Thor CV31

Vehicle-Mount Computer

Model CV31A

User Manual

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Document Change Record

This page records changes to this document. The document was originally released as Revision 001.

Version Number	Date	Description of Change
002	08/2015	Added and updated information: • Updated the topic and subtopics about "How to Reset the Computer" and added the topic, "How to Clean Boot the Computer" to Chapter 5. • Added the headset jack pinouts to Appendix A.
003	03/2021	• Updated battery charging temperature.

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Before You Begin

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

Safety Information

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

This section explains how to identify and understand 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 Honeywell product, visit the Honeywell website at **www.honeywellaidc.com** and click **Resources** > **Warranty**.

Web Support

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

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Who Should Read This Manual

This manual is for the person who is responsible for installing, configuring, and maintaining the CV31.

This manual provides you with information about the features of the CV31, and how to install, configure, operate, maintain, and troubleshoot the computer.

Before you work with the CV31, you should be familiar with your network and general networking terms, such as IP address.

Related Documents

The Honeywell website at **www.honeywellaidc.com** contains our documents (as .pdf files) that you can download for free.

To download documents

1 Visit the Honeywell website at **www.honeywellaidc.com**.

2 Click **Products**.

3 Use the **Products** menu to navigate to your product page. For example, to find the CV31 product page, click **Vehicle-Mount Computers** > **Thor CV31 Vehicle-Mount Computer**.

1

About the Computer Features

This chapter introduces the Thor™ CV31 Vehicle-Mount Computer with Microsoft® Windows® Embedded Compact 7 (CE 7). Use this chapter to learn about basic features and functions of the computer, as well as available accessories.

About the Thor CV31

The Thor™ CV31 is a vehicle-mount computer that is rugged, versatile and built on the Microsoft® Windows® Embedded Compact 7 (CE 7.0) operating system.

The CV31 with a Texas Instruments WL1273 802.11a/b/g/n radio installed is Wi-Fi® certified for interoperability with other 802.11a/b/g/n wireless LAN devices.

CV31 Front View

What's New

This version of the user manual contains new and updated information:

- Updated the information about "How to Reset the Computer," as well as added new information about "How to Clean Boot the Computer" to Chapter 5.
- Added the headset jack pinouts to Appendix A.

About the Buttons

The buttons on the front of the computer provide easy access to power, volume, brightness, and device health. You can also program buttons P1 to P4 to access different system functions.
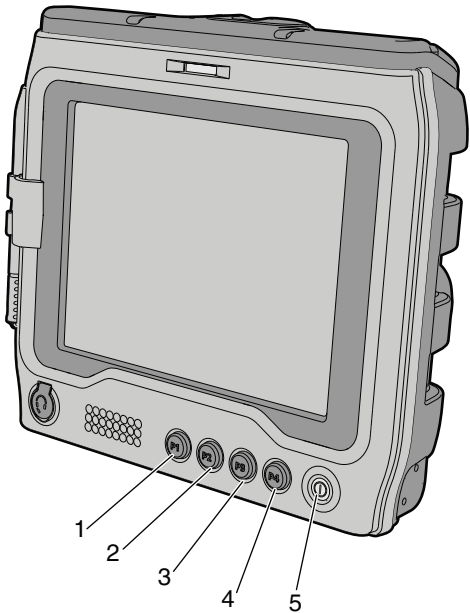
CV31 Buttons

Callout	Button	Description
1	P1	Opens the Device Health Dashboard.
2	P2	Press and release to cycle through the five backlight levels.
3	P3	Decreases the volume.
4	P4	Increases the volume.
5	Power	Controls the power state of the computer.

About the Power Button

The **Power** button controls the power state of the computer.

Power Button Actions

Computer State	Power Button Action
On	Press and release to open the Power Options menu.
	Press and hold for more than 8 seconds to turn off the computer.
Suspend	Press to wake up the computer.
Off	Press to turn on the computer.

You can also use Intermec Settings to disable the **Power** button or configure the button to perform the actions available from the Power Options menu.

Configure the Power Button

You can disable the **Power** button or configure the button to perform the actions available from the Power Options menu.

1 On your computer, start Intermec Settings.

2 Tap **Device Settings > Power Management > Power Button > Power button behavior**.

3 Select the action that you want to be performed when you press the **Power** button.

4 To save your changes, tap **OK**.

About the Power Options

The power options for the computer are available from the Power Options menu. When the computer is on, press the **Power** button to open the Power Options menu. The timeout bar at the bottom of the screen indicates how much time is left to make a selection. If you do not select a power option, the selected action (outlined in bold) occurs after the timeout.
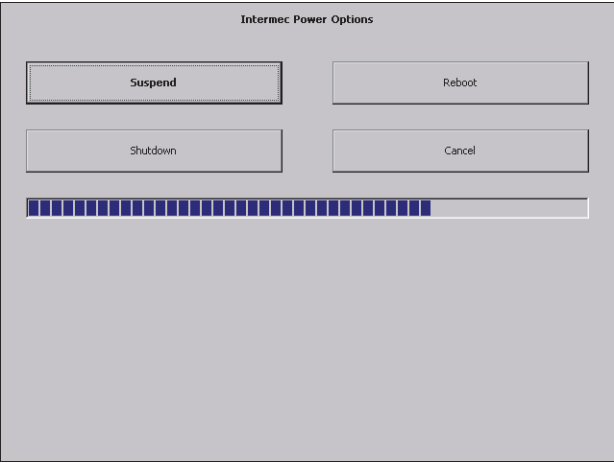
Power Options Menu

Power Options Menu

Option	Description
Screen Off	Lowest power saving mode. The screen turns off, but the radios and internal devices stay on. Tap the screen to turn on the computer. By default, Screen Off does not appear on the Power Options menu.
Suspend	The computer powers off all radios and internal devices not involved in saving the system state. You can wake the computer by pressing the **Power** button.
Reboot	The computer does not save the current system state, but the registry and file systems are saved. The computer shuts down all running processes and restarts.
Shutdown	The computer turns off.
Cancel	Closes the Power Options menu.

If you are using WPA or 802.1x security, the computer may need to reauthenticate before it resumes your application. The Real Time Clock (RTC) persists through all of the power options as long as it receives power from the Real Time Clock battery.

Configure the Power Options Menu

You can enable or disable the Power Options menu, determine which options appear on the menu, and set the amount of time you have to make a selection.

1 On your computer, start Intermec Settings.

2 Tap **Device Settings > Power Management > Power Button > Power Button Screen > Screen Options Displayed**.

3 Configure the Power Options menu:

- To enable or disable the Power Options menu, tap **Enable power button screen**.

- To select the options that appear on the Power Options menu, tap **Screen Options Displayed**.

- To set the amount of time to make a selection (from 1 to 20 seconds), tap **Screen timeout (seconds)**.

4 To save your changes, tap **OK**.

About the Ports and Connectors

The connectors provide access to power, external devices, and communications.
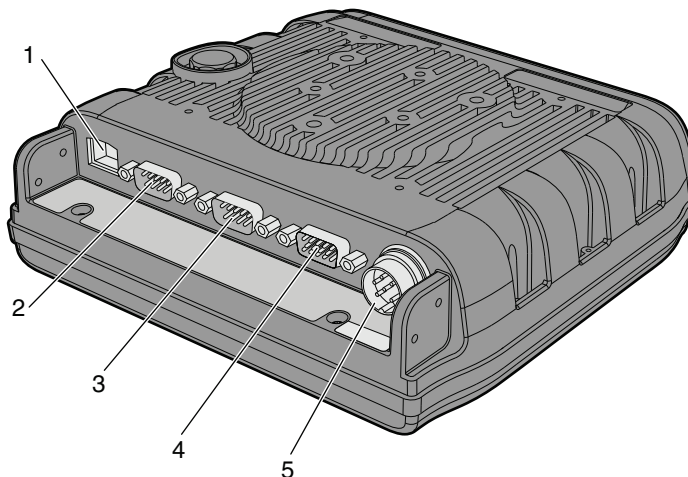
Back View of the CV31
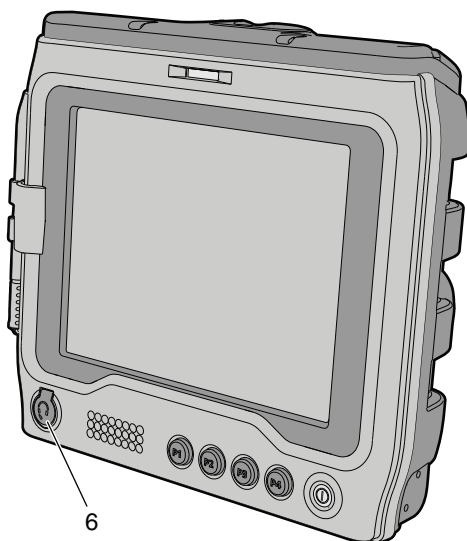
Headset Jack on the Front of the CV31
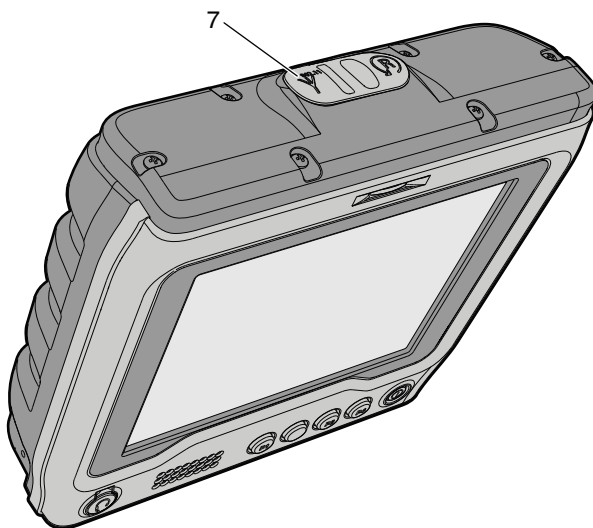
Antenna Connector on the Top of the CV31

CV31 Ports and Connectors

Callout	Connector	Description
1	Ethernet	Supports 10BaseT/100BaseT full duplex standard Ethernet interfaces.
2	COM1	Connects the computer to RS-232 devices, like scanners or printers.
3	COM3	Connects the computer to RS-232 devices, like scanners or printers.
4	AUX	Connects USB devices, like keyboards to the computer. You can connect a single or double USB cable to the AUX connector to turn it into one or two USB host connectors. You can also connect a developer USB cable to turn the port into a USB 1.1 Client connection.
5	Power	Connects the computer to an AC/DC or DC/DC power supply.
6	Headset Jack	Connects a 3.5 mm (1/8") headset to the computer.
7	Antenna	Connects an external antenna to the computer.

About the Status LEDs

The status LEDs turn on, turn off, or blink to indicate a specific activity on your computer.
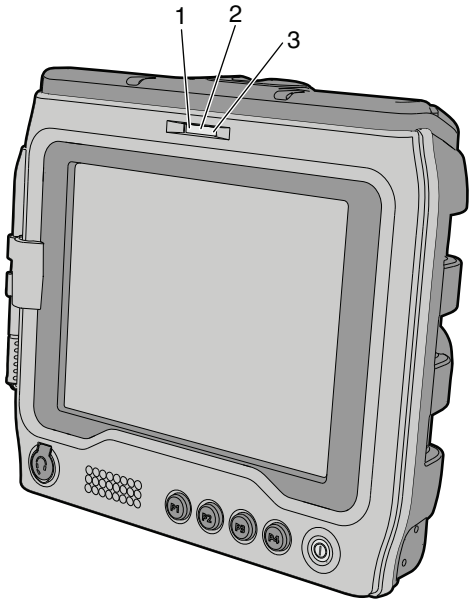
CV31 Status LEDs

Status LED Descriptions

Callout	LED	Color	Description
1	Good Read	Green	Both sides of the LED turn green to indicate that the CV31 successfully read a bar code.
2	Ready-to-Work indicator	Blue	If Intermec Terminal Emulator (ITE) is installed, the application is running and is connected to the host.
			If you do not have ITE, you can configure the Ready-to-Work indicator to turn on or off to indicate a healthy state.
		Blinking blue	ITE is running but not connected to the host. The computer is unhealthy.

Status LED Descriptions (continued)

Callout	LED	Color	Description
		Off	ITE is not installed or not running. The computer is healthy.
3	Battery Status	Steady orange	The battery is outside the allowable charging temperature range of 0 °C to 45 °C (32 °F to 113 °F). Charging will resume when the battery temperature returns to within the acceptable range.
		Blinking orange	There is a battery error. The battery is not charging because it is missing, faulty, or there is a bad connection.
		Blinking red	The CV31 is not connected to external power, and the battery is very low. The computer will go into Suspend mode soon. Charge or replace the battery.

How to Supply Power to the CV31

The accessories you use to supply power to the CV31 depends on whether you want to replace a CV30 and keep your existing wiring or perform a new installation:

- To replace a CV30 and keep your existing wiring, you need to purchase an adapter cable (P/N VE027-8024-C0).
- To perform a new installation, you need to know the electrical rating of your CV31 and the vehicle you are installing it on to determine which power supply to use.

Note: The AC power supply for the CV31 is different than the AC power supply for the CV30. Do not use the CV30 power supply with the CV31.

CV31 Power Supply Options for a New Installation

Installation Electrical Requirement	CV31 Electrical Rating	Use This Power Supply
100-240 VAC,50-60 Hz	12 V, 2.1 A or 9-36 V, 5.1 A	AC Power Supply (P/N 203-955-001)*
Vehicle: 9-36 VDC	9-36 V, 5.1 A	Thor CV31/CV61 Direct Wiring Kit (P/N 203-950-001)
Vehicle: 6-96 VDC	12 V, 2.1 A or 9-36 V, 5.1 A	Universal Vehicle Power Supply Kit (P/N 203-950-002) with cable P/N VE027-8024-C0

*The connector for the CV31 AC power supply is different than the one for the CV30. You cannot use the CV31 power supply with a CV30.

About the Backup Battery

If the CV31 is disconnected from external power, the backup battery can keep the CV31 running in a network connected state for up to 30 minutes. When power is restored, the CV31 continues normal operation.

An internal charger automatically charges the backup battery (within 8 hours) when the CV31 is connected to external power.

Note: The battery temperature must be with in the acceptable range of 0 °C to 45 °C (32 °F to 113 °F) to charge.

Check the Status of the Backup Battery

Check the status of the backup battery to make sure that it is functioning properly.

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

2 Double tap **Power**.

The battery status appears on the Battery tab.

Disable Backup Battery Charging

If you use the CV31 in a cold environment for an extended period of time, the backup battery temperature may fall below the required temperature for charging (0 °C, 32 °F). To prevent data loss, the default state of the CV31 is to not start if the backup battery does not have sufficient charge. If you need to start a CV31 that has a low battery but is connected to external power in a cold environment, you can disable this setting.

Caution: If the CV31 is disconnected from external power and the backup battery does not have sufficient charge, data may be lost or corrupted.

1 Start Intermec Settings.

2 Tap **Device Settings > Boot Charging Options**.

3 Select **Disable charging during startup**.

How to Mount the CV31

Use a Honeywell approved mounting accessory to mount the CV31:

• Desktop Mounting Kit (P/N 805-815-001)
• Vehicle Mounting Kit with a 1.5-inch (C-size) (P/N 805-813-001) or 2.25-inch (D-size) (P/N 805-814-001) RAM ball
• Wall Mounting Kit (P/N VE011-2006)
• Mounting Screw Kit (P/N 213-043-001) to mount the CV31 to an existing 1.5-inch (C-size) or 2.25-inch (D-size) RAM ball

How to Connect a Scanner

You can connect a scanner to the computer with one of these connectors:

• Serial
• USB

Note: Power to the COM ports is disabled when power is not supplied to the CV31 (the vehicle is turned off).

You can also connect a Bluetooth scanner through Bluetooth communications.

About Serial Scanners

You connect a serial tethered scanner to COM1 or COM3. By default, these COM ports are configured so that you can connect specific scanners without making any configuration changes. To configure the COM ports to work with other scanners, you can change the scanner model in Intermec Settings.

Note: By default, both COM ports are opened by Intermec data collection software. To connect another serial device, like a printer, you need to disable the scanner port.

Default COM Port Scanner Settings

COM Port	Default Scanner Model	Default Scanner Settings
COM1	SR Intermec scanner (for rugged Intermec scanners: SR30, SR31, and SR61T)	57600 baud, 8 data bits, no parity, 1 stop bit
COM3	ASCII	9600 baud, 8 data bits, no parity, 1 stop bit

You also need an appropriate serial cable. For help, see the user manual for your scanner.

Connect a Serial Scanner

By default, when you connect a tethered scanner, the scanner settings are overwritten by the computer settings for the scanner. You can change this setting in Intermec Settings.

1 Start Intermec Settings.

2 Tap **Data Collection > Tethered Scanners**.

3 To keep the scanner settings, tap **Tethered-Configure on connect**, select **Keep scanner settings**, and tap **OK**.

4 Tap the COM port that you want to connect the scanner to: **Tethered Scanner (COM1)** or **Tethered Scanner (COM3)**.

5 To change the scanner model, tap **Scanner Settings**, and then select a **Scanner model** from the list.

6 Configure the settings for the scanner you selected in Step 5 and close Intermec Settings.

7 Connect the scanner to the appropriate COM port.

About USB Scanners

To use a USB scanner with the CV31, you need to configure the scanner as a Human Interface Device (HID). When HID is enabled, scanned bar code data is sent directly to an active window as if the data came from a keyboard. You need to configure any data handling settings in the scanner with the scanner manufacturer's configuration bar codes. For help, see the scanner user manual.

Connect a USB Scanner

Connect a USB tethered scanner to the AUX port.

1 Connect an appropriate USB cable to the AUX port on the computer.

2 Connect the scanner to the USB cable.

How to Connect a Headset

Use one of these methods to connect a headset or audio device:

- Plug a 3.5 mm (1/8") headset into the headset jack. Note that the headset jack on the CV31 is not the same size as the headset jack on the CV30 (2.5 mm, 3/32").
- Use the Bluetooth Audio applet.
- Pair a Vocollect Bluetooth headset with the near-field communication (NFC) radio.
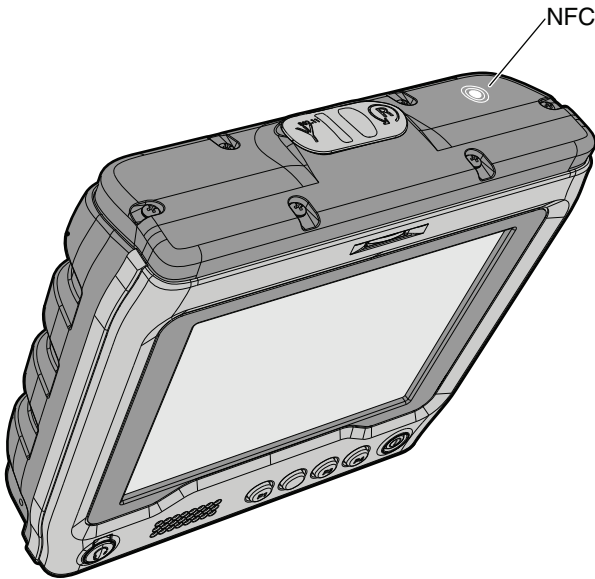
Location of the NFC Radio

How to Change the Volume

The computer volume controls the sounds you hear when you tap the screen or scan bar codes with an external scanner.

Methods to Change the Volume

Method	Description
Front panel buttons	Use the volume up and volume down buttons on the front panel.
Control panel	Tap **Start > Settings > Control Panel**, and then double-tap **Volume & Sounds**.
Intermec Settings	Start Intermec Settings and go to **Device Settings > Sounds > Beeper and voice**.

Connect an External Keyboard

You can attach a compact or standard external keyboard to make data entry easier. To attach a standard keyboard, you also need an appropriate USB cable.

1 Mount the keyboard. For help, see the installation instructions that ship with the mounting kit.

2 Connect the keyboard to the CV31:

- For compact keyboards, connect the keyboard cable to the AUX port on the computer.

- For standard keyboards, connect an appropriate USB cable to the computer, and then connect the keyboard to the USB cable.

About External Antennas

Use an external antenna to increase the signal strength of the wireless radio in the CV31. You can mount the antenna on a wall, forklift, or other flat surface with hardware or adhesive-backed hook and loop fastener material.

For most fixed installations, you should mount the antenna in a vertically-polarized position with the cable from the antenna parallel to the floor and ceiling. However, you may need to experiment with antenna position to find an orientation that provides the best antenna performance. Use the ISpyWiFi application that ships on the computer to determine which antenna position provides the best signal strength.

Install an External Antenna

Install an external antenna to increase the wireless signal strength.

Note: External antennas must only be installed by trained professionals.

1 Lift the cover from the antenna connector.
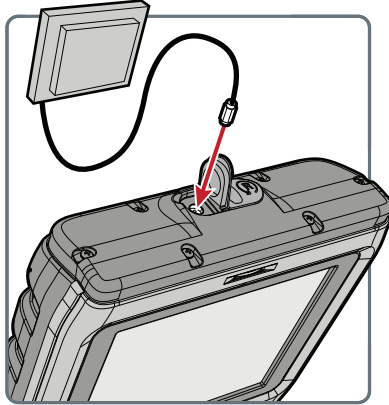
2 Secure the antenna cable to the connector. The CV31 automatically detects the connection, disables the internal antenna, and uses the external antenna.

3 Use your own mounting hardware to secure the antenna to a wall, forklift, or other surface.

About the Bar Code Slot Reader

Install a visible light (P/N 858-098-001) or infrared light (P/N 858-098-002) bar code slot reader (Model AR3) to scan and enter bar code data. The CV31 decodes the bar code and enters the data or command.

After you install the bar code slot reader, you need to enable and configure it. By default, these symbologies are enabled: Code 39, Code 128, UPC A, UPC E, EAN 8, and EAN 13. You should only enable the symbologies that you plan to read.

When you scan a bar code, the Good Read LED turns green to indicate a successful scan.

Configure the Bar Code Slot Reader

If you installed the bar code slot reader (Model AR3) accessory, you need to enable and configure it before you can use it.

1 Start Intermec Settings.

2 Tap **Data Collection > Tethered Scanner (COM1 or COM3) > Scanner Settings**.

3 Tap **Scanner Model**.

4 From the list, select **ID Tech Slot Scanner**.

5 Select **Enable Scanner Port**.

6 Tap **OK**.

7 Tap **Data Collection > Tethered Scanner (COM1 or COM3) > Symbologies**.

8 Only enable the symbologies that you plan to read.

Install a microSD Card

Use a microSD card to increase file storage or install software. The computer resets when you install or remove a microSD card.

1 To turn off the computer, press the **Power** button and tap **Suspend**.

2 Disconnect the power cord from the computer.

3 Use a Phillips screwdriver to remove the six screws that secure the cover.
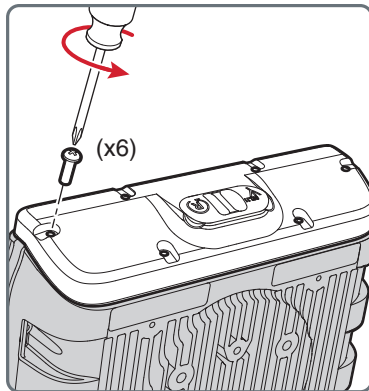
4 The antenna cable is connected to the cover, so carefully lift but do not remove the cover.
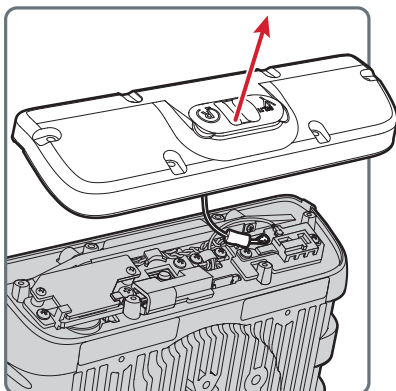
5 Insert the microSD card into the microSD card slot.
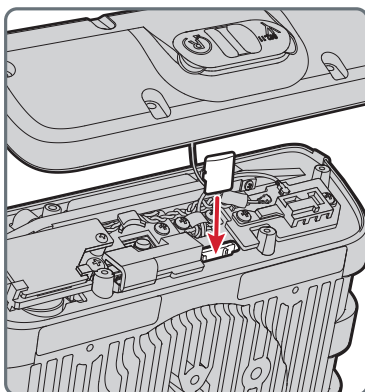
6 Close the cover.

7 Replace the six screws in the indicated order and tighten to 0.90 Nm (8.00 lbf-in).
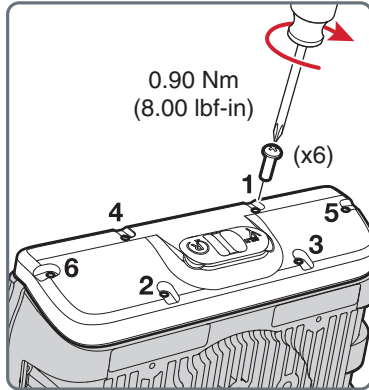
8 Connect the power cord and turn on the computer. The computer resets and turns on.

CV31 Accessories

The CV31 ships with a backup battery. All other accessories are sold and ordered separately. For help, contact your local sales representative.

CV31 Accessories

Accessory	Description
Mounting Kits	Use one of these mounting accessories to securely mount the CV31:
	• Desktop Mounting Kit (P/N 805-815-001)
	• Vehicle Mounting Kit with a 1.5-inch (C-size) (P/N 805-813-001) or 2.25-inch (D-size) (P/N 805-814-001) RAM ball
	• Wall Mounting Kit (P/N VE011-2006)
	• Mounting Screw Kit (P/N 213-043-001) to mount the CV31 to an existing 1.5-inch (C-size) or 2.25-inch (D-size) RAM ball
	• Wall Mount Cable Protector

CV31 Accessories (continued)

Accessory	Description
AR3 Bar Code Reader	Install a visible light (P/N 858-098-001) or infrared light (P/N 858-098-002) bar code slot reader to scan and enter bar code data.
Tethered Stylus	Install the tethered stylus (P/N VE011-2004) on the right or left side of the CV31 and use the stylus to interact with the touch screen.
USB Cables	Use a USB cable to connect a USB device to the CV31: • Single USB host cable (P/N VE011-2016) • Dual USB cable (P/N VE011-2017) • High density DB15 USB cable (P/N VE011-2021)
Developer USB Cable	Use the developer USB cable (P/N VE011-2018) to connect the CV31 to your desktop PC.
AC Power Supply	Use the AC power supply (P/N 203-955-001) to power the CV31 (rated 12 VDC).
Thor CV31 & CV61 Direct Wiring Kit	Use the direct wiring kit (P/N 203-950-001) to connect the CV31 (rated 9-36 VDC) to a vehicle electrical system.
Universal Vehicle Power Supply	Use the Universal Vehicle Power Supply (P/N 203-950-002) with cable P/N VE027-8024-C0 to connect the CV31 to a vehicle rated from 6 VDC up to 96 VDC.
Replacement Battery	The CV31 ships with a backup battery, but you can order and install a replacement battery (P/N 213-042-001), if necessary.
Screen Blanking Box	Use the screen blanking box (P/N VX89351PWRSPLY) to help improve operator safety and reduce driver distractions by turning off the computer display when the vehicle is in motion.

CV31 Accessories (continued)

Accessory	Description
Ignition Sensing Cable	The ignition sensing cable (P/N 236-316-001) lets the CV31 monitor the vehicle ignition switch. Install the ignition sensing cable with the CV31/CV41/CV61 Direct Wiring Kit or the Universal Vehicle Power Supply.
Compact Keyboards and Overlays	Install the AK4 compact keyboard (P/N VE011-2022 or P/N VE011-2030) and keyboard mounting kit (P/N VE011-2003) to the CV31 to make data entry easier.
Large external QWERTY Keyboards	Connect one of these large external QWERTY keyboards to the CV31 to make data entry easier: • Windows DE-15S Backlit QWERTY Keyboard (P/N 340-054-003) • 3270 DE-15S Backlit QWERTY Keyboard (P/N 340-054-001) • VT-220 DE-15S Backlit QWERTY Keyboard (P/N 340-054-004) • 5250 Extreme Temp QWERTY Keyboard (P/N 340-054-102)
Screen Protector	Install the screen protector (P/N 346-086-001, 10-pack) to reduce damage to the screen due to scratches.

2

About the User Interface and Installed Applications

Use this chapter to learn about the Microsoft® Windows® Embedded Compact 7 (CE 7) user interface and how to interact with the screen. You can also use this chapter to learn about the applications installed on your computer, as well as additional applications you can download.

About the User Interface

The Microsoft Windows Embedded Compact 7 (CE 7.0) operating system provides a touch-friendly and easy to navigate user interface.
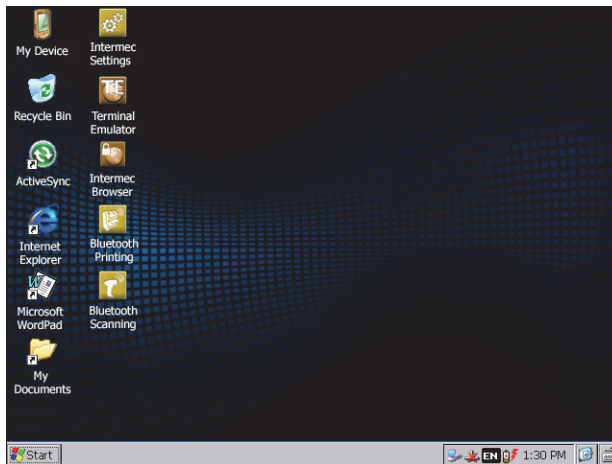
Home Screen

About the Touch Screen

The CV31 has a 6.4-inch color VGA (640 x 480 pixels) touch screen display. The display also has an optional defroster to reduce condensation on the external surface when moving between sub-freezing and normal temperatures.

If you plan to use the CV31 in extreme cold conditions for an extended period of time, turn on the power in a room temperature environment (25 °C, 77 °F) and let the CV31 "warm up" for at least 15 minutes.

About Screen Gestures

The Windows CE7 interface supports the use of gestures with the finger or stylus to move around the screen.

Screen Gestures

Gesture	Description
Tap	Represents the left click of a mouse.
Double-tap	Represents the left double-click of a mouse.

Screen Gestures (continued)

Gesture	Description
Hold	Represents the right click of a mouse when you press and hold on the screen and a context menu appears.
Flick	Initiates scrolling in the direction (horizontal or vertical) the finger or stylus moves across the screen.
Pan	Press and hold on the screen and then drag in any direction.

Calibrate the Touch Screen

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

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

2 Double-tap **Stylus**.

3 Tap the **Calibration** tab.

4 Tap **Recalibrate** and follow the instructions.

Applications Installed on the Computer

Applications installed on the computer help you configure, troubleshoot, and connect your computer to other devices and networks.

Applications Installed on the Computer

Icon	Application	Description
	Bluetooth Audio	Use the Bluetooth Audio application to connect to a Bluetooth headset or hands-free device.
	CloneNGo	Use CloneNGo to configure basic device settings on multiple client computers from one master computer.
	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.

Applications Installed on the Computer (continued)

Icon	Application	Description
	ISpyWiFi	Use ISpyWiFi to check your 802.11 status and diagnose issues with the connection.
	Wireless Printing	Use the Wireless Printing application to connect to a Bluetooth printer.
	Wireless Readers	Use the Wireless Readers application to connect the computer to the IV7D RFID reader.
	Wireless Scanning	Use the Wireless Scanning application to connect to a Bluetooth scanner.

Downloadable Applications for the Computer

You can download applications to extend the capabilities of the computer. You may need to purchase a license to run some applications.

About HTML5 Browser

HTML5 Browser provides a free, open-platform application for Honeywell computers. You can now run the same cross-platform web applications that you run on iOS and Android devices on Honeywell computers. HTML5 Browser also lets you run applications while the computer is connected to the web or offline. For more information, see the HTML5 Browser User Guide.

About Launcher for Windows

Launcher for Windows is a Microsoft Windows application designed for Honeywell computers. This application provides a platform from which other applications can be launched in a locked-down environment. You can configure Launcher for Windows for your specific application requirements.

You can download and use Launcher for Windows for a 60-day evaluation period. When the evaluation period ends, you need to purchase a license. For help, contact your local Honeywell representative.

About Intermec Terminal Emulator

Intermec Terminal Emulator (ITE) is Intermec's popular terminal emulation client designed for enterprise-level data collection. In a single client, ITE supports multiple emulation protocols. Its features include session persistence, remote management and configuration, and multiple security options. ITE provides a consistent user interface and a common menu structure (Intermec Settings), simplifying the use and management of applications running on Intermec mobile computers.

You can download and use ITE for a 60-day demo period. During the demo period, a demo mode message box appears each time you run ITE. Press **Enter** to close the message box. When the demo period ends, you need to purchase a license. For help, contact your local Honeywell representative.

About SmartSystems

Intermec SmartSystems is an easy-to-use centralized software platform. With SmartSystems, IT Administrators and Integrators can perform hands-free provisioning and deploy and manage computers.

SmartSystems provides a consistent way to manage computers located on-site or remotely to maximize IT resources and lower the total cost of ownership for your data collection equipment. You can download SmartSystems at no charge from the Intermec website at www.intermec.com/SmartSystems.

3

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.
*   Remotely using Intermec SmartSystems. With SmartSystems, you can remotely configure all of your mobile computers as well as other SmartSystems-enabled Intermec devices and peripherals.
*   Using a third-party device management product that supports the computer and Intermec Settings, such as Soti MobiControl or Wavelink Avalanche.
*   Using configuration bundles that you create with SmartSystems.

About 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. You can also password protect Intermec Settings to prevent users from making changes to the configuration settings.

Start Intermec Settings

Use Intermec Settings to configure Intermec applications and device-specific parameters.

Note: You can also double-tap the Intermec Settings shortcut on the desktop to start Intermec Settings.

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

2 Double-tap **Intermec Settings**. The Intermec Settings Main Menu appears.

About the Structure of Intermec Settings

Use these tables to find parameters in Intermec Settings. Each table contains the parameters for an Intermec Settings Main Menu option.

Most parameters are saved when you tap **OK**. Other parameters, such as Security Choice, require you to reboot the computer for the changes to take effect.

Data Collection Menu

Data Collection Option	Parameters You Can Configure
Tethered Scanners	Tethered-Configure on connect
Tethered Scanner (COM1) and Tethered Scanner (COM3)	• Tethered-Configure on connect • Enable scanner port • Symbologies • Symbology Options • Scanner settings • Scanner Port Settings • Decode Security
Bluetooth Scanners	Bluetooth-Configure on connect

Communications Menu

Communications Option	Parameters You Can Configure
Device Name	Device Name
802.11 Radio	• Radio Enabled • Security Choice • Funk Security Settings • IP Settings • Certificates • Radio Measurement • Radio Bands • Allow Security Changes
Ethernet Adapter	IP Settings
Bluetooth	Bluetooth Settings
UDP Plus	UDP Plus Activate

Device Settings Menu

Device Settings Option	Parameters You Can Configure
Antenna	Force external antenna
Boot Charging Options	Disable charging during startup
Date and Time	Date and Time Settings
Good Read	• Internal Scanner • Tethered Scanner • Bluetooth Scanner • RFID Scanner
IDL Runtime Versions	Read-only
Power Management	• Power Button • External Power
Screen	Screen rotation
Security	Enables or disables ActiveSync, the SD card, the USB external drive, image capture, and using a URL bar code to launch a browser.
Sounds	• Beeper and voice • Screen taps • Key clicks
System Component Versions	Read-only

Printers Menu

Printer Options	Parameters You Can Configure
Printer (connected through Bluetooth)	Printer Settings

Note: The Printers menu displays settings for Bluetooth connected printers. The settings that appear in the menu depend on the printer paired with the computer. The printer needs to use the Wireless Printing application.

SmartSystems Information Menu

SmartSystems Information Options	Parameters You Can Configure
Identity	Identity Information (hardware version, firmware version, OS version, and so on) (Read-only)
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 • Enable Device Health Application • Enable Blue Light (LED) • Set Rule File Location • Set Data Refresh Periods
Device Health Screen Captures	• Directory • Screen Captures Allowed
Disabled Executables	Read-only
Device Wipe	• Enable Wipe • Interval

License Manager Menu

License Manager Options	Parameters You Can Configure
About	Read-only
License Vault	Read-only

Virtual Wedge Menu

Virtual Wedge Options	Parameters You Can Configure
Enable Virtual Wedge	Enable Virtual Wedge

Virtual Wedge Menu (continued)

Virtual Wedge Options	Parameters You Can Configure
Virtual Wedge Method	Virtual Wedge Method (Adapt to application, character mode, or block mode)
Bar Code Scanner Wedge	• Bar Code Scanner Grid • Label Encoding (Code page)
Magstripe Reader Wedge	Magstripe Reader Grid
RFID Reader Wedge	• Read Command • User-Defined Read Command • Date • Time • Tag Separator • User-Defined Tag Separator • End of Message • User-Defined End of Message • RFID Reader Grid

Core Messaging Service Menu

Core Messaging Service Options	Parameters You Can Configure
Server IP	Read-only
Associated Server IP	Associated Server IP
Broadcast Name	Broadcast name
Port	Read-only
Keep Alive Ping Interval	Keep Alive Ping Interval

RFID Menu

RFID Options	Parameters You Can Configure
Enable RFID Service	Enable RFID Service
Application Connection	• Allow External BRI Connections • BRI TCP Port • Enable Logging

RFID Menu (continued)

RFID Options	Parameters You Can Configure
Reader 1	• Enable Reader • Connected • Reader Model • Port • RFID Module

How to Navigate in Intermec Settings

You can easily navigate through the screens in Intermec Settings to find the parameters you need to configure:

- Tap inside a text field to be able to enter text into it.
- Tap a field once to select it.
- If you see a **...** next to a menu item, there is only one more screen available. Tap the menu item to access this screen.
- If you see a **>** next to a menu item, there are more screens available in the next level. Tap the menu item to access these screens.
- Use the up and down arrow keys to move up and down the menu.
- To move back a level in the menu, tap **Back** or **Cancel** on the Tile bar.
- To exit Intermec Settings, tap **Menu** > **Exit** or **OK**.

Enable Intermec Settings Password

You can protect Intermec Settings from other users by enabling a password.

1 Start Intermec Settings.

2 Tap **Menu > Enter Password**.

3 Select the **Enable password** check box.

4 Type your password in the **Enter:** text box.

5 Retype your password in the **Confirm:** text box.

6 (Optional) Select the **Use password to protect CAB Installation** if you want to restrict the installation of .cab files.

7 Tap **OK**.

Restore Default Settings

The easiest way to restore default settings on your computer is to use Intermec Settings. You can restore all default settings on your computer or restore default settings for a specific menu item in Intermec Settings.

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

1 Start Intermec Settings.

2 Restore the default settings:

- To restore all default settings, tap **Menu > Restore all Defaults**.

- To restore default settings for one menu item, navigate to the menu and tap **Menu > Restore Menu Defaults**.

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

If you are prompted to refresh the computer, tap **Yes**.

Hide Menu Items in Intermec Settings

You can hide menu items in Intermec Settings if you do not want other users to access them. When you restore default settings in Intermec Settings, hidden items are not restored. When you back up settings using the SmartSystems console, hidden items are not backed up.

Note: To restore all hidden items in all menus, tap **Menu > Unhide All Items**.

1 Navigate to the menu item that you want to hide.

2 Tap and hold the menu item. A list appears.

3 Select **Hide Menu Item**.

4 When you are prompted to hide the menu, tap **Yes**.

Configure the Computer Remotely with SmartSystems

You can use Intermec Settings from a SmartSystems console to remotely configure all the Intermec computers. For help using Intermec Settings, click **Help** > **Contents**. For information on all the parameters in Intermec Settings, see the Intermec Settings Command Reference Manual.

1 In the SmartSystems console, select a computer and then right-click on it. A list appears.

2 Select **Start Intermec Settings**.

3 Configure the settings you want to change. As you select parameters, help for each parameter appears in the upper right pane.

4 When you are done making changes, select **File > Save Settings**.

About Network Communications

You can use the mobile computer in your wireless or wired data collection network. You can connect your computer using:

- 802.11 radio communications.
- Ethernet communications.
- Bluetooth communications.
- USB and serial communications.

About 802.11 Radio Communications

The computer has an 801.11a/b/g/n radio to transfer data using wireless communications. Before you configure radio communications, you need to set up your wireless network, including your access points.

About Bluetooth Communications

The computer is Bluetooth-enabled, which lets you connect to these Bluetooth devices:

- Scanners
- Printers
- Audio devices
- Wireless readers

By default, the Bluetooth radio is on. The Bluetooth radio maintains its current state through a warm or cold boot and maintains virtual COM ports. But, if you clean boot the computer, you need to recreate pairings with Bluetooth devices.

Configure Bluetooth Communications

Before you can connect to a Bluetooth device, you need to configure the Bluetooth radio so that your computer is discoverable and connectable.

1 Start Intermec Settings.

2 Tap **Communications > Bluetooth**.

3 Make sure that the **Power** is **On** and **Discoverable** and **Connectable** are both **Enabled**.

4 Exit Intermec Settings.

   Other Bluetooth devices can discover and connect to your computer.

Connect a Bluetooth Scanner with the Quick Connect Bar Code

Scan the Quick Connect bar code to easily connect your CV31 to a Bluetooth scanner, such as an Intermec SF51 or SR61. By default, when you connect a Bluetooth scanner, the scanner settings are overwritten by the computer settings for the scanner. You can change this setting in Intermec Settings.

1 To keep the scanner settings, start Intermec Settings:

   a Tap **Data Collection > Bluetooth Scanners**.

   b Tap **BT-Configure on connect**, select **Keep scanner settings**, and tap **OK**.

   c Tap **Back** twice to return to the main menu.

   d Exit Intermec Settings.

2 With your Bluetooth scanner, scan the Quick Connect bar code on either side of the computer.

3 When prompted, enter the passcode for your scanner. For Intermec Bluetooth scanners, the default passcode is 0000.

   The scanner pairs with your computer.

Connect a Bluetooth Scanner with the Wireless Scanning App

Use the Wireless Scanning app to discover and connect to Bluetooth scanners within range of your computer. By default, when you connect a Bluetooth scanner, the scanner settings are overwritten by the computer settings for the scanner. You can change this setting in Intermec Settings.

1   To keep the scanner settings, start Intermec Settings:

   a   Tap **Data Collection > Bluetooth Scanners**.

   b   Tap **BT-Configure on connect**, select **Keep scanner settings**, and tap **OK**.

   c   Tap **Back** twice to return to the main menu.

   d   Exit Intermec Settings.

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

3   Double-tap **Wireless Scanning**.

4   Tap **Add Device**.

5   Select **Quick Connect**, **Search**, or **Manual** and tap **Next**.

6   Follow the instructions to add a wireless scanner.

Connect to a Bluetooth Printer

Use the Wireless Printing application to connect to a Bluetooth printer.

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

2   Double-tap **Wireless Printing**.

3   Tap **Search** to find a printer, or tap **Manual** to enter a device address.

4   Follow the instructions.

5   (Optional) Tap **Print Test**. The printer prints a test page.

About Wireless Security

The computer provides these security solutions for your wireless network:

- Wi-Fi Protected Access 2 (WPA2™)
- Wi-Fi Protected Access (WPA)
- 802.1x
- LEAP (Funk security only)
- WEP

Honeywell recommends WPA2 security with PSK (Personal) or 802.1x (Enterprise) key management.

Before you set security, you need to enable the radio, set the date, and set the SSID on your computer. To use 802.1x security, you need to load a root certificate on your computer. To use transport layer security (TLS) with 802.1x security, you also need to load a user certificate.

Load a Certificate

To use transport layer security (TLS) with 802.1x security, you need a unique client certificate on the computer and a trusted root certificate authority (CA) certificate.

1 Start Intermec Settings.

2 Select **Communications > 802.11 Radio > Certificates**.

3 Tap **Import Certificates**.

4 To import a certificate chain:

    a Tap the **Import PFX** tab.

    b Next to the **Select pfx to import** field, tap **<<<**.

    c Find and select the root certificate.

    d If necessary, enter the **Password of pfx**.

    e Tap **Import Certificate**.

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

   a Tap **Web Enrollment**.

   b To log on to the server, enter the **User**, **Password**, and **Server** (IP Address).

   c Tap **OK**.

   d When you are prompted to load the root certificate, tap **OK**.

   e When the message box appears to let you know the certificate has been added, tap **OK**.

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 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.

1 Start Intermec Settings.

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

3 Tap a profile to expand it.

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 To set the active profile, tap **Active Profile** and select a profile from the list.

8 Save your settings.

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

Before you set WPA-802.1x or WPA2-802.1x security with Funk, you need to configure your authentication server and authenticators. To use TLS protocol, you also need to load a user and root certificate. On your computer, you need to enable the radio and set the date.

1 Start Intermec Settings.

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

3 Select a Funk security profile to configure.

4 Enter the **SSID**.

5 For **Association**, select **WPA** or **WPA2**.

   The default encryption is **TKIP** or **AES**, respectively.

6 For **8021x**, select **TTLS**, **PEAP**, **EAP-FAST**, or **TLS**.

7 If you selected **TTLS**, **PEAP**, or **EAP-FAST**:

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

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

8 If you selected **TLS**, enter a **User Name** and **Subject Name**.

9 For **Validate Server Certificate**, select **Yes**.

10 Tap **OK**.

Configure WPA or WPA2 Personal (PSK) Security with Funk Security

Before you set WPA or WPA2 Personal (PSK) security, you need to know the pre-shared key for your access point or passphrase for your authenticator. On your computer, you need to enable the radio and set the date.

1 Start Intermec Settings.

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

3 Select a Funk security profile to configure.

4 Enter the **SSID**.

5 For **Association**, select **WPA** or **WPA2**.

   The default encryption is **TKIP** or **AES**, respectively.

6 For **8021x**, select **None**.

7 For **Pre-Shared Key**, enter the pre-shared key or passphrase:

   • Enter the pre-shared key (0x followed by 32 hexadecimal pairs) for your access point.

   • Enter the passphrase (8 to 63 ASCII characters) for your authenticator. The computer internally converts the passphrase to a pre-shared key.

8 Tap **OK**.

Configure 802.1x Security with Funk Security

Before you set 802.1x-WEP security with Funk security, you need to enable the radio on your computer and set the date. To use TLS protocol, you also need to load a user and root certificate. Intermec recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

1 Start Intermec Settings.

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

3 Select a Funk security profile to configure.

4 Enter the **SSID**.

5 For **Association**, select **Open**.

6 For **Encryption**, select **WEP**.

7 For **8021x**, select **TTLS**, **PEAP**, or **TLS**.

8 If you selected **TTLS** or **PEAP**:

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

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

9 If you selected **TLS**, enter a **User Name** and **Subject Name**.

10 For **Validate Server Certificate**, select **Yes**.

11 Tap **OK**.

Configure LEAP Security with Funk Security

Before you set LEAP security, you need to enable the radio and set the date on your computer.

1 Start Intermec Settings.

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

3 Select a Funk security profile to configure.

4 Enter the **SSID**.

5 For **Association**, select **Open**, **WPA**, **WPA2**, or **Network EAP**.

   The default encryption is **TKIP** for **WPA**, **AES** for **WPA2**, and **WEP** for **Open** or **Network EAP**.

6 For **Prompt for Credentials**, select **Enter credentials now**.

7 Type a **User Name** and **User Password**.

8 Save your settings.

Configure Static WEP Security with Funk Security

Before you set static WEP security with Funk security, you need to enable the radio on your computer and set the date. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

1 Start Intermec Settings.

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

3 Select a Funk security profile to configure.

4 Enter the **SSID**.

5 For **Association**, select **Open**.

6 For **Encryption**, select **WEP**.

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

8 Enter an ASCII key or hex key value for each key you want to use (**Key 1** through **Key 4**):

   • For 64-bit WEP, enter a 5-byte value: 5 ASCII characters or 0x followed by 5 hexadecimal pairs.

   • For 128-bit WEP, enter a 13-byte value: 13 ASCII characters or 0x followed by 13 hexadecimal pairs.

9 Select the **Transmit key** you want to use to transmit data.

10 Tap **OK**.

Use Open (No Security) Associations with Funk Security

To create an open network, you can set no security with Funk security.

1 Start Intermec Settings.

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

3 Select the active Funk security profile.

4 Enter the **SSID**.

5 For **Association**, select **Open**.

6 For **Encryption**, select **WEP**.

7 Tap **OK**.

4

Manage the Computer

You can update, configure, and monitor your computers remotely. You can also develop and install applications, as well as upgrade the system software.

How to Manage the Computer in Your Network

With multiple mobile computers and peripheral devices in your network, you need to be able to easily manage updates, configure devices, and remotely troubleshoot problems. You can manage your computer with:

- CloneNGo, a peer-to-peer, license-free device cloning application that lets you clone settings from one computer to another.
- SmartSystems, a device management software platform.
- third-party device management software, such as Wavelink Avalanche.

How to Manage the Computer with CloneNGo

Intermec CloneNGo is a software application that allows you to copy the settings and parameters from a master computer onto one or more client computers. Cloning reduces redundancy and error by providing an efficient and accurate way to copy and transmit settings from a master computer to one or more client computers through an adhoc wireless network. For more information on CloneNGo, see the CloneNGo User Guide.

How to Manage the Computer with SmartSystems

Intermec SmartSystems is a software platform that lets you manage all of your SmartSystems-enabled devices simultaneously from a central server. From the Intermec website, you can download this application at no charge. For help, see www.intermec.com/SmartSystems.

The SmartSystems console displays all SmartSystems-enabled devices and peripherals in your network. 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 the computer and peripherals.

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

With a Provisioning license, SmartSystems can automatically push software, configuration settings, and other files to the computers. The license also enables ScanNGo, which makes connecting additional computers to your wireless network as easy as scanning bar codes. To purchase a Provisioning license, contact your local Intermec representative.

How to Manage the Computer with Third-Party Software

Third-party device management software, such as Soti MobiControl and Wavelink Avalanche, increases security and lets you update software, track assets, and troubleshoot devices remotely.

Note: The CV31 is supported by Soti MobiControl version 11.0.2 and later and RemoteMastermind version 4.05 and later.

How to Develop and Install Applications

Use the Intermec Resource Kits to develop applications to run on the mobile 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.

How to Package Your Application

After you develop your application, you need to package it for installation on your mobile computer. For very simple applications, the executable file may be the only file you need to deploy. Typically, you will have a set of files to install. Intermec recommends using cabinet (.cab) files to install more complex applications. The computer uses standard Windows Mobile .cab files and will install third-party .cab files.

You can have your .cab file place the application in any of these memory locations on the computer:

- Object store (root directory)
- The non-volatile Flash File Store. Applications and data in the Flash File Store will persist through a clean boot or if you reflash the operating system image.
- The optional microSD card. Depending on available disk space, you may want to consider installing your application files on the microSD card. Using a card creates the Storage Card folder on the computer.

Files copied to any of these locations are safe when you cold boot the computer if the Autouser.dat file has been edited correctly. All .cab files in each 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 with SmartSystems

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

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 mobile computer in your network, or drop the application on a group of computers contained in a folder.

Install Applications with Microsoft Synchronization Software

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

1 Connect to the mobile computer through the synchronization software.

2 Copy the .cab files from your development PC to the mobile computer.

3 Reboot or cold boot the computer.

4 After the boot process is finished, browse to the .cab files and tap the files to install them.

Install Applications with a microSD Card

Use a microSD card to install applications on one computer at a time or if you do not have a network connection.

1 Copy your application file to the microSD card.

2 Insert the microSD card into the computer.

3 Press the **Reset** button.

4 On the computer, browse to the SD Card folder and run your application.

Install Applications with a USB Device

Install applications with a USB device if you do not have a network connection or if you want to install an application on one computer at a time.

1 Copy your application file to the USB device.

2 Connect an appropriate USB cable to the computer.

3 Connect the USB device to the USB cable.

4 Press the **Reset** button.

5 On the computer, browse to the USB device folder and run your application.

How to Launch Applications Automatically

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

- Set up your application .cab file to place a shortcut to the application in the \Windows\StartUp directory at install time.

- Use AutoRun 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 using AutoRun, see the Readme.txt file located in the My Device\Flash File Store\2577 directory on the computer.

How to Update the System Software

The computer uses SmartSystems bundles to update the operating system (OS) and the system software.

You can use these methods to update your computer:

- You can update individual computers, or multiple computers at the same time, using the SmartSystems console.
- You can update individual computers with a microSD card.

Update the Computer with SmartSystems

You can use the SmartSystems console to update the operating system or system software on your mobile computer.

1 Go to www.intermec.com/SmartSystems and download and install SmartSystems.

2 Download the SmartSystems bundles you want to install:

   a Go to www.intermec.com.

   b Click **Products** and navigate to your computer product page.

   c Click the **Downloads** tab and scroll down to the OS/Firmware/ Drivers section.

   d Select the SmartSystems bundles you want to install.

3 On your computer, make sure that power management is disabled.

4 Start SmartSystems and make sure that your computer is discovered.

5 Double-click the SmartSystems bundle to extract the update files to the software vault.

6 On the SmartSystems console, find the bundle to install and drag it to each computer (or group in a folder) you want to update. SmartSystems installs the update on your computer.

After the download is complete, your computer begins the update process and automatically performs a cold boot. The computer then enters a special Update Loader mode where it has no network connections and is completely unusable. While your computer is offline, SmartSystems displays a red stop symbol.

This process can take anywhere from 30 seconds to 15 minutes depending on the update. After the update is complete, the computer boots again.

Update the Computer with a microSD Card

To update the computer with a microSD card, you need a microSD adapter card and an SD card reader. You also need to format the microSD card as FAT32.

1 Download the AutoFlash.img file with the updated you want to install:

   a Go to www.intermec.com.

   b Click **Products** and navigate to your computer product page.

   c Click the **Downloads** tab and scroll down to the OS/Firmware/ Drivers section.

   d Select the download you want to install.

2 Insert the microSD card into a microSD adapter card and then place it in the SD card reader connected to your PC.

3 On your PC, navigate to the location of the AutoFlash.img with the update you want to install. Typically, this directory is C:\Program Files\Intermec\SmartSystem\SS_Lib\Software*OS*\

4 Copy the AutoFlash.img file to the root directory of the microSD card.

5 Remove the microSD card from the adapter card.

6 Turn off the computer and install the microSD card.

7 Press the **Reset** button.

8 Turn on the computer.

   The update process begins. The computer may restart several times. When the update is complete, the Autoflash Complete message appears.

9 Press the **Power** button and suspend the computer.

10 Remove the microSD card. If you do not remove the microSD card, the update process repeats each time the computer restarts.

11 Turn on the computer, and follow the setup process.

5

Troubleshoot and Maintain the Computer

Find solutions to problems you may have while using the computer, as well as information on routine maintenance.

How to Troubleshoot the Computer

These troubleshooting tables may help you fix some common problems you may experience with your computer.

Note: If you send the computer in for service, it is your responsibility to save the computer data and its configuration. Honeywell only ensures that the hardware matches the original configuration when repairing or replacing the computer.

Wi-Fi Connection Problems

Use this section to find possible solutions to Wi-Fi connection problems.

Wi-Fi Connection Problems and Possible Solutions

Problem	Possible Solution
When you turn on the computer after it was suspended for 10 to 15 minutes or longer, the computer can no longer send or receive messages over the network.	The host PC may have deactivated or lost the current terminal emulation session. In a TCP/IP direct connect network, turn off the "Keep Alive" message from host PC 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. Now, your computer is 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. Any data collected while out of range is transmitted over the network.
The computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host PC.	Move closer to an access point or to a different location to reestablish communications until you reconnect with the network. Any data collected while out of range is transmitted over the network.
The computer appears to be connected to the network, but the host PC is not receiving any information from the computer.	There may be a problem with the connection between the access point and the host PC. Check with network administrator or use your access point user manual.

How to Check Wi-Fi Network Status

Use the iSpyWiFi application to verify available access points and networks, check signal strength, and view other diagnostics. This infomation can also be helpful if you need to contact Product Support.

ISpyWiFi Tabs

Tab	Description
ISpy	Displays:
	• 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.
Scan	Displays a list of available 802.11 networks, including the signal strength, channel, and MAC address for each network.
Supp	Displays radio supplicant information, including a list of supplicant events and authentication status.
Ping	Lets you run a ping test to the host PC.
RSSI	Displays the received signal strength of the host PC signal, including the host SSID name, MAC address, data rate, and transmit power.
Conf	Lets you set up a log file that lists RSSI history.

802.1x Security Problems

Use this section to find possible solutions to 802.1x security problems.

802.1x Security Problems and Possible Solutions

Problem	Possible Solution
The computer indicates that it is authenticated, but it does not communicate with the host.	Make sure the computer IP address, host IP address, subnet mask, and default router are configured for the network.

802.1x Security Problems and Possible Solutions (continued)

Problem	Possible Solution
The computer indicates it is not authenticated.	Make sure that: • the User Name and Password parameters on the computer match the user name and password on the authentication server. You may need to configure the password on both the computer and the 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 the access point match the IP address and secret key on the authentication server. You may need to configure the IP address and secret key on both your access point and authentication server. • the authentication server software is running on the server PC.
The computer does not appear to be authenticating and a network connection icon does not appear on the toolbar.	The computer may not be communicating with the intended access point, or the access point may not be communicating with the server: • Make sure the network name matches the access point network name. • Make sure the access point is turned on, properly configured, and has 802.1x security enabled.
A network connection icon appears on the toolbar, but then disappears.	The computer may not be communicating with the intended access point, or the access point may not be communicating with the server: • Make sure that the network name matches the access point network name. The default network name is "INTERMEC." • Make sure the access point is turned on, properly configured, and has 802.1x security enabled.

802.1x Security Problems and Possible Solutions (continued)

Problem	Possible Solution
You are setting up multiple access points in a network with different SSIDs, and the connection fails.	When you change the SSID, the WEP key values are not saved. Configure the WEP key values and save your changes.
You clean boot the computer and this message appears, "The server certificate has expired or your system date is incorrect."	When you clean boot the computer, the date and time are not saved. Configure the date and time and save your changes.

Problems Reading Bar Codes

You can troubleshoot problems that prevent you from reading bar codes, such as the appropriate symbology not being enabled.

Problems Reading Bar Codes

Problem	Possible Solution
You cannot see the illumination beam or frame from the imager when you press the **Scan** button and aim the imager at a bar code label.	Try these possible solutions: • You may be too far away from the bar code label. Move 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 may be disabled. Start Intermec Settings and go to **Data Collection** > **Scanner Settings**. Make sure Hardware trigger is selected.
When you release the **Scan** button or scan handle trigger, the Good Read LED does not turn off.	If you configure the computer to use continuous/edge triggering, the Good Read LED stays on. If you configure the computer for level triggering and the Good Read LED stays on, there may be a problem. Press the **Scan** button or pull the trigger again without scanning a bar code label. If the LED is still on, contact Product Support.

Problems Reading Bar Codes (continued)

Problem	Possible Solution
The scanner or imager cannot read the bar code.	Try these possible solutions: • Position the scanner beam so that it crosses the entire bar code label in one pass. Try to vary the scanning angle. • Check the quality of the bar code label. Scan a bar code label that you know scans properly. Compare the quality of the two bar code labels. You may need to replace the label that you cannot scan. • Make sure the bar code symbology is enabled and configured correctly. Start Intermec Settings and go to **Data Collection > Symbologies** for the scanning device (scanner, virtual wedge) to check and enable symbologies. • Make sure the computer application is expecting input from a bar code. You may need to type this information instead. • The scanner may not be turned on or the scanner may be unable to scan a specific bar code. Run the ScanDiagnostic application.
The scanner or imager cannot read the bar code quickly, or the scanning beam seems to be faint or obscured.	The scanner or imager window may be dirty. Clean the window with a solution of mild soap and water. Wipe dry. Do not allow abrasive material to touch the window.
You read a valid bar code label to enter data for your application. The data decoded by the scan module does not match the data encoded in the bar code label.	The computer may have decoded the bar code label in another symbology. Scan 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. Enable only the bar code symbologies being used.

Problems Using the Computer

You can troubleshoot general problems while using the computer. Before you call Intermec Product Support, look for your problem in the next table, and try the possible solutions.

Problems Using the Computer

Problem	Possible Solution
You tap the screen and nothing happens.	Align the screen.
You press the **Power** button and nothing happens.	• The battery may be completely drained. Replace or charge the battery. • Restart the computer.
The computer appears to be locked up, and you cannot enter data.	• Press the **Power** button and select **Suspend**. Press the **Power** button again to turn the screen back on. • Press the **Power** button and select **Reboot**. • Cold boot the computer. • Reload the firmware.
You installed an external antenna, but the computer does not detect it.	Manually enable the antenna: 1 Tap **Start > Settings > Control Panel > Intermec Settings**. 2 Tap **Device Settings > Antenna**. 3 Under **Force external antenna**, select **Enabled**.
You connected a serial printer to COM1 or COM3, but your application cannot open the COM port.	By default, COM1 and COM3 are enabled for serial scanners. You need to disable the COM port for scanners: 1 Start Intermec Settings. 2 Tap **Data Collection > Tethered Scanners > Tethered Scanner (COM1 or COM3) > Enable scanner port**. 3 Clear the **Enable scanner port** check box.

Call Product Support

If you are having trouble using your computer and you cannot find a solution in this user manual or from the Knowledge Base (www.hsmknowledgebase.com) or Technical Support Portal (www.hsmsupportportal.com), you can contact Customer Support. For our latest contact information, go to www.honeywellaidc.com/locations.

Before you call Product Support, have this information ready:

- Configuration number (CN) and serial number (SN), available from the Device Health dashboard
- Operating system version
- Power management settings
- Wireless security settings
- SmartSystems Platform Bundle (SSPB) version
- Intermec Terminal Emulation (ITE) version and protocol, available from the ITE main screen.

    Or, programming language of your custom application and tools used to create it.

Find Your Configuration Number

Before you call Intermec Product Support, you need know the configuration number of your computer.

1 Press ❓ to open the Device Health Dashboard.
2 Double-tap **Information**. The Hardware Configuration field displays the configuration number.

Find Your Operating System Version

Before you call Intermec Product Support, you need know the operating system version on your computer.

1 Press ❓ to open the Device Health Dashboard.
2 Double-tap **Information**. The OS Version field displays the operating system version.

How to Reset the Computer

If the computer or an application locks up, or if the computer does not respond when you press the **Power** button, you may need to reset the computer.

The computer uses the configuration currently saved in flash memory during the boot process. Try these methods, in order, to reset the computer:

- Reboot: Restarts the computer and goes through the initialization process.
- Cold boot: Preserves configuration and network settings, but does not necessarily save cached disk data, which may result in data loss.
- Clean boot: Completely erases the computer memory, including all applications and data files (except those in the Flash File Store or any removable storage) and returns the computer to its factory default settings.

Reboot the Computer

If an application stops responding to the system, you may need to reboot the computer.

- Press the **Power** button and select **Reboot** from the menu.

Cold Boot the Computer

If the computer seems to be locked up, cold boot the computer to reset the operating system.

- Press the **Reset** button on the top of the computer. When the cold boot is complete, the Home screen appears.

Clean Boot the Computer

If you need to reset the computer to its factory default settings, you can clean boot the computer. Because clean booting can result in data loss, use this method only if all other recovery methods have failed.

⚠️ **Caution: A clean boot erases the memory in the mobile computer, including all applications and data files, with the exception of those found in the Flash File Store or any removable storage.**

1 Press and hold the **Power** button until the message, "Release IO Button" appears.

   For the next part of this procedure, you need to press two buttons. We use **P1** and **P2**, but you can press any two buttons.

2 Release the **Power** button. A caution message appears letting you know that you are about to reset the computer.

3 Press **P1**. This button is the "first key."

   A message appears prompting you to enter a "second key."

4 Press **P2**.

5 Press **P1**, and then press **P2** again. The message, "Cleanboot Confirmed" appears. When the clean boot is complete, the EULA screen appears.

6 Accept the EULA. The computer reboots and the Home screen appears.

Clean the Computer

Clean the computer as often as needed. Use one of these recommended cleaning agents: Acetic acid (10% in water), Ethyl alcohol (10% in water), mild soap solutions, or 5% to no more than 10% bleach or sodium hypochlorite with water.

1 Press the **Power** button to suspend the computer.

2 Dip a clean cloth towel in the cleaning agent and wring out the excess.

3 Wipe the touch screen. Do not allow any abrasive material to touch the surface.

4 Wipe off the exterior of the computer.

5 Wipe dry.

A
Specifications

Physical and Environmental Specifications

This section lists the physical and environmental specifications for the CV31.

Physical Dimensions

Specification	Measure
Height	17.65 cm (6.95 in)
Width	18.92 cm (7.45 in)
Depth	5.46 cm (2.15 in)
Weight	1.6 kg (3.5 lb)

Power and Electrical Specifications

Specification	Measure
Electrical rating	12 VDC ±1.5 V input voltage range
	9-36 VDC input voltage range
Backup battery	Rechargeable lithium-ion battery

Temperature and Humidity Specifications

Specification	Measure
Operating temperature	-20 °C to 50 °C (-4 °F to 122 °F)
Operating temperature with optional heater on	-30 °C to 50 °C (-22 °F to 122 °F)
Backup battery charging temperature (battery cell)	0 °C to 45 °C (32 °F to 113 °F)
Storage temperature	-20 °C to 50 °C (-4 °F to 122 °F) For maximum battery life, store at 23 °C (73 °F) at 50% charge.
Relative humidity	5% to 95% non-condensing

Screen Specifications

- 163 mm (6.4 in) color VGA
- 640 x 480 pixels, supports 16 bpp color depth (65,536 colors)
- LCD capable of both portrait and landscape operation
- LED backlight
- Ambient light sensor

Keyboard Options

- Windows DE-15S Backlit QWERTY Keyboard (P/N 340-054-003)
- 3270 DE-15S Backlit QWERTY Keyboard (P/N 340-054-001)
- VT-220 DE-15S Backlit QWERTY Keyboard (P/N 340-054-004)
- 5250 Extreme Temp QWERTY Keyboard (P/N 340-054-102)

Bar Code Symbologies

- Australia Post*
- Aztec*
- BPO (British Post 4-state)*
- Canada Post
- Codabar
- Codablock A
- Codablock F
- Code 11
- Code 39
- Code 93
- Code 128/GS1-128
- DataMatrix*
- Dutch Post*
- EAN/UPC
- GS1 Composite*
- GS1 DataBar Expanded
- GS1 DataBar Limited
- GS1 DataBar Omni-Directional
- HanXin
- Infomail
- Intelligent Mail
- Interleaved 2 of 5

- JapanPost*
- Matrix 2 of 5
- Maxicode*
- Micro PDF417
- MSI
- PDF417*
- Planet*
- Plessey
- Postnet*
- QR Code*
- Standard 2 of 5
- SwedenPost
- Telepen
- TLC 39

* These symbologies are only available if your CV31 is connected to an Intermec extended range area imager or a near-far area imager.

Pin Assignments

The CV31 has these ports and connectors:

- COM1
- COM3
- USB
- Power

COM 1 and COM 3 Ports

By default, Pin 9 is configured to provide + 5 V for an external bar code scanner.
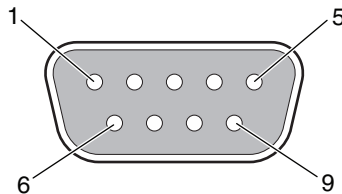
COM 1 and COM 3 Port Pin Assignments

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)
9	Power Out	5 +/- 10% @ 1A
Shell	C-GND	Chassis ground

USB Port

The USB port on the CV31 is labeled AUX.
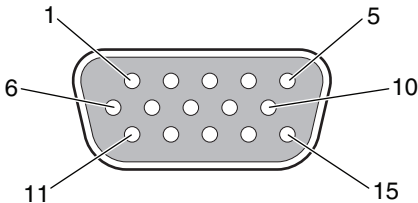
USB Port Pin Assignments

Pin	Signal	Description
1	–	
2	–	
3	–	
4	–	
5	–	
6	USB1_D-	USB client data signal
7	USB1_D+	USB client data signal

USB Port Pin Assignments (continued)

Pin	Signal	Description
8	USB1_VBUS	USB host 1 (5 V output power)
9	GND	Common ground
10	GND11USB2_VBUS	USB host 2 (5 V output power)
11	GND	Common ground
12	USB2_D-	USB client data signal
13	USB2_D+	USB client data signal
14	GND	Common ground
15	GND	Common ground

Power Connector

To connect to a regulated external AC/DC or DC/DC supply, apply power to DC+. To connect directly to an unregulated 9 to 36 VDC source, connect power to V In+.
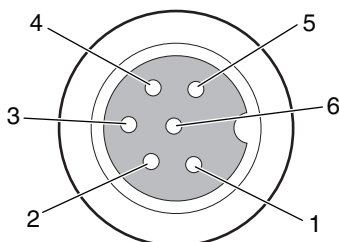
Power Connector Pin Assignments

Pin	Signal	Description
1	GND	Chassis ground
2	DC+	12 V regulated DC+ input
3	VIn-	DC- power return
4	–	Not connected
5	Ignition	Ignition sensing input
6	VIn+	9 to 36 V non-regulated DC+ input

Headset Jack

The headset jack supports headsets with a standard TRRS (Tip, Ring, Ring, Sleeve) configuration where:

- T: Left Audio
- R: Right Audio
- R: Mic
- S: Ground

B
Device Settings

This section lists all default settings for computer-specific features such as the backlight and power management.

Default Configuration

If you restore the computer to factory default settings, the computer sets the configuration commands to these values.

Default Configuration

Data Collection Settings

Data Collection Setting	Default Value
Tethered-Configure on connect	Overwrite with computer settings
BT-Configure on Connect	Overwrite with computer settings
Enable Scanner Port	Enable
Tethered Scanner (COM1) Baud Rate	57600
Tethered Scanner (COM3) Baud Rate	9600

Symbology Settings

Symbology	Default Value
Australian Post	Disable
Aztec	Disable
BPO	Disable
CanadaPost	Disable
Codabar	Disable
Codablock A	Disable
Codablock F	Disable
Code 11	Disable
Code 39	Enable
Code 93	Disable
Code 128/GS1-128	Enable
DataMatrix	Enable
DutchPost	Disable
EAN/UPC	Enable UPC A, UPC E, EAN 8, EAN 13
GS1 Composite	Disable

Symbology Settings (continued)

Symbology	Default Value
GS1 DataBar Expanded	Disable
GS1 DataBar Limited	Disable
GS1 DataBar Omni-Directional	Disable
HanXin	Disable
Infomail	Disable
Interleaved 2 of 5	Disable
JapanPost	Disable
KoreanPost	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
SwedenPost	Disable
Telepen	Disable
TLC 39	Disable

Symbology Option Settings

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

Scanner Settings

Scanner Setting	Default Value
Tethered Scanner (COM1) Scanner Model	SR Intermec Scanner
Tethered Scanner (COM3) Scanner Model	ASCII
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	1
Energy Saver Mode	Disable

Imager Settings

Imager Setting	Default Value
Predefined Modes	1D and 2D Standard
Sticky Aimer LED Duration	0
Imager Decode Mode	2D Imager
Lighting Mode	Illumination LED Priority
Lighting Goal	40
Top Position	0
Bottom Position	479
Illumination Level	100
Initial 1D Search Area	Smart Raster
Enable Direct Product Marking (DPM) Mode	Enable
Enable DPM Automatic Exposure Control (AEC)	Enable
AEC area	Small (center)
Damaged 1D Codes	Disable
Image File Location	\My Documents\MDI

Imager Settings (continued)

Imager Setting	Default Value
Folder Memory Limit (MBytes)	13
Enable Tagging Location Data	Disable
Output Compression	Bitmap
Output Compression Quality	0
Edge Enhancement	None
Noise Reduction	0
Subsampling	None
Image Rotation	None
Image Lighting Correction	Disable

Decode Security Settings

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

RFID

RFID Settings

RFID Setting	Default Value
Enable RFID Service	Enable

Application Connection Settings

Application Connection Setting	Default Value
Allow External BRI Connections	Enable
BRI TCP Port	2189
Enable Logging	Disable

Reader 1 Settings

Reader 1 Setting	Default Value
Enable Reader	Off
Connected	Off
Reader Model	IV7
Device Address	000000000000

RFID Module Settings

RFID Module Setting	Default Value
Tag Type	UHF EPC Class 1 Gen2
Dense Reader Mode	Off
LBT Channel	5
LBT Scan Enable	On
Field Separator	Space ( )
ID Report	Off
No Tag Report	Off
Report Timeout	0 ms
Timeout Mode	Off
ID Timeout	100 ms
Antenna Timeout	50 ms
ID Tries	1
Antenna Tries	3
Read Tries	3
Write Tries	3
Initialization Tries	1
Lock Tries	3
Select Tries	1
Unselect Tries	1
Initial Q	4
Field Strength dB	30
Session	2
Enable Antenna Port 1	On
Enable Antenna Port 2	Off

RFID Module Settings (continued)

RFID Module Setting	Default Value
Enable Antenna Port 3	Off
Enable Antenna Port 4	Off
Bluetooth Power Off	300 s

Communications

Communications Settings

Communications Setting	Default Value
Device Name	CV31xxxxxxxxxxx
UDP Plus Activate	Disabled

802.11 Radio Settings

802.11 Radio Setting	Default Value
Radio Enabled	Off
Security Choice	Funk Security
Radio Measurement	300
Radio Bands	b/g (2.4 GHz)
Allow Security Changes	Enabled

Funk Security Settings

Funk Security Setting	Default Value
Active Profile	Profile 1
Hide Password Text	Enabled
Profile Label	Profile_1
Network Type	Infrastructure
Channel	3
SSID	INTERMEC
Power Mode	Diabled(CAM)
8021x	None
Association	Open
Encryption	None

Funk Security Settings (continued)

Funk Security Setting	Default Value
Pre-Shared Key	Null
Transmit Key	Key1
Prompt for Credentials	Disabled
User Name	anonymous
User Password	anonymous
Inner Authentication - TTLS	MS-Chapv2
Inner EAP	EAP/MD5
Inner Authentication - PEAP	EAP/MS-Chapv2
InnerAuthenticationFAST	EAP/Token Card
Mixed Cell	On
CCKM	Off
Automatic PAC Provisioning	On
Provisioning PAC Prompt	Off
Reprovisioning PAC Prompt	Off
Authenticate PAC Provisioning Server (by certificate)	Optional
Logging	Off

Ethernet Adapter Settings

IP Settings	Default Value
Current Device IP Address	0.0.0.0
DHCP	Enable
DHCP Client Identifier	Null
IP Address	Null
Subnet Mask	255.0.0.0
Default Router	Null
Primary DNS	Null
Secondary DNS	Null
Primary WINS	Null
Secondary WINS	Null

Bluetooth Settings

Bluetooth Setting	Default Value
Power	On
Discoverable	Disable
Connectable	Enable

Device Settings

Device Settings

Device Setting	Default Value
Force external antenna	Disabled
Disable charging during startup	Disabled
Date	Null
Time	Null
Enable ActiveSync	Enabled
Enable SD Card	Enabled
Enable USB External Drive	Enabled
Enable All Image Capture	Enabled
Enable a URL barcode to launch browser	Disabled
Beeper and Voice	Medium
Screen Taps	Off
Good Read	One beep

Power Management Settings

Power Management Setting	Default Value
Enable Power Button Screen	On
Screen Options Displayed	Suspend, Reboot, Shutdown
Screen Timeout (Seconds)	5
Power Button Behavior	Suspend
External Power, Screen Turns Off After (minutes)	1

Screen Settings

Screen Setting	Default Value
Screen Rotation	Rotate left 90 degrees
Screen blanking on motion	Enabled

Core Messaging Service

Core Messaging Service Settings

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

Device Monitor

Device Monitor Settings

Device Monitor Setting	Default Value
Enable Device Health Data Collection	On
Enable Device Health Application	On
Enable Blue Light (LED)	Off for Ready-to-Work
Set Rule File Location	\SmartSystems\HealthRules.txt
Asset Message Send Period	0
System Device Health (Seconds)	90
Network Device Health (Seconds)	45
Printer Device Health (Seconds)	300
Directory	\SmartSystems\ScreenCapture
Screen Captures Allowed	3
Enable Wipe	Disabled
Interval (in Days)	3

Virtual Wedge

Virtual Wedge Settings

Virtual Wedge Setting	Default Value
Enable Virtual Wedge	Enabled
Virtual Wedge Method	Adapt to Application
Bar Code Scanner Grid	Null
Label Encoding (Code Page)	0-OS ANSI Default
Magstripe Reader Grid	Null
Read Command	READ REPORT = EVENT
User-Defined Read Command	READ
Date (YYYY-MM-DD)	Disabled
Time (HH_MM_SS)	Disabled
Tag Separator	SP (space)
User-Defined Tag Separator	Null
End of Message	CRLF (Return-Line Feed)
User-Defined End of Message	Null
RFID Reader Grid	Null
OEM Scanner Grid	Null

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Thor CV31 Vehicle-Mount Computer User Manual

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