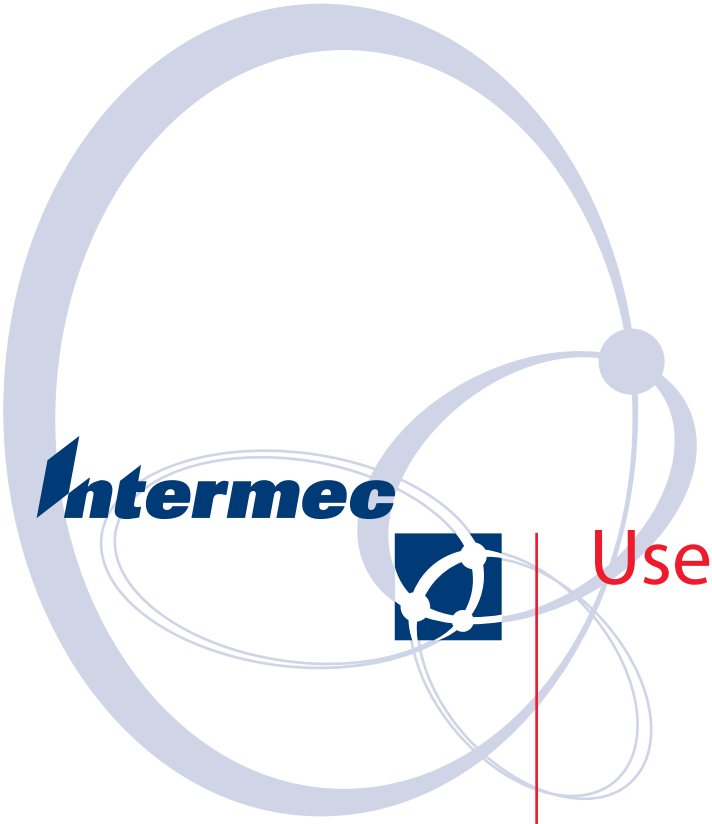

User's Manual

741 and 751 Mobile Computers (Windows Mobile 5.0)

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Contents

Before You Begin

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

Safety Information

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

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

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

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec 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 **intermec.custhelp.com** to review technical information or to request technical support for your Intermec product.

Telephone Support

These services are available from Intermec.

Services	Description	In the USA and Canada call 1-800-755-5505 and choose this option
Order Intermec products	• Place an order. • Ask about an existing order.	1 and then choose 2
Order Intermec media	Order printer labels and ribbons.	1 and then choose 1
Order spare parts	Order spare parts.	1 or 2 and then choose 4
Technical Support	Talk to technical support about your Intermec product.	2 and then choose 2
Service	• Get a return authorization number for authorized service center repair. • Request an on-site repair technician.	2 and then choose 1
Service contracts	• Ask about an existing contract. • Renew a contract. • Inquire about repair billing or other service invoicing questions.	1 or 2 and then choose 3

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

Who Should Read This Manual

This document is written for the person who is responsible for installing, configuring, and maintaining the 741 or 751 Mobile Computer.

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

Before you work with the computer, 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:

4,882,476; 4,894,523; 4,953,113; 4,961,043; 4,970,379; 4,988,852; 5,019,699; 5,021,642; 5,038,024; 5,081,343; 5,095,197; 5,144,119; 5,144,121; 5,182,441; 5,187,355; 5,187,356; 5,195,183; 5,195,183; 5,195,183; 5,216,233; 5,216,550; 5,218,191; 5,227,614; 5,233,172; 5,241,488; 5,243,602; 5,258,606; 5,278,487; 5,288,985; 5,308,966; 5,322,991; 5,331,136; 5,331,580; 5,342,210; 5,349,678; 5,359,185; 5,371,858; 5,373,478; 5,389,770; 5,397,885; 5,410,141; 5,414,251; 5,416,463; 5,442,167; 5,464,972; 5,468,947; 5,468,950; 5,477,044; 5,486,689; 5,488,575; 5,500,516; 5,502,297; 5,504,367; 5,508,599; 5,514,858; 5,530,619; 5,534,684; 5,536,924; 5,539,191; 5,541,419; 5,548,108; 5,550,362; 5,550,364; 5,565,669; 5,567,925; 5,568,645; 5,572,007; 5,576,529; 5,592,512; 5,594,230; 5,598,007; 5,608,578; 5,616,909; 5,619,027; 5,627,360; 5,640,001; 5,657,317; 5,659,431; 5,671,436; 5,672,860; 5,684,290; 5,719,678; 5,729,003; 5,793,604; 5,742,041; 5,761,219; 5,764,798; 5,777,308; 5,777,309; 5,777,310; 5,786,583; 5,798,509; 5,798,513; 5,804,805; 5,805,807; 5,811,776; 5,811,777; 5,818,027; 5,821,523; 5,828,052; 5,831,819; 5,834,749; 5,834,753; 5,837,987; 5,841,121; 5,842,070; 5,844,222; 5,854,478; 5,862,267; 5,869,840; 5,873,070; 5,877,486; 5,878,395; 5,883,492; 5,883,493; 5,886,338; 5,889,386; 5,895,906; 5,898,162; 5,902,987; 5,902,988; 5,912,452; 5,923,022; 5,936,224; 5,949,056; 5,969,321; 5,969,326; 5,969,328; 5,979,768; 5,986,435; 5,987,192; 5,992,750; 6,003,775; 6,012,640; 6,016,960; 6,018,597; 6,024,289; 6,034,379; 6,036,093; 6,039,252; 6,064,763; 6,075,340; 6,095,422; 6,097,839; 6,102,289; 6,102,295; 6,109,528; 6,119,941; 6,128,414; 6,138,915; 6,149,061; 6,149,063; 6,152,370; 6,155,490; 6,158,661; 6,164,542; 6,164,545; 6,173,893; 6,195,053; 6,234,393; 6,234,395; 6,244,512; 6,249,008; 6,328,214; 6,330,975; 6,345,765; 6,356,949; 6,367,699; 6,375,075; 6,375,076; 6,431,451; 6,435,411; 6,484,944; 6,488,209; 6,497,368; 6,532,152; 6,538,413; 6,539,422; 6,621,942; 6,641,046; 6,681,994; 6,687,403; 6,688,523; 6,732,930; Des. 417445

Docking Station/Device: 5,052,943; 5,195,183; 5,317,691; 5,331,580;

5,544,010; 5,644,471There may be other U.S. and foreign patents pending.

1 Using the Computer

This chapter introduces the 741 and 751 Color Mobile Computer with Windows Mobile 5.0. Throughout this manual, the computers are referred to as 741, 751, or computer. This chapter contains hardware and software configuration information to assist you in making the most out of your computer.

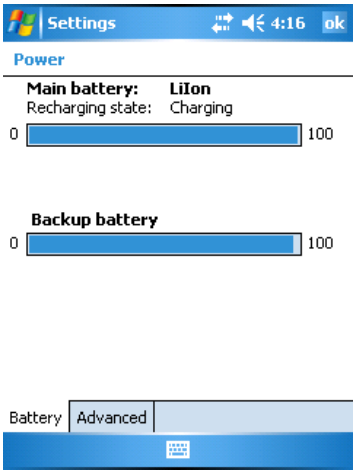
751 Color Mobile Computers with an IEEE 802.11b/g radio installed are Wi-Fi® certified for interoperability with other 802.11b/g wireless LAN devices.

Using the Battery

The computer comes with a 14.4 Watt-hour, 7.2V, replaceable Lithium-ion (Li-ion) battery. You must fully charge the main battery before you can use the computer. When you change the main battery, a backup battery maintains your status, memory, and real-time clock for at least 10 minutes.

To view the status of the battery

1. Tap **Start** > **Settings** > the **System** tab > **Power**.
2. Tap **ok** to exit.



If your computer shuts down because of a low battery condition, your computer will not operate. The computer shuts down to make sure that your data is protected. Although the battery protects the data against loss for several hours, you should connect your computer to a power source when you first detect a low battery condition.

Note: In addition to protecting data for up to 10 minutes, the internal backup super capacitor shuts down the computer if the main battery is removed from the computer. Depending on the processes running, it may not have adequate power for a graceful shutdown. If so, the computer performs a cold boot the next time you apply power.

Make sure you put the computer into a suspend (sleep) mode before you remove the main battery.

If you have at least one device in your 741 or 751 (radio, scanner, or imager), the battery power fail level is set so that after the system shuts down in a low battery condition, there is still sufficient charge to allow the unit to remain configured, keep proper time, and maintain DRAM (Dynamic Random Access Memory) for at least 72 hours at room temperature *if* the main battery remains in the computer.

The configuration and time are lost if:

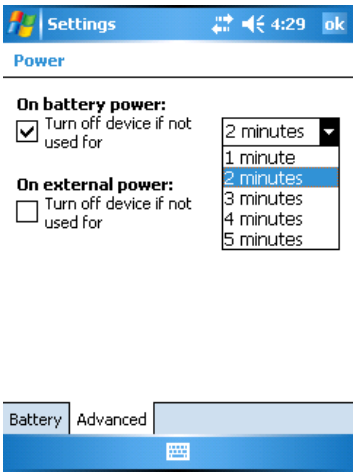
- The battery discharges beyond the battery power fail level.

- The battery is removed when the computer is *not in suspend mode.*
- A cold-boot (reset) is performed on the computer.

You can increase the battery runtime by turning off the computer when not in use.

To turn off the computer when not in use

1. Tap **Start** > **Settings** > the **Systems** tab > **Power**.
2. Tap the **Advanced** tab.
3. Under On battery power, check **Turn off device if not used for**.
4. From the drop-down list, select the number of minutes. You can choose from 1 to 5 minutes.



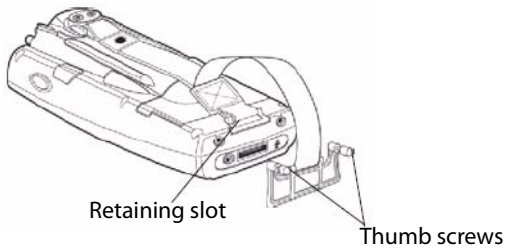
5. Click **ok** to exit.

Installing and Charging the Battery

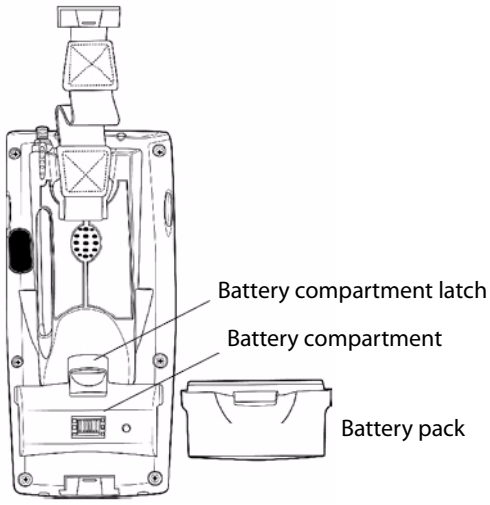
Make sure you fully charge the battery before you use your 741 or 751. To charge the battery, you need to install it in the computer.

To install the battery

1. Remove the two thumb screws on the connector cover to release the hand strap and back cover.
2. Slide the bottom of the strap forward to release it from the retaining slot.



3 Tilt, insert, and place the battery into the compartment. Make sure the battery compartment latch clicks in place to ensure the battery is secure.



4 Insert your 741 or 751 into its single dock for charging.

5 Charge the battery pack for three hours before using.

Caution

You must use only the Intermec power supply approved for use with the computer. Using any other power supply will damage the computer.

Note: For help installing and using the single dock, see the *700 Series Single Dock Quick Start Guide* (P/N 962-040-009) shipped with the dock.

Removing the Battery

Follow these instructions to remove the battery from the computer.

Caution

Only use the battery compartment latch to dislodge and remove the battery. Using any other tool or method to remove the battery may damage the battery or the 741 or 751.

Caution

Removing the main battery when the backup battery low icon appears on the status bar may cause your computer to cold boot and you may lose data.

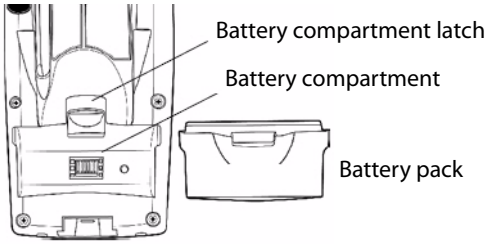
Caution

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

To remove the battery

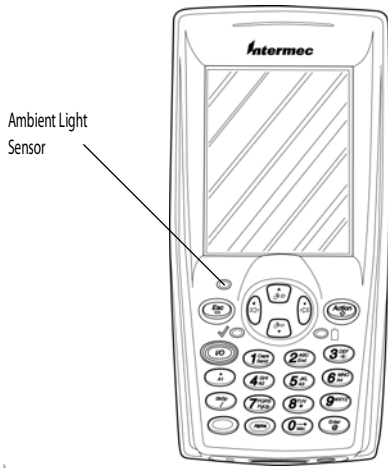
1 Press the **On/Off** (**I/O**) key to suspend the computer.

2 Pull up on the battery compartment latch, and then lift the battery out of the battery compartment.



Understanding the Ambient Light Sensor

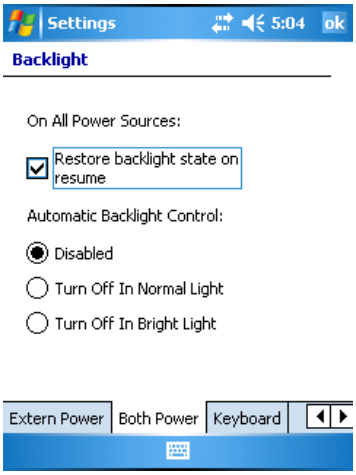
The ambient light sensor turns on the display lighting when conditions warrant but automatically turns it off again as surrounding light increases. The sensor helps conserves your battery power.



To adjust the ambient light sensor

1 Tap **Start** > **Settings** > the **System** tab > **Backlight**.

2 Tap the **Both Power** tab.



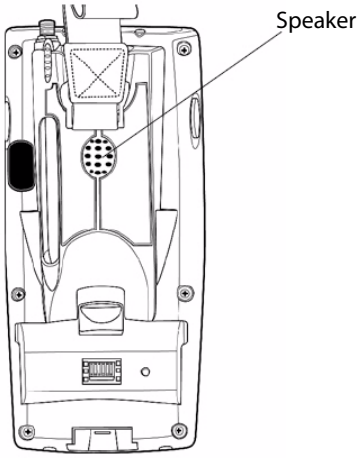
3 Make your selections, and then tap **OK** to exit.

Understanding the Audio System

The audio system consists of the speaker, internal microphone, and the external headset jack.

Locating the Speaker

The speaker, which is capable of variable volume levels, is located on the back of the 741 and 751. This speaker has a transducer volume of 85 dB min at 10 cm (3.9 in) and a frequency range of 1 to 8 KHz.

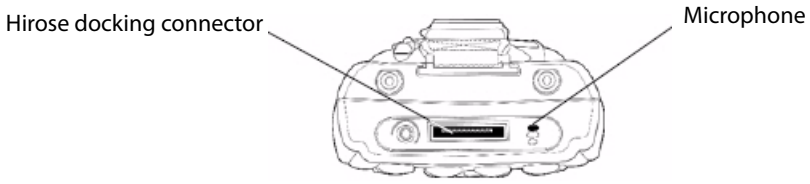


Warning

Do not place the speaker next to your ear when the speaker volume is set to "Loud" (maximum), or you may damage your hearing.

Locating the Microphone

The built-in microphone is located on the bottom of the unit next to the Hirose docking connector.



Microphone Location on the Computer

Locating the External Headset Jack

The external headset jack connects a mobile phone style headset to the computer for use in noisy environments. The jack is a 2.5 mm, three-conductor jack. When you insert a headset into the external jack, the internal speaker and microphone are disabled. The external headset jack is located on the bottom of the computer next to the Hirose docking connector.

External Headset Jack Location on the Computer

Adjusting the Beeper Volume

Note: Each time you perform a cold boot on the 741 or 751, all default settings are restored.

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, low, medium, high, and very high (default). Use the following table to understand the different ways to adjust the volume.

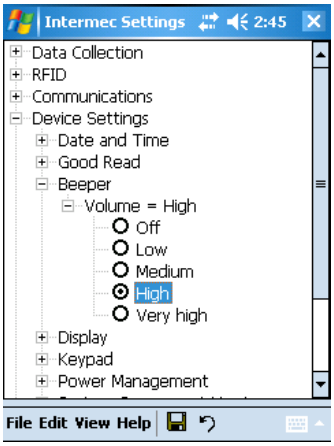
Changing the Beeper Volume

Way to Adjust Volume	Procedure
Tap the Speaker ( ) icon in the navigation bar.	Use the stylus to move the speaker slider up or down. You can also turn the volume on or off and choose to use vibrate mode.
Use Intermec Settings.	From the Start menu, choose **Settings**, select the **System** tab, and then tap **Intermec Settings**. Go to **Device Settings** > **Beeper** > **Volume**.

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

To enable the beeper

1. Tap **Start** > **Settings** > the **System** tab > **Intermec Settings**.
2. Go to **Device Settings** > **Beeper** > **Volume**.



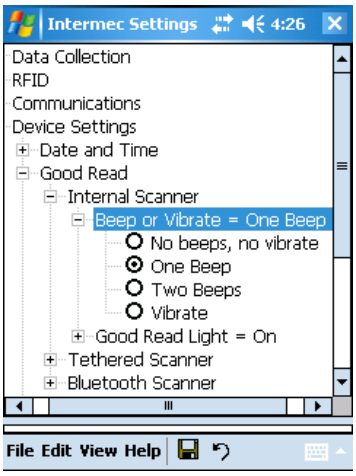
3 Tap **Low**, **Medium**, **High**, or **Very high** and save your changes.

The computer has a built-in vibrate feature that enables you to receive scanner feedback despite the noise level. When enabled, the computer vibrates when the scanner performs a good read.

To enable the vibrate feature

1 Tap **Start** > **Settings** > the **System** tab > **Intermec Settings**.

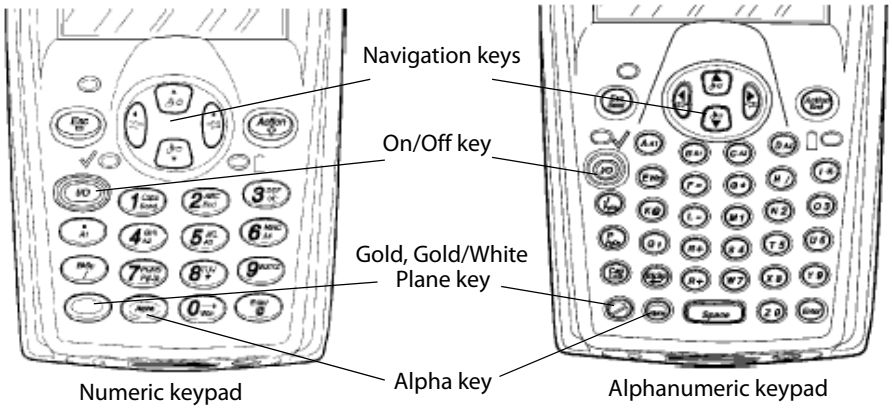
2 Tap **Device Settings** > **Good Read** > **Internal Scanner** > **Beep or Vibrate** > **Vibrate**.



Using the Keypad

Your 741 and 751 mobile computer has one of the following keypad options:

- 22-key numeric keypad
- 39-key alphanumeric keypad



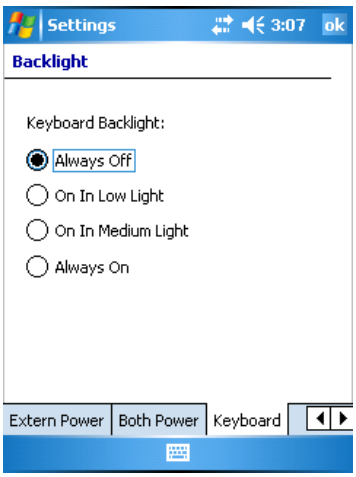
Use the following sections to understand how to use the keypad. For information on remapping the keypad, you can download the Device IDL Resource Kit from the Intermec web site at www.intermec.com/idl.

Adjusting the Backlight for the Keypad

You can configure your keypad to turn on a backlight to assist you when you are working in low lighting.

To adjust the backlight for the keypad

1. Tap **Start** > **Settings** > the **System** tab > **Backlight**.
2. Tap the right arrow to move to and tap the **Keyboard** tab.
3. Make your selection and then tap **ok**.



Entering Key Sequences

Use the following key sequences to enter characters into your computer using the numeric keypad.

Using Orange or Orange/White Plane Keys

The **orange** plane key (numeric keypad) or the **orange/white** plane key (alphanumeric keypad) provides you access to display controls, special characters, and Windows Mobile options.

Press the **orange** ( ) or the **orange/white** ( ) plane key for each orange key stroke you wish to make. For example, to turn on the front light, press and hold the **orange** key plus the 3 key. To turn the front light off, press these keys again.

The following table lists sequences that use the **orange** plane key. See "Understanding Windows Mobile" on page 19 for information about Windows Mobile applications.

Orange Plane Key Sequence

Press the Keys	To Do This
orange + 3	Toggle backlight on/off, goes through backlight power levels.
orange + A1	Launch a Windows Mobile application or custom application.
orange + 4	Launch a Windows Mobile application or custom application.
orange + 5	Launch a Windows Mobile application or custom application.
orange + 6	Launch a Windows Mobile application or custom application.
orange + 7	Move up one page.
orange + 8	Enter an asterisk (*).
orange + 9	Move down one page.
orange + 0	Access the Windows Mobile Start menu.
orange + @	Enter an at (@) symbol.
orange + ?	Enter a backslash (/).
orange + Esc	Enter a minus sign (-).
orange + Action	Enter a plus sign (+).
orange + Tab	Tab to the right.
orange + Shift	Tab to the left.
orange + Space	Increase volume.
orange + Backspace	Decrease volume

Note: You can configure the A1, A2, A3, and A4 functions to launch Windows Mobile applications or custom applications in the App Launch portion of the Utilities application. Go to **Start** > **Settings** > the **System** tab > **Utilities** > the **App Launch** tab.

The following table lists sequences that use the **orange/white** (◒) plane key. See "Understanding Windows Mobile" on page 19 for information about the Windows Mobile applications.

Orange/White Plane Key Sequences

Press the Keys	To Do This
◒ I ☼	Toggle the backlight on or off. You can also go through the backlight power levels by holding the keys down.
◒ A A1	Launch a Windows Mobile application or custom application.
◒ B A2	Launch a Windows Mobile application or custom application.
◒ C A3	Launch a Windows Mobile application or custom application.
◒ D A4	Launch a Windows Mobile application or custom application.
◒ J PgUp	Move up one page.
◒ G *	Enter an asterisk (*).
◒ P PgDn	Move down one page.
◒ E Win	Access the Windows Mobile Start menu.
◒ K @	Enter an at (@) symbol.
◒ H /	Enter a backslash (/).
◒ L -	Enter a minus sign (-).
◒ R +	Enter a plus sign (+).
◒ ▶	Tab to the right.
◒ ◀	Tab to the left.
◒ ♪+	Increase volume.
◒ ♪-	Decrease volume.

Note: You can configure the A1, A2, A3, and A4 functions to launch Windows Mobile applications or custom applications in the App Launch portion of the Utilities application. Go to **Start** > **Settings** > the **System** tab > **Utilities** > the **App Launch** tab.

Using the Green Plane Keys

You can enter the alphabet using the **green** (Alpha) plane keys on numeric keypads. Below and on the next page are the key sequences.

When you press the **green** key, the Scanning/Alpha LED (✓◯) shows red for the Alpha mode. The keypad stays in Alpha mode until you press the **green** key again.

To type a lowercase "c," press **green** 2 ABC End 2 ABC End 2 ABC End . To type a letter on the same key as the last letter entered, wait two seconds, then enter the correct series of keystrokes to create the next letter.

While in the Alpha mode and you press 1 Caps Send to initiate the CAPS mode, you will render a CAPS LOCK until you press 1 Caps Send again. Once you are in CAPS mode, you stay in CAPS until it is pressed again. Press 0 Win to enter a space.

Green Plane Key Sequences

To Enter	Press These Keys	To Enter	Press These Keys
a	Alpha 2	A	Alpha 1 2
b	Alpha 2 2	B	Alpha 1 2 2
c	Alpha 2 2 2	C	Alpha 1 2 2 2
d	Alpha 3	D	Alpha 1 3
e	Alpha 3 3	E	Alpha 1 3 3
f	Alpha 3 3 3	F	Alpha 1 3 3 3
g	Alpha 4	G	Alpha 1 4
h	Alpha 4 4	H	Alpha 1 4 4
i	Alpha 4 4 4	I	Alpha 1 4 4 4
j	Alpha 5	J	Alpha 1 5
k	Alpha 5 5	K	Alpha 1 5 5
l	Alpha 5 5 5	L	Alpha 1 5 5 5
m	Alpha 6	M	Alpha 1 6
n	Alpha 6 6	N	Alpha 1 6 6
o	Alpha 6 6 6	O	Alpha 1 6 6 6
p	Alpha 7	P	Alpha 1 7
q	Alpha 7 7	Q	Alpha 1 7 7
r	Alpha 7 7 7	R	Alpha 1 7 7 7
s	Alpha 7 7 7 7	S	Alpha 1 7 7 7 7
t	Alpha 8	T	Alpha 1 8
u	Alpha 8 8	U	Alpha 1 8 8
v	Alpha 8 8 8	V	Alpha 1 8 8 8
w	Alpha 9	W	Alpha 1 9
x	Alpha 9 9	X	Alpha 1 9 9
y	Alpha 9 9 9	Y	Alpha 1 9 9 9
z	Alpha 9 9 9 9	Z	Alpha 1 9 9 9 9

Using the Alpha Plane Keys

When you press Alpha, the Scanning/Alpha LED ( ) is red to indicate Alpha mode on the alphanumeric keypad. The keypad stays in Alpha mode until you press Alpha again. If you want to type a lowercase c, press Alpha C A3. If you want to type an uppercase C, press and hold the Cap Lock key and then press C A3. Press Space to enter a space.

Alpha Plane Key Sequences

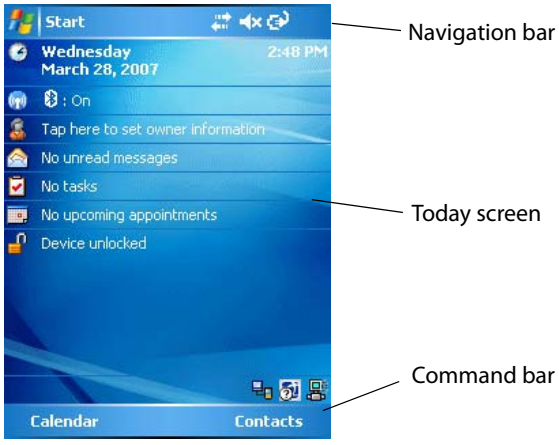
To Enter	Press These Keys	To Enter	Press These Keys
a	Alpha A A1	A	Alpha Cap Lock A A1
b	Alpha B A2	B	Alpha Cap Lock B A2
c	Alpha C A3	C	Alpha Cap Lock C A3
d	Alpha D A4	D	Alpha Cap Lock D A4

Alpha Plane Key Sequences (continued)

To Enter	Press These Keys	To Enter	Press These Keys
e	Alpha E Win	E	Alpha Cap Lock E Win
f	Alpha F =	F	Alpha Cap Lock F =
g	Alpha G ★	G	Alpha Cap Lock G ★
h	Alpha H /	H	Alpha Cap Lock H /
i	Alpha I ☼	I	Alpha Cap Lock I ☼
j	Alpha J PgUp	J	Alpha Cap Lock J PgUp
k	Alpha K @	K	Alpha Cap Lock K @
l	Alpha L -	L	Alpha Cap Lock L -
m	Alpha M1	M	Alpha Cap Lock M1
n	Alpha N2	N	Alpha Cap Lock N2
o	Alpha O3	O	Alpha Cap Lock O3
p	Alpha P PgDn	P	Alpha Cap Lock P PgDn
q	Alpha Q ,	Q	Alpha Cap Lock Q ,
r	Alpha R +	R	Alpha Cap Lock R +
s	Alpha S4	S	Alpha Cap Lock S4
t	Alpha T5	T	Alpha Cap Lock T5
u	Alpha U6	U	Alpha Cap Lock U6
v	Alpha V •	V	Alpha Cap Lock V •
w	Alpha W7	W	Alpha Cap Lock W7
x	Alpha X8	X	Alpha Cap Lock X8
y	Alpha Y9	Y	Alpha Cap Lock Y9
z	Alpha Z0	Z	Alpha Cap Lock Z0

Using the Touch Screen

The computer has a color touch screen display. The screen is a Quarter VGA display with 240 x 320 pixels. The default Today screen has three distinct areas: the Navigation bar, the Today screen, and the Command bar.



The Windows Mobile Today Screen

See Chapter 2, "Understanding Windows Mobile" for more information on using Windows Mobile.

If you have TE 2000 loaded on your computer, you will not see the Today screen. After the computer finishes the initial booting sequence, the TE 2000 screen appears. For help using TE 2000 terminal emulation, see the *TE 2000 Terminal Emulation Programmer's Guide* (P/N 977-055-xxx).

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 taskbar.
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 battery status, network connections, and so on. Some standard Microsoft icons are included in this table.

Computer Screen Icons

Icon	Description
	The battery is full.
	The battery is low. You need to replace or charge the battery very soon.
	The battery is charging.
	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.
	The computer is connected through the USB port to your desktop PC.
	The iConnect application icon. Tap it to set up Ethernet or Wireless settings.

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.

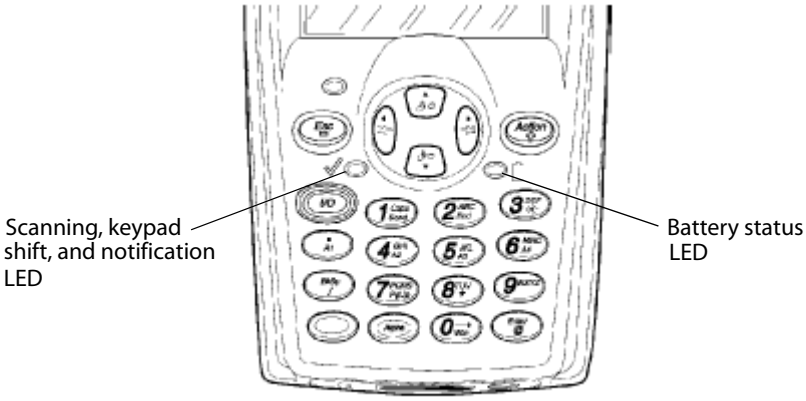
To calibrate the touch screen

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

If the touch screen is so out of alignment that you cannot open the Start menu, you may need to perform a clean boot. After the computer clean boots, it prompts you to align the screen. For more information about performing a clean boot, see "Clean Booting the Computer" on page 80.

Understanding the LEDs

The LEDs on the computer turn on to indicate the status of the battery, a good read by the scanner, a shifted key, or a notification.



The battery status LED (B) and the scanning/keypad shift and notification LED (C) turn red, green, or yellow to indicate the status of the battery, scanner information, and the mode of the keypad.

Battery Status LED

LED Color and Action	Description
Steady green	Battery is more than 95% charged and the computer is on the charger.
Blinking red	Battery is low. The blinking speed increases as the battery power lowers.
Red	Main battery is low; or if charging, remains red until your computer reaches a 95% charge status.
Yellow	The computer is on a charging source and there is no battery pack installed. The computer may also be out of the charging range of 0° to 50° C (32° to 122° F). When the computer is back in charging range, charging resumes and the LED changes to red or green.
Alternating Red/Yellow	Replace the battery pack.

Scanning/Keypad Shift and Notification LED

LED Color and Action	Description
Momentary green	Indicates a good scan.
Blinking green	Indicates the scanner is initializing.
Steady red	Indicates the keypad is shifted to Alpha (green) and the computer is turned on.
Yellow	When the keypad is in alpha mode, the LED temporarily switches from red to yellow to indicate a good scan. The yellow LED also indicates a Calendar or Task activity.

Scanning Bar Codes

Do not look directly into the window area or at a reflection of the laser beam while the laser is scanning. Long-term exposure to the laser beam can damage your vision.

Use the internal scanner to scan and enter bar code data. The type of scanner you are using and the type of bar code you are decoding determines the way you scan the bar code. The computer supports the scanning of 1D linear bar codes and 2D images, depending on the scanner model you chose to purchase. Plus, if you are using an integrated handle or a scanner attached to the serial port, the way you scan bar codes is different.

When you unpack the computer, these bar code symbologies are enabled:

- Code 39
- Code 128
- PDF417 (if supported)
- UPC/EAN
- DataMatrix (area imagers only)

If you are using bar code labels that are encoded in a different symbology, you need to enable the symbology on the computer. Use Intermec Settings to enable and disable symbologies for your scanner. For help using Intermec Settings, see **"Configuring the Computer With Intermec Settings" on page 38**.

For information on scanner reading distances, see **"Scanner Reading Distances" on page 90**. The following two sections describe how to scan a bar code label with the laser scanner (EL10), linear imager (EV10), and area imager (EA11).

Scanning With the Laser Scanner or Linear Imager

If your computer has a standard range laser or a linear imager, use the following procedure to practice scanning a bar code. The linear imager can decode PDF417 bar codes as well as bar codes with high-density, low-density, and poor quality in any lighting conditions. For help scanning PDF417 bar codes, see the procedure on the next page.

To scan bar code labels with the laser scanner or linear imager

1. Press **I/O** to turn on the computer.
2. Point the scanner window at the bar code label and hold the computer at a slight angle 15 to 25 cm (6 to 10 in) from the label.
3. Press either side **Scan** button, or pull the trigger on a handle, and direct the red beam so that it falls across all bars in the bar code label.

   Use this test bar code:

   Code 39 Test Bar Code

   123456

   When the computer successfully reads a bar code label, you hear a high beep and the green Scanning LED turns on briefly.
4. Release the side **Scan** button or the trigger.

To scan a PDF417 or Micro PDF417 bar code with the linear imager

1. Press **I/O** to turn on the computer.
2. Point the scanner window at the PDF417 or Micro PDF417 bar code label and hold the computer at a slight angle 15 to 25 cm (6 to 10 in) from the label.
3. Press either side **Scan** button, or pull the trigger on a handle, and direct the red beam so that it falls across the top row of the bar code label.

   Use this test bar code:

   PDF417 Test Bar Code

   123456789abcdefg
4. Move the beam down all rows of the bar code label. The computer clicks as it reads each row.
5. The computer emits a high beep and the Scanning LED turns on briefly when the computer successfully reads the entire bar code label.
6. Release the side **Scan** button or the trigger.

Scanning With an Area Imager

If the computer has an area imager, use the following procedure to practice scanning a bar code. The area imager lets you scan 2D bar code symbologies and supports omni-directional (360°) scanning. Omni-directional scanning means that you can position the computer in any orientation to scan a bar code label. Using the area imager is very similar to taking a picture with a digital camera.

To scan a bar code label with the area imager

1 Press I/O to turn on the computer.

2 Point the scanner window at the bar code label and hold the computer steady a few inches from the label.

3 Press one of the side Scan buttons, or pull the trigger on a handle, and center the red aiming beam over the bar code label.

The imager flashes repeatedly while it is trying to read a bar code. The aiming beam is smaller when the imager is closer to the bar code and larger when it is further away.

When the computer successfully reads a bar code label, you hear a high beep and the green Scanning LED turns on briefly.

4 Release the side **Scan** button or the trigger.

If you experience problems scanning a bar code with the area imager, try following some of these tips to improve the performance of your imager.

- Choose a Predefined Mode in Intermec Settings:
  - **a** Tap **Start** > **Settings** > the **System** tab > **Intermec Settings**.
  - **b** Tap **Data Collection** > **Internal Scanner** > **Imager Settings** > **Predefined Modes** and then select one of these options.

Predefined Mode	Select if You Are Scanning:
1D	only 1D labels.
1D and 2D Standard	all types of bar code labels.
1D and 2D Bright Environment	in high ambient light, such as outdoors in the sunshine.
1D and 2D Reflective Surface	glossy labels.
Custom	in conditions that require customized settings. For more information on the customized settings, see the *Intermec Computer Command Reference Manual* available from Intermec web site at www.intermec.com.

- Keep your hand as steady as possible while scanning a label.
- Position the imager as close to the bar code as possible while still being able to capture the entire bar code.
- Enable only the bar code symbologies that you need to use every day.

Attaching a Scanner to the Serial Port

You can attach a scanner to the serial port of the computer if you order a 700 Series Tethered Scanner Adapter and RS-232 cable (P/N 3-604032-16). After you install the adapter with two thumbscrews, you can easily connect tethered bar code scanners to the end of your computer.

You can use the following scanner models with the tethered scanner adapter:

- 1551E
- 1553E
- ASCII
- SR60

For information on configuring the tethered scanner, see the documentation that came with the scanner.

You can also attach Bluetooth scanners, such as the SF51 and the SR61, to the computer. For more information, see **"Configuring the Computer to Communicate With a Wireless Scanner" on page 41**.

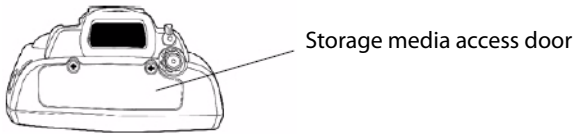
Installing a Storage Card

The 741 supports the use of CompactFlash cards and Secure Digital (SD) cards. The 751 does not support the use of SD cards because the 802.11 radio occupies the CompactFlash card slot.

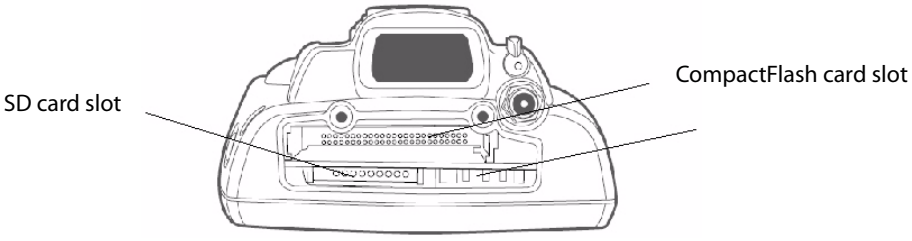
Note: MultiMediaCards (MMCs) are not supported.

To access the SD card slots

1 Locate the access door at the top of the computer and loosen the two screws.



2 Lift the storage media access door away from the computer. You can now insert storage cards into the computer.



This illustration shows the top of the computer. Note the keypad is facing downward.

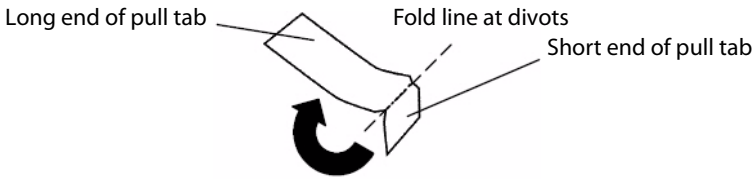
Attaching a Tab to the SD Card

The SD card, as ordered from Intermec, come with acrylic adhesive pull tabs. If you are using a storage card that you plan to remove from the computer, this tab can make its removal easier.

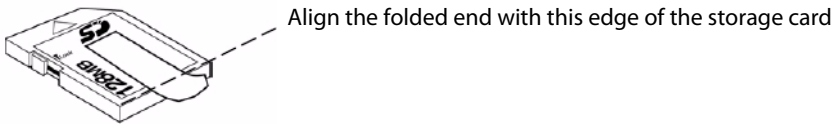
Do the following to attach the tab to your storage card. Note that the pull tab has divots cut into either side, towards the shorter end. Use these divots as a guide.

To attach a tab to the SD card

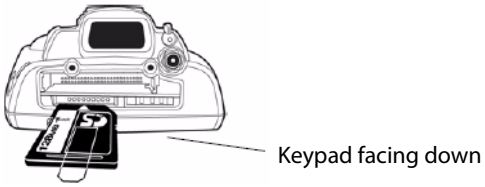
1 Completely peel the paper off the short end of the tab. Partially pull the paper off the long end of the tab away from the divots. Fold the short end under, at the divots, to stick to itself.



2 Align the folded edge of the pull tab where there is no adhesive with the bottom end of the storage card. Peel away the rest of the paper from the long end, then firmly press down the remaining adhesive area of the tab onto the storage card.



3 Insert the storage card, with the contacts facing the keypad, into your computer to ensure that no adhesive is exposed once the tab is placed.



4 Press on the storage card until you hear a click. If necessary, you can reattach the storage media access door.

Accessing Files Stored on the SD Card

When inserted in the computer, the SD card appears as the "\SDMMC Disk" folder. To access this folder, select My Computer, then tap the "\SDMMC Disk" folder.

Removing the SD Card

1. Press and hold the **Power** key for a few seconds, and then release the **Power** key to turn off the computer. Remove the storage media access door.
2. Gently press the SD card to release the card, and then pull the card out of the computer.
3. Replace the storage media access door.
4. Press the **Power** key for two to three seconds, and then release the **Power** key to turn on the computer.

2 Understanding Windows Mobile 5.0

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

- Understanding Windows Mobile 5.0
- Finding Information in Windows Mobile
- Learning the Basic Skills
- Using Microsoft ActiveSync
- Using Internet Explorer Mobile

Understanding Windows Mobile 5.0

This chapter introduces Microsoft Windows Mobile 5.0. While using the computer, keep these key points in mind:

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

Microsoft Windows Mobile 5.0 contains these standard Office Mobile programs:

- Word Mobile
- Excel Mobile
- PowerPoint Mobile

Finding Information in Windows Mobile

This section describes how to find Windows Mobile information on your computer.

Finding Information in Windows Mobile

For Information On:	See This Source:
Programs on the computer.	This chapter and the computer help.To view help, tap **Start** > **Help** and then select a topic.
Additional programs you can install on the computer.	The *Windows Mobile Companion CD*.
Connecting to and synchronizing with a desktop.	The ActiveSync help on your desktop. To view Help, click **Help** > **Microsoft ActiveSync Help**.
Last-minute updates and detailed technical information.	The readme files located in the Microsoft ActiveSync folder on the desktop and on the *Windows Mobile Companion CD*.
Up-to-date information on Windows Mobile.	www.microsoft.com/windowsmobile/resources/communities/default.mspx

Use these URLs for additional information about Microsoft Windows Mobile:

- **msdn2.microsoft.com/en-us/support/default.aspx**
- **support.microsoft.com/**

- http://msdn.microsoft.com/newsgroups/

And, most importantly, the Intermec front-line support personnel can help assist you work with many of the Windows Mobile and technologies that you find on the computer. See "Global Services and Support" on page vi for more information.

Learning the Basic Skills

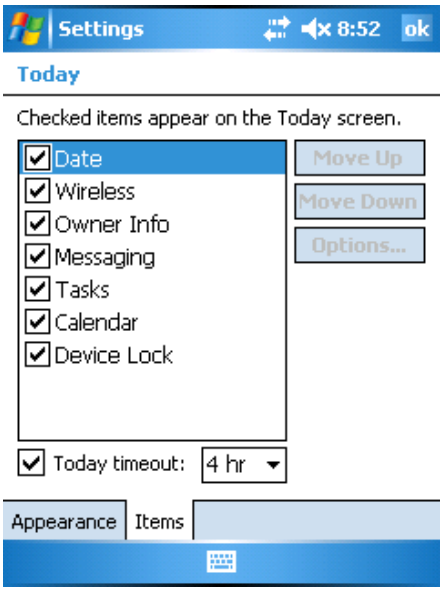
Learning to use the computer is easy. This section describes the basic concepts of using and customizing your computer.

Using the Today Screen

When you turn on your computer for the first time each day, you see the Today screen. You can also display it by tapping **Start** > **Today**. On the Today screen, you can see important information for the day.

To customize what displays on the Today screen

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



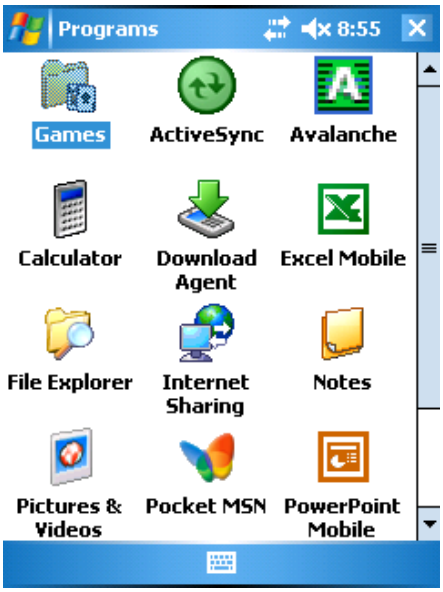
Status icons display information such as when the computer is connected to the network or to the Internet. You can tap an icon to open the associated setting or program.

Accessing Programs

You can switch from one program to another by selecting it from the **Start** menu. You can customize which programs you see on this menu. For information, see "Adjusting Settings" on page 32.

To access programs

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



The following list contains some of the programs on your computer. Look on the *Windows Mobile Companion CD* for additional programs that you can install onto your computer.

- ActiveSync
- Excel Mobile
- PowerPoint Mobile
- Word Mobile

Using the Navigation Bar and the Command Bar

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

Windows Mobile Navigation Bar

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

Windows Mobile Command Bar

Using Pop-Up Menus

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

Entering Information

You can enter information on your computer in several ways depending on the program you are using.

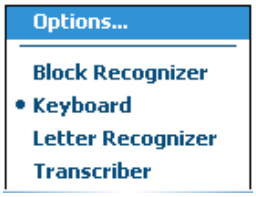
Understanding the Ways to Enter Information

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

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

To show or hide the input panel

1. Tap the Input Panel icon ( ).
2. Tap the arrow next to the Input Panel icon to see your choices.



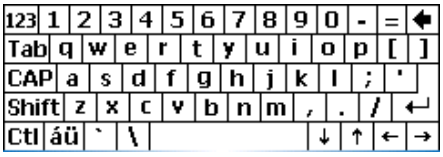
When you use the input panel, your computer anticipates the word you are typing or writing and displays it above the input panel. When you tap the displayed word, it is inserted into your text at the insertion point. The more you use the computer, the more it learns to anticipate what you are going to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

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

Typing With the Onscreen Keyboard

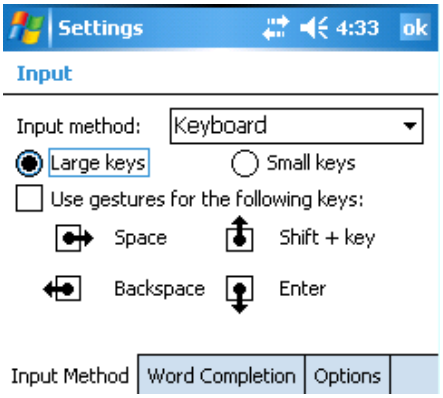
Tap the input panel arrow, and then tap **Keyboard**. On the soft keyboard that displays, tap the keys with your stylus.

- To type lowercase letters, tap the keys with the stylus.
- To type a single uppercase letter or symbol, tap the **Shift** key. To tap multiple uppercase letter or symbols, tap the **CAP** key.



To use larger keys

1. Tap the input panel arrow and then tap **Options**.
2. On the **Input Method** tab, select **Large keys**.



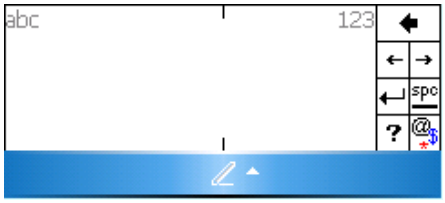
Using Block Recognizer

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

To use Block Recognizer

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

For specific instructions on using Block Recognizer, tap the question mark next to the writing area.



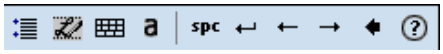
Using Transcriber

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

To use Transcriber

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

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



Selecting Typed Text

If you want to edit or format typed text, you must select it first.

To select typed text

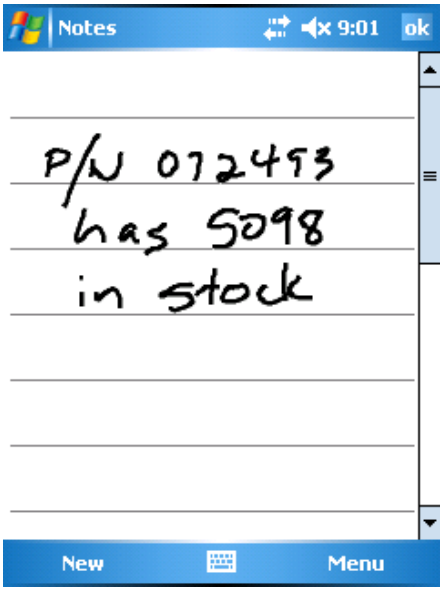
1. Drag the stylus across the text you want to select.
2. Double-tap text or drag the stylus across text you want to select.
3. Do one of the following:
   a. Tap and hold the stylus on the text to bring up the pop-up menu and select a command.
   b. Select a command by tapping Menu from the command bar.

Writing on the Screen

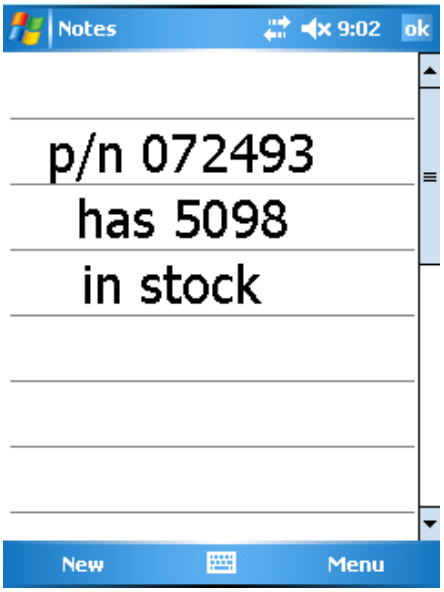
In any program that accepts writing, such as the Notes program, you can use your stylus to write directly on the screen. Write the way you do on paper. You can edit and format what you have written and convert the information to text in the future.

To convert the writing to text

1. Write your information on the screen with the stylus.



2 Tap **Menu** > **Tools** > **Recognize**. Your writing is converted to text.



Notifications

When you have something to do, your computer can notify you in a variety of ways. For example, if you have set up an appointment in Calendar, you can be notified in any of the following ways:

- A message box appears on the screen.
- A sound, which you can specify, plays.
- A light flashes on your computer.
- The computer vibrates.

To choose how you are notified

1 Tap **Start** > **Settings** > **Sounds & Notifications** > the **Notifications** tab.

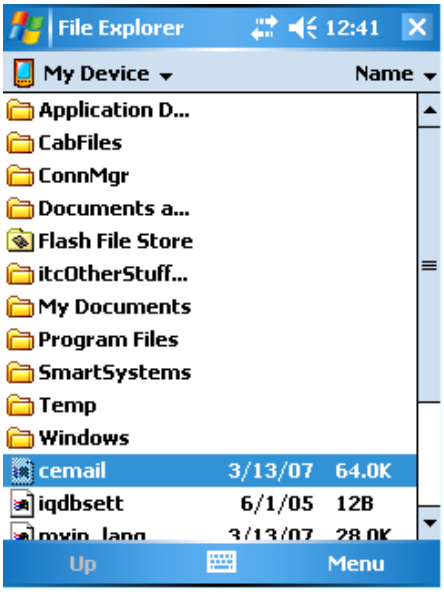
2 Choose your settings and then click **ok**.

Finding and Organizing Information

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

To open File Explorer

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



Once you open File Explorer, it becomes available from **Start** menu.

Customizing the Computer

You can customize your computer by adjusting settings and by adding or removing programs.

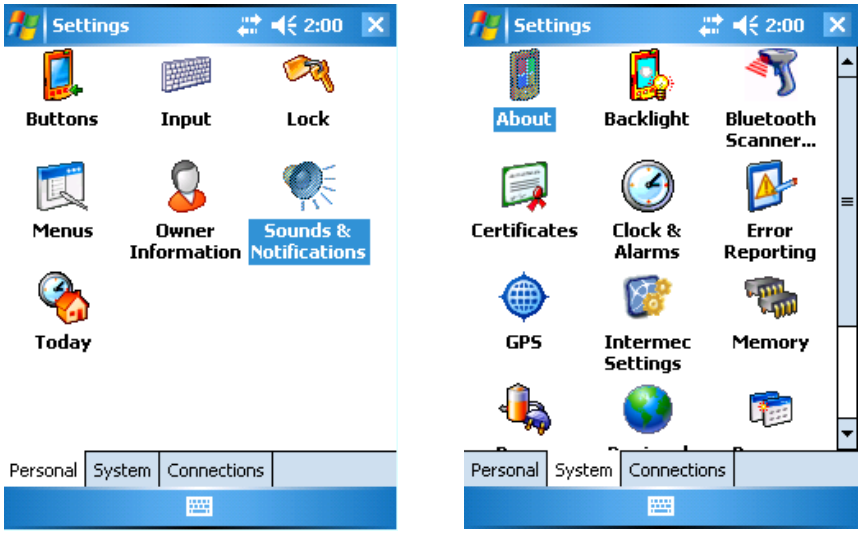
Adjusting Settings

You can adjust the computer settings to suit the way you work.

To view the Settings options

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

You might want to adjust settings on the following screens.



Adjustable Settings on the Computer

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

Adding or Removing Programs

Programs added to your computer at the factory are stored in ROM (Read Only Memory). You cannot remove this software, and you cannot accidentally lose ROM contents. Applications added to your computer go into the Object Store, which is located in Flash ROM. See "Installing Applications" on page 68 for more information about the Object Store.

You can install any program created for the 741 or 751 mobile computer, as long as there is enough memory. A popular place to find software for your computer is on the Windows Mobile Web site (**www.microsoft.com/windowsmobile/resources/communities/default.mspx**).

Using Microsoft ActiveSync

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

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

You can also perform these functions with ActiveSync:

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

To use ActiveSync

1. Insert the computer into communications dock attached to your PC with a USB cable.
2. Install ActiveSync on your desktop. ActiveSync is available from the *Windows Mobile Companion CD* or from the Microsoft web site. ActiveSync is already installed on the computer.

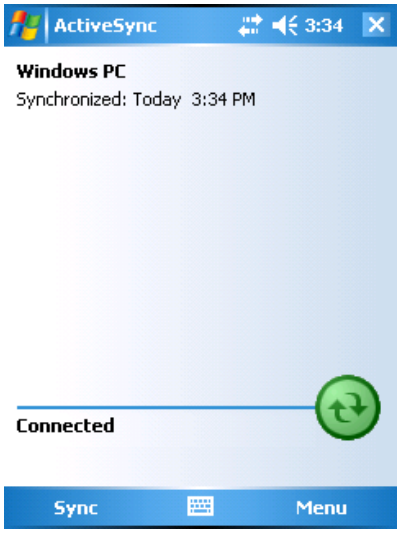
   After installation, ActiveSync automatically launches the ActiveSync Setup Wizard.
3. Follow the screens of the ActiveSync Setup Wizard to complete the synchronization process. The wizard helps you connect to the computer, set up a partnership for synchronization, and customizes synchronization settings.

   The synchronization process automatically begins when you finish the wizard.
4. Disconnect the computer from your desktop and go to work.

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

To open ActiveSync on your computer

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



For more information about ActiveSync on your computer, open ActiveSync and tap **Start** > **Help**.

Using Internet Explorer Mobile

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

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

To use Internet Explorer

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

Default Internet Explorer Web Page

3 Configuring the Computer

Use this chapter to understand how to configure the 741 and 751 to communicate in your network. In this chapter, you will find these sections:

- Configuring the Computer Operating Parameters
- Configuring Personal Area Networks
- Configuring Local Area Networks
- Configuring Security

Configuring the Computer Parameters

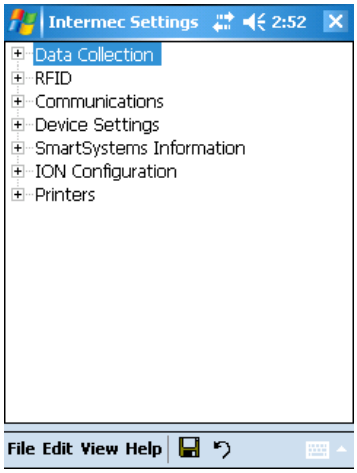
You can configure many parameters on the computer, such as the bar code symbologies it decodes or the network settings. These characteristics are controlled by configuration parameters. The values you set for these configuration parameters determine how the computer operates. Use configuration commands to configure the 741 and 751.

Configuring the Computer With Intermec Settings

Use Intermec Settings to configure the computer and view system information. You can access Intermec Settings while running any application.

To open Intermec Settings

- Tap **Start** > **Settings** > the **System** tab > **Intermec Settings**.



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

Navigating in Intermec Settings

To Do This Function	Do This
Select a command.	• Tap the command. • Press ▼ or ▲.
Expand a command.	• Tap the command. • Press ◄ or ►.
Select text in a text box.	Tap in the text box and drag the stylus over the text.
Save your settings.	Tap **File** > **Save Settings** or tap the disk icon ( ).

Remotely Configuring the Computer Using SmartSystems Foundation

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

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

Synchronizing the Computer System Time with a Time Server

It is important that the time on all of your computers be synchronized with a network time server to ensure real-time communications and updates. Network time servers acquire Coordinated Universal Time (UTC) from an outside source such as the U.S. Naval Observatory (USNO). The 741 and 751 use Simple Network Time Protocol (SNTP) to synchronize with a network time server.

The default reference time server is the USNO (tock.usno.navy.mil). To synchronize the time on your computer with this time server, you must have a valid connection to the Internet. You can also synchronize the computer system time with a corporate network server within your firewall that is SNTP-capable. To use an internal corporate network server, you need to set the command name in the registry.

Configuring Personal Area Networks

Bluetooth™ is a technology standard that uses short-range radio links, intended to replace cable s connecting portable and fixed electronic devices. The key features of Bluetooth are robustness, low complexity, low power, and low cost. The technology offers wireless access to LANs, the mobile phone network, and mobile computers.

You can also print wirelessly by using Microsoft APIs, including Bluetooth extensions for Winsock and Bluetooth virtual COM ports. Information about other Bluetooth software is in the Bluetooth Resource Kit and the *Bluetooth Resource Kit User's Guide* which is part of the Intermec Developer Library (IDL). The IDL is available as a download from the Intermec web site at **www.intermec.com/idl**.

You can send and receive information to a Bluetooth device wirelessly using the Bluetooth radio in the computer.

You can use the Bluetooth radio to perform these wireless activities:

- Print to a Bluetooth printer

- Connect to a Bluetooth scanner

The Bluetooth radio is disabled by default. You must turn on the Bluetooth radio before you can discover and connect to other remote devices.

To turn the Bluetooth radio on

1 Tap **Start** > **Settings** > the **Connections** tab > **Bluetooth**.

2 Tap **Turn on Bluetooth**.

3 (Optional) Tap **Make this device visible to other devices** if you want your computer to be discoverable by other Bluetooth devices.

4 Click **ok**.

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

You can also use Intermec Settings to turn on the radio and enable Bluetooth settings. Use this table to understand the settings you see in the Bluetooth menu in Intermec Settings.

Bluetooth Settings

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

Configuring the Computer to Communicate With a Wireless Scanner

This section explains how to configure the computer to communicate with Bluetooth wireless scanners. The computer ships with a Bluetooth association label attached to the left side. Scan the association label to quickly connect the computer to the Bluetooth wireless scanner, such as the SF51 or SR61.

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

To configure Bluetooth communications on the computer

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

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

To connect to the wireless scanner using the association label

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

To connect to the wireless scanner using Intermec Settings

1. Select **Start** > **Settings** > the **System** tab > **Bluetooth Scanner Wizard**.
2. Tap **Add Device**. The wizard advances to the next screen.
3. Select how you would like to set your scanner (the default is Search) and then click **Next**. The computer starts discovering scanners.
4. Select the scanner you want to connect to from the Devices list and then tap **Next**.
5. When prompted to add the scanner to your device list, tap **Yes**.
6. In the **Passcode** text box, enter the passcode for your scanner. The default passcode for Intermec Bluetooth scanners is `0000`.
7. Tap **Next**. The computer connects to the scanner and displays the remote device information.
8. Tap **Finish**.

9 Refresh Intermec Settings to see the Bluetooth scanner under Data Collection. You can now view and modify any symbology settings.

To remove a wireless scanner from the computer

1 Select **Start** > **Settings** > the **System** tab > **Bluetooth Scanner Wizard**.

2 Tap **Remove Device**.

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

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

4 Tap **Finish**.

Configuring Bluetooth Communications for Wireless Printing

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

- make sure Bluetooth power is on. For help, see the procedure in "Configuring Personal Area Networks" on page 39.
- create an application that lets you print. For help, see the next section.
- select the current wireless printer on the computer. For help, see "Selecting the Current Wireless Printer on the Computer" on page 43.

Creating an Application That Lets You Print Wirelessly

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

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

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

The Wireless Printing application performs these tasks on the computer:

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

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

Selecting the Current Wireless Printer on the Computer

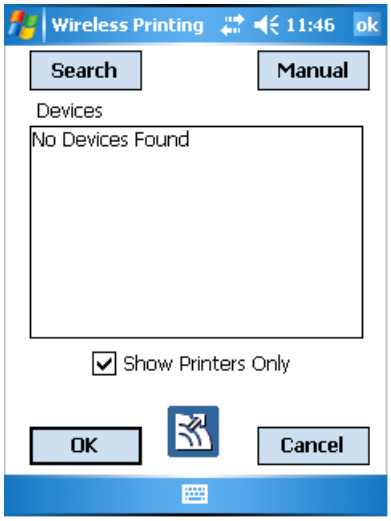
By default, there is no current wireless printer selected on the computer.

There are three ways to select the current wireless printer:

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

To discover the printer with Bluetooth device discovery

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



2 Tap **Search** to initiate printer discovery. All Bluetooth printers discovered within range appear in the devices list.

3 Select the printer you want to connect to and then tap **OK**.

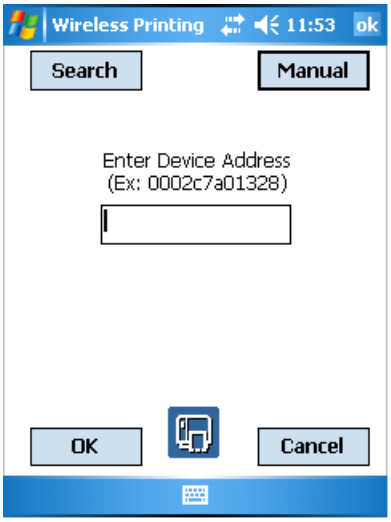
4 If your preferred printer does not appear, make sure the printer is turned on and discovery is enabled, and then repeat Steps 1 through 3.

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

To manually enter the device address of the printer

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

2 Tap **Manual**. The wizard advances to the next screen where you enter the device address.



3 Type the address of the printer in the Enter Device Address text box and then tap **OK**. The keyword -unknown- appears in the Device Name field in the Current Wireless Printer box. The name of the printer is not sent to the computer when you manually enter the printer address.

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

To choose the printer from a list of previously discovered printers

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

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

3 Tap Set Different Printer. The Devices list appears with the list of previously discovered printers.

4 Select the printer you want and tap **OK**.

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

Configuring Local Area Networks

Your computer is a versatile mobile computer that easily adds to your wired or wireless data collection network. You can connect your computer to a network using:

- USB communications.
- 802.11 radio communications.

Configuring USB Communications

You can place your computer in a single dock, multidock, modem dock, or vehicle dock to transfer data to and receive data from another device using USB communications. The USB cable and all of the docks are sold separately. For information on accessories and how to order them, see "Accessories" on page 93.

To use USB communications with your computer

1. Connect the dock to the USB port of the other device using an appropriate USB cable.
2. Make sure your USB device is configured for USB communications.
3. Insert the computer into the dock and turn it on.

A status box appears on the screen to show that the computer is making a USB connection.

Configuring Ethernet Communications

You can use your computer directly in an Ethernet network if you use the Ethernet Adapter Cup or one of the communications docks. The adapter cup provides an RJ-45 connector off of it to connect to your Ethernet network and the communications docks provide an Ethernet connector that allows your computer to communicate in an Ethernet network.

To use your computer in an Ethernet network

1. Tap the iConnect icon ( ) in the lower right corner of the Today screen. The iConnect pop-up menu appears:

2. Select **Enable** > **Ethernet**.
3. (Optional) Configure the IP Settings for the Ethernet Adapter if you are not using DHCP. DHCP is the default setting.
4. (Optional) If required for your network, you may also need to set these parameters on each computer:
   - Primary and secondary DNS servers
   - Primary and secondary WINS servers
5. Make sure that your computer is talking to the network and that the network can see your computer.

Configuring 802.11 Radio Communications

The 751 Mobile Computer has an internal 802.11 b/g radio to transfer data using wireless communications. This section of the manual assumes that you have already set up your wireless communications network including your access points. If you are using a UDP Plus network, have your Intermec Application Server communicate with a host computer.

Your computer supports these network protocols:

- TCP/IP
- UDP Plus

The next sections explain the parameters you need to configure for the 751 to work in your wireless network.

Configuring the Network Parameters for a TCP/IP Network

In a TCP/IP network, the 751 communicates with a host computer directly using TCP/IP. The access point acts as a bridge to allow communications between the wired network and the wireless network.

To use wireless communications in a TCP/IP network

1. Go to **Start** > **Settings** > the **Systems** tab > **Intermec Settings**.
2. Configure these network parameters on each 751 in the network:
   - Network name (SSID)
   - IP settings (if not using DHCP)
3. Make sure that the 751 is talking to the network and that the network can see the 751.
4. Configure security. For help, see **"Configuring Security on the Wireless Network" on page 47**.

The easiest way to configure the network parameters on the 751 is to use Intermec Settings. For help, see **"Configuring the Computer With Intermec Settings" on page 38**.

Configuring the Network Parameters for a UDP Plus Network

In a UDP Plus network, the 751 communicates with a host computer through the Intermec Application Server. The Intermec Application Server translates UDP Plus packets on the wireless network into TCP/IP packets on the wired networks and vice versa. The access point acts as a bridge to allow communications between the wired network and the wireless network.

To use wireless communications in a UDP Plus network

1. Go to **Start** > **Settings** > the **Systems** tab > **Intermec Settings**.
2. Configure these network parameters on the 751:
   - Network name (SSID)

- Controller IP address
- IP settings (if not using DHCP)
- Network port

3 Make sure the 751 is talking to the network and that the network can see the 751.

4 Configure security. For help, see "Configuring Security on the Wireless Network" on this page.

Checking the Status of Your Wireless Connection

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

To check the status of your wireless connection

1 Tap the iConnect icon ( ) in the lower right corner of the Today screen.

2 From the menu, select **Status** > **Wireless**. The Wireless Status screen appears and checks the connection.

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

Configuring Security on the Wireless Network

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

- Infrastructure networks connect you to your corporate network and the internet. Your computer establishes a wireless connection to an access point, which links you to the rest of the network.
- Ad-hoc networks are private networks shared between two or more clients, even without an access point.

Each wireless network is assigned a name (or SSID) to allow multiple networks to coexist in the same area without infringement.

Intermec recommends using security measures with wireless networks to prevent unauthorized access to your network and to ensure the privacy of transmitted data. These elements are required for secure networks:

- Authentication by both the network and the user
- Authentication is cryptographically protected
- Transmitted data

There are many schemes available to implement these features. Use the following tables to understand the common terminology for wireless network security.

Encryption Terminology

Acronym	Description
AES (Advanced Encryption Standard)	A block cipher, a type of symmetric key cipher that uses groups of bits of a fixed length - called blocks. A symmetric key cipher is a cipher using the same key for both encryption and decryption. As implemented for wireless, this is also known as CCMP, which implements AES as TKIP and WEP are implementations of RC4.
CKIP (Cisco Key Integrity Protocol)	This is Cisco's version of the TKIP protocol, compatible with Cisco Aironet products.
TKIP (Temporal Key Integrity Protocol)	This protocol is part of the IEEE 802.11i encryption standard for wireless LANs, which provides per-packet key mixing, a message integrity check and a re-keying mechanism, thus overcoming most of the weak points of WEP. This encryption is more difficult to crack than the standard WEP. Weak points of WEP include: No Initiation Vector (IV) reuse protection, weak keys, no protection against message replay, no detection of message tampering, and no key updates.
WEP (Wired Equivalent Privacy) encryption	With preconfigured WEP, both the client 751 and access point are assigned the same key, which can encrypt all data between the two devices. WEP keys also authenticate the 751 to the access point - unless the 751 can prove it knows the WEP key, it is not allowed onto the network. WEP keys are only needed if they are expected by your clients. There are two types available: 64-bit (5-character strings, 12345) (default) and 128-bit (13-character strings, 1234567890123).

Key Management Protocols Terminology

Acronym	Description
WPA (Wi-Fi Protected Access)	This is an enhanced version of WEP that does not rely on a static, shared key. It encompasses a number of security enhancements over WEP, including improved data encryption via TKIP and 802.11b/g authentication with EAP. WiFi Alliance security standard is designed to work with existing 802.11 products and to offer forward compatibility with 802.11i.
WPA2 (Wi-Fi Protected Access)	Second generation of WPA security. Like WPA, WPA2 provides enterprise and home Wi-Fi users with a high level of assurance that their data remains protected and that only authorized users can access their wireless networks. WPA2 is based on the final IEEE 802.11i amendment to the 802.11 standard ratified in June 2004. WPA2 uses the Advanced Encryption Standard (AES) for data encryption and is eligible for FIPS (Federal Information Processing Standards) 140-2 compliance.

Authentication Terminology

Acronym	Description
EAP (Extensible Authentication Protocol)	802.11b/g uses this protocol to perform authentication. This is not necessarily an authentication mechanism, but is a common framework for transporting actual authentication protocols. Intermec provides a number of EAP protocols for you to choose the best for your network.
EAP-FAST (Flexible Authentication via Secure Tunneling)	A publicly accessible IEEE 802.1X EAP type developed by Cisco Systems. It is available as an IETF informational draft. An 802.1X EAP type that does not require digital certificates, supports a variety of user and password database types, supports password expiration and change, and is flexible, easy to deploy, and easy to manage.
LEAP (Lightweight Extensible Authentication Protocol)	Also known as Cisco-Wireless EAP, provides username/password based authentication between a wireless client and a RADIUS server. In the 802.1x framework, traffic cannot pass through a wireless network access point until it successfully authenticates itself.
EAP-PEAP (Protected Extensible Authentication Protocol)	Performs secure authentication against Windows domains and directory services. It is comparable to EAP-TTLS both in its method of operation and its security, though not as flexible. This does not support the range of inside-the-tunnel authentication methods supported by EAP-TTLS. Microsoft and Cisco both support this protocol.
EAP-TLS (Transport Layer Security)	Based on the TLS (Transport Layer Security) protocol widely used to secure web sites. This requires both the user and authentication server have certificates for mutual authentication. While cryptically strong, this requires corporations that deploy this to maintain a certificate infrastructure for all users.
EAP-TTLS (Tunneled Transport Layer Security)	This protocol provides authentication like EAP-TLS but does not require certificates for every user. Instead, authentication servers are issued certificates. User authentication is done using a password or other credentials that are transported in a securely encrypted "tunnel" established using server certificates. EAP-TTLS works by creating a secure, encrypted tunnel through which you present your credentials to the authentication server. Thus, inside EAP-TTLS there is another *inner authentication protocol* that you must configure via Additional TTLS Settings.

The 751 provides three types of security for your wireless network: Wi-Fi Protected Access 2 (WPA2/802.11i), WPA, and WEP. 802.1x should be referred to as an authentication method used for WPA and WPA2. Another authentication method for WPA and WPA2 would be the Pre-Shared Key (PSK).

Choosing Between Microsoft and Funk Security

Before you can implement a security solution on the 751, you need to choose between Microsoft and Funk security:

- By default, Funk security is enabled. It provides everything you get with Microsoft security plus the addition of Cisco Compatible Extensions features. It also provides additional authentication types like EAP-TTLS, LEAP, and EAP-FAST.
- Microsoft security, with its Microsoft Zero Config feature, is also available. To switch to Microsoft security, go to "Configuring Microsoft Security" on page 62 to start.

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

If you want to use the default Funk security, you need to select a profile. For help, see one of the following sections, "Configuring Funk Security Using Intermec Settings" on this page or "Configuring Funk Security Using the Profile Wizard" on page 53.

If you want to use Microsoft security, you need to select it as your security choice. For help, see "Configuring Microsoft Security" on page 62.

Configuring Funk Security Using Intermec Settings

You can define up to four profiles for Funk security. Different profiles let your 751 communicate in different networks without having to change all of your security settings. For example, you may want to set up one profile for the manufacturing floor and one for the warehouse. By default, the active profile is Profile_1.

To select a profile for Funk security

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

Configuring WPA Security With Funk Security

Use these procedures to set WPA-802.1x, WPA2-802.1x, WPA-PSK, or WPA2-PSK security on your 751 with Funk security.

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

1. Make sure you have configured the communications and radio parameters on your 751.
2. Make sure you have selected Funk as your security choice.
3. Open Intermec Settings.
4. Choose **Communications** > **802.11 Radio** > **Funk Security** > **Profile**.
5. For **Association**, choose **WPA** or **WPA2** and press **Enter**. Encryption automatically defaults to TKIP if you are using WPA. Encryption automatically defaults to AES if you are using WPA2.
6. For **8021x**, choose **TTLS**, **PEAP**, **EAP-FAST**, or **TLS** and press **Enter**.

   If you choose TTLS or PEAP:

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

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

   b. Select **User name** and type your user name.

   c. Select **User Password** and type a user password.

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

Note: You must have the date on the 751 set correctly when you enable Validate Server Certificate.

   If you choose TLS:

   a. Load a user and root certificate on your 751. For help, see "Loading a Certificate" on page 64.

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

   c. You must enter a **User Name** and **Subject Name**. You can also enter a **Server Common Name** if you want to increase your level of security.

7. Exit Intermec Settings.

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

1. Make sure you have configured the communications and radio parameters on your 751.
2. Make sure you have selected Funk as your security choice.
3. Open Intermec Settings.
4. Choose **Communications** > **802.11 Radio** > **Funk Security** > **Profile**.

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

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

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

The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the access point. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the 751 internally converts it to a pre-shared key.

This value must match the passphrase on the authenticator.

8 Exit Intermec Settings.

Configuring 802.1x Security With Funk Security

1 Make sure you have configured the communications and radio parameters on your 751.

2 Make sure you have selected Funk as your security choice.

3 Open Intermec Settings.

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

5 For **Association**, choose **Open**.

6 For **Encryption**, choose **WEP**.

7 For **Authentication**, choose **TTLS**, **PEAP**, or **TLS**.

If you choose TTLS or PEAP:

a Select **User name** and type your user name.

b Select **Password prompt**, and choose **Enter password now**.

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

c Select **User Password** and type a user password.

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

If you choose TLS:

a Load a user and root certificate on your 751. For help, see "Loading a Certificate" on page 64.

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

c You must enter a **User Name** and **Subject Name**. You can also enter a **Server Common Name** if you want to increase your level of security.

8 Exit Intermec Settings.

Configuring LEAP Security on the 751

1. Make sure you have selected Funk as your security choice.
2. Make sure you have configured the communications and radio parameters on your 751.
3. From Intermec Settings, choose **Communications** > **802.11 Radio** > **Funk Security** > **Profile**.
4. For **8021x**, choose **LEAP**.
5. For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**. Encryption automatically defaults to TKIP if you choose WPA, to AES if you choose WPA2, and to WEP if you choose Open or Network EAP.
6. For **Prompt for Credentials**, choose **Enter credentials now**.
7. Select **User name** and type your user name.
8. Select **User Password** and type a user password.
9. Exit Intermec Settings.

Configuring Static WEP Security With Funk Security

1. Make sure you have selected Funk as your security choice.
2. Make sure you have configured the communications and radio parameters on your 751.
3. Open Intermec Settings.
4. Choose **Communications** > **802.11 Radio** > **Funk Security** > **Profile**.
5. For **Association**, choose **Open**.
6. For **Encryption**, choose **WEP**.
7. For **8021x**, choose **None**.
8. Define a value for the keys you want to use. You can define up to four keys (**Key 1** through **Key 4**).

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

Configuring Funk Security Using the Profile Wizard

You can start 802.11 b/g communications on the 751 using the Profile Wizard. A profile contains all the information necessary to authenticate you to the network, such as login name, password or certificate, and protocols by which the 751 is authenticated. You can have up to four profiles for different networks. For example, you may have different login names or passwords on different networks.

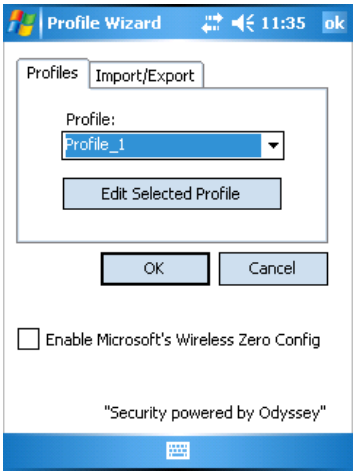
To select a profile for Funk security

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

or

Tap the iConnect icon ( ) in the lower right corner of the Today screen and select **Tools** > **Wireless Settings**.

The Profile Wizard appears.



2 From the **Profile** list, select the profile you want to configure.

3 Tap **Edit Selected Profile**.

4 (Optional) Give your profile a meaningful name by selecting the text in the Profile Label text box and typing a meaningful name.

5 From the **Network type** list, select either **Infrastructure** or **Ad-Hoc**. Select Infrastructure if the network uses access points to connect to the corporate network or internet. Select Ad-Hoc to set up a private network with one or more participants.

6 Enter the **SSID (Network Name)** if different than the profile name.

7 (Optional) Check the **Enable Power Management** box to conserve battery power.

8 Click **OK**.

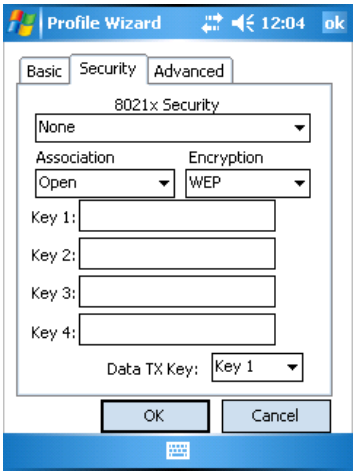
Configuring WEP Security With Profile Wizard

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

2 For **8021x Security**, choose **None**.

3 For **Association**, choose **Open** or **Shared** to match the settings on your access point.

4 For **Encryption**, choose **WEP**.



5 From the **Data TX Key** list, select the key you want to use for transmitting data.

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

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

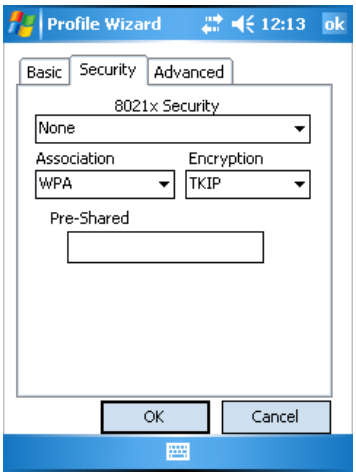
7 Tap **OK**.

Configuring WPA-PSK Security With Profile Wizard

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

2 For **8021x Security**, choose **None**.

3 For **Association**, choose **WPA**.



4 For **Pre-Shared Key** field, enter the passphrase as ASCII. The passphrase must be 8 to 63 characters and match the passphrase on the access point.

5 Tap **OK**.

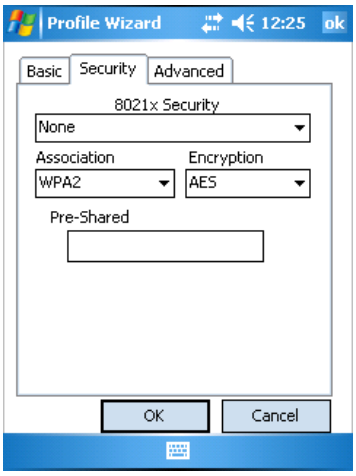
Configuring WPA2-PSK Security With Profile Wizard

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

2 For **8021x Security**, choose **None**.

3 For **Association**, choose **WPA2**.

4 For **Encryption**, choose **TKIP** or **AES**.



5 For **Pre-Shared Key** field, enter the passphrase as ASCII (12345).

6 Tap **OK**.

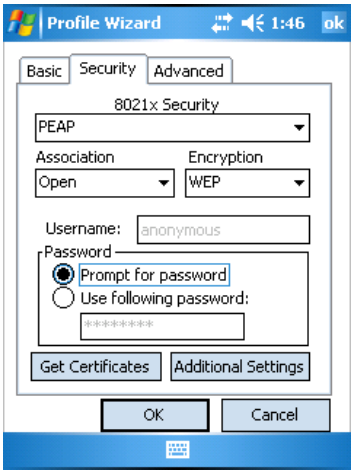
Configuring PEAP Security With Profile Wizard

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

To configure PEAP security

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

2 For **8021x Security**, choose **PEAP**.



3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.

4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.

5 For **Username**, type a unique username for this protocol.

6 In the **Password** field, type a unique password for this protocol.

7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the 751.

8 Tap **Get Certificates** to obtain or import server certificates. For help with certificates, see "Loading a Certificate" on page 64.

9 Tap **Additional Settings** to assign an inner PEAP authentication and set options for server certificate validation and trust.

10 From the **Inner PEAP Authentication** list, choose **EAP/MS-CHAP-V2**, **EAT/Token Card**, or **EAP/MD5-Challenge**.

11 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using PEAP.

12 Tap **Root CA**, select a root certificate, and then tap **OK**.

13 Enter the Common Names of trusted servers.

14 Tap **OK**.

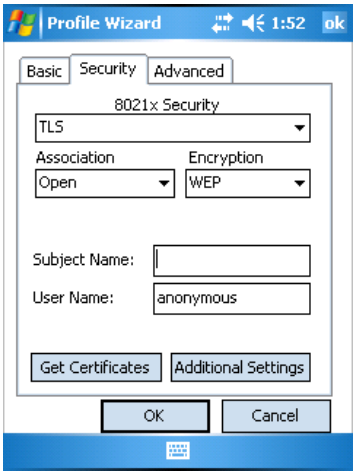
Configuring TLS Security With Profile Wizard

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

To configure TLS security

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

2 For **8021x Security**, choose **TLS**.



3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.

4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.

5 For **Subject Name**, type a unique subject name for this protocol.

6 For **User Name**, type a unique user name for this protocol.

7 Tap **Get Certificates** to obtain or import server certificates. For help with certificates, see "Loading a Certificate" on page 64.

8 Tap **Additional Settings** to server certificate validation and trust.

9 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using TLS.

10 Tap **Root CA**, select a root certificate, and then tap **OK**.

11 Enter the Common Names of trusted servers.

12 Tap **OK**.

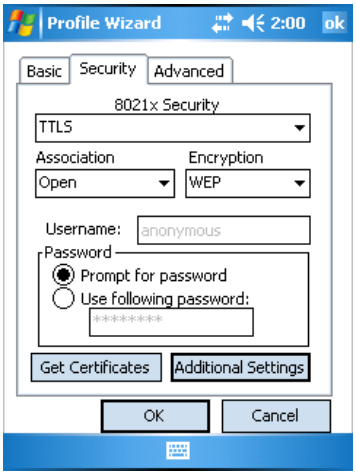
Configuring TTLS Security With Profile Wizard

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

To configure TTLS security

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

2 For **8021x Security**, choose **TTLS**.



3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.

4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.

5 For **Username**, type a unique username for this protocol.

6 In the **Password** field, type a unique password for this protocol.

7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the 751.

8 (Optional) Tap **Get Certificates** to obtain or import server certificates. For help with certificates, see "Loading a Certificate" on page 64.

9 Tap **Additional Settings** to assign an inner TTLS authentication, inner EAP, and set options for server certificate validation and trust.

10 From the **Inner TTLS Authentication** list, choose **PAP, CHAP, MS-CHAP, MS-CHAP-V2**, **PAP/Token Card**, or **EAP**.

11 If you select EAP for the inner authentication protocol, select and inner EAP protocol form the **Inner EAP** list.

12 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using TTLS.

13 Tap **Root CA**, select a root certificate, and then tap **OK**.

14 Enter the Common Names of trusted servers.

15 For **Anonymous EAP-TTLS Name**, type an outer identity to protect your login name or identity.

16 Tap **OK**.

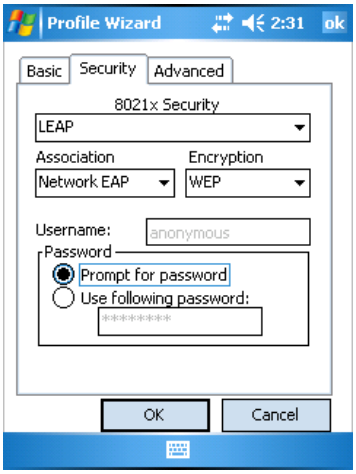
Configuring LEAP Security With Profile Wizard

LEAP is the Cisco Lightweight version of EAP.

To configure LEAP security

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

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



3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.

4 For **Encryption**, choose **TKIP** or **AES** if you selected WPA2 for association, or **WEP** or **CKIP** if you selected Network EAP for association.

5 For **Username**, type a unique username for this protocol.

6 In the **Password** field, type a unique password for this protocol.

7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the 751.

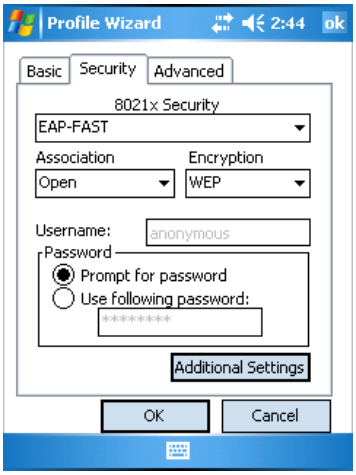
8 Tap **OK**.

Configuring EAP-FAST with Profile Wizard

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

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

2 For **8021x Security**, choose **EAP-FAST**.



3 For **Association**, choose **Open**, **WPA**, **WPA2**, or **Network EAP**.

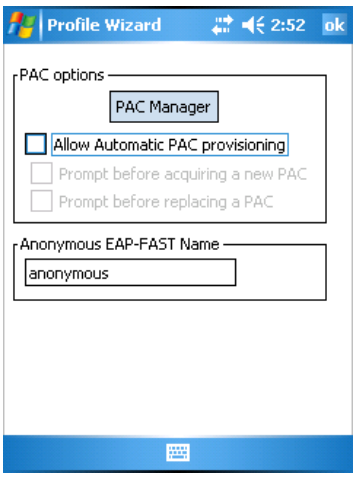
4 For **Encryption**, choose **WEP** or **CKIP** if you selected Network EAP for association.

5 For **Username**, type a unique username for this protocol.

6 In the **Password** field, type a unique password for this protocol.

7 Select **Prompt for password** to have the user enter this password each time to access the protocol, or select **Use following password** to use the protocol without entering a password each time you use the 751.

8 Tap **Additional Settings** to set options for PAC management and assign an anonymous EAP-FAST name.



9 Tap **PAC Manager** to view the PAC files currently installed on the 751. Tap ok to return to the Additional Settings screen.

10 If you already have a PAC on the 751, clear **Allow Automatic PAC provisioning** to avoid receiving more PACs from the server.

11 If **Allow Automatic PAC provisioning** is selected, you can check:

- **Prompt before acquiring a new PAC** for notification of any incoming PACs.

- **Prompt before replacing a PAC** for notification whether to replace a current PAC with an incoming PAC.

12 For **Anonymous EAP-FAST Name**, type the outer identity assigned for public usage.

13 Tap **OK**.

Configuring Microsoft Security

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

To select Microsoft security as your security choice

1 Select **Start** > **Settings** > the **System** tab > **Intermec Settings**. The Intermec Settings application appears.

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

3 From the Security Choice list, select **Microsoft Security** and save your settings. An alert box appears telling you that you must save your settings and warm boot the 751 for the new security choice to take effect.

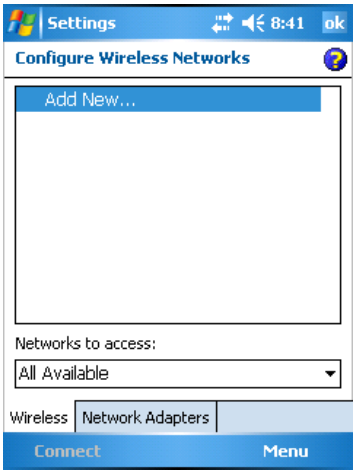
4 Tap **Yes**. The 751 resets and starts with Microsoft Security as the Security Choice.

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

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

To configure Microsoft security

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



2 Enter a **Network name**. If the network was detected, the network name is entered and cannot be changed.

3 From the **Connects to** list, select where you want your network to connect:

- If you select Work, you can create a VPN connection or use proxy servers.
- If you select The Internet, you can connect directly to the internet.

4 (Optional) To connect to an ad-hoc connection, select **This is a device-to-device (ad-hoc) connection**.

5 Tap **Next**.

6 Follow these steps to disable authentication:

a Set **Authentication** to **Open** if WEP keys are not required or to Shared when WEP keys are required for association.

b Set **Data Encryption** to **Disabled**.

Follow these steps to enable WEP encryption:

a Set **Authentication** to **Open** if WEP keys are not required or to **Shared** when WEP keys are required for association.

b Set **Data Encryption** to **WEP**.

c To change the network key, clear **The key is automatically provided** check box, enter the new **Network key**, and then select the appropriate **Key index**.

Follow these steps to enable WPA authentication:

a Set **Authentication** to **WPA**.

b Set **Data Encryption** to either **WEP** or **TKIP**.

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

a Set **Authentication** to **WPA-PSK**.

b Set **Data Encryption** to either **WEP** or TKIP.

c Enter the new **Network key**.

Follow these steps to enable WPA2 authentication:

a Set **Authentication** to **WPA2**.

b Set **Data Encryption** to **AES** or **TKIP**.

c Enter the new **Network key**.

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

a Set **Authentication** to **WPA2-PSK**.

b Set **Data Encryption** to **AES** or **TKIP**.

c Enter the new **Network key**.

7 Tap **Next**.

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

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

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

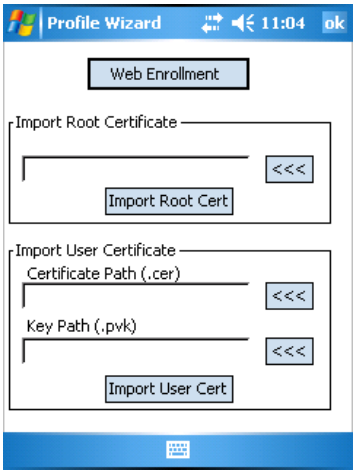
Note: If you select to automatically connect to non-preferred networks, the 751 detects any new networks and provides you with the opportunity to configure them.

Loading a Certificate

If you choose to use transport layer security (TLS) with WPA or 802.1x security, you need to have a unique client certificate on the 751 and a trusted root certificate authority (CA) certificate. Certificates are pieces of cryptographic data that guarantee a public key is associated with a private key. They contain a public key and the entity name that owns the key. Each certificate is issued by a certificate authority.

To import a root certificate

1 Tap the <<< button next to the **Import Root Certificate** field to select the root certificate (DER-encoded .cer file) to import.



2 Click **Import Root Cert** to install the selected certificate.

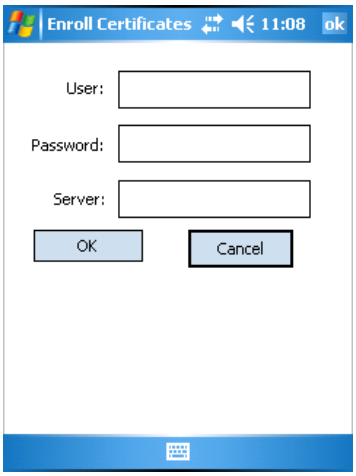
To import a user certificate

1 Tap the <<< button next to the **Certificate Path** field to select the user certificate (DER-encoded .cer file without the private key) to import.

2 Tap the <<< button next to the **Key Path** field to select the private key (.pvk file) which corresponds to the user certificate chosen in Step 1.

To import a user certificate from an IAS server

1 Tap **Web Enrollment**.



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

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

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

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

Disabling Security

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

To disable security

1 Open Intermec Settings.

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

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

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

5 Close Intermec Settings.

4 Developing and Installing Applications

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

- Developing Applications for the Computer
- Installing Applications on the Computer
- Freeing Up Virtual Memory for Applications
- Launching an Application Automatically
- Upgrading the System Software

Developing Applications for the Computer

The 741 and 751 mobile computers run applications programmed in Microsoft Visual Studio 2005. You can also use Microsoft eMbedded Visual C++ 4.0, but some features may not be available. Use this section to understand the hardware and software you need to:

- develop a new application for the computer
- develop a web-based application for the computer

Developing a New Application

Use the Intermec resource kits to develop new applications to run on the mobile computer. The Intermec resource kits are a library of C++ and .NET 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**.

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

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

Developing a Web-Based Application

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

Installing Applications

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 Secure Digital (SD) card or CompactFlash (CF) card. If you are using an SD or CF card, this should be the primary location to place application installation files. The following folders represent either card:
  - The SD card creates the \SDMMC Disk folder.
  - The CF card creates the \Storage Card folder.
- The non-volatile Flash File Store region of the storage. Use the small non-volatile Flash File Store region to hold .cab files that rebuild the system at clean boot or install applications from a .cab file into the Flash File Store so that they are "ready-to-run" when you perform clean boot. Since the flash in the system has a limited number of write cycles, do not use the Flash File Store for excessive writing.

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 server
- ActiveSync
- SD card
- FTP server
- Wavelink Avalanche

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

Installing Applications Using SmartSystems Server

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

To use SmartSystems console to install an application

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

Installing Applications Using Microsoft ActiveSync

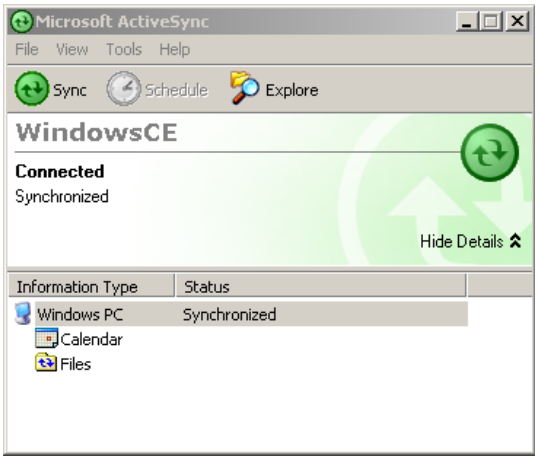
You can use Microsoft ActiveSync to establish a connection between your PC and the computer. ActiveSync transfers files, synchronizes files, performs remote debugging, and other device management activities. For more information on installing and using ActiveSync, see **"Using Microsoft ActiveSync" on page 33**.

You can have a serial or USB ActiveSync connection to the mobile computer. When you only have a few computers to update, you can copy files using Windows Explorer on a PC.

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

To install an application on the computer using ActiveSync

1. Connect the mobile computer to a PC using a USB cable. You may have to disconnect and then connect the cable to "wake" the connection.
2. Wait for a "Connected" message to appear in the Microsoft ActiveSync application to signal a connection to the mobile computer.
   If necessary, select **File** > **Get Connected** to initiate a connection.



3 Click **Explore** to open the Mobile Device window that shows the files and folders on the mobile computer.

4 On your desktop PC, locate the .cab file you want to download to the mobile computer and copy it.

5 From the Mobile Device window, open the **My Windows Mobile-Based Device** folder and navigate to the folder where you want to paste the .cab file.

6 Paste the .cab file into the desired folder.

7 When you are done copying files, warm boot the mobile computer.

8 After the mobile computer is done warm booting, tap **Start** > **Programs** > **File Explorer** to locate the newly copied files.

9 Tap the .cab files to install them.

Installing Applications Using a Storage Card

If you have an SD or CF card for your mobile computer, this is the best place for you to install applications.

To install applications using the storage card

1 Suspend the mobile computer and remove the storage card.

2 Insert the storage card into the storage card reader connected to your desktop PC.

3 Copy your application file to the storage card.

If you are using ActiveSync, an FTP server, or Wavelink Avalanche to copy the files to the SD card, place the application in the Storage Card folder located in My Windows Mobile-Based Device.

4 Insert the storage card back into the mobile computer.

5 Navigate to the storage card folder and run your application.

Installing Applications Using the FTP Server

The computer has a built-in FTP server that connects to a network through the 802.11 b/g radio. You can use the server to transfer your application file to the computer. Another benefit of using the FTP server is that you can create FTP scripts to automate the process of copying your files to the computer. This option is useful when you need to send files to a large number of computers.

If you want to disable the FTP server use a CAB file or another method to modify the registry key HKEY_LOCAL_MACHINE\COMM\FTPD. You need to set the value IsEnabled (a REG_DWORD) to zero (0). If you set the value to zero, the Web server will not accept connections from the network, even from the local host.

Installing Applications Using Wavelink Avalanche

You can use the Wavelink Avalanche device management system to install applications on all of your wireless 751s. The 751 ships with the Avalanche Enabler already loaded on it.

Each time the Avalanche Enabler is activated (typically on a reset), the 751 attempts to connect to the Avalanche Agent. When the 751 connects to the agent, the agent determines whether an update is available and immediately starts the software upgrade, file transfer, or configuration update.

To use Avalanche to remotely manage the 751

1. Install software packages and updates for the 751 using the Avalanche Administrative console.
2. Schedule the 751 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.

Freeing Up Virtual Memory for Applications

You can use the InstallSelect application to reduce the amount of virtual memory used by portions of the SmartSystems Platform Bundle (SSPB). Freeing up virtual memory provides you with more space to load and run custom applications. In technical terms, virtual memory allows software to run in a memory address space whose size and addressing are not necessarily tied to the physical memory of the computer.

Note: InstallSelect is designed for use only by administrators, developers, integrators, or Intermec service representatives.

Note: Do not run InstallSelect while using any other applications.

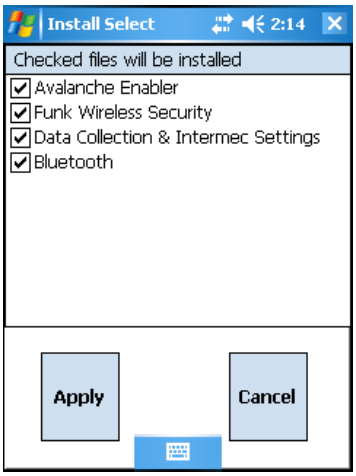
InstallSelect manages the installation of value-added software features of the computer. Removing software features may result in loss of computer functionality or the ability to manage device settings. See **"Understanding the InstallSelect Software Components" on page 74** or contact your Intermec service representative for information about each software feature before making changes.

To free up virtual memory, select items from the InstallSelect list that you do not want to install. When you perform a clean boot, the items you selected are not installed. However, you can reinstall any of these SSPB components at any time with InstallSelect. Be sure to back up any related files that you want before you use the InstallSelect application. The InstallSelect application is part of the SSPB and is installed at the factory.

For more information on SSPB, see **"Upgrading the System Software" on page 75**.

To free up virtual memory

1. Go to **Start** > **Programs** > **File Explorer**.
2. Tap the **Windows** folder.
3. Scroll down to the InstallSelect application and tap the icon. The InstallSelect application appears on the display with a Caution dialog box.
4. Tap **OK** to close the Caution dialog box.



5. Clear the check box of any components you do not want installed after a clean boot.

   By default, components already installed on the computer are automatically checked to be installed again after you perform a clean boot.

6. Tap **Apply** to initiate the clean boot and install only the files that are selected.

7 Tap **Yes** to continue with the clean boot. The computer performs a clean boot and restarts with all of the checked components installed.

Understanding the InstallSelect Software Components

Component Name	Description
Data Collection & Intermec Settings	Data collection and Intermec Settings. Also includes on-unit SDK libraries. If you disable this CAB file, you cannot scan or collect data on the device and you cannot use Intermec Settings.
Funk Wireless Security	Intermec security supplicant that provides a wireless security solution with several features that are not supported by Microsoft.
Printer Support	Provides Intermec printer driver support.
SmartSystems Client & Intermec Settings	Enables the client SmartSystems Server and the use of Intermec Settings on the local computer. If you disable this CAB file, you cannot use SmartSystems or Intermec Settings locally on the device.
Intermec DHCP Client	Provides the Intermec DHCP client application.
Bluetooth	Provides the Intermec Bluetooth application support.
Avalanche Enabler	Enables the client to the Wavelink Device Management solution.

Launching An Application Automatically

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

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

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

AutoRun supports the following script commands in AutoRun.dat:

AutoRun Script Commands

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

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

Upgrading the System Software

When you upgrade your computer, you are updating the operating system (OS) and the Persistent Storage Manager (PSM) files.

The PSM files are stored in the Flash File Store region, and deliver Intermec Value Add (IVA) functionality such as data collection, configuration, the Intermec wireless security suite, and the SmartSystems™ Foundation.

There are two ways to upgrade your computer:

- You can upgrade your computer using an storage card. For help, see the next section, **"Using an SD Card to Upgrade the Computer."**
- You can upgrade your computer using the SmartSystems Server. For help, see **"Using the SmartSystems Console to Upgrade the Computer" on page 76**.

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

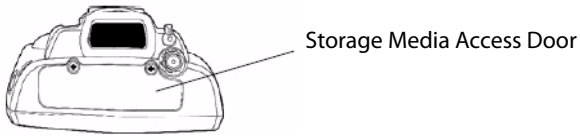
Using an SD Card to Upgrade the Computer

To use an SD card to upgrade the computer, you need an SD card reader and an SD card formatted as FAT.

Note: The computer currently supports Delkin Secure Digital cards only. Intermec cannot guarantee that other Secure Digital cards will work with the computer.

To upgrade the computer using an SD card

1. Locate the storage card access door at the top of the computer, remove its two screws, remove the door, then remove the storage card. See the *700 Color Mobile Computer Quick Start Guide* (P/N 930-163-xxx) for more information.

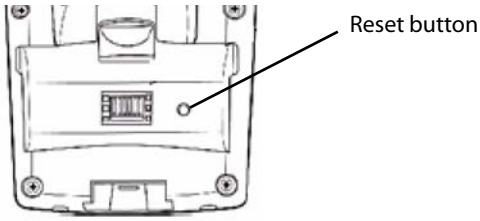


This shows the top of the computer. Note the keypad is facing downward.

2 Place the storage card in your desktop PC card reader, and then copy all required upgrade files to the SD card.

3 Remove the SD card from your card reader and reinstall it in the computer.

4 Press the **Reset** button inside the battery compartment to perform a cold boot. Do not use force or a sharp object when pressing the **Reset** button, or you may damage the **Reset** button.



This shows the back of the computer inside the battery compartment.

5 Return the computer to DC power, such as installing it into a dock connected to external power.

6 When the Bootloader Menu shows "complete," remove the SD card, then press the **Reset** button again to load the new operating system.

Note: The upgrade will fail if the computer is not connected to external power. For help, see "Accessories" on page 93.

7 When the computer finishes booting, insert the battery and then close the battery door.

You may use the computer. You have reset the computer to its default configuration. You need to set the date and time and to set its network communications parameters to reestablish communications with the other devices in the wireless network.

Using the SmartSystems Console to Upgrade the Computer

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

- the 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 console

1. Install SmartSystems Foundation on your PC and open the SmartSystems console.
2. Make sure the SmartSystems console and the computers are on the same subnet.
3. Make sure your computers are either in a communications dock or charging dock, such as the AD14, or that power management is disabled.
4. Download the device upgrade .exe file to your desktop PC.
5. Double-click the .exe file on your desktop PC. An InstallShield application starts and walks you through the process of extracting the upgrade files in the default location.

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

6. From the SmartSystems console, locate the device upgrade to install.
7. Drag-and-drop the device upgrade onto each computer you want to upgrade. The SmartSystems console will tell you that it is installing the upgrade on your computer.

Once the upgrade is done downloading to your computer, your computer replaces the operating system and then automatically performs a cold-boot. Progress messages appear on the computer screen.

The SmartSystems console will show your computer as offline *(note the red stop sign)* until the computer reboots and reconnects to the system.

5 Troubleshooting and Maintaining the Computer

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 Computer
- Resetting Your Computer
- Cleaning the Scanner Window

Calling Product Support

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

To talk to an Intermec Product Support representative, call:

1-800-755-5505

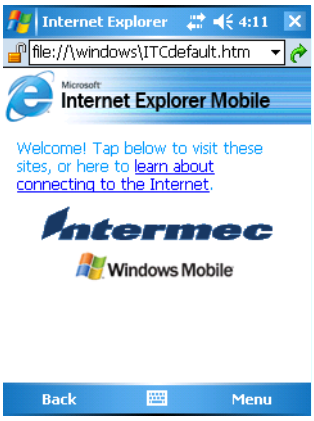
Before you call Intermec Product Support, make sure you have the following information ready:

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

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

To find your operating system version

1 Tap **Start** > **Internet Explorer**.



2 Tap the **Intermec** logo. The Intermec page appears and displays the software build information.

To find your configuration number

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

Troubleshooting Your Computer

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

Problems While Operating the Computer

Problem	Solution
You press the power key to turn on the computer and nothing happens.	• Make sure the backlight is on. • Make sure you have a charged battery that is installed correctly. For help, see "Installing and Charging the Battery" on page 3. • The battery may be discharged. Replace the battery with a spare charged battery, or charge the battery. • Perform a warm boot or a cold boot.
The Battery status LED is on.	The battery status LED indicates the following states: • 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.	• Press the power key to turn off the computer, then press the power key again to turn it on. • Press and hold the power key ten seconds to warm boot the computer. • Try reloading the firmware. See "Upgrading the System Software" on page 75. • If the computer does not boot or reset, contact your Intermec representative for help.
You tap the screen and nothing happens.	Align your screen. For help, see "Aligning the Touch Screen" on page 15.

Problems While Configuring the Computer

Problem	Solution
You scan a configuration command, such as Beeper Volume, and you hear three low beeps.	If you are working in Intermec Settings, you cannot scan configuration commands. Exit the application to scan configuration commands.
You scan or enter an option for the Scanner Model configuration command and you hear three low beeps.	You may have scanned or entered a Scanner Model command that does not apply to the type of scanner that you have installed. Try scanning or entering the Scanner Model command again and select an option for the type of device you are using.

Problems With Wireless Connectivity

Problem	Solution
When you turn on the computer after it was suspended for a while (10-15 minutes or longer), it can no longer send or receive messages over the network.	Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the "Keep Alive" message from host to maintain the TCP session while the computer is suspended.
The **Network Connection** icon is in the toolbar, but you cannot establish a terminal emulation session with the host computer.	There may be a problem with the host computer, with the connection between the Intermec Application Server and the host computer, or with the connection between the access point and the host computer. Check with network administrator to make sure the host is running and allowing users to login to the system.
The **Network Connection** icon is in the toolbar, but the host computer is not receiving any data from the 751.	In a UDP Plus network, there may be a problem with the connection between the Intermec Application Server and the host computer. Check with network administrator or see the user's manual for the Intermec Application Server. In a TCP/IP network, 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	Solution
The 751 indicates that it is authenticated, but it does not communicate with the host.	Make sure the 751 IP address, host IP address, subnet mask, default router are configured for network.
The 751 does not appear to be authenticating and a network connection icon does not appear on the toolbar.	The 751 may not be communicating with the access point. Make sure the 751 network name matches the access point network name (SSID). 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.	The 751 may not be communicating with the intended access point. Make sure the 751 network name matches the access point network name. Default network name is "INTERMEC." Access point may not be communicating with server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled.
You are setting up multiple access points in a network, with different SSIDs, and the connection fails.	The 751 does not save WEP key values when changing the SSID. Reenter the WEP key value after changing the SSID and save your changes. You should now be able to connect to the different access points.

Problems While Configuring 802.1x Security (continued)

Problem	Solution
The 751 indicates it is not authenticated.	Make sure that: • the User Name and Password parameters on the 751 must match the user name and password on authentication server. You may need to reenter the password on both the 751, authentication server. • on your authentication server, the user and group are allowed and the group policy is allowed to log into the server. For help, see the documentation that shipped with your authentication server software. • the IP address and secret key for access point must match the IP address and secret key on authentication server. You may need to reenter the IP address and secret key on both your access point and authentication server. • the authentication server software is running on server PC.
You receive a message saying "The server certificate has expired or your system date is incorrect" after you perform a clean boot on the 751.	Date and time are not saved when you perform a clean boot. Reenter the date and time, and then save your changes.

Problems While Scanning Bar Codes

Problem	Solution
You cannot see a red beam of light from the scanner when you press the **Scan** button and aim the scanner at a bar code label.	You may be too far away from the bar code label. Try. 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.
When you release a **Scan** button or handle trigger, the **Good Read** light does not turn off.	The **Good Read** light will remain on if you configure the computer to use continuous/edge triggering. If you configure the computer for level triggering and the **Good Read** light remains on, there may be a problem. Press one of the **Scan** buttons or pull the trigger again without scanning a bar code label. If the light is still on, contact your local Intermec representative.

Problems While Scanning Bar Codes (continued)

Problem	Solution
The input device attached to the computer does not work well or read bar code labels very quickly.	Set the Scanner Model command to the specific attached input device. Check enabled bar code symbologies and enable only the symbologies being used.
The scanner will not read the bar code label.	• Aim the scanner beam to cross entire bar code label in one pass. Vary the scanning angle. • Check the quality of the bar code label, Scan a bar code label that you know will scan. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan. • Make sure the bar code symbology is enabled. Use Intermec Settings to check the symbologies. Expand **Data Collection** > **Symbologies** beneath devices listed (scanner, virtual wedge) to check and enable symbologies, then scan the bar code label again. • Make sure the computer application is expecting input from a bar code. You may need to type this information instead.
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.
You scan a valid bar code label to enter data for your application. The data decoded by the scan module does not match the data encoded in the bar code label.	The computer may have decoded the bar code label in a symbology other than the label's actual symbology. Try scanning the bar code label again. Make sure you scan the entire label.

Resetting Your Computer

You rarely need to reset the computer. If the computer does not resume after pressing the I/O key, or if the computer or an application is locked up, you may need to reset it. The computer uses the configuration currently saved in flash memory during the boot process. There are three ways to reset the computer:

- Warm booting the computer
- Cold booting the computer
- Clean booting the computer

Warm Booting the Computer

You may need to perform a warm boot to correct conditions where an application stops responding to the system.

To warm boot the computer

- Press and hold the **Power** key for ten seconds.

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

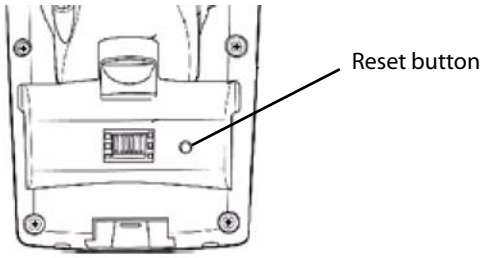
Cold Booting the Computer

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 deletes all programs and data stored in RAM including the Object Store. Make sure data is backed up to your host computer or a storage card before performing a cold boot.

To cold boot your computer

1. Release the lower clip of the hand strap and remove the battery pack.
2. Press the **Reset** button.
3. Reinstall the battery pack.



This illustration shows the back of the computer inside the battery compartment.

Clean Booting the Computer

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

Caution

The clean boot process will erase the memory in the mobile computer, including all applications and data files found in the object store.

Caution

To preserve application programs through a clean boot, you must store them in the Flash File Store.

To clean boot the computer

1. Press the **Power** key to turn off the computer.
2. Release the lower clip of the hand strap and remove the battery pack.
3. Press the **Reset** button and then reinstall the battery pack.
4. Press and hold the **Power** key until the computer starts the boot sequence and you see a warning message asking if you want to clean boot the system.
5. Press the right side button to start the clean boot process.
6. When the message "Tap the screen to set up your Windows Mobile-based device" appears on the screen, tap the screen with your stylus. You will then be prompted to align the screen.
7. Follow the directions to align the screen. The computer continues with the boot process.
8. Reset the time and date.
9. Reload any custom applications that may have been erased during the clean boot.

Cleaning the Scanner Window and Screen

To keep the computer in good working order, you may need to clean the scanner window.

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

There are no user-serviceable parts inside the computer. 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 the Power key to turn off the computer.
2. Dip a clean towel or rag in the ammonia solution and wring out the excess.
3. Wipe off the scanner window and screen. Do not allow any abrasive material to touch these surfaces.
4. Wipe dry.

A Specifications

Physical and Environmental Specifications

Use these specifications to locate technical information about the 741 and 751 and their available features and options.

Display

1/4 VGA Transflective, software-controlled backlight

Pixels:	240x320
Diagonal:	97 mm (3.8 in)
Colors:	256 K

Environmental

Operating Temperature:	-20° to 60°C (-4° to 140°F)
Storage Temperature:	-20° to 60°C (-4° to 140°F)
Relative Humidity:	5% to 95% noncondensing
Rain and Dust Resistance:	IP64 compliant
Drop Specifications:	1.5 m (5 ft) drop

Expansion Slots

The 741 and 751 support Secure Digital (SD) cards and CompactFlash (CF) Type II cards.

Integrated Scanner Options

Area imager, linear imager, 1D laser, and PDF417 laser.

Integrated Wireless

741 supports Bluetooth™ compatible module

751 supports 802.11b/g (Wi-Fi® certified) module

Keypad Option

Numeric and alphanumeric keypads are available.

Memory and Storage

RAM Memory:	64 MB (128 MB optional)
Flash ROM:	64 MB, includes ROM folder for application storage

Microprocessor

Intel® XScale™ Processor, 400 MHz

Operating System

Microsoft® Windows® Mobile 5.0

Physical Dimensions

Length:	191 mm (7.53 in)
Width:	50 mm (1.97 in)
Height:	90 mm (3.50 in)
Weight:	483 to 568 g (17 to 20 oz)

Power

Battery Type:	Lithium-Ion (Li-ion), 7.2V, (2 x 2000 mAh cells), customer-replaceable
Battery Capacity:	14.4 Watt-hours
Battery Life:	8 to 12 hours, application-dependent
Recharging Time:	4 hours
Charging Range:	0° to 40°C (32° to 104°F)

Regulator Approvals

UL and cUL Listed, UL 60950 and UL 1604 and CSA 22.2 #157, FCC Part 15, TUV, CE mark

Standard Communications

RS-232, USB, IrDA 1.1, 10 Base-T Ethernet

Bar Code Symbologies

If you are using a scanner attached to the serial port, see your scanner manual for a list of supported bar code symbologies.

If you are using the EA10 or EA11 area imager, your computer supports these bar code symbologies:

EA10 and EA11Supported Symbologies	
• Codabar	• MSI
• Codablock A	• PDF417
• Codablock F	• Planet
• Code 11	• Plessey
• Code 2 of 5	• Postnet
• Code 39	• QR Code
• Code 93	• RSS 14
• Code 128	• RSS Limited
• Datamatrix	• RSS Expanded
• EAN.UCC Composite	• Telepen
• Interleaved 2 of 5	• TLC 39
• Matrix 2 of 5	• UPC/EAN
• MaxiCode	
• Micro PDF417	

If you are using the linear imager, the standard range laser, or the long range laser, the computers support these bar code symbologies:

Supported Symbologies	
• Codabar	• Micro PDF417
• Codablock A	• MSI
• Codablock F	• PDF417
• Code 11	• Plessey
• Code 2 of 5	• RSS 14
• Code 39	• RSS Limited
• Code 128	• RSS Expanded
• EAN.UCC Composite	• Telepen
• Interleaved 2 of 5	• TLC 39
• Matrix 2 of 5	• UPC/EAN

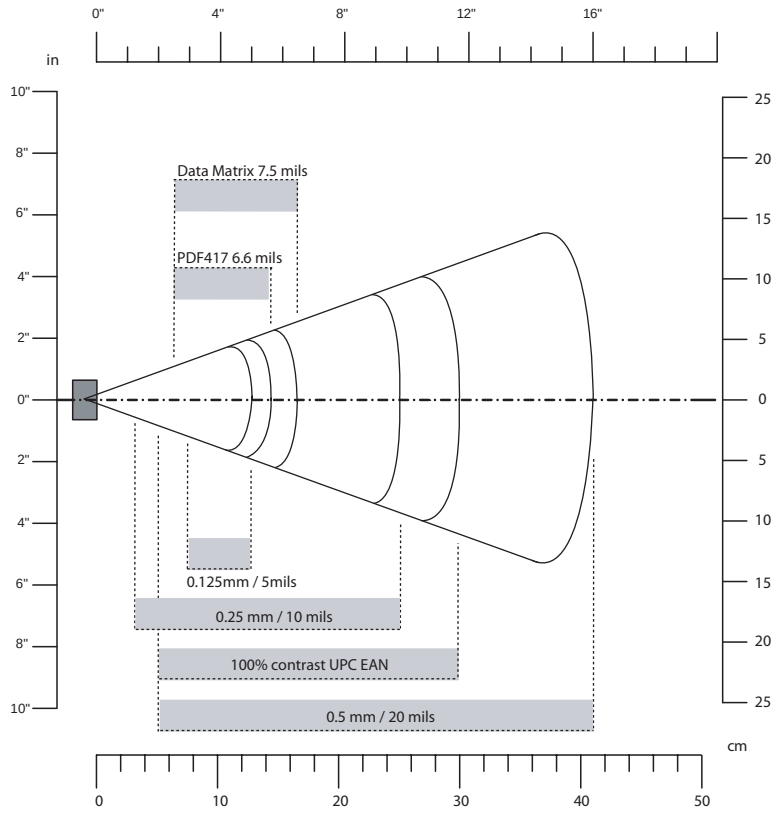
Scanner Reading Distances

Typical reading distances are done in an office environment using office lights (4 lux). Minimum distances are measured in the dark (0 lux). Both reading distances are provided in respective scan engine integration guides. Contact your local Intermec representative for more information.

Below are minimum standard reading distances for the 741 and 751 built with integrated scan engines. When correctly mounted, and exit window reduces reading distances by about 4% for all scan engines, with the exception of the EL10 with its reading distances reduced by about 25%.

EA11 Standard Minimum Reading Distances With 0.04 Inch Setbacks

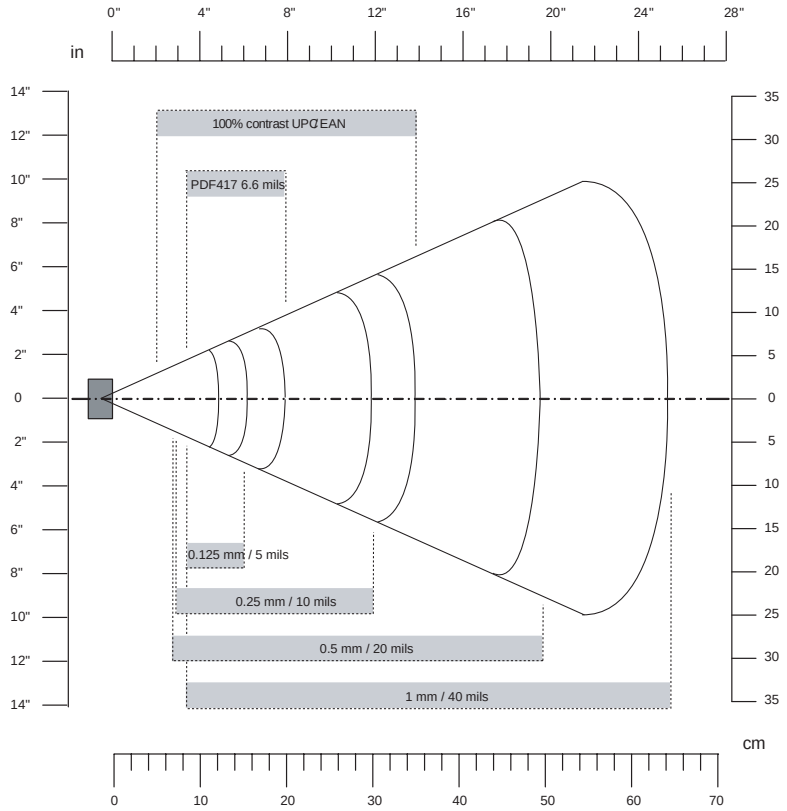
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.125 mm (5 mils) 0.20 mm (8 mils) 0.25 mm (10 mils) 0.5 mm (20 mils)	7.26 cm (2.86 in) 3.96 cm (1.56 in) 3.45 cm (1.36 in) 4.98 cm (1.96 in)	12.09 cm (4.76 in) 20.98 cm (8.26 in) 25.04 cm (9.86 in) 40.28 cm (15.86 in)
UPC/EAN	0.33 mm (13 mils)	4.98 cm (1.96 in)	29.62 cm (11.66 in)
PDF417	0.168 mm (6.6 mils) 0.254 mm (10 mils) 0.381 mm (15 mils)	6.25 cm (2.46 in) 4.47 cm (1.76 in) 4.98 cm (1.96 in)	13.87 cm (5.46 in) 21.74 cm (8.56 in) 33.43 cm (13.16 in)
Data Matrix	0.191 mm (7.5 mils) 0.254 mm (10 mils) 0.381 mm (15 mils)	3.71 cm (2.46 in) 5.98 cm (2.35 in) *	16.41 cm (6.46 in) 20.73 cm (8.16 in) 27.58 cm (10.86 in)
* Minimum distance depends on symbology length and scan angle			



EA11 Standard Minimum Reading Distances With 0.04 Inch Setbacks

EL10 Minimum Guaranteed Reading Distances With 0.25 Inch Setbacks

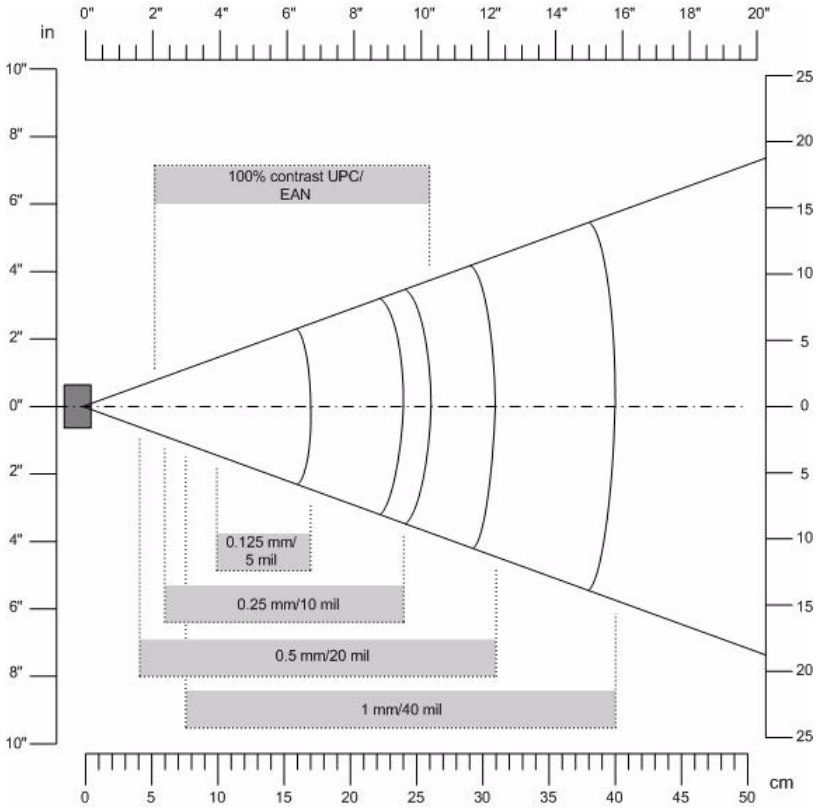
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.10 mm (4 mils) 0.125 mm (5 mils) 0.25 mm (10 mils) 0.50 mm (20 mils) 1 mm (40 mils)	8.51 cm (3.35 in) 7.75 cm (3.05 in) 6.99 cm (2.75 in) 6.48 cm (2.55 in) 7.75 cm (3.05 in)	12.30 cm (4.45 in) 14.35 cm (5.65 in) 29.34 cm (11.55 in) 50.17cm (19.75 in) 63.37 cm (24.95 in)
UPC/EAN	0.33 mm (13 mils)	5.46 cm (2.15 in)	34.42 cm (13.55 in)
PDF417	0.17 mm (6.6 mil)	7.75 cm (3.05 in)	19.43 cm (7.65 in)



EL10 Minimum Guaranteed Reading Distances With 0.25 Inch Setbacks

EV10 Minimum Reading Distances With 0.04 Inch Setbacks

Symbology	Bar Code Content	Density	Minimum Distance	Maximum Distance
Code 39	RESO 0.100 MM	0.10 MM (4 mils)	10.8 cm (4.26 in)	13.87 cm (5.46 in)
	R 0.125 MM	0.125 mm (5 mils)	9.80 cm (3.86 in)	16.92 cm (6.66 in)
	0.25	0.25 mm (10 mils)	5.99 cm (2.36 in)	23.77 cm (9.36 in)
	0.5	0.50 mm (20 mils)	3.96 cm (1.56 in)	30.89 cm (12.16 in)
	RIMM	1 mm (40 mils)	7.53 cm (2.96 in)	39.78 cm (15.66 in)
UPC/EAN	120010010100	0.33 mm (13 mils)	4.98 cm (1.96 in)	25.81 cm (10.16 in)
PDF417	10 mil	0.254 mm (10 mils)	9.80 cm (3.86 in)	16.92 cm (6.66 in)
	15 mil	0.381 mm (15 mils)	7.77 cm (3.06 in)	18.95 cm (7.46 in)



EV10 Minimum Reading Distances With 0.04 Inch Setbacks

Accessories

The following accessories are available for the 741 and 751. *Note that this is not a complete list.* Contact your local Intermec service representative for information about these and other accessories that are not in this list.

Accessory Description	Part Number
AA8 Snap-on modem	225-687-002
AA9 DEX adapter	225-686-001
AA10 Long range tethered scanning adapter (3.3 V to 5 V)	225-686-002
AC15 Single battery charger	852-060-004
AC16 Quad battery charger	852-060-005
AD15 Single dock charger with USB and Ethernet	225-683-006
AD16 Modem dock	225-683-002
AD17 Multidock (charge only)	225-682-004
AD18 Multidock (charging with Ethernet support)	225-682-006
AH5 Standard scan handle	714-525-005
AV7 Vehicle dock	225-685-001

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741 and 751 Mobile Computer (Windows Mobile 5.0) User's Manual

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