

User's Manual

P/N 068975

5020
Data Collection PC™

 **ntermec**

A **UNOVA** Company

Intermec Technologies Corporation
6001 36th Avenue West
P.O. Box 4280
Everett, WA 98203-9280

U.S. service and technical support: 1-800-755-5505
U.S. media supplies ordering information: 1-800-227-9947

Canadian service and technical support: 1-800-668-7043
Canadian media supplies ordering information: 1-800-268-6936

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There are U.S. and foreign patents pending.

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	9/00	Added ActiveSync and Fast Config material.
003	8/01	Divided the manual into a user's manual and a system manual. Added material describing Release 3.0 firmware, including full alphanumeric keypad and Windows CE 3.0 functionality. Other new sections include information on using Task Manager and the Start menu.

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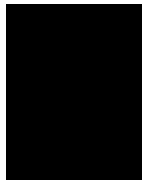
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Before You Begin

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, dangers, 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 manipulant 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 5020 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 5020 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
5020 5020 PC	These terms indicate any 5020 Data Collection PC. More specific terms, such as “RF 5020,” indicate a specific type of 5020 Data Collection PC.
Unit Manager	The term “unit manager” indicates the Unit Manager for PlanNET application suite.
Computer Host	The terms “computer” and “host” indicate a personal computer or other computer that communicates with the 5020.
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 5020 keypads:


Convention	Description
Special text	Shows the command as you should enter it into the 5020 PC. See “Format Conventions for Commands” later in this chapter.
<i>Italic text</i>	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 5020. For example, “press   	Shows a series of 5020 keys you must press and release in the order shown. For example, “Press    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 5020. 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.
<i>Italic text</i>	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 5020 Data Collection PC in a data collection system. Please visit our Web site at www.intermec.com for a list of available manuals or 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.



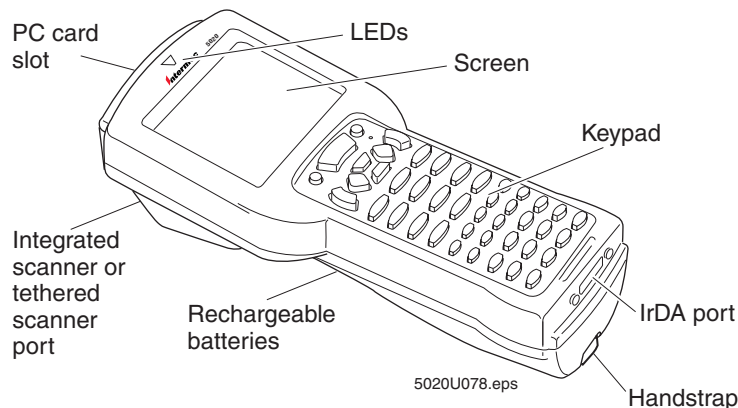
Learning About the 5020

This chapter introduces the Intermec 5020 Data Collection PC and explains the use of the screen and keypad, what the icons and audio signals mean, how to manage the rechargeable batteries, and how to scan a bar code label.

What Is the 5020 Data Collection PC?

Engineered to take full advantage of the Microsoft® Windows® CE operating system, the 5020 Data Collection PC™ incorporates Intermec's high-performance wireless LAN technology, bar code scanning, and power management features into a hand-held computer.

The 5020 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 Manager and remotely configure and manage information on 5020 PCs.



Handstrap The handstrap can be adjusted for left- or right-handed use.

Integrated scanner The 5020 comes with an integrated scanner or a tethered scanner port.

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 elastomeric keypad is available in Standard and Full Alpha versions.

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

PC card slot You can use Type I and Type II memory and I/O PC cards in your 5020. You can also use Type I compact flash cards for additional storage for your 5020.

Rechargeable batteries The 5020 uses a rechargeable lithium-ion main battery pack (sold separately) and a rechargeable 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.

What's New?

With this revision of the user's manual, several significant changes were made to support hardware and software for the 5020:

Separate user and system manuals The manual was divided into the 5020 user's manual and the *502X Data Collection PC System Manual* (Part No. 071479). The user's manual contains all information necessary to install, operate, configure, and maintain the 5020, and the 502X system manual contains configuration commands, programming procedures, and other information that applies to the 502X family of handheld computers.

Release 3.0 firmware The 5020 Release 3.0 firmware includes new remote device management capabilities and additional configuration commands. For more information, see the 502X system manual.

Windows CE 3.0 The 5020 now ships with Windows CE 3.0, providing greater storage and file-handling capabilities, interprocess communications, and SSCE components preinstalled and certified by Microsoft to support SQL Server applications.

502X Intro This online introduction to using the 5020 provides basic navigation and configuration information. For help, see "Programs in the Start Menu" later in this chapter.

Optional full alphanumeric keypad You can order the 5020 with either a full alphanumeric keypad or the standard multifunction keypad.

Models and Options

The 5020 family of Data Collection PCs includes these models:



Batch The basic 5020 PC has one PC card slot for Type I or Type II 16-bit memory and input/output (I/O) cards, and one slot for a compact flash memory card.



RF The RF version of the 5020 is available with a WLI-F 2.4 GHz OpenAir frequency hopping spread spectrum radio or an IEEE 802.11b High Rate (HR) direct sequence radio and comes with a single slot for a compact flash memory card. The radio includes an adjustable antenna.

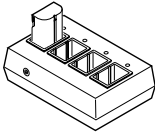
These options are available for all 5020s:

- Integrated scanner (standard, long-range, high density, or high visibility) or tethered scanner port
- Full alphanumeric keypad or standard multifunction keypad
- Keypad overlay to support western European languages
- Asian character sets

This manual explains the features and options available on all models of the 5020.

Accessories

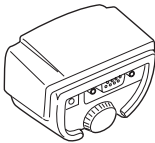
You can use these accessories (sold and ordered separately) with the 5020:



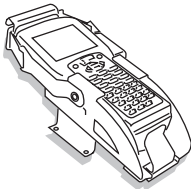
Z2400 Battery Charger The battery charger lets you charge up to four main battery packs at one time. The charger senses when a main battery pack is fully charged and does not overcharge it, ensuring long and consistent battery life.



D5020 IrDA and Serial Communications Dock 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 5020 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 5020 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 5020 batteries.



Vehicle Mount Bracket This bracket is available in a standard model (Part No. 070407) and a powered version (Part No. 070780) that adds even more mobility to your 5020.



Holster The holster (Part No. 069237) is a convenient way to carry the 5020 on your belt when you are not using it. The holster attaches to your belt and holds the 5020 at your side.



Handle The detachable handle (Part No. 067802) provides trigger-activated scanning.

CF5020 Compact Flash Memory Cards You can add storage space to your 5020 with compact flash memory cards. See your Intermec sales representative for available sizes.

Cables You may need to purchase cables for serial data communications between the 5020 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

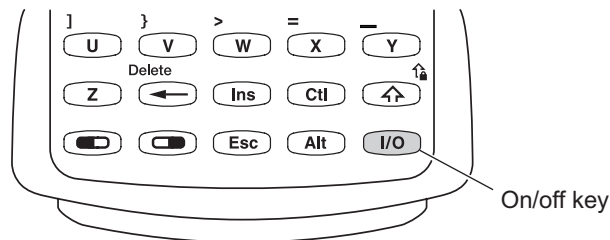
To use the 5020 in your data collection system, you need to follow the following steps.

To configure and connect the 5020

1. Charge and install a main battery pack in the 5020. For help, see “Understanding the Main Battery Pack” later in this chapter.
2. Turn on the 5020 and use the Fast Config or Configuration applications to set up general network parameters. When finished, the 5020 will be communicating in your network. For help, see Chapter 2, “Configuring the 5020.”
3. Customize the 5020 with the Control Panel applets. For help, see Chapter 3, “Customizing the 502X Using the Control Panel,” in the 502X system manual.
4. Install applications on the 5020. For help, see “Using Application Manager” in Chapter 4 of the 502X system manual.
5. After the 5020 is connected to your network, you can remotely configure symbologies and other operating parameters with Unit Manager or through an SNMP station. For help with Unit Manager, 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 5020

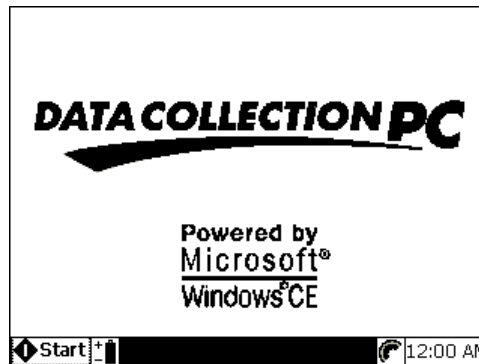
The 5020's On/Off key is the yellow  key in the lower right corner of the keypad.





5020U306.eps

To turn on the 5020

- Press . The 5020 desktop appears.

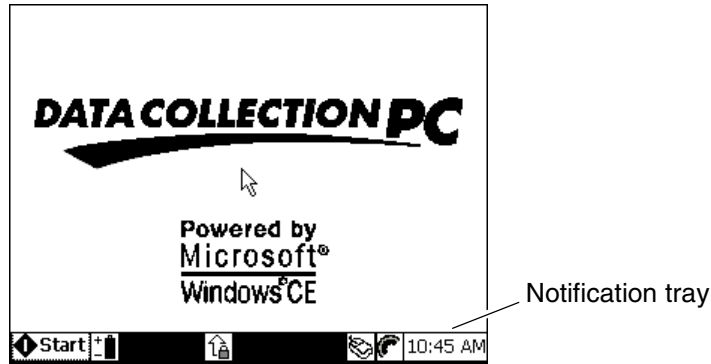


When you press  to turn off the 5020, the PC does not actually shut off but goes into a Suspend mode. In Suspend mode, the 5020 continues to power all memory and turns off the power to most of the hardware. This mode is referred to as “off” in the rest of this manual. When you press  to turn on the 5020, the 5020 resumes exactly where it was when you turned it off.

Changing the main battery pack while the 5020 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 5020 Screen

You can use the screen for many functions, including viewing data, running applications, and monitoring the 5020'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 5020 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 5020 in a cold environment, the liquid crystal display (LCD) may respond and display information more slowly than in a warm environment.

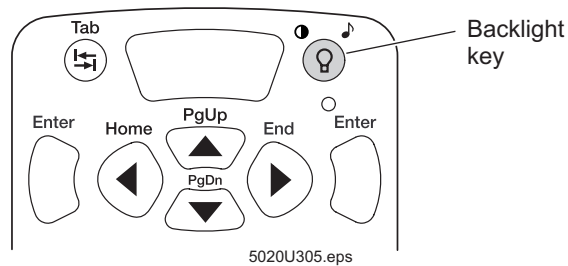
Adjusting the Screen With the Backlight Key



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.



To turn the backlight on and off

- Press . Turn the backlight on to more easily see the 5020's screen in dimly-lit environments.



Note: The 5020 uses battery power at a faster rate with the backlight turned on.

To change the screen contrast

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

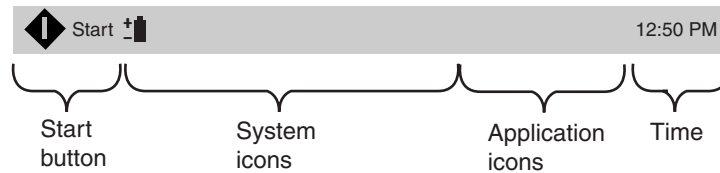
There are 34 contrast levels. If the contrast is at the darkest level and you press , the contrast changes to the lightest contrast level. You can hold down the contrast key for repeated contrast changes.



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, 5020 configuration parameters are reset to the factory default values. For more information, see "Booting the 5020" in Chapter 4.

Understanding the System and Application Icons
















You can use the system and application icons to monitor the status of special keys, battery power, RF, and network communications. As you use the 5020, 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 5020 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 5020 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.

Understanding the System and Application Icons (continued)

Icon	Description
	Center Modifier (Standard keypad only) Appears when you press  and when the 5020 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 5020 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.
Ctl	Ctl 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 5020 and the icon disappears.
Alt	Alt 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 5020 and the icon disappears.
	Radio Connected Indicates that the 5020 is connected to an access point. If the Radio Connect icon is not displayed, the 5020 is not connected to an access point.
	Radio Not Connected Indicates that the 5020 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 5020 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 5020 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 5020 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 5020 is in contact with a DCS 30X and no data currently resides in the data buffer.
	No UDP connection Indicates that the 5020 is not in contact with a DCS 30X and no data currently resides in the data buffer.

Understanding the System and Application Icons (continued)



Icon	Description
	Intrinsic HTTP Server Appears in the Application icons area of the Notification Tray when the Intrinsic HTTP Server Loader is running.
	Device Connected Appears in the Application icons area of the Notification Tray when the 5020 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 5020 has internal speakers to sound audio signals or beep sequences. For example, you hear a low 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 the beep sequences you may hear.

Beep Sequence	Description
Low beep	You entered a valid command, or the data you entered was stored.
Low 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 low beeps	You entered or scanned an invalid command or data.
High beep	You entered valid data, the 5020 decoded a label, or the 5020 decoded the last row of a two-dimensional symbology.
Four beeps (three high, one low)	The 5020 has finished its cold boot process.





The 5020 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 5020'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 5020'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 5020 configuration parameters are reset to the factory default values. For more information, see "Booting the 5020" in Chapter 4.

Using the Keypad

The 5020 ships with either a full alphanumeric keypad or a standard multifunction keypad. The keypad overlay shows the locations of function keys and punctuation marks, which can be accessed by pressing a modifier key.

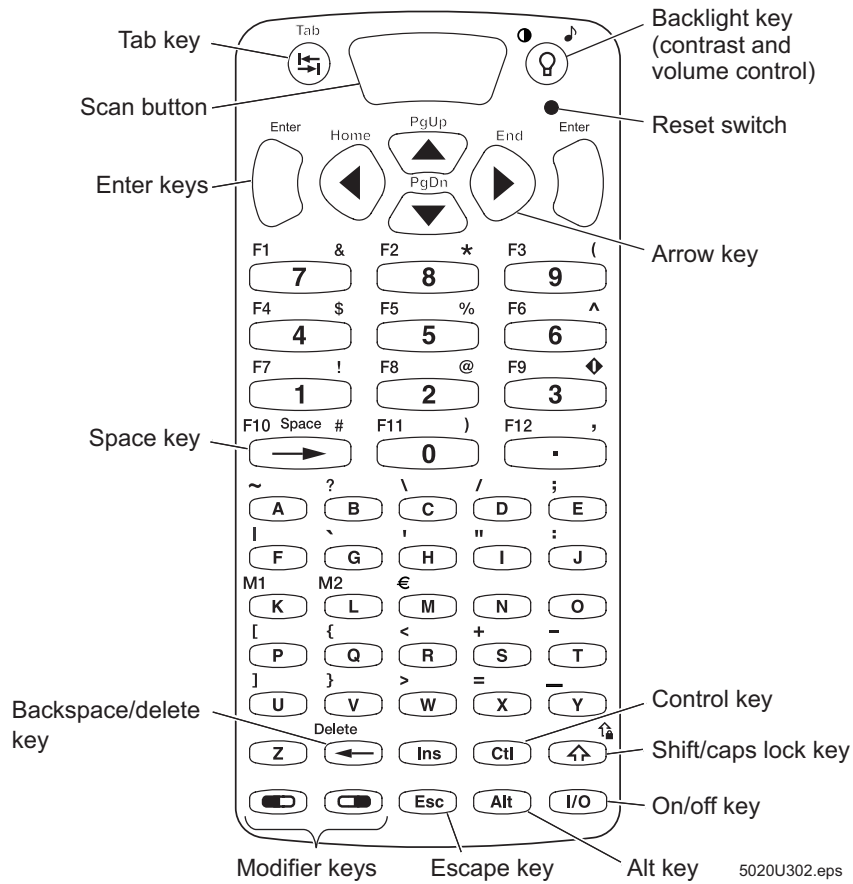
There are two other keypad overlay options:

- The Euro1 overlay, supporting Romance languages including British English, French, Italian, Portuguese, and Spanish. This keypad overlay is supplied with 5020s ordered with the Euro1 language option and is available for either the full alphanumeric keypad or the standard multifunction keypad.
- The Euro2 overlay, supporting Germanic languages including British English, Danish, Dutch, German, Finnish, Norwegian, and Swedish. This keypad overlay is supplied with 5020s ordered with the Euro2 language option and is available only for the standard multifunction keypad.

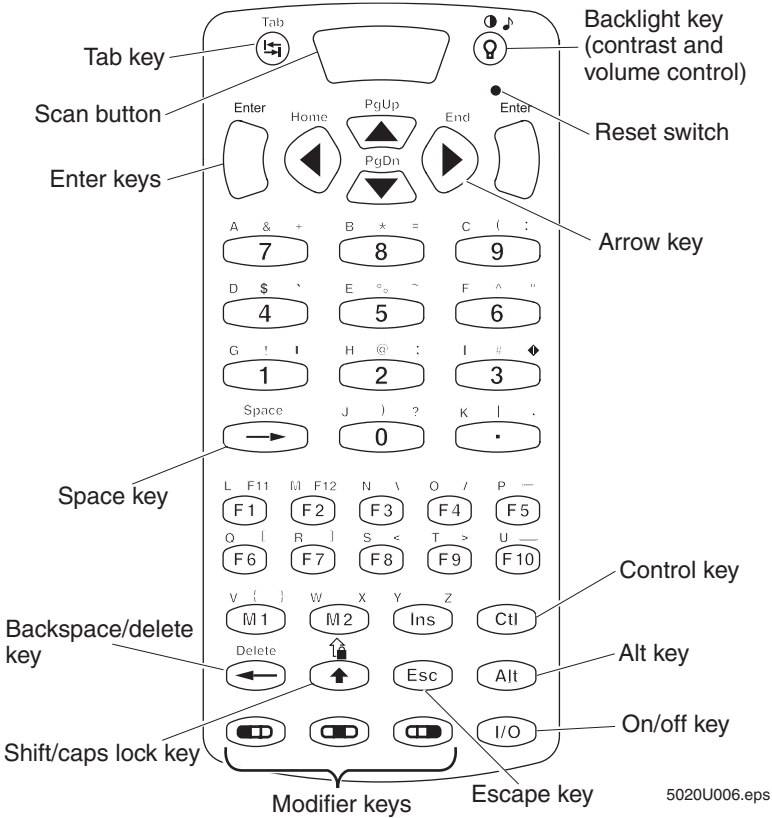
Finding the Special Keys

Before you use the 5020's keypad, make sure you can find all of the different types of keys on the keypad. See the illustration for your full alphanumeric or standard multifunction keypad. The special keys that you use to type characters or perform functions are explained in the next sections.

Full Alphanumeric Keypad






Standard Multifunction Keypad



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, then the key.
Centered above the key (Standard keypad only)	Lime	Press the lime  key, then the key.
Right side above the key	Green	Press the green  key, 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.






Note: (For 5020s with the standard multifunction keypad) To type punctuation marks and symbols that normally appear on the upper level of a standard keyboard, press ⇧ before pressing the key for the mark or symbol.



To enable Caps Lock

- Press  ⇧ (or  ⇧ on standard multifunction keypad) or press ⇧ 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 ⇧  and an alphabetic character key. For example, press ⇧   to type a lowercase letter f. Caps Lock remains enabled.


To disable Caps Lock

- Press  ⇧ (or  ⇧ on standard multifunction keypad) or press ⇧ until the tone sounds. The Caps Lock icon disappears from the Notification Tray.



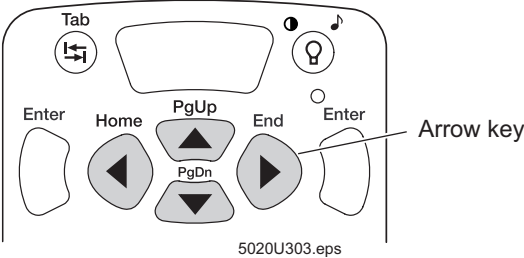
Note: The default setting for Caps Lock is enabled. You can also use the Keypad Caps Lock configuration command to enable or disable Caps Lock on the 5020. For help, see “Keypad Caps Lock” in Chapter 7 of the 502X system manual.

On the 5020 keypad, ⇧ key 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 5020'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.



To Do This

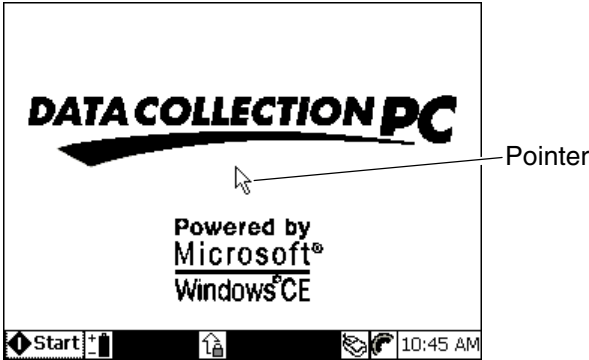
- Move the cursor up one row or line
- Move the cursor down one row or line
- Move the cursor one character to the right
- Move the cursor one character to the left

Press



- ▲
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- ▶
- ◀

Using the Pointer



Instead of using the (↔) or arrow keys to select fields or buttons on the 5020 desktop, you can enable a pointer.







To enable the pointer

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


To disable the pointer

- Press   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 , , and . In addition, unique 5020 modifier keys ( and  on the full alphanumeric keypad, plus  on the standard multifunction keypad) are located in the bottom row of the 5020 keypad. These modifier keys are used to access the corresponding 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:

- , , or  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 5020 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 5020 keypad.

When you press ⌘, ⌘, or ⌘, the modifier key is enabled until you press another key. The icon appears on the 5020 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 ⌘ and ⌘ 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: ⌘, ⌘, and ⌘ are independent of one another. All three keys can be in effect at the same time.

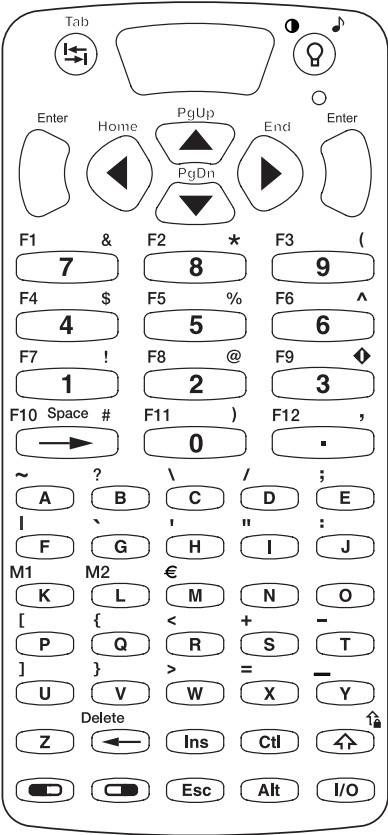
Keypad Navigation Shortcuts

You can use the following keypad shortcuts to navigate in the 5020 desktop.

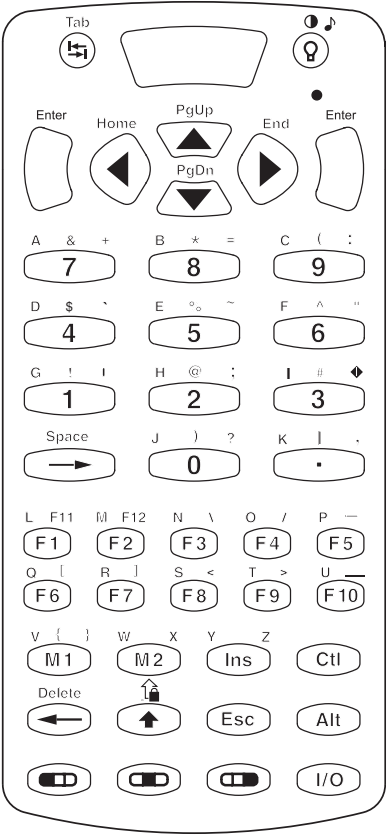
Shortcut	Function Performed
	Accesses application menus.
	Opens the leftmost menu in an application. Press the arrow keys to open the other menus or change selections in a menu.
	Enables or disables the pointer.
OR	Opens the Task Manager so that you can switch between running programs. For help, see “Switching Between Applications With Task Manager” later in this chapter.
	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 returns you to the 5020 desktop.
(, , , 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	Changes tabs in a dialog box.
OR	Moves backward between tabs in a dialog box.
(, , , or)	Selects adjacent files.
	Opens the Start menu.
OR	Activates or opens the selected item.
	Navigates in a dialog box.
	Marks or clears check boxes.

English Keypads

Full



Standard



5020U304.eps

International Keypads

The Euro1 and Euro2 keypads provide special keys to support Western European languages. The Euro1 keypad supports special characters for British English, French, Italian, Portuguese, and Spanish. The Euro2 keypad supports special characters for British English, Danish, Dutch, German, Finnish, Norwegian, and Swedish.







The Euro keypads allow you to access accented characters (À Á Â Ã Ä Å). Accented characters are provided with floating accents as on many standard European keyboards. With floating accents, first you press the key for the accent and then you press the letter to which the accent is to be associated. The resulting character is the accented character.



Note: No accent characters appear until you press the second key.


To type characters with an accent mark (Full alphanumeric keypad)







1. Press the modifier key for the accent mark you want to add, and then press the key that the accent mark appears above.

To type	Press
` (grave)	 G
´ (acute)	 G
^ (circumflex)	 H
¨ (dieresis)	 I
° (ring above)	 J
~ (tilde)	 F

2. Press the key for the character to be accented.

To type characters with an accent mark (Standard multifunction keypad)

1. Press . The Center Modifier icon appears in the Notification Tray.
2. Press the function key that the accent mark appears above.

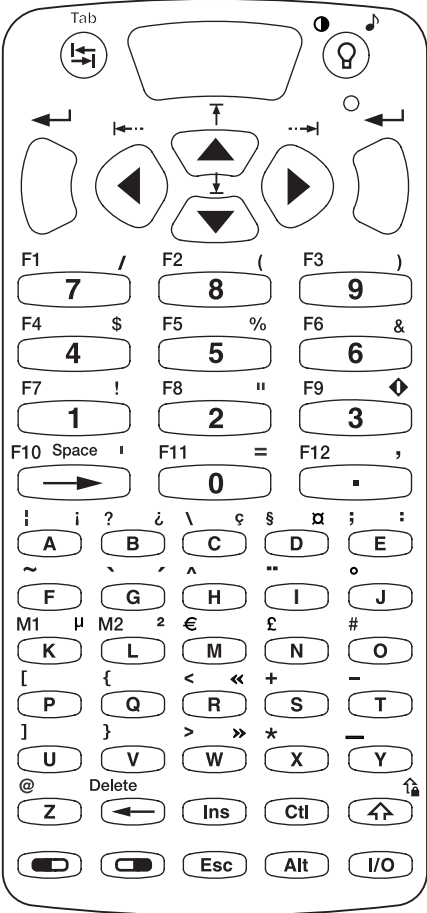
To type	Press
` (grave)	 F1
´ (acute)	 F2
^ (circumflex)	 F3
¨ (dieresis)	 F4
° (ring above)	 F5
~ (tilde)	 F8

3. Press the key for the character to be accented.



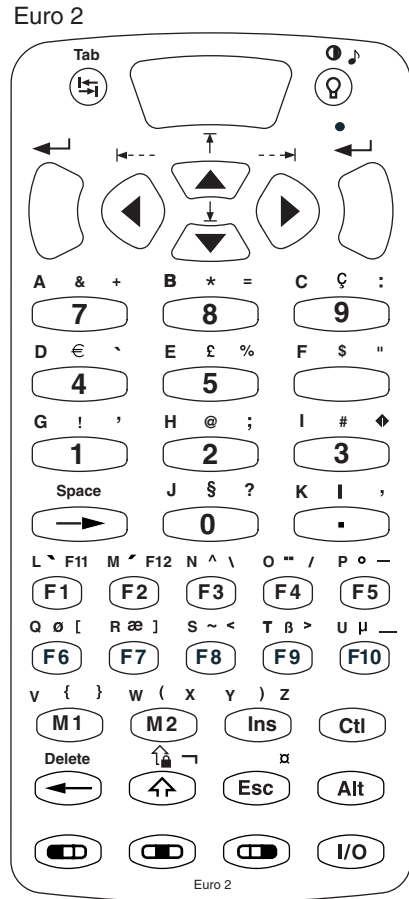
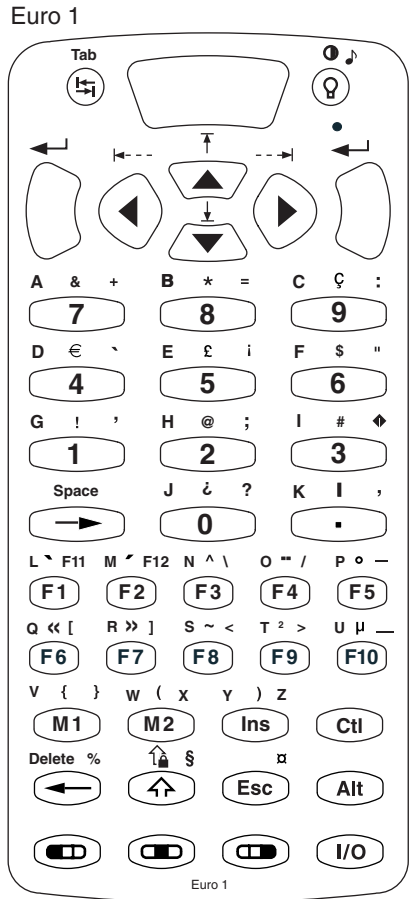
Euro1 Full Alphanumeric Keypad (Not available for Euro2 language option)

Euro 1



5020U310.eps

Euro1 and Euro2 Standard Multifunction Keypads



5020U032.eps

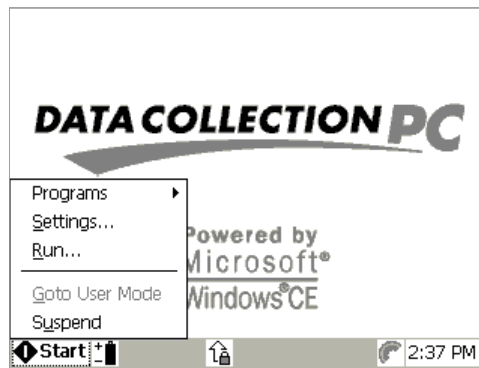
Using the Start Menu

You can select the Start menu to run applications, open the Control Panel applets, change operating modes, or turn off the 5020.

To open the Start menus and select an option

- Do one of the following:
 - Press **Ctrl** **Esc** to place the focus on the Start button and then press **Enter**.
 - Press **Start** **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 **Enter** 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.

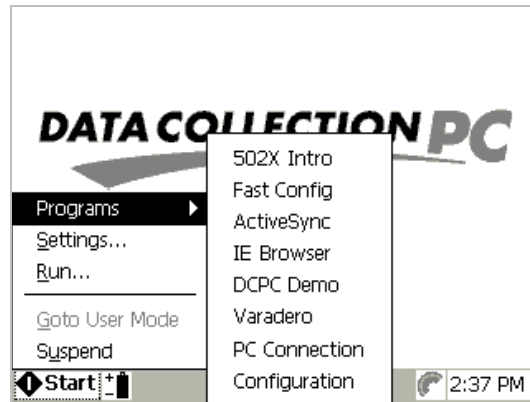
Goto User Mode When you set a password for the 5020, you can choose this option to change operating modes. For more information, see “Managing Your Passwords” in Chapter 4 of the 502X system manual.

Suspend Choose this option to turn off the 5020.

- Press **Up** or **Down** to select an option and press **Enter**.

Programs in the Start Menu

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



502X Intro Choose 502X Intro to view “Introducing the 502X,” an online document intended for new 502X users. “Introducing the 502X” includes basic configuration and navigation information.

Fast Config Select Fast Config to quickly set or enable basic network parameters and to connect the 5020 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 5020 and your desktop PC for device management activities. For help, see “Using ActiveSync” in Chapter 5 of the 502X system manual.

IE Browser Choose this option to open Internet Explorer. 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 5020. For help, see “Verifying That the 5020 Is Operating Correctly” in the *5020 Data Collection PC Quick Start Guide* (Part No. 068974).

Varadero Varadero is a mobile framework that allows Visual Basic developers to create thin-client applications supporting multiple device platforms. For more information, go to www.abacomobile.com.

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.

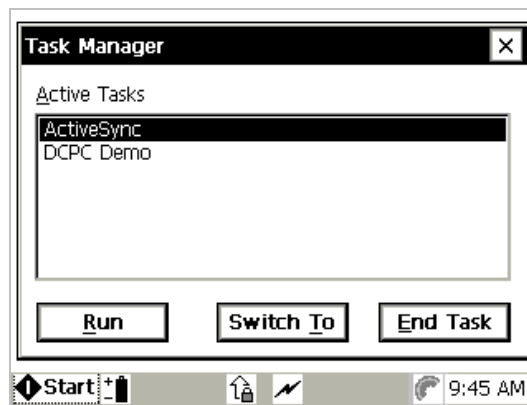
Configuration Choose the Configuration application to view and change all 5020 parameters. For help, see “Using the Configuration Application” in Chapter 2.

Switching Between Applications With Task Manager

If you have several applications 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'incinerez pas ce bloc-batterie.

There are two rechargeable batteries in the 5020:

Main Battery Pack This lithium-ion battery provides the main power source to operate the 5020 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 5020'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 5020. When you remove the main battery pack for charging, insert another charged main battery pack so you can continue to operate the 5020 without interruption and to maximize the bridge battery charge life.
- To extend the life of the main battery charge, use the Automatic Shutoff feature to turn off the 5020 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 5020 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 5020 in cold temperatures, see “Power Management in Cold Environments” later in this section.



Note: ALWAYS keep a main battery pack installed in the 502X. Leaving the 502X 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 5020 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 5020 **BEFORE** removing the main battery pack.



Note: ALWAYS keep a main battery pack installed in the 502X. Leaving the 502X 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

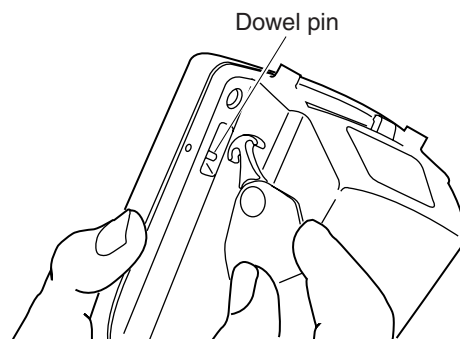
Removing the battery pack while the 5020 is on may cause loss of data.

Conseil

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

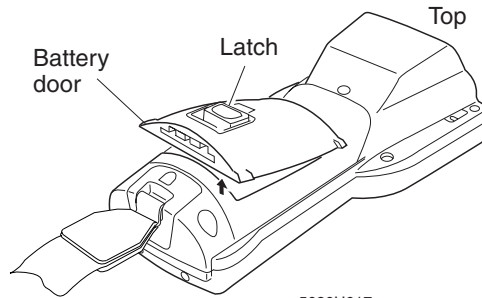
To remove the main battery pack

1. Press  to turn off the 5020.
2. Push the top clip of the handstrap down and forward to unhook it from the dowel pin on the top of the 5020, and then lift it out.



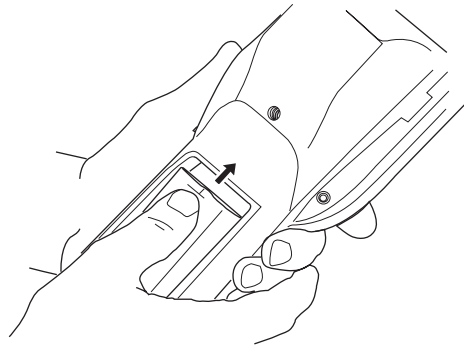
5020U066.eps

3. Open the battery door by pushing up on the battery door latch and sliding it toward the top end of the 5020. Lift up the edge of the battery door to remove it.



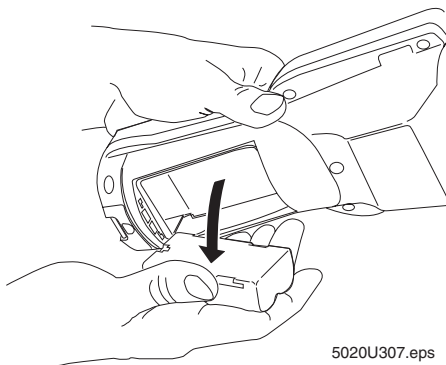
5020U017.eps

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



5020U018.eps

5. Tilt the 5020 to one side and let the main battery pack drop out of the compartment into your hand.

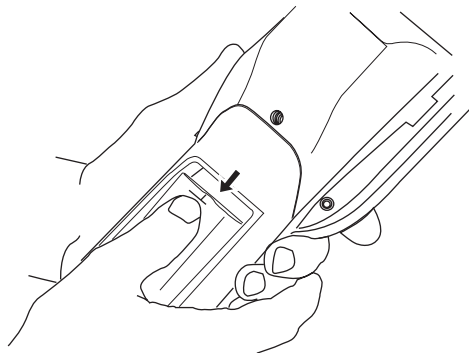


5020U307.eps

6. Place the battery pack into the battery charger. If you have a spare charged battery pack, install it in the 5020 now. For help, see the next section.

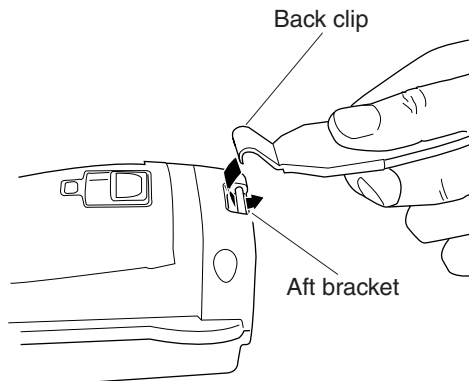
To install the main battery pack

1. Place the charged main battery pack into the battery compartment. The arrow mark on the end of the battery should be closest to the 5020 aft bracket.
2. Slide the main battery pack down until it locks into the connectors on the bottom of the battery compartment.



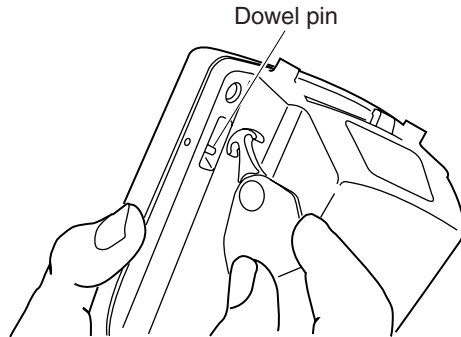
5020U003.eps

3. Insert the top edge of the battery door into the top of the compartment, and push the door down to close it.
4. Push the battery door latch down and slide it toward the bottom end of the 5020 to lock the door in place.
5. Reattach the back clip of the handstrap to the 5020 aft bracket if it was removed. The back clip must be attached as shown, or the handstrap will come off.



5020U067.eps

6. Place the top clip over the pin on the top of the 5020 and set it in place.



5020U066.eps

Charging the Main Battery Pack

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

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 5020 before removing the main battery pack. If you remove a battery pack to charge it, ALWAYS install a spare charged battery pack in the 5020 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 5020, 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 5020, 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 5020, and place the 5020 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 5020, and install an L5020 Serial Communications Adapter on the 5020 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 5020 while it is in the D5020 dock or when an L5020 has been installed.



Note: You need to charge the 5020 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 5020 back on, the 5020 resumes where it was when you turned it off.

ALWAYS keep a charged main battery pack installed in the 5020 to maximize the bridge battery life. Leaving the 502X 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 5020 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 5020'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

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 5020 turned on or off. The 5020 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 5020 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 5020 in a D5020 Communications Dock connected to an external AC power supply.
- Install an L5020 Serial Communications Adapter on the 5020 and connect the adapter to an external AC power supply.






Note: To charge the bridge battery, you need to place the 5020 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

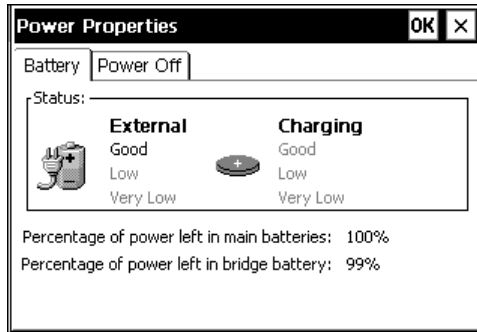
There are two ways to check the battery charge levels:

- Open the Power applet to view the Power Properties window, which gives the charge status of the main and bridge batteries. For help, see 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.

- 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.

- Press ⌘ twice. The File menu appears.
- Press ▼ to select Close and press ⏏ to return to the 5020 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 5020 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 **Ctrl** **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 5020 desktop by pressing **Ctrl** **Esc** at any time.

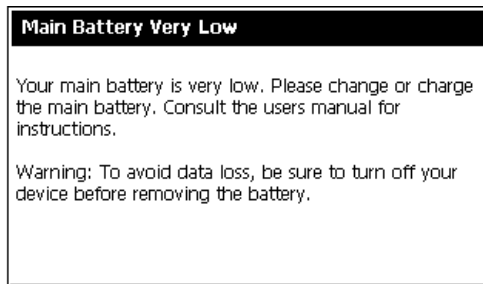
3. Do one of the following:
 - Press **Ctrl** **Esc** to remove focus from the icon and return to the 5020 desktop.
 - Leave the focus on the Main Battery charge icon and press **↵**. The Power Properties information box appears, showing main and bridge battery status. Press **↵** to close the Power Properties information box and return to the 5020 desktop.

Recognizing Low Battery Warnings

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

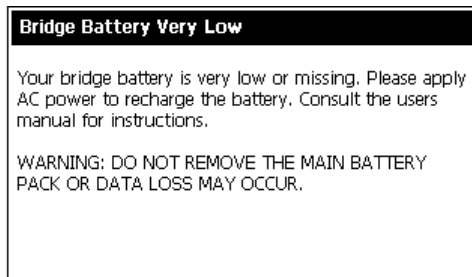
Main Battery Very Low Warning

The 5020 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.



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. Press **Esc** to close the Power applet.
3. Exit any running applications.
4. Press **Ctrl+D** to suspend the 5020.
5. Replace the main battery pack with a spare charged battery pack, charge the main battery pack, or attach an external power supply.

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 5020 from AC power after the main battery pack is charged.

Power Management in Cold Environments

If you use the 5020 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 5020 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 5020 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 5020.
 - move the 5020 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 5020 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 5020 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 5020 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 5020 and to charge the 5020's batteries at the same time. For help, see the accessory quick reference guides.

Using PC and Compact Flash Memory Cards

The 5020 has two available PC card slots:

- standard PC card slot located just above the scanner window
- compact flash memory card slot located inside the battery compartment

The standard PC slot in a batch 5020 can be used for a storage card, modem, or Ethernet card. If you have an RF 5020, the radio has been installed in this slot. For more information, see the next section.

The compact flash memory card slot can be used for Type I flash memory cards. For more information, see “Inserting and Removing Compact Flash Memory Cards” later in this section.



Note: If you are installing two storage cards (one in each slot), the Windows CE file system designates the first card inserted as “Storage Card” and the second as “Storage Card2.” To avoid changing the designation of storage cards after a cold boot, install both cards before the cold boot so that the designators remain the same through all future cold boots.

Inserting and Removing PC Cards (Batch 5020s only)

A standard PC card slot is provided on the batch 5020. You can use 3.3V and 5V Type I and Type II Memory and I/O cards that comply with the PC Card Standard, February 1995, for 16-bit cards.

You can use the following types of PC cards in your 5020:

- Type I SRAM Memory (storage card)
- Type II ATA Flash Memory (storage card)
- Type II Modem
- Type II Ethernet


You cannot use Type III cards in the 5020. See your Intermec sales representative for a complete list of supported PC cards.

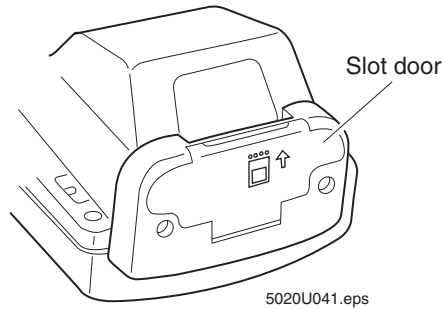
The PC card slot is located on the top of the 5020 just above the laser scanner window or tethered scanner port. You can use a Type I or Type II PC card in the slot.



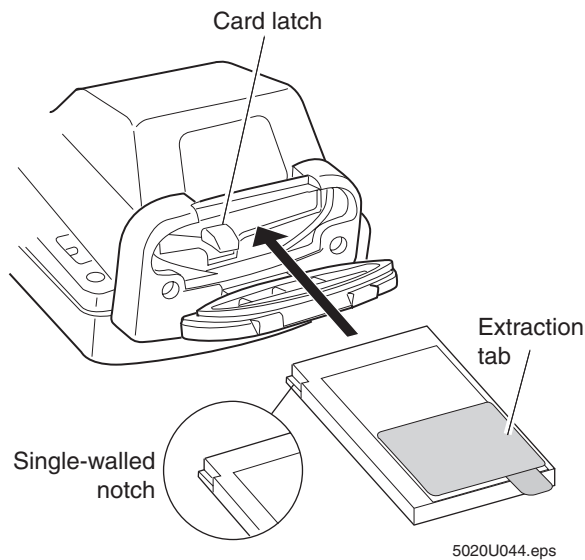
Note: The Windows CE file system is sensitive to the order of storage card recognition when you change storage cards. When you are inserting or removing a storage PC card, follow the steps described in this section to avoid changing the designation of storage cards in the file system.

To insert a PC card (Batch 5020s only)

1. Press  to turn on the 5020.
2. Make sure an extraction tab is applied to the PC card.
3. Open the slot door on the top of the 5020. The slot door drops down to reveal the PC card slot.



4. Insert the card in the slot connector, notched end first, with the single-walled notch on the left edge of the card.



5. Push the card into the slot until it fits firmly in the connector and the card latch closes.



Note: Do not force the PC card into the slot. If the card stops and the card latch won't close, remove the PC card and make sure you have the card oriented correctly. Then try to insert the card again.

6. Close the slot door by pressing firmly on the door until it snaps into place. When closed correctly, the slot door is flush with the hard plastic body of the 5020.
7. If you are inserting a new storage card, you will be prompted to format the card.

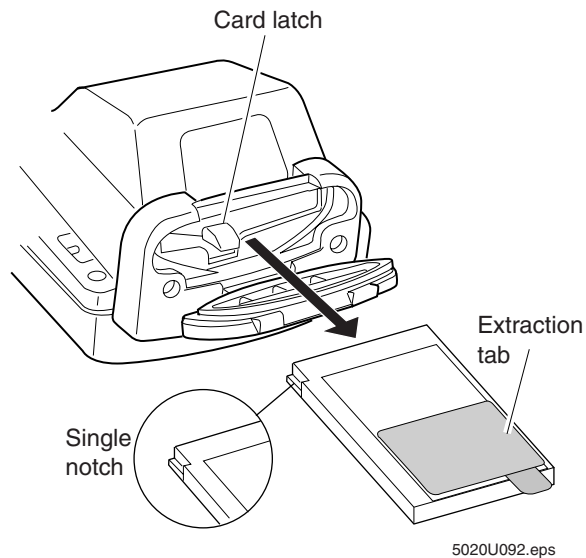


Note: The storage card in the PC card slot will be designated as “Storage Card” by the Windows CE file system if a compact flash card is not already installed. If a compact flash card has already been installed, the card in the PC card slot will be designated as “Storage Card2.”

If you are inserting a radio or Ethernet PC card, you will need to warm boot the 5020 for the card to be recognized. For help, see “Booting the 5020” in Chapter 4.

To remove a PC card (Batch 5020s only)

1. Open the slot door on the top of the 5020.
2. Press the card latch while firmly pulling on the extraction tab.



3. Pull the card out of the slot.
4. Close the slot door by pressing firmly on the door until it snaps into place. When closed correctly, the slot door is flush with the hard plastic body of the 5020.

Inserting and Removing Compact Flash Memory Cards



You can use Type I compact flash cards (3.3 mm thick) to provide additional storage for your 5020. The compact flash slot is accessible through an access door located beneath the main battery pack.

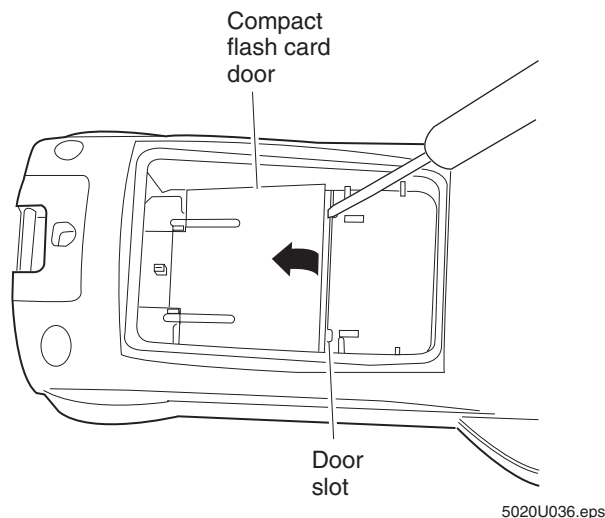
You cannot use Type II compact flash memory cards in the 5020.



Note: The Windows CE file system is sensitive to the order of storage card recognition when you change storage cards. When you are inserting or removing a compact flash card, follow the steps described in this section to avoid changing the designation of storage cards in the file system.

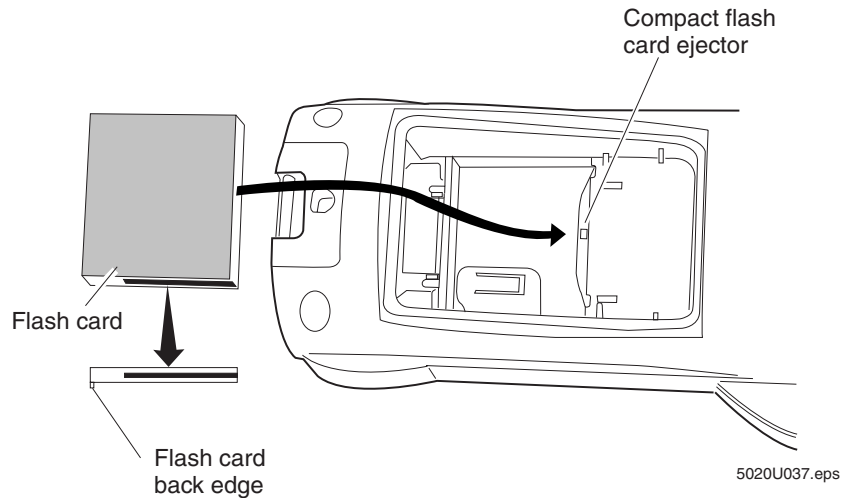
To insert a compact flash card

1. Remove storage cards in either the PC card slot or the compact flash slot. For help, see “To remove a PC card” or “To remove a compact flash card” in this chapter.
2. Press  to turn on the 5020 with the cards removed, and wait for the hourglass to disappear.
3. Press  to turn off the 5020.
4. Remove the handstrap and main battery pack. For help see “Removing and Installing the Main Battery Pack” earlier in this chapter.
5. Insert a small straight-slot screwdriver in the door slot and pry up to open the compact flash card door.



6. Lift and remove the compact flash card door from the battery compartment.

7. Insert the compact flash card under the release mechanism and slide the card forward until it snaps into place. Make sure the compact flash card is oriented as shown below.

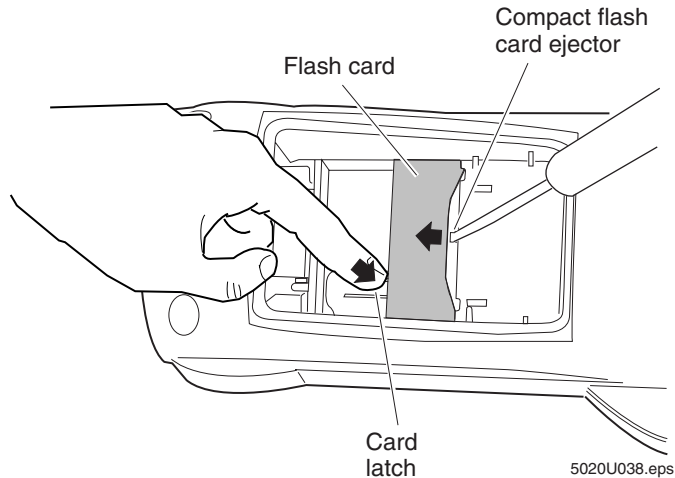


8. Replace the compact flash card door.
9. Reinstall the main battery pack and replace the battery door and handstrap. If you are inserting a new compact flash card, you will be prompted to format the card when you press I/O to resume the device. The compact flash card will be designated "Storage Card" in the Windows CE file system.
10. If there was a storage card in the PC card slot, reinsert it now. It will be designated "Storage Card2."

To remove a compact flash card

1. Press I/O to turn off the 5020.
2. If there is a storage card installed in the PC card slot, remove it now. For help, see "To remove a PC card" earlier in this chapter.
3. Remove the handstrap and main battery pack. For help see "Removing and Installing the Main Battery Pack" earlier in this chapter.
4. Use a small straight-slot screwdriver to pry up the compact flash card door and remove it from the battery compartment.
5. Pull back on the card latch.

6. Insert a small straight-slot screwdriver into the compact flash card ejector and push the card latch to remove the card from the internal connector.



7. After the card is released, push the compact flash card ejector back into place and remove the compact flash card.
8. Reinstall the compact flash card door and main battery pack and replace the battery door and handstrap.
9. Press I/O to turn on the 5020 with no cards installed. If you removed a storage PC card, reinsert it now. It will be designated as "Storage Card" in the Windows CE file system.

Connecting a Tethered Scanning Device

Tethered scanners are supported on 5020s ordered with a 10-pin tethered scanner port in place of the integrated scanner. Currently, the following devices are supported by the 5020:

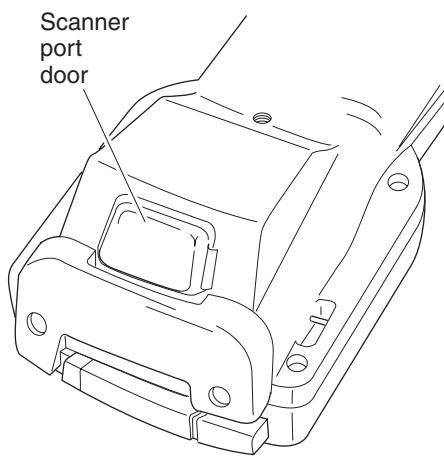
- 151X, 1545, and 1550 laser scanners
- 126X, 127X, and 128X series wands
- Metrologic MS941
- PSC 53001P70 with cable (CTP01576XX)
- Symbol LS3200ER



Note: The 5020 also supports RS-232 scanners through a 9-pin adapter cable (Part No. 064438) connected to the tethered scanner port. You need to develop your own applications to use RS-232 scanners. For help with developing applications, see Chapter 5, “Developing and Installing Applications,” in the 502X system manual.

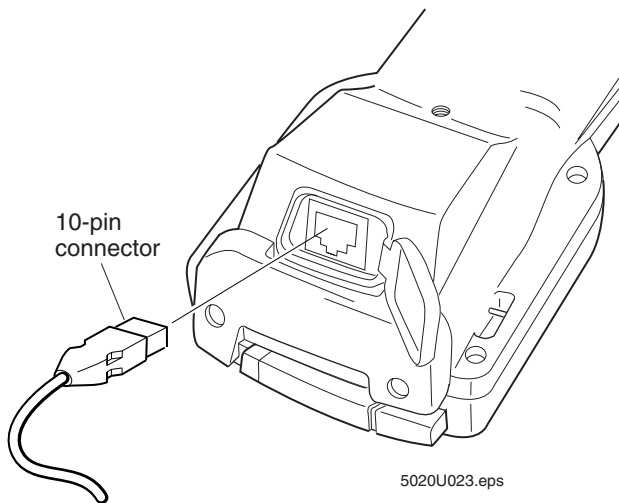
To attach a tethered scanning device

1. Locate and open the scanner port door.



5020U022.eps

2. Insert the 10-pin connector until the connector locks into place.



5020U023.eps

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 5020 decodes the bar code label and enters the data or command you scanned.



Note: You can also use a variety of tethered scanning devices with the 5020. For more information on using tethered scanners, see “Connecting a Tethered Scanning Device” earlier in this chapter.

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




Warning

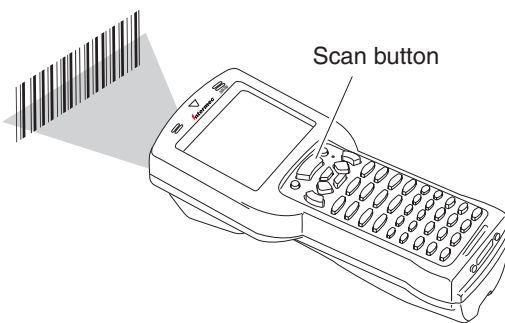
Do not look directly into the window area or at a reflection of the laser beam while the laser is scanning. Long-term exposure to the laser beam can damage your vision.

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

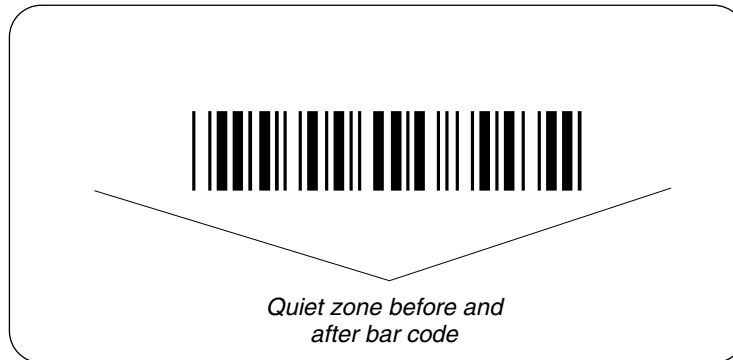
1. Press  to turn on the 5020.
2. Hold the 5020 at a slight angle a few inches from the bar code label. The laser scan window must be pointing toward the label.
3. Push the Scan button on the keypad or pull the trigger on the handle if the optional trigger handle is installed. Direct the beam so that it falls across all bars in the bar code label. After the 5020 successfully reads the label, you hear a high 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.



5020U029.eps

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

With the standard range scan module, you will have the best success if you hold the 5020 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 5020 so that the scan module is pointing toward the bar code label, and tilt the 5020 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 5020 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 5020. For help, see Chapter 2, "Configuring the 5020." 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 5020 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 5020 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.

Selection Identifies the type of tethered scanner you have connected. The 5020 can optimize the scanning performance by using the scanner you define in this command.

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 5020. 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 5020. Common postambles include cursor controls such as tabs or carriage return line feeds.



Where Do You Go From Here?

Now that your new 5020 is up and running, you can use this manual to learn how to perform these tasks:

Task or Feature	See This Chapter
Configuring parameters	Chapter 2, “Configuring the 5020”
Connecting the 5020 to your network	Chapter 3, “Connecting the 5020”
Solving problems with operations and maintaining your 5020	Chapter 4, “Troubleshooting and Maintenance”
List of physical and environmental specifications	Appendix A, “5020 Specifications”

For help with remotely managing your 5020, developing and installing applications, and understanding configuration and reader commands, please see the 502X system manual.

2

Configuring the 5020

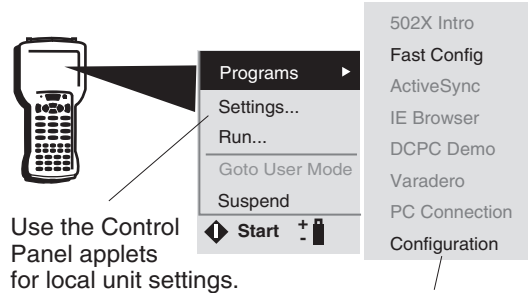
This chapter explains how to configure the 5020 using several different methods.

How to Configure the 5020

You can set many operating characteristics of the 5020 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.

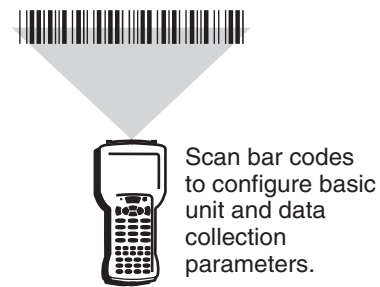
There are several ways to configure the 5020:

Use Applications on the 5020

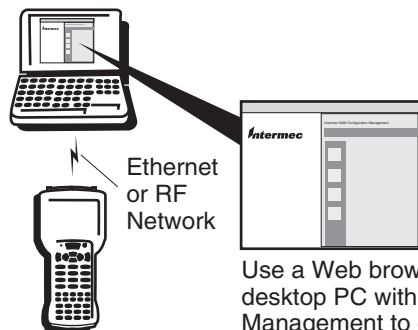


Use Fast Config to quickly enter network parameters, or use the Configuration application to set all parameters.

Scan Bar Codes

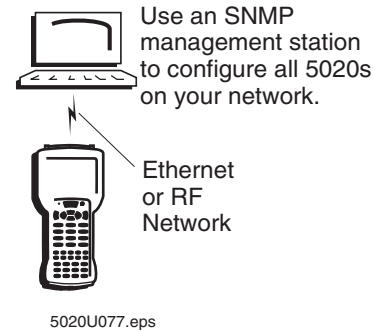


Use Web Browser



Use a Web browser on your desktop PC with Configuration Management to configure parameters for each 5020 on your network.

Use SNMP Commands



Use an SNMP management station to configure all 5020s on your network.

Use the Fast Config Application When first setting up the 502X, use Fast Config to set or enable most basic network parameters and get the 502X 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 5020 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 5020 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 5020 is communicating in your network, you can use a Web browser on a desktop PC and the Configuration Management application in Unit Manager to configure all parameters and remotely manage your 5020. You can configure parameters for all 5020s 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 5020 is communicating in your network, you can use an SNMP management station to send SNMP commands to the 5020. 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 502X 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.
- security ID and domain for OpenAir radios.
- network name and WEP key for 802.11b HR radios.
- 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:

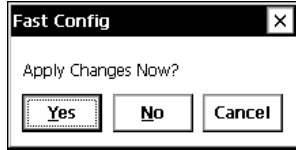
Press \leftarrow to move from field to field. Press the arrow keys to move the cursor within a field. Enter information with the keypad. For help, see “Using the Keypad” in Chapter 1.

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

Press \leftarrow to select the Back or Finish buttons:

- Select Back and press \leftarrow to return to the previous dialog box. For example, you could go back if you think you entered incorrect information.
- Select Finish and press \leftarrow 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 **Y**, a confirmation dialog box appears:



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

Press **N** to select the No or Cancel buttons:

- Select the No button and press **Y** 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 **Y** to return to the current dialog box.

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



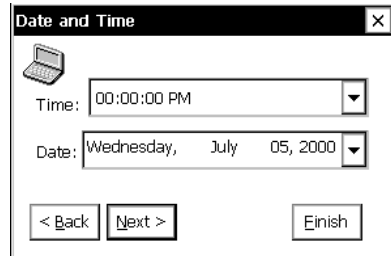
Note: Before using Fast Config with a batch 5020, install an Ethernet card in the PC card slot. For help, see “Using PC and Compact Flash Memory Cards” in Chapter 1. For an RF 5020, be sure you are in range of an access point.

To set network parameters using Fast Config

1. Press **I/O** to turn on the 5020.
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 **Y**. The Welcome screen appears.

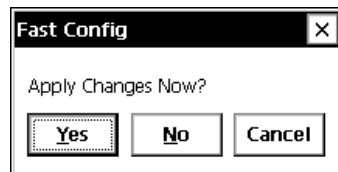


5. Press **⏏** to start Fast Config. The Date and Time screen appears.



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.

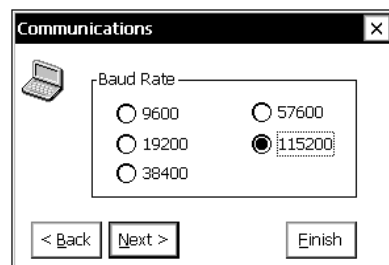
6. Press **⏏**. A confirmation dialog box appears, prompting you to apply the changes.



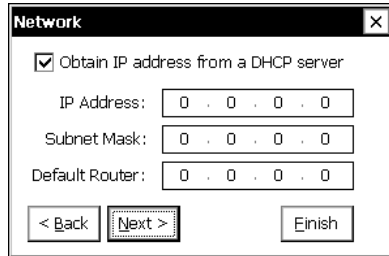
7. Press **⏏** to continue. The Communications dialog box appears with the default baud rate (115200) selected.



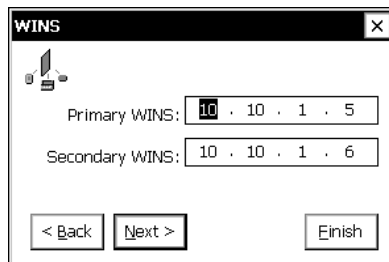
Note: If your 5020 is not connected to a D5020 Communications Dock or an L5020 Serial Communications Adapter, a baud rate error message appears. Press **⏏** to clear the error message. The Communications dialog box appears without a baud rate selected.



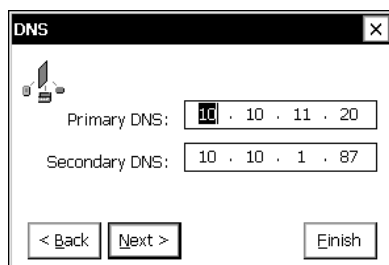
8. Press **Y** to accept the default baud rate. The confirmation dialog box appears. Press **Y**. The Network dialog box appears.



9. If you are using a DHCP server, press **Y**. 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 **Y**. The confirmation dialog box appears. Press **Y**. The WINS dialog box appears.



10. If your DHCP server is configured to automatically set the Primary and Secondary WINS addresses, press **Y**. The DNS dialog box appears.
If your server will not automatically set the WINS addresses, enter them now. When finished, press **Y**. The confirmation dialog box appears. Press **Y**. The DNS dialog box appears.

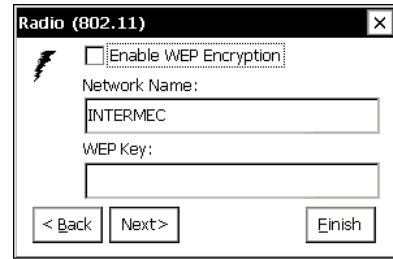
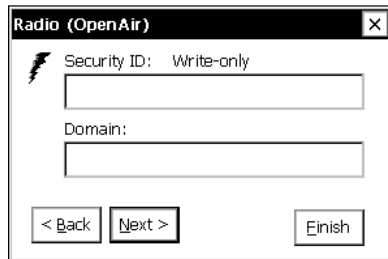


11. If your DHCP server is configured to automatically set the Primary and Secondary DNS addresses, press **↵**. The Radio dialog box appears.

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



Note: If your 5020 comes with a radio, the Radio dialog box (either OpenAir or 802.11) appears. Continue with Step 12. On a batch 5020, the Identification dialog box appears. Go to Step 14.

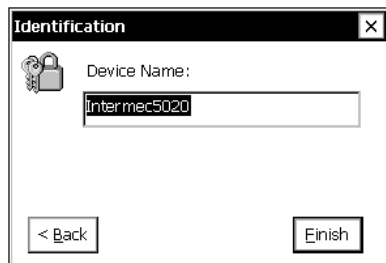


12. Press **↔** to move from field to field in the Radio dialog box. Enter information with the alphanumeric keys. For help, see “Using the Keypad” in Chapter 1.



Note: To enable WEP encryption for the 802.11b HR radio, 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.

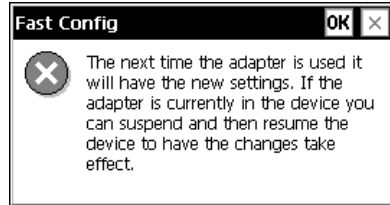
13. Press **↵**. The confirmation dialog box appears. Press **↵**. The Identification dialog box appears.



14. Enter a name for the 5020 in the Device Name field. When finished, press **Enter**. The confirmation dialog box appears. Press **Enter**. An alert message appears.





Note: You may not need to enter a name for your 5020. If this is true, press **Enter**. An alert message appears.



15. The alert message reminds you that you must turn the 5020 off and back on again to enable the changes. Press **Enter**. The Congratulations message appears.



16. Press **Enter** to close Fast Config. Press **Fn + F10** twice to turn the 5020 off and back on again.

The 5020 should now be communicating with your wired or RF network. When an RF 5020 is in range of the access point, the  icon appears and remains on in the Notification Tray indicating that the 5020 is communicating with the access point. If you see the  icon, the 5020 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

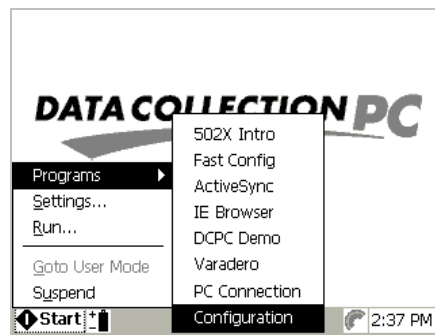
- view, change, or set all parameters in real time.
- restore factory defaults to a selected group of parameters or all parameters as needed.
- view system and terminal information.



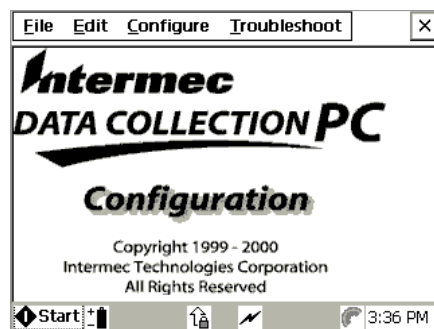
Note: You can also extend and customize the Configuration application. For help, see Appendix D, “Extending the Configuration Applications,” in the 502X system manual.

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.

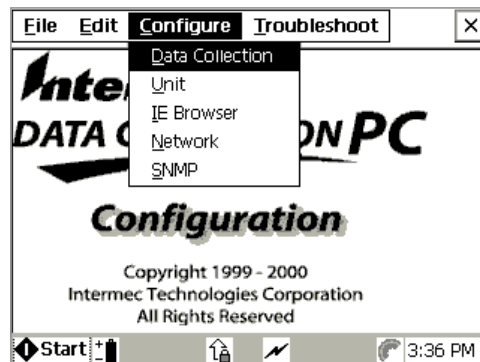
5. To select a menu, press **Alt** plus the application menu shortcut. For example, to select the Configure menu, press **Alt C** (**Alt** **C** on Standard keypad).
6. Use **▼** and **▲** to select a menu option and then press **↵**.
7. To exit the Configuration application, press **Alt F** (**Alt** **F** on the Standard keypad) 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 5020.

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 C** (**Alt** **C** on Standard keypad) to open the Configure menu.



The Configure menu lists these five parameter groups:

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

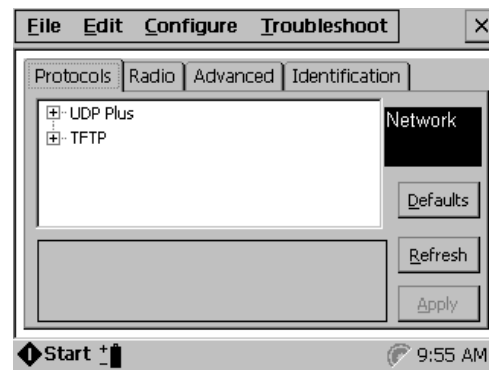
Unit Includes display, audio, and keypad options; date and time; serial port baud rate; and power management.

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.

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



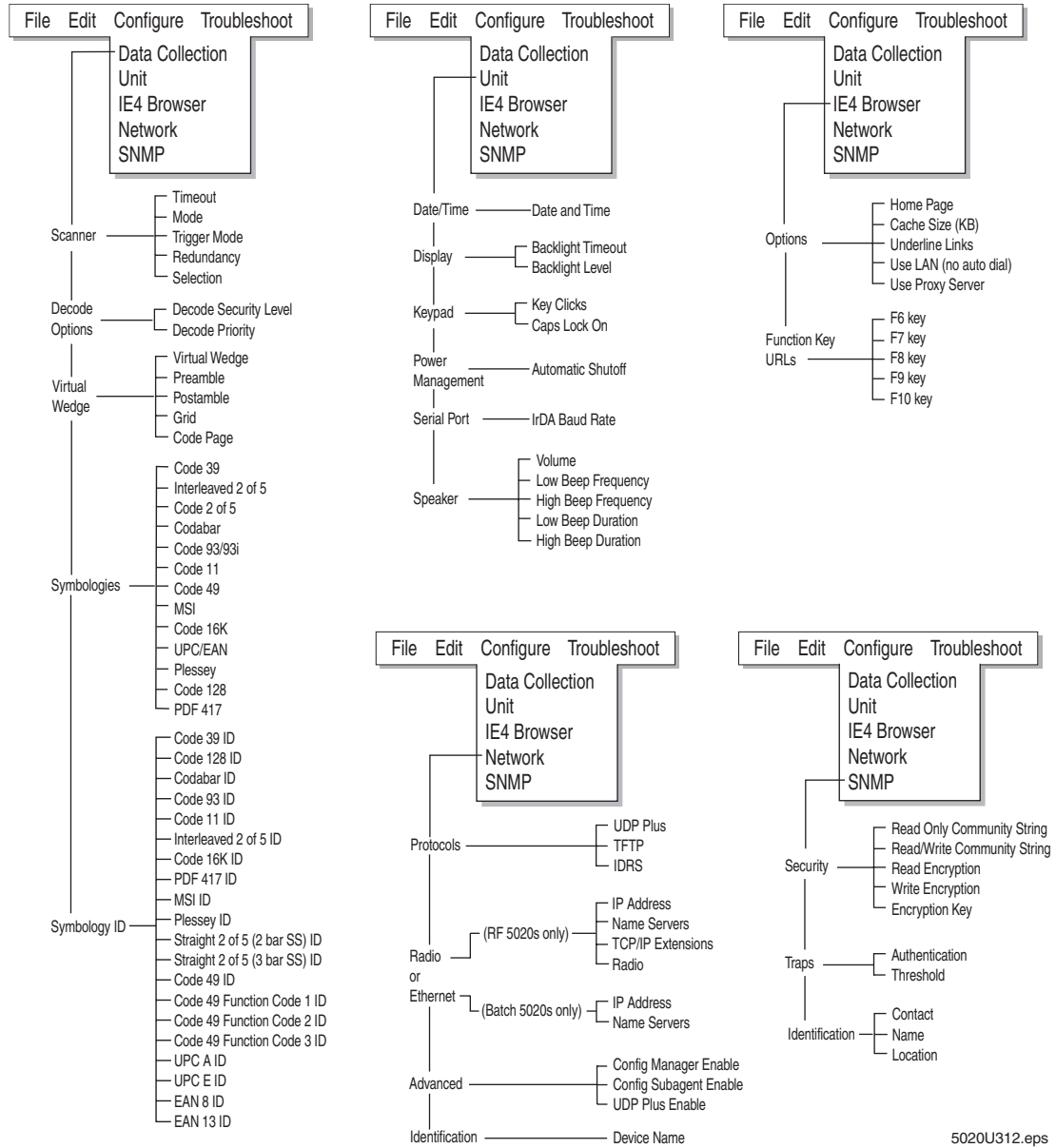
- Use the ⏏ and arrow keys to navigate in the configuration screen. Make the changes you need for each parameter. For help, see the next section.
- To save your changes in each configuration screen, press ⏏ to select the Apply button and then press ⏏.
- To exit the Configuration application, press **Alt** **F** (**Alt** **F**) on the Standard keypad) to open the File menu. Press ▼ to highlight Exit and then press ⏏.
- If you changed any network settings, press **F10** twice to make the changes effective.



Note: If you changed the UDP Plus Enable parameter, warm boot the 5020. For help, see “Booting the 5020” 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



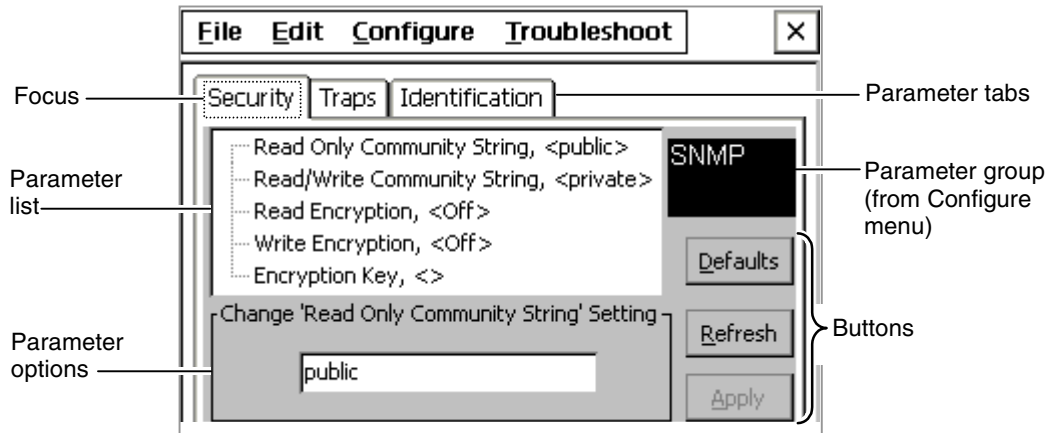
5020U312.eps



Note: In the Network parameter group, you will see either Radio or Ethernet when the corresponding card has been installed in your 5020. If the correct tab does not appear, see Chapter 4, “Troubleshooting and Maintenance.”

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



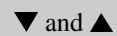
Move the focus in reverse order within a tab



Select the next parameter tab. If the focus is on a tab, you can also press ◀ or ▶ to select the next parameter 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

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



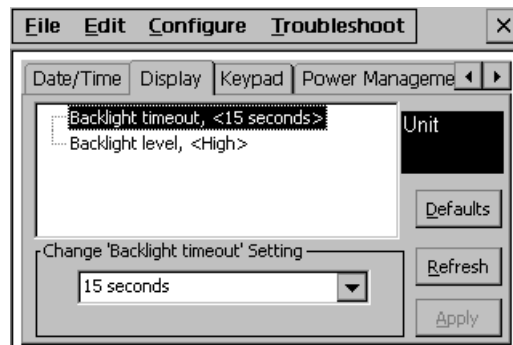
To select another parameter tab

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

To select a parameter

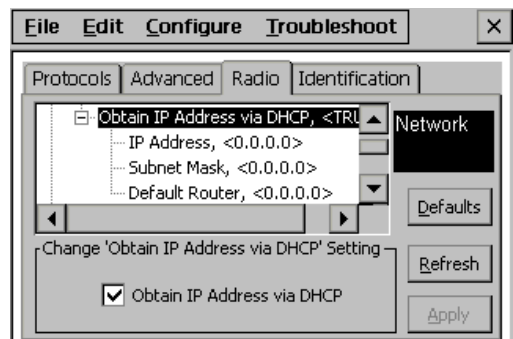
1. Press **→** until the first parameter in the parameter list is highlighted.
2. Press ▲ or ▼ to select a parameter in the list.

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.



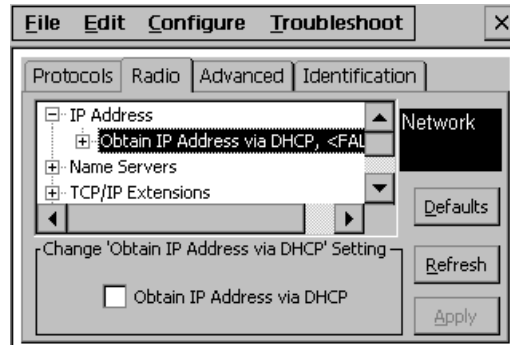
To view an expanded parameter list **+**

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.

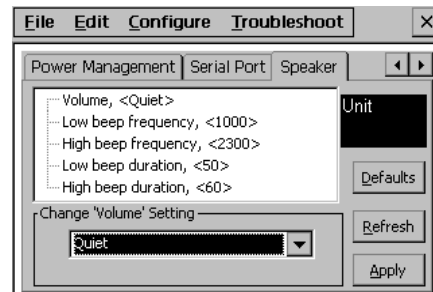


To change a parameter

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:

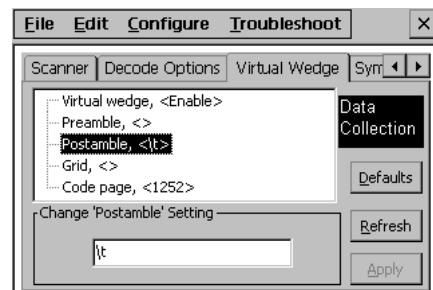
- Drop-down list:


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

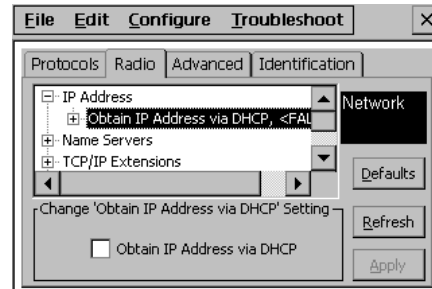




- Entry field or box:

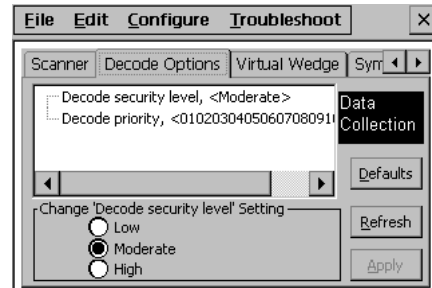
Type or scan a value. To enter an IP address, use the ◀ or ▶ keys to move the cursor between segments of the IP address field. To edit the data in an entry field, use the arrow keys, ⤴, or ⤵.






- 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 5020 screen and you choose refresh, the 5020 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 5020.

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 5020 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

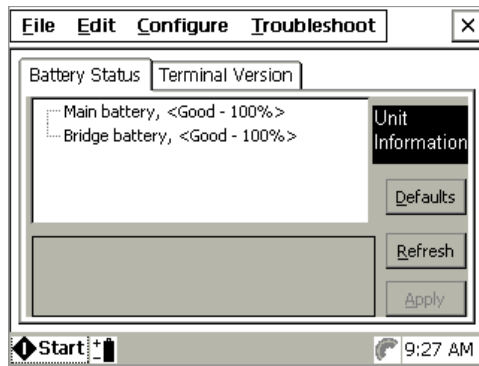
1. Be sure a Configuration menu is onscreen (not the Configuration main screen).
2. Press **Alt F** (**Alt** **6**) on the Standard keypad) to open the File menu.
3. Press **▼** to choose Restore Factory Defaults and press **↵**. A confirming message box appears.
4. Press **↵** to close the message box 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 (3). Choose Programs and then Configuration.
2. Press **Alt T** (**Alt** **F9** on the Standard keypad) 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 5020'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 to close the Unit Information screen and return to the main Configuration application screen.

Configuring the 5020 by Scanning Bar Code Labels

You can configure the 5020 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 Duration
- Beep Frequency
- Speaker Volume
- Codabar
- Code 11
- Code 16K
- Code 2 of 5
- Code 39
- Code 49
- Code 93/93i
- Code 128
- Decode Priority
- Decode Security
- Display Backlight Timeout
- Interleaved 2 of 5
- Keypad Caps Lock
- Keypad Clicker
- MSI
- PDF 417
- Plessey
- Postamble
- Preamble
- Scanner Mode
- Scanner Redundancy
- Scanner Selection
- Scanner Timeout
- Scanner Trigger
- Symbology Identifier
- UPC/EAN

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

When you scan bar code configuration commands, the 5020 sounds an audio signal unless the beep volume is turned off. There are two beep sequences:

- Low beep, low beep, high beep, high beep means you scanned a valid configuration command.
- Three low 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 5020 Remotely

After the 5020 is communicating in your network, you can configure it by

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

You can use a Web browser on a desktop PC and the Unit Manager applications to configure all parameters and remotely manage your 5020. You can configure parameters for all 5020s on your network one at a time using the Configuration Management application in Unit Manager from your desktop. For help, see Chapter 4, “Using Unit Manager,” in the 502X system manual.

You can also send SNMP commands to the 5020 from an SNMP management station to configure the 5020. For help, see “Configuring the 502X by Using SNMP” in Chapter 2 of the 502X system manual.

For help with connecting the 5020 to your network, see Chapter 3, “Connecting the 5020.”

3

Connecting the 5020

Connecting the 5020 To Your Network

You can easily use the 5020 as an end device in your wired or RF network. There are several ways to connect the 5020 to your network:

- Install an Ethernet card (purchased separately) in a batch 5020 to communicate with other devices in your network.
- Use the radio in an RF 5020 to communicate with other RF devices in your network.
- Use the IrDA port or install a serial I/O card (purchased separately) to transfer data between the 5020 and a host computer.

To configure your 5020 for an Ethernet or RF network, see “Setting The Network Parameters” later in this chapter. To configure and use the IrDA port, see “Configuring for Serial or IrDA Communications” later in this chapter.

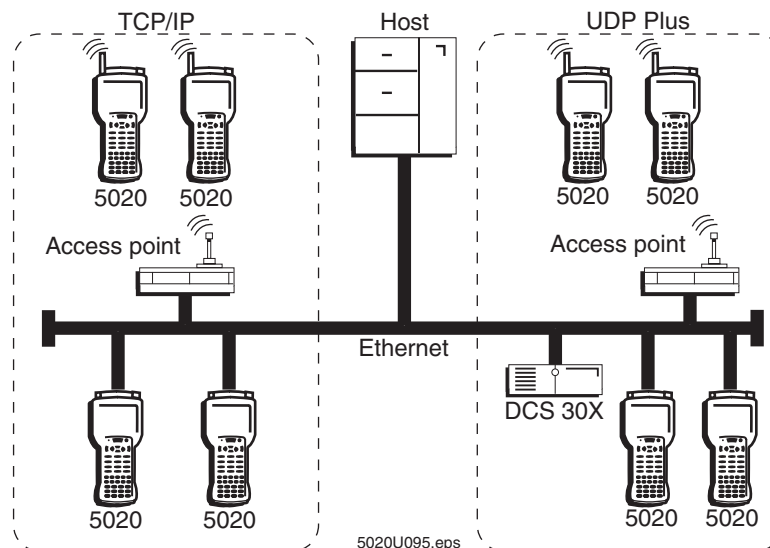
Learning About Network Protocols

The 5020 communicates using either of these network protocol options:

- TCP/IP
- UDP Plus

The 5020 ships with TCP/IP enabled. In a TCP/IP network, the 5020 communicates directly through the access points or through the Ethernet network 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 5020 communicates through the DCS 30X to the host or server. If you have a DCS 30X network, you must enable UDP Plus on the 5020.



The network parameters you need to set depend on your network environment. If you are using a DHCP (Dynamic Host Control Protocol) server, the 5020 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 5020. 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 (RF 5020s only)



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.

Your RF 5020 ships with either an OpenAir radio or an 802.11b HR radio. To connect to an RF network, you need to

- configure your access points.
- configure the 5020 radio parameters. For an OpenAir radio, you need to set the security ID and domain. For an 802.11b HR radio, you need to set the network name and WEP key.

The access point acts as a bridge to provide RF communications between the 5020 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 5020 through 011X access points, you may need to add the 5020 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 get the 5020 connected 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
- Security ID and domain for OpenAir radios
- Network name and WEP key for 802.11b HR radios
- Device name

After you use Fast Config, the 5020 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.

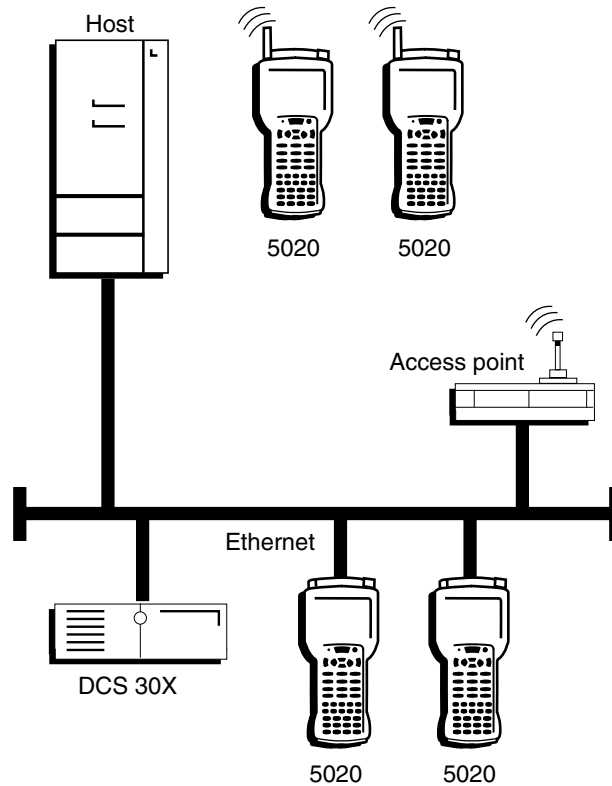
You can also configure each network and radio parameter using the Configuration application. For help, see "Using the Configuration Application" in Chapter 2.

After you have connected the 5020 to your network, you can remotely set parameters by using the Configuration Management application in Unit Manager 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 5020 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 5020s in your network. The 5020s communicate through the DCS 30X with your host by using UDP Plus. For help installing the DCS 30X, see the DCS 30X manual.



5020U081.eps

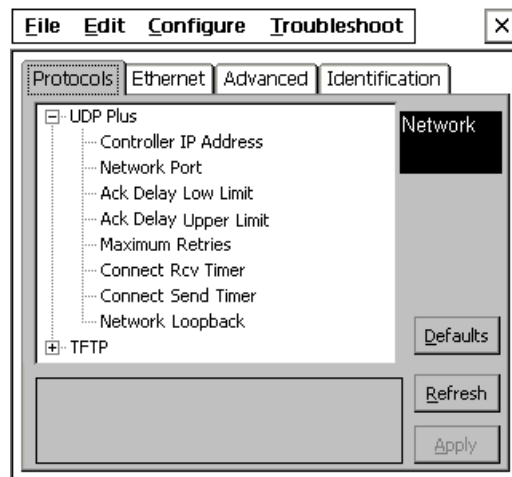
For the 5020 to communicate with the server, you must perform these tasks on the DCS 30X:

- Configure the UDP Plus network.
- Assign an IP address to each 5020, or if you are using a DHCP server, set up the DNS Configuration dialog box on the DCS 30X.
- Enable all 5020s.
- Define the host environment parameters.
- Define the host communications parameters.

Next, you need to configure UDP Plus on the 5020. If you have not configured the network parameters, start with the instructions for “Setting the Network Parameters” earlier in this chapter.

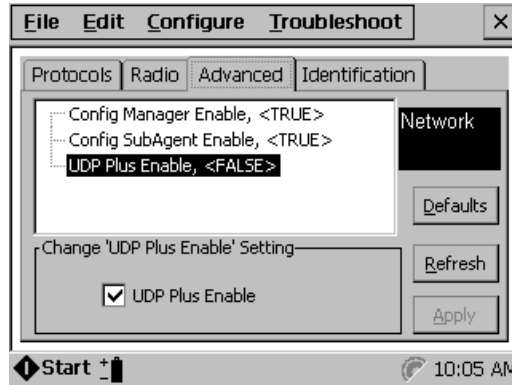
To enable UDP Plus

1. Turn on the 5020 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 ⌘ ⏏ 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 **⌘** twice to make the changes effective.
12. Warm boot the 5020 to enable UDP Plus. For help, see “Booting the 5020” in Chapter 4.

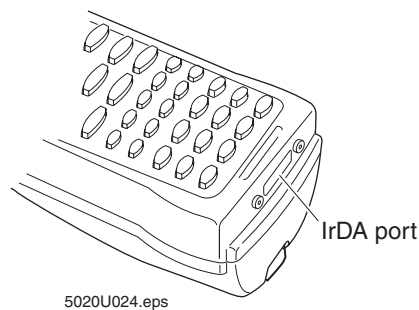
The 5020 should now be communicating in your UDP Plus network. When the 5020 is communicating with the DCS 30X, the  icon appears and remains on in the Notification Tray. If you see a  icon, the 5020 is unable to communicate with the DCS 30X. See Chapter 4, “Troubleshooting and Maintenance,” for help.

Configuring for Serial or IrDA Communications

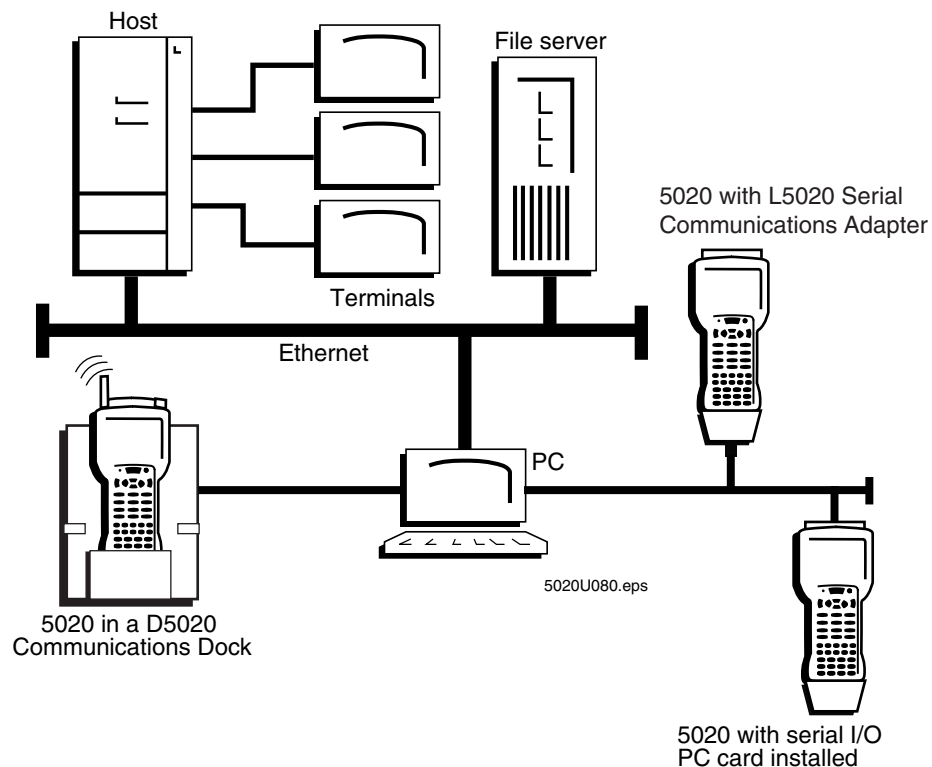
The 5020 has an IrDA port for data communications with a host computer. To convert the IrDA port to an RS-232 serial port, you need an L5020 Serial Communications Adapter, a D5020 Communications Dock, or a serial input/output (I/O) PC card.

Locating the IrDA Port

The 5020's IrDA port is located on the end of the 5020 below the keypad.



5020 Data Collection PC in a Wired Network



Before you can use the 5020 for serial or IrDA communications, you need to connect and configure the device. The next sections cover these topics:

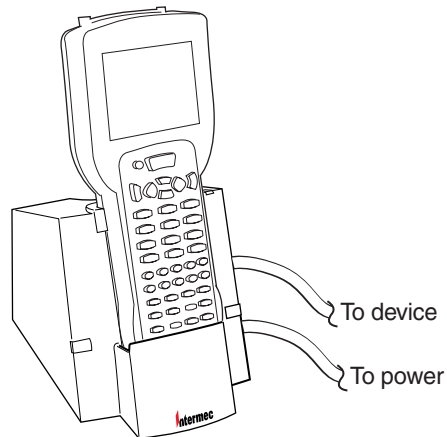
- Connecting the 5020 to Another Device
- Connecting With a Serial I/O Card
- Configuring the Baud Rate

Once the 5020 is connected, you can use ActiveSync to establish a partnership between your desktop PC and the 5020 for browsing, file transfers, application development, and other device management activities. For help, see “Using ActiveSync” in Chapter 5 of the 502X system manual.

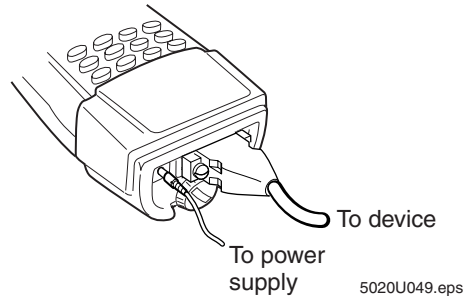
Connecting to Another Device

You can physically connect the 5020 to another device using one of the methods described next.

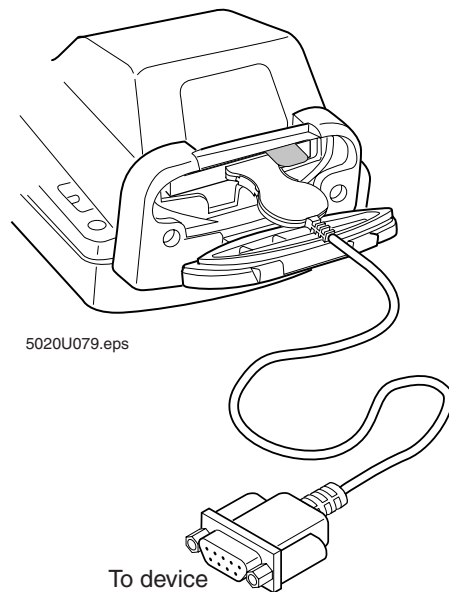
D5020 IrDA and Serial Communications Docks Either connect the Serial Communications Dock to a device (host computer, printer, or other serial device) using an RS-232 null-modem serial cable (Part No. 070268), or connect the IrDA Communications Dock to an IrDA transceiver using the IrDA port. Connect the power supply to the dock and then place the 5020 in the dock. You can transfer data between the 5020 and the device connected to the dock. For help, see the *D5020 Communications Dock Getting Started Guide* (Part No. 068976).



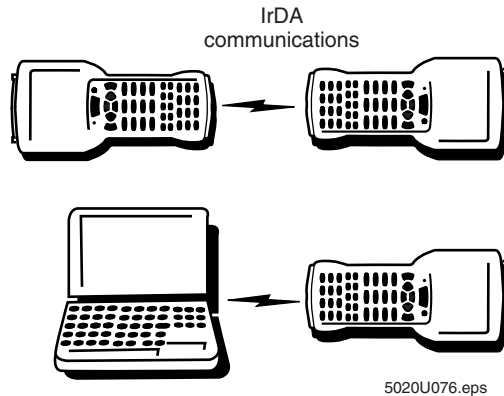
L5020 Serial Communications Adapter Connect the serial adapter to a device (host computer, printer, or other serial device) using an RS-232 null-modem serial cable (Part No. 070268). Connect the power supply to the serial adapter. Install the serial adapter onto the IrDA port on the 5020. You can transfer data between the 5020 and the device connected to the serial adapter. For help, see the *L5020 Serial Communications Adapter Quick Reference Guide* (Part No. 068978).



Serial I/O PC Card (Batch 5020 only) Install a serial I/O PC card in a batch 5020 and connect the cable from the serial PC card to a device (host computer, printer, or other serial device). You can transfer data between the 5020 and the device connected to the serial PC card. You may need to configure the 5020 baud rate (default of 115200) to match the serial PC card. Check the documentation that ships with your serial PC card. For help with installing PC cards, see “Using PC and Compact Flash Memory Cards” in Chapter 1. To configure the 5020 for use with a serial card, see “Connecting With a Serial I/O Card” later in this chapter. For help with changing the baud rate, see “Setting the Baud Rate” later in this chapter.



5020-to-5020 (or IrDA Port) Line up the IrDA port on the 5020 with the IrDA port on another 5020 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.






Connecting With a Serial I/O Card (Batch 5020s only)

Serial connections to the 5020 are enabled through the IrDA port by default. To enable a serial connection through a serial I/O card, you need to set up a new connection route. The next instructions explain how to configure a batch 5020 to communicate through a serial I/O card. After the 5020 has been configured in this manner, you can use ActiveSync to communicate with the host PC. For help with ActiveSync, see “Using ActiveSync” in Chapter 5 of the 502X system manual.

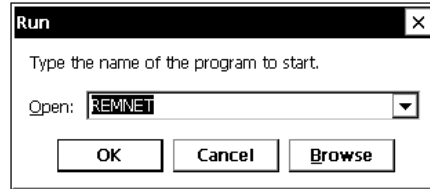
After you have configured the 5020 to communicate through the serial I/O card, you can return the communications route to the IrDA port when needed. To do this, see “To select the IrDA port” later in this chapter.

To configure a batch 5020 for use with a serial I/O card

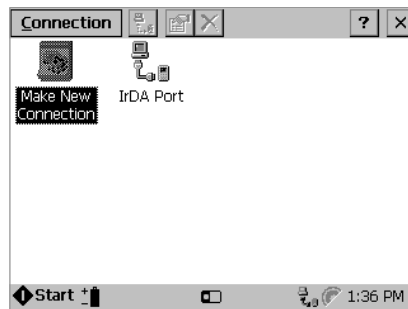
1. Install the serial I/O card in the 5020. For help, see “Inserting and Removing PC Cards” in Chapter 1.
2. Press  to turn on the 5020.
3. Press  . The Start menu appears.



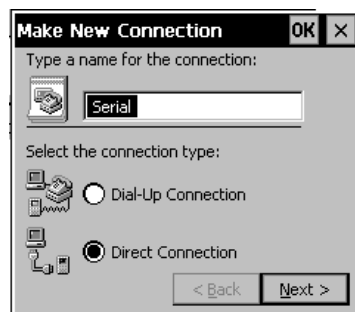
4. Press **▲** to select Run and press **⏎**. The Run dialog box appears.



5. Type REMNET and press **⏎**. The Connection dialog box appears. Select the Make New Connection icon.



6. Press **⏎**. The Make New Connection dialog box appears.

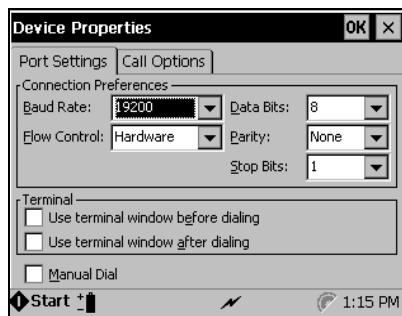


7. Enter a name for the new connection. When finished, press **⏎** to select Direct Connection.

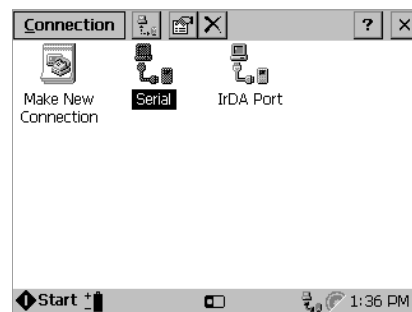
- Press **→** to select the Next button and press **↵**. The Make New Direct Connection dialog box appears.



- Press **▼** to select Socket I/O Serial from the drop-down list.
- Press **→** to select the Configure button and press **↵**. The Device Properties dialog box appears.

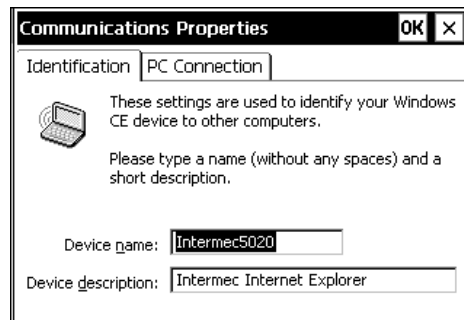


- Press **▲** to change the Baud Rate setting to 19200.
- Press **↵**. The Make New Direct Connection screen appears.
- Press **→** to select the Finish button and press **↵**. The Connection screen appears.

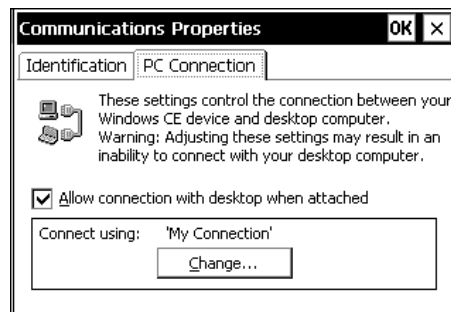


- Press **Alt Esc**. The Task Manager screen appears.

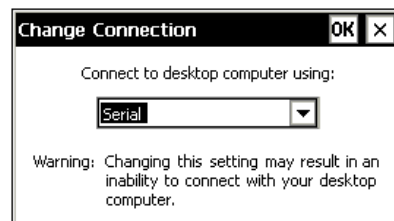
15. Press ▼ to select Connections. Press ⌘ to select End Task and press ⏏. Connections disappears from the Task Manager list.
16. Press Esc to close Task Manager. The 5020 desktop appears.
17. Press ⏏ 3 to open the Start menu.
18. Press ▼ to select Settings and press ⏏. The Control Panels desktop appears.
19. Press ▶ and then press ◀ to select the Communications icon. Press ⏏. The Communications Properties dialog box appears.



20. Press Ctrl ⌘ to select the PC Connection tab and press ⏏. The PC Connection tab appears.



21. Press ⌘ to select the Change button and press ⏏. The Change Connection dialog box appears.

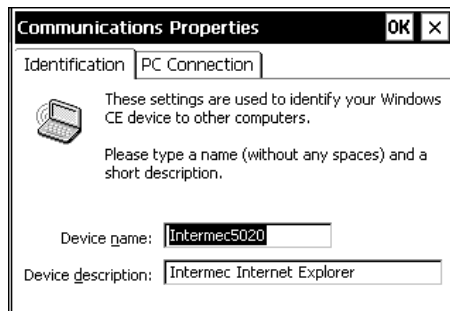


22. Press ▼ to select your new connection and press ⏏.
23. Press ⏏ again to return to the PC Connection tab.
24. Press ⌘ to select the Identification tab and press ⏏. The Control Panels desktop appears.
25. Press ⌘ twice to open the File menu. Press ▼ to select Close and press ⏏. The 5020 desktop appears.

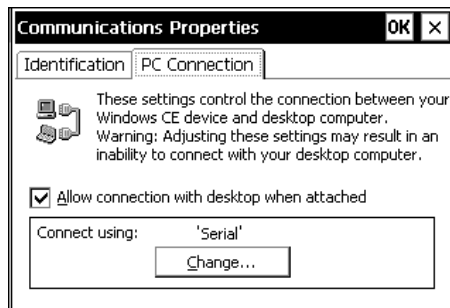
The 5020 is now set up to communicate through the serial I/O card. If you need to return the 5020 serial communications to the IrDA port, see the next section.

To select the IrDA port

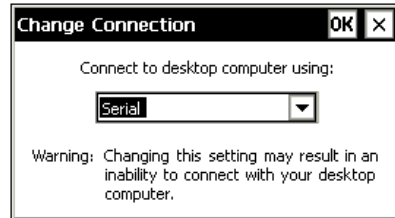
1. Press ⏏ 3 to open the Start menu.
2. Press ▼ to select Settings and press ⏏. The Control Panels desktop appears.
3. Press ▶ and then press ◀ to select the Communications icon. Press ⏏. The Communications Properties dialog box appears.



4. Press ⌘ ⌘ to select the PC Connection tab and press ⏏. The PC Connection tab appears.



- Press **F5** to select the Change button and press **Enter**. The Change Connection dialog box appears.



- Press **Up Arrow** to select IrDA Port and press **Enter**.
- Press **Enter** again to return to the PC Connection tab.
- Press **F5** to select the Identification tab and press **Enter**. The Control Panels desktop appears.
- Press **Alt** twice to open the File menu. Press **Down Arrow** to select Close and press **Enter**. The 5020 desktop appears.

The 5020 is now ready for serial connections through the IrDA port.



Note: On a cold boot, any new connections made in REMNET are lost, and serial communications are reset to the IrDA port. You need to recreate any new serial connections after a cold boot. For help, see “To configure a batch 5020 for use with a serial I/O card” earlier in this chapter.

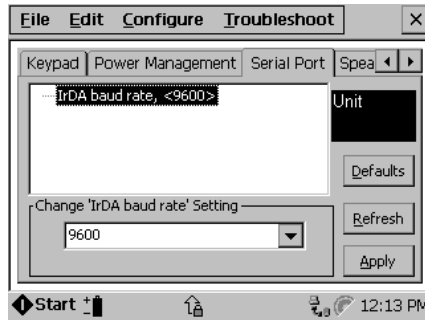
Setting the Baud Rate

The baud rate you set for the 5020 IrDA port must match the baud rate set for the serial port on the connected device. You must connect the 5020 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 Manager, SNMP, or Fast Config.

To set the baud rate with the Configuration application

- If the Configuration application is not open, open the Start menu. Choose Programs and then Configuration.
- Open the Configure menu.
- Press **Down Arrow** to select Unit and then press **Enter**. 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 **⌘/⓪** twice to have the changes take effect.

Once the 5020 is connected and configured, you are ready to connect and transfer data between the 5020 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 5020. You will also find guidelines for booting the 5020, 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 5020, look in this chapter to find a possible solution. This chapter consists of the following sections:

Sections	Page
Problems While Operating the 5020	4-4
Problems With Connectivity	4-6
Problems While Configuring the 5020	4-8
Problems While Using Unit Manager	4-9
Problems While Scanning Bar Codes	4-11
Problems Upgrading the Operating System Image	4-13
Application Manager Error Messages	4-14
Booting the 5020	4-14
Verifying RF or Ethernet Communications	4-16
Upgrading the 5020 Operating System Image	4-16
Restoring a Corrupted Operating System Image	4-17



Caution

There are no user-serviceable parts inside the 5020. Opening the unit will void the warranty and may cause damage to the internal components.

Conseil

Le 5020 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 5020 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 5020.

Problems While Operating the 5020

Problem or Message

Solution

You press **(I/O)** to turn on the 5020 and nothing happens.

Make sure you have a charged main battery pack installed in the 5020.

After placing the 5020 in storage, you press **(I/O)** to turn on the 5020 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 5020. 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 5020 will turn off in one minute. To stop the 5020 from turning off and to clear the message, press **(Esc)** and then press **(I/O)** twice.

While working with an application on the 5020, you open the Start menu and cannot close the Start menu.

Press **(Alt) (F5)** to open the Task Manager. Select your application or press **(Ctrl) (Esc)** twice. For help, see "Switching Between Applications With Task Manager" in Chapter 1.

You added notes to the Owner Properties applet of the Control Panel, selected the Apply button, and pressed **(Enter)** and nothing happened.

Press **(F5)** to put the focus on Notes and press **(Enter)**. The Owner Properties applet saves the information and closes.

The 5020 is running slowly.

Remove any unnecessary programs. Use the Application Manager in Unit Manager to remove programs. For help, see "Uninstalling Applications" in Chapter 4 of the *502X Data Collection PC System Manual* (Part No. 071479).

If the 5020 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 5020 does not have enough storage memory to load a file.

Use the File Manager application in Unit Manager to delete unnecessary files. For help, see "Deleting a File" in Chapter 4 of the 502X system manual.

If the 5020 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.

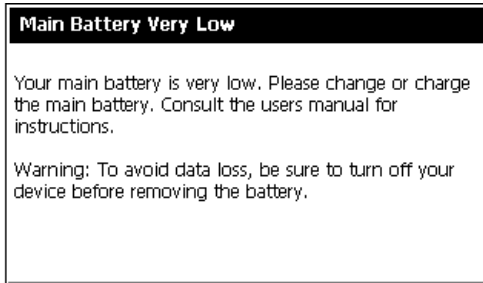
You hotswap a PC card, such as an Ethernet card, and the 5020 does not recognize the new card.

Warm boot the 5020. For help, see "Booting the 5020" later in this chapter.

Problems While Operating the 5020 (continued)

Problem or Message

The 5020 beeps every 15 seconds, the Power applet starts, and the Main Battery Very Low message appears:

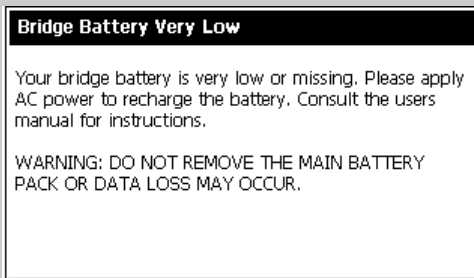


Solution

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 5020.
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 5020 from AC power after the main battery pack is charged.

For more information, see “Charging the Bridge Battery” in Chapter 1.

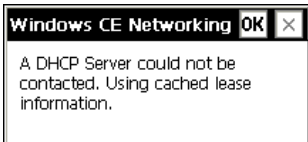
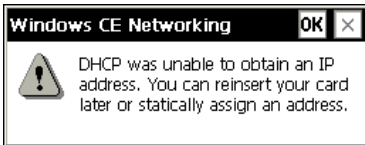
Pressing the arrow keys has no effect on focus placement or the cursor.

The pointer may have been turned on inadvertently. If the pointer icon  is visible in the Notification Tray, press **Alt** **Ctrl** 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

You see one of these messages:



Solution


If you turned on the 5020 for the first time, press **Q** or **Esc** to exit the message box. If you are using a batch 5020 or do not have a DHCP server, disable DHCP. For help, see Chapter 3, "Connecting the 5020."

If you are using an RF 5020 or have an Ethernet card installed and have a DHCP server, press **Q** or **Esc** to exit the message box. For the RF 5020, make sure the Radio Connect icon () is displayed in the Notification Tray. Make sure 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 5020."

If you are upgrading the 5020 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 Manager, click or choose the Refresh button in whatever screen you are at.

You have an RF 5020 and the Radio Not Connected icon () is displayed in the Notification Tray.





The 5020 is unable to connect to an access point. Be sure that

- the 5020 is within range of an access point.
- the access point has been turned on.
- the 5020 has been configured correctly. For help configuring the 5020, see Chapter 3, "Connecting the 5020."

While using eMbedded Visual Tools, you are unable to establish a connection to the 5020.

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.

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 5020 is in range of an access point and that the 5020 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

The host communicates with the RF 5020 through an Intermecc 011X access point and the host cannot initiate communications with the 5020.

Solution

To conserve battery life, the 5020 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 5020's IP address and MAC address to your host's ARP table. You must disable DHCP before adding the 5020'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 5020's IP address.
MAC_address is the 5020'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 5020 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 5020 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 5020, PC Connection sets a baud rate of 19200 when first establishing an ActiveSync partnership. If you change the 5020 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.

You have an Ethernet PC card installed but the Ethernet tab does not appear in the Network menu of the Configuration application or the Configuration Management application in Unit Manager.

Warm boot the 5020 to initialize the PC card then restart the Configuration application or Unit Manager. For help, see "Warm Booting the 5020" later in this chapter.

Problems While Configuring the 5020

Problem or Message

Solution

You changed the radio, Ethernet, or UDP Plus parameters, such as DHCP enable or the 5020 IP address, but the parameters did not take effect on the 5020.

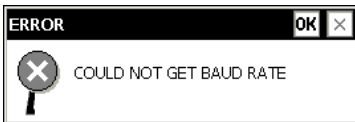
Press **(i/o)** twice to suspend and resume the 5020 and have the changes take effect.

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 5020.

Warm boot the 5020 to enable the change. For help, see “Warm Booting the 5020” later in this chapter.

While using Fast Config to set up the 5020, this message appeared:



If the 5020 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 5020 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 5020 off and back on.

After warm or cold booting the 5020, you chose Data Collection from the Configure menu in the Configuration application or Configuration Management, and some or all of the parameters do not display 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 (three high beeps and one low beep) sounds and the red LED stops flashing before you open any applications.

You try to configure the 5020 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 5020's configuration, or exit the Configuration application to scan configuration commands.
- The 5020 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 5020 (continued)

Problem or Message

You scan a configuration command, such as Beep Duration, and you hear three low beeps.

Solution

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 Manager

Problem or Message

You enter the 5020 IP address in your Web browser and you get a message that your browser cannot connect.

Solution

Try these solutions:

- If your network uses a proxy server, the 5020 IP address must be added to the proxy exceptions list. Add the IP address to the proxy exceptions list and try again.
- The 5020 may be off. Turn on the 5020 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.
- If you have an RF 5020, you may be out of range of an access point. Make sure the 5020 is on and connected to an access point.
- If you are using an Ethernet PC card, make sure you have the 5020 configured correctly for your network.
- Warm boot the 5020.

In the Configuration Management application in Unit Manager, 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 Manager. Make sure you enter all of the data for a field before moving to a different field.

You are in Unit Manager and the Web browser screen goes blank or becomes jumbled.

The 5020 may have suspended or been turned off. Make sure the 5020 is on and remains on. If you have an RF 5020, you may be out of range. Make sure the 5020 is on and connected to an access point.

If the 5020 has not been suspended or turned off, make sure your Web server is still on.

Problems While Using Unit Manager (continued)




Problem or Message

Solution

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 Manager. 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.

In Unit Manager, you changed the scanner selection and the following error message appears:

Press  to clear the message and continue configuring the 5020. Unit Manager did make the scanner selection change. Press  to select the Refresh button and press  to update the screen.

Unable to apply new value.

You add or remove a network PC card and warm boot the 5020, but the appropriate screen does not appear in the Network menu in Configuration Management. For example, you remove an Ethernet PC card and Ethernet still appears in Configuration Management.

The 5020 Web page menu options and graphics are loaded first from the browser's cache although the configuration data is always loaded from the 5020. You may need to delete the cache so that Unit Manager will reload the Configuration Management web page and Network parameters from the 5020. Delete the browser cache (temporary files) and history and restart your browser.

You choose Configuration from the Unit Manager menu and nothing displays 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 <http://java.sun.com/products/plugin>.
- If your network uses a proxy server, the 5020 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 Manager for PlanNET works best with Internet Explorer 4.0 or higher or Netscape Navigator 4.0 or higher on Windows 95/98/NT. Unit Manager 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 <http://java.sun.com/products/plugin>.

Problems While Scanning Bar Codes

Problem or Message

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.

Solution

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 5020 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 5020 quickly and efficiently, you should enable only the bar code symbologies that you are going to scan. If you enable multiple symbologies, the 5020 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 input device connected to the tethered scanner port does not appear to work well or read bar code labels very quickly.

Set the Scanner Selection tab to the specific input device you have attached. Check the bar code symbologies you have enabled on the 5020. Enable only the symbologies that you are using.

The scan module or input device 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 have an input device attached to the tethered scanner port and cannot read any bar code labels.

You may not be using an input device that is supported with the tethered scanner port. For a list of supported input devices, see "Connecting a Tethered Scanner Device" in Chapter 1.

Also make sure that the 5020 is configured for the scanner you are using. In the Configuration application under Data Collection, select Scanner and then Selection. For more information, see “Using the Configuration Application” in Chapter 2.

You try to scan a bar code immediately after turning the 5020 on, and nothing happens.

Wait 5 to 6 seconds after turning the 5020 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:

On your PC keyboard, press **Ctrl-C** and try to run the upgrade program again. For help, see “Upgrading the 5020 Operating System Image” later in this chapter.

```
Ser_EstablishConnection Recvd
Header Error
```

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 the 5020 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 the 5020 Operating System Image” later in this chapter.

Application Manager Error Messages

If a problem occurs when you are installing an application on the 5020, 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 5020. This message appears when you try to install another type of file, usually an EXE or DLL, on the 5020.

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.

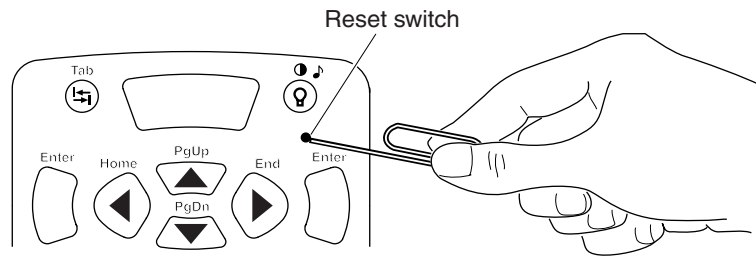
You need to remove files from the 5020 to create additional disk space for the application. Use the File Manager application in Unit Manager to delete files. For help, see “Deleting a File” in Chapter 4 of the 502X system manual.

Current free disk space on the CE device = _____

Size of CAB file [Filename] = _____

Booting the 5020

You can use the recessed Reset switch to warm boot or cold boot the 5020.



5020U021.eps



Note: Do not activate the scanner during the boot process or the 502X will be unable to complete the boot. If the scanner is accidentally activated during the boot process, reboot the 502X.

Warm Booting the 5020

On a warm boot, the system reboots without changing the 5020 settings and files. During a warm boot, the 5020 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 5020.

To warm boot the 5020

- 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 5020 desktop appears. The red LED goes off and the green LED flashes until the warm boot is finished.

Cold Booting the 5020



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 settings and scanner selection are preserved and restored. All other settings revert to the default factory settings. For a list of network 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, RF, or Ethernet connections remain after a cold boot.



Note: If you are using two storage cards (one in the PC card slot and one in the flash memory card slot), the Windows CE file system designates the first card inserted as “Storage Card” and the second as “Storage Card2.” To avoid changing the designation of storage cards after a cold boot, you can install both cards before the cold boot so that the designators remain the same through all future cold boots. For more information, see “Using PC and Compact Flash Memory Cards” in Chapter 1.

To cold boot the 5020

- Press and hold , 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 .

The green LED flashes until the cold boot is finished, which is about one minute after the 5020 desktop appears. The 5020 emits a four-beep sequence when the cold boot is complete.



Note: After a cold boot, the date is set to June 1, 2001, and the time is set to 12:00 AM.

Verifying RF or Ethernet Communications

If your 5020 is configured for an RF or Ethernet network, use the following procedure to verify that the 5020 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 5020.

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 the 5020 Operating System Image

You can upgrade a Release 2 or 2.1 5020 to Release 3.0 with the 5020 Release 3.0 Upgrade CD-ROM set.

The upgrade set includes

- the Release 3 operating system image and necessary files.
- Microsoft ActiveSync.

Contact your Intermec sales representative to purchase the upgrade CD set.

Restoring a Corrupted Operating System Image

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.

The following procedure should only be used to restore a corrupted operating system image.



Caution

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

Conseil

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.

To restore a corrupted operating system image

1. Connect the 5020 to AC power using either a D5020 dock or L5020 adapter and make sure the main battery pack is fully charged.
2. Connect the 5020 to the host PC through the D5020 dock or L5020 adapter. For help, see the documentation that shipped with your dock or adapter.
3. Create a directory on the host PC for the operating system image (NK_FLASH.BIN) and download program (OSDOWNLOADSERVER.EXE).
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. The upgrade program takes approximately 90 minutes to finish restoring the operating system image.
6. Insert a small straightened paper clip in the Reset switch on the 5020. Press and hold the Reset switch for 5 seconds. The green and red LEDs are both on when the 5020 is in the correct mode.

The new operating system image is now downloaded to the 5020. The “Finished sending file” message appears on the host PC when the download is complete. The green and red LEDs turn off when the download is complete.

7. Cold boot the 5020 after the download is complete. For help, see “Cold Booting the 5020” earlier in this chapter.



5020 Specifications

This appendix lists the 5020 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 5020 Data Collection PC:

- Physical Dimensions
- Power Specifications
- Electrical Specifications
- Temperature and Environmental Specifications
- Hardware Specifications
- Keypad Options
- Screen Specifications
- RF Communications
- Connectivity Options
- Bar Code Symbolologies
- Bar Code Scanning Options
- Standard-Range Integrated Scanner Optical Parameters
- Long-Range Integrated Scanner Optical Parameters
- High-Visibility Integrated Scanner Optical Parameters
- High-Density Integrated Scanner Optical Parameters
- Input Devices for the Tethered Scanner Port

Physical Dimensions

Width:	10.2 cm (4.0 in) at the screen 7.0 cm (2.75 in) at the grip
Length:	22.9 cm (9.0 in)
Depth:	7.1 cm (2.8 in) maximum 4.572 cm (1.8 in) at the grip
Weight:	
Batch 5020:	703.1 g (24.8 oz) (includes batteries and handstrap)
RF 5020:	748.4 g (26.4 oz) (includes batteries and handstrap)

Power Specifications

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

Electrical Specifications

Model: 5020
Electrical Rating: \approx 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
- 16MB RAM
- 32MB Flash
- PC card slot for radio, serial, modem, and memory cards
- Compact flash card slot

Keypad Options

- Full alphanumeric keypad (except Euro2) or standard multifunction keypad
- Three keypad overlays available: English, Euro1, Euro2
 - Euro1 keypad overlay supports British English, French, Italian, Portuguese, and Spanish. Full alphanumeric keypad or standard multifunction keypad overlay available.
 - Euro2 keypad overlay supports British English, Danish, Finnish, German, Norwegian, and Swedish. Full alphanumeric keypad overlay not available for Euro2 language option.

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



RF Communications

WLI-Forum 2.4 GHz OpenAir™ frequency hopping spread spectrum radio

- 100 mW maximum output power
- 1.6 / 0.8 Mbits per second data speed
- Coverage > 80 m (262.4 ft)
- Frequency varies by country

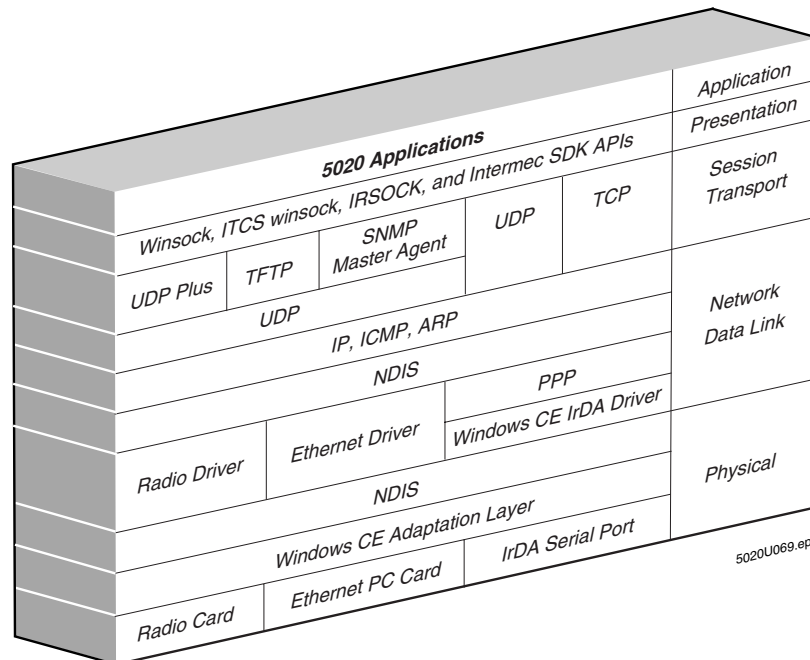
IEEE 802.11b High Rate (HR) direct sequence spread spectrum radio

- 100 mW maximum output power
- 11 Mbits per second data speed
- Coverage > 80 m (262.4 ft)

Connectivity Options

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

5020 Communications Protocol Stack



Bar Code Symbolologies

- Codabar
- Code 11
- Code 16K
- Code 2 of 5
- Code 39
- Code 49
- Code 93/93i
- Code 128
- Interleaved 2 of 5
- MSI
- Plessey
- UPC/EAN
- PDF 417 (5020s with tethered scanner option and Intermec 1470 scanner only)

Bar Code Scanning Options

- Standard-range integrated scanner with visible laser diode (670 nm)
- Long-range integrated scanner with visible laser diode (650 nm)
- High-density integrated scanner with visible laser diode (675 nm)
- High-visibility integrated scanner with visible laser diode (675 nm)
- 10-pin modular scanner port for tethered input devices

Standard-Range Integrated Scanner Optical Parameters

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



Long-Range Integrated Scanner Optical Parameters

The depth of field specifications are:

Bar Code Specification	Depth of Field / Scanning Range	
5 mil code	29.5 to 49.8 cm	11.6 to 19.6 in
10 mil code	21.8 to 85.3 cm	8.5 to 33.6 in
20 mil code	21.8 to 98 cm	8.5 to 38.6 in
30 mil code	24.4 cm to 1.92 m	9.6 to 75.6 in
40 mil code	24.4 cm to 2.047 m	9.6 to 80.6 in
70 mil code, retroreflective	1.92 to 4.105 m	76.8 to 161.6 in
100 mil code, retroreflective	2.123 to 5.324 m	83.6 to 209.6 in

High-Visibility Integrated Scanner Optical Parameters

The depth of field specifications are:

Bar Code Specification	Depth of Field / Scanning Range	
5 mil code	10.16 to 13.98 cm	4 to 5.5 in
7.5 mil code	7.62 to 21.59 cm	3 to 8.5 in
10 mil code	7.112 to 25.4 cm	2.8 to 10 in
15 mil code	6.35 to 38.1 cm	2.5 to 15 in
20 mil code	7.62 to 50.8 cm	3 to 20 in
40 mil code	12.7 to 81.28 cm	5 to 32 in
55 mil code	19.05 to 91.44 cm	7.5 to 36 in

High-Density Integrated Scanner Optical Parameters

The depth of field specifications are:

Bar Code Specification	Depth of Field / Scanning Range	
3 mil code	6.60 to 9.779 cm	2.6 to 3.85 in
4 mil code	7.11 to 11.43 cm	2.8 to 4.5 in
5 mil code	6.60 to 14.732 cm	2.6 to 5.8 in
7.5 mil code	6.60 to 14.859 cm	2.6 to 5.85 in
13 mil code	6.60 to 17.526 cm	2.6 to 6.9 in

Input Devices for the Tethered Scanner Port

As of this writing, these input devices are supported by the 5020:

- 151X, 1545, and 1550 laser scanners
- 126X, 127X, and 128X series wands
- Metrologic MS941
- PSC 53001P70 with cable (CTP01576XX)
- Symbol LS3200ER



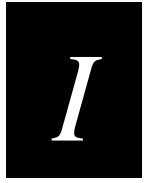
Note: The 5020 also supports RS-232 scanners through a 9-pin adapter cable (Part No. 064438) connected to the tethered scanner port. You need to develop your own applications to use RS-232 scanners. For help with developing applications, see “Developing and Installing Applications,” Chapter 5 in the 502X system manual.

Cables for RS-232 Serial Communications

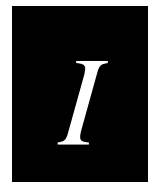
You use these accessory cables (sold and ordered separately) with the L5020 Serial Communications Adapter or the D5020 Serial Communications Dock:

- 5-wire, 9-pin to 9-pin, RS-232 null-modem serial cable (Part No. 070268)
- 3-wire, 9-pin to 25-pin, RS-232 null-modem serial cable (Part No. 047569)
- 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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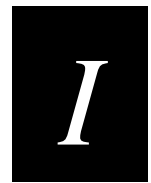
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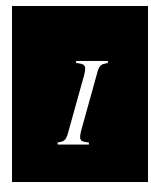
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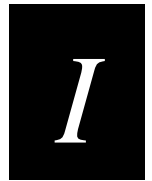
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