

CN50

Mobile Computer

User's Manual



Intermec[®]

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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 warnings, cautions, and notes that are in this document.



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



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



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

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at www.intermec.com and click **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 web site at www.intermec.com to download our current manuals (in PDF). To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

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.

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 web site, click **About Us > Contact Us**.

Service Location Support

For the most current listing of service locations, go to www.intermec.com and click **Support > Returns and Repairs > Repair Locations**.

For technical support in South Korea, use the after service locations listed below:

AWOO Systems

102-1304 SK Ventium

522 Dangjung-dong

Gunpo-si, Gyeonggi-do Korea, South 435-776

Contact: Mr. Sinbum Kang

Telephone: +82-31-436-1191

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Who Should Read This Manual

This manual is for the person who is responsible for installing, configuring, and maintaining the CN50 Mobile Computer.

This manual provides you with information about the features of the CN50, including how to install, configure, operate, maintain, and troubleshoot it.

Before you work with the CN50, you should be familiar with your network and general networking terms, such as IP address.

Related Documents

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

To download documents

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

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

Patent Information

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

4953113; 4961043; 4970379; 4988852; 5019699; 5021642; 5038024; 5081343; 5095197; 5144119; 5144121; 5182441; 5187355; 5187356; 5195183; 5216233; 5216550; 5218191; 5227614; 5233172; 5241488; 5243602; 5258606; 5278487; 5288985; 5308966; 5322991; 5331136; 5331580; 5342210; 5349678; 5359185; 5371858; 5373458; 5389770; 5397885; 5410141; 5414251; 5416463; 5442167; 5464972; 5468947; 5468950; 5477044; 5486689; 5488575; 5500516; 5502297; 5504367; 5508599; 5514858; 5530619; 5534684; 5536924; 5539191; 5541419; 5548108; 5550362; 5550364; 5565669; 5567925; 5568645; 5572007; 5576529; 5592512; 5594230; 5598007; 5608578; 5616909; 5619027; 5627360; 5640001; 5657317; 5659431; 5671436; 5672860; 5684290; 5719678; 5729003; 5742041; 5761219; 5764798; 5777308; 5777309; 5777310; 5786583; 5793604; 5798509; 5798513; 5804805; 5805807; 5811776; 5811777; 5818027; 5821523; 5828052; 5831819; 5834749; 5834753; 5837987; 5841121; 5842070; 5844222; 5854478; 5862267; 5869840; 5873070; 5877486; 5878395; 5883492; 5883493; 5886338; 5889386; 5892971; 5895906; 5898162; 5902987; 5902988; 5912452; 5923022; 5936224; 5949056; 5969321; 5969326; 5969328; 5979768; 5986435; 5987192; 5987499; 5992750; 6003775; 6012640; 6016960; 6018597; 6024289; 6034379; 6036093; 6039252; 6064763; 6075340; 6095422; 6097839; 6102289; 6102295; 6109528; 6119941; 6128414; 6138915; 6149061; 6149063; 6152370; 6155490; 6158661; 6164542; 6164545; 6173893; 6195053; 6234393; 6234395; 6244512; 6249008; 6328214; 6330975; 6345765; 6356949; 6367699; 6375075; 6375076; 6375344; 6431451; 6435411; 6484944; 6488209; 6497368; 6532152; 6538413; 6539422; 6621942; 6641046; 6681994; 6687403; 6688523; 6732930; 6859190; 6889903; 6967280; 7027037; 7035466; 7090137; 7121467.

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

Before You Begin

1

Using the Computer

This chapter introduces the CN50 Mobile Computer with Windows® Mobile® 6.1 and contains these topics:

- **Introducing the CN50 Mobile Computer**
- **Using the Battery**
- **Using the Keypad**
- **Adjusting the Volume of the Speaker**
- **Using the Touch Screen**
- **Understanding the Status LEDs**
- **Using the Imager**
- **Using the Color Camera**
- **Using a microSD Card**
- **Enabling the Integrated GPS on the CN50**

Introducing the CN50 Mobile Computer

The Intermec CN50 Mobile Computer is a small, sleek, and stylish mobile computer built on the Microsoft® Windows® Mobile 6.1 operating system. The CN50 uses dual ARM processors to provide high throughput and is the only mobile computer with the latest High Speed Uplink Packet Access (HSUPA). The CN50 is also the only mobile computer that can be reprovisioned from a CDMA to a GSM/UMTS network.



CN50 Mobile Computer

Here are more great features of the CN50:

- A digital compass to enhance GPS navigation and improve geotagging of captured images.
- An accelerometer that can automatically rotate the display between portrait, landscape and upside-down viewing.
- The highest quality color camera in a mobile computer.
- An area imager that supports reading bar codes, signature capture, and Enhanced Mobile Document Imaging (eMDI).



The CN50 Mobile Computer with an IEEE 802.11b/g radio installed is Wi-Fi® certified for interoperability with other 802.11b/g wireless LAN devices.

Use this manual to understand how to use the CN50 and other features and options available on it. For information about Windows Mobile 6.1 applications installed on the CN50, refer to the online help.

Using the Battery

The CN50 uses an AB24 standard or AB25 extended battery as its main power source. The standard battery has a 7.2 Watt hour capacity, and the extended battery has a 14.4 Watt hour capacity. Several factors determine the life of your battery, such as extreme temperatures, input devices, and your usage.

You must fully charge the battery before you can use the CN50. When you change the battery, an internal super capacitor maintains your status, memory, and real-time clock for approximately 5 minutes.



The battery used in this device may present a fire or chemical burn hazard if it is mistreated. Do not disassemble it, heat it above 100° C (212° F) or incinerate it. Dispose of used batteries promptly. Keep away from children.



If you fail to replace the low battery immediately, you may lose important data or applications.



Note: If the CN50 is not using external power and you remove the battery pack, the CN50 goes into Suspend mode.

For replacement batteries, contact your Intermec representative.

Charging the Battery

Make sure you fully charge the AB24 or AB25 battery before you use your CN50. You can charge the battery before or after you install it in the CN50. A fully discharged battery charges in approximately 4 (AB24) to 6 (AB25) hours.

To charge the battery

- Insert up to four batteries into the AC21 quad battery charger.

- Install the battery in the CN50 and insert the CN50 into the AD23 charge-only multidock or AD24 Ethernet multidock.
- Attach an AE37 AC adapter or AE36 vehicle battery adapter.

Use the next table to understand how long it takes to charge your batteries in each of the CN50 charger or dock accessories.



Charging Times for CN50 Batteries

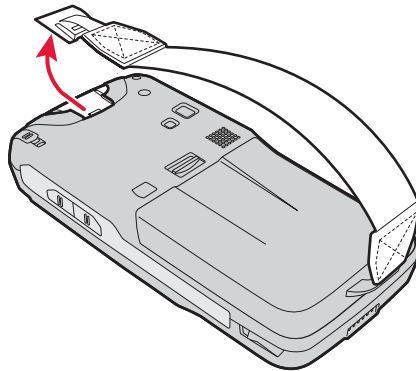
CN50 Charging Accessory	AB24 Charging Time	AB25 Charging Time
AC21 quad battery charger	4 hours	6 hours
AD23 charge-only multidock	4 hours	6 hours
AD24 Ethernet multidock	4 hours	6 hours
AE36 Vehicle battery adapter	4 hours	6 hours
AE37 AC adapter	4 hours	6 hours

Removing and Installing the Battery

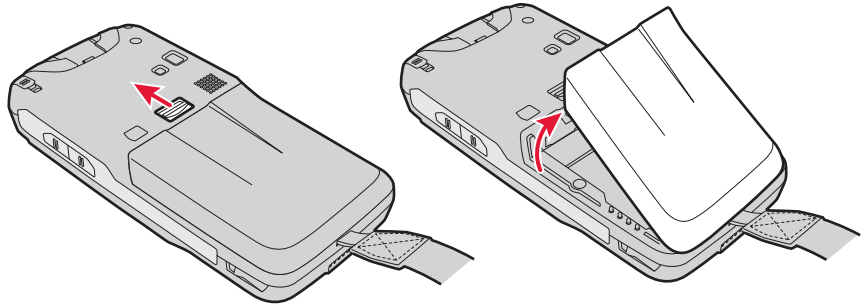
To maximize the time allowed to replace the main battery pack, put the CN50 in suspend mode before removing the battery pack.

To remove and install the battery

- 1 Press and hold  for about 2 seconds. When you release , the CN50 goes into suspend mode.
- 2 If necessary, disconnect the handstrap from the top of the CN50.



- 3 Push forward on the battery release tab until the battery releases, and then lift it away from the CN50.



- 4 Insert a fully charged battery into the CN50, and press down on the battery until it clicks into place.
- 5 If necessary, replace the handstrap.

Maximizing Battery Life

Batteries are chemical devices. If the batteries are left sitting on a shelf for long periods of time outside the CN50, the batteries slowly discharge, eventually to zero if left uncharged. The battery chemistry resists normal degradation if you store the battery in a charger as opposed to leaving the battery in a discharged state. See the following table for tips to maximize the life of your battery.

Battery Conservation Tips

When You Want To:	Do This to Save Battery Power:
Operate the CN50 and the Low Battery status icon appears or the Battery light comes on.	Press ⏻ to turn off the CN50. Remove the battery and insert another fully charged battery within 5 minutes or you may lose data. Or, you can connect the CN50 to an external power source.
Stop using the CN50 for 5 minutes or longer.	Make sure the low battery icon is not on the screen and that the Battery light is not turned on. Press ⏻ to turn off the CN50.






Battery Conservation Tips (continued)

When You Want To:	Do This to Save Battery Power:
Store the CN50 for more than a day.	If you are storing the CN50 for a few days, like over the weekend, install the charged battery or attach the CN50 to a power source. If you are storing the CN50 for longer, remove and charge the battery, then store both the battery and the CN50 in a cool location. If the battery in storage is not used in several months, you should recharge the battery to keep it at its performance peak.
Store the battery outside the CN50.	Store the batteries in a charger.

Checking the Battery Status

The easiest way to check the status of your battery is to look at the battery icon on the status bar of your CN50.

Battery Icon Status

Icon	Status
	Battery is fully charged.
	Battery has a medium charge. You should be able to work for several more hours before changing batteries.
	Battery is low. You need to replace the battery soon.
	Battery is critically low. You need to replace the battery now.
	Battery is charging.

The Battery Status LED below your CN50 display indicates the charging status of your battery.

Understanding the Battery Status LED

LED State	Description
Steady green when the CN50 is connected to external power	The battery is more than 97% charged.
Blinking red	The battery is low. CN50 goes into Suspend mode. Charge or replace the battery.
Steady red when the CN50 is connected to external power	The battery is charging.
Steady red when the CN50 is not connected to external power	The software is not working properly.
Steady amber	The battery is missing or is unable to charge because the temperature is outside of the charging range.
Off	The CN50 is not on external power and the battery is operating normally.

Using the Keypad

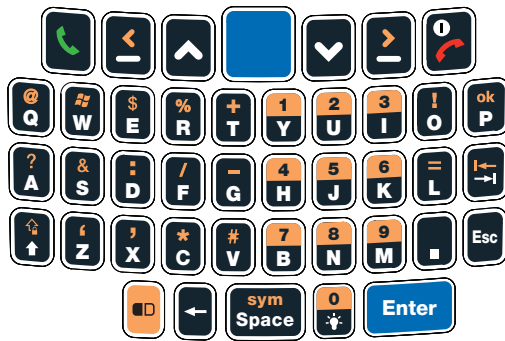
Use the following sections to understand how to use the keypad. For information on remapping the keypad, you can download the Device IDL Resource Kit from the Intermec web site at www.intermec.com/idl.

The CN50 comes with a numeric keypad or a QWERTY keypad. The QWERTY keypad is designed for applications that require primary input of alphabetic data. This keypad also provides special characters, numbers, symbols, and functions by pressing color-coded key sequences.

The numeric keypad is for applications that require mainly numeric data. This keypad also lets you enter special characters, including the alphabet, by pressing color-coded key sequences.





CN50 Numeric Keypad


















CN50 QWERTY Keypad

Using the Color-Coded Keys

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

There are two color-coded modifier keys on the numeric keypad: the orange  key and the green  key. There is one orange  color-coded modifier key on the QWERTY keypad.







Using 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).	On the CN50 QWERTY keypad, press  and then  to select the  key.
Use a green 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).	On the CN50 numeric keypad, press  and then  to select the  function.
Lock the orange or green key to stay on.	 or  once.	On the CN50 numeric keypad, press  once. The green LED turns on and stays on.
Unlock the green or orange key.	 or  once.	Press  or  once to unlock the key. The LED turns off.





Capitalizing Characters

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



To capitalize a single character

- On the QWERTY keypad, press the  key, and then the  key to select the **Shift** function. Press the  key, and the character.
- On the numeric keypad, press the  key, and then the  key. Select the key with the letter you want to capitalize. Press  again to return to lowercase letters.

To enable Caps Lock


- On the QWERTY keypad, press , then the **up arrow** key. Press  again to disable the Caps Lock.
- On the numeric keypad, press  .

To disable Caps Lock


- On the QWERTY keypad, press the  key again.
- On the numeric keypad, press  again.

For information on how to enter specific characters with keystrokes, see Appendix C, “[Keypads and Keystrokes](#)” on page 73.






Using the Power Button

When you press the **Power** button () , you put the CN50 into suspend mode. In this lower power mode, the CN50 continues to supply power to all memory, but turns off power to most hardware such as the display. This power-saving feature is designed to prolong battery life.

Entering Letters With the Numeric Keypad

To enter letters on the numeric keypad, you need to press the  key and the number key as many times as necessary to access the letter you need since each number key has one to four letters or functions.

For example, to type a lowercase z

- Press     .

Configuring the Backlight Settings

By default, the CN50 goes into Screen Off mode when there is no activity on the computer. Screen Off mode turns off the backlight and display. Press a key or tap the screen to resume activity.

To configure the backlight

- 1 Tap **Start** > **Settings** > the **System** tab > the **Backlight** icon > the **Battery Power** tab.
- 2 With **Turn off backlight if device is not used for** checked, select the timeout value (10 seconds, 30 seconds, or 1 to 5 minutes).

Adjusting the Volume of the Speaker

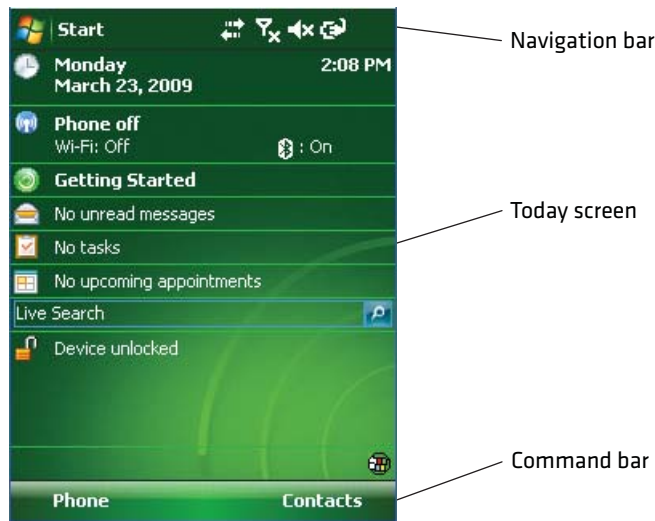
You can adjust the computer volume for your needs and your environment. The volume includes sounds you hear when you tap the screen or scan bar codes with a scanner. You can set the volume to off, very low, low, medium, high, and very high (default).

To adjust the volume of the speaker with the Volume icon

- 1 Tap the Volume (🔊) icon at the top of the screen.
- 2 Use your stylus to adjust the volume slider.

Using the Touch Screen

The CN50 has a 240 x 320 pixel color touch screen display. The Windows Mobile 6.1 start screen has three distinct areas: the navigation bar, today screen, and command bar.



Windows Mobile 6.1 Start Screen

Using the Stylus

Your computer has a stylus for selecting items and entering information on the touch screen.





Functions You Can Perform With the Stylus

Action	Description
Tap	Touch the screen once with the stylus to select options, open or close applications, or launch menus from the Command bar.
Drag	Hold the stylus on the screen and drag across the screen to select text and images.
Tap and hold	Tap and hold the stylus 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.

Understanding the Screen Icons

Use the screen icons on the navigation bar and the command bar to see the network connection status and other system information. For information about the battery icons, see [“Checking the Battery Status” on page 6](#). Some standard Microsoft icons are included in this table.

Screen Icons

Icon	Description
	The volume is turned off. To turn the volume back on, tap this icon and choose your setting.
	The computer is connected to the network.
	The computer is not connected to the network.
	The 802.11b/g radio is connected to the wireless network.

Aligning the Touch Screen

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

To calibrate the touch screen

- 1 Tap **Start** > **Settings** > the **Systems** tab > **Screen**.



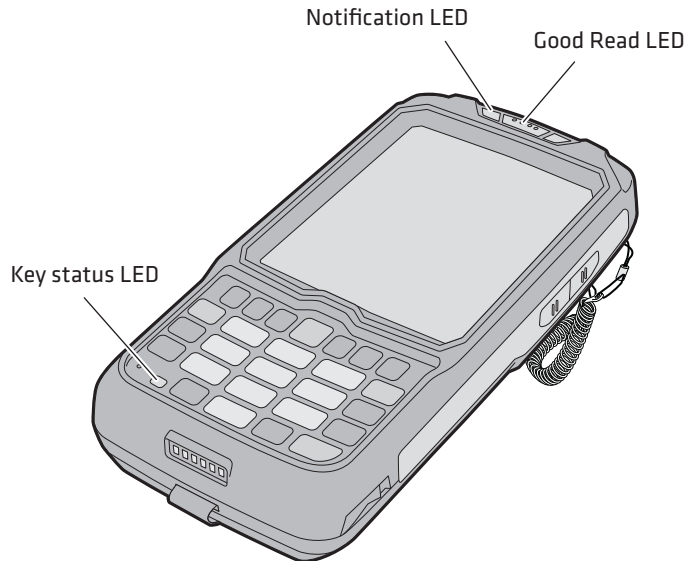
Note: If the touch screen is so out of alignment that you cannot open the **Start** menu, you can try to align the screen menu using the keypad. For help, see the next procedure.

- 2 Tap **Align Screen** and follow the instructions to align the screen.
- 3 Click **ok**.

If you are unable to align the touch screen, you may need to cold boot the CN50. For help, see [“Cold Booting the CN50” on page 58](#).

Understanding the Status LEDs

The CN50 has three status LEDs.



Status LEDs

The next table describes the notification LED, good read LED, and key status LED. For information about the battery status LED, see [“Understanding the Battery Status LED” on page 7](#).

Understanding the Status LEDs

LED	Color	Description
Notification	Orange	The CN50 is notifying you of a pending alarm or message.
Good Read	Green	The CN50 has successfully decoded a bar code.
Key Status	Green	Caps Lock is enabled if you have a QWERTY keypad. Green function keys are enabled if you have a numeric keypad.
	Amber	Orange function keys are enabled.

Using the Imager

The CN50 contains an internal imager that enables you to do much more than read bar codes. You can also use the imager to perform signature capture and document capture as part of your business application. The next few sections explain how to configure and use the imager and provide information on using signature capture and document capture.

Configuring the Imager

The CN50 ships with an internal imager to read and enter bar code data. By default, these bar code symbologies are enabled on the CN50:

- Code 39
- Code 128/GS1-128
- DataMatrix
- PDF417
- EAN/UPC

If you are using bar code labels that are encoded in a different symbology, you need to enable the symbology on the CN50. To easily enable or disable symbologies, read one of the bar codes in the table called “**Symbology Bar Codes**” on page 81.

You can use EasySet to create configuration bar codes specific to your system. You can download a free copy of EasySet from the CN50 page on the Intermec web site at www.intermec.com.


To develop an application you can use to configure the imager, use the Data Collection Resource Kit. The resource kit is part of the Intermec Developer Library (IDL) and can be downloaded from the Intermec web site at www.intermec.com/idl.

Use the next section to understand how to read a bar code with the imager.

Reading Bar Codes With the Imager

Your CN50 comes with an area imager. The area imager is equipped with a laser pointer to help you aim at bar codes, allow you to read 2D bar code symbologies, and support omni-directional (360°) scanning. Omni-directional scanning lets you position the CN50 in any orientation to read a bar code label.

To read a bar code

- 1** Press  to turn on the CN50.
- 2** Point the scanner window at the bar code label, and hold the CN50 steady a few inches from the label.
- 3** Press the **Scan** button. The laser pointer and illumination beam and frame appear.



- 4 Use the laser pointer as a guide and aim toward the middle of the bar code. Make sure that the illumination frame covers the bar code you are trying to decode.

When the CN50 successfully reads a bar code label, you hear a high beep, and the Good Read LED turns on briefly.

- 5 Release the **Scan** button.

Capturing a Signature

Signature capture is a process in which the imager in the Intermec computer takes a picture of a specified area, usually the signature line on a receipt or other printed form. The capture area is usually defined in relation to the location of a nearby bar code. The capture process produces an image file (either .bmp or .jpg format) which you can use in your back-office operations. For example, you could shorten order processing time by sending order confirmations wirelessly back to the office. For more information on using signature capture, download the Data Collection Resource Kit which is part of the Intermec Developer Library (IDL), from the Intermec web site at www.intermec.com/idl.

Capturing a Document

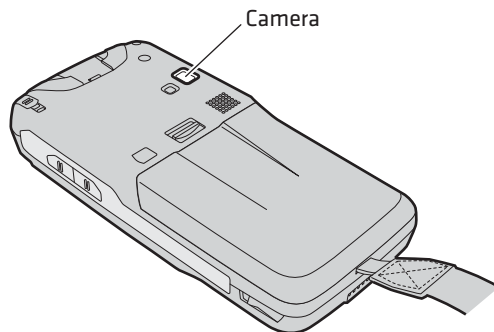
Intermec Enhanced Mobile Document Imaging (eMDI) is an image capture application that enables users to capture document images while in the field. Using the imager on your CN50, eMDI allows you to convert paper documents into document images that are saved on your mobile computer.

eMDI streamlines back-office operation and reduces data entry time because document images can be transmitted from the field to backoffice applications over wireless networks. With this, customer service and other staff gain real-time access to document images, via their enterprise systems, which can be used to answer customer queries, issue invoices, and update records.

You can download a demo version of eMDI from the CN50 page on the Intermec web site at www.intermec.com. To get the full version of eMDI, you need to purchase the eMDI Client Software License (P/N 454-025-001). For more information, contact your local Intermec representative

Using the Color Camera

The high quality color camera with flash is a standard feature of the CN50. You can take photos in high, normal, or low quality, with image sizes up to 640x480 pixels. When you take a picture, the images are saved as .img files and stored in the /My Documents/My Pictures folder.



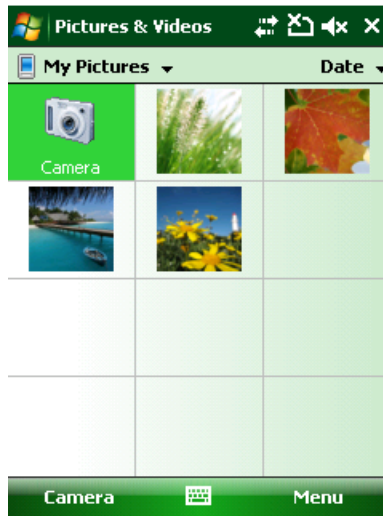
CN50 Color Camera

You can use the Pictures & Videos application on the CN50 to take, view, and edit pictures or record and launch video clips stored on the CN50 or a storage card. You can also send pictures and video clips to others or save an image as the background on the Today screen.

After you have opened up the camera, you can configure camera options by tapping **Menu > Options**.

To take a picture with the camera

- 1 Tap **Start > Programs > Pictures & Videos**.
- 2 Tap the **Camera** icon in the grid, or tap **Camera** in the taskbar.



- 3 Using the screen as a viewfinder, move the camera until you have the image you want to capture.
- 4 Press **Enter** to save the image. If you select to save your pictures to Main memory, they are saved to permanent storage on the CN50.

To set options for saving pictures

- 1 From the Pictures & Videos application, tap **Menu > Options**.
- 2 Set these options:
 - (Optional) A filename prefix. The default filename prefix is .img.
 - Where you want to save picture files

- The compression level.

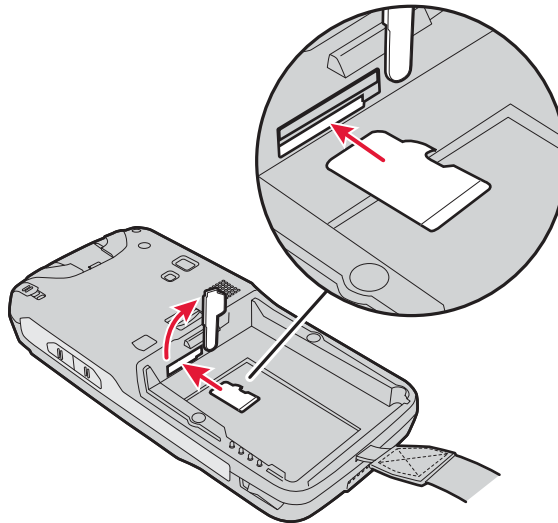
3 Click **ok**.

Using a microSD Card

You can use a micro Secure Digital (SD) card to increase file storage and install software. The CN50 supports an optional 32 GB maximum capacity microSD™. The microSD card slot is located in the battery compartment.

To install a microSD card

- 1 Remove the battery. For help, see [“Removing and Installing the Battery” on page 4](#).
- 2 Swing the card access door clockwise to expose the SIM card and microSD card slots.



- 3 Insert the microSD card in the bottom slot and push in until it clicks into place.
- 4 Install the battery.
- 5 Press **⓪** to turn on the CN50:
 - You should be able to navigate to the SDMMC Disk folder and see the contents of the microSD card.

- If the microSD card is bootable, your CN50 boots from the card.
- If the microSD card contains operating system upgrade files, the upgrade process automatically starts. For more information, see **“Upgrading the System Software” on page 46.**

For troubleshooting information, see **“Troubleshooting the CN50” on page 52.**

Enabling the Integrated GPS on the CN50

The CN50 comes equipped with an integrated Global Positioning System (GPS) receiver, it can deliver standards-based National Marine Electronics Association (NMEA) data strings to GPS applications. Intermec recommends that you use the GPS Intermediate Driver (GPSID) instead of directly accessing the GPS hardware. The GPSID is a Microsoft software component that interacts between applications and the GPS hardware.

Using the GPSID allows Intermec support for Extended Ephemeris, which enhances GPS performance by:

- reducing the amount of time it takes your GPS receiver to acquire a fix.
- eliminating the need to obtain precise satellite data information from the GPS satellites.

And, as a Microsoft software component, the GPSID also provides these benefits:

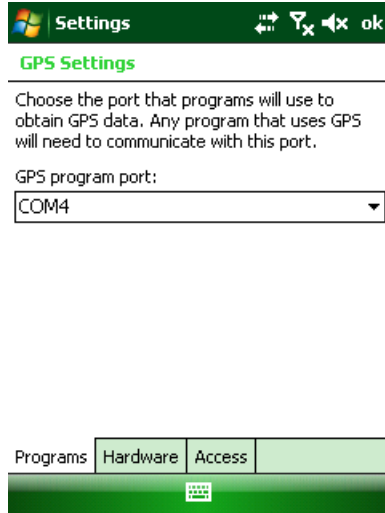
- Allows multiple applications to simultaneously access the GPS data stream.
- Provides access to GPS data without requiring applications to recognize and parse NMEA syntax.

Using the GPSID Installed on the CN50

To use the GPSID installed on your CN50, you need to configure the GPSID settings.

To configure your GPSID settings

- 1 Tap **Start** > **Settings** > the **System** tab.
- 2 Tap **External GPS**. The GPS Settings screen appears.



- 3 On the **Programs** tab, select the COM port that you want your programs to use to get GPS data from your CN50.

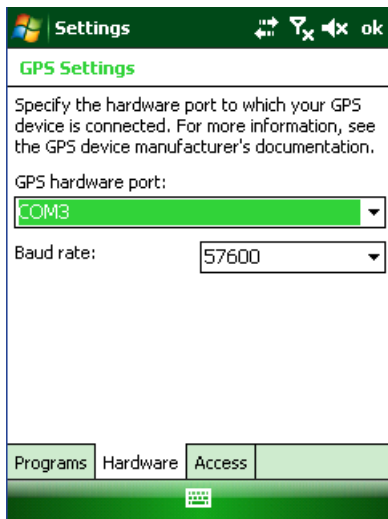


Note: COM1 and COM3 are reserved.

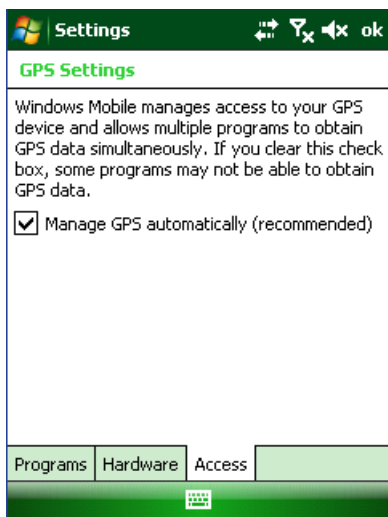
- 4 Tap the **Hardware** tab, and select these settings.

GPS hardware port: COM3

Baud rate: 57600



- 5 Tap the **Access** tab and select the **Manage GPS automatically** check box.



- 6 Tap **ok**.

Learning About Additional GPS Options for the CN50

Intermec provides enhanced feature support for the Extended Ephemeris data capability. For the latest Extended Ephemeris data files and other CN50 downloads, visit the CN50 downloads page on the Intermec web site at www.intermec.com. For more information about programming for Extended Ephemeris GPS, visit the Intermec Developer Library at www.intermec.com/idl.

2

Connecting and Configuring the CN50

Use this chapter to understand how to configure the CN50 to communicate in your network. This chapter contains these topics:

- **Connecting the CN50 to a PC**
- **Configuring the CN50 for Your Network**
- **Connecting the CN50 to Your Network**
- **Configuring the Phone**
- **Connecting to an ISP**
- **Connecting to a Network With a RAS Account**
- **Connecting to a Network with a VPN Server**

Connecting the CN50 to a PC

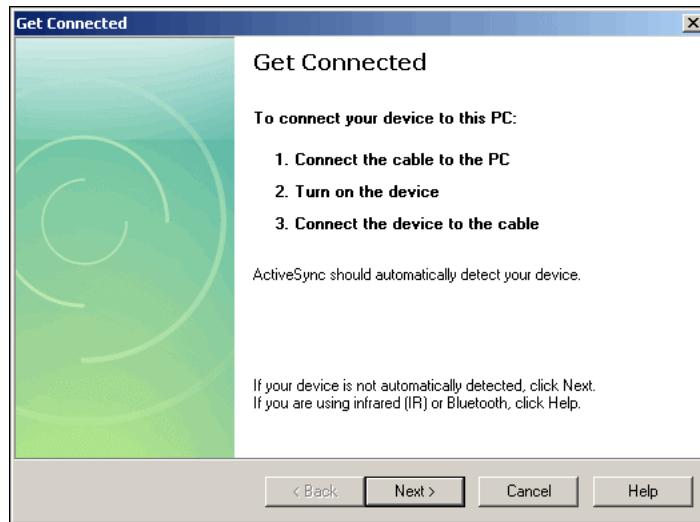
You can use Microsoft ActiveSync to establish a connection between your CN50 and PC. ActiveSync lets you transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync is a free application available from the Microsoft web site.

To establish an ActiveSync partnership between your CN50 and PC, you need to physically connect your CN50 to your PC using these accessories:

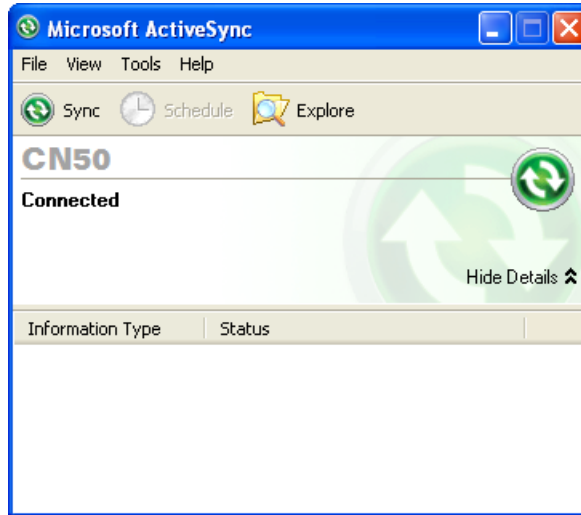
- CN50 AC adapter
- USB to mini-USB cable

To establish an ActiveSync partnership

- 1 Download ActiveSync from the Microsoft Windows Mobile CD and install ActiveSync on your PC. When installation is complete, the Get Connected dialog box appears.



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



Configuring the CN50 for Your Network

You have several options for configuring the CN50 to connect to your network:

- You can use the Scan-to-Connect utility, which is part of SmartSystems Foundation, to quickly provide the CN50 with the minimal information necessary to connect to a secure network. You can download SmartSystems Foundation and the Scan-to-Connect utility from www.intermec.com/SmartSystems.
- You can connect the CN50 to your PC using an ActiveSync connection and download the SOTI client. You can use the SOTI client to manage your CN50s with the MobiControl software application for device management and remote control. You can download a trial version of MobiControl from the Intermec web site. From www.intermec.com, select **Products > Applications and Software > Device and Data Management**.

- You can use Microsoft APIs and Development Tools for Windows Mobile 6. These tools are available from the Microsoft Developer's Network web site at <http://msdn.microsoft.com/en-us/default.aspx>.

Connecting the CN50 to Your Network

The CN50 is a versatile mobile computer that you can easily add to your wireless or wired data collection network. You can connect your CN50 using:

- 802.11b/g radio communications.
- Bluetooth communications.
- Ethernet communications
- USB communications.

Connecting the CN50 Using 802.11b/g 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.

Your CN50 has an 802.11b/g radio to transfer data using wireless communications. This section assumes that your wireless network is set up, including your access points.

To configure 802.11b/g radio parameters

- 1 Tap **Start** > **Settings** > the **Connections** tab.
- 2 Tap **Wi-Fi**. The Configure Wireless Network page appears.
- 3 In the **Network Name** field, type in the name of your network and then tap **Next**. The Configure Network Authentication page appears.
- 4 From the **Authentication** list, choose either Open, Shared, WPA, WPA-PSK, WPA2, or WPA-PSK.
 - If you choose **Open** or **Shared**, **Data Encryption** is automatically set to WEP and the key is automatically provided.

- If you choose **WPA** or **WPA2**, **Data Encryption** is automatically set to TKIP.
 - If you choose **WPA-PSK** or **WPA2-PSK**, **Data Encryption** is automatically set to TKIP and you need to enter a **Network key**.
- 5** Tap **Next**.
 - 6** For **EAP type**, select **PEAP** from the list and tap **Finish**. You return to the Configure Wireless Networks page.
 - 7** Tap **Connect**. The CN50 prompts you to enter this network information:
 - User name
 - Password
 - 8** Tap **OK**. Your device will connect to the network.
 - 9** Make sure that your CN50 is talking to the network and that the network can see your CN50.

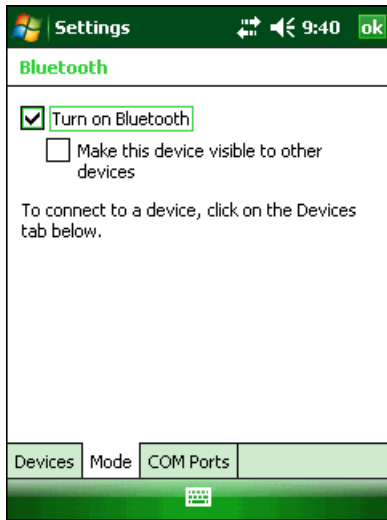
Connecting the CN50 Using Bluetooth Communications

Your CN50 is Bluetooth™-enabled, which lets you connect to other Bluetooth devices, such as printers.

You need to turn on the Bluetooth radio before you can discover and connect to other Bluetooth devices. By default, the radio is turned off.

To turn on the Bluetooth radio

- 1** Tap **Start** > **Settings** > the **Connections** tab > **Bluetooth** > the **Mode** tab.
- 2** Tap **Turn on Bluetooth**.



3 (Optional) If you want your CN50 to be visible to other Bluetooth devices, tap **Make this device visible to other devices**.

4 Click **ok**.

The Bluetooth radio maintains its current state through a warm or cold boot and maintains virtual COM ports. But, if you clean boot your CN50, you need to recreate pairings to devices.

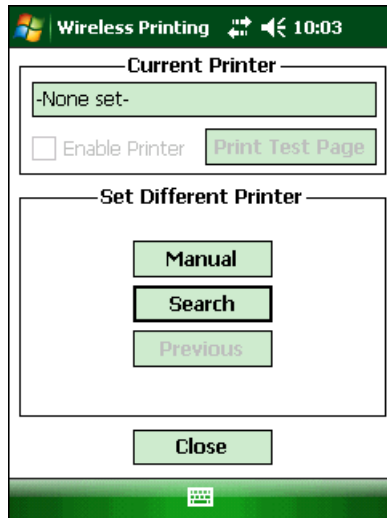
Connecting the CN50 to a Wireless Printer

To configure your CN50 for Bluetooth wireless printing, you need to:

- make sure Bluetooth power is on. For help, see the procedure in **“Connecting the CN50 Using Bluetooth Communications” on page 29**.
- create an application that opens the wireless printing COM port on your CN50. For help, see the Bluetooth Resource Kit, which is part of the Intermec Developer Library (IDL), available from the Intermec web site at www.intermec.com/idl.
- select the current wireless printer on the CN50. For help, see the next procedure.

To select the current wireless printer

- 1 Select **Start > Settings > the System tab > Wireless 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 the test page.



Note: You can also print wirelessly using Microsoft APIs with Bluetooth extensions for Winsock and Bluetooth virtual COM ports. For help, see the IDL, available from the Intermec web site at www.intermec.com/idl.

Connecting the CN50 Using Ethernet Communications

You connect your CN50 to your Ethernet network with an ethernet cable and an AD24 ethernet multidock.

To use your CN50 in an Ethernet network

- 1 Connect your CN50 to an ethernet network with an AD24. Ethernet communications is automatically enabled on your CN50.
- 2 Make sure that your CN50 is communicating with the network and that the network can see your CN50.

Connecting the CN50 Using USB Communications

You can use the CN50 AC adapter to transmit data to and receive data from another device through USB communications. For more information about this accessory and how to order it, see [“Accessories” on page 90](#).

Configuring the Phone

The CN50 supports two types of cellular phone technology:

- CDMA
- UMTS

With a radio module installed in the CN50, you can send and receive telephone calls as well as transmit data through wide-area (WAN) cellular networks.

The CN50 provides a phone speaker, microphone, and speakerphone. It also supports the use of a Bluetooth headset or hands-free kit. The factory default setting for the phone is disabled.

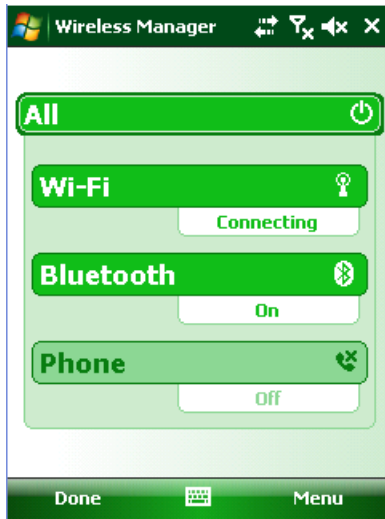
After you have turned on the phone and activated it, you can customize the features of the phone and network settings. For help, refer to the online help on your CN50.

Turning On the Phone Using the Wireless Manager

You can use the Wireless Manager to enable and disable Bluetooth, Wi-Fi, and the phone on your CN50.

To turn on the phone using the wireless manager

- 1** Tap **Start** > **Settings** > the **Connections** tab > **Wireless Manager**.



- 2 In the Wireless Manager, tap **Phone**. The phone turns on.
- 3 Tap **Menu** > **Phone Settings** to configure the phone. For help, see the next procedure, “Activating the CDMA Phone.”
- 4 Tap **Done** to close the Wireless Manager.

Activating the CDMA Phone

The CDMA WAN radio module is installed at the factory. To activate your CDMA CN50 device, you need to contact the carrier you have chosen and set up accounts for each device. Use the following table to view the carriers that Intermec currently supports. If your carrier is not listed in the table, please contact Intermec product support to see if it is now supported.

Currently Supported Carriers

Country	Carriers
United States	Alltel, Sprint, Verizon
Canada	Bell Mobility, Telus

The carrier will require the Electronic Serial Number (ESN) to start the activation process. You can find the ESN:

- on a label located in the upper right corner of the battery compartment.
- on the outside of the CN50 shipping box.

The activation process is slightly different for each CDMA carrier. Your carrier sales contact and an Interme representative can guide you through the process.

After you supply the ESN to your carrier, they will respond with values that you must enter using the Windows Mobile Activation Wizard (if required). Some of the supported carriers do not require you to enter any values. The following table shows the carriers, the correct activation method to use, and the values that you need to activate your phone.

Values Required for CDMA Phone Activation

Carrier	Activation Method	Activation Values You Need
Alltel	Dial *22899	None - all parameters are automatically transferred wirelessly. The Activation Wizard is disabled for Alltel.
Bell Mobility	Activation Wizard	<ul style="list-style-type: none"> • Service Programming Code (SPC), also called the activation code. • Mobile Directory Number (MDN) • Mobile Station Identification Number (MSIN) • System ID (SID) • Network ID (NID) • Mobile Country Code (MCC) • Mobile Network Code (MNC) • Username • Password
Sprint	Activation Wizard	<ul style="list-style-type: none"> • Master Subsidy Lock (MSL), also called the activation code • MDN • Mobile Station Identifier (MSID)
Telus	Dial *22803	None - all parameters are automatically transferred wirelessly.

Values Required for CDMA Phone Activation (continued)

Carrier	Activation Method	Activation Values You Need
Verizon	Dial *22899	None - all parameters are automatically transferred wirelessly. You can also use the Activation Wizard with Verizon.

After you complete the activation process, the settings you enter are permanently stored in the CDMA module. Changing the OS or SSPB loads will not affect any of the settings or activation parameters stored in the WAN modem.


To start the Activation Wizard

- 1 Tap **Start** > **Phone** from the Today screen.
- 2 In the Phone application, tap **Menu** > **Activation Wizard** from the bottom of the screen.

Activating the UMTS Phone

You use a SIM card to activate the UMTS/HSPA phone on the CN50. You can purchase the SIM card from your network provider. You insert the SIM card in the battery cavity on the back of the CN50. For more information, please contact your local Intermecc representative.

To install the SIM card

- 1 Disconnect the handstrap from the top of the CN50.
- 2 Push forward on the battery release tab until the battery releases, and then lift the battery away from the CN50.
- 3 Swing the card access door clockwise to expose the SIM card and microSD card slots.
- 4 Insert the SIM card into the top slot until it clicks in place.
- 5 Close the card access door.
- 6 Insert the battery and press down until it clicks in place. Reconnect the handstrap.
- 7 Press  to turn on the CN50.

Making a Phone Call

After you activate your phone, you are ready to start making phone calls.

To make a phone call

- 1 Tap **Start** > **Phone**.
- 2 Tap the keys to enter the telephone number you want to call.
- 3 Tap the **Talk** button.

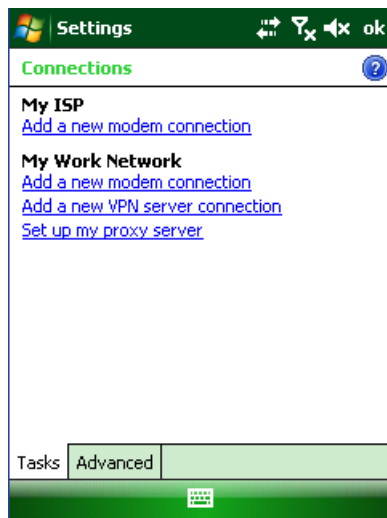
Connecting to an ISP

You can connect to your Internet Service Provider (ISP), and use the connection to send and receive e-mail messages and view web pages. Get an ISP dial-up access telephone number, a user name, and a password from your ISP.

Tap the **Help** icon at any time to view additional information for the wizard or the settings.

To connect to an Internet service provider

- 1 Tap **Start** > **Settings** > **Connections** tab > **Connections**.
- 2 Under My ISP, tap **Add a new modem connection**.



- 3 Enter a name for the connection, such as “ISP Connection.”

- 4 If using an external modem connected to your CN50 with a cable, select **Hayes Compatible on COM1** from the Select a modem drop-down list.
- 5 Tap **Next**.
- 6 Enter the access phone number and then tap **Next**.
- 7 Enter the **User name**, **Password**, and **Domain** (if provided by an ISP or your network administrator).
- 8 Tap **Finish**.
- 9 Tap the **Advanced** tab from the Connections screen and then tap **Dialing Rules**.
- 10 Select **Use dialing rules**, tap **ok** at the dialog box, and then tap **Edit**.
- 11 Specify your current phone type and then tap **ok** until you exit and return to the Settings page.

Once the CN50 is connected, you can:

- send and receive message by using Messaging (Outlook E-mail).
- visit web pages by using Internet Explorer Mobile.

Connecting to a Network With a RAS Account

If you have access to a network at work, you can send e-mail messages, view intranet pages, synchronize your CN50, and possibly access the Internet. Create a modem connection through a RAS (Remote Access Server) account. Before you can create this modem connection, your network administrator needs to set up a RAS account for you. Your network administrator may also give you Virtual Private Network (VPN) settings.

Tap the **Help** icon at any time to view additional information for the wizard or the settings.

To connect to a private network

- 1 Tap **Start > Settings > Connections**.
- 2 Under My Work Network, tap **Add a new modem connection**.
- 3 Enter a name for the connection, such as “Company Connection.”

- 4** Select your modem type.
 - If using an external modem connected to your CN50 with a cable, select **Hayes Compatible on COM1** from the Select a modem drop-down list.
 - If using any type of external modem, select the modem by name. If a listing does not exist for your modem, select **Hayes Compatible on COM1**.
- 5** Tap **Next**.
- 6** Enter the access phone number and then tap **Next**. Use these guidelines when entering a phone number:
 - Enter the phone number exactly as you want it dialed. For example, if you call from a business complex or hotel that requires a nine before dialing out, enter 9 in front of the phone number.
 - Enter the access point name (APN) provided by your mobile phone service provider.
 - If you want to use dialing rules, see the online help for information.
- 7** Enter the **User name**, **Password**, and **Domain** (if provided by an ISP or your network administrator).
- 8** Tap **Finish**.

Connecting to a Network with a VPN Server

A VPN connection helps you to securely connect to servers, such as a corporate network, through the Internet. Before you can make a VPN connection, you will need the following items from your network administrator:

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

To create a VPN server connection to work

- 1 Tap **Start** > **Settings** > **Connections**.
- 2 Under My Work Network, tap **Add a new VPN server connection**.
- 3 In the **Name** field, enter a name for the connection, such as your company name.
- 4 In the **Host name / IP** field, enter the VPN server name or IP address.
- 5 Select the **VPN type** of authentication to use with your CN50. If you are not sure which option to choose, check with your network administrator.
- 6 Tap **Next**.
- 7 Select a way for the CN50 to authenticate the connection. If you select **A pre-shared key**, enter the key provided by your network administrator.



- 8 Click **Next**.
- 9 Enter the **User name**, **Password**, and **Domain** (if provided by an ISP or your network administrator).
- 10 Tap **Finish**.

Chapter 2 – Connecting and Configuring the CN50

- 11** Insert the necessary equipment, such as a network card, into the CN50 and begin connecting.

3

Developing and Installing Applications

Use this chapter to understand the guidelines for developing applications for use on the CN50. This chapter contains these sections:

- **Developing Applications for the Computer**
- **Installing Applications on the Computer**
- **Upgrading the System Software**

Developing Applications for the Computer

Use the Intermec Resource Kits to develop new applications to run on the CN50. The Resource Kits are a library of 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 web site at www.intermec.com/idl.

For more information, see the *Intermec Developer Library Resource Kit Developer's Guide* (P/N 934-006-xxx).

Installing Applications on the Computer

There are several ways you can install applications on your mobile computer:

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

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

- The Object Store or the Flash File Store. The Object Store is a DiskOnChip® flash that looks like a disk. The Flash File Store is an area of storage which is embedded in a section of the system flash memory. This storage is *not* erased during a reset, although it might be erased during the reflashing process. In addition to storing applications and data files, you have the option to store persistent registry information to the Flash File Store region.
- The optional microSD card. If you are using a microSD card, this should be the primary location to place application installation files. The microSD card creates the Storage Card folder on the CN50.

- The non-volatile Flash File Store region of the storage. Use the small non-volatile Flash File Store region to hold .cab files that rebuild the system at clean boot or install applications from a .cab file into the Flash File Store so that they are “ready-to-run” when you perform a clean boot. Since the flash in the system has a limited number of write cycles, do not use the Flash File Store for excessive writing.

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. You can find information about this system in the *Intermec Developer’s Library (IDL) Resource Kit Developer’s Guide* which is available from www.intermec.com/idl. When you copy a .cab file to the \CabFiles folder, the folder automatically extracts that .cab file on every cold boot.

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

- SmartSystems console
- ActiveSync
- microSD card
- Wavelink Avalanche

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

Installing Applications Using SmartSystems Foundation

Your CN50 is SmartSystems-enabled, which lets you use the SmartSystems console to install Intermec applications on your CN50. The console is part of SmartSystems Foundation. For more information, go to the Intermec web site at www.intermec.com/SmartSystems.

To install an application using the SmartSystems console

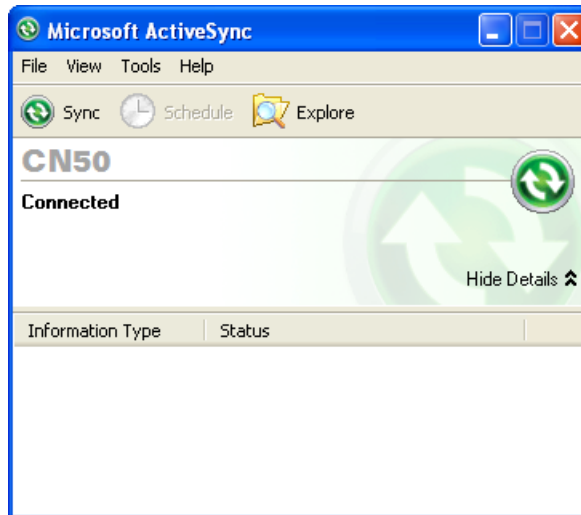
- 1 Download the application to your PC.
- 2 Double-click the application. The application appears in the SmartSystems console in the Software Vault.
- 3 Drag the application to each CN50 in your network or to a group of CN50 in a folder.

Installing Applications Using Microsoft ActiveSync

You can send applications from your PC to your CN50 using Microsoft ActiveSync.

To install an application using Microsoft ActiveSync

- 1 On your PC, copy the .cab file you want to download to your CN50.
- 2 Create an ActiveSync connection between your PC and CN50. For help, see [“Connecting the CN50 to a PC” on page 26](#).



- 3 Click **Explore**. The Mobile Device window opens.
- 4 Double-click **My Windows Mobile-Based Device**.
- 5 Navigate to the folder you want to copy the .cab file to, and paste the .cab file in the folder.
- 6 Clean boot the CN50. For help, see [“Clean Booting the CN50” on page 58](#).
- 7 On your CN50, tap **Start > Programs > File Explorer** and navigate to the location of the .cab file.
- 8 Tap the .cab file to install it.

Installing Applications Using a microSD Card

Using a microSD card is the best method for installing applications.

To install applications using the microSD card

- 1 Suspend the CN50 and remove the microSD card.
- 2 Insert the microSD card into a microSD adapter card and then place it in the storage card reader connected to your PC.
- 3 Copy your application file to the microSD card.
- 4 Remove the microSD card from the adapter card and insert it into the CN50.
- 5 On your CN50, navigate to the storage card folder and run your application.

Installing Applications Using Wavelink Avalanche

You can use the Wavelink Avalanche device management system to install applications on all of your wireless CN50s. The CN50 ships with the Avalanche Enabler already loaded on it.

Each time the Avalanche Enabler is activated (typically on a reset), the CN50 attempts to connect to the Avalanche Agent. When the CN50 connects to the agent, the agent determines whether an update is available and immediately starts the software upgrade, file transfer, or configuration update.



Note: If you manually activate the Avalanche Enabler on the CN50, you may be prompted for a password when you exit the Avalanche Enabler. The default password is `leave`.

To use Avalanche to remotely manage the CN50

- 1 Install software packages and updates for the CN50 using the Avalanche Administrative console.
- 2 Schedule the CN50 updates or manually initiate an update using the Avalanche Administrative console.

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

Upgrading the System Software

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

The SSPB files are stored on the DiskOnChip and deliver Intermec Value Add (IVA) functionality such as data collection, configuration, the Intermec wireless security suite, and SmartSystems Foundation. As new features are added to these components, you can upgrade your SSPB files without needing to upgrade the operating system. Alternately, you can choose to upgrade only the operating system if you need new functionality. If you upgrade the operating system, you will need to reinstall SSPB files.

There are two ways to upgrade your computer:

- You can upgrade your computer using an storage card. For help, see the next section, **“Upgrading the CN50 Using a microSD Card.”**
- You can upgrade your computer using the SmartSystems Console. For help, see **“Upgrading the CN50 Using SmartSystems Foundation” on page 48.**

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

To download the upgrade files

- 1 Start your web browser and go to the Intermec web site at www.intermec.com.
- 2 Go to **Support > Downloads**.
- 3 Click the link to search the product downloads.
- 4 Select your computer from the **Downloads** list. The Downloads page displays all of the downloads available for your computer.
- 5 Download the upgrade file you need. If you want to upgrade both the OS and the SSPB, you will need to download both files.




Upgrading the CN50 Using a microSD Card

To use a microSD card to upgrade the computer, you need an SD card reader and a microSD adapter card formatted as FAT16.

To upgrade the operating system using a microSD card

- 1 Insert a microSD card into a microSD adapter card and then place it in the storage card reader connected to your PC.
- 2 Copy all required OS upgrade files to the microSD card.
- 3 Remove the microSD card from the adapter card and insert it into the CN50.
- 4 Place the CN50 in a dock connected to external power.
For help, see the document that shipped with your dock.
- 5 Remove the microSD card when the Installation Complete menu appears.
- 6 Remove the CN50 from the dock and replace the battery.

To upgrade the SSPB using a microSD card

- 1 Insert a microSD card into a microSD adapter card and then place it in the storage card reader connected to your PC.
- 2 Copy all required SSPB upgrade files to the microSD card.
- 3 Remove the microSD card from the adapter card and insert it into the CN50.
- 4 Press and hold  as you insert the battery back into the CN50.
- 5 Continue to hold  until a Warning message appears.
- 6 Release , read the message, and press either button on the right side to continue.
- 7 Perform the screen alignment and wait for the CN50 to load files from the microSD card.

When the progress is complete, the CN50 warm boots to reset the configuration.

- 8 Remove the microSD card and delete the files.
- 9 Set the date, time, and network communication parameters to reestablish communications with the other devices in the wireless network.

Upgrading the CN50 Using SmartSystems Foundation

You can use the SmartSystems console to upgrade the operating system on your CN50. The console is part of SmartSystems Foundation and is available from the Intermec web site through the Intermec Developer Library (IDL). Before you can upgrade your CN50, you need:

- SmartSystems Foundation. To download SmartSystems Foundation, go to www.intermec.com/idl and open the Device Management page.
- the device upgrade .exe file. This file is available from the Intermec web site at www.intermec.com. Go to **Support > Downloads**. Make sure the file you select is for your language.

To upgrade the computer using SmartSystems Foundation

- 1 Install SmartSystems Foundation on your PC and open the SmartSystems console.
- 2 Make sure the SmartSystems console and CN50 are on the same subnet.
- 3 Make sure your CN50 is either in a communications dock or charging dock or that power management is disabled.
- 4 Download the device upgrade .exe file to your PC.
- 5 Double-click the .exe file on your PC. An InstallShield application starts and walks you through the process of extracting the upgrade files to the default location.



Note: Do not change the default location where InstallShield extracts the files. The SmartSystems console requires the files to be in this location.

- 6 From the SmartSystems console, locate the device upgrade to install.
- 7 Drag the application to each CN50 you want to upgrade or to a group of CN50s in a folder. The SmartSystems console installs the upgrade on your computers.

After the download is complete, your CN50 replaces the operating system and automatically performs a cold boot.



Note: The SmartSystems console indicates that your CN50 is offline, by displaying a red stop sign symbol, until the CN50 reboots and reconnects to the system.

4

Troubleshooting and Maintaining the CN50

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

- **Calling Product Support**
- **Troubleshooting the CN50**
- **Resetting the CN50**
- **Cleaning the CN50**

Calling Product Support

To talk to an Intermecc Product Support representative, call **1-800-755-5505**.

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

- Configuration number
- Operating system version
- SmartSystems Platform Bundle (SSPB) version
- Know the language your custom application was written in and the tools you used to create it

Consult your application developer for information on your custom application.

To find your configuration number

- Look at the CN field of the configuration label on the back of your CN50.

Troubleshooting the CN50

Use this section to troubleshoot some common problems you may experience with your CN50.




Note: If you send the CN50 in for service, it is your responsibility to save the computer data and configuration. Intermecc is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

Problems While Configuring the CN50

Problem	Possible Solution
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. For help, see “Using the Keypad” on page 7 .

Problems While Configuring the CN50

Problem	Possible Solution
You press  and nothing happens.	<ul style="list-style-type: none"> • Make sure the backlight is on. • Make sure you have a charged battery that is installed correctly. For help, see “Charging the Battery” on page 3. • The battery may be discharged. Replace the battery with a spare charged battery, or charge the battery. • Reset the CN50. For help, see “Resetting the CN50” on page 57.
You insert a microSD card and cannot find the SDMMC Disk folder on the CN50. Or, you insert a bootable SD card and the CN50 does not boot from the card.	<ul style="list-style-type: none"> • The microSD card may not be installed correctly. Insert the microSD card as described in Steps 2 through 4 of “Using a microSD Card” on page 19. • The microSD card may be damaged. Try another microSD card.
The Battery status LED is on.	<ul style="list-style-type: none"> • If the battery status LED is a steady green, the battery is more than 95% charged and computer is on a charger. • If the battery status LED is blinking red, then the battery is low. Replace or charge the battery. • If the battery status LED is a steady red, the main battery is on charge.
The computer appears to be locked up and you cannot enter data.	<ul style="list-style-type: none"> • Press the power key to turn off the CN50, and then press the power key again to turn it on. • Try reloading the firmware. For help, see “Upgrading the System Software” on page 46. • If the CN50 does not boot or reset, contact your Intermec representative for help.
You tap the screen and nothing happens.	Align your screen. For help, see “Aligning the Touch Screen” on page 13 .

Problems With Wireless Connectivity

Problem	Possible Solution
The CN50 is connected to the network, and you move to a new site to collect data. Now, your CN50 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 CN50 appears to be connected to the network, but the host computer is not receiving any information from the CN50.	There may be a problem with the connection between the access point and the host computer. Check with network administrator or use your access point user's manual.

Problems While Configuring 802.1x Security

Problem	Possible Solution
The CN50 indicates that it is authenticated, but it does not communicate with the host.	Make sure the CN50 IP address, host IP address, subnet mask, default router are configured for the network.
The CN50 does not appear to be authenticating and a network connection icon does not appear on the toolbar.	<ul style="list-style-type: none">• The CN50 may not be communicating with the access point. Make sure the CN50 network name matches the access point network name (SSID).• The 802.1x security network may not be active. Make sure the server software is properly loaded and configured on the server PC. See server software documentation for help.
A network connection icon appears in the toolbar, but then disappears.	<ul style="list-style-type: none">• The CN50 may not be communicating with the intended access point. Make sure the CN50 network name matches the access point network name. Default network name is "INTERMEC."• 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.

Problems While Configuring 802.1x Security (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.
The CN50 indicates it is not authenticated.	Make sure that: <ul style="list-style-type: none">• the User Name and Password parameters on the CN50 match the user name and password on the authentication server. You may need to configure the password on both the CN50 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.
You clean boot the CN50 and this message appears, “The server certificate has expired or your system date is incorrect.”	When you clean boot the CN50, the date and time are not saved. Configure the date and time and save your changes.


Problems While Scanning Bar Codes

Problem	Possible Solution
You press the Scan button, but you cannot see a red beam of light.	<ul style="list-style-type: none">• You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again.• You may be scanning the bar code label “straight on.” Change the scanning angle and try again.• Move within two feet of a wall to test the effective scan of the scanner. For help scanning bar codes, see “Scanning Bar Codes” on page 15.
The input device attached to the CN50 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.
When you release Scan button, the Good Read LED does not turn off.	<p>If the CN50 is configured to use continuous/edge triggering, the Good Read LED stays on.</p> <p>If the CN50 is configured to use level triggering, 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 your local Intermec representative.</p>
The scanner does not read the bar code label.	<ul style="list-style-type: none">• Aim the scanning beam so that it crosses the entire bar code label in one pass. Try changing the scan angle.• Check the quality of the bar code label, Scan a bar code label that you know scans well. 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. For help, see the Data Collection Resource Kit which is part of IDL. You can download the resource kit from www.intermec.com/idl.• Make sure the application is accepting input by scanning a bar code. You may need to type this information instead.

Problems While Scanning Bar Codes (continued)

Problem	Possible Solution
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.
The scanned bar code data that appears in your application does not match the data encoded in the bar code label.	The CN50 may have decoded the bar code label in a different bar code symbology. Try scanning the bar code label again. Make sure you scan the entire label.

Resetting the CN50

You rarely need to reset the computer. If the computer does not resume after pressing the  button, or if the computer or an application lock up, you may need to reset the CN50. The CN50 uses the configuration currently saved in flash memory during the boot process. There are two ways to reset the CN50:

- Warm booting the CN50
- Cold booting the CN50

Warm Booting the CN50

You may need to perform a warm boot to correct conditions where an application stops responding to the system. You can send a warm boot command by using a Microsoft API.

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

Cold Booting the CN50

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



Note: Cold booting the CN50 does not guarantee that cached disk data will be saved, so transactional data may be lost during the reset. All other data is preserved.

To cold boot your CN50

- 1 Remove the battery pack from the CN50.
- 2 Reinsert the battery pack and press **[0]**.

Clean Booting the CN50

If the CN50 does not warm boot or cold boot, you may need to perform a clean boot. When you clean boot the CN50, the CN50 only loads files and applications that are absolutely required by the operating system. Perform a clean boot to get the CN50 up and running so that you can run diagnostic tests to troubleshoot the normal boot process.



Caution

The clean boot process erases the CN50 memory, including all applications and data files in the object store. To preserve applications through a clean boot, store them in the Flash File Store. For more information, see “[Installing Applications on the Computer](#)” on page 42.

To clean boot the CN50

- 1 Remove the battery pack, reinsert it, and press **[0]**.
- 2 When the CN50 starts the boot process, simultaneously press **[4]** and **[2]** until the IPL Boot Configuration Menu appears on the screen.
- 3 Press **[2]** to select **Force Cold Boot** and then press **[0]** to select **Continue with Boot**.

The CN50 executes the clean boot. This process takes a few minutes.

- 4 When prompted, tap the screen to set up the CN50.
- 5 Follow the instructions to calibrate the screen.

Cleaning the CN50

To keep the CN50 in good working order, you may need to perform these minor maintenance tasks:


- Clean the scanner window.
- Clean the CN50 screen.

Clean the scanner window and CN50 screen as often as needed for the environment in which you are using the computer. To clean the CN50, use a solution of ammonia and water.



There are no user-serviceable parts inside the CN50. Opening the unit will void the warranty and may cause damage to the internal components.

To clean the scanner window and computer screen

- 1 Press  to turn off the CN50.
- 2 Dip a clean towel or rag in the ammonia solution and wring out the excess. Wipe off the scanner window and screen. Do not allow any abrasive material to touch these surfaces.
- 3 Wipe dry.

A

Specifications

Physical and Environmental Specifications

Physical Dimensions

Length:	15 cm (5.9 in)
Width (at widest part):	7 cm (2.75 in)
Height (at tallest part):	2.5 cm (1 in)
Weight:	285 g (10 oz)

Power and Electrical Specifications

Operating:	Rechargeable lithium-ion battery
Backup:	Supercap supplies 10 minutes of bridge time while replacing the main battery
Electrical rating:	4,65 V, 3A

Temperature and Humidity Specifications

Operating temperature:	-10°C to 50°C (14°F to 122°F)
Storage temperature:	-20°C to 70°C (-4°F to 158°F)
Charging temperature:	0°C to 45°C (32°F to 113°F)
Relative humidity (operating):	0 to 95% non-condensing
Environmental rating:	IP54

Screen Specifications

- 240 RGB x 320 pixels
- 8.9 cm (3.52 in) diagonal square active area, ¼ VGA
- LED backlight with 5 levels of brightness
- LCD capable of both portrait and landscape operation

Keypad Options

- Numeric keypad
- Alphanumeric keypad (QWERTY)

Bar Code Symbolgies

• Australian Post	• GS1 DataBar Limited
• Aztec	• GS1 DataBar Omnidirectional
• BPO (British Post 4-state)	• Interleaved 2 of 5
• ChinaPost	• Japan Post
• CanadaPost	• Matrix 2 of 5
• Codabar	• Maxicode
• Codablock A	• Micro PDF417
• Codablock F	• MSI
• Code 11	• PDF417
• Code 39	• Planet
• Code 93	• Plessey
• Code 128/GS1-128	• Postnet
• DataMatrix	• QR Code
• Dutch Post	• Standard 2 of 5
• EAN/UPC	• Telepen
• EAN.UCC Composite	• TLC 39
• GS1 DataBar Expanded	

EA21 Imager Reading Distances

Insert information here when I receive it from Krista....

Accessories

You can use these accessories (sold and ordered separately) with the CN50. To order accessories, contact your local Intermec sales representative.

Battery (AB24, AB25)

The AB24 standard battery and AB25 extended battery provide main power to the CN50.

Quad Charger (AC21)

The AC21 quad charger charges up to four CN50 batteries at one time.

Ethernet Multidock (AD24)

The AD24 ethernet multidock provides ethernet connectivity and power to up to four CK3c computers at one time.

Charge-Only Multidock (AD23)

The AD23 charge-only multidock charges up to four CN50 computers at one time.

Vehicle Holder

Use the vehicle holder to hold your CN50 while you are using it in a vehicle.

Vehicle Battery Adapter (AE36)

Use the AE36 vehicle battery adapter to provide power to your CN50 from your vehicle.

AC Power Adapter (AE37)

Use the AC power adapter to provide power to your CN50 from an external power supply.

B

Default Settings

Default Configuration

The following tables list the default values of the configuration commands supported on the CN50. If you restore the CN50 to factory default settings, the CN50 uses these values.

The commands are grouped by function and reflect the organization of Intermec Settings. You can configure your CN50 with Intermec Settings from the SmartSystems Foundation console. For detailed information on most of the commands, see the *Intermec Settings Command Reference Manual* (P/N 937-016-xxx), available from the Intermec web site at www.intermec.com.

Data Collection

Data Collection Settings

Data Collection Setting	Default Value
Enable Scanner Port	Enable
Enable Scanner Auto-Detect	Enable

Symbology Settings

Symbology	Default Value
AustraliaPost	Disable
Aztec	Disable
BPO	Disable
CanadaPost	Disable
ChinaPost	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

Symbology Settings (continued)

Symbology	Default Value
DutchPost	Disable
EAN/UPC	Enable UPC A, UPC E, EAN 8, EAN 13
EAN.UCC Composite	Disable
GS1 DataBar Expanded	Disable
GS1 DataBar Limited	Disable
GS1 DataBar Omnidirectional	Disable
Interleaved 2 of 5	Disable
JapanPost	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	Default Value
Preamble	None (disabled)
Postamble	None (disabled)
Global Symbology ID	Disable

Imager Settings

Imager Setting	Default Value
Predefined Modes	1D and 2D Standard
Sticky Aimer LED duration	0 (disabled)
Signature Image Capture	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

Communications

Communications Settings

Communications Setting	Default Value
Device Name	IntermecCN50

Bluetooth Settings

Bluetooth Setting	Default Value
Bluetooth Power	Off
Bluetooth Discoverable	Disable
Bluetooth Connectable	Disable

802.11 Radio Settings

802.11 Radio Setting	Default Value
Security Choice	Funk Security
Allow Security Changes	Enable
Radio Measurement	0

802.11 Radio Settings (continued)

802.11 Radio Setting	Default Value
Radio Enabled	Enable

Ethernet Adapter Settings

IP Settings	Default Value
DHCP	Enable
DHCP Client Identifier	Null
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
Primary WINS	0.0.0.0
Secondary WINS	0.0.0.0

Certificates Settings

Certificates Setting	Default Value
Import Root Certificates	False
Import User Certificates	False
Import Pac Files	False

Ethernet Adapter IP Settings

Ethernet Adapter IP Setting	Default Value
DHCP	Enable
DHCP Client Identifier	Null
Primary DNS	Null
Secondary DNS	Null
Primary WINS	Null
Secondary WINS	Null

Device Settings

Device Settings

Device Setting	Default Value
Date	Null
Time	Null
Adjust for Daylight Time	Disable
Good Read Beep	One Beep
Good Read Light	On
Beeper Volume	Medium

Display Settings

Display Setting	Default Value
Backlight on Battery Power	
Backlight Turns Off After	10 min
Backlight On Tap	Enable
Backlight on External Power	
Backlight Turns Off After	1 min
Backlight On Tap	Enable
Backlight Level	High

Power Management Settings

Power Management Setting	Default Value
Battery Power	
Device Turns Off After	2 min
Screen Turns Off After	1 min
External Power	
Device Turns Off After	Disable
Screen Turns Off After	Disable

Device Monitor

Device Monitor Settings

Device Monitor Setting	Default Value
Poll Period	1 min
Threshold Values	
Backup Battery Charge Remaining	10
Main Battery Charge Remaining	10
Storage Load	90
Memory Load	90

Core Messaging Service

Core Messaging Service Settings

Core Messaging Service Setting	Default Value
Associated Server IP	Null
Server Name	INTERMEC
Keep Alive Ping Interval	30 s

Appendix B – Default Settings

C

Keypads and Keystrokes

Standard Characters

Use the following tables to learn how to enter standard and hidden characters and functions with the keypad.

Alphanumeric Characters

Character	QWERTY Keypad	Numeric Keypad
a	A	2
b	B	2 2
c	C	2 2 2
d	D	3
e	E	3 3
f	F	3 3 3
g	G	4
h	H	4 4
i	I	4 4 4
j	J	5
k	K	5 5
l	L	5 5 5
m	M	6
n	N	6 6
o	O	6 6 6
p	P	7
q	Q	7 7
r	R	7 7 7
s	S	7 7 7 7
t	T	8
u	U	8 8
v	V	8 8 8
w	W	9
x	X	9 9

Alphanumeric Characters (continued)

Character	QWERTY Keypad	Numeric Keypad
y		
z		
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		
L		
M		
N		
O		
P		
Q		
R		
S		
T		
U		
V		
W		
X		
Y		
Z		



























Alphanumeric Characters (continued)

Character	QWERTY Keypad	Numeric Keypad
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		

Characters and Functions

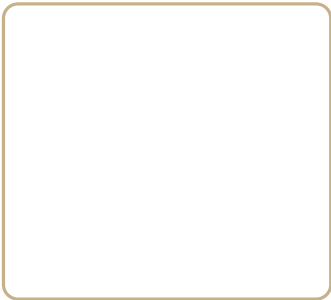
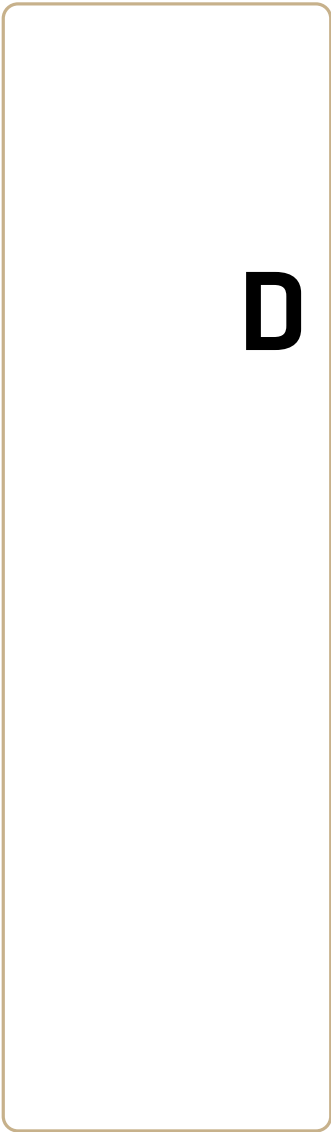
Function	QWERTY Keypad	Numeric Keypad
Forward Tab		
Back Tab		
Space		
Backspace		
Shift		or
Caps Lock		
Up Arrow		
Down Arrow		
Left Arrow		
Right Arrow		
!		Not available
@		Not available
#		
\$		Not available
%		Not available
&		Not available

Characters and Functions (continued)

Function	QWERTY Keypad	Numeric Keypad
*		
+		
ok		
-		
Start (Windows)		
?		Not available
:		Not available
/		Not available
=		Not available
' (apostrophe)		Not available
, (comma)		Not available
. (period)		
Esc		
Backlight		
Talk		
End call		

D

Imager Configuration Bar Codes



Imager Configuration Bar Codes

Use the following bar codes to quickly configure the CN50 imager. These bar codes allow you to enable or disable symbologies, reset to factory defaults, and set predefined imager modes.

If you need to create a bar code for a specific setup, please download a free copy of EasySet from the CN50 page on the Intermec web site at www.intermec.com.

Basic Configuration Bar Codes

Command	Bar Code
Disable all symbologies	
Reset to Factory Defaults	
Postamble with Carriage Return and Line Feed	

Imager Predefined Modes

Command	Bar Code
1D codes only	
Standard 1D and 2D codes	

Imager Predefined Modes (continued)



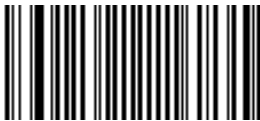
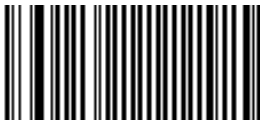
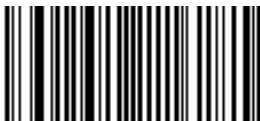

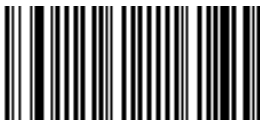





Command	Bar Code
1D and 2D codes bright environment	
1D and 2D codes with reflective surface	

Symbology Bar Codes


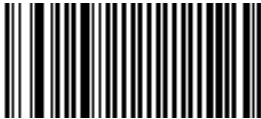

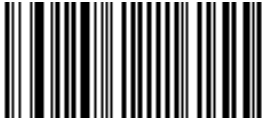
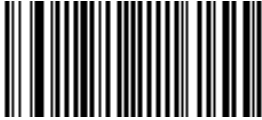
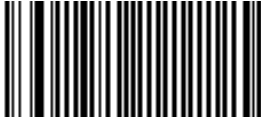

Symbology	Enable Bar Code	Disable Bar Code
AustraliaPost		
Aztec		
BPO		
CanadaPost		
Codabar		

Appendix D - Imager Configuration Bar Codes

Symbology Bar Codes (continued)

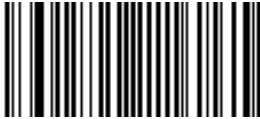
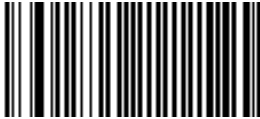


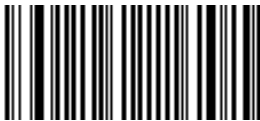
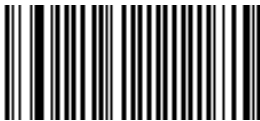




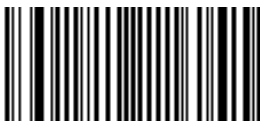





Symbology	Enable Bar Code	Disable Bar Code
Code 11		
Code 39		
Code 93		
Code 128		
DataMatrix		
DutchPost		
EAN 8		
EAN 13		

Symbology Bar Codes (continued)

Symbology	Enable Bar Code	Disable Bar Code
EAN 128		
Interleaved 2 of 5		
JapanPost		
Matrix 2 of 5		
MaxiCode		
Micro PDF417		
MSI Code		
PDF417		

Appendix D - Imager Configuration Bar Codes

Symbology Bar Codes (continued)

Symbology	Enable Bar Code	Disable Bar Code
Planet		
Plessey Code		
Postnet		
QR Code		
Standard 2 of 5		
Telepen		
TLC 39		
UPC-A		

Symbology Bar Codes (continued)

Symbology	Enable Bar Code	Disable Bar Code
UPC-E		
UPC-E1		

Appendix D - Imager Configuration Bar Codes



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