure parameters for all 5023s on your network one at a time using the Configuration Management application in Unit Management from your desktop. For help, see Chapter 4, “Using Unit Manager,” in the 502X system manual.

You can also send SNMP commands to the 5023 from an SNMP management station to configure the 5023. For help, see “Configuring the 502X by Using SNMP”in Chapter 2 of the 502X system manual.

For help with connecting the 5023 to your network, see Chapter 3, “Connecting the 5023.”

3

Connecting the 5023

Connecting the 5023 to Your Network

You can easily use the 5023 as an end device in your wired or RF network. There are two ways to connect the 5023 to your network:

- Use the 802.11b HR radio to communicate with your RF network.
- Use the IrDA port to transfer data between the 5023 and a host computer.

To configure your 5023 for an RF or Ethernet network, start with the instructions in the next section. To configure and use your IrDA port, see "Configuring for Serial or IrDA Communications" later in this chapter.

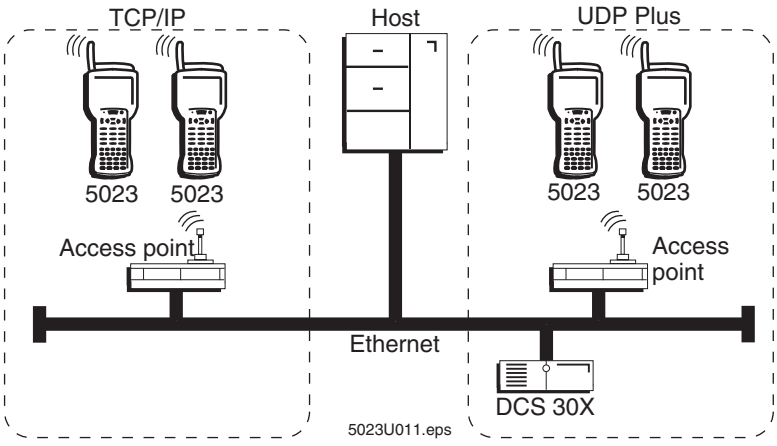
Learning About Network Protocols

The 5023 communicates using either of these network protocol options:

- TCP/IP
- UDP Plus

The 5023 ships with TCP/IP enabled. In a TCP/IP network, the 5023 communicates directly through the access points to the host or server.

UDP Plus is an Intermec protocol built on top of the User Datagram Protocol (UDP). It maximizes the performance of RF networks and provides robust data communications. In a UDP Plus network, the 5023 communicates through the DCS 30X to the host or server. If you have a DCS 30X network, you must enable UDP Plus on the 5023.



The network parameters you need to set depend on your network environment. If you are using a DHCP (Dynamic Host Configuration Protocol) server, the 5023 broadcasts a message to the server, and the DHCP server assigns these network parameters:

- IP address
- Subnet mask
- Default router
- Primary and secondary DNS servers
- Primary and secondary WINS servers

DHCP is automatically enabled on the 5023. If you are not using a DHCP server, you need to disable DHCP and manually set the network parameters. You only need to set the DNS and WINS servers if they are required for your network communications.

If you are on a network that uses a WINS server or you want to use universal naming conventions (UNC) such as \\computer_name\share_name\filename, you need to set the device name. For help with setting the device name, see "Setting Communications Properties" in Chapter 3 of the *502X Data Collection PC System Manual* (Part No. 071479).

Learning About RF Network Settings

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

Conseil
Assurez-vous que la distance entre tous les éléments avec antennes soit d'au moins 30 centimètres (un pied) avant de faire la connexion avec l'alimentation électrique, faute de quoi vous risquez d'endommager votre installation.

To connect the 5023 to an RF network, you need to

- configure your access points.
- configure the 5023 radio parameters, including the network name and WEP key.

The access point acts as a bridge to provide RF communications between the 5023 and the DCS 30X or host. When you first consider purchasing an RF data collection system, an Intermec representative works with you to perform a site survey at your facility. The survey analyzes the range of RF devices in your facility, determines the placement of the access points, and ensures that the access point coverage overlaps to provide uninterrupted RF access at any location within the building. This manual assumes that a site survey is complete and the access points are installed.

If the host computer communicates with the 5023 through 011X access points, you may need to add the 5023 IP address and MAC address as a static entry in the host's ARP table. For help, see "Problems With Connectivity" in Chapter 4.

Setting the Network Parameters

To quickly connect the 5023 to your network, you can use the Fast Config application to set these basic network and RF parameters for a TCP/IP network:

- Date and time
- Baud rate of a host PC serial port
- DHCP server enabling
- IP address, subnet mask, and default router
- Primary and secondary WINS addresses
- Primary and secondary DNS addresses
- Network name and WEP key
- Device name

After you use Fast Config, the 5023 should be communicating in your network. For help with Fast Config, see "Using Fast Config" in Chapter 2.

For a UDP Plus network, follow the Fast Config instructions and then use the Configuration application to enter UDP parameters and enable the network. For help, see "Enabling UDP Plus" later in this chapter.

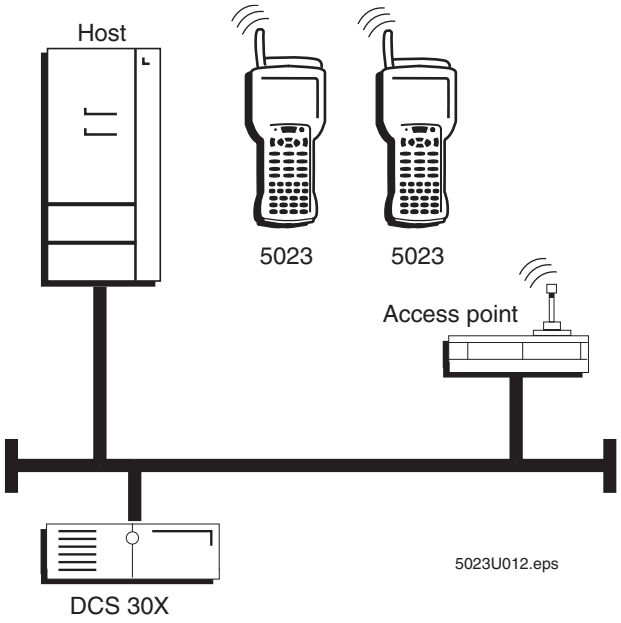
You can also configure each network and radio parameter using the Configuration application. For help, see "Using the Configuration Application" in Chapter 2.

After you have connected the 5023 to your network, you can remotely set parameters by using the Configuration Management application in Unit Management from your desktop PC. For help, see "Using Configuration Management" in Chapter 4 of the 502X system manual.

You can also remotely set parameters on the 5023 by sending SNMP commands from an SNMP management station. For help, see "Configuring the 502X by Using SNMP" in Chapter 2 of the 502X system manual.

Enabling UDP Plus

The DCS 30X supports and manages communications with other devices in the RF or Ethernet network. When you install and configure the DCS 30X, you identify the host computer(s) and 5023s in your network. The 5023s communicate through the DCS 30X with your host by using UDP Plus. For help installing the DCS 30X, see the DCS 30X manual.



For the 5023 to communicate with the server, you must perform these tasks on the DCS 30X:

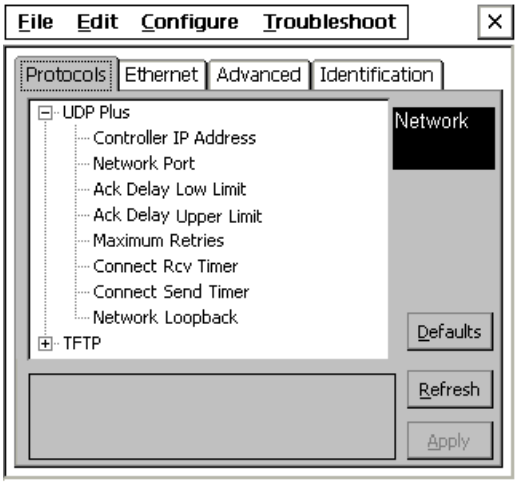
- Configure the UDP Plus network.
- Assign an IP address to each 5023, or if you are using a DHCP server, set up the DNS Configuration dialog box on the DCS 30X.
- Enable all 5023s.
- Define the host environment parameters.
- Define the host communications parameters.

Next, you need to configure UDP Plus on the 5023. If you have not configured the network parameters, start with the instructions for "Setting the Network Parameters" earlier in this chapter.

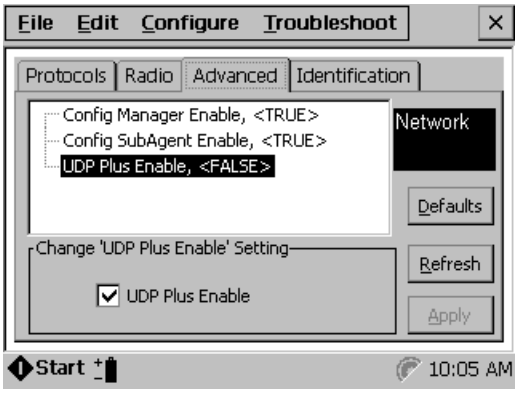
To enable UDP Plus

1. Turn on the 5023 and open the Start menu.
2. Start the Configuration application and select the Configure menu.
3. Press ▼ to select Network and then press ⎕. The Network configuration screen appears.

4. Press ⇆ to select UDP Plus and then press ▶. The expanded UDP Plus parameter list appears. For a definition of each parameter, see Chapter 7, "Configuration Command Reference," in the 502X system manual.



5. Choose Controller IP Address and set the IP address of the DCS 30X. You can set other UDP Plus parameters as needed.
6. To save your changes, press ⇆ to select the Apply button and then press ⏎.
7. Press Ctl ⇆ three times to select Advanced. The Advanced configuration screen appears.
8. Press ⇆ and then ▼ to select the UDP Plus Enable parameter.



9. Press ⇆ to move to the UDP Plus Enable check box, and then press → to place a check mark in the box.
10. To save your changes, press ⇆ to select the Apply button and then press ⏎.
11. Exit the Configuration application and press I/O twice to make the changes effective.

12. Warm boot the 5023 to enable UDP Plus. For help, see "Booting the 5023" in Chapter 4.

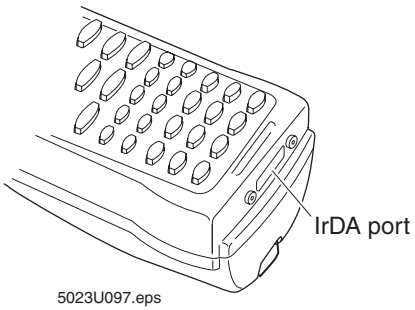
The 5023 should now be communicating in your UDP Plus network. When the 5023 is communicating with the DCS 30X, the icon appears and remains on in the Notification Tray. If you see a icon, the 5023 is unable to communicate with the DCS 30X. See Chapter 4, "Troubleshooting and Maintenance," for help.

Configuring for Serial or IrDA Communications

The 5023 has an IrDA port for data communications with a host computer. To convert the IrDA port to an RS-232 serial port, you need an L5020 Serial Communications Adapter or a D5020 Communications Dock.

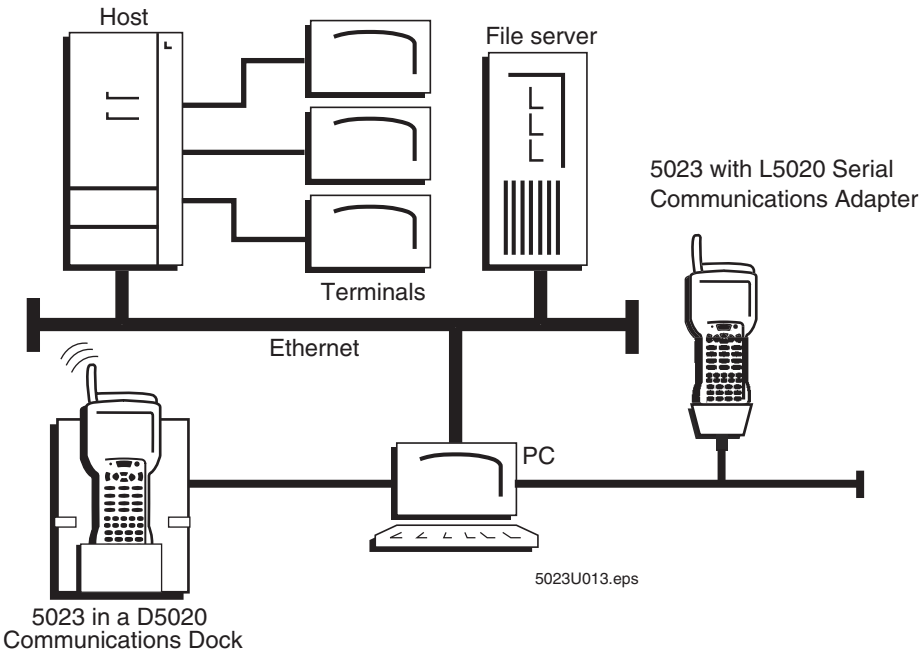
Locating the IrDA Port

The 5023's IrDA port is located on the end of the 5023 below the keypad.



5023U097.eps

5023 Data Collection PC in a Wired Network



To use the 5023 for serial communications, you need to

- connect the 5023 to the desktop PC through the D5020 dock or L5020 adapter. For help, see the next section.
- configure the 5023's baud rate to match the baud rate set on the desktop PC. For help, see "Setting the Baud Rate" later in this chapter.

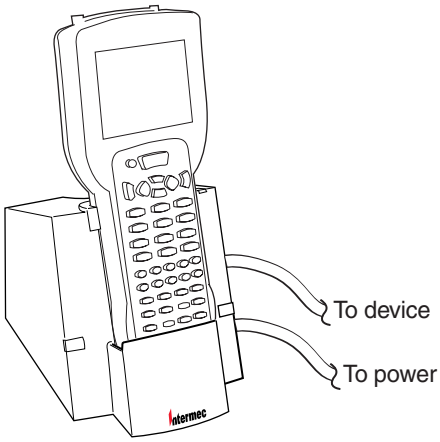
Once the 5023 is connected, you can use ActiveSync to establish a partnership between your desktop PC and the 5023 for browsing, file transfers, application development, and other device management activities. For help, see "Using ActiveSync" in Chapter 5 of the 502X system manual.

To use the 5023 for IrDA communications with your desktop PC, you need to enable your desktop PC's IrDA port.

Connecting to Another Device

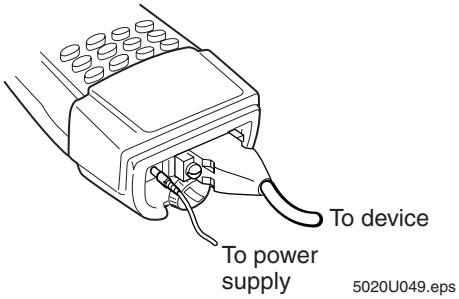
You can physically connect the 5023 to another device using one of the methods described next.

D5020 IrDA and Serial Communications Docks Either connect the Serial Communications Dock to a device (host computer, printer, or other serial device) using an RS-232 null-modem serial cable (Part No. 070268), or connect the IrDA Communications Dock to an IrDA transceiver using the IrDA port. Connect the power supply to the dock and then place the 5023 in the dock. You can transfer data between the 5023 and the device connected to the dock. For help, see the *D5020 Communications Dock Getting Started Guide* (Part No. 068976).



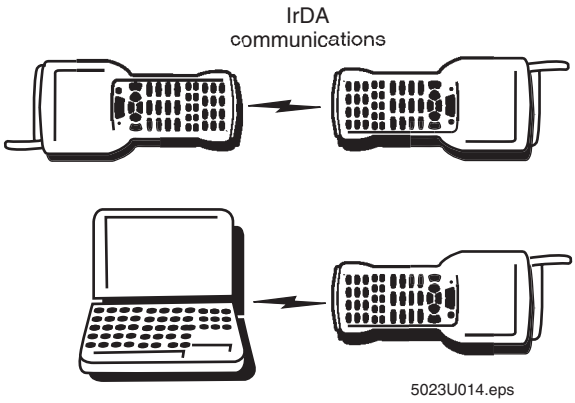
5020U026.eps

L5020 Serial Communications Adapter Connect the serial adapter to a device (host computer, printer, or other serial device) using an RS-232 null-modem serial cable (Part No. 070268). Connect the power supply to the serial adapter. Install the serial adapter onto the IrDA port on the 5023. You can transfer data between the 5023 and the device connected to the serial adapter. For help, see the *L5020 Serial Communications Adapter Quick Reference Guide* (Part No. 068978).



5020U049.eps

5023-to-5023 (or IrDA Port) Line up the IrDA port on the 5023 with the IrDA port on another 5023 or on a PC. The two IrDA ports must be within about 30.5 centimeters (1 foot) of each other. You do not need to set the IrDA baud rate because the two computers will auto-negotiate and choose the highest possible speed.

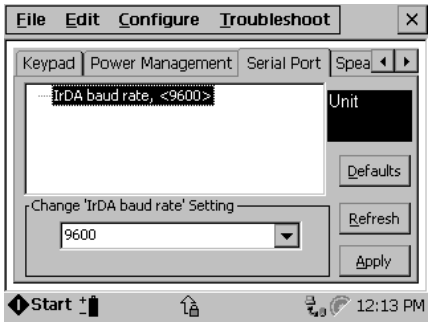


Setting the Baud Rate

The baud rate you set for the 5023 IrDA port must match the baud rate set for the serial port on the connected device. You must connect the 5023 to a D5020 Communications Dock or an L5020 Serial Communications Adapter to set the IrDA baud rate. Set the baud rate using the Configuration application, the Configuration Management application in Unit Management, SNMP, or Fast Config.

To set the baud rate with the Configuration application

1. If the Configuration application is not open, open the Start menu. Choose Programs and then Configuration.
2. Open the Configure menu.
3. Press ▼ to select Unit and then press . The Unit configuration screen appears.
4. Press ▶ to select the Serial Port configuration tab and then press to select the IrDA baud rate.



5. Press ⇆ and use the arrow keys to select the baud rate.
6. To save your changes, press ⇆ to select the Apply button and then press ⎕.
7. Exit the Configuration application.
8. Press ▼ to highlight Exit and then press ⎕.
9. Press I/O twice to have the changes take effect.

Once the 5023 is connected and configured, you are ready to connect and transfer data between the 5023 and the device that is connected to the IrDA or RS-232 serial port. You can use PC Connection to establish a serial connection, and then use ActiveSync to establish a partnership for file and application management. For help, see "Using ActiveSync" in Chapter 5 of the 502X system manual.

4

Troubleshooting and Maintenance

This chapter provides information to help solve problems while using your 5023. You will also find guidelines for booting the 5023, instructions for upgrading and restoring the operating system image, and a procedure for verifying RF communications.

Problems and Solutions

If you have a problem while using the 5023, look in this chapter to find a possible solution. This chapter consists of the following sections:

Sections	Page
Problems While Operating the 5023	4-4
Problems With Connectivity	4-6
Problems While Configuring the 5023	4-8
Problems While Using Unit Management	4-9
Problems While Scanning Bar Codes	4-11
Problems Upgrading the Operating System Image	4-13
Application Manager Error Messages	4-13
Booting the 5023	4-14
Verifying RF or Ethernet Communications	4-15
Upgrading or Restoring the 5023 Operating System Image	4-16

Caution
There are no user-serviceable parts inside the 5023. Opening the unit will void the warranty and may cause damage to the internal components.

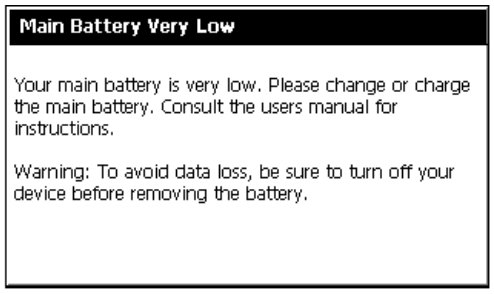
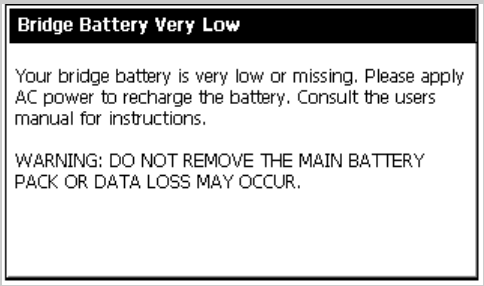
Conseil
Le 5023 ne contient pas de pièces révisibles par l'utilisateur. Le fait d'ouvrir l'unité annule la garantie et peut endommager les pièces internes.

If you send the 5023 in for service, it is your responsibility to save your data and configuration. Intermec is responsible only for ensuring that the keypad and other hardware features match the original configuration when repairing or replacing your 5023.

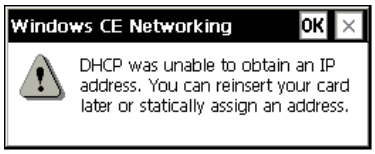
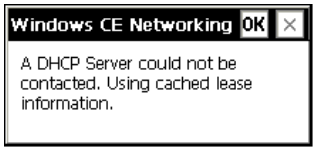
Problems While Operating the 5023

Problem or Message	Solution
You press I/O to turn on the 5023 and nothing happens.	Make sure you have a charged main battery pack installed in the 5023.
After placing the 5023 in storage, you press I/O to turn on the 5023 and nothing happens.	The main battery pack has a low charge. Replace the main battery pack with a fully charged one. Press I/O to turn on the 5023. A message saying that the main battery pack is low appears. The Power applet opens and the 1-minute low-power shutdown process has begun. The 5023 will turn off in one minute. To stop the 5023 from turning off and to clear the message, press Esc and then press I/O twice.
While working with an application on the 5023, you open the Start menu and cannot close the Start menu.	Press Alt ⇆ to open the Task Manager. Select your application or press Ctl Esc twice. For help, see "Switching Between Programs With Task Manager" in Chapter 1.
You added notes to the Owner Properties applet of the Control Panel, selected the Apply button, and pressed ↵ and nothing happened.	Press ⇆ to put the focus on Notes and press ↵. The Owner Properties applet saves the information and closes.
The 5023 is running slowly.	Remove any unnecessary programs. Use the Application Manager in Unit Management to remove programs. For help, see "Uninstalling Applications" in Chapter 4 of the *502X Data Collection PC System Manual* (Part No. 071479). If the 5023 is still running slowly, increase the program memory. Use the System applet in the Control Panel to adjust the memory allocation. For help, see "Adjusting Memory Allocation" in Chapter 3 of the 502X system manual.
The 5023 does not have enough storage memory to load a file.	Use the File Manager application in Unit Management to delete unnecessary files. For help, see "Deleting a File" in Chapter 4 of the 502X system manual. If the 5023 still does not have enough storage memory, increase the storage memory. Use the System applet in the Control Panel to adjust the memory allocation. For help, see "Adjusting Memory Allocation" in Chapter 3 of the 502X system manual.

Problems While Operating the 5023 (continued)

Problem or Message	Solution
The 5023 beeps every 15 seconds, the Power applet starts, and the Main Battery Very Low message appears: 	1. Press Esc to close the message box. 2. Press Esc to close the Power applet. 3. Exit any running applications. 4. Press I/O to suspend the 5023. 5. Replace the main battery pack with a spare charged battery pack, charge the main battery pack, or attach an external power supply. For more information, see "Learning About the Batteries" in Chapter 1.
The Bridge Battery Very Low dialog box appears: 	1. Press to close the message box. 2. Apply AC power to charge the bridge battery. The bridge battery will be fully charged in approximately 72 hours. Do not remove the main battery pack until the Power applet indicates the bridge battery has at least a 50% charge or data loss may occur. You can remove the 5023 from AC power after the main battery pack is charged. For more information, see "Charging the Bridge Battery" in Chapter 1.
Pressing the arrow keys has no effect on focus placement or the cursor.	The pointer may have been turned on inadvertently. If the pointer icon is visible in the Notification Tray, press Alt Ctl to turn off the pointer. When the pointer is enabled, the arrow keys move the pointer and have no effect on the cursor or on where the focus is placed.

Problems With Connectivity

Problem or Message	Solution
You see one of these messages:  	If you turned on the 5023 for the first time, press ↵ or Esc to exit the message box. If you do not have a DHCP server, disable DHCP. For help, see Chapter 3, "Connecting the 5023." If you are using a DHCP server, press ↵ or Esc to exit the message box. Make sure the Radio Connect icon ( ) is displayed in the Notification Tray and that you are in range of an access point. Also make sure the radio parameters, such as RF security ID or domain, are set correctly. For help, see Chapter 3, "Connecting the 5023." If you are upgrading the 5023 operating system image, do **not** press any keys, and wait for the message to disappear. The upgrade will continue.
With DHCP enabled, you check the network parameters and they are incorrect.	In the Configuration application or in Unit Management, click or choose the Refresh button in whatever screen you are at.
The Radio Not Connected icon ( ) is displayed in the Notification Tray.	The 5023 is unable to connect to an access point. Be sure that • the 5023 is within range of an access point. • the access point has been turned on. • the 5023 has been configured correctly. For help configuring the 5023, see Chapter 3, "Connecting the 5023."
While using eMbedded Visual Tools, you are unable to establish a connection to the 5023.	1. Make sure the WINS or DNS network configuration is correct and that you have access to a WINS or DNS server. 2. Exit eMbedded Visual Tools. Use Task Manager to verify that the CEMGR process is not running. End the process if it is running. 3. Set up eMbedded Visual Tools for remote debugging. For more information on using eMbedded Visual Tools, see "Setting Up eMbedded Visual Tools 3.0 for Remote Access" in Chapter 5 of the 502X system manual.
One of the Data Buffer icons blinks: Data buffered in Data buffered out Data buffered in and out No data is currently pending or the No UDP Connection icon appears:	There is a connection problem with a DCS 30X. Make sure the 5023 is in range of an access point and that the 5023 and DCS 30X are configured correctly. For help configuring for UDP Plus, see "Enabling UDP Plus" in Chapter 3.

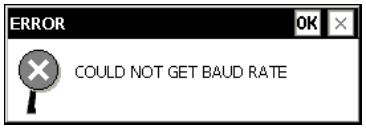
Problems With Connectivity (continued)

Problem or Message	Solution

The host communicates with the RF 5023 through an Intermec 011X access point and the host cannot initiate communications with the 5023.	To conserve battery life, the 5023 radio does not wake up on broadcast messages unless an access point with an address resolution protocol (ARP) server converts the multicast ARP request to a unicast request. The 011X access points do not provide ARP server support, so you must add a static entry in the host's ARP table.
	
	To solve the problem, add the 5023's IP address and MAC address to your host's ARP table. You must disable DHCP before adding the 5023's IP address to the ARP table.
	
	On a Windows 95, 98, or NT host, you can open an MS-DOS window and enter the following command:
	
	`ARP -s IP_address MAC_address [IF_address]`
	
	where:
	
	IP_address is the 5023's IP address.
	MAC_address is the 5023's MAC address.
	IF_address is the IP address for the ARP table. This part of the command is optional.
	
	For a complete description of this command, enter the following at a DOS prompt at the host PC:
	
	`ARP -?`

You cannot establish a partnership with ActiveSync.	You must connect the 5023 to your desktop PC through an L5020 Serial Communications Adapter or a D5020 Communications Dock, and then use PC Connection to establish a serial link between the 5023 and your desktop PC. Then you can establish a partnership through ActiveSync. For more information, see "Using ActiveSync" in Chapter 5 of the 502X system manual. On the 5023, PC Connection sets a baud rate of 19200 when first establishing an ActiveSync partnership. If you change the 5023 baud rate setting after a partnership has been established, it may take several connection attempts before ActiveSync can automatically match the desktop PC to the new baud rate. After the connection is made at the new baud rate, this becomes the default ActiveSync baud rate.

Problems While Configuring the 5023

Problem or Message	Solution
You changed the radio, Ethernet, or UDP Plus parameters, such as DHCP enable or the 5023 IP address, but the parameters did not take effect on the 5023.	Press I/O twice to suspend and resume the 5023 and have the changes take effect. If you have DHCP enabled and the DHCP-assigned parameters are not displayed, select the Refresh button in the Configuration application or Configuration Management.
You enabled or disabled UDP Plus but the change did not take effect on the 5023.	Warm boot the 5023 to enable the change. For help, see "Warm Booting the 5023" later in this chapter.
While using Fast Config to set up the 5023, this message appeared: 	If the 5023 is not connected to a D5020 Communications Dock or an L5020 Serial Communications Adapter, you can set all parameters except the baud rate. Press ↵ to clear the message. The Communications screen appears without a baud rate selected. Press ↵ to continue using Fast Config. If the 5023 is connected to a D5020 or an L5020 and you see this message, press ↵ to clear the message. Press Esc to close Fast Config, and then press I/O twice to turn the 5023 off and back on.
After warm or cold booting the 5023, you chose Data Collection from the Configure menu in the Configuration application or Configuration Management, and some or all of the parameters do not appear or show as Not Available.	You may not have waited for the warm or cold boot to finish before you opened the Configuration application. Choose Refresh to refresh the parameters. On a cold boot, wait until the beep sequence sounds and the red LED stops flashing before you open any applications.
You try to configure the 5023 using SNMP and SNMP does not work.	Check community strings, IP addresses, and whether encryption is turned on or off. If encryption is on, turn it off. (SNMP encryption only works with Intermec software that supports it.) For help, see "Configuring the 502X by Using SNMP" in Chapter 2 of the 502X system manual.
You scan a configuration command, such as Beep Volume Very Quiet, and nothing happens.	There are two possible solutions: • If the Configuration application is open, you cannot scan configuration commands. Use the Configure menu to change the 5023's configuration, or exit the Configuration application to scan configuration commands. • The 5023 may be waiting for another command to complete the configuration change. If you started by scanning the Enter Accumulate command, you must finish the command by scanning the Exit Accumulate command. For help, see Chapter 7, "Configuration Command Reference," in the 502X system manual.

Problems While Configuring the 5023 (continued)

Problem or Message	Solution
You scan a configuration command, such as Beep Duration, and you hear three low beeps.	You scanned an invalid configuration command. Make sure the variable (*data*) part of the command is valid for that command. For example, the beep duration cannot be lower than 10 ms, so the following configuration, which would set the duration to 5 ms, would be invalid. Invalid Beep Duration (5 ms)  *$+BB5*

Problems While Using Unit Management

Problem or Message	Solution
You enter the 5023 IP address in your Web browser and you get a message that your browser cannot connect.	Try these solutions: • If your network uses a proxy server, the 5023 IP address must be added to the proxy exceptions list. Add the IP address to the proxy exceptions list and try again. • The 5023 may be off. Turn on the 5023 and either disable automatic shutoff or connect AC power through the D5020 or the L5020. • Make sure that ITCRB.EXE (deviceWEB) is running. Look for the rainbow icon ( ) in the Notification Tray. • Make sure the 5023 is on and connected to an access point. • Warm boot the 5023.
In the Configuration Management application in Unit Management, the Web browser locks up when you press **Tab** to move out of a field.	You did not complete the entry for the field you just left, such as the IP address field. Close the browser, re-open it and start Unit Management. Make sure you enter all of the data for a field before moving to a different field.
You are in Unit Management and the Web browser screen goes blank or becomes jumbled.	The 5023 may have suspended or been turned off. Make sure the 5023 is on and remains on, and is in range of an access point. If the 5023 has not been suspended, turned off, or moved out of range of an access point, make sure your Web server is still on.
While a Web page or an application is loading, you resize or refresh the window of your Web browser and the browser crashes.	Restart your Web browser and open Unit Management. When you click on a link or choose an option, wait until the application is loaded (the hourglass disappears) before resizing or refreshing the window.

Problems While Using Unit Management (continued)

Problem or Message	Solution
You choose Configuration from the Unit Management menu and nothing appears in the right hand window.	Check these solutions in order: • The Java 1.3 plug-in may not be installed. If you are on the Internet, it should download automatically. • If you move or rename the Java plug-in directory on your desktop PC, the Java plug-in installation may be corrupted. Reinstall the Java plug-in from java.sun.com/products/plugin. • If your network uses a proxy server, the 5023 IP address must be added to the proxy exceptions list. Add the IP address to the proxy exceptions list and try again. • If you still cannot get Configuration to work after trying all the solutions listed above, you may need to configure the Java 1.3 plug-in. Choose Java Plug-in Control Panel from the Start menu on your desktop PC. Choose Proxies to change the proxy configuration options. You may need to uncheck "Use Browser Settings." For help with the Java plug-in, see the documentation for the Java plug-in at http://java.sun.com/products/plugin. Unit Management works best with Internet Explorer 4.0 or higher or Netscape Navigator 4.0 or higher on Windows 95/98/NT. Unit Management will work on other platforms such as Unix or Macintosh using Netscape Navigator 4.0. The installation process and performance of the Java plug-in varies by platform. You may experience some limitations due to browser implementation issues. For help with non-Windows platforms, see the Java plug-in documentation at java.sun.com/products/plugin.

Problems While Scanning Bar Codes

Problem or Message	Solution
You cannot see a red beam of light from the integrated scan module when you aim the scanner at a bar code label and press the Scan button or pull the trigger on the handle.	There are two possible problems: • You may be too far away from the bar code label. Try moving closer to the bar code label and scanning it again. • You may be scanning the bar code label "straight on." Try changing the scanning angle. You need to be within the scanning range to scan bar code labels. For help on scanning distances, see "Physical and Environmental Specifications" in Appendix A.
	 **Warning** ***Do not look directly into the window area or at a reflection of the laser beam while the laser is scanning. Long-term exposure to the laser beam can damage your vision.*** **Avertissement** ***Ne regardez pas directement la réflexion d'un rayon laser ou dans la fenêtre du laser lorsque celui-ci est en opération. Si vous regardez trop longtemps un rayon laser, cela peut endommager votre vue.***
When you press the Scan button or pull the trigger, the scanner LED above the display does not light up.	Move within 60 cm (2 ft) of a wall and press the Scan button again or pull the trigger again. Make sure the scan module emits the red laser beam. If the LEDs do not light, there may be a problem with them. For help, contact your local Intermec service representative. If the laser beam does not turn on, check the other problems in this section for a possible solution.
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 5023 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. To operate the 5023 quickly and efficiently, you should enable only the bar code symbologies that you are going to scan. If you enable multiple symbologies, the 5023 may on rare occasions decode a bar code according to the wrong symbology and produce erroneous results.

Problems While Scanning Bar Codes (continued)

Problem or Message	Solution
The integrated scan module does not read the bar code labels quickly, or the scanning beam seems to be faint or obscured.	The scan module window may be dirty. Clean the scan module window with a solution of ammonia and water. Wipe dry. Do not allow abrasive material to touch the window.
The scanner will not read the bar code label.	Try one of these solutions: • Make sure you aim the scanner beam so it crosses the entire bar code label in one pass. • The angle you are scanning the bar code label may not be working well, or you may be scanning the label "straight on." Try scanning the bar code label again, but vary the scanning angle. • The bar code label print quality may be poor or unreadable. To check the quality of the bar code label, try scanning a bar code label that you know scans. 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 you are scanning is enabled. Use the Configuration application to check the symbologies. From the Configure menu, select Data Collection and then select the Symbologies tab.
You try to scan a bar code immediately after turning the 5023 on, and nothing happens.	Wait 5 to 6 seconds after turning the 5023 on before scanning a bar code. This short delay helps prevent data loss by allowing the operating system to reload the network drivers and reestablish the network connection.
You scan a bar code of more than 128 characters, and some of the data is truncated.	Because the virtual wedge translates incoming data into keypad input, the size of the keypad buffer limits the effective size of a bar code label to 128 characters. Longer labels may be truncated. For labels of more than 128 characters, you can develop an application that bypasses the keypad buffer.

Problems Upgrading the Operating System Image

Problem or Message	Solution
The following message appears on the host PC: `Ser_EstablishConnection Recvd Header Error`	On your PC keyboard, press **Ctrl-C** and try to run the upgrade program again. For help, see "Upgrading or Restoring the 5023 Operating System Image" later in this chapter.
The green and red LEDs do not turn off when the upgrade is finished.	This indicates that the upgrade was unsuccessful. Try running the upgrade program again. For help, see "Upgrading or Restoring the 5023 Operating System Image" later in this chapter.
The operating system image was not completely upgraded.	Upgrade the operating system image again and do **not** press ⎋ when the next message appears: `DHCP was unable to obtain an IP address. You can reinsert your card later or statically assign an address.` For help upgrading the operating system image, see "Upgrading or Restoring the 5023 Operating System Image" later in this chapter.

Application Manager Error Messages

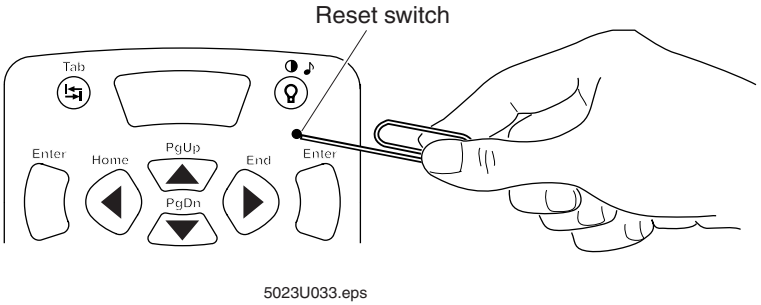
If a problem occurs when you are installing an application on the 5023, you may see one of the following error messages in Application Manager. For help, see "Using Application Manager" in Chapter 4 of the 502X system manual.

Message	Explanation
`The file [Filename.ext] is not a valid CAB file.`	You can only install CAB files on the 5023. This message appears when you try to install another type of file, usually an EXE or DLL, on the 5023.
`The CAB File [Filename] is for another CPU type!`	This message appears if you selected a CAB file that is for another CPU type.

`There isn't enough free disk space on the CE device.`
 	
`Current free disk space on the CE device = _____`
 	
`Size of CAB file [Filename] = _____`
	You need to remove files from the 5023 to create additional disk space for the application. Use the File Manager application in Unit Management to delete files. For help, see "Deleting a File" in Chapter 4 of the 502X system manual.

Booting the 5023

You can use the recessed Reset switch to warm boot or cold boot the 5023.



5023U033.eps

Note: Do not activate the scanner during the boot process or the 5023 will be unable to complete the boot. If the scanner is accidentally activated during the boot process, reboot the 5023.

Warm Booting the 5023

On a warm boot, the system reboots without changing the 5023 settings and files. During a warm boot, the 5023 exits or cancels any open applications, but the applications do not have to be reloaded. All configuration settings are saved when you warm boot the 5023.

To warm boot the 5023

- Insert a small straightened paper clip in the Reset switch and gently press the switch. Hold it momentarily and then remove it from the Reset switch.

  The red LED flashes until the 5023 desktop appears. The red LED goes off and the green LED flashes until the warm boot is finished.

Cold Booting the 5023

CAUTION

Caution
Only the network settings and scanner selection are preserved and restored on a cold boot.

Conseil
Seuls les paramètres réseau et la sélection de scanner sont conservés et rétablis après un démarrage à froid.

During a cold boot, the network and scanner settings are preserved and restored. All other settings revert to the default factory settings. For a list of network and scanner settings that are restored, see "502X Default Configuration" in Appendix A of the 502X system manual.

When you perform a cold boot, you lose the configuration settings that enable a serial connection through ActiveSync. IrDA and RF settings remain after a cold boot.

To cold boot the 5023

- Press and hold I/O, and insert a small straightened paper clip in the Reset switch. Gently press and hold the Reset switch momentarily and then remove the paper clip from the Reset switch. Release I/O.

  The green LED flashes until the cold boot is finished, which is about one minute after the 5023 desktop appears. The 5023 emits a four beeps when the cold boot is complete.

Note: After a cold boot, the date is set to January 1, 1999, and the time is set to 12:00 AM.

Verifying RF or Ethernet Communications

Use the following procedure to verify that the 5023 is communicating with your desktop PC.

To verify communications

- On your host PC, type this command at the DOS prompt to verify communications:

  `PING y.x.x.x`

  where *y.x.x.x* is the IP address of the 5023.

  You should receive a response similar to this:

```
Pinging y.x.x.x with 32 bytes of data:

Reply from y.x.x.x: bytes=32 time=8ms TTL=32
Reply from y.x.x.x: bytes=32 time=8ms TTL=32
Reply from y.x.x.x: bytes=32 time=8ms TTL=32
Reply from y.x.x.x: bytes=32 time=8ms TTL=32
```

Upgrading or Restoring the 5023 Operating System Image

Use the following procedure to upgrade the 5023 with a new operating system image. When you upgrade the image, you lose the settings that enable a partnership with a desktop PC through ActiveSync. IrDA and RF settings remain after you upgrade.

If you think that you have a corrupted operating system image, contact your Intermec service representative to confirm that you need to restore your operating system image and to receive a new operating system image.

You need the following items to upgrade the 5023 operating system image:

- A D5020 Communications Dock or L5020 Serial Communications Adapter
- An RS-232 cable (Part No. 070268)

Caution
To perform this upgrade, you MUST first connect to AC power and have a fully charged main battery.

Before you upgrade, back up any files and applications. Only the network settings and scanner selection are preserved on an upgrade.

Conseil
Pour effectuer cette mise à niveau, vous devez d'abord brancher l'appareil sur l'alimentation secteur et disposer d'une batterie principale entièrement chargée.

Avant d'effectuer la mise à niveau, faites une sauvegarde de vos fichiers et applications. Seuls les paramètres réseau et le choix du scanner sont conservés lors d'une mise à niveau.

Note: If you are using Windows 9X on the host PC, you must turn off all background processing before upgrading or restoring the image.

To upgrade or restore an operating system image

1. Connect the 5023 to the host PC using either a D5020 dock or L5020 adapter with an external AC power supply. For help, see the documentation that shipped with your dock or adapter.
2. Create a directory on the host PC for the operating system image (NK_FLASH.BIN) and download program (OSDOWNLOADSERVER.EXE).
3. Copy the download program to the directory you created on the host PC.
4. Copy the operating system image to the directory you created on the host PC. Contact your Intermec service representative for a copy of the operating system image.
5. Run the upgrade program from a DOS window on the host PC.

6. Insert a small straightened paper clip in the Reset switch on the 5023. Gently press and hold the Reset switch until the green and red LEDs are lit. Remove the paper clip from the Reset switch.

   The new operating system image is now downloaded to the 5023. The upgrade program takes approximately 50 minutes to upgrade or restore the operating system image.

   When the download is complete, the LEDs turn off and the “Finished sending file” message appears on the host PC.

7. Cold boot the 5023 after the download is complete. For help, see “Cold Booting the 5023” earlier in this chapter.

A

5023 Specifications

This appendix lists the 5023 Data Collection PC's physical and environmental specifications.

Physical and Environmental Specifications

You can use the tables in this section to find technical information and specifications for the 5023 Data Collection PC:

- Physical Dimensions
- Power Specifications
- Electrical Specifications
- Temperature and Environmental Specifications
- Hardware Specifications
- Keypad Options
- Screen Specifications
- 802.11b HR Radio Specifications
- Connectivity Options
- Bar Code Symbologies
- Integrated Scanner
- Cables for RS-232 Serial Communications

Physical Dimensions

Width:	10.2 cm (4.0 in) at the screen 7.0 cm (2.75 in) at the handle
Length:	22.9 cm (9.0 in)
Depth:	7.6 cm (3.0 in) at the scan module 19.4 cm (7.63 in) at the handle
Weight:	952 g (29.8 oz), including batteries

Power Specifications

Operating:	Rechargeable lithium-ion 1500 mAh battery pack
Memory Backup:	Rechargeable manganese-dioxide lithium 90 mAh bridge battery

Electrical Specifications

Electrical Rating:	⎓ 7,4 to 12V; 750mA peak

Temperature and Environmental Specifications

Operating Temperature:	-20°C to 50°C	-4°F to 122°F
Storage Temperature:		
Less than 2 weeks	-20°C to 60°C	-4°F to 140°F
More than 2 weeks	-20°C to 45°C	-4°F to 113°F
Relative humidity:	0 to 95% non-condensing	

Hardware Specifications

- Hitachi SH3 processor
- 8MB RAM
- IEEE 802.11b High Rate (HR) direct sequence spread spectrum radio
- SmartCard reader

Keypad Options

- Alphanumeric keypad with 43 keys and 10 function keys
- Two keypad overlays available: Standard English, Full English

Screen Specifications

- 320 x 240 pixel monochrome screen
- 5.1 x 6.73 cm (2 in x 2.65 in) screen size and 8.4 cm (3.3 in) diagonal
- Graphics capable

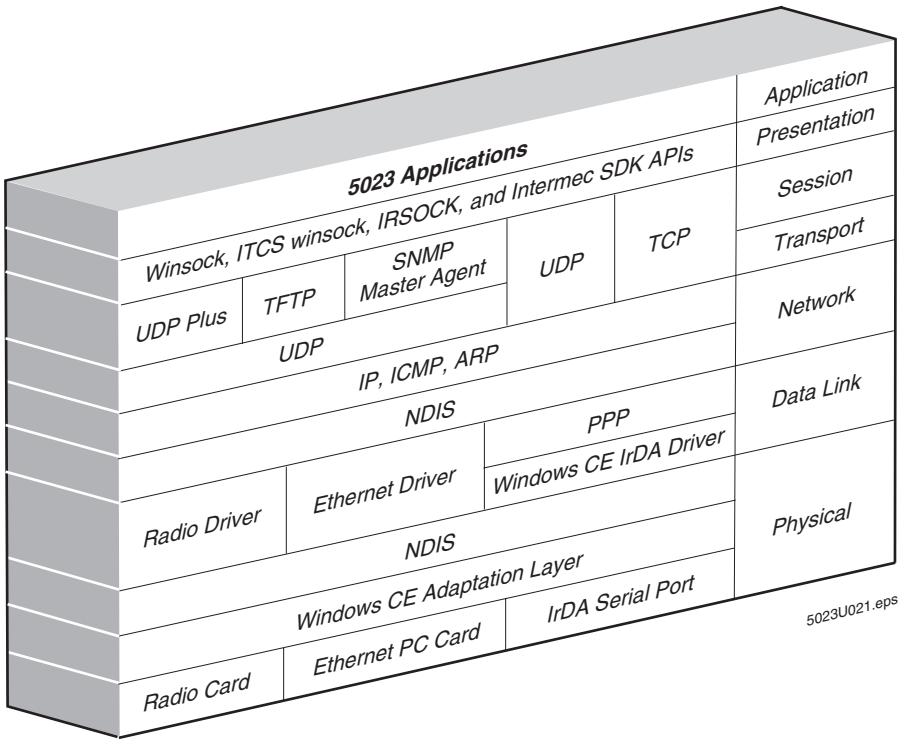
802.11b HR Radio Specifications

Radio type	Direct sequence, spread spectrum
Channels	North America: 11 Europe: 13 France: 4 Japan: 1
Data rate	High: 11 Mbps Medium: 5.5 Mbps Standard: 2 Mbps Low: 1 Mbps with automatic fallback for increased range
Range (11 Mbps)	Open environment: 160 m (525 ft) Semi-open: 50 m (165 ft) Closed: 24 m (80 ft)
Frequency band	2.4 to 2.5 GHz world-wide

Connectivity Options

- Winsock 1.1
- TCP/IP, SLIP, IrDA, IRSOCK
- LAN using NDIS
- UDP Plus

5023 Communications Protocol Stack



Bar Code Symbologies

- Codabar
- Code 2 of 5
- Code 39
- Code 93
- Code 128
- Interleaved 2 of 5
- MSI
- PDF 417
- UPC/EAN

Integrated Scanner

- Standard-range integrated scanner with visible laser diode (670 nm)

  The depth of field specifications are:

Bar Code Specification	Depth of Field / Scanning Range	
5 mil code	9.4 to 15.7 cm	3.7 to 8.2 in
10 mil code	7.4 to 35.3 cm	2.5 to 13.9 in
20 mil code	10.2 to 63.5 cm	4 to 25 in
30 mil code	10.2 to 86.4 cm	4 to 34 in
40 mil code	12.7 to 99 cm	5 to 39 in
55 mil code	19.1 cm to 1.26 m	7.5 to 49 in
55 mil code, retroreflective	1.05 to 1.51 m	41 to 59 in
100 mil code, retroreflective	1.13 to 2.27 m	44 to 89 in

Cables for RS-232 Serial Communications

You use these accessory cables (sold and ordered separately) with the L5020 Serial Communications Adapter or the D5020 Serial Communications Dock:

- 5-wire, 9-pin to 9-pin, RS-232 null-modem serial cable (Part No. 070268)
- RS-232 adapter cable, 9-pin to 10-pin (Part No. 064438)

To use ActiveSync through a serial connection, you must use Part No. 070268 with a D5020B (or higher) Communications Dock or an L5020B (or higher) Serial Communications Adapter. For help, contact your local Intermec service representative.

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5023 Data Collection PC User's Manual

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