



Intermec



User's Manual



**CV30 Fixed Mount
Computer**

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Before You Begin

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

Safety Information

Your safety is extremely important. Read and follow all warnings and cautions in this document 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.

This section explains how to identify and understand dangers, warnings, cautions, and notes that are in this document. You may also see icons that tell you when to follow ESD procedures and when to take special precautions for handling optical parts.



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



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

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at www.intermec.com and click **Service & Support > Warranty**.

Web Support

Visit the Intermec web site at www.intermec.com to download our current manuals (in PDF). To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Before You Begin

Visit the Intermec technical knowledge base (Knowledge Central) at intermec.custhelp.com to review technical information or to request technical support for your Intermec product.

Telephone Support

These services are available from Intermec.

		In the USA and Canada call 1-800-755-5505 and choose this option
Services	Description	
Order Intermec products	<ul style="list-style-type: none">Place an order.Ask about an existing order.	1 and then choose 2
Order Intermec media	Order printer labels and ribbons.	1 and then choose 1
Order spare parts	Order spare parts.	1 or 2 and then choose 4
Technical Support	Talk to technical support about your Intermec product.	2 and then choose 2
Service	<ul style="list-style-type: none">Get a return authorization number for authorized service center repair.Request an on-site repair technician.	2 and then choose 1
Service contracts	<ul style="list-style-type: none">Ask about an existing contract.Renew a contract.Inquire about repair billing or other service invoicing questions.	1 or 2 and then choose 3

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **Contact**.

Who Should Read This Manual

This *CV30 Fixed Mount Computer User's Manual* is for the person who is responsible for installing, configuring, and maintaining the CV30.

This manual provides you with information about the features of the CV30, and how to install, configure, operate, maintain, and troubleshoot it.

Before you work with the CV30, you should be familiar with your network and general networking terms, such as IP address.

Related Documents

The Intermec web site at www.intermec.com contains our documents (as PDF files) that you can download for free.

To download documents

- 1 Visit the Intermec web site at www.intermec.com.
- 2 Click **Service & Support > Manuals**.
- 3 In the **Select a Product** field, choose the product whose documentation you want to download.

To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

Patent Information

Product is covered by one or more of the following patents:

4912309, 4940974, 5216233, 5289378, 5345146, 5349678, 5401591, 5404493, 5416463, 5440315, 5457629, 5465207, 5473242, 5487161, 5500516, 5534684, 5536124, 5554822, 5568645, 5576981, 5592512, 5598082, 5625555, 5671436, 5694318, 5726937, 5736725, 5747748, 5796359, 5805474, 5818027, 5873070, 5878395, 5889818, 5892971, 5895431, 5896214, 5914481, 5928292, 5962837, 5987499, 5996080, 6003773, 6026027, 6042414, 6049813, 6058000, 6061155, 6112206, 6113047, 6124800, 6135810, 6149063, 6163359, 6164545, 6174180, 6204825, 6212401, 6213400, 6229408, 6234393, 6259044, 6292437, 6295461, 6356949, 6398105, 6424542, 6488209, 6539064, 6694359, 6701361, 6731713, 6857013, 6897776, 6944446, 6967280, 6970459, 6976062, 7027037, 7034659.

Before You Begin

There may be other U.S. and foreign patents pending.



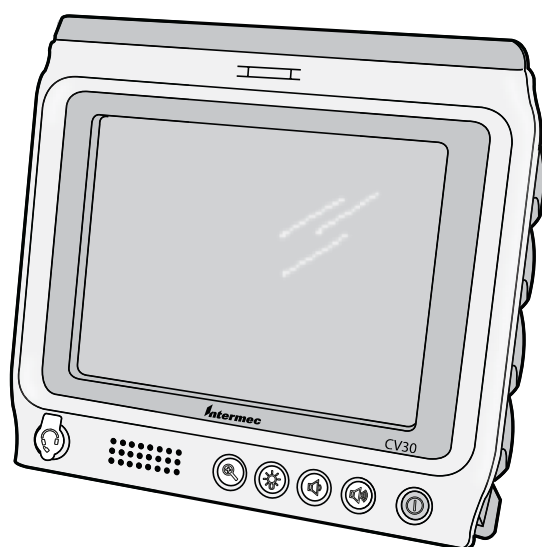
1 Using the CV30 Fixed Mount Computer

Use this chapter to familiarize yourself with the CV30 Fixed Mount Computer. In this chapter, you will find these sections:

- Introducing the CV30 Fixed Mount Computer
- Attaching the CV30 to Power
- Understanding the Status Lights
- Installing an External Antenna
- Installing an External Keyboard
- Connecting a Scanner
- Increasing Memory Storage

Introducing the CV30 Fixed Mount Computer

The Intermec CV30 is a rugged fixed mount computer designed for real-time data collection applications in warehousing, distribution, work-in-process, time and attendance, and stationary applications. The CV30 is built on the Microsoft® Windows Mobile® 5.0 operating system and supports the use of terminal emulation applications, browser-based applications, or custom applications. The CV30 is certified by the Cisco® Certified Extensions (CCX-2) program to be interoperable with a Cisco Wireless LAN (WLAN) infrastructure.



CV30 Fixed Mount Computer



CV30 fixed mount computers with an IEEE 802.11 b/g radio installed are Wi-Fi® certified for interoperability with other 802.11 b/g wireless LAN devices.

Understanding the Features of the CV30

The CV30 includes these standard features:

- Touch screen heater
- Two USB ports, two serial ports, and an Ethernet port
- 802.11 b/g radio
- Bluetooth radio

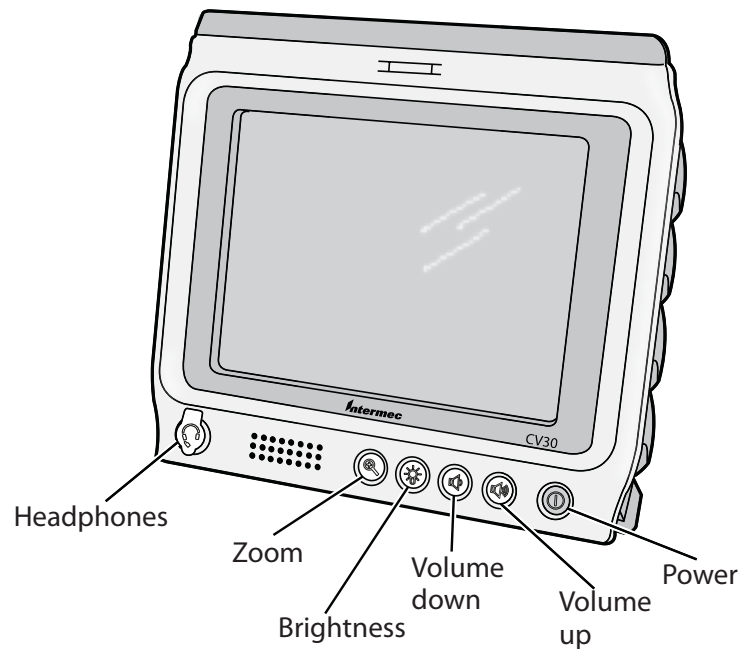
Chapter 1 — Using the CV30 Fixed Mount Computer

- 128 MB RAM, 128 MB Disk on Chip Flash memory
- 520 MHz Intel XScale PXA270 processor

These options are available for the CV30:

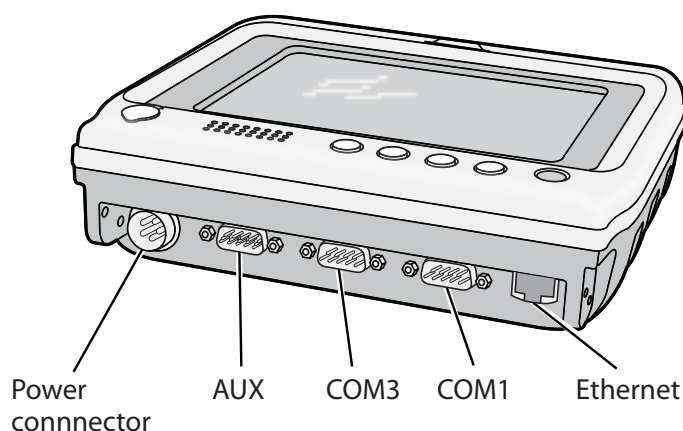
- TE 2000 terminal emulation application, including 3270, 5250, and VT-ANSI
- Secure Digital (SD) memory card for memory expansion

For additional help using the terminal emulation application, see the *TE 2000 Terminal Emulation Programmer's Guide* (P/N 977-055-xxx).



Understanding the Buttons on the CV30

Chapter 1 — Using the CV30 Fixed Mount Computer



Understanding the Connectors on the CV30

CV30 Connector Descriptions

Connector	Description
Power	Connects the CV30 to an AC or DC/DC power supply.
AUX	Connects USB devices to the CV30. You can purchase a single or double USB cable assembly that attaches to the AUX connector and turns the port into one or two USB host connectors. You can also purchase a developer USB cable that turns the port into a USB 1.1 Client connection.
COM3	Connects the CV30 to other RS-232 devices such as PCs or printers.
COM1	Connects the CV30 to other RS-232 devices such as PCs or printers.
Ethernet	Connects the CV30 to 10BaseT/100BaseT full duplex standard Ethernet interfaces.

Use this manual to understand how to use the features and options available on the CV30. For a complete list of accessories available for the CV30, see [“Accessories for the CV30” on page 86](#).

Using the Power Button

When you press the **Power** (⏻) button to turn off the CV30, you actually put the CV30 into Suspend mode. In Suspend mode, the CV30 continues to supply power to all memory, but turns off power to most hardware. When you press the **Power** button to turn the CV30 back on, the computer resumes where it was when you turned it off.

You can configure the CV30 to turn off if not used for a specified period of time by going to **Start > Settings > the System tab > Power > the Advanced tab**.

When a CV30 is suspended and resumes, the 802.11 connection requires reauthentication.

Magnifying a Portion of the Screen

You can use the Zoom button to magnify a portion of the screen if you need to see details.

To zoom in on a portion of the screen

- Press the **Zoom** (🔍) button and tap on the area of the screen you want to see.

Adjusting the Screen Brightness

You may want to adjust the brightness depending on the location of the CV30. Use the **Brightness** button on the CV30 front panel to control the brightness of the screen. The **Brightness** button also toggles the backlight on and off.

To toggle the backlight on and off

- Press and release the **Brightness** (☀️) button.

To adjust the screen brightness

- Press and hold the **Brightness** button until you achieve the desired level of brightness.

When you press and hold the **Brightness** button, it increases the brightness until you reach the highest setting. It then cycles to the lowest setting and increases the setting as you hold the button.

You can also adjust the brightness settings by going to **Start > Settings > the Systems tab > Backlight** or by using Intermec Settings.

Adjusting the Volume

You can change the CV30 volume, for sounds you hear when you tap the screen or scan bar codes with a scanner, to adjust to your needs and the environment. You can set the volume to off, low, medium, medium-high, high, and very high (default). Use the following table to understand the different ways to adjust the volume.

Changing the Beeper Volume

Way to Adjust Volume	Procedure
Use the front panel button.	Press the Volume Up (⏮) or Volume Down (⏭) button to increase or decrease the volume.
Use Intermec Settings.	From the Start menu, choose Settings , select the System tab, and then double-click Intermec Settings . Go to Device Settings > Beeper > Volume .
Tap Speaker (🔊) icon in the taskbar.	Use the stylus to move the speaker slider up or down. You can also turn the volume on or off.

You can also set the number of beeps you hear when you scan a bar code with a Bluetooth or tethered scanner. For help setting the number of beeps, see [“Connecting a Scanner” on page 13](#).

Using the Touch Screen

The CV30 has a 6.4 inch color VGA touch screen display with a resolution of 640 x 480 pixels. The touch screen has a built-in heater to reduce condensation on the external surface of the display when moving between sub-freezing temperatures and normal temperatures.

If you are going to use the CV30 in extreme cold conditions (0°C to -30°C or 32°F to -22°F) for an extended period of time, you should turn on the power at room temperature for at least 15 minutes prior to using it. This process of “warming up” the CV30 helps preserve the lighting on the display.

Chapter 1 — Using the CV30 Fixed Mount Computer

The default screen that appears on the display when you turn on the CV30 is the Windows Mobile 5.0 standard Today screen. This screen appears unless you have the TE 2000 application installed on the CV30. If you have the TE 2000 application installed, it launches after the initial booting sequence.



Standard CV30 Today Screen

Navigating the Touch Screen

You can use the stylus accessory to navigate the touch screen.

Touch Screen Navigation

Action	Description
Tap	Touch the screen once with the stylus or finger to select options, open or close applications, or launch menus.
Drag	Hold the stylus or your finger on the screen and drag across the screen to select text and images.
Tap and hold	Tap and hold the stylus or your finger on an item to see a menu of actions available for that item. On the pop-up menu that appears, tap the action you want to perform.

Aligning the Touch Screen

If the touch screen does not respond when you tap it with the stylus, you may need to align the screen.

To align the touch screen

- 1 Tap **Start** > **Settings** > the **System** tab > **Screen**.
- 2 Tap **Align Screen** and follow the instructions to align the screen.

If the touch screen is so out of alignment that you cannot open the **Start** menu, you may need to perform a clean boot. After the computer clean boots, it prompts you to align the screen. For more information on performing a clean boot, see [“Troubleshooting the Boot Process \(Clean Booting\)” on page 83](#).

Attaching the CV30 to Power

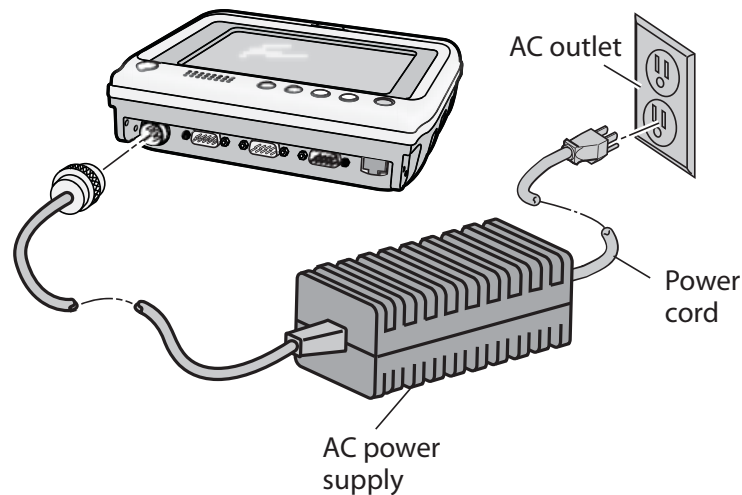
For the CV30 to operate, you must provide power to the CV30 through a DC/DC power supply or an AC/DC power supply. The CV30 also has a backup battery to sustain all memory and applications when power is not supplied. You must have a power supply connected to the CV30 for it to operate.

Use the AC power supply and power cord when you are using the CV30 with a desk mounting kit or a wall mounting kit. The AC power supply does not provide power for the internal touch screen heater. You must order the AC power supply and country-specific power cord separately.

There are three DC/DC power options for the CV30. You must order one of these DC/DC power options separately:

- DC/DC heated/non-heated (6-60 VDC) power supply (P/N 203-779-001)
- DC/DC non-heated (15-96 VDC) power supply (P/N 203-780-001)
- DC/DC heated (15-96 VDC) power supply (P/N 203-780-002)

For more information on installing the DC power options, see *Vehicle Power Supply Installation Guide* (P/N 932-003-001).



Attaching the CV30 to Power Using an AC Power Supply

Understanding the Backup Power System

The CV30 contains a backup battery that has enough capacity to support the suspend state for at least 72 hours. When power is restored to the CV30, it resumes the state it was in when the power was removed.

An internal charger automatically charges the backup battery within 4 hours when external power is supplied. If the backup battery fails, an amber light on the top of the display turns on. You must replace your backup battery immediately if you see an amber light. The backup battery must be replaced by a trained Intermec service technician. Please contact your local Intermec service representative for more information.

To check the status of your backup battery

- Click the Battery (🔋) icon at the top of the Today screen.

Resetting the CV30

You rarely need to reset the CV30. If the CV30 does not resume after pressing the **Power** button, or if the computer or an application is locked up, you may need to reset it. The CV30 uses the configuration currently saved in flash memory during the boot process.

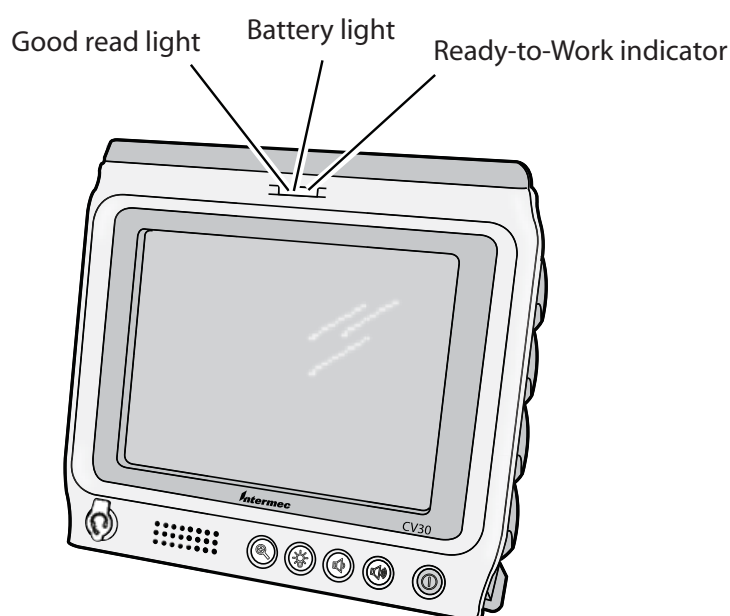
To reset the CV30

- Press and hold the **Power** button for 5 seconds.

The CV30 systematically shuts down, restarts, and goes through the initialization process.

Understanding the Status Lights

The status lights on the CV30 turn on to indicate the status of the network connection, a successful decode of a bar code, or a user-defined function.



CV30 Status Lights

Understanding the CV30 Status Lights

Light Name	Color	Description
Battery	Amber	The amber light comes on when the backup battery is critically low. You need to replace the backup battery as soon as possible.
Good read	Green	This light comes on when the CV30 successfully decodes a bar code with an attached scanner.

Understanding the CV30 Status Lights (continued)

Light Name	Color	Description
Ready-to-Work indicator™	Blue	The blue light indicates when the CV30 is ready to use in your application, typically TE 2000. If you have problems using the TE 2000 application, see the <i>TE 2000 Terminal Emulation Programmer's Guide</i> (P/N 977-055-008).

The Ready-to-Work indicator has three states: off, blinking, and on. Use this table to understand the different states of the light.

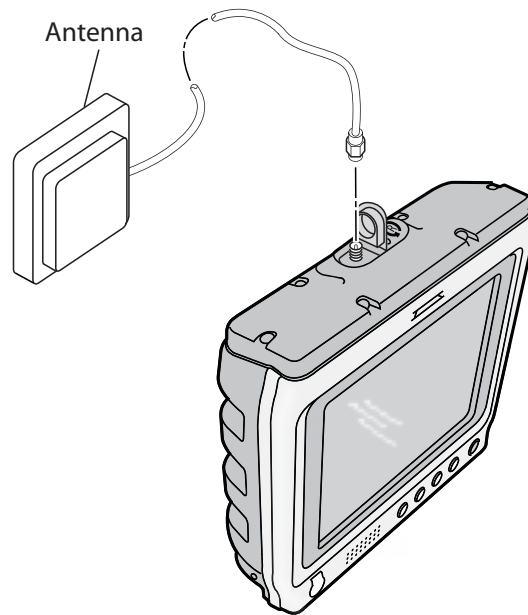
Ready-to-Work Light States

Light State	What It Means
Off	The TE 2000 application has not loaded successfully, or you are not running a Ready-to-Work application.
Blinking	The CV30 is not connected to the host.
On	A connection to the server has been established and all network connections are active.

Installing an External Antenna

You can purchase a 2.4 GHz “patch” antenna to mount on a wall, fork lift, or other flat surface using either screws or small patches of adhesive-backed hook and loop fastener material. For more information on ordering an antenna, see [“Accessories for the CV30” on page 86](#).

Since system performance and antenna polarization are site-dependent, a permanent mounting location and orientation may require some experimentation. In most fixed installations, you should mount the antenna initially in a vertically-polarized position, with the cable from the antenna parallel to the floor/ceiling.

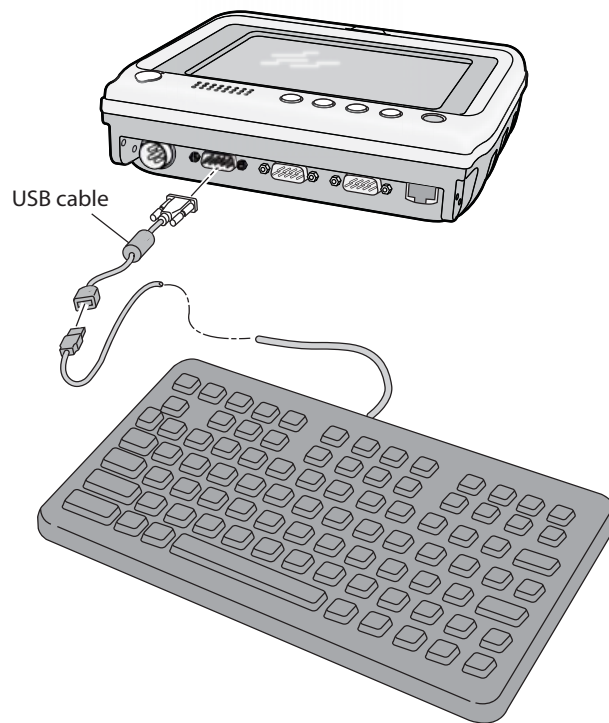


Attaching an External Antenna

Installing an External Keyboard

There are two types of keyboards you can install and use with the CV30:

- The compact keyboard (P/N VE011-2002)
- Rugged QWERTY large external keyboards. For a complete list of available keyboards, see [“Accessories for the CV30” on page 86](#).



Attaching a Rugged QWERTY Large Keyboard

For information on installing the compact keyboard, see the instructions that ship with it.

Connecting a Scanner

You can attach a tethered scanner to one of the serial (COM3 or COM1) connectors on the CV30 if you order the appropriate RS-232 cable.

Supported Scanners and Cables

Scanner	Required Cable
1470	Ships with the scanner
1400, 1551E, 1553, ASCII	3-604032-05
1800	3-364032-02
SR60	321-642-002
Slot scanner	N/A

Chapter 1 — Using the CV30 Fixed Mount Computer

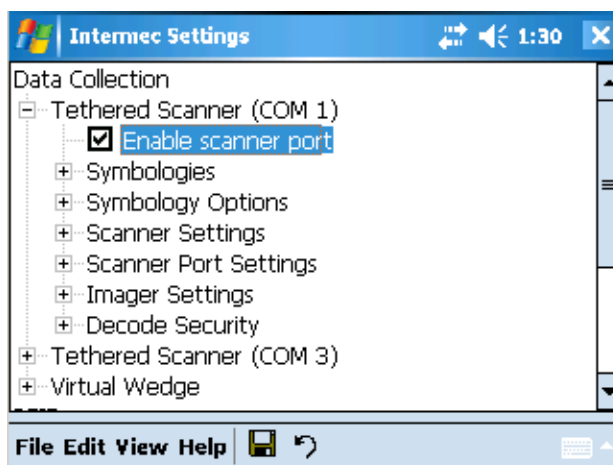
You can also attach Bluetooth scanners, such as the SF51 and the SR61, to the CV30. For more information, see [“Configuring the CV30 to Communicate With a Wireless Scanner” on page 33](#).



Note: The SR60 only operates in ASCII mode with the CV30. You cannot retrieve or update symbologies for the SR60 on the CV30. For help, see the *SR60 Scanner Programmer's Reference Manual* (P/N 937-004-xxx) for defaults and limitations.

To connect a tethered scanner

- 1 Attach the scanner RS-232 cable to one of the COM connectors on the CV30.
- 2 Attach the other end of the cable to the tethered scanner.
- 3 On the CV30, go to **Start > Settings > the System tab > Intermec Settings**. For help using Intermec Settings, see [“Configuring the CV30 Using Intermec Settings” on page 30](#).
- 4 Go to **Data Collection > Tethered Scanner (COM1) or (COM3)**.
- 5 Make sure **Enable scanner port** is checked.

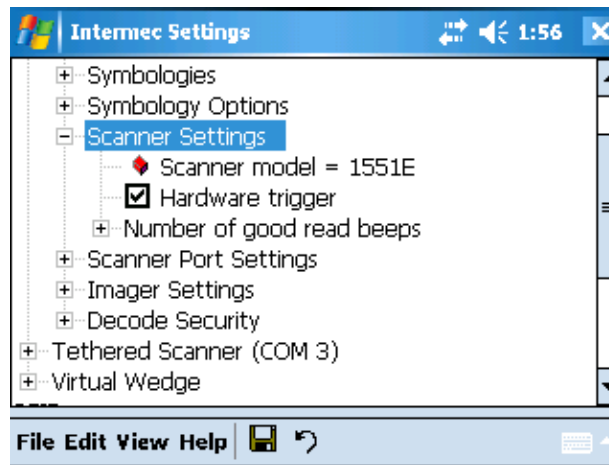


- 6 Go to **Scanner Settings > Scanner model** and select your scanner from the list.

If you are configuring an ASCII scanner, you need to select **ASCII** from the **Scanner model** list and then configure the scanner port settings to match the scanner after Intermec Settings refreshes.



Note: If you are attaching a 1470 scanner, you need to configure it as an ASCII scanner and set the appropriate scanner port settings (38400 baud, 8 data bits, no parity, 1 stop bit).



- 7 Tap **File** > **Save Settings** or to the disk icon ().

Depending on the scanner you are attaching, you may hear a series of beeps and the Good Read light may flash. You are now ready to use the scanner.

Increasing Memory Storage

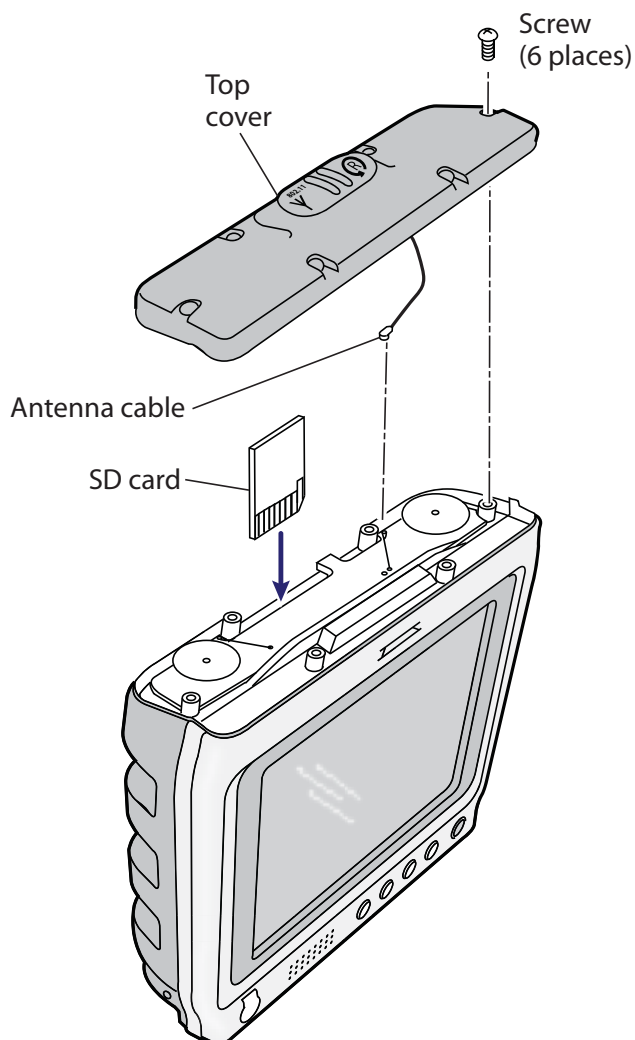
You can use an SD card to increase file storage and install software. The CV30 currently supports SD cards that hold up to 2 GB of information. The SD card slot is located on the top of the CV30 under the top cover. You must remove the top cover to access the SD card slot.

To insert an SD card

- 1 Press Power to suspend the CV30.
- 2 Unscrew the six Phillips head screws from the top cover and remove the cover. Make sure you keep all of the screws.
- 3 Disconnect the antenna cable from the Remote Antenna connector.

Chapter 1 — Using the CV30 Fixed Mount Computer

- 4 Gently insert the SD card into the CV30.



- 5 Push the SD card into the slot until it latches in place.
- 6 Reattach the antenna cable, replace the top cover, and attach it with the six screws you removed in Step 2.
- 7 Press **Power** to resume using the CV30.



2 Understanding Windows Mobile

This chapter introduces Microsoft Windows Mobile 5.0 for Pocket PC. In this chapter you will find these sections:

- Understanding Windows Mobile
- Using Microsoft ActiveSync
- Using Internet Explorer Mobile

Understanding Windows Mobile

This chapter introduces Microsoft Windows Mobile 5.0 for Pocket PC. While using your CV30, keep these key points in mind:

- Tap **Start** on the navigation bar, located at the top of the screen, to quickly move to programs, files, and settings. Use the command bar at the bottom of the screen to perform tasks in programs. The command bar includes menus, icons, and the onscreen keyboard.
- Tap and hold an item to see a pop-up menu containing a list of actions you can perform. Pop-up menus give you quick and easy access to the most common actions.

Tap **Start** > **Help**, then select a topic on your CV30 to find additional information on Windows Mobile components.

Microsoft Windows Mobile contains these standard companion programs:

- Word Mobile
- Excel Mobile
- PowerPoint Mobile

Finding Information in Windows Mobile

This chapter describes your CV30 hardware, provides an overview of the programs on your CV30, and explains how to connect your CV30 to a desktop, a network, or the Internet. Use the following table to understand more about the CV30.

Finding Information in Windows Mobile

For Information on:	See this Source:
Programs on the CV30.	This chapter and the CV30 Help. To view Help, tap Start > Help and then select a topic.
Additional programs you can install on the CV30.	The Windows Mobile CD.

Finding Information in Windows Mobile

For Information on:	See this Source:
Connecting to and synchronizing with a desktop.	The ActiveSync Help on your desktop. To view Help, click Help > Microsoft ActiveSync Help .
Last minute updates and detailed technical information.	The readme files located in the Microsoft ActiveSync folder on the desktop and on the Windows Mobile CD.
Up-to-date information on Windows Mobile.	www.microsoft.com/windowsmobile/resources/communities/default.aspx

Windows Mobile and many of the technologies supported by the CV30 are not from Intermec Technologies. Many of the utilities and features on a Windows Mobile device come directly from Microsoft without any modification from Intermec Technologies. There may be certain Microsoft-specific issues that Intermec Technologies would not be able to support, so contact our front-line support personnel to determine the best source of assistance.

Use these URLs for additional information about Microsoft Windows Mobile (Pocket PC):

- msdn.microsoft.com/support/
- support.microsoft.com/
- news.microsoft.com

Learning the Basic Skills

Learning to use the CV30 is easy. This section describes the basic concepts of using and customizing your CV30 Computer.

Using the Today Screen

When you turn on your CV30 for the first time each day, you see the Today screen. You can also display it by tapping the **Start** icon at the top left of your display and then **Today**. On the Today screen, you can see important information for the day.

To customize what displays on the Today screen

- Tap **Start > Settings > the Personal tab > Today**.

Status icons display information such as when the CV30 is connected to the network or to the Internet. You can tap an icon to open the associated setting or program.

Accessing Programs

You can switch from one program to another by selecting it from the **Start** menu. (You can customize which programs you see on this menu. For information, see [“Adjusting Settings” on page 24](#).

To access programs

- Tap **Start > Programs** and then the program name.

The following is a partial list of programs that are on your CV30, in the order they appear in the Start menu. Look on the Windows Mobile CD for additional programs that you can install onto your CV30.

- Calendar
- Contacts
- Internet Explorer
- Messaging
- Windows Media

Using the Navigation Bar and the Command Bar

The navigation bar is located at the top of the screen. It displays the active program and current time, and allows you to switch to programs and close screens.



Windows Mobile Navigation Bar

The command bar is located at the bottom of the screen. Use the command bar to perform tasks in programs. The command bar includes menu names, functions, and the Input Panel icon when needed.



Windows Mobile Command Bar

Using Pop-Up Menus

Use pop-up menus to quickly perform an action on an item. For example, you can use a pop-up menu to delete or make a copy of an item. To access a pop-up menu, tap and hold the item on which you want to perform the action. When the menu appears, tap the action you want to perform, or tap anywhere outside the menu to close the menu without performing the action.

Entering Information

You can enter information on your CV30 in several ways depending on the program you are using:

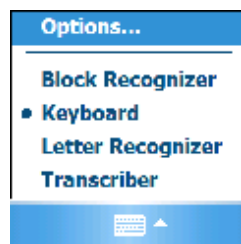
Understanding the Ways to Enter Information

Enter Information By:	Description
Synchronizing	Use Microsoft ActiveSync to synchronize or copy information between your desktop PC and the CV30. For more information on ActiveSync, see <i>ActiveSync Help</i> on your desktop PC.
Typing	Enter typed text into the CV30 by tapping keys on the onscreen keyboard or by using the handwriting recognition software.
Writing	Use the stylus to write directly on the screen.
Drawing	Use the stylus to draw directly on the screen.
Recording	Create a stand-alone recording or embed a recording into a document or note.

Use the input panel to enter information in any program on your CV30 Computer. You can either type using the onscreen keyboard or write using **Block Recognizer**, **Letter Recognizer**, or **Transcriber**. In either case, the characters appear as typed text on the screen.

To show or hide the input panel

- 1 Tap the **Input Panel** icon.
- 2 Tap the arrow next to the **Input Panel** icon to see your choices.



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When you use the input panel, your CV30 Computer anticipates the word you are typing or writing and displays it above the input panel. When you tap the displayed word, it is inserted into your text at the insertion point. The more you use the CV30, the more it learns to anticipate.

To change word suggestion options, such as the number of words suggested at one time, tap **Start** > **Settings** > the **Personal** tab > **Input** > the **Word Completion** tab.

Typing With the Onscreen Keyboard

Tap the input panel arrow, then tap **Keyboard**. On the soft keyboard that is displayed, tap the keys with your stylus.

- To type lowercase letters, tap the keys with the stylus.
- To type a single uppercase letter or symbol, tap the **Shift** key. To tap multiple uppercase letters or symbols, tap the **CAP** key.
- To convert a letter to uppercase, tap and hold the stylus on the letter and drag up.
- To add a space, drag the stylus to the right across at least two keys.
- To backspace one character, drag the stylus to the left across at least two keys.
- To insert a carriage return, tap and hold the stylus anywhere on the keyboard and drag down.



To use larger keys

- 1 Tap the input panel arrow.
- 2 Select **Options**.
- 3 From the **Input method** list, select Large keys.

Using Block Recognizer

Character recognition software gives you a fast and easy method for entering information in any program on the CV30. Letters, numbers, and punctuation you write are translated into typed text.

To use Block Recognizer

- 1 Tap the input panel arrow and then tap **Block Recognizer**.
- 2 Write a letter in the box. It converts to typed text that appears on the screen.

For help using Block Recognizer, tap the question mark next to the writing area.

Using Letter Recognizer

With Letter Recognizer, you can write letters using the stylus just as you would on paper.

To use Letter Recognizer

- 1 Tap the input panel arrow and then tap **Letter Recognizer**.
- 2 Write a letter in the box. It converts to typed text that appears on the screen.

For help using Letter Recognizer, tap the question mark next to the writing area.

Using Transcriber

With Transcriber, you can write anywhere on the screen using the stylus just as you would on paper. Unlike Letter Recognizer and Clock Recognizer, you can write an entire sentence of information.

To use Transcriber

- 1 Tap the input panel arrow and then tap **Transcriber**.
- 2 Tap **ok**.
- 3 Write anywhere on the screen. Pause and let Transcriber change the written characters to typed characters.

For help using Transcriber, tap the question mark in the lower right-hand corner of the screen.

Selecting Typed Text

If you want to edit or format typed text, you must select it first. Drag the stylus across the text you want to select. You can cut, copy, and paste text by tapping and holding the selected words and then tapping an editing command on the pop-up menu or by tapping the command under **Menu**.

Writing on the Screen

In any program that accepts writing, such as the Notes program, you can use your stylus to write directly on the screen. Write the way you do on paper. You can edit and format what you have written and convert the information to text in the future.

To convert the writing to text

- Select **Menu** > **Tools** > **Recognize**. Your writing is converted to text.

Finding and Organizing Information

You can use File Explorer to find files on your CV30 and organize these files into folders.

To open File Explorer

- Select **Start** > **Programs** > **File Explorer**.

Customizing the CV30

You can customize the CV30 by adjusting settings and installing additional software.

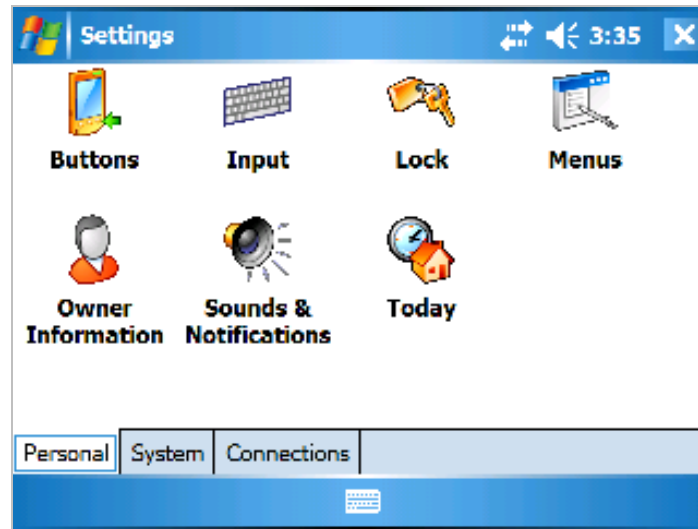
Adjusting Settings

You can adjust CV30 settings for your environment.

To view the Settings options

- Select **Start** > **Settings** > either the **Personal** tab or the **System** tab.

Here is an example of the **Personal** tab.



Adjustable Settings on the CV30

Setting	Why Adjust It?
Menus	To customize what appears on the Start menu.
Owner Information	To enter your contact information.
Lock	To limit access to the CV30.
Clock & Alarms	To change the time. You can also access the Clock & Alarms settings from the Today menu.
Power	To maximize battery life. You can view the status of the backup battery and determine the length of time it takes for the CV30 to turn off if not used.

Adding or Removing Programs

Programs added to your CV30 at the factory are stored in Read Only Memory (ROM). You cannot remove this software. All other programs and files added to the CV30 after factory installation are stored in Random Access Memory (RAM).

You can install any program created for the CV30, as long as the computer has enough memory available. Go to the Windows Mobile web site (www.microsoft.com/windowsmobile/resources/communities/default.mspx) to find software.

Using Microsoft ActiveSync

Use Microsoft ActiveSync to synchronize the information on your desktop with the information on the CV30. Synchronization compares the data on the CV30 with your desktop PC and updates both computers with the most recent information.



Note: By default, ActiveSync does not automatically synchronize all types of information. Use ActiveSync options to turn synchronization on or off for specific information types.

You can also perform these functions with ActiveSync:

- Copy files between the CV30 and the desktop.
- Back up and restore the CV30 data.
- Control when synchronization occurs by selecting a synchronization mode.
- Select which information types are synchronized and control how much data is synchronized.

To use ActiveSync

- 1 Connect the CV30 to your desktop PC with a USB cable.
- 2 Install ActiveSync on your desktop. ActiveSync is available from the Windows Mobile CD or from the Microsoft web site. ActiveSync is already installed on the CV30.

After installation, ActiveSync automatically launches the ActiveSync Setup Wizard.

- 3 Follow the screens of the ActiveSync to complete the synchronization process. The wizard helps you connect to the CV30, set up a partnership for synchronization, and customizes synchronization settings.

The synchronization process automatically begins when you finish the wizard.

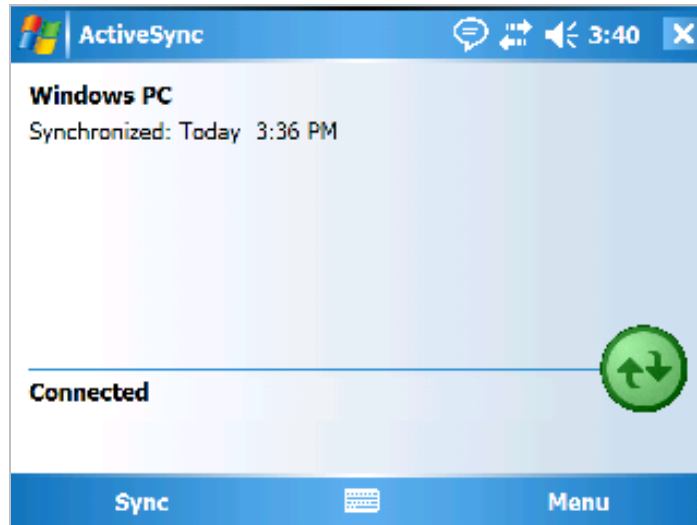
- 4 Disconnect the CV30 from your desktop and go to work.

Once you have set up ActiveSync and completed the first synchronization process, you can initiate synchronization from your CV30.

To open ActiveSync on your CV30



- Tap **Start > Programs > ActiveSync**. ActiveSync opens and shows you the synchronization status.



For more information about ActiveSync on the CV30, switch to ActiveSync, tap **Start > Help**, and then select a topic.

Using Internet Explorer Mobile

You can use Internet Explorer Mobile to run web-based applications, and view pages downloaded to the CV30. You can also connect to the internet through an ISP or a network connection.

You can make connections using a modem, a wireless network, or Ethernet. You can use a modem connection to set up connections with an external modem.

To use Internet Explorer

- 1 Set up a connection to your ISP or corporate network by going to **Start > Settings > the Connections tab > Connections**. Use the Connections Help to understand the process you need to go through to set up a connection.
- 2 Tap **Start > Internet Explorer**. The default page that appears when you open Internet Explorer contains links to Intermec-specific information and to the Windows Mobile web site.

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Default Internet Explorer Web Page



3 Configuring the CV30

Use this chapter to understand how to configure the CV30 to communicate in your network. In this chapter, you will find these sections:

- Configuring the CV30 Operating Parameters
- Setting Up Ethernet Communications
- Setting Up Bluetooth Communications
- Setting Up 802.11 Radio Communications
- Configuring Security on the CV30

Configuring the CV30 Operating Parameters

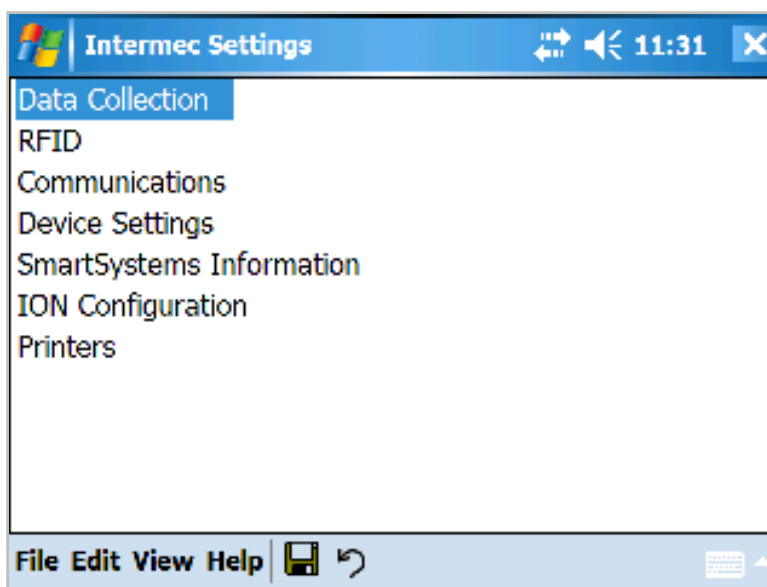
You can configure many operating parameters on the CV30, such as the symbologies it decodes or the network settings it uses. The CV30 provides a configuration application called Intermec Settings that allows you to set all of the operating parameters in one place.

Configuring the CV30 Using Intermec Settings

Use Intermec Settings to configure the CV30 and to view system information. You access Intermec Settings from the Settings menu.


To open Intermec Settings

- 1 Tap the **Start** icon to open the **Start** menu.
- 2 From the **Start** menu, select **Settings**.
- 3 From the Settings window, select the **System** tab.
- 4 Tap the Intermec Settings icon. The Intermec Settings application appears.



For detailed information on the commands available in Intermec Settings, see the *Intermec Computer Command Reference Manual* (P/N 073529). The *Intermec Computer Command Reference Manual* is available from the Intermec web site.

Navigating in Intermec Settings

To Do This Function	Do This
Select or expand a command	Tap the command
Select text in a text box	Tap in the text box and drag the stylus over the text
Save settings	Tap File > Save Settings or tap the disk icon ().

Remotely Configuring the CV30 Using SmartSystems Foundation

The SmartSystems™ server lets you manage all your SmartSystems-enabled devices at the same time from a central host PC. The CV30 ships with the SmartSystems client, which means it is SmartSystems enabled. The SmartSystems server has a console that displays all of the CV30s in your network. In the console, you can right-click a CV30 and a menu appears. To configure the CV30, choose Intermec Settings from the menu.

The SmartSystems server and console are part of SmartSystems Foundation and are available from the Intermec web site. To download SmartSystems Foundation, go to www.intermec.com/SmartSystems. For information on how to use the SmartSystems server, see the online manual.

Setting Up Ethernet Communications

You can use the CV30 directly in an Ethernet network by connecting the network to the RJ45 10BaseT/100BaseT full duplex connector on the bottom of the CV30.

To use the CV30 in an Ethernet network

- 1 Go to **Start** > **Settings** > the **Systems** tab > **Intermec Settings**.
- 2 If you have a DHCP server, enable DHCP.
or
If you do not have a DHCP server, set these parameters:
 - IP address
 - Subnet mask

- Default router
- 3 If required for your network, you may also need to set these parameters on each CV30:
 - Primary and secondary DNS servers
 - Primary and secondary WINS servers
- 4 Make sure your CV30 is talking to the network and that the network can see your CV30.

Setting Up Bluetooth Communications

You can send information to a Bluetooth device wirelessly using the standard Bluetooth radio in the CV30. The Bluetooth technology uses short-range radio links and allows for communications over a 10-meter (32.8 foot) range.

You can use the Bluetooth radio to connect to these wireless devices:

- Scanners
- Printers
- Headsets

To turn the Bluetooth radio on

- 1 Select **Start > Settings > the Connections tab > Bluetooth**.
- 2 Check **Turn on Bluetooth** and **Make this device visible to other devices**.
- 3 Tap **ok**.

Once Bluetooth is enabled, it stays enabled through a warm or cold boot and maintains virtual COM ports (such as printing) registration. However, you must reactivate connections because these are not done automatically.

For more information on Bluetooth software, see the Bluetooth Resource Kit and the *Wireless Printing Development Guide* in the Intermec Developer Library (IDL). You can download this resource kit from the Intermec Developer Library web site at www.intermec.com/idl.

Use this table to understand the settings you see in the Bluetooth menu in Intermec Settings.

Bluetooth Settings

Setting	Description
Power	Set and view whether the Bluetooth radio is on or off.
Discoverable	Allows other Bluetooth devices to be able to discover the CV30 during a device discovery.
Connectable	Allows other Bluetooth devices to connect to your CV30.
Class of Device	Determines how the device appears to other devices during discovery.
IBT	Displays the version of the Intermec Bluetooth Library.
Radio	Displays the version of the Bluetooth Radio Hardware.
Device Address	Displays the Bluetooth address of your CV30.

Configuring the CV30 to Communicate With a Wireless Scanner

This section explains how to configure the CV30 to communicate with Bluetooth wireless scanners. The CV30 ships with a Bluetooth association label attached to the left side. Scan the association label to quickly connect the CV30 to the Bluetooth wireless scanner.

If for some reason the Bluetooth association label does not work, you can follow the procedure for configuring the CV30 from Intermec Settings at the end of this section.

To configure Bluetooth communications on the CV30

- 1 Select **Start > Settings > the System tab > Intermec Settings**.
- 2 Select **Communications > Bluetooth**.
- 3 If you want to allow incoming connections from wireless scanners, you must enable these two parameters:
 - Discoverable
 - Connectable

If you do not want to allow incoming connections, make sure both parameters are disabled.
- 4 Save your changes and exit Intermec Settings.

To connect to the wireless scanner using the association label

- 1 Using your wireless scanner, scan the Bluetooth association label on the side of the CV30.
- 2 The CV30 prompts you to enter the passcode for your scanner. The default passcode for Intermec Bluetooth scanners is 0000.
- 3 Tap **Finish**.

To connect to the wireless scanner using Intermec Settings

- 1 Select **Start > Programs > File Explorer > Program Files > Intermec > Network > Bluetooth**.



- 2 Tap the **BluetoothScannerWizard** icon. The Bluetooth Scanner Wizard appears.
- 3 Tap **Add Device**. The wizard advances to the next screen.
- 4 Select how you would like to set your scanner (the default is Search) and then click **Next**. The CV30 starts discovering scanners.
- 5 Select the scanner you want to connect to from the Devices list and then tap **Next**.
- 6 When prompted to add the scanner to your device list, tap **Yes**.
- 7 In the **Passcode** text box, enter the passcode for your scanner. The default passcode for Intermec Bluetooth scanners is 0000.
- 8 Tap **Next**. The CV30 connects to the scanner and displays the remote device information.
- 9 Tap **Finish**.
- 10 Refresh Intermec Settings to see the Bluetooth scanner under Data Collection. You can now view and modify any symbology settings.

To remove a wireless scanner from the CV30

- 1 Select **Start > Programs > File Explorer > Program Files > Intermec > Network > Bluetooth > Bluetooth Scanner Wizard**.
- 2 Tap **Remove Device**.

- 3** Select the Bluetooth scanner from the DCE Device(s) list that you want to disconnect and then tap **Disconnect**.

The scanner you wanted to remove no longer appears in the list.

- 4** Tap **Finish**.

Configuring Bluetooth Communications for Wireless Printing

This section explains how to configure the CV30 for Bluetooth wireless printing. You need to:

- make sure Bluetooth power is on. For help, see the procedure in [“Setting Up Bluetooth Communications” on page 32](#).
- create an application that lets you print. For help, see the next section.
- select the current wireless printer on the CV30. For help, see [“Selecting the Current Wireless Printer on the CV30” on page 36](#).

Creating an Application That Lets You Print Wirelessly

The CV30 does not ship with an application that lets you print wirelessly. You must create an application that opens the wireless printing COM port on the CV30. For help, see the Bluetooth Resource Kit.

The Wireless Printing applet is available from **Start > Settings**. The applet separates the task of wireless printing setup from other Bluetooth management tasks.

The Wireless Printing applet uses the concept of a “current wireless printer.” The CV30 connects to the current wireless printer when your application opens the wireless printing COM port on the CV30. If there is no current wireless printer selected on your CV30, there is no wireless printing COM port registered on your CV30. You must select a current wireless printer on your CV30, as described in the next section.

The Wireless Printing applet performs these tasks on the CV30:

- Helps you select the current wireless printer
- Stores the current wireless printer in the registry
- Registers/deregisters the wireless printing COM port

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- Stores the wireless printing COM port in the registry as the WPort

Specifically, the current wireless printer is registered and deregistered on Bluetooth stack load/unload. If you select a different current wireless printer, the existing wireless printing COM port is deregistered and the new one is registered instead. The Wireless Printing applet uses the Bluetooth COM Port Control to handle COM port registration/deregistration.

Selecting the Current Wireless Printer on the CV30

By default, there is no current wireless printer selected on the CV30.

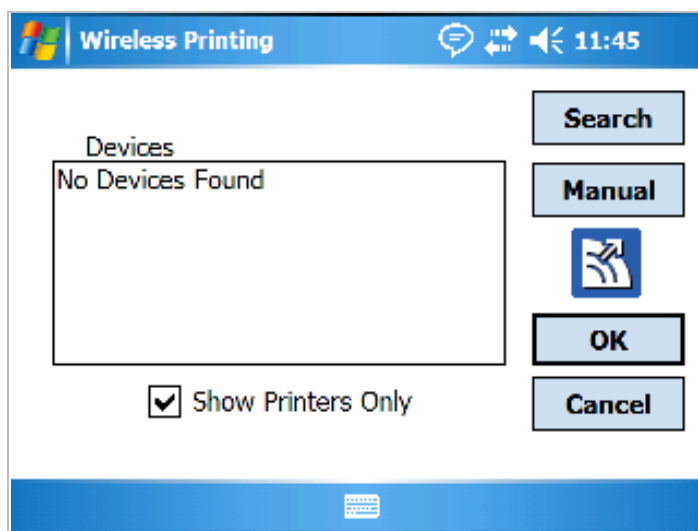
There are three ways to select the current wireless printer:

- Discovering the printer using Bluetooth device discovery
- Manually entering the printer's Bluetooth device address
- Choosing the printer from a list of previously discovered printers

To discover the printer with Bluetooth device discovery



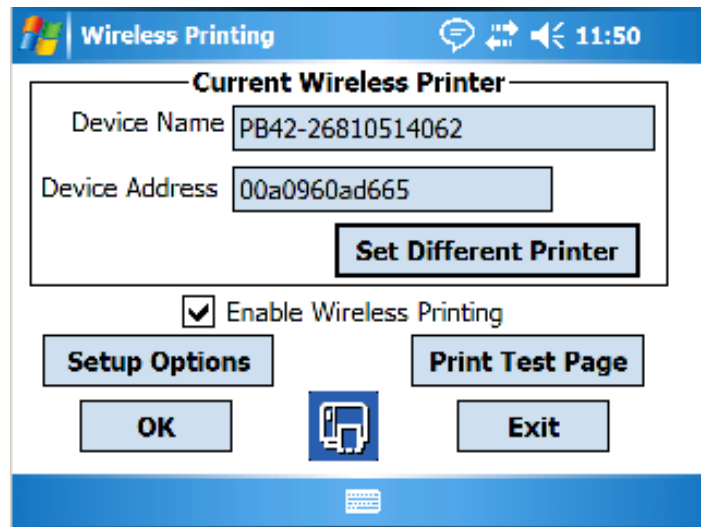
- 1 Select **Start > Settings > the Systems tab > Wireless Printing**. The Wireless Printing wizard appears.



- 2 Tap **Search** to initiate printer discovery. All Bluetooth printers discovered within range appear in the devices list.
- 3 Select the printer you want to connect to and then tap **OK**.

If your preferred printer does not appear, make sure the printer is turned on and discovery is enabled, and then repeat Steps 1 through 3.

- 4 Tap **Print Test Page**. The printer prints out the test page.

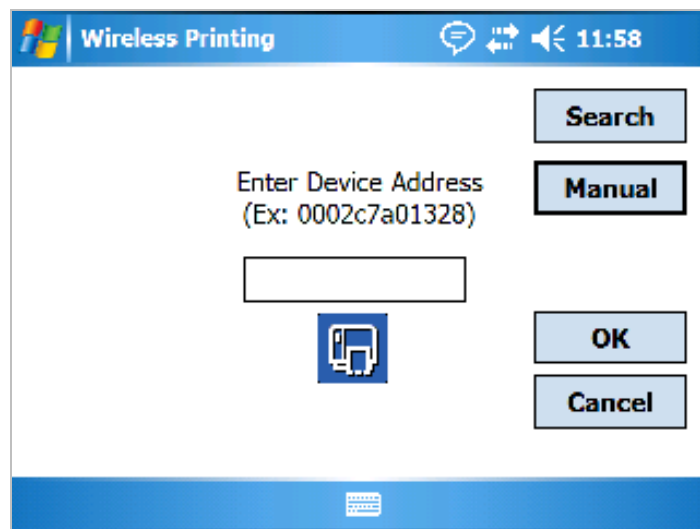


To manually enter the device address of the printer



Wireless
Printing

- 1 Select **Start** > **Settings** > the **Systems** tab > **Wireless Printing**. The Wireless Printing wizard appears.
- 2 Tap **Manual**. The wizard advances to the next screen where you enter the device address.



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- 3 Type the address of the printer in the Enter Device Address text box and then tap **OK**. The keyword -unknown- appears in the Device Name field in the Current Wireless Printer box. The name of the printer is not sent to the CV30 when you manually enter the printer address.
- 4 Tap **Print Test Page**. The printer prints out the test page.

To choose the printer from a list of previously discovered printers

- 1 Make sure you have already performed a Bluetooth device discovery.



- 2 Select **Start > Settings > the Systems tab > Wireless Printing**. The Wireless Printing wizard appears.
- 3 Tap **Set Different Printer**. The Devices list appears with the list of previously discovered printers.
- 4 Select the printer you want and tap **OK**.
- 5 Tap **Print Test Page**. The printer prints out the test page.

Connecting to a Bluetooth Audio Device

Use the Bluetooth Audio applet to discover, activate, and connect to Bluetooth audio devices such as a Bluetooth headset. You can control the audio volume and microphone gain for the connected Bluetooth audio device.

To connect to a Bluetooth headset

- 1 Select **Start > Settings > the System tab > Bluetooth Audio**.
- 2 Tap **Search for devices**. Discovered audio devices are added to the list with an icon to identify them.
- 3 Double-tap a Bluetooth audio device from the list of Connect headsets / hands-free devices.
- 4 When a pop-up menu appears and then select **Activate**. The device icon changes to include a check mark.
- 5 Double-tap the device name and then select **Connect**. When a connection is established, the status changes to connected.
- 6 Tap the **Volume** slider bar or **Mic gain** slider bar to adjust the setting.

Setting Up 802.11 Radio Communications

The CV30 has an internal 802.11 b/g radio to transfer data using wireless communications. This section of the manual assumes that you have already set up your wireless communications network including your access points. If you are using a UDP Plus network, you also need to have your Intermec Application Server communicating with a host computer.

The CV30 supports these network protocols:

- TCP/IP
- UDP Plus

The next sections explain the parameters you need to configure for the CV30 to work in your wireless network.

Configuring the Network Parameters for a TCP/IP Network

In a TCP/IP network, the CV30 communicates with a host computer directly using TCP/IP. The access point acts as a bridge to allow communications between the wired network and the wireless network.

To use wireless communications in a TCP/IP network

- 1 Go to **Start > Settings > the Systems tab > Intermec Settings**.
- 2 Configure these network parameters on each CV30 in the network:
 - Network name (SSID)
 - IP settings (if not using DHCP)
- 3 Make sure that the CV30 is talking to the network and that the network can see the CV30.
- 4 Configure security. For help, see [“Configuring Security on the CV30” on page 41](#).

The easiest way to configure the network parameters on the CV30 is to use Intermec Settings. For help, see [“Configuring the CV30 Using Intermec Settings” on page 30](#).

Configuring the Network Parameters for a UDP Plus Network

In a UDP Plus network, the CV30 communicates with a host computer through the Intermec Application Server. The Intermec Application Server translates UDP Plus packets on the wireless network into TCP/IP packets on the wired network and vice versa. The access point acts as a bridge to allow communications between the wired network and the wireless network.


To use wireless communications in a UDP Plus network

- 1** Go to **Start > Settings > the Systems tab > Intermec Settings**.
- 2** Configure these network parameters on the CV30:
 - Network name (SSID)
 - Controller IP address
 - IP settings (if not using DHCP)
 - Network port
- 3** Make sure the CV30 is talking to the network and that the network can see the CV30.
- 4** Configure security. For help, see “Configuring Security on the CV30” in the next section.

Checking the Status of Your Wireless Connection

After you configure your wireless settings, you can use iConnect to check the status of your connection.

To check the status of your wireless connection

- 1** Tap the iConnect icon () in the lower right corner of the Today screen.
- 2** From the menu, select **Status > Wireless**. The Wireless Status screen appears and checks the connection.

You can also use iConnect to configure the network settings if you need to change anything by tapping **Tools > Wireless Settings** from the iConnect menu.

Configuring Security on the CV30

The CV30 provides four types of security for your wireless network:

- Wi-Fi Protected Access (WPA)
- Wi-Fi Protected Access 2 (WPA2)
- 802.1x
- WEP

This section explains how to configure security on your wireless CV30. If you choose not to use security, see [“Disabling Security” on page 63](#). Intermec always recommends that you implement security.

You must use either Funk or Microsoft security to implement your security solution. For details, see [“Choosing Between Funk and Microsoft Security” on page 44](#).

If you are using WPA-802.1x, WPA2-802.1x, or 802.1x security, this section assumes that your authentication server and authenticators are properly configured. For more information on 802.1x security, see the *MobileLAN™ secure 802.1x Security Solution Installation Guide* (P/N 073134) available at www.intermec.com.



Note: Your security choice does not depend on your authentication server. For example, you can choose Funk security if you use Microsoft's Internet Authentication Service.

Understanding the Wireless Network

Your wireless radio adapter (network interface card) connects to wireless networks of two types: infrastructure and ad-hoc networks.

- Infrastructure networks get you onto your corporate network and the internet. The CV30 establishes a wireless connection to an access point, which links you to the rest of the network. When you connect to a network using an access point, you are using the 802.11 b/g infrastructure mode.
- ad-hoc networks are private networks shared between two or more clients.

Each wireless network is assigned a name or SSID (Service Set Identifier) to allow multiple networks to exist in the same area without infringing on each other.

Intermec recommends using security with wireless networks to prevent unauthorized access to your network and to ensure the privacy of transmitted data. Authentication by both the network and the user are required elements for secure networks. Use the following table to understand some of the wireless network terminology.

Using WPA Security

Wi-Fi Protected Access (WPA) is a strongly enhanced, interoperable Wi-Fi security that addresses many of the vulnerabilities of Wired Equivalent Privacy (WEP). Instead of WEP, WPA uses Temporal Key Integrity Protocol (TKIP) for its data encryption method.

Currently, WPA satisfies some of the requirements in the IEEE 802.11i draft standard. When the standard is finalized, WPA will maintain forward compatibility.

WPA runs in 802.1x (Enterprise) mode or PSK (Pre-Shared Key) mode:

- In Enterprise mode, WPA provides user authentication using 802.1x and the Extensible Authentication Protocol (EAP). That is, an authentication server (such as a RADIUS server) must authenticate each device before the device can communicate with the wireless network.
- In PSK mode, WPA provides user authentication using a shared key between the authenticator and the CV30. WPA-PSK is a good solution for small offices or home offices that do not want to use an authentication server.

To use WPA security, you need:

- an authentication server (Enterprise mode only).



Note: You can also use a MobileLAN access point with software release 1.80 or later as an authentication server. For help, see the system manual for your access point.

- an access point with an 802.11 b/g radio that supports WPA.

- a CV30 with the 802.11b/g radio and the 802.1x/WPA security option.

The CV30 also supports Wi-Fi Protected Access 2 (WPA2) if you are using Funk security. WPA2 is a product certification available through the Wi-Fi Alliance that certifies wireless equipment is compatible with the 802.11i standard. WPA2 uses the Advanced Encryption Standard (AES) for data encryption.

WPA2 runs in 802.1x (Enterprise) mode or PSK (Pre-Shared Key) mode:

- For WPA2-802.1x mode, WPA2 requires authentication in two phases; the first is an open system authentication and the second uses 802.1x and an Extensible Authentication Protocol (EAP) authentication method.
- In PSK mode, WPA2 provides user authentication using a shared key between the authenticator and the CV30. WPA2-PSK is a good solution for small offices or home offices that do not want to use an authentication server.

Using 802.1x Security

802.1x security provides centralized user authentication using an authentication server, authenticators (access points), and supplicants. These components communicate using an EAP authentication type, such as TLS (Transport Layer Security) or PEAP (Protected Extensible Authentication Protocol). 802.1x security provides data encryption using dynamic WEP key management.

To use 802.1x security, you need:

- an access point with an 802.11b/g radio.
- a CV30 with an 802.11b/g radio and the 802.1x/WPA security option.
- an authentication server.



Note: You can also use a MobileLAN access point with software release 1.80 or later as an authentication server. For help, see the system manual for your access point.

Using LEAP Security

Lightweight Extensible Authentication Protocol (LEAP), also known as Cisco-Wireless EAP, provides username/password-based authentication between a wireless client and a RADIUS server. In the 802.1x framework, traffic cannot pass through an Ethernet hub or wireless network access point until it successfully authenticates itself.

The station must identify itself and prove that it is an authorized user before it is actually allowed to use the LAN. LEAP also delivers a session key to the authenticated station, so that future frames can be encrypted with a key that is different than keys used by other sessions.

To use LEAP security, you need:

- a RADIUS server.
- Cisco access points.

LEAP security is not supported with Microsoft security.

Using Static WEP Security

The CV30 uses the Wired Equivalent Privacy (WEP) protocol to add security to your wireless network based on the 802.11b standard.

To use WEP security, you need:

- a CV30 with an 802.11b/g radio.
- an access point with an 802.11b/g radio.

Choosing Between Funk and Microsoft Security

The CV30 provides both Funk and Microsoft security choices. Funk security is the default setting. Use the following sections to set security using either Funk or Microsoft as your security choice. Both security choices offer similar features, but Funk security also offers these features:

- CCX v2.0 compliance
- Support for LEAP, TTLS, and FAST
- Configuration of up to four profiles

If you want to use the default Funk security, you need to select a profile. For help, see one of the following sections, “[Configuring Funk Security Using Intermec Settings](#)” or “[Configuring Funk Security Using the Profile Wizard](#).”

If you want to use Microsoft security, you need to select it as your security choice. For help, see “[Configuring Microsoft Security](#)” on page 58.

Configuring Funk Security Using Intermec Settings

You can define up to four profiles for Funk security. Different profiles let your CV30 communicate in different networks without having to change all of your security settings. For example, you may want to set up one profile for the manufacturing floor and one for the warehouse. By default, the active profile is Profile_1.

To select a profile for Funk security

- 1 Select **Start** > **Settings** > the **Systems** tab > **Intermec Settings**.
- 2 Select **Communications** > **802.11 Radio** > **Funk Security**.
- 3 Select **Active Profile**, choose a profile from the list, and save your settings.
- 4 Tap the active profile to expand it.
- 5 (Optional) Give your profile a meaningful name:
 - a Select **Profile Label** and a text box appears.
 - b Select the text in the box, type a meaningful name, and save your settings.
- 6 Select one profile as the active profile by tapping **Active Profile** and choosing a profile from the drop-down list.
- 7 Save your settings.

Configuring WPA Security With Funk Security

Use these procedures to set WPA-802.1x, WPA2-802.1x, WPA-PSK, or WPA2-PSK security on your CV30 with Funk security.

To configure WPA-802.1x or WPA2-802.1x with Funk security

- 1 Make sure you have configured the communications and radio parameters on your CV30.

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- 2 Make sure you have selected Funk as your security choice.
- 3 Open Intermec Settings.
- 4 Choose **Communications > 802.11 Radio > Funk Security > Profile**.
- 5 For **Association**, choose **WPA** or **WPA2** and press **Enter**. Encryption automatically defaults to TKIP if you are using WPA. Encryption automatically defaults to AES if you are using WPA2.
- 6 For **8021x**, choose **TTLS**, **PEAP**, **EAP-FAST**, or **TLS** and press **Enter**.

If you choose TTLS or PEAP:

- a For **Prompt for Credentials**, choose **Enter credentials now**.



Note: You can use **Prompt for credentials** to troubleshoot your connection to the network if you have problems.

- b Select **User name** and type your user name.
- c Select **User Password** and type a user password.
- d For **Validate Server Certificate**, choose **Yes**.



Note: You must have the date on the CV30 set correctly when you enable Validate Server Certificate.

If you choose TLS:

- a Load a user and root certificate on your CV30. For help, see [“Loading a Certificate” on page 61](#).
 - b For **Validate Server Certificate**, choose **Yes**.
 - c You must enter a **User Name** and **Subject Name**. You can also enter a **Server Common Name** if you want to increase your level of security.
- 7 Exit Intermec Settings.

To enable WPA-PSK or WPA2-PSK with Funk security

- 1 Make sure you have configured the communications and radio parameters on your CV30.
- 2 Make sure you have selected Funk as your security choice.
- 3 Open Intermec Settings.
- 4 Choose **Communications > 802.11 Radio > Funk Security > Profile**.
- 5 For **Association**, choose **WPA** or **WPA2**.
- 6 For **8021x**, choose **None**.
- 7 For **Pre-Shared Key**, enter the pre-shared key or the passphrase.

The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the access point. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the CV30 internally converts it to a pre-shared key.

This value must match the passphrase on the authenticator.

- 8 Exit Intermec Settings.

Configuring 802.1x Security With Funk Security

- 1 Make sure you have configured the communications and radio parameters on your CV30.
- 2 Make sure you have selected Funk as your security choice.
- 3 Open Intermec Settings.
- 4 Choose **Communications > 802.11 Radio > Funk Security > Profile**.
- 5 For **Association**, choose **Open**.
- 6 For **Encryption**, choose **WEP**.
- 7 For **Authentication**, choose **TTLS**, **PEAP**, or **TLS**.

If you choose TTLS or PEAP:

- a Select **User name** and type your user name.
- b Select **Password prompt**, and choose **Enter password now**.



Note: You can use **Prompt for password** to troubleshoot your connection to the network if you have problems.

- c** Select **User Password** and type a user password.
- d** For **Validate Server Certificate**, choose **Enabled**.

If you choose TLS:

- a** Load a user and root certificate on your CV30. For help, see [“Loading a Certificate” on page 61](#).
- b** For **Validate Server Certificate**, choose **Yes**.
- c** You must enter a **User Name** and **Subject Name**. You can also enter a **Server Common Name** if you want to increase your level of security.

8 Exit Intermec Settings.

Configuring LEAP Security on the CV30

- 1** Make sure you have selected Funk as your security choice.
- 2** Make sure you have configured the communications and radio parameters on your CV30.
- 3** From Intermec Settings, choose **Communications > 802.11 Radio > Funk Security > Profile**.
- 4** For **8021x**, choose **LEAP**.
- 5** For **Association**, choose **Open, WPA, WPA2, or Network EAP**. Encryption automatically defaults to TKIP if you choose WPA, to AES if you choose WPA2, and to WEP if you choose Open or Network EAP.
- 6** For **Prompt for Credentials**, choose **Enter credentials now**.
- 7** Select **User name** and type your user name.
- 8** Select **User Password** and type a user password.
- 9** Exit Intermec Settings.

Configuring Static WEP Security With Funk Security

- 1** Make sure you have selected Funk as your security choice.
- 2** Make sure you have configured the communications and radio parameters on your CV30.

- 3 Open Intermec Settings.
- 4 Choose **Communications > 802.11 Radio > Funk Security > Profile**.
- 5 For **Association**, choose **Open**.
- 6 For **Encryption**, choose **WEP**.
- 7 For **8021x**, choose **None**.
- 8 Define a value for the keys you want to use. You can define up to four keys (**Key 1** through **Key 4**).

Enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio. Set a 5-byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.
- 9 For **Transmit key**, choose the key you want to use for transmitting data.
- 10 Exit Intermec Settings.

Configuring Funk Security Using the Profile Wizard

You can start 802.11 b/g communications on the CV30 using the Profile Wizard. A profile contains all the information necessary to authenticate you to the network, such as login name, password or certificate, and protocols by which the CV30 is authenticated. You can have up to four profiles for different networks. For example, you may have different login names or passwords on different networks.

To select a profile for Funk security

- 1 Select **Start > Settings > the Systems tab > Wireless Network**.

or

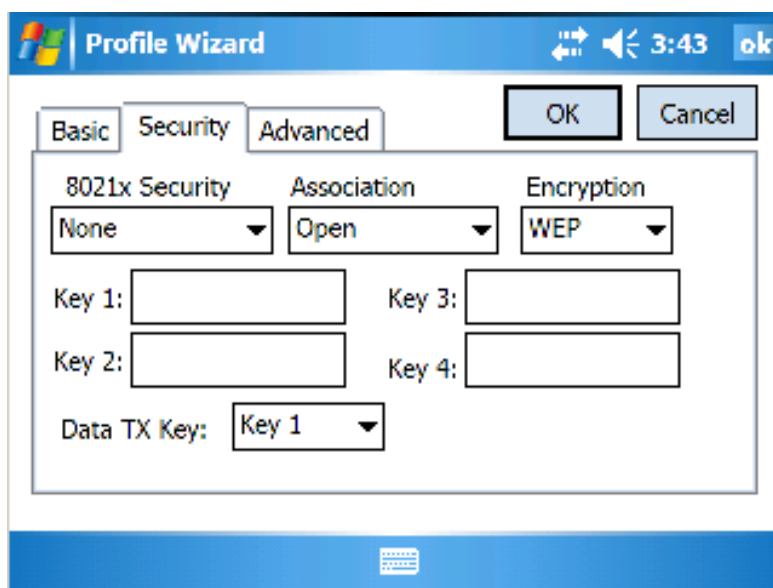
Click the **Wireless Network** icon in the lower right corner of the screen and select **Tools > Wireless Settings**.
- 2 From the **Profile** list, select the profile you want to configure.
- 3 Tap **Edit Selected Profile**.

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- 4 (Optional) Give your profile a meaningful name by selecting the text in the Profile Label text box and typing a meaningful name.
- 5 From the **Network type** list, select either **Infrastructure** or **Ad-Hoc**. Select Infrastructure if the network uses access points to connect to the corporate network or internet. Select Ad-Hoc to set up a private network with one or more participants.
- 6 Enter the **SSID (Network Name)** if different than the profile name.
- 7 (Optional) Check the **Enable Power Management** box to conserve battery power.
- 8 Click **OK**.

Configuring WEP Security With Profile Wizard

- 1 In the Profile Wizard, select the **Security** page.

The image shows a screenshot of the 'Profile Wizard' window, specifically the 'Security' tab. The window has a blue title bar with the text 'Profile Wizard' and icons for help, volume, and time (3:43). Below the title bar are three tabs: 'Basic', 'Security' (which is selected), and 'Advanced'. To the right of the tabs are 'OK' and 'Cancel' buttons. The main area of the 'Security' tab contains three sections: '8021x Security' with a dropdown menu set to 'None'; 'Association' with a dropdown menu set to 'Open'; and 'Encryption' with a dropdown menu set to 'WEP'. Below these are four text input fields labeled 'Key 1:', 'Key 2:', 'Key 3:', and 'Key 4:'. At the bottom, there is a 'Data TX Key:' label and a dropdown menu set to 'Key 1'. A keyboard icon is visible at the bottom center of the window.

- 2 For **8021x Security**, choose **None**.
- 3 For **Association**, choose **Open** or **Shared** to match the settings on your access point.
- 4 For **Encryption**, choose **WEP**.
- 5 From the **Data TX Key** list, select the key you want to use for transmitting data.

- 6 Define a value for the keys you want to use. You can define up to four keys (**Key 1** through **Key 4**).

Enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio. Set a 5-byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.

- 7 Tap **OK**.

Configuring WPA-PSK Security With Profile Wizard

- 1 In the Profile Wizard, select the **Security** page.



- 2 For **8021x Security**, choose **None**.
- 3 For **Association**, choose **WPA**.
- 4 For **Pre-Shared Key** field, enter the passphrase as ASCII (12345).
- 5 Tap **OK**.

Configuring WPA2-PSK Security With Profile Wizard

- 1 In the Profile Wizard, select the **Security** page.



- 2 For **8021x Security**, choose **None**.
- 3 For **Association**, choose **WPA2**.
- 4 For **Encryption**, choose **TKIP** or **AES**.
- 5 For **Pre-Shared Key** field, enter the passphrase as ASCII (12345).
- 6 Tap **OK**.

Configuring PEAP Security With Profile Wizard

Protected EAP (PEAP) performs secure authentication against Windows domains and directory services. It is comparable to EAP-TTLS, though not as flexible.

To configure PEAP security

- 1 In the Profile Wizard, select the **Security** page.



- 2 For **8021x Security**, choose **PEAP**.
- 3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.
- 4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.
- 5 For **Username**, type a unique username for this protocol.
- 6 In the **Password** field, type a unique password for this protocol.

- 7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the CV30.
- 8 Tap **Get Certificates** to obtain or import server certificates. For help with certificates, see [“Loading a Certificate” on page 61](#).
- 9 Tap **Additional Settings** to assign an inner PEAP authentication and set options for server certificate validation and trust.
- 10 From the **Inner PEAP Authentication** list, choose **EAP/MS-CHAP-V2**, **EAT/Token Card**, or **EAP/MD5-Challenge**.
- 11 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using PEAP.
- 12 Tap **Root CA**, select a root certificate, and then tap **OK**.
- 13 Enter the Common Names of trusted servers.
- 14 Tap **OK**.

Configuring TLS Security With Profile Wizard

EAP-TLS is a protocol based on the Transport Layer Security (TLS) protocol widely used to secure web sites. This protocol requires both the user and authentication server to have certificates for mutual authentication.

To configure TLS security

- 1 In the Profile Wizard, select the **Security** page.
- 2 For **8021x Security**, choose **TLS**.
- 3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.
- 4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.
- 5 For **Subject Name**, type a unique subject name for this protocol.
- 6 For **User Name**, type a unique user name for this protocol.

- 7 Tap **Get Certificates** to obtain or import server certificates. For help with certificates, see [“Loading a Certificate” on page 61](#).
- 8 Tap **Additional Settings** to server certificate validation and trust.
- 9 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using TLS.
- 10 Tap **Root CA**, select a root certificate, and then tap **OK**.
- 11 Enter the Common Names of trusted servers.
- 12 Tap **OK**.

Configuring TTLS Security With Profile Wizard

TTLS protocol provides authentication like EAP-TLS but does not require user certificates. User authentication is done using a password or other credentials that are transported in a securely encrypted “tunnel” established using server certificates.

To configure TTLS security

- 1 In the Profile Wizard, select the **Security** page.
- 2 For **8021x Security**, choose **TTLS**.
- 3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.
- 4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.
- 5 For **Username**, type a unique username for this protocol.
- 6 In the **Password** field, type a unique password for this protocol.
- 7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the CV30.
- 8 (Optional) Tap **Get Certificates** to obtain or import server certificates. For help with certificates, see [“Loading a Certificate” on page 61](#).

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- 9 Tap **Additional Settings** to assign an inner TTLS authentication, inner EAP, and set options for server certificate validation and trust.
- 10 From the **Inner TTLS Authentication** list, choose **PAP**, **CHAP**, **MS-CHAP**, **MS-CHAP-V2**, **PAP/Token Card**, or **EAP**.
- 11 If you select EAP for the inner authentication protocol, select and inner EAP protocol form the **Inner EAP** list.
- 12 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using TTLS.
- 13 Tap **Root CA**, select a root certificate, and then tap **OK**.
- 14 Enter the Common Names of trusted servers.
- 15 For **Anonymous EAP-TTLS Name**, type an outer identity to protect your login name or identity.
- 16 Tap **OK**.

Configuring LEAP Security With Profile Wizard

LEAP is the Cisco Lightweight version of EAP.

To configure LEAP security

- 1 In the Profile Wizard, select the **Security** page.



- 2 For **8021x Security**, choose **LEAP**.

- 3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.
- 4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.
- 5 For **Username**, type a unique username for this protocol.
- 6 In the **Password** field, type a unique password for this protocol.
- 7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the CV30.
- 8 Tap **OK**.

Configuring EAP-FAST with Profile Wizard

The EAP-FAST protocol is a client-server security architecture that encrypts EAP transactions with a TLS tunnel. While similar to PEAP, EAP-FAST differs significantly since tunnel establishment is based on strong secrets unique to users. These secrets are called Protected Access Credentials (PACs), which CiscoSecure ACS generates using a master key known only to CiscoSecure ACS. EAP-FAST does not require certificate management.

- 1 In the Profile Wizard, select the **Security** page.
- 2 For **8021x Security**, choose **EAP-FAST**.
- 3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.
- 4 For **Encryption**, choose **WEP** or **CKIP** if you selected Network EAP for association.
- 5 For **Username**, type a unique username for this protocol.
- 6 In the **Password** field, type a unique password for this protocol.
- 7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the CV30.

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- 8 Tap **Additional Settings** to set options for PAC management and assign an anonymous EAP-FAST name.
- 9 Tap **PAC Manager** to view the PAC files currently installed on the CV30. Tap ok to return to the Additional Settings screen.
- 10 If you already have a PAC on the CV30, clear **Allow Automatic PAC provisioning** to avoid receiving more PACs from the server.
- 11 If **Allow Automatic PAC provisioning** is selected, you can check:
 - **Prompt before acquiring a new PAC** for notification of any incoming PACs.
 - **Prompt before replacing a PAC** for notification whether to replace a current PAC with an incoming PAC.
- 12 For **Anonymous EAP-FAST Name**, type the outer identity assigned for public usage.
- 13 Tap **OK**.

Configuring Microsoft Security

The default security setting is Funk. If you want to use Microsoft security, you need to select it as your security choice. After you select Microsoft as your security choice, you will be prompted to save your settings and reset your computer for your change to take effect.

To select Microsoft security as your security choice

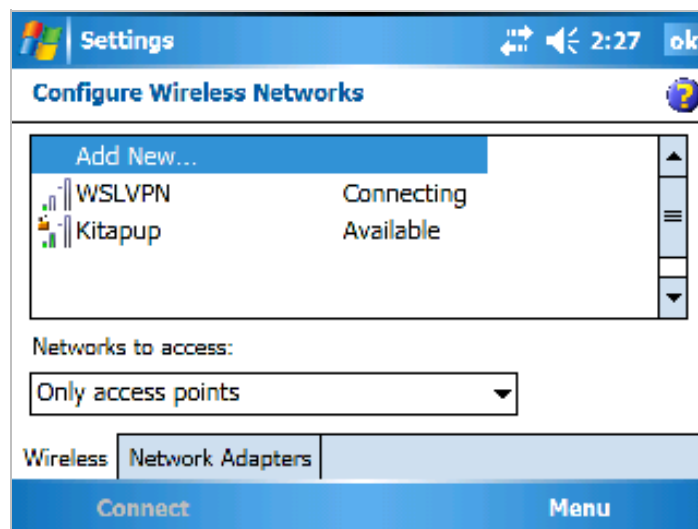
- 1 Select **Start > Settings > the System tab > Intermec Settings**. The Intermec Settings application appears.
- 2 Select **Communications > 802.11 Radio > Security Choice**.
- 3 From the Security Choice list, select **Microsoft Security** and save your settings. An alert box appears telling you that you must save your settings and warm boot the CV30 for the new security choice to take effect.
- 4 Tap **Yes**. The CV30 resets and starts with Microsoft Security as the Security Choice.

Networks already configured are preferred networks. You can connect to only preferred networks or search for and connect to any available network.

You can add a wireless network when the network is detected or manually by entering settings information. To determine if authentication information is needed, see your network administrator.

To configure Microsoft security

- 1 Select **Start > Settings > the Connections tab > WiFi > Add New**.



- 2 Enter a network name. If the network was detected, the network name is entered and cannot be changed.
- 3 From the **Connects to** list, select where you want your network to connect:
 - If you select Work, you can create a VPN connection or use proxy servers.
 - If you select The Internet, you can connect directly to the internet.
- 4 (Optional) To connect to an ad-hoc connection, select **This is a device-to-device (ad-hoc) connection**.
- 5 Tap **Next**.
- 6 Follow these steps to disable authentication:

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- a Set **Authentication** to **Open** if WEP keys are not required or to **Shared** when WEP keys are required for association.
- b Set **Data Encryption** to **Disabled**.

Follow these steps to enable WEP encryption:

- a Set **Authentication** to **Open** if WEP keys are not required or to **Shared** when WEP keys are required for association.
- b Set **Data Encryption** to **WEP**.
- c To change the network key, clear **The key is automatically provided** check box, enter the new **Network key**, and then select the appropriate **Key index**.

Follow these steps to enable WPA authentication:

- a Set **Authentication** to **WPA**.
- b Set **Data Encryption** to either **WEP** or **TKIP**.

Follow these steps to enable WPA authentication using a preshared key:

- a Set **Authentication** to **WPA-PSK**.
- b Set **Data Encryption** to either **WEP** or **TKIP**.
- c Enter the new **Network key**.

Follow these steps to enable WPA2 authentication:

- a Set **Authentication** to **WPA2**.
- b Set **Data Encryption** to **AES** or **TKIP**.
- c Enter the new **Network key**.

Follow these steps to enable WPA2 authentication using a preshared key:

- a Set **Authentication** to **WPA2-PSK**.
- b Set **Data Encryption** to **AES** or **TKIP**.
- c Enter the new **Network key**.

7 Tap **Next**.

8 From the **EAP type** list, select either **PEAP** or **Smart Card or Certificate** and then tap **Finish**.

9 From the **Networks to access** list, select All Available, Only access points, or Only computer-to-computer.

10 Tap **ok** to close the screen.



Note: If you select to automatically connect to non-preferred networks, the CV30 detects any new networks and provides you with the opportunity to configure them.

Loading a Certificate

If you choose to use transport layer security (TLS) with WPA or 802.1x security, you need to have a unique client certificate on the CV30 and a trusted root certificate authority (CA) certificate. You can use a third-party CA to issue unique client certificates and a root certificate.

There are three ways to load certificates on the CV30:

- If you are using Active Directory to issue certificates, you can use the Enroll Certificates application to load the certificates.
- If you are using another third-party CA, you can use the Import Certificates application to load the certificates.
- If you have multiple certificates to install, you can use the Import Root Certificates and Import User Certificates functions.



Note: For certificates to be valid, the CV30 must be set to the correct date and time. After cold booting the CV30, you may need to correct the date and time.


To load certificates if you are using Active Directory

- 1 Configure the network and radio settings for the CV30 to communicate with your certificate authority or establish an ActiveSync connection with the CA.
- 2 From Intermec Settings, select **Communications > 802.11 Radio > Certificates**.
- 3 Select **Enroll Certificates** and tap the **Run App** button. The Enroll Certificates dialog box appears.
- 4 In the Enroll Certificates dialog box, enter the **User Name**, **Password**, and **Server** (IP address) to log into the CA server.

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- 5 Tap **OK**. A dialog box appears asking if you want to load the root certificate.
- 6 Tap **OK** for yes. The Enrollment Tool message box appears telling you that the user certificate has been added.
- 7 Tap **OK** to close the Enrollment Tool message box.
- 8 Configure your CV30 for WPA, WPA2, or 802.1x security.

To load certificates if you are using a third-party CA

- 1 From Intermec Settings, select **Communications > 802.11 Radio > Certificates**.
- 2 Select **Import Certificates** and tap the **Run App** button. The certificates application appears.
- 3 Tap  in the Import pfx Certificate box and navigate to your private .pfx file.
- 4 Select the file and the path to your .pfx file now appears in the text box.
- 5 Tap **Import Certificate**. A dialog box appears asking if you want to add the certificate to the root store.
- 6 Press **OK** to add the certificate. A message box appears telling you that the root certificate has been imported.
- 7 Tap **OK** to close the Success message box.
- 8 Tap **Import User Cert**. A dialog box appears telling you that the user certificate and the associated key were successfully imported.
- 9 Tap **OK** to close the Success message box.
- 10 Configure your CV30 for WPA, WPA2, or 802.1x security.

To load multiple certificates

- 1 Create the \Temp\Root and the \Temp\User folders on the CV30.
- 2 Copy at least one root certificate .cer file into the \Temp\Root folder.
- 3 Copy at least one user certificate .cer file and key .pvk file into the \Temp\User folder. The filenames must match (for example, cert1.cer and cert1.pvk).

- 4 From Intermec Settings, select **Communications > 802.11 Radio > Certificates**.
 - 5 Select **Import Root Certificates = False**. Choose **True** from the drop-down menu.
 - 6 Select **Import User Certificates = False**. Choose **True** from the drop-down menu.
 - 7 Exit Intermec Settings and save your settings. The certificates are immediately imported:
 - a All root certificates in \Temp\Root are imported into the Trusted Authorities certificate store.
-  **Note:** You are prompted when a root certificate is imported, unless that certificate is already in the store.
- b All certificate and key files in \Temp\User are imported into the My Certificates certificate store.
 - c The Import Root Certificates and the Import User Certificates settings are changed from **True** to **False**.
 - 8 Configure your CV30 for WPA, WPA2, or 802.1x security.

Disabling Security

If you choose not to use security with your wireless network, you can disable it on the CV30. Intermec recommends that you always set security in your network.

To disable security

- 1 Open Intermec Settings.
- 2 Choose **Communications > 802.11 Radio > Microsoft Security**.
- 3 For **Network Authentication**, choose **Open**.
- 4 For **Data Encryption**, choose **Disabled**.
- 5 Close Intermec Settings.

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4 Developing and Installing Applications

Use this chapter to understand the guidelines for developing applications and converting existing Trakker Antares applications for use on the CV30. You will also find information on installing applications and automatically launching them. This chapter contains these sections:

- Developing Applications for the CV30
- Installing Applications on the CV30
- Launching an Application Automatically

Developing Applications for the CV30

The CV30 Fixed Mount Computers run applications programmed in Microsoft Visual Studio 2005. You can also use Microsoft eMbedded Visual C++ 4.0, but some features may not be available. Use this section to understand the hardware and software you need to:

- develop a new application for the CV30.
- develop a web-based application for the CV30.
- convert a Trakker Antares application to a CV30 application.

Developing a New Application

Use the Intermec resource kits to develop new applications to run on the CV30. The Intermec resource kits are a library of C++ and .NET components grouped by functionality that you can use to create applications for the CV30. The resource kits are part of the Intermec Developer Library (IDL), and can be downloaded from the Intermec web site at www.intermec.com/idl.

You need these hardware and software components to use the Intermec resource kits:

- Pentium PC, 400 MHz or higher
- Windows 2000 (Service Pack 2 or later) or Windows XP (Home, Professional, or Server)
- For native and managed development, Microsoft Visual Studio 2005
- 128 MB RAM (196 MB recommended)
- 360 MB hard drive space for minimum installation (720 MB for complete)
- CD-ROM drive compatible with multimedia PC specification
- VGA or higher-resolution monitor (Super VGA recommended)
- Microsoft Mouse or compatible pointing device

Developing a Web-Based Application

You can develop web-based data collection applications for use on the CV30. For help, see any HTML source book. The CV30 contains Internet Explorer Mobile for you to use. Microsoft Internet Explorer Mobile is available from the Start menu and provides all of the common elements you expect to find.

Converting a Trakker Antares Application for the CV30

If you have an existing Trakker Antares application that you would like to run on the CV30, you can use the Antares Migration Resource Kit to convert it. The Antares Migration Resource Kit is a set of libraries and tools that you use to convert your existing Trakker Antares C applications into C++ applications for use on the CV30.

The CV30 does not support all Trakker Antares functions. You may need to rewrite parts of your application when converting it for use on the CV30. See the resource kit for a list of functions that are not supported.

You need these hardware and software components to use the resource kit:

- PC with at least 1 MB of free disk space running Microsoft Windows 2000/XP
- Microsoft Visual Studio 2005
- Antares Migration Resource Kit (from IDL 2.4 or later)

The resource kit is part of the Intermec Developer's Library (IDL), which you can download from the Intermec web site at www.intermec.com/idl.

Installing Applications on the CV30

There are several ways you can install applications on the CV30:

- You can package your application as a cabinet (.cab) file.
- If you have a simple application, you may only need to deliver the .exe file.
- You can copy a directory structure that contains the application, supporting files, DLLs, images, and data files.

Intermec recommends using .cab files to install your applications. The CV30 uses standard Windows Mobile .cab files and will install third-party .cab files. You can have your .cab files place your application in any of these memory locations on the CV30:

- The Object Store or the Flash File Store. The Object Store is a Disk on Chip (DOC) flash that looks like a disk. The Flash File Store is an area of storage which is embedded in a section of the system flash memory. This storage is *not* erased during a reset. Although it might be erased during the reflashing process. In addition to storing applications and data files, you have the option to store persistent registry to the Flash File Store region.
- The optional SD card. If you are using an SD card, this should be the primary location to place application installation files.
- The non-volatile Flash File Store region of the storage. Use the small non-volatile Flash File Store region to hold .cab files that rebuild the system at clean boot or install applications from a .cab file into the Flash File Store so that they are “ready-to-run” when you perform clean boot. Since the flash in the system has a limited number of write cycles, do not use the Flash File Store for excessive writing.

There are several ways you can install files and applications on the CV30:

- SmartSystems server
- ActiveSync
- SD card
- FTP server

- Wavelink Avalanche

The following sections explain how to use each one of these processes to install your application on the CV30.

Installing Applications Using SmartSystems Server

You can use the SmartSystems server to drag-and-drop Intermec applications onto your CV30s. The CV30 ships with the SmartSystems client, which means it is SmartSystems-enabled. The console is part of SmartSystems Foundation, which you can download from www.intermec.com/SmartSystems. For help using the console, see the online help.

To use SmartSystems Console to install an application

- 1 Download your application file from the Intermec web site and unzip it on your desktop PC.
- 2 Double-click the application file to install it. The application file should appear in the software vault.
- 3 From the SmartSystems Console in the Software Vault, drag-and-drop the application onto each CV30 in your network.

Installing Applications Using Microsoft ActiveSync

You can use Microsoft ActiveSync to establish a connection between your PC and the CV30. ActiveSync transfers files, synchronizes files, performs remote debugging, and other device management activities. For more information on installing and using ActiveSync, see [“Using Microsoft ActiveSync” on page 26](#).

You can have a USB or 802.11 b/g ActiveSync connection to the CV30. When you only have a few CV30s to update, you can copy files using Windows Explorer on a PC.

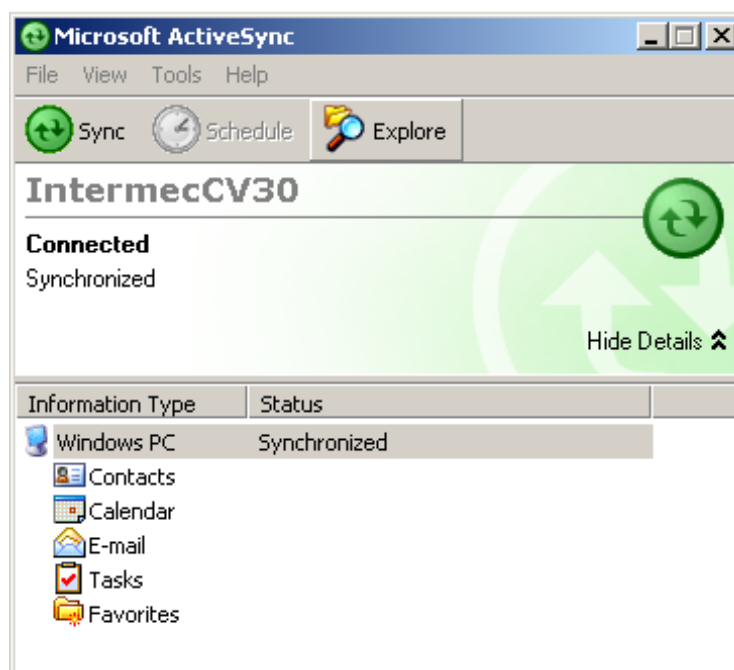
This procedure assumes that Microsoft ActiveSync is installed on your PC and is up and running.

To install an application on the CV30 using ActiveSync

- 1 Connect the CV30 to a PC using a USB cable. You may have to disconnect and then connect the cable to “wake” the connection.
- 2 Wait for a “Connected” message to appear in the Microsoft ActiveSync application to signal a connection to the CV30.

Chapter 4 — Developing and Installing Applications

If necessary, select **File > Get Connected** to initiate a connection.



- 3 Click **Explore** to open the Mobile Device window on the CV30.
- 4 On your desktop PC, locate the .cab file you want to download to the CV30 and copy it.
- 5 From the Mobile Device window, open the My Windows Mobile-Based Device folder and navigate to the folder where you want to paste the .cab file.
- 6 Paste the .cab file into the desired folder.
- 7 When you are done copying files, reset the CV30.
- 8 After the CV30 is done resetting, tap **Start > Programs > File Explorer** to locate the newly copied files.
- 9 Tap the .cab files to install them.

Installing Applications Using Your SD Card

If you have an SD card for your CV30, this is the best place for you to install applications.

To install applications using the SD card

- 1 If you are using an SD card reader, remove the SD card from the CV30 and place it in the reader. For help, see “[Increasing Memory Storage](#)” on page 15.
- 2 Copy your application file to the SD card.
If you are using ActiveSync, an FTP server, or Wavelink Avalanche to copy the files to the SD card, place the application in the SD Card folder located in My Windows Mobile-Based Device.
- 3 If you are using an SD card reader, insert the SD card back into the CV30.
- 4 Navigate to the SD Card folder and run your application.

Installing Applications Using Wavelink Avalanche

You can use the Wavelink Avalanche device management system to install applications on all of your wireless CV30s. The CV30 ships with the Avalanche Enabler already loaded on it.

Each time the Avalanche Enabler is activated (typically on a reset), the CV30 attempts to connect to the Avalanche Agent. When the CV30 connects to the agent, the agent determines whether an update is available and immediately starts the software upgrade, file transfer, or configuration update.

To use Avalanche to remotely manage the CV30

- 1 Install software packages and updates for the CV30 using the Avalanche Administrative Console.
- 2 Schedule the CV30 updates or manually initiate an update using the Avalanche Administrative Console.

For more information on using Wavelink Avalanche, contact your local Intermec representative or visit the Wavelink web site at www.wavelink.com.

Launching An Application Automatically

There are two ways to automatically launch your application when you perform a reset on the CV30:

- Make sure your CAB file places a shortcut to your application in the \Windows\StartUp folder.
- Configure the AutoRun program to launch your application.

The CV30 contains a program called AutoRun.exe which automates operations such as launching other processes. You can configure AutoRun.exe through the AutoRun data file, AutoRun.dat. This script file must be located in the same directory as the program.

AutoRun supports the following script commands in AutoRun.dat:

AutoRun Script Commands

Command	Description
EXEC	Launches a specified program and waits for it to finish (up to 10 minutes)
CALL	Processes a specified file of commands and returns.
CHAIN	Processes a specified file of commands and does not return.
RUN	Loads a specified program and executes it.
LOAD	Loads a specified program and executes it.

AutoRun handles quoted file names for the first parameter, which allows you to specify path names or file names that contain white spaces. AutoRun only supports one set of quotes per command.



5 Troubleshooting and Maintaining the CV30

If you encounter any problems while using the CV30, look in this chapter to find a possible solution. You will also find information on routine maintenance. This chapter contains these sections:

- Calling Product Support
- Troubleshooting the CV30
- Upgrading the CV30
- Troubleshooting the Boot Process (Clean Booting)
- Cleaning the Screen

Calling Product Support

If you cannot find the answer to your problem in the “Troubleshooting the CV30” section, you can visit the Intermec technical knowledge base (Knowledge Central) at intermec.custhelp.com to review technical information or to request technical support. If you still need help after visiting Knowledge Central, you may need to call Product Support.

To talk to an Intermec Product Support representative, call:

1-800-755-5505

Before you call Intermec Product Support, make sure you have the following information ready:

- Operating system version
- Configuration number
- If you are using security, know the type (Funk or Microsoft) and the full set of parameters
- Power management settings
- If you are using terminal emulation (TE), know the version and protocol
- If you are not using TE, know the language your custom application was written in and the tools you used to create it

You can find most of the information listed above in Intermec Settings. Consult your application developer for information on your custom application.

To find your operating system version

- 1** Go to **Start > Internet Explorer**.
- 2** Tap **Intermec**. An Intermec page opens and displays the OS version loaded on the CV30.

To find your configuration number

- Look at the label on the back of the CV30.

Troubleshooting the CV30

If you send the CV30 in for service, it is your responsibility to save the computer data and configuration. Intermec is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

Problems While Operating the CV30

Problem	Solution
You press Power and nothing happens.	<ul style="list-style-type: none"> • Make sure the brightness is not set all the way to the darkest or lightest setting. Press and hold the Brightness button until you reach the desired contrast level. • Make sure the backlight is on by pressing the Brightness button. • Make sure you are connected to a power supply. • Reset the CV30. For help, see “Resetting the CV30” on page 9.
The Battery light is on.	The backup battery needs to be replaced immediately.
The CV30 appears to be locked up and you cannot enter data.	<ul style="list-style-type: none"> • Press Power to turn off the CV30 and then turn it back on. • Press and hold the Power button for 5 seconds to reset the CV30. • Clean boot the CV30. For help, see “Troubleshooting the Boot Process (Clean Booting)” on page 83. • Try reloading the operating system. For help, see “Upgrading the CV30” on page 80. • If the CV30 will not reset or boot, contact your local Intermec service representative for help.
You tap the screen and nothing happens.	Align your screen. For help, see “Aligning the Touch Screen” on page 7 .

Problems While Configuring Security

Problem	Solution
You are setting up multiple access points in a network, with different SSIDs, and the connection fails.	The CV30 does not save WEP key values when you change the SSID. Reenter the WEP key value after you change the SSID and select Apply Network Settings from the 802.11 Radio menu. You should now be able to connect to the different access points.
You receive a message saying “The server certificate has expired or your system date is incorrect” after you clean boot the CV30.	The date and time on the CV30 are not saved through a clean boot. You need to correctly set the time and date and then select Apply Network Settings from the 802.11 Radio menu.
You are using static WEP keys and you have a strong connection to the access point, but you cannot communicate with it.	Make sure you are using the correct static WEP key. Sometimes you can see the strong signal strength and that security is enabled even with the WEP key set incorrectly.
The CV30 indicates that it is not authenticated.	Make sure that: <ul style="list-style-type: none">• the User Name and Password parameters on the CV30 match the user name and password on the authentication server. You may need to re-enter the password on both the CV30 and the authentication server.• on your authentication server, the user and group are allowed and the group policy is allowed to log in to the server. For help, see the documentation that shipped with your authentication server software.• the IP address and secret key for your access point must match the IP address and secret key on the authentication server. You may need to re-enter the IP address and secret key on both your access point and authentication server.• your authentication server is active and that it can communicate with your access point. You can use the PING utility in iConnect to determine communications.• the authentication server software is running on the server PC.

Problems With Wireless Connectivity

Problem	Solution
When you turn on the CV30 after it was suspended for a while (10 to 15 minutes or longer) and it no longer sends or receives messages over the network.	The host may have deactivated or lost your current terminal emulation session. In a TCP/IP direct connect network, you need to turn off the “Keep Alive” message (if possible) from the host so that the TCP session is maintained while a CV30 is suspended.
The network connection icon is in the taskbar or iConnect appears to be communicating, but the host computer is not receiving any data from the CV30.	<p>In a UDP Plus network, there may be a problem with the connection between the Intermec Application Server and the host computer. Check with your network administrator or see the user’s manual for the Intermec Application Server.</p> <p>In a TCP/IP network, there may be a problem with the connection between the access point and the host computer. Check with your network administrator or use your access point user’s manual.</p>
The CV30 is not communicating with the access point.	<ul style="list-style-type: none">• The CV30 is not connected to the access point. Make sure the access point is turned on and operating. You may also be using the CV30 out of range of an access point. Try moving closer to an access point to reestablish communications.• Make sure the CV30 is configured correctly for your network. The radio parameters on the CV30 must match the values set for all access points the CV30 may communicate with. For help, see “Setting Up 802.11 Radio Communications” on page 39.• The radio initialization process may have failed on the 802.11 b/g radio. Try resetting the CV30. For help, see “Resetting the CV30” on page 9.• If you have tried these possible solutions and nothing happens, you may have a defective radio card. For help, contact your local Intermec service representative.
The CV30 is connected to the Intermec Application Server or host computer and you move to a new site to collect data. You do not appear to be connected to the network.	You may have gone out of range of an access point. Try moving closer to an access point or to a different location to reestablish communications. Once you are in range again, the network connection icon appears again. Any data you collected while out of range is transmitted over the network.

Chapter 5 — Troubleshooting and Maintaining the CV30

Problems While Scanning Bar Codes

Problem	Solution
You cannot see a red beam of light from the connected scanner when you press the Scan button and aim the scanner at a bar code label.	There are two possible problems: <ul style="list-style-type: none">• You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again.• You may be scanning the bar code label “straight on.” Change the scanning angle and try again. You can test the effective range of the scanner. Move within 61 cm (2 ft) of a wall and test the scanner. You need to be within the scanning range to scan bar code labels.
The input device attached to the computer does not appear to work well or read bar code labels very quickly.	Try setting the Scanner Model command to the specific input device you have attached. Check the bar code symbologies you have enabled on the CV30. Enable only the symbologies being used.
You scan a configuration command such as Beeper Volume, and you hear three low beeps.	If you are using Intermec Setting, you cannot scan configuration commands. Exit Intermec Settings to scan configuration commands.
You scan or enter an option for the Scanner Model configuration command and you hear three low beeps.	You may have scanned or enter a Scanner Model command that does not apply to the type of scanner that you have installed. Try scanning or entering the Scanner Model command again and select an option for the type of device you are using.
You scan a valid bar code label to enter data for your application. The data decoded by the scan module does not match the data encoded in the bar code label.	The computer may have decoded the bar code label in a symbology other than the label’s actual symbology. Try scanning the bar code label again. Make sure you scan the entire label. To operate the computer quickly and efficiently, you should enable only the bar code symbologies that you are going to scan.
The scanner does not read the bar code labels quickly, or scanning beam seems to be faint or obscured.	The scanner window may be dirty. Clean the window with a solution of ammonia and water. Wipe dry. Do not allow abrasive material to touch the window.

Problems While Scanning Bar Codes

Problem	Solution
The scanner will not read the bar code label.	<ul style="list-style-type: none">• Make sure you aim the scanner beam so it crosses the entire bar code label in one pass.• The angle you are scanning the bar code label may not be working well, or you may be scanning the label “straight on.” Try scanning the bar code label again, but vary the scanning angle.• The bar code label print quality may be poor or unreadable. To check the quality of the bar code label, try scanning a bar code label that you know will scan. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan. <p>Make sure that the application you are running on the computer is expecting input from a bar code. You may need to type this information instead of scanning it.</p>
You selected 1551E or 1553 and enabled the scanner port, but the scanner does not scan.	<p>Try these possible solutions in order:</p> <ul style="list-style-type: none">• Select ASCII as the scanner model.• Make sure that you are using the correct cable and that it is attached correctly (when you attach the scanner to the port, it should emit a single power up beep).• Try enabling the port state using Intermec Settings.• Try upgrading the scanner firmware.
Your 1551E or 1553 scanner was working fine, but after changing the port setting you cannot change the configuration.	<p>The 1551E or 1553 scanner must be using the correct RS-232 settings to allow configuration in the Intermec Settings applet. Try disabling, then enabling the scanner port state.</p>
The configuration settings in the Intermec Settings do not match the settings on your 1551E or 1553 scanner.	<p>Try disabling and then enabling the scanner port state to synchronize the CV30 settings with the scanner.</p>

Upgrading the CV30

When you upgrade the CV30, you are updating the operating system (OS) and the SmartSystems Platform Bundle (SSPB) files.

The SSPB files are stored on the DiskOnChip, and deliver Intermec Value Add (IVA) functionality such as data collection, configuration, and wireless security. As new features are added to these components, you can upgrade your SSPB files without needing to upgrade the operating system. Similarly, features added to the operating system do not affect the functionality of the SSPB, and you can choose to upgrade only the operating system.

There are two ways to upgrade your CV30:

- You can upgrade your computer using an SD card. For help, see the next section, “Upgrading the CV30 Using an SD Card.”
- You can upgrade your computer using the SmartSystems Server. For help, see **“Upgrading Your CV30 Using SmartSystems Server” on page 82.**

You need to download the latest upgrade files from the Intermec web site to your desktop computer.

To download the upgrade files

- 1 Start your web browser and go to the Intermec web site at www.intermec.com.
- 2 Go to **Service & Support > Downloads**.
- 3 Select **Computers: CV30 Fixed Mount** from the list.
- 4 Select the download you need. Make sure the download you select is for the CV30 computer and that it contains the upgrade you want: operating system only, SSPB only, or operating system and SSPB.
- 5 Download the .zip file to your desktop computer.
- 6 Use the SD card or SmartSystems server to upgrade the CV30.



Note: You cannot install the files for the OS and the SSPB bundle at the same time. You need to install one and then install the other. Or install only the bundle that you need to upgrade.

Upgrading the CV30 Using an SD Card

To upgrade the operating system, you need:

- an SD card.
- an SD card reader (optional).



Note: If you are using an SD card reader to copy files to your SD card, see [“Increasing Memory Storage” on page 15](#) for information on how to remove and insert the SD card.

You will need to set the network communications parameters on the CV30 to reestablish communications with the other devices in the wireless network.

To upgrade the operating system

- 1 Back up all of your applications and data.
- 2 Download the latest upgrade (.exe) file from the Intermec web site to your desktop PC.
- 3 Double-click the .exe file on your desktop PC. An installation wizard starts and walks you through the process of extracting the upgrade files. The installation wizard extracts the upgrade files to:

C:\Program Files\Intermec\<version>

Copy all files in this directory to the SD card. Do **not** copy the .exe file to the SD card.

- 4 If you are using an SD card reader, remove the SD card from the CV30 and place it in the reader.
- 5 Copy the contents of the <version> folder to the SD card.
- 6 If you are using an SD card reader, insert the SD card into the CV30.



Note: Make sure the CV30 has completely loaded all of the upgrade files before you remove the SD card or reset the computer.

- 7 Perform a clean boot on the CV30. For help, see [“Troubleshooting the Boot Process \(Clean Booting\)” on page 83](#).

Chapter 5 — Troubleshooting and Maintaining the CV30

To upgrade the SSPB files

- 1 Back up all of your applications and data.
- 2 Download the latest SSPB (.exe) file from the Intermec web site to your desktop PC.
- 3 Double-click the .exe file on your desktop PC. An installation wizard starts and walks you through the process of extracting the upgrade files. The installation wizard extracts the upgrade files to:

C:\Program Files\Intermec\SmartSystem\ss_lib\Software\
<version>

Copy all files in this directory to the SD card. Do **not** copy the .exe file to the SD card.
- 4 If you are using an SD card reader, remove the SD card from the CV30 and place it in the reader.
- 5 Copy the contents of the <version> folder to the SD card.
- 6 If you are using an SD card reader, insert the SD card into the CV30.



Note: Make sure the CV30 has completely loaded all of the upgrade files before you remove the SD card or reset the computer.

- 7 Perform a clean boot on the CV30. For help, see [“Troubleshooting the Boot Process \(Clean Booting\)” on page 83](#).

Upgrading Your CV30 Using SmartSystems Server

You can use the SmartSystems server to upgrade the operating system on your CV30. The server is part of SmartSystems Foundation, which is available from the Intermec web site.

Before you can upgrade the CV30, you need:

- SmartSystems Foundation. To download SmartSystems Foundation, go to www.intermec.com/SmartSystems.
- the device upgrade .exe file. This file is available from the Intermec web site at www.intermec.com. Go to **Service & Support > Downloads**.

To upgrade a CV30 using SmartSystems Server

- 1 Install SmartSystems Foundation on your desktop PC and open the server.
- 2 Make sure the server and the CV30s are on the same subnet.
- 3 Make sure your CV30s have power management disabled.
- 4 Download the device upgrade .exe file to your desktop PC.
- 5 Double-click the .exe file on your desktop PC. An InstallShield application starts and walks you through the process of extracting the upgrade files in the default location.



Note: Do not change the default location where InstallShield extracts the files. SmartSystems server requires that the files be located in the default directory.

- 6 In the software vault, locate the device upgrade you want to install.
- 7 Drag-and-drop the device upgrade onto each CV30 you want to upgrade. SmartSystems server will tell you that it is installing the upgrade on your CV30.

Once the upgrade is done downloading to your CV30, your CV30 replaces the operating system and then automatically cold boots. Progress messages appear on the CV30 screen.

The SmartSystems server will show your CV30 as being offline until the CV30 reboots and reconnects to the system.

Troubleshooting the Boot Process (Clean Booting)

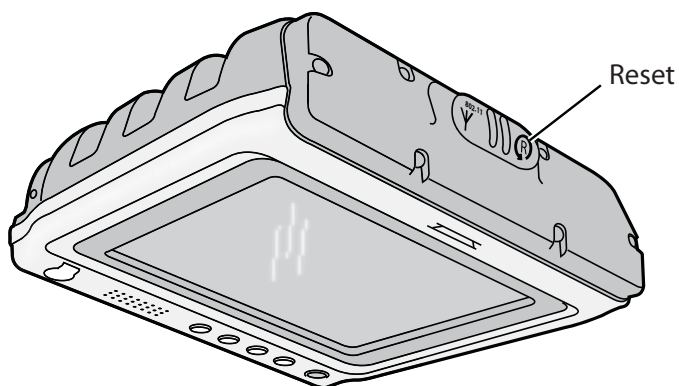
When you clean boot the CV30, it loads only those files and programs that are absolutely required by the operating system. Use the clean boot to troubleshoot the computer by getting it up and running so that you can perform diagnostic tests to determine which elements of the normal boot process are causing problems.

To clean boot the CV30

- 1 Using a small pointed device (such as the end of the stylus) or your finger, press the Reset switch on the top of the CV30 at the same time as you press the Power button.



Do not use force or a sharp object when pressing the reset switch. You may damage the reset switch.



The blue light on the CV30 blinks once and the CV30 starts the booting sequence.

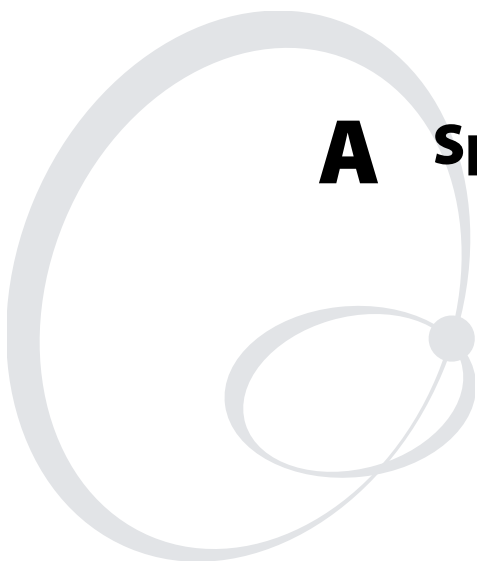
- 2 Reload any custom applications that may have been erased during the clean boot and reset the time and date.

Cleaning the Screen

To keep the CV30 in good working order, you may need to clean the screen whenever necessary depending on the environment in which you use the computer. To clean the CV30, use a solution of ammonia and water.

To clean the screen

- 1 Disconnect the CV30 from the power supply.
- 2 Dip a clean towel or rag in the ammonia solution and wring out the excess. Wipe off the screen. Do not allow any abrasive material to touch these surfaces.
- 3 Wipe dry.



A Specifications

Physical and Environmental Specifications

Use this section to locate technical information about the CV30 and its available options and accessories.

Physical Dimensions

Height:	17.65 cm (6.95 in)
Width:	18.92 cm (7.45 in)
Depth:	5.46 cm (2.15 in)
Weight:	1.47 kg (3.25 lbs)

Power Specifications

Operating:	6-60 VDC input DC/DC 15-96 VDC input DC/DC AC/DC converter
Backup:	Rechargeable Lithium-Ion
Electrical rating:	⎓ 12V, 4A; ⎓ 12V, 1A

Temperature and Humidity Specifications

Operating temperature:	-30° to 50° C (-22° to 122°F)
Storage temperature:	-20° to 70° C (-4° to 158°F)
Humidity:	5 to 95% RH non-condensing

Screen Specifications

- 163 mm (6.4 in) color VGA
- 640 x 480 transmissive TFT LCD unit with replaceable touch panel

Accessories for the CV30

You can use these accessories (sold and ordered separately) with the CV30. To order accessories, contact your local Intermec sales representative.

2455/CV30 Adapter Plate (P/N VE011-2011)

Use this adapter plate to mount the CV30 in an existing 2455 installation.

CV30 Cable Protector (P/N VE011-2013)

Use the cable protector to keep your cables from getting disconnected from the CV30.

CV30 Compact Keyboard (P/N VE011-2002)

Use the compact keyboard to save space or to have a keyboard that you can attach directly to the CV30.

CV30 Compact Keyboard Mounting Kit (P/N VE011-2003)

Use this mounting kit to attach the compact keyboard to the CV30.

CV30 Single USB Cable Assembly (P/N VE011-2016)

Use this cable to connect a USB device to the CV30.

CV30 Desktop Mounting Kit (P/N 805-815-001)

Use this desktop mounting kit to attach the CV30 to a flat surface such as a desktop.

CV30 Dual USB Cable Assembly (P/N VE011-2017)

Use this cable to connect two USB devices to the CV30.

CV30 Developer Cable Assembly (P/N VE011-2018)

Use this cable to connect the CV30 to the USB port on your desktop PC. This cable is to use for ActiveSync connections from your desktop PC to the CV30.

CV30 Screen Protector (P/N VE011-2010)

Use the screen protector to keep the touch screen from getting damaged in harsh work environments.

CV30 Tethered Stylus (P/N VE011-2004)

Use the tethered stylus to always have a stylus available for navigating on the CV30 touch screen.

CV30 Vehicle Mounting Kit (P/N 805-813-001 or 805-814-001)

Use the vehicle mounting kit to attach the CV30 to a vehicle. This kit does not include a power supply. You need to purchase it separately.

CV30 Wall Mounting Kit (P/N VE011-2006)

Use the wall mounting kit to attach the CV30 to a wall.

DC/DC Heated/Non-Heated (6-60 VDC) Power Supply (P/N 203-779-001)

Use this power supply kit with vehicles that are 6-60 V powered.

Appendix A — Specifications

DC/DC Non-Heated (15-96 VDC) Power Supply (P/N 203-780-001)

Use this power supply with 15-96 V powered trucks that do not require a heated touch screen.

DC/DC Heated (15-96 VDC) Power Supply (P/N 203-780-002)

Use this power supply with 15-96 V powered trucks that require a heated touch screen.

External Keyboards

You can purchase these rugged QWERTY keyboards to attach to the CV30:

- 3270 (P/N 850-809-001)
- 5250 (P/N 850-809-002)
- Windows (P/N 850-809-003)
- VT220 (P/N 850-809-004)

Scanner Cables

You can purchase these scanner cables to use with the CV30:

- SR60 RS-232 decoded cable (P/N 321-642-002)
- 9-pin with power RS-232 cable (P/N 3-604032-05)

Slot Reader (P/N 858-098-001 or 858-098-002)

You can connect either a visible light or infrared light slot reader. The slot reader comes with a mounting plate to attach it to the CV30.

Universal Power Supply (P/N 851-082-004)

Use the universal power supply to supply AC power to the CV30. You need to purchase a country-specific power cord separately. The universal power supply does not provide power for the internal touch screen heater.



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CV30 Fixed Mount Computer User's Manual



P/N 935-005-001