CV41

Vehicle Mount Computer (Windows CE)

CV41C

User Guide

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Contents

Before You Begin

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

Safety Information

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

This section explains how to identify and understand cautions and notes that are in this document.

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

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

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec website at **www.intermec.com** and click **Support** > **Returns and Repairs** > **Warranty**.

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

Web Support

Visit the Intermec website at **www.intermec.com** to download our current manuals (in PDF).

Visit the Intermec technical knowledge base (Knowledge Central) at **www.intermec.com** and click **Support** > **Knowledge Central** to review technical information or to request technical support for your Intermec product.

Send Feedback

Your feedback is crucial to the continual improvement of our documentation. To provide feedback about this manual, please contact the Intermec Technical Communications department directly at **TechnicalCommunications@intermec.com.**

Telephone Support

In the U.S.A. and Canada, call **1-800-755-5505**.

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec website, click **About Us** > **Contact Us**.

Service Location Support

For the most current listing of service locations, click **Support** > **Returns and Repairs** > **Repair Locations.**

Related Documents

This is a list of related Intermec documents.

- ***Intermec Settings Command Reference Manual***
- ***Intermec Developer Library (IDL) Resource Kit Developer's Guide***

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

To download documents

1. Visit the Intermec website at **www.intermec.com**.
2. Click the **Products** tab.
3. Using the **Products** menu, navigate to your product page. For example, to find the CV41 computer product page, click **Computers** > **Fixed Vehicle Computers** > **CV41**.
4. Click the **Manuals** tab.

If your product does not have its own product page, click **Support** > **Manuals**. Use the **Product Category**, the **Product Family**, and **Product** to find your documentation.

Patent Information

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

5,218,191; 5,233,172; 5,241,488; 5,243,602; 5,258,606; 5,288,985; 5,308,966; 5,342,210; 5,359,185; 5,389,770; 5,397,885; 5,414,251; 5,416,463; 5,442,167; 5,464,972; 5,468,947; 5,468,950; 5,477,044; 5,486,689; 5,500,516; 5,502,297; 5,504,367; 5,514,858; 5,534,684; 5,536,924; 5,539,191; 5,541,419; 5,548,108; 5,550,362; 5,550,364; 5,565,669; 5,572,007; 5,576,529; 5,594,230; 5,598,007; 5,608,578; 5,616,909; 5,619,027; 5,640,001; 5,659,431; 5,672,860; 5,684,290; 5,719,678; 5,729,003; 5,742,041; 5,761,219; 5,764,798; 5,777,308; 5,777,309; 5,777,310; 5,786,583; 5,798,509; 5,798,513; 5,804,805; 5,811,776; 5,811,777; 5,818,027; 5,821,523; 5,834,749; 5,837,987; 5,841,121; 5,842,070; 5,854,478; 5,862,267; 5,869,840; 5,873,070; 5,877,486; 5,878,395; 5,886,338; 5,895,906; 5,902,987; 5,902,988; 5,912,452; 5,923,022; 5,936,224; 5,949,056; 5,969,321; 5,969,326; 5,979,768; 5,987,192; 5,992,750; 6,003,775; 6,012,640; 6,016,960; 6,018,597; 6,024,289; 6,034,379; 6,036,093; 6,039,252; 6,064,763; 6,095,422; 6,097,839; 6,102,289; 6,102,295; 6,119,941; 6,128,414; 6,138,915; 6,149,061; 6,149,063; 6,152,370; 6,155,490; 6,158,661; 6,164,542; 6,164,545; 6,173,893; 6,195,053; 6,234,393; 6,234,395; 6,249,008; 6,328,214; 6,330,975; 6,345,765; 6,356,949; 6,367,699; 6,375,075; 6,375,076; 6,435,411; 6,484,944; 6,641,046; 6,669,087; 6,681,994; 6,688,523; 6,732,930; 6,879,428; 6,889,903; 6,974,085; 7,035,466; 7,143,941; 7,185,819; 7,190,835; 7,232,072; 7,322,526; 6,847,620; 6,857,013; 6,944,446; 6,970,459; 6,976,062; 7,125,743; 7,139,870; 7,159,764; 7,206,338; 7,208,916; 7,210,633; 7,271,679; 7,298,791; 7,325,741; 7,327,988; 7,336,853; 7,451,441; 7,564,799; 7,572,990; 7,580,395; 7,590,425; 7,633,550; 7,669,201; 7,761,864; 7,888,913; 7,895,267; 7,924,346; 7,962,104; 8,002,173; 8,014,354; 8,064,924.

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

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About the Computer

This chapter introduces the CV41 Vehicle Mount Computer with Windows® CE operating system. Use this chapter to learn about the basic features and available accessories.

About the CV41 Vehicle Mount Computer

The rugged CV41 Vehicle Mount Computer is designed for real-time data collection applications in warehousing, distribution, work-in-process, time and attendance, and stationary applications. The CV41 is highly configurable and runs on the Microsoft Windows CE 6.0 operating system. Additionally, the CV41 supports terminal emulation applications, browser-based applications, or custom applications.

The CV41 is used in conjunction with the smart dock. The dock installs onto a vehicle and provides conditioned power to the CV41. All peripheral connections are also made on the dock. With the CV41 design, you can easily remove the CV41 from the smart dock and attach it to another vehicle that is equipped with a dock.

The CV41 also contains an internal UPS battery. When fully charged, the battery can power the CV41 for a minimum of 30 minutes when the C41 is not attached to the dock, or when vehicle power is interrupted.

If you plan on shipping the CV41 to a different location, make sure the internal UPS battery is disconnected. For help, see "Disconnect the UPS Battery" on page 82.

Overview of the CV41 Features

The CV41 includes these standard features:

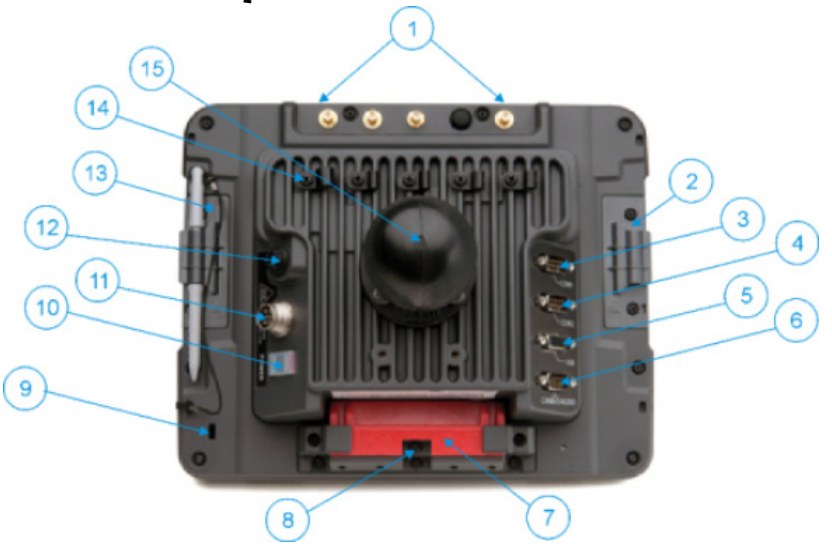
- WVGA display with a resolution of 800 x 480 pixels
- 1 GB of RAM memory
- 1 GB flash memory with user-installable expansion slot supporting an additional 1 to 4 GB SD card
- 802.11a/b/g and Bluetooth® radios
- Intel Atom 1.6 GHz processor

The CV41 Vehicle Mount Computer has an IEEE 802.11a/b/g radio installed and Wi-Fi® certified for interoperability with other 802.11a/b/g wireless LAN devices.

CV41 Front View

Callout	Description
1	Power button
2	Speakers
3	Microphone

CV41 Back View with Quick Mount Smart Dock



Callout	Description
1	Antenna connectors
2	SIM card access panel (not available)
3	COM 1
4	COM 2
5	USB connector
6	CANBUS/audio connector
7	Quick release handle
8	Provision for padlock
9	Provision for laptop security cable
10	Power switch
11	Power connector
12	Fuse
13	SD card access panel
14	Strain relief clamp
15	RAM ball

Mount and Power the CV41

To use the CV41, you must properly mount and power the CV41. To To do this you must purchase a smart dock and a RAM Mounting Kit and secure the CV41 to a vehicle or to your desktop. After mounting the smart dock, you must power it using a DC/DC or AC/DC power supply. For more information, see the ***CV41 Vehicle Mounting Kit Reference Guide***.

About the Smart Dock

The smart dock provides conditioned power to the CV41. With this unique system, the smart dock remains attached to the vehicle, and you can easily move the CV41 from one vehicle equipped with the smart dock to another. Additionally, the dock provides:

- a USB port
- two COM ports
- a CANBUS/audio port
- strain relief cable mounts

To connect any accessory such as a tethered scanner, or a USB flash drive, you need to purchase the correct accessory cables.

Connect the Smart Dock to a DC/DC Power Supply

To provide power to the CV41, you must first provide power to the smart dock. The CV41 comes with a DC power cable to connect a a forklift running 10-60 VDC power. Other power supply options (sold separately) include:

- 72-144 VDC Power Connection Kit
- AC Power Supply

For more information on installing these power options, see the ***CV41 Vehicle Mounting Kit Reference Guide***.

Connect the Smart Dock to a AC/DC Power Supply

To provide power to the CV41, you must first provide power to the smart dock. If you are going to use the CV41 at a desk, use the AC/DC power supply. The AC/DC power supply must be connected to a 120 V, 60 Hz supply in North America, or to a 230 V, 50 Hz power supply outside of North America (appropriate AC cable not included). Make sure that the external AC power is properly grounded and provides a maximum of 15 A of overcurrent protection (10 A for 230 V circuits). For more information on installing the AC/DC power supply,see the ***CV41 Vehicle Mounting Kit Reference Guide***.

Note: In North America, the AC power supply is intended for use with a UL Listed ITE power supply with an output rating of 12 to 48 VDC, minimum 15 W. Outside of North America, the power supply is inteded for use with an IEC certified ITE power supply with an output rating of 12 to 48 VDC, minimum 15 W.

Connect Cables to the Smart Dock

To use a USB drive or an audio headset, you need to purchase the appropriate cable and connect it to the smart dock. For more information on available cables, see **"CV41 Accessories" on page 11**.

Make sure the smart dock is powered off before you connect any cables to it.

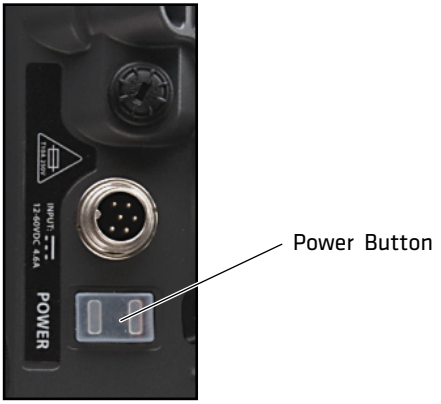
Connect the CV41 to the Smart Dock

After you have secured the smart dock and connected it to power, attach the CV41 to the smart dock.

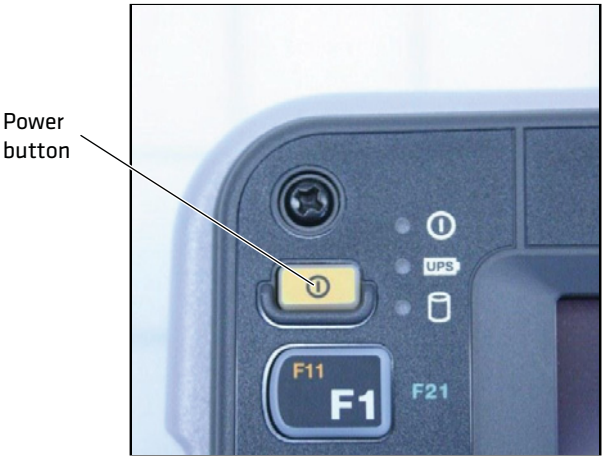
1. Press and hold the **Power** button on the CV41 until the computer turns off.
2. Locate the protruding lip on the rear of the CV41.
3. Place the lip of the CV41 over the top of the dock.
4. Slide the CV41 from side-to-side until the CV41 is seated into the smart dock.
5. Push down onto the smart dock until you hear click.

6 If necessary, adjust the viewing angle by adjusting the pivot arm on the RAM mount.

7 Press the **Power** button on the smart dock to turn on the dock.



8 Press the **Power** button on the CV41 to turn on the CV41.



Remove the CV41 from the Smart Dock

The CV41 can easily be moved from one vehicle equipped with the smart dock to another.

1 Press and hold the **Power** button on the CV41 until the computer turns off.

2. Pull down on the red quick release handle.
3. Pull the bottom of the CV41 away from the smart dock.
4. Lift the CV41 away from the dock.

About Auto-On for the CV41

The Auto-On feature turns on the CV41 when external power is applied to the computer. When Auto-On is disabled, the CV41 monitors the ignition input signal and turns on the computer when the ignition on your vehicle is active.

To disable the Auto-On feature, you must wire the ignition input wire from your CV41 to your vehicle to monitor the ignition input signal. For more information, see the ***CV41 Vehicle Mounting Kit Reference Guide***.

Enable Auto-On

When Auto-On is enabled, the CV41 turns on when external power is applied. For example, when the smart dock is powered on and:

- the CV41 is placed into the dock.
- the CV41 is placed into the dock and the vehicle is turned on.

1. Tap **Start > Settings > Control Panel > Options**. The Options screen appears.
2. Tap the **Misc** tab.
3. Select **Enable Auto-On** and tap **OK**.

Disable Auto-On

When Auto-On is disabled, the CV41 is turned off, and the ignition input signal:

- is inactive, the CV41 remains off.
- changes to active, the CV41 turns on.

When the Auto-On is disabled, the CV41 is turned on. and the ignition input signal:

- changes to active, the CV41 stays on.

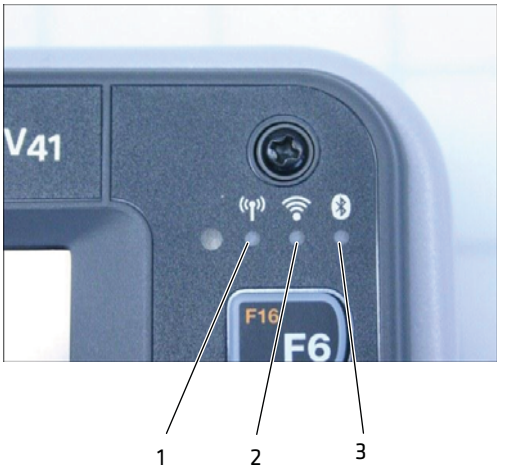
- changes to inactive, the CV41 is placed into Suspend mode.

1. Tap **Start > Settings > Control Panel > Options**. The Options screen appears.
2. Tap the **Misc** tab.
3. Make sure that **Enable Auto-On** is not selected and tap **OK**.

About the LEDs

The LEDs on the CV41 tell the state of the computer. Use this section to learn about the connection and system LEDs.

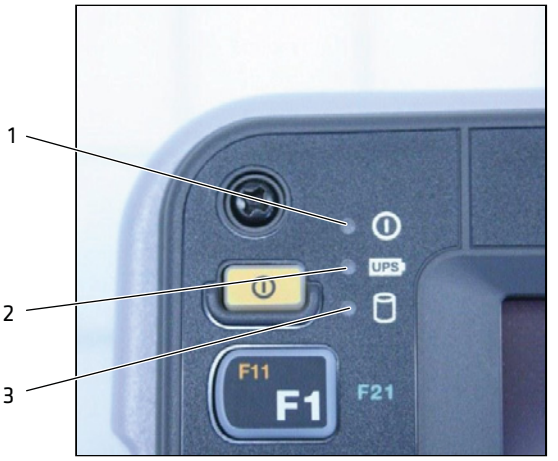
Connection LEDs



Connection LED Status Descriptions

Callout	LED	State	Description
1	WWAN	Solid green	The CV41 is connected to WWAN.
		Off	The CV41 is not connected to WWAN.
2	Wi-Fi	Solid green	The CV41 is connected to Wi-Fi.
		Off	The CV41 is not connected to Wi-Fi.
3	Bluetooth	Solid blue	Bluetooth is turned on.
		Off	Bluetooth is turned off.

System LEDs



Connection LED Status Descriptions

Callout	LED	State	Description
1	System	Solid green	The CV41 is on, or the CV41 is on but the backlight or display may be off.
		Blinking green every 4.5 seconds	The CV41 is in suspend mode, or external power is not present.
		Blinking green every 1.5 seconds	The CPU temperature is less than -20 °C (-4 °F), the heater is warming the CPU for 30 seconds, or the CV41 needs to be moved to a warmer environment.
		Off	The CV41 is off, external power is not present, or it is in suspend mode.
2	UPS	Solid green	(External power present) The UPS battery is charging. (External power not present) The CV41 is off or the UPS battery is not present.
		Solid amber	(External power present) There is no UPS battery present, the CV41 is out of charging temperature range, a charge timeout has occurred, or there is a charging fault. (External not present) UPS battery is supplying power and is discharging.
		Off	The UPS battery is fully charged, or is not charging.
3	SSD	Flashing green	Read or write activity is occurring.
		Off	There is no read or write activity.

CV41 Accessories

The CV41 does not ship with any accessories. All accessories are sold and ordered separately. For help, contact your local Intermec sales representative.

CV41 Accessories

Accessory	Description
Quick Mount Smart Dock	The smart dock provides a mount for the CV41, and supplies conditioned power to the CV41. For more information, see the ***CV41 Vehicle Mounting Kit Reference Guide***.
RAM Mounting Kit	Use this mounting kit to attach the CV41 to a variety of surfaces, including a vehicle or to your desktop. For more information, see the ***CV41 Vehicle Mounting Kit Reference Guide***.
USB Y-Cable	Use the USB cable to connect USB devices and peripherals to the CV41.
Screen Blanking Box	Use the screen blankig box to turn off the CV41 display while a vehicle is in motion.
CANBUS Y-Cable	Use the CANBUS Y-Cable to connect a CANBUS interface to the CV41.
UPS Battery	Use the UPS battery to power the CV41 when it is not attached to the smart dock. You can purchase a new UPS battery if the one in your computer has aged and no longer provides satisfactory operating time.
Audio Cable	Use the audio cable to connect a headset to the CV41.
Headset	Use the headset for a hands-free voice solution.
Touch Screen Protective Film (10 pack)	Use the protective film to to reduce wear and protect the touch screen from being damaged.
Stylus Kit (5 pack)	Use the stylus to navigate around the user interface of the CV41.
WWAN Adhesive Mount Antenna Kit	If your CV41 does not come with an internal WWAN antenna, purchase the WWAN antenna to provide WWAN connectivity to the CV41.

Accessory	Description
GPS Antenna Kit	If your CV41 does not come with an internal GPS antenna, purchase the GPS antenna to provide WWAN connectivity to the CV41.
72 to 96 VDC Power Connection Kit	Use this kit to supply 72 to 96 VDC power to the CV41.
AC Power Supply	Use the AC power supply to power the CV41. The power supply can be connected to a 120 V or to a 230 V supply. If you are outside of the United States, you must supply your own power cord.

About Internal UPS Battery

The CV41 contains an internal UPS battery that is automatically charged when you place the CV41 in a powered smart dock. The UPS battery can power the CV41 for a minimum of 30 minutes at -20 °C (-40 °F) or higher. The UPS battery allows you to continue using the CV41 when it is not mounted in a dock or when the vehicle battery is being changed.

If the UPS battery becomes critically low on power, the CV41 performs a controlled shutdown. You can recharge it by placing the CV41 into the smart dock. You can fully charge a discharged UPS battery in approximately 4 hours.

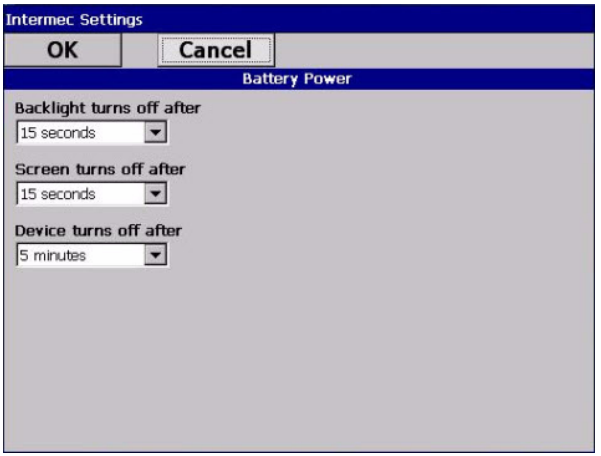
Maximize the Internal UPS Battery Usage

Adjust the backlight, screen, or computer turn off times to maximize the internal UPS battery usage. The changes you make to these settings are cumulative. For example, if you set the backlight and screen turn off times to 15 sec and the CV41 turn off times to 5 min, the CV41 actually turns off after 5 min and 30 sec.

Note: Disabling the backlight also disables the screen and the CV41 turn off times. Conversely, disabling the screen turn off time also disables the CV41 turn off times..

1 Tap **Start > Settings > Control Panel > Intermec Settings**. The Intermec Settings screen appears.

2 Tap **Device Settings > Power Management > Battery Power**. The Battery Power screen appears.



3 Adjust the **Backlight**, **Screen**, and **Device** turn off times in the dropdown menus.

4 Tap **OK** when you are finished to save your changes.

About the Backup Battery

The CV41 has a permanent Lithium-Ion battery installed to maintain the time, date, and CMOS setup information for a minimum of 90 days. The Lithium-Ion battery is not user-replaceable and should last five years before it needs a replacement.

The backup battery must only be changed by authorized service personnel. For more information, contact your local Intermec service representative.

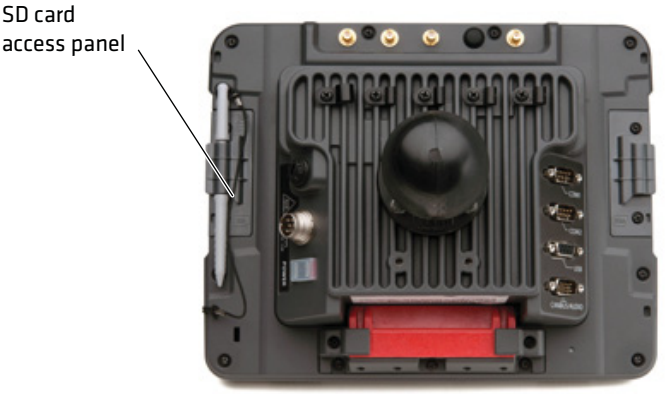
Insert an SD Card

You can use an SD card to increase file storage and install software. The computer supports an optional 1 to 4 GB maximum capacity SD card.

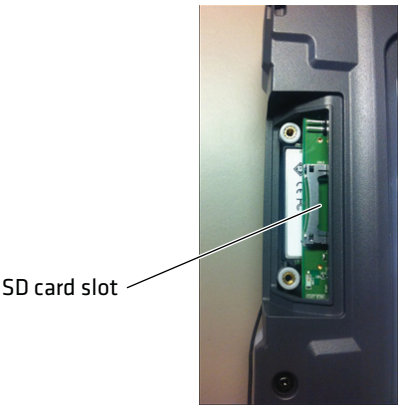
1 Remove the CV41 from the smart dock.

2 Press the **Power** button to place the CV41 in Suspend mode.

3 Using a small Phillips screwdriver, remove the two screws that secure the SD card access panel.



4 Insert the SD card into the SD card slot.



5 Reattach the SD card access panel and screw to a torque value of 4-5 in/lbs.

6 Reattach the CV41 to the smart dock.

7 Press the **Power** button to resume the CV41 from Suspend mode.

About the Touch Screen

The CV41 comes with an 8-inch color touch screen display with a resolution of 800 x 480 pixels. The display also comes with an optional heater to reduce condensation on the external surface of the display when moving between sub-freezing temperatures and normal temperatures.

Note: If you are going to use the CV41 in extreme cold conditions 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" helps preserve the lighting on the display.

Apply the Touch Screen Protective Film

Apply the touch screen protective film to help protect the screen from minor damage, scratches, and abrasions. Contact your local Intermec representative to order protective film for your touch screen.

1. Clean the touch screen from fingerprints, lint particles, dust, and smudges. For more information, see **"Clean the Computer" on page 84**.
2. Peel off the backing from the film to expose the adhesive.
3. Slide one edge of the film between the touch screen and display housing.
4. Repeat Step 3 for the other three edges of the film.

Adjust the Screen Brightness

Depending on the current lighting conditions of the environment, you may want to adjust the screen brightness of the CV41.

1. On the keypad, tap the **ALT** key to enable the secondary keys.

2 Tap **F7** to increase brightness or **F8** to decrease the brightness.

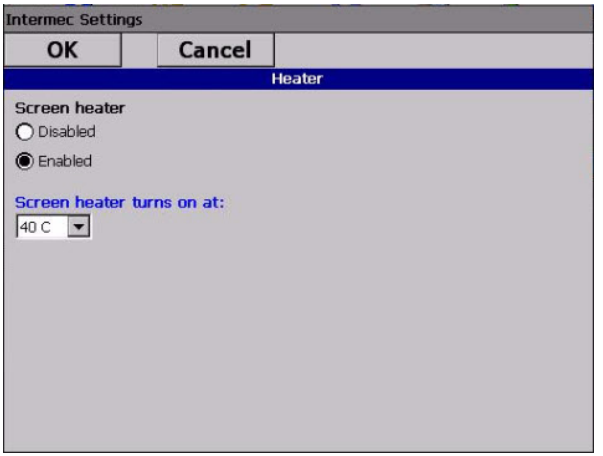
3 Repeat Steps 1 and 2 to increase or decrease brigthness.

Enable the Defroster

If your CV41 contains a defroster, use it to help reduce condensation on an external surface when the computer is moving between sub-freezing and normal temperatures.

1 Tap **Start > Settings > Control Panel > Intermec Settings**. The Intermec Settings screen appears.

2 Tap **Device Settings > Heater**. The Heater screen appears.



3 In **Screen heater**, select **Enabled**.

4 In **Screen heater turns on at:**, set the temperature tripping point in degrees Celsius. When the temperature reaches the trip point, the heater automatically turns on.

5 Tap **OK** to save and exit the Heater screen.

Change the Volume

The CV41 can make sounds when you tap the screen or use an attached scanner. You can change the CV41 volume to suit your needs and the environment.

1 On the keypad, tap **ALT** to enable the secondary keys.

2 Tap **F9** to increase volume or **F10** to decrease the volume.

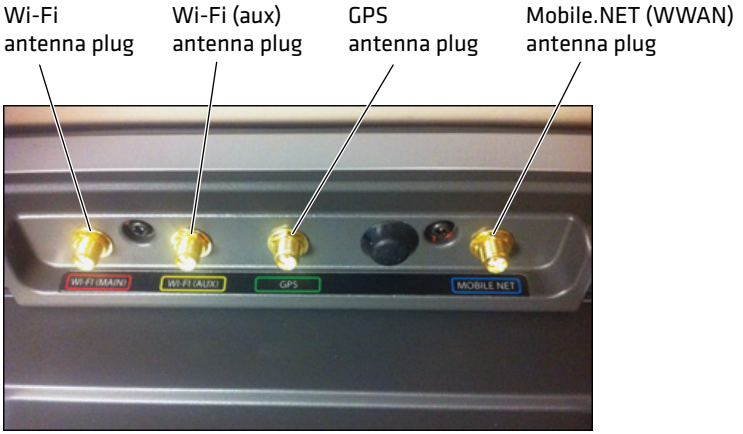
3 Repeat Steps 1 and 2 to increase or decrease volume.

Install an External Antenna

The CV41 comes with either an internal or external antenna option. If you ordered the external antenna option, you can purchase Wi-Fi, GPS, or WWAN antennas to mount on a wall, forklift, or other flat surface using screws or small patches of adhesive-backed hook and loop fastener material.

Note: If you have the internal 802.11 antenna option, you cannot connect an external antenna to your CV41. GPS and WWAN antennas are optional and require an external antenna.

1 Secure the antenna to one of the antenna plugs on the CV41.



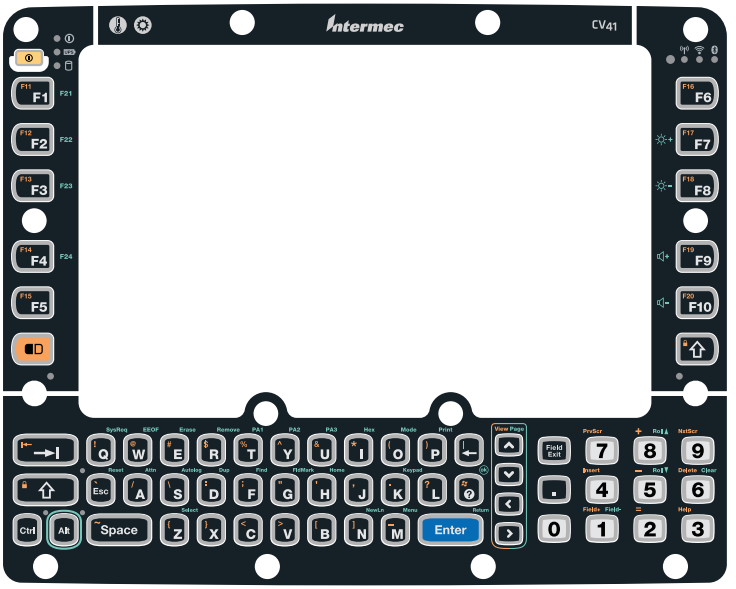
2 Using your own hardware, secure the external antenna to a wall, forklift, or other flat surface.

Because system performance and antenna polarization are site-dependent, a permanent mounting location 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 and ceiling. For information on purchasing an antenna, contact your local Intermec sales representative.

About the Keypad

The CV41 comes with one standard keypad overlay and contains a backlight for low light conditions. Use the following sections to understand how to use the keypad. For information on remapping the keypad, download the Device IDL Resource Kit from the Intermec website at **www.intermec.com/idl**.

CV41 Keypad Overlay



Use the Modifier Keys

The CV41 keypad provides modifier keys to let you access additional characters, symbols, and functions printed on the keypad overlay. Once you understand how to use the modifier keys and key sequences, you can access all of the additional features printed on the keypad overlay.

There are three modifier keys: the orange ( ) key, the green (**Alt**) key, and the Control (**Ctrl**) key.

Use the Color-Coded Keys

You want to:	Press:	Example:
Use an orange character or function printed above a key.	key (LED turns on) and then the key with the character or function printed above it (LED turns off).	Press and then F1 to select the F11 function.
Use a green character or function printed above the key.	**Alt** key (LED turns on) and then the key with the character or function printed above it (LED turns off).	Press **Alt** and then P to select the **Print** function.

Use the Color-Coded Keys (Continued)

You want to:	Press:	Example:
Enable the Control modifier key.	**Ctrl** key (LED turns on) and then the key with the character or function printed above it (LED turns off)	

Capitalize Characters

You can capitalize characters individually, or you can type all capital letters by enabling Caps Lock.

To capitalize a single character

- Press the ⇧ key. The **Shift** key LED flashes to show that the **Shift** key is enabled for one key press.

To enable Caps lock

- Press the ◧ key, and then the ⇧ key. The **Shift** key LED lights up green to show that the CV41 is in Caps Lock mode.

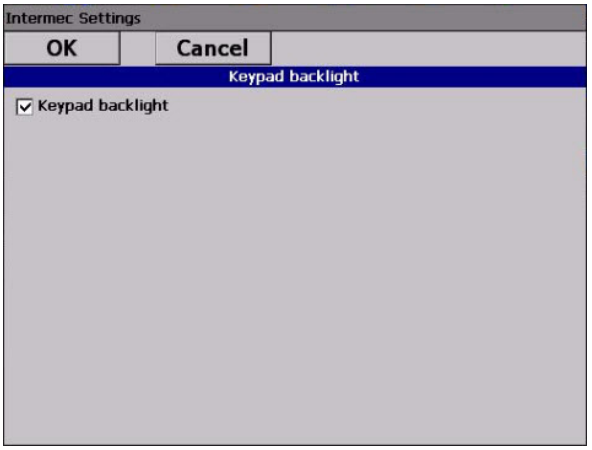
To disable Caps Lock

- When Caps Lock is enabled, press the ◧ key, and then the ⇧ key. The **Shift** key LED turns off to show that Caps Lock has been disabled.

Enable or Disable the Keypad Backlight

The computer has a keypad backlight for low light conditions. By default, the keypad backlight is enabled. Disable the keypad to conserve power.

1. Tap **Start > Settings > Control Panel > Intermec Settings**. The Intermec Settings screen appears.
2. Tap **Device Settings > Backlight > Keypad Backlight**. The Keypad Backlight screen appears.



3 Clear the check box to disable the backlight, and select the check box to enable it.

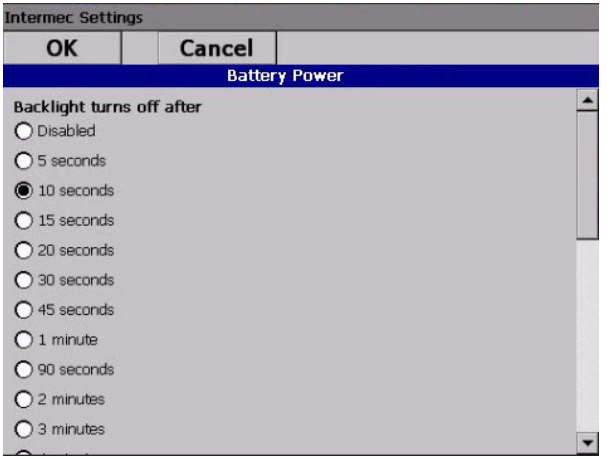
4 Tap **OK** to save your changes.

Set the Keypad and Display Backlight Timer

The keypad backlight and the display backlight share the same timer. When the display is on, the keypad backlight is also on. Use this section to learn how to set the keypad and display backlight timer.

1 Tap **Start > Control Panel > Intermec Settings**. The Intermec Settings screen appears.

2 Tap **Device Settings > Power Management > Battery Power**. The Battery Power screen appears.



3 Select the amount of time you want the backlight timer to stay on.

4 Tap **OK** to save your settings.

Transfer Files To and From Your PC

You can use Microsoft ActiveSync (Windows XP or earlier) or Windows Mobile Device Center (Windows Vista or Windows 7) to establish a connection between the CV41 and a PC. After you connect to your PC, you can transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync and Windows Mobile Device Center are free applications available from the Microsoft website at **www.windowsmobile.com/getstarted**.

To establish a partnership between your CV41 and a PC, you need to physically connect your computer to your PC using a standard USB cable, and a USB cable adapter. To buy the USB cable adapter, contact your local Intermec representative.

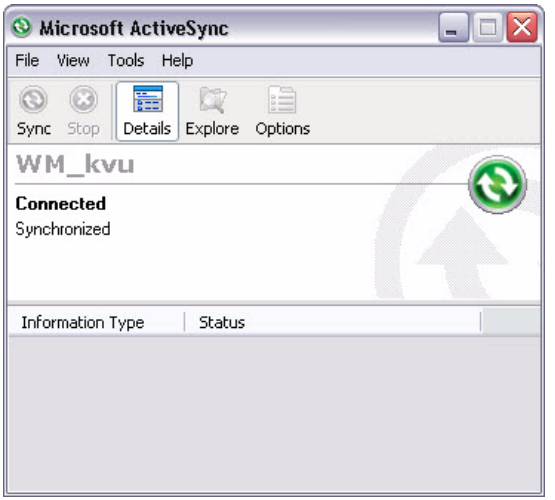
1 Connect the CV41 to the smart dock.

2 Secure the USB cable adapter to the smart dock.

3 Connect the USB cable to the USB cable adapter and to your PC.

4 Download ActiveSync from the Microsoft website and install ActiveSync on your PC.

5 Follow the onscreen instructions to establish a partnership. When the partnership is established, the Microsoft ActiveSync screen appears on your PC.



2

Understand the User Interface and Intermec Applications

Use this chapter to learn about the Windows Embedded CE 6.0 user interface and how to interact with the screen. You can also use this chapter to learn about the Intermec applications on your computer, as well as additional Intermec applications you can download.

About the User Interface

The user interface for the Windows Embedded CE 6.0 operating system is similar to previous versions of Windows CE. The interface is touch-friendly and easy to navigate. Use the following sections to understand how to interact with Windows CE.

About the Desktop Screen

When you turn on your computer, the Desktop screen is the first screen that appears, unless Intermec Terminal Emulator (ITE) is configured to automatically launch. The Desktop screen contains the Desktop and the Taskbar.

Windows CE Default Screen

Tap **Start** > **Help**, then select a topic on the computer to find additional information on Windows CE components.

Learn the Basic Skills

Learning to use the computer is easy. This section describes the basic concepts of using and customizing the vehicle mount computer and Windows CE.

Use the Touch Screen

Use your finger or stylus to move around the CV41 user interface.

Touch Screen Navigation

Action	Description
Tap	Tap the screen once with your stylus or finger to select options, open or close applications, or launch menus.
Double-tap	Double-tap the screen with your stylus or finger to launch applications.
Drag	Hold your stylus or finger on the screen and drag across the screen to select text and images.
Tap and hold	Tap and hold your stylus or 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.

Use the Taskbar

The Taskbar is located at the bottom of the screen. It displays the Start menu icon, the current time, the Input panel icon, and the current status of information such as external power connections, and battery power remaining. Use the following table for CV41 specific tasbar icons.

Taskbar Icons

Icon	Description
	The remaining power for the UPS battery from 0 to 100 percent.
	The UPS battery is charging.
	The CV41 is connected to external power.

For more information on Windows CE 6.0 icons, tap **Start** > **Help**, then select a topic on the computer to find additional information on Windows CE components.

Use 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.

Enter Information

If you do not use the keypad, you can enter information on your vehicle mount computer in several ways depending on the program you are using.

Understanding the Ways to Enter Information

Action	Description
Typing	Enter typed text into the computer by tapping keys on the onscreen keyboard or by using handwriting recognition software.
Writing	Use the stylus to write directly on the screen.
Drawing	Use the stylus to draw directly on the screen.

Use the input panel to enter information in any program on your computer. You can either type using the onscreen keyboard or write using Transcriber. The characters appear as typed text.

1. Tap the **Input Panel** icon. The Input Panel menu appears.
2. Tap **LargeKB**. The large keyboard displays on the desktop of the computer.

Use Transcriber

Use Transcriber to write anywhere on the screen using the stylus just as you would on paper. You can write an entire sentence of information, and then pause to let Transcriber change the written characters to typed characters.

1. Double-tap the **Transcriber** icon on the desktop. The Transcriber Intro help box appears on the desktop with some tips on how to use Transcriber.
2. Click **OK** to close the help box. The Transcriber Input Panel appears in the lower right corner of the desktop.
3. Write anywhere on the screen. Pause and let Transcriber change the written characters to typed characters.

Calibrate the Screen

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

1. Tap **Start > Settings > Control Panel > Stylus**.
2. Select the **Calibration** tab.
3. Tap the **Recalibrate** button.
4. Follow the prompts on the screen to complete the alignment process.

Set the Date and Time

Use this section to learn how to set the date and time for the CV41. Optionally, you can sync the date and time to a local time server.

1. Tap the clock on the taskbar. The Date/Time Properties screen appears.
2. Set your current date, time, and time zone.
3. Select the **Automatically adjust clock for daylight savings** if you want the CV41 to automatically adjust for daylight savings time.
4. Tap **Apply** to save your settings.

Sync to a Local Time Server

To keep your CV41 time and date running accurately, you can sync it to a local time server through an internet connection.

1. Establish an ActiveSync connection.
2. On the CV41, tap **My Device > Windows**.
3. Copy the **GrabTime.ini** file and place it onto your desktop PC.
4. Open the .ini file and add the local time server domain to the top of the .ini file.
5. (Optional) Delete the rest of the time server domains from the list.
6. Save the .ini file and copy it back to the My Device\Windows folder on the CV41.
7. On the CV41, tap **Start > Settings > Control Panel > Options**.
8. Select **Autolaunch TimeSync** and tap **OK**.

About Intermec Applications

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

Applications Available On the Computer

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

Icon	Application	Description
	Intermec Settings	Use Intermec Settings to configure your computer. You can use Intermec Settings to individually configure a computer or you can use it through SmartSystems to configure all of your computers.
	iSpyWiFi	Use iSpyWiFi to check your 802.11 status and diagnose issues with the connection.

Icon	Application	Description
	Profile Settings	Use Profile Settings to easily configure the computer for a specific use. You can choose predefined value for Power settings. • Tap the Profile Setting you want to use. You will see a message that changes are saved and a check mark appears next to your choice.
	Bluetooth Printing	Use the Bluetooth Printing application to connect to a Bluetooth printer.
	Bluetooth Scanning	Use the Bluetooth Scanning application to connect to a Bluetooth scanner.
	Intermec Browser	Intermec Browser is a locked-down web application for your computer that is compatible with Internet Explorer 6.0. You can configure Intermec Browser for your specific application requirements and design your own web pages.
	Intermec Terminal Emulator (ITE)	Intermec Terminal Emulator (ITE), part of Intermec Client Pack (ICP), is a terminal emulation client designed for enterprise-level data collection. ITE is packed with enhancements that improve productivity, reduce errors, and deliver fast return on investment. It supports multiple emulation protocols in a single client and has new features such as session persistence, remote management and configuration, and offers a maintenance plan to keep you up-to-date with the latest releases and upgrades.

Applications You Can Download For the Computer

You can download several Intermec applications from the website that extend the capabilities of your computer. All of the applications explained below are available from the Intermec website. Some of the applications require the purchase of a license to run. To find the application you want, go to **www.intermec.com** > **Support** > **Downloads** and then enter the information to find your computer.

About Intermec Launcher

Intermec Launcher is a Microsoft Windows application, designed for Intermec computers, that provides a platform from which other applications may be launched while attempting to provide a locked-down environment. You can configure Intermec Launcher for your specific application requirements. You can download and use Intermec Launcher for a 60-day evaluation period. After the evaluation period expires, you will need to purchase a license.

About SmartSystems Foundation

SmartSystems™ is an easy-to-use software platform that provides IT Administrators and Integrators a single, integrated portal for hands-free provisioning, deployment, and management of Intermec devices minimizing the effort spent on software upgrades, equipment monitoring, maintenance and troubleshooting.

SmartSystems Foundation provides a consistent way to manage Intermec devices including computers, vehicle mounted computers, RFID readers, printers and bar code scanners, located on-site or remote, to make the most of limited IT resources, and lower the total cost of ownership for Intermec data collection equipment. SmartSystems Foundation can be downloaded at no charge from the Intermec website. For more information, visit **www.intermec.com/SmartSystems**.

3

Manage the Computer

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

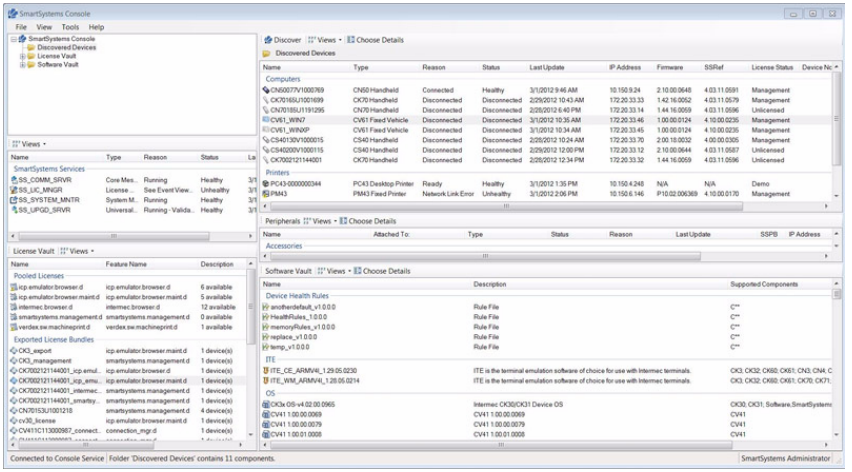
Manage the Computer in Your Network

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

Manage the Computer Using SmartSystems Foundation

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

Intermec SmartSystems Foundation Console



Through the console, you can:

- drag-and-drop configuration bundles, operating system updates, and firmware upgrades to multiple computers.
- save configuration settings from a single device and deploy those settings to many devices simultaneously.
- remotely change settings on SmartSystems-enabled computers and peripherals.

The SmartSystems Foundation console can report on asset locations and battery status, making it easier to manage your devices.

With a Provisioning license, SmartSystems Foundation can automatically push software, configuration settings, and other files to connected computers. You can download SmartSystems Foundation from the Intermec website at no charge. For more information, visit **www.intermec.com/SmartSystems**. To purchase a Provisioning license, contact your local Intermec sales representative.

Develop and Install Applications

Use the Intermec Resource Kits and the CV41 Software Development Kits to develop applications to run on the computer. The Resource Kits are a library of C++, .NET, Java, and web components grouped by functionality that you can use to create applications for the computer. The Resource Kits are part of the Intermec Developer Library (IDL), and can be downloaded from the Intermec website at **www.intermec.com/idl**.

For more information, see the ***Intermec Developer Library Resource Kit Developer Guide***.

Package Your Application

For very simple applications, the executable file may be the only file you need to deploy. More typically, you will have a set of files to install.

Intermec recommends using .cab files to install your applications. The computer uses standard Windows CE .cab files and will install third-party .cab files.

Choose a Target Location

Place your application in any of these memory locations on the computer:

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

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

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

Install Applications Using SmartSystems Foundation Console

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

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

Install Applications Using Microsoft ActiveSync

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

1. Connect to the computer using ActiveSync.
2. Copy the .cab files from your PC to the CV41.
3. Browse to the .cab files and tap the files to install them.

Install Applications Using an SD Card

Use an SD card to install applications on one computer at a time or if you have no network connection.

1. Copy your application file to the storage card.
2. Install the SD card in the CV41.
3. On the CV41, browse to the **SD Card** folder and run your application.

Launch Applications Automatically

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

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

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

Update the System Software

The computer uses a series of cab files to update the operating system (OS), low-level firmware, and SmartSystems Platform Bundle (SSPB) files.

SSPB files deliver Intermec functionality such as data collection, configuration, and wireless security to your CV41. 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.

Update the Operating System and Low-Level Firmware

Use a USB flash drive to upgrade the operating system (OS) and low -level firmware of the CV41. Before you can update your CV41, you need:

- a USB Y-Cable.
- a USB flash drive.
- the upgrade .exe file. This file is available from the Intermec website at **www.intermec.com**. Go to **Support > Downloads > OS/Firmware/Drivers** list.

After you locate these items, you can update your computer.

1. Connect the USB flash drive to your PC.
2. Download and install the OS update file to your PC.
3. Click **Create_CV41_Update_Drive.bat**. A command window appears and scans your PC for a connected USB flash drive.
4. In the Command window, press **3** and then **Enter**. The USB flash drive is formatted and the update files are loaded onto the drive.
5. Remove the USB flash drive and insert it into the smart dock.
6. Make sure the that the smart dock is connected to power and insert the CV41 into the dock.
7. Turn on the CV41. A screen prompt appears.
8. Press **F** and then **Enter** to update the OS and device firmware. The installer installs the update onto the CV41. When it is finished, the CV41 turns off.
9. Remove the USB flash drive and press the **Power** button. The CV41 continues the update process. After the update is complete, the computer boots again.

Update the SmartSystems Platform Bundle

You can use these methods to update the SmartSystems Platform Bundle (SSPB) on the CV41:

- You can update individual computers, or multiple computers at the same time using the SmartSystems console. For help, see the

next section, **"Update Bundles Using SmartSystems Foundation" on page 39**.

- You can update individual computers using ActiveSync.

Update Bundles Using SmartSystems Foundation

You can use the SmartSystems console to update the SSPB on your CV41. The console is part of SmartSystems Foundation and is available from the Intermec website. Before you can update your CV41, you need:

- SmartSystems Foundation. To download SmartSystems Foundation, go to **www.intermec.com/SmartSystems** and click the **Downloads** tab.
- the SSPB files you want to install. These SSPB files are available from the Intermec website at **www.intermec.com**. Go to **Support > Downloads > OS/Firmware/Drivers** list.

After you locate these items, you can update your CV41 using SmartSystems Foundation.

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

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

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

Update Bundles Using a ActiveSync

Use ActiveSync to update individual computers.

1. Establish an ActiveSync partnership. For help, see **"Transfer Files To and From Your PC" on page 23**.
2. From your desktop PC, download the bundle you want to install. These bundles are available from the Intermec website at **www.intermec.com**. Go to **Support > Downloads > OS/Firmware/Drivers** list.
3. Transfer the bundle file to \System directory on the CV41.
4. Tap on the file on the CV41. The computer reboots. After the computer reboots, the bundle files installs. When the installation is finished, the CV41 reboots once again.

4

Configure the Computer

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

How to Configure the Computer

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

There are several ways to configure the computer:

- Directly on the computer. You can use Intermec Settings directly on the computer to change only the settings on that computer. For more information, see the next section..
- Remotely using Intermec SmartSystems Foundation. When you use SmartSystems, you can remotely configure all of your CV41 vehicle mount computers as well as other SmartSystems-enabled Intermec computers and peripherals. For more information, see **"Use Intermec Settings Remotely With SmartSystems Foundation" on page 51**.
- You can use a third-party device management product that supports the computer and Intermec Settings, such as Soti MobiControl or Wavelink Avalanche. For more information, visit the **Device Management** page on the Intermec website.

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

Use Intermec Settings on the Computer

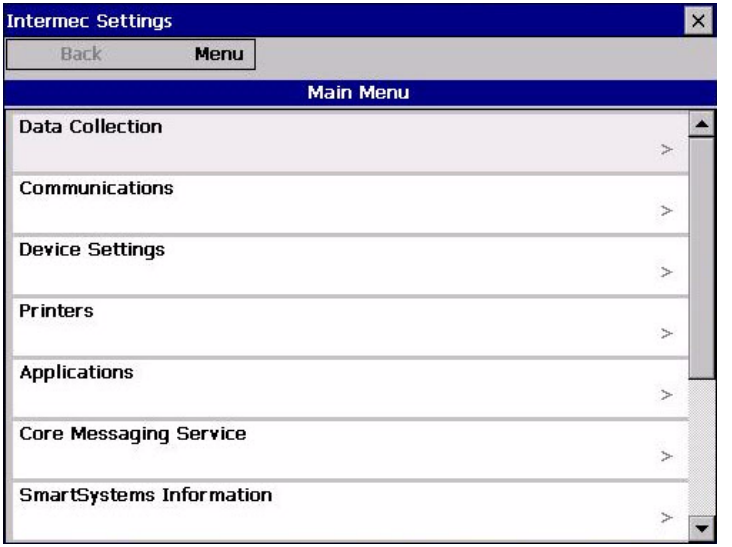
Use Intermec Settings to configure parameters for Intermec applications on the computer as well as some device-specific parameters like volume. You can configure parameters for important functions like data collection and communications.

External bar code scanners are supported by connecting the scanner to a COM port or by Bluetooth. When configuring a scanner using Intermec Settings, the scanner symbologies can be updated through the CV41 data collection software.

Start Intermec Settings

Intermec Settings is located in the Control Panel.

- Tap **Start > Settings > Control Panel > Intermec Settings.** The Intermec Settings Main Menu appears.



About the Structure of Intermec Settings

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

If you see **>** next to a menu option, there are more screens available in the next level. If you see **...** next to a menu option, there is only one more screen available.

Most parameters are saved when you tap **OK**. Some settings , require you to reboot the computer for the changes to take effect.

Data Collection Menu

Data Collection Options	Parameters You Can Configure
Tethered Scanner (COM 1)	• Enable Scanner Port • Symbologies • Symbology options • Scanner settings • Scanner port settings • Decode security
Tethered Scanner (COM 2)	• Enable Scanner Port • Symbologies • Symbology options • Scanner settings • Scanner port settings • Decode security
Bluetooth Scanner	• Symbologies • Symbology options • Scanner settings • Bluetooth scanner settings • Scanner port settings • Decode security
BT-Configure on Connect	Bluetooth-configure on connect

Communications Menu

Communications Options	Parameters You Can Configure
Device Name	Device name
802.11 Radio	• Security choice • Security settings (includes Wi-Fi settings such as enable/disable radio) • Funk Security Settings • Microsoft Security settings • IP settings • Certificates • Radio bands • Security changes
Bluetooth	Bluetooth settings (power, discoverable, connectable, and so on)

Device Settings Menu

Device Settings Options	Parameters You Can Configure
Backlight	Keypad backlight
Date and Time	Date and time settings
Heater	Screen heater settings
IDL Runtime Versions	• ITC50 (read-only) • ITCScan (read-only)
Keypad	Keypad settings
Power Management	• Battery power • External power • Auto-on
Profile Settings Application	Whether these parameter options appear in Profile Settings: • Always on • Maximize battery life • Normal
Screen	• Brightness settings • Screen Blanking On Motion settings
Sounds	Sound settings
System Component Versions	System component versions (read-only)

Printer Menu

Printer Options	Parameters You Can Configure
Printer (if connected through Bluetooth)	Printer settings (Information, memory, printer definitions, power, Bluetooth communications, and so on)

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

Applications Menu

Application Options	Parameters You Can Configure
Intermec Browser	• Administration settings • Toolbar options • Key settings • Printer settings • Function key mapping
Intermec Terminal Emulation	• Program name (read-only) • Program version (read-only) • SIP settings • No Lockdown settings • No Auto-Start • OOR Monitor settings • Chk In License settings • Trusted App settings • Scan Control settings • Menu options • Toolbar options • Debug filters • UDP+ options • Sessions 1 - 4

Core Messaging Service Menu

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

SmartSystems Information Menu

SmartSystems Information Options	Parameters You Can Configure
Identity	Identity information (hardware version, firmware version, OS version, and so on) (read-only)

SmartSystems Information Options	Parameters You Can Configure
Administrator	Administrator settings (name, phone, and email)
Location	Location settings (country, state, city, campus, and detail)
Information	Device Notes (read-only)

Device Monitor Menu

Device Monitor Options	Parameters You Can Configure
Device Health Controls	• Enable health data collection • Set rule file location • Set data refresh periods

Virtual Wedge Menu

Virtual Wedge Options	Parameters You Can Configure
Enable Virtual Wedge	Enable virtual wedge
Virtual Wedge Method	Set the virtual wedge method (adapt to application, character mode, and block mode)
Bar Code Scanner Wedge	Bar code scanner wedge settings (bar code scanner grid and label encoding)

License Manager Menu

License Manager Options	Parameters You Can Configure
About	About settings (read-only)
License Vault	None (displays applications that are licensed)

RFID Menu

RFID Options	Parameters You Can Configure
RFID Service	RFID Service settings

For more information on all parameters in Intermec Settings, see the *Intermec Settings Command Reference Manual*.

Navigate in Intermec Settings

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

To move down a level in Intermec Settings:

- Tap the menu item in the list.

To move back a level in Intermec Settings:

- Tap **Back** or **Cancel** on the Tile bar.

To save a parameter setting:

- Tap **OK**.

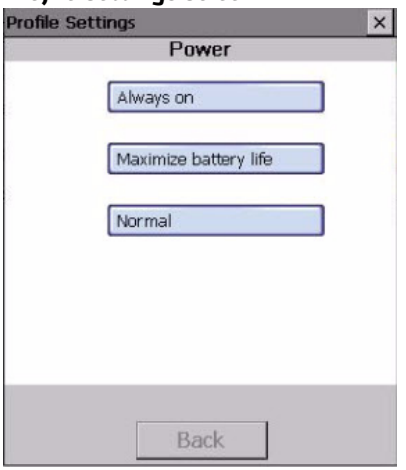
To exit Intermec Settings:

- Tap **Menu > Exit** or **OK**.

Configure Profile Settings With Intermec Settings

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

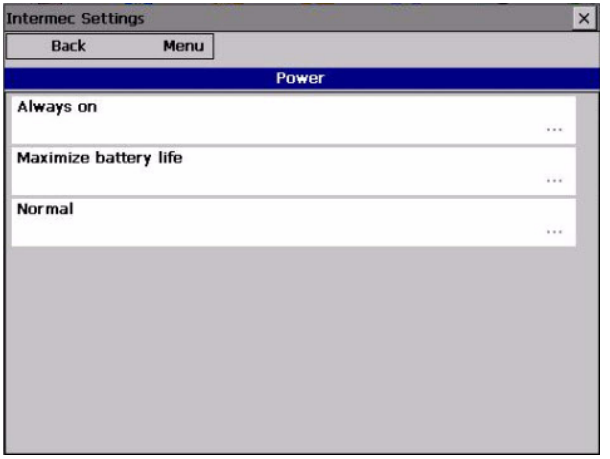
Profile Settings Screen



Use Intermec Settings to determine the profiles you want the end user to see in the Profile Settings application.

1 Go to **Device Settings > Profile Settings Application**.

2 Select **Always on**, **Maximizing battery life**, or **Normal**.



3 From the submenus, select or clear the **Show option in Profile Settings** check box for the settings you want to have available to the end user.

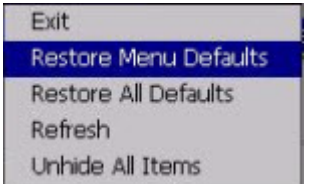
4 Click **OK** to save your selection.

Restore Default Settings

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

1 Navigate to the menu that you want to restore to defaults.

2 Tap **Menu > Restore Menu Defaults**.



3 When prompted, tap **Yes** to restore the menu default settings.

4 If prompted to refresh the computer, tap **Yes**.

You can restore defaults settings for all parameters.

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

2 Tap **Yes**.

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

Hide Menu Items in Intermec Settings

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

On the computer, you can:

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

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

Use Intermec Settings Remotely With SmartSystems Foundation

Your computer is SmartSystems-enabled, which lets you open Intermec Settings from the SmartSystems console to remotely configure all of your computers. For more information on SmartSystems, see **"Manage the Computer Using SmartSystems Foundation" on page 34**.

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

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

About Network Communications

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

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

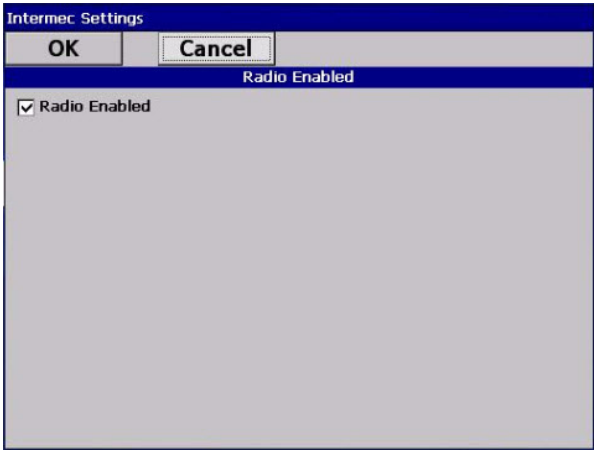
Configure 802.11a/b/g (Wi-Fi) Radio Communications

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

The computer contains an 802.11 radio to transfer data using wireless communications and to support the TCP/IP network protocols. This section of the manual assumes that your wireless network is set up, including your access points.

By default, the 802.11 radio is enabled. If it is disabled, use the following procedure to enable the Wi-Fi radio using Intermec Settings.

1 From the Intermec Settings main menu, tap **Communications > 802.11 Radio > Radio Enabled**.



2 Select the **Radio Enabled** check box and tap **OK**. By default, the computer uses Funk security and enables DHCP.

3 Use Intermec Settings to configure any other parameters you need to use for communication with your network.

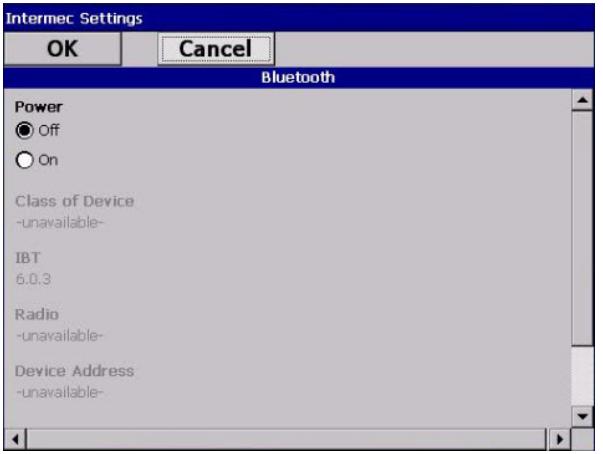
4 Configure 802.11 security. For help, see **"About Wireless Security" on page 60**.

Configure Bluetooth Communications

Your computer is Bluetooth™-enabled, which lets you connect to other Bluetooth devices, such as scanners or printers.

The Bluetooth radio needs to be on before you can discover and connect to other Bluetooth devices. By default, the radio is turned on. You can configure Bluetooth communications using Intermec Settings or from the Start menu.

1 From the Intermec Settings main menu, tap **Communications > Bluetooth**.



2 Select the **on** check box.

3 Tap **OK**.

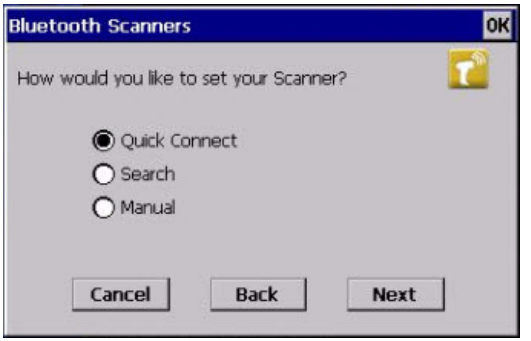
The Bluetooth radio maintains its state through a reboot or cold boot and maintains virtual COM ports. But, if you clean boot your computer you need to recreate pairings to devices.

Connect to a Bluetooth Scanner

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

1 Tap **Start > Settings > Control Panel > Bluetooth Scanning**.

2 Tap **Add Device**.



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

Connect to a Bluetooth Printer

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

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

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

1 Tap **Start > Settings > Control Panel > Bluetooth Printing**.

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

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

About Serial and USB Communications

Use a serial or USB cable to transmit and receive data from another device through serial or USB communications. If you are using a USB cable, you must purchase a USB Y-Cable. For more information, contact your local Intermec representative.

Connect to a USB Scanner

When an HID-enabled USB scanner with the CV41, any data handling must be programmed into the scanner because the data transmits to an active window as a keystroke message, and bypasses the Intermec Data Collection wedge. You can program the scanner by:

- scanning the configuration bar codes from the scanner manufacturer.
- installing an application that accepts the incoming data.

For the SR30 or SR61T, you must purchase the correct scanner USB cable to use with the CV41. For more information, see the following table.

Required USB Cables For the SR30 or SR61T

Scanner Model	Required Cable
SR30	6.5 ft (1.9 m) cable (P/N 236-159-002)
SR61T (Gen 1)	6.5 ft (1.9 m) cable (P/N 236-182-001)
SR61T (Gen 2)	6.5 ft (1.9 m) cable (P/N 236-240-001)

Connect to a Serially Tethered Scanner

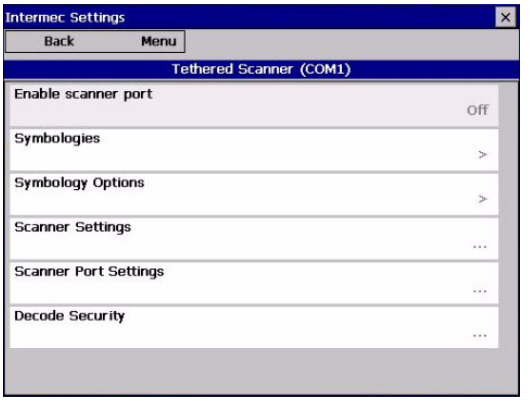
Use this procedure to connect your computer to connect a tethered scanner and enable RS-232 communications. For the SR30 or SR61T, you must purchase the correct serial cable to use with the CV41. For more information, see the following table.

Required Serial Cables For the SR30 or SR61T

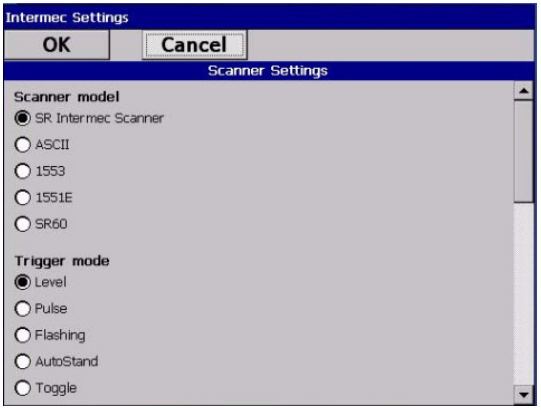
Scanner Model	Required Cable
SR30	6.5 ft (1.9 m) cable (P/N 236-164-002)
SR61T (Gen1, Gen 2)	• 6.5 ft (1.9 m) cable (P/N 236-197-001) • 12 ft (3.6 m) cable (P/N 237-197-001)

1 Connect the scanner to the COM1 or COM2 port.

2 From the Intermec Settings main menu, select **Tethered Scanner (COM 1 or COM 2)**.



3 Tap **Scanner Settings.**

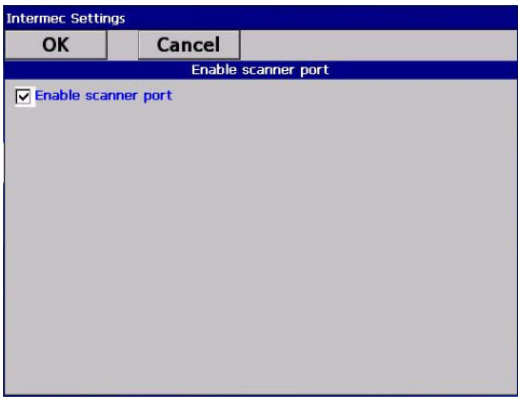


4 Perform one of these items based on the type of scanner you are connecting:

- For an SR30 or SR61T scanner, tap **Scanner Settings**, select **SR Intermec Scanner**, and then tap **OK**.
- For an ASCII scanner, tap **Scanner Settings**, select **ASCII**, and then tap **OK**. Set up the appropriate COM port settings by selecting **Scanner Port Settings**.

5 Tap **Enable scanner port**.

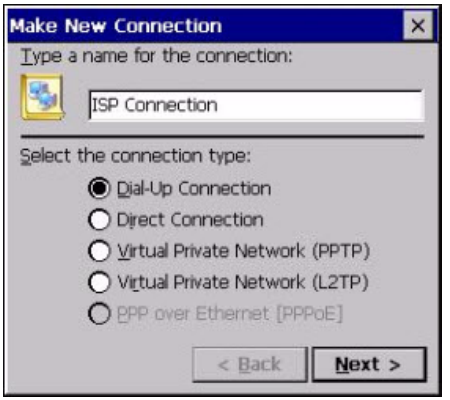
6 Check the **Enable scanner port** check box and tap **OK**.



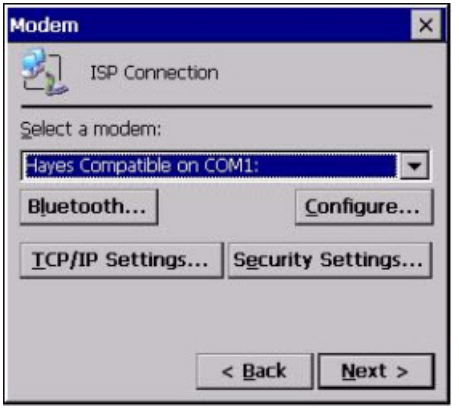
Create an ISP Connection

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

1. Tap **Start > Settings > Control Panel**.
2. Double-tap **Network and Dial-up Connections**.
3. Double-tap **Make New Connection**.



4. Enter a name for the connection, such as "ISP Connection."
5. Select the **Dial-up Connection** radio button.
6. Tap **Next**.
7. If you are using an external modem connected to your computer with a cable, select **Hayes Compatible on COM1** from the **Select a modem** list.

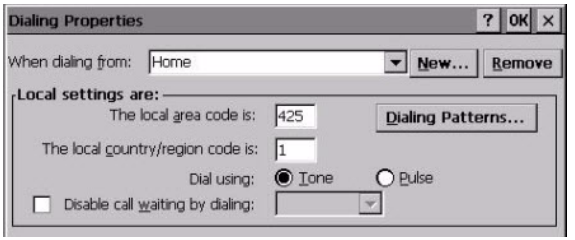


8 Tap **Next**.

9 Enter the access phone number and then tap **Finish**.

10 Double-tap on the connection you just created.

11 Tap **Dial Properties**.



12 On the Dialing Properties screen, configure your dialing properties and tap **OK**.

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

14 Tap **Connect**.

Create a VPN Server Connection

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

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

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

1 Tap **Start > Settings > Control Panel**.

2 Double-tap **Network and Dial-up Connections**.

3 Double-tap **Make New Connection**.

4 Double-tap either **Virtual Private Network (PPTP)** or **Virtual Private Network (L2TP)**.

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

About Wireless Security

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

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

- LEAP
- WEP

This section explains how to configure wireless security on your computer. Intermec recommends that you implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management as appropriate.

You must use either Funk or Microsoft security to implement your security solution. For details, see the next section, **"Choose Between Microsoft and Funk Security."** Intermec recommends that you always implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management.

If you are using WPA-802.1x, WPA2-802.1x, or 802.1x security, this section also assumes that your authentication server and authenticators are properly configured.

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

Choose Between Microsoft and Funk Security

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

- If you are using the computer in a static environment that requires a high level of security, you should use Funk security, which offers CCX v4.0 compliance, support for LEAP and TTLS, and configuration for up to four profiles.

  To use Funk security, you need to select a profile. For help, see the next section, **"Select a Funk Security Profile."**

- If you are primarily using the computer to connect to Wi-Fi hotspots, you may want to use Microsoft security.

  To use Microsoft security, you need to select it as your security choice. For help, see **"Select Microsoft as Your Security Choice" on page 66**.

Select a Funk Security Profile

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

Select a Funk Security Profile

Use the following procedure to select a Funk security profile.

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

Configure WPA or WPA2 Enterprise (802.1x) Security With Funk

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

1. Make sure the communications and radio parameters on your computer are configured.
2. Make sure Funk is selected as your security choice.
3. Start Intermec Settings.
4. Choose **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, choose **WPA** or **WPA2**. Encryption automatically defaults to **TKIP** or **AES**, respectively.

7 For **8021x**, choose **TTLS**, **PEAP**, **EAP-FAST**, or **TLS**.

8 If you choose **TTLS**, **EAP-FAST**, or **PEAP**:

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

   b Enter a **User Name** and **User Password**.

   c For **Validate Server Certificate**, choose **Yes**.

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

9 If you choose TLS:

   a Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 71**.

   b Enter a **User Name** and **Subject Name**.

   c For **Validate Server Certificate**, choose **Yes**.

Configure WPA or WPA2 Personal (PSK) Security With Funk

Use the following procedure to configure WPA-PSK or WPA2-PSK with Funk security.

1 Make sure the communications and radio parameters on your computer are configured.

2 Make sure Funk is selected as your security choice.

3 Start Intermec Settings.

4 Choose **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, choose **WPA** or **WPA2**.

7 For **8021x**, choose **None**.

8 For **Pre-Shared Key**, enter the pre-shared key or passphrase.

   The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on

the access point. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the computer internally converts it to a pre-shared key. This value must match the passphrase on the authenticator.

9 Save your settings.

Configure 802.1x Security With Funk Security

Use the following procedure to configure 802.1x-WEP security with Funk security. Intermec recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.

2 Make sure Funk is selected as your security choice.

3 Start Intermec Settings.

4 Choose **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, choose **Open**.

7 For **Encryption**, choose **WEP**.

8 For **8021x**, choose **TTLS**, **PEAP**, or **TLS**.

9 If you chose **TTLS** or **PEAP**:

   a Enter a **User Name**.

   b For **Prompt for Credentials**, choose **Enter credentials now**.

   c Enter a **User Password**.

   d For **Validate Server Certificate**, choose **Yes**.

10 If you choose **TLS**:

   a Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 71**.

   b For **Validate Server Certificate**, choose **Yes**.

   c Enter a **User Name** and **Subject Name**.

11 Save your settings.

Configure LEAP Security With Funk

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

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

Configure Static WEP Security With Funk Security

Use the following procedure to configure static WEP security with Funk. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

1. Make sure the communications and radio parameters on your computer are configured.
2. Make sure Funk is selected as your security choice.
3. Start Intermec Settings.
4. Choose **Communications > 802.11 Radio > Funk Security**.
5. Select the profile you want to configure.
6. For **8021x** choose **None**.
7. For **Association**, choose **Open**.
8. For **Encryption**, choose **WEP**.

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

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

10 For **Transmit key**, choose the key you want to use for transmitting data.

11 Save your settings.

Use Open (No Security) Associations with Funk

Use the following procedure to configure your computer for open security using Funk.

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Funk Security**.

3 Select the active profile you are using.

4 For **Association**, choose **Open**.

5 For **Encryption**, choose **None**.

6 Tap **OK**. Your settings are saved.

Select Microsoft as Your Security Choice

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

With Microsoft as your security choice, you can configure:

- WPA or WPA2
- 802.1x
- Static WEP

Select Microsoft Security

Use the following procedure to select Microsoft security.

1. Start Intermec Settings. For help, see **"Start Intermec Settings" on page 43**.
2. Choose **Communications > 802.11 Radio > Security Choice**.
3. From the **Security Choice list**, select **Microsoft Security**. An alert box appears telling you that you must save your settings and reboot the computer for the new security choice to take effect.
4. Tap **Yes**. The computer resets and starts with Microsoft Security as the Security Choice.

Configure WPA or WPA2 Enterprise (802.1x) Security With Microsoft

Use these procedures to set WPA-802.1x security on your computer with Microsoft security.

1. Make sure the communications and radio parameters on your computer are configured.
2. Start Intermec Settings.
3. Choose **Communications > 802.11 Radio > Microsoft Security**.
4. For **Infrastructure Mode**, choose **Infrastructure**.
5. For **Network Authentication**, choose **WPA** or **WPA2**. Data Encryption automatically defaults to **TKIP** for WPA and **AES** for WPA2.
6. For **802.1x Authentication**, choose either **TLS** or **PEAP**.
7. If you choose **TLS**:
   a. Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 71**.
   b. Choose **Properties**. The Certificates dialog box appears.
   c. Select the certificate you want to use from the list. The User Logon dialog box appears.
   d. Enter a **User Name** and **Domain** and tap **OK**.
   e. Tap **OK** to exit the Certificates dialog box.

f Tap **OK** to save the Microsoft Security settings.

8 If you choose PEAP:

a Load a root certificate of the authentication server on your computer. For help, see **"Load a Certificate" on page 71**.

b Tap **OK** to save the security settings and the User Logon dialog box appears.

c Tap a **User Name**, **Password**, and **Domain**. Select **Save Password** if you want to save the password for future authentication sessions.

d Tap **OK** to save the Microsoft Security settings.

Enable WPA or WPA2 Personal (PSK) Security With Microsoft

Use the following procedure to enable WPA-PSK With Microsoft Security.

1 Make sure the communications and radio parameters on your computer are configured.

2 Start Intermec Settings.

3 Choose **Communications > 802.11 Radio > Microsoft Security**.

4 For **Infrastructure Mode**, choose **Infrastructure**.

5 For **Network Authentication**, choose **WPA-PSK**. Data Encryption automatically defaults to **TKIP** for WPA and **AES** for WPA2.

6 For **Pre-Shared Key**, enter the pre-shared key or the passphrase.

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

7 Save your settings.

Configure 802.1x Security with Microsoft

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

1. Make sure the communications and radio parameters on your computer are configured.
2. Start Intermec Settings.
3. **Choose Communications > 802.11 Radio > Microsoft Security**.
4. For **Infrastructure Mode**, choose **Infrastructure**.
5. For **Network Authentication**, choose **Open**.
6. For **Data Encryption**, choose **WEP**.
7. For **802.1X Authentication**, choose **TLS** or **PEAP**.
8. If you choose TLS:
   a. Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 71**.
   b. Choose **Properties**. The Certificates dialog box appears.
   c. Select the certificate you want to use from the list. The User Logon dialog box appears.
   d. Enter a **User Name** and **Domain** and tap **OK**.
   e. Tap **OK** to exit the Certificates dialog box.
   f. Tap **OK** to save the Microsoft Security settings.
9. If you choose PEAP:
   a. Load a root certificate of the authentication server on your computer. For help, see **"Load a Certificate" on page 71**.
   b. Tap **OK** to save the security settings and the User Logon dialog box appears.
   c. Enter a **User Name**, **Password**, and **Domain**. Select **Save Password** if you want to save the password for future authentication sessions.
   d. Tap **OK** to save the Microsoft Security settings.

10 For **Network Key Setting**, choose **Automatic**.

11 Save your settings.

Configure Static WEP Security With Microsoft

Use the following procedure to configure static WEP security with Microsoft security. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.

2 Start Intermec Settings.

3 Choose **Communications > 802.11 Radio > Microsoft Security**.

4 For **Network Authentication**, choose **Open**.

5 For **Data Encryption**, choose **WEP**.

6 For **Network Key Setting**, choose **Enter Key and Index**.

7 For **Network Key Value**, enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio.

   Set a 5-byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.

8 For **Network Key Index**, select the key you want to use for data transmission.

9 Save your settings.

Use Open (No Security) Associations With Microsoft

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

1 Start Intermec Settings.

2 Choose **Communications > 802.11 Radio > Microsoft Security**.

3 For **Network Authentication**, choose **Open**.

4 For **Data Encryption**, choose **Disabled**.

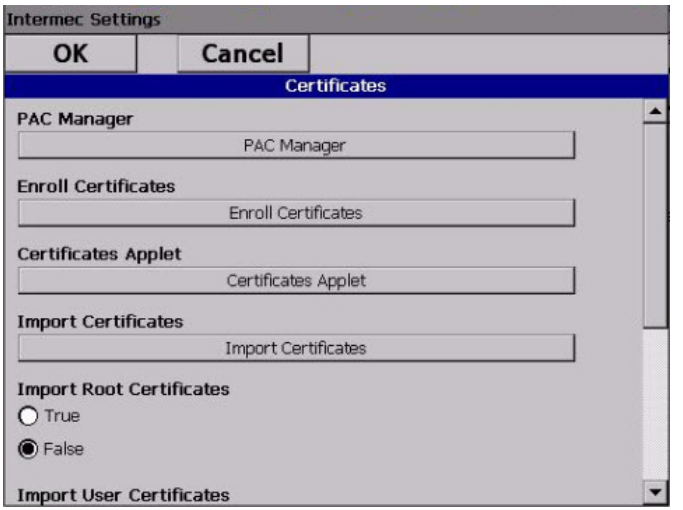
5 Tap **OK**. Your settings are saved.

Load a Certificate

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

1 Start Intermec Settings.

2 Tap **Communications > 802.11 Radio > Certificates**. The Certificates screen appears.



3 To import user and root certificates from a Microsoft IAS server:

a Tap **Import Certificates**.

b Tap **Web Enrollment**.

c Enter the **User**, **Password**, and **Server** (IP address) to log into the server.

d Tap **OK**. A dialog box appears asking if you want to load the root certificate.

e Tap **OK**. The Enrollment Tool message box appears telling you that the certificate has been added.

f Tap **OK** to close the message box.

4 To import a certificate chain:

a Tap the **Import PFX** tab.
b Tap **Import Certificates** to install the selected certificate.
c In the CertImportUI screen, tap the **<<<** button next to the Select pfx to import text field.
d Select the root certificate from the list.
e Tap **Import Certificate**.

5

Troubleshoot and Maintain the Computer

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

Troubleshoot Your Computer

Use the troubleshooting tables in this section to fix problems with the Wi-Fi connection, 802.1x security, or general problems with operating the computer.

Note: If you send the computer 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.

Troubleshoot the Wi-Fi Connection

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

Problems With the Wi-Fi Connection

Problem	Solution
When you turn on the computer after it was suspended for a while (10 to 15 minutes or longer), it can no longer send or receive messages over the network.	Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the "Keep Alive" message from host to maintain the TCP session while the computer is suspended.
The computer is connected to the network and you move to a new site to collect data. Your computer now shows you are not connected to the network.	Move closer to an access point or to a different location to reestablish communications until you reconnect with the network.
The computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host computer.	There may be a problem with the host computer, or with the connection between the access point and the host computer. Check with the network administrator to make sure the host is running and allowing users to log in to the system.
The computer appears to be connected to the network, but the host computer is not receiving any information from the computer.	There may be a problem with the connection between the access point and the host computer. Check with the network administrator or use your access point user's manual.
A network connection icon appears in the toolbar, but then disappears.	The computer may not be communicating with the intended access point. Make sure the network name matches the access point network name. The access point may not be communicating with the server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled.

Troubleshoot 802.1x Security

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

Problems With 802.1x Security

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

Check 802.11 Network Status

If you have trouble connecting to your 802.11 wireless network:

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

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

1. Tap **Start > Programs > iSpyWiFi**. The iSpyWiFi application launches.

   The iSpyWiFi tab shows:

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

2. Tap the **Scan** tab to view a list of available 802.11 networks. The list includes the signal strength, channel, and MAC address for each network.
   - Tap **Scan** to refresh the screen.
3. Tap the **Supp** tab to view radio supplicant information, including a list of supplicant events and authentication status.
   - To verify the settings for the currently active security profile, tap **Configure Profile**. Intermec Settings launches for you to configure 802.11 Radio settings.
   - To try reconnecting to the network, tap **Reconnect**.
   - To delete the events in the list, tap **Clear Events**.
4. Tap the **Ping** tab to run a ping test to the host.
   a. In the **Host** field, enter the IP address of the host.
   b. From the **Repetitions** list, choose the number of times the computer will ping the host.
   c. Tap **Ping**. The graph shows the amount of time it takes for the host to return the ping. Tap **List** to see this information in a list format.

5 Tap the **RSSI** tab to view the received signal strength of the host signal.

The information box includes the current signal strength, host SSID name, MAC address, data rate, and transmit power.

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

6 Tap the **Conf** tab to set up a log file that lists RSSI history.

This screen includes the 802.11 radio driver version and available radio modes.

a Check the **Log to File** check box.

b (Optional) Change the sample period and number of samples displayed.

c Tap **Log File**. The Save As screen appears.

d (Optional) Change the name of the saved log file, the folder to which the file will be saved, the content type (log or text), and the location.

e Tap **OK**.

Troubleshoot Reading Bar Codes

Use this section to troubleshoot problems that may prevent you from being able to read a bar code with an Intermec scanner. If you cannot find the solution in the following table, refer to your scanner user guide for more information.

Problems Reading Bar Codes

Problem	Solution
You cannot see the illumination beam or frame from the scanner when you press the **Scan** button and aim the imager at a bar code label.	• You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again. • You may be reading the bar code label "straight on." Change the reading angle and try again. • The imager hardware trigger might be disabled in Intermec Settings. To check the setting go to **Start > Settings > Control Panel > Intermec Settings > Data Collection > Scanner Settings**. Hardware trigger should be checked.

Problem	Solution
When you release a **Scan** button or handle trigger, the **Good Read** light does not turn off.	The **Good Read** light remains on if you configure the computer to use continuous/edge triggering. If you configure the computer for level triggering and the **Good Read** light remains on, there may be a problem. Press one of the **Scan** buttons or pull the trigger again without scanning a bar code label. If the light is still on, contact your local Intermec representative.
The scanner will not read the bar code label.	• Aim the scanner beam to cross the entire bar code label in one pass. Vary the scanning angle. • Check the quality of the bar code label. Scan a bar code label that you know will scan. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan. • Make sure the bar code symbology is enabled and configured correctly. Use Intermec Settings to check the symbologies. Expand **Data Collection** > **Symbologies** beneath devices listed (scanner, virtual wedge) to check and enable symbologies, then scan the bar code label again. • Make sure the computer application is expecting input from a bar code. You may need to type this information instead • Check to see if the right scanner model is selected. To check the setting go to **Start > Settings > Control Panel > Intermec Settings > Data Collection > Scanner Settings**. • Check to see if the scanner cable is damaged.
The scanner does not read the bar code labels quickly, or the scanning beam seems to be faint or obscured.	The scanner window may be dirty. Clean the window with a solution of ammonia and water. Wipe dry. Do not allow abrasive material to touch the window.
When Enable Scanner Port is checked in Intermec Settings, the "COM port is busy. Another application may be using the port" error message appears.	Confirm that no other application is currently using the COM port or select another COM port for the scanner. If that does not work, try to restart the computer to see if the COM port becomes available.
The scanner does not read the bar code or is corrupted when it is enabled as an ASCII scanner.	• Check to see if the Scanner Port Settings in Intermec Settings match those settings programmed in the scan engine. • The scanner may be in an unknown state. Reset the scanner to the factory default settings by scanning the manufacturer's configuration bar code, and reconnect the scanner.

Problem	Solution
You scan a valid bar code label to enter data for your application. The data decoded by the scanner does not match the data encoded in the bar code label.	The scanner may have decoded the bar code label in a symbology other than the label's actual symbology. Try scanning the bar code label again. Make sure you scan the entire label.
The input device attached to the computer does not work well or read bar code labels very quickly.	Set the Scanner Model command to the specific attached input device. Check enabled bar code symbologies and enable only the symbologies being used.

Troubleshoot Operating the Computer

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

Problems Operating the Computer

Problem	Solution
You press the **Power** button and nothing happens.	Try the following solutions: • Make sure that power is connected to the computer, and that the Power switch on the smart dock is on. • If your computer is not connected to the smart dock, you may have run out of battery power. • Disconnect the UPS battery and turn the power back on. For help, see **"Disconnect the UPS Battery" on page 82**.
The computer appears to be locked up and you cannot enter data.	• Perform a cold boot. For help, see **"Cold Boot the Computer" on page 81**. • Perform a warm boot. For help, see **"Warm Boot the Computer" on page 81** • Perform a clean boot. For help, see **"Clean Boot the Computer" on page 82**. • If the computer does not boot or reset, contact your Intermec representative for help.
You tap the screen and nothing happens.	Align your screen. For help, see **"Calibrate the Screen" on page 29**.
You cannot type a character on the keypad or you can only type uppercase or lowercase letters.	You may have locked a modifier key on the keypad. Press the necessary key sequence to unlock the key.

Call Product Support

If you cannot find the answer to your problem in the "Troubleshooting the Computer" 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 can call Intermec Product Support, make sure you have the following information ready:

- Configuration number
- Serial number
- Operating system version
- If you are using security, know the type (Funk or Microsoft) and the full set of parameters
- Power management settings
- If you are using Intermec Terminal Emulator (ITE), know the version and protocol. If you are not using ITE, 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.

Find Your Configuration Number

Use the following procedure to help you find the configuration number of your computer.

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

Find Your Operating System Version

Use the following procedure to find the OS version of your computer.

- Tap **Start > Settings > Control Panel > About**. The OS version is displayed in the **Version** tab as the Intermec Content version.

Reset the Computer

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

- Cold boot
- Warm boot
- Clean boot
- Disconnect the UPS battery

Cold Boot the Computer

If the computer seems to be locked up, try cold booting it. Cold booting the CV41 restarts the computer and RAM is cleared, while the registry and files under \System folder are preserved.

1. Tap **Start > Settings > Control Panel > Registry**.
2. Tap the **Coldboot** button.

Warm Boot the Computer

Warm booting the CV41 restarts the computer, while the file system and registry settings are preserved.

1. Tap **Start > Settings > Control Panel > Registry**.
2. Tap the **Warmboot** button.

Clean Boot the Computer

In some cases where the computer completely stops responding, it may be necessary to perform a clean boot. Because clean booting may result in data loss, use this method only if all other recovery methods have failed. This returns the computer back to its factory default settings.

Note: Clean booting the device erases all files in the ObjectStore including any file or registry changes. Any files that are present in the \System folder are preserved.

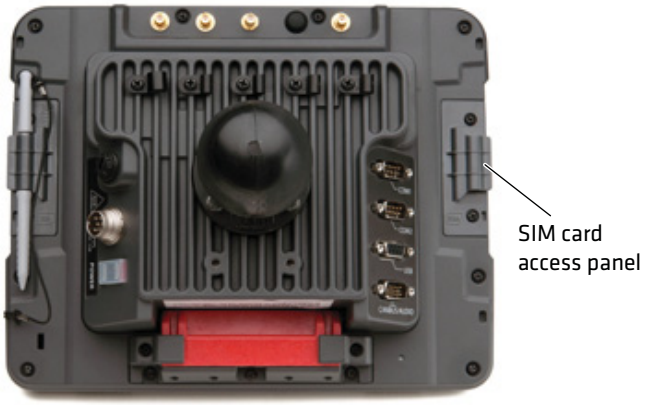
1. Tap **Start > Settings > Control Panel > Registry**.
2. Tap the **Load Factory Defaults** button.

Disconnect the UPS Battery

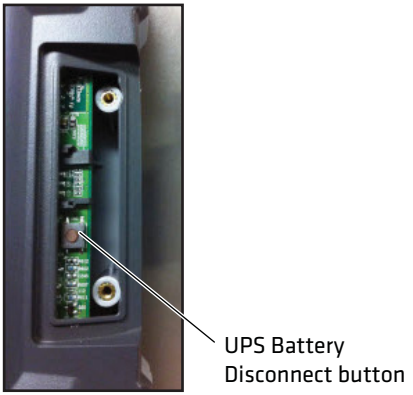
If the CV41 stops responding, or you plan on shipping the CV41, you need to disconnect the UPS battery.

1. Press and hold the **Power** button on the CV41 for ten seconds to turn the computer off.
2. Pull down on the red quick release handle and lift the bottom of the CV41 up and away from the dock.

3. Using a Phillips head screwdriver, remove the two screws that secure the SIM card access panel.



4 Press the **UPS Battery Disconnect** button located below the SIM card slot.



5 Reinstall the SIM card access panel and tighten the screws to a torque to a value of 4-5 in/lbs.

Once power external power is reconnected to the CV41, the UPS battery automatically reconnects.

Replace the Fuse

The CV41 uses a 10 A time delay (slow blow) fuse, which is located on the smart dock. If you need to replace the fuse, make sure that you replace it with the same size, rating, and type of fuse (Littelfuse 03260 10 MXP or equivalent).

1. Remove the CV41 from the smart dock.
2. Disconnect the smart dock from power.
3. Using a flathead screwdriver, remove the fuse holder from the CV41.

4. Replace the fuse.
5. Secure the fuse holder back into the CV41.

Clean the Computer

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

1. Press the **Power** button to suspend the computer.
2. Dip a clean cloth towel in the ammonia solution and wring out the excess.

3. Wipe off the touch screen. Do not allow any abrasive material to touch these surfaces.
4. Wipe dry.

A

Specifications and Default Settings

Physical and Environmental Specifications

Physical Dimensions

CV41 dimensions	21.4 x 26.8 x 4.3 /6.6 cm (8.4 x 10.6 x 1.7/2.6 in)
CV41 weight	2.1 kg (5.6 lbs)
Smart dock dimensions	15.5 x 18 x 6.4 cm (6.1 x 7.1 x 2.5 in)
Smart dock weight	1.2 kg (3.2 lbs)

Environmental Specifications

Standard operating temperature	Non-condensing: -20 °C to 50 °C (-4 °F to 122 °F)
Extreme operating temperature	Condensing: -30 °C to 50 °C (-22 °F to 122 °F)
Storage temperature	Non-condensing: -30 °C to 60 °C (-22 °F to 148 °F)
Relative humidity	Up to 90% non-condensing at 40 °C (104 °F) with extended temperatures up to 100%
Water and dust	IP66
ESD	15 kV
Vibration	MIL-STD-810F, composite wheeled vehicles
Crash	SAE-J 1455

Power and Electrical Specifications

Input power	DC input voltage: 10 to 60 VDC Input current: 4.6 A Input fuse: 10 A time delay
External power supply	Internal power supply: 10 to 60 VDC AC adapter: 90 to 240 VAC DC power supply : 72 to 96 VDC
Backup battery (CMOS)	Field replaceable, rechargeable lithium-ion battery, 30 minutes of life at -20 °C (-4 °F).

Hardware

Touch Screen	20 cm (8 in) color WVGA 800 x 480 LED backlit display. Standard display: • 400 NIT indoor display • Ambient light sensor • Glove compatible • Field-replaceable resistive touch screen Optional display: • 900 MIT outdoor display • Defroster
Keypad	Backlit 64 QWERTY keyboard with number pad and 10 function keys. Univeral keyboard overlay legend and supports VT220, 3270, 5250. All keys (except modifiers) are mappable.
Processor	Intel Atom Z530 at 1.6 GHz
Memory	1 GB total mappable memory with 512 MB as system memory in Windows CE.
Integrated radio	802.11a/b/g
Intefaces	USB 2.0 host port, USB 1.1 client port, two RS-232 COM ports, a CANBUS/audio port, DC power input and ignition input, and RF antenna ports for Wi-Fi, WWAN, and GPS.
Antennas	Dual internal anennas or optional external antennas
Removable storage	Secure Digital
Operating system	Microsoft Windows CE 6.0

Standard Communications

- 802.11a/b/g
- Bluetooth
- USB
- Serial

Wireless LAN

Data rates	Supports all 802.11a/b/g data rates.

Security	WPA, WPA2, 802.1x (EAP-TLS, TTLS, LEAP, PEAP, EAP-FAST), WEP
Cisco compatibility	CCX v4 certified

Default Configuration

The following tables list the default values of the configuration settings supported on the computer. If you restore the computer to factory default settings, the computer uses these values.

The settings are grouped by function and reflect the organization of Intermec Settings. Not all of the configuration settings are listed in this appendix. For detailed information on most of the settings, see the *Intermec Settings Command Reference Manual*.

Data Collection Settings

Use data collection settings to configure the Bluetooth or tethered scanner and to configure the bar codes that you want the imager to be able to read.

Data Collection Settings

Data Collection Setting	Default Value
Enable Scanner	Off
BT-Configure On Connect	Overwrite with computer settings

Symbology Settings

Symbology	Default Value
AustraliaPost	Disable
Aztec	Disable
BPO	Disable
CanadaPost	Disable
Codabar	Disable
Codablock A	Disable
Codablock F	Disable
Code 11	Disable
Code 39	Enable

Symbology	Default Value
Code 93	Disable
Code 128/GS1-128	Enable Code 128, GS1-128, GS1-128 identifier
DataMatrix	Enable
DutchPost	Disable
EAN/UPC	Enable UPC A, UPC E, EAN 8, EAN 13
GS1 Composite	Disable
GS1 DataBar Expanded	Disable
GS1 DataBar Limited	Disable
GS1 DataBar Omni-Directional	Disable
JapanPost	Disable
KoreaPost	Disable
Matrix 2 of 5	Disable
Maxicode	Disable
Micro PDF417	Disable
MSI	Disable
PDF417	Enable
Planet	Disable
Plessey	Disable
Postnet	Disable
QR Code	Disable
Standard 2 of 5	Disable
Telepen	Disable
TLC 39	Disable

Symbology Option Settings

Symbology Option Settings	Default Value
Preamble	None (Disable)
Postamble	None (Disable)
Symbology Identifier	Disable
Multicode	Disable

Scanner Settings

Scanner Settings	Default Value
Scanner Model	SR Intermec Scanner
Trigger Mode	Level
Aimer Mode	Typical aimer
Hardware Trigger	Enable
Trigger Timeout (sec)	2
Aiming Duration (msec)	500
Turn Off After Good Read	Enable/One-shot
Number of Good Read Beeps	One

Scanner Port Settings

Scanner Port Settings	Default Value
Baud Rate	57600

Decode Security Settings

Decode Security Settings	Default Value
Consecutive Data Validation	0
Identical Consecutive Timeout	300 ms
Different Consecutive Timeout	0
Center Decoding	Disable
Center Decoding Tolerance	0

Communications

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

Communications Settings

Communications Setting	Default Value
Device Name	Intermec CV41

802.11 Radio Settings

802.11 Radio Setting	Default Value
Radio Enabled	Off
Security Choice	Funk
Microsoft Security	Disable
Active Profile	Profile 1
DHCP	Enable
Import Root Certificates	False
Import User Certificates	False
Import Pac Files	False
Radio Bands	Indeterminate
Allow Security Changes	Enable

Bluetooth Settings

Bluetooth Setting	Default Value
Bluetooth Power	On

Device Settings

Use device settings to configure settings on the computer.

Backlight Settings

Backlight Setting	Default Value
Keypad Backlight	Enable

Heater Settings

Screen Setting	Default Value
Screen Heater	Enabled
Screen Heater Turns On at	40 °C

Keypad Settings

Keypad Setting	Default Value
Caps Lock on Reboot	Disabled

Power Management Settings

Battery Power Setting	Default Value
Backlight Turns On After (Battery Power)	3 seconds
Screen Turns Off After (Battery Power)	15 seconds
Device Turns Off After (Battery Power)	5 minutes
Backlight Turns On After (External Power)	2 minutes
Screen Turns Off After (External Power)	2 minutes
Device Turns Off After (External Power)	5 minutes
Auto-on	Disable

Profiles Settings Application

Profiles Settings	Default Value
Always On	Show Option in Profile Settings
Maximize Battery Life	Show Option in Profile Settings
Normal	Show Option in Profile Settings

Screen Settings

Screen Settings	Default Value
Brightness	High
Screen Blanking On Motion	Disable
Screen-On Delay After Motion Stops (sec)	1.0

Sound Settings

Sound Setting	Default Value
Beeper and Voice	15
Headset Beeper	0
Screen Taps	Off
Key Clicks	Off

Core Messaging Service Settings

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

Core Messaging Service

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

Device Monitor Settings

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

Device Health Controls

Device Health Setting	Default Value
Enable Health Data Collection	On
Set Rule File Location	\SmartSystems\HealthRules.txt
Set Data Refresh Periods Asset Msg Send Period System Device Health Network Device Health Printer	 0 seconds 90 seconds 45 seconds 0
Network Device Health Refresh (seconds)	45

RFID Settings

Use RFID settings to enable the RFID service.

RFID Settings

RFID Settings	Default Value
Enable RFID Service	Off

Virtual Wedge Settings

Use virtual wedge settings to configure the virtual wedge.

Virtual Wedge Setting

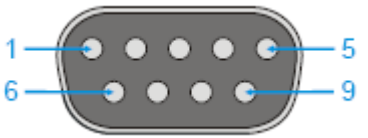
Virtual Wedge Settings	Default Value
Virtual Wedge	Enable
Virtual Wedge Method	Adapt to Application
Barcode Scanner Grid	Null
Label Encoding (Code Page)	1252(D)-ANSI Win3.1 US

Port Pin Assignments

Use this section to learn about the ports pin assignments on the CV41, smart dock, and cables.

COM 1 and COM 2 Ports

The COM 1 and COM 2 ports are located on the smart dock. By default, Pin 9 is configured to provide + 5 V for an external bar code scanner, or it can be configured to provide RI.



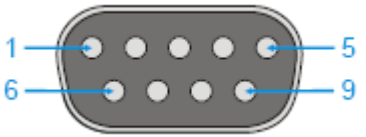
COM 1 and COM 2 Port Pin Assignments

Pin	Signal	Description
1	DCD	Data carrier detect (input)
2	RXD	Receive data (input)
3	TXD	Transmit data (output)
4	DTR	Data terminal ready (output)
5	GND	Signal/power ground
6	DSR	Data set ready (input)
7	RTS	Request to send (output)
8	CTS	Clear to send (input)

Pin	Signal	Description
9	+5 VDC or RI	Bar code scanner power (500 mA max) or Ring indicator (input)
Shell	CGND	Chassis ground

USB Port

The USB port is located on the back of the smart dock.

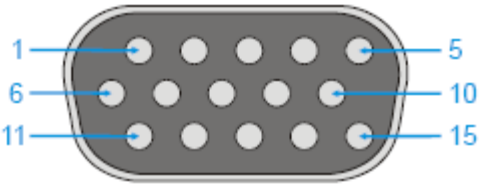


USB Port

Pin	Signal	Description
1	GND	Common ground
2	USBC_D+	USB client data signal
3	USBC_D-	USN client data signal
4	USB_H1_PWR	USB host 1 (5 V output power)
5	GND	Common ground
6	GND	Common ground
7	USB_H1_D+	USB host 1 data signal
8	USB_H1_D-	USB host 1 data signal
9	USBC_VBUS	USB client (5 V detect from attached host)

CANBUS/Audio Port

The CV41 CANBUS and audio port is located on the smart dock. The CV41 cannot support CANBUS and audio simultaneously.



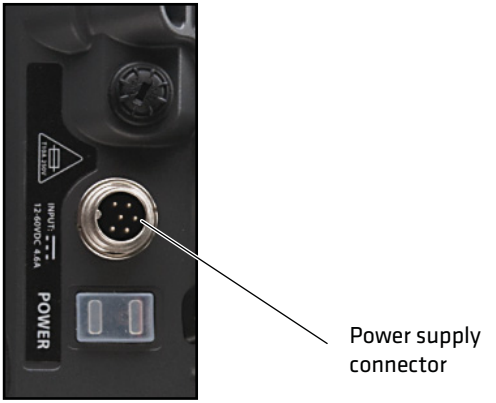
CANBUS/Audio Port

Pin	Signal	Description
1	-	CAN reserved
2	CAN_L	CAN_L bus line dominant low
3	CAN_GND	CAN ground
4	-	CAN reserved
5	GND	Optional ground
6	Audio return	Headset return
7	Audio output	Headset output
8	Mic input	Microphone input
9	Mic retun	Microphone return
10	Audio return	
11	GND	Optional ground
12	CAN_SHLD	
13	CAN_H	CAN_H bus line dominant high
14	-	CAN reserved
15	CAN_V+	Optional CAN external power supply

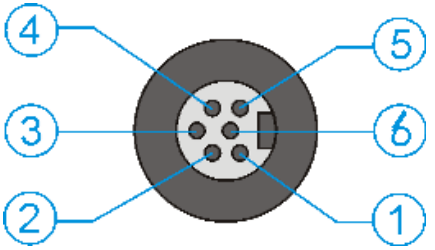
Power Supply Connector

Power is supplied from the smart dock to the CV41 through the power connector. The power supply connector also provides a connection point for the vehicle chassis ground to be connected internally to the conductive chassis of the computer.

Power Supply Connector Located on the Smart Dock



The CV41 internal power supply can accept DC input voltages in the range of 10 to 60 VDC.

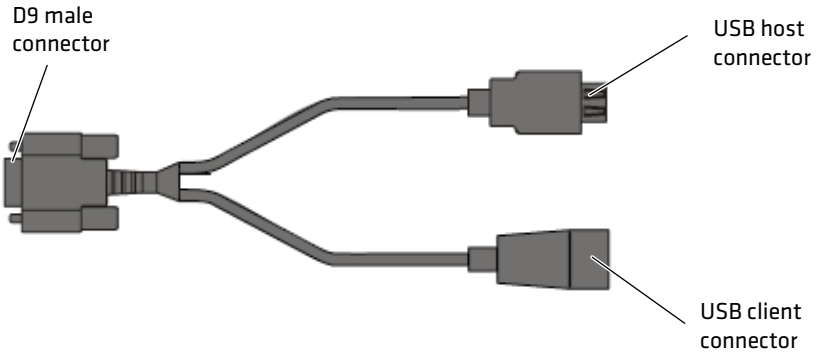


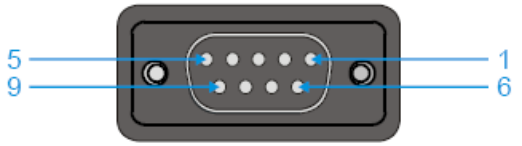
Power Supply Connector

Pin	Signal	Description
1	V In+	10-60 nominal DC input +
2	V In+	10-60 nominal DC input +
3	V In-	Input -
4	V In-	Input -
5	GND	Chassis ground
6	Ignition	+0 V to 60 V to start terminal

USB Dongle Cable

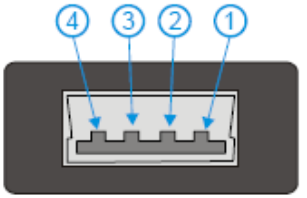
Use the USB dongle cable to connect USB devices, such as a USB flash drive to the smart dock and CV41.





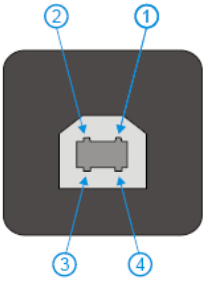
USB Dongle Cable D9 Male Connector

Pin	Signal	Description
1	GND	Common ground
2	USBC_D+	USB client data signal
3	USBC_D_	USN client data signal
4	USB_H1_PWR	USB host 5 V output power
5	GND	Common ground
6	GND	Common ground
7	USB_H1_D+	USB host 1 data signal
8	USB_H1_D-	USB host 1 data signal
9	USBC_VBUS	USB client 5 V detect from attached host



USB Dongle Cable Host Connector

Pin	Signal	Description
1	5V_USB	USB power, current limited
2	USB2N_A	USB D-
3	EUSB2PA_A	USB D+
4	DGND	USB power return
Shell	CGND	Chassis ground



USB Dongle Client Connector

Pin	Signal	Description
1	V In+	12 to 48 V nominal DC input +
2	V In+	12 to 48 V nominal DC input +
3	V In-	Input -
4	V In-	Input -

B

Keypads and Keystrokes

Standard Characters

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

CV41 Alphanumeric Characters

To Enter	Keypad
a	A
b	B
c	C
d	D
e	E
f	F
g	G
h	H
i	I
j	J
k	K
l	L
m	M
n	N
o	O
p	P
q	Q
r	R
s	S

To Enter	Keypad
t	T
u	U
v	V
w	W
x	X
y	Y
z	Z

CV41 Function Keys

To Enter	Keypad
F1	F1
F2	F2
F3	F3
F4	F4
F5	F5
F6	F6
F7	F7
F8	F8
F9	F9
F10	F10
F11	◧D F1
F12	◧D F2
F13	◧D F3
F14	◧D F4
F15	◧D F5
F16	◧D F6

To Enter	Keypad
F17	Fn F7
F18	Fn F8
F19	Fn F9
F20	Fn F10
F21	Alt F1
F22	Alt F2
F23	Alt F3
F24	Alt F4

CV41 Special Keys

To Enter	Keypad
* (asterik)	Fn *
@ (at symbol)	Fn W
# (pound)	Fn #
& (ampersand)	Fn &
% (percentage)	Fn %
: (colon)	Fn D
; (semicolon)	Fn F
, (comma)	Fn J
$ (dollar)	Fn R
! (exclamation)	Fn Q
? (question mark)	Fn L
- (hyphen or minus)	Fn 5
. (period)	. or Fn K
+ (plus)	Fn 8
‘ (apostrophe)	Fn H

To Enter	Keypad
= (equals)	Blue 2
_ (underscore)	Blue M
^ (caret)	Blue ↑
> (greater than)	Blue V
< (less than)	Blue C
((left parenthesis)	Blue O
) (right parenthesis)	Blue P
[(left square bracket)	Blue B
] (right square bracket)	Blue N
{ (left curly brace)	Blue Z
} (right curly brace)	Blue X
~ (tilde)	Blue Space
\ (backslash)	Blue S
/ (forward slash)	Blue A
“ (quotes)	Blue G
Insert	Blue 4
Delete	Blue 6
¦ (broken vertical bar)	Blue ←
` (grave)	Blue Esc
Forward Tab	→
Backspace	←
Up Arrow	↑
Down Arrow	↓
Left Arrow	←
Right Arrow	→
CapsLock	Blue ⇧

To Enter	Keypad
Enter	Enter
ok	**Alt** ok
Shift	⇧
Space	Space
Start (Windows)	? or ◧D ?
Esc	Esc
Alt	**Alt**
Ctrl	**Ctrl**

CV41 Intermec Terminal Emulator Keys

To Enter	Keypad
Attention	**Alt** A
Autolog	**Alt** S
Clear	**Alt** 6
Duplicate	**Alt** D
EEOF	**Alt** W
Erase	**Alt** E
Find	**Alt** F
Field +	◧D 1
Field -	**Alt** 2
Fieldmark	**Alt** G
Help	◧D 3
Hex	**Alt** I
Home	**Alt** H
Keypad	**Alt** K
Menu	**Alt** M
Mode	**Alt** O

To Enter	Keypad
New Line	**Alt** N
Next Screen	Fn 9
PA1	**Alt** T
PA2	**Alt** Y
PA3	**Alt** U
Page	**Alt** ^
Print	**Alt** P
Previous Screen	Fn 7
Remove	**Alt** R
Reset	**Alt** Esc
Return	**Alt** Enter
Roll Down	**Alt** 5
Roll Up	**Alt** 8
Select	**Alt** Z
System Request	**Alt** Q
View Down	Fn v
View Up	Fn ^

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