

System Manual

P/N 071479

502X Data Collection PC™

 **intermec**

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

Outside U.S.A. and Canada: Contact your local Intermec service supplier.

The information contained herein is proprietary and is provided solely for the purpose of allowing customers to operate and/or service Intermec manufactured equipment and is not to be released, reproduced, or used for any other purpose without written permission of Intermec.

Information and specifications in this manual are subject to change without notice.

© 2001 by Intermec Technologies Corporation
All Rights Reserved

The word Intermec, the Intermec logo, INCA (under license), MobileLAN, JANUS, IRL, Trakker Antares, EZBuilder, TE 2000, Data Collection Browser, dcBrowser, Universal Access Point, UAP, Duratherm, EasyCoder, Precision Print, PrintSet, Virtual Wedge, and CrossBar are either trademarks or registered trademarks of Intermec.

Throughout this manual, trademarked names may be used. Rather than put a trademark (™ or ®) symbol in every occurrence of a trademarked name, we state that we are using the names only in an editorial fashion, and to the benefit of the trademark owner, with no intention of infringement.

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	8/01	System manual revised to include 5020 Release 3.0 firmware. On the 5020, the Unit Management suite of applications is now called “Unit Manager for PlanNET.” All Unit Management material updated to reflect this change. IDRS and Symbology Identifier commands added.

Contents

Before You Begin xv

- Warranty Information xv*
- Safety Summary xv*
- Warnings, Cautions, and Notes xvi*
- About This Manual xvii*
- Other Intermec Manuals xix*

1

Introducing the 502X Data Collection PC

What Is the 502X Data Collection PC? 1-3

- Models and Options 1-3*
- What's New? 1-4*

Learning About the Installed Software 1-4

Where Do You Go From Here? 1-6

2

Configuring and Connecting the 502X

How to Configure the 502X 2-3

- Setting Parameters Directly 2-3*
- Setting Parameters Remotely 2-3*
- Using Fast Config 2-4*
- Using the Configuration Application 2-5*
- Scanning Bar Code Labels to Set Parameters 2-6*
- Configuring the 502X by Using SNMP 2-7*

Connecting the 502X To Your Network 2-9

- Learning About Network Protocols 2-9*
- Learning About RF Network Settings (RF 502Xs only) 2-10*
 - Setting the Network Parameters 2-11*
- Configuring for Serial or IrDA Communications 2-11*

3

Customizing the 502X Using the Control Panel

Using the Control Panel 3-3

- Setting Communications Properties 3-4*
- Setting the Date and Time 3-7*
- Creating Dialing Properties (Batch 5020 Only) 3-8*
- Viewing or Modifying the Desktop Display 3-9*

Adjusting the Backlight Shutoff 3-9
Adjusting the Keypad Properties 3-10
Entering Owner Information 3-11
Setting a Password 3-12
Viewing Battery Status and Changing Power Suspend Time 3-13
Entering Regional Settings 3-14
Removing Application Programs 3-15
Viewing System Properties 3-15
Adjusting Memory Allocation 3-16
Changing the Volume and Enabling Sounds 3-16

4

Using Unit Manager

Using the Unit Manager Applications 4-3

Using Configuration Management 4-5

Printing a Configuration Management Screen 4-8

Using File Manager 4-10

Creating, Removing, and Renaming Directories 4-11

Uploading a File to a Directory 4-14

Copying a File 4-15

Moving a File to Another Directory 4-16

Renaming a File 4-17

Deleting a File 4-18

Changing File Attributes 4-19

Using File Manager to Run an Executable on the 502X 4-20

Using Process Manager 4-21

Managing Processes Running on the 502X 4-22

Displaying Threads Running on the 502X 4-25

Displaying Modules Running on the 502X 4-26

Using Application Manager 4-27

Installing an Application 4-28

Uninstalling an Application 4-29

Using the Event Viewer 4-30

Viewing the Event Logging Buffer 4-30

Setting an Event Filter 4-31

Tracing Events 4-32

Clearing Events 4-34

Managing Your Passwords 4-34

5

Developing and Installing Applications**Hardware and Software You Need to Develop Applications 5-3****Using the Intermec SDK to Develop Applications 5-4***Reader Command Functions 5-6**Message Functions 5-6**System Information Function 5-6**Communications Functions 5-6**File Transfer Functions 5-7**Virtual Wedge Functions 5-7**UDP Plus Functions 5-7**Automatic Data Collection Functions 5-7**QuickWin Functions 5-8***Developing Applications Without the Intermec SDK 5-8****Developing Applications With HTML 5-9***Using Internet Explorer 5-9**Configuring the IE Browser 5-10**IE Browser Keypad Shortcuts 5-11***Creating an Application Package 5-12***Creating a Win32 CAB File 5-12**Creating a SETUP.DLL to Customize Setup 5-13***Installing and Uninstalling Applications 5-14***Installing Applications 5-14**Automatic Application Installation (5020 only) 5-15**Uninstalling Applications 5-16**Understanding the Information File Format 5-17***Using ActiveSync 5-19***Installing ActiveSync 5-19**Reconnecting To Your Desktop PC 5-23**Using ActiveSync With a Serial I/O Card (Batch 5020s only) 5-24***Setting Up eMbedded Visual Tools 3.0 for Remote Access 5-25***Problems Establishing a Connection 5-27***Installing and Removing Commercial Off-the-Shelf Software 5-28**

6

Reader Command Reference

Using Reader Commands 6-3

Using Accumulate Mode 6-3

Enter Accumulate Mode 6-5

Clear 6-5

Destructive Backspace 6-6

Exit Accumulate Mode 6-6

Operating Reader Commands 6-6

Backlight On and Off 6-7

Change Configuration 6-7

Multiple-Read Labels (5020 only) 6-8

Set Date and Time 6-8

7

Configuration Command Reference

Using Configuration Commands 7-3

Configuration Commands Listed by Category 7-4

Configuration Commands Listed by Bar Code Syntax 7-7

Entering Variable Data in a Configuration Command 7-9

502X IP Address 7-10

Access Point Density 7-11

Access Point MAC Address 7-12

Access Point Name (5020 only) 7-12

Access Point Network Name 7-13

Acknowledgement Delay Lower Limit 7-13

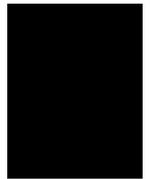
Acknowledgement Delay Upper Limit 7-14

Automatic Shutoff 7-15

Beep Duration (5020 only) 7-16

Beep Frequency (5020 only) 7-18

Codabar 7-20



Code 11 (5020 only) 7-21

Code 16K (5020 only) 7-23

Code 2 of 5 7-24

Code 39 7-26

Code 49 (5020 only) 7-30

Code 93/93i 7-32

Code 128 7-33

Controller Connect Check Receive Timer 7-35

Controller Connect Check Send Timer 7-36

Controller IP Address 7-37

Decode Priority (5020 only) 7-37

Decode Security 7-40

Default Router 7-41

Device Name 7-42

DHCP (Obtain IP Address Via DHCP) 7-43

Display Backlight Level 7-44

Display Backlight Timeout 7-44

Domain (5020 only) 7-46

IDRSEnable (5020 only) 7-47

IDRSRetries (5020 only) 7-47

IDRSScope (5020 only) 7-48

IDRSServerAddr (5020 only) 7-48

IDRSTimeout (5020 only) 7-49

IE Autodial Name 7-49

IE Cache Size 7-50

IE Function Key URLs 7-50

502X Data Collection PC System Manual

IE Home Page 7-51

IE Proxy Server Address 7-51

IE Proxy Server Port 7-52

IE Underline Links 7-52

IE Use LAN (No Auto Dial) 7-53

IE Use Proxy Server 7-54

Inactivity Timeout (5020 only) 7-54

Interleaved 2 of 5 7-55

IrDA Baud Rate 7-57

Keypad Caps Lock 7-58

Keypad Clicker 7-59

Maximum Retries 7-60

Maximum Sleep Duration 7-60

MSI 7-61

Network Loopback 7-63

Network Name 7-63

Network Port 7-64

PDF 417 7-65

Plessey (5020 only) 7-66

Postamble 7-67

Power Management 7-69

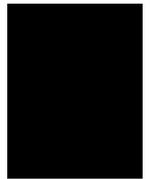
Preamble 7-69

Primary DNS Server 7-71

Primary/Station Radio ROM Version 7-72

Primary WINS Server 7-72

Radio Description 7-73



Radio MAC Address 7-73

Radio ROM Version (5020 only) 7-74

Receive All Multicasts 7-74

Reservation Threshold 7-75

Roaming Allowed (5020 only) 7-76

Scanner Mode (5020 only) 7-77

Scanner Redundancy 7-78

Scanner Selection (5020 only) 7-79

Scanner Timeout 7-81

Scanner Trigger 7-82

Secondary DNS Server 7-83

Secondary WINS Server 7-84

Security Identification (5020 Only) 7-85

SNMP Identification Contact 7-86

SNMP Identification Location 7-86

SNMP Identification Name 7-87

SNMP Security Encryption Key 7-87

SNMP Security IP Address 7-88

SNMP Security Read Encryption 7-89

SNMP Security Read-Only Community String 7-89

SNMP Security Read/Write Community String 7-90

SNMP Security Subnet Mask 7-90

SNMP Security Write Encryption 7-91

SNMP Trap Authentication 7-92

SNMP Trap Community Name 7-92

SNMP Trap IP Address 7-93

SNMP Trap Port 7-94

SNMP Trap Threshold 7-94

Speaker Volume 7-95

Station Name 7-96

Subnet Mask 7-96

Supported WEP 7-97

Symbology Identifier (5020 only) 7-98

TCP/IP Extensions Delayed Acknowledgement Timer 7-103

TCP/IP Extensions Initial Roundtrip Time 7-103

TCP/IP Extensions Receive Window Size 7-104

TFTP Resend Limit 7-105

TFTP Timeout 7-105

Transmit Mode (5020 only) 7-106

Transmit Rate 7-107

UDP Plus Enable 7-107

UPC/EAN 7-108

Virtual Wedge 7-112

Virtual Wedge Code Page 7-112

Virtual Wedge Grid 7-113

WEP Encryption 7-115

WEP Key 7-116

WEP Key Length 7-117

WEP Transmit Key 7-117



502X Default Configuration

502X Default Configuration A-3

B

Full ASCII Charts**Full ASCII Table B-3****Full ASCII Bar Code Chart B-6***Control Characters B-6**Symbols and Punctuation Marks B-7**Numbers B-8**Uppercase Letters B-9**Lowercase Letters B-10***C**

Extending the Unit Manager Main Menu**Getting Started C-3***Required Tools C-3**Understanding the 502X Registry C-3***Extending the Main Menu C-5****Importing a Registry File C-10****Registry Property Values C-10***Break C-10**DisplayName C-11**Ordinal C-11**Password C-11**Value C-12***D**

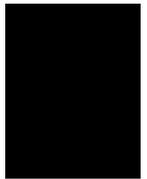
Extending the Configuration Applications**Getting Started D-3***Required Tools D-3**Understanding the 502X Registry D-4***Extending the Configuration Application D-5****Importing a Registry File D-9****Registry Property Values D-10***Adapter D-10**Bound D-10**ChoiceFmt D-11**CmdOID D-11*

CmdString D-12
Constraint D-12
DefVal D-13
DisplayName D-13
Expert D-14
Hidden D-14
MaxChars D-14
OID D-15
Ordinal D-15
PageDependency D-16
PropEditor D-16
Range D-16
ReadOnly D-17
Security D-17
ShortDesc D-17
TextFmt D-18
Type D-19

Required and Optional Registry Property Values D-19



Index



Before You Begin

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

Warranty Information

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

Safety Summary

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

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

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

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

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

Warnings, Cautions, and Notes

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



Warning

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

Avertissement

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



Caution

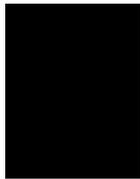
A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

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 detailed configuration, management, and programming information for

- the 5020 Data Collection PC™ with Release 3.0 firmware.
- the 5023 Data Collection PC™ with Release 1.0 firmware.

Use this manual in conjunction with the *5020 Data Collection PC User's Manual* (Part No. 068975) or the *5023 Data Collection PC User's Manual* (Part No. 070698), which explains how to install, operate, and maintain your 5020 or 5023 computer.

This manual was written for analysts and programmers who operate, program, and connect the 502X 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
502X 502X PC	These terms indicate any 502X Data Collection PC. More specific terms, such as “RF 5020,” indicate a specific type of 502X Data Collection PC.
Unit Manager	The term “Unit Manager” refers to 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 502X.
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 502X keypads:

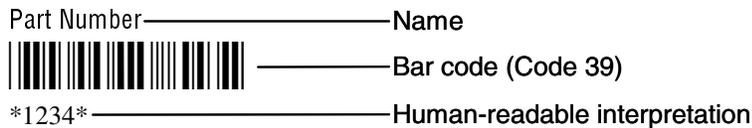
Convention	Description
Special text	Shows the command as you should enter it into the 502X PC. See “Format Conventions for Commands” later in this chapter.
<i>Italic text</i>	Indicates that you must replace the parameter with a value. See “Format Conventions for Commands” later in this chapter.
Ctrl	Bold text represents a key on your keypad. For example, Tab represents the Tab key and M represents the letter M key.

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

Convention	Description	
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.	
	Shows the key you must press on the 502X. For example, “press   	Shows a series of 502X 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:



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 502X. 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 502X 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.

1

Introducing the 502X Data Collection PC

This chapter introduces the Intermec 502X Data Collection PC family.

What Is the 502X Data Collection PC?

The 5020 and 5023 (502X) Data Collection PC™ are portable hand-held computers that come ready to connect to your network. The 502X makes data collection easy and is engineered to take full advantage of its Microsoft® Windows® CE operating system.

Models and Options

The 502X family of Data Collection PCs includes these models:



Batch 5020 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 5020 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 includes a single slot for a compact flash memory card. The radio includes an adjustable antenna.



5023 The 5023 comes with a SmartCard reader and an 802.11b HR radio with adjustable antenna. The built-in handle includes a scanner trigger.

These options are available for batch and RF 5020s:

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

This manual tells you how to use the features and options available on all models of the 502X.

What's New?

With this revision of the system manual, several significant changes were made to support hardware and software for the 502X:

Release 3.0 firmware for 5020 The 5020 Release 3.0 firmware includes new configuration commands and remote device management naming:

- Intermec Device Registration System (IDRS) configuration commands
- Symbology Identifier configuration commands
- Unit Manager for PlanNET (formerly Unit Management)

For help with the IDRS and Symbology Identifier commands, see Chapter 7, "Configuration Command Reference." For help with Unit Manager, see Chapter 4, "Using Unit Manager."

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.

Learning About the Installed Software

The 502X ships with the following software components installed.

Automatic Data Collection (ADC) server The ADC server is the software interface to the 502X bar code reader engine. It allows multiple applications to retrieve ADC data from the 502X reader engine.

Configuration The local Configuration application enables you to view and change the configuration of the 502X.

Desktop The desktop provides the user interface to the 502X, including a Start button, Notification Tray (instead of a Task bar) that displays 502X status icons, and control panel applets. You can use the control panel applets to customize your 502X settings.

Fast Config The Fast Config application helps you get the 502X general network settings set up and running quickly.

HTTP server The server software enables you to connect the 502X with the Internet. The HTTP server supports server-side scripting.

Intermec Software Development Kit (SDK) library functions The library functions are software components that support the use of Intermec SDK. These components are required when applications use SDK functions.

Internet Explorer (IE) Browser The browser is a client application that can be used for Web browser-based data collection applications.

Language components The language components consist of U.S. language components (on all 502X devices) and international language fonts (on 5020 only). International language fonts support western European languages including Danish, Dutch, Finnish, French, German, Italian, Norwegian, Portuguese, Spanish, and Swedish. The 5020 is also available with Chinese, Japanese, or Korean character sets.

PC Connection PC Connection allows you to establish a serial connection to another PC.

Programming environment support The 502X contains software components that support the use of COM/Active X, Visual Basic, C Runtime Libraries, Active Template Library, and Microsoft Foundation Classes.

Radio drivers The radio drivers control the operation of the WLI-F 2.4 GHz OpenAir or IEEE 802.11b HR radio.

SNMP (Simple Network Management Protocol) SNMP is an application-layer protocol designed to facilitate the exchange of management information between network devices. Use SNMP to control and configure the 502X anywhere on an SNMP enabled network.

Unit Manager for PlanNET This suite of applications includes Configuration Management, File Manager, Process Manager, Application Manager, and Event Viewer. Use the Unit Manager applications to remotely manage and configure your 502X.

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.

Windows CE Windows CE is a compact, efficient, multiplatform operating system designed for hand-held devices. The 5020 ships with Windows CE 3.0 and the 5023 ships with Windows CE 2.12.



Note: A README.TXT file is included on the 502X in Unicode text (.TXT) format. This document provides complementary or late-breaking information not contained in this manual.

Where Do You Go From Here?

This manual provides all the information necessary to configure and operate the 502X Data Collection PC. To learn more about performing tasks or using the features on the 502X, see the chapter list below.

Task or Feature	See This Chapter
Configuring your 502X and connecting it to your network	Chapter 2, "Configuring and Connecting the 502X"
Setting local unit parameters on your 502X using the control panel applets	Chapter 3, "Customizing the 502X Using the Control Panel"
Using the Unit Manager applications to configure parameters and manage information on your 502X	Chapter 4, "Using Unit Manager"
Developing and installing applications on your 502X, and using ActiveSync	Chapter 5, "Developing and Installing Applications"
Using reader commands while operating the 502X	Chapter 6, "Reader Command Reference"
Information on all the 502X configuration commands	Chapter 7, "Configuration Command Reference"
Lists of default configuration values	Appendix A, "502X Default Configuration"
Table of ASCII characters and their binary, hexadecimal, and Code 39 equivalents	Appendix B, "Full ASCII Charts"
Extending and customizing Unit Manager, including registry definitions and examples	Appendix C, "Extending the Unit Manager Main Menu"
Extending and customizing the local Configuration and the remote Configuration Management applications, including registry definitions and examples	Appendix D, "Extending the Configuration Applications"

For specific information about the 5020 or 5023, see the *5020 Data Collection PC User's Manual* (Part No. 068975) or the *5023 Data Collection PC User's Manual* (Part No. 070698).

Configuring and Connecting the 502X

This chapter includes a basic overview of direct and remote configuration methods. It also includes information about connecting the 502X to your wired or wireless network.

How to Configure the 502X

You can configure many operating characteristics of the 502X Data Collection PC, such as the bar code symbologies it decodes or the network settings. These characteristics are controlled by configuration parameters. The values that you set for the configuration parameters determine how the computer operates.

There are several ways to configure the 502X. The next section is an overview of configuration methods.

Setting Parameters Directly

You can directly configure the 502X using these applications or methods:

Fast Config 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” in Chapter 2 of your user’s manual.

Configuration application Use the Configuration application to individually select and set all parameters and view system information. For help, see “Using the Configuration Application” in Chapter 2 of your user’s manual.

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 502X by Scanning Bar Code Labels” in Chapter 2 of your user’s manual.

Control Panel Applets You can change local unit settings such as memory allocation or dialing properties using the Control Panel applets. Some local unit settings can only be accessed through the Control Panel. For help, see Chapter 3, “Customizing the 502X Using the Control Panel.”

Setting Parameters Remotely

After the 502X is communicating in your network, you can use these methods to remotely configure all parameters:

Configuration Management Use a Web browser on your desktop PC and the Configuration Management application in Unit Manager to individually select and set all parameters and view system information. You can configure parameters for each 502X on your network one at a time using Configuration Management. For help, see “Using Configuration Management” in Chapter 4.

SNMP Commands You can configure all parameters by sending SNMP commands to the 502X from an SNMP management station. For help, see “Configuring the 502X by Using SNMP” later in this chapter.

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 basic network parameters including

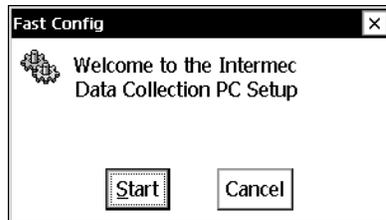
- date and time.
- baud rate of a host PC serial port.
- DHCP server enabling.
- IP address, subnet mask, and default router.
- primary and secondary WINS addresses.
- primary and secondary DNS addresses.
- security ID and domain for OpenAir radios.
- network name and WEP key for 802.11b HR radios.
-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

To set other parameters, use the Configuration application.

After you use Fast Config, the 502X should be communicating with your wired or RF network. When an RF 502X is in range of the access point, the  icon appears and remains on in the Notification Tray indicating that the 502X is communicating with the access point.

To access Fast Config

1. Open the Start menu and select Programs.
2. Select Fast Config and press Enter. The Welcome screen appears.



Follow the onscreen prompts to set or enable network parameters. For help, see “Using Fast Config” in Chapter 2 of your user’s manual.

Using the Configuration Application

You can use the Configuration application to

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

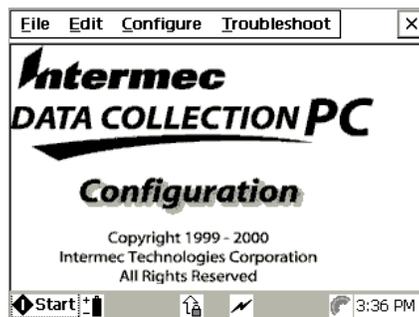


Note: Because using the Restore Factory Defaults option resets all network parameters, a loss of network communications may result. This option should only be used by your network administrator or by Intermec support personnel. After using this option, a warm boot may be necessary to restart the 502X.

You can access the Configuration application while running any application. You can also extend and customize the Configuration application. For help, see Appendix D, “Extending the Configuration Applications.”

To access the Configuration application

1. Open the Start menu and select Programs.
2. Select Configuration and press Enter. The Configuration main screen appears.



For more information, see “Using the Configuration Application” in Chapter 2 of your user’s manual.

Scanning Bar Code Labels to Set Parameters

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

You can enable and set the following parameters by scanning bar codes:

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

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

For help, see “Configuring the 502X by Scanning Bar Codes” in Chapter 2 of your user’s manual.

Configuring the 502X by Using SNMP

The 502X is an SNMP-enabled device. You can use an SNMP management station to control and configure the 502X anywhere on an SNMP-enabled network.

The 502X supports proprietary Management Information Bases (MIBs). You will find the MIB files for the 502X on the Intermecc Web site at www.intermec.com.

MIB File	Description
intermec.mib	Defines the root of the Intermecc MIB tree.
itcadc.mib	Defines objects for Automated Data Collection. For example, bar code symbologies.
itcfile.mib	Defines objects for manipulating and viewing files. For example, TFTP Timeout.
itcnetwork.mib	Defines objects for Network parameters. For example, 502X IP address.
itcsnmp.mib	Defines objects for Intermecc SNMP parameters and security methods. For example, SNMP security IP address.
itcterminal.mib	Defines objects for terminal parameters. For example, keypad clicker.

In addition to the MIB files, Intermecc provides SNMP support for MIB II through seven read-only MIB II (RFC1213-MIB) OIDs. You can only query these seven OIDs through an SNMP management station. The OIDs are not available in the Configuration application or the Unit Manager applications.

MIB II Item	OID	Group or Table	Description
ifNumber	1.3.6.1.2.1.2.1.0	Interfaces group	Indicates the number of adapters present in the system. For the 502X, if one adapter is present in the system, then ifNumber = 1 and ifIndex = 1.
ifIndex	1.3.6.1.2.1.2.2.1.1.ifIndex	Interfaces table (ifTable)	A unique value for each interface. The value ranges between 1 and the value of ifNumber.
ifDescr	1.3.6.1.2.1.2.2.1.2.ifIndex	Interfaces table (ifTable)	A textual string containing information about the interface.

Read-Only MIB II OIDs (continued)

MIB II Item	OID	Group or Table	Description
ifType	1.3.6.1.2.1.2.2.1.3.ifIndex	Interfaces table (ifTable)	An integer containing information about the type of the interface. It is equal to 1 for Other.
ipAdEntAddr	1.3.6.1.2.1.4.20.1.1.IpAddress	IP address table (ipAddrTable)	The IP address to which this entry's addressing information pertains (same as 502X IP address). Where IpAddress is the user's entered valid non-zero IP address of the 502X, for example, 10.20.10.152.
ipAdEntIfIndex	1.3.6.1.2.1.4.20.1.2.IpAddress	IP address table (ipAddrTable)	The index value that uniquely identifies the interface to which this entry is applicable (same as ifIndex).
ipAdEntNetMask	1.3.6.1.2.1.4.20.1.3.IpAddress	IP address table (ipAddrTable)	The subnet mask associated with the IP address of this entry (same as Subnet Mask).

The community string allows an SNMP manager to manage the 502X with a specified privilege level. The default read-only community string is "public." The default read/write community string is "private."

To configure the 502X using SNMP

1. Use the Configuration application or the Configuration Management application in Unit Manager to configure your 502Xs for RF or Ethernet communications.
2. Determine the OID (Object Identifier) for the parameter that you want to change. The Intermec base OID is:
1.3.6.1.4.1.1963
3. Use your SNMP management station to get and set variables that are defined in the Intermec MIBs.

You can set the traps, identification, or security configuration parameters for SNMP. For help, see Chapter 7, "Configuration Command Reference."

Connecting the 502X To Your Network

You can easily use the 502X as an end device in your wired or RF network. There are several ways to connect the 502X to your network:

- Install an Ethernet card or a serial I/O card (purchased separately) in a batch 5020 to communicate with other devices in your network.
- Use the radio in an RF 502X to communicate with other RF devices in your network.
- Use the IrDA port to transfer data between the 502X and a host computer.

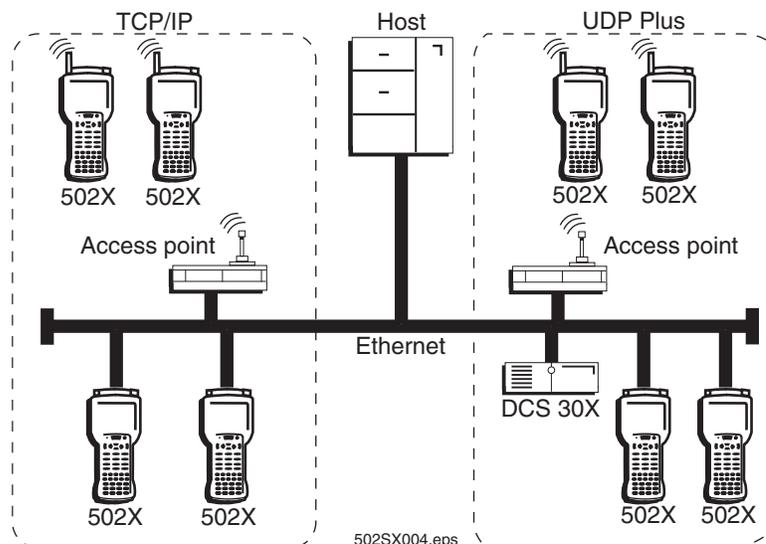
Learning About Network Protocols

The 502X communicates using either of these network protocol options:

- TCP/IP
- UDP Plus

The 502X ships with TCP/IP enabled. In a TCP/IP network, the 502X 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 502X communicates through the DCS 30X to the host or server. If you have a DCS 30X network, you must enable UDP Plus on the 502X.



The network parameters you need to set depend on your network environment. If you are using a DHCP (Dynamic Host Configuration Protocol) server, the 502X 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 502X. 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.

Learning About RF Network Settings (RF 502Xs 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 502X ships with either an OpenAir radio or an 802.11b HR radio. To connect to an RF network, you need to

- configure your access point(s).
- configure the 502X 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 502X 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 502X through 011X access points, you may need to add the 502X IP address and MAC address as a static entry in the host's ARP table.

Setting the Network Parameters

You can use the Fast Config application to quickly set the parameters for a TCP/IP network. For help with Fast Config, see "Using Fast Config" in Chapter 2 of your user's manual.

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 with enabling UDP Plus, see Chapter 3 of your user's manual.

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

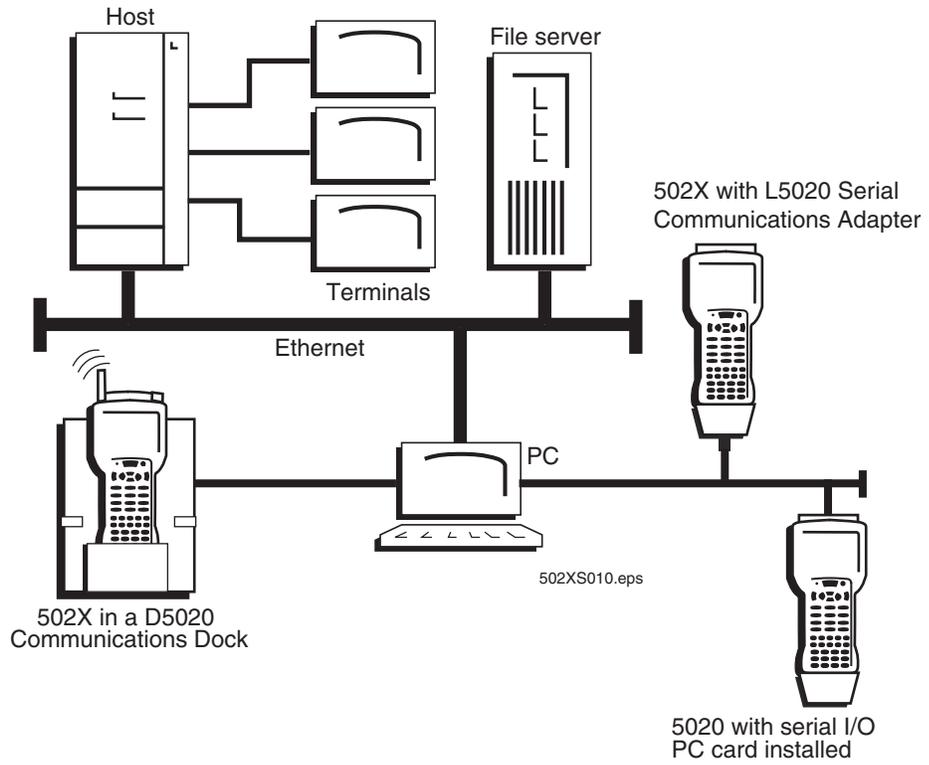
After you have connected the 502X to your network, you can remotely change all network parameters by using the Configuration Management application in Unit Manager from your desktop PC. For help, see "Using Configuration Management" in Chapter 4.

You can also remotely change all network parameters on the 502X by sending SNMP commands from an SNMP management station. For help, see "Configuring the 502X by Using SNMP" earlier in this chapter.

Configuring for Serial or IrDA Communications

The 502X has an IrDA port to transmit data to and from a host computer via IrDA communications. To convert the IrDA port to an RS-232 serial port, you need an L5020 Serial Communications Adapter, a D5020 Communications Dock, or (for batch 5020s only) a serial input/output (I/O) PC card.

502X Data Collection PC in a Wired Network



For help connecting the 502X to another device, see your user's manual.

Customizing the 502X Using the Control Panel

This chapter describes how you can use the Control Panel applets to customize the look and operation of your 502X.

Using the Control Panel

You can set many properties of the 502X to suit the needs of your environment. Use the Control Panel to customize properties on your 502X that you cannot change with the Configuration application, Unit Manager, SNMP commands, or bar code labels. Use this chapter to learn how to

- set communications properties.
- set the date and time.
- create dialing properties.
- view or modify the desktop display properties.
- adjust the backlight shutoff period.
- adjust the keyboard properties.
- set owner information.
- set a password.
- view battery status and change power suspend time.
- enter regional settings.
- remove application programs.
- view system information.
- adjust memory allocation.
- adjust volume and sounds.

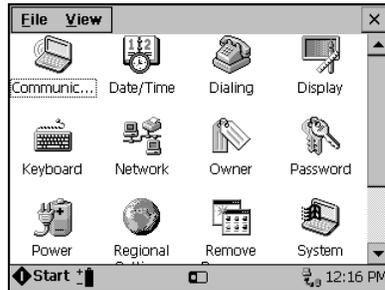
For help on navigating through the screens, see “Using the Keypad” in Chapter 1 of your user’s manual.



Note: After a cold boot, all Control Panel settings are reset to the factory default values.

To open the control panel

1. Open the Start menu and choose Programs.
2. Select Settings and then press . The Control Panel appears.



Setting Communications Properties

You can use the Communications applet to

- configure a device name on the 502X.
- select a serial or IrDA connection between a 502X and another computer.

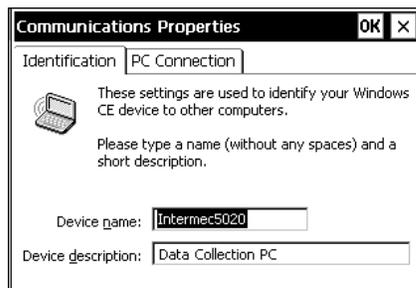
Your network setup may require that each device has its own unique name. Check with your network administrator for this information.

Follow the next instructions to configure the device name. For help configuring network parameters, see Chapter 2 in your user's manual.

To configure the device name

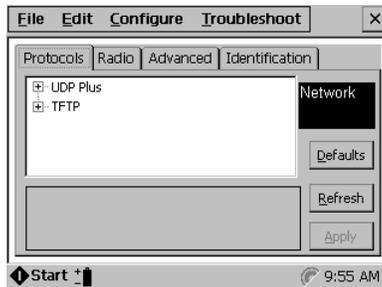


1. In the Control Panel, use the arrow keys to highlight the Communications icon.
2. Press . The Communications Properties dialog box appears and the Device name field is highlighted.



3. Type a Device name (without any spaces) that is up to 15 characters long.

4. Press **F4** to select the Device description field.
5. Type a short description for the device that is up to 50 characters long. The description is an optional field.
6. Press **Esc** to close the dialog box and temporarily save your changes.
7. To save the device name permanently so that it will be restored after a cold boot, use the Configuration application to change a network parameter. Open the Start menu and choose Programs.
8. Choose Configuration and open the Configure menu.
9. Select Network and then press **Esc**. The Network configuration screen appears.



10. Use the **F4** and arrow keys to navigate in the configuration screen. Change one network parameter. For example, change the TFTP timeout and increase the value by one.
11. Press **F4** to select the Apply button and then press **Esc**.
12. Press **Alt** **Alt** to open the File menu. Choose Exit, and press **Esc** to close the Configuration application.
13. Press **Ctrl** **I/O** twice to make the changes effective. The device name is now saved in permanent memory and will be restored after a cold boot.

To establish an ActiveSync partnership between a 502X and another computer, you must first connect the 502X to the other computer using a D5020 Communications Dock or an L5020 Serial Communications Adapter. You can also use a serial I/O PC card in the batch 5020. For help, see “Connecting With a Serial I/O Card” in Chapter 3 of the 5020 user’s manual.

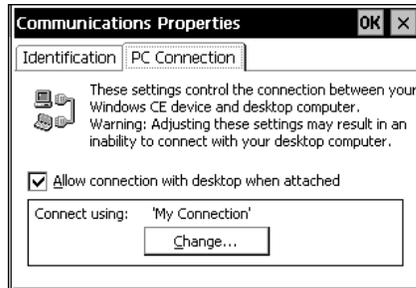
For a serial connection, you install a serial I/O PC card in the batch 5020 and use the Remnet program to create and configure a custom serial connection. For an IrDA connection, you can use the D5020 or L5020 with any 502X.

By default, the 502X uses an IrDA port connection. You use the PC Connection tab in the Communications applet to select a serial connection or to switch back to an IrDA port connection.

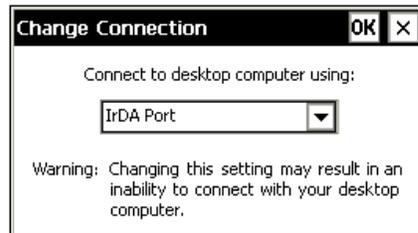
To select a PC connection



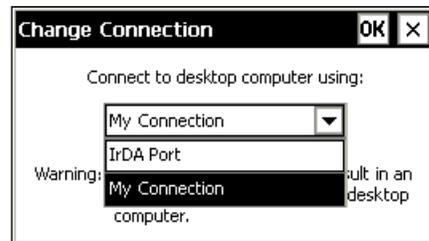
1. In the Control Panel, use the arrow keys to highlight the Communications icon.
2. Press **Enter**. The Communications Properties dialog box appears.
3. Press **Tab** to select the PC Connection tab and press **Enter**.



4. Press **Enter** to select the Change button and press **Enter**.



5. Press the arrow keys to select a serial connection (IrDA port or a serial connection such as "My Connection").



6. Press **Enter**. The Communications Properties dialog box appears.
7. Press **Tab** to move the focus from the Change button to the PC Connection tab.
8. Press **Enter** to close the dialog box.

Setting the Date and Time



Caution

If the 502X is turned off while the Date/Time Properties dialog box is open, the clock may not be accurate. Turn the 502X on and correct the time before closing the dialog box.

Conseil

Si l'appareil 502X est mis hors tension alors que la boîte de dialogue de Date and Time est ouverte, l'horloge risque d'être inexacte. Mettez le 502X sous tension et réglez l'horloge avant de fermer la boîte de dialogue.

Use the Date/Time applet to set the time and date on the 502X system clock.

To set the date and time



1. In the Control Panel, use the arrow keys to highlight the Date/Time icon.
2. Press **Enter**. The Date/Time Properties dialog box appears.



3. Press the arrow keys to select your time zone from the list box.
4. Press **Enter** to select the calendar. Use the arrow keys to select the month, date, and year.
5. Press **Enter** to select the time box.
 - Press **Up** or **Down** to change a value.
 - Press **Right** or **Left** to move between hour, minutes, and seconds.

You can also enter hour, minutes, and seconds directly if the field is selected.

6. If you do not want the time to display in your Notification Tray, press **Enter** to select the Hide Clock check box and then press **Spacebar**. You can also select the Hide Clock check box and create more space for application icons on the Notification Tray.
7. Press **Enter** to close the dialog box and save your changes.



Note: After a cold boot, the date is reset to June 1, 2001 (January 1, 1999 on 5023), and the time is reset to 12:00 A.M.

Creating Dialing Properties (Batch 5020 Only)

You can use the Dialing applet to configure the batch 5020 so that you can connect it to other computers via a modem. You also need to use a modem PC card in the batch 5020. For help with PC cards, see “Using PC and Compact Flash Memory Cards” in Chapter 1 of the 5020 user’s manual.

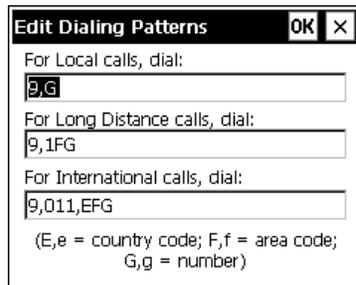
To create a new location



1. In the Control Panel, use the arrow keys to highlight the Dialing icon.
2. Press **Enter**. The Dialing Properties dialog box appears.



3. Press **Enter** to highlight the Dialing Patterns button and press **Enter**. You can now enter various dialing patterns.



4. Press **Enter** to close the dialog box and save your changes.

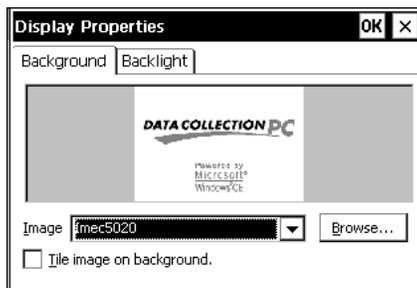
Viewing or Modifying the Desktop Display

You can use the Display Properties applet to select an image to display on the 502X desktop and to adjust the automatic backlight shutoff feature.

To view or modify display properties



1. In the Control Panel, use the arrow keys to highlight the Display icon.
2. Press **Enter**. The Display Properties dialog box appears.



3. Use the arrow keys to select a background image from the list, or press **Enter** to highlight the Browse button and press **Enter** to locate the image you want to use. Windows CE uses bitmap (BMP) files for the desktop image.
4. Press **Enter** to close the dialog box and save your changes.

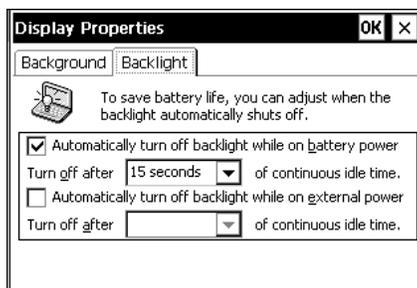
Adjusting the Backlight Shutoff

You can adjust the automatic backlight shutoff time to save battery life. The default backlight shutoff time is 15 seconds.

To view or modify the backlight shutoff time



1. In the Control Panel, use the arrow keys to highlight the Display icon.
2. Press **Enter**. The Display Properties dialog box appears.
3. Press **Right Arrow** to select the Backlight tab.



4. Press  to select Automatically turn off backlight while on battery power, and then press  to enable or disable automatic shutoff. If automatic shutoff is enabled, press  to select the Turn off after dialog box and press ▲ or ▼ to select a time from the list.
5. Press  to select the automatic shutoff while on external power feature, and then press  to enable or disable this feature. If automatic shutoff is enabled, you can press  to select the Turn off after dialog box and press ▲ or ▼ to select a time from the list.
6. Press  to close the dialog box and save your changes.

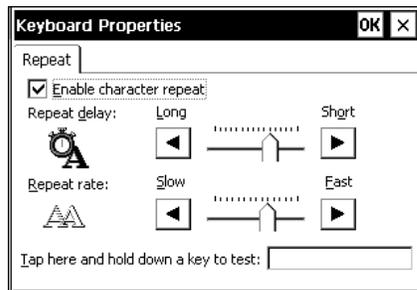
Adjusting the Keypad Properties

You can set the character repeat rate and delay for your keypad using the Control Panel.

To change the character delay and repeat rates



1. In the Control Panel, use the arrow keys to highlight the Keyboard icon.
2. Press . The Keyboard Properties dialog box appears.



3. Press  to select the slider for repeat delay or repeat rate.
4. Press ▲ or ▼ to move the sliders that adjust the repeat delay or repeat rate.
5. Press  to close the dialog box and save your changes.

Entering Owner Information

You can record owner information about your 502X device using the Owner Properties applet. Name and company information entered using the Owner Properties applet appear in the General tab of the System Properties dialog box.

To enter owner information



1. In the Control Panel, use the arrow keys to highlight the Owner icon.
2. Press **Enter**. The Owner Properties dialog box appears.

The screenshot shows the 'Owner Properties' dialog box with the 'Identification' tab selected. The dialog has two tabs: 'Identification' and 'Notes'. The 'Identification' tab contains the following fields:

- Name: [Text Field]
- Company: [Text Field]
- Address: [Text Area]
- Work:
 - Area code: [Text Field]
 - Phone: [Text Field]
- Home:
 - Area code: [Text Field]
 - Phone: [Text Field]

3. Press **Tab** to move the cursor from field to field. You can now enter information with the keypad.
4. Select the Notes tab and press **Enter**.

The screenshot shows the 'Owner Properties' dialog box with the 'Notes' tab selected. The dialog has two tabs: 'Identification' and 'Notes'. The 'Notes' tab contains the following text and field:

Use the Notes field to add any additional information not included in the Identification tab.

Notes: [Text Area]

Apply [Button]

5. Press **Tab** to move to the Notes field and type any additional owner information.
6. Press **Tab** to return focus to the Notes tab.
7. Press **Enter** to close the dialog box and save your changes.

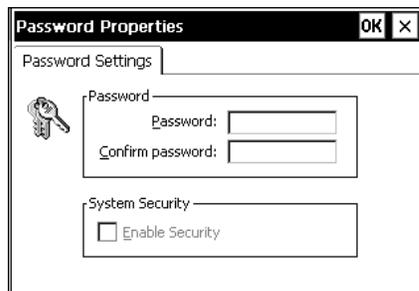
Setting a Password

You can prevent unauthorized people from gaining access to information on the 502X by setting a password. You must enter the password to gain access to features that you do not want the user to change.

To set a password



1. In the Control Panel, use the arrow keys to highlight the Password icon.
2. Press **Enter**. The Password Properties dialog box appears.



3. Type a password in the Password field.
4. Press **Tab** to select the Confirm password field, and retype the password.
5. Press **Tab** to select the Enable Security check box, and then press **Space** to mark the check box.
6. Press **Enter** to close the dialog box and save your changes.

You need to warm boot the 502X or select Go to User Mode from the Start Menu for your changes to take effect. For help with warm booting the 502X, see “Booting the 502X” in Chapter 4 of your user’s manual. The Start menu options are then changed. You will now see that Go to Admin Mode has replaced Go to User Mode and that you cannot change the settings or run applications not listed in Programs.



Note: After a cold boot, password settings are reset to no password.

Viewing Battery Status and Changing Power Suspend Time

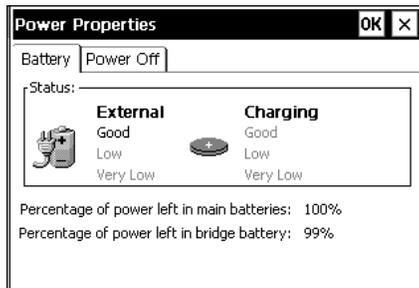
Use the Power applet to view battery status and change the power suspend time on your 502X. While on battery power, your 502X automatically suspends power if there has been a period of continuous inactivity. The factory default setting is to suspend after 5 minutes of inactivity. To save battery power, you can adjust this setting.

For more information on the 502X batteries and power management, see your user's manual.

To view the battery status



1. In the Control Panel, use the arrow keys to highlight the Power icon.
2. Press **Enter**. The Power Properties dialog box appears, displaying the status of your main battery and bridge battery.

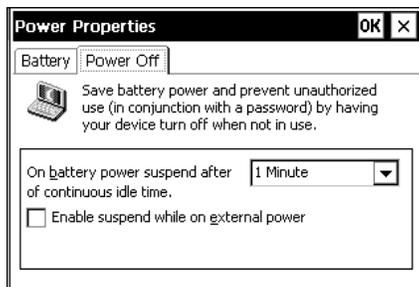


If you are connected to an external power supply, the status of the main battery will show that it is charging.

To change the power suspend time



1. In the Control Panel, use the arrow keys to highlight the Power icon.
2. Press **Enter**.
3. Press **F5** to select the Battery tab, and then press **Right Arrow** to select the Power Off tab. The Power Off dialog box appears.



4. Press  to select the “On battery power suspend after...” field. Press  or  to select a time from the list.
5. If you want to enable suspend while running on external power, press  to select the “Enable suspend while on external power supply” check box and then press .
6. Press  to select the Suspend after box. Press  or  to select a time from the list.
7. Press  to close the dialog box and save your changes.

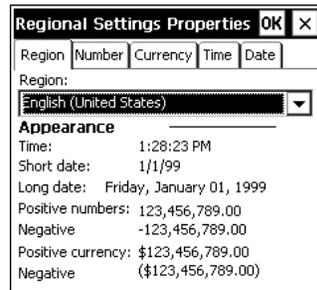
Entering Regional Settings

You can use the Regional Settings applet to customize the 502X to display unique regional settings for numbers, currency, time, and date.

To enter regional settings



1. In the Control Panel, use the arrow keys to highlight the Regional Settings icon.
2. Press . The Regional Settings Properties dialog box appears.



3. Press  or  to select a region. The default regional settings are displayed.
4. Press  to close the dialog box and save your changes.

You can also press the  and arrow keys to select the Number, Currency, Time, and Date tabs in the Regional Settings Properties dialog box to further customize those settings.

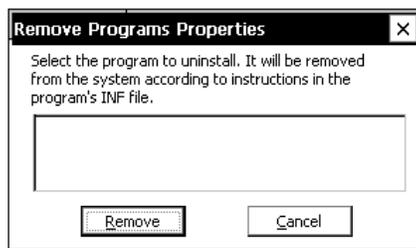
Removing Application Programs

You can easily remove application programs from the 502X. You might need to remove application programs to load another program onto the 502X or to create more program storage space. For information, see “Installing Applications” in Chapter 5.

To remove application programs



1. In the Control Panel, use the arrow keys to highlight the Remove Programs icon.
2. Press **Enter**. The Remove Programs Properties dialog box appears.



3. Press **Up** or **Down** to select the program that you want to remove.
4. Press **Enter** to select the Remove button.
5. Press **Enter** to close the dialog box and save your changes.

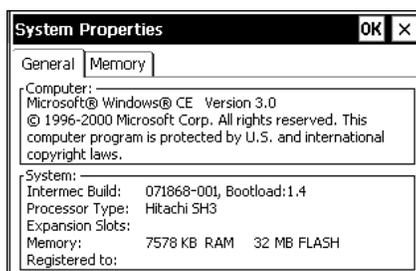
Viewing System Properties

You can view this screen for information such as how much memory is installed in your 502X, what version of Windows CE you are using, and what Intermec software build you are using.

To view the system information



1. In the Control Panel, use the arrow keys to highlight the System icon.
2. Press **Enter**. The System Properties dialog box appears.



3. Press **Enter** to close the dialog box and save your changes.

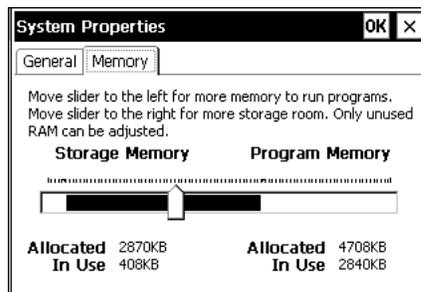
Adjusting Memory Allocation

Memory allocation is divided between storage memory and program memory. If you do not have enough space for a file, you should increase the amount of storage memory. If your 502X is running slowly, try increasing the amount of program memory.

To adjust the memory allocation



1. In the Control Panel, use the arrow keys to highlight the System icon.
2. Press **Enter**. The System Properties dialog box displays the General tab.



3. Press **Right Arrow** to select the Memory tab.
4. Press **F6** to select the Storage Memory/Program Memory slider.
5. Press the arrow keys to move the slider.
6. Press **Enter** to close the dialog box and save your changes.

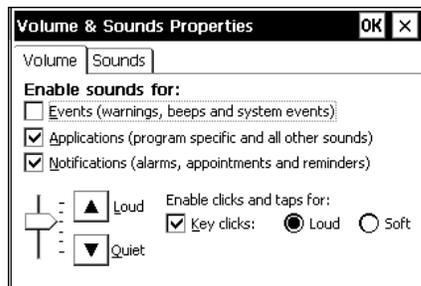
Changing the Volume and Enabling Sounds

You can set the volume at which your 502X plays sounds. You can also turn sounds off for events, applications, and notifications.

To change the volume and enable sounds



1. In the Control Panel, use the arrow keys to highlight the Volume icon.
2. Press **Enter**. The Volume & Sounds Properties dialog box appears.



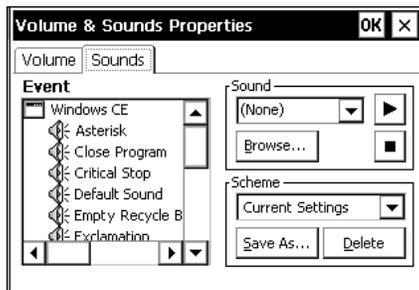
3. Press **⌘** to select the “Enable sounds for” check boxes. Press **⏎** to mark or clear the check boxes to turn sounds on or off.
4. Press **⌘** to select the volume slider. Press **⬇** or **⬆** to change the volume.
5. Press **⌘** to select the Key clicks check box. Press **⏎** to check or clear the check box.
6. Press **⏏** to close the dialog box and save your changes.

You can also use the Sounds tab to select unique sounds for various system events. Windows CE supports 8-bit, 11 KHz, mono wave (WAV) files that you can transfer from your desktop to the 502X to use for these events.

To view the system sounds list



1. In the Control Panel, use the arrow keys to highlight the Volume icon.
2. Press **⏏**. The Volume & Sounds Properties dialog box appears.
3. Press **⌘** to select the Volume tab, and then press **⏏** to move the focus to the Sounds tab.



For more information on Sounds, see your Windows CE documentation.

4

Using Unit Manager

This chapter explains how you can use the Unit Manager applications to configure parameters and manage files, processes, applications, and security on your 502X—all from your desktop PC.

Using the Unit Manager Applications

Unit Manager (Unit Management on 5023) for PlanNET provides a suite of applications you can use to remotely manage 502Xs. To access Unit Manager on your desktop PC, you need to connect the 502X to an Ethernet or RF network.

The Unit Manager applications include

Configuration Management Use this application to change configuration parameters and view system information.

File Manager Perform a variety of file and directory functions including copying, creating, deleting, and uploading.

Process Manager View lists of active processes and process information.

Application Manager Install and uninstall applications.

Event Viewer View lists of system software-generated events, which can be helpful when troubleshooting applications.

Password Enable and manage password security on your 502X.

The following sections explain how to use each Unit Manager application.



Note: Unit Manager for PlanNET works best with Internet Explorer 4.0 or higher on Windows 95/98/NT/2000. Netscape Navigator 4.0 or higher is also supported on Windows 95/98/NT/2000. Unit Manager will work on other platforms such as Unix or Macintosh using Netscape Navigator 4.0 or higher, but 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 the Java plug-in on other platforms, see the Sun Microsystems Web page at www.java.sun.com/products/plugin.

You can also extend and customize the Unit Manager main menu. For help, see Appendix C, “Extending the Unit Manager Main Menu.”

To connect to the 502X from your desktop PC

1. Use the D5020 dock or the L5020 adapter to connect the 502X to AC power.
2. Press  to turn on the 502X. If you have enabled the “suspend while on external power” feature in the Power applet, scan this bar code label to turn off the Automatic Shutoff feature:

Disable Automatic Shutoff



\$+EZ0



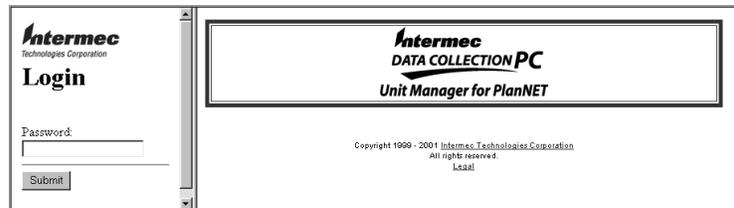
Note: The 502X must be turned on and must remain on while you manage it through Unit Manager. If you have an RF 502X, it must be in range of an access point.

3. Configure the 502X to communicate with your RF or Ethernet network. For help, see “Setting the Network Parameters” in Chapter 3 of your user’s manual.
4. If your desktop PC is running Windows 98, Windows NT, or Windows 2000, turn off the Active Desktop if you have it enabled. If your desktop PC is running Windows 95, continue with Step 5.
5. On your desktop PC, launch version 4.0 or higher of Internet Explorer or Netscape Navigator.
6. If you access the Internet by using a proxy server, add the IP address for each 502X you want to manage to the proxy server exceptions list.
7. In the browser Address or Location field, type the IP address of the 502X that you want to configure, and then press Enter:

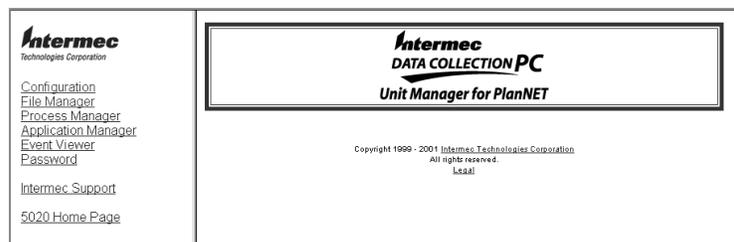
x . x . x . x

where x.x.x.x is the IP address of the 502X.

The Unit Manager login screen appears on your desktop PC.



8. If security is enabled on the 502X, type the password and then click Submit. If security is not enabled, click Submit. The Unit Manager main menu appears.



9. Click the name of the Unit Manager application that you want to use.



Note: On the 5023, the login and main menu screens show the name “Unit Management.”

Using Configuration Management

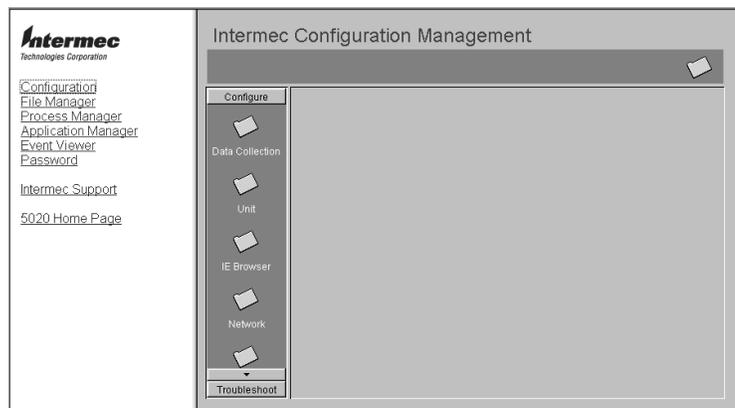
Configuration Management is a remote version of the Configuration application on the 502X. You can use Configuration Management to

- view, change, or set all 502X parameters in real time.
- restore factory defaults to all parameters in a parameter list.
- view system and terminal information.

To use Configuration Management, you need the Java 1.3 plug-in. You can automatically download the plug-in during the next procedure.

To run Configuration Management

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Configuration. The Intermec Configuration Management screen appears.



Note: If the Java 1.3 plug-in is not installed on your PC, it automatically downloads now from the Sun Microsystems Web site. If you choose to download the plug-in from the developer’s kit, follow the instructions to install it.

The Configuration Management screen includes two options:

Configure Click on the icons to view data collection, unit, Internet Explorer (IE) browser, network, and SNMP parameters. You can configure the same parameters using Configuration Management as you do using the Configuration application on the 502X.

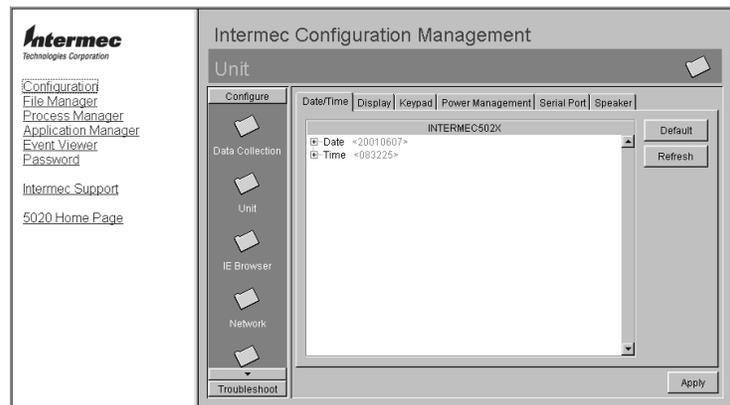
Troubleshoot Choose this option to check the battery status and view 502X version information. You can check the battery status for the main battery pack and the bridge battery.



Note: Do not resize or refresh the Intermec Configuration Management windows until the Web page is completely loaded. If you do resize the window, wait for the Web page to refresh and finish loading before you resize or refresh again.

To view and set parameters using Configuration Management

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Configuration. The Intermec Configuration Management screen appears.
3. Click the folder icon for the parameter group you want to configure. The configuration screen for that group appears. For example, click Unit and the Unit configuration screen appears.

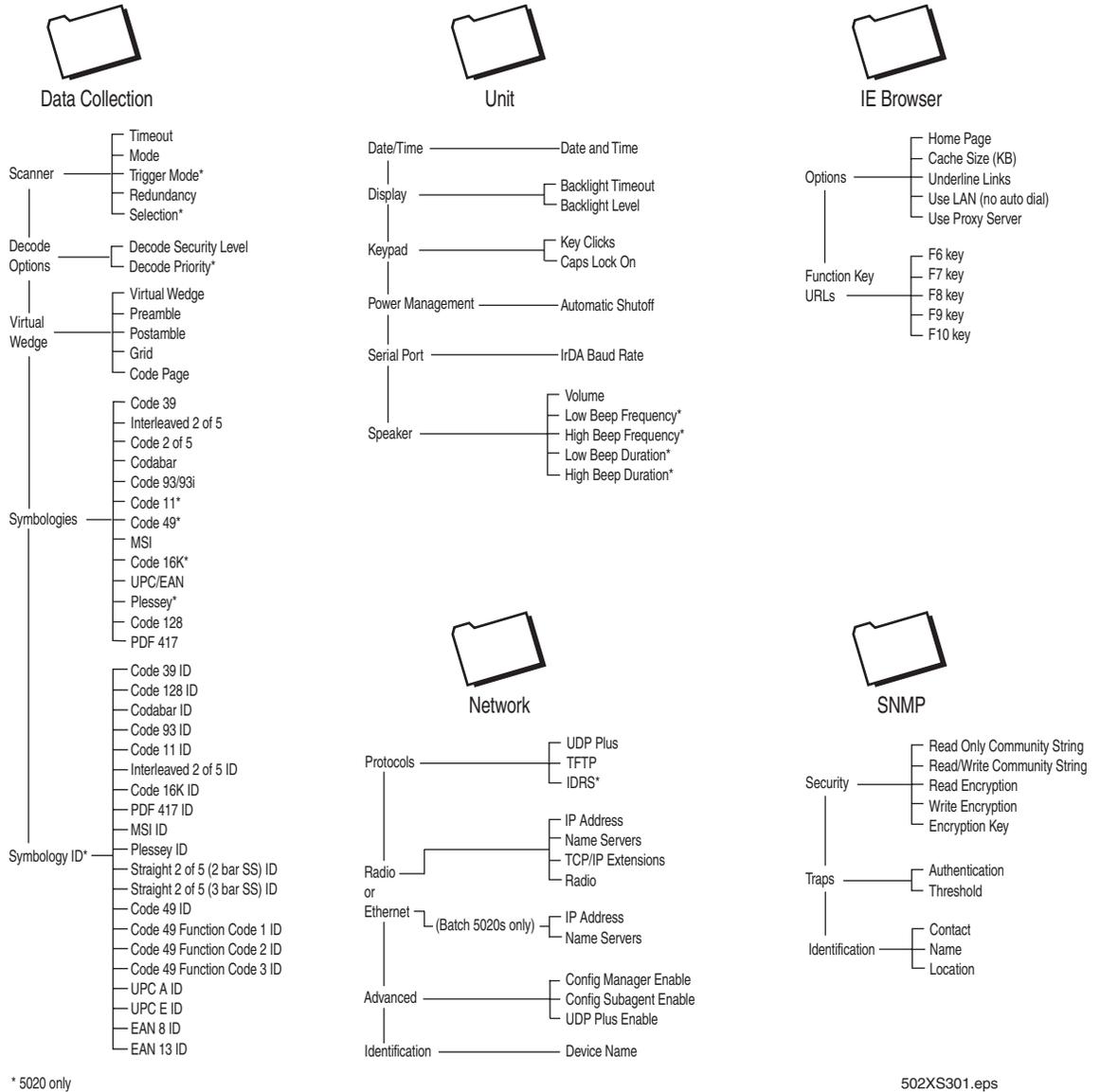


See the next illustration to see how the parameters are listed in each of the five groups.



Note: 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.

Configuration Management Parameter Groups



Note: Some parameters are available only on the 5020 and are marked with an asterisk (*) in the illustration.

4. Click the tab for the parameter you want to change.
5. Click the parameter you want to change. You may need to click  to expand a parameter list. The parameter options appear in the lower part of the screen.
6. Change the parameter by
 - clicking an option or check box.
 - selecting a new value from a drop-down list.
 - typing the new value in the entry field.

You can also click Default to restore the factory default values to all parameters in the list.

7. Do one of the following:
 - Click Apply to save your changes.
 - Click Refresh to restore the previous values and discard unapplied changes.
8. To exit the Configuration Management screen, click another option from the Unit Manager menu or exit your Web browser.
9. If you changed any network settings, press  twice on the 502X to have the changes take effect.



Note: If you changed the UDP Plus Enable parameter, warm boot the 502X. For help, see “Booting the 502X” in Chapter 4 of your user’s manual.

Printing a Configuration Management Screen

You can print any Configuration Management screen for a hard copy of a 502X’s configured settings.

To print a Configuration Management screen

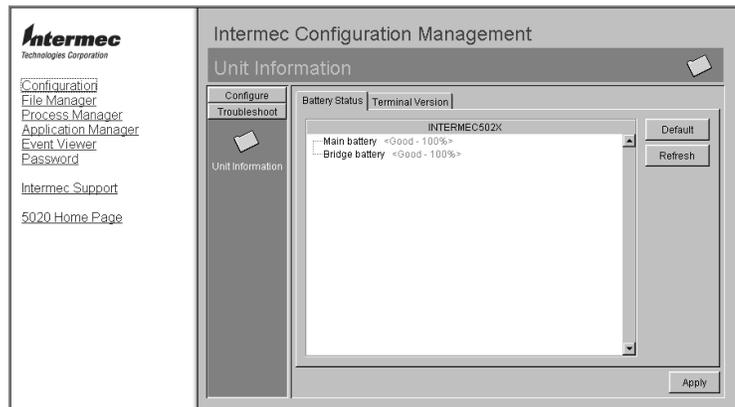
1. Press **Alt-PrintScreen** to capture the screen you wish to print.
2. Paste the screen capture into a document.
3. Print the document.



Note: Using the Print command in the browser File menu may cause some browsers to lock up.

To view unit information

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Configuration. The Intermec Configuration Management screen appears.
3. Click Troubleshoot and then click Unit Information. The Unit Information screen appears with the Battery Status tab active.



The Battery Status tab shows the condition and charge levels of the main battery pack and bridge battery.

4. To view Terminal Version information, click the Terminal Version tab. The tab shows the 5020's last service date, model number, serial number, manufacturing software version, current software version, current software build, and PCB part number.
5. To exit, click another option from the Unit Manager menu or exit your Web browser.

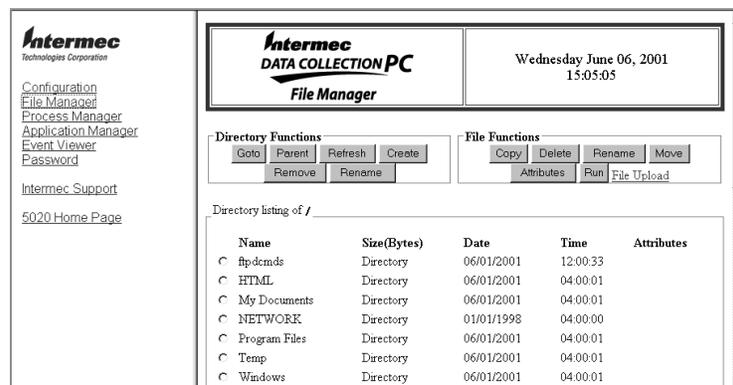
Using File Manager

File Manager is a Unit Manager application that you can use to copy, delete, rename, and move files on a 502X. Use File Manager to

- create a directory.
- remove a directory.
- upload a file to a directory.
- copy a file.
- move a file to another directory.
- rename a file.
- change the attributes of a file.
- run an executable file on the 502X.
- delete a file.

To run File Manager

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.



3. Choose the function you want to perform. Each function is explained in the sections that follow.

Creating, Removing, and Renaming Directories

You can use File Manager to create, remove, or rename directories on a 502X.

To create a directory

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To create a new directory within an existing directory, click the option button next to the existing directory, and then click the GoTo button.

To create a new directory in the current directory, continue with Step 4.

4. Click the Create button. The Create Directory screen appears.



5. Enter a name for the new directory.
6. Click the Create Directory button to add the new directory.

The main File Manager screen appears. If the operation was successful, the new directory appears in the Directory listing with a confirmation message:

```
Successfully created the directory DirectoryName
```

where *DirectoryName* is the one you just created.

To delete a directory

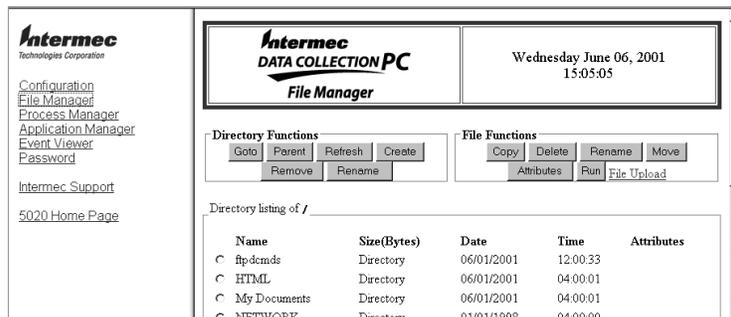
1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory you want to delete, click the option button next to its parent directory, and then click the GoTo button.

To delete a directory in the current directory, continue with Step 4.

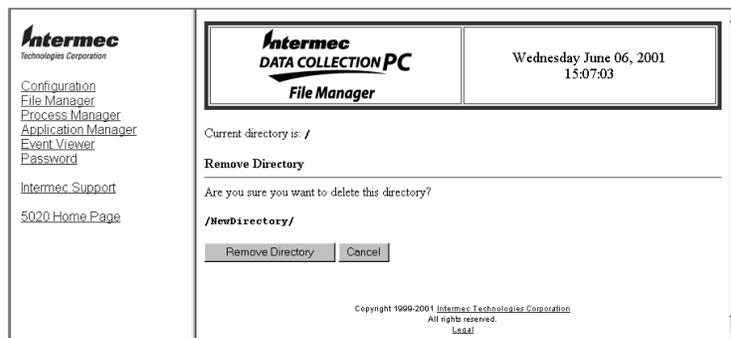


Note: Before deleting a directory, you must delete all files or directories contained in it.

4. Click the option button beside the directory you want to delete.



5. Click the Remove button. The Remove Directory screen appears.



6. Click the Remove Directory button.

The main File Manager screen appears. If the operation was successful, the deleted directory does not appear in the Directory listing and a message appears:

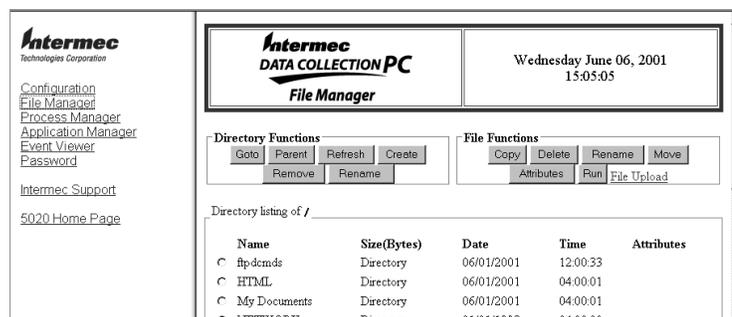
Successfully removed the directory *DirectoryName*
where *DirectoryName* is the directory that was removed.

To rename a directory

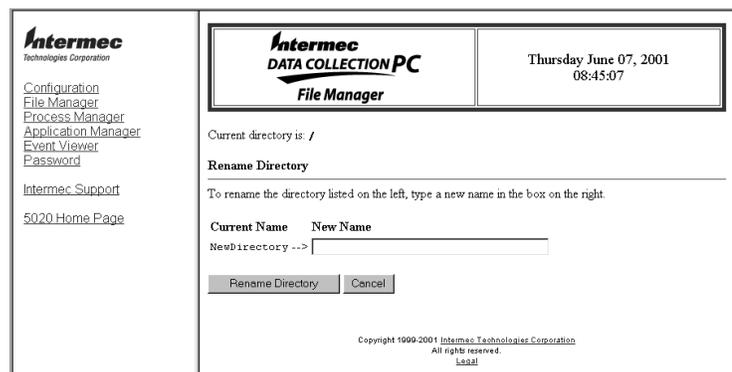
1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory you want to rename, click the option button next to its parent directory, and then click the GoTo button.

To rename a directory in the current directory, continue with Step 4.

4. Click the option button beside the directory you want to rename.



5. Click the Rename button. The Rename Directory screen appears.



6. Click the Rename Directory button.

The main File Manager screen appears. If the operation was successful, the renamed directory appears in the Directory listing with a confirming message:

Successfully renamed the directory *DirectoryName*
where *DirectoryName* is the directory that was renamed.

Uploading a File to a Directory

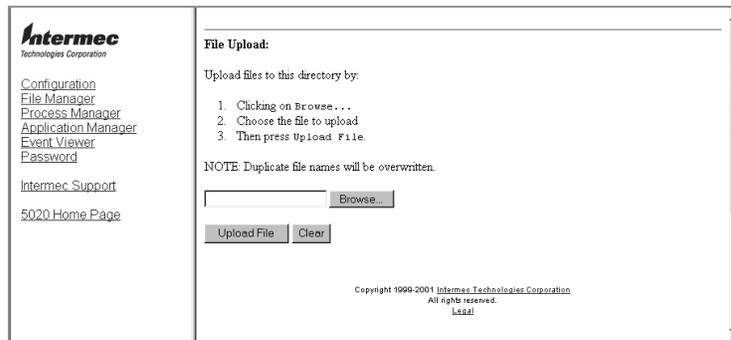
You can upload a file to a directory using the File Upload form at the bottom of the main File Manager screen.

To upload a file to a directory

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory where you wish to place the uploaded file, click the option button next to its parent directory, and click the GoTo button.

To upload a file to the current directory, continue with Step 4.

4. Go to the File Upload form at the bottom of the main File Manager screen and click the Browse button.



5. From the Choose File dialog box, select the file on your desktop PC that you want to upload to the 502X.



6. Click the Open button. The path and file name of the file you selected appears on the File Upload form.
7. Click the Upload File button, or click Clear to clear the form and start again.

The screen showing the parent directory is refreshed. If the upload operation was successful, the file you uploaded appears in the Directory listing along with a confirmation message:

Uploaded file *Filename*

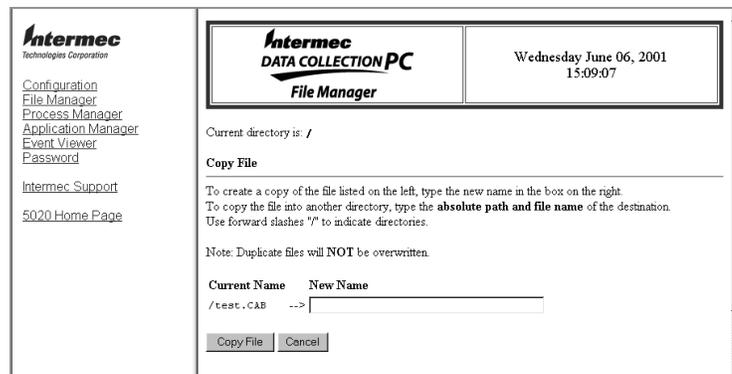
where *Filename* is the file that was uploaded.

Copying a File

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory containing the file you want to copy, click the option button next to the directory, and then click the GoTo button.

To copy a file located in the current directory, continue with Step 4.

4. Click the option button next to the file you want to copy.
5. Click the Copy button. The Copy File screen appears. If you want to save the copied file to the same directory as the original file, enter a unique file name in the New Name field.



6. Click the Copy File button to create a copy of the file.

The screen showing the parent directory is refreshed. If the copy operation was successful, you will see the new file copy in the Directory listing along with a confirmation message:

Filename copied to NewFilename

where Filename is the original file and NewFilename is the copy.

Moving a File to Another Directory

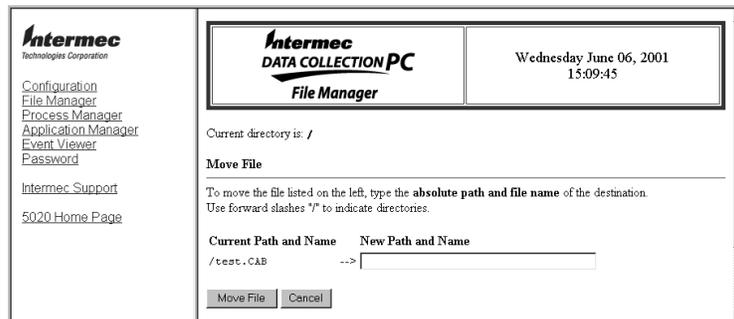
You can use File Manager to move a file into another directory on the 502X.

To move a file to another directory

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory containing the file you want to move, click the option button next to the directory, and then click the GoTo button.

To move a file from the current directory, continue with Step 3.

4. Click the option button next to the file you want to move.
5. Click the Move button. The Move File screen appears. Enter the path to the new location and the file name in the New Path and Name field.



6. Click the Move File button.

The screen showing the parent directory is refreshed. If the move operation was successful, the file you moved does not appear in the Directory listing and a confirming message appears:

Filename moved to Directory/Filename

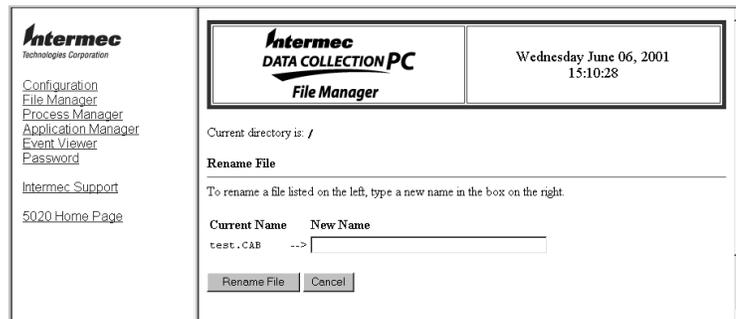
where Directory is the new location.

Renaming a File

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory with the file you want to rename, click the option button next to the directory, and then click the GoTo button.

To rename a file in the current directory, continue with Step 4.

4. Click the option button next to the file you want to rename.
5. Click the Rename button. The Rename File screen appears. Enter a unique name for the file in the New Name field.



6. Click the Rename File button.

The screen showing the parent directory is refreshed. If the rename operation was successful, the renamed file appears in the directory listing along with a confirming message:

Filename renamed to NewFilename

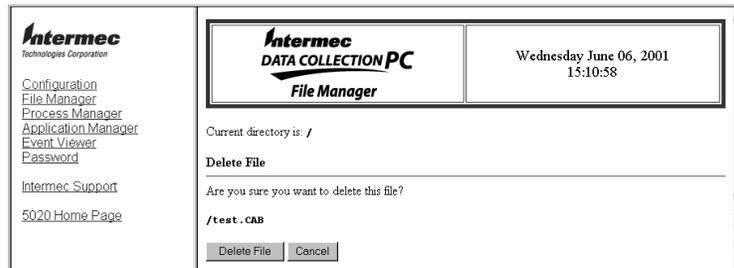
where Filename is the original file and NewFilename is the new name.

Deleting a File

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory with the file you want to delete, click the option button next to the directory, and then click the GoTo button.

To delete a file from the current directory, continue with Step 4.

4. Click the option button next to the file you want to delete.
5. Click the Delete button. A confirmation message appears:



6. Click the Delete File button.

The screen showing the parent directory is refreshed. If the delete operation was successful, the file no longer appears in the Directory listing and a confirming message appears:

Deleted the file *Filename*

where *Filename* is the deleted file.

Changing File Attributes

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory with the file you want to change, click the option button next to the directory, and then click the GoTo button.

To change the attributes of a file in the current directory, continue with Step 4.

4. Click the option button next to the file you want to change.
5. Click the Attributes button. The Set File Attributes screen appears. Mark or clear the appropriate check box in the New Attributes box. You can only change the Read-only, Hidden, and Archive attributes.

Intermec Technologies Corporation

[Configuration](#)
[File Manager](#)
[Process Manager](#)
[Application Manager](#)
[Event Viewer](#)
[Password](#)

[Intermec Support](#)
[5020 Home Page](#)

Intermec DATA COLLECTION PC
File Manager

Wednesday June 06, 2001
15:11:32

Current directory is: /

Set File Attributes

To set the attributes of a file, check the desired attributes in the table on the right.

NOTE: Only the **Read-only**, **Archive**, and the **Hidden** attributes can be set.

	Current Attributes						New Attributes		
	Read-only	Archive	Hidden	System	In ROM	ROM Module	Read-only	Archive	Hidden
test.CAB		A					<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Set File Attributes Reset Cancel

6. Click the Set File Attributes button to change the file attribute, click Cancel to end the request, or click Reset to erase all changes on the form.

The screen showing the parent directory is refreshed. If the change attribute operation was successful, the new file attributes are displayed in the Directory listing along with a confirming message:

Successfully set the file attributes of *Filename*
where *Filename* is the modified file.

Using File Manager to Run an Executable on the 502X

You can use File Manager to run an executable (EXE) file on the 502X.

To run an executable file

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click File Manager. The main File Manager screen appears.
3. To navigate to the directory with the file you want to run, click the option button next to the directory, and then click the GoTo button.

To run a file in the current directory, continue with Step 4.

4. Click the option button next to the file you want to run.
5. Click the Run button. The Run Executable screen appears. Enter any command line parameters on the form.

The screenshot shows the File Manager interface. On the left is a navigation menu with links: Configuration, File Manager, Process Manager, Application Manager, Event Viewer, Password, Intermec Support, and 5020 Home Page. The main area is titled 'Intermec DATA COLLECTION PC File Manager' and shows the current directory as '/#windows/'. Below this is the 'Run Executable' section, which includes a table with two columns: 'File Name' and 'Command line parameters'. The first row shows 'wce-load.exe' in the 'File Name' column and an empty text box in the 'Command line parameters' column. At the bottom of the dialog are 'Run Executable' and 'Cancel' buttons.

File Name	Command line parameters
wce-load.exe	--> <input type="text"/>

6. Click the Run Executable button to run the executable. The screen showing the parent directory appears with a confirming message:

Successfully executed the file *Filename*
where *Filename* is the executable.

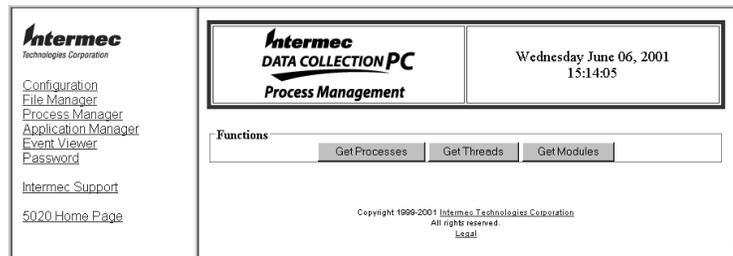
Using Process Manager

The Process Manager is very similar to the Windows Task Manager. You can use Process Manager to

- display processes running on the 502X.
- close processes running on the 502X. A close command ends a process and gives the process time to “clean up” before it stops functioning.
- kill processes running on the 502X. A kill command ends a process but does not let the process “clean up” before it stops functioning.
- view a list of the default local heap for a selected process. The list can be a useful debugging tool for finding application memory leaks.
- view all threads associated with specific processes.
- view all modules associated with specific processes.

To run Process Manager

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Process Manager. The main Process Manager screen appears.



3. Choose the function you want to perform. Each function is explained in the sections that follow.

Managing Processes Running on the 502X

When you click Get Processes, a screen appears showing the processes that are part of a larger process or program on the 502X.

To close a process

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Process Manager. The main Process Manager screen appears.
3. Click the Get Processes button. The Process List screen appears.

The screenshot shows the 'Process Management' interface. At the top, it displays the Intermec logo and the text 'DATA COLLECTION PC Process Management'. The date and time are 'Wednesday June 06, 2001 15:14:38'. Below this is a 'Process List' table with the following columns: Process Name, Process ID, Priority, # of Threads, Base Address, and Wi. The table contains several rows of process information.

	Process Name	Process ID	Priority	# of Threads	Base Address	Wi
System Application	NK.EXE	0x0CFFF802	3	1	0x02000000	
System Application	filesys.exe	0x0CFFF7BE	3	1	0x04000000	
System Application	device.exe	0x0CFEB7CA	3	38	0x06000000	
System Application	gives.exe	0x8CF6BD4A	3	18	0x08000000	gweWir
System Application	ITCSNMPD.exe	0x0CEE47CA	3	4	0x0A000000	
System Application	mncshel.exe	0x8CF3AE12	3	2	0x0C000000	
System Application	ITCNetwork.exe	0x8ACED5BCA	3	4	0x0E000000	
System Application	ItcRB.exe	0x8CEAC39E	3	6	0x10000000	Default

4. Click the option button to select the process you want to close.
5. Click the Request to Close button. An informative message appears, indicating that the request to close command was successful.

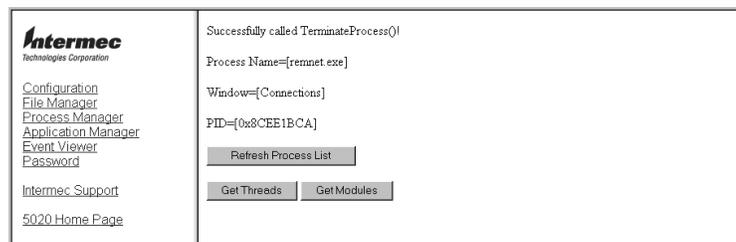
The screenshot shows a success message: 'Successfully posted the WM_CLOSE message to:'. Below this, the process details are listed: 'Process Name=[ITCNetwork.exe]', 'PID=[0x8ACED5BCA]', and 'Window=[]'. There are three buttons: 'Refresh Process List', 'Get Threads', and 'Get Modules'.

An error message may appear if you try to close a process that does not have a window. Processes without windows do not have handles and will not accept a close command.

6. Click the Refresh Process List button to get an updated list of processes running on the 502X.

To kill a process

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Process Manager. The main Process Manager screen appears.
3. Click the Get Processes button. The Process List screen appears.
4. Click the option button to select the process you want to kill.
5. Click the Kill Process button. An informative message appears, indicating that the kill command was successful.



An error message may appear if you try to kill a process that does not have a window. Processes without windows do not have handles and will not accept a kill command.

6. Click the Refresh Process List button to get an updated list of processes running on the 502X.

To view the default local heap for a selected process

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Process Manager. The main Process Manager screen appears.
3. Click the Get Processes button. The Process List screen appears.
4. Click the option button to select the process you want to view.

- Click the Walk Heap button. The default local heap list appears, with an entry for each heap block showing its starting address, size, and status.

Intermec		DATA COLLECTION PC		Wednesday June 06, 2001 15:19:17	
Technologies Corporation		Process Management			
Default heap for Process 0CEE47CA					
Address	Size	Status	Lock Count		
00060000	24	ALLOC	1		
00060018	24	ALLOC	1		
00060030	16	ALLOC	1		
00060040	24	ALLOC	1		
00060058	112	ALLOC	1		
000600C8	32	ALLOC	1		
000600E8	32	ALLOC	1		
00060108	24	UNUSED	0		

- To refresh this page, click the Refresh Process List button. After the page is refreshed, click the Walk Heap button. Repeatedly refreshing this page can often give insight into which blocks are leaking.

To view the default local heap sorted by size

- Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
- Click Process Manager. The main Process Manager screen appears.
- Click the Get Processes button. The Process List screen appears.
- Click the option button to select the process you want to view.
- Click the Heap Stats button. The default local heap list appears, sorted by size of heap blocks.

Intermec		DATA COLLECTION PC		Wednesday June 06, 2001 15:19:50	
Technologies Corporation		Process Management			
Default heap statistics for Process 0CEE47CA					
Total Allocated Heap = 9968					
Block Size	# Alloc	# Big	# Decommit	# Free	Total
16	1	0	0	2	3
24	19	0	0	5	24
32	41	0	0	2	43
40	6	0	0	0	6
48	3	0	0	0	3
56	10	0	0	1	11
64	4	0	0	0	4

- To refresh this page, click the Refresh Process List button. After the page is refreshed, click the Heap Stats button. Repeatedly refreshing this page can often give insight into which blocks are leaking.

Displaying Threads Running on the 502X

You can use Process Manager to view all threads associated with specific processes.

To view all threads

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Process Manager. The main Process Manager screen appears.
3. Click the Get Threads button. The Thread List appears.

The screenshot shows the Intermec Process Management web interface. On the left is a navigation menu with links: Configuration, File Manager, Process Manager, Application Manager, Event Viewer, Password, Intermec Support, and 5020 Home Page. The main content area has a header with the Intermec logo and 'DATA COLLECTION PC Process Management', and a date/time stamp: 'Wednesday June 06, 2001 15:20:42'. Below the header, it says 'Last updated 15:20:43' and 'Thread List'. The thread list is for 'Process=[NK.EXE]' with 'PID=[0x0CFF802]' and 'WindowText=[]'. A table displays the thread list with the following data:

Thread ID	Current PID	Thread Priority	Access Key	Usage Count	Delta Priority	Owner PID
0x0CFFFA12	0x0CFF802	255	0xFFFFFFFF	1	0	0x0CFF802

Below the table, it shows 'Process=[filesys.exe]' and 'PID=[0x0CFF802]'.

Displaying Modules Running on the 502X

You can use Process Manager to view all modules associated with specific processes.

To view all modules

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Process Manager. The main Process Manager screen appears.
3. Click the Get Modules button. The Module List appears.

The screenshot shows the Intermec Data Collection PC Process Management interface. On the left is a navigation menu with links: Configuration, File Manager, Process Manager, Application Manager, Event Viewer, Password, Intermec Support, and 5020 Home Page. The main content area has a header with the Intermec logo and 'DATA COLLECTION PC Process Management', and a timestamp 'Wednesday June 06, 2001 15:21:15'. Below the header, it says 'Last updated: 15:21:15' and 'Module List'. There are two process information blocks: one for 'Process=[NK.EXE]' with PID=[0x0CFFF802] and WindowText=[], and another for 'Process=[filesys.exe]' with PID=[0x0CFFF7BE] and WindowText=[]. A table titled 'Module List' is displayed with the following data:

Module	Module ID	Proc Count	Global Count	Base Addr	Base Size	hModule	Full Path
core.dll	0x8CFFFAD8	1	92	0x01F90000	0x0006C800	0x8CFFFAD8	\\Windows\core.dll.c

Using Application Manager

You can use Application Manager to install or uninstall applications on your 502X.

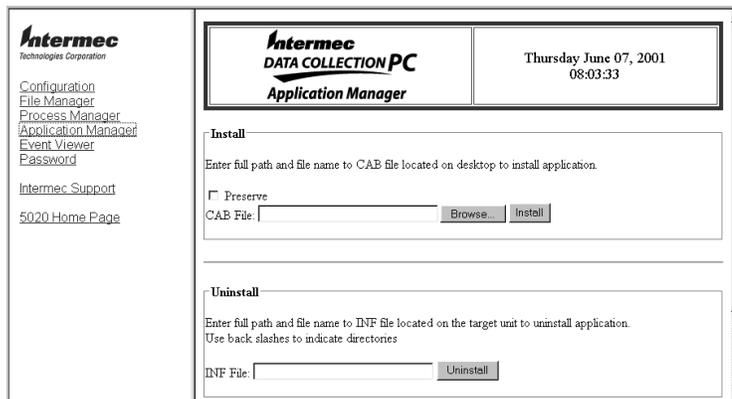
- The Application Manager can only be used to install cabinet (CAB) files created using CABARC. CABARC is the CAB file creation software included with the 502X Software Developer's Kit, available on the Windows CE/Pocket PC Developer's Kit CD-ROM (Part No. 069511). CAB files contain EXE files, data files, and registry settings for an application.
- You can also uninstall an application by removing the device information file (INF) from the 502X.



Note: You cannot use Application Manager to install an EXE file that will in turn install an application on the 502X.

To run Application Manager

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Application Manager. The Application Manager screen appears.

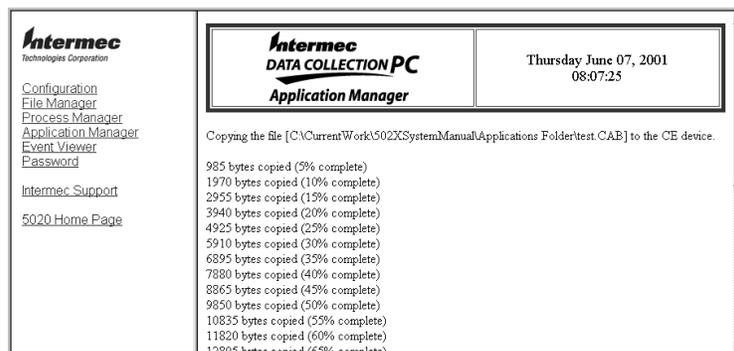


Installing an Application

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Application Manager. The Application Installer screen appears.
3. Click the Browse button to locate the CAB file you want to install. The Choose File dialog box appears.



4. Click the CAB file you want to install on the 502X. The CAB file name appears in the File Name field. Click Open.
5. Click the Install button. You will see informative messages as the installation progresses.



Application Manager also provides informative messages if there are problems installing an application on the 502X.

Message	Explanation
The file [<i>Filename.ext</i>] is not a valid CAB file.	You can only install .CAB files on the 502X. This message appears when you try to install another type of file, usually an .EXE or .DLL, on the 502X.
The CAB File [<i>Filename</i>] 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 502X to create additional disk space for the application.
Current free disk space on the CE device = _____	
Size of CAB file [<i>Filename</i>] = _____	

Uninstalling an Application

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Application Manager. The main Application Manager screen appears.
3. In the INF File field, enter the full path and filename of the INF file that you want to uninstall. If you don't know the location of the INF file, use File Manager to determine the path of the INF file that you want to remove.

4. Click the Uninstall button to uninstall the application.
5. If the uninstall was successful, you will see the following message:

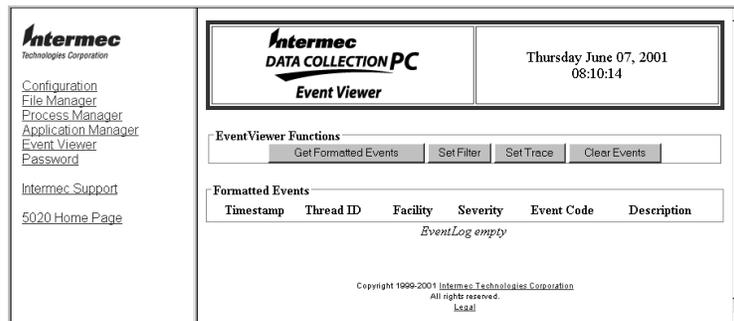
Successfully uninstalled the application *ApplicationName*
where *ApplicationName* is the name of the application that was uninstalled.

Using the Event Viewer

You can use the Event Viewer when you are troubleshooting problems on the 502X. You can copy the transactions on the Event Viewer screen and e-mail them to Intermec Product Support (support@intermec.com) to aid in problem resolution. Product Support can access the Event Viewer directly if the 502X is accessible through the Internet.

To run the Event Viewer application

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Event Viewer. The Event Viewer screen appears.

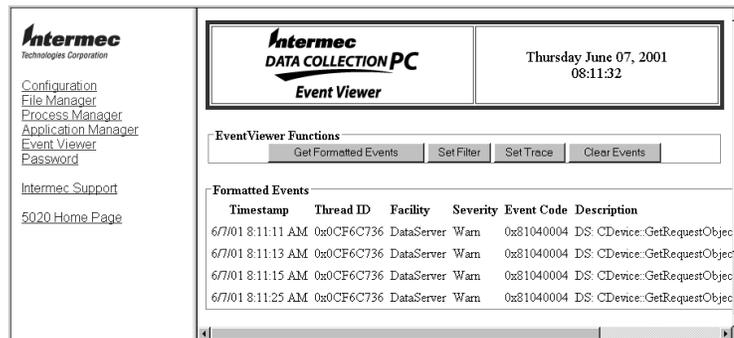


Viewing the Event Logging Buffer

The Event Logger provides the capability to save Intermec-system-software generated events for later review. The events are saved in an Event Logging Buffer that defaults to a capacity of 1000 event records before the older message records are overwritten (first-in/first-out). Each record includes a timestamp indicating when the event occurred, a facility name indicating the software area that generated the event, the assigned severity category (informational, success, warning, or error), an Event Code number, and a description of the event. Records collected in the Event Logging Buffer may be retrieved and viewed using the Event Viewer.

To view the Event Logging Buffer

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Event Viewer. The Event Viewer screen appears.
3. Click the Get Formatted Events button. The screen is refreshed with the current contents of the Event Logging Buffer.



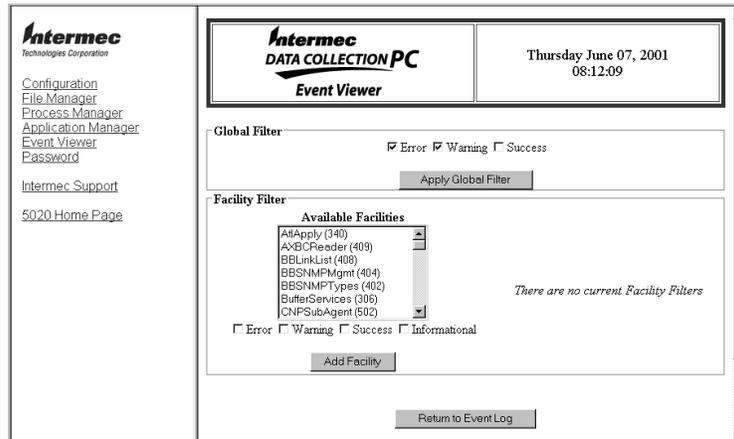
Setting an Event Filter

You can set the Global Filter or the Facility Filter. The Global Filter determines the events that can be captured on a system-wide basis. The Facility Filter determines the events that can be captured on a software-component basis and is used to filter out specific events that are allowed by the Global Filter.

To set the event filter

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Event Viewer. The Event Viewer screen appears.

3. Click the Set Filter button. The Global and Facility Filters screen appears. You can choose to globally capture all error, warning, or success events, or you can choose to capture only events specific to a given facility.



4. Do one of the following:
 - In the Global Filter box, click Error, Warning, or Success to choose the type of event you want to capture, and then click Apply Global Filter.
 - In the Facility Filter box, click on the facility you want to filter, and then click Error, Warning, Success, or Informational to choose which kinds of events you want to capture. Click Add Facility to enable the filter.
5. Click Return to Event Log. The Event Viewer screen appears, showing only the events you selected to capture.

Tracing Events

You can set the Event Logger to suspend logging after a specified Event Value occurs. This prevents the normal discarding of older event information when the Event Logging Buffer is full.

To set a trace

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Event Viewer. The Event Viewer screen appears.

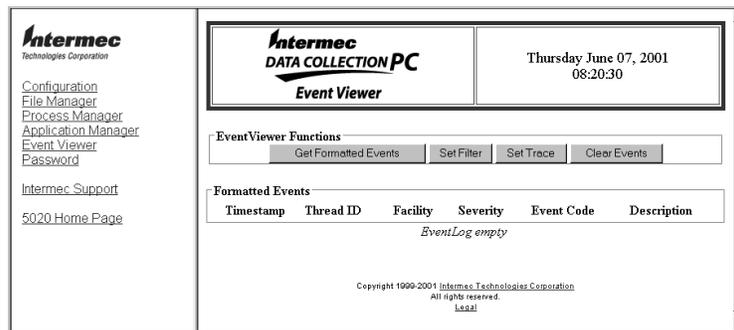
3. Click Set Trace. The Trace Criteria screen appears.

The screenshot shows the Intermec DATA COLLECTION PC Event Viewer interface. The top left contains navigation links: Configuration, File Manager, Process Manager, Application Manager, Event Viewer, Password, Intermec Support, and 5020 Home Page. The top right displays the date and time: Thursday June 07, 2001 08:17:06. The main area is titled "Trace Criteria" and features a text input field for "Trace EVENT Value in Hex:" containing "41040004". Below this are three radio button options: "Pre - Stop logging after Trace EVENT occurs.", "Center - Continue logging after Trace EVENT, for Max/2 events.", and "Post - Continue logging after Trace EVENT, for Max events." Three buttons are positioned below the options: "Enable Trace", "Disable Trace", and "Reset Trace". A "Status" section below shows "Trace is disabled.", a "Trace:" label, a text input field containing "Searching", and a "Refresh Status" button. At the bottom is a "Return to Event Log" button.

4. Enter the Event Value in the Trace Event Value in Hex field. The Event Value is the same as the Event Code as seen in the Event Logging Buffer. You can also enter an Event Value of 0 to set the trace point for any success message, 1 for any informational message, 2 for any warning message, or 3 for any error message.
5. Click one of the option buttons to select a logging suspension parameter:
 - Choose Pre to stop logging immediately after the trace event occurs.
 - Choose Center to stop logging after the trace event occurs and when the logging buffer is half full.
 - Choose Post to start logging when the trace event occurs and stop logging when the buffer is full.
6. Click Enable Trace to accept the parameters. The Event Value and suspension parameter appear in the Status box.

Clearing Events

- Click the Clear Events button to clear the Event Viewer screen.



Managing Your Passwords

You can use the Password application to set or clear a password on a remote 502X. When a password has been set for a 502X,

- you must enter the password to access Unit Manager.
- the 502X is placed in User mode, which limits access to the Configuration application and the Control Panels. You cannot make changes to the 502X's parameters unless you place the 502X in Admin mode and enter the password when prompted.

To set, change, or clear a password

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” earlier in this chapter.
2. Click Password. The Password screen appears.

The screenshot shows a web browser window displaying the Intermec Password management interface. The page title is "Intermec DATA COLLECTION PC Password". The date and time are "Thursday June 07, 2001 08:21:08". The page is divided into two main sections: "Password" and "System Security". The "Password" section contains three input fields: "Old Password:", "Password:", and "Confirm Password:". The "System Security" section contains a checkbox labeled "Enable Security:". At the bottom of the page are "Submit" and "Reset" buttons. A left sidebar contains navigation links: Configuration, File Manager, Process Manager, Application Manager, Event Viewer, Password, Intermec Support, and 5020 Home Page.

3. Do one of the following:
 - To set a password, enter it in the Password field, and enter it again in the Confirm Password field. Click the Enable Security check box.
 - To change a password, enter the current password in the Old Password field. Enter the new password in the Password field, and enter the new password again in the Confirm Password field. Click the Enable Security checkbox.
 - To clear a password, enter it in the Old Password field. Leave the Password and Confirm Password fields blank.



Note: Passwords may be up to 40 characters in length. Use non-alphanumeric characters only.

4. Click Submit. A success message confirms that the password was set, changed, or cleared.

502X Data Collection PC System Manual

5. Do one of the following to place the 502X in User mode:
 - Warm boot the 502X. For help, see “Booting the 502X” in Chapter 4 of your user’s manual. When the warm boot is completed, the 502X is placed in User mode.
 - Open the Start menu. Select Goto User Mode and press Enter. The 502X is placed in User mode.

Placing the 502X in User mode enables the password settings. You cannot access the Configuration application or the Control Panels when the 502X is in User mode.

To place the 502X in Admin mode

1. Open the Start menu. Select Goto Admin Mode and press Enter. The Enter Password dialog box appears.
2. Enter the password and press Enter. The 502X is placed in Admin mode, and you can access the Configuration application and the Control Panels.

5

Developing and Installing Applications

This chapter describes the hardware and software you need to develop applications for your 502X Data Collection PC and provides guidelines for developing applications using the Intermec Software Development Kit (SDK). This chapter also explains how to install and remove applications from your 502X, and how to use ActiveSync for remote device management activities.

Hardware and Software You Need to Develop Applications

You need the following hardware and software components to develop applications for the 502X Data Collection PC:

- Intel based system—Pentium 266 MHz or faster
- 64MB RAM or more recommended
- Hard disk with 400MB available if Microsoft eMbedded Visual Tools 3.0 is not already installed
- 800 x 600 Super VGA monitor—1280 x 1024 recommended
- CD-ROM drive, 16X or faster
- Microsoft Mouse or compatible pointing device
- Microsoft Windows NT Version 4.0 or newer
- Microsoft eMbedded Visual Tools 3.0
- ActiveSync 3.1 (available from the Microsoft Web site), which allows you to establish a connection between the 502X and your development PC

To develop applications that utilize any of the unique 502X SDK interfaces, you also need to install the Intermec 502X SDK, which is available on the Windows CE/Pocket PC Developer's Kit CD-ROM (Part No. 069511). The SDK library helps you take advantage of the unique functionality available on the 502X device and facilitates software development for that environment.

The SDK library is compatible with the Windows CE Win32 programming environment. Applications developed for the 502X can use combinations of functions available in the Windows CE Win32 programming environment and the Intermec SDK library.

Intermec recommends that you install the software components in the following order:

1. ActiveSync
2. eMbedded Visual Tools 3.0
3. Intermec 502X SDK

Using the Intermec SDK to Develop Applications

The Intermec SDK provides a functional subset of JANUS and Trakker Antares PSK functions. Functionality available with Windows CE development tools is not duplicated with the 502X SDK. The 502X SDK provides

- the necessary development targets for Microsoft eMbedded Visual Tools.
- the library and header files required to use the SDK functionality.
- a bar code scanning emulation environment.

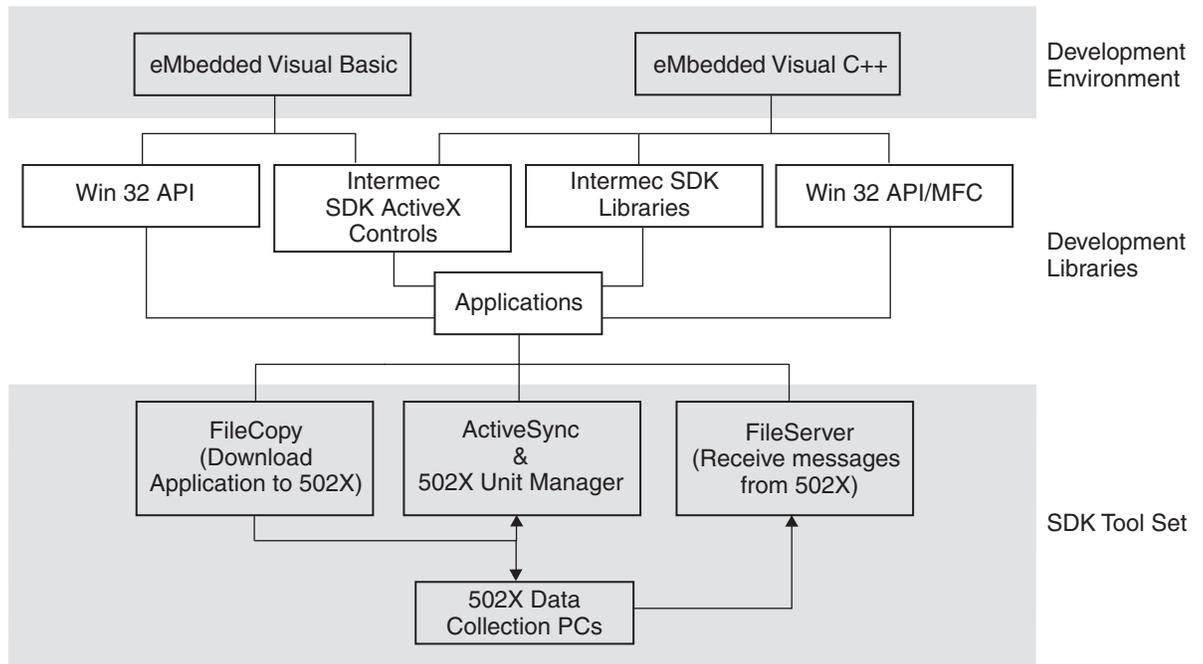


Note: The Intermec SDK online help (provided with the SDK software) provides additional information about using the Intermec SDK, SDK functions, and components (FileCopy, FileServer, and ADC Simulator).

Key features of the 502X SDK include

- SDK functions, which are available as DLL interfaces and as ActiveX Controls. The DLL interface is used when developing Visual C++ applications. The ActiveX Controls can be used when developing Visual C++, Visual Basic, and JScript applications.
- Automatic Data Collection (ADC) simulator. The ADC simulator simulates the operation of the 502X bar code scan engine in a Windows NT environment. You can use the ADC simulator to send bar code data to an application that you are developing to run on the 502X.
- the FileServer utility. Use the FileServer utility on a host PC to receive messages from 502X devices through the serial port (RS-232 connection) or a TCP/IP port.
- the FileCopy utility. Use the FileCopy utility to download or upload files or applications between a desktop computer and a 502X using a serial link.
- Custom Edit ActiveX control that integrates 502X input devices into a Windows control.
- QuickWin, a simplified Windows interface to ease the migration of JANUS or Trakker Antares applications.

SDK Development Environment



502XS003.eps

The following types of functions are provided in the Intermec SDK:

- Reader Command Functions
- Message Functions
- System Information Function
- Communications Functions
- File Transfer Functions
- Virtual Wedge Functions
- UDP Plus Functions
- Automatic Data Collection Functions
- QuickWin Functions

These functions are described in the following sections.

Reader Command Functions

Reader Command functions are used to modify and retrieve configuration information from the 502X using the reader command interface.

Message Functions

The SDK Library Message functions are used to simplify retrieval and display of 502X messages and Windows CE system messages. You can use Win 32 API FormatMessage to retrieve and display messages, but the SDK Message functions can simplify the calls. The SDK Message functions support messages for Intermec subsystems only; third party subsystems can use the Microsoft message system directly to store and retrieve messages. These functions also provide macros for testing HRESULT values for success, warnings, errors, and other functions.

System Information Function

The System Information function retrieves system information about battery power status.

Communications Functions

Communications functions are used to transmit or receive messages. The following communications protocols are supported:

- Serial communications over COM ports
- Serial communications over IrDA transceivers
- Communications over TCP/IP and UDP Plus networks
- ADC input

The communications functions are wrapper functions for

- Win32 serial communications API functions.
- IrSock API functions.
- WinSock API functions.
- Intermec-emulated WinSock 1.1 UDP Plus API functions.
- Automatic Data Collection functions.

File Transfer Functions

File Transfer functions are used to transmit and receive files using the Trivial File Transfer Protocol (TFTP). The TFTP client, ITCTftpClient.DLL, is provided as a Windows DLL on the 502X. ITCTftpClient exposes a COM interface to 502X programs and supports file transfers to and from any TFTP server. ITCTftpClient executes in the process of the caller.

Virtual Wedge Functions

The Virtual Wedge functions are used to access the virtual wedge configuration on the 502X. The virtual wedge retrieves ADC data from the 502X and sends it to the keyboard driver so that the device can receive and interpret the data as keyboard input.

UDP Plus Functions

UDP Plus allows 502X applications to send data to and receive data from a DCS 30X. UDP Plus is designed to work in adverse networking conditions, such as wireless devices moving in and out of range, and battery-powered devices that power down during periods of inactivity. UDP Plus offers the guaranteed delivery and permanent connection of TCP but uses the lower overhead of UDP.

UDP Plus functions expose a minimal emulated Winsock 1.1 API as its application-level interface on the 502X. This API provides a sockets-based method to support UDP Plus transactions.

- Only one socket is allowed since UDP Plus does not allow more than one connection.
- The UDP Plus system supports a second communication mode, the Reader Command gateway. The Reader Command gateway allows configuration messages (TMF Reader Commands) to be sent to the 502X via the DCS 30X. The TMF Reader Commands are compatible with other Intermec products, such as Trakker Antares terminals and JANUS devices.

Automatic Data Collection Functions

The ADC functions are accessed through custom COM interfaces. These COM interfaces allow the application to receive bar code data, configure the bar code reader engine, and control the bar code reader engine. In addition, the COM interfaces allow applications to specify the data it will receive. The COM interfaces are:

IADC Provides ADC data independent of an input device. On a 502X, there may be multiple reader engines to decode different types of ADC data. For example, a bar code reader engine decodes raw bar code data and passes it to a bar code reader COM object. An RFID reader engine decodes raw RFID tag data and passes it to an RFID tag reader COM object.

IBarcodeReaderConfig Allows the application to directly configure the bar code reader engine and get statistics.

IBarcodeReaderControl Allows the application to trigger the bar code laser scanner, disable the scanner, and receive bar codes with data details such as symbology scanned, data type (Unicode, ASCII, or other), and the time the data was received. This interface also allows the application to specify a data grid to filter ADC data.

QuickWin Functions

QuickWin functions allow you to create a simple Windows CE data collection application. You can create a VT-like terminal screen that occupies the entire display on a 502X. You can create label prompts and edit fields on the display and receive input from the edit fields.

Developing Applications Without the Intermec SDK

You can develop data collection applications by using Visual C++, Visual Basic, the standard Win32 API, or Microsoft Foundation Classes (MFC).

If you develop applications without the Intermec SDK, you can use

- standard virtual wedge functions to scan input through the keyboard interfaces to any 502X application. This includes any application using a standard input control.
- standard Win32 serial and Winsock communication layer support.

Without the Intermec SDK, you cannot use the following features of the 502X in your application:

- Advanced scanning (No data routing, scanner control, or symbology information)
- TFTP file transfer capabilities
- UDP Plus communication support
- System information functions

Developing Applications With HTML

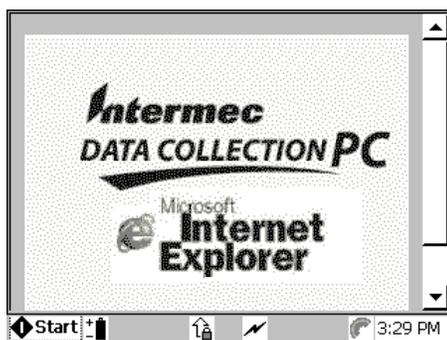
You can develop HTML-based data collection applications for use with the 502X. For help, see any HTML source book. The 502X ships with the Internet Explorer (IE) Web browser installed for use with HTML-based applications.

Using Internet Explorer

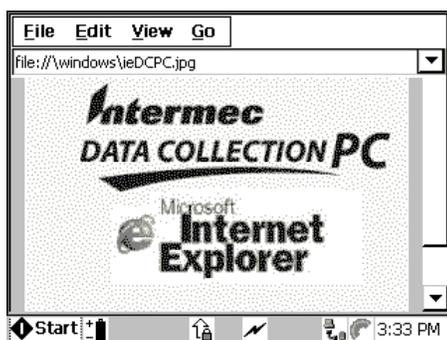
The 502X includes the IE browser for use with HTML-based data collection applications. This version of the browser includes several features specially designed for use on the 502X.

To access the 502X IE browser

1. Open the Start menu and select Programs.
2. Choose IE Browser and press Enter. The IE home page appears.



3. Press **Esc** (**M1** on standard keypad) to display the menu and URL bars. The bars can be hidden to maximize screen area. Press **Esc** to hide the menu and URL bars.



The menu bar offers four choices:

File This menu includes options to find a file, print a file (if printer drivers have been loaded), work offline, or close the IE browser.

Edit This menu includes copy, cut, and paste options.

View This menu includes displayed text size and encoding options, the Stop and Refresh commands, and Internet Options. Choose Internet Options to change the IE default parameters. For help, see “Configuring the IE Browser” later in this chapter.

Go This menu includes the Back, Forward, Home, and Help commands. Selecting the Help command shows a list of the IE browser keypad shortcuts. For help, see “IE Browser Keypad Shortcuts” later in this chapter.

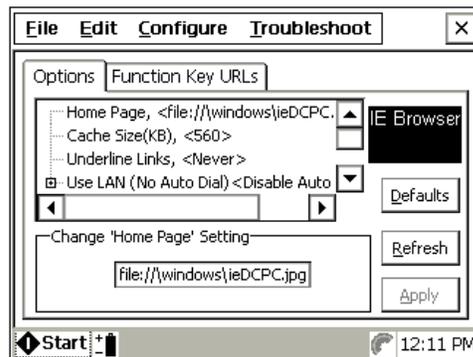
To access a menu, press **Alt** followed by the key for that menu. For example, to access the File menu, press **Alt F** (**Alt** **F** on standard keypad).

Configuring the IE Browser

You can configure several IE parameters from your host PC using the Configuration application or the Configuration Management application in Unit Manager. You can also configure IE parameters from within the browser itself using Internet Options in the View menu.

To configure IE with the Configuration application

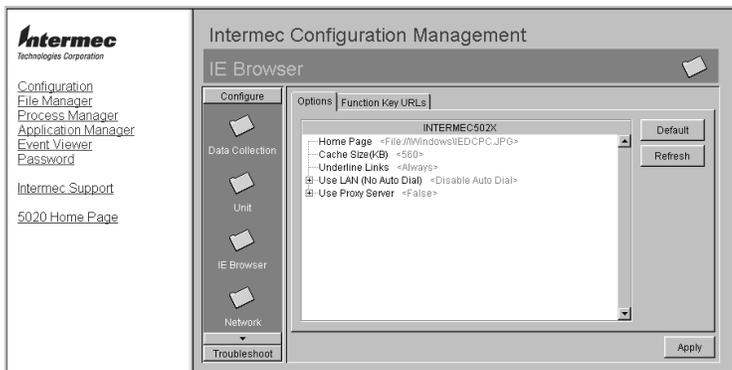
1. On the 502X, open the Start menu and select Programs.
2. Choose Configuration and press **Enter**. The Configuration main screen appears.
3. Open the Configure menu and select IE Browser.
4. Press **Enter**. The IE Browser configuration options screen appears.



Use the **Up** and arrow keys to navigate in the configuration screen. Make changes as needed. For help, see “Navigating in the Parameter Screens” in Chapter 2 of your user’s manual.

To configure IE with Configuration Management

1. Connect to the 502X using a Web browser and start Unit Manager. For help, see “To connect to the 502X from your desktop PC” in Chapter 4.
2. Click Configure. The Configuration Management screen appears.
3. Click IE Browser. The IE Browser configuration screen appears.



4. Click on a parameter to select it and make changes as needed. For help, see Chapter 7, “Configuration Command Reference.”

IE Browser Keypad Shortcuts

The following table lists keypad shortcuts you can use to navigate in the IE browser.

Standard Keypad	Full Alpha Keypad	Function Performed
		Displays the menu bar and URL bar.
		Displays the File menu.
		Displays the Edit menu.
		Displays the View menu.
		Displays the Go menu.
		Scrolls the window. If a menu is open, changes the highlighted item.
		Selects next hyperlink.

IE Browser Keypad Shortcuts (continued)

Standard Keypad	Full Alpha Keypad	Function Performed
	 	Displays the Help page (this list).
	 	Refreshes the current page.
 	 	Moves back one page.
 	 	Moves forward one page.
 	 	Returns home (upper left-hand corner of page).
		Hides the menu and URL bars. If the bars are already hidden, stops retrieving a web page.



Note: If the menu and URL bars are not displayed, pressing  will display them. To hide the menu and URL bars, press   to place focus on the URL bar and then press .

Creating an Application Package

In Windows program development, a cabinet file (CAB) is used to install an application on a Windows device. A cabinet file is a single file created to hold a number of application files. A cabinet file typically contains EXE, INF, DLL, and other application components. The 502X uses standard Win32 CAB files. It will also install third-party applications shipped as WinCE CAB files.

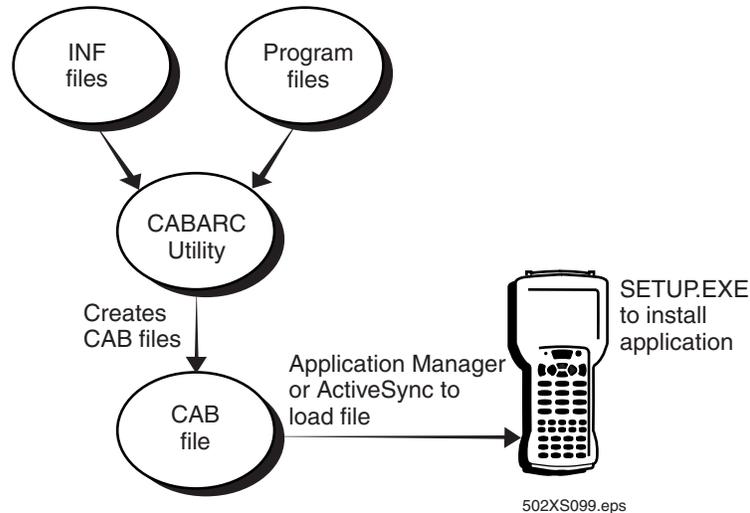


Note: The 502X runs the embedded version of the Windows CE operating system. Intermec does not guarantee that software designed for the dedicated versions of Windows CE, such as the PalmPC, Handheld PC, and Handheld PC Pro, will function properly on the 502X. For best results, use the Intermec SDK to develop your applications.

Creating a Win32 CAB File

The 502X uses standard Win32 CAB files. You can create CAB files using the CABARC program, which is included on the 502X SDK and Support Files CD-ROM. When you install the Intermec SDK, the CABARC program is installed in the TOOLS\CABARC directory on your desktop PC.

CAB files created with CABARC are somewhat different from CAB files created with the Windows CE CAB Wizard. CAB files created with CE CAB Wizard can be used on a 502X, but cannot use the enhanced security features and shortcuts available on the 502X.

Creating a CAB File**Creating a SETUP.DLL to Customize Setup**

You need to develop a SETUP.DLL file to perform custom operations when you install or remove custom applications on the 502X. The SETUP.DLL file should export the following functions, which are fully documented in the *Windows CE Programmer's Guide* (ISBN 1-57231-643-8).

Install_Init This function is called before installation begins. You can use `Install_Init` to check the application version in a reinstall scenario and to determine if a dependent application is present.

Install_Exit This function is called after installation is completed. You can use `Install_Exit` to handle errors that occurred during installation.

Uninstall_Init This function is called before the uninstall begins. You can use `Uninstall_Init` to close the application if it is running.

Uninstall_Exit This function is called after the uninstall is completed. You can use `Uninstall_Exit` to save database data into a file, delete the database, and tell the user where the data files are stored and how to reinstall the application.

Installing and Uninstalling Applications

This section explains how to install and uninstall applications on your 502X.

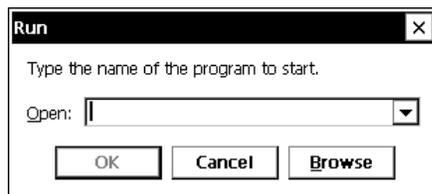
Installing Applications

You can use the Application Manager application in Unit Manager or ActiveSync to install applications on your 502X.

- Use Application Manager to install applications on your 502X device over a network. For more information about Application Manager, see Chapter 4.
- Use ActiveSync to establish a partnership between your desktop PC and a 502X device. For help with ActiveSync, see “Using ActiveSync” later in this chapter.

To install an application on the 502X

1. Use CABARC to create your application CAB file, or locate the third-party CAB file on your desktop PC.
2. Transfer the CAB file to the 502X using Application Manager or ActiveSync.
3. On the 502X, open the Start menu.
4. Select Run and press **R**. The Run dialog box appears.



5. Do one of the following:
 - Type the path to your CAB file in the Run dialog box entry field and press **R**.
 - Press **F5** to select the Browse button and press **R**. You can browse the Windows directory to find your CAB file. Use the arrow keys to select the desired application and press **R** twice.



Note: If the CAB file or extracted files are too large for the available memory, you can choose to delete the CAB file as files are extracted. In the Run dialog box, type `SETUP /D filename.CAB` where *filename* is the name of the CAB file. Press **R**. The application will be installed and the CAB file deleted.

The 502X system software automatically associates the CAB file with SETUP.EXE and installs the application. SETUP.EXE extracts the entire contents of the CAB file into the \SETUPTMP directory. SETUP.EXE then uses the information in the INF file to copy files to their destinations, make registry changes, configure the application on the 502X, store the INF file in the application directory, and store the uninstall information in the registry.

IMPORTANT! SETUP.EXE writes status messages about the installation to the SETUP.LOG file. The SETUP.LOG is a text file located in the WINDOWS directory of the 502X. Errors or problems with the installation are not displayed on the 502X screen. Only the messages in the SETUP.LOG will indicate what has occurred.

Automatic Application Installation (5020 only)

You can automatically install an application during a cold boot by copying an application CAB file to a compact flash or PC card and inserting the card in the 5020.

To automatically install an application

1. Use CABARC to create your application CAB file, or locate the third-party CAB file on your desktop PC.
2. Rename the application CAB file OEMINSTALL.CAB.
3. On the host PC, copy the application CAB file to a compact flash or PC card.
4. Insert the storage card in the 5020 and cold boot the device. For more information on cold booting the 5020, see “Cold Booting the 5020” in Chapter 4 of the 5020 user’s manual.

When the OEMINSTALL.CAB file is found in the Storage Card folder, SETUP.EXE automatically installs the application from the CAB file. SETUP.EXE does not delete the CAB file after installation.



Note: Storage Card may refer to the compact flash or the PC card slot, depending on which card was inserted first. If both slots contain storage cards at cold boot time, the PC card slot is designated as the Storage Card folder, and the compact flash is designated as Storage Card 2. If the PC card slot contains a radio, Ethernet, or other I/O card, the internal compact flash card is designated as the Storage Card folder.

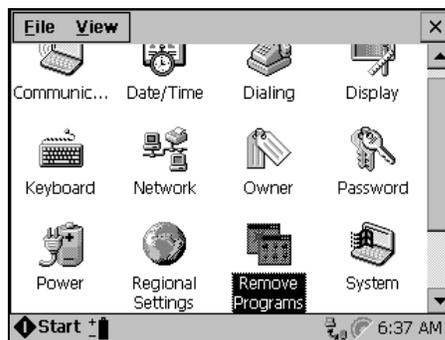
Uninstalling Applications

When you uninstall an application extracted from a Win32 CAB file using the Remove Programs utility, the SETUP.EXE program removes application information stored in the registry. As part of the uninstall process, all files and registry entries specified in the Files and Registry sections of the INF file are removed. Cold-booting the 502X also uninstalls all applications extracted from WinCE CAB files.

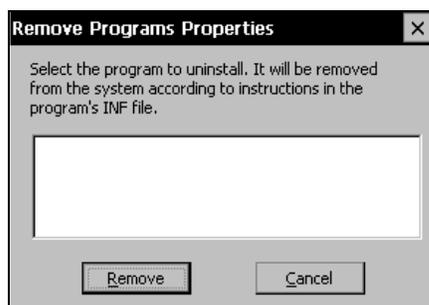
Shared system files have their usage count in the registry decremented when the uninstall processes the Files section of the INF file. If the resulting value is zero, the unused shared files are also deleted during the uninstall.

To uninstall your application

1. On the 502X, open the Start menu and select Settings. The Control Panel appears.



2. Select the Remove Programs icon and press . The Remove Programs Properties dialog box appears.



3. Use the arrow keys to select the program you want to remove.
4. Press to select the Remove button and press . The program is removed from the list.

Understanding the Information File Format

Device information files (INF) contain scripts, which are used to control hardware operations. You can use the INF file to add custom applications to the 502X Start menu, the Desktop, and/or the Auto Run list. In all of these cases, the custom application is added at the end of the list.



Note: See the *Windows CE Programmer's Guide* (ISBN 1-57231-643-8) for essential information about programming for Windows CE devices.

The 502X uses the INF file format described in the Windows CE SDK with two extensions added as optional parameters. The `%CE99%` substitution string resolves the path `\WINDOWS\STARTMENU`. The following additional parameters were added to the CE Shortcuts format:

- shortcut-file-name
- shortcut-type-flag
- target-file/path
- [standard-destination-path]
- [run-time-arguments]
- [working-directory]
- [user-mode]
- [application-type]

These parameters are described in the following table.

Parameter	Description
shortcut-file-name	This string identifies the shortcut. It is the application's description and will appear on the desktop or appropriate menu.
shortcut-type-flag	This field is retained for consistency with existing CE applications. A zero or empty represents a shortcut to a file; any non-zero numeric value represents a shortcut to a folder. Since folders are not supported, all shortcuts to folders are ignored without any error indications.
target-file/path	This string specifies the destination directory. It is used to determine the path of the program to execute. This string can be a simple name; for example, MYAPP.EXE, in which case the path will be determined according to where it was installed.

Information File Parameters (continued)

Parameter	Description										
[standard-destination-path]	<p>This string specifies the destination directory for the shortcut. You can use a standard %CEx% path or %InstallDir%. If no value is specified, the <i>target-file/path</i> determines where the application appears:</p> <table border="1"> <thead> <tr> <th>String</th> <th>Destination Directory</th> </tr> </thead> <tbody> <tr> <td>%CE3% or \WINDOWS\DESKTOP</td> <td>Desktop</td> </tr> <tr> <td>%CE4% or \WINDOWS\STARTUP</td> <td>AutoStart</td> </tr> <tr> <td>%CE11% or \WINDOWS\PROGRAMS</td> <td>Start Menu, Program submenu</td> </tr> <tr> <td>%CE99% or \WINDOWS\STARTMENU</td> <td>Start Menu</td> </tr> </tbody> </table>	String	Destination Directory	%CE3% or \WINDOWS\DESKTOP	Desktop	%CE4% or \WINDOWS\STARTUP	AutoStart	%CE11% or \WINDOWS\PROGRAMS	Start Menu, Program submenu	%CE99% or \WINDOWS\STARTMENU	Start Menu
String	Destination Directory										
%CE3% or \WINDOWS\DESKTOP	Desktop										
%CE4% or \WINDOWS\STARTUP	AutoStart										
%CE11% or \WINDOWS\PROGRAMS	Start Menu, Program submenu										
%CE99% or \WINDOWS\STARTMENU	Start Menu										
[run-time-arguments]	<p>This string specifies the arguments that are passed to <i>target-file/path</i> when it is started. If it is omitted, then no arguments are passed.</p>										
[working-dir]	<p>This string specifies the working directory to be established when <i>target-file/path</i> is started. If it is omitted, the directory containing <i>target-file/path</i> is used.</p>										
[user-mode]	<p>This string indicates under which user modes the shortcut is visible. The default is 3, which makes the shortcut visible to both the administrator and the end user. If supplied, it must be one of the following values:</p> <table border="1"> <thead> <tr> <th>String</th> <th>User Mode</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Visible to administrator</td> </tr> <tr> <td>2</td> <td>Visible to end user</td> </tr> <tr> <td>3</td> <td>Visible to administrator and end user</td> </tr> </tbody> </table>	String	User Mode	1	Visible to administrator	2	Visible to end user	3	Visible to administrator and end user		
String	User Mode										
1	Visible to administrator										
2	Visible to end user										
3	Visible to administrator and end user										
[application-type]	<p>This string identifies where this application will appear. If it is omitted, the <i>standard-destination-path</i> parameter determines where it should appear. If supplied, it must be one of the following values. If you want the application to appear in more than one location, you can specify multiple installed locations.</p> <table border="1"> <thead> <tr> <th>String</th> <th>Installed Location</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Desktop</td> </tr> <tr> <td>2</td> <td>Start Menu</td> </tr> <tr> <td>4</td> <td>Start Menu Programs Submenu</td> </tr> <tr> <td>8</td> <td>Auto Start</td> </tr> </tbody> </table>	String	Installed Location	1	Desktop	2	Start Menu	4	Start Menu Programs Submenu	8	Auto Start
String	Installed Location										
1	Desktop										
2	Start Menu										
4	Start Menu Programs Submenu										
8	Auto Start										

Using ActiveSync

**Caution**

The 502X should be powered by an AC power source when you use ActiveSync.

Conseil

Il faut alimenter le 502X par une source de courant AC lors de l'exécution du ActiveSync.

You can use ActiveSync to synchronize files between the 502X and your desktop PC, to remotely debug applications on the 502X, and to perform other device management activities.

When you perform a cold boot, you lose the configuration settings that enable a connection to ActiveSync. IrDA, RF, or Ethernet settings remain after a cold boot.

Installing ActiveSync

In addition to the 502X and your desktop PC, you need the following hardware and software components to install ActiveSync and establish a partnership:

- ActiveSync 3.1. You can download ActiveSync from the Microsoft Web site at www.microsoft.com.
- ASHelper.exe. ASHelper is an application developed by Intermec that simplifies the initial ActiveSync connecting process. You can download ASHelper at www.intermec.com. Choose Support, then choose Downloads, and select ASHelper from the available downloads list.
- A D5020B (or higher) Communications Dock or an L5020B (or higher) Serial Communications Adapter, connected to your desktop PC using an Intermec RS-232 cable (Part. No. 070268). Instead of a D5020B or an L5020B, you can connect the 502X to your desktop PC through the IrDA port.

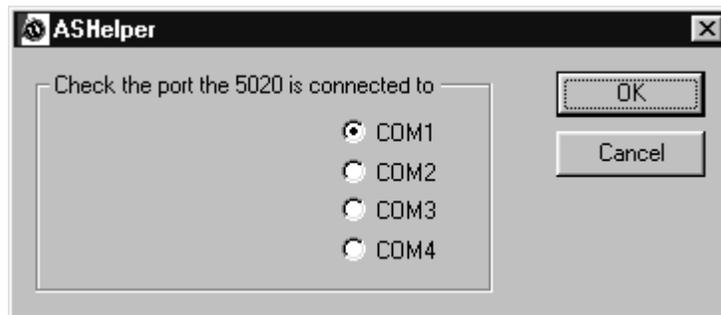
You can also establish a partnership with a batch 5020 connected to the host PC through a serial I/O card. For help, see “Using ActiveSync With a Serial I/O Card” later in this chapter.

To install ActiveSync and establish a partnership with your 502X

1. Connect the 502X to your desktop PC using the IrDA port, a D5020B (or higher) Communications Dock, or an L5020B (or higher) Serial Communications Adapter. You must use an Intermec RS-232 cable (Part No. 070268) to connect the D5020B or the L5020B to the desktop PC. For help, see Chapter 3 of your user's manual.

You can also connect the 502X to your desktop PC through the IrDA port or through a serial I/O card in a batch 5020. To use the IrDA port, continue with the next step. To use a serial I/O card, see "Using ActiveSync With a Serial I/O Card" later in this chapter.

2. Download ActiveSync from the Microsoft Web site and follow the onscreen instructions for installing it on your desktop PC. When this process is complete, the Get Connected dialog box appears. Click Cancel.
3. Download ASHelper.exe from the Intermec Web site at www.intermec.com and install it on your desktop PC.
4. Double-click ASHelper. The ASHelper screen appears.

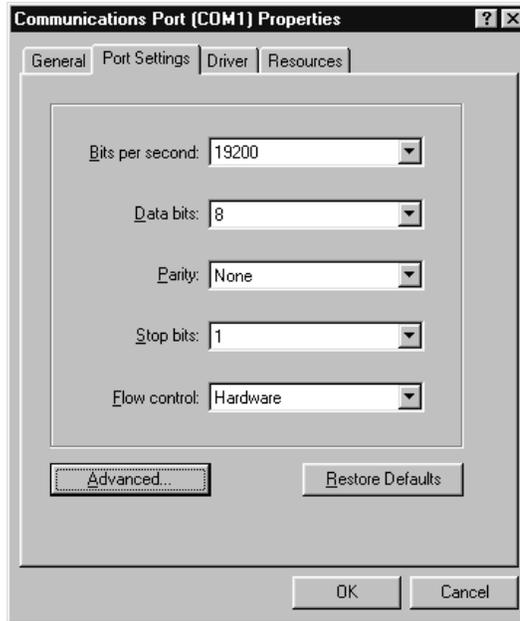


Make sure that COM1 is selected and click OK.



Note: For Windows 98, continue with the next step. For Windows 95, go to Step 8.

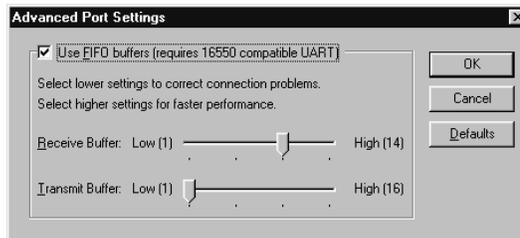
- Open the Start menu and choose Settings. Choose Control Panel, and then choose Systems. Click the Port Settings tab. The Port Settings information box appears.



Make sure the settings are as follows:

Data Bits	8
Parity	None
Stop bits	1
Flow control	Hardware

- Click the Advanced button. The Advanced Port Settings dialog box appears.

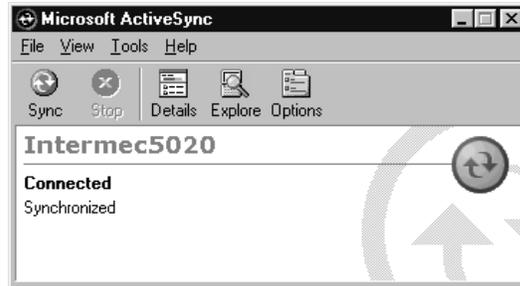


Make sure the Transmit Buffer slider is set to Low.

- Click OK twice to close the message boxes, and then reboot the desktop PC.

8. On the 502X, open the Start menu and select Programs. Choose PC Connection and press .

The 502X should shortly be communicating with your desktop PC. Follow the onscreen instructions for establishing a partnership. When the partnership has been established, the device name of your 502X appears in the ActiveSync window on your desktop:



9. To disconnect the 502X from your desktop PC this first time, open the Start menu and select Programs. Then select PC Connection and press . A message box appears. Press to close the message box. The connection will be broken in a few moments.

Now that the partnership has been established, all future connects and disconnects will be handled through ActiveSync.



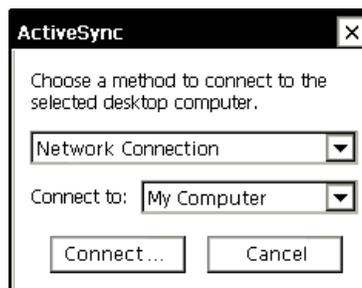
Note: On the 502X, PC Connection sets a baud rate of 19,200 when first establishing an ActiveSync partnership. If you change the 502X baud rate setting after a partnership has been established, it may take several connection attempts before ActiveSync can automatically match the desktop PC to the new baud rate. After the connection is made at the new baud rate, this becomes the default ActiveSync baud rate.

Reconnecting To Your Desktop PC

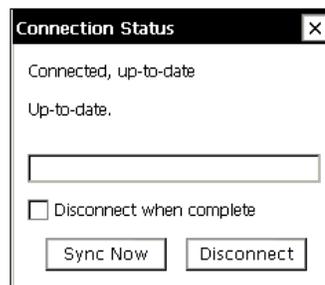
After you have created a partnership using ActiveSync, use it to re-establish the connection between the 502X and your desktop PC.

To reconnect a 502X to a desktop PC using ActiveSync

1. If you are using a batch 5020, connect it to your desktop PC through the IrDA port, a D5020 dock, an L5020 adapter, or a serial I/O card. If you are using an RF 502X, be sure it is within range of an access point.
2. Open the Start menu and select Programs.
3. Select ActiveSync and press . The ActiveSync dialog box appears.



4. Press  to select the Method field, and use  or  to select a connection method.
 - Choose IrDA Port if you are using the IrDA port, a D5020, or an L5020.
 - Choose Network Connection if you are using a radio.
 - (Batch 5020s only) Choose the connection you made using REMNET.
5. Press  to select the Connect To field. Use  or  to select your host PC or another device with which you want to establish the connection.
6. Press  to select the Connect button and press Enter. The Connecting to Desktop message box appears. When ActiveSync has established the connection, the Connection Status dialog box appears.



To disconnect an ActiveSync connection

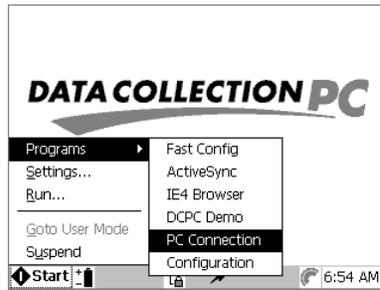
- Press **↵** to select Disconnect in the Connection Status dialog box and then press **⏏**. The 502X will disconnect itself from the host computer and close the Connection Status dialog box.

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

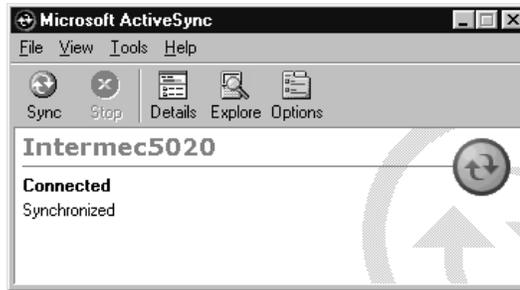
After you have configured your batch 5020 to communicate through a serial I/O card, you can use ActiveSync to establish a partnership between the 5020 and your host PC.

To establish a partnership using ActiveSync with a serial I/O card

1. Install a serial I/O card in the 5020. For help, see “Using PC and Compact Flash Memory Cards” in Chapter 1 of the 5020 user’s manual.
2. Configure your 5020 to communicate through the serial I/O card. For help, see “Connecting With a Serial I/O Card” in Chapter 3 of the 5020 user’s manual.
3. Set the baud rates for the COM ports on your desktop PC to 19,200.
4. Download ActiveSync from the Microsoft Web site and follow the onscreen instructions for installing it on your desktop PC. When this process is complete, the Get Connected dialog box appears.
5. Open the Start menu and select Programs. Select PC Connection and press **⏏**.



- When the Connecting to Serial message appears on the 5020, immediately select the Next button on the host PC. The 5020 should shortly be communicating with your desktop PC, and the Device Connected icon appears in the Notification Tray. Follow the onscreen instructions for establishing a partnership. When the partnership has been established, the device name of your 5020 appears in the Microsoft ActiveSync window on your desktop:



- To disconnect the 5020 from your desktop PC this first time, open the Start menu and select Programs. Then select PC Connection and press . A message box appears. Press to close the message box. The connection will be broken in a few moments.

Now that the partnership has been established, all future connects and disconnects will be handled through ActiveSync. For help, see "Reconnecting To Your Desktop PC" earlier in this chapter.

Setting Up eMbedded Visual Tools 3.0 for Remote Access

Setting up eMbedded Visual Tools 3.0 for remote access allows you to test programs on the 502X while you are developing them on your desktop PC. Remote debugging allows you to single step a program, to set break points, and to examine variables. ActiveSync is the preferred method for connecting the 502X to your desktop PC.

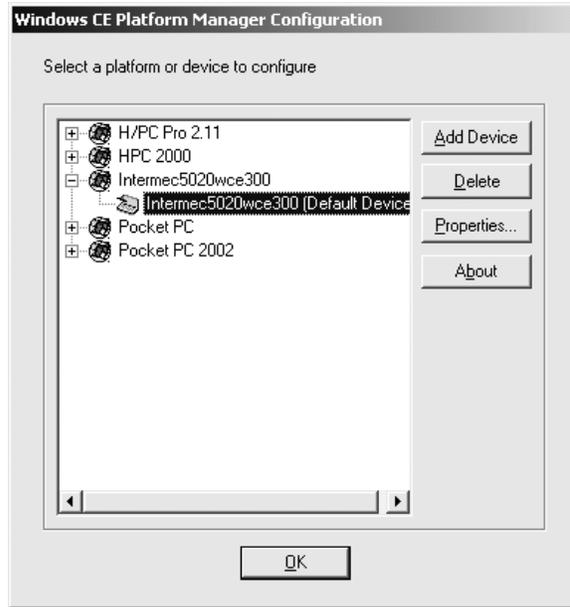
You need to have the following components installed to use the remote debugging feature:

- Microsoft eMbedded Visual Tools 3.0 installed on your desktop PC.
- The Intermec 502X SDK installed on your desktop PC. The 502X SDK, sample code, and examples are provided on the Windows CE/Pocket PC Developer's Kit CD-ROM (Part No. 069511).

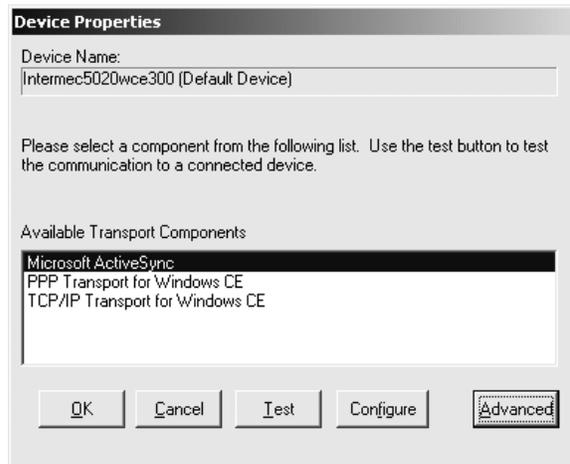
You should also use ActiveSync to establish a partnership between your desktop PC and your 502X before using eMbedded Visual Tools. For help with ActiveSync, see "Using ActiveSync" earlier in this chapter.

To set up the eMbedded Visual Tools for ActiveSync

1. Start the eMbedded Visual Tools Integrated Development Environment.
2. Select Configure Platform Manager from the Tools menu. The Windows CE Platform Manager Configuration dialog box appears.



3. Click the Intermec 502X icon (5020 shown here), and then click on the plus sign to expand the selection. Select the Default Device icon and click Properties. The Device Properties dialog box appears.



4. In the Available Transport Components box, select Microsoft ActiveSync. Click Advanced. The second Device Properties dialog box appears.



5. In the Available Server Components dialog box, select Microsoft ActiveSync. Click OK. The first Device Properties dialog box appears.
6. Click OK three times to exit.

Microsoft eMbedded Visual Tools is now configured to connect to your 502X through ActiveSync. For help with remote debugging, see the eMVT documentation.

Problems Establishing a Connection

If you are unable to establish a connection between eMbedded Visual Tools and the 502X, follow these steps:

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 the eMbedded Visual Tools for remote debugging.

Installing and Removing Commercial Off-the-Shelf Software

Commercial off-the-shelf software products use an installation program that installs the software differently than the 502X SETUP.EXE program. After installing the application, you need to run IMECSYNC.EXE to make the installation compatible with the 502X by reinstalling the application shortcuts as 502X shortcuts. IMECSYNC is installed in the WINDOWS directory on your 502X.

When you install off-the-shelf applications on a 502X, the registry entries are not set to have these applications appear on the Start Menu, Desktop, Startup, or Programs Menu. IMECSYNC.EXE compares the contents of the \WINDOWS\DESKTOP, \WINDOWS\STARTUP, \WINDOWS\STARTMENU, and \WINDOWS\PROGRAMS directories with the contents of the registry. The registry is modified when any programs are found in these directories that are not currently defined in the appropriate registry entries.

Some assumptions have to be made since the installation process has no way of indicating whether the program is accessible for administrators or end users. By default, the program name becomes the description; the working directory is the directory that the program was found in; there are no command line arguments; and the program is accessible to both administrators and end users.

The program also understands shortcut files and follows the path to the resultant program to which it points. If IMECSYNC detects any programs that are defined in the registry but are no longer on the 502X, the registry entries are removed. IMECSYNC displays an activity log in a list box.

You can also use IMECSYNC after you remove the application. IMECSYNC acts as a cleanup program and removes any residual information about an uninstalled application.



Note: Commercial off-the-shelf applications are not guaranteed to be fully compatible with the 502X.



Reader Command Reference

This chapter describes the reader commands that you can use while operating the 502X. Reader commands, such as Backlight On, allow you to perform a task on the 502X.

Using Reader Commands

A reader command causes the computer to perform a task such as turning the backlight on or off. Some reader commands temporarily override the configuration settings and some actually change the configuration settings. You can execute reader commands by

- pressing keys on the keypad or using the Configuration application.
- scanning a command from a Code 39 or Code 93 bar code label.
- sending a command from an application.

You can also send reader commands from a device in a UDP Plus network. For help, see your DCS 30X user's manual.

There are two general types of reader commands:

- Accumulate mode commands
- Operating commands

Reader commands are listed in alphabetical order within these two categories. You will find the purpose, command syntax, and bar code labels for each reader command in this chapter.



Note: The Code 39 bar code labels in this chapter show an asterisk (*) at the beginning and end of the human-readable interpretation to represent the start and stop codes. If you are creating your own Code 39 bar code labels, your bar code printing utility may automatically supply the asterisks as the start/stop code.

Using Accumulate Mode

You can use Accumulate mode to collect data from a series of bar code labels and enter them as a single label. When you put the 502X in Accumulate mode, the computer collects all scanned bar code labels in its buffer until you scan either the Enter or Exit Accumulate mode command.

You can edit the accumulated data with the Clear and Destructive Backspace commands.

- The Clear command deletes the entire data record you are accumulating.
- The Destructive Backspace command deletes the last data record you accumulated.



Note: If you are not in Accumulate mode, the Clear command has no effect, and you will hear an error beep.

When you exit Accumulate mode, the accumulated data is “entered” as a data record. If you reset the 502X (software or hardware reset), you exit Accumulate mode, the entire buffer is cleared, and all data accumulated is lost.

The maximum number of ASCII characters that can be read, accumulated, and transferred to a Windows CE application as a single bar code is limited by the type of characters being transferred to the application.

- Lowercase and numeric characters require the fewest bytes. You can accumulate and transfer up to 256 lowercase letters and numeric characters to an application.
- Uppercase and ASCII control characters require an additional record space to emulate the shift key. You can accumulate and transfer up to 128 uppercase letters and ASCII control characters to an application.

To use Accumulate mode

The syntax to use the Enter Accumulate command is:

+/data

where:

+/ is the syntax for the Enter Accumulate mode command.

data is the optional data you want to enter. *Data* can be a reader command that is executed when you exit Accumulate mode.

1. Scan this bar code label to enter Accumulate Mode:

Enter Accumulate Mode



+/

2. Scan the bar code label(s) for the data you want to enter. You can scan labels from the “Full ASCII Bar Code Chart” in Appendix B.

For example, scan this label to change the 502X’s configuration and set the preamble to the characters XYZ:

Change Configuration / Set Preamble to XYZ



\$+ADXYZ

Or, to edit the accumulated data, scan one of these bar code labels:

Clear



_ _

Destructive Backspace



_+

Using Accumulate Mode (continued)

Note: You can create one bar code label by combining Steps 1 and 2 above. Most of the examples in this manual use one bar code label.

3. Scan this bar code label to exit Accumulate Mode and enter the data record:

Exit Accumulate Mode



_/

Enter Accumulate Mode

Purpose: Enters Accumulate mode. You can accumulate data from a series of bar code labels and enter them as a single label.

From Network: Not supported

Keypad: Not supported

Scan: Enter Accumulate Mode



+/

Clear

Purpose: Deletes the entire data record you are accumulating. If there is no data in the buffer, the command has no effect.

From Network: Not supported

Keypad: Not supported

Scan: Clear



_ _

Destructive Backspace

Purpose: Deletes the most recent data record and remains in Accumulate mode. If no data exists, a null string is entered.

From Network: Not supported

Keypad: Not supported

Scan: Destructive Backspace



-+

Exit Accumulate Mode

Purpose: Exits Accumulate mode and transmits the current data record. If no data has been accumulated, an empty data record is entered.

From Network: Not supported

Keypad: Not supported

Scan: Exit Accumulate Mode



./

Operating Reader Commands

The reader commands you can use to operate or change the 502X's configuration are listed in this section. The operating commands are listed in alphabetical order. You will find the purpose, syntax for commands sent from a network device in a UDP Plus network, and bar code labels for these reader commands in this section.

- Backlight On and Off
- Change Configuration
- Multiple-Read Labels (5020 only)
- Set Time and Date

Backlight On and Off

Purpose: Turns the backlight on to easily view the 502X screen in dimly lit environments.

From Network: % . 1

Keypad: Press  to turn the backlight on or off.

Scan: Backlight On



%.1

Purpose: Turns the backlight off.

From Network: % . 0

Keypad: Press  to turn the backlight on or off.

Scan: Backlight Off



%.0



Note: You can use the command % . to toggle the backlight on and off.

Change Configuration

Purpose: This command must precede any configuration command. If you enter a valid string, the 502X configuration is modified and the computer sounds a high beep. For help on the configuration commands, see Chapter 7, “Configuration Command Reference.”

From Network: \$+*command* [*command*] . . . [*command n*]

where *command* is a configuration command with the value you want to set.

Keypad: In the Configuration application on the 502X or the Configuration Management application in Unit Manager, choose Configure.

Example: Change Configuration / Turn Off Beep Volume



\$+BV0

The Change Configuration command is followed by the configuration command to turn off the beep volume (BV0).

Multiple-Read Labels (5020 only)

Purpose: A multiple-read label is a Code 39 or Code 93 bar code label that has a space as the first character after the start code. The 5020 stores a multiple-read label in the buffer until you execute a command to transmit the label or scan a regular label. A regular bar code label is executed as soon as you scan it.

From Network: Not supported

Keypad: Not supported

Label Syntax: <Start Code><SP>*data*<Stop Code>

where <SP> is the ASCII space character and *data* is the content of the label.

Example: Multiple-Read Bar Code Label



* A*

After you scan a multiple-read bar code label, you can use the Accumulate mode commands, such as Enter or Clear, to accumulate or edit the data. Once you scan a non-multiple-read label, the data is entered.

Set Date and Time

Purpose: Sets the date and time on the 502X. The default date and time is

- June 1, 2001 at 12:00 AM (5020).
- January 1, 1999 at 12:00 AM (5023).

From Network: /+*yyyymmddhhmss*

where acceptable values for the date are:

<i>yyyy</i>	0000-9999	Year
<i>mm</i>	01-12	Month of the year
<i>dd</i>	01-31	Day of the month
<i>hh</i>	00-23	Hour
<i>mm</i>	00-59	Minutes
<i>ss</i>	00-59	Seconds

Keypad: In the Control Panel, choose Date/Time. For help, see Chapter 3, “Customizing the 502X Using the Control Panel.”

Scan: Not supported.

7

Configuration Command Reference

This chapter describes all configuration commands supported on the 502X.

Using Configuration Commands

A configuration command changes the way the 502X operates. For example, to make the 502X beep very loud in a noisy environment, you can send a command to change the Beep Volume. To execute configuration commands, you can

- send the command from an application, such as the Configuration application or Configuration Management. You can also send a command from your own application. For help, see Chapter 5, “Developing and Installing Applications.”
- send the command from an SNMP management station. For help with SNMP, see “Configuring the 502X by Using SNMP” in Chapter 2.
- send the command from a device in a UDP Plus network. For help, see your DCS 30X user’s manual.
- scan the command from a Code 39 or Code 93/93i bar code label. For more information, see “Configuring the 502X by Scanning Bar Code Labels” in Chapter 2 of your user’s manual.

You can find the following information about each configuration command in this chapter:

Purpose Describes the command and its function.

Configuration Lists the possible ways to send the command, including

- the Configuration Management application in Unit Manager (Unit Management on 5023). For help, see “Using Configuration Management” in Chapter 4.
- the Fast Config and Configuration applications. For help, see Chapter 2 of your user’s manual.
- SNMP, including SNMP OID where applicable
- bar codes, including Code 39 bar code labels where applicable

Syntax If configurable by bar code, the two-character code for the command.

Options Acceptable values for the command.

Default Factory default setting for the command.

The configuration commands are listed alphabetically by command name. For a list of commands by category, see the next section, “Configuration Commands Listed by Category.” If you want to look up a command by its syntax, see “Configuration Commands Listed by Bar Code Syntax” later in this chapter.



Note: The Code 39 bar code labels in this chapter show an asterisk (*) at the beginning and end of the human-readable interpretation to represent the start and stop codes. If you are creating your own Code 39 bar code labels, your bar code printing utility may automatically supply the asterisks as the start/stop code.

Configuration Commands Listed by Category

Use this next list to find the configuration commands you may need to set for data collection, IDRS, Internet Explorer (IE), network and RF communications, SNMP, TFTP, UDP Plus, or the unit (502X).

Data Collection

Codabar, 7-20	Plessey (5020 only), 7-66
Code 11 (5020 only), 7-21	Postamble, 7-67
Code 16K (5020 only), 7-23	Preamble, 7-69
Code 2 of 5, 7-24	Scanner Mode (5020 only), 7-77
Code 39, 7-26	Scanner Redundancy, 7-78
Code 49 (5020 only), 7-30	Scanner Selection (5020 only), 7-79
Code 93/93i, 7-32	Scanner Timeout, 7-81
Code 128, 7-33	Scanner Trigger, 7-82
Decode Priority (5020 only), 7-37	Symbology Identifier, 7-98
Decode Security, 7-40	UPC/EAN, 7-108
Interleaved 2 of 5, 7-55	Virtual Wedge, 7-112
MSI, 7-61	Virtual Wedge Code Page, 7-112
PDF 417, 7-65	Virtual Wedge Grid, 7-113

IDRS (5020 only)

IDRSEnable, 7-47	IDRSServerAddr, 7-48
IDRSRetries, 7-47	IDRSTimeout, 7-49
IDRSScope, 7-48	

Internet Explorer (IE)

IE Autodial Name, 7-49	IE Proxy Server Port, 7-52
IE Cache Size, 7-50	IE Underline Links, 7-52
IE Function Key URLs, 7-50	IE Use LAN (No Auto Dial), 7-53
IE Home Page, 7-51	IE Use Proxy Server, 7-54
IE Proxy Server Address, 7-51	



Network

- | | |
|--|--|
| 502X IP Address, 7-10 | Secondary DNS Server, 7-83 |
| Default Router, 7-41 | Secondary WINS Server, 7-84 |
| Device Name, 7-42 | Subnet Mask, 7-96 |
| DHCP (Obtain IP Address Via DHCP) , 7-43 | TCP/IP Extensions Delayed Acknowledgement Timer, 7-103 |
| Primary DNS Server, 7-71 | TCP/IP Extensions Initial Roundtrip Time, 7-103 |
| Primary WINS Server, 7-72 | TCP/IP Extensions Receive Window Size, 7-104 |

OpenAir (5020 only)

- | | |
|--------------------------------|-------------------------------------|
| Access Point MAC Address, 7-12 | Radio ROM Version, 7-74 |
| Access Point Name, 7-12 | Roaming Allowed, 7-76 |
| Domain, 7-46 | Security Identification (ID) , 7-85 |
| Inactivity Timeout, 7-54 | Transmit Mode, 7-106 |
| Radio MAC Address, 7-73 | |

802.11b HR

- | | |
|-----------------------------------|------------------------------|
| Access Point Density, 7-11 | Receive All Multicasts, 7-74 |
| Access Point MAC Address, 7-12 | Reservation Threshold, 7-75 |
| Access Point Network Name, 7-13 | Station Name, 7-96 |
| Maximum Sleep Duration, 7-60 | Supported WEP, 7-97 |
| Network Name, 7-63 | Transmit Rate, 7-107 |
| Power Management, 7-69 | WEP Encryption, 7-115 |
| Primary/Station ROM Version, 7-72 | WEP Key, 7-116 |
| Radio Description, 7-73 | WEP Key Length , 7-117 |
| Radio MAC Address, 7-73 | WEP Transmit Key, 7-117 |

SNMP

Identification Contact, 7-86	Security Subnet Mask, 7-90
Identification Location, 7-86	Security Write Encryption, 7-91
Identification Name, 7-87	Trap Authentication, 7-92
Security Encryption Key, 7-87	Trap Community Name, 7-92
Security IP Address, 7-88	Trap IP Address, 7-93
Security Read Encryption, 7-89	Trap Port, 7-94
Security Read-Only Community String, 7-89	Trap Threshold, 7-94
Security Read/Write Community String, 7-90	

TFTP

TFTP Resend Limit, 7-105	TFTP Timeout, 7-105
--------------------------	---------------------

UDP Plus

Acknowledgement Delay Lower Limit, 7-13	Maximum Retries, 7-60
Acknowledgement Delay Upper Limit, 7-14	Network Loopback, 7-63
Controller Connect Check Receive Timer, 7-35	Network Port, 7-64
Controller Connect Check Send Timer, 7-36	UDP Plus Enable, 7-107
Controller IP Address, 7-37	

Unit

Automatic Shutoff, 7-15	IrDA Baud Rate, 7-57
Beep Duration (5020 only), 7-16	Keypad Caps Lock, 7-58
Beep Frequency (5020 only), 7-18	Keypad Clicker, 7-59
Display Backlight Level, 7-44	Speaker Volume, 7-95
Display Backlight Timeout, 7-44	

Configuration Commands Listed by Bar Code Syntax

The next table lists the configuration commands you can set by scanning bar codes with the 502X. The configuration commands are listed in alphabetic order by syntax. You can also configure these commands by using the Configuration application, the Configuration Management application in Unit Manager, or using SNMP.

Syntax	Command	For Help, See Page
<i>ADdata</i>	Preamble	7-69
<i>AEdata</i>	Postamble	7-67
<i>BVdata</i>	Speaker Volume	7-95
<i>BBdata</i>	Low Beep Duration (5020 only)	7-16
<i>BCdata</i>	High Beep Duration (5020 only)	7-16
<i>BGdata</i>	Low Beep Frequency (5020 only)	7-18
<i>BHdata</i>	High Beep Frequency (5020 only)	7-18
<i>CAdata</i>	Interleaved 2 of 5 Code (1 2 of 5)	7-55
<i>CBdata</i>	Code 39	7-26
<i>CCdata</i>	Code 2 of 5 (2 of 5)	7-24
<i>CDdata</i>	Codabar	7-20
<i>CEdata</i>	UPC/EAN	7-108
<i>CFdata</i>	Code 93	7-32
<i>CGdata</i>	Code 11 (5020 only)	7-21
<i>CHdata</i>	Code 128	7-33
<i>CIdata</i>	Plessey (5020 only)	7-66
<i>CJdata</i>	Code 49 (5020 only)	7-30
<i>CKdata</i>	Code 49 Function Code 1 (5020 only)	7-30
<i>CLdata</i>	Code 49 Function Code 2 (5020 only)	7-30
<i>CMdata</i>	Code 49 Function Code 3 (5020 only)	7-30
<i>CNdata</i>	MSI	7-61
<i>CPdata</i>	Code 16K (5020 only)	7-23
<i>CQdata</i>	PDF 417	7-65
<i>CSdata</i>	Decode Security	7-40
<i>CTdata</i>	Decode Priority (5020 only)	7-37
<i>CYdata</i>	Symbology Identifier	7-98
<i>DFdata</i>	Display Backlight Timeout	7-44

Bar Code Configuration Commands by Syntax (continued)

Syntax	Command	For Help, See Page
<i>EZdata</i>	Automatic Shutoff	7-15
<i>KAdata</i>	Keypad Caps Lock	7-58
<i>KCdata</i>	Keypad Clicker	7-59
<i>SAdata</i>	Scanner Timeout	7-81
<i>SBdata</i>	Scanner Mode (5020 only)	7-77
<i>SCdata</i>	Scanner Trigger	7-82
<i>SRdata</i>	Scanner Redundancy	7-78
<i>SSdata</i>	Scanner Selection (5020 only)	7-79

Entering Variable Data in a Configuration Command

You can enter variable data for many of the configuration commands. For example, you can set a preamble that is up to 31 ASCII characters long. Follow these general instructions to enter variable data.

To enter variable data in a configuration command

1. 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 and data for the command you want to change.

For example, the command syntax for a preamble is *ADdata*. To change or set a preamble, scan this bar code:

Enter Accumulate Mode / Change Configuration / Set Preamble



+/\$+AD

2. Scan a bar code label from the “Full ASCII Bar Code Chart” in Appendix B. If the data you enter forms a reader or configuration command such as *BV* for Speaker Volume, you must enclose the data in quotes. If you are entering quotation marks as data, you must enclose the data within quotation marks and precede each quotation mark with another quotation mark. For help, see “Configuring the 502X by Scanning Bar Code Labels” in Chapter 2 of your user’s manual.

To set the preamble to the character *T*, scan this label:

T



T



Note: To use the bar code labels in Appendix B, you must configure the 502X to use Code 39 in Full ASCII mode. For help, see “Code 39” later in this chapter.

3. Scan the Exit Accumulate Mode bar code label to update the 502X’s configuration:

Exit Accumulate Mode



-/

502X IP Address

Purpose: Defines the IP address assigned to the 502X in your RF or Ethernet network. An IP address is a unique network level address you assign to each device in a TCP/IP network. If you are using a DHCP server, the IP address is automatically assigned. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose either Radio or Ethernet, then IP Address, then Obtain IP Address via DHCP, and finally choose IP Address.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.2.1.2.*index*
where *index* is the radio or I/O adapter card number.

Options: This address must be a valid IPv4 address that has the form
y.x.x.x
where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: 0.0.0.0

Access Point Density

Purpose: This parameter controls the roaming sensitivity of the 802.11b HR radio. By increasing the density you do not reduce the absolute range of the radio, but the roaming algorithms are modified to allow significant overlap of the wireless cells. Increasing the density allows you to create a higher performance radio network but requires significantly more access points to cover a given area.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Access Point Density.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.4.1.1.5.*ifindex*
where *ifindex* is the radio adapter card number.

Options: Acceptable values for Access Point Density are:

- 1 Low Density
- 2 Medium Density
- 3 High Density

Default: Low Density

Access Point MAC Address

Purpose: Displays the MAC address of the radio in the access point to which the 502X is currently connected.

Configuration: The Access Point MAC Address is a read-only parameter that cannot be changed.

On Cold Boot: Not applicable (read-only)

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.2.*index* OpenAir radio
1.3.6.1.4.1.1963.5.5.2.4.1.1.2.*ifindex* 802.11b HR radio
where *index* or *ifindex* is the radio adapter card number.

Default: None

Access Point Name (5020 only)

Purpose: Displays the first 11 characters of the name of the access point to which the 502X is currently connected.

Configuration: The Access Point Name is a read-only parameter that cannot be changed.
In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Access Pt Name. Choose Refresh to view the current assignments.

On Cold Boot: Not applicable (read-only)

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.1.*index*
where *index* is the radio adapter card number.

Default: None

Access Point Network Name

- Purpose:** This parameter is an alphanumeric string (maximum of 32 ASCII characters) that must match the network name of the access point(s) to which your 502X should associate.
- Configuration:** The Access Point Network Name is a read-only parameter that cannot be changed. In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Access Point Network Name.
- On Cold Boot:** Not applicable (read-only)
- SNMP OID:** 1.3.6.1.4.1.1.1963.5.5.2.4.1.1.1.*ifindex*
where *ifindex* is the radio adapter card number.
- Default:** None

Acknowledgement Delay Lower Limit

- Purpose:** When the 502X sends a message to the DCS 30X, the 502X waits to receive a response acknowledging the message. If no response is received within the Acknowledgement Delay Lower Limit time, the 502X sends the message again at the time interval set for the lower limit. The 502X will continue to send the data at increasingly longer intervals until it reaches the Acknowledgement Delay Upper Limit time. The 502X continues sending the message at the time interval set for the upper limit until a response is received or a timeout error occurs.
- Configuration:** Use one of these methods:
- | Configuration Applications | SNMP | Bar Codes | Fast Config |
|----------------------------|------|-----------|-------------|
| Yes | Yes | No | No |
- In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Ack Delay Low Limit.
- On Cold Boot:** Not saved
- SNMP OID:** 1.3.6.1.4.1.1963.5.15.20.1.1.1.2.1
- Options:** Acceptable values for the lower limit are any number from 200 to 2000 ms.
- Default:** 300 ms

Acknowledgement Delay Upper Limit

Purpose: When the 502X sends a message to the DCS 30X, the 502X waits to receive a response acknowledging the message. If no response is received within the Acknowledgement Delay Lower Limit time, the 502X sends the message again at the time interval set for the lower limit. The 502X will continue to send the data at increasingly longer intervals until it reaches the Acknowledgement Delay Upper Limit time. The computer continues sending the message at the time interval set for the upper limit until a response is received or a timeout error occurs.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Ack Delay Upper Limit.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.3.1

Options: Acceptable values for the upper limit are any number from 2 to 60 seconds.

Default: 5 seconds

Automatic Shutoff

Purpose: Defines the maximum length of time the 502X remains on when there is no activity. When you do not use the 502X for the length of time set with this command, the computer automatically turns off.

When you press  to turn on the 502X, the PC either resumes exactly where it was when you turned it off or boots and restarts your application.

You can use the Configuration application, the Configuration Management application, or the Power applet in the Control Panel to set the Automatic Shutoff parameter. In the Configuration and Configuration Management applications, the value you set will turn off the 502X when you are using it on battery power.

In the Control Panel, you can set separate values to turn off the 502X when it is on battery power or on AC power. If the 502X is connected to AC power through the D5020 or L5020, automatic shutoff is disabled unless you enable the suspend while on external power in the Control Panel Power applet. For help, see Chapter 3, “Customizing the 502X Using the Control Panel.”

Power Management Tip: You should use the Automatic Shutoff feature to preserve the main battery pack’s power.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Power Management and then choose Automatic Shutoff.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.11.3.0

Syntax: *EZdata*

You only use the two-character command EZ for bar code configuration labels. When configuring via SNMP, acceptable values for *data* are:

0	Disabled (always on)
1	1 minute
5	5 minutes
30	30 minutes
60	60 minutes

Automatic Shutoff (continued)

Default: 5 minutes

Scan: One of these bar codes:

Disable Automatic Shutoff



\$+EZ0

Automatic Shutoff 1 Minute



\$+EZ1

Automatic Shutoff 5 Minutes



\$+EZ5

Automatic Shutoff 30 Minutes



\$+EZ30

Automatic Shutoff 60 Minutes



\$+EZ60

Beep Duration (5020 only)

Purpose: Defines the duration of the beeps on the 5020. There are two types of beeps:

- Low beep
- High beep

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Speaker and then choose either Low Beep Duration or High Beep Duration.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.1.4.1.2.1 Low beep duration
 1.3.6.1.4.1.1963.15.3.1.4.1.3.1 High beep duration

Syntax: BBdata Low beep duration
 BCdata High beep duration

Beep Duration (continued)

You only use the two-character command BB or BC for bar code configuration labels. Acceptable values for *data* are from 10 to 60,000 ms (60 seconds).

Default: 50 ms for the low beep duration
60 ms for the high beep duration

Scan: 1. Scan this bar code:

Enter Accumulate Mode



+/

2. Scan one of these bar codes:

Change Low Beep Duration



\$+BB

Change High Beep Duration



\$+BC

3. Scan a numeric value for *data* in milliseconds from these bar codes:



0



1



2



3



4



5



6



7



8



9

4. Scan this bar code:

Exit Accumulate Mode



-/

5. Repeat Steps 1 through 4 to set the other beep duration.

Beep Frequency (5020 only)

- Purpose:** Defines the individual frequencies of the 5020 beeps. There are two types of beeps:
- Low beep
 - High beep

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Speaker and then choose either Low Beep Frequency or High Beep Frequency.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.1.4.1.4.1 Low beep frequency
 1.3.6.1.4.1.1963.15.3.1.4.1.5.1 High beep frequency

Syntax: BGdata Low beep frequency
 BHdata High beep frequency

You only use the two-character command BG or BH for bar code configuration labels. Acceptable values for *data* are from 100 to 20,000 Hz (20 KHz).



Note: If you set the frequency outside the range of 100 Hz to 10,000 Hz, the beeps are inaudible.

Default: 1000 Hz for the low beep
 2300 Hz for the high beep

Scan: 1. Scan this bar code:

Enter Accumulate Mode



+/

2. Scan one of these bar codes:

Change Low Beep Frequency



\$+BG

Change High Beep Frequency



\$+BH

Beep Frequency (continued)

- Scan a numeric value for *data* in Hz from these bar codes:



0



1



2



3



4



5



6



7



8



9

- Scan this bar code:

Exit Accumulate Mode



/

- Repeat Steps 1 through 4 to set the other beep frequency.

Codabar

Purpose: Enables or disables decoding of Codabar, a self-checking, discrete symbology. The American Blood Commission (ABC) Codabar requires that you retain and transmit the start/stop code digits when processing a Codabar symbol. As a result, configuration CD10 is an illegal configuration.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Codabar.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.5.1

Syntax: *CDdata*

You only use the two-character command CD for bar code configuration labels. Acceptable values for *data* must be two digits, corresponding to:

First digit:	0	Disabled
	1	(5020 only) ABC
	2	Standard
	3	(5020 only) Concatenated
Second digit:	0	Discard Start/Stop
	1	Retain ABCD Start/Stop
	2	(5020 only) Retain DC1-DC4 Start/Stop

Default: Standard, Transmit ABCD start/stop

Codabar (continued)

Scan: One of these bar codes:

Disabled, Discard Start/Stop



\$+CD00

ABC, Retain ABCD Start/Stop (5020 only)



\$+CD11

ABC, Retain DC1-DC4 Start/Stop (5020 only)



\$+CD12

Standard, Discard Start/Stop



\$+CD20

Standard, Retain ABCD Start/Stop



\$+CD21

Standard, Retain DC1-DC4 Start/Stop



\$+CD22

Concatenated, Discard Start/Stop (5020 only)



\$+CD30

Concatenated, Retain ABCD Start/Stop (5020 only)



\$+CD31

Concatenated, Retain DC1-DC4 Start/Stop (5020 only)



\$+CD32

Code 11 (5020 only)

Purpose: Enables or disables decoding of Code 11, a very high density, discrete numeric bar symbology. It is most extensively used in labeling telecommunications components and equipment.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

Code 11 (continued)

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 11.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.8.1

Syntax: *CGdata*

You only use the two-character command CG for bar code configuration labels. Acceptable values for *data* are:

- 0 Disabled
- 1 Code 11 enabled with one check digit
- 2 Code 11 enabled with two check digits

Default: Enabled with two check digits

Scan: One of these bar codes:

Disable Code 11



\$+CG0

Code 11 Enabled With One Check Digit



\$+CG1

Code 11 Enabled With Two Check Digits



\$+CG2

Notes: Code 11 is designed to have one or two check digits with second check digit as optional. For reading reliability, the two-check-digit is recommended. Because of the ways that the check digits are calculated, selecting one check digit enables reading labels with either one or two check digits. Selecting two check digits, however, enables reading only labels with two check digits.

Code 16K (5020 only)

Purpose: Enables or disables decoding of Code 16K, a two-dimensional (stacked rows), high density symbology. Based on Code 128, Code 16K is widely used to label unit-dose packaging for the healthcare industry.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 16K.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.16.1

Syntax: *CPdata*

You only use the two-character command CP for bar code configuration labels. Acceptable values for *data* are:

- 0 Disabled
- 1 Standard Code 16K enabled
- 2 Code 16K enabled with Function Code 1

When you enable Code 16K with Function Code 1, the 502X decodes the bar code label and checks for a Function Code 1 in the first data character position. If a Function Code 1 is the first character, the computer substitutes this Code 16K symbology identifier string for the Function Code 1 character:

] K1

Default: Standard Code 16K enabled

Scan: One of these bar codes:

Disable Code 16K

 \$+CP0

Standard Code 16K Enabled

 \$+CP1

Code 16K Enabled With Function Code 1

 \$+CP2

Code 2 of 5

Purpose: Enables or disables decoding of Code 2 of 5 symbology. Code 2 of 5 uses the bars to encode information and the spaces to separate the individual bars. This code is discrete and self-checking.



Note: For the 5020 only, you can enable Code 2 of 5 only if the Interleaved 2 of 5 (I 2 of 5) code is disabled. If you enable I 2 of 5, Code 2 of 5 is automatically disabled.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 2 of 5.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.4.1

Syntax: *CCdata*

where *data* consists of three digits as follows:

First digit:	0	Code 2 of 5, 3 Bar Start/Stop
	1	(5020 only) Code 2 of 5, 2 Bar Start/Stop
Second and third digits:	00	Disable Code 2 of 5
	01-32	Label Length

You only use the two-character command CC for bar code configuration labels.

Default: Disabled

Scan: To disable Code 2 of 5, scan this bar code:

Disable Code 2 of 5



\$+CC000

Code 2 of 5 (continued)

Or: To enable Code 2 of 5:

1. Scan one of these bar codes:

Code 2 of 5, 3 Bar Start/Stop



+/\$+CC0

Code 2 of 5, 2 Bar Start/Stop (5020 only)



+/\$+CC1

2. Scan a two-digit numeric value to set the label length (01-32) from these bar codes.



0



1



2



3



4



5



6



7



8



9

3. Scan this bar code:

Exit Accumulate Mode



./

Code 39

Purpose: Enables or disables decoding of Code 39 symbology. Code 39 is discrete, self-checking, and of variable length. The character set is uppercase A to Z, 0 to 9, dollar sign (\$), period (.), slash (/), percent (%), space (), plus (+), and minus (-).

The 502X decodes the following three types of ASCII:

- Code 39 non-full ASCII
- Code 39 full ASCII
- Code 39 mixed-full ASCII (5020 only)

Code 39 non-full ASCII Non-full ASCII uses a one-character encoding scheme. For example, you encode the data “SAMPLE” as follows:



SAMPLE

This label decodes as *SAMPLE*.

Code 39 full ASCII Full ASCII uses a two-character encoding scheme to extend the character set to 128 characters. You use the dollar sign (\$), slash (/), percent (%), or plus (+) followed by an uppercase letter to represent one of the characters in the extended set. You must encode lowercase letters as a plus sign (+) followed by their uppercase equivalents. For a list of ASCII characters and their Code 39 representations, see the “Full ASCII Table” in Appendix B.

Use Code 39 full ASCII to enter ASCII control characters or lowercase characters as data. You should also enable Code 39 full ASCII to use ASCII command characters.

For example, you encode the data “sample” in Code 39 full ASCII as follows:



+S+A+M+P+L+E

In Code 39 non-full ASCII, this label decodes as *+S+A+M+P+L+E*. In Code 39 full ASCII, this label decodes as *sample*.

Code 39 mixed-full ASCII (5020 only) Use mixed-full ASCII when printers encode the same label two different ways. For example, if you have a bar code with the data \$%a, some printers encode the data as follows:



/D/E+A

Code 39 (continued)

In the Full ASCII Table in Appendix B, /D represents \$ and /E represents %. If you configure the 502X for Code 39 full ASCII, the computer decodes the data as \$%a because there are three valid full ASCII character pairs to represent the data.

Other printers encode the data \$%a as:



\$%+A

The \$ and % are valid Code 39 characters in the non-full ASCII character set. However, the 502X will not decode this label if it is configured for full ASCII, because the data is not represented by valid full ASCII character pairs. To decode the label correctly, you need to configure the 502X for mixed-full ASCII.

When you configure the 502X for Code 39 mixed-full ASCII, the 502X will decode both of the labels above as \$%a.

Mixed-full ASCII interprets any valid full ASCII character pairs that appear in the label, but does not require that all data be encoded with a valid full ASCII character pair. If you are uncertain how your labels are encoded, configure the 502X for mixed-full ASCII, which decodes all valid Code 39 labels.

If you configure the 502X for Code 39 full ASCII, you should check for Code 39 mixed-full ASCII. Mixed-full ASCII does not apply when you configure the computer for non-full ASCII.



Note: The interpretive text shown under bar code labels does not always accurately reflect the data that is encoded in the label. The interpretive text represents how the label should be decoded.

Use this table to help configure your 502X.

Code 39 Option	Bar Code Label	Decodes
Non-full ASCII	\$%+A	\$%+A
	/D/E+A	/D/E+A
Full ASCII	\$%+A	No decode
	/D/E+A	\$%a
Mixed-full ASCII (5020 only)	\$%+A	\$%a
	/D/E+A	\$%a

Code 39 (continued)

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 39.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.3.1

Syntax: *CBdata*

You only use the two-character command CB for bar code configuration labels. Acceptable values for *data* must be three digits, corresponding to:

- First digit:
 - 0 Disabled
 - 1 Enabled with no check digit
 - 2 Enabled with check digit
 - 3 HIBC (Health Industry Bar Code)
 - 4 (5020 only) With AIAG check digit
- Second digit:
 - 0 Discard check digit
 - 1 Transmit check digit
- Third digit:
 - 0 Code 39 non-full ASCII
 - 1 Code 39 full ASCII
 - 2 (5020 only) Code 39 mixed-full ASCII



Note: Selecting HIBC Code 39 automatically sets the configuration to non-full ASCII with the check digit transmitted.

Default: Enable Code 39 Full ASCII with no check digit (101)

Scan: To disable Code 39:

Disable Code 39



\$+CB0

Code 39 (continued)

Or: To enable Code 39:

1. Scan this bar code:

Enter Accumulate Mode / Enable Code 39



+/\$+CB

2. Scan one of these bar codes to set the first digit:

Without a Check Digit



1

With a Check Digit



2

HIBC Code 39



3

With AIAG Check Digit (5020 only)



4

3. Scan one of these bar codes to set the second digit:

Discard Check Digit



0

Transmit Check Digit



1

4. Scan one of these bar codes to set the third digit:

Code 39 Non-Full ASCII



0

Code 39 Full ASCII



1

Code 39 Mixed-Full ASCII (5020 only)



2

5. Scan this bar code:

Exit Accumulate Mode



-/

Code 49 (5020 only)

Purpose: Enables or disables decoding of Code 49, a multirow symbology for high data density. The last character in each row is used for row checking, and the last two characters of the symbol are used for overall checking.

Function codes designate where to place the predefined data string in a Code 49 label. Whenever a 5020 encounters a function code, it replaces the function code with the defined string before transmitting the data. A single Code 49 symbol may contain several different variable length data fields. Function Code 1 (F1) identifies a data system. Function Code 2 (F2) indicates the end of a data field.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 49.

On Cold Boot: Not saved

SNMP OID:

1.3.6.1.4.1.1963.15.3.3.1.1.11.1	Code 49
1.3.6.1.4.1.1963.15.3.3.1.1.12.1	Function Code 1
1.3.6.1.4.1.1963.15.3.3.1.1.13.1	Function Code 2
1.3.6.1.4.1.1963.15.3.3.1.1.14.1	Function Code 3

Syntax:

<i>CJdata</i>	Code 49
<i>CKdata</i>	Function Code 1
<i>CLdata</i>	Function Code 2
<i>CMdata</i>	Function Code 3

You only use the two-character command CJ, CK, CL, or CM for bar code configuration labels. Acceptable values for *data* are:

Code 49:	0	Disabled
	1	Enabled

Function Code 1: Any two ASCII characters

Function Code 2: Any four ASCII characters

Function Code 3: Any two ASCII characters

Code 49 (continued)

Default: Code 49 Enabled
 Function Code 1 NULL
 Function Code 2 CR LF (\r\n)
 Function Code 3 NULL

Scan: One of these bar codes:

Disable Code 49



\$+CJ0

Enable Code 49



\$+CJ1

Scan: To disable any of the function codes, scan one of these bar codes:

Disable Function Code 1



\$+CK

Disable Function Code 2



\$+CL

Disable Function Code 3



\$+CM

Or: To set one of the function codes to a character string:

1. Scan one of these bar codes:

Enter Accumulate Mode / Set Function Code 1



+/\$+CK

Enter Accumulate Mode / Set Function Code 2



+/\$+CL

Enter Accumulate Mode / Set Function Code 3



+/\$+CM

Code 49 (continued)

2. Scan any character from the “Full ASCII Bar Code Chart” in Appendix B. You can define two characters each for Function Codes 1 and 3, and four characters for Function Code 2.
3. Scan this bar code:

Exit Accumulate Mode



-/.

Code 93/93i

Purpose: Enables or disables decoding of Code 93/93i, a variable length, continuous symbology that uses four element widths.

Code 93i (available only on 5020) is an upwardly compatible superset of Code 93 offering support for numeric compression, binary data, error correction, composite labels, and other features.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 93/93i.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.7.1

Syntax: CF*data*

You only use the two-character command CF for bar code configuration labels. Acceptable values for *data* are:

- 0 Disabled
- 1 Enabled

Default: Enabled

Code 93/93i (continued)

Scan: One of these bar codes:

Disable Code 93/93i



\$+CF0

Enable Code 93/93i



\$+CF1

Code 128

Purpose: Enables or disables decoding of Code 128, a very high density alphanumeric symbology that supports the extended ASCII character set. It is a variable length, continuous code that uses multiple element widths.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Code 128.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.9.1

Syntax: CH*data*

You only use the two-character command CH for bar code configuration labels. Acceptable values for *data* are:

- 0 Disabled
- 1 Standard Code 128
- 2 UCC/EAN Code 128

Default: Standard

Code 128 (continued)

Scan: One of these bar codes:

Disable Code 128



\$+CH0

Enable Standard Code 128



\$+CH1

Enable UCC/EAN Code 128



\$+CH2



Note: If you configure Standard Code 128, the 502X will not decode Function Code 1 characters in the first position of a bar code label. Any subsequent Function Code 1 characters are translated to the ASCII GS character as a separator for variable length fields.

If you configure UCC/EAN Code 128, the 502X will decode a bar code label as Standard Code 128 unless one of the first two characters are a start character and a Function Code 1. In this case, the bar code label is processed as described next:

1. The Function Code 1 character is not transmitted.
2. The three symbology ID characters,]C1, are transmitted.
3. The remaining Code 128 characters are decoded as Standard Code 128.

Controller Connect Check Receive Timer

Purpose: When the 502X is inactive, it still sends messages to the DCS 30X to check the RF or Ethernet connection. If no message is received within the time set for the Controller Connect Check Receive Timer, the 502X is no longer connected to the DCS 30X and the Data Buffered icon flashes. The timer countdown resets each time a valid message is received.

Power Management Tip: Intermec strongly recommends that you use the optimum setting of 45 seconds.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Connect Rev Timer.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.5.1

Options: Acceptable values for the receive timer are any number from 1 to 3600 seconds (60 minutes).

Default: 45 seconds

Controller Connect Check Send Timer

Purpose: When the 502X is inactive, it still sends messages to the DCS 30X to check the RF or Ethernet connection. The 502X sends a message at the time interval set for the Controller Connect Check Send Timer. The timer countdown resets each time a valid message is sent or received.

Power Management Tip: Intermec strongly recommends that you use the optimum setting of 20 seconds.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Connect Send Timer.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.6.1

Options: Acceptable values for the send timer are any number from 1 to 3600 seconds (60 minutes).

Default: 20 seconds

Controller IP Address

Purpose: Defines the IP address assigned to the DCS 30X in your network. An IP address is a network level address you assign to each device in a TCP/IP network. The controller IP address you set on the 502X must match the address that is set on the DCS 30X. You must set the controller IP address even if you plan to enable DHCP (Dynamic Host Configuration Protocol).

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Controller IP Address.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.11.1

Options: This address must be a valid IPv4 address that has the form

y.x.x.x

where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: 0.0.0.0

Decode Priority (5020 only)

Purpose: Defines the decode priority to use when decoding bar code symbologies. The 5020 uses an initial order to decode the symbology of each bar code label. As bar code labels are decoded, the 5020 attempts to decode the labels in an order determined by the frequency of past decoded symbologies, that is, the most frequently decoded symbology is attempted first, then the second most, and so on.

Decode Priority (continued)

For example, if you have only been scanning Code 39 bar code labels, the 5020 will set the decode priority to Code 39 and will first attempt to decode every label as Code 39. If you suddenly begin scanning only Code 128 bar code labels, the 5020 eventually resets the decode priority.

Although you can set the decode priority, the 5020 establishes the priority order based on the bar code labels you scan. You can also reset the statistics through SNMP or an SDK application so that the 5020 can establish a fresh set of decode statistics.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Decode Options and then choose Decode Priority.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.2.1.3.1

Syntax: CT*data*

You only use the two-character command CT for bar code configuration labels. Acceptable values for *data* are from 2 to 24 numbers from this list:

- 01 Code 39
- 02 Code 93/93i
- 03 Code 49
- 04 Interleaved 2 of 5
- 05 Codabar
- 06 UPC/EAN
- 07 Code 128
- 08 Code 16K
- 09 Plessey
- 10 Code 11
- 11 MSI
- 12 PDF 417

You must enter leading zeros, and you cannot duplicate numbers.

Default: 010203040506070809101112

Decode Priority (continued)

Scan: To set the decode priority to the default, scan this bar code:

Set Decode Priority to Default



\$+CT00

Or: To set the decode priority:

1. Scan this bar code:

Enter Accumulate Mode / Set Decode Priority



+/\$+CT

2. Scan one bar code at a time (up to a total of all 12) in the order you want to set for the decode priority:

Code 39



01

Code 93/93i



02

Code 49



03

Interleaved 2 of 5



04

Codabar



05

UPC/EAN



06

Code 128



07

Code 16K



08

Plessey



09

Code 11



10

MSI



11

PDF 417



12

Decode Priority (continued)

3. Scan this bar code:

Exit Accumulate Mode



-/

Decode Security

Purpose: Defines the security level to use when decoding bar codes. When you select a lower decode security level, the 502X can decode bar codes with poorer print quality.



Note: Use the low parameter as only a temporary solution until you can improve the bar code label print quality.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Decode Options and then choose Decode Security Level.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.3.1.1.10.1.1

Syntax: *CSdata*

You only use the two-character command CS for bar code configuration labels. Acceptable values for *data* are:

- 0 Low
- 1 Moderate
- 2 High

Default: Moderate

Decode Security (continued)

Scan: One of these bar codes:

Low Decode Security



\$+CS0

Moderate Decode Security



\$+CS1

High Decode Security



\$+CS2

Default Router

Purpose: Defines the IP address assigned to the default router in your RF or Ethernet network. The router provides a software and hardware connection between two or more networks that permits traffic to be routed from one network to another on the basis of the intended destinations of that traffic.

When the DCS 30X or host is on a different subnetwork than the 502X, you need to set the IP address assigned to the default router. The 502X uses the router address to send packets across the network to the DCS 30X or host. The default of 0.0.0.0 means there is no default router. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then IP Address, then Obtain IP Address Via DHCP, and finally choose Default Router.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.2.1.4.*index*
 where *index* is the radio or I/O adapter card number.

Default Router (continued)

- Options:** This address must be a valid IPv4 address that has the form
y.x.x.x
where y is a value between 1 and 223 (not including 127) and x is a value between 0 and 255.
- Default:** 0.0.0.0

Device Name

Purpose: This parameter is an alphanumeric string with a maximum of 15 ASCII characters.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Identification, and finally choose Device Name.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.1.0

Options: 1 to 15 character ASCII string with an alpha leading character. The other characters must be alphanumeric or a dash.

Default: Intermec5020 or Intermec5023

DHCP (Obtain IP Address Via DHCP)

Purpose: DHCP (Dynamic Host Configuration Protocol) allocates IP addresses dynamically so that addresses can be reused when hosts no longer need them. DHCP is automatically enabled on the 502X. If you are using a DHCP server in your Ethernet or RF network, the 502X 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

Once the IP address, subnet mask, default router, DNS servers, and WINS servers are dynamically assigned, you can check their status and IP assignments. If you are not using a DHCP server, you need to disable DHCP and then set the network parameters listed above. When you disable DHCP, the 502X sets the IP address, subnet mask, and default router to zero so you can assign static addresses. After you change this parameter, suspend and resume the 502X to make the change effective.

In a UDP Plus network, you need to configure the Controller IP Address on the 502X even if you are using a DHCP server in your network. For help, see “Controller IP Address” earlier in this chapter.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then IP Address, and finally Obtain IP Address Via DHCP.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.2.1.1.*index*
where *index* is the radio or I/O adapter card number.

Options: Acceptable values for DHCP are:

- 0 Disable
- 1 Enable

Default: Enabled

Display Backlight Level

Purpose: Defines the intensity of the backlight on the 502X screen. You can set the intensity to either high or low.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Display and then choose Backlight Level.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.501.4.1.0

Options: Acceptable values for the backlight level are:

0 Low
1 High

Default: High

Display Backlight Timeout

Purpose: Defines the amount of time the backlight remains on. The backlight timeout setting significantly affects the 502X's battery life. If you set a longer backlight timeout value, you will use the power in the main battery pack at a faster rate.

In the Configuration or Configuration Management applications, the value you set will turn off the backlight when you are using it on battery power or on AC power. In the Control Panel, you can set separate values to turn off the backlight when it is on battery power or on AC power. For help, see Chapter 3, "Customizing the 502X Using the Control Panel."

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

Display Backlight Timeout (continued)

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Display and then choose Backlight Timeout.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.13.1.0

Syntax: DF*data*

You only use the two-character command DF for bar code configuration labels. Acceptable values for *data* are:

15	15 seconds
30	30 seconds
60	1 minute
120	2 minutes
300	5 minutes

Default: 15 seconds

Scan: One of these bar codes:

Backlight Timeout 15 Seconds



\$+DF15

Backlight Timeout 30 Seconds



\$+DF30

Backlight Timeout 1 Minute



\$+DF60

Backlight Timeout 2 Minutes



\$+DF120

Backlight Timeout 5 Minutes



\$+DF300

Domain (5020 only)

Purpose: Defines a logical partition or subnetwork of the OpenAir network. To establish communications, you must assign the same domain number to every OpenAir device in a wireless network. The domain number you set on the 5020 must match the domain that is set on each access point the 5020 may communicate with. You can continue to collect data with the 5020 as you roam in between access points as long as all the devices have the same domain number and security ID. After you change this parameter, suspend and resume the 5020 to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Domain.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.7.*index*
where *index* is the radio adapter card number.

Options: The domain can be any number from 0 to 15.

Default: 0

IDRSEnable (5020 only)

Purpose: Enables or disables the operation of IDRS Client.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

On Cold Boot: Saved

SNMP OID: 1.1.3.6.1.4.1.1963.5.10.5.1.0

Options: Acceptable values for IDRSEnable are:

- 0 Enable
- 1 Disable

Default: Enabled

IDRSRetries (5020 only)

Purpose: Specifies the number of retries that the IDRS Client will attempt if a previous attempt fails or the server does not respond.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

On Cold Boot: Saved

SNMP OID: 1.1.3.6.1.4.1.1963.5.10.5.4.0

Options: Acceptable values are within the range 0-20.

Default: 15

IDRSScope (5020 only)

Purpose: Specifies the identifier the 5020 sends if the IDRS Server will not accept the 5020's registration (or if the 5020 is out of scope).

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

On Cold Boot: Saved

SNMP OID: 1.1.3.6.1.4.1.1963.5.10.5.5.0

Options: 1-20 ASCII characters

Default: INTERMEC

IDRSServerAddr (5020 only)

Purpose: Names the IP address of an IDRS Server on the network.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

On Cold Boot: Saved

SNMP OID: 1.1.3.6.1.4.1.1963.5.10.5.2.0.*index*
where *index* is the IDRS Server IP address.

Options: The IDRSServerAddr address must be a valid IPv4 address which has the form
y.x.x.x
where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: 0.0.0.0

IDRSTimeout (5020 only)

Purpose: Specifies how often the IDRS Client will attempt registration retries if a previous attempt fails (or if the server does not respond).

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

On Cold Boot: Saved

SNMP OID: 1.1.3.6.1.4.1.1963.5.10.5.3.0

Options: Acceptable values are within the range 1-5000.

Default: 5000 ms

IE Autodial Name

Purpose: This command is reserved for future use. Autodial is disabled if the Use LAN (No Auto Dial) option is selected.

On Cold Boot: Not saved

Options: Reserved for future use

IE Cache Size

Purpose: Sets the IE browser cache size.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Options and then choose Cache Size (in KB).

On Cold Boot: Not saved

Options: Cache size is variable.

Default: 560K

IE Function Key URLs

Purpose: Sets the URL address linked to each of the F6, F7, F8, F9, and F10 keys. In the IE browser, pressing a configured function key sets that address as the active URL.

The Admin Mode Required command can be enabled for each of the five keys. To change the assigned URLs, you must be operating the 502X in Administrator mode.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Function Key URLs and then choose the desired key.

On Cold Boot: Not saved

Options: Variable

Default: F6 - F10 URL: null
Admin Mode Required: No

IE Home Page

Purpose: Sets the URL for the IE browser home page.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Options and then choose Home Page.

You can also set the home page URL in the IE browser. Choose View and then choose Internet Options.

On Cold Boot: Not saved

Options: Variable

Default: files://\windows\ie502X.jpg

IE Proxy Server Address

Purpose: Sets the address of the proxy server IE uses to make Internet connections. This setting is inactive unless the Use Proxy Server command is enabled.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Options and then choose Proxy Server.

You can also set the Proxy Server Address in the IE Browser. Choose View and then choose Internet Options.

On Cold Boot: Not saved

Options: Variable

Default: null

IE Proxy Server Port

Purpose: Sets the port used on the proxy server (enabled through the IE Browser) that is connected to the 502X. This setting is inactive unless the Use Proxy Server command is enabled.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Options and then choose Use LAN (No Auto Dial).

You can also set the Proxy Server Port in the IE browser. Choose View and then choose Internet Options.

On Cold Boot: Not saved

Options: Variable

Default: null

IE Underline Links

Purpose: Determines if links displayed in the IE browser are underlined, not underlined, or have a focus placed on them.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Options and then choose Underline Links.

You can also set this command in the IE browser. Choose View and then choose Internet Options.

IE Underline Links (continued)

- On Cold Boot:** Not saved
- Options:**
 - 0 Always
 - 1 Never
 - 2 Hover
- Default:** Always

IE Use LAN (No Auto Dial)

Purpose: Determines if the IE browser will use a LAN for Internet connections. When this command is enabled, IE will not autodial.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Options and then choose Use LAN (No Auto Dial).

You can also set this command in the IE browser. Choose View and then choose Internet Options.

- On Cold Boot:** Not saved
- Options:** Acceptable values are:
 - 0 Disable
 - 1 Enable
- Default:** Enable

IE Use Proxy Server

Purpose: Determines whether the IE browser uses a proxy server.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	No	No	No

In the Configuration or Configuration Management application, choose Configure and then IE Browser. Choose Use Proxy Server.

You can also enable this command in the IE Browser. Choose View and then choose Internet Options.

On Cold Boot: Not saved

Options: Acceptable values are:

- 0 True
- 1 False

Default: False

Inactivity Timeout (5020 only)

Purpose: Defines the amount of time the OpenAir radio on the 5020 waits to go into a low power state. If no data is sent or received within the RF inactivity timeout period set, the radio goes into a low power state to conserve power. If you set a high value, the radio stays on longer at a higher power rate and uses battery power at a faster rate. After you change this parameter, suspend and resume the 5020 to make the change effective.

Power Management Tip: Intermec strongly recommends that you use the optimum RF inactivity timeout of 5 seconds to preserve power.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

Inactivity Timeout (continued)

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Inactivity Timeout.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.8.*index*
 where *index* is the radio adapter card number.

Options: Acceptable values for the inactivity timeout are:
 0 Radio never turns off
 1-60 RF inactivity timeout in seconds

Although you can enter any value from 1-60, the inactivity timeout is rounded to the nearest multiple of five (i.e., 5, 10, 15, ..., 60).

Default: 5 seconds

Interleaved 2 of 5

Purpose: Enables or disables decoding of Interleaved 2 of 5 (I 2 of 5), a high-density, self-checking, continuous numeric symbology. It is mainly used in inventory distribution and the automobile industry.



Note: For the 5020 only, enabling I 2 of 5 automatically disables Code 2 of 5.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Interleaved 2 of 5.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.2.1

Syntax: *CAdata*

Interleaved 2 of 5 (continued)

You only use the two-character command CA for bar code configuration labels.
Acceptable values for *data* are:

- 0 Disabled
- 2-32 Fixed length (even number only)
- 97 Variable length without a check digit
- 98 Case code (6 or 14) with a check digit
- 99 Variable length with a check digit



Caution

Using the variable length without a check digit configuration option can cause substitution errors.

Conseil

Des erreurs de substitution peuvent survenir si vous utilisez la longueur variable sans option de vérification de configuration de chiffres.

Default: Variable length with a check digit

Scan: One of these bar codes:

Disable Interleaved 2 of 5



\$+CA0

Enable Variable Length Without a Check Digit



\$+CA97

Enable Variable Length With a Check Digit



\$+CA99

Enable Interleaved 2 of 5, Case Code



\$+CA98

Or: To set Interleaved 2 of 5 to a fixed length:

1. Scan this bar code:

Enter Accumulate Mode / Set Fixed Length



+/\$+CA

Interleaved 2 of 5 (continued)

- Scan a numeric value for *data* from these bar codes. (Use even numbers 2-32 only)



0



1



2



3



4



6



8

- Scan this bar code:

Exit Accumulate Mode



/

IrDA Baud Rate

Purpose: Sets the baud rate for the IrDA communications port on the 502X. The baud rate must match the baud rate of the device (i.e., the host computer) that the 502X is communicating with through the IrDA port and the D5020 Communications Dock or the L5020 Serial Communications Adapter. You must connect the 502X to a D5020 dock or an L5020 adapter to set the IrDA baud rate.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Serial Port and then choose IrDA Baud Rate.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.7.3.2.1.2.0

IrDA Baud Rate (continued)

Options: Acceptable values for the baud rate are:

- 9600
- 19200
- 38400
- 57600
- 115200

Default: 115200

Keypad Caps Lock

Purpose: Turns the caps lock on and off. With the caps lock turned on, all alphabetic characters you type on the keypad will be uppercase or capital letters.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Keypad and then choose Caps Lock.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.12.2.0

Syntax: *KAdata*

You only use the two-character command KA for bar code configuration labels. Acceptable values for *data* are:

- 0 Caps lock off
- 1 Caps lock on

Default: Caps lock on

Scan: One of these bar codes:



Keypad Clicker

Purpose: Enables or disables the keypad clicks. The 502X sounds a click each time you press a key or decode a row of a two-dimensional symbology.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Keypad and then choose Key Clicks.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.12.1.0

Syntax: *KCdata*

You only use the two-character command KC for bar code configuration labels. Acceptable values for *data* are:

- 0 Disable keypad clicker
- 1 Enable soft keyclicks
- 2 Enable loud keyclicks

Default: Enabled with loud keyclicks

Scan: One of these bar codes:

Disable Keypad Clicker

 \$+KC0

Enable Soft Keyclicks

 \$+KC1

Enable Loud Keyclicks

 \$+KC2

Maximum Retries

Purpose: Defines the number of times the 502X will attempt to send a disconnect request message to the DCS 30X. The 502X sends connect and disconnect request messages to the DCS 30X when you turn the 502X on and off.

Tip: Intermec strongly recommends that you use the optimum setting of seven retries.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Maximum Retries.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.4.1

Options: Acceptable values for the retries are:

0 502X retries indefinitely
1-99 Number of retries

Default: 7

Maximum Sleep Duration

Purpose: Specifies the maximum time (in milliseconds) the 802.11b HR radio is allowed to sleep. If Power Management is disabled, this parameter is ignored.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

Maximum Sleep Duration (continued)

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, then Power Management, and finally choose Maximum Sleep Duration.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.4.1.1.6.*ifindex*
 where *ifindex* is the radio adapter card number.

Options: From 1 to 6553 ms

Default: 100 ms

MSI

Purpose: Enables or disables decoding of MSI symbology. MSI code is similar to Plessey code. MSI code includes a start pattern, data characters, one or two check digits, and a stop pattern.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose MSI.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.15.1

MSI (continued)

Syntax: CN*data*

You only use the two-character command CN for bar code configuration labels.
Acceptable values for *data* are:

First digit:	0	Disabled
	1	(5020 only) No check digits
	2	1 modulus 10 check digit
	3	2 modulus 10 check digit
Second digit:	0	Discard check digit
	1	Transmit check digit

Default: Disabled

Scan: One of these bar codes:

Disable MSI



\$+CN00

MSI Without Check Digits (5020 only)



\$+CN10

MSI With 1 Modulus 10 Check Digit, Discard Check Digit



\$+CN20

MSI With 1 Modulus 10 Check Digit, Transmit Check Digit



\$+CN21

MSI With 2 Modulus 10 Check Digits, Discard Check Digits



\$+CN30

MSI With 2 Modulus 10 Check Digits, Transmit Check Digits



\$+CN31

Network Loopback

Purpose: Transmits all messages received from the DCS 30X back to the DCS 30X. Messages received by the radio are not passed on to the 502X applications unless they are configuration commands. Messages continue to be looped back to the DCS 30X as long as this feature is enabled. Messages originating from the 502X are still transmitted to the DCS 30X.

Use the Network Loopback parameter to troubleshoot RF or Ethernet communications problems.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Network Loopback.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.13.1

Options: Acceptable values for the Network Loopback parameter are:

0 Disabled
1 Enabled

Default: Disabled

Network Name

Purpose: This parameter is an alphanumeric string that must match the network name of the access point(s) to which your 502X should associate.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

Network Name (continued)

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Network Name.

On Cold Boot: Saved

SNMP OID: 1.2.840.10036.1.1.1.9.*ifindex*
where *ifindex* is the radio adapter card number.

Options: 0 to 32 byte ASCII string
ANY
The value ANY enables your 502X to connect to any access point in your 802.11b HR network.

Default: INTERMEC

Network Port

Purpose: Defines the network port that UDP Plus uses for communications in your RF or Ethernet network. The network port you set on the 502X must match the network port that is set on the DCS 30X.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then UDP Plus, and finally choose Network Port.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.20.1.1.1.12.1

Options: The network port can be any number from 5001 to 65535.

Default: 5555

PDF 417

Purpose: Enables or disables decoding of PDF 417, a stacked two-dimensional symbology that provides the ability to scan across rows of code. Each row consists of start/stop characters, row identifiers, and symbol characters, which consist of four bars and four spaces each and contain the actual data. This symbology uses error correction symbol characters appended at the end to recover loss of data.

Because the virtual wedge translates incoming data into keypad input, the size of the keypad buffer limits the effective length of the label to 128 characters. Longer labels may be truncated. For PDF 417 labels of more than 128 characters, you can develop an application that bypasses the keypad buffer. For help, see the 502X Software Developer's Kit, available on the Intermec Windows CE/Pocket PC Developer's Kit (Part No. 069511).



Note: PDF 417 is supported on the 5023 and on the 5020 when you use an Intermec 1470 scanner through the tethered scanner port.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then choose Data Collection. Next, choose Symbologies and then choose PDF 417.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.17.1

Syntax: CQdata

Acceptable values for *data* are:

- 0 Disabled
- 1 Enabled

Default: Disabled on 5020
Enabled on 5023

Scan: One of these bar codes:

Disable PDF 417



\$+CQ0

Enable PDF 417



\$+CQ1

Plessey (5020 only)

Purpose: Enables or disables decoding of Plessey symbology. Plessey code is pulse-width modulated like most other bar codes. It includes a start character, data characters, an eight-bit cyclic check digit, and a termination bar. The code is continuous and not self-checking. You need to configure two parameters for Plessey code: Start Code and Check Digit.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose Plessey.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.10.1

Syntax: *CIdata*

You only use the two-character command CI for bar code configuration labels. Acceptable values for *data* are:

00 Disabled
 30 Transmit check digit
 31 Discard check digit

Default: Disabled

Scan: To disable Plessey:

Disable Plessey



\$+CI00

Or: To set Plessey, scan one of these bar codes to transmit or discard the check digit:

Transmit Check Digit



\$+CI30

Discard Check Digit



\$+CI31

Postamble

Purpose: Sets the postamble that is appended to any data you scan with the 502X. Common postambles include cursor controls, such as tabs or carriage return line feeds.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Virtual Wedge and finally choose Postamble.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.2.1.1.4.1

Syntax: *AEdata*

You only use the two-character command AE for bar code configuration labels. Acceptable values for *data* are up to 31 ASCII characters. Embedded null (<NUL>) characters are not allowed. If you enter the AE command without *data*, the postamble is disabled. If you are entering quotation marks as data or grouping configuration commands, you need to enclose the *data* within quotation marks (see the example).



Note: To scan a bar code label that includes quotes, you must configure the 502X to use Code 39 in Full ASCII mode. For help, see “Code 39” earlier in this chapter.

Default: Tab character (\t)

Scan: To disable the postamble, scan this bar code:

Disable Postamble



\$+AE

Postamble (continued)

Or: To set the postamble to an ASCII character setting:

1. Scan this bar code:

Enter Accumulate Mode / Set Postamble



+/\$+AE

2. Scan a value for *data* from the “Full ASCII Bar Code Chart” in Appendix B. The postamble can be from 1 to 31 characters.
3. Scan this bar code:

Exit Accumulate Mode



./

Example: You want to set a postamble that includes quotation marks. Enter the postamble by scanning this full ASCII bar code label:

Set Postamble to “B”



\$+AE""B""

You must enclose the data within quotation marks and precede each quotation mark with another quotation mark so that the quotation marks are not treated as the end of the data.

Power Management

Purpose: Enables or disables Power Management in the 802.11b HR radio. If you enable Power Management, the radio conserves power by sleeping between messages. Enabling Power Management decreases the performance of the RF network, but it increases the life of battery-powered devices.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Power Management.

On Cold Boot: Saved

SNMP OID: 1.2.840.10036.1.1.1.8.*ifindex*
where *ifindex* is the radio adapter card number.

Options: Acceptable values for Power Management parameter are:

- 1 Disabled
- 2 Enabled

Default: Enabled

Preamble

Purpose: Sets the preamble that precedes any data you scan with the 502X. Common preambles include a data location number or an operator number.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Virtual Wedge and finally choose Preamble.

Preamble (continued)

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.2.1.1.3.1

Syntax: AD*data*

You only use the two-character command AD for bar code configuration labels. Acceptable values for *data* are up to 31 ASCII characters. Embedded null (<NUL>) characters are not allowed. When you enter the AD command without *data*, the preamble is disabled. If you are entering quotation marks as data or grouping configuration commands, you need to enclose the *data* within quotation marks (see the example).



Note: To scan a bar code label that includes quotes, you must configure the 502X to use Code 39 in Full ASCII mode. For help, see “Code 39” earlier in this chapter.

Default: No characters (disabled)

Scan: To disable the preamble, scan this bar code:

Disable Preamble



\$+AD

Or: To set the preamble to an ASCII character string:

1. Scan this bar code:

Enter Accumulate Mode / Set Preamble



+/\$+AD

2. Scan a value for *data* from the “Full ASCII Bar Code Chart” in Appendix B. The preamble can be from 1 to 31 characters.
3. Scan this bar code:

Exit Accumulate Mode



./

Preamble (continued)

Example: You want to set a preamble that includes quotation marks. Enter the preamble by scanning this full ASCII bar code label:

Set Preamble to "B"



\$+AD""B""

You must enclose the data within quotation marks and precede each quotation mark with another quotation mark so that the quotation marks are not treated as the end of the data.

Primary DNS Server

Purpose: The IP address to which the 502X sends DNS requests. DNS (Domain Name System) servers are used to associate IP addresses with machine names. You can use DNS with DHCP enabled or disabled. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then Name Servers, and finally choose Primary DNS.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.7.1.1.1.1.*index*
 where *index* is the radio or I/O adapter card number.

Options: The Primary DNS Server address must be a valid IPv4 address that has the form *y.x.x.x* where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: 0.0.0.0

Primary/Station Radio ROM Version

Purpose: Displays the Primary/Station firmware version of the 802.11b HR radio.

Configuration: The Primary/Station firmware version is a read-only parameter that cannot be changed. In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then choose Radio, and finally choose Pri./Station Radio ROM Version. Choose Refresh to view the current assignments.

On Cold Boot: Not applicable (read-only)

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.4.1.1.3.*ifindex*
where *ifindex* is the radio adapter card number.

Default: None

Primary WINS Server

Purpose: The IP address to which the 502X sends WINS requests. WINS (Windows Internet Name Service) servers are used to associate IP addresses with machine names. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then Name Servers, and finally choose Primary WINS.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.6.1.1.1.*index*
where *index* is the radio or I/O adapter card number.

Primary WINS Server (continued)

- Options:** The Primary WINS Server address must be a valid IPv4 address that has the form $y.x.x.x$ where y is a value between 1 and 223 (not including 127) and x is a value between 0 and 255.
- Default:** 0.0.0.0

Radio Description

- Purpose:** Displays the 802.11b HR radio description.
- Configuration:** The Radio Description is a read-only parameter that cannot be changed. In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Radio Description.
- On Cold Boot:** Not applicable (read-only)
- Default:** Not applicable

Radio MAC Address

- Purpose:** Displays the MAC address of the radio that is installed in the 502X.
- Configuration:** The Radio MAC Address is a read-only parameter that cannot be changed. In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Radio MAC Address. Choose Refresh to view the current assignments.
- On Cold Boot:** Not applicable (read-only)
- SNMP OID:** 1.3.6.1.4.1.1963.5.5.2.5.1.1.4.*index* OpenAir radio
1.2.840.10036.2.1.1.1.*ifindex* 802.11b HR radio
where *index* or *ifindex* is the radio adapter card number.
- Default:** None

Radio ROM Version (5020 only)

Purpose: Displays the OpenAir radio ROM version that is installed in the 5020.

Configuration: The Radio ROM Version is a read-only parameter that cannot be changed. In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Radio ROM Version. Choose Refresh to view the current assignments.

On Cold Boot: Not applicable (read-only)

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.3.*index*
where *index* is the radio adapter card number.

Default: None

Receive All Multicasts

Purpose: Specifies whether the 802.11b HR radio must receive all multicast frames. When this parameter is enabled, the 502X will wake up at regular intervals to receive the multicast frames. If Power Management is disabled, this parameter will be ignored.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, then Power Management, and finally choose Receive All Multicasts.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.4.1.1.7.*ifindex*
where *ifindex* is the radio adapter card number.

Options: Acceptable values for the Receive All Multicasts parameter are:
0 Disabled
1 Enabled

Default: Enabled

Reservation Threshold

Purpose: Specifies the maximum packet size that the 502X can send before it uses medium reservation. Medium reservation is a numeric field that disables/enables the RTS/CTS and specifies the package size threshold for the RTS/CTS Mechanism. Medium reservation should be enabled in installations where hidden stations are expected. Packets that are greater than or equal to this packet size use the medium reservation mechanism to help prevent collisions with packets from other devices.

The value you specify determines when the access point will issue a Request to Send (RTS). For example, if the value you select is 500,

- the access point will use the RTS/CTS protocol for each message that exceeds the length of 500.
- messages with a length shorter than 500 will be transmitted according to the standard CSMA/CA protocol.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Reservation Threshold.

On Cold Boot: Saved

SNMP OID: 1.2.840.10036.2.1.1.2.*ifindex*
where *ifindex* is the radio adapter card number.

Options: A numeric value from 0 to 2347.

2347 Disables medium reservation
0-2346 Enables the RTS/CTS Mechanism, and sets the frame length threshold from which the 502X should start using the RTS/CTS.

Default: 500

Roaming Allowed (5020 only)

Purpose: Determines whether or not the OpenAir radio can roam between access points. All access points are master stations and each master has a unique channel. If you have five access points in one domain, the 5020 will connect to one access point when you turn it on. This access point becomes the master station for the 5020.

When you set the RF roaming flag to “Not Allowed,” the 5020 will only communicate with the master station (access point) to which it first connects. If you allow roaming, the 5020 can communicate with any access point in the same domain. After you change this parameter, suspend and resume the 5020 to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Roaming Allowed.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.5.*index*
where *index* is the radio adapter card number.

Options: Acceptable values for the roaming flag are:
0 Not allowed
1 Allowed

Default: Allowed

Scanner Mode (5020 only)

Purpose: Defines how the scanner operates when you press the Scan button or activate a cabled laser scanner. There are two types of modes:

- In One-Shot mode, you must press the Scan button or activate the tethered laser scanner each time you want to scan a bar code. Once you scan a bar code, the scanner turns off.
- In Automatic (Auto-trigger) mode, you press the Scan button once or activate the tethered laser scanner once to scan a series of bar codes. When you release the button or trigger, the scanner turns off. To scan the same bar code more than once, you must release the Scan button or trigger, or scan a different bar code before attempting a second scan.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Scanner and then choose Mode.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.3.1.1.6.1.1

Syntax: *SBdata*

You only use the two-character command SB for bar code configuration labels. Acceptable values for *data* are:

- 0 One-Shot mode
- 1 Automatic mode

Default: One-Shot mode

Scan: One of these bar codes:

Enable One-Shot Mode

 \$+SB0

Enable Automatic Mode

 \$+SB1

Scanner Redundancy

Purpose: Defines the number of scans (voting) the scanner takes of the same label that must decode correctly for a good read of the label. Voting requires the 502X to decode the same bar code multiple times during a single scanner event and to compare the decoded information a specific number of times before signaling a good read. There are three options:

None The 502X accepts the first good read, which speeds up computer performance. This setting is recommended when scanning good quality bar codes.

Normal The 502X decodes the bar code a minimum number of times in each scanner event. The number of comparisons that are made depends on each bar code symbology.

High The 502X scans and decodes the bar code a maximum number of times in each scanner event. The specific number of comparisons depends on each bar code symbology. The high setting is recommended when scanning poor quality labels that may cause substitution errors.

For example, when you scan Code 39 labels and the scanner redundancy is set to normal, two successive matching decodes in a single scanner event are required. When scanner redundancy is set to high, three successive matching decodes in a single scanner event are required.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Scanner and then choose Redundancy.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.3.1.1.8.1.1

Syntax: *SRdata*

You only use the two-character command SR for bar code configuration labels. Acceptable values for *data* are:

- 0 None
- 1 Normal
- 2 High

Default: Normal

Scanner Redundancy (continued)

Scan: One of these bar codes:

Scanner Redundancy None



\$+SR0

Scanner Redundancy Normal



\$+SR1

Scanner Redundancy High



\$+SR2

Scanner Selection (5020 only)

Purpose: Identifies the type of tethered scanner you have connected to the 5020 or the type of integrated scanner that is installed in the 5020. The PC can optimize the scanning performance by using the scanner you define in this command. When you select a specific scanner, other scanners may not function properly. Your 5020 may not work if you connect an incompatible tethered scanner.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Scanner and then choose Selection.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.3.1.1.9.1.1

Syntax: *SSdata*

You only use the two-character command SS for bar code configuration labels.

Scanner Selection (continued)

Acceptable values for *data* are:

- 0 All Intermec-compatible scanners (including wands)
- 4 Intermec 1545 laser scanner
- 5 Other supported scanners
- 7 Intermec decoded output scanner (Intelligent Input Devices or IID)
- 8 Intermec 155x laser scanners
- 10 Internal standard-range scanner
- 11 Internal long-range scanner
- 12 Internal extra long-range scanner
- 13 Internal raster scanner

SS0 through SS8 work only when a tethered scanner is connected to the 5020. SS10 through SS13 are set at the Intermec factory to match the integrated scanner that is installed in the 5020. If you have an internal scanner, do not change the Scanner Selection command or the scanner may not function properly.



Note: See your Intermec sales representative for information about the availability of the internal extra long-range scanner and internal raster scanner.

Default: All compatible scanners for tethered scanner
Internal scanner (10-13) to match the factory-installed scanner

Scan: One of these bar codes:

All Intermec-Compatible Scanners



\$+SS0

Intermec 1545 Laser Scanner



\$+SS4

Other Supported Scanners



\$+SS5

Intermec IID (Decoded Output Scanners)



\$+SS7

Intermec 155X Laser Scanners



\$+SS8

Internal Standard-Range Scanner



\$+SS10

Internal Long-Range Scanner



\$+SS11

Internal Extra Long-Range Scanner



\$+SS12

Scanner Selection (continued)

Internal Raster Scanner

 \$+SS13

Scanner Timeout

Purpose: Defines the maximum length of time the scanner stays on after you press the Scan button, squeeze the scanner trigger, or activate a tethered laser scanner.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Scanner and then choose Timeout.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.3.1.1.5.1.1

Syntax: SAdata

You only use the two-character command SA for bar code configuration labels. Acceptable values for *data* are:

- 0 (5020 only) Disabled
- 1-60 (5020 only) Shutoff time in seconds
- 1-99 (5023 only) Shutoff time in tenths of seconds

Default: Disabled (no timeout)

Scan: 1. Scan this bar code:

Enter Accumulate Mode / Set Scanner Timeout

 +/\$+SA

Scanner Timeout (continued)

2. Scan a numeric value for *data* from these bar codes:



0



1



2



3



4



5



6



7



8



9

3. Scan this bar code:

Exit Accumulate Mode



/

Scanner Trigger

Purpose: Scanner trigger allows you to set level triggering or edge triggering.

- With level triggering, you activate the scanner and the laser turns on and stays on until you release the button or the trigger on a tethered scanner.
- In edge triggering, you activate the scanner and the laser turns on and stays on. When you activate the scanner a second time, the laser turns off. Simply releasing the button or the trigger does not turn the laser off. If the laser is left on, the scanner timeout turns the laser off.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

Scanner Trigger (continued)

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Scanner and then choose Trigger Mode.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.3.1.1.7.1.1

Syntax: SC*data*

You only use the two-character command SC for bar code configuration labels. Acceptable values for *data* are:

- 0 Level triggering
- 1 Edge triggering

Default: Level triggering

Scan: One of these bar codes:

Enable Level Triggering



\$+SC0

Enable Edge Triggering



\$+SC1

Secondary DNS Server

Purpose: The IP address to which the 502X sends DNS requests when the Primary DNS Server is not responding. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then Name Servers, and finally choose Secondary DNS.

Secondary DNS Server (continued)

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.7.1.1.1.2.*index*
where *index* is the radio or I/O adapter card number.

Options: The Secondary DNS Server address must be a valid IPv4 address that has the form
y.x.x.x
where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: 0.0.0.0

Secondary WINS Server

Purpose: The IP address to which the 502X sends WINS requests when the Primary WINS Server is not responding. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then Name Servers, and finally choose Secondary WINS.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.6.1.1.2.*index*
where *index* is the radio or I/O adapter card number.

Options: The Secondary WINS Server address must be a valid IPv4 address that has the form
y.x.x.x
where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: 0.0.0.0

Security Identification (5020 Only)

Purpose: Defines the password you can set for secured transmission and receipt of data between devices in the OpenAir network. To communicate, all access points and 5020s in the subnetwork must have matching security IDs. After you change this parameter, suspend and resume the 5020 to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Security ID.

On Cold Boot: Saved

The security ID is stored internally in the OpenAir radio card rather than being stored in permanent memory on the 5020.

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.9.*index*

where *index* is the radio adapter card number.

Options: The security ID can be up to 20 ASCII characters.

Default: No characters or blank (disabled)

Notes: If you view the RF security ID in the Configuration or Configuration Management applications, the actual security ID does not display on the screen. If you change the security ID, you see the new password until you exit the application.

SNMP Identification Contact

Purpose: This command gives you the information for the person who is responsible for this managed node or 502X. You can also set the information on how to contact this person.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Identification and then choose Contact.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.2.1.1.4.0

Options: The identification contact may be up to 255 ASCII characters.

Default: No characters or blank

SNMP Identification Location

Purpose: The identification location is the physical location for this 502X. For example, the location may be “Shipping.”

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Identification and then choose Location.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.2.1.1.6.0

Options: The identification location may be up to 255 ASCII characters.

Default: No characters or blank

SNMP Identification Name

Purpose: The identification name is the assigned name for this managed node or 502X. Usually, the name is the 502X's fully-qualified domain name.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Identification and then choose Name.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.2.1.1.5.0

Options: The identification name may be up to 255 ASCII characters.

Default: No characters or blank

SNMP Security Encryption Key

Purpose: The security encryption key identifies the key that the 502X uses to encrypt or decipher SNMP packets. Encryption is used only by Intermecc-provided software. If encryption is enabled, SNMP management platforms will no longer be able to communicate with the 502X. The encryption key is returned encrypted.

To enable security encryption, set the encryption key and one or both of these two commands:

- SNMP Security Read Encryption
- SNMP Security Write Encryption

For help, see “SNMP Security Read Encryption” and “SNMP Security Write Encryption” later in this chapter.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

SNMP Security Encryption Key (continued)

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Security and then choose Encryption Key.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.1.6.0

Options: The encryption key can be from 4 to 20 ASCII characters.

Default: NULL

SNMP Security IP Address

Purpose: The security IP address is the IP address from which the 502X will accept SNMP requests. The 502X uses the security IP address and security subnet mask to determine if the SNMP request was from a valid IP address. If no security IP address is set, the 502X will accept SNMP requests from any source.

You can set multiple pairs of valid security IP addresses and subnet mask addresses so that the 502X will accept SNMP requests from multiple sources. For help with the subnet mask, see “SNMP Security Subnet Mask” later in this chapter.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
No	Yes	No	No

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.1.1.1.1.*index*
where *index* is the SNMP security IP address.

Options: The SNMP Security IP address must be a valid IPv4 address that has the form *y.x.x.x* where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.

Default: None (502X accepts SNMP requests from any IP host)

SNMP Security Read Encryption

Purpose: Sets the packet-level mode of security for SNMP read-only requests. If you enable read encryption, all SNMP get and get next packets that are received have to be encrypted or the packet will not be authorized. If encryption is enabled, you can only use Internec-provided software.

To enable security encryption, you also need to set the encryption key. For help, see “SNMP Security Encryption Key” earlier in this chapter.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Security and then choose Read Encryption.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.1.4.0

Options: Acceptable values for the read encryption are:

- 1 On - SNMP get and get next packets must be encrypted
- 2 Off - SNMP packets do not have to be encrypted

Default: Off

SNMP Security Read-Only Community String

Purpose: The read-only community string is required so that SNMP get and get next requests can be processed by the 502X.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Security and then choose Read Only Community String.

SNMP Security Read-Only Community String (continued)

- On Cold Boot:** Not saved
- SNMP OID:** 1.3.6.1.4.1.1963.10.5.1.2.0
- Options:** The read-only community string can be up to 128 ASCII characters.
- Default:** public

SNMP Security Read/Write Community String

Purpose: The read/write community string is required so that SNMP set requests can be processed by the 502X. An SNMP packet with this name as the community string will also process SNMP get and next requests.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Security and then choose Read/Write Community String.

- On Cold Boot:** Not saved
- SNMP OID:** 1.3.6.1.4.1.1963.10.5.1.3.0
- Options:** The read/write community string can be up to 128 ASCII characters.
- Default:** private

SNMP Security Subnet Mask

Purpose: The subnet mask that corresponds to the SNMP Security IP address. The 502X uses the security IP address and the security subnet mask to determine if the SNMP request was from a valid IP address. You can set multiple pairs of valid security IP addresses and subnet mask addresses so that the 502X will accept SNMP requests from multiple sources. For help with the IP address, see “SNMP Security IP Address” earlier in this chapter.

For example, if you set a security IP address of 10.20.0.0 and a security subnet mask of 255.255.0.0, the 502X would authorize all SNMP requests with a source IP address of 10.20.n.n.

SNMP Security Subnet Mask (continued)

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
No	Yes	No	No

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.1.1.1.2.*index*
 where *index* is the SNMP security IP address.

Options: The SNMP Security Subnet Mask must be a valid IP address in the form
x.x.x.x
 where *x* is a value between 0 and 255.

Default: None

SNMP Security Write Encryption

Purpose: Sets the packet-level mode of security for SNMP read/write requests. If you enable write encryption, all SNMP packets received with the read/write community string have to be encrypted or the packet will not be authorized. You need to use Intermec-provided software that supports encryption.
 To enable security encryption, you also need to set the encryption key. For help, see “SNMP Security Encryption Key” earlier in this chapter.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Security and then choose Write Encryption.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.1.5.0

SNMP Security Write Encryption (continued)

- Options:** Acceptable values for the write encryption are:
- 1 On - SNMP packets must be encrypted
 - 2 Off - SNMP packets do not have to be encrypted
- Default:** Off

SNMP Trap Authentication

Purpose: This command determines whether or not authentication traps are sent. If trap authentication is enabled, an authentication trap is sent if an SNMP packet is received by the master agent and the community string is not valid.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Traps and then choose Authentication.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.2.2.0

- Options:** Acceptable values for the trap authentication are:
- 1 On
 - 2 Off

Default: On

SNMP Trap Community Name

Purpose: The community name is attached to a trap that is sent to this trap destination.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
No	Yes	No	No

SNMP Trap Community Name (continued)**On Cold Boot:** Not saved**SNMP OID:** 1.3.6.1.4.1.1963.10.5.2.1.1.3.*index*
where *index* is the SNMP trap IP address.**Options:** The community name can be up to 128 ASCII characters.**Default:** NULL**SNMP Trap IP Address****Purpose:** The SNMP Trap IP address is the IP address to which the 502X will send traps. If no trap IP address is set, the 502X will accept SNMP requests from any source. You can set multiple combinations of valid trap IP addresses, trap ports, and trap community names so that the 502X will accept SNMP requests from multiple sources.**Configuration:** Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
No	Yes	No	No

On Cold Boot: Not saved**SNMP OID:** 1.3.6.1.4.1.1963.10.5.2.1.1.1.*index*
where *index* is the SNMP trap IP address.**Options:** The SNMP Trap IP address must be a valid IPv4 address that has the form
y.x.x.x
where *y* is a value between 1 and 223 (not including 127) and *x* is a value between 0 and 255.**Default:** None

SNMP Trap Port

Purpose: The port through which the trap packet is sent and received.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
No	Yes	No	No

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.2.1.1.2.*index*
where *index* is the SNMP trap IP address.

Options: The trap port can be any number from 1 to 65535.

Default: 162

SNMP Trap Threshold

Purpose: The trap threshold determines the maximum number of traps per second that the master agent generates. If the threshold is reached, the trap will not be sent.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then SNMP. Next, choose Traps and then choose Threshold.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.10.5.2.3.0

Options: Any positive integer value.

Default: 10

Speaker Volume

Purpose: Adjusts the volume of the 502X’s audio signals. Set the speaker volume according to operator preference and work environment. For more information, see “Understanding the Audio Signals” in Chapter 1 of your user’s manual.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Unit. Next, choose Speaker and then choose Volume.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.1.3.0

Syntax: *BVdata*

You only use the two-character command BV for bar code configuration labels. Acceptable values for *data* are:

- 0 Off
- 1 Very quiet
- 2 Quiet
- 3 Normal
- 4 Loud
- 5 Very loud

Default: Normal

Scan: One of these bar codes:

Beep Volume Off

 \$+BV0

Beep Volume Very Quiet

 \$+BV1

Beep Volume Quiet

 \$+BV2

Beep Volume Normal

 \$+BV3

Speaker Volume (continued)

Beep Volume Loud



\$+BV4

Beep Volume Very Loud



\$+BV5

Station Name

Purpose: Identifies the 502X to the network. For example, you might want to define station names so that you can identify devices when using site survey tools.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Station Name.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.4.1.1.4*ifindex*

where *ifindex* is the radio adapter card number.

Options: A station name consists of up to 32 printable ASCII characters. You are advised to use the same name as the device's name.

Default: Intermec5020 or Intermec5023

Subnet Mask

Purpose: Defines the subnet mask, an internal TCP/IP stack variable that is used to separate the subnetwork address from the local IP address. The TCP/IP stack performs a bit-wise AND on the IP address and the subnet mask. Each address segment represents one byte, where 255 converts to FF hex.

This computation is used to find out if the DCS 30X (UDP Plus) or host (TCP/IP) and 502X are on different subnetworks. If the 502X is on a different IP subnetwork than the DCS 30X or host, you must set the subnet mask. After you change this parameter, suspend and resume the 502X to make the change effective.

Subnet Mask (continued)

For example, if the IP address is 192.9.150.184 and the subnet mask is 255.255.255.0, the subnetwork address is 192.9.150.0.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio or Ethernet, then IP Address, then Obtain IP Address Via DHCP, and finally choose Subnet Mask.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.2.1.3.*index*
 where *index* is the radio or I/O adapter card number.

Options: The subnet mask must be a valid IP address in the form
x.x.x.x
 where *x* is a number from 0 to 255.

Default: 0.0.0.0

Supported WEP

Purpose: Displays the supported WEP type (none, WEP64, or WEP128) for the installed 802.11b HR radio.

Configuration: Supported WEP is a read-only parameter that cannot be changed.
 In the Configuration or Configuration Management applications, choose Configure and then Network. Next choose Radio, then Radio, and finally choose Supported WEP.

On Cold Boot: Not applicable (read-only)

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.4.1.1.8.*ifindex*
 where *ifindex* is the radio adapter card number.

Default: Not applicable

Symbology Identifier (5020 only)

Purpose: Enables the addition of a pre-pended symbology identifier to any scanned label data, allowing you to indicate what type of data is being sent. You can prepend one of the following types of character strings to identify which symbology the data is using:

AIM ISO/IEC Standard The AIM Standard symbology identifiers consist of a three-character structure indicating the symbology and the optional features of the symbology. For more information about the AIM standard for symbology identifiers, refer to the AIM ISO/IEC Standard.

User-defined ASCII Character String The user-defined symbology identifier is one to four ASCII characters in length. You can configure user-defined symbology identifiers to assign custom identifier strings to the bar code symbologies.

To enable the symbology ID, you must configure up to four parameters. To set the optional third and fourth parameters, you must set the second parameter to user-defined. A user-defined symbology ID must be from one to four ASCII characters in length.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies, and finally choose Identifier.

On Cold Boot: Saved

SNMP OID:	1.3.6.1.4.1.1963.15.3.3.4.1.2.1	Codabar
	1.3.6.1.4.1.1963.15.3.3.4.1.3.1	Code 39
	1.3.6.1.4.1.1963.15.3.3.4.1.4.1	Code 93
	1.3.6.1.4.1.1963.15.3.3.4.1.5.1	Code 128
	1.3.6.1.4.1.1963.15.3.3.4.1.6.1	UPC-A
	1.3.6.1.4.1.1963.15.3.3.4.1.7.1	UPC-E
	1.3.6.1.4.1.1963.15.3.3.4.1.8.1	EAN8
	1.3.6.1.4.1.1963.15.3.3.4.1.9.1	EAN13
	1.3.6.1.4.1.1963.15.3.3.4.1.10.1	I 2 of 5
	1.3.6.1.4.1.1963.15.3.3.4.1.11.1	MSI
	1.3.6.1.4.1.1963.15.3.3.4.1.12.1	PDF 417

Symbology Identifier (continued)

1.3.6.1.4.1.1963.15.3.3.4.1.13.1	Plessey
1.3.6.1.4.1.1963.15.3.3.4.1.14.1	Straight 2 of 5 2 Bar SS
1.3.6.1.4.1.1963.15.3.3.4.1.15.1	Straight 2 of 5 3 BarSS
1.3.6.1.4.1.1963.15.3.3.4.1.16.1	Code 11
1.3.6.1.4.1.1963.15.3.3.4.1.17.1	Code 49
1.3.6.1.4.1.1963.15.3.3.4.1.18.1	Code 49 FC1
1.3.6.1.4.1.1963.15.3.3.4.1.19.1	Code 49 FC2
1.3.6.1.4.1.1963.15.3.3.4.1.20.1	Code 49 FC3
1.3.6.1.4.1.1963.15.3.3.4.1.21.1	Code 16K

Syntax: *CYdata*

where *data* must be 3 to 8 digits selected from this list:

First and second digits:	00	All symbology identifiers (SIs)
	01	Code 39
	02	Code 128
	03	Codabar
	04	Code 93
	05	Code 11
	06	Interleaved 2 of 5
	07	Code 16K
	08	PDF 417
	09	MSI
	10	Plessey
	11	Straight 2 of 5 (with two bar start/stop codes)
	12	Straight 2 of 5 (with 3 bar start/stop codes)
	13	Code 49
	14	Code 49 - Function Code 1
	15	Code 49 - Function Code 2
	16	EAN/UPC-A
	17	EAN/UPC-E
	18	EAN/UPC-8
	19	EAN/UPC-13
	20	Non-bar code (RFID) SIs
	21	Code 49 - Function Code 3
	22-99	System expansion SIs
Third digit:	0	Disable
	1	ISO/IEC Standard (Enable) Not valid if All Symbology IDs (00) is selected
	2	User-defined SI (disables ISO/IEC Standard)

Symbology Identifier (continued)

Fourth digit (optional): 1-4 Specifies length of user-defined SI string

5th through 8th digits (optional): User-defined SI



Note: When configuring symbology IDs with SNMP, do not specify the length of the user-defined SI string.

Default: Disabled

Scan: To set the default configuration for symbology IDs, scan this bar code:

Disable All Symbology IDs



\$+CY000

Or: To configure symbology ID parameters for a specific symbology or to configure a user-defined symbology ID:

1. Scan this bar code:

Enter Accumulate Mode / Set Symbology IDs



+/\$+CY

2. Scan the symbology from these bar codes:

Code 39



01

Code 128



02

Codabar



03

Code 93



04

Code 11



05

Interleaved 2 of 5



06

Code 16K



07

PDF 417



08

Symbology Identifier (continued)

MSI



09

Plessey



10

Straight 2 of 5 (with 2 bar start/stop codes)



11

Straight 2 of 5 (with 3 bar start/stop codes)



12

Code 49



13

Code 49 - Function Code 1



14

Code 49 - Function Code 2



15

EAN/UPC-A



16

EAN/UPC-E



17

EAN/UPC-8



18

EAN/UPC-13



19

Non-bar code (RFID) identifiers



20

Code 49 - Function Code 3



21

3. Scan one of these bar codes:

Disable Symbology IDs



0

ISO/IEC Standard (Enable)



1

Enable User-Defined Symbology ID (Disables ISO/IEC Standard)



2

Symbology Identifier (continued)



Note: To set a user-defined symbology using the bar code labels in Appendix B, you must configure the terminal to enable Code 39 in Full ASCII mode. For help, see “Code 39” earlier in this chapter.

4. If you enabled a user-defined symbology ID, scan a numeric value for the symbology ID character length from these bar codes:



1



2



3



4

If you did not enable a user-defined symbology ID, go to Step 6.

5. Scan a value for the user-defined symbology ID from the “Full ASCII Bar Code Chart” in Appendix B. The user-defined symbology ID should be 1 to 4 characters in length, equal to the value you scanned in Step 4.
6. Scan this bar code:

Exit Accumulate Mode



-/+

TCP/IP Extensions Delayed Acknowledgement Timer

Purpose: Specifies the time that TCP will delay an acknowledgement on the arrival of data. You can use the TCP/IP extensions commands to fine tune the network performance in a wireless networking environment. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then TCP/IP Extensions, and finally choose Delayed ACK Timer.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.3.1.3.*index*
where *index* is the radio adapter card number.

Options: Any number from 100 to 3000 ms

Default: 200 ms

TCP/IP Extensions Initial Roundtrip Time

Purpose: The initial roundtrip time is an average measurement of the delay between two hosts. In general, this value is greater for wireless networks than for wired networks. You can use the TCP/IP extensions commands to fine tune the network performance in a wireless networking environment. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

TCP/IP Extensions Initial Roundtrip Time (continued)

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then TCP/IP Extensions, and finally choose Initial Round Trip Time.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.3.1.2.*index*
where *index* is the radio adapter card number.

Options: An acceptable value for the initial roundtrip time is any number from 0 to 2,147,483,647 ms.

Default: 3000 ms

TCP/IP Extensions Receive Window Size

Purpose: Determines the maximum TCP receive window size offered by the system. The receive window specifies the number of bytes a sender may transmit without receiving an acknowledgement. In general, larger receive windows work better with high-delay, high-bandwidth networks. For the greatest efficiency, the receive window should be an even multiple of the TCP Maximum Segment Size (MSS) and it should not exceed the system maximum. After you change this parameter, suspend and resume the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then TCP/IP Extensions, and finally choose Receive Window Size.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.5.15.5.3.1.1.*index*
where *index* is the radio adapter card number.

Options: Any number from 0 to the Global Maximum TCP Window Size (default of 64K).

Default: 8192 bytes

TFTP Resend Limit

Purpose: The TFTP resend limit identifies the maximum number of resent data blocks during a Put to Server request.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then TFTP, and finally choose Resend Limit.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.10.3.3.1.11.0

Options: Any value from 10 to 10,000.

Default: 100

TFTP Timeout

Purpose: The TFTP timeout sets the amount of time that the 502X will wait for a response from a TFTP server.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Protocols, then TFTP, and finally choose Timeout.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.10.3.3.1.10.0

Options: An acceptable value for the TFTP timeout is any value from 200 to 25,000 ms.

Default: 500 ms

Transmit Mode (5020 only)

Purpose: Defines the transmit mode that the OpenAir radio uses. There are three modes:

BFSK Binary Frequency Shift Key. A broadcasting method the radio uses that lengthens the range, but halves the throughput. This method is switched when the RF protocol on the 5020 determines that communications are degrading.

QFSK Quad Frequency Shift Key. A broadcasting method the radio uses that shortens the range, but doubles the throughput. QFSK is the method used under standard radio conditions.

Auto The radio automatically switches modes between BFSK and QFSK as needed.

After you change this parameter, suspend and resume the 5020 to make the change effective.



Note: Even if you set this configuration command, the 5020 radio will reset the parameter as needed to maximize the broadcasting range and throughput.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose Transmit Mode.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.5.5.2.5.1.1.6.*index*

where *index* is the radio adapter card number.

Options: Acceptable values for the RF Transmit mode are:

- 0 BFSK (Binary Frequency Shift Key)
- 1 QFSK (Quad Frequency Shift Key)
- 3 Auto

Default: Auto

Transmit Rate

Purpose: Sets the bit rate for data transmission in the 802.11b HR radio. Slower transmission rates provide better range while faster rates provide better throughput. You should configure most of the terminals to the faster transmit range.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, finally choose Transmit Rate.

On Cold Boot: Saved

SNMP OID: 1.2.840.10036.1.1.1.11.*ifindex*
where *ifindex* is the radio adapter card number.

Options: Acceptable values (hexadecimal) for the transmit rate are:

02040B16	11 Mbs/Fallback
16	11 Mbs/Fixed
02040B	5.5 Mbs/Fallback
0B	5.5 Mbs/Fixed

Default: 11 Mbs/Fallback

UDP Plus Enable

Purpose: Enables or disables UDP Plus for enhanced wireless networking. You only use this command in an Intermec UDP Plus network where the 502X communicates with a host through a DCS 30X. After you change this parameter, warm boot the 502X to make the change effective.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

UDP Plus Enable (continued)

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Advanced and then choose UDP Plus Enable.

On Cold Boot: Saved

SNMP OID: 1.3.6.1.4.1.1963.15.501.7.3.0

Options: Acceptable values for the UDP Plus Enable parameter are:

- 0 Disabled
- 1 Enabled

Default: Disabled

UPC/EAN

Purpose: Enables or disables the decoding of Universal Product Code (UPC)/European Article Numbering (EAN) symbology. UPC/EAN are fixed length, numeric, continuous symbologies that use four element widths. A 502X that is configured to decode EAN bar codes can decode UPC, but the reverse is not true. UPC code is a subset of EAN code.

To define the UPC/EAN symbology, you set up to seven digits. The fifth, sixth, and seventh digits are optional. To set the sixth digit, you must set the fifth digit. To set the seventh digit, you must set all seven digits.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	Yes	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Symbologies and then choose UPC/EAN.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.3.1.1.6.1

UPC/EAN (continued)

Syntax: *CEdata*

where *data* must be 4 to 7 digits selected from this list:

First digit:	0	UPC-A/EAN-13 disabled
	1	UPC-A/EAN-13 enabled
	2	UPC-A only enabled
Second digit:	0	UPC-E disabled
	1	(5020) UPC-E enabled, standard format (5023) UPC-E enabled
	2	(5020 only) UPC-E enabled, expanded format
Third digit:	0	EAN-8 disabled
	1	EAN-8 enabled
Fourth digit:	0	(5020) Supplementals are not allowed. If a supplemental is present, an error results. (5023) Supplementals are ignored. If a supplemental is present, it is not read.
	1	Supplementals are allowed (may or may not be present).
	2	Supplementals required. If no supplemental is present, an error results.
	3	(5020 only) 2-digit supplementals required. If no supplemental is present, or if the supplemental is other than 2 digits in length, an error results.
	4	(5020 only) 5-digit supplementals required. If no supplemental is present, or if the supplemental is other than 5 digits in length, an error results.
Fifth digit:	0	Discard check digit
	1	Transmit check digit
Sixth digit:	0	Discard number system digit
	1	Transmit number system digit
Seventh digit:	0	Discard the leading zero for UPC-A
	1	Retain the leading zero for UPC-A

You only use the two-character command CE for bar code configuration labels.

Default:	First digit:	UPC-A/EAN-13 enabled
	Second digit:	UPC-E enabled
	Third digit:	EAN-8 enabled
	Fourth digit:	Supplementals allowed
	Fifth digit:	Transmit check digit
	Sixth digit:	Transmit number system digit
	Seventh digit:	Retain leading zero for UPC-A

UPC/EAN (continued)

Scan: To disable UPC/EAN, scan this bar code:

Disable UPC/EAN



\$+CE0000000

Or: To enable UPC/EAN:

1. Scan this bar code:

Enter Accumulate Mode / Enable UPC/EAN



+/\$+CE

2. Scan one of these bar codes to set the first digit:

Disable UPC/EAN-13



0

Enable UPC/EAN-13



1

Enable UPC-A Only



2

3. Scan one of these bar codes to set the second digit:

Disable UPC-E



0

Enable UPC-E



1

4. Scan one of these bar codes to set the third digit:

Disable EAN-8



0

Enable EAN-8



1

5. Scan one of these bar codes to set the fourth digit:

Supplementals Not Allowed (5020) or Supplementals Ignored (5023)



0

UPC/EAN (continued)

Supplementals Allowed



1

Supplementals Required



2

2-digit Supplementals Required (5020 only)



3

5-digit Supplementals Required (5020 only)



4

6. Scan one of these bar codes to set the fifth digit:

Discard Check Digit



0

Transmit Check Digit



1

7. Scan one of these bar codes to set the sixth digit:

Discard Number System Digit



0

Transmit Number System Digit



1



Note: If you discard the number system digit, one leading digit is discarded from UPC-A, UPC-E, and EAN-8, and two leading digits are discarded from EAN-13.

8. Scan one of these bar codes to set the seventh digit:

Discard Leading Zero for UPC-A



0

Transmit Leading Zero for UPC-A



1



Note: This option applies only when you enable UPC-A/EAN-13.

9. Scan this bar code:

Exit Accumulate Mode



-/

Virtual Wedge

Purpose: Enables or disables the virtual wedge for the internal scanner or the input device that is connected to the tethered scanner port. The virtual wedge retrieves scanned Automatic Data Collection (ADC) data and sends it to the keypad driver so that the 502X can receive and interpret the data as keypad input.

Because the virtual wedge translates incoming data into keypad input, the size of the keypad buffer limits the effective length of the label to 128 characters. Longer labels may be truncated. For PDF 417 labels of more than 128 characters, you can develop an application that bypasses the keypad buffer. For help, see the 502X SDK on the Windows CE/Pocket PC Developer's Kit (Part No. 069511).

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Virtual Wedge and finally choose Virtual Wedge.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.2.1.1.2.1

Options: Acceptable values for the Virtual Wedge parameter are:

- 0 Disabled
- 1 Enabled

Default: Enabled

Virtual Wedge Code Page

Purpose: Sets the virtual wedge code page. The code page controls the translation from the character set of the raw collected data to Unicode, which is the character set expected by Windows CE applications. The default code page is 1252, which is the Windows Latin 1 (ANSI) character set.

Virtual Wedge Code Page (continued)

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Virtual Wedge and finally choose Code Page.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.2.1.1.6.1

Options: The only acceptable value for the code page parameter is 1252.

Default: 1252

Virtual Wedge Grid

Purpose: Sets the virtual wedge grid. The grid filters the data coming from a 502X. The 502X data server supports data filtering, which allows you to selectively send scanned data. You can also use the virtual wedge grid function in the 502X SDK to selectively send scanned data to an application. For help, see the SDK online help. The virtual wedge grid is similar to the “format” argument of the C Runtime Library scan function.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Data Collection. Next, choose Virtual Wedge and finally choose Grid.

On Cold Boot: Not saved

SNMP OID: 1.3.6.1.4.1.1963.15.3.2.1.1.5.1

Virtual Wedge Grid (continued)

Options: The grid can be from 0 to 31 ASCII characters in this format:

<field><field>...<field>

where *<field>* is any of the following:

- Literal characters

Any character that must match the corresponding data character. If you want a literal % symbol in the *<field>*, you must precede it by another % symbol. For example, ABC matches the label ABC and ABC%% matches the label ABC%.

- %*<width><type>*

% is a format prefix for a *<field>*.

<width> is any positive integer or NULL. A NULL width means that the field type (defined next) applies all the way to the end of the data string. A non-null width means that the field applies to that many characters of data.

<type> is one of the following:

s Any characters. For example, %4s matches any 4-character string.

d Decimal digit. For example, %4d matches any 4-digit decimal number.

[*<class>*] Any character in *<class>*.

[^*<class>*] Any character NOT in *<class>*.

A *<class>* is a string of characters. Every character in the field must match (or not match if ^ is used) at least one of the class's characters. For example, the class field %4[1357] matches the data "1357," "3333," "7531," and so on. Ranges are permitted. For example, %4[1a-z] matches a 4-character string containing the digit '1' or any lowercase character, such as "az1q," "1111," or "abcd."

Default: NULL

Virtual Wedge Grid (continued)

Example 1: Virtual wedge grid set to: %3d-%2d-%4d

where %3d is a 3-digit field, - is a literal character field, %2d is a 2-digit field, - is a literal character field, and %4d is a 4-digit field. In this example, the 502X would only accept bar code labels that are defined in a Social Security Number format.

Example 2: Virtual wedge grid set to: AB%2[1-9]

where AB is a literal character field and %2[0-9] defines a 2-digit field that accepts any numbers. AB12, AB94, AB52, and AB73 are all valid labels.

Example 3: Virtual wedge grid set to: AB%d

where AB is a literal character field and %d defines a multi-digit field that accepts any numbers. AB12, AB123, and AB12345 are all valid labels, but AB123Z is not.

WEP Encryption

Purpose: This parameter allows the user to enable or disable the Wired Equivalent Privacy protocol. When disabled, WEP is not used and all WEP parameters are ignored. When enabled, WEP will encrypt data transmitted to and from the 502X.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, and finally choose WEP Encryption.

On Cold Boot: Saved

SNMP OID: 1.2.840.10036.1.5.1.1.*ifindex*

where *ifindex* is the radio adapter card number.

Options: Acceptable values for the WEP Encryption parameter are:

- 1 Enabled
- 2 Disabled

Default: Disabled

WEP Key

Purpose: This parameter lets you set the value of each of the four available WEP keys. You can enter either an ASCII key or a hex key that is either 5 bytes or 13 bytes long, depending on the capability of the radio. Set a 5-byte value for WEP 64-bit or a 13-byte value for WEP 128-bit. If WEP Encryption is not enabled, this parameter is ignored.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	Yes (WEP Key 1 only)

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, then WEP Encryption, and finally choose WEP Key. The key value is entered in the Change WEP Key Setting field.

On Cold Boot: Saved

SNMP OID: 1.2.840.10036.1.3.1.2.*ifindex*.1 WEP Key 1
 1.2.840.10036.1.3.1.2.*ifindex*.2 WEP Key 2
 1.2.840.10036.1.3.1.2.*ifindex*.3 WEP Key 3
 1.2.840.10036.1.3.1.2.*ifindex*.4 WEP Key 4

where *ifindex* is the radio adapter card number.

Options: The key can be entered in either ASCII or hex formats. For a radio that supports WEP 64-bit, enter five ASCII characters or ten hex numbers preceded by 0x. For a radio that supports WEP 128-bit, enter either 5 or 13 ASCII characters or 10 or 26 hex numbers preceded by 0x.

For example, to enter a key of value ABCDE for a radio that supports WEP 64-bit:

- ASCII format: Enter ABCDE
- Hex format: Enter 0x4142434445

If no value is entered for any key, all keys default to ASCII number 80211 (hex number 0x3830323131).

Default: Disabled

WEP Key Length

Purpose: Displays the length in ASCII or hex characters of each WEP key for the 802.11b HR radio. The WEP key length is dependent upon the supported WEP version. Key lengths for WEP64 are 5 ASCII or 10 hex characters, and key lengths for WEP128 are 13 ASCII or 26 hex characters.

Configuration: The WEP Key Length is a read-only parameter that cannot be changed. In the Configuration application or Unit Management, choose Configure and then Network. Next choose Radio, then Radio, then expand WEP Encryption, and finally choose the desired WEP key.

On Cold Boot: Not applicable (read-only)

SNMP OID:	1.3.6.1.4.1.1963.5.5.2.4.2.1.3. <i>ifindex</i> .1	WEP Key 1
	1.3.6.1.4.1.1963.5.5.2.4.2.1.3. <i>ifindex</i> .2	WEP Key 2
	1.3.6.1.4.1.1963.5.5.2.4.2.1.3. <i>ifindex</i> .3	WEP Key 3
	1.3.6.1.4.1.1963.5.5.2.4.2.1.3. <i>ifindex</i> .4	WEP Key 4

where *ifindex* is the radio adapter card number.

Default: Not applicable

WEP Transmit Key

Purpose: This parameter is a numeric value between 0 and 3, inclusive, which selects one of the four WEP keys as the key used for data transmission. If WEP Encryption is not enabled, this parameter is ignored.

Configuration: Use one of these methods:

Configuration Applications	SNMP	Bar Codes	Fast Config
Yes	Yes	No	No

In the Configuration or Configuration Management application, choose Configure and then Network. Next, choose Radio, then Radio, then WEP Encryption, and finally choose WEP Transmit Key.

On Cold Boot: Saved

WEP Transmit Key (continued)

SNMP OID: 1.2.840.10036.1.5.1.2.*ifindex*
where *ifindex* is the radio adapter card number.

Options: Acceptable values for the WEP Transmit Key value are:

- 0 Key 1
- 1 Key 2
- 2 Key 3
- 3 Key 4

Default: 0 Key 1



502X Default Configuration

This appendix lists the 502X Data Collection PC's default configuration.

502X Default Configuration

The next tables show the 502X's default configuration. For help with changing the default settings, see your user's manual.

Default Configuration for Data Collection

Parameter	Default	Saved on Cold Boot
Codabar	Standard, retain ABCD start/stop	No
Code 11 (5020 only)	Disabled	No
Code 16K (5020 only)	Standard Code 16K enabled	No
Code 2 of 5	Disabled	No
Code 39	Full ASCII Code 39 enabled with no check digit	No
Code 49 (5020 only)	Function 1 NULL, Function 2 CR LF, Function 3 NULL	No
Code 93/93i	Enabled	No
Code 128	Standard	No
Decode Priority (5020 only)	010203040506070809101112	No
Decode Security	Moderate	No
Interleaved 2 of 5	Enabled, variable length with check digit	No
MSI	Disabled	No
PDF 417	Disabled on 5020; Enabled on 5023	No
Plessey (5020 only)	Disabled	No
Postamble	Tab character (\t)	No
Preamble	No characters (disabled)	No
Scanner Mode (5020 only)	One-Shot mode	No
Scanner Redundancy	Normal	No
Scanner Selection (5020 only)	All compatible scanners for tethered scanner Or, internal scanner to match the factory-installed scanner	Yes
Scanner Timeout	Disabled (no timeout) on 5020; 9.9 sec on 5023	No
Scanner Trigger	Level triggering	No
Symbology Identifier (5020 only)	All disabled	No
UPC/EAN	UPC-A/EAN-13 enabled, UPC-E standard format and EAN-8 enabled, supplementals allowed, transmit check digit, transmit number system digit, and retain leading zero for UPC-A	No
Virtual Wedge	Enabled	No
Virtual Wedge Code Page	1252	No
Virtual Wedge Grid	NULL	No

502X Data Collection PC System Manual

Default Configuration for IDRS (5020 only)

Parameter	Default	Saved on Cold Boot
IDRSEnable	Enabled	Yes
IDRSRetries	15	Yes
IDRSScope	INTERMEC	Yes
IDRSServerAddr	0.0.0.0	Yes
IDRSTimeout	5000 ms	Yes

Default Configuration for Internet Explorer (IE)

Parameter	Default	Saved on Cold Boot
Autodial Name	IrDA port	No
Cache Size (KB)	560	No
Function Key URLs	F6 - F10 URL: null Admin Mode Required: No	No
Home Page	files://\windows\ieDCPC.jpg	No
Proxy Server Address	null	No
Proxy Server Port	null	No
Underline Links	Always	No
Use LAN (No Auto Dial)	Enable	No
Use Proxy Server	False	No

Default Configuration for Network Communications

Parameter	Default	Saved on Cold Boot
502X IP Address	0.0.0.0	Yes
Configuration Manager Enable	Enabled	Yes
Configuration SubAgent Enable	Enabled	Yes
Default Router	0.0.0.0	Yes
Device Name	Intermec5020 or Intermec5023	Yes
DHCP (Obtain IP Address Via DHCP)	Enabled	Yes
Primary DNS Server	0.0.0.0	Yes
Primary WINS Server	0.0.0.0	Yes
Secondary DNS Server	0.0.0.0	Yes
Secondary WINS Server	0.0.0.0	Yes
Subnet Mask	0.0.0.0	Yes
TCP/IP Extensions Delayed Acknowledgement Timer	200 ms	No
TCP/IP Extensions Initial Roundtrip Time	3000 ms	No
TCP/IP Extensions Receive Window Size	8192 bytes	No
TFTP Resend Limit	100	Yes
TFTP Timeout	500 ms	Yes

Default Configuration for Network Communications: OpenAir Radio (5020 only)

Parameter	Default	Saved on Cold Boot
Access Point MAC Address	Not applicable (read-only)	Not applicable
Access Point Name	Not applicable (read-only)	Not applicable
Radio MAC Address	Not applicable (read-only)	Not applicable
Radio ROM Version	Not applicable (read-only)	Not applicable
RF Domain	0	Yes
RF Inactivity Timeout	5 sec	Yes
RF Roaming Allowed	Allowed	Yes
RF Security Identification (ID)	None	Yes (see Note)
RF Transmit Mode	Auto	Yes



Note: The RF Security ID is stored internally in the OpenAir radio card and not in permanent memory on the 5020.

Default Configuration for Network Communications: 802.11b HR Radio

Parameter	Default	Saved on Cold Boot
Access Point Density	Low	Yes
Access Point MAC Address	Not applicable (read-only)	Not applicable
Access Point Network Name	Not applicable (read-only)	Not applicable
Max. Sleep Duration	100	Yes
Network Name	INTERMEC	Yes
Power Management	Enabled	Yes
Pri/Sta Radio ROM Version	Not applicable (read-only)	Not applicable
Radio Description	Not applicable (read-only)	Not applicable
Radio MAC Address	Not applicable (read-only)	Not applicable
Receive All Multicasts	Enabled	Yes
Reservation Threshold	500	Yes
Station Name	Intermec5020 or Intermec5023	Yes
Supported WEP	Not applicable (read-only)	Not applicable
Transmit Rate	11MBS/Fallback	Yes
WEP Encryption	Disabled	Yes
WEP Key 1 - WEP Key 4	Disabled	Yes
WEP Key Length 1 - WEP Key Length 4	Not applicable (read-only)	Not applicable
WEP Transmit Key	Key 1	Yes

Default Configuration for SNMP

Parameter	Default	Saved on Cold Boot
Identification Contact	No characters	No
Identification Location	No characters	No
Identification Name	No characters	No
Security Encryption Key	NULL	No
Security IP Address	None (502X accepts requests from any host)	No
Security Read Encryption	Off	No
Security Read Only Community String	public	No
Security Read/Write Community String	private	No
Security Subnet Mask	None	No
Security Write Encryption	Off	No
Trap Authentication	On	No
Trap Community Name	NULL	No
Trap IP Address	None	No
Trap Port	162	No
Trap Threshold	10	No

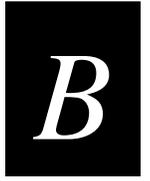
Default Configuration for UDP Plus

Parameter	Default	Saved on Cold Boot
Acknowledgement Delay Lower Limit	300 ms	No
Acknowledgement Delay Upper Limit	5 sec	No
Controller Connect Check Receive Timer	45 sec	No
Controller Connect Check Send Timer	20 sec	No
Controller IP Address	0.0.0.0	No
Maximum Retries	7	No
Network Loopback	Disabled	No
Network Port	5555	No
UDP Plus Enable	Disabled	Yes

502X Data Collection PC System Manual

Default Configuration for Unit Operations

Parameter	Default	Saved on Cold Boot
Automatic Shutoff	5 min	No
Beep Duration (5020 only)	Low Beep: 50 ms High Beep : 60 ms	No
Beep Frequency (5020 only)	Low Beep: 1000 Hz High Beep: 2300 Hz	No
Display Backlight Level	High	No
Display Backlight Timeout	15 seconds	No
IrDA Baud Rate	115200	No
Keypad Caps Lock	Caps lock on	No
Keypad Clicker	Enabled with loud keyclicks	No
Speaker Volume	Normal	No



Full ASCII Charts

This appendix contains a full ASCII chart and charts of Code 39 bar code labels that you can scan with the 502X PC.

Full ASCII Table

This table lists the ASCII characters and their binary, hexadecimal, and Code 39 equivalents.

Full ASCII Table

Binary ⁰	Hex ¹	Decimal	Code 39	ASCII ²	Binary ⁰	Hex ¹	Decimal	Code 39	ASCII ²
00000000	00	00	%U	NUL	00100000	20	32	SP	SP ³
00000001	01	01	\$A	SOH	00100001	21	33	/A	!
00000010	02	02	\$B	STX	00100010	22	34	/B	"
00000011	03	03	\$C	ETX	00100011	23	35	/C	#
00000100	04	04	\$D	EOT	00100100	24	36	/D	\$
00000101	05	05	\$E	ENQ	00100101	25	37	/E	%
00000110	06	06	\$F	ACK	00100110	26	38	/F	&
00000111	07	07	\$G	BEL	00100111	27	39	/G	'
00001000	08	08	\$H	BS	00101000	28	40	/H	(
00001001	09	09	\$I	HT	00101001	29	41	/I)
00001010	0A	10	\$J	LF	00101010	2A	42	/J	*
00001011	0B	11	\$K	VT	00101011	2B	43	/K	+
00001100	0C	12	\$L	FF	00101100	2C	44	/L	,
00001101	0D	13	\$M	CR	00101101	2D	45	/M	-
00001110	0E	14	\$N	SO	00101110	2E	46	/N	.
00001111	0F	15	\$O	SI	00101111	2F	47	/O	/
00010000	10	16	\$P	DLE	00110000	30	48	/P ⁴	0
00010001	11	17	\$Q	DC1	00110001	31	49	/Q	1
00010010	12	18	\$R	DC2	00110010	32	50	/R	2
00010011	13	19	\$S	DC3	00110011	33	51	/S	3
00010100	14	20	\$T	DC4	00110100	34	52	/T	4
00010101	15	21	\$U	NAK	00110101	35	53	/U	5
00010110	16	22	\$V	SYN	00110110	36	54	/V	6
00010111	17	23	\$W	ETB	00110111	37	55	/W	7
00011000	18	24	\$X	CAN	00111000	38	56	/X	8
00011001	19	25	\$Y	EM	00111001	39	57	/Y	9
00011010	1A	26	\$Z	SUB	00111010	3A	58	/Z	:
00011011	1B	27	%A	ESC	00111011	3B	59	%F	;
00011100	1C	28	%B	FS	00111100	3C	60	%G	<
00011101	1D	29	%C	GS	00111101	3D	61	%H	=
00011110	1E	30	%D	RS	00111110	3E	62	%I	>
00011111	1F	31	%E	US	00111111	3F	63	%J	?

502X Data Collection PC System Manual

Full ASCII Table (continued)

Binary ⁰	Hex ¹	Decimal	Code 39	ASCII ²	Binary ⁰	Hex ¹	Decimal	Code 39	ASCII ²
01000000	40	64	%V	@	01100000	60	96	%W	`
01000001	41	65	A	A	01100001	61	97	+A	a
01000010	42	66	B	B	01100010	62	98	+B	b
01000011	43	67	C	C	01100011	63	99	+C	c
01000100	44	68	D	D	01100100	64	100	+D	d
01000101	45	69	E	E	01100101	65	101	+E	e
01000110	46	70	F	F	01100110	66	102	+F	f
01000111	47	71	G	G	01100111	67	103	+G	g
01001000	48	72	H	H	01101000	68	104	+H	h
01001001	49	73	I	I	01101001	69	105	+I	i
01001010	4A	74	J	J	01101010	6A	106	+J	j
01001011	4B	75	K	K	01101011	6B	107	+K	k
01001100	4C	76	L	L	01101100	6C	108	+L	l
01001101	4D	77	M	M	01101101	6D	109	+M	m
01001110	4E	78	N	N	01101110	6E	110	+N	n
01001111	4F	79	O	O	01101111	6F	111	+O	o
01010000	50	80	P	P	01110000	70	112	+P	p
01010001	51	81	Q	Q	01110001	71	113	+Q	q
01010010	52	82	R	R	01110010	72	114	+R	r
01010011	53	83	S	S	01110011	73	115	+S	s
01010100	54	84	T	T	01110100	74	116	+T	t
01010101	55	85	U	U	01110101	75	117	+U	u
01010110	56	86	V	V	01110110	76	118	+V	v
01010111	57	87	W	W	01110111	77	119	+W	w
01011000	58	88	X	X	01111000	78	120	+X	x
01011001	59	89	Y	Y	01111001	79	121	+Y	y
01011010	5A	90	Z	Z	01111010	7A	122	+Z	z
01011011	5B	91	%K	[01111011	7B	123	%P	{
01011100	5C	92	%L	\	01111100	7C	124	%Q	
01011101	5D	93	%M]	01111101	7D	125	%R	}
01011110	5E	94	%N	^	01111110	7E	126	%S	~
01011111	5F	95	%O	_	01111111	7F	127	%T ⁵	n ⁶

Notes for the Full ASCII Table

- 0 Bit positions are 76543210.
- 1 This column lists the hexadecimal value.
- 2 This column lists the ASCII character.
- 3 SP is the SPACE character.
- 4 The Code 39 characters /P through /Y may be interchanged with the numbers 0 through 9.
- 5 %T may be interchanged with %X or %Y or %Z.
- 6 n is the Delete character.

Full ASCII Control Characters Table

Control Character	Definition	Control Character	Definition
NUL	Null or all zeroes	DC1	Device Control 1 (XON)
SOH	Start of Heading	DC2	Device Control 2
STX	Start of Text	DC3	Device Control 3 (XOFF)
ETX	End of Text	DC4	Device Control
EOT	End of Transmission	NAK	Negative Acknowledge
ENQ	Enquiry	SYN	Synchronous Idle
ACK	Acknowledgment	ETB	End Transmission Block
BEL	Bell	CAN	Cancel
BS	Backspace	EM	End of Medium
HT	Horizontal Tab	SUB	Substitute
LF	Line Feed	ESC	Escape
VT	Vertical Tab	FS	File Separator
FF	Form Feed	GS	Group Separator
CR	Carriage Return	RS	Record Separator
SO	Shift Out	US	Unit Separator
SI	Shift In	SP	Space
DLE	Data Link Escape	DEL	Delete

Full ASCII Bar Code Chart

The charts in this section list the Code 39 bar code label for each ASCII character. To use these bar code labels, you must configure the 502X to use Code 39 in Full ASCII mode.

Control Characters

NUL



%U

SOH



\$A

STX



\$B

ETX



\$C

EOT



\$D

ENQ



\$E

ACK



\$F

BEL



\$G

BS



\$H

HT



\$I

LF



\$J

VT



\$K

FF



\$L

CR



\$M

SO



\$N

SI



\$O

DLE



\$P

DC1



\$Q

DC2



\$R

DC3



\$S

DC4



\$T

NAK



\$U

SYN



\$V

ETB



\$W

Control Characters (continued)

CAN



\$X

EM



\$Y

SUB



\$Z

ESC



%A

FS



%B

GS



%C

RS



%D

US



%E

DEL



%T

Symbols and Punctuation Marks

! (exclamation point)



/A

" (quotation marks)



/B

#



/C

\$



/D

%



/E

&



/F

' (apostrophe)



/G

(



/H

)



/I

* (asterisk)



/J

+



/K

- (dash)



/M

/



/O

=



%H

. (period)



/N

, (comma)



/L

: (colon)



/Z

; (semicolon)



%F

Symbols and Punctuation Marks (continued)

?

%J

<

%G

>

%I

@

%V

[

%K

]

%M

~ (tilde)

%S

^

%N

_ (underline)

%O

\

%L

` (left single quote)

%W

| (pipe)

%Q

{

%P

}

%R

Space

* *

Numbers

0

0

1

1

2

2

3

3

4

4

5

5

6

6

7

7

8

8

9

9



Uppercase Letters

A



A

B



B

C



C

D



D

E



E

F



F

G



G

H



H

I



I

J



J

K



K

L



L

M



M

N



N

O



O

P



P

Q



Q

R



R

S



S

T



T

U



U

V



V

W



W

X



X

Y



Y

Z



Z

Lowercase Letters

a



+A

b



+B

c



+C

d



+D

e



+E

f



+F

g



+G

h



+H

i



+I

j



+J

k



+K

l



+L

m



+M

n



+N

o



+O

p



+P

q



+Q

r



+R

s



+S

t



+T

u



+U

v



+V

w



+W

x



+X

y



+Y

z



+Z



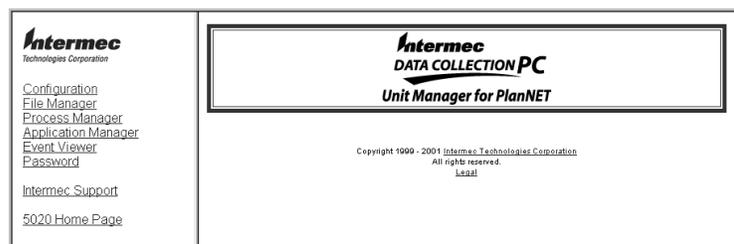
Extending the Unit Manager Main Menu



This appendix explains how to extend and customize the Unit Manager main menu. It includes 502X registry definitions and examples.

Getting Started

Unit Manager (Unit Management on 5023) is a Web-based, data-driven presentation engine. When you access a 502X through your Web browser, the 502X sends the Web pages to the browser. For example, the main menu is displayed next.



The Unit Manager Web page consists of two frames: “content” and “main.” The menu on the left side of the frame is the “content” and reflects the data in the data store. The content frame is data-driven and references links that display the file or URL in the “main” or right frame when each menu option is clicked.

The menu options or links in the content frame are properties in the 502X registry. This appendix explains the 502X registry and how you modify the properties to extend and customize the Unit Manager main menu.

Required Tools

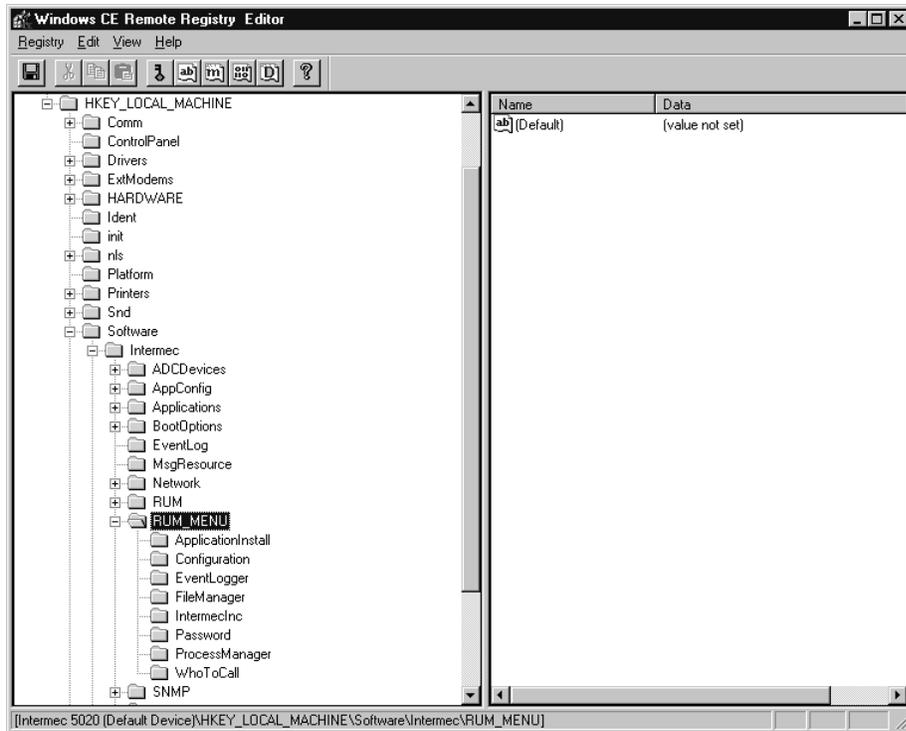
To extend Unit Manager, you need a Windows CE registry editor or you can construct a registry file that you import on the 502X. For example, you can use the Remote Registry Editor in the Microsoft Windows CE 2.1 Toolkit for Visual C++ 6.0.

The instructions in this appendix assume that you are experienced in Windows programming.

Understanding the 502X Registry

The 502X registry is a Windows CE registry. The registry is a system-defined database that applications and system components use to store and retrieve configuration data. The configuration data that is stored in the 502X registry drives the Unit Manager menu in the left or “content” frame. The next illustration shows the Unit Manager section of the 502X registry.

502X Registry



The registry subkeys under RUM_MENU define the Unit Manager menu options. For example, Configuration and Process Manager are two of the menu options or properties.

The next sections explain how to

- extend the Unit Manager main menu.
- import a registry file.

Use the last section in this appendix to look up the definitions for the “Registry Property Values.”



Extending the Main Menu

You can use Unit Manager and a Web browser on your PC to configure and manage the 502X. You can modify the properties in the RUM_MENU section of the 502X registry to add, change, or delete menu options in the contents frame. For help using Unit Manager, see Chapter 4.



Note: If you cold boot the 502X, you lose all registry changes and extensions. Make sure you export the registry file and save a backup copy.

To extend the Unit Manager main menu

1. Connect the 502X to your development PC and establish communications.
2. Edit the 502X registry. For help, see “Registry Property Values” later in this appendix. The Unit Manager menu section begins at this branch:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU
```

For example, open a Windows CE registry editor like the Remote Registry Editor in Microsoft Windows CE 2.1 Toolkit for Visual C++ 6.0.

3. Save the changes.
4. Choose only the Unit Manager section at this branch:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU
```

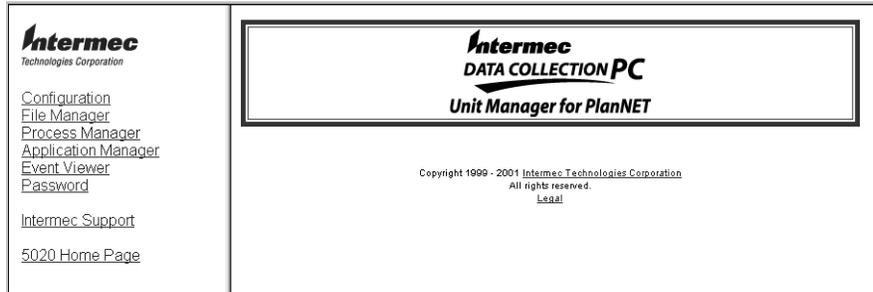
Export your registry changes and save the registry file as a backup file. You can import the registry file to recover your changes after a cold boot. For help, see “Importing a Registry File” later in this appendix.

5. Exit the registry editor.
6. To see the changes, restart Unit Manager in your Web browser.

Example 1

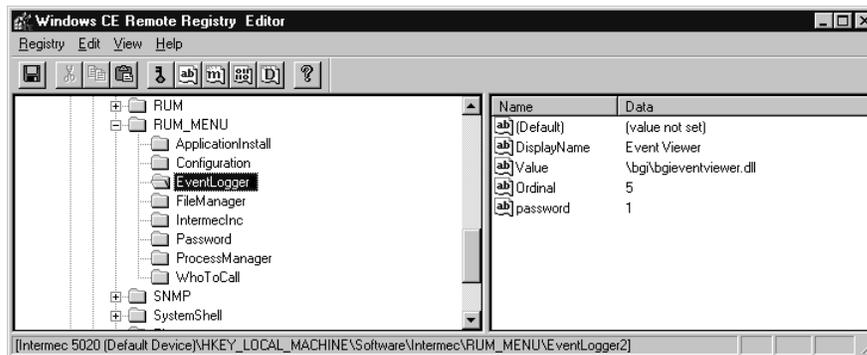
In this example, rename the Event Viewer application in the Unit Manager main menu.

Unit Manager Main Menu



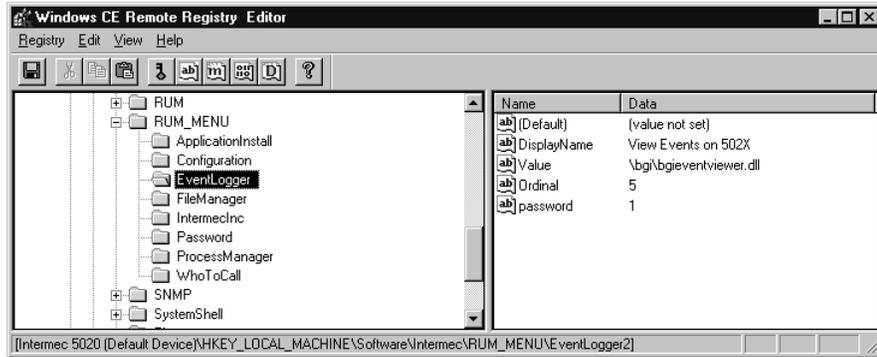
To rename Event Viewer

1. Connect the 502X to your development PC and establish communications.
2. Edit the 502X registry.
3. Open the RUM_MENU branch of the registry and choose EventLogger as shown below.

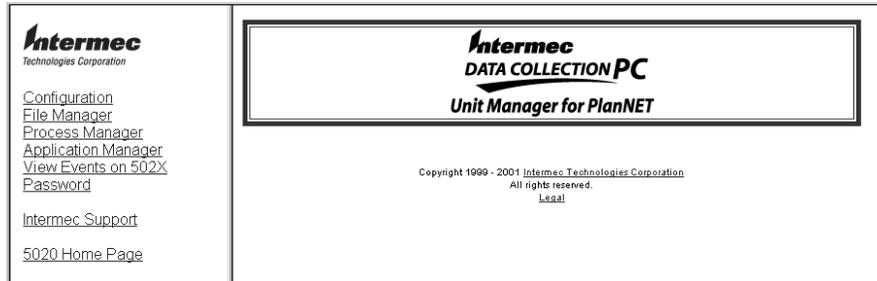




4. Edit the DisplayName field and change the name from “Event Viewer” to “View Events on 502X.” The registry appears as shown next.



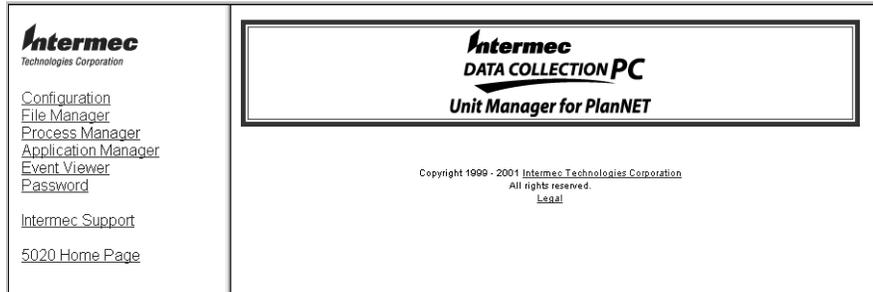
5. Save the changes and exit the registry editor.
6. To see the changes, restart Unit Manager. View Events on 502X appears in the main menu instead of Event Viewer.



Example 2

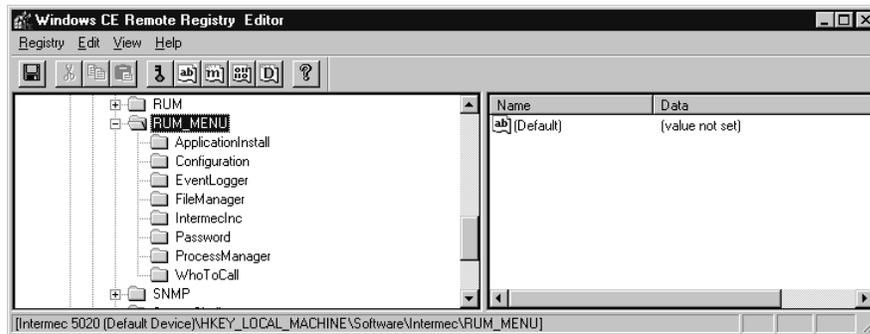
In this example, add a link to your company's home page.

Unit Manager Main Menu



To add a link to your company's home page

1. Connect the 502X to your development PC and establish communications.
2. Edit the 502X registry.
3. Open the RUM_MENU branch of the registry as shown below.

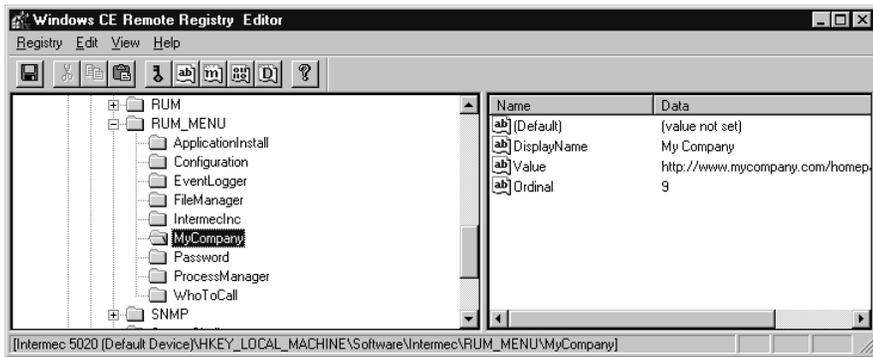




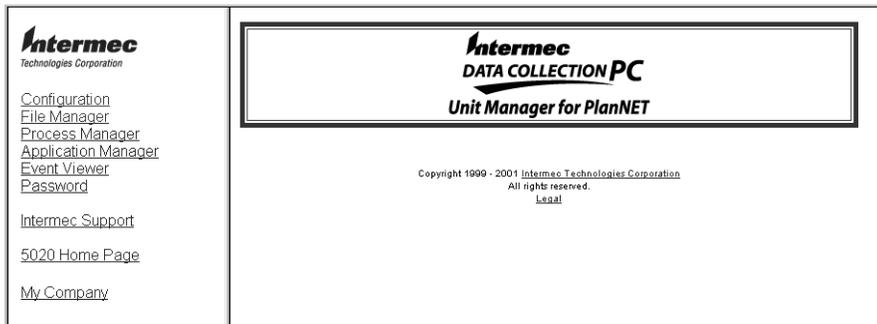
4. Add a subkey under RUM_MENU. Next, define the DisplayName, Value, and Ordinal for the link to your company's home page.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU\MyCompany]
"DisplayName"="My Company"
"Value"="http://www.mycompany.com/homepage.htm"
"Ordinal"="9"
```

In this example, you add a link to “My Company” as the last menu item after the link to 5020 Home Page. The registry appears as shown next.



5. Save the changes and exit the registry editor.
6. To see the changes, restart Unit Manager. My Company is now a menu option.



Importing a Registry File

Once you have extended Unit Manager on a 502X, you can import the customized registry file into another 502X. You may also need to import the registry file if you cold boot the 502X.



Note: If you cold boot the 502X, you will lose all registry changes and extensions. Make sure you export the registry file and save a backup copy.

To import a registry file

1. Copy the registry file from your development PC to the 502X. For help, see Chapter 4, “Using Unit Manager.”
2. On the 502X, choose Run from the Start menu.
3. Type this command and choose OK:

```
itconfig.exe filename.reg
```

where *filename.reg* is the name of your customized registry file for the Unit Manager main menu.

4. Repeat Steps 1 through 3 for each 502X.



Note: ITCONFIG.EXE is only designed to import 502X properties. It is not a full-featured registry import application.

Registry Property Values

These are the possible values that can go in the registry for the Unit Manager main menu. Each property (menu option) must have a DisplayName, Ordinal, and Value.

Break

Purpose: Reserved for future use.

Syntax: Reserved.

Required Field: Reserved.



DisplayName

Purpose: Text that displays on the user interface for the menu item.

Syntax: "string"
where "string" is a text string in quotes.

Required Field: Yes

Example: Here is the DisplayName for the File Manager menu option.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU\FileManager]
"DisplayName"="File Manager"
"Value"="/bgi/bgifilemanager.dll"
"Ordinal"="2"
"password"="1"
```

Ordinal

Purpose: Specifies the order of the item relative to its siblings or properties at the same level. The ordinal also indicates the order in each sublevel.

Syntax: "n"
where "n" is an integer.

Required Field: Yes

Example: Event Viewer is the fifth menu item, so it has an ordinal value of "5."

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU\EventLogger]
"DisplayName"="Event Viewer"
"Value"="/bgi/bgieventviewer.dll"
"Ordinal"="5"
"password"="1"
```

Password

Purpose: Reserved for future use.

Syntax: Reserved

Required Field: Reserved

Value

Purpose: Defines the URL or link including the path if necessary. When the user clicks on the link, the “Value” displays in the right side of the Unit Manager frame.

Syntax: "URL" or "/path/filename"

where the URL is a valid Internet or Intranet Web address and /path/filename is a valid path and filename on the 502X.

If you place HTML files in the HTML directory on the 502X, you only need to define the *filename*. If you place BGI script files in the Windows directory on the 502X, you only need to define the *filename*. For all other files or directories, identify the *path* and *filename*.

Required Field: Yes

Example: The Password menu option links to a BGI script file named bgiPassWord.dll in the BGI directory on the 502X. The Who To Call menu option links to a specific URL on the Intermecc Web site.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU>Password]
"DisplayName"="Password"
"Value"="/bgi/bgiPassWord.dll"
"Ordinal"="6"
"password"="1"
"Break"="Yes"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM_MENU\WhoToCall]
"DisplayName"="Intermec Support"
"Value"="http://www.intermec.com/support.htm"
"Ordinal"="7"
"Break"="Yes"
```



Extending the Configuration Applications

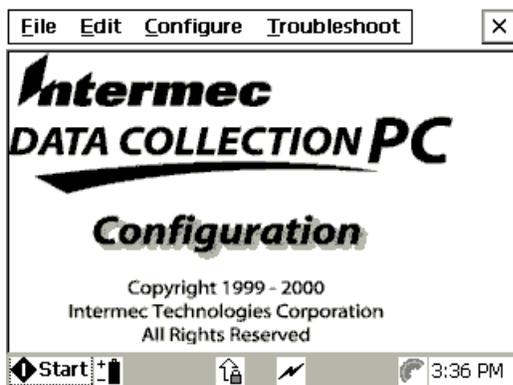
This appendix explains how to extend and customize the local Configuration application and the Configuration Management application in Unit Manager. It includes 502X registry definitions and examples.

Getting Started

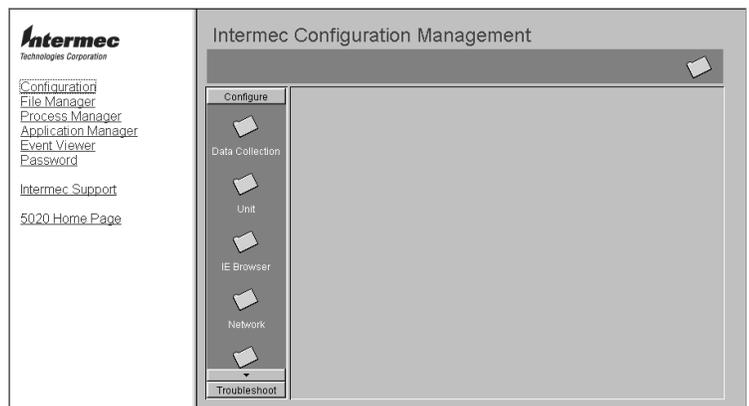
The Configuration and Configuration Management applications are data-driven presentation engines. You access the local Configuration application from the Start menu on the 502X. You access the same data in Configuration Management by choosing Configuration in Unit Manager (Unit Management on 5023).

The menus and options in the Configuration applications are properties in the 502X registry. You can modify the properties in the 502X registry to change the menus, configuration tabs, parameters, and options. This appendix explains the 502X registry and how you can extend and customize the Configuration applications.

502X Configuration Application



Configuration Management Application in Unit Manager



Required Tools

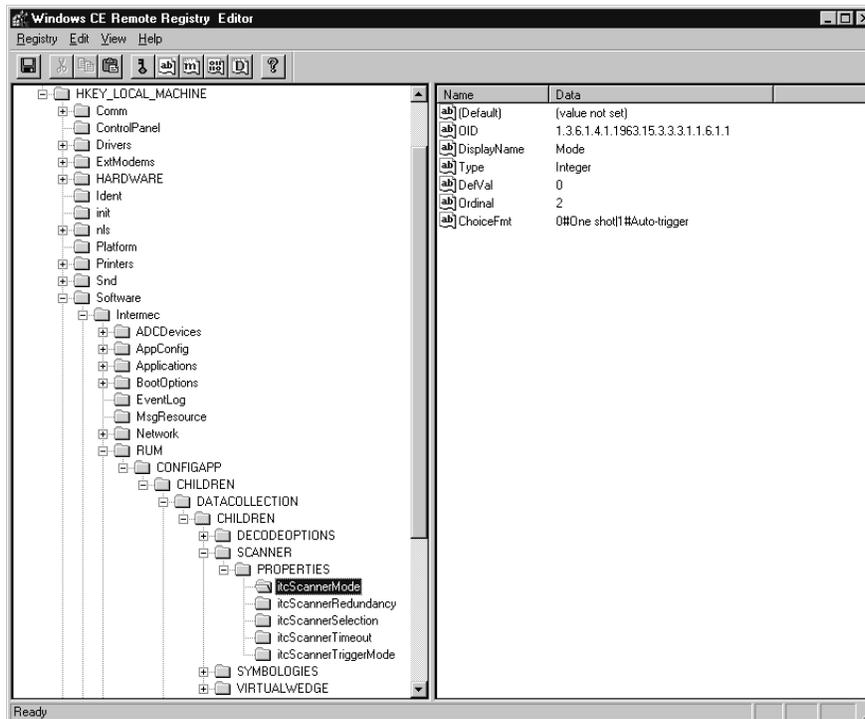
To extend the Configuration applications, you need a Windows CE registry editor or you can construct a registry file that you import on the 502X. For example, you can use the Remote Registry Editor in the Microsoft Windows CE 2.1 Toolkit for Visual C++ 6.0.

The instructions in this appendix assume that you are experienced in Windows programming.

Understanding the 502X Registry

The 502X registry is a Windows CE registry. The registry is a system-defined database that applications and system components use to store and retrieve configuration data. The next illustration shows the Configuration application section of the 502X registry.

502X Registry



The Configuration applications use the registry to dynamically create the user interface. The next table defines the structure and levels of the registry.

Registry Level	Description
Root	The highest level in the registry. In this example, the root is HKEY_LOCAL_MACHINE/SOFTWARE/INTERMEC/RUM/CONFIGAPP.
MenuItem	Registry subkey that defines a major grouping of configuration items. For example, DATACOLLECTION is a MenuItem.
PageView	Registry subkey that defines a configuration tab page under a MenuItem. For example, SCANNER is a PageView item.
[Children]	Specifies the next level in the registry.
[Properties]	The registry subkeys under Properties define the configuration items for a PageView item. For example, the properties of the Scanner page are Scanner Mode, Scanner Redundancy, Scanner Selection, Scanner Timeout, and Scanner Trigger Mode.



The next sections explain how to

- extend the Configuration application.
- import a registry file.

Use the last two sections in this appendix to look up the definitions for the “Registry Property Values” and the “Required and Optional Registry Property Values.”

Extending the Configuration Application

By modifying the properties in the RUM section of the 502X registry, you can change the configuration menus, tabs, parameters, and options in the local Configuration application and the Configuration Management application in Unit Manager.

For help using the Configuration application, see Chapter 2, “Configuring the 502X,” in the 502X user’s manual. For help with Unit Manager, see Chapter 4, “Using Unit Manager.”



Note: If you cold boot the 502X, you will lose all registry changes and extensions. Make sure you export the registry file and save a backup copy.

To extend the Configuration and Configuration Management applications

1. Connect the 502X to your development PC and establish communications.
2. Edit the 502X registry. For help, see “Registry Property Values” later in this appendix. The Configuration application section begins at this branch:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP
```

For example, open a Windows CE registry editor like the Remote Registry Editor in Microsoft Windows CE 2.1 Toolkit for Visual C++ 6.0.

3. Save the changes.
4. Choose RUM or the folder in RUM that you customized beginning at this branch:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP
```

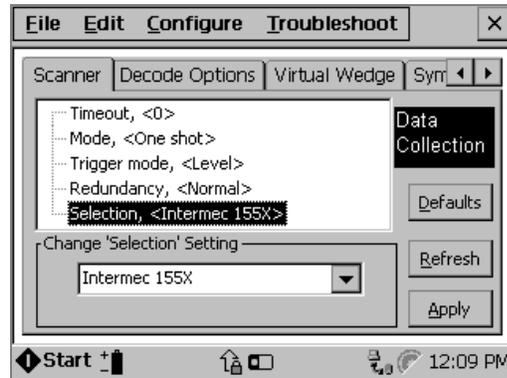
Export your registry changes and save the registry file as a backup file. You can import the registry file to recover your changes after a cold boot. For help importing a registry file, see “Importing a Registry File” later in this appendix.

5. Exit the registry editor.
6. To see the changes, restart the Configuration application on the 502X. You can also connect to the 502X through a Web browser, start Unit Manager, and then click Configuration to start the Configuration Management application.

Example 1

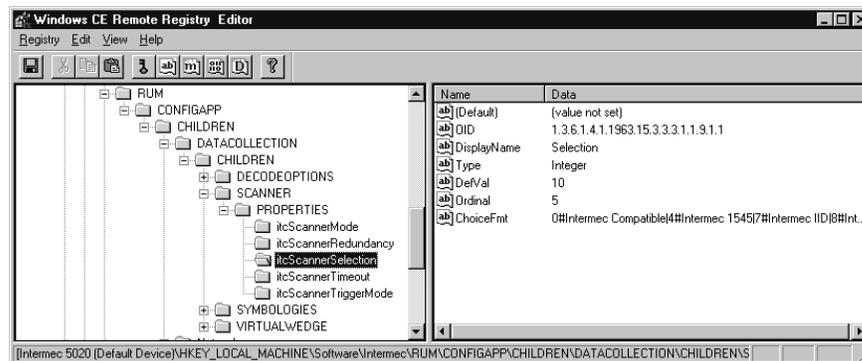
In this example, change the Scanner Selection options from a list of eight scanners or input devices to a list of three input devices.

Scanner Selection in the Local Configuration Application



To change the Scanner Selection options

1. Connect the 502X to your development PC and establish communications.
2. Edit the 502X registry.
3. Open the Scanner Selection branch of the registry as shown below.



4. Edit the ChoiceFmt line. The current ChoiceFmt line is:

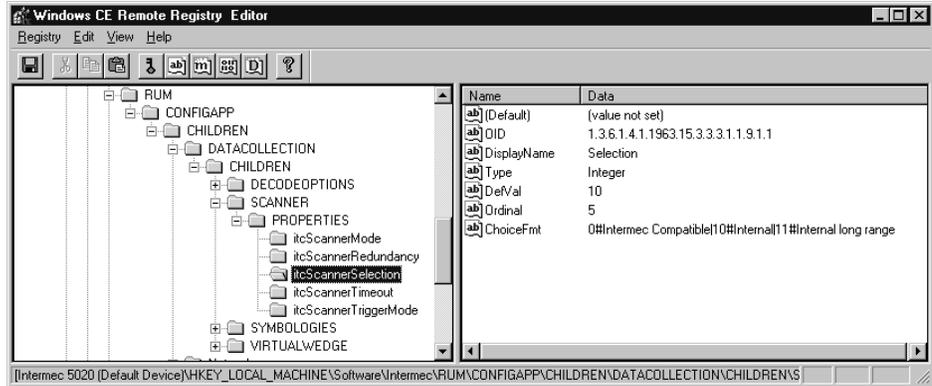
```
"ChoiceFmt"="0#Intermec Compatible|4#Intermec 1545|7#Intermec IID|8#Intermec 155X|10#Internal|11#Internal long range|12#Internal extra long range|13#Internal raster"
```

Remove the Scanner Selection options 4, 7, 8, 12, and 13 as shown.

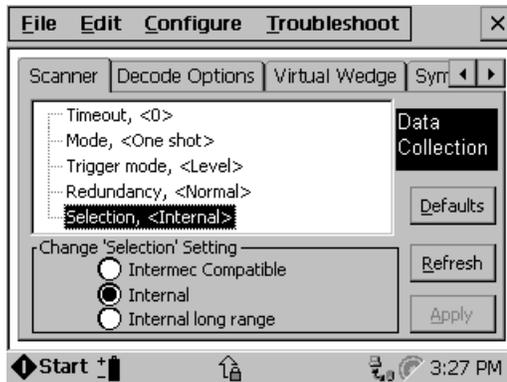
```
"ChoiceFmt"="0#Intermec Compatible|10#Internal|11#Internal long range"
```



The registry appears as shown next.



5. Save the changes and exit the registry editor.
6. To see the changes, restart the Configuration application on the 502X. The Scanner Selection parameter now has three options. You can also connect to the 502X with a Web browser, start Unit Manager, and click Configure to start the Configuration Management application. Choose Data Collection and look at the Scanner parameter to see the three options.

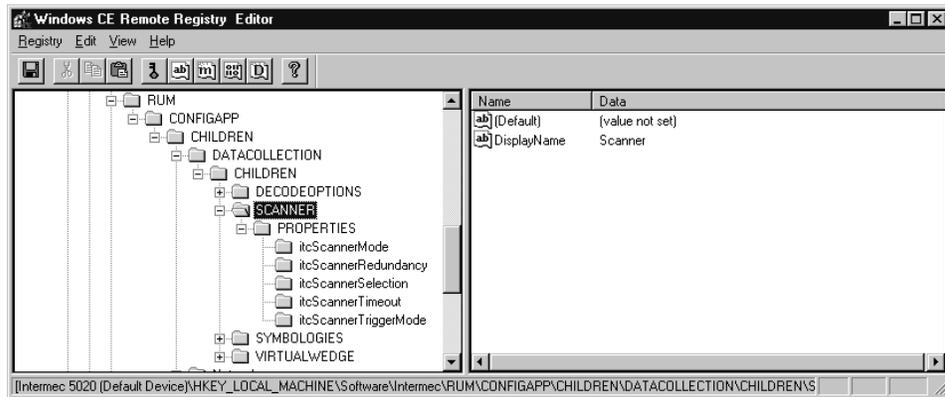


Example 2

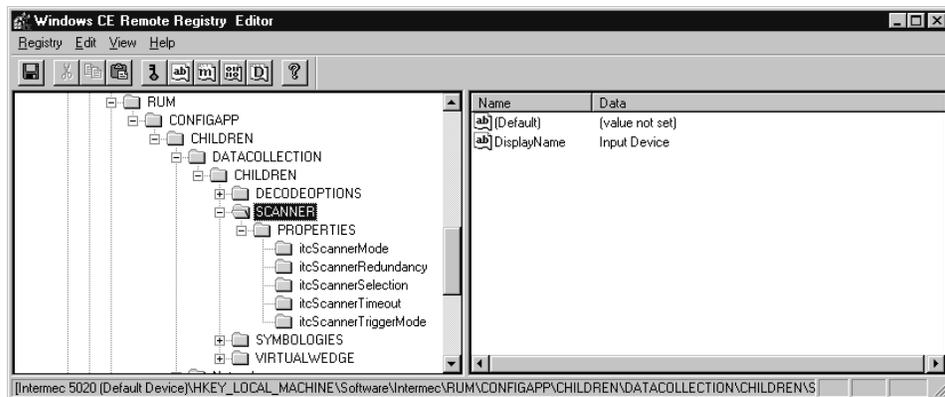
In this example, rename the Scanner tab to Input Device.

To rename the Scanner tab

1. Connect the 502X to your development PC and establish communications.
2. Edit the 502X registry.
3. Open the Scanner branch of the registry as shown below.



4. Edit the DisplayName field and change the name from “Scanner” to “Input Device.” The registry appears as shown next.



5. Save the changes and exit the registry editor.
6. To see the changes, restart the Configuration application on the 502X. The Scanner configuration tab in the Data Collection menu shows the new display name. You can also connect to the 502X with a Web browser, start Unit Manager, and click on Configure to start the Configuration Management application. Click Data Collection to see the renamed configuration tab.

Importing a Registry File

Once you have extended the Configuration application on a 502X, you can import the customized registry file into another 502X. You may also need to import the registry file if you cold boot the 502X.



Note: If you cold boot the 502X, you will lose all registry changes and extensions. Make sure you export the registry file and save a backup copy.

To import a registry file

1. Copy the registry file from your development PC to the 502X. For help, see Chapter 4, “Using Unit Manager.”
2. On the 502X, choose Run from the Start menu.
3. Type this command and choose OK:

```
itcconfig.exe filename.reg
```

where *filename.reg* is the name of your customized registry file for the Configuration application.

4. Repeat Steps 1 through 3 for each 502X.



Note: ITCCONFIG.EXE is only designed to import 502X properties. It is not a full-featured registry import application.

Registry Property Values

These are the possible values that can go in the registry. Not all of these values are required for each configuration item. For a list of required items, see the next section, "Required and Optional Registry Property Values."

Adapter

Purpose: Reserved for use by Intermecc. The adapter identifies the communications PC card.

Syntax: Reserved.

Type: Reserved.

Example: Reserved for use by Intermecc as shown next.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\Network\
CHILDREN\OpenAir1]
"Ordinal"="2"
"DisplayName"="Radio"
"PageDependency"="PageDependency.PageDependency.1"
"Adapter"="OpenAir"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\Network\CHI
LDREN\OpenAir1\PROPERTIES\IPAddress\PROPERTIES\itcDHCPEnable.2]
"OID"="1.3.6.1.4.1.1963.5.15.5.2.1.1.?"
"Adapter"="OpenAir"
"Type"="Integer"
"DefVal"="1"
"Ordinal"="1"
"DisplayName"="Obtain IP Address via DHCP"
"ShortDesc"="The next time the adapter is used it will have the new
settings. If the adapter is currently in the device you can suspend and
then resume the device to have the changes take affect."
"ChoiceFmt"="0#FALSE|1#TRUE"
```

Bound

Purpose: Reserved for future use.

Syntax: Reserved.

Type: Reserved.



ChoiceFmt

- Purpose:** Specifies a choice list in the user interface.
- Syntax:** `"n#<text>|n1#<text>|..."`
 where *n*, *n1*, and so on is the numeric value and <text> is the corresponding textual description of *n*, *n1*, and so on.
- Type:** Integer
- Example:** The ChoiceFmt definition for Beep (or Beeper) Volume is:
- ```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\UNIT\
CHILDREN\SPEAKER\PROPERTIES\itcBeeperVolume]
"DisplayName"="Volume"
"OID"="1.3.6.1.4.1.1963.15.3.1.3.0"
"Type"="Integer"
"DefVal"="3"
"Ordinal"="1"
"ChoiceFmt"="0#Off|1#Very quiet|2#Quiet|3#Normal|4#Loud|5#Very loud"
```

## CmdOID

- Purpose:** Used by subitems of reader or configuration commands to indicate the parent's OID. The value you enter is the OID of the item of which this is a parameter (parent's OID). The CmdOID is designed for reader and configuration commands. You can also use CmdOID for any item that is a string where you want to edit substrings independently. For help with commands, see Chapter 6, "Reader Command Reference," or Chapter 7, "Configuration Command Reference."
- Syntax:** `"n:y"`  
 where *n* is the parent OID and *y* is the position.
- Type:** Integer
- See also:** CmdString, OID, reader and configuration commands
- Example:** The CmdOID for the third digit of Code 39 is:
- ```
"CmdOID"="1.3.6.1.4.1.1963.15.3.3.1.1.3.1:3"
```
- Code 39 is a parent and has its own OID. However, you can set three options for Code 39 and each option or digit has a CmdOID. The third digit is where you select non-full ASCII, full ASCII, or mixed-full ASCII Code 39. For help, see "Code 39" in Chapter 7.
- ```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SYMBOLOGIES\PROPERTIES\itcCode39\PROPERTIES\3]
"DisplayName"="ASCII"
"Type"="Integer"
"DefVal"="1"
"Ordinal"="3"
"CmdOID"="1.3.6.1.4.1.1963.15.3.3.1.1.3.1:3"
"ChoiceFmt"="0#Non-full ASCII|1#Full ASCII|2#Mixed full ASCII"
```

## **CmdString**

**Purpose:** Specifies the number and widths of the subitems for a reader or configuration command. This entry is required for properties where the type is ReaderCmd.

**Syntax:** "*n,w<sup>1</sup>,w<sup>2</sup>...w<sup>n</sup>*"

where *n* is the number of options, *w<sup>1</sup>* is the field width of the first option, *w<sup>2</sup>* is the field width of the second option, and so on to *w<sup>n</sup>*.

**Type:** ReaderCmd

**See also:** CmdOID, reader and configuration commands

**Example:** Code 39 has three options or digits, so the CmdString is:

```
"CmdString"= "3,1,1,1"
```

The “3” defines the three options and each option is a single digit. For help, see “Code 39” in Chapter 7.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SYMBOLOGIES\PROPERTIES\itcCode39]
"OID"="1.3.6.1.4.1.1963.15.3.3.1.1.3.1"
"DisplayName"="Code 39"
"Type"="ReaderCmd"
"Ordinal"="1"
"CmdString"="3,1,1,1"
"DefVal"="101"
"ShortDesc"="If Code 39 Options equals HIBC, then Check digit must equal
Retain and ASCII must equal Non-full ASCII"
```

---

## **Constraint**

**Purpose:** Reserved for future use.

**Syntax:** Reserved

**Type:** Reserved



## DefVal

**Purpose:** The Intermec factory default value for this configuration item. You do not set DefVal for ReadOnly items.

**Syntax:** "string"  
 where "string" is the default value in quotes.

**Type:** All

**Example:** The DefVal for Beeper Volume is “3”, where 3 is a normal beep volume.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\UNIT\
CHILDREN\SPEAKER\PROPERTIES\itcBeeperVolume]
"DisplayName"="Volume"
"OID"="1.3.6.1.4.1.1963.15.3.1.3.0"
>Type"="Integer"
"DefVal"="3"
"Ordinal"="1"
"ChoiceFmt"="0#Off|1#Very quiet|2#Quiet|3#Normal|4#Loud|5#Very loud"
```

## DisplayName

**Purpose:** Text that displays on the user interface (menu, label, or caption).

**Syntax:** "string"  
 where "string" is a text string in quotes.

**Type:** All

**Example:** Here is the DisplayName for the Scanner configuration tab or page and for one of the parameters, Scanner Timeout.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SCANNER]
"DisplayName"="Scanner"

[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SCANNER\PROPERTIES\itcScannerTimeout]
"OID"="1.3.6.1.4.1.1963.15.3.3.3.1.1.5.1.1"
"DisplayName"="Timeout"
>Type"="Integer"
"DefVal"="0"
"Ordinal"="1"
"Range"="0,60"
```

## **Expert**

**Purpose:** Reserved for future use.

**Syntax:** Reserved

**Type:** Reserved

---

## **Hidden**

**Purpose:** Reserved for future use.

**Syntax:** Reserved

**Type:** Reserved

---

## **MaxChars**

**Purpose:** Specifies the maximum number of characters that can be entered in the user interface.

**Syntax:** "*n*"  
where *n* is any positive integer.

**Type:** Octet string

**See also:** TextFmt

**Example:** The MaxChars for preamble is 31 characters.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\VIRTUALWEDGE\PROPERTIES\itcrVMPreamble]
"OID"="1.3.6.1.4.1.1963.15.3.2.1.1.3.1"
"DisplayName"="Preamble"
"Type"="Octet String"
"DefVal"=""
"Ordinal"="2"
"MaxChars"="31"
```



## OID

**Purpose:** SNMP Object Identifier (OID) for the configuration item.

**Syntax:** "n.n.n.n..."  
 where *n* is an OID.

**Type:** All

**See also:** CmdOID

**Example:** The OID for preamble is 1.3.6.1.4.1.1963.15.3.2.1.1.3.1.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\VIRTUALWEDGE\PROPERTIES\itcRVWPreAmble]
"OID"="1.3.6.1.4.1.1963.15.3.2.1.1.3.1"
"DisplayName"="Preamble"
"Type"="Octet String"
"DefVal"=""
"Ordinal"="2"
"MaxChars"="31"
```

## Ordinal

**Purpose:** Specifies the order of the item relative to its siblings or properties at the same level. The ordinal also indicates the order in each sublevel.

**Syntax:** "n"

**Type:** Not applicable.

**Example:** In the Scanner page, Scanner Timeout is the first property or parameter, so it has an ordinal value of "1." Scanner Mode is the second property or parameter, so the ordinal value is "2."

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SCANNER\PROPERTIES\itcScannerTimeout]
"OID"="1.3.6.1.4.1.1963.15.3.3.3.1.1.5.1.1"
"DisplayName"="Timeout"
"Type"="Integer"
"DefVal"="0"
"Ordinal"="1"
"Range"="0,60"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SCANNER\PROPERTIES\itcScannerMode]
"OID"="1.3.6.1.4.1.1963.15.3.3.3.1.1.6.1.1"
"DisplayName"="Mode"
"Type"="Integer"
"DefVal"="0"
"Ordinal"="2"
"ChoiceFmt"="0#One shot|1#Auto-trigger"
```

## **PageDependency**

**Purpose:** Reserved for use by Intermec.

**Syntax:** Reserved

**Type:** Reserved

**Example:** Reserved for use by Intermec as shown next.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SYMBOLOGIES]
"PageDependency"="PageDependency.PageDependency.1"
"DisplayName"="Symbologies"
```

---

## **PropEditor**

**Purpose:** Reserved for future use.

**Syntax:** Reserved

**Type:** Reserved

---

## **Range**

**Purpose:** Specifies the range of allowed values.

**Syntax:** "*n,m*"

where *n* is the lower limit of the range and *m* is the upper limit.

**Type:** Integer

**Example:** The range for Scanner Timeout is any number from 0 to 60.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\SCANNER\PROPERTIES\itcScannerTimeout]
"OID"="1.3.6.1.4.1.1963.15.3.3.3.1.1.5.1.1"
"DisplayName"="Timeout"
"Type"="Integer"
"DefVal"="0"
"Ordinal"="1"
"Range"="0,60"
```

---

## **ReadOnly**

**Purpose:** Specifies a read-only configuration item.

**Syntax:** "True"

**Type:** Not applicable.

**Example:** The Access Point Name is a read-only configuration item since the information is supplied from the access point.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\Network\
CHILDREN\OpenAir1\PROPERTIES\OpenAirConfig\PROPERTIES\itcOpenAir
ConnectedAP.2]
"OID"="1.3.6.1.4.1.1963.5.5.2.5.1.1.1.?"
"Adapter"="OpenAir"
"Type"="Octet String"
"Ordinal"="1"
"DisplayName"="Access Pt Name"
"ShortDesc"="The next time the adapter is used it will have the new
settings. If the adapter is currently in the device you can suspend and
then resume the device to have the changes take effect."
"MaxChars"="255"
"ReadOnly"="True"
```

---

## **Security**

**Purpose:** Reserved for future use.

**Syntax:** Reserved

**Type:** Reserved

---

## **ShortDesc**

**Purpose:** When you edit a configuration item in the Configuration Management application, this text displays below the options for the configuration item. The short description does not display on the 502X Configuration application.

**Syntax:** "string"  
where "string" is a text string in quotes.

**Type:** All

---

**ShortDesc (continued)**

**Example:** Here is the short description for Code 2 of 5.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\DATACOLLECT
ION\CHILDREN\SYMBOLOGIES\PROPERTIES\itc2of5]
"OID"="1.3.6.1.4.1.1963.15.3.3.1.1.4.1"
"DisplayName"="Code 2 of 5"
"Type"="ReaderCmd"
"Ordinal"="3"
"CmdString"="2,1,2"
"DefVal"="000"
"ShortDesc"="If Code 2 of 5 is enabled, Interleaved 2 of 5 will be
disabled."
```

---

**TextFmt**

**Purpose:** Specifies the formatting for a string of characters that you can enter in the user interface. You specify the maximum length of the string by the number of formatting characters (# or &).

**Syntax:** "#" or "&"

where:

- # Allows only a numeric character between 0 and 9.
- & Allows any ASCII character.

You can only use one type of formatting character (# or &) in a string.

**Type:** Octet string

**See also:** MaxChars

**Example:** In the Decode Priority command, TextFmt defines a numeric-only field that is 24 digits long.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\DATACOLLECT
ION\CHILDREN\DECODEOPTIONS\PROPERTIES\itcSymPriority]
"OID"="1.3.6.1.4.1.1963.15.3.3.2.1.3.1"
"DisplayName"="Decode priority"
"Type"="Octet String"
"DefVal"="010203040506070809101112"
"Ordinal"="2"
"TextFmt"="#####"
```



## Type

**Purpose:** SNMP data type. Each property has a type.

**Syntax:** "Integer" or "Octet String" or "ReaderCmd" or "IP Address"

where ReaderCmd is a reader or configuration command. For help, see Chapter 6, "Reader Command Reference," or Chapter 7, "Configuration Command Reference."

**Type:** Not applicable.

**Example:** The type for preamble is an octet string.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Intermec\RUM\CONFIGAPP\CHILDREN\
DATACOLLECTION\CHILDREN\VIRTUALWEDGE\PROPERTIES\itcrVWPreamble]
"OID"="1.3.6.1.4.1.1963.15.3.2.1.1.3.1"
"DisplayName"="Preamble"
"Type"="Octet String"
"DefVal"=""
"Ordinal"="2"
"MaxChars"="31"
```

## Required and Optional Registry Property Values

This table indicates, for each level in the registry, whether the value is required, optional, or not applicable (N/A).

Every property (label or non-label) MUST have the following:

- DisplayName
- Ordinal

All non-label properties MUST have the following:

- DisplayName
- Ordinal
- Type
- DefVal
- OID or CmdOID

**Required and Optional Registry Property Values**

| <b>Registry Property Value</b> | <b>Root</b> | <b>MenuItem</b> | <b>PageView</b> | <b>Properties</b>               |
|--------------------------------|-------------|-----------------|-----------------|---------------------------------|
| Adapter                        | N/A         | N/A             | Optional        | N/A                             |
| Bound                          | N/A         | N/A             | N/A             | Optional                        |
| ChoiceFmt                      | N/A         | N/A             | N/A             | Optional                        |
| CmdOID                         | N/A         | N/A             | N/A             | Required for ReaderCmd subitems |
| CmdString                      | N/A         | N/A             | N/A             | Required for ReaderCmd          |
| Constraint                     | N/A         | N/A             | N/A             | Optional                        |
| DefVal                         | N/A         | N/A             | N/A             | Required if non-label           |
| DisplayName                    | N/A         | Required        | Required        | Required                        |
| Expert                         | N/A         | Optional        | Optional        | Optional                        |
| Hidden                         | N/A         | Optional        | Optional        | Optional                        |
| MaxChars                       | N/A         | N/A             | N/A             | Optional                        |
| OID                            | N/A         | N/A             | N/A             | Required if non-label           |
| Ordinal                        | N/A         | N/A             | N/A             | Required                        |
| PageDependency                 | N/A         | N/A             | Optional        | N/A                             |
| PropEditor                     | N/A         | N/A             | N/A             | Optional                        |
| Range                          | N/A         | N/A             | N/A             | Optional                        |
| ReadOnly                       | N/A         | N/A             | N/A             | Optional                        |
| Security                       | N/A         | Optional        | Optional        | Options                         |
| ShortDesc                      | N/A         | N/A             | N/A             | Optional                        |
| TextFmt                        | N/A         | N/A             | N/A             | Optional                        |
| Type                           | N/A         | N/A             | N/A             | Required if non-label           |
| [CHILDREN]                     | Required    | Required        | N/A             | N/A                             |
| [PROPERTIES]                   | N/A         | N/A             | Required        | Optional                        |



***Index***



## Numbers

- 2.4 GHz OpenAir radio, *See* OpenAir radio
  - 502X Data Collection PC
    - 5020 models, described, 1-3
    - 5023 model, described, 1-3
    - applications, developing, 5-3
    - configuring, overview, 2-3
    - models, described and illustrated, 1-3
    - radio parameters, described, 2-10
    - software, installed, 1-4
  - 802.11b HR radio
    - access point density, configuring, 7-11
    - access point MAC address, displaying, 7-12
    - access point network name, displaying, 7-13
    - default settings, A-6
    - description, displaying, 7-73
    - MAC address, displaying, 7-73
    - maximum sleep duration, configuring, 7-60
    - network name, configuring, 7-63
    - power management, configuring, 7-69
    - primary/station radio ROM Version, displaying, 7-72
    - receive all multicasts, configuring, 7-74
    - required parameters for network connection, 2-10
    - reservation threshold, configuring, 7-75
    - setting parameters with Fast Config, 2-4
    - station name, configuring, 7-96
    - supported WEP, displaying, 7-97
    - transmit rate, configuring, 7-107
    - WEP encryption, configuring, 7-115
    - WEP key length, configuring, 7-117
    - WEP key, configuring, 7-116
    - WEP transmit key, configuring, 7-117
- ## A
- ABC Codabar symbology, 7-20
  - access point
    - configuring, 2-10
    - default settings, A-5, A-6
    - Density command, 7-11
    - MAC address, displaying, 7-12
    - name, displaying, 7-12
    - network name, displaying, 7-13
    - RF roaming, 7-76
    - RF security ID, 7-85
  - Access Point Density command, 7-11
  - Accumulate mode, 6-3
  - Acknowledgement Delay Lower Limit command, 7-13
  - Acknowledgement Delay Upper Limit command, 7-14
  - acknowledgement timer, TCP/IP extensions delayed, 7-103
  - ActiveSync
    - connecting, 5-23
    - disconnecting, 5-24
    - establishing a partnership, 5-20
    - installing, 5-20

- ActiveSync (*continued*)
  - serial I/O PC card, using with, 5-24
- Adapter property value, D-10
- ADC
  - functions, 5-7
  - Simulator, described, 5-4
  - virtual wedge, enabling, 7-112
- address
  - 502X IP, configuring, 7-10
  - company, entering on 502X, 3-11
  - controller IP, configuring, 7-37
  - default router, configuring, 7-41
  - default settings, A-5
  - DHCP, using, 7-43
  - MAC address, displaying, 7-73
  - Secondary DNS Server command, 7-83
  - Secondary WINS Server command, 7-84
  - SNMP security IP, 7-88
  - SNMP security subnet mask, 7-90
  - SNMP trap IP address, 7-93
  - subnet mask, 7-96
- Admin mode, placing the 5020 in, 4-36
- AIAG check digit, Code 39, 7-28
- American Blood Commission, *See* ABC Codabar
- ANSI character set, 7-112
- Application Manager application, 4-27
  - installing applications, 4-28
  - messages while installing applications, 4-29
  - uninstalling applications, 4-29
- applications
  - ActiveSync, 5-19
  - Application Manager, 4-27
  - automatic installation on 5020, 5-15
  - cabinet (CAB) file, 5-12
  - Configuration, 2-4 to 2-5
  - Configuration Management, 4-5
  - developing
    - components needed, 5-3
    - installing software, 5-3
    - with SDK, 5-4
    - without SDK, 5-8
  - eMbedded Visual Tools, Ethernet access, 5-25
  - Event Viewer, 4-30
  - Fast Config, 2-4
  - File Manager, 4-10
  - installing, 5-14
  - Internet Explorer (IE), 5-9
  - messages while installing, 4-29
  - off-the-shelf, 5-28
  - Password, 4-34
  - Process Manager, 4-21
  - removing, 3-15
  - running, 4-20
  - setting up to test on 502X, 5-25
  - uninstalling, 5-16

## 502X Data Collection PC System Manual

### applications (*continued*)

- Unit Manager for PlanNET
  - Application Manager, 4-27
  - Configuration Management, 4-5
  - Event Viewer, 4-30
  - File Manager, 4-10
  - Password, 4-34
  - Process Manager, 4-21

### ASCII

- bar code chart, B-6 to B-10
- character equivalents, table of, B-3 to B-5
- Code 39, full, 7-26
- Code 39, mixed-full, 7-26
- Code 39, non-full, 7-26
- control characters, list of, B-5

attributes, changing file, 4-19

### audio signals

- beep duration, setting, 7-16
- beep frequency, setting, 7-18
- default settings, A-8
- keypad clicks, enabling or disabling, 7-59
- sounds, enabling, 3-16, 7-95
- volume, changing, 3-16, 7-95

authentication, SNMP trap, 7-92

Auto Run list, 5-17

Automatic Data Collection, *See* ADC

Automatic mode, configuring the scanner, 7-77

### Automatic Shutoff

- backlight, setting, 3-9
- command, setting, 3-13, 7-15
- disabling for Unit Manager, 4-3

automatically turning the 502X off, 7-15

Auto-trigger mode, configuring the scanner, 7-77

## B

background, changing, 3-9

### backlight

- configuring the level, 7-44
- configuring the timeout, 3-9, 7-44
- turning on and off, 6-7

### bar codes

- accumulating data, 6-3
- ASCII chart, B-6 to B-10
- Codabar, configuring, 7-20
- Code 11, configuring, 7-21
- Code 128, configuring, 7-33
- Code 16K, configuring, 7-23
- Code 39, configuring, 7-26
- Code 49, configuring, 7-30
- Code 93/93i, configuring, 7-32
- configuration commands
  - listed by category, 7-4
  - listed by syntax, 7-7
- creating, about start/stop codes, 7-3
- Decode Priority command, 7-37

### bar codes (*continued*)

- decode security, configuring, 7-40
  - default settings, A-3
  - Interleaved 2 of 5, configuring, 7-55
  - list of configurable commands, 2-6
  - MSI, configuring, 7-61
  - Multiple-Read labels, 6-8
  - PDF 417, configuring, 7-65
  - Plessey, configuring, 7-66
  - regular labels, 6-8
  - Scanner Redundancy command, 7-78
  - UPC/EAN, configuring, 7-108
- battery status, viewing with Power applet, 3-13
- baud rate
  - command, 7-57
  - setting for D5020 and L5020, 7-57

### beep

- Beep Duration command, 7-16
- Beep Frequency command, 7-18
- default settings, A-8
- enabling, 3-16, 7-95
- Speaker Volume command, 7-95
- volume, changing, 3-16, 7-95

BFSK, defined, 7-106

binary, table of ASCII characters, B-3 to B-5

Bound property value, D-10

Break property value, C-10

bridge battery, viewing status with Power applet, 3-13

## C

CABARC program, 5-12

cabinet (CAB) file, 5-12

- deleting, 5-14
- installing, 5-14
- problems installing, 4-29

capitalizing characters using Keypad Caps Lock command, 7-58

Caps Lock command, 7-58

CCD scanners, configuring for tethered scanner port, 7-79

### change configuration

- configuration commands, using, 7-9
- reader commands, using, 6-7

### characters

- delay, setting, 3-10
- Keypad Caps Lock command, 7-58
- repeat rate, setting, 3-10
- setting the maximum number for the user interface, D-14

ChoiceFmt property value

- described, D-11
- example, changing, D-6

Clear reader command, 6-5

clicker, keypad, 7-59

CmdOID property value, D-11

CmdString property value, D-12

Codabar command, 7-20

- Code 11 command, 7-21
- Code 128 command, 7-33
- Code 16K command, 7-23
- Code 2 of 5 command, 7-24
- Code 39 ASCII characters, table of, B-3
- Code 39 command, 7-26
- Code 49 command, 7-30
- Code 93/93i command, 7-32
- code page, virtual wedge, 7-112
- commands
  - configurable by bar code, 2-6
  - configuration, *See* configuration commands
  - reader, *See* reader commands
- communications
  - default settings, A-5, A-6
  - Ethernet, using, 2-9
  - functions, SDK, 5-6
  - IrDA, using, 2-11
  - network protocol options, 2-9
  - properties, setting, 3-4
  - serial, using, 2-11
- community name, SNMP trap, 7-92
- community string
  - SNMP read only, 7-89
  - SNMP read/write, 7-90
  - SNMP security write encryption, 7-91
  - SNMP trap authentication, 7-92
- compact flash card, using to install applications on 5020, 5-15
- company name, entering on 502X, 3-11
- configuration
  - application
    - accessing, 2-5
    - described, 1-4, 2-5
    - extending, D-5
    - scanner selection options, customizing, D-6
    - scanner tab, customizing, D-8
  - commands
    - 502X IP Address, 7-10
    - Access Point Density, 7-11
    - Access Point MAC Address, 7-12
    - Access Point Name, 7-12
    - Access Point Network Name, 7-13
    - Acknowledgement Delay Lower Limit, 7-13
    - Acknowledgement Delay Upper Limit, 7-14
    - Automatic Shutoff, 7-15
    - bar code commands by syntax, 7-7
    - Baud Rate, 7-57
    - Beep Duration, 7-16
    - Beep Frequency, 7-18
    - category, listed by, 7-4
    - Codabar, 7-20
    - Code 11, 7-21
    - Code 128, 7-33
    - Code 16K, 7-23
    - Code 39, 7-26
    - configuration, commands (*continued*)
      - Code 49, 7-30
      - Code 93/93i, 7-32
      - Controller Connect Check Receive Timer, 7-35
      - Controller Connect Check Send Timer, 7-36
      - Controller IP Address, 7-37
      - Decode Priority, 7-37
      - Decode Security, 7-40
      - Default Router, 7-41
      - Device Name, 7-42
      - DHCP, 7-43
      - Display Backlight Level, 7-44
      - Display Backlight Timeout, 7-44
      - IDRSEnable, 7-47
      - IDRSRetries, 7-47
      - IDRSScope, 7-48
      - IDRSServerAddr, 7-48
      - IDRSTimeout, 7-49
      - IE Autodial Name, 7-49
      - IE Cache Size, 7-50
      - IE Function Key URLs, 7-50
      - IE Home Page, 7-51
      - IE Proxy Server Address, 7-51
      - IE Proxy Server Port, 7-52
      - IE Underline Links, 7-52
      - IE Use LAN (No Auto Dial), 7-53
      - IE Use Proxy Server, 7-54
      - Interleaved 2 of 5, 7-55
      - Keypad Caps Lock, 7-58
      - Keypad Clicker, 7-59
      - Maximum Retries, 7-60
      - Maximum Sleep Duration, 7-60
      - MSI, 7-61
      - Network Loopback, 7-63
      - Network Name, 7-63
      - Network Port, 7-64
      - PDF 417, 7-65
      - Plessey, 7-66
      - Postamble, 7-67
      - Power Management, 7-69
      - Preamble, 7-69
      - Pri./Station Radio ROM Version, 7-72
      - Primary DNS Server, 7-71
      - Primary WINS Server, 7-72
      - Radio Description, 7-73
      - Radio MAC Address, 7-73
      - Radio ROM Version, 7-74
      - Receive All Multicasts, 7-74
      - Reservation Threshold, 7-75
      - RF Domain, 7-46
      - RF Inactivity Timeout, 7-54
      - RF Roaming Allowed, 7-76
      - RF Security ID, 7-85
      - RF Transmit Mode, 7-106
      - Scanner Mode, 7-77

## 502X Data Collection PC System Manual

- Scanner Redundancy, 7-78
- Scanner Selection, 7-79
- Scanner Timeout, 7-81
- Scanner Trigger, 7-82
- Secondary DNS Server, 7-83
- Secondary WINS Server, 7-84
- SNMP Identification Contact, 7-86
- SNMP Identification Location, 7-86
- SNMP Identification Name, 7-87
- SNMP Security Encryption Key, 7-87
- SNMP Security IP Address, 7-88
- SNMP Security Read Encryption, 7-89
- SNMP Security Read Only Community String, 7-89
- SNMP Security Read/Write Community String, 7-90
- SNMP Security Subnet Mask, 7-90
- SNMP Security Write Encryption, 7-91
- SNMP Trap Authentication, 7-92
- SNMP Trap Community Name, 7-92
- SNMP Trap IP Address, 7-93
- SNMP Trap Port, 7-94
- SNMP Trap Threshold, 7-94
- Speaker Volume, 7-95
- Station Name, 7-96
- Subnet Mask, 7-96
- Symbology Identifier, 7-98
- TCP/IP Extensions Delayed Acknowledgement Timer, 7-103
- TCP/IP Extensions Initial Roundtrip Time, 7-103
- TCP/IP Extensions Receive Window Size, 7-104
- TFTP Resend Limit, 7-105
- TFTP Timeout, 7-105
- Transmit Rate, 7-107
- UDP Plus Enable, 7-107
- UPC/EAN, 7-108
- using, 7-3
- variable data, entering, 7-9
- Virtual Wedge Code Page, 7-112
- Virtual Wedge Grid, 7-113
- Virtual Wedge, enabling, 7-112
- WEP Encryption, 7-115
- WEP Key, 7-116
- WEP Transmit Key, 7-117
- Configuration Management application, 4-5
  - configuring parameters with, 4-5
  - main screen, illustrated, 4-5
  - viewing unit information, 4-9
- configuring the 502X, 2-3
  - bar codes, using, overview, 2-6
  - Change Configuration command, using, 6-7
  - Configuration application, overview, 2-5
  - Configuration Management application, using, 4-5
  - connecting to Unit Manager, 4-3
  - Fast Config, overview, 2-4
  - SNMP commands, using, 2-7
- connecting with ActiveSync, 5-23

- Constraint property value, D-12
- control characters
  - bar code labels to scan, B-6
  - full ASCII, list of, B-5
- control panel
  - application programs, removing, 3-15
  - backlight shutoff, adjusting, 3-9
  - battery status, viewing with Power applet, 3-13
  - date and time, setting, 3-7
  - dialing properties, creating, 3-8
  - display properties, changing, 3-9
  - keypad, adjusting properties, 3-10
  - memory allocation, adjusting, 3-16
  - opening, 3-4
  - owner information, entering, 3-11
  - password, setting, 3-12
  - regional settings, entering, 3-14
  - sounds volume, changing, 3-16
  - system information, viewing, 3-15
- Controller Connect Check Receive Timer command, 7-35
- Controller Connect Check Send Timer command, 7-36
- controller IP address, command, 7-37
- copying a file, 4-15
- currency, using regional settings, 3-14
- customizing scanner selection options, D-6

## D

- D5020, setting baud rate for, 7-57
- data collection
  - configuration commands, list of, 7-4
  - default configuration, A-3
- data, accumulating in commands, 6-3, 7-9
- date and time
  - configuring, 3-7
  - Set Date and Time reader command, 6-8
  - using regional settings, 3-14
- DCS 30X, UDP Plus default settings, A-7
- debugging, setting up eMbedded Visual Tools, 5-26
- decimal table of ASCII characters, B-3 to B-5
- Decode Priority command, 7-37
- Decode Security command, 7-40
- decoding
  - bar codes, 7-78
  - default settings, A-3
- default local heap sorted by size, viewing, 4-24
- default local heap, viewing, 4-23
- defaults, configuration
  - 802.11b HR radio, A-6
  - data collection, A-3
  - IDRS commands, A-4
  - Internet Explorer (IE), A-4
  - network communications, A-5, A-6
  - OpenAir radio, A-5
  - SNMP, A-7
  - UDP Plus, A-7

- defaults, configuration (*continued*)
  - unit operations, A-8
- DefVal property value, D-13
- delay between two hosts, 7-103
- delayed acknowledgement timer, TCP/IP extensions, 7-103
- deleting a file, 4-18
- desktop, adding custom applications to, 5-17
- development environment, SDK, 5-5
- Device Name command, 7-42
- device name, configuring, 3-4
- DHCP
  - command, 7-43
  - default settings, A-5
  - server assigned network parameters, 2-10
- dialing properties, creating, 3-8
- directory
  - creating on the 502X, 4-11
  - deleting on the 502X, 4-12
  - moving a file to another directory, 4-16
  - renaming on the 502X, 4-13
  - uploading a file to, 4-14
- disconnecting from ActiveSync, 5-24
- display
  - background, changing, 3-9
  - backlight
    - automatic shutoff, changing, 3-9, 7-44
    - level, configuring, 3-9, 7-44
    - on and off, reader command, 6-7
  - default settings, A-8
  - properties, modifying, 3-9
- DisplayName property value, C-11, D-13
- DNS server
  - Primary DNS Server command, 7-71
  - Secondary DNS Server command, 7-83
- documentation, guide to learning tasks, 1-6
- domain, *See* RF domain
- Domain Name Service, *See* DNS server
- domain name, assigning, 7-87
- duration, beep, 7-16
- Dynamic Host Configuration Protocol, *See* DHCP

## E

- EAN-8, enabling, 7-108
- edge triggering, configuring, 7-82
- eMbedded Visual Tools
  - remote Ethernet access, setting up for, 5-25
  - setting up for remote debugging, 5-26
  - supported by SDK, 5-4
  - troubleshooting, 5-27
- encryption, SNMP
  - key, setting, 7-87
  - security read, 7-89
  - security write, 7-91
- Enter Accumulate mode
  - configuration commands, using, 7-9
  - reader command, using, 6-5
- Enter reader command, 6-6
- entering data
  - configuration commands, using, 7-9
  - reader commands, using, 6-3
- equipment, required
  - ActiveSync, 5-19
  - Configuration application, extending, D-3
  - Unit Manager, extending main menu, C-3
- Ethernet
  - default settings, A-5
  - network
    - configuring, overview, 2-9
    - desktop PC, connecting the 502X to, 4-3
    - remote access, setting up for, 5-25
- European Article Numbering, *See* UPC/EAN command
- Event Viewer application, 4-30
  - clearing events, 4-34
  - setting a trace, 4-32
  - viewing events, 4-30, 4-31, 4-32
- events
  - clearing, 4-34
  - Event Viewer application, using, 4-30
  - setting a trace, 4-32
  - viewing, 4-30, 4-31, 4-32
- examples, customizing the registry
  - Adapter property value, D-10
  - ChoiceFmt, D-11
  - CmdOID property value, D-11
  - CmdString property value, D-12
  - Configuration application, extending, D-6, D-8
  - DefVal property value, D-13
  - DisplayName property value, C-11, D-13
  - MaxChars property value, D-14
  - OID property value, D-15
  - Ordinal property value, C-11, D-15
  - PageDependency property value, D-16
  - Range property value, D-16
  - ReadOnly property value, D-17
  - ShortDesc property value, D-18
  - Type property value, D-19
  - Unit Manager main menu, extending, C-8
  - Unit Manager, extending, C-6
  - Value property value, C-12
- executable files, running, 4-20
- Exit Accumulate mode
  - configuration commands, using, 7-9
  - reader command, using, 6-6
- Expert property value, D-14
- extending
  - Configuration application
    - equipment needed, D-3
    - example, D-6, D-8

## 502X Data Collection PC System Manual

- extending, Configuration application (*continued*)
  - procedure, D-5
  - Unit Manager main menu
    - equipment needed, C-3
    - example, C-6, C-8
  - Unit Manager main menu, procedure, C-5
- extensions, TCP/IP
  - delayed acknowledgement timer, 7-103
  - initial roundtrip time, 7-103
  - receive window size, 7-104

### F

- Facility Filter, setting, 4-31
- Fast Config application
  - accessing, 2-4
  - described, 2-4
  - using to connect to network, 2-4
- File Manager application, 4-10
  - attributes, changing file, 4-19
  - directory functions
    - creating, 4-11
    - deleting, 4-12
    - renaming, 4-13
  - file
    - copying, 4-15
    - deleting, 4-18
    - moving, 4-16
    - renaming, 4-17
    - running executable, 4-20
    - uploading, 4-14
  - File Upload form, 4-14
  - list of functions, 4-10
- File Transfer functions, 5-7
- File Upload, in File Manager application, 4-14
- FileCopy utility, 5-4
- files
  - changing attributes, 4-19
  - copying, 4-15
  - deleting, 4-18
  - moving, 4-16
  - renaming, 4-17
  - running executable, 4-20
  - uploading, 4-14
- FileServer utility, 5-4
- frequency, beep, 7-18
- full ASCII
  - bar code chart of characters, B-6 to B-10
  - characters, table of, B-3 to B-5
  - Code 39, 7-26
- Function Code 1
  - Code 128, using with, 7-34
  - Code 16K, enable with, 7-23
  - Code 49, enable with, 7-30
- Function Code 2, Code 49, 7-30
- Function Code 3, Code 49, 7-30

- functions, SDK
  - Automatic Data Collection (ADC), 5-7
  - Communications, 5-6
  - File Transfer, 5-7
  - Install\_Exit, 5-13
  - Install\_Init, 5-13
  - Library Message, 5-6
  - QuickWin, 5-8
  - Reader Command, 5-6
  - System Information, 5-6
  - UDP Plus, 5-7
  - Uninstall\_Exit, 5-13
  - Uninstall\_Init, 5-13
  - Virtual Wedge, 5-7
  - wrapper, 5-6

### G

- Get Processes, viewing, 4-22
- Global Filter, setting, 4-31
- GoTo button, File Manager application, 4-11
- grid, virtual wedge, 7-113
- guide to learning tasks, 1-6

### H

- hardware required for developing applications, 5-3
- Health Industry Bar Code, *See* HIBC, Code 39
- Heap Stats button, using, 4-24
- hexadecimal table of ASCII characters, B-3 to B-5
- HIBC, Code 39, 7-28
- Hidden property value, D-14
- HTTP Server, described, 1-4

### I

- I/O PC cards, using ActiveSync with, 5-24
- IADC, described, 5-8
- IBarCodeReaderConfig, 5-8
- IBarCodeReaderControl, 5-8
- idle time, setting power off, 3-13
- IDRS commands, defaults, A-4
- IDRSEnable command, 7-47
- IDRSRetries command, 7-47
- IDRSScope command, 7-48
- IDRSServerAddr command, 7-48
- IDRSTimeout command, 7-49
- IE, *See* Internet Explorer
- IEEE 802.11b High Rate (HR) radio, *See* 802.11b HR radio
- IMECSYNC.EXE, 5-28
- INF file
  - described, 5-17
  - uninstalling, 4-29
- input devices, configuring for tethered scanner port, 7-79
- Install\_Exit function, 5-13
- Install\_Init function, 5-13
- installed software, 1-4
- installing applications, 5-14

integrated scanner, *See* scanner  
 Interleaved 2 of 5 command, 7-55  
 Intermec SDK, *See* SDK  
 Internet Explorer (IE), 5-9
 

- Autodial Name, configuring, 7-49
- Cache Size, configuring, 7-50
- configuring, 5-10
- default settings, A-4
- described, 1-4
- Function Key URLs, configuring, 7-50
- Home Page, configuring, 7-51
- keypad shortcuts, 5-11
- menu bar, 5-10
- menus, accessing, 5-10
- Proxy Server Address, configuring, 7-51
- Proxy Server Port, configuring, 7-52
- Underline Links command, 7-52
- Use LAN (No Auto Dial) command, 7-53
- Use Proxy Server command, 7-54

 IP address
 

- 502X command, 7-10
- Default Router command, 7-41
- default settings, A-5
- DHCP command, described, 7-43
- Primary DNS Server command, 7-71
- Primary WINS Server command, 7-72
- Secondary DNS Server command, 7-83
- Secondary WINS Server command, 7-84
- setting, 7-10
- SNMP commands
  - security, 7-88
  - security subnet mask, 7-90
  - trap, 7-93
- Subnet Mask command, 7-96

 IrDA port
 

- baud rate, configuring, 7-57
- selecting, 3-6

 ITCONFIG.EXE, C-10, D-9  
 ITCTftpClient, 5-7

## K

key clicks
 

- enabling, 3-16, 7-59
- volume, changing, 3-16, 7-95

 keypad
 

- Caps Lock command, 7-58
- characters, capitalizing, 7-58
- Clicker command, 7-59
- default settings, A-8
- properties, adjusting, 3-10

## L

L5020, setting baud rate for, 7-57  
 language components, described, 1-5  
 letters, bar code labels to scan, B-9, B-10

level triggering, configuring, 7-82  
 library functions, SDK, 1-4, 5-6  
 Library Message functions, SDK, 5-6  
 lowercase letters, bar code labels to scan, B-10

## M

machine names, using with WINS, 7-72  
 main battery pack
 

- power suspend time, changing, 3-13, 7-15
- status, viewing with Power applet, 3-13

 manual, guide to learning tasks, 1-6  
 master agent, SNMP trap authentication, 7-92  
 master station, defined, 7-76  
 MaxChars property value, D-14  
 Maximum Retries command, 7-60  
 Maximum Sleep Duration command, 7-60  
 memory
 

- allocation, adjusting, 3-16
- viewing amount installed on 502X, 3-15

 message
 

- functions, 5-6
- SDK Library Message function, 5-6

 Microsoft Foundation Classes
 

- described, 5-4
- developing applications, 5-8

 mixed-full ASCII, Code 39, 7-26  
 models of the 502X, 1-3  
 modules, viewing for specific processes, 4-26  
 mono wave (WAV) files, supported, 3-17  
 MSI command, 7-61  
 Multiple-Read Labels reader command, 6-8

## N

name
 

- access point, displaying, 7-12
- owner information, entering, 3-11
- SNMP Identification Name command, 7-87

 network
 

- access point
  - MAC Address, displaying, 7-12
  - name, displaying, 7-12
  - network name, displaying, 7-13
- communications
  - 502X IP address, configuring, 7-10
  - default router, configuring, 7-41
  - DHCP, configuring, 7-43
  - RF domain, configuring, 7-46
  - RF roaming, configuring, 7-76
  - RF security ID, configuring, 7-85
  - subnet mask, configuring, 7-96
  - TCP/IP extensions initial roundtrip time, 7-103
- configuration commands, list of, 7-5
- configuring with Fast Config, overview, 2-4
- connecting the 502X to, 2-9
- default settings, A-5, A-6

## 502X Data Collection PC System Manual

### network (*continued*)

- DHCP server assigned parameters, 2-10
- protocol options, defined, 2-9
- required parameters
  - for 802.11b HR radio, 2-10
  - for OpenAir radio, 2-10
- Secondary DNS Server command, 7-83
- Secondary WINS Server command, 7-84
- UDP Plus
  - Acknowledgement Delay Lower Limit command, 7-13
  - Acknowledgement Delay Upper Limit command, 7-14
  - Controller Connect Check Receive Timer command, 7-35
  - Controller Connect Check Send Timer command, 7-36
  - controller IP address, configuring, 7-37
  - default settings, A-7
  - enabling, 7-107
  - Maximum Retries command, 7-60
  - Network Loopback command, 7-63
  - Network Port command, 7-64
- wired, illustrated, 2-12
- Network Name command, 7-63
- non-full ASCII, Code 39, 7-26
- numbers
  - bar code labels to scan, B-8
  - using regional settings, 3-14

## O

- OEMINSTALL.CAB, 5-15
- off-the-shelf software, 5-28
- OID property value, D-15
  - CmdOID, D-11
  - formatting with multiple options, D-12
- One-Shot mode, configuring the scanner, 7-77
- OpenAir radio
  - access point MAC address, displaying, 7-12
  - access point name, displaying, 7-12
  - default settings, A-5
  - MAC address, displaying, 7-73
  - required parameters, 2-10
  - RF domain, configuring, 7-46
  - RF inactivity timeout, configuring, 7-54
  - RF roaming, configuring, 7-76
  - RF security ID, configuring, 7-85
  - RF transmit mode, configuring, 7-106
  - ROM version, displaying, 7-74
  - setting parameters with Fast Config, 2-4
- Ordinal property value, C-11, D-15
- owner information, entering, 3-11

## P

- PageDependency property value, D-16
- Parent button, File Manager application, 4-11

- password
  - property value, C-11
  - setting, 3-12, 4-35
- Password application, 4-34
- PC card, using to install applications on 5020, 5-15
- PC connection, selecting, 3-6
- PDF 417 command, 7-65
- phone number, entering on 502X, 3-11
- Plessey command, 7-66
- port
  - network, 7-64
  - SNMP trap, 7-94
- postamble
  - default setting, A-3
  - Postamble command, 7-67
- power
  - applet, 3-13
  - management
    - automatic shutoff, using, 3-13, 7-15
    - battery status, viewing, 3-13
    - RF Inactivity Timeout command, 7-54
    - suspend time, changing, 7-15
- Power Management command, 7-69
- preamble
  - default setting, A-3
  - Preamble command, 7-69
- Primary DNS Server command, defined, 7-71
- Primary WINS Server command, defined, 7-72
- primary/station radio ROM version, displaying, 7-72
- print quality, bar code, 7-40, 7-78
- priority, decode, 7-37
- problems installing an application, 4-29
- process
  - closing, 4-22
  - killing, 4-23
  - viewing modules, 4-26
  - viewing threads, 4-25
- Process Manager application, 4-21
  - closing a process, 4-22
  - killing a process, 4-23
  - list of functions, 4-21
  - viewing process modules, 4-26
  - viewing process threads, 4-25
- program memory allocation, adjusting, 3-16
- programming environment support, described, 1-5
- PropEditor property value, D-16
- properties
  - Configuration application, changing, D-5
  - Unit Manager main menu, changing, C-5
- protocol options, defined, 2-9
- punctuation marks, bar code labels to scan, B-7

## Q

- QFSK, defined, 7-106

QuickWin  
 described, 5-4  
 functions, 5-8  
 quotation marks in commands, using, 7-67, 7-69

**R**

radio  
 access point MAC address, displaying, 7-12  
 access point name, displaying, 7-12  
 access point network name, displaying, 7-13  
 default settings, A-5  
 description, displaying, 7-73  
 IEEE 802.11b High Rate (HR), *See* 802.11b HR radio  
 MAC address, displaying, 7-73  
 primary/station radio ROM Version, displaying, 7-72  
 RF Domain, 7-46  
 RF Inactivity Timeout, 7-54  
 RF security ID, 7-85  
 RF transmit mode, 7-106  
 ROM version, displaying, 7-74  
 WLI-F 2.4 GHz OpenAir, *See* OpenAir radio

radio description, displaying, 7-73

Radio MAC Address, displaying, 7-73

Range property value, D-16

read only community string, SNMP, 7-89

read/write community string, SNMP, 7-90

reader commands  
 Accumulate mode, using, 6-3  
 Backlight On and Off, 6-7  
 Change Configuration, 6-7  
 Clear, 6-5  
 Enter, 6-6  
 Enter Accumulate mode, 6-5  
 Exit Accumulate mode, 6-6  
 functions, SDK, 5-6  
 Multiple-Read Labels, 6-8  
 operating commands, 6-6  
 Reader Command gateway, UDP Plus, 5-7  
 Set Date and Time, 6-8  
 using, 6-3

ReadOnly property value, D-17

Receive All Multicasts command, 7-74

receive timer, controller connect check, 7-35

redundancy, scanner, 7-78

regional settings, entering, 3-14

registry  
 cold boot caution, C-10, D-9  
 customizing, C-3, D-4  
 described, C-3, D-4  
 example, customizing and extending, C-6, C-8, D-6, D-8  
 importing file, C-10, D-9  
 optional property values, D-19  
 property values, C-10 to C-12, D-10 to D-19  
 required property values, D-19  
 structure and levels, D-4

Remove Programs icon, 5-16

renaming a file, 4-17

resend limit, TFTP, 7-105

Reservation Threshold command, 7-75

RF  
 domain  
 configuration command, 7-46  
 roaming, 7-76

Inactivity Timeout command, 7-54

network  
 access point, configuring, 2-10  
 ActiveSync, using, 5-23  
 configuring, overview, 2-9  
 desktop PC, connecting the 502X to, 4-3  
 radio parameters, described, 2-10  
 Roaming Allowed command, 7-76  
 security ID, command, 7-85  
 Transmit Mode command, 7-106

roaming, RF, 7-76

ROM, radio version, displaying, 7-74

roundtrip time, TCP/IP extensions initial, 7-103

router, command, 7-41

RUM\_MENU, registry described, C-4

run-time-arguments, INF file, 5-18

**S**

scanner  
 accumulating data, 6-3  
 button/trigger operation, configuring, 7-77  
 default settings, A-3  
 Mode command, 7-77  
 Redundancy command, 7-78

scanning  
 ASCII characters, list of labels, B-6 to B-10  
 decode priority, 7-37  
 Selection command, 7-79  
 selection options, customizing, D-6  
 tab, customizing, D-8  
 tethered scanner port, configuring, 7-79  
 Timeout command, 7-81  
 Trigger Mode command, 7-82  
 virtual wedge, enabling, 7-112

screen  
 background, changing, 3-9  
 backlight  
 level, configuring, 7-44  
 on and off, 6-7  
 timeout, configuring, 3-9, 7-44  
 default settings, A-8  
 properties, modifying, 3-9

SDK  
 ADC functions, 5-7  
 applications, developing, 5-4  
 Communications functions, 5-6  
 environment, development, 5-5

## 502X Data Collection PC System Manual

### SDK (continued)

- File Transfer functions, 5-7
- INF file format, 5-17
- library functions, described, 1-4
- Library Message function, 5-6
- QuickWin functions, 5-8
- Reader Command function, 5-6
- System Information function, 5-6
- UDP Plus functions, 5-7
- Virtual Wedge functions, 5-7
- Secondary DNS Server command, 7-83
- Secondary WINS Server command, 7-84
- security
  - decode, 7-40
  - default settings, A-5
  - password, setting, 3-12, 4-35
  - property value, D-17
  - RF security ID, 7-85
  - SNMP
    - encryption key, 7-87
    - IP address, 7-88
    - read encryption, 7-89
    - read only community string, 7-89
    - read/write community string, 7-90
    - Trap Authentication, 7-92
    - Trap Community Name, 7-92
    - trap IP address, 7-93
    - write encryption, 7-91
  - Unit Manager, setting password with, 4-34
- send timer, controller connect check, 7-36
- serial communications
  - ActiveSync, using, 5-23
  - network, illustrated, 2-12
  - selecting a connection, 3-6
  - setting the baud rate, 7-57
- serial port baud rate, configuring, 7-57
- Set Date and Time reader command, 6-8
- setup, customizing, 5-13
- SETUP.DLL, 5-13
- SETUP.EXE, 5-15
- ShortDesc property value, D-17
- SNMP
  - configuration commands, list of, 7-6
  - configuring the 502X, 2-8
  - data type, property value, D-19
  - default settings, A-7
  - described, 1-5
  - Identification
    - Contact command, 7-86
    - Location command, 7-86
    - Name command, 7-87
  - Object Identifier, property value, D-15
  - Security
    - Encryption Key command, 7-87
    - IP Address command, 7-88

### SNMP, Security (continued)

- Read Encryption command, 7-89
- Read Only Community String command, 7-89
- Read/Write Community String command, 7-90
- Subnet Mask commands, 7-90
- Write Encryption command, 7-91
- Trap
  - Authentication command, 7-92
  - Community Name command, 7-92
  - Port command, 7-94
  - Threshold command, 7-94
- software
  - installed on 502X, 1-4
  - installing, order for, 5-3
  - off-the-shelf, 5-28
  - required for developing applications, 5-3
  - SDK, 5-4
  - version, viewing on 502X, 3-15
- Software Development Kit, *See* SDK
- sounds, enabling, 3-16, 7-95
- speaker, adjusting the volume, 7-95
- Standard Code 128 command, 7-33
- Start menu
  - custom applications, adding to, 5-17
  - settings, Control Panel, 3-4
- start/stop codes, creating bar code labels, 7-3
- Station Name command, 7-96
- Storage Card folder, defined, 5-15
- storage memory allocation, adjusting, 3-16
- storage space, removing application programs, 3-15
- subnet mask
  - configuration command, 7-96
  - SNMP security, 7-90
- Suspend mode, using automatic shutoff, 3-9, 7-15
- symbolologies
  - Codabar, configuring, 7-20
  - Code 11, configuring, 7-21
  - Code 128, configuring, 7-33
  - Code 16K, configuring, 7-23
  - Code 2 of 5, configuring, 7-24
  - Code 39, configuring, 7-26
  - Code 49, configuring, 7-30
  - Code 93/93i, configuring, 7-32
  - Decode Priority command, 7-37
  - Decode Security command, 7-40
  - Interleaved 2 of 5, 7-55
  - MSI, configuring, 7-61
  - PDF 417, configuring, 7-65
  - Plessey, configuring, 7-66
  - UPC/EAN, configuring, 7-108
  - See also* bar codes
- Symbology Identifier command, 7-98
- symbols, bar code labels to scan, B-7
- System Information function, 5-6

- system information, viewing
  - in Configuration Management application, 4-9
  - in System Properties applet, 3-15

## T

- tasks, where to find in manual, 1-6
- TCP/IP
  - configuration commands, using, 7-3
  - configuring, described, 2-9
  - Extensions Delayed Acknowledgement Timer command, 7-103
  - Extensions Initial Roundtrip Time command, 7-103
  - Extensions Receive Window Size command, 7-104
  - protocol stack, subnet mask, 7-96
  - reader commands, using, 6-3
- telecommunications components, labeling, 7-21
- tethered scanner
  - Scanner Mode command, 7-77
  - Scanner Selection command, 7-79
  - virtual wedge, enabling, 7-112
- TextFmt property value, D-18
- TFTP
  - ITCTftpClient, 5-7
  - Resend Limit command, 7-105
  - Timeout command, 7-105
- threads, viewing for specific processes, 4-25
- threshold, SNMP trap, 7-94
- time, configuring, 3-7
- timeout
  - display backlight, configuring, 3-9, 7-44
  - RF Inactivity Timeout command, 7-54
  - scanner, configuring, 7-77, 7-81
  - TFTP, 7-105
- timer
  - receive, controller connect check, 7-35
  - send, controller connect check, 7-36
  - TCP/IP extensions delayed acknowledgement, 7-103
- TMF Reader commands, 5-7
- transmit mode, RF, 7-106
- Transmit Rate command, 7-107
- trap, SNMP
  - authentication, 7-92
  - community name, 7-92
  - IP address, 7-93
  - port, 7-94
  - threshold, 7-94
- Trigger Mode command, scanner, 7-82
- troubleshooting
  - adjusting the memory allocation, 3-16
  - eMbedded Visual Tools connection, 5-27
  - installing an application, 4-29
  - network loopback, using, 7-63
- turning off the 502X, automatically, 3-13, 7-15
- Type property value, D-19

## U

- UCC/EAN Code 128, enabling, 7-33
- UDP Plus
  - Acknowledgement Delay Lower Limit command, 7-13
  - Acknowledgement Delay Upper Limit command, 7-14
  - configuration commands, list of, 7-6
  - Controller Connect Check Receive Timer command, 7-35
  - Controller Connect Check Send Timer command, 7-36
  - controller IP address, configuring, 7-37
  - default settings, A-7
  - described, 2-9
  - Enable command, 7-107
  - functions, SDK, 5-7
  - Maximum Retries command, 7-60
  - Network Loopback command, 7-63
  - Network Port command, 7-64
  - Reader Command gateway, 5-7
  - reader commands, using, 6-3
  - subnet mask, 7-96
- UDP Port, *See* Network Port command
- Unicode, translating to, 7-112
- Uninstall\_Exit function, 5-13
- Uninstall\_Init function, 5-13
- uninstalling applications, 5-16
- unit
  - configuration commands, list of, 7-6
  - operation, default settings, A-8
- Unit Management, *See* Unit Manager for PlanNET
- Unit Manager for PlanNET, 4-3
  - Application Manager application, 4-27
    - installing an application, 4-28
    - uninstalling an application, 4-29
  - Configuration Management application, 4-5
    - configuring parameters with, 4-5
    - customizing the scanner tab, D-8
    - printing screen, 4-8
    - viewing unit information, 4-9
  - described, 1-5
  - Event Viewer application, 4-30
    - clearing events, 4-34
    - event logging buffer, viewing, 4-30
    - setting a trace, 4-32
  - extending
    - adding a link to your company's home page in the main menu, C-8
    - Configuration Management application, D-5
    - customizing an application name in the main menu, C-6
  - extending main menu
    - procedure, C-5
    - required tools, C-3
  - File Manager application, 4-10
    - attributes, changing a file, 4-19
    - copying a file, 4-15
    - deleting a file, 4-18
    - directory, creating and deleting, 4-11

## 502X Data Collection PC System Manual

- Unit Manager for PlanNET, File Manager application
  - (*continued*)
  - list of functions, 4-10
  - moving a file, 4-16
  - renaming a file, 4-17
  - running an executable file, 4-20
- login screen, illustrated, 4-4
- main menu, illustrated, 4-4, C-3
- Password, setting, 4-35
- Process Manager application, 4-21
  - closing a process, 4-22
  - killing a process, 4-23
  - list of functions, 4-21
  - viewing process modules, 4-26
  - viewing process threads, 4-25
- using, 4-3
- unit-dose packaging, labeling, 7-23
- Universal Product Code, *See* UPC/EAN command
- UPC/EAN command, 7-108
- UPC-A/EAN-13, enabling, 7-108
- UPC-E, enabling, 7-108
- uppercase letters, bar code labels to scan, B-9
- user interface, ChoiceFmt property value, D-11

### V

- Value property value, C-12
- variable data, entering in commands, 6-3, 7-9
- virtual wedge
  - code page, 7-112
  - default settings, A-3
  - enabling, 7-112
  - functions, 5-7
  - grid, 7-113
- Visual Basic, developing applications, 5-8
- Visual C++, developing applications, 5-8
- volume
  - adjusting, 7-95
  - default settings, A-8
- voting, scanner redundancy, 7-78

### W

- Walk Heap button, using, 4-23
- wands, 7-79
- WEP Encryption command, 7-115
- WEP Key command, 7-116
- WEP key default settings, A-6
- WEP Transmit Key command, 7-117
- Win32 API
  - developing applications, 5-8
  - FormatMessage, 5-6
- window size, TCP/IP extensions receive, 7-104
- Windows CE
  - CAB Wizard, 5-12
  - described, 1-5
  - INF file format, 5-17

- Windows CE (*continued*)
  - viewing version you are using, 3-15
- Windows Internet Name Service, *See* WINS server
- Windows Latin 1, 7-112
- WINS server
  - Primary WINS Server command, 7-72
  - Secondary WINS Server command, 7-84
- Winsock 1.1 API, 5-7
- WLI-F 2.4 GHz OpenAir radio, *See* OpenAir radio wrapper functions, SDK, 5-6