



Intermec



User's Manual



**700 Series Color
Mobile Computer**

Intermec Technologies Corporation

Worldwide Headquarters	Cedar Rapids Technical Communications
6001 36th Ave. W.	550 Second Street SE
Everett, WA 98203	Cedar Rapids, IA 52401
U.S.A.	U.S.A.

www.intermec.com

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Document Change Record

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

Revision Letter	Date	Description of Change
B	11/2002	Added information about the Siemens MC45 radio module, the tethered scanner, CAB extraction, FTP Server parameters, and Data Collection control panel applet imager options.
C	04/2003	Added information about the ambient light sensor, the beeper, keypad sequences, the alphanumeric keypad, the vibrator, an accessories list, programming notifications, the MaxiCode symbology, the Utilities control panel applet, and the Wireless Network control panel applet.
D	08/2003	Upgraded Pocket PC 2002 information to Windows Mobile 2003, upgraded all illustrations to gray-scale, added new Imager functions, moved the Automatic Data Collection COM Interface material to the SDK User's Manual.
E	01/2004	Added 730 Computer information, revised CDMA Setup information, and revised Wireless Area Network Printing information.
F	04/2004	Updated 802.11 security supplicant information. Added new network selection APIs. Incorporated information about the Intermec Settings control panel applet for PSM Builds 3.00 or newer. Added information about the PhoneUtility application. Revised Chapter 4, "Network Support." Added tethered scanner and internal scanner configuration and troubleshooting information to Chapter 6, "Scanner Support."
G	01/2005	Added information about resetting the 700 Series Computer. Updated the Profile Wizard information in Appendix A, "Configurable Settings." Revised information about using Sprint Watcher and added information about a Phone application for units with CDMA or GSM radios in Chapter 4, "Network Support." Added information about the 741, 751, and 761 Computers and the MC46 Radio.
H	07/2005	Added information on performing a warm-boot, LED status, replicating settings using the registry, troubleshooting, and specifications.
J	06/2006	Updated to include RoHS model numbers, removed information for operating systems builds older than 3.0, added information about EL10 Laser Scanners, scan engine reading distances, PB42 Portable Printers, pull tabs on storage cards, RFID support, and the MC75 Radio.

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Before You Begin

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

Safety Information

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

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



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

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

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at www.intermec.com and click **Service & Support**. The Intermec Global Sales & Service page appears. From the Service & Support menu, move your pointer over **Support**, and then click **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 documents (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 Technologies Corporation.

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

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

Who Should Read This Manual

This document is written for the person who is responsible for installing, configuring, and maintaining the 700 Series Color Mobile Computer.

This document provides you with information about the features of the 700 Color and how to install, configure, operate, maintain, and troubleshoot it.

Before you work with the 700 Color, you should be familiar with your network and general networking terms, such as IP address.

Related Documents

This table contains a list of related Intermec documents and their part numbers.

Document Title	Part Number
<i>700 Color with Windows Mobile 2003 Quick Start Guide</i>	962-054-069
<i>730 Mobile Computer Quick Start Guide</i>	962-054-068
<i>Intermec Computer Command Reference Manual</i>	073529
<i>700C Recovery CD Windows Mobile 2003 Edition English</i>	235-110-001 (Kit)

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- 2** Click **Service & Support > Manuals**.
- 3** In the **Select a Product** field, choose the product whose documentation you want to download.

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

Patent Information

Product is covered by one or more of the following patents: 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; 5,644,471

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

Before You Begin



1 Introduction

This chapter introduces the 700 Series Color Mobile Computer, developed by Intermec to enhance wireless connectivity needs. This chapter contains hardware and software configuration information to assist you in making the most out of your 700 Color Computer.



Note: Desktop icons and applet icons are shown to the left.

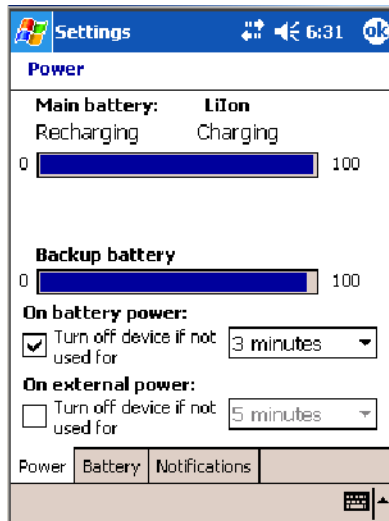
AB10 Battery

The 700 Color Computer comes with a 14.4 Watt-hour, 7.2V, replaceable Lithium-Ion (LiIon) battery.

The 730 Computer comes with an 8.8 Watt-hour, 3.7V, replaceable LiIon battery.



To view the status of the battery, tap **Start** > **Settings** > the **System** tab > the **Power** icon > the **Power** tab to view the current status of both the main AB10 battery and the backup battery. Tap **ok** to exit this information.



If your computer shuts down because of low battery conditions, your computer does not operate. This is done to ensure that data is protected. Although the battery does protect 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: The 700 Color Computer has an internal backup super capacitor which retains data for an average of ten minutes after the battery is removed. It also shuts down the 700 Color Computer if the main battery suddenly goes away (removed from the computer). Depending upon the processes running, it may not have adequate power for a graceful shut down. If so, the 700 Color performs a cold-boot the next time power is applied.



Note: The 730 I-Safe Computer performs a cold-boot every time its main battery is removed if it was not put in suspend mode prior to the removal.

In short, put the 700 Color Computer into a suspend (sleep) mode before you remove the main battery.

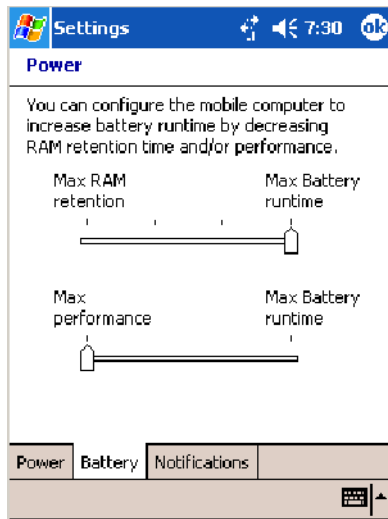
If you have at least one device in your 700 Color Computer (radio, scanner, imager, or Ethernet), the battery power fail level is set so that after the system shuts down in a low battery condition, there is still sufficient charge to allow the unit to remain configured, keep proper time, and maintain DRAM (Dynamic Random Access Memory) for at least 23 to 32 hours at room temperature *if* the main battery remains in the mobile computer. The configuration and time are lost if:

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



Power

You can modify RAM maintenance in a limited way. On the 700 Color Computer, tap **Start** > **Settings** > the **System** tab > the **Power** icon > the **Battery** tab. Drag the top slider bar to the right to change the suspend voltage to favor suspend time over rundown time, then click **ok** to exit.

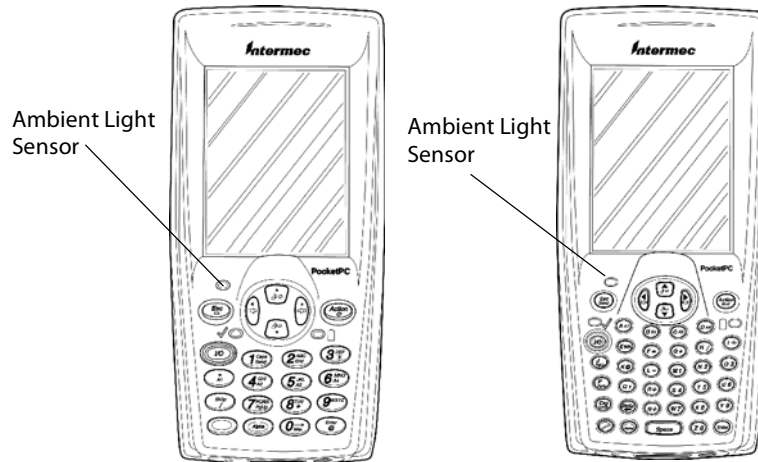


Ambient Light Sensor



Note: This information does *not* apply to the 730 Computer.

The ambient light sensor turns on the display lighting when conditions warrant but automatically turns it off again as surrounding light increases. This conserves your 700 Color battery power.

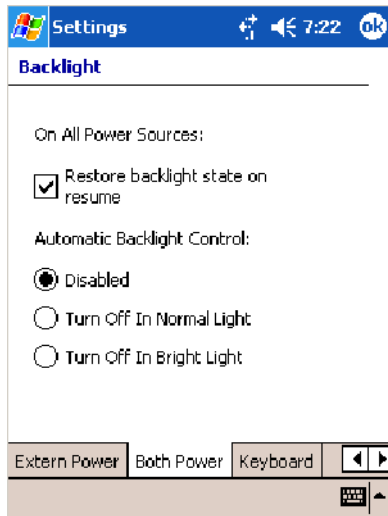


This illustration shows the 700 Color Computer with a numeric keypad (left) and an alphanumeric keypad (right).



Backlight

To adjust the ambient light sensor, tap **Start > Settings > the System tab > the Backlight icon > the Both Power tab**. Make your selections, then tap **ok** to exit this applet.

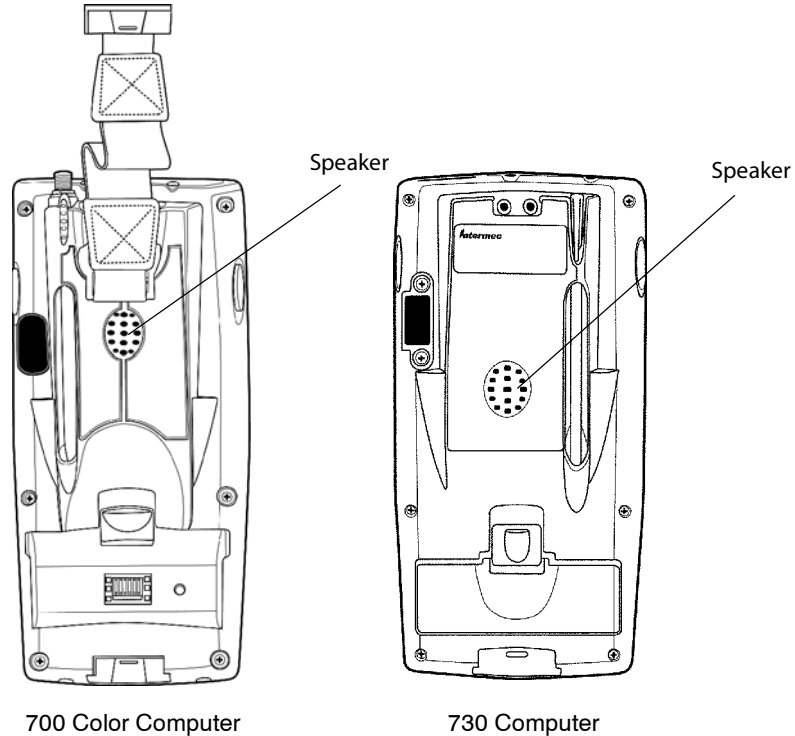


Audio System

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

Speaker

A speaker capable of variable volume levels is located on the back of the computer. This speaker has a transducer volume of 85 dB min at 10 CM and a frequency range of 1–8 KHz.



Warning

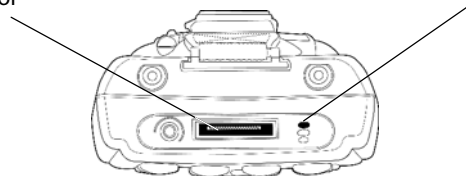
Warning: Do not place the speaker next to your ear when the speaker volume is set to “Loud” (maximum), or you may damage your hearing.

Microphone

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

Charging/Docking
connector

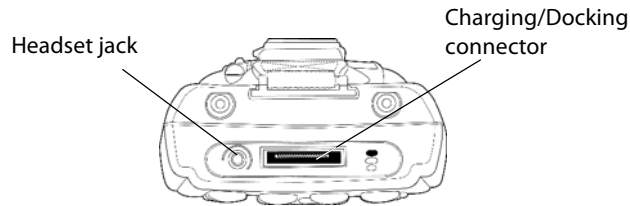
Microphone



This is the bottom of the 700 Color Computer. Note that the keypad is to the bottom in this illustration.

External Headset Jack

The external headset jack connects a mobile phone style headset to your mobile computer for use in noisy environments. The jack is a 2.5 mm, three-conductor jack, with autosensing of the headset jack insertion which disables the internal speaker and microphone. The external headset jack is located on the bottom of the mobile computer next to the Hirose docking connector.



This is the bottom of the 700 Color Computer. Note that the keypad is to the bottom in this illustration.

Beeper



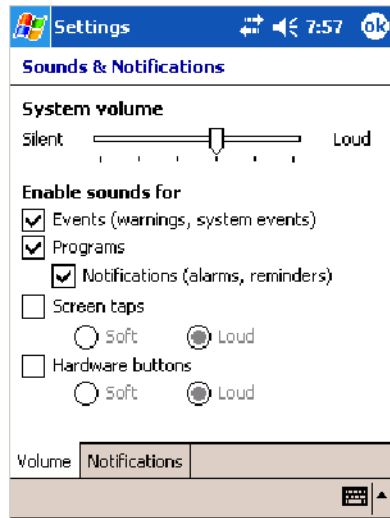
Note: Each time the 700 Color Computer is cold-booted, all default settings are restored unless registry storage is enabled. See page 232 for information on enabling the registry storage.

To learn about setting volume levels for screen taps, ActiveSync alert noises, etc., tap **Start > Help > Pocket PC Basics**, then select **Notifications**.

Enable the Beeper



To enable the beeper, tap **Start > Settings > the Personal tab > Sounds & Notifications > the Volume tab**. Drag the **System volume** slider bar to the right of the “Silent” position. Tap **ok** to exit this applet.



Disable the Scanner Mute

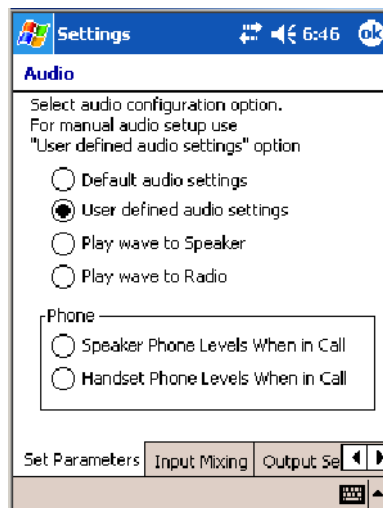


Note: This information does *not* apply to the 730 Computer.

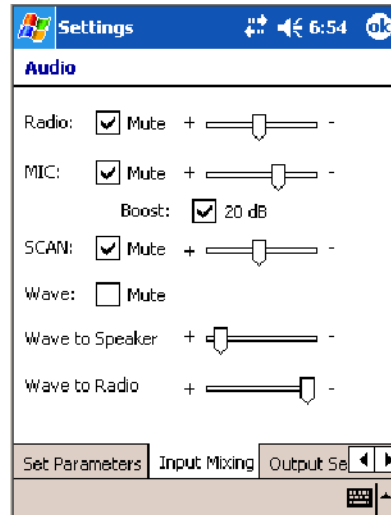


Audio

1 Tap **Start > Settings > the System tab > the Audio icon**, then select **User defined audio settings**.



- 2 Tap the **Input Mixing** tab, then clear the **SCAN Mute** box.
- 3 Drag its slider bar to the appropriate level of loudness, with the left side being the most loud and the right side being the most quiet. Tap **ok** to exit this applet.



Select a Beeper Volume



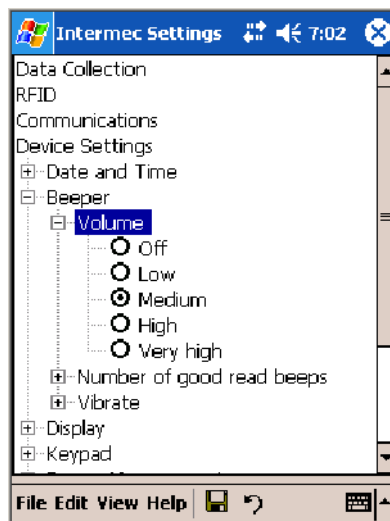
Note: The 730 Computer does *not* support the laser scanner.

To determine your PSM Build version, tap **Start > Programs > File Explorer > the Flash File Store folder > the PSMInfo** text file.

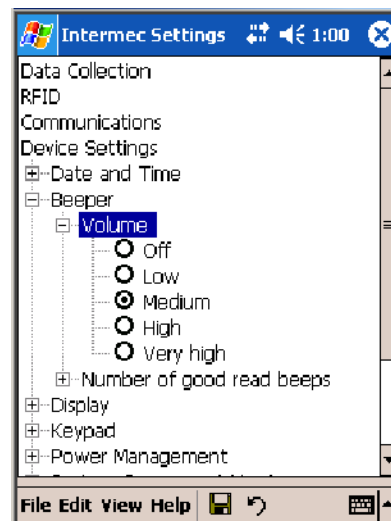


Intermec Settings

To select a beeper volume for the 700 Color Computer, tap **Start > Settings > the System tab > the Intermec Settings** icon. Tap the **Device Settings** option, tap (+) to expand **Beeper**, then tap (+) to expand **Volume**. Select an item, then close this option.



700 Color Screen

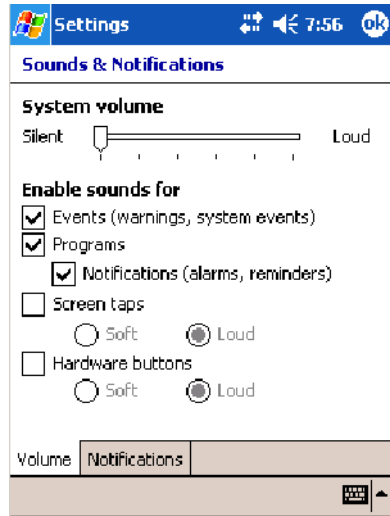


730 Screen

Disable the Beeper



To disable the beeper, tap **Start > Settings > the Personal tab > Sounds & Notification > the Volume tab**. Drag the **System volume** slider completely to the left to “Silent,” then tap **ok** to exit this applet.



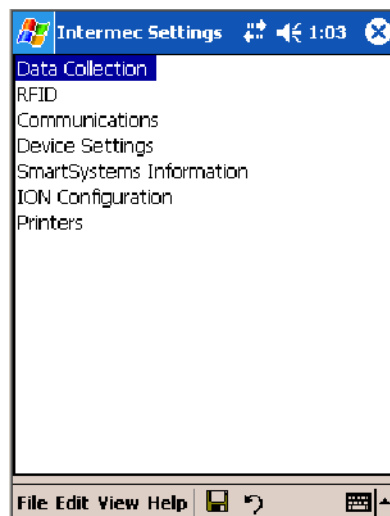
Intermec Settings Applet

Use the Intermec Settings applet to gather, view, and update device configuration settings. Information about the settings you can configure with the Intermec Settings applet is in the *Intermec Computer Command Reference Manual* (P/N: 073529) available online at www.intermec.com.

See the Data Collection Resource Kit in the Intermec Developer Library (IDL) for information about data collection functions. The IDL is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for more information.



Tap **Start > Settings > the System tab > the Intermec Settings icon** to access the applet.

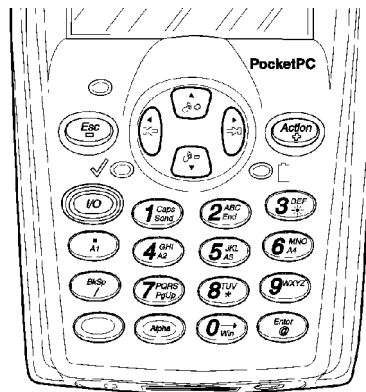


Keypads

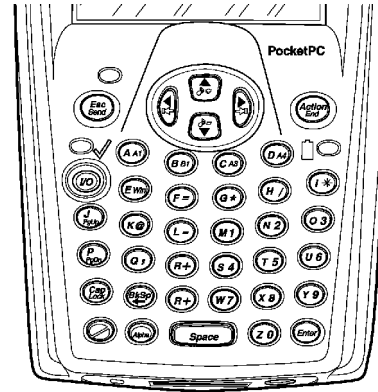
Instructions for the keypad include the following:

700 Color Keypads

The following keypads are available for the 700 Color Computer.



Numeric keypad



Alphanumeric keypad

Backlight for Keypad

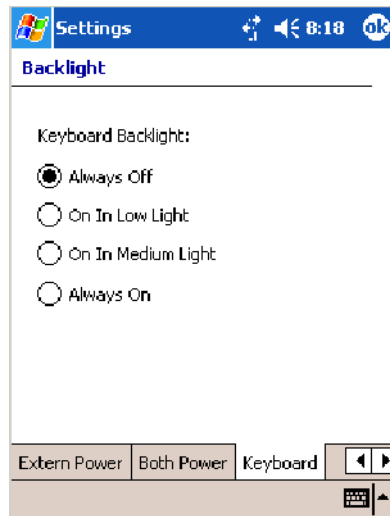


Note: This information does *not* apply to the 730 Computer.



Backlight



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, tap **Start > Settings > the System tab > Backlight**. Use the left/right scroll arrows to move to and tap the **Keyboard** tab. Make your selection, then tap **ok** to exit this applet.









Key Sequences

Use the following key sequences to enter characters into your 700 Color Computer using either a numeric keypad or an alphanumeric keypad.


[Gold] or [Gold/White] Plane Keys

































The [Gold]  plane key (numeric keypad) or the [Gold/White]  plane key (alphanumeric keypad) provides you access to display controls, special characters, and Pocket PC options.

Press the [Gold]  key or the [Gold/White]  key for each gold plane key stroke you wish to make. For example to turn on the front light, press and hold the [Gold]  key plus the  key on the numeric keypad or press and hold the [Gold/White]  key plus the  key on the alphanumeric keypad. To turn the front light off, press the appropriate keys again.

On the next few pages are the key sequences.

Numeric Keypad

The following table lists sequences that use the [Gold]  plane key. See Chapter 2, “Windows Mobile 2003,” for information about the Pocket PC applications.


Press the Keys	To Do This
[Gold]  	Toggle the backlight on or off (also goes through backlight power levels if held down)
[Gold]  	Access the Pocket PC Record application (<i>see Note</i>).
[Gold]  	Access the Pocket PC Calendar application (<i>see Note</i>).
[Gold]  	Access the Pocket PC Contacts application (<i>see Note</i>).
[Gold]  	Access the Pocket PC Tasks application (<i>see Note</i>).
[Gold]  	Move up one page.
[Gold]  	Enter an asterisk (*).
[Gold]  	Move down one page.
[Gold]  	Access the Pocket PC Start menu.
[Gold]  	Enter an at symbol (@).
[Gold]  	Enter a backslash (/).
[Gold]  	Enter a minus sign (-).
[Gold]  	Enter a plus sign (+).
[Gold]  →	Tab to the right.
[Gold]  ←	Tab to the left.
[Gold]  	Increase volume
[Gold]  	Decrease volume



































Note: Pocket PC applications are accessible only if configured to do so in the App Launch portion of the Utilities applet. See page 231 for more information.



Alphanumeric Keypad

Note: This information does *not* apply to the 730 Computer.

The following table lists sequences that use the [Gold/White]  plane key. See Chapter 2, “Windows Mobile 2003,” for information about the Pocket PC applications.




Press the Keys	To Do This
[Gold/White]  	Toggle the backlight on or off (also goes through backlight power levels if held down)
[Gold/White]  	Access the Pocket PC Record application (<i>see Note</i>).
[Gold/White]  	Access the Pocket PC Calendar application (<i>see Note</i>).
[Gold/White]  	Access the Pocket PC Contacts application (<i>see Note</i>).
[Gold/White]  	Access the Pocket PC Tasks application (<i>see Note</i>).
[Gold/White]  	Move up one page.
[Gold/White]  	Enter an asterisk (*).
[Gold/White]  	Move down one page.
[Gold/White]  	Access the Pocket PC Start menu.
[Gold/White]  	Enter an at symbol (@).
[Gold/White]  	Enter a backslash (/).
[Gold/White]  	Enter a minus sign (-).
[Gold/White]  	Enter a plus sign (+).
[Gold/White]  	Tab to the right.
[Gold/White]  	Tab to the left.
[Gold/White]  	Increase volume
[Gold/White]  	Decrease volume





Note: Pocket PC applications are accessible only if configured to do so in the App Launch portion of the Utilities applet. See page 231 for more information.



Alpha (Blue) Plane Keys


The alphabet can be entered with either the numeric keypad or the alphanumeric keypad. Below and on the next page are the key sequences.

Numeric Keypad

When you press , the Scanning/Alpha LED () shows ‘red’ for the Alpha mode. The keypad stays in Alpha mode until you press .

To type a lowercase ‘c,’ press     (the [2] key three times). 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 you are in the Alpha mode and you press  to initiate the CAPS mode, you will render a CAPS LOCK until you press  again. Once you are in CAPS mode, you stay in CAPS until it is pressed again.


Press  to enter a space.

To Enter	Press the Keys	To Enter	Press the Keys
a	Alpha 2 ABC End	A	Alpha 1 Caps Send 2 ABC End
b	Alpha 2 ABC End 2 ABC End	B	Alpha 1 Caps Send 2 ABC End 2 ABC End
c	Alpha 2 ABC End 2 ABC End 2 ABC End	C	Alpha 1 Caps Send 2 ABC End 2 ABC End 2 ABC End
d	Alpha 3 DEF *	D	Alpha 1 Caps Send 3 DEF *
e	Alpha 3 DEF * 3 DEF *	E	Alpha 1 Caps Send 3 DEF * 3 DEF *
f	Alpha 3 DEF * 3 DEF * 3 DEF *	F	Alpha 1 Caps Send 3 DEF * 3 DEF * 3 DEF *
g	Alpha 4 GHI A2	G	Alpha 1 Caps Send 4 GHI A2
h	Alpha 4 GHI A2 4 GHI A2	H	Alpha 1 Caps Send 4 GHI A2 4 GHI A2
i	Alpha 4 GHI A2 4 GHI A2 4 GHI A2	I	Alpha 1 Caps Send 4 GHI A2 4 GHI A2 4 GHI A2
j	Alpha 5 JKL A3	J	Alpha 1 Caps Send 5 JKL A3
k	Alpha 5 JKL A3 5 JKL A3	K	Alpha 1 Caps Send 5 JKL A3 5 JKL A3
l	Alpha 5 JKL A3 5 JKL A3 5 JKL A3	L	Alpha 1 Caps Send 5 JKL A3 5 JKL A3 5 JKL A3
m	Alpha 6 MNO A4	M	Alpha 1 Caps Send 6 MNO A4
n	Alpha 6 MNO A4 6 MNO A4	N	Alpha 1 Caps Send 6 MNO A4 6 MNO A4
o	Alpha 6 MNO A4 6 MNO A4 6 MNO A4	O	Alpha 1 Caps Send 6 MNO A4 6 MNO A4 6 MNO A4
p	Alpha 7 PQRS PgUp	P	Alpha 1 Caps Send 7 PQRS PgUp
q	Alpha 7 PQRS PgUp 7 PQRS PgUp	Q	Alpha 1 Caps Send 7 PQRS PgUp 7 PQRS PgUp
r	Alpha 7 PQRS PgUp 7 PQRS PgUp 7 PQRS PgUp	R	Alpha 1 Caps Send 7 PQRS PgUp 7 PQRS PgUp 7 PQRS PgUp
s	Alpha 7 PQRS PgUp 7 PQRS PgUp 7 PQRS PgUp 7 PQRS PgUp	S	Alpha 1 Caps Send 7 PQRS PgUp 7 PQRS PgUp 7 PQRS PgUp 7 PQRS PgUp
t	Alpha 8 TUV	T	Alpha 1 Caps Send 8 TUV
u	Alpha 8 TUV 8 TUV	U	Alpha 1 Caps Send 8 TUV 8 TUV
v	Alpha 8 TUV 8 TUV 8 TUV	V	Alpha 1 Caps Send 8 TUV 8 TUV 8 TUV
w	Alpha 9 WXYZ	W	Alpha 1 Caps Send 9 WXYZ
x	Alpha 9 WXYZ 9 WXYZ	X	Alpha 1 Caps Send 9 WXYZ 9 WXYZ
y	Alpha 9 WXYZ 9 WXYZ 9 WXYZ	Y	Alpha 1 Caps Send 9 WXYZ 9 WXYZ 9 WXYZ
z	Alpha 9 WXYZ 9 WXYZ 9 WXYZ 9 WXYZ	Z	Alpha 1 Caps Send 9 WXYZ 9 WXYZ 9 WXYZ 9 WXYZ

Alphanumeric Keypad

When you press , the Scanning/Alpha LED (✓⊙) is 'red' to indicate Alpha mode. The keypad stays in Alpha mode until you press  again.

If you want to type a lowercase 'c,' press  . If you want an uppercase "C," press and hold the  key, then press .

Press  to enter a space.

To Enter	Press the Keys	To Enter	Press the 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

To Enter	Press the Keys	To Enter	Press the Keys
e		E	
f		F	
g		G	
h		H	
i		I	
j		J	
k		K	
l		L	
m		M	
n		N	
o		O	
p		P	
q		Q	
r		R	
s		S	
t		T	
u		U	
v		V	
w		W	
x		X	
y		Y	
z		Z	

LEDs

The battery status LED and the scanning/keypad shift and notification LED turn red, green, or yellow.

Battery Status LED

LED Color and Action	Description
Steady Green	Battery is more than 95% charged and unit is on charger.
Blinking Red	Battery is low. The blinking speed increases as the battery's power gets increasingly lower.
Red	Main battery is low; or if charging, remains red until your 700 Color Computer reaches 95% charge status.
Yellow	The 700 Color Computer is on a charging source and there is no battery pack installed. The mobile computer may also be out of the charging range of 32° to 122° F (0° to 50° C). When back in 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 (Blue) and the 700 Color Computer is turned on.
Blinking Red	Indicates the WAN (GPRS or CDMA) radio is on when the 700 Color Computer is in suspend mode. Also indicates when the WAN radio is initialized on 761 Computers.
Yellow	When the keypad is in alpha mode, the LED temporarily switches from red to yellow to indicate a good scan. This also indicates a Calendar or Task activity occurred.

Modem Support

The 700 Color Computer has the following modem options:

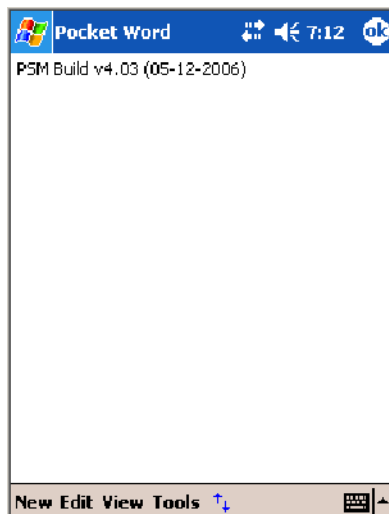
- AD16 modem dock that provides charging and includes a built-in modem and a serial port between which an application can switch.
- AA8 snap-on modem, a stand-alone product, that attaches to the bottom of your 700 Color Computer. Note that you cannot place this modem in a dock, printer, or other devices. Contact your Intermec representative for more information.

PSM Build Version

The Persistent Storage Manager (PSM) is an area of storage which is embedded in a section of the system's FLASH memory. This storage area is *not* erased during a cold-boot. It may, however, be erased during the re-flashing process. In addition to storing applications and data files, you do have the option to store a persistent registry to the PSM region.



To determine what PSM Build is on your 700 Color Computer, tap **Start > Programs > File Explorer**. Access the **Flash File Store** folder from the **My Device** root directory, then tap the **PSMinfo** text file. Take note of your information, then tap **ok** to exit.



Resetting Your 700 Color Computer

Performing a Warm-Boot

Performing a warm-boot may be necessary to correct conditions where an application stops responding to the system. It does, however, unload all running programs.

Press and hold the I/O key for about ten seconds, then the 700 Color Computer continues from the screen you were at before you performed the warm-boot.

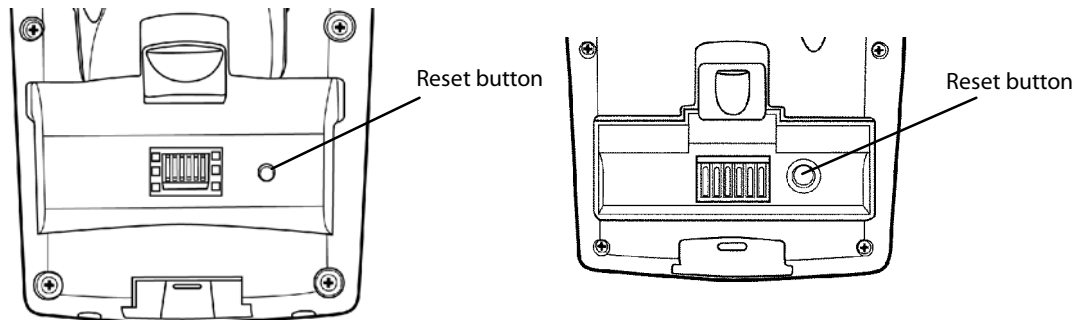
Performing a Cold-Boot

In some cases where the 700 Color Computer completely stops responding, it may be necessary to perform a cold-boot. Because this may result in data loss, this procedure is not recommended unless all other recovery methods have failed.



Note: This 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.

- 1 Release the lower clip of the hand strap.
- 2 Remove the battery pack.
- 3 Press the **Reset** button.
- 4 Reinstall the battery pack.

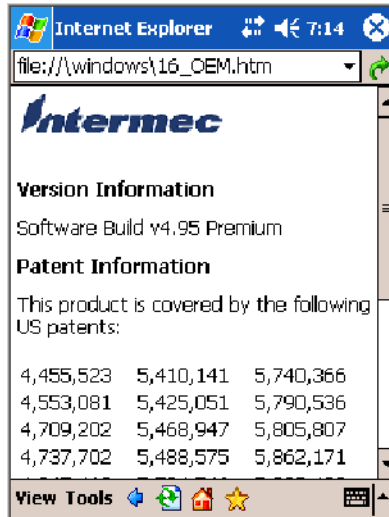


This illustration shows the back of the 700 Color Computer on the left and of the 730 Computer on the right.

Software Build Version



To check to see if your 700 Color Computer has the latest software build, select **Start > Internet Explorer > the Intermec logo**. The latest software build version is displayed beneath the **Version Information** title.



Software Tools

The following Intermec software tools are available as free downloads:

SmartSystems™ Foundation Console (www.intermec.com/SmartSystems)

This tool includes a management console that provides a default method to configure and manage Intermec devices “out-of-the-box,” without the purchase of additional software licenses. This is for anyone who must configure and deploy multiple devices or manage multiple licenses.

Intermec Resource Kits (www.intermec.com/IDL)

Resource Kits provide tools that build applications using the features of Intermec devices. Resource kits include: Bluetooth, Communications, Data Collection, Device Settings, Mobile Gadgets, Printing, and RFID.

This is for anyone who develops software for the 700 Color Computer.

Storage Media



Note: MultiMediaCards (MMCs) are not supported.

Storage Cards Available

CompactFlash Cards

On 700 Color Computers, the CompactFlash card slot accepts either a storage card or the 802.11b or 802.11b/g radio, which is factory-installed and cannot be removed. The 730 Computer does not support CompactFlash storage cards.

Secure Digital Cards

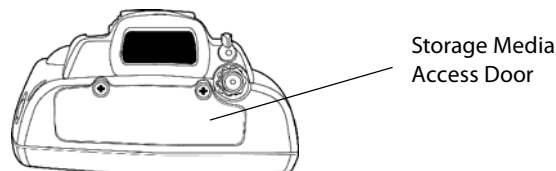
The Secure Digital card slot accepts storage cards only.

SIM Cards

Subscriber Identification Module (SIM) cards are used on all 700 Color Computers shipped with WAN GPS/GPRS radios. The model number calls out which of the 700 Color Computers are GPRS/GPS devices in the seventh or eighth place, such as “G2” for European GPRS and “G4” for US GPRS. Contact your Intermec representative for more information on SIM cards.

700 Color Computers

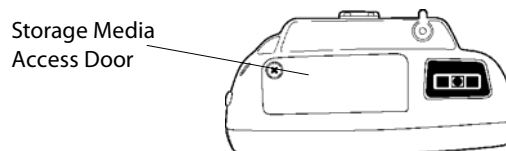
The 700 Color Computer supports CompactFlash, Secure Digital, and SIM storage cards. To access either card slot, locate the access door at the top of the 700 Color Computer, remove its two screws, then remove the door.



Note that the keypad is to the bottom for this 700 Color Computer.

730 Computers

The 730 Computer only supports the Secure Digital storage card. The CompactFlash card slot is embedded in the 730 Computer and cannot be removed. To access the Secure Digital card slot, locate the access door at the top of the 730 Computer, remove its screws, then remove the door.

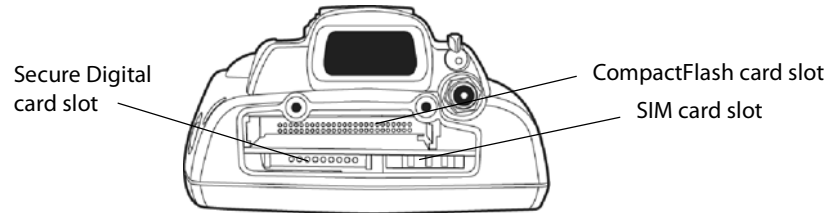


Note that the keypad is to the bottom for this 730 Computer.

Internal Card Slots

Below is a view of the various card slots within your 700 Color Computer. Note that the 730 Computer only allows access to the Secure Digital and SIM card slots.

- The CompactFlash card goes into the top card slot.
- The Secure Digital card would go into the bottom left card slot.
- The SIM card goes into the bottom right card slot.



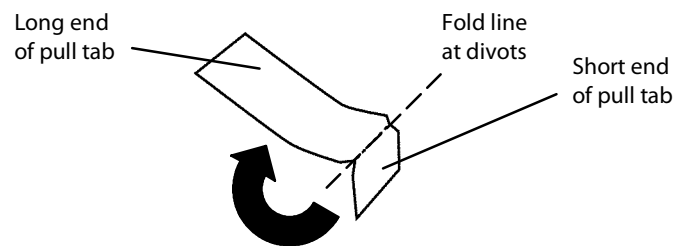
This illustration is of the 700 Color Computer with the keypad on the bottom.

Inserting the Storage Card

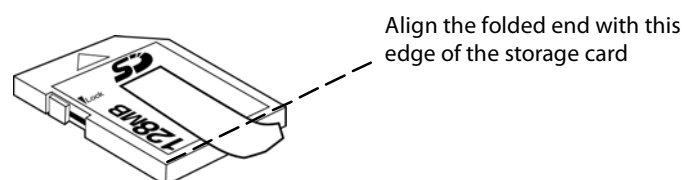
The Secure Digital storage card, as ordered from Intermec Technologies, come with acrylic adhesive pull tabs. If you are using a storage card that you plan to remove from the 700 Color Computer, this tab can make its removal easier.

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.

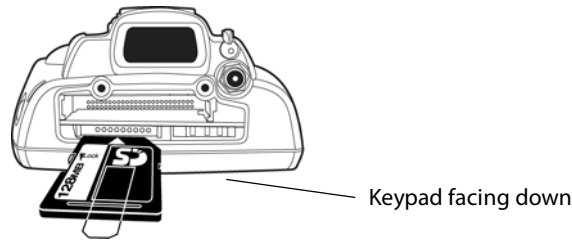
- 1 Completely peel the paper off the short end of the tab. Partially pull the paper off the long end of the tab away from the divots. Fold the short end under, at the divots, to stick to itself.



- 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 700 Color Computer to ensure that no adhesive is exposed once the tab is placed.



Vibrator



Note: This information does *not* apply to the 730 Computer.

If your 700 Color Computer is built with an imager or scanner and the vibrator is disabled, do the following instructions to enable the vibrator. If you are not able to enable the vibrator, then contact Customer Support.

For information about setting volume levels for screen taps, ActiveSync alert noises, etc., tap **Start** > **Help** > **Pocket PC Basics**, then select **Notifications**.

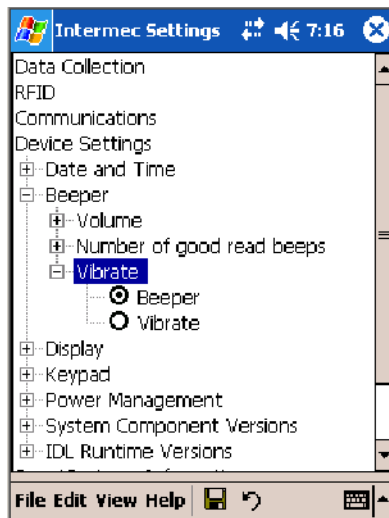


Note: Each time the 700 Color Computer is cold-booted, all default settings are restored.



Intermec Settings

Do the following to enable the vibrator for the 700 Color Computer. Tap **Start** > **Settings** > the **System** tab > the **Intermec Settings** icon. Tap the **Device Settings** option, tap (+) to expand **Beeper**, then tap (+) to expand **Vibrate**. Select an item, then close this option.



Note: Information about the settings you can configure with the Intermec Settings applet is described in the *Intermec Computer Command Reference Manual*. The online manual is available from the Intermec web site at www.intermec.com

Wireless Network Support

Radios are installed at the factory and cannot be installed by a user. The 700 Color Computer must be serviced to install or replace radios. Contact your Intermec representative for more information. See Chapter 4, “Network Support” for information about supported radios.



Note: Changes or modifications not expressly approved by Intermec could void the user’s authority to operate the equipment.

Accessories

The following accessories are available for the 700 Color Computer. *Note that this is not a complete list.* Contact your Intermec representative for information about these and other accessories that are not in this list.

Accessory Descriptions	700 Color	730 Computer
AA8 Snap-On Modem	X	
AA9 DEX Adapter	X	
AA10 Long Range Tethered Scanning Adapter (3.3v to 5v)	X	
AC15 Single Battery Charger	X	
AC16 Quad Battery Charger	X	X
AD15 Single Dock Charger with USB and Ethernet	X	X **
AD16 Modem Dock	X	X
AD17 Multidock — Charge Only (<i>holds four 700 Computers</i>)	X	X
AD18 Multidock Charging with Ethernet support (<i>holds four units</i>)	X	
AH5 Standard Scan Handle Option	X	X
AV7 Vehicle Dock	X	X
** No Ethernet Support		

Physical and Environmental Specifications

Use this section to locate technical information about the 700 Color Computer and its available features and options.

Cisco Compatible Extensions:	730	740, 741, 750, 751, 760, 761
Version 1	LEAP, CKIP, VLAN	X
Version 2		future

Display:	730	740, 741, 750, 751, 760, 761
Transflective	TFT all-light readable color display with LED backlight	Transflective
Pixels	240x320	240x320

Display:	730	740, 741, 750, 751, 760, 761
Diagonal	89mm (3.5 in)	97mm (3.8 in)
Colors	64 K	256 K

Environmental:	730	740, 741, 750, 751, 760, 761
Operating Temperature	-10° to 55°C (14° to 131°F)	-20° to 60°C (-4° to 140°F)
Storage Temperature	-20° to 60°C (-4° to 140°F)	-20° to 60°C (-4° to 140°F)
Relative Humidity	5% to 95% noncondensing	5% to 95% noncondensing
Rain and Dust Resistance	IP54 compliant	IP64 compliant
Drop Specifications	1.2 m (4') drop, 26 times on concrete	5' drop, 26 times onto concrete

Expansion Slots:	730	740, 741, 750, 751, 760, 761
Secure Digital (SD)	X	X
CompactFlash (CF) Type II		X

Integrated Scanner Options:	730	740, 741, 750, 751, 760, 761
Area Imager		X
Linear Imager	X	X
1D Laser		X
PDF 417 Laser		X

Integrated Wireless:	730	740, 741, 750, 751, 760, 761
802.11b (Wi-Fi® certified)	WLAN (802.11b)	LAN (802.11b/g)
WAN:		GSM/GPRS, CDMA/1xRTT
Bluetooth™ compatible module	X	X

Keypad Options:	730	740, 741, 750, 751, 760, 761
Numeric	X	X
Full Alphanumeric		X

Memory and Storage:	730	740, 741, 750, 751, 760, 761
RAM Memory	64 MB	64 MB (128 MB optional)
Flash ROM	64 MB, includes ROM folder for application storage	64 MB, includes ROM folder for application storage

Microprocessor:	730	740, 741, 750, 751, 760, 761
	Intel® XScale™ PXA255 Application Processor, 400 MHz	Intel® XScale™ Processor, 400 MHz

AA8 Modem:	730	740, 741, 750, 751, 760, 761
Optional V.90 modem snaps on V.92 docking options		X

Operating System:	730	740, 741, 750, 751, 760, 761
Microsoft® Windows® Mobile software for Pocket PC	X	X

Physical Dimensions:	730	740, 741, 750, 751, 760, 761
Length	178 mm (7.0 in)	191 mm (7.53 in)
Width	89 mm (3.5 in)	90 mm (3.5 in)
Height	38 mm (1.5 in)	50 mm (1.97 in)
Weight	420 g (15 oz)	483-568 g (17-20 oz) depending on options

Power:	730	740, 741, 750, 751, 760, 761
Battery Type	AB10 Lithium-Ion (LiIon), 3.6V, (1 x 2400 mAh cells), customer-replaceable	LiIon, 7.2V, (2 x 2000 mAh cells), customer-replaceable
Battery Capacity	8.64 Watt-hours	14.4 Watt-hours
Battery Life	6-10 hours, application dependent	8-12 hours, application dependent
Recharging Time	4 hours	4 hours

Regulatory Approvals:	730	740, 741, 750, 751, 760, 761
FCC Part 15 Class B	X	X
UL Listing	X	X
CE Mark	X	X
CB Report	X	

Standard Communications:	730	740, 741, 750, 751, 760, 761
RS232	X	X
USB	X	Client
IrDA 1.1 (115 kbps)	X	X
10 Base-T Ethernet		X

2 Windows Mobile 2003

This chapter introduces Microsoft Windows Mobile 2003 for Pocket PC. While using your 700 Color 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.



Note: “700 Color” pertains to 740, 741, 750, 751, 760, and 761 Computers unless otherwise noted.

 Help

Below is a list of Windows Mobile 2003 components described in this chapter. Tap **Start** > **Help** on your 700 Color Computer to find additional information on Windows Mobile components.

Windows Mobile 2003 Components
Microsoft ActiveSync Client (<i>page 41</i>)
Microsoft Pocket Outlook (<i>page 42</i>)
Pocket Word (<i>page 68</i>)
Pocket Excel (<i>page 71</i>)
MSN Messenger (<i>page 73</i>)
Windows Media Player for Pocket PC (<i>page 76</i>)
Microsoft Reader (<i>page 77</i>)
Pocket Internet Explorer (<i>page 79</i>)

Software Builds

Go to “Software Build Version” on page 17 to determine which Intermec build of Windows Mobile 2003 is on your unit.

Where to Find Information

This chapter describes your 700 Color Computer hardware, provides an overview of the programs on your 700 Color Computer, and explains how to connect your 700 Color Computer to a desktop, a network, or the Internet. For instructions on setting up your 700 Color Computer and installing ActiveSync, see the Quick Start Guide. The following is a guide to more information to assist you use your 700 Color Computer.

For information on:	See this source:
Programs on your mobile computer.	This chapter and mobile computer Help. To view Help, tap Start > Help .
Additional programs that can be installed on the mobile computer.	The <i>Windows Mobile Companion CD</i> .
Connecting to and synchronizing with a desktop.	The Quick Start Guide or <i>AutoSync Help</i> on your desktop. To view Help, click Help > Microsoft ActiveSync Help .
Last-minute updates and detailed technical information.	The Read Me files, located in the Microsoft ActiveSync folder on the desktop and on the <i>Windows Mobile Companion CD</i> .
Up-to-date information on your Windows Mobile.	www.microsoft.com/windowsmobile/resources/communities/default.aspx

Windows Mobile and many of the technologies supported by the 700 Color Computer are not from Intermec. Many of the utilities and features on a Windows Mobile device come directly from Microsoft without any modification from Intermec. There may be certain Microsoft-specific issues that Intermec would not be able to support, so contact our front-line support personnel to determine the best source of assistance.

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

- msdn.microsoft.com/support/
- support.microsoft.com/
- news://news.microsoft.com (*a free support option*)

Basic Skills

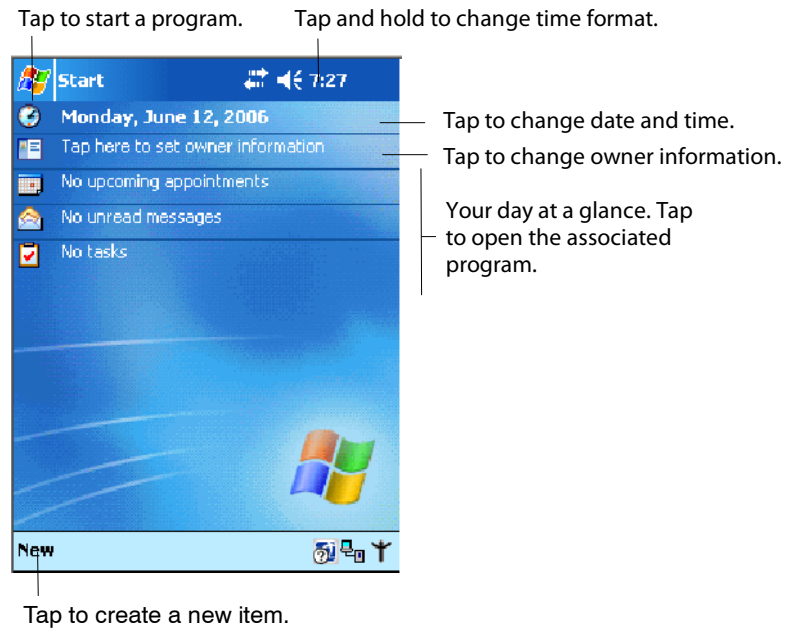
Learning to use your 700 Color Computer is easy. This section describes the basic concepts of using and customizing your 700 Color Computer.

Today Screen



When you turn on your 700 Color Computer for the first time each day (*or after four hours of inactivity*), you see the **Today** screen. You can also

display it by tapping the **Start** flag (*shown left*) and then **Today**. On the Today screen, you can see important information for the day.



To customize what is displayed on the Today screen, including the background image, tap **Start > Settings > the Personal tab > Today**.

Status icons display information such as low batteries or when the 700 Color Computer is connected to a desktop or to the Internet. You can tap an icon to open the associated setting or program.

Programs

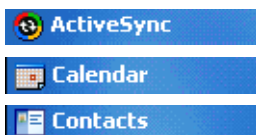
You can switch from one program to another by selecting it from the **Start** menu. (You can customize which programs you see on this menu. For information, see “Adjusting Settings” on page 38.) To access some programs, tap **Start > Programs**, and then the program name.

You can also switch to some programs by pressing a program icon. Your 700 Color Computer has one or more program icons located on the front or side of the computer. The icons on the icons identify the programs to which they switch.



Note: Some programs have abbreviated labels for check boxes and drop-down menus. To see the full spelling of an abbreviated label, tap and hold the stylus on the label. Drag the stylus off the label so that the command is not carried out.

The following is a partial list of programs that are on your 700 Color Computer. Look on the *Windows Mobile Companion CD* for additional programs that you can install onto your 700 Color Computer.



ActiveSync Synchronize information between your 700 Color Computer and desktop.

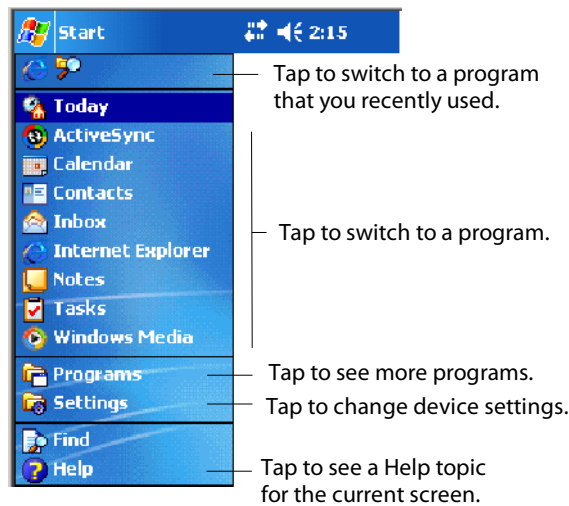
Calendar Keep track of your appointments and create meeting requests.

Contacts Keep track of your friends and colleagues.

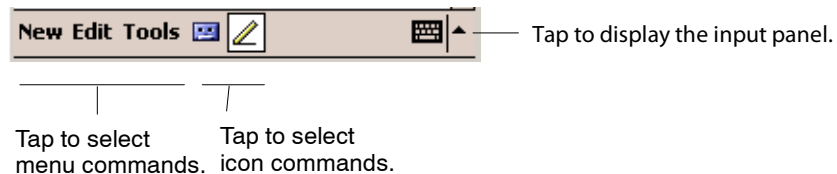
- Inbox**
Send and receive e-mail messages.
- Internet Explorer**
Browse Web and WAP (Wireless Application Protocol) sites, and download new programs and files from the Internet.
- Notes**
Create handwritten or typed notes, drawings, and recordings.
- Tasks**
Keep track of your tasks.
- Windows Media**
Play digital audio and video files that are stored on your 700 Series Computer or on a network.

Navigation Bar and Command Bar

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

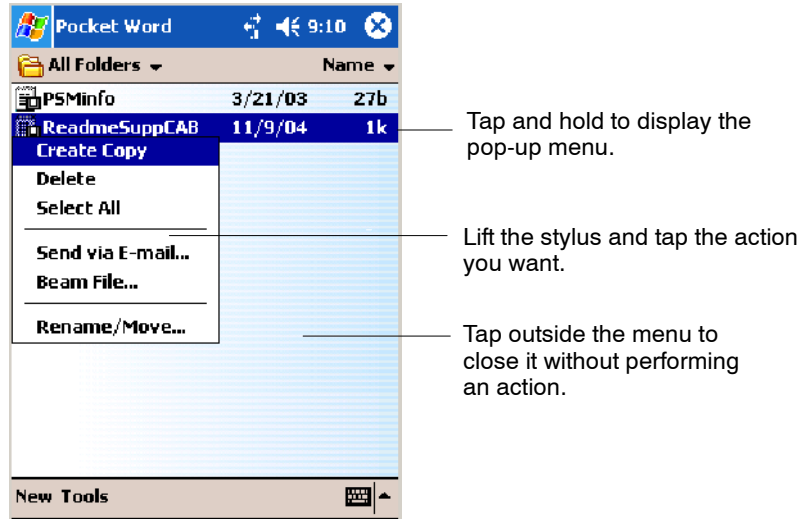


Use the command bar at the bottom of the screen to perform tasks in programs. The command bar includes menu names, icons, and the **Input Panel** icon. To create a new item in the current program, tap **New**. To see the name of an icon, tap and hold the stylus on the icon. Drag the stylus off the icon so that the command is not carried out.



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.



Notifications

When you have something to do, your device notifies you in a variety of ways. For example, if you have set up an appointment in Calendar, an e-mail message arrives, or a friend sends you an instant message, you are notified in any of the following ways:

- A message box appears on the screen.
- A sound, which you can specify, is played.
- A light flashes on your 700 Color Computer.
- The 700 Color Computer vibrates.

You can choose the notification types.

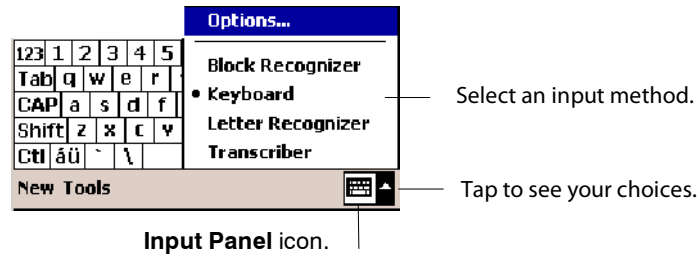
Entering Information

You can enter information on your 700 Color Computer in several ways, depending on the type of device you have and the program you are using:

- **Synchronizing**
Using Microsoft ActiveSync, synchronize or copy information between your desktop and 700 Color Computer. For more information on ActiveSync, see *ActiveSync Help* on your desktop.
- **Typing**
Using the input panel, enter typed text into the 700 Color Computer. You can do this by tapping keys on the onscreen keyboard or by using handwriting recognition software.
- **Writing**
Using the stylus, write directly on the screen.
- **Drawing**
Using the stylus, 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 700 Color Computer. You can either type using the onscreen keyboard or write using **Block Recognizer**, **Letter Recognizer**, or **Transcriber**. In either case, the characters appear as typed text on the screen.

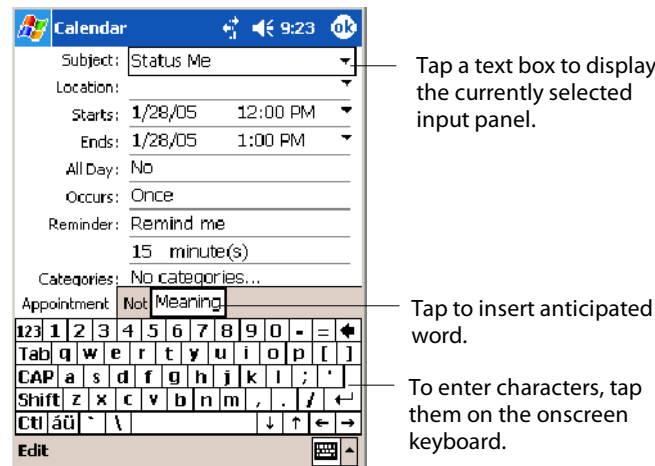
To show or hide the input panel, tap the **Input Panel** icon. Tap the arrow next to the **Input Panel** icon to see your choices.



When you use the input panel, your 700 Color 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 your 700 Color Computer, the more words it learns to anticipate.



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



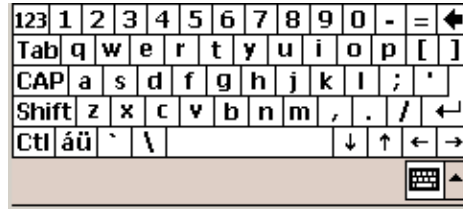
Typing With the Onscreen Keyboard




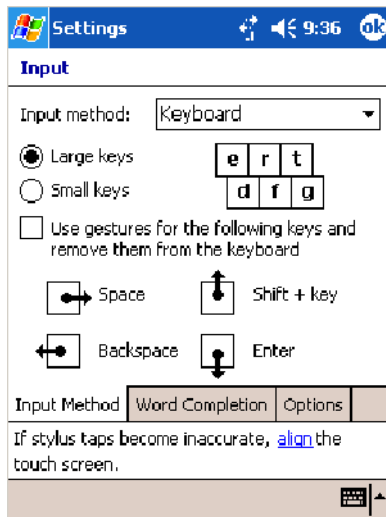
Tap the input panel arrow, then tap **Keyboard**. On the soft keyboard that is displayed, tap the keys with your stylus.

- To type lowercase letters, tap the keys with the stylus.
- To type a single uppercase letter or symbol, tap the **Shift** key. To tap multiple uppercase letters or symbols, tap the **CAP** key.
- To convert a letter to uppercase, tap and hold the stylus on the letter and drag up.
- To add a space, drag the stylus to the right across at least two keys.

- To backspace one character, drag the stylus to the left across at least two keys.
- To insert a carriage return, tap and hold the stylus anywhere on the keyboard and drag down.




 To use larger keys, tap the input panel arrow, tap **Options**, select “Keyboard” from the **Input method** drop-down list, then select **Large keys**.

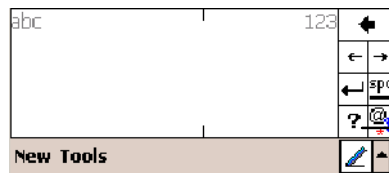


Using Block Recognizer

Character recognition software gives you a fast and easy method for entering information in any program on your 700 Color Computer. Letters, numbers, and punctuation you write are translated into typed text.

 Tap the input panel arrow, then tap **Block Recognizer**. Write a letter in the box. When you write a letter, it is converted to typed text onscreen.

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

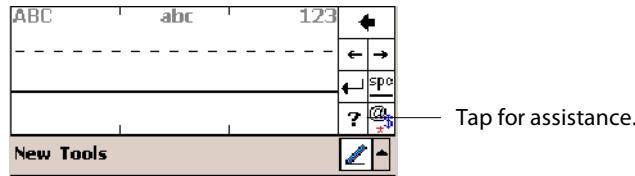


Tap for assistance.

Using Letter Recognizer

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

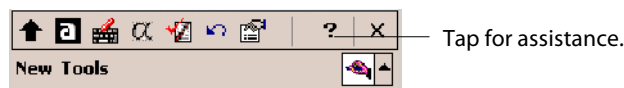
- Tap the input panel arrow, then tap **Letter Recognizer**. Write a letter in the box. When you write a letter, it is converted to typed text that appears on the screen. For specific instructions on using Letter Recognizer, with Letter Recognizer open, tap the question mark next to the writing area.



Using Transcriber

With Transcriber, you can write anywhere on the screen using the stylus just as you would on paper. Unlike Letter Recognizer and Block Recognizer, you can write a sentence or more of information. Then, pause and let Transcriber change the written characters to typed characters.

- Tap the input panel arrow, then tap **Transcriber**. Tap **ok**, then write anywhere on the screen. For specific instructions on using Transcriber, with Transcriber open, tap the question mark in the lower, right-hand corner of the screen.



Selecting Typed Text

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

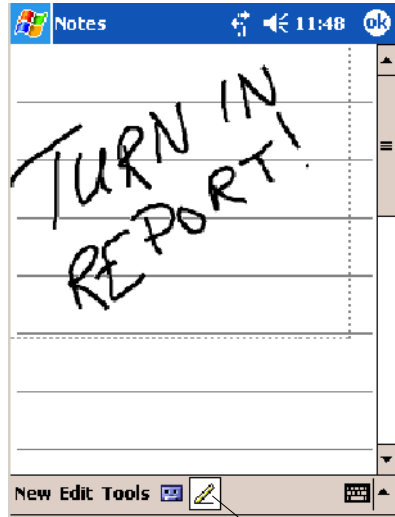
Writing on the Screen

In any writing program, such as the Notes program, and in the **Notes** tab in Calendar, Contacts, and Tasks, 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 at a later time.

- Tap the **Pen** icon to switch to writing mode. This action displays lines on the screen to help you write.



Note: Some programs that accept writing may not have the **Pen** icon. See the documentation for that program to find out how to switch to writing mode.



Tap to use your stylus like a pen.

Selecting the Writing

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

- 1 Tap and hold the stylus next to the text you want to select until the insertion point appears.
- 2 Without lifting, drag the stylus across the text you want to select.

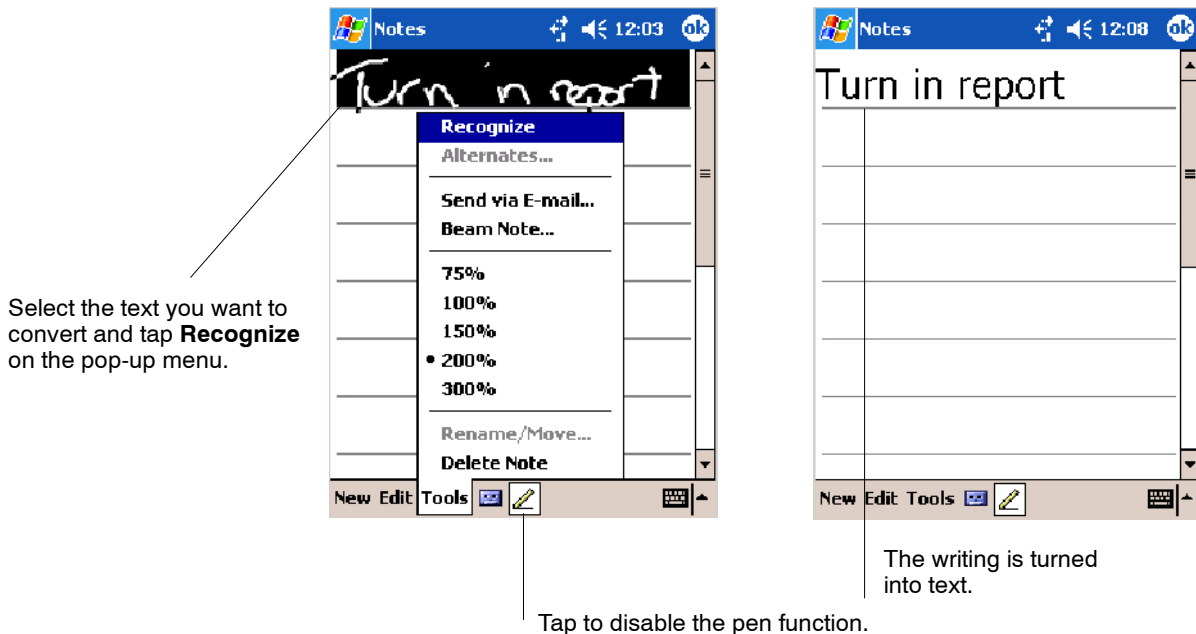
If you accidentally write on the screen, tap **Tools** > **Undo** and try again. You can also select text by tapping the **Pen** icon to deselect it and then dragging the stylus across the screen.

You can cut, copy, and paste written text in the same way you work with typed text: tap and hold the selected words and then tap an editing command on the pop-up menu, or tap the command on the **Edit** menu.

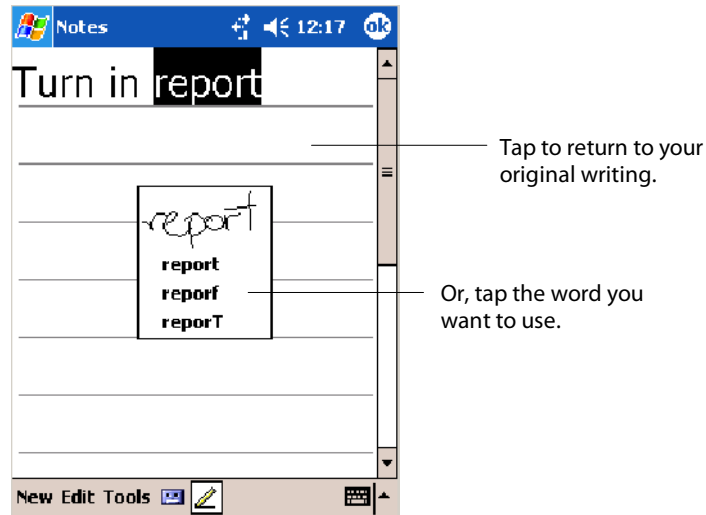
Converting Writing to Text

You can convert words you write in print or cursive to text by tapping **Tools** > **Recognize**. If a word is not recognized, it keeps its original form.

If you want to convert only certain words, tap **Pen** to disable the writing function, tap twice over the word or phrase to highlight, then tap **Tools** > **Recognize**.



If the conversion is incorrect, you can choose different words from a list of alternates or return to the original writing. To do so, tap and hold the incorrect word (tap one word at a time). On the pop-up menu, tap **Alternates**. Tap the word use from the menu with a list of alternate words, or tap the writing at the top of the menu to return to the original writing.



Tips for getting good recognition:

- Write neatly.
- Write on the lines and draw descenders below the line. Write the cross of the “t” and apostrophes below the top line so they are not confused with the word above. Write periods and commas above the baseline.
- For better recognition, try increasing the zoom level to 300% by using the **Tools** menu. Recognition does not work well below a 150% zoom level.

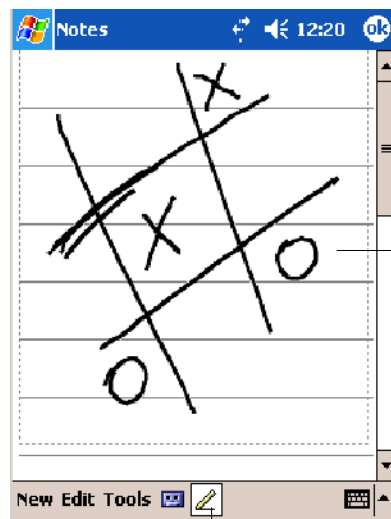
- Write the letters of a word closely and leave big gaps between words so that the 700 Color Computer can easily tell where words begin and end.
- Hyphenated words, foreign words that use special characters such as accents, and some punctuation cannot be converted.
- If you add writing to a word to change it (such as changing a “3” to an “8”) after you attempt to recognize the word, the writing you add is not included if you attempt to recognize the writing again.

Drawing on the Screen

You can draw on the screen in the same way that you write on the screen. The difference between writing and drawing on the screen is how you select items and how they are edited. For example, you can resize selected drawings, while you cannot resize writing.

Creating a Drawing

- Cross three ruled lines on your first stroke. A drawing box appears. Subsequent strokes in or touching the drawing box become part of the drawing. Drawings that do not cross three ruled lines are treated as writing.



The drawing box indicates the boundaries of the drawing.

Pen icon.



Note: You may want to change the zoom level so that you can more easily work on or view your drawing. Tap **Tools** and then a zoom level.

Selecting a Drawing

If you want to edit or format a drawing, you must select it first.



- Tap and hold the stylus on the drawing until the selection handle appears. To select multiple drawings, deselect the **Pen** icon and then drag to select the drawings you want.

You can cut, copy, and paste selected drawings by tapping and holding the selected drawing and then tapping an editing command on the pop-up menu, or by tapping the command on the **Edit** menu. To resize a drawing, make sure the **Pen** icon is not selected, and drag a selection handle.

Recording a Message

In any program where you can write or draw onscreen, you can also capture thoughts, reminders, and phone numbers by recording a message.

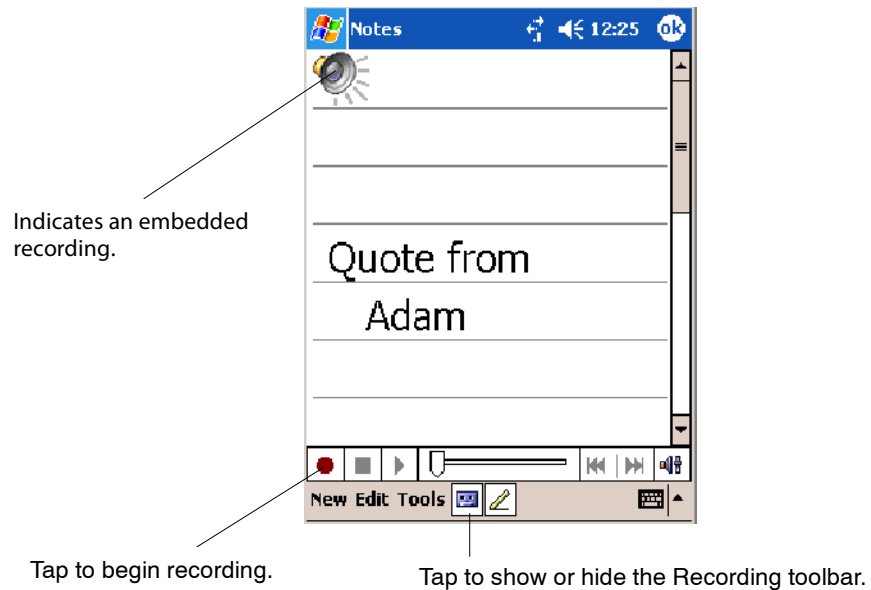
In the Inbox program, you can add a recording to an e-mail message. In Calendar, Tasks, and Contacts, you can include a recording in the **Notes** tab. In the Notes program, you can create a stand-alone recording or add a recording to an open note.

- 1 Hold the 700 Color Computer's microphone near your mouth or source of sound.
- 2 Tap  and make your recording.
- 3 Tap  when finished. If you are recording in an open note, an icon appears in the note. If you are creating a stand-alone recording, it appears in the note list.
- 4 To play a recording, tap the recording icon in the open note or tap the recording in the note list.



Note: To quickly create a recording, hold down the Record hardware icon. When you hear the beep, begin your recording. Release the icon when you are finished. The new recording is stored in the open note or as a stand-alone recording if no note is open.

To play a recording, tap it in the list or tap its icon in the note.

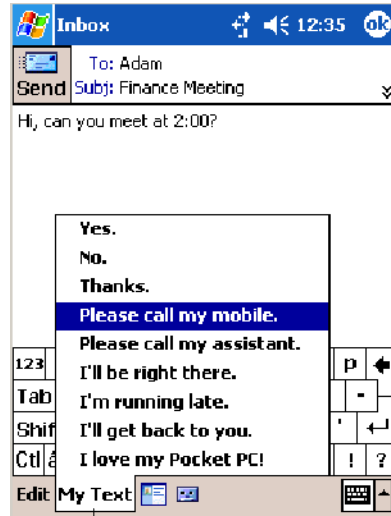


Using My Text

When using Inbox or MSN Messenger, use **My Text** to quickly insert preset or frequently used messages into the text entry area. To insert a message, tap **My Text** and tap a message.

- To add common messages, tap **My Text**, then a desired message.

- To edit a My Text message, tap **Tools > Edit My Text Messages**. Tap the message to edit and enter new text at the bottom of the screen.



Tap to select a prewritten message.

Finding and Organizing Information

The Find feature helps you to quickly locate information.

Tap **Start > Find**. Enter the text you want to find, select a data type, and then tap **Go** to initiate the search.



Note: To quickly find information that is taking up storage space on your 700 Color Computer, select **Larger than 64 KB** in **Type**.

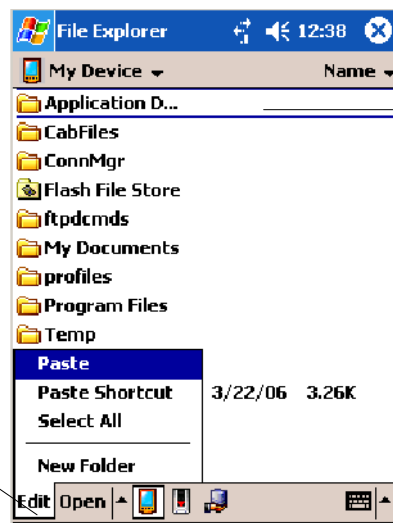


File Explorer

Use the File Explorer to find files on your 700 Color Computer and to organize these files into folders. Tap **Start > Programs > File Explorer**.



Note: You can move files in File Explorer by tapping and holding the item you want to move, and then tapping **Cut** or **Copy and Paste** on the menu.



Tap the folder name to open it.

Tap **New Folder** to create a new folder.

Customizing Your 700 Color Computer

You can customize your 700 Color Computer by adjusting settings and installing additional software.

Adjusting Settings

You can adjust settings to suit the way you work. To see available options, tap **Start > Settings >** either the **Personal** tab or the **System** tab located at the bottom of the screen. You might want to adjust the following:



Menus:	To customize the Start menu, and to enable a pop-up menu from the New icon.
Owner Information:	To enter your contact information.
Password:	To limit access to your 700 Color Computer.
Today:	To customize the look and information displayed on the Today screen.
Clock:	To change the time or to set alarms.
Power:	To maximize battery life.

Adding or Removing Programs

Programs added to your 700 Color Computer at the factory are stored in ROM (Read Only Memory). You cannot remove this software, and you cannot accidentally lose ROM contents. ROM programs can be updated using special installation programs with a *.XIP extension. All other programs and data files added to your 700 Color Computer after factory installation are stored in RAM (Random Access Memory).

You can install any program created for your 700 Color Computer, as long as your 700 Color Computer has enough memory. The most popular place to find software for your 700 Color Computer is on the Windows Mobile Web site (www.microsoft.com/windowsmobile/resources/communities/default.msp).

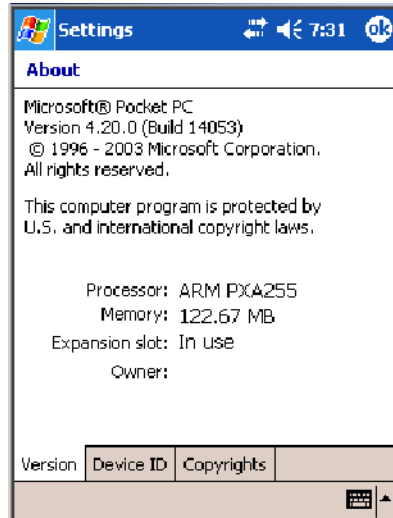
Adding Programs Using ActiveSync

Install the appropriate software for your 700 Color Computer on your desktop before installing it on your 700 Color Computer.



About

- 1 Determine your 700 Color Computer and processor type so that you know which version of the software to install. Tap **Start** > **Settings** > the **System** tab > **About** > the **Version** tab, then make a note of the information in **Processor**.



- 2 Download the program to your desktop (or insert the CD or disk that contains the program into your desktop). You may see a single *.XIP, *.EXE, or *.ZIP file, a SETUP.EXE file, or several versions of files for different 700 Color Computer types and processors. Be sure to select the program designed for the Windows Mobile and your 700 Color Computer processor type.
- 3 Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
- 4 Connect your 700 Color Computer and desktop.
- 5 Double-click the *.EXE file.
 - If the file is an installer, the installation wizard begins. Follow the directions on the screen. Once the software is installed, the installer automatically transfers the software to your 700 Color Computer.
 - If the file is not an installer, an error message stating that the program is valid but it is designed for a different type of computer is displayed. Move this file to your 700 Color Computer. If you cannot find any installation instructions for the program in the Read Me file or documentation, use ActiveSync Explore to copy the program file to the Program Files folder on your 700 Color Computer. For more information on copying files using ActiveSync, see *ActiveSync Help*.

Once installation is complete, tap **Start** > **Programs**, and then the program icon to switch to it.



About

Adding a Program Directly from the Internet

- 1 Determine your 700 Color Computer and processor type so that you know which version of the software to install. Tap **Start** > **Settings** > the **System** tab > **About** > the **Version** tab, then make a note of the information in **Processor**. See a sample on the previous page.
- 2 Download the program to your 700 Color Computer straight from the Internet using Pocket Internet Explorer. You may see a single *.XIP, *.EXE, or *.ZIP file, a SETUP.EXE file, or several versions of files for different 700 Color Computer types and processors. Be sure to select the program designed for the Windows Mobile and your 700 Color Computer processor type.
- 3 Read program installation instructions, Read Me files, or other documentation. Many programs provide installation instructions.
- 4 Tap the file, such as a *.XIP or *.EXE file to start the installation wizard. Follow the directions on the screen.

Adding a Program to the Start Menu

Tap **Start** > **Settings** > **Menus** > the **Start Menu** tab, and then the check box for the program. If you do not see the program listed, you can either use File Explorer on the 700 Color Computer to move the program to the **Start Menu** folder, or use ActiveSync on the desktop to create a shortcut to the program and place the shortcut in the **Start Menu** folder.



File Explorer

Using File Explorer on the 700 Color Computer

Tap **Start** > **Programs** > **File Explorer**, and locate the program (tap the folder list, labeled **My Documents** by default, and then **My Device** to see a list of all folders on the 700 Color Computer). Tap and hold the program and tap **Cut** on the pop-up menu. Open the **Start Menu** folder located in the **Windows** folder, tap and hold a blank area of the window, and tap **Paste** on the pop-up menu. The program now appears on the **Start** menu. For more information on using File Explorer, see “Finding and Organizing Information” on page 37.

Using ActiveSync on the desktop

Use the Explorer in ActiveSync to explore your 700 Color Computer files and locate the program. Right-click the program, and then click **Create Shortcut**. Move the shortcut to the **Start Menu** folder in the **Windows** folder. The shortcut now appears on the **Start** menu. For more information, see *ActiveSync Help*.

Removing Programs



Remove Programs

Tap **Start** > **Settings** > the **System** tab > **Remove Programs**.

If the program does not appear in the list of installed programs, use File Explorer on your 700 Color Computer to locate the program, tap and hold the program, and then tap **Delete** on the pop-up menu.

Microsoft ActiveSync

Visit the following Microsoft Web site for the latest in updates, technical information, and samples:

www.microsoft.com/windowsmobile/resources/communities/default.mspx

Using Microsoft ActiveSync, you can synchronize the information on the desktop with information on your 700 Color Computer. Synchronization compares the data on your 700 Color Computer with your desktop and updates both computers with the most recent information. For example:

- Keep Pocket Outlook data up-to-date by synchronizing your 700 Color Computer with Microsoft Outlook data on your desktop.
- Synchronize Microsoft Word and Microsoft Excel files between your 700 Color Computer and desktop. Your files are automatically converted to the correct format.



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

With ActiveSync, you can also:

- Back up and restore your 700 Color Computer data.
- Copy files between your 700 Color Computer and desktop.
- Control when synchronization occurs by selecting a synchronization mode. For example, you can synchronize continually while connected to your desktop or only when you choose the synchronize command.
- Select which information types are synchronized and control how much data is synchronized. For example, you can choose how many weeks of past appointments you want synchronized.

Before you begin synchronization, install ActiveSync on your desktop from the *Windows Mobile Companion CD*. For more information on installing ActiveSync, see your Quick Start card. ActiveSync is already installed on your 700 Color Computer.

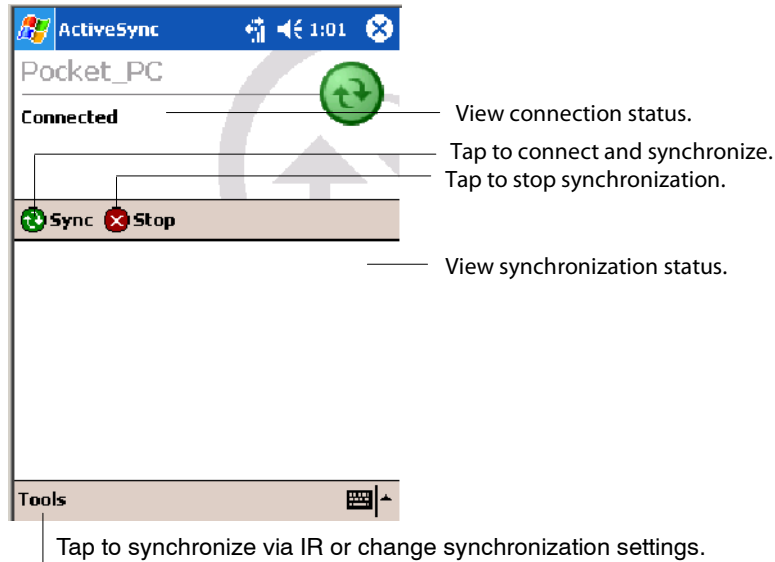
After installation is complete, the ActiveSync Setup Wizard helps you connect your 700 Color Computer to your desktop, set up a partnership so you can synchronize information between your 700 Color Computer and your desktop, and customize your synchronization settings. Your first synchronization process automatically begins when finished using the wizard.

After your first synchronization, look at Calendar, Contacts, and Tasks on your 700 Color Computer. Notice that information you have stored in Microsoft Outlook on your desktop was copied to your 700 Color Computer, and you did not have to type a word. Disconnect the 700 Color Computer from your computer and you are ready to go!



Once you have set up ActiveSync and completed the first synchronization process, you can initiate synchronization from your 700 Color Computer. To switch to ActiveSync on your 700 Color Computer, tap **Start > ActiveSync**. Note that if you have a wireless LAN card, you can synchronize remotely from your 700 Color Computer.

For information about using ActiveSync on your desktop, start ActiveSync on your desktop, and then see *ActiveSync Help*.



For more information about ActiveSync on your 700 Color Computer, switch to ActiveSync, then tap **Start** > **Help**.

Microsoft Pocket Outlook

Microsoft Pocket Outlook includes Calendar, Contacts, Tasks, Inbox, and Notes. Use these programs individually or together, such as, you can use e-mail addresses stored in Contacts to address e-mail messages in Inbox.

Using ActiveSync, you can synchronize information in Microsoft Outlook or Microsoft Exchange on your desktop with your 700 Color Computer. You can also synchronize this information directly with a Microsoft Exchange server. Each time you synchronize, ActiveSync compares the changes you made on your 700 Color Computer and desktop or server and updates both computers with the latest information. See *ActiveSync Help* on the desktop for information. You can switch to any program by tapping it on the **Start** menu.

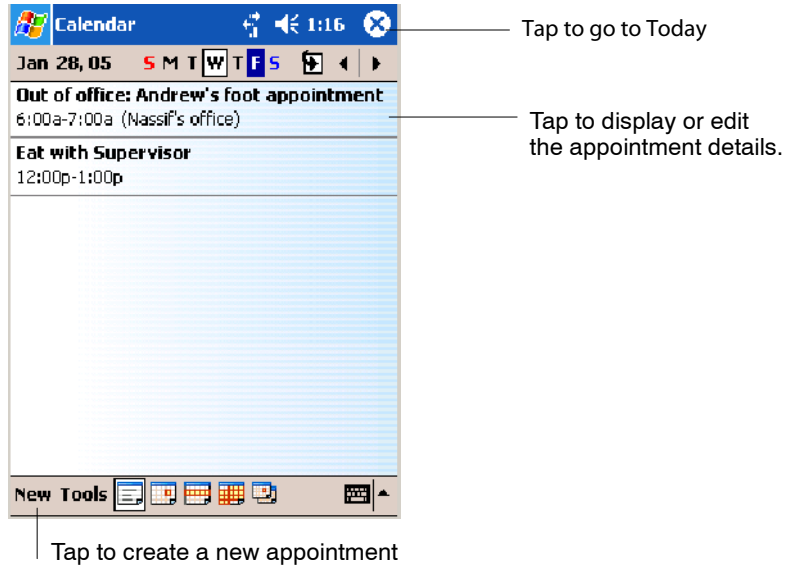
Calendar: Scheduling Appointments and Meetings



To switch to Calendar on the 700 Color Computer, tap **Start** > **Calendar**.

Use Calendar to schedule appointments, including meetings and other events. You can check your appointments in one of several views (Day, Week, Month, Year, and Agenda) and set Calendar to remind you of appointments with a sound or other method. Appointments for the day can display on the Today screen.

If you use Outlook on your desktop, you can synchronize appointments between your device and desktop.



Synchronizing Calendar

Calendar items stored on your device can be synchronized with calendar items on your desktop or Microsoft Exchange Server. (Note that you can only synchronize information directly with an Exchange Server if your company is running Microsoft Mobile Information Server 2002 or later.) Calendar synchronization is automatically selected in ActiveSync.

Calendar items entered on one computer are copied to the other during synchronization. Handwritten notes and drawings are saved as metafiles (pictures).

For more information on synchronization, see *ActiveSync Help* on the desktop.

Why Use Categories in the Calendar?

Use categories to group related tasks, contacts, and appointments. Then, use these groupings to display the information you want. For example, you can easily share your device with another by assigning your appointments to a category with a special project's name. You can then use this category to filter Calendar and only display appointments for that project.



Note: In Month View, the day of an appointment assigned to the Holiday category appears in red.



This day was assigned the Holiday category.

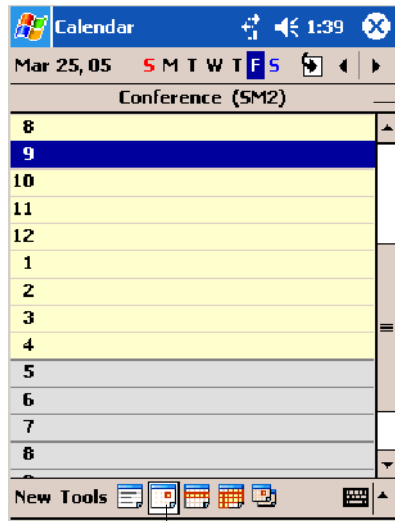
Tap to access the Month view

What's an All Day Event?

An appointment can either be a normal appointment or an all day event, which lasts the full day or spans many days. Examples include a trade show, a vacation, or a seminar. You can also use all day events to schedule an annual event, such as a birthday or anniversary. In this case, change the Status box to Free (you may need to scroll to see it) so that it does not show time as busy in your calendar. All day events do not occupy blocks of time in Calendar; they appear in banners at the top of the calendar.



Note: You cannot modify or create all-day events with attendees on the device. If you create all day events with attendees on your desktop, use ActiveSync to copy such events to the device. Then, view them in Calendar. For more information on copying files, see *ActiveSync Help*. To use the device to schedule an appointment with attendees lasting all day, set type to “Normal,” then adjust the date and time appropriately.

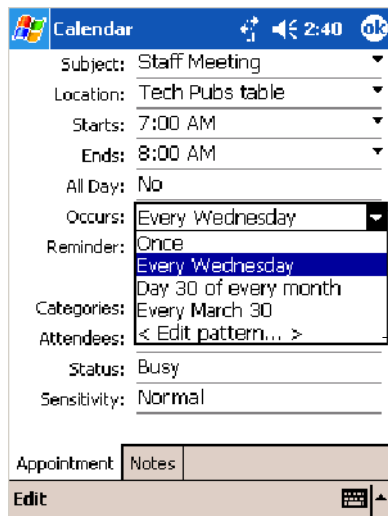


This describes the all day event.

Tap to access the Day view

What’s a Recurrence Pattern?

If you have an appointment or task that you do on a regular basis, such as a weekly team meeting or a monthly status report, enter the item once and set a recurrence pattern for it. If the default patterns in the list are not what you need, you can create your own pattern using the wizard.

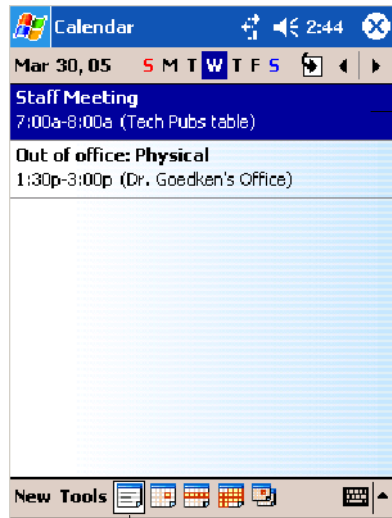


Select your recurrence pattern from this drop-down list.

Select <Edit pattern...> to access the wizard with which to customize your recurrence.

Viewing Appointments

You can view appointments in one of several views (Agenda, Day, Week, and Month). In Agenda view, upcoming appointments are displayed in bold. To see detailed appointment information in any view, tap the appointment. To see a list of available actions for an appointment, tap and hold the appointment. Tap **Start** > **Today** to quickly see your appointments for the day.



This displays the appointment in bold.

Tap to access the Agenda view

Month view displays symbols to indicate the types of appointments you have on a given day. An upward triangle indicates a morning appointment; a downward triangle indicates an afternoon appointment. If you have appointments in the morning and afternoon, a solid square is displayed. If you have an all day event not marked Free, a hollow square is displayed.



This displays a morning appointment.

This displays an all day event not marked Free.

This displays appointments in both morning and afternoon.

This displays an afternoon appointment.

Tap to access the Month view

Creating or Changing an Appointment

To create an appointment, tap **New**. To select a new date from a pop-up calendar, tap the display date. To enter or select a new time, tap the display time. Enter the appointment details, and when finished, tap **OK** to return to the calendar.

If you are working in Day view, tap the time slot for the new appointment and then tap **New** to have the time automatically entered for you.

To change an appointment, tap it in the calendar, then tap **Edit**. Change any appointment detail by tapping it and entering the new information.



Note: Tap the arrows to the right of the description and location boxes to choose from previous entries.

When entering a time, you can type military and abbreviated time forms, such as 2300 (becomes 11:00 PM), 913pm (becomes 9:13 PM), 911 (becomes 9:11 AM), and 9p (becomes 9:00 PM).

Tap to return to the calendar
(the appointment is saved automatically).

The screenshot shows the 'Edit' screen for a calendar appointment. The title bar says 'Calendar' and '2:47'. The 'OK' button is in the top right. The fields are: Subject (with a dropdown arrow), Location (with a dropdown arrow), Starts (3/30/05 12:00 PM with a dropdown arrow), Ends (3/30/05 1:00 PM with a dropdown arrow), All Day (No), Occurs (Once), Reminder (Remind me, 15 minute(s)), Categories (No categories...), Attendees (No attendees...), Status (Busy), and Sensitivity (Normal). At the bottom, there is a 'Notes' field and an 'Edit' button.

Tap to choose from predefined text.

Tap to choose from previously entered locations.

Tap to select a time.

Tap to select a date.

Notes is a good place for maps and directions.

Creating an All Day Event

To create an all day event, tap **New**, then tap **All Day**, then select **Yes**.

The screenshot shows the 'Calendar' application interface. At the top, there's a status bar with the Windows logo, 'Calendar', a signal strength indicator, a battery icon, and the time '2:52' with an 'ok' button. Below this, the event details are listed: Subject: Training, Location: (empty), Starts: 3/30/05 12:00 PM, Ends: 3/30/05 1:00 PM, All Day: Yes (highlighted), Occurs: No, Reminder: Remind me (15 minute(s)), Categories: No categories..., Attendees: No attendees..., Status: Busy, Sensitivity: Normal. At the bottom, there are tabs for 'Appointment' and 'Notes', and an 'Edit' button.

Tap to select either Yes or No whether this is an all day event.



Note: To change an all day event, switch to **Day** or **Agenda** view, tap the event listed at the top of the calendar, and then tap **Edit**. Change any appointment detail by tapping it and entering the new information.

You cannot modify or create all day events with attendees. If you create all day events with attendees on your desktop, use *ActiveSync* to copy such events to the 700 Color Computer, then view them in *Calendar*. For more information on copying files, see *ActiveSync Help*.

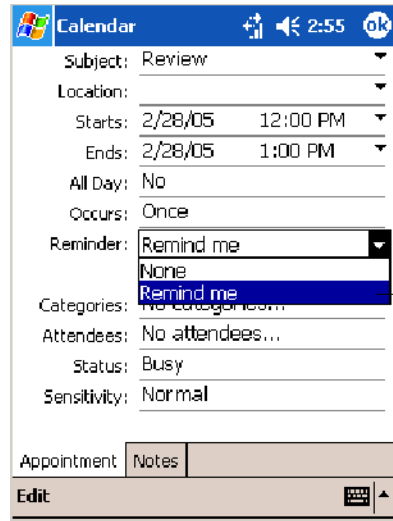
To use the device to schedule an appointment with attendees lasting all day, set type to **Normal**, then adjust date and time accordingly.

Setting a Reminder for an Appointment

Do the following to set a reminder for an appointment in the calendar:

- 1 Tap the appointment, then tap **Edit** to change the appointment.
- 2 Tap **Reminder** and select **Remind me**.

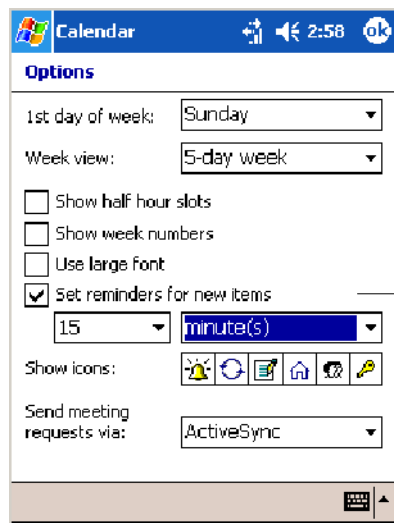
- To change how many minutes before the appointment you are reminded, tap the minutes displayed, then select the new minutes from a drop-down or enter the new minutes. Tap **minutes** to change hours, days, or weeks.



Tap to select **Remind me** to enable the reminder feature.



Note: To automatically set a reminder for all new appointments, in the calendar, tap **Tools > Options**, select **Set reminders for new items**, then tap the number and timeframe options to change the information given.



Tap this to set reminders for new appointments automatically.



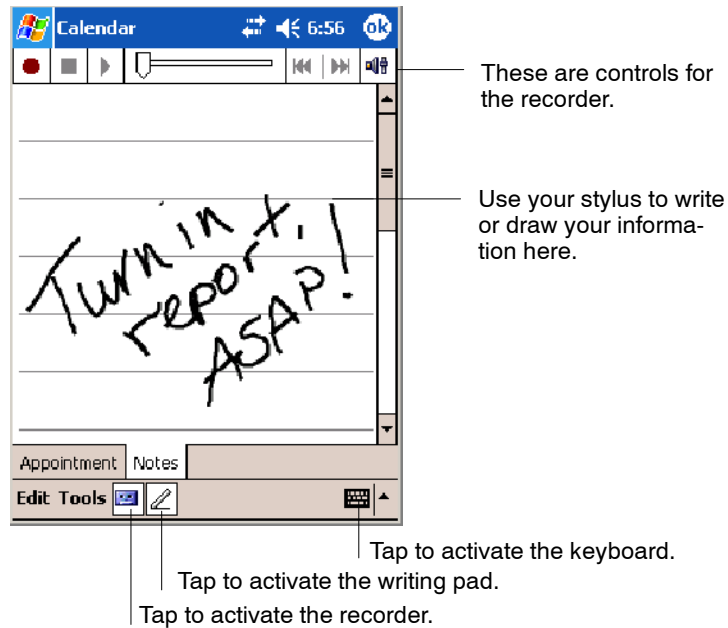
To choose how you are reminded, for example by a sound, tap **Start > Settings > the Personal tab > the Sounds & Notifications icon**.

Adding a Note to an Appointment

You can add written or typed notes and even recordings (if your device supports recordings) to an appointment. This is a good place for maps, drawings, and other detailed information.

- In the calendar, tap the appointment, then tap **Edit**.

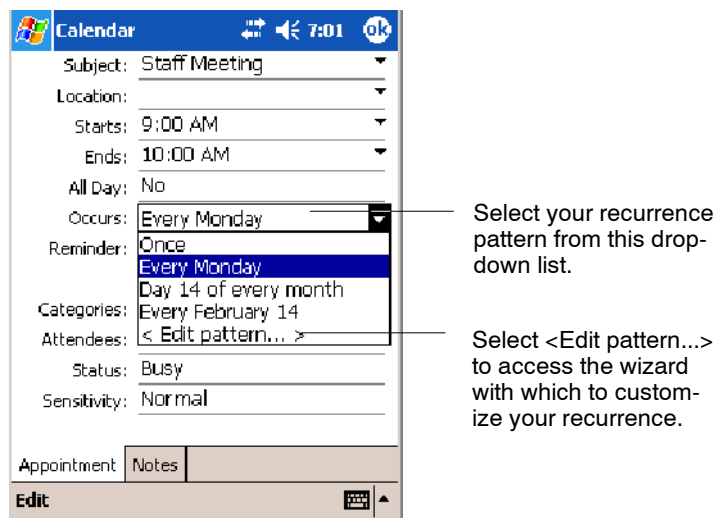
- 2 Tap the **Notes** tab to enter notes. For specific instructions, tap **Start > Help > Notes** to see *Notes Help*.



Note: To edit an existing note, tap the appointment in the calendar, tap **Edit**, then tap the **Notes** tab.

Making an Appointment Recurring

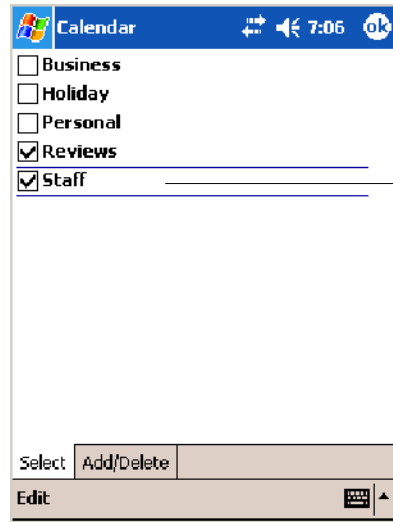
To make a recurring appointment, in the calendar, tap the appointment, then tap **Edit**. Tap **Occurs** and select a pattern from the list. Or, to create a new pattern, tap **<Edit pattern...>**, and follow the steps in the wizard.



Assigning an Appointment to a Category

- 1 In the calendar, tap the appointment, then tap **Edit**.
- 2 Tap **Categories**.

- 3 On the **Select** tab, select the categories to which you want to assign the appointment.
- 4 To create a new category, tap the **Add/Delete** tab, enter the category name, then tap **Add**. The new category is automatically selected in the **Select** tab.
- 5 Tap **ok** to return to the appointment.



A check mark indicates a selected category.



Note: To find an appointment assigned to a category, tap **Tools > Categories** and select the type of appointment that you want displayed. To show all appointments again, tap **Tools > Categories** and clear all categories.

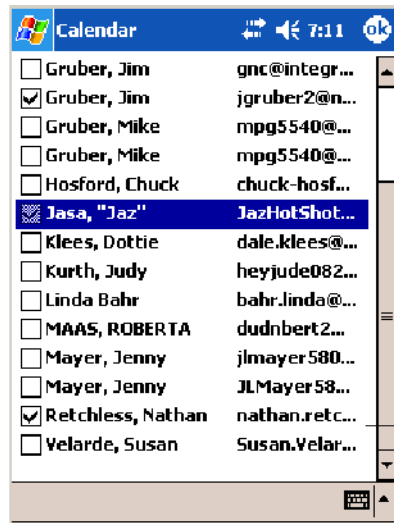
Sending a Meeting Request

Use Calendar to schedule meetings with people who use Outlook or Pocket Outlook. When attendees receive a meeting request, they can accept or decline the meeting. If they accept, the meeting is automatically added to their schedule. In addition, their response is sent back to you, and your calendar is updated.

Before you can send a request, you must enter e-mail addresses in Contacts Help and set up Inbox to send and receive messages. For more information on sending and receiving meeting requests, tap **Start > Help > Calendar** to see *Calendar Help*, and tap **Start > Help > Inbox** to see *Inbox Help*.

- 1 Tap **New**, then enter the meeting information.
- 2 Hide the onscreen keyboard, if needed, then tap **Attendees**. Only those contacts with e-mail addresses are displayed. Select the contacts you want to invite, then tap **ok** to return to the appointment.
- 3 Select other desired options and then tap **ok**.

- Inbox automatically creates a meeting request and sends it to the attendees the next time you synchronize with your desktop. Textual notes entered in the Notes tab (excluding writing or recordings) are sent also.



A check mark indicates a selected attendee.

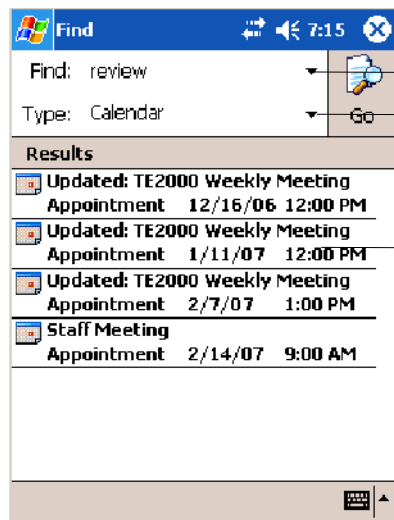


Note: If you are sending the meeting request through a connection to an ISP or the network, rather than through synchronization with your desktop, tap **Tools > Options**. From the **Send meeting requests via** drop-down list, tap the service to use to send the meeting request.

Finding an Appointment

There are two ways to find an appointment:

- Tap **Start > Find**, enter the appointment name, tap the **Type** arrow and select **Calendar** from the drop-down list, and then tap **Go**.
- In the calendar, tap **Tools > Categories** and select the type to display. To show all appointments, tap **Tools > Categories**, clear all categories.



Tap this to select from a drop-down list or enter a phrase.

Tap this for a drop-down list of areas where to search this phrase.

Tap these to see details.



Note: In Find, you can tap the **Find** arrow to select from a list of items of previously searched items or phrases.

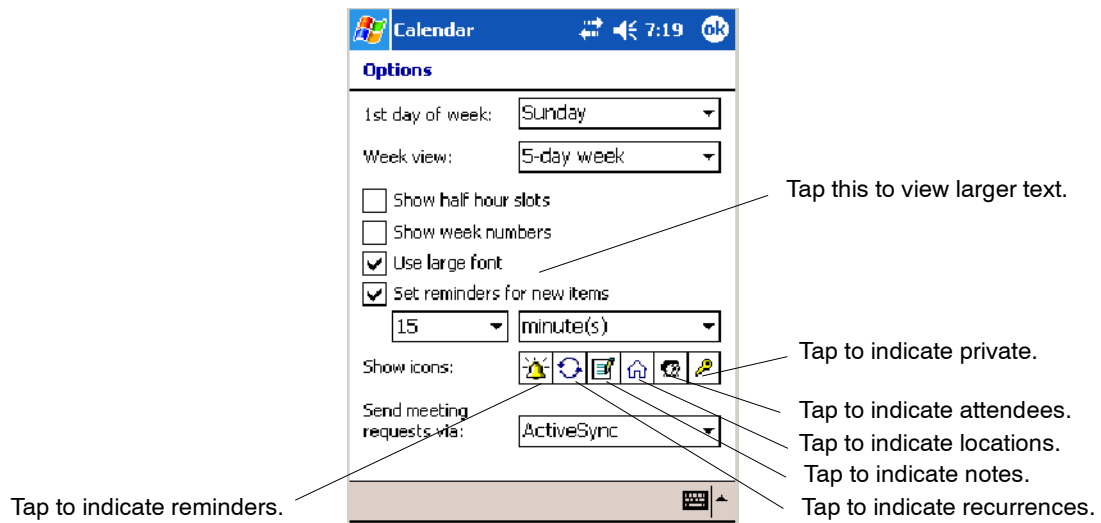
Deleting an Appointment

In the calendar, tap and hold the appointment, then tap **Delete Appointment**. When you synchronize next, this is also deleted from the desktop.

Changing Calendar Options

In the calendar, tap **Tools > Options**.

- To see appointment indicators, select icons to display in **Show icons**. You can display indicators for recurring appointments, appointments with notes, appointments with reminders, etc.
- If you are having trouble reading the calendar, select **Use large font**.



Contacts: Tracking Friends and Colleagues



To switch to Contacts on the 700 Color Computer, tap **Start > Contacts**.

Contacts maintains a list of your friends and colleagues so that you can easily find the information you are looking for, whether you are at home or on the road. You can enter both personal and business information.

If you use Microsoft Outlook on your desktop, you can synchronize contacts between your 700 Color Computer and your desktop.

Select the category of contacts you want displayed in the list.

Tap and enter part of a name to quickly find it in the list.

Tap to see additional phone numbers and e-mail addresses.

Tap to display or edit the contact details.

Tap and hold to display a pop-up menu of actions.

Tap to toggle to **By Company** (note the Name view)

Tap to create a new contact.

Creating a Contact

- 1 Tap **New**, then use the input panel to enter a name and other contact information. Scroll down to see all available fields.
- 2 To assign the contact to a category, scroll to and tap **Categories** and select a category from the list. In the contact list, you can display contacts by category.
- 3 To add notes, tap the **Notes** tab. You can enter text, draw, or create a recording. For more information on creating notes, see “Notes: Capturing Thoughts and Ideas” on page 62.
- 4 When finished, tap **OK** to return to the contact list.

Tap to return to the contact list (the contact is saved automatically).

Scroll to see more fields.

Notes is a good place for maps and directions.

Synchronizing Contacts

Contacts stored on your device can be synchronized with Outlook contacts stored on your desktop or with Mobile Information Server 2002 or later.

New items entered in one location are copied to the other during synchronization. Handwritten notes and drawings are saved as pictures when synchronizing with a desktop, but removed when synchronizing with a server.

For information on synchronization, see *ActiveSync Help* on the desktop.

Viewing Contacts

The contact list displays the contact name and the first primary phone number or e-mail address specified for that contact. Contacts are ordered by name of contact or company.

- Tap the default letter (home, work, mobile, or e-mail) to the right of the contact to see additional phone numbers and e-mail addresses.
- Use your up/down controls on your keypad to select a contact, then press the left/right controls on your keypad to change the default number, displayed as a letter to the right of the contact name.
- To see more contact information, tap the contact.
- To see a list of available actions for a contact via a pop-up menu, tap and hold the contact.
- To see a list of contacts employed by a specific company, tap **View > By Company**. Then, tap the desired company name.



Note: You can change the appearance of the contact list by tapping **Tools > Options**.

Indicates the default number.

Tap for a list of phone numbers and e-mail addresses.

Tap to toggle By Name and By Company views.

Contact Name	Primary Contact Info	Default Letter
Edmonds, De...	dedmonds@dee-in... e	e
Emig, Irvin	EmigIr@ncs.com e	e
Gruber, Bobbie	(319) 294-5312 Work Tel	w
Gruber, Bobbie	(319) 393-6012 Home Tel	
Gruber, Bobbie	(319) 329-4339 Mobile Tel	
Hos...	bgruber@aol.com E-mail	
Klees, Dottie	dale.klees@mcleod...e	
Kurth, Judy	heyjude0826@yah... e	
Linda Bahr	bahr.linda@mayo.e...e	
MAAS, ROBE...	dudnbert2@msn.c... e	
Mayer, Jenny	JLMayer5805@aol... e	
Retchless, N...	nathan.reutchless@... e	
Velarde, Sus...	Susan.Velarde@ad... e	

Creating or Changing a Contact

- To create a contact, tap **New**. To enter notes, tap the **Notes** tab. When finished, tap **ok** to return to the contact list.
- To change a contact, tap it in the contact list, and then tap **Edit**. To cancel edits, tap **Edit > Undo**. When finished making changes, tap **ok** to return to the contact list.



Note: If you enter a name with more than two words, the middle word is recorded as a middle name. If your contact has a double first or last name, tap the **Name** arrow and enter the names in the proper box.

Tap to access the **Name** fields.

Tap anywhere outside the box to close and return to details.



Note: New contacts are added to the displayed category.

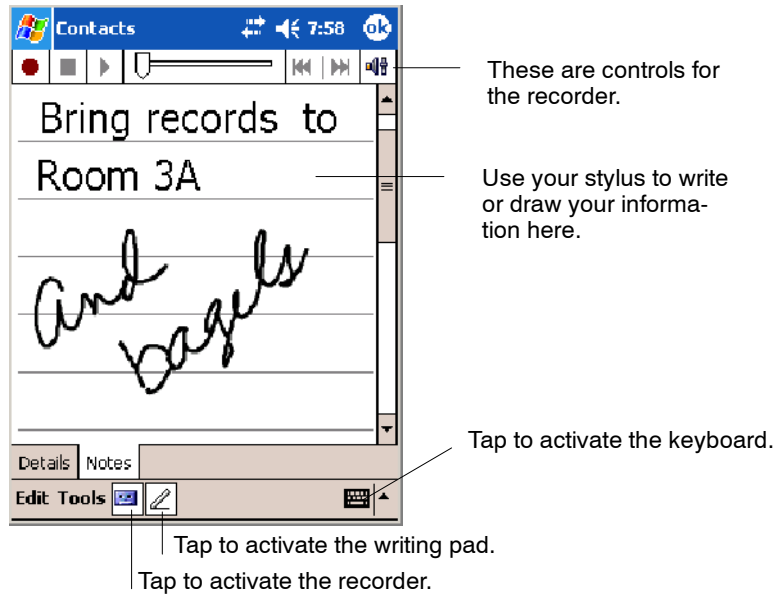
Adding a Note to a Contact

You can add written or typed notes and even recordings (if your device supports recordings) to a contact. Notes are handy for maps and drawings.

In the contact list, tap the contact, then tap the **Notes** tab. For specific instructions, tap **Start > Help > Notes** to see *Notes Help*.

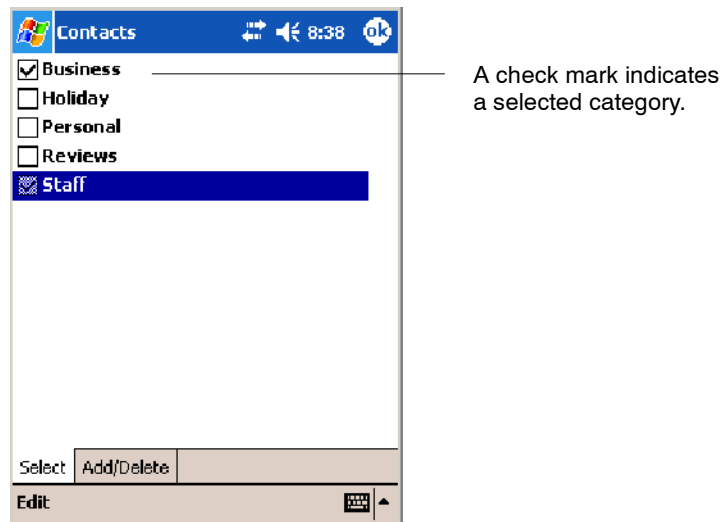


Note: To edit an existing note, tap the contact, tap **Edit** > the **Notes** tab.



Assigning a Contact to a Category

- 1 In the contact list, tap the contact, and then tap **Edit**.
- 2 Scroll to and tap **Categories**.
- 3 On the **Select** tab, check the categories to assign to the contact.
- 4 To create a new category, tap the **Add/Delete** tab, enter the category name, tap **Add**. The new category is then checked in the **Select** tab.
- 5 Tap **ok** to return to the contacts.

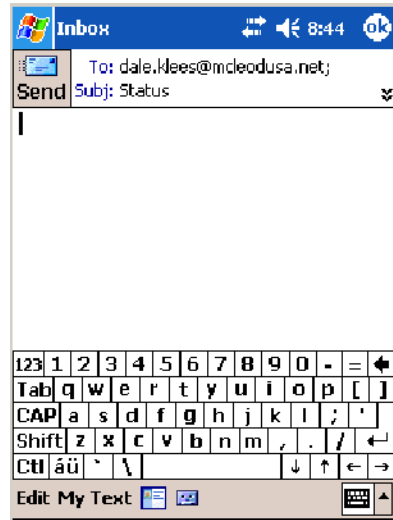


Copying a Contact

In the contact list, select the contact. To select multiple contacts, tap and drag. Tap **Tools**, and then select **Copy Contacts**.

Sending a Message to a Contact

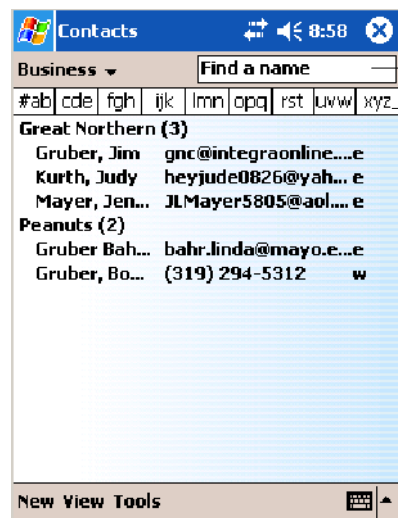
- 1 In the contact list, tap and hold the contact. To select multiple contacts, tap and drag. Then, tap and hold the selected contacts.
- 2 On the pop-up menu, select **Send Email** or **Send SMS**, depending upon the type of message to send.



Note: To send an e-mail message, you must have an e-mail address configured for the contact. To send an SMS (Short Messaging Service) message, you must have an SMS number for the contact, which is usually the mobile phone number.

Finding a Contact

There are four ways to find a contact:



Enter the first few letters of the contact in question here.

Tap to jump to that portion of the contacts list.

Tap to toggle to **By Name** (note the *Company* view)

- Tap **Start > Find**, enter the contact name (first, last, or middle), phone number, or address, select **Contacts** for the type, then tap **Go**.

- From Contacts, start typing a contact name until you see it displayed on the screen. To show all contacts again, tap the text box at the top of the screen and clear the text, or tap the arrow to the right of the text box.
- In the contact list, tap the category list (labeled **All Contacts** by default) and tap the category to which you have assigned a contact. To show all contacts again, select **All Contacts**.
- To view the names of companies for which your contacts work, in the contact list, tap **View > By Company**. The number of contacts that work for that company is displayed to the right of the company name.



Note: To quickly move through a long list of contacts, tap one of the sets of letters displayed at the top of the contact list. This takes you to the contact names beginning with those letters.

Deleting a Contact

- 1 In the contact list, tap and hold the contact. To select multiple contacts, tap and drag. Then, tap and hold the selected contacts.
- 2 On the pop-up menu, tap **Delete Contact**. The next time you synchronize, the contact is deleted from the desktop also.

Adding a Contact to Speed Dial

You can create speed dials to call frequently-called numbers with a single tap. Before you can create a speed dial entry for a phone number, that number must already exist in Contacts.

- 1 From the Phone keypad, tap **Speed Dial > New**.
- 2 Tap the desired contact name and number.
- 3 In the **Location** field, tap the **Up/Down** arrows to select an available location to assign as the new speed dial entry. The first speed dial location is reserved for your voice mail.

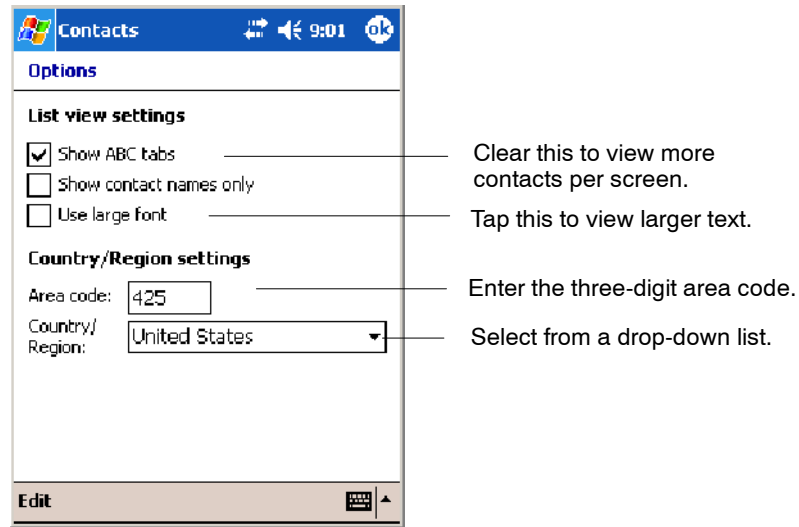
To delete a speed dial entry, go to the Speed Dial list, tap and hold the contact name in the box to the right of the assigned speed dial number, then tap **Delete**.

Changing Contacts Options

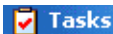
In the contact list, tap **Tools > Options**.

- The area code and country/region for new contacts are automatically entered based on the information in **Country/Region settings**.
- If you are having trouble reading the contacts in the contact list, select **Use large font**.

- To increase the available space for displaying contacts in the list, clear **Show ABC tabs**.

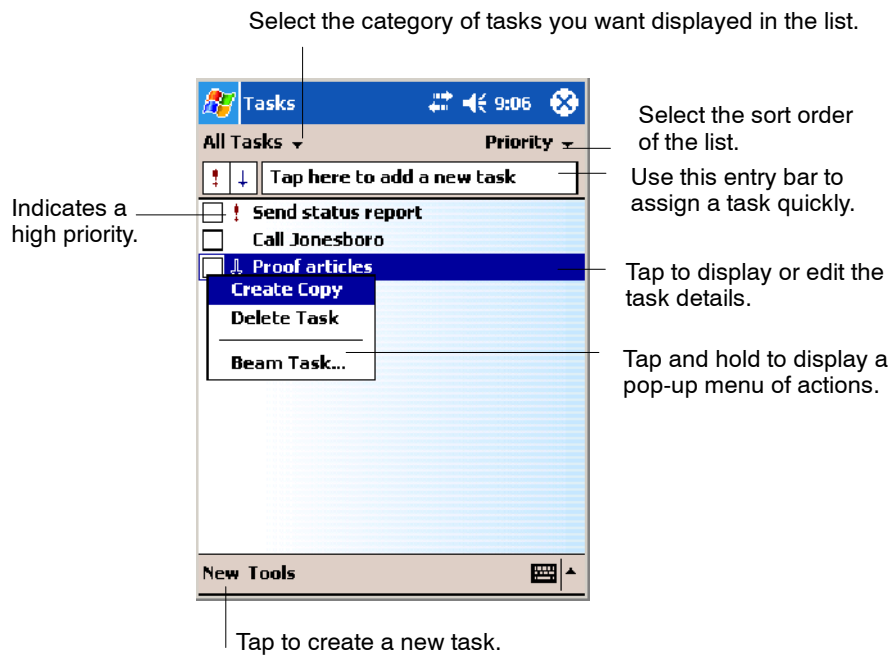


Tasks: Keeping a To Do List



To switch to Tasks on your 700 Color Computer, tap **Start > Tasks**.

Use Tasks to keep track of what you have to do. A variety of task information can display on the Today screen. If you use Microsoft Outlook on your desktop, you can synchronize tasks between your device and desktop.



Note: To change the way information is displayed in the list, tap **Tools > Options**.

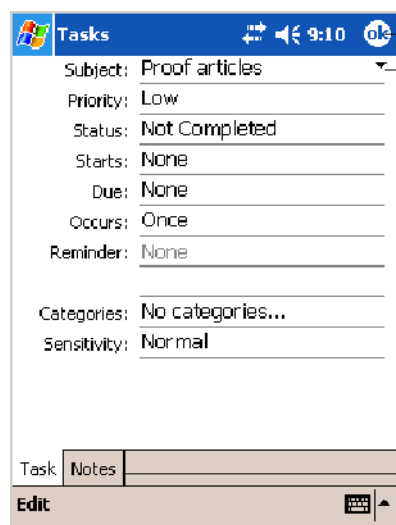
Creating a Task

- To quickly create a task, enter text in the **Tap here to add a new task** box at the top of the screen. If you do not see this box, tap **Tools > Entry Bar**.
- To create a task with detailed information, such as start and due dates, tap **New**. To enter notes, tap the **Notes** tab.

You can enter a start date and due date or enter other information by first tapping the field. If the input panel is open, you need to hide it to see all available fields.

You can enter text, draw, or create a recording. For more information on creating notes, see “Notes: Capturing Thoughts and Ideas” on page 62.

- To change a task, tap it in the task list, and then tap **Edit**.
- Using the onscreen keyboard, enter a description.
- To assign the task to a category, tap **Categories** and select a category from the list. In the task list, you can display tasks by category.
- When finished, tap **ok** to return to the task list.



Tap to return to the task list (the task is saved automatically).

Tap to choose from predefined subjects.

Notes is a good place for maps and drawings.



Note: To quickly create a task with only a subject, tap **Entry Bar** on the **Tools** menu. Then, tap **Tap here to add a new task** and enter your task information.

Synchronizing Tasks

Tasks stored on your 700 Color Computer can synchronize with Microsoft Outlook on your desktop. Task synchronization is automatically selected in ActiveSync.

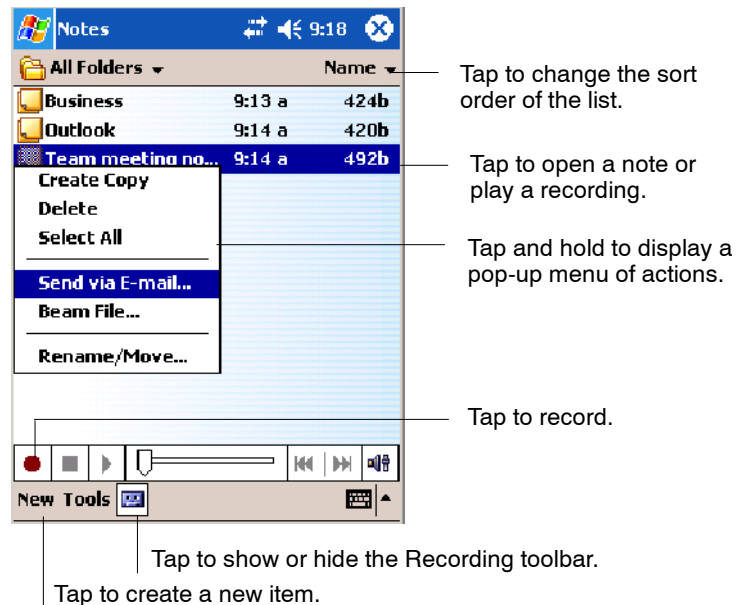
New items entered on one computer are copied to the other during synchronization. Handwritten notes and drawings are saved as metafiles (pictures). For more information on synchronization, see *ActiveSync Help* on the desktop.

Notes: Capturing Thoughts and Ideas



To switch to Notes on your 700 Color Computer, tap **Start > Notes**.

Notes helps you quickly capture your ideas, notes, and thoughts. You can create a note using written and typed text, drawings, and recordings. You can also share your notes with others through e-mail, infrared, and synchronization with your desktop.



Note: To create documents with advanced formatting or templates, such as bulleted lists and tabs, use word processing software developed for your device, such as Pocket Word.

Creating a Note

To create your note, tap **New**, then write, draw, type, or record your information. For information about using the input panel, writing and drawing, and creating recordings, see “Basic Skills” on page 26.

- **Writing**
Using the stylus, write directly on the screen.
- **Drawing**
Using the stylus, draw directly on the screen.
- **Typing**
Using the input panel, enter typed text into the 700 Color Computer. Do this by tapping keys on the onscreen keyboard or by using hand-writing recognition software.
- **Recording**
Create a stand-alone recording or embed a recording into a note.

Synchronizing Notes

Notes can be synchronized between your desktop and device either through notes synchronization or file synchronization. Notes synchronization synchronizes the notes on your 700 Color Computer with Outlook Notes on your desktop. File synchronization synchronizes all notes on your 700 Color Computer with the My Documents folder for the 700 Color Computer on your desktop.

To synchronize your notes through notes synchronization, first select the Notes information type for synchronization in ActiveSync. The next time you synchronize, all notes in My Documents and its subfolder on your device appear in Outlook Notes on your desktop. Notes that contain only text appear as regular notes in Outlook on your desktop, while notes containing written text or drawings appear in the device format. In addition, all notes in the Notes group in Outlook on the desktop appear in Notes on the device.

To synchronize your notes as files, in ActiveSync, select the Files information type for synchronization and clear the Notes information type. When you select Files, the My Documents folder for the 700 Color Computer is created on your desktop. All .PWI files placed in the My Documents folder on your device and all .DOC files placed in the My Documents folder for the 700 Color Computer on your desktop are synchronized. Password-protected files cannot be synchronized.

ActiveSync converts documents during synchronization. For information on synchronization or file conversion, see *ActiveSync Help* on the desktop.



Note: When you delete or change an item on either your desktop or 700 Color Computer, the item is changed or deleted in the other location the next time you synchronize.



Note: If you synchronize your notes using file synchronization and then later decide to use notes synchronization, all of your notes are synchronized with Outlook on your desktop and no longer store in the My Documents folder for the 700 Color Computer.

Inbox: Sending and Receiving E-mail Messages



To switch to Inbox on your 700 Color Computer, tap **Start > Inbox**.

You can receive Internet e-mail messages and SMS messages in Inbox. Internet e-mail messages are sent by using an address you receive from your Internet service provider (ISP) or your employer. SMS messages are sent and received through your wireless phone service provider by using a phone number as the message address.

You can send and receive e-mail by synchronizing with your desktop, or by connecting to a Post Office Protocol 3 (POP3) or Internet Message Access Protocol 4 (IMAP4) mail server. You need to set up an e-mail account for each method that you use except for Microsoft ActiveSync, which is set up by default. The ActiveSync folder on your 700 Color Computer stores messages that you send and receive through synchronization with a desktop. Account names appear as folders in the folder list (located on the left, under the navigation bar) in the Inbox message list.

With synchronization, messages are synchronized between the device Inbox and the PC Inbox by using ActiveSync and Microsoft Exchange or Microsoft Outlook. For more information, see “Synchronizing E-mail Messages” below.

When connecting to a POP3 or IMAP4 server, you use a modem to connect to your Internet service provider (ISP), or a modem or Ethernet card to connect to the local area network to which your e-mail server is connected. You can also use your phone to connect by using a cellular line connection. For information, see “Connecting to a Mail Server” on page 65.

Synchronizing E-mail Messages

After selecting Inbox for synchronization in ActiveSync, e-mail messages are synchronized as part of the general synchronization process. During synchronization:

- Messages are copied from the Inbox folder on your desktop or the Microsoft Exchange server to the Inbox folder on your 700 Color Computer. (Note that you can only synchronize information directly with an Exchange Server if your company is running Microsoft Mobile Information Server 2002 or later.) By default, you receive messages from the last three days only, the first 100 lines of each new message, and file attachments of less than 100 KB in size.
- Messages in the Outbox folder on your device are transferred to Exchange or Outlook and then sent from those programs.
- The messages on the two computers are linked. When you delete a message on your 700 Color Computer, it is deleted from your desktop the next time you synchronize.
- Messages in subfolders in other e-mail folders in Outlook are synchronized only if they were selected for synchronization in ActiveSync.

For information on initiating Inbox synchronization or changing synchronization settings, see *ActiveSync Help* on your desktop or select **Start > Help > Connections** to see *Connections Help*.

Managing E-mail Messages and Folders

Each e-mail account and SMS account has its own folder hierarchy with five default folders: Inbox, Outbox, Deleted Items, Drafts, and Sent Items. The messages you receive and send through the mail account are stored in these folders. You can also create additional folders within each hierarchy. The Deleted Items folder contains messages that were deleted on the device. The behavior of the Deleted Items and Sent Items folders depends on the Inbox options you have chosen.

The behavior of the folders you create depends on whether you are using ActiveSync, SMS, POP3, or IMAP4.

- *If you use ActiveSync*, e-mail messages in the Inbox folder in Outlook automatically synchronize with your device. You can select to synchronize additional folders by designating them for ActiveSync. The folders you create and the messages you move are then mirrored on the server. For example, if you

move two messages from the Inbox folder to a folder named Family, and you have designated Family for synchronization, the server creates a copy of the Family folder and copies the messages into that folder. You can then read the messages while away from your desktop.

- *If you use SMS,* messages are stored in the Inbox folder.
- *If you use POP3* and you move e-mail messages to a folder you created, the link is broken between the messages on the device and their copies on the mail server. The next time you connect, the mail server sees that the messages are missing from the device Inbox and deletes them from the server. This prevents you from having duplicate copies of a message, but it also means that you no longer have access to messages that you move to folders created from anywhere except the 700 Color Computer.
- *If you use IMAP4,* the folders you create and the e-mail messages you move are mirrored on the server. Therefore, messages are available to you anytime you connect to your mail server, whether it is from your 700 Color Computer or desktop. This synchronization of folders occurs whenever you connect to your mail server, create new folders, or rename or delete folders when connected.

For all accounts except ActiveSync, you can access folder options by tapping **Tools > Manage Folders**.

Connecting to a Mail Server

In addition to synchronizing e-mail messages with your desktop, you can send and receive e-mail messages by connecting to an e-mail server using a modem or network card connected to your 700 Color Computer. You need to set up a remote connection to a network or an ISP, and a connection to your e-mail server.

When you connect to the e-mail server, new messages are downloaded to the 700 Color Computer Inbox folder, messages in the 700 Color Computer Outbox folder are sent, and messages that were deleted on the e-mail server are removed from the 700 Color Computer Inbox folder.

Messages that you receive directly from an e-mail server are linked to your e-mail server rather than your desktop. When you delete a message on your 700 Color Computer, it is also deleted from the e-mail server the next time you connect based on the settings selected in ActiveSync.

You can work online or offline. When working online, you read and respond to messages while connected to the e-mail server. Messages are sent as soon as you tap **Send**, which saves space on your 700 Color Computer.

When working offline, once you have downloaded new message headers or partial messages, you can disconnect from the e-mail server and then decide which messages to download completely. The next time you connect, Inbox downloads the complete messages you have marked for retrieval and sends the messages you have composed.

Setting Up or Changing an Account

- To set up a POP3 or IMAP4 e-mail account, tap **Accounts > New Account**. Follow the instructions in the New Account Wizard.
- To set up an SMS account, tap **Accounts > Accounts**, and then tap **SMS**. Follow the instructions on the screen.

To change options for an account, tap **Accounts > Accounts**, then tap the name of the account, and follow the instructions on the screen.

To delete an account, tap **Accounts > Accounts**, then tap and hold the name of the account, and then tap **Delete**.



Note: You can set up several e-mail accounts including your ActiveSync account, but you can set up only one SMS account.



Note: You cannot add a new account while connected. Tap **Accounts > Disconnect** to disconnect.



Note: You cannot delete your SMS account.

Downloading Messages from the Server

In Inbox, tap **Accounts > Connect** to open a connection to the Internet or your corporate network, depending on the account. For more information, tap **Start > Help > Connections** to see *Connections Help*.

- 1 Tap **Accounts** and ensure that the account you want to use is selected (marked by a bullet.)
- 2 Tap **Connect**. The messages on your 700 Color Computer and e-mail server are synchronized: new messages are downloaded to the 700 Color Inbox folder, messages in the 700 Color Outbox folder are sent, and messages that were deleted from the server are removed from the 700 Color Inbox. Tap a message in the message list to open it.
- 3 If you read a message and decide that you need the full copy, tap **Edit > Mark for Download** while in the message window. If you are in the message list, tap and hold the message, and then tap **Mark for Download**. This also downloads message attachments if you selected those options when you set up the e-mail account. You can also choose to download full copies of messages by default.
- 4 When finished, tap **Accounts > Disconnect**.



Note: Receiving entire messages consumes storage memory.



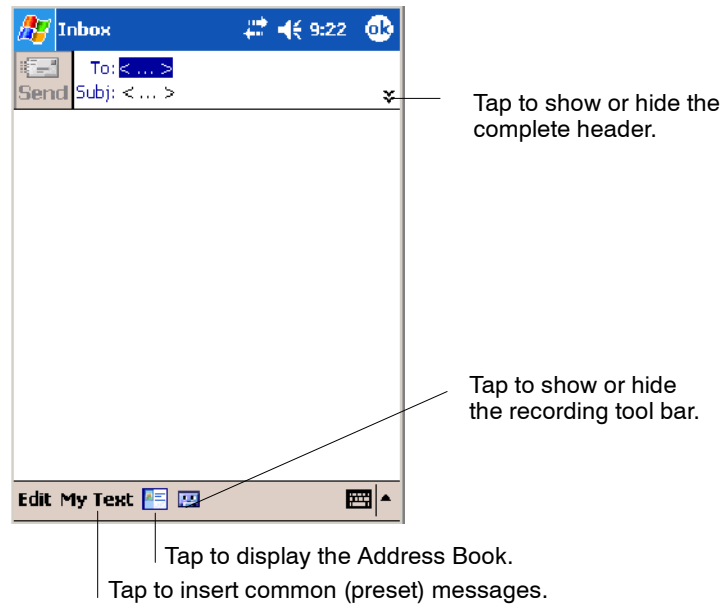
Note: The size column in the message list displays the local size and server size of a message. Even when a message has downloaded fully, these numbers may differ because the size of a message can vary between the server and the device.

Composing and Sending Messages

To compose a message:

- 1 In the message list, tap **New**.

- 2 To select an account, tap the **From** list and select “ActiveSync,” “SMS,” or the desired e-mail account.
- 3 Enter the e-mail address or SMS address of one or more recipients, separating them with semicolons. To access addresses and phone numbers from Contacts, tap **To**.
- 4 Enter your message. To quickly add common messages, tap **My Text** and tap a desired message.
- 5 To check spelling, tap **Edit > Spell Check**.
- 6 Tap **Send**. If you are working offline, the message is moved to the Out-box folder and is sent the next time you connect.



Note: If you are sending an SMS message and want to know if it was received, before sending the message, tap **Edit > Options > Request SMS text message delivery notification**.



You can directly call the sender of an SMS message by tapping the icon shown to the left, then **Call**.



Note: Depending on the e-mail address options that you select, you can use a directory service in addition to your contact list to verify names.

Companion Programs

The companion programs consist of Microsoft Pocket Word, Microsoft Pocket Excel, Windows Media Player, and Microsoft Reader. To switch to a companion program on your 700 Color Computer, tap **Start > Programs**, then tap the program name.

Pocket Word



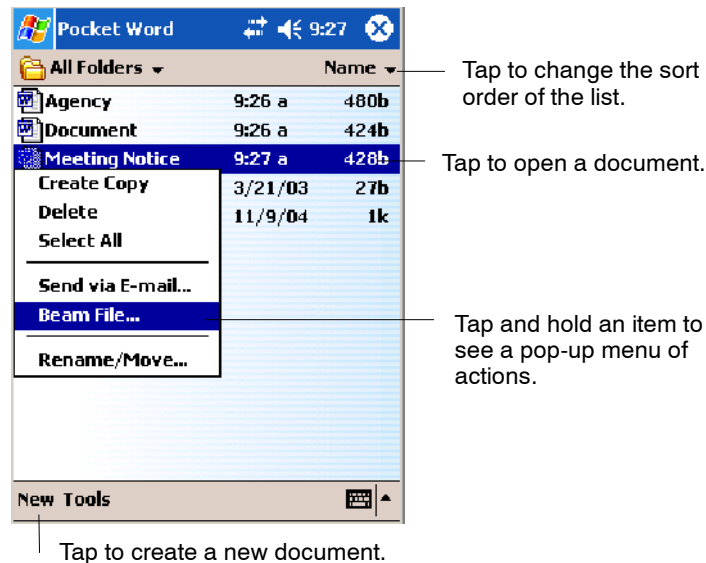
Pocket Word works with Microsoft Word on your desktop to access copies of your documents. You can create new documents on your 700 Color Computer, or you can copy documents from your desktop to your 700 Color Computer. Synchronize documents between your desktop and your 700 Color Computer to have up-to-date content in both locations.

Creating a Document

Use Pocket Word to create documents, such as letters or meeting minutes. To create a new file, tap **Start > Programs > Pocket Word > New**. You get either a blank document or a template, depending on what you have selected in the **Tools > Options** dialog box. Select an input mode from the **View** menu.

You can open only one document at a time; when you open a second document, you have to save the first. You can save a document you create or edit in formats such as Word (.DOC), Pocket Word (.PSW), Rich Text Format (.RTF), and Plain Text (.TXT).

Pocket Word contains a list of files stored on your 700 Color Computer. Tap a file in the list to open it. To delete, make copies of, and send files, tap and hold a file in the list, then, select the action on the pop-up menu.



You can enter information in Pocket Word in one of four modes (typing, writing, recording, and drawing), which are displayed on the **View** menu. Each mode has its own toolbar, which you can show and hide by tapping the **Show/Hide Toolbar** icon on the command bar.

You can change the zoom magnification by tapping **View > Zoom**, then select the percentage you want. Select a higher percentage to enter text and a lower one to see more of your document.

If you are opening a Word document created on a desktop, you may select **View > Wrap to Window** so that you can see the entire document.

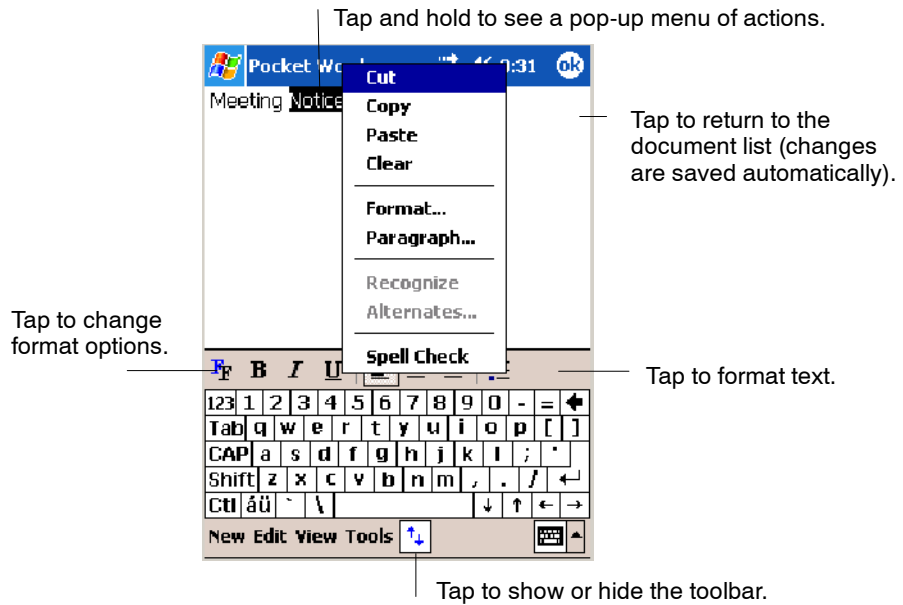
To check spelling, select text, then tap **Tools > Spell Check**. To use your new document as a template, move the document to the Templates folder.

You can insert the data in a document. First, make sure that no drawings are selected, tap and hold anywhere on the document, then tap **Insert Date** from the pop-up menu.

Typing Mode

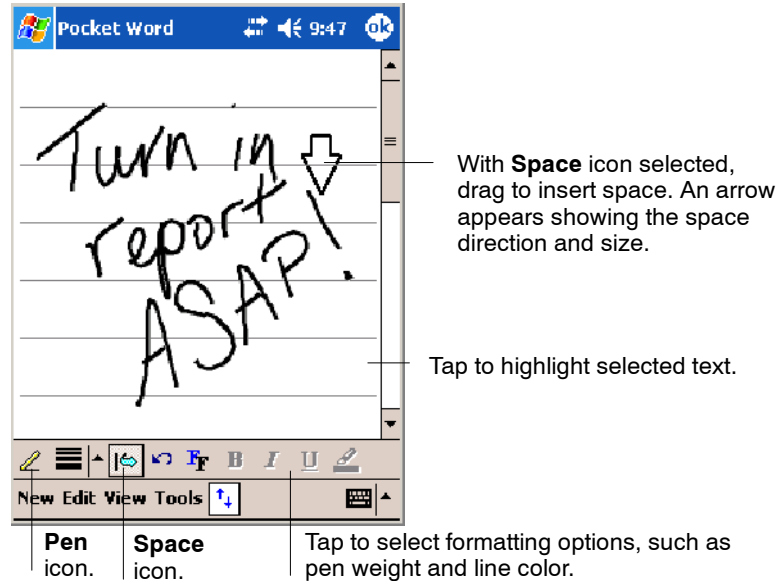
Using the input panel, enter typed text into the document. For more information on entering typed text, see “Basic Skills” on page 26.

To format existing text and to edit text, first select the text. You can select text as you do in a Word document, using your stylus instead of the mouse to drag through the text you want to select. You can search a document to find text by tapping **Edit > Find/Replace**.



Writing Mode

In writing mode, use your stylus to write directly on the screen. Ruled lines are displayed as a guide, and the zoom magnification is greater than in typing mode to allow you to write more easily. For more information on writing and selecting writing, see “Basic Skills” on page 26.



Note: If you cross three ruled lines in a single stylus stroke, the writing becomes a drawing, and can be edited and manipulated as described in “Drawing Mode” on the next page.



Note: Written words are converted to graphics (metafiles) when a Pocket Word document is converted to a Word document on your desktop.

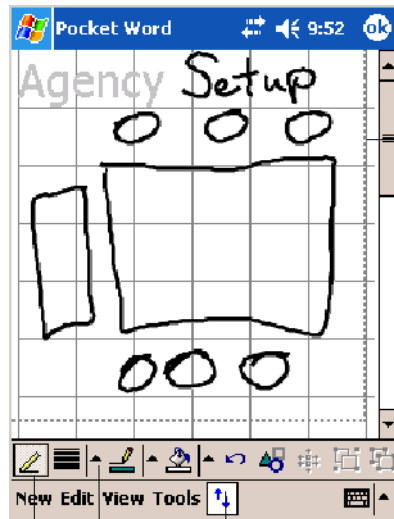
Recording Mode

In recording mode, embed a recording into your document. Recordings are saved as .WAV files. For more information on recording, see “Basic Skills” on page 26.

For more information on using Pocket Word, tap **Start > Help > Pocket Word** to see *Pocket Word Help*.

Drawing Mode

In drawing mode, use your stylus to draw on the screen. Grid lines appear as a guide. When you lift your stylus off the screen after the first stroke, a drawing box indicating the boundaries of the drawing appears. Every subsequent stroke within or touching the drawing box becomes part of the drawing. For more information on drawing and selecting drawings, see “Basic Skills” on page 26.



Resize an object by dragging the selection handles.

Tap to select formatting options, such as line weight, fill color, and line color.

Tap an arrow to see your choices.

Pen icon.

Synchronizing Pocket Word Documents

Pocket Word documents can be synchronized with Word documents on your desktop. To synchronize files, first select the Files information type for synchronization in ActiveSync. When you select Files, the My Documents folder for the 700 Color Computer is created on your desktop. Place all files you want to synchronize with the device in this folder. Password-protected files cannot be synchronized.

All Pocket Word files stored in My Documents and its subfolders are synchronized with the desktop. ActiveSync converts documents during synchronization.

For more information on synchronization or file conversion, see *ActiveSync Help* on the desktop.



Note: When you delete a file on either your desktop or your 700 Color Computer, the file is deleted in the other location when you synchronize.

Pocket Excel

You can create and edit workbooks and templates in Microsoft Pocket Excel as you do in Microsoft Excel on your desktop. Pocket Excel workbooks are usually saved as .PXL files, but you can also save them in .XLS format.

When you close a workbook, it is automatically named and placed in the Pocket Excel workbook list. You can attach a password to a workbook to help ensure privacy.

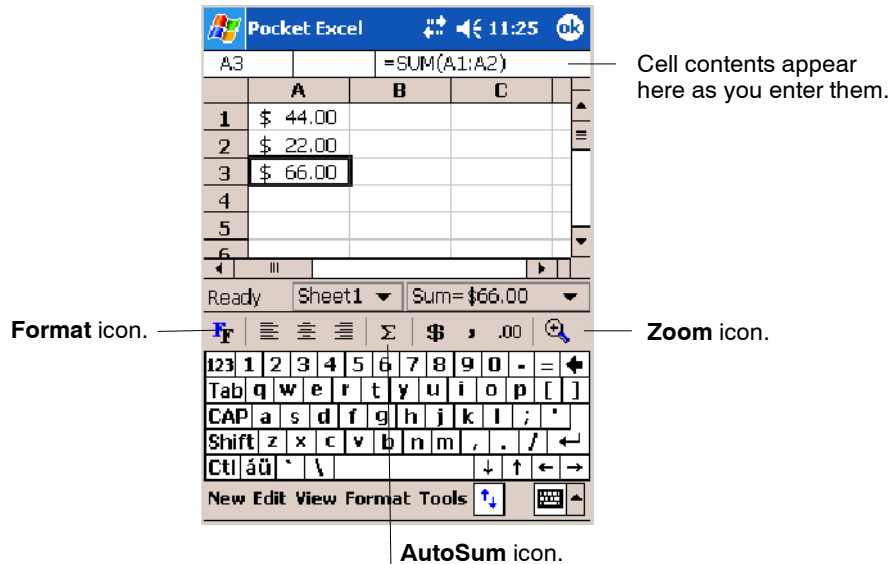


Creating a Workbook

Use Pocket Excel to create workbooks, such as expense reports and mileage logs. To create a new file, tap **Start > Programs > Pocket Excel > New**. A blank workbook appears. Or, if you have selected a template for new workbooks in the **Tools > Options** dialog box, that template appears with appropriate text and formatting already provided. You can open only one workbook at a time; when you open a second workbook, save the first. You can save a workbook you create or edit in a variety of formats, including Pocket Excel (.PXL) and Excel (.XLS). You can also save a workbook as a template by moving the workbook to the Templates folder.

Pocket Excel contains a list of the files stored on your 700 Color Computer. Tap a file in the list to open it. To delete, make copies of, and send files, tap and hold a file in the list, then select the action from the menu.

Pocket Excel provides fundamental spreadsheet tools, such as formulas, functions, sorting, and filtering. To display the toolbar, tap **View > Toolbar**.



Note: If your workbook contains sensitive information, you can protect it with a password. To do so, open the workbook, tap **Edit > Password**. Every time you open the workbook, enter a password, preferably one that is easy for you to remember but hard for others to guess.

Tips for Working in Pocket Excel

Note the following when working in large worksheets in Pocket Excel:

- View in full-screen mode to see as much of your worksheet as possible. Tap **View > Full Screen**. To exit full-screen mode, tap **Restore**.
- Tap **View > Zoom** and select a percentage so that you can easily read the worksheet.
- Show and hide window elements. Tap **View** and then tap the elements you want to show or hide.

- Freeze panes on a worksheet. First select the cell where you want to freeze panes. Tap **View > Freeze Panes**. You might want to freeze the top and leftmost panes in a worksheet to keep row and column labels visible as you scroll through a sheet. Tap **View > Unfreeze Panes** to undo this process.
- Split panes to view different areas of a large worksheet. Tap **View > Split**. Then drag the split bar to where you want it. To remove the split, tap **View > Remove Split**.
- Show and hide rows. To hide a row, select a cell in the row you want to hide. Then tap **Format > Row > Hide**. To show a hidden row, tap **Tools > Go To**, and then type a reference that is in the hidden row. Then tap **Format > Row > Unhide**.
- Do the same to show and hide columns. To hide a column, select a cell in the column you want to hide. Then tap **Format > Column > Hide**. To show a hidden column, tap **Tools > Go To**, type a reference that is in the hidden column, then tap **Format > Column > Unhide**.

For more information on using Pocket Excel, tap **Start > Help > Pocket Excel** to see *Pocket Excel Help*.

MSN Messenger

MSN Messenger on your 700 Color Computer provides the same chat environment as MSN Messenger on your desktop. These features include:

- Seeing who is online
- Sending and receiving instant messages
- Having an instant message conversation with a group of contacts
- Telling contacts that you are unavailable
- Blocking contacts from seeing your status or sending you messages

To use MSN Messenger, you need a Microsoft Passport account, or a Microsoft Exchange e-mail account that your employer provides. Once you have one of these accounts, do the following:

- 1 Set up a connection on your 700 Color Computer, such as a modem or wireless connection, that enables you to connect to the Internet.
- 2 Set up an account in MSN Messenger.
- 3 Sign in to MSN Messenger.



Note: To set up a free Hotmail account, go to www.hotmail.com. To set up a Microsoft Passport account, go to www.passport.com. To set up an Exchange account, see your network administrator.

For more information on using MSN Messenger, tap **Start > Help > MSN Messenger** to see *MSN Messenger Help*.

To switch to MSN Messenger, tap **Start > Programs > MSN Messenger**.



Setting Up an Account

Before you can use MSN Messenger, you must set up the instant messaging accounts to use. For MSN Messenger Service, you must have a Microsoft Passport or Hotmail account. For Exchange Instant Messaging, you must have an Exchange account.

- 1 Create a connection for your device. To use MSN Messenger Service, set up a connection to the Internet; to use Exchange Instant Messaging, set up a connection to your corporate network.
- 2 In MSN Messenger, tap **Tools > Options > the Accounts** tab.
- 3 Select either **Enable MSN Messenger Service**, or **Enable Exchange Instant Messaging**, or both.
- 4 Enter your sign-in name and password for the selected accounts. Your sign-in name is usually in the username@domain.com form.
- 5 If you selected both accounts, under **Sign in using this account first**, select which account to sign in to first.

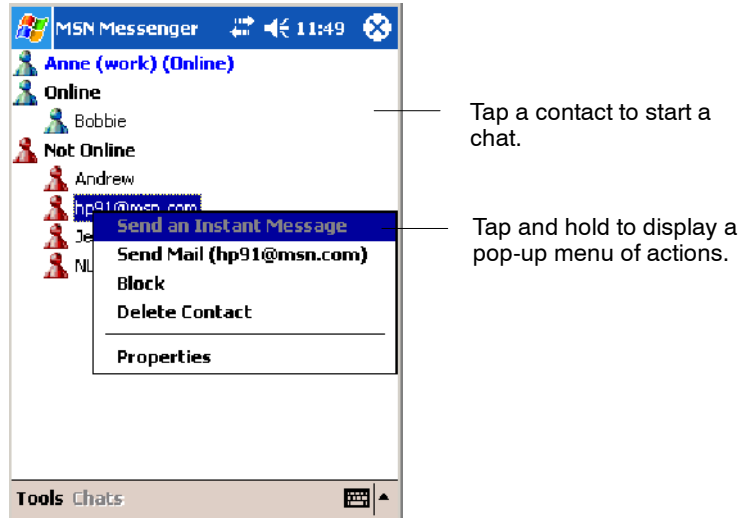


Signing In and Out

- To sign in, tap anywhere on the screen, follow directions on the screen.
- To sign out, tap **Tools > Sign Out**.
- To sign in upon connecting, tap **Tools > Options > General** and select the **Run this program upon connection** box.
- Signing in to an Exchange account may take several minutes depending upon your connection speed. Reducing the number of Exchange contacts decreases your sign-in time.

Working with Contacts

The MSN Messenger window shows all of your messenger contacts at a glance, divided into Online and Not Online categories. From this view, while connected, you can chat, send e-mail, block the contact from chatting with you, or delete contacts from your list using the pop-up menu.



To add a contact, tap **Tools > Add a Contact** and follow the directions on the screen. To delete a contact, tap and hold the contact's name, then tap **Delete Contact** from the pop-up menu. To see others online without being seen, tap **Tools > My Status > Appear Offline**.

Managing Contacts

For alerts each time you are added to a contact list, tap **Tools > Options > the Privacy tab**.

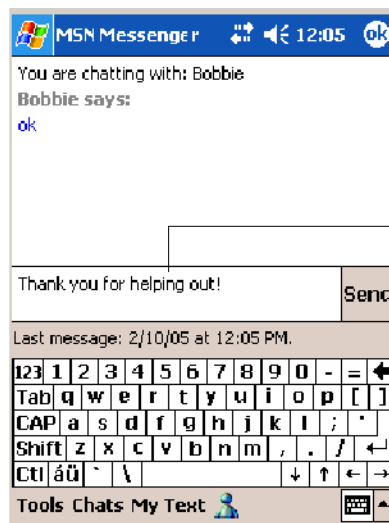
- To block a contact from your status and sending you messages, tap the contact, then tap the right arrow to move the contact to **My Block List**.
- To unblock a contact, tap the contact and tap the left arrow. This moves the contact to **My Allow List**.
- To receive an alert when someone adds you to their contacts list, select **Alert me when I am added to a Passport contact list**.

- To see who has you listed as a contact, tap **View**.



Sending a Message

- Tap a contact to whom you want to send a message. Enter your message in the text entry area at the bottom of the screen and tap **Send**. To quickly add common messages, tap **My Text** and tap a desired message.
- To invite another contact to an ongoing chat, tap **Tools > Invite** and tap a contact.
- To see who is already chatting or to switch between chats, tap **Chats**.



Enter a message.

Tap to send message.

Windows Media Player for Windows Mobile

Use Microsoft Windows Media Player for Windows Mobile to play digital audio and video files stored on the 700 Series Computer or on a network.



To switch to Windows Media Player on your 700 Color Computer, tap **Start > Windows Media**.

Use Microsoft Windows Media Player on your desktop to copy digital audio and video files to your 700 Color Computer. You can play Windows Media and MP3 files on your Windows Mobile.

For information about using Windows Media Player for Windows Mobile, tap **Start > Help > Windows Media Player**.



Microsoft Reader

Use Microsoft Reader to read eBooks on your 700 Color Computer. Download books to your desktop from your favorite eBook Web site. Then, use ActiveSync to copy the book files to your activated 700 Color Computer. The books appear in the Reader Library, where you can tap them in the list to open them. Each book consists of a cover page, an optional table of contents, and the pages of the book. You can:

- Page through the book by using the Up/Down control on your 700 Color Computer or by tapping the page number on each page.
- Annotate the book with highlighting, bookmarks, notes, and drawings.
- Search for text and look up definitions for words.

The Guidebook contains all the information needed to use the software. To open the Guidebook, tap **Help** on the Reader command bar. Or, on a book page, tap and hold on the book title, and then tap **Help**.

To switch to Microsoft Reader, tap **Start > Programs > Microsoft Reader**.



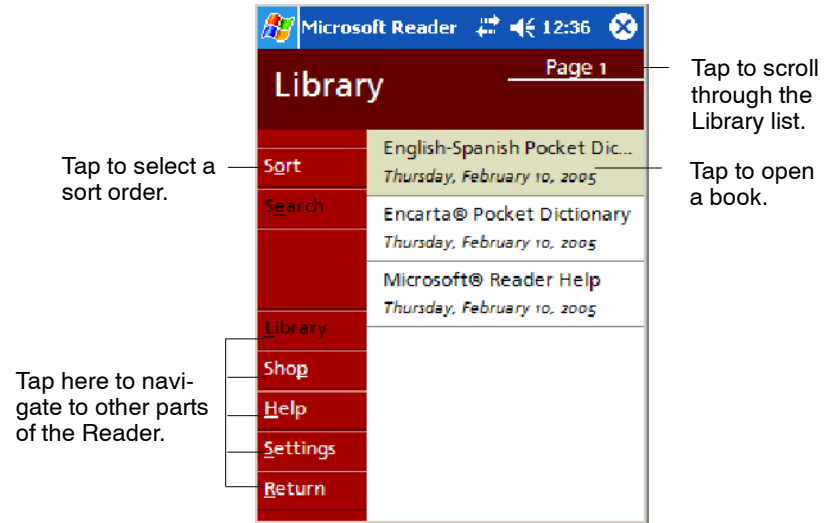
Getting Books on Your 700 Color Computer

You can download book files from the Web. Just visit your favorite eBook retailer and follow the instructions to download the book files. Sample books and a dictionary are also included in the MSReader folder in the Extras folder on the *Windows Mobile Companion CD*. Use ActiveSync to download the files from your desktop to your activated mobile computer as described in the *Read Me* file in the MSReader folder.

Using the Library

The Library is your Reader home page with a list of the books stored on your 700 Color Computer or storage card. To open the Library:

- On the Reader command bar, tap **Library**.
- On a book page, tap the book title, then tap **Library**.
- To open a book, tap its title in the Library list.

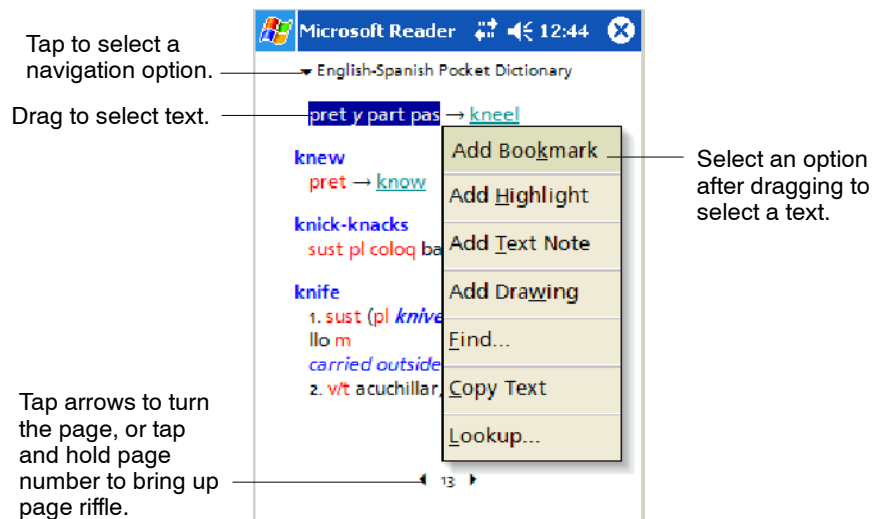


Reading a Book

Each book consists of a cover page, an optional table of contents, and book pages. Navigation options are listed in the bottom of the cover page.

The first time you open a book, go to the first page or to the table of contents, if there is one. Subsequently, whenever you open the book, you are automatically taken to the last page read.

With the text, each book page includes a page number and book title. You can also page through a book by using the Up/Down/Left/Right controls.



Using Reader Features

Reading a book electronically gives you several options not available with paper books. These options are available from any book page.

Select text by dragging across the text on the page. Then, tap an option on the pop-up menu, as described here:

Searching for Text	Find text in a book by tapping Find on the pop-up menu. Enter the word you want to search for, and tap the desired Find option. Reader highlights found text on the page. To close Find , tap outside the box. To return to your original page, tap the title and then tap Return on the pop-up menu.
Copying Text	You can copy text from books that support this feature into any program that accepts text. On a book page, select the text you want to copy. Then, tap Copy Text on the pop-up menu. The text can be pasted into the program of your choice.
Adding Bookmarks	When you add a bookmark to a book, a color-coded bookmark icon appears in the right margin. You can add multiple bookmarks to a book. Then, from anywhere in the book, tap the bookmark icon to go to the bookmarked page.
Highlighting Text	When you highlight text, it appears with a colored background.
Attaching Notes to Text	When you attach a note to text, you enter the text in a notepad that appears on top of the book page. A Note icon displays in the left margin. To show or hide the note, tap the icon.
Adding Drawings	When you add a drawing, a Drawing icon appears in the bottom-left corner of the page, and drawing tools appear across the bottom of the page. Draw by dragging your stylus.
Annotations Index	To see a list of a book's annotations, including bookmarks, highlights, text notes, and drawings, tap Annotations Index on the book's cover page. You can tap an entry in the list to go to the annotated page.

Removing a Book

When you finish reading a book, you can delete it to conserve space on your 700 Color Computer. If a copy of the book is stored on your desktop, you can download it again at any time.

To remove a book from your 700 Color Computer, tap and hold the title in the Library list, and then tap **Delete** on the pop-up menu.

Pocket Internet Explorer

Use Microsoft Pocket Internet Explorer to view Web or WAP pages in either of these ways:

- During synchronization with your desktop, download your favorite links and mobile favorites that are stored in the Mobile Favorites subfolder in Internet Explorer on the desktop.
- Connect to an ISP or network and browse the Web.

When connected to an ISP or network, you can also download files and programs from the Internet or intranet.



To switch to Pocket Internet Explorer on your 700 Color Computer, tap **Start > Internet Explorer**.

Mobile Favorites Folder

Only items stored in the Mobile Favorites subfolder in the Favorites folder in Internet Explorer on your desktop are synchronized with your 700 Color Computer. This folder was created automatically when you installed ActiveSync.

Favorite Links

During synchronization, the list of favorite links in the Mobile Favorites folder on your desktop is synchronized with Pocket Internet Explorer on your 700 Color Computer. Both computers are updated with changes made to either list each time you synchronize. Unless you mark the favorite link as a mobile favorite, only the link is downloaded to your 700 Color Computer. Connect to your ISP or network to view the content.

- 1 In ActiveSync on your desktop, click **Tools > Options**, and select “Favorites” from the **Mobile Device** list. For more information on using ActiveSync, see *ActiveSync Help* on the desktop.
- 2 In Internet Explorer on your desktop, save or move favorite links to the Mobile Favorites subfolder in the Favorites list via **Favorites > Organize Favorites**. For more information on using Internet Explorer, see *Internet Explorer Help* on the desktop.
- 3 Connect your 700 Color Computer to your desktop. If synchronization does not start automatically, in ActiveSync on your desktop, click **Sync**.

Mobile Favorites

If you are using Microsoft Internet Explorer 5.0 or later on your desktop, you can download mobile favorites to your 700 Color Computer. Synchronizing mobile favorites downloads Web content to your 700 Color Computer so that you can view pages while you are disconnected from your ISP and desktop.

Use the Internet Explorer plug-in installed with ActiveSync to create mobile favorites quickly. To create a mobile favorite:

- 1 In ActiveSync on your desktop, click **Tools > Options**, and select “Favorites” from the **Mobile Device** list. For more information on using ActiveSync, see *ActiveSync Help* on the desktop.
- 2 In Internet Explorer 5.0 or greater on your desktop, browse to the page you want to view offline, then click **Tools > Create Mobile Favorite**.
- 3 To change the link name, enter a new name in the **Name** box.
- 4 In the **Update** box, select a desired update schedule to keep the page in the Mobile Favorites folder up to date. You can also update content by clicking **Tools > Synchronize** in Internet Explorer.
- 5 To save the link in a subfolder of Mobile Favorites, click **Create In** and select the desired subfolder.
- 6 Click **OK**. Internet Explorer downloads the latest version of the page to your desktop.


- 7 To download the pages that are linked to the mobile favorite you just created, in Internet Explorer on the desktop, right-click the mobile favorite, then click **Properties**. On the **Download** tab, specify the number of links deep you want to download. *To conserve 700 Color Computer memory, go only one level deep.*
- 8 Connect your 700 Color Computer to your desktop. If synchronization between your 700 Color Computer and desktop does not start, in ActiveSync on your desktop, click **Sync**.

Mobile favorites take up storage memory on your 700 Color Computer. To minimize the amount of memory used:

- In the settings for the Favorites information, type in ActiveSync options, turn off pictures and sounds, or stop some mobile favorites from being downloaded to the 700 Color Computer. For more information, see *ActiveSync Help*.
- Limit the number of downloaded linked pages. In Internet Explorer on the desktop, right-click the mobile favorite you want to change and then **Properties**. In the **Download** tab, specify “0” or “1” for the number of linked pages you want to download.

Using AvantGo Channels

AvantGo is a free interactive service that gives you access to personalized content and thousands of popular Web sites. You subscribe to AvantGo channels directly from your 700 Color Computer. Then, you synchronize your 700 Color Computer and desktop, or connect to the Internet to download the content. For more information, visit the AvantGo Web site. To synchronize an AvantGo channel:

- 1 In Pocket Internet Explorer on your 700 Color Computer, tap  to display your list of favorites.
- 2 Tap the **AvantGo Channels** link.
- 3 Tap **Activate**.
- 4 Follow the directions on the screen. Synchronize your 700 Series Computer with your desktop, then tap **My Channels** to complete the AvantGo setup.
- 5 When synchronization is complete, tap the **AvantGo Channels** link in your list of favorites to see a few of the most popular channels.

To add or remove channels, tap the **Add** or **Remove** link.

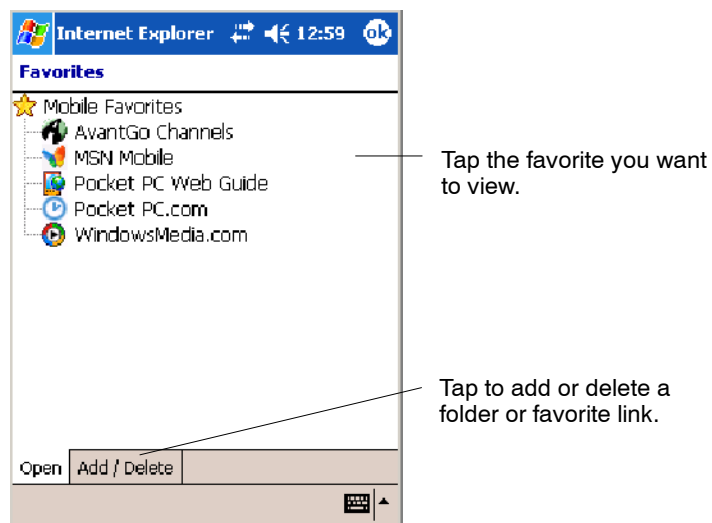
Using Pocket Internet Explorer

You can use Pocket Internet Explorer to browse mobile favorites and channels that were downloaded to your 700 Color Computer without connecting to the Internet. You can also connect to the Internet through an ISP or a network connection and browse the Web.



Viewing Mobile Favorites and Channels

- 1 Tap the Favorites icon to display your list of favorites.
- 2 Tap the page you want to view.



The page that was downloaded the last time you synchronized with your desktop opens. If the page is not on your 700 Color Computer, the favorite is dimmed. Synchronize with your desktop again to download the page to your 700 Color Computer, or connect to the Internet to view the page.

Browsing the Internet

- 1 Set up a connection to your ISP or corporate network.
- 2 To connect and start browsing, do one of the following:
 - Tap the **Favorites** icon, and then tap the favorite you want to view.
 - Tap **View > Address Bar**. In the address bar that appears at the top of the screen, enter the Web address you want to visit and then tap **Go**. Tap the arrow to choose from previously entered addresses.



Note: To add a favorite link while using the 700 Color Computer, go to the page you want to add, tap and hold on the page, and tap **Add to Favorites**.



3 Installing Applications

There are multiple ways to get an application to your 700 Series Color Mobile Computer; just as there are multiple ways to package the application for delivery.



Note: “700 Color” pertains to 730, 740, 741, 750, 751, 760, and 761 Computers unless otherwise noted.

Packaging an Application

Use any of these methods to package an application for installation:

- For very simple applications, the application itself might be the only file that needs to be delivered.
- It could be a directory structure that contains the application, supporting files like ActiveX controls, DLLs, images, sound files, and data files.
- Or, you could package an application via a CAB file.

Consider any of the following when choosing a location into which to store your application:

- In the basic 700 Color Computer, there are two built-in storage options: the Object Store and the Persistent Storage Manager (PSM). The Object Store is RAM that looks like a disk. Anything copied here is deleted when a cold-boot is performed on the 700 Color Computer. The PSM is an area of storage which is embedded in a section of the system's FLASH memory. This storage area is *not* erased during a cold-boot. It may, however, be erased during the reflashing process. In addition to storing applications and data files, you do have the option to store a persistent registry to the PSM region.
- If the optional Secure Digital or CompactFlash storage card is in the system, then consider this card the primary location for placing an applications install files. The following folders represent either card:
 - The Secure Digital storage card creates the “\SDMMC Disk” folder.
 - The CompactFlash storage card creates the “\Storage Card” folder.



Note: 730 Computers do *not* support Compact Flash storage cards. Instead, the “\Storage Card” folder is created for the Secure Digital storage card.

- Use the small non-volatile Flash File Store region to hold CAB files that rebuild the system at cold-boot or install applications from a CAB file *into* the Flash File Store so they are “ready-to-run” when a cold-boot is performed. Since the FLASH in the system has a limited number of write cycles, do not use the Flash File Store for excessive writing purposes; however, reading is okay.

Files copied to any of these locations are safe when a cold-boot is performed on a 700 Color Computer — *providing the AutoRun system is installed in the appropriate location*. Find this system in the 700 Color Management Tools portion. Copying a CAB file to the “\CabFiles” folder on one of these cards automatically extracts that CAB file on every cold-boot to ensure that your system is properly set up (see page 95).

Installing Applications

Consider any of these options to get the package to the preferred location:

- Microsoft ActiveSync (*next page*)
- Storage cards (*page 88*)
- FTP Server (*page 88*)
- Registry (*page 88*)

Using Microsoft ActiveSync



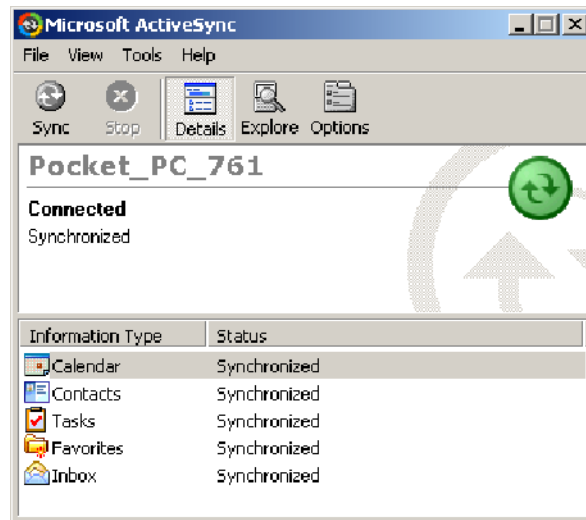
Note: These instructions assume the 700 Color Management Tools were installed on your desktop.

The Microsoft ActiveSync tool is located on the *700 Color Companion CD*. See Chapter 2, “Windows Mobile 2003,” for information about this tool as provided by Microsoft Corporation.

This can be a serial or USB ActiveSync connection. Files can be copied using File Explorer on a desktop or a laptop computer. This is usually good when updating few 700 Color Computers.

These instructions assume that Microsoft ActiveSync was installed onto your desktop and is up and running. If not, go to Chapter 2, “Windows Mobile 2003,” for an URL from which to download the latest application.

- 1 Connect your 700 Color Computer to your desktop computer via an ActiveSync cable.
- 2 Wait for a “Connected” message to appear in the Microsoft ActiveSync application to signal a connection to the 700 Series Computer. If necessary, select **File > Get Connected** to initiate a connection.



- 3 Click **Explore** to access the Mobile Device folder on your unit.
- 4 From your desktop, select **Start > Windows Explorer**, then browse the “C:\Intermec\700C Mgmt Tools\CabFiles” path for any CAB files needed for your 700 Color Computer. Select the appropriate file, right-click the file for a pop-up menu, then select **Copy**.

- 5 Within the Mobile Device directory, go to the directory where you want the files located on the 700 Color Computer, do a right-click for a pop-up menu, then select **Paste**.
- 6 When all of the files are pasted, perform a warm-boot on the 700 Color Computer. When the computer reboots, wait for the LED on the top left of your keypad to stop blinking. Tap **Start > Programs > File Explorer** to locate the newly copied executable files, then tap these files to activate their utilities.

Using the FTP Server

The 700 Color Computer has a built-in FTP Server that connects to a network via Ethernet, 802.11b, or WAN (Wireless Access Network). This allows connections to the 700 Color Computer to perform file transfers or computer management functions. Another benefit is you can create FTP scripts to automate the process of copying files to the 700 Color Computer. This option is good for when a large number of 700 Color Computers need updating. See Chapter 7, “Programming,” for more information.

Using a Storage Card



Note: The 730 Computer does not use the CompactFlash storage card, only Secure Digital storage cards. Use these instructions only if you are using either a 740 or a 741 Computer that does not have an 802.11 radio installed. 730, 750, 751, 760, 761 Computers only use Secure Digital storage cards.

Use the following steps to install an application using either a CompactFlash or a Secure Digital storage card:

- 1 Suspend the 700 Color Computer and remove the storage card.
- 2 Insert the storage card into the storage card reader connected to your desktop PC.
- 3 Create a “\CabFiles” directory on the storage card, then copy (build into cabfiles) your application, data files, and all required DLLs and drivers into this directory.
- 4 See “Creating CAB Files” on page 188 to build a “\2577” directory to control the autolaunching of these CAB files.
- 5 Remove the storage card from your card reader and reinstall it into the 700 Color Computer.
- 6 Warm-boot the 700 Color Computer to install these files.

Replicating 700 Color Settings Using the Registry

This information updates the registry on your 700 Color Computer, confirms the registry update, then copies the information onto other 700 Color Computers in your network. If using DHCP, no changes are necessary. If you are using Static IP, the new 700 Color Computer will have the IP address of the original 700 Color Computer because the copied registry includes this information.

When you change the IP address using the Intermec Settings applet, the information is lost when you perform a warm-boot, and the original IP address is used.

You must load the REGFLUSH.CAB file before running the Registry Save application. Once you do, perform a warm-boot to keep the IP address.

To install the Registry Save application after a cold-boot is performed, change the properties of the REGFLUSH.CAB file to that of read-only.

Using ActiveSync, copy the CAB file to the “Flash File Store\Persistent Copy\CabFiles” folder on the 700 Color Computer, then perform a cold-boot to load this CAB file.



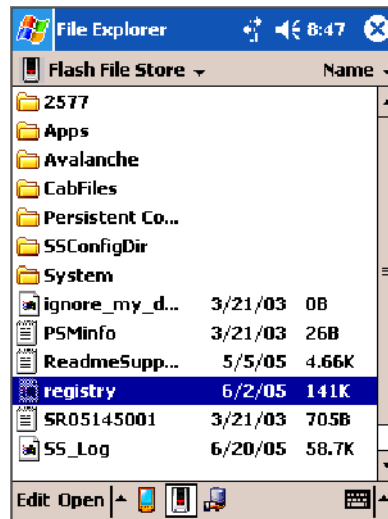
File Explorer

Deleting the Old Registry File

- 1 On the original 700 Color Computer, select **Start > Programs > the File Explorer icon**, then tap **My Device > Flash File Store**. Scroll down to the bottom of the list of files and folders, press and hold your stylus in the white area beneath for a pop-up menu, then select **View All Files**.



- 2 Look for a “registry” file. If one exists, select to highlight that file, press and hold for a pop-up menu, select **Delete**, then **Yes** to remove this file.

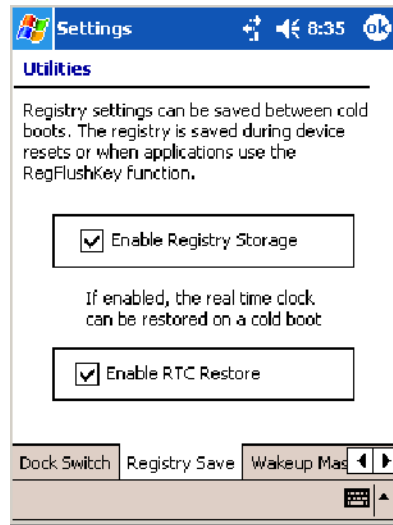


Downloading the RegFlush CAB File

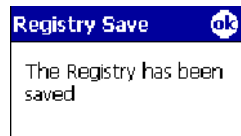
- 1 Using your web browser, go to the Intermec web site at www.intermec.com/developersupport. *Note that this is subject to change.*
- 2 Select **Pen Notepads > 700 Color Series > Downloads > Tools**.
- 3 Scroll down for the “Registry Save Utility (regflush.CAB)” header.
- 4 Click **Download** next to this header to download the CAB file to a location on your desktop.

Loading the Registry Save Application

- 1 On the 700 Color Computer, double-click the REGFLUSH.CAB file to load the “Registry Save” application.
- 2 Set up the 700 Color Computer to your specifications using the Inter-mec Settings and other applets.
- 3 Select **Start > Settings > the System tab > the Utilities icon > the Registry Save tab**, then check both **Enable Registry Storage** and **Enable RTC Restore**. Tap **ok** to close, then close Settings.



- 4 Select **Start > Programs > the Registry Save icon** to run the Registry Save application, then tap **ok** when told the registry was saved.



Confirming the New Registry File

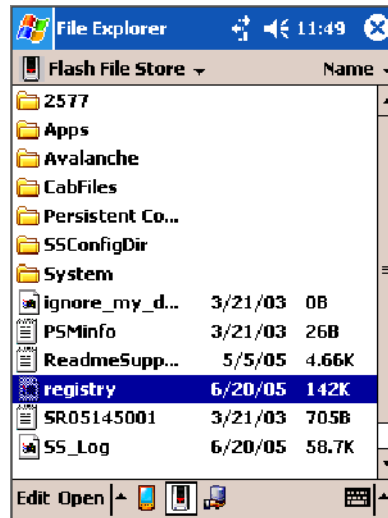
To confirm whether the new registry file exists, do the following:



- 1 On the 700 Color Computer, select **Start > Programs > the File Explorer icon**, then tap **My Device > Flash File Store**. Press and hold your stylus in the white area for a pop-up menu, then select **View All Files**.



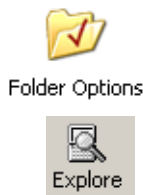
- The new registry file should be on the root of the Flash File Store folder with today's date.

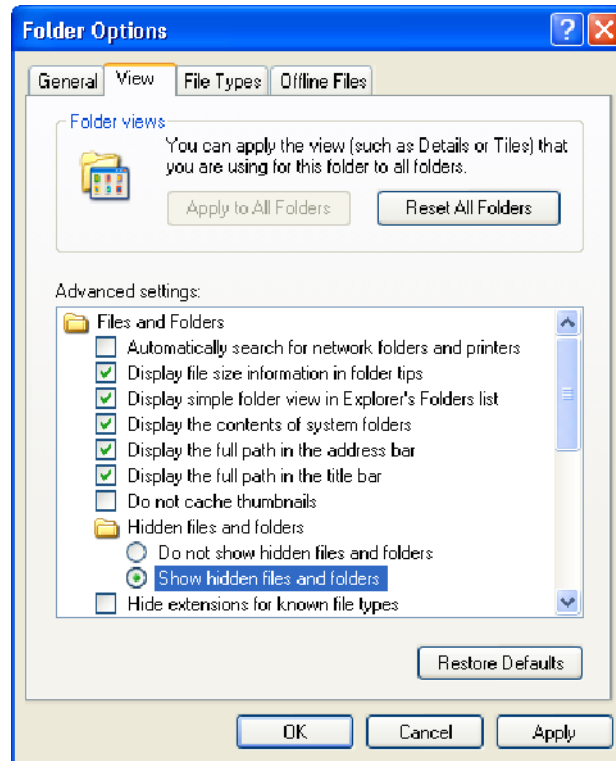


Updating Other Computers in Your Network

These instructions assume you have Windows XP on your desktop.

- Connect your 700 Color Computer to your desktop using Microsoft ActiveSync and a cradle. Make sure the ActiveSync application on your desktop is up and running and connected to your 700 Color Computer.
- On your desktop, select **Start > Settings > Control Panel**, double-click the **Folder Options** icon, then click the **View** tab. Beneath “Hidden files and folders,” check **Show hidden files and folders**, then click **OK**.
- Using the Microsoft ActiveSync application on your desktop, click **Explore** to access the Flash File Store folder on your 700 Color Computer and locate the “registry” file. Copy this file, then paste it in a temporary location on your desktop.
- Remove the 700 Color Computer from the cradle, and put another 700 Color Computer in its place. The ActiveSync application on your desktop should connect to the new unit.
- Follow the instructions for “Deleting the Old Registry File” starting on page 89, put the new registry file in the root of the Flash File Store folder on the new 700 Color Computer, enable the registry save flag via the Utilities applet, perform a warm-boot. and make sure these settings are saved.





Updating the System Software

When you upgrade your 700 Color 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-added functionality such as data collection, unit configuration and diagnostics, the Intermec wireless security suite, and the SmartSystems™ Foundation.

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

- 1 Start your web browser and go to the Intermec web site at www.intermec.com/wm2003.
- 2 Click the **PPC 2003 OS** link, fill out the appropriate information, then click **Submit Information**. Click **OK** to continue.
- 3 Click the link and download the .zip file to your PC.
- 4 Follow the steps in one of the next sections:
 - If you are using a storage card to upgrade the 700 Color Computer, see next page.
 - If using the SmartSystems Console to upgrade the 700 Color Computer, see “Using the SmartSystems Console to Upgrade the 700 Color Computer” on page 94.

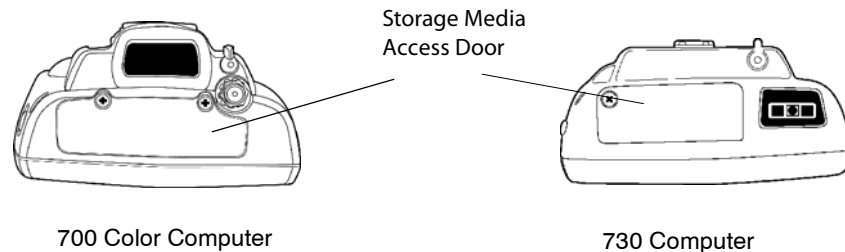
Using a Storage Card to Upgrade the 700 Color Computer

To use a Secure Digital card to upgrade the 700 Color Computer, you need a Secure Digital card reader and a Secure Digital card formatted as FAT.



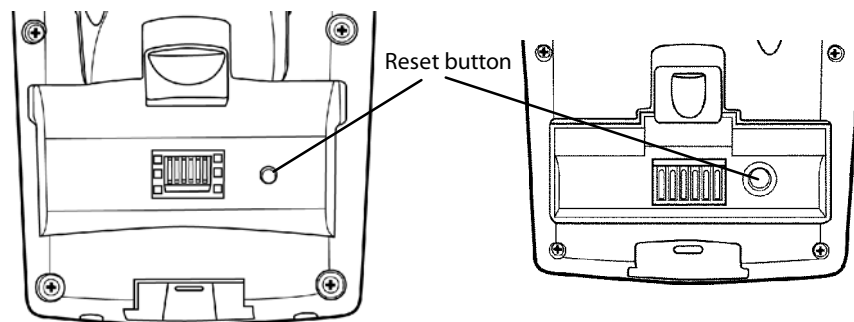
Note: The 700 Color Computer currently supports Delkin Secure Digital cards only. Intermec cannot guarantee that other Secure Digital cards will work with the 700 Color Computer.

- 1 Locate the storage card access door at the top of the 700 Color Computer, remove its two screws, remove the door, then remove the storage card. See the *700 Color with Windows Mobile 2003 Quick Start Guide* (P/N: 962-054-069) for more information.



This illustration shows the top of the 700 Color Computer on the left and of the 730 Computer on the right. Note that the keypad is to the bottom.

- 2 Place the storage card in your desktop PC card reader, then copy all required upgrade files to the storage card.
- 3 Remove the storage card from your card reader, reinstall it into the 700 Color 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 illustration shows the back of the 700 Color Computer on the left and of the 730 Computer on the right.

- 5 Return the 700 Color Computer to DC power, such as installing it into a dock connected to external power.
- 6 When the Bootloader Menu shows “complete,” remove the storage card, then press the **Reset** button again to load the new operating system.



Note: The upgrade will fail if the 700 Color Computer is not connected to external power. For help, see “Accessories” on page 21.

- 7 When the 700 Color Computer finishes booting, insert the AB10 battery, then close the battery door.

You may use the 700 Color Computer. You have reset the 700 Color 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 700 Color Computer

You can use the SmartSystems Console to upgrade the operating system on your 700 Color 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 **Service & Support > Downloads**. Make sure the file you select is for your language.

- 1 Install SmartSystems Foundation on your PC and open the console.
- 2 Make sure the console and 700 Color Computers are on the same subnet.
- 3 Make sure your 700 Color Computers are either in a communications dock or charging dock, such as the AD14 dock charger, 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 700 Color Computer you want to upgrade. The SmartSystems Console will tell you that it is installing the upgrade on your 700 Color Computer.

Once the upgrade is done downloading to your 700 Color Computer, your 700 Color Computer replaces the operating system and then automatically performs a cold-boot. Progress messages do appear on the 700 Color screen.



The SmartSystems Console will show your 700 Color Computer as offline (note the red stop sign) until the 700 Color Computer reboots and reconnects to the system.

Migrating from a 700 Monochrome Computer

As you migrate from a 700 Monochrome Computer to a 700 Color Computer, you need to consider the following: When converting a 700 Monochrome Computer application to run on the 700 Color Computer, most APIs should work without changes. Below are a few exceptions:

- The 700 Monochrome Computer uses the “\Storage Card” folder for nonvolatile storage. You may need to change the application to store data onto the “SDMMC Disk” folder instead of the “\Storage Card” folder if a Secure Digital storage card is present in the system.
- If the application uses the RegFlushKey() API, it must first verify that the proper media is available in the system and call this API.
- If the application is using the 700 Color switchable dock, use the IOCTL_DOCK_SWITCH value from the IOCTL_HAL_ITC_WRITE_SYSPARM function to set the proper port on the dock before communications. See more information about this KernelIOControl function in Chapter 7, “Programming.”
- Some WAN radio options have changed. Review the WAN radio information in Chapter 4, “Network Support,” to determine if any changes are required in your application.
- Arrow and tab keys are reversed from the 700 Monochrome Computer. Keyboard remapping is available on the 700 Color Computer should you need to map these keys like that of the 700 Monochrome Computer (see page 92).
- Targeting the ARM (SA1110) processor which creates applications that run on the 700 Color Computer requires the Windows Mobile 2003 SDK.

Installing Cabinet Files

CAB files (*short form of “cabinet” files*) are compressed folders as defined by Microsoft. A “cabinet” file is a single file, usually suffixed with .CAB, that stores compressed files in a file library. A compressed file can be spread over several cabinet files. During installation, the setup application decompresses the files stored in a cabinet and copies them to the user’s system.

For the 700 Series Computer, CAB files register DLLs, create shortcuts, modify registry entries, and run custom setup programs. Tap a CAB file to extract that file or place the CAB file on one of the approved storage devices in the “\CabFiles” folder, then perform a warm-boot on the 700 Series Computer. There are two methods available to extract a CAB file:

- Tap a CAB file to extract it. With this method, the CAB file is automatically deleted when the extraction process is successful, *unless* the CAB file is set with the read-only attribute.
- Use AUTOCAB to extract all files when a cold-boot is performed on the 700 Series Computer. See the *Software Tools User’s Manual* for information.



4 Network Support

This chapter includes information about the different networks supported by the 700 Series Color Mobile Computer, and ways to configure and manage those networks. Note that the 700 Color automatically installs the appropriate software for radio or phone use when the unit is turned on.



Note: “700 Color” pertains to 730, 740, 741, 750, 751, 760, 761, and 761B Computers unless otherwise noted.

Understanding Your 700 Color Computer

Due to the number of 700 Color Computers now available, and to the number of applications, drivers, and modules that may or may not be available, use these tables to determine what is on your computer.

Hardware Features

730 Computers	802.11b radio, Bluetooth
740 Computers	Ethernet, Bluetooth
741 Computers	Ethernet, Bluetooth
750 Computers	Ethernet, 802.11b radios, Bluetooth
751 Computers	Ethernet, 802.11b/g radios, Bluetooth
760 Computers	Ethernet, 802.11b, CDMA/1xRTT WAN (data only*), GSM/GPRS WAN (data and voice) radios, Bluetooth
761 Computers	Ethernet, 802.11b/g, CDMA/1xRTT WAN (data and voice), GSM/GPRS EDGE WAN (data and voice) radios, Bluetooth
* This is for units sold in the United States.	

Software Applications

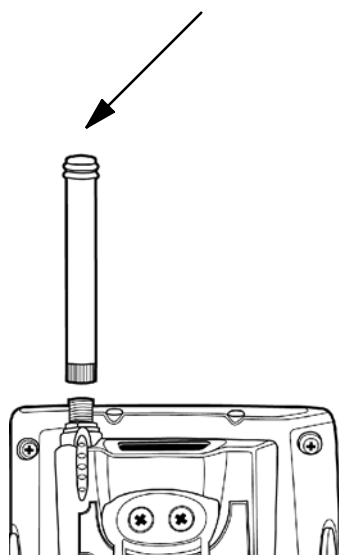
	Computers: 730	740	741	750	751	760	761
Microsoft Phone for CDMA Radios (page 117)							X
Microsoft Phone for GSM Radios (page 125)							X
On-board Wired Ethernet (page 109)		X	X	X	X	X	X
SB555 Watcher (page 130)						X	
Wireless Local Area Network (page 108)	X			X	X	X	X
Wireless Personal Area Network (page 99)	X	X	X	X	X	X	X
Wireless Wide Area Network						X	X
WWAN Communicator**						X	X
WWAN Toolkit						X	X
* Does not apply to WAN radios							
** See the “ <i>WWAN Communicator User’s Guide</i> ” P/N: 074250.							

Antennas (760/761 Computers)

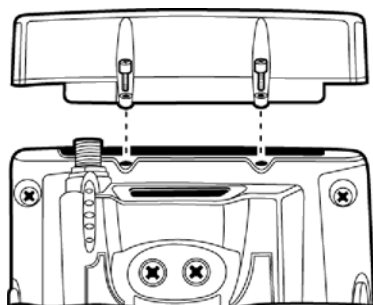
760 Computers have color-coded tips to identify the WWAN radio type within. Below and on the next page are the colors and their types. 761 Computers in the United States and Canada use the external antenna with no color in its tip. See your Intermec representative for more information.

- **Red** (760 Computers)
CDMA (non-Sprint networks) and GSM/GPRS US/Canada
- **White** (760 Computers)
GSM/GPRS US/Canada and CDMA Sprint networks

- **Blue (760/761 Computers)**
GSM/GPRS International (MC45 WAN radios)
- **No Color (761 Computers)**
CDMA and GSM/GPRS US/Canada (MC46 WAN radios)



- **Radome (761B Computers)**
GPRS EDGE only (MC75 radios)




Personal Area Networks

“Bluetooth” is the name given to a technology standard using short-range radio links, intended to replace cables connecting portable and fixed electronic devices. The standard defines a uniform structure for a range of devices to communicate with each other with minimal user effort. Its key features are robustness, low complexity, low power, and low cost. The technology offers wireless access to LANs, the mobile phone network, and the internet for a host of home appliances and mobile computer interfaces.

Wireless Printing can also be done with 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* via the Intermec Developer Library (IDL), which is available as a download from the Intermec web via www.intermec.com/idl. See your Intermec representative for information.

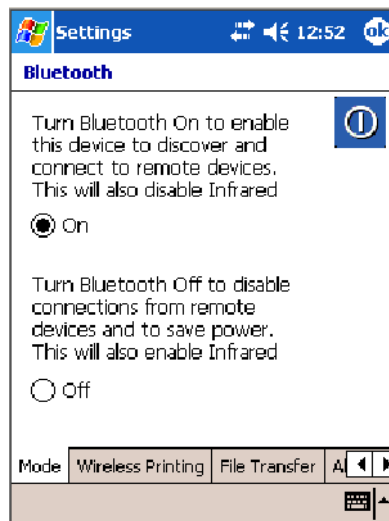
About the Application

 Bluetooth is not started automatically by default after a cold-boot is performed. To run Bluetooth, tap **Start** > **Settings** > the **Connections** tab > the **Bluetooth** icon. The 700 Color Computer retains the Bluetooth state when warm-boots are performed, for example:

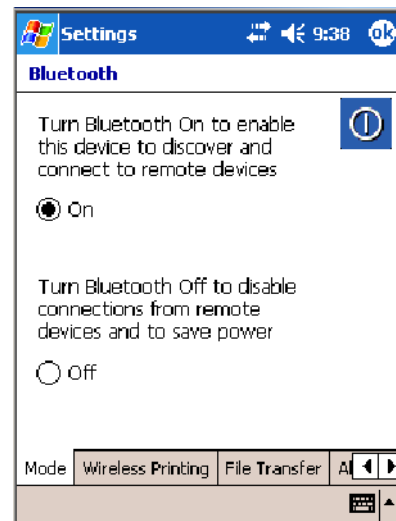
- *If Bluetooth is active*, and a warm-boot was performed, the 700 Color Computer boots up with the Bluetooth state activated and Bluetooth virtual COM ports (such as printing) registered. However, you must reactivate connections, as the system does not do these automatically.
- *If Bluetooth is inactive*, and a warm-boot was performed, the 700 Color Computer boots up with Bluetooth deactivated.

Mode

The default tab activates or deactivates Bluetooth. When Bluetooth is activated, the 700 Color Computer discovers and connects to remote devices.



700 Color Screen



730 Screen

Wireless Printing

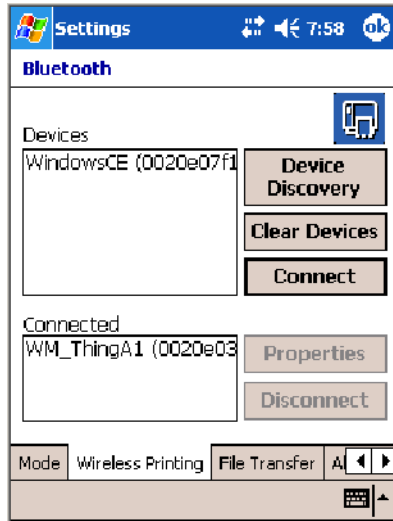
Use this tab to print via Bluetooth devices. Tap **Device Discovery** to discover (or scan) for remote Bluetooth devices. When the 700 Color Computer is finished scanning, any newly discovered devices appear in the upper **Devices** box.

Tap **Clear Devices** to remove the list from the **Devices** box.

To print to a Bluetooth device, select any of the devices listed in the **Devices** box, then tap **Connect**. Once connected, the selected device moves to the lower **Connected** box.

To view connection information or register a COM port for a device, from the lower **Connected** box, select a device, then tap **Properties**. See “*Properties*” on the next page for information.

When done printing to a device, select that device in the **Connected** box, then tap **Disconnect**. This moves the device in question back to the upper **Devices** box.



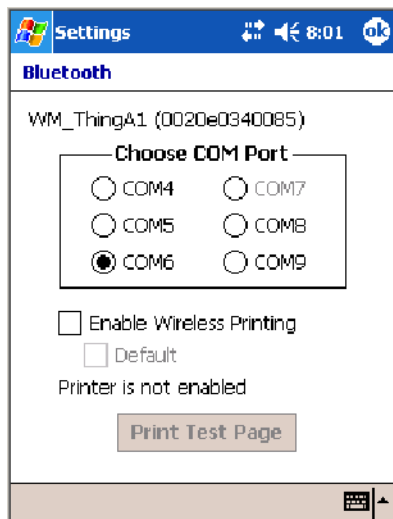
Properties

Select a COM Port from the **Choose COM Port** box to register for this device, then check **Enable Wireless Printing** to complete the COM port registration. To change your COM port selection, clear (uncheck) the **Enable Wireless Printing** box, select a new COM port, then check **Enable Wireless Printing** again. **Choose COM Port** items already in use are grayed out.

When you enable Wireless Printing, a status message is shown near the bottom of the screen to confirm your action. To print a test page to your printer, tap **Print Test Page**.

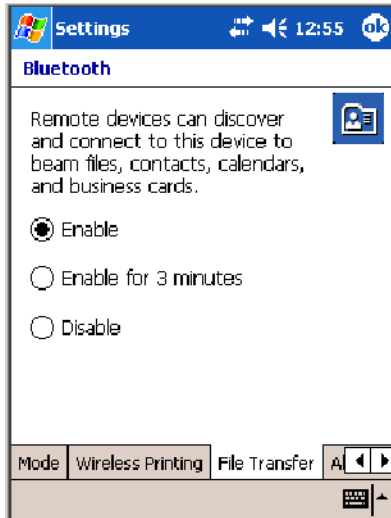
Check **Default** to set this printer to identify the assigned COM Port as the WPPort in the registry. See the *Bluetooth Resource Kit User's Guide* for more details on WPPort.

Tap **ok** to return to the Wireless Printing page.



File Transfer

Use this page to enable your unit to receive files from another Bluetooth device, or from any device that supports this function.



This does not apply to the 730 Computer. From this point, this transfer is similar to an IrDA file transfer. Tap **Start > Programs > File Explorer**, tap to hold the file to transfer, then select **Beam File** from its pop-up menu.



The system searches for a list of Bluetooth devices that will accept a connection from your unit. When the list is complete, tap on a device to which to send the file. *Note: in some cases, the user of the target device has to “accept” the file before it is transmitted.*



Connecting with Bluetooth



Note: While these instructions apply to many Bluetooth devices, these instructions use the Nokia 3650 for example purposes.

Before you connect to the network, make sure Bluetooth is enabled on your 700 Color Computer before discovering and connecting to remote devices.



Bluetooth

Tap **Start** > **Settings** > the **Connections** tab > the **Bluetooth** icon. Tap **On** to activate Bluetooth, then tap **ok** to exit the applet.

Also make sure Bluetooth is enabled on your mobile phone. For example, with the Nokia 3650, go to its menu, select **Connect** > **Bluetooth**, then set **My phone's visibility** to “Shown to all.”

Do the following to establish a Bluetooth connection between your 700 Color Computer and your mobile phone, then establishing a dial-up networking session with your wireless network. Once connected, you should be able to browse Internet websites and use other online resources from your 700 Color Computer.



To view additional information for any screen in the wizard or while changing settings, tap the **Help** icon.

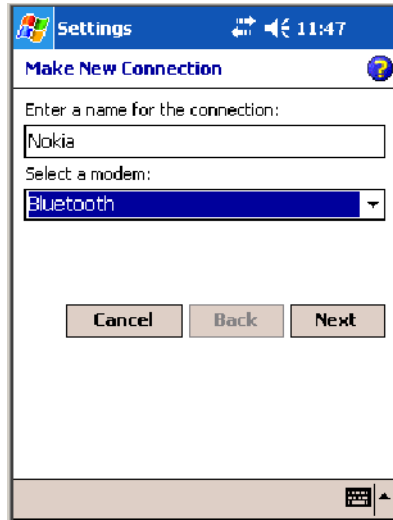


Connections

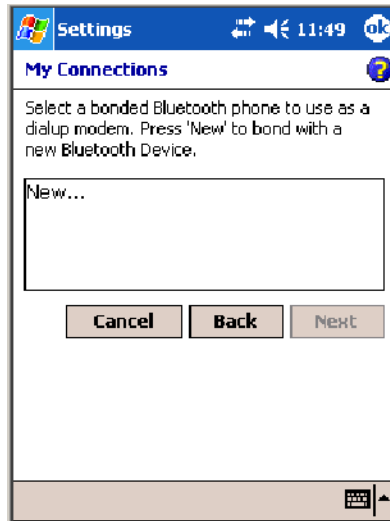
1 Tap **Start** > **Settings** > the **Connections** tab > the **Connections** icon. In **My ISP**, tap **Add a new modem connection**.



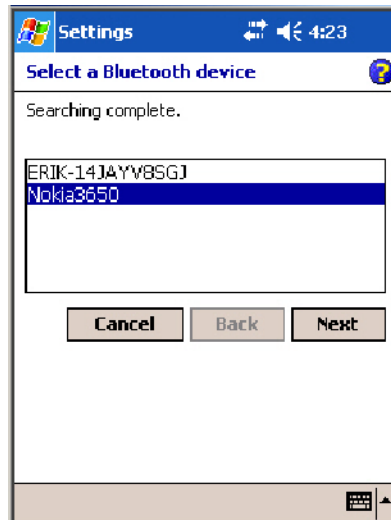
- 2 Enter a name for the connection, such as “Nokia.” In the **Select a modem** list, select “Bluetooth,” then tap **Next** to continue.



- 3 Tap **New...** if the phone is not listed in the known devices. Make sure your Bluetooth device is turned on before you start the search.



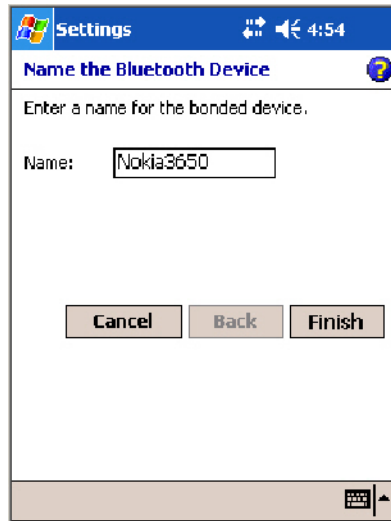
- 4 When the discovery of devices is complete, select your Bluetooth device, then tap **Next** to continue.



- 5 Enter the correct **Device PIN** on both the Bluetooth device and the 700 Color Computer, then tap **Next** to continue.



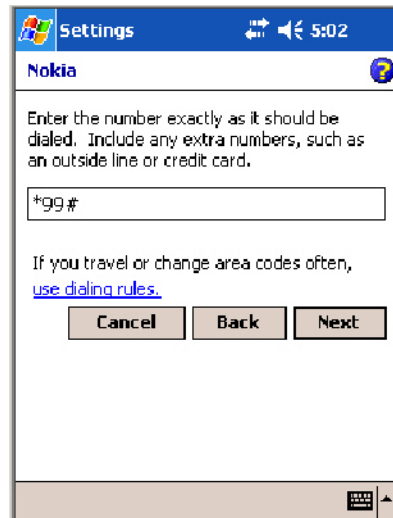
- 6 Enter a name for the device if needed, then tap **Finish**.



- 7 After bonding completes, select your Bluetooth device from the list of bonded devices, then tap **Next**.



- 8 Enter the appropriate number as it should be dialed for your Bluetooth connection, then tap **Next** to continue. Enter the user name, password, and domain required for your Bluetooth device, then tap **Finish**.



Now you can establish a connection to your network via the Internet Explorer application. To disconnect, tap the **Connectivity** icon in the top menu bar, then select **Disconnect**.

Local Area Networks

See the Developer's Support web site for the latest information on network adapters for your unit.

The 700 Color Computer is a versatile mobile computer that easily adds to your wired or wireless data collection network. You can connect your 700 Color Computer to your network using either USB communications or 802.11b or 802.11b/g radio communications.

Configuring USB Communications

You can place the 700 Color 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, single dock, multidock, modem dock, and vehicle dock are sold separately. For information on accessories and how to order them, see "Accessories" on page 21.

To use USB communications with your 700 Color 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 700 Color Computer into the dock.
- 4 Turn on the 700 Color Computer.

Configuring 802.11 Radio Communications



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

The wireless 700 Color Computer has an internal 802.11b or 802.11b/g radio to transfer data using wireless communications. This manual assumes you already have 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 700 Color Computer supports TCP/IP and UDP Plus.

Configuring the Network Parameters for a TCP/IP Network

In a TCP/IP network, the 700 Color Computer communicates with a host computer directly using TCP/IP. The access point acts as a bridge to allow communications between the wired and wireless networks.

- 1 Configure the infrastructure mode, network name (SSID), host IP address, and IP settings (if not using DHCP) on each 700 Color Computer in the network.



- 2 Configure security. Tap **Start** > **Settings** > the **System** tab > the **Wireless Network** icon to access the Profile Wizard for the 802.11b or 802.11b/g radio module. Go to Appendix A, “Configurable Settings,” for information.

Configuring the Network Parameters for a UDP Plus Network

In a UDP Plus network, the 700 Color Computer communicates with a host computer through the Intermec Application Server. The Intermec Application Server translates UDP Plus packets on the wireless network into TCP/IP packets on the wired network and vice versa. The access point acts as a bridge to allow communications between the wired and wireless networks.

- 1 Configure the network name (SSID), controller IP address, and IP settings (if not using DHCP), and controller port (set to 5555) on each 700 Color Computer in the network.



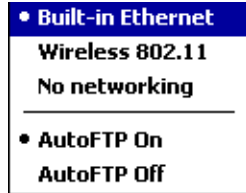
- 2 Configure security. Tap **Start** > **Settings** > the **System** tab > the **Wireless Network** icon to access the Profile Wizard for the 802.11b or 802.11b/g radio module. Go to Appendix A, “Configurable Settings,” for information.

The easiest way to configure the network parameters on the 700 Color Computer is to use the Intermec Settings applet. Go to Appendix A, “Configurable Settings.” for information.

Network Adapters

The 700 Color Computer can have up to three radios installed. The default network adapter or radio is dependent on what radios are installed in your unit. The 700 Color Computer is capable of supporting 802.11i security requirements.

With the NDISTRAY pop-up menu (the Network Driver Interface Specification tray application) from the System Tray, you can specify “802.11,” “Ethernet,” or “No Networking” to load onto your 700 Color Computer when a cold-boot is performed. When a warm boot is performed, the 700 Color Computer loads the network set just prior to the warm boot.



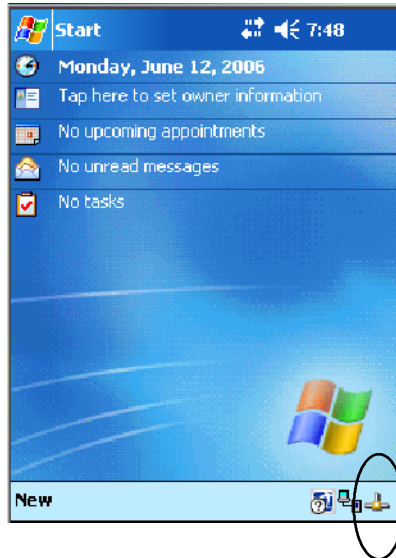
The 730 Computer only has the 802.11b radio and Bluetooth. It does not have an external antenna. Other radios are *not* supported.

Ethernet Communications (740, 741, 750, 751, 760, 761 Computers)

Follow the steps below to start Ethernet communications on the 700 Color Computer. If your system does not contain an 802.11b or 802.11b/g radio, then **Ethernet networking using DHCP** is selected as the default.



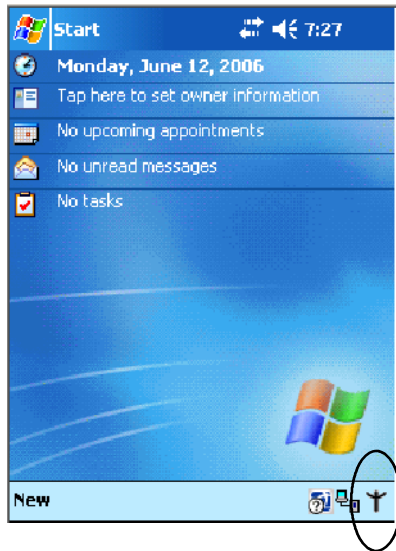
When “Built-in Ethernet” is selected from the NDISTRAY pop-up menu, then the **Ethernet** icon shown to the left appears in the System Tray *as circled in the following illustration*.



Wireless 802.11 Communications



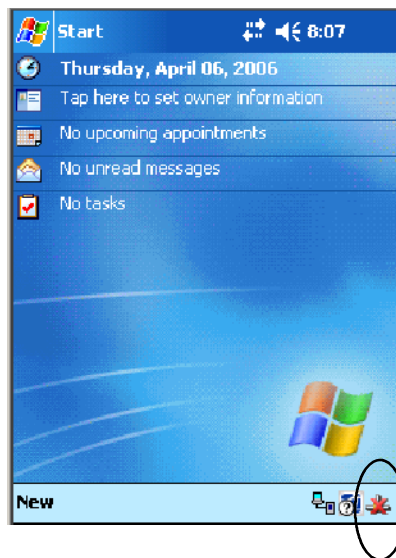
When “Wireless 802.11” is selected via the NDISTRAY pop-up menu, the **Wireless 802.11 antenna** icon shown to the left appears in the system tray *as circled in the following illustration.*



No Networking



When “No networking” is selected from the NDISTRAY pop-up menu, the **disconnected** icon shown to the left appears in the system tray *as circled in the following illustration.*



Network Selection APIs

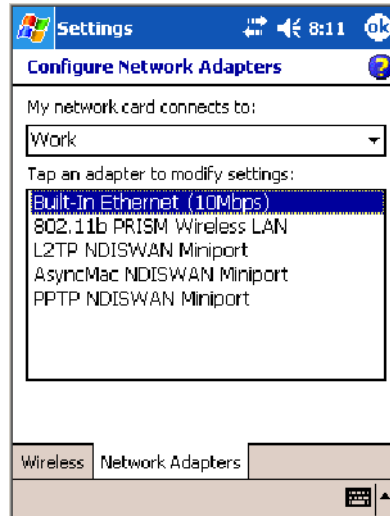
The Network Selection APIs change the network adapter configuration programmatically. Both drivers support the same IOCTL function numbers for loading and unloading the drivers. Go to Chapter 7, “Programming,” to see the APIs.

Network Connections



Connections

From the 700 Color Computer, tap **Start** > **Settings** > the **Connections** tab > the **Connections** icon > the **Advanced** tab > **Network Card** or the **Network Adapters** tab to access the network connections for this unit. Make the changes necessary for your network, then tap **ok** when finished.



Creating a Wireless Network Connection

Use the Wireless Network applet for more security choices and better roaming behavior. See Appendix A for information.

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

A wireless network can be added either when the network is detected, or manually by entering settings information. To determine if authentication information is needed, see your network administrator.

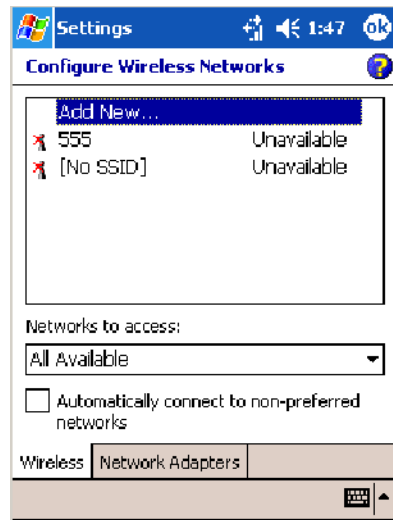
1 Tap **Start** > **Settings** > the **Connections** tab > the **Connections** icon.



Connections



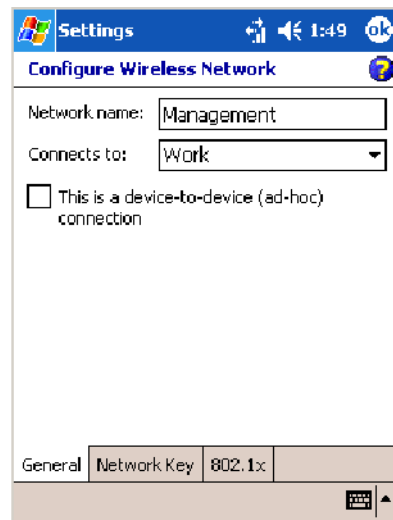
- 2 Tap the **Advanced** tab > **Network Card** > the **Wireless** tab > **Add New** .



- 3 Tap the **General** tab, then enter a network name. If the network was detected, the network name is entered and cannot be changed.

From **Connects to**, select to what your network is to connect. If you select “Work,” you can do a vpn connection or use proxy servers. If you select “The Internet,” you can connect directly to the internet.

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



- 4 Tap the **Network Key** tab, then do the following:

To Disable Authentication

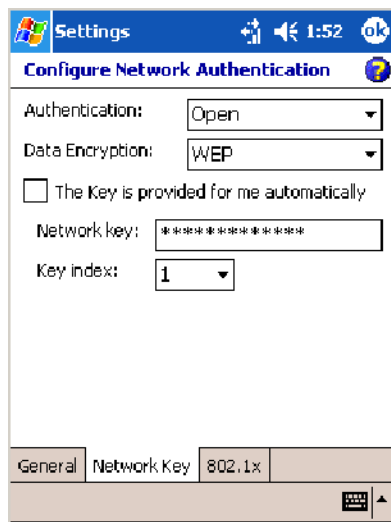
- a Set **Authentication** to either “Open” if WEP keys are not required; or “Shared” when WEP keys are required for association.

- b** Set **Data Encryption** to “Disabled.”



To Enable WEP Encryption

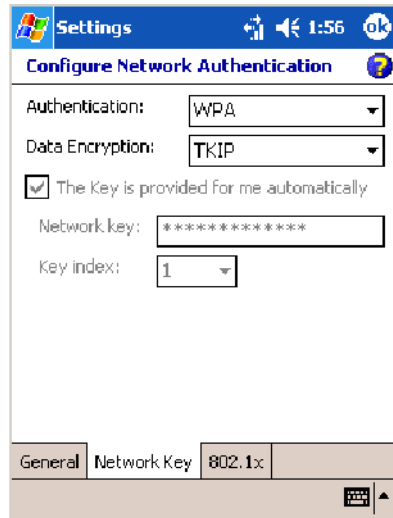
- a** Set **Authentication** to either “Open” if WEP keys are not required; or “Shared” when WEP keys are required for association.
- b** Set **Data Encryption** to “WEP.”
- c** To change the network key, clear **The Key is provided for me automatically** box, then enter the new **Network key** and select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



Note: The following information applies when you have **Enable Microsoft’s Wireless Zero Config** checked via the Wireless Network applet (see Appendix A, “Configurable Settings”).

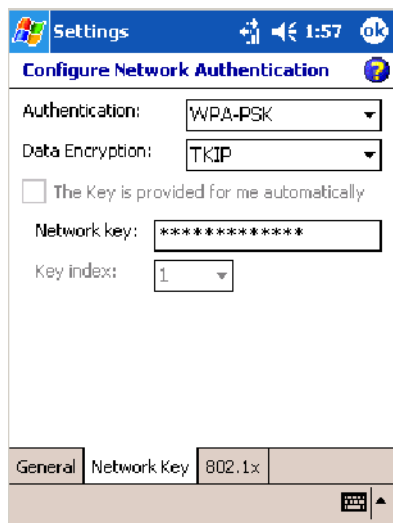
To Enable WPA Authentication (730, 751, 751, 761 Computers)

- a Set **Authentication** to “WPA” (see page 236).
- b Set **Data Encryption** to either “WEP” or “TKIP” (see page 236).

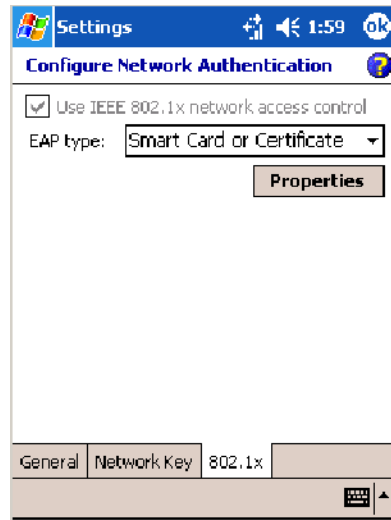


To Enable WPA Authentication Using a Preshared Key (730, 741, 751, 761 Computers)

- a Set **Authentication** to “WPA-PSK” (see page 236).
- b Set **Data Encryption** to either “WEP” or “TKIP” (see page 236).
- c Enter the new **Network key**.

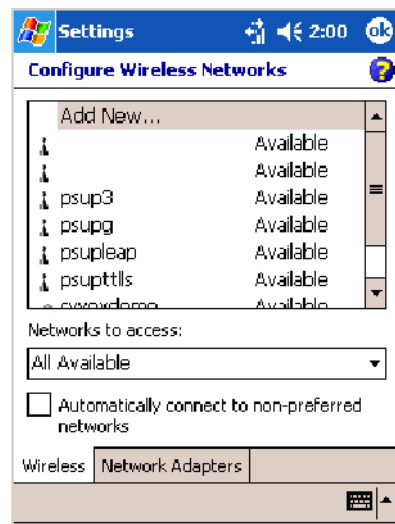


- 5 Tap the **802.1x** tab, select either “PEAP” or “Smart Card or Certificate” for the **EAP type**, then tap **Properties** to adjust its settings.



- 6 Tap **ok** to return to the Configure Wireless Network screen.
- 7 From the **Networks to access** drop-down list, select “All Available,” “Only access points,” or “Only computer-to-computer” depending on the type of networks to which you connect.

To connect only to networks you have already configured, clear **Automatically connect to non-preferred networks**. Tap **ok** to close this screen.



Note: If you select to automatically connect to non-preferred networks, your device detects any new networks and provide you the opportunity to configure them.

AutoIP/DHCP

Automatic Private IP Addressing (AutoIP) is enabled by default in Windows Mobile 2003. To remain compatible with other versions of Pocket PC, this setting needs to be enabled. You can configure the registry settings in the following to set the required AutoIP/DHCP behavior:

- For Ethernet: `HKEY_LOCAL_MACHINE\Comm\LAN9001\TcpIp`
- For 802.11: `HKEY_LOCAL_MACHINE\Comm\NETWLAN1\TcpIp`

Other registry keys that can modify the behavior of AutoIP are as follows. You can find the appropriate settings and behavior of each of these keys in Microsoft Help.

- AutoInterval
- AutoMask
- AutoSubnet
- AutoIP
- AutoSeed

When a TCP/IP client cannot find a DHCP server, it generates an AutoIP address from the 169.254.xxx.xxx block. The client then tries to check for a DHCP server every 15 seconds and if a DHCP server is found, the client drops the AutoIP address and uses the address from the DHCP server.

In the MSDN Windows CE documentation available out on the Microsoft Developer Network web site (www.msdn.com), see “Automatic Client Configuration” for more information on AutoIP.

To disable AutoIP, set the AutoCfg registry entry to “0.” If a DHCP server cannot be found, instead of using AutoIP, the system will display the “Unable to obtain a server assigned IP address” message.



Note: If you try to disable AutoIP using a CAB file to set the registry value for AutoIP, remember to set the EnableDHCP value to “1” to keep DHCP enabled



Note: To extend the number of attempts that a DHCP client makes to get a DHCP address, use the DhcpRetryDialogue and DhcpMaxRetry registry settings.



Note: Change the AutoInterval registry key value to make the client retry more often to obtain a DHCP address.

Wide Area Networks

The 700 Color Computer does not support wide area networks.

Phone Applications

The following phone applications apply to certain configurations. See the chart on page 98 to learn which applies to your 700 Color Computer.

Microsoft Phone Application (761 Computers with CDMA Radios)

With the WAN radio module installed in your 761 Computer, you can send and receive telephone calls. Use the speaker on the back of the computer as your earpiece and use the connector on the bottom of the computer for your mouthpiece.

Data Provisioning (Sprint)



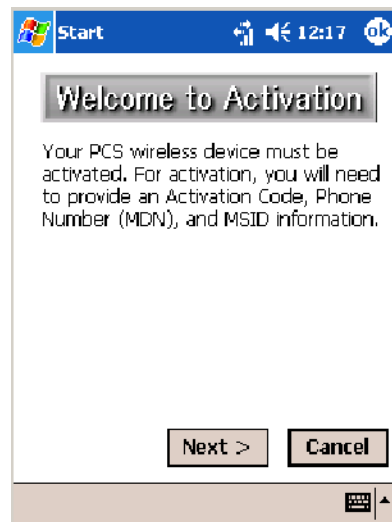
Note: If you wish to do this activation another time, tap **Cancel** to close this wizard, then tap **Yes**.



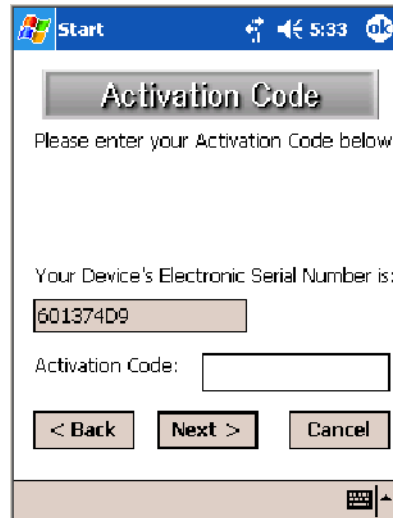
It is necessary to initiate activation before using your Microsoft Phone application. Below are the instructions:



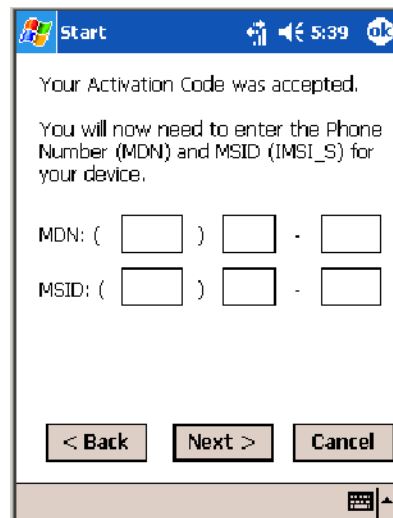
- 1 Tap **Start > Programs > the Phone** desktop icon or tap **Start > Phone** from the Today screen to access the application which processes your phone calls. Tap the **Close** button in the upper right corner of this application to close.
- 2 From the Phone application, tap **Tools > Activation Wizard**.
- 3 Have your activation code, phone number (MDN), and MSID information ready before you tap **Next** to continue. You can get this information from your network provider.



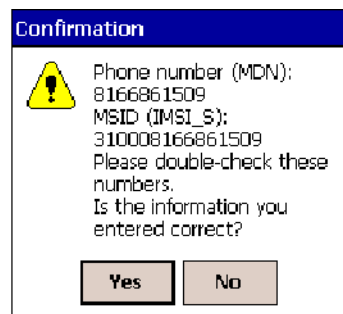
- 4 Enter your 6-digit activation code, then tap **Next** to continue.



- 5 Enter the phone number and MSID from Sprint, tap **Next** to continue.

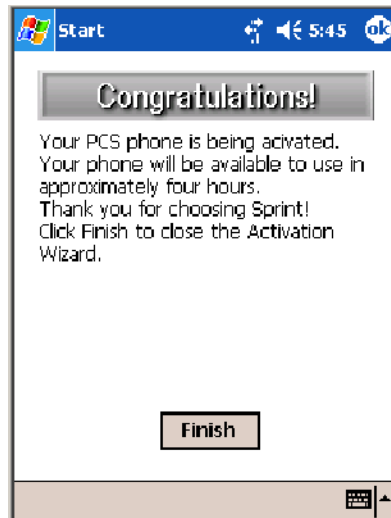


- 6 The application prompts whether the information entered is correct. If so, tap **Yes** to continue, else tap **No** to return to the previous screen.



- 7 Note that voice service is available immediately. Data service take a minimum of four hours of activation before you can use the service. If after four hours, a data connection is not established, see “Data Provisioning” on page 117 to manually launch data provisioning.

The application acknowledges that your phone will be in service in four hours. Tap **Finish** to close the wizard.



Data Provisioning (Verizon)



Note: If you wish to do this activation another time, tap **Cancel** to close this wizard, then tap **Yes**.



It is necessary to initiate activation before using your Microsoft Phone application. Below are the instructions:

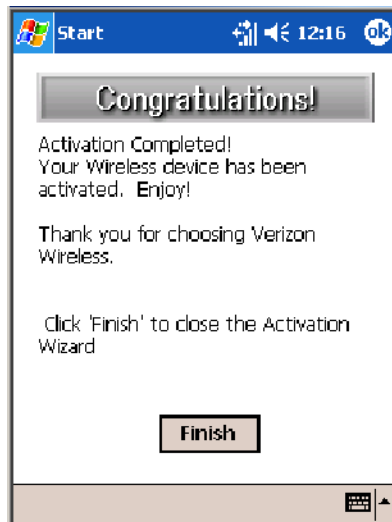


- 1 Tap **Start** > **Programs** > the **Phone** desktop icon or tap **Start** > **Phone** from the Today screen to access the application which processes your phone calls. Tap the **Close** button in the upper right corner of this application to close.
- 2 From the Phone application, tap **Tools** > **Activation Wizard**.

- 3 Tap **Auto** to initiate the activation.



- 4 The application acknowledges that your phone is now in service. Tap **Finish** to close the wizard.



Phone Application



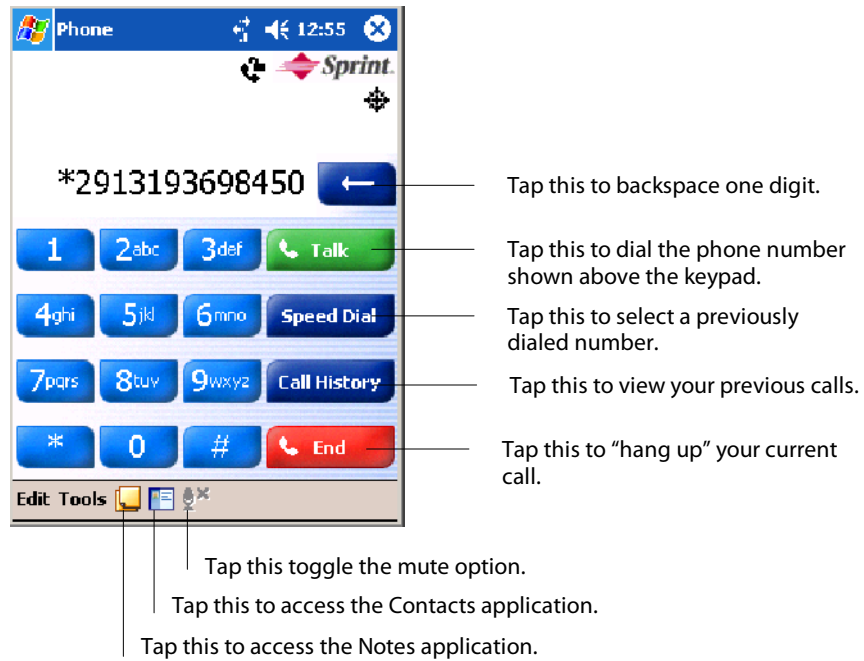
Note: Wait at least four hours after Sprint activation is complete before using this application. Data provisioning should occur automatically. Network information about your 761 Computer needs to propagate through the Sprint Network after the activation is complete.



Phone

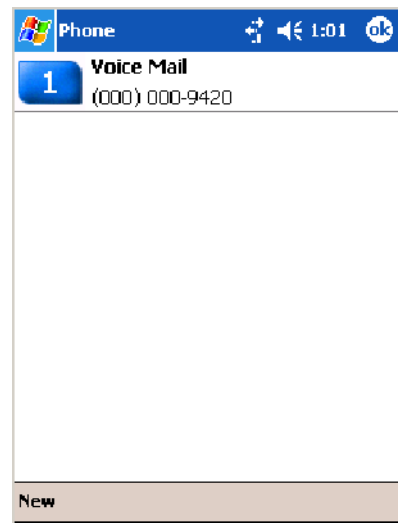
If data provisioning does not occur automatically, tap **Start** > **Settings** > the **Personal** tab > the **Phone** icon. Tap the **Data** tab, then tap **Provision** to initiate a session.

Tap the appropriate keys to enter a telephone number, then tap **Talk** to dial the number. Tap **End** to “hang up” the phone.



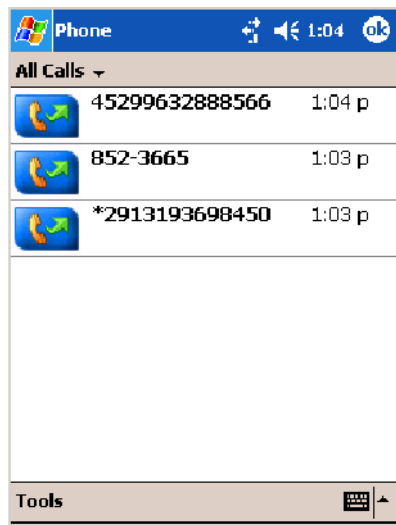
Speed Dial

Tap **Speed Dial** to select a telephone number with which the 761 Computer is to dial automatically. To add to this list, use the **Contacts** application. See Chapter 2, “Windows Mobile 2003,” for more information about the **Contacts** application.



Call History

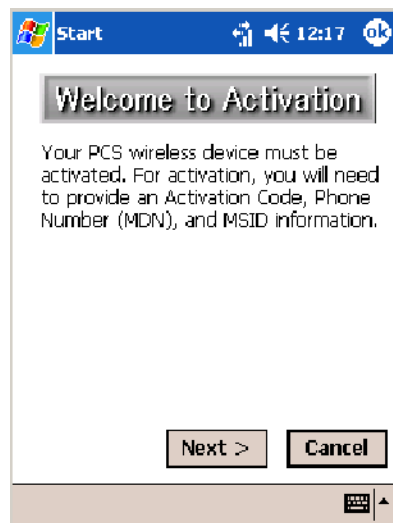
Tap **Call History** to note the telephone numbers that were previously dialed from this 761 Computer.



Tools

Use the Tools menu to send a voice mail, access the Activation Wizard, send an SMS email message, or configure phone settings.

- Tap **Tools > Voice Mail** to call and leave a voice message.
- Tap **Tools > Activation Wizard** to access the wizard with which to activate your 761 Computer. Be sure to have an activation code, a phone number, and MSID information ready. See page 117 for instructions on using this wizard.

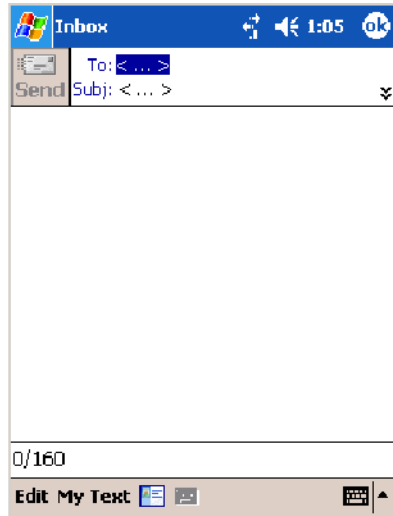


Sprint Networks



Verizon Networks

- Tap **Tools** > **Send SMS** tab to access the Inbox application and send an SMS (Short Messaging Service) message. Be sure to have an SMS number ready to send the message — this is usually the mobile phone number. See Chapter 2, “Windows Mobile 2003,” for Inbox information.

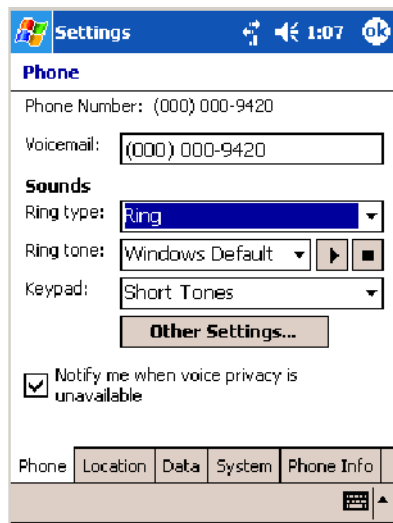


Phone Settings

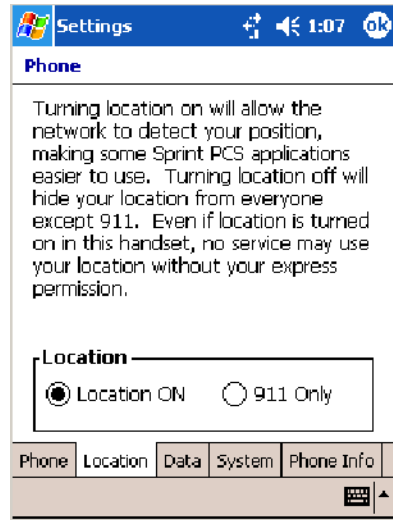


Either select **Tools** > **Options** from the Phone application or select **Start** > **Settings** > the **Personal** tab > the **Phone** icon to access the applet.

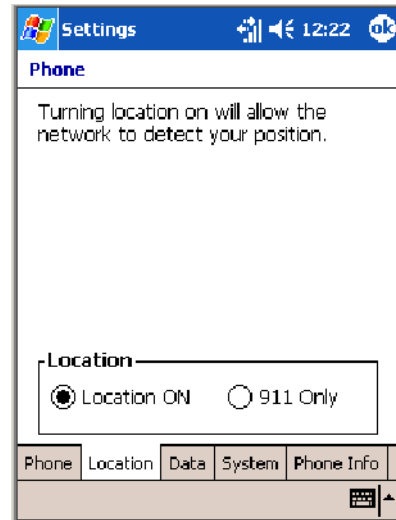
- Tap the **Phone** tab to customize your phone settings such as the ring type and ring tone to use for incoming calls, and the keypad tone to use when entering phone numbers. Tap **Other Settings** to go to the Sounds & Notifications applet. *Select **Start** > **Help** for more information.*



- Tap the **Location** tab to toggle between your location being visible for everyone to detect and hiding your location from everyone except 911.



Sprint Networks



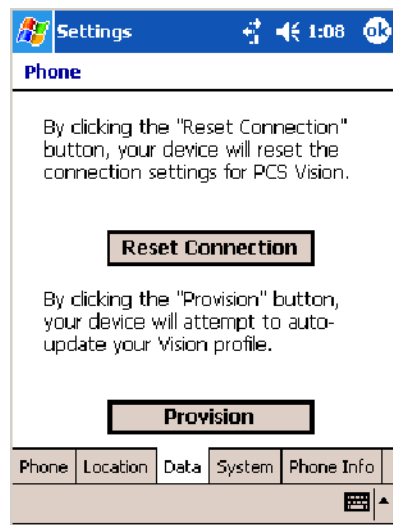
Verizon Networks

- Tap the **Data** tab to either reset your connection settings for PCS Vision or update your PCS Vision profile.

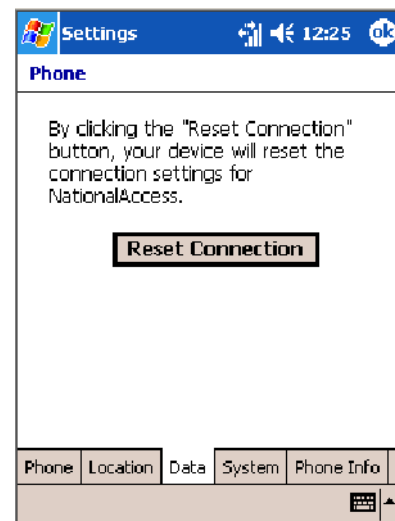
For Sprint Networks, if your 761 Computer is unable to make a data connection and it has been more than four hours since activation, you can launch data provisioning from this screen. Tap **Provision**, then follow the prompts. It takes a few minutes to set up the data connections.



Note: The data provisioning process can be automatically initiated by the Sprint network, by attempting to make a cellular line connection to the WAN before the 761 Computer is data provisioned, or by manually starting the connections through this screen. *Intermec recommends that Sprint Network “push” the data provisioning to your unit.* This should occur shortly after the voice activation is complete.

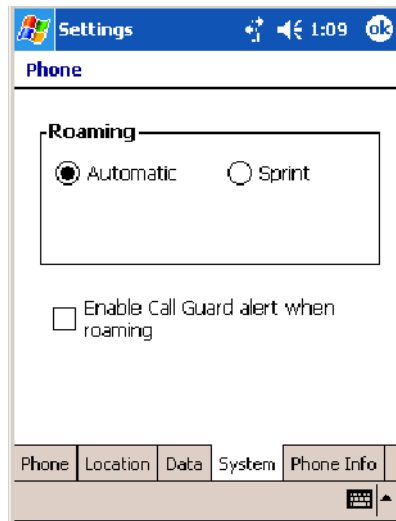


Sprint Networks

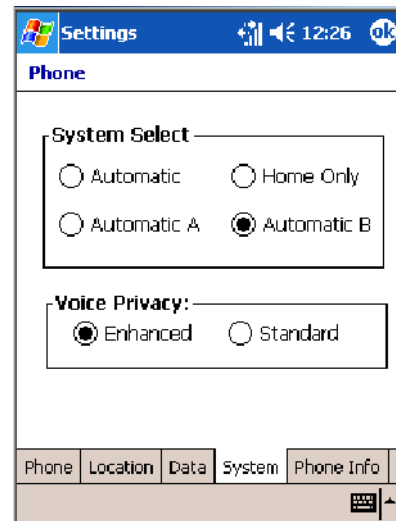


Verizon Networks

- Tap the **System** tab to select the applicable function.



Sprint Networks

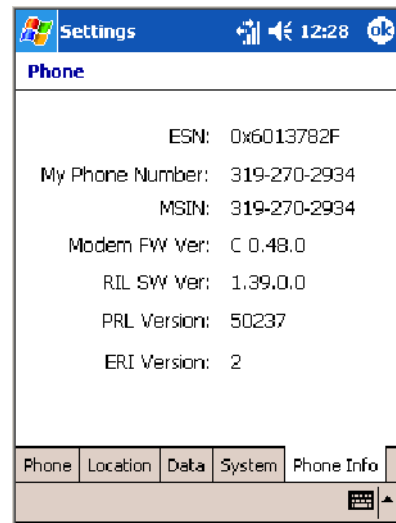


Verizon Networks

- Tap the **Phone Info** tab to view the phone settings.



Sprint Networks



Verizon Networks

Microsoft Phone Application (761 Computers with GSM Radios)

With the WAN radio module installed in your 761 Computer, you can send and receive telephone calls. Use the speaker on the back of the computer as your earpiece and use the connector on the bottom of the computer for your mouthpiece.



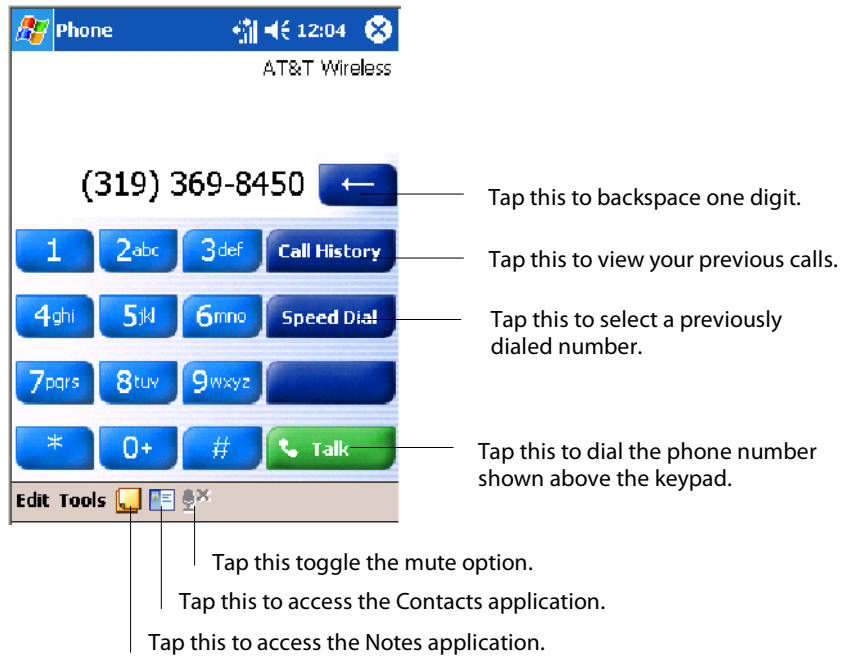
Tap **Start > Settings > the Phone** desktop icon from the **Personal** tab or tap **Start > Phone** from the Today screen to access the application which processes your phone calls. Tap the **Close** button in the upper right corner of this application to close.

Activation

The GSM phone is activated via a SIM card that you can purchase from your network provider.

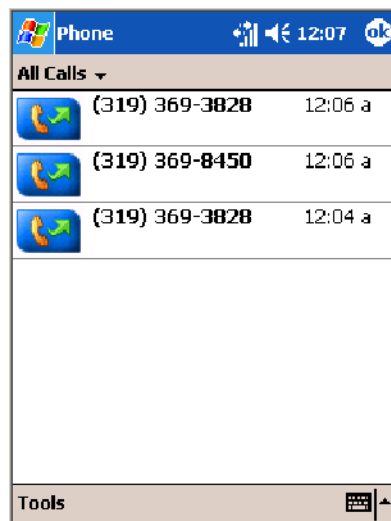
Phone Application

Tap the appropriate keys to enter a telephone number, then tap **Talk** to dial the number.



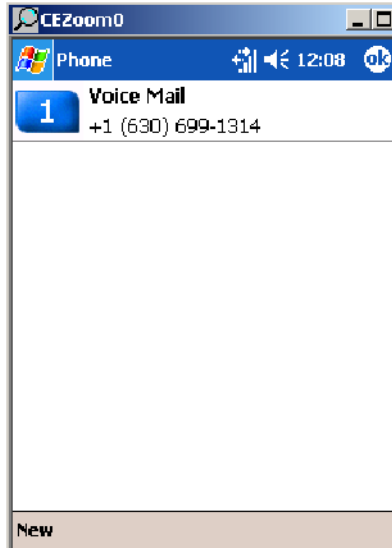
Call History

Tap **Call History** to note the telephone numbers that were previously dialed from this 761 Computer.



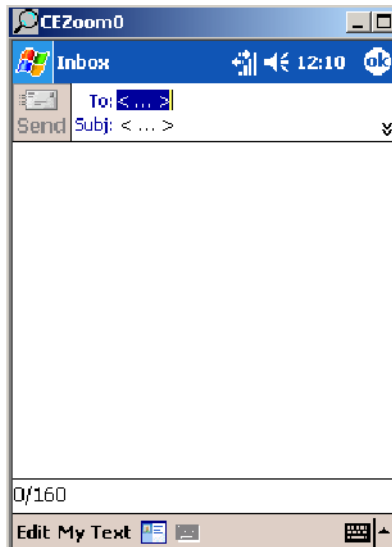
Speed Dial

Tap **Speed Dial** to select a telephone number with which the 761 Computer is to dial automatically. To add to this list, use the Contacts application. See Chapter 2, “Windows Mobile 2003,” for more information about the Contacts application.



Tools

Tap **Tools > Send SMS** tab to access the Inbox application and send an SMS (Short Messaging Service) message. Be sure to have an SMS number ready to send the message — this is usually the mobile phone number. See Chapter 2, “Windows Mobile 2003,” for information about Inbox.





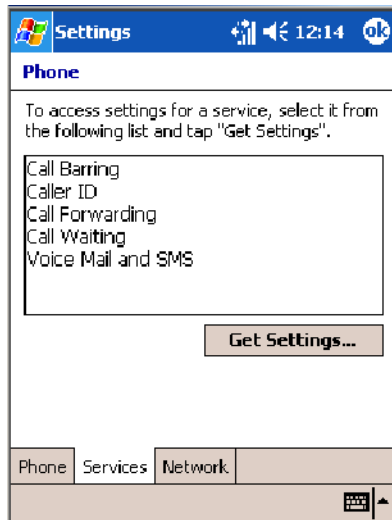
Phone Settings

Either select **Tools > Options** from the Phone application or select **Start > Settings > the Personal tab > the Phone icon** to access the applet.

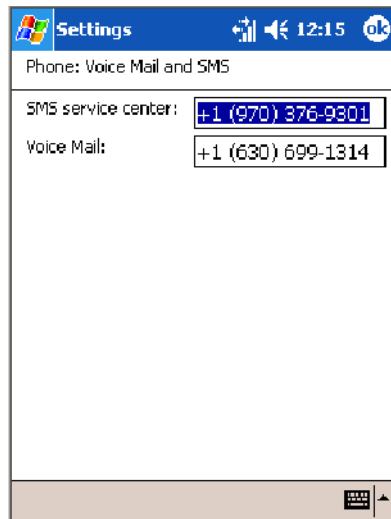
- Tap the **Phone** tab to customize your phone settings such as the ring type and ring tone to use for incoming calls, and the keypad tone to use when entering phone numbers. Tap **Other Settings** to go to the Sounds & Notifications applet.



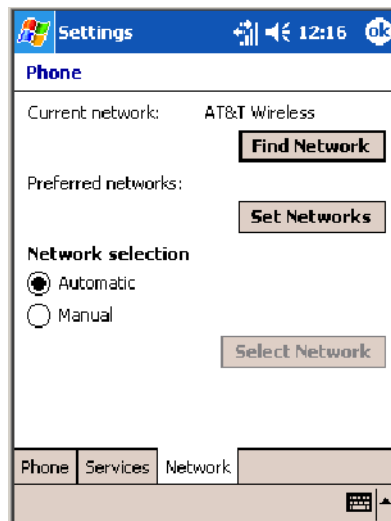
- Tap the **Services** tab to access settings for any of the provided services.



Tap any of the settings, then tap **Get Settings**. Make your changes, then tap **ok** to return to the Settings screen. Below is a sample Settings screen.



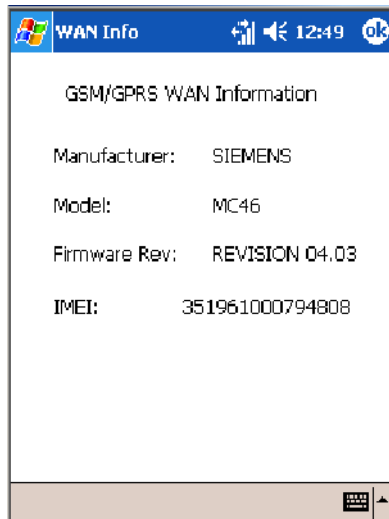
- Tap the **Network** tab to find, set, or select the type of network on which this phone is to communicate.



Phone Information



To learn the latest phone settings, including the manufacturer, model, firmware rev, and IMEI, select **Start > Settings > the System tab**, then tap the **WAN Info** desktop icon. Tap **ok** when finished.



SB555 Watcher (760 Computers with CDMA Radios)

The SB555 Watcher program is used on the 760 Computer with CDMA radios only. Use this primarily to activate the WAN radio. Once the WAN radio is activated, you can remove the SB555 Watcher program from the 760 Computer.

This tells you how to set up your CDMA radio in your 760 Computer. Below are terms to familiarize you with CDMA radio technology:



Note: Set up and provision information is also available in the *700 Color CDMA Radio Setup Quick Start Guide* P/N: 962-054-063.

Activation	The process of programming the radio with the lock code (MSL) and phone number (MIN) to allow it to communicate on the provider's network. Once activation is complete you can make voice calls (<i>if enabled by the carrier</i>) with the mobile computer.
Data Provisioning	The process of activating the ability for the CDMA radio to establish data connections, such as connecting to the Internet. The CDMA radio makes data connection only after it is activated and data provisioned.
NID (Network ID)	A numeric value programmed into the CDMA radio at the factory or during the activation process. Your carrier may or may not use this value, but your carrier may provide this for activation purposes.
SID (System ID)	A numeric value programmed into the CDMA radio at the factory or during the activation process. This number is used by your carrier to determine if the radio belongs to its CDMA network. Your carrier may provide this number for activation purposes.



Note: Descriptions in this chapter are for Sprint PCS, Bell Mobility, Telus, and Verizon Networks versions of the SB555 Watcher program. Other carriers may be added pending regulatory and carrier approval.

Copying CDMA Radio Module CAB Files from Intermec Web Site

Copy CAB files from the Intermec web site at www.intermec.com onto your desktop. Intermec recommends one of two methods with which to load these CAB files onto your 760 Computer:

- via the Microsoft ActiveSync application
- via a CompactFlash or Secure Digital storage card. See Chapter 3, “Installing Applications,” for information about these methods.

Via Microsoft ActiveSync

You can transfer files from your desktop to your 760 Computer via Microsoft ActiveSync. See Chapter 2, “Windows Mobile 2003” for more information about ActiveSync.

- 1 Obtain software from the Intermec web site as described earlier. Download the software to any location on your 760 Computer, such as the **Temp** folder via the **My Device** root location.
- 2 Tap the carrier CAB file to install the application.
- 3 Go to “Finishing the Installation” on page 132.

Via a CompactFlash or Secure Digital Storage Card

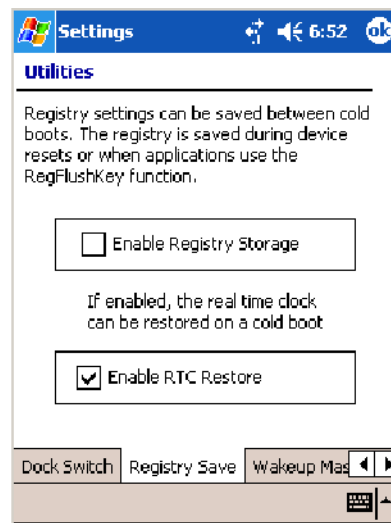


Note: These instructions are based on default locations. You can change the location to which to copy your CAB files.



Utilities

- 1 Make sure the Registry Restore feature on your 760 Computer is disabled. Select **Start** > **Settings** > the **System** tab. Tap the **Utilities** desktop icon, the **Registry Save** tab, then clear the **Enable Registry Save** box.



- 2 Copy the CAB files for your carrier to your CompactFlash or Secure Digital storage card after downloading it from the web site.
- 3 Cold-boot your 760 Computer. Remove the AB10 battery pack and press the reset button in the bottom of the battery compartment.
- 4 Go through the normal getting started steps detailed in your *700 Color CDMA Radio Setup Quick Start Guide*.

- 5 Install the CompactFlash or Secure Digital memory card into the card slot in your 760 Computer. *Note that if you do not want the CAB files erased after installation, set the CAB file attributes to “read-only” after copying them to the storage card.*



- 6 Tap **Start > Programs >** the **File Explorer** icon on the 760 Computer.
- 7 Tap the pull-down menu for **My Documents** and tap the **My Device** root location.
- 8 *If you are using a CompactFlash storage card,* tap **Storage Card**.

If you are using an Secure Digital storage card, tap **SDMMC Disk**.

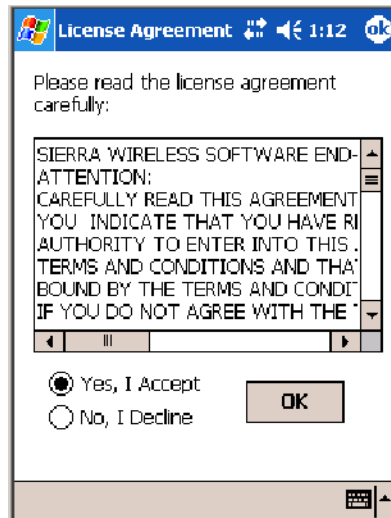
- 9 Scroll down, tap the **Sprint Watcher CAB** file to install the application.

Finishing the Installation

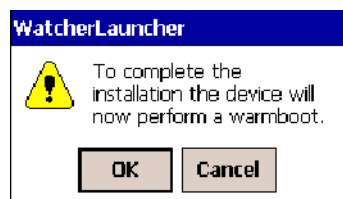
Do the following to run the SB555 Watcher application. Be sure to do step 1 as it is important to perform a warm-boot on your 760 Computer. Upon restart, the Watcher application sets up on the 760 Computer for activation.



- 1 Tap **Start > Programs >** the **Watcher** icon.
- 2 Tap **Yes, I accept** to accept the license agreement, tap **OK** to continue. *Note this license agreement does not appear again after this installation.*



- 3 Tap **OK** for the 760 Computer to perform a warm-boot.



Activation



Note: Set the date and time before doing this activation.

SB555 Watcher is for activation and data provisioning. Once you enable voice capability, data capability, or both depending on the carrier, remove this program from the system by cold-booting your computer.

Do not use the SB555 Watcher to make data/voice calls on a daily basis:

- *The SB555 Watcher application is a third-party application unaware of certain power management methods used in your 760 Computer. Therefore, the application consumes more power than necessary.*
- *The application size consumes memory better used for application data.*

The process of setting up the account with your carrier and enabling the CDMA WAN radio in your 760 Computer is called *activation*. To properly function, program the CDMA device with the necessary information and set up the network carrier account. If either piece has errors, the device does not function on the CDMA network.

The CDMA radio is pre-programmed for a specific carrier, such as Sprint, Telus, Bell Mobility, Verizon, etc.). Therefore, information about your radio should already be in your carrier's database.

You need to notify the carrier and set up mobile accounts for each unit you are activating. The Electronic Serial Number (ESN hex 63xxxxxx) that you need to supply to your carrier is located in two places:

- On the outside of the 760 Computer shipping box.
- On the inside of the 760 Computer battery compartment. The label includes the term “ESN” and a bar code along with the serial number.

The ESN comes in both decimal and hexadecimal formats. Most carriers accept either format, but with a preference for the decimal format. You only need to provide one number to your carrier.

- The decimal format consists of 11 digits, beginning with “099.”
- The hexadecimal format is an 8-digit number, beginning with “63.”

Accounts for Verizon and Sprint carriers can be set up for data only. Canadian carriers (Telus and Bell Mobility) can be set for data only, voice only, or both voice and data. This is determined by your application and the services your carrier offers.

After the all ESNs are provided to the carrier and the carrier has established the accounts, you will be provided with the lock codes and telephone numbers needed to complete the activation process. You use the SB555 Watcher program to accomplish this task. *Note this for future use.*



Note: Ensure that you receive a spreadsheet with your order that calls out all ESNs in both decimal and hexadecimal formats.



Note: Keep the activation information for your devices in a safe, accessible place should you have any future issues.



Note: Not all of the elements listed are required by all service providers.

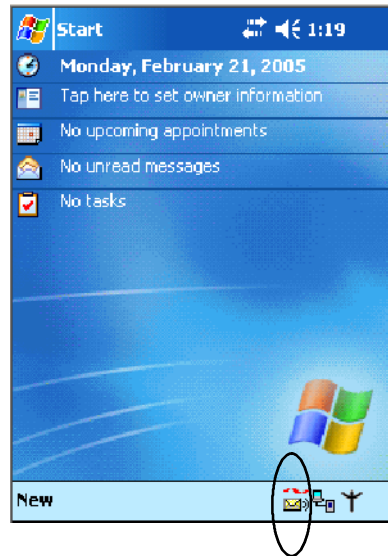
ESN of the modem
Lock/Activation Code (may be termed one of the following):
<ul style="list-style-type: none"> • MSL — Master Subsidy Lock • OTSL — OneTime Subsidy Lock • SPC — Service Provisioning Code • OTKSL — One Time Key Subsidy Lock
SID (System ID)
NID (Network ID)
User Name
Password
MIN
MSD
MDN



Note: The activation process for your Watcher version may vary from the following steps. Thus, you may not have to do all of them.

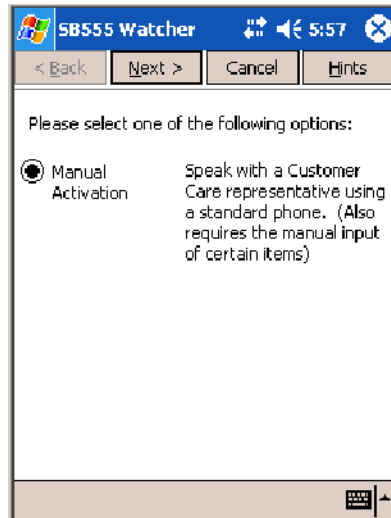


- 1 Tap **Start** > **Programs** > the **Watcher** icon or tap the Watcher icon from the NDISTRAY via the Today screen (*circled in the following illustration*) to launch the SB555 Watcher program.

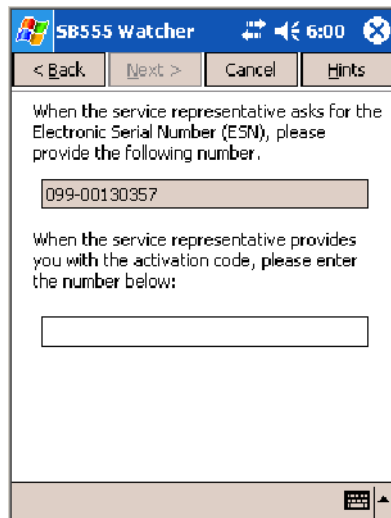


- 2 The Activation Wizard should start automatically. If not, then tap **Admin** > **Activation Wizard** from the bottom of the screen.
- 3 Tap **Next** to move from one screen prompt to the next.

- 4 When you reach the Activation screen, select **Manual Activation**.



- 5 At the appropriate screen, enter the **Activation Code** (OTSL, MSL, OTKSL, or SPC) provided by your carrier and tap **Next**.



- 6 Enter the phone number provided when your 760 Computer was activated and tap **Next**.

Verizon Automated Activation Process



Note: This process takes approximately 60 seconds.

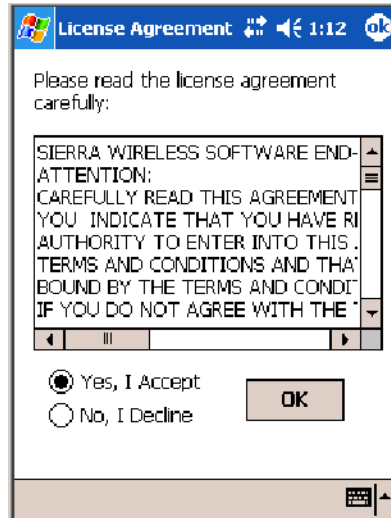
Do the following to activate Verizon on your 760 Computer:



Watcher

- 1 Tap **Start > Programs > the Watcher icon**.

- 2 Tap **Yes, I accept** to accept the license agreement, tap **OK** to continue. *Note this license agreement does not appear again after this installation.*



- 3 Select **OK** to initiate the warm-boot, then after the warm-boot, start the Watcher program again, select **Automated Activation**, then click **Next**.



Note: You must be in the Verizon coverage area to activate your 760 Computer and only in the location of intended use.

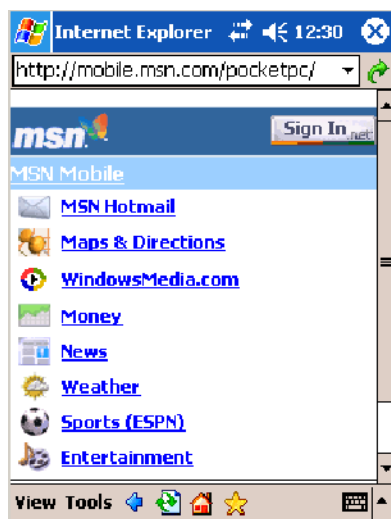
- 4 Click **Next**, click **Next** again to dial the number displayed on the screen.
- 5 The activation process starts automatically.
- 6 You will see a series of unlock codes on your screen.



- 7 Click the **Connect** button to connect to the carrier's network.



- 8 Select **Start > Internet Explorer**, then choose a web site. Your unit is now successfully activated.



9 Perform a cold-boot on your 760 Computer to uninstall the Watcher application, which is intended for activation purposes only. Use the following for establishing and maintaining connection to the WAN radio:

- Custom application using Intermec WWAN Toolkit API
- Custom customer application using Connection Manager Interface



Note: When connecting to the WAN radio via Pocket PC Connection Manager, use the 10-digit phone number@vzw3g.com for the user name (such as 1234567890@vzw3g.com) and “vzw” for the password.

Sprint Automated Activation Process



Note: Sprint PCS uses a data provisioning method termed IOTA (Internet Over The Air) to complete its activation and data enablement. These steps detail how to properly activate and data provision your 760 Computer.

- 1 Give Sprint your ESN (either on the box or on a label inside the battery compartment), rate plan, and account information. The label would include the term “ESN” and a bar code along with the serial number.
- 2 Sprint provides you with the following for each ESN:
 - MDN, such as 214-555-5555
 - MSID, such as 214-555-5555
 - MSL/OTKSL (Activation Code), such as 945614
 - NAI (Network Access Identifier), such as the following:
CustomerName103@sprintpcs.com

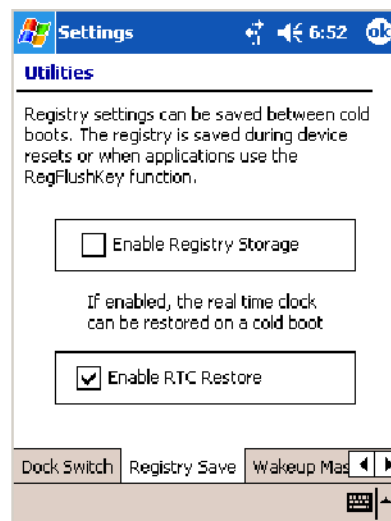
Use a Secure Digital storage card with *only* the Sprint_Watcher_PPC_2002-03xxx.CAB file in the “\SDMMC\Cabfiles” folder. Other CAB files in the “\SDMMC\Cabfiles” folder may cause problems with testing, remove or uninstall these before proceeding. At least 80% (4 of 5 bars) CDMA signal strength for a successful over-the-air activation.

Download and Activate Sprint Watcher

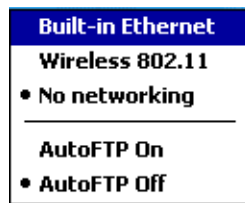


Utilities

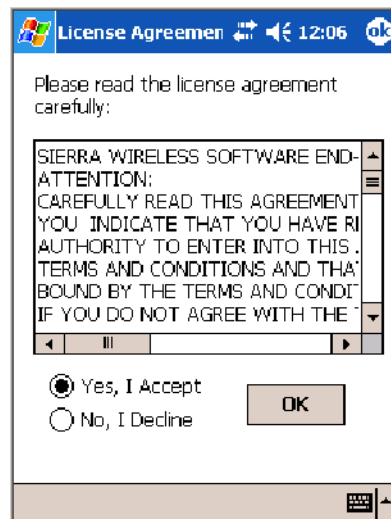
- 1 Make sure the Registry Restore feature on your 760 Computer is disabled. Select **Start** > **Settings** > the **System** tab. Tap the **Utilities** desktop icon, then the **Registry Save** tab. Clear **Enable Registry Save**.



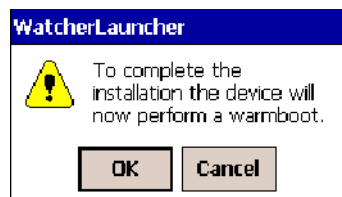
- 2 Perform a cold-boot on your 760 Computer, then go through the normal Pocket PC set-up (i.e. Align Screen etc.).
- 3 **Important!** Set the Date and Time.
- 4 Tap the Sprint_Watcher_PPC_2002-03xxx.CAB file to perform the installation.
- 5 Perform a warm-boot on your 760 Computer to load the CAB file.
- 6 From the Today screen, tap the LAN Network icon in the System Tray.
- 7 In the NDISTRAY pop-up menu (the Network Driver Interface Specification tray application), select **No Networking** and **Auto FTP Off**. Tap anywhere on the screen to close the menu.



- 8 Tap **Start > Programs > the Watcher icon** to launch the SB555 Watcher program.
- 9 Tap **Yes, I accept** to accept the license agreement, then tap **OK** to continue. *This license agreement does not appear again after this installation.*



Tap **OK** for the 760 Computer to perform a warm-boot and complete the installation.



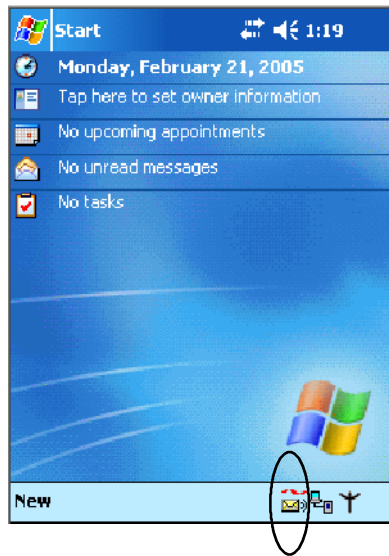
Using Sprint Watcher

Before you start using the Sprint Watcher application, make sure you match the correct ESN with each 760 Computer and that you have at least 80% CDMA signal strength.

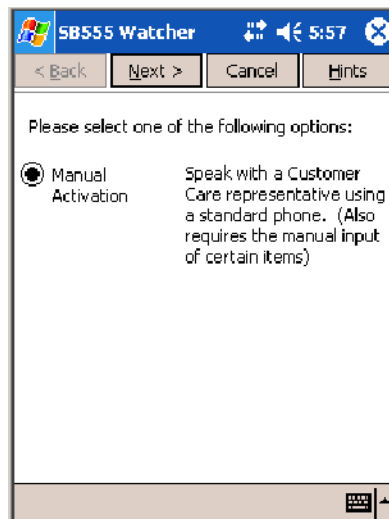
The ESN that you give to your provider is either on the box or on a label inside the battery compartment. The label would include the “ESN” term and a bar code along with the serial number.



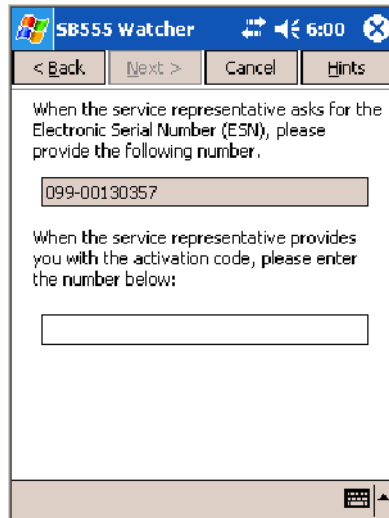
- 1 Tap **Start** > **Programs** > the **Watcher** icon or tap the Watcher icon from the NDISTRAY via the Today screen (*circled in the following illustration*) to launch the SB555 Watcher program.



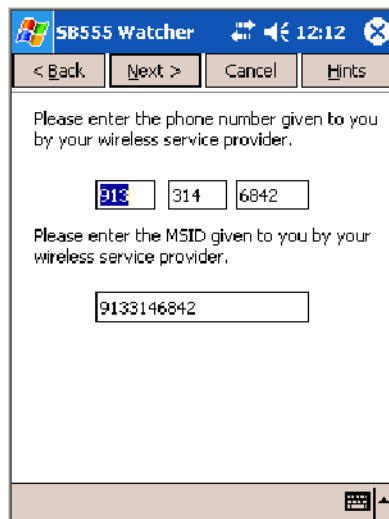
- 2 If your 760 Computer was not previously activated, Watcher automatically starts the Activation Wizard. Otherwise, select **Manual Activation** to continue.



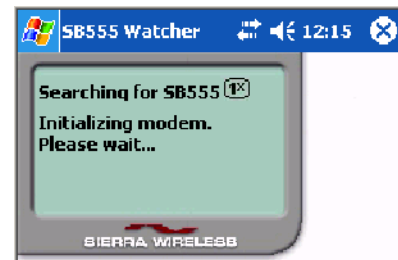
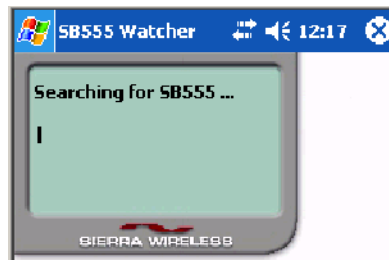
- 3 Enter the MSL or lock code received from Sprint.



- 4 Enter the phone number (MIN) and MSID received from Sprint. These numbers may be the same.



- 5 After entering the phone number and MSID, the modem then resets and the Watcher application displays the screens shown here:



Note: If the “searching for SB555” screen does not proceed to the next screen after 30-40 seconds, perform a warm-boot on your 760 Computer, then restart the Watcher program.

Data Provisioning

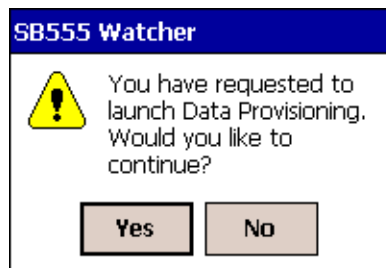
At this point, the activation on the Sprint network is complete. It is recommended by Sprint to wait before you launch data provisioning to allow time for the activation to propagate through your Sprint network.

Before you manually launch data provisioning, wait at least 30 minutes. In some cases, you may have to wait up to two hours.

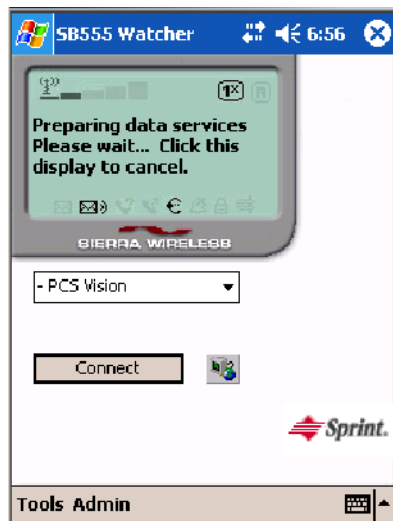
- 1 If **Data Provisioning** does not start automatically, select **Admin > Data Provisioning** from the bottom menu bar.



- 2 Tap **Yes** to proceed with data provisioning.



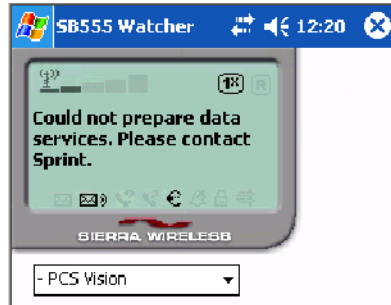
- 3 Activation over the air typically takes 1–20 minutes.



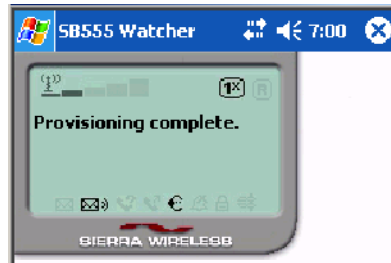
If data provisioning fails, do the following:

- If Data Provisioning fails and the message “could not prepare data services, please contact Sprint” displays, retry the Data Provisioning step by tapping the “Admin” menu icon at the bottom of the Watcher screen. Select “Data Provisioning...” and answer “yes” to the request.

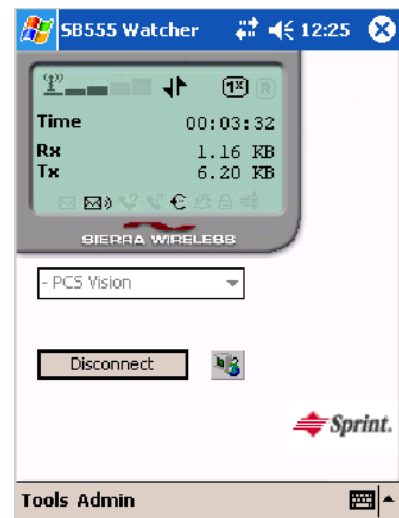
- If after several attempts to complete the Data Provisioning over the air, it may be necessary to manually enter the data activation method.
- Go to Intermec Knowledge Central www.intermec.com, then select **Service & Support > Knowledge Central** to learn about manual activation. The article (number 5749) is titled *How to Manually Activate a Sprint CDMA WAN Radio in the 760 Device*.



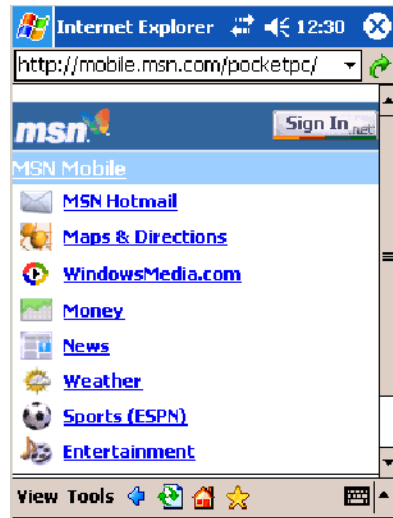
- 4 The following screen appears once data provisioning is complete:



- 5 Test the data connection by tapping on the “connect” button to make a data connection to the network. Watcher progresses through the following two screens. Once you see the second screen you know that your mobile computer has successfully connected to the 1XRTT network.



- Internet Explorer** 6 Select **Start > Internet Explorer**, then tap **Pocket Internet Explorer** to choose a web site. Your unit is now successfully activated.



Perform a cold-boot on your 760 Computer to uninstall the Watcher application. Watcher is intended for activation purposes only. Use the following to establish and maintain connection to the WAN radio:

- Custom application using Intermec WWAN Toolkit API
- Custom customer application using Connection Manager Interface

Telus and Bell Mobility Activation

Activation of Bell Mobility and Telus are similar to the first portion of the Sprint activation process. Follow the instructions for manual activation using the Bell Mobility Watcher.CAB or Telus Watcher.CAB file to install the applicable application. Enter the activation lock codes and phone numbers as requested.

	Bell Mobility	Telus
Username	10 digit phone number@1xbell.ca	10-digit phone number@1x.telusmobility.com
Password	Original Voice Mail system password (usually a 4 digit #) available from activating organizations.	The 11-digit ESN printed inside the 760 Computer battery compartment, begins with 099.
SID	16420	16422

AT Command Interface (760 Computers)

This interface specification is based on the following recommendation:

- **ETSI GSM 07.05:**
European Digital Cellular Telecommunication System (phase 2)
Use of DTE-DCE interface for Short message and cell broadcast service.
- **ETSI GSM 07.07:**
European Digital Cellular Telecommunication System (phase 2)
AT command set for GSM Mobile Equipment.
- **ITU-T Recommendation V.25 ter**
Serial asynchronous automatic dialing and control.



Note: You need the Adobe Acrobat Reader application to view a PDF document. Go to www.adobe.com/prodindex/acrobat/readstep.html to install or download the latest Adobe Acrobat Reader.

Command Set for Sierra Wireless SB555

Use the AT command interface from Sierra Wireless to program the CDMA/1xRTT SB555 radio module. Documentation for this interface is available via the following URL. Click the “General AT command reference” link for a PDF document, which is 680 KB in size.

Command Set for Siemens MC45, MC46, or MC75

Use the MC45, MC46, or MC75 AT command interface from Siemens AG to program the GPRS/GSM MC45, MC46, or MC75 radio module. The following documentation is available either from Intermec or from Siemens AG. Contact either your Intermec representative or the Siemens AG support personnel for information.

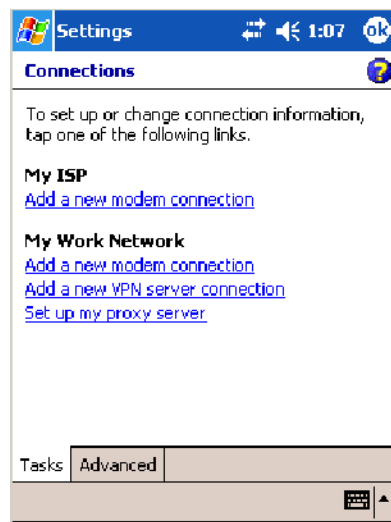
- *MC45 Siemens Cellular Engine AT Command Set*
- *MC46 Siemens Cellular Engine AT Command Set*
- *MC75 Siemens Cellular Engine AT Command Set*

Testing the AT Commands (760, 761, 761B)

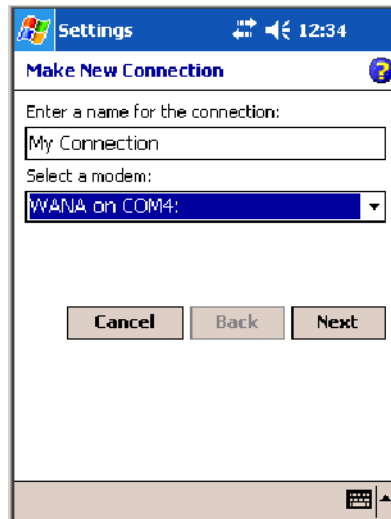
These commands can be sent to either WAN radio by setting up a dial-up networking connection. Do the following to initiate this connection and test these commands to your radio. *These screens are from a 760 Computer.*



- 1 From the 760, 761, or 761B Computer, select **Start > Settings > the Connections tab > Connections**. Under **My ISP**, tap **Add a new modem connection**.

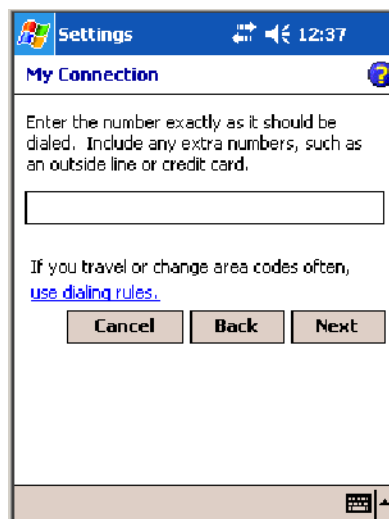


- 2 Enter a name for the connection, select the appropriate modem (as listed here) from the **Select a modem** drop-down list, then tap **Next** to continue.
- 760 Computers “WANA on COM4”
 - 761 Computers “WANB on COM5”
 - 761B Computers “Virtual WANB”

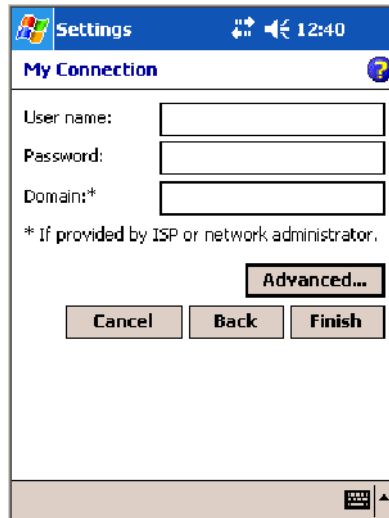


- 3 Enter a phone number as it should be dialed, then tap **Next** to continue. Select **Start > Help** for more information or tap **use dialing rules** to make modifications. *Note that this screen may vary based on dialing rules.*

Note that when you make a manual dial-up connection, a number is not required. You may type in any number with at least one digit.

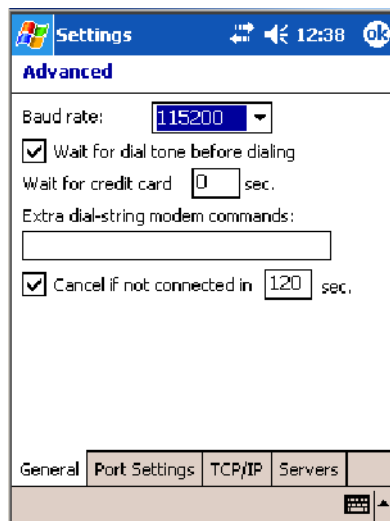


4 Tap **Advanced** to adjust the baud rate.

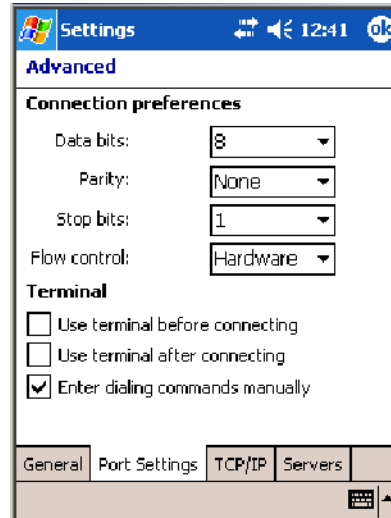


5 Select the appropriate baud rate (as listed here) from the **Baud rate** drop-down list.

- 760 Computers 115200
- 761 Computers 57600
- 761B Computers 110



- 6 Tap the **Port Settings** tab, check **Enter dialing commands manually**, tap **ok**, then tap **Finish** to return to the Connections screen.



- 7 Tap **Manage existing connections** from the Connections page, press and hold the new connection for a pop-up menu, then tap **Connect** to initiate the connection.



- 8 Wait about ten seconds for the Network Log On screen, then tap **OK**.
You do not need to enter information within the Network Log On screen.

Use either the onscreen keyboard, or press the keys to type any of the AT commands provided. Press or tap **Enter** to send each command. The results of each command sent will print onscreen. *Note that each “AT” command must start with the “at” characters.*

- To see what you typed onscreen, type “atE1” to initiate the AT Echo command, then press **Enter**.

Remote Access (Modems)

You can set up connections to the Internet and corporate network at work to do such activities as browsing the Internet or intranet, sending and receiving e-mail and instant messages, and synchronizing information using ActiveSync. Connections can be made using a wireless network.

Your 700 Series Computer has two groups of connection settings: My ISP and My Work Network. Use My ISP settings to connect to the Internet. Use My Work Network settings to connect to any private network.

- **My ISP:** Once connected, you can send and receive e-mail messages by using Inbox and view Web or WAP pages by using Pocket Internet Explorer. The communication software for creating an ISP connection is already installed on your 700 Series Computer. Your service provider provides the software needed to install other services, such as paging and fax services. If this is the method you want to use, see “Connecting to an Internet Service Provider” below.
- **My Work Network:** Connect to the network at your company or organization where you work. Once connected, you can send and receive e-mail messages by using Inbox, view Web or WAP pages by using Pocket Internet Explorer, and synchronize with your desktop. If this is the method you want to use, see “Connecting to Work” on page 151.

Connecting to an Internet Service Provider (ISP)

You can use your ISP connection to do e-mail and Web or WAP pages. Get your dial-up access telephone number, user name, and password from your ISP. *Note some require additional information, such as MSN/username.*



To see more information regarding any screen in the wizard or while changing settings, tap the **Help** icon.

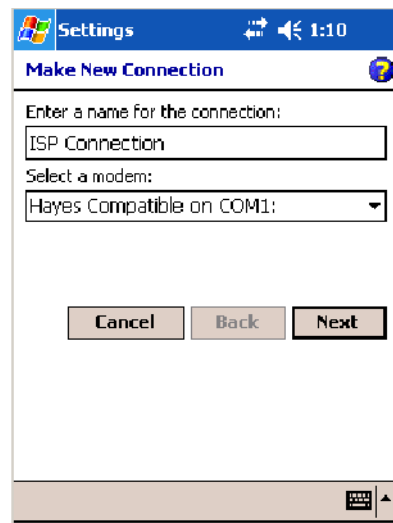


Connections

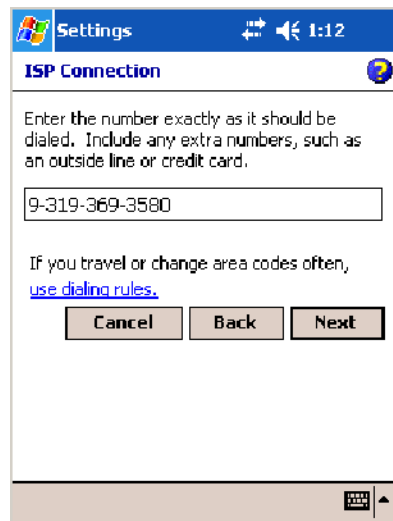
- 1 Tap **Start > Settings > the Connections tab > the Connections icon**. In My ISP, tap **Add a new modem connection**.



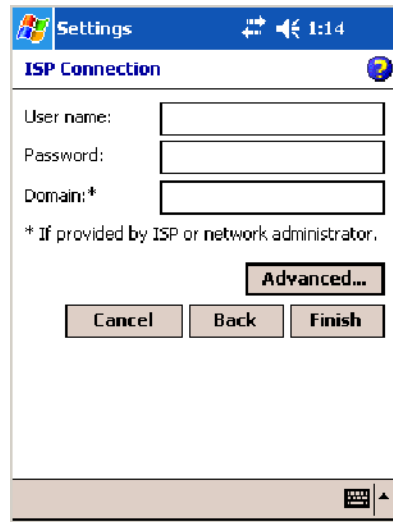
- 2 Enter a name for the connection, such as “ISP Connection.” If using an external modem with a cable, select “Hayes Compatible on COM1” from the **Select a modem** list. Tap **Next** to continue.



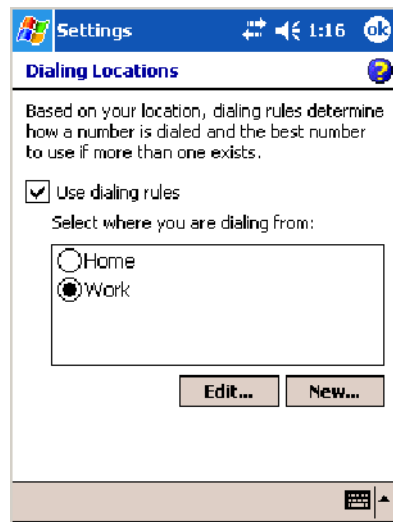
- 3 Enter the access phone number, then tap **Next**.



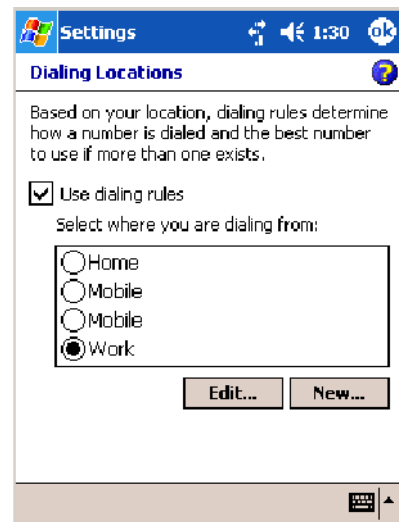
- 4 Enter the user name, password, and domain (if provided by an ISP or your network administrator), then tap **Finish**.



- 5 Tap the **Advanced** tab from the Connections screen, then tap **Select Location** to specify your current location. These settings apply to all connections. Tap **Use dialing rules**, tap **OK**, then tap **Edit** to continue.



730, 740, 750, 760 Screens



741, 751, 761 Screens

- 6 Specify your current phone type. If your phone type is pulse dialing, check the **Pulse dialing** box. If your type is tone dialing (as most phone lines are), then clear the **Pulse dialing** box. Continue to tap **ok** to close each page and return to the Settings page.

To start the connection, use one of the following programs:

- Send and receive e-mail messages by using Inbox. Before you can use Inbox, you need to provide the information it needs to communicate with the e-mail server.
- Visit Web and WAP pages by using Pocket Internet Explorer. For more information, see “Pocket Internet Explorer” on page 79.
- Send and receive instant messages with MSN Messenger. For more information, see “MSN Messenger” on page 73.



Note: To change modem connection settings in My ISP, tap **Manage existing connections**. Select the desired modem connection, tap **Settings**, and follow the instructions on the screen.

Connecting to Work

If you have access to a network at work, you can send e-mail messages, view intranet pages, synchronize your 700 Color Computer, and possibly access the Internet. You can connect to work by creating a modem connection via a RAS (Remote Access Server) account. Before you can create this modem connection, your network administrator needs to set up a RAS account for you. Your network administrator may also give you Virtual Private Network (VPN) settings.



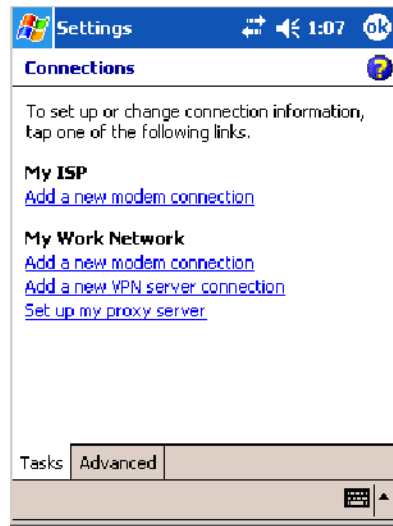
Note: To change modem connection settings in My Work Network, tap **Manage existing connections**. Select the desired modem connection, tap **Edit**, and follow the instructions on the screen.



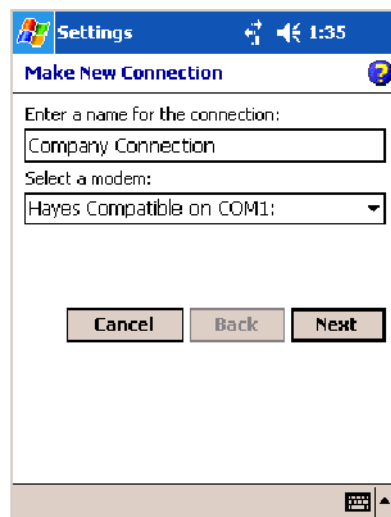
To view additional information for any screen in the wizard or while changing settings, tap the **Help** icon.



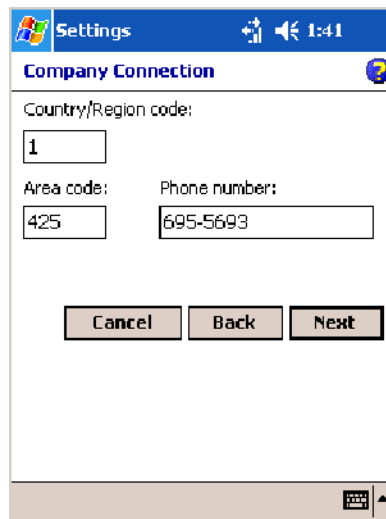
- 1 Tap **Start** > **Settings** > the **Connections** tab > the **Connections** icon. In **My ISP**, tap **Add a new modem connection**.



- 2 Enter a name for the connection, such as “Company Connection.” In the **Select a modem** list, select your modem type, then tap **Next** to continue. If your modem type does not appear, try reinserting your 700 Color Computer into your modem dock.
 - If using an external modem connected to your 700 Computer with a cable, select “Hayes Compatible on COM1.”
 - If using any type of external modem, select the modem by name. If a listing does not exist for your external modem, select “Hayes Compatible on COM1.”
 - Wireless connections can be made via a mobile phone network:
 - If making a circuit-switched data connection, select “Cellular Line.”
 - If using GPRS/EDGE, tap “Cellular Line (GPRS).”

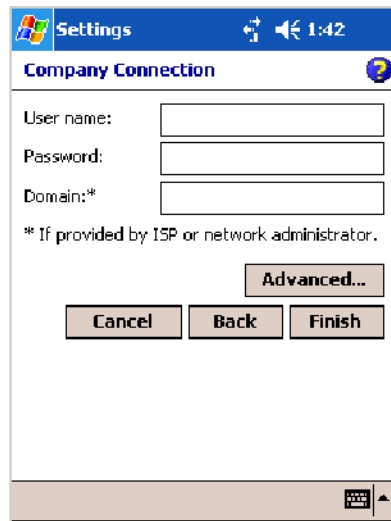


- 3 Enter the access phone number, using some of the following guidelines. If you know part of the phone number changes frequently as you travel, create dialing rules to avoid creating numerous modem connections for the same phone number. For more information, tap **Use Dialing Rules**.
- Enter the phone number exactly as you want it dialed. For example, if you call from a business complex or hotel that requires a nine before dialing out, enter “9” in front of the phone number.
 - Enter the APN provided by your mobile phone service provider.
 - When using dialing rules, phone numbers are entered differently. To use additional numbers, such as a “9” to dial from an office complex or hotel, you must use additional dialing rules or change dialing patterns. See “*Create Dialing Rules*” via your online help for information.
 - a In the **Country/Region** box, enter the appropriate code when dialing internationally. For more information, contact an operator at your local phone company.
 - b In the **Area code** box, enter the area code. Area codes are not needed in all countries.
 - c Enter the main phone number, then tap **Next** to continue.



The screenshot shows a mobile device's settings screen titled "Company Connection". At the top, there is a status bar with "Settings", signal strength, and the time "1:41". Below the title bar, the "Country/Region code" field contains the number "1". The "Area code" field contains "425" and the "Phone number" field contains "695-5693". At the bottom of the screen, there are three buttons: "Cancel", "Back", and "Next".

- 4 If necessary, enter the user name, password, and domain (provided by an ISP or network administrator). If a domain name was not provided, try the connection without entering a domain name, then tap **Finish**.



Creating a VPN Server Connection to Work

A VPN connection connects securely to servers via the Internet. Ask your network administrator for the user name, password, domain name, TCP/IP settings, and host name or IP address of the VPN server. The following information applies when you have “Wireless 802.11” selected via the NDISTRAY pop-up menu (see page 108).



To view additional information for any screen in the wizard or while changing settings, tap the **Help** icon.

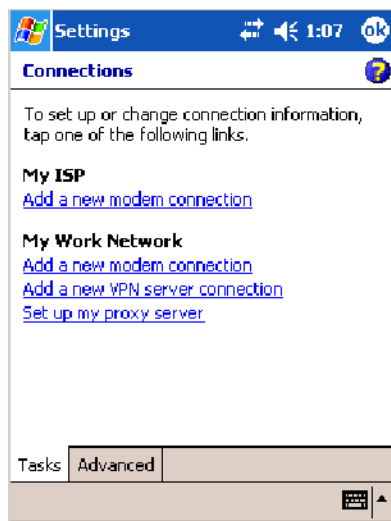


Note: To change existing settings in My Work Network, tap **Manage existing connections** > the **VPN** tab. Select the desired VPN connection, tap **Settings**, and follow the instructions on the screen.



Connections

- 1 Tap **Start** > **Settings** > the **Connections** tab > the **Connections** icon. Tap **Add a new VPN server connection** beneath My Work Network.



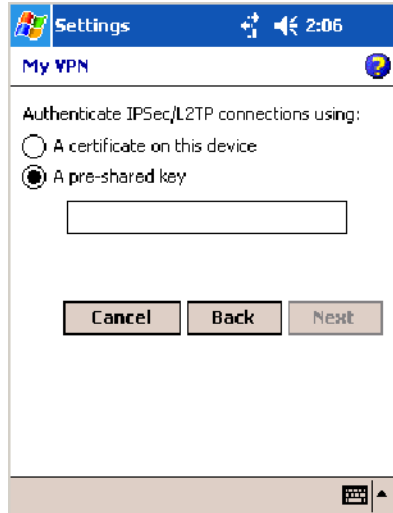
- 2 In **Name**, enter a name for the connection, such as a company's name.

In **Host name/ IP**, enter the VPN server name or IP address.

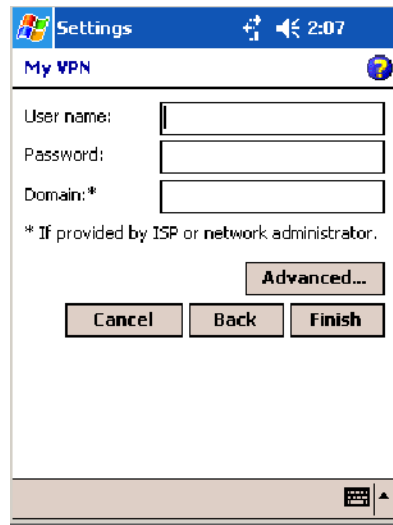
Next to **VPN type**, select the type of authentication to use with your device: “IPSec/L2TP” or “PPTP.” If you are not sure which option to choose, ask your network administrator. Tap **Next** to continue.



- 3 Select the type of authentication. If you select **A pre-shared key**, enter the key provided by your network administrator.



- 4 Enter your user name, password, and domain name as provided by your ISP or network administrator. If a domain name was not provided, try the connection without entering a domain name.



- 5 You should not need to change any **Advanced** settings. Instances where to change advanced settings include the server to which you are connecting does not use dynamically-assigned addresses, and you need to enter your TCP/IP settings; or to change server DNS or WINS settings.

To change advanced settings, tap **Advanced**. Otherwise, tap **Finish**. Insert necessary equipment, such as a network (Ethernet) card, into the device, and use a desired program to automatically begin connecting.

Ending a Connection



When connected via modem or VPN, tap the **Connectivity** icon on the navigation bar, and then select **Disconnect**. When connected via cable or cradle, detach your device. When connected via Infrared, move the device away from the other computer or device. When connected via a wireless network, switch off the connection.

Management

Use the following tool and information to configure and manage your network. You can also contact your Intermec representative for support.

SmartSystems™ Foundation Console (www.intermec.com/SmartSystems)

This tool, available as a free download from Intermec, includes a management console that provides a default method to configure and manage Intermec devices “out-of-the-box,” without the purchase of additional software licenses. This is for anyone who must configure and deploy multiple devices or manage multiple licenses.

Use the Intermec Settings applet to gather, view, and update device configuration settings within the SmartSystems Foundation. Information about

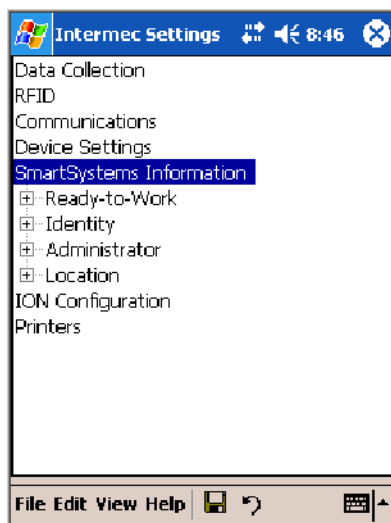
the settings you can configure with the Intermec Settings applet is in the *Intermec Computer Command Reference Manual* (P/N: 073529) available online at www.intermec.com.

Information about the SmartSystems Foundation is available as an online help within the SmartSystems Console application. Select **SmartSystems > Help** in the console to access the manual.

See the Data Collection Resource Kit in the IDL for information about data collection functions. The IDL is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for more information.



Tap **Start > Settings > the System tab > the Intermec Settings icon** to access the applet, then tap to expand the SmartSystems Information option.



SNMP Configuration on the Mobile Computer

In short, SNMP is an application-layer protocol that facilitates the exchange of management information between network devices. The 700 Color Computer is such an SNMP-enabled device. Use SNMP to control and configure the 700 Color anywhere on an SNMP-enabled network.

The 700 Color supports four proprietary Management Information Bases (MIBs) and Intermec provides SNMP support for MIB-II through seven read-only MIB-II (RFC1213-MIB) Object Identifiers (OIDs).



Note: You can only query these seven OIDs through an SNMP management station.

Management Information Base

The Management Information Base is a database that contains information about the elements to be managed. The information identifies the management element and specifies its type and access mode (Read-Only, Read-Write). MIBs are written in ASN.1 (Abstract Syntax Notation.1) — a machine independent data definition language. *Note: Elements to be managed are represented by objects. The MIB is a structured collection of such objects.*

You will find the following MIB files either in the 700 Color Management Tools or on the web via www.intermec.com:

- **INTERMEC.MIB**
Defines the root of the Intermec MIB tree.
- **ITCADC.MIB**
Defines objects for Automated Data Collection (ADC), such as bar code symbologies.
- **ITCSNMP.MIB**
Defines objects for Intermec SNMP parameters and security methods, such as an SNMP security IP address.
- **ITCTERMINAL.MIB**
Defines objects for 700 Color parameters, such as key clicks.

Object Identifiers

Each object has a unique identifier called an OID, which consist of a sequence of integer values represented in dot notation. Objects are stored in a tree structure and OIDs are assigned based on the position of the object in the tree. For example, the internet OID is equal to 1.3.6.1. Seven MIB OIDs are shown in the following table:

MIB-II Item	OID	Group or Table	Description
ifNumber	1.3.6.1.2.1.2.1.0	Interfaces Group	Indicates the number of adapters present in the system. For the 700 Color Computer, if one adapter is present in the system, then <i>ifNumber</i> = 1 and <i>ifIndex</i> = 1.
ifIndex	1.3.6.1.2.1.2.2.1.1.ifIndex	Interfaces Table (ifTable)	A unique value for each interface. The value ranges between 1 and the value of <i>ifNumber</i> .
ifDescr	1.3.6.1.2.1.2.2.1.2.ifIndex	Interfaces Table (ifTable)	A textual string containing information about the interface.
ifType	1.3.6.1.2.1.2.2.1.3.ifIndex	Interfaces Table (ifTable)	An integer containing information about the type of the interface. It is equal to 1 for Other.
ipAdEntAddr	1.3.6.1.2.1.4.20.1.1.IpAddress	IP address Table (ipAddrTable)	The IP address to which this entry's addressing information pertains (<i>same as 700 IP address</i>), where IP Address is the valid non-zero IP address of the 700 Color Computer.
ipAdEntIfIndex	1.3.6.1.2.1.4.20.1.2.IpAddress	IP address Table (ipAddrTable)	The index value that uniquely identifies the interface to which this entry is applicable (<i>same as ifIndex</i>).
ipAdEntNetMask	1.3.6.1.2.1.4.20.1.3.IpAddress	IP address Table (ipAddrTable)	Subnet mask associated with the IP address of this entry (<i>Subnet Mask</i>).

Configuring with SNMP

The community string allows an SNMP manager to manage the 700 Color Computer with a specified privilege level. The default read-only community string is “public” and “private” is the default read/write community string. See the specific configuration parameter to find its OID.

To configure using SNMP, configure 700 Color Computers for RF or Ethernet communications. Determine the OID (Object Identifier) for the parameter to be changed. The Intermec base OID is 1.3.6.1.4.1.1963. Use your SNMP management station to get and set variables that are defined in the Intermec MIBs. You can set the traps, identification, or security configuration parameters for SNMP.



5 Printer Support

The 700 Series Color Mobile Computer works with the following printers from Intermec. Contact an Intermec representative for information about these printers.

- **6808**
A 4-inch belt-mount printer.
- **6820**
A full-page, 80-column printer.
- **782T**
A 2-inch workboard printer.
- **PB20**
A 2-inch belt-mount printer with a Bluetooth compatible module from Socket Communications.
- **PB42**
A 4-inch wireless portable receipt printer with a Bluetooth compatible module from Socket Communications.



Note: “700 Color” pertains to 740, 741, 750, 751, 760, and 761 Computers unless otherwise noted.

Printing ASCII

These methods for printing using Pocket PC at this time is as follows:

- Add port drivers to print ASCII directly to the port.
- Use LinePrinter ActiveX Control from the Printing Resource Kit via the Intermec Developer Library (IDL) available as a download from the Intermec webs site at www.intermec.com/idl. Contact your Intermec representative for more information.
- Via wireless printing - *see the Bluetooth Resource Kit User's Guide for more information.*

Directly to a Port

Printing directly to the port sends RAW data to the printer. The format of this data depends upon your application and the printer capabilities.

You must understand the printer commands available for your specific printer. Generally, applications just send raw ASCII text to the printer. Since you are sending data to the printer from your application directly to the port you are in complete control of the printers operations. This allows you to do line printing (*print one line at a time*) rather than the page format printing offered by the GDI approach. It is also much faster since data does not have to be converted from one graphics format to the other (display to printer). Most Intermec[®] printers use Epson Escape Sequences to control print format operations.

These commands are available in documentation you receive with your printers or from technical support. Win32 APIs are required to print directly to the port.

Directly to a Generic Serial Port

To print directly to a generic serial port printer (non-Intermec printers):

- Use CreateFile() to open ports — COM1 can open on most devices.
- Use WriteFile() to send data directly to the printer.
- Use CloseHandle() when you are finished printing to close the port.

IrDA Printer Driver

IrDA printing is only available on the certain devices and is supported directly by the Windows CE load via the IrSock API provided by the Microsoft Win32 API without need for additional drivers. Intermec 6804, 6805, 6806, 6808 and 6820 and other IrDA printers are supported.

NPCP Printer Driver

The NPCP printer communications driver (NPCPPORT.DLL) is a Stream Device Driver built into the operating system. The driver supports only NPCP communications to and from the 6820 and 4820 printers over a selected serial port.

All applications use WIN32 API functions to access drivers. Applications easily implement basic operations through the CreateFile(), WriteFile(), ReadFile(), DeviceIOControl(), and CloseHandle() Win32 APIs.

DeviceIOControl() functions are used to do most upgrade printer modules, printer diagnostics, and get printer configurations.

About NPCP

NPCP (Norand[®] Portable Communications Protocol) is a proprietary protocol that provides session, network, and datalink services for Intermecc mobile computers in the Intermecc LAN environment used with printers and data communications.

NPCP Driver Installation and Removal

Use LPT9: for the NPCP printer device and COM1 for the last parameter. COM1 is the connection available via the 700 Color Computer.

Applications use the RegisterDevice() function to install the driver. DeregisterDevice() uninstalls the device driver and frees memory space when the driver is not required. Use the HANDLE returned by RegisterDevice() as the parameter to DeregisterDevice().

Use the RegisterDevice() function call as demonstrated below. Specify the full path name to the driver starting at the root for the RegisterDevice() function to work properly. The last parameter to RegisterDevice() is a DWORD that represents the name of the port for the NPCP stream driver to use. Build this parameter on the stack if it is not to be paged out during the call. The first parameter "LPT" (Device Name) and the second parameter "9" (index), indicate the name of the registered device, such as LPT9. This is used in the CreateFile() function call.

```
Install()
{
    HANDLE hDevice;
    TCHAR port[6];
    port[0] = TCHAR('C');
    port[1] = TCHAR('O');
    port[2] = TCHAR('M');
    port[3] = TCHAR('1');
    port[4] = TCHAR(':');
    port[5] = TCHAR(0);
    hDevice = RegisterDevice ( (TEXT("LPT"), 9,
    TEXT("\\STORAGE CARD\\WINDOWS\\NPCPPORT.dll"), (DWORD)port);
}
```

Opening the NPCP Driver

The application opens the NPCP driver by using the `CreateFile()` function. The call can be implemented as follows. The first parameter “LPT9:” must reflect the device name and index used in the `RegisterDevice()` function call and will fail for any of the following reasons:

```
hFile = CreateFile(_T("LPT9:"), GENERIC_WRITE |
GENERIC_READ, 0, NULL, OPEN_ALWAYS, FILE_ATTRIBUTE_NORMAL,
NULL);
```

- The port associated with the device during `RegisterDevice()` is in use.
- The NPCP device is already open.
- The share mode is not set to zero. The device cannot be shared.
- Access permissions are not set to `GENERIC_WRITE | GENERIC_READ`. Both modes must be specified.

Closing the NPCP Driver

Using the `CloseHandle()` (`hFile`) function closes the NPCP driver. Where *hFile* is the handle returned by the `CreateFile()` function call.

- `TRUE` = the device is successfully closed.
- `FALSE` = an attempt to close `NULL HANDLE` or already closed device.

Reading from the NPCP Driver

Reading of the NPCP printers is not supported since all responses from the printer are the result of commands sent to the printer.

`DeviceIoControl()` functions are provided where data is to be received from the printer.

Writing to the NPCP Driver

All Print data can be sent to the printer using the `WriteFile()` function. The print data written to the driver must contain the proper printer commands for formatting. If the function returns `FALSE`, the NPCP error may be retrieved using `IOCTL_NPCP_ERROR`. See the description on the next page.

NPCP Driver I/O Controls

An application uses the `DeviceIoControl()` function to specify an printer operation to be performed. Certain I/O controls are required to bind and close communication sessions with the printer, and must be completed before any other commands to the driver can execute properly.

The function returns `TRUE` to indicate the device successfully completed its specified I/O control operation, otherwise it returns `FALSE`. The following I/O control codes are defined:

```

#define IOCTL_NPCP_CANCEL
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x400, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define IOCTL_NPCP_BIND
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x401, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define IOCTL_NPCP_CLOSE
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x402, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define IOCTL_NPCP_ERROR
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x403, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define IOCTL_NPCP_FLUSH
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x404, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define IOCTL_NPCP_IOCTL
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x405, METHOD_BUFFERED, FILE_ANY_ACCESS)
#define IOCTL_NPCP_PRTVER
CTL_CODE(FILE_DEVICE_SERIAL_PORT, 0x406, METHOD_BUFFERED, FILE_ANY_ACCESS)

```

- **IOCTL_NPCP_CANCEL**
This cancels all printing at the printer. It flushes the printer buffers and reinitializes the printer to its default state. No parameters are required.
- **IOCTL_NPCP_BIND**
This command is required before any data is sent or received by the printer. Once the driver is opened, the application must bind the communications session with the printer before any data can be sent or received by the printer. If an error occurs during the bind, the application may use `IOCTL_NPCP_ERROR` to get the current extended error code. No parameters are required.
- **IOCTL_NPCP_CLOSE**
This command closes the current session with the printer. This function always returns `TRUE`. No parameters are required.
- **IOCTL_NPCP_ERROR**
This command returns the extended NPCP error code in PL/N format. The word returned will contain the PL/N compatible error code in the low byte and completion flags in the high byte. If the frame that returned an error was not received correctly by the printer the `FRAME_NOT_ACKED` bit will be set in the high byte. This operation always returns `TRUE`. An output buffer of at least 2 bytes is required. See “NPCP Error Codes” on page 166.
- **IOCTL_NPCP_FLUSH**
This command allows the application to poll the printer for errors while the report is completing the print process at the printer. If an error occurs during the polling process, the operation will return `FALSE` and the application can get the extended error code by using `IOCTL_NPCP_ERROR`. No parameters are required.

NPCP Printer Communications

All NPCP printer communications should be based on the following flow:

- 1 Use `CreateFile()`; to open the printer driver.
- 2 Use `IOCTL_NPCP_BIND` to bind a session with the printer; `IOCTL_NPCP_ERROR` to check for errors on the bind to ensure success; and `IOCTL_NPCP_CANCEL` to cancel outstanding print jobs.

- 3 Use `IOCTL_NPCP_FLUSH` to poll the printer to free up printer buffer resources. Use `IOCTL_NPCP_FLUSH` to poll the printer's status. If an error is reported by the `IOCTL`, then use `IOCTL_NPCP_ERROR` to get the error and determine the correct recovery procedure.
- 4 Use `WriteFile()` to write data to the printer. Check for errors and that all data were written. Use `IOCTL_NPCP_ERROR` to get the extended error. If the error is critical in nature, use `IOCTL_NPCP_CLOSE`, followed by `CloseFile()`, to end the communications session. Start a new session, beginning with step 1 to ensure proper printing. For noncritical errors display the error and retry the operation.
- 5 After all data is sent to the printer, ensure that the printer continues to print the report properly by polling the printer's status. Use `IOCTL_NPCP_FLUSH` to poll the printer's status. If an error is reported by the `IOCTL`, then use `IOCTL_NPCP_ERROR` to get the error and determine the correct recovery procedure.

Sample Code

See sample code in the “\700C Dev Tools\Installable Drivers\Port Drivers\Npcp\NPCPPrint\” directory for more details on printing, printer communications and error code handling.

NPCP Error Codes

Call the `IOCTL_NPCP_ERROR` I/O control to receive PL/N compatible error codes. Applications must decide how to act on the data returned.

```
// Definition of NPCP communications Errors and Printer Errors
#define PNRDY (BYTE)102 // link not ready error
#define RXTMO (BYTE)104 // link no receive error
#define TXTMO (BYTE)106 // link no transmit error
#define BADADR (BYTE)111 // frame address error
#define GAPERR (BYTE)112 // link gap error (timeout) in receive data
#define LSRPE (BYTE)113 // frame parity error on length field
#define IFTS (BYTE)120 // session layer - invalid frame this state
#define NS_NE_VR (BYTE)121 // session layer sequence error
#define NR_NE_VS (BYTE)122 // session layer sequence error
#define MAC_CRCERR (BYTE)124 // MAC CRC error
#define RLENERR (BYTE)123 // MAC too much data received
#define FRMERR (BYTE)200 // Frame Reject
#define FRMERR_IF (BYTE)201 // Frame Reject - Invalid Frame
#define FRMERR_NR (BYTE)202 // Frame Reject - NR Mismatch
#define FRMERR_NS (BYTE)203 // Frame Reject - NS Mismatch
#define NDMERR (BYTE)204 // Normal Disconnect mode error
#define BINDERR (BYTE)210 // bind error
#define IPLDUR (BYTE)221 // invalid presentation layer response
#define HEADJAM (BYTE)222 // printer head jam
#define PAPEROUT (BYTE)223 // printer paper out
#define LOWVOLTS (BYTE)224 // printer low voltage
#define HIVOLTS (BYTE)225 // printer over voltage
#define LOWBAT (BYTE)226 // printer low battery
#define COVEROFF (BYTE)227 // printer cover off error
#define HEADFAULT (BYTE)228 // printer head short or driver short error
#define PFFAULT (BYTE)229 // paper feed motor fault.
#define FRAME_NOT_ACKED 0x8000 // frame was not received by printer and need
to be resent.
```


O'Neil Printer Driver

The DTR printer communications driver is a Stream Device Driver named ONEIL.DLL.

All applications use WIN32 API functions to access drivers. Applications easily implement basic operations using the CreateFile(), WriteFile(), DeviceIOControl() and CloseHandle() Win32 APIs.

The driver supports communications to 6804DM, 6804T, 6805A, 6806, 6808, 681T, PB20, and PB42 printers over a selected serial port.

DTR Driver Installation and Removal

Your application must use the RegisterDevice() function to install the ONEIL.DDL device driver. Use “DTR” for the Device Name parameter, “1” for the Device Driver index parameter, and any of these strings for the last parameter:

- NULL (==0) Defaults to COM1 @ 9600
- “COM1” only COM port specified defaults to 9600
- “COM1:9600” sets to COM port and specified bit rate
- “COM1:19200” sets to COM port and specified bit rate

Use the HANDLE returned by RegisterDevice() as the parameter to DeregisterDevice(). The correct usage of the RegisterDevice() function call is shown below. You may use DeregisterDevice() to uninstall the driver.

```
Install()
{
    HANDLE hDevice;
    TCHAR port[6];
    port[0] = TCHAR('C');
    port[1] = TCHAR('O');
    port[2] = TCHAR('M');
    port[3] = TCHAR('1');
    port[4] = TCHAR(':');
    port[5] = TCHAR(' ');
    hDevice = RegisterDevice ( (TEXT("DTR"), 1, TEXT("\\WINDOWS\\ONEIL.DLL"),
        (DWORD)port);
}
```

Opening the DTR Driver

The application opens the DTR driver by using the CreateFile() function. The call can be implemented as follows:

```
hFile = CreateFile(_T("DTR1:"), GENERIC_WRITE, 0, NULL,
    OPEN_ALWAYS, FILE_ATTRIBUTE_NORMAL, NULL);
```

The first parameter “DTR1:” must reflect the device name and index used in the RegisterDevice() function call.

The function call will fail for any of the following reasons:

- Port associated with device during RegisterDevice() is currently in use.
- The DTR device is already open.
- The share mode is not set to zero. The device cannot be shared.
- Access permissions are not set to GENERIC_WRITE.

Closing the DTR Driver

Using the CloseHandle() (hFile) function closes the DTR driver. Where *hFile* is the handle returned by the CreateFile() function call.

- TRUE indicates the device is successfully closed.
- FALSE indicates an attempt to close a NULL HANDLE or an already closed device.

Writing to the DTR Driver

Use the WriteFile() function to send all print data to the printer. The data must contain the proper formatting printer commands.

DTR Printer Communications

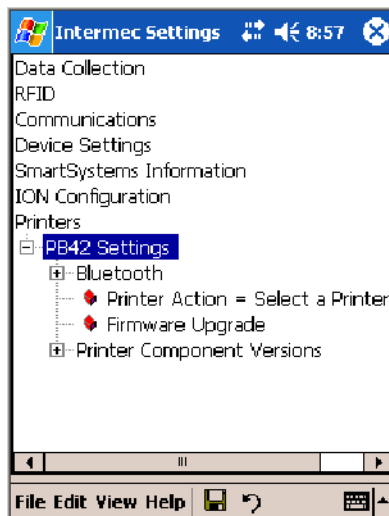
All DTR printer communications should be based on the following flow:

- 1 Use CreateFile() to open the printer driver.
- 2 Use WriteFile() to write your data to the printer. Check for errors and that all data were written.
- 3 Use CloseHandle() to close the driver.

Configuring PB42 Printers Via Intermec Settings



Tap **Start** > **Settings** > the **System** tab > the **Intermec Settings** icon to access the applet. Tap (+) to expand the **Printers** option, then tap (+) to expand the **PB42 Settings** option and make your adjustments.



6 Scanner Support

The 700 Series Color Mobile Computer is available with imaging or laser scanning technologies, including the following:

<p>APS Linear Imager: <i>(standard for 730 Computers)</i> — includes the EV10 Scan Engine</p>	<p>Reads 1D symbologies and PDF417 bar codes. Linear imaging using Vista Scanning technology reads low-contrast bar codes, laminated bar codes, and bar codes displayed on CRT or TRT displays. This imaging uses harmless LEDs for illumination and does not require any warning labels. Vista Scanning is more reliable than lasers as it is a completely solid state with no moving parts or oscillating mirrors.</p>
<p>2D Imager: <i>(not supported on 730 Computers)</i> — includes the IT4000 Scan Engine</p>	<p>This decodes several stacked 1D and 2D symbologies, including PDF417, Data Matrix, and MaxiCode without “painting.” It can also read 1D codes from any orientation, for example the scan beam does not need to align perpendicular to the symbol to read it. Photography is a secondary application; the lens in the device favors bar code reading. Photos are 640x480, 256 gray-scale.</p>
<p>1D Laser Scanner: <i>(not supported on 730 Computers)</i> — includes the SE900, SE900HS, SE900-S6, and SE900HS-S6 scan engines</p>	<p>Traditional laser scanner that decodes 1D bar codes.</p>
<p>PDF417 Laser Scanner: <i>(not supported on 730 Computers)</i></p>	<p>Higher speed laser scanner that can read PDF417 labels by “painting” the label.</p>
<p>EL10 Laser Scanner</p>	<p>An EXCELeRate™ bar code laser scan engine, based on the Micro Electro Mechanical System (MEMS) technology, that is significantly faster, lighter, and more efficient than traditional laser scanners.</p>

A 700 Color ImageDemo application demonstrates the more common features of the 700 Color Computer imager. See the *ImageDemo User's Guide* for information.



Note: “700 Color” pertains to 740, 741, 750, 751, 760, and 761 Computers unless otherwise noted.

Scanner Control and Data Transfer



Note: To use the methods described below, enable Data Collection functionality on the 700 Computer using the bootloader configuration menu.

The Data Server and associated software provide several ways to manipulate scanner control and data transfer between the scanner subsystem and user applications:

- **Automatic Data Collection COM Interfaces:**
These COM interfaces allow user applications to receive bar code data, and configure and control the bar code reader engine.
- **ITCAxBarCodeReaderControl functions:**
These ActiveX controls allow user applications to collect bar code data from the scanner, to configure the scanner, and to configure audio and visual notification when data arrives.
- **ITCAxReaderCommand functions:**
Use these ActiveX controls to modify and retrieve configuration information using the reader interface commands.
- **Scanning EasySet bar code labels:**
You can use the EasySet[®] bar code creation software from Intermec to print configuration labels. Scan the labels to change the scanner configuration and data transfer settings.

Use the Intermec EasySet software to print configuration labels you can scan to change your configuration settings. For more information, see the EasySet online help. EasySet is available from the Intermec Data Capture web site.

For more information, see the Data Collection Resource Kit in the Intermec Developer Library (IDL), which is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for more information.

Data Collection Configuration



You can configure scanner and reader settings for the 700 Color Computer via the Intermec Settings applet. From the 700 Color Computer, tap **Start > Settings > the System tab > the Intermec Settings icon**. See the *Intermec Computer Command Reference Manual* (P/N: 073529) for information about the settings you can configure with this applet. This online manual is available from the Intermec web site at www.intermec.com.

Internal Scanners

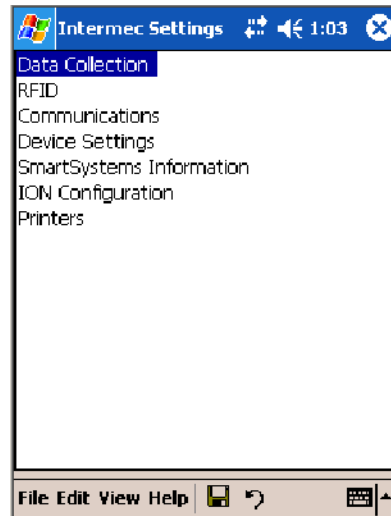
The Intermec Internal Scanner feature allows Automatic Data Collection (ADC) by accepting data from the COM1 port and wedging it into the keyboard interface. You can enable or disable this feature from the Today screen on the 700 Color Computer.

Before you configure your internal scanner, adjust its settings using the Intermec Settings applet. Information about the settings you can configure with this applet is described in the *Intermec Computer Command Reference Manual*. The online manual is available from the Intermec web site at www.intermec.com.

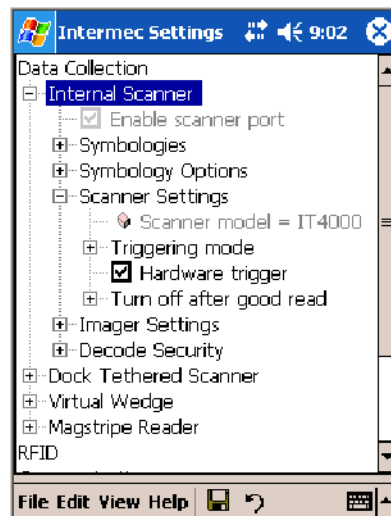


Intermec
Settings

- 1 From the 700 Color Computer, tap **Start > Settings > the System tab > the Intermec Settings icon**.



- 2 Tap the **Data Collection** option, then tap (+) to expand **Internal Scanner**. *This sample screen is for the IT4000 scan engine.*



Scanner and Imager Settings

Depending on what is selected as the scanner model, image settings, decode security, scanner settings, and virtual wedge are configured from the Intermec Settings applet. See the the *Intermec Computer Command Reference Manual*, available from the Intermec web site at www.intermec.com, for more information about each enabled option.

Internal Scanner Supported Symbologies

Symbologies	EL10	EV10	IT4000	SE900	SE900HS	SE900-S6	SE900HS-S6
Code39	X	X	X	X	X	X	X
UPC/EAN	X	X	X	X	X	X	X
Code 128	X	X	X	X	X	X	X
Interleaved 2 of 5	X	X	X	X	X	X	X
Code 93	X	X	X	X	X	X	X
Codabar	X	X	X	X	X	X	X
Code 2 of 5	X	X	X	X	X	X	X
MSI	X	X	X	X	X	X	X
Plessey	X	X	X	X	X	X	X
Code 11	X	X	X	X	X	X	X
Matrix 2 of 5	X	X	X	X	X	X	X
Telepen	X	X	X	X	X	X	X
PDF417	X	X	X	X	X	X	X
Micro PDF417	X	X	X	X	X	X	X
MaxiCode			X				
Data Matrix			X				
QR Code			X				
RSS 14	X	X	X	X	X	Available in f/w Sxxp304	Available in f/w Sxxp304
RSS Limited	X	X	X	X	X	Available in f/w Sxxp304	Available in f/w Sxxp304
RSS Expanded	X	X	X	X	X	Available in f/w Sxxp304	Available in f/w Sxxp304
Codablock A	X	X	X	X	X	X	X
Codablock F	X	X	X	X	X	X	X
UCC Composite			X				
TLC 39	X	X	X	X	X	X	X

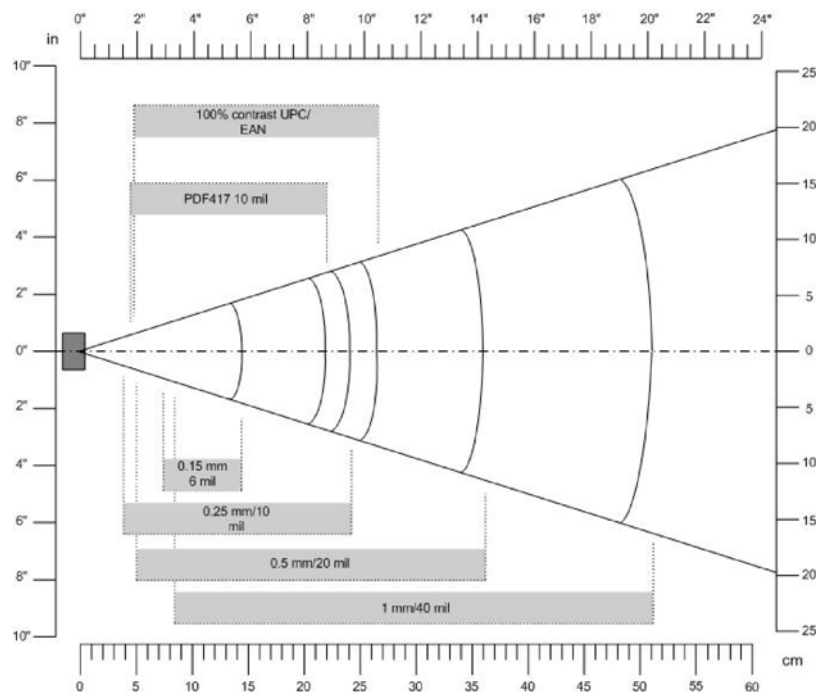
Reading Distances

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 Intermec representative for more information.

Below are minimum standard reading distances for 700 Color Computers built with integrated scan engines. When correctly mounted, an 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%.

EA10 Minimum Reading Distances with 0.04" Setbacks

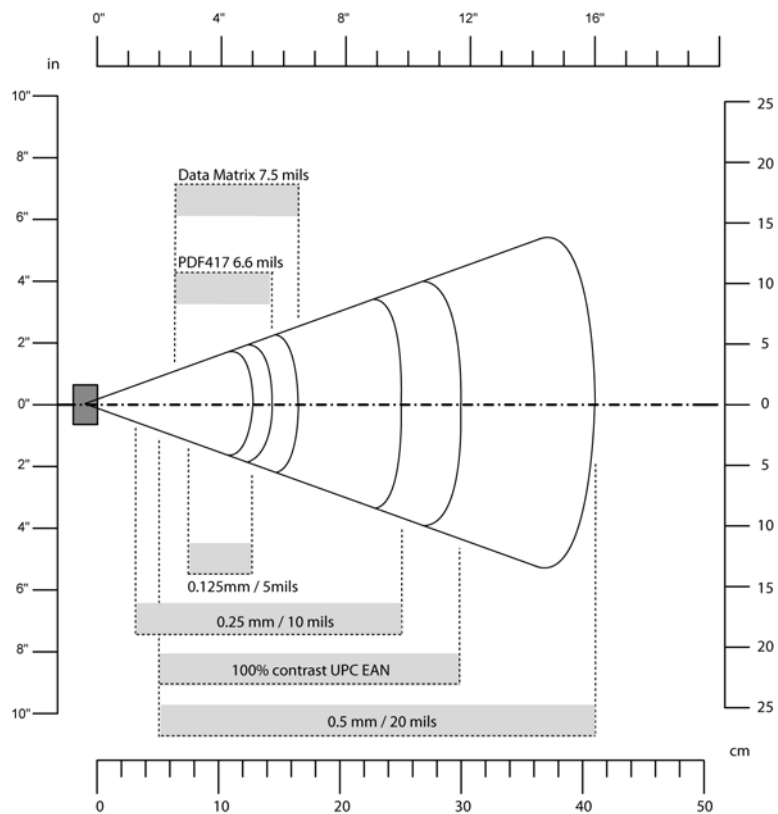
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.125 mm/ 5 mil	8.03 cm/ 3.16"	11.84 cm/ 4.66"
	0.15 mm/ 6 mil	7.39 cm/ 2.91"	14.38 cm/ 5.66"
	0.20 mm/ 8 mil	5.49 cm/ 2.16"	19.46 cm/ 7.66"
	0.25 mm/ 10 mil	3.96 cm/ 1.56"	24.03 cm/ 9.46"
	0.30 mm/ 12 mil	3.71 cm/ 1.46"	25.81 cm/ 10.16"
	0.5 mm/ 20 mil	4.98 cm/ 1.96"	35.97 cm/ 14.26"
	1.0 mm/ 40 mil	3.71 cm/ 1.46"	50.95 cm/ 20.06"
UPC/EAN		4.98 cm/ 1.96"	29.87 cm/ 11.76"
PDF417	0.168 mm/ 6.6 mil	7.26 cm/ 2.86"	12.85 cm/ 5.06"
	0.254 mm/ 10 mil	4.47 cm/ 1.76"	20.98 cm/ 8.26"
	0.381 mm/ 15 mil	10.06 cm/ 3.96"	28.35 cm/ 11.16"
Data Matrix	0.254 mm/ 10 mil	6.50 cm/ 2.56"	17.93 cm/ 7.06"
	0.381 mm/ 15 mil	5.99 cm/ 2.36"	27.84 cm/ 10.96"
	0.508 mm/ 20 mil	4.98 cm/ 1.96"	32.92 cm/ 12.96"



EA11 Standard Minimum Reading Distances with 0.04" Setbacks

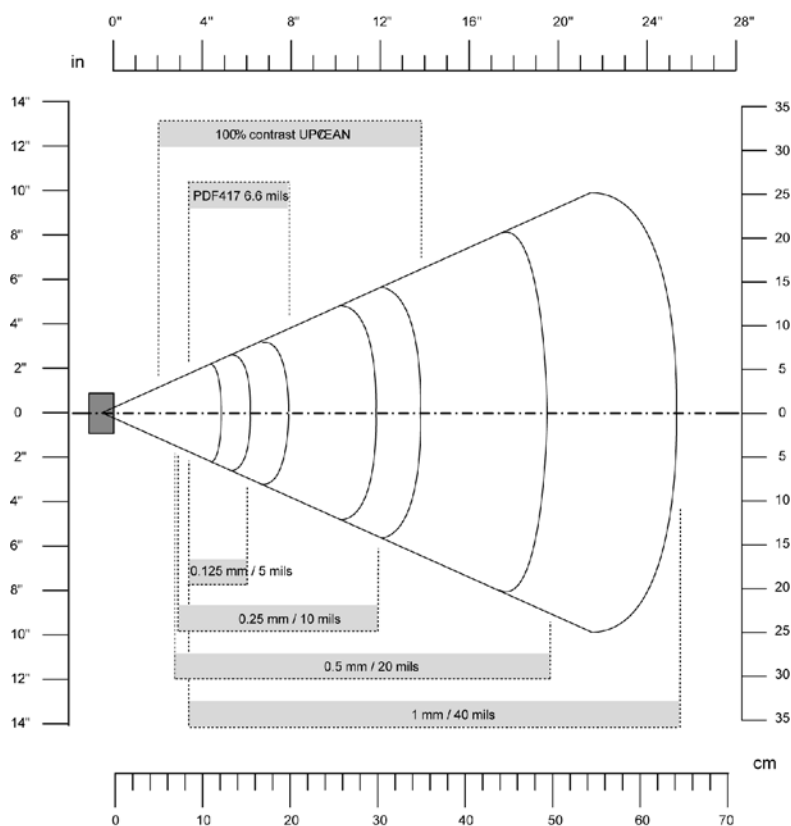
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.125 mm/ 5 mil	7.26 cm/ 2.86"	12.09 cm/ 4.76"
	0.20 mm/ 8 mil	3.96 cm/ 1.56"	20.98 cm/ 8.26"
	0.25 mm/ 10 mil	3.45 cm/ 1.36"	25.04 cm/ 9.86"
	0.5 mm/ 20 mil	4.98 cm/ 1.96"	40.28 cm/ 15.86"
UPC/EAN	0.33 mm/ 13 mil	4.98 cm/ 1.96"	29.62 cm/ 11.66"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

* Minimum distance depends on symbology length and scan angle.



EL10 Minimum Guaranteed Reading Distances with 0.25" Setbacks

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.1 mm/ 4 mil	8.51 cm/ 3.35"	12.30 cm/ 4.45"
	0.125 mm/ 5 mil	7.75 cm/ 3.05"	14.35 cm/ 5.65"
	0.25 mm/ 10 mil	6.99 cm/ 2.75"	29.34 cm/ 11.55"
	0.5 mm/ 20 mil	6.48 cm/ 2.55"	50.17 cm/ 19.75"
	1 mm/ 40 mil	7.75 cm/ 3.05"	63.37 cm/ 24.95"
UPC/EAN	0.33 mm/ 13 mil	5.46 cm/ 2.15"	34.42 cm/ 13.55"
PDF417	0.17 mm/ 6.6 mil	7.75 cm/ 3.05"	19.43 cm/ 7.65"

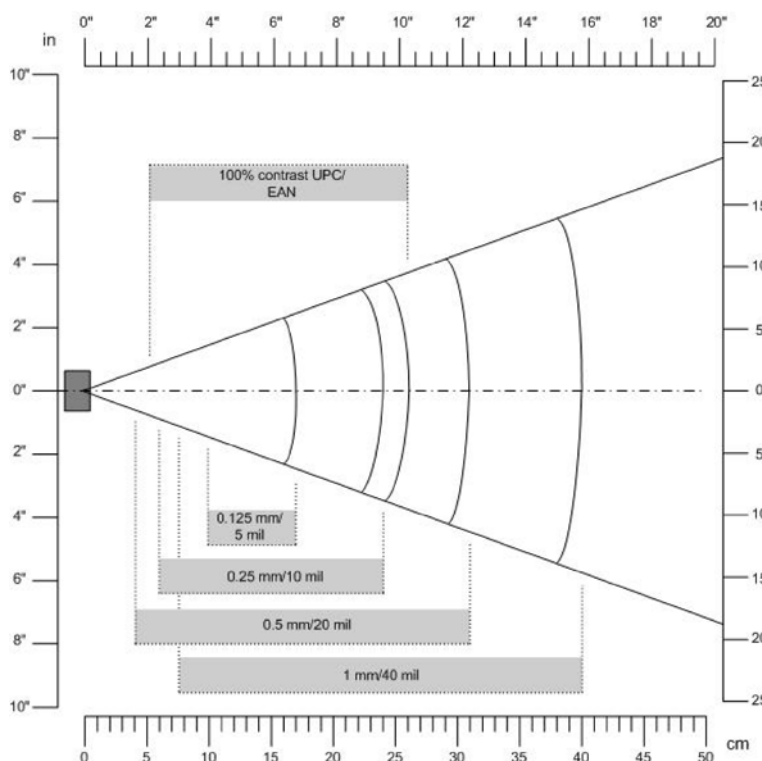


EL11 Minimum Reading Distances with 0.04" Setbacks

Symbology	Density	Minimum Distance	Maximum Distance
	0.1 mm/ 4 mil	8.79 cm/ 3.46"	11.84 cm/ 4.66"
	0.125 mm/ 5 mil	8.28 cm/ 3.26"	14.48 cm/ 5.86"
	0.33 mm/ 13 mil (EAN)	5.49 cm/ 2.16"	34.95 cm/ 13.76"
	1 mm/ 40 mil	9.55 cm/ 3.86"	63.91 cm/ 25.16"

EV10 Minimum Reading Distances with 0.04" Setbacks

Symbology	Bar Code Content	Density	Minimum Distance	Maximum Distance
Code 39	RESO 0.100 MM	0.1 mm/ 4 mil	10.8 cm/ 4.26"	13.87 cm/ 5.46"
	R 0.125 MM	0.125 mm/ 5 mil	9.80 cm/ 3.86"	16.92 cm/ 6.66"
	0.25	0.25 mm/ 10 mil	5.99 cm/ 2.36"	23.77 cm/ 9.36"
	0.5	0.5 mm/ 20 mil	3.96 cm/ 1.56"	30.89 cm/ 12.16"
	R1MM	1 mm/ 40 mil	7.53 cm/ 2.96"	39.78 cm/ 15.66"
UPC/EAN	120010010100	0.33 mm/ 13 mil	4.98 cm/ 1.96"	25.81 cm/ 10.16"
PDF417	10 mil	0.254 mm/ 10 mil	9.80 cm/ 3.86"	16.92 cm/ 6.66"
	15 mil	0.381 mm/ 15 mil	7.77 cm/ 3.06"	18.95 cm/ 7.46"



2D Area Imager Reading Distances with 0.04" Setbacks

Symbology	Density	Near Distance	Far Distance
MaxiCode	35 mil	4.98 cm/ 1.96"	33.92 cm/ 12.96"
Data Matrix	15 mil	9.30 cm/ 3.66"	16.41 cm/ 6.46"
PDF417	10 mil	7.77 cm/ 3.06"	22.76 cm/ 8.96"
	8 mil	8.28 cm/ 3.26"	20.22 cm/ 7.96"
	6.6 mil	11.33 cm/ 4.46"	15.77 cm/ 6.21"
Code 39	15 mil	5.23 cm/ 2.06"	29.87 cm/ 11.76"
	10 mil	8.03 cm/ 3.16"	23.27 cm/ 9.16"
	8 mil	8.79 cm/ 3.46"	19.20 cm/ 7.56"
UPC	13 mil	6.25 cm/ 2.46"	31.65 cm/ 12.46"

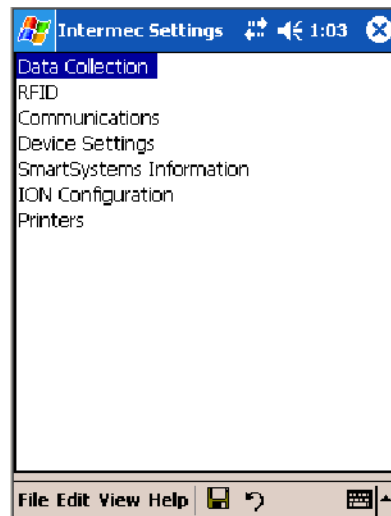
Tethered Scanners

The Intermec Tethered Scanner feature allows Automatic Data Collection (ADC) by accepting data from the COM1 port and wedging it into the keyboard interface. You can enable or disable this feature from the Today screen on the 700 Color Computer.

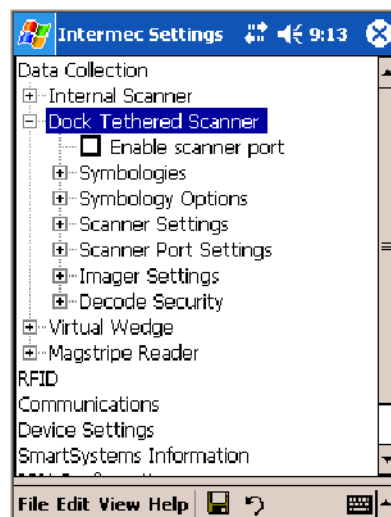
Configuring the Tethered Scanner

Before you configure your tethered scanner, adjust its settings using the Intermec Settings applet. Information about the settings you can configure with this applet is described in the *Intermec Computer Command Reference Manual*. The online manual is available from the Intermec web site at www.intermec.com.

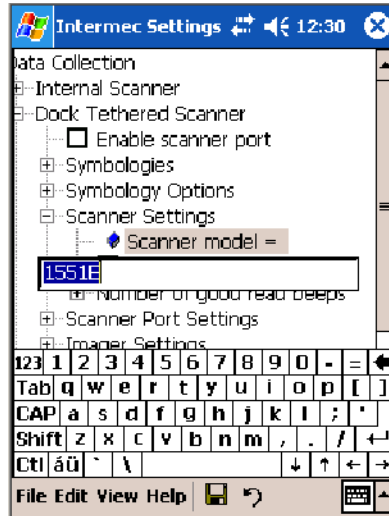
- 1 Connect your tethered scanner to the tethered scanner port.
- 2 From the 700 Color Computer, tap **Start > Settings > the System tab > the Intermec Settings icon**.



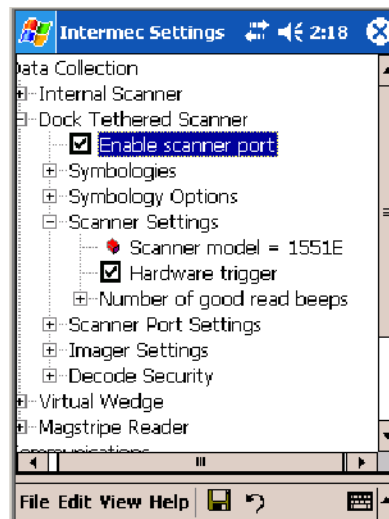
- 3 Tap **Data Collection**, then tap (+) to expand **Dock Tethered Scanner**.



- 4 Tap (+) to expand **Scanner Settings**, tap **Scanner model**, then enter the applicable scanner, such as “1551E” or “1553.”



- 5 Make sure a scanner is properly connected to your 700 Computer, tap to check **Enable scanner port**, then tap **File > Save Settings** from the bottom of the screen. These changes take several moments to reset.



1551E or 1553 Selected for Scanner Model

When “1551E” or “1553” is selected from the **Scanner model** option (*see step 4 above*), and the port state is already enabled (*see step 5*), the process will take several moments to reset. When 1551E or 1553 is successfully connected during this step, the unit will emit some beeps. Here, the terminal is initializing the scanner at 9600 for the baud rate, 7 data bits, even parity, and 2 stop bits and synchronizing the terminal’s configuration with the attached scanner.

With “1551E” or “1553” selected, Symbologies, Symbology Options, Hardware Trigger, and Scanner Port settings are configured from the Intermec Settings applet. See the the *Intermec Computer Command Reference*

Manual, available from the Intermec web site at www.intermec.com, for more information about each enabled option.

ASCII Selected for Scanner Model

To send data coming into the 700 Color Computer through the COM1 port from an external input device, as keyboard data to an application on the desktop, do the following:

- 1 Enter “ASCII” as the **Scanner model** option.
- 2 Tap to check **Enable scanner port**.
- 3 Tap **File > Save Settings** from the bottom of the screen, or tap **Yes** when prompted to refresh the scanner settings.

With “ASCII” selected, Symbology Options, Hardware Trigger, and Scanner Port settings are configured from the Intermec Settings applet. See the *Intermec Computer Command Reference Manual*, available from the Intermec web site at www.intermec.com, for more information about each enabled option.



Note: When selecting either the 1551E or the 1553 Scanner or enabling the scanner port for these scanners, the 700 Computer tries to communicate with the attached scanner. If the scanner is not powered, if the cable is not connected properly, the wrong cable is used, or if the scanner firmware is older than 2.0, and the “Failed to save one or more settings” message appears, then this step failed.

This process can take time as the terminal is going through a group of RS-232 settings to communicate with the scanner. After successful communication with the scanner (about eight beeps are generated), it initializes the scanner with the 700 Computer’s current settings. This process might generate a series of beeps pending on the firmware version installed in the scanner. These beeps are suppressed in firmware versions 2.08 or greater.

Troubleshooting the 1551E/1553 Tethered Scanner

Do the following to troubleshoot your 1551E/1553 Tethered Scanner:

- 1 Ensure the correct cable is used for the scanner on the tethered scanner port. *Note the 700 Computer cannot supply power to the scanner.*
- 2 Perform a quick test to determine whether the connection is good. Temporary select the scanner model as “ASCII,” then enable the scanner port state. Go to a command prompt or a notepad and scan a data label. If a label is wedged into the command prompt or notepad, then the connection is good.
- 3 If step 2 passes, reset the scanner configurations to their defaults (scan the Reset Factory Defaults label on the next page) to prevent miscommunication, then reenabling the scanner port state.
- 4 If step 2 fails, then the firmware installed in the tethered scanner may be older than version 2.0. Upgrade your scanner firmware.

Reset Factory Defaults

Scan the EasySet software bar code label “Reset Factory Default” to restore all of your scanner’s configurations to their factory defaults. When this command label is scanned, reinitialize the tethered scanner (such as disable the scanner port state, then enable it) on the 700 Computer. Otherwise, the online configuration and scanning on the 700 Computer are not functional. In general, scan this label only to initially reset the scanner.

Do not scan EasySet command labels to change the following settings:

- Symbologies code mark
- Preamble and Postamble
- Symbology ID transmit option
- Code 128, EAN29 Identifier
- Enable/Disable symbologies

In some cases, scanning EasySet Command labels cause the current setting on the user interface to be out of sync with the scanner settings. However, in some cases, scanning these labels does corrupt scanned data.

The “Open COMx error: 0x00000037” message appears if the COM port cannot open due to another application using the port. Disable that application to free up the COM1 port before you can enable the scanner. “x” is the COM port number, such as 1, 2, or 3.

Tethered Scanner Supported Symbologies

The user interface may allow configuration of PDF417, Micro PDF417, RSS, and Codablock bar code symbologies. However, these symbologies are dependant on what scanner models and firmware versions are in use. See the following table for a guideline on each supported symbology:

You can use a generic ASCII scanner with the 700 Color Computer. Pending on the scanner, linear symbologies such as Code39, should decode correctly. However, 2D symbologies such as PDF417 may not decode correctly.

Symbologies	1551E	1553
Code39	X	X
UPC/EAN	X	X
Code 128	X	X
Interleaved 2 of 5	X	X
Code 93	X	X
Codabar	X	X
Code 2 of 5	X	X
MSI	X	X
Plessey	X	X
Code 11	X	X
Matrix 2 of 5	X	X
Telepen	X	X

Symbologies	1551E	1553
PDF417	Available in 1551 0808 PDF	
Micro PDF417	Available in 1551 0808 PDF, Sxxp217_ or later	
MaxiCode		
Data Matrix		
QR Code		
RSS 14	F/w version 2.15 or later	F/w version 2.15 or later
RSS Limited	F/w version 2.15 or later	F/w version 2.15 or later
RSS Expanded	F/w version 2.15 or later	F/w version 2.15 or later
Codablock A	Available in 1551 0808 PDF	
Codablock F	Available in 1551 0808 PDF	
UCC Composite		

Attached RFID Readers



Note: The 700 Color Computer currently supports only the IP4 Intellitag Portable RFID Reader, a trigger handle accessory that lets you hold your 700 Color Computer like a reader or scanner. Contact your Intermec representative for more information.

Radio frequency identification (RFID) systems evolved as a way to provide all the benefits of visual scanning systems, while overcoming many of their limitations. Radio frequency (RF) describes electromagnetic waves in the 10 kHz to 10 GHz range. Electronic identification (ID) systems transfer data messages from an object to be identified to a data management system. RFID systems use radio frequency to transfer data between an item being tracked and a reader/writer. It is a fast, automatic identification technology.

More information about RFID and the IP4 Reader are in the following Intermec publications. PDFs of these publications are available from the Intermec web site at www.intermec.com.

- *Basic Reader Interface Programmer's Reference Manual* (P/N: 937-000-001)
- *Intermec RFID System Manual* (P/N: 936-000-001)
- *IP4 Handheld Reader Instructions* (P/N: 943-002-002)
- *IP4 Handheld Reader Manual Supplement* (P/N: 933-000-001)

Reading RFID Tags with the Virtual Wedge

The virtual wedge is a Data Collection services feature that enters bar code and RFID tag data into a software application as if it were typed at the keypad. This section explains how to configure the 700 Color Computer to read RFID tags through the virtual wedge. Contact your Intermec representative for more information about the virtual wedge.

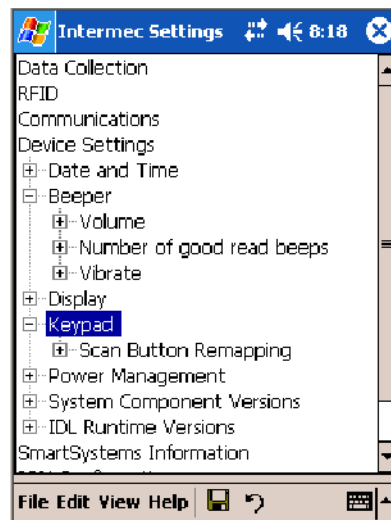
Do the following to configure your virtual wedge to do RFID tags.

- Configure at least one scan button on the 700 Color Computer to trigger RFID (*go to the next paragraph*).
- Disable power to Bluetooth (*go to page 183 for instructions*).
- Enable the IP4 Reader (*go to page 184 for instructions*).

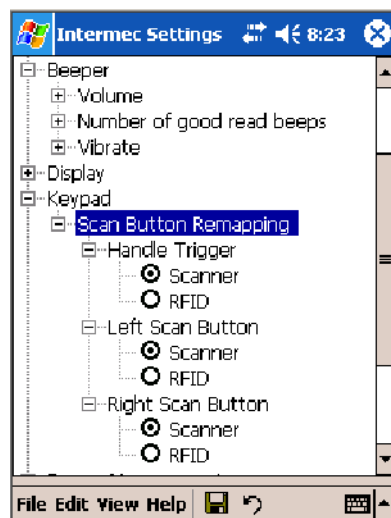
Use the Intermec Settings applet to configure at least one scan button. Information about the settings you can configure with this applet is described in the *Intermec Computer Command Reference Manual*. The online manual is available from the Intermec web site at www.intermec.com.



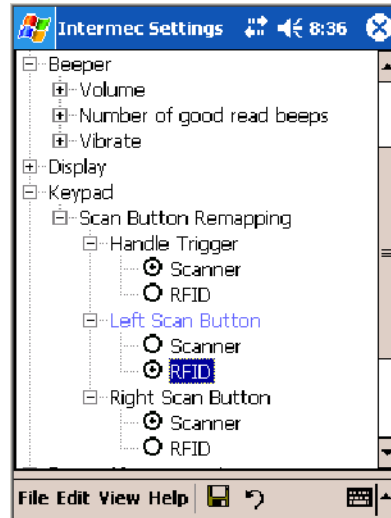
- 1 From the 700 Color Computer, tap **Start > Settings > the System tab > the Intermec Settings icon > the Device Settings option**, then tap (+) to expand the **Keypad** option.



- 2 Tap (+) to expand **Scan Button Remapping**, then tap (+) to expand any of the **Handle Trigger**, the **Left Scan Button**, or the **Right Scan Button** options. *Note that the Handle Trigger option is for the IP4 Reader.*



- 3 Select **RFID** to change the trigger from the scanner to RFID, then select **File > Save Settings**.



- 4 Go to the next paragraph to disable power to Bluetooth.
- 5 Go to page 184 to enable the IP4 Reader.

Disable Power to Bluetooth

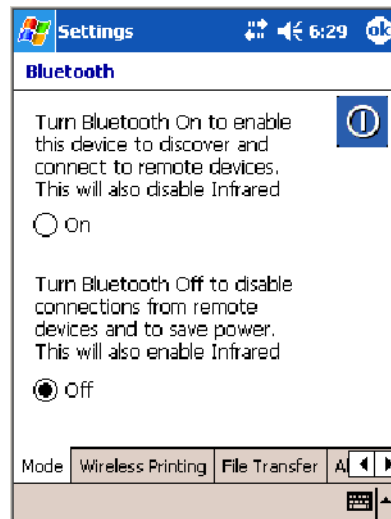


Note: Before you configure your attached IP4 Reader, make sure Bluetooth is disabled on your 700 Color Computer.



Bluetooth

- 1 Tap **Start > Settings > the Connections tab > the Bluetooth icon**.
- 2 Check whether **Off** is selected. If not, then check **Off**. Wait momentarily for Bluetooth to turn off, then click **ok** to close the Bluetooth applet.



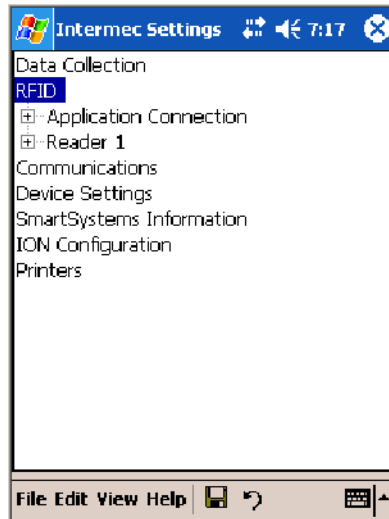
Configure the Reader Using Intermec Settings

You should also adjust its settings using the Intermec Settings applet. Information about the settings you can configure with this applet is described in the *Intermec Computer Command Reference Manual*. The online manual is available from the Intermec web site at www.intermec.com.

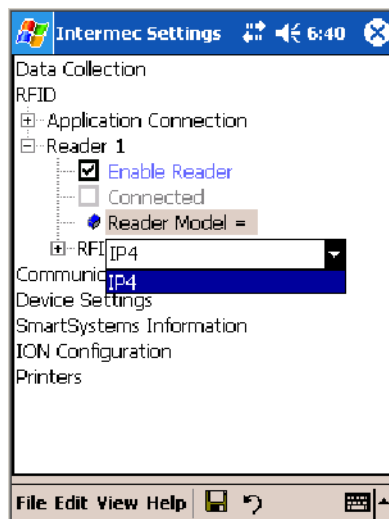
- 1 Connect your reader to the reader port.



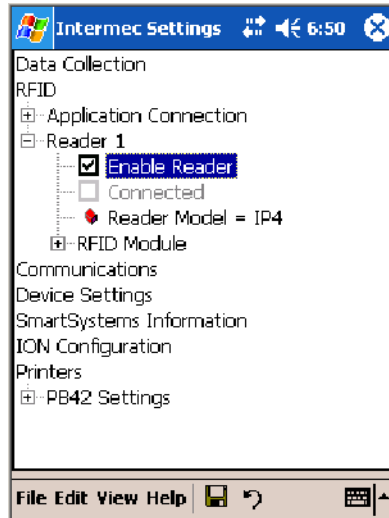
- 1 From the 700 Color Computer, tap **Start > Settings > the System tab > the Intermec Settings icon > the RFID option.**



- 2 Tap (+) to expand **Reader 1** and ensure **Reader Model** shows “IP4” as the model of choice. If not, then tap **Reader Model**, tap its drop-down, then select “IP4.”



- 3 Under the **Reader** option, check **Enable Reader** to enable the attached reader.



Once the IP4 reader is configured using the Intermec Settings applet, applications can access the IP4 Reader using the Basic Reader Interface (BRI) protocol on the 700 Color TCP port “2189.”



7 Programming

The following programming information pertains to the 700 Series Color Mobile Computer:

- Creating CAB Files (*page 188*)
- Customization and Lockdown (*page 202*)
- FTP Server (*page 203*)
- Kernel I/O Control Functions (*page 210*)
- Network Selection APIs (*page 221*)
- Notifications (*page 221*)
- Reboot Functions (*page 222*)
- Remapping the Keypad (*page 223*)



Note: “700 Color” pertains to 730, 740, 741, 750, 751, 760, and 761 Computers unless otherwise noted.

Creating CAB Files

The Windows CE operating system uses a .CAB file to install an application on a Windows CE-based device. A .CAB file is composed of multiple files that are compressed into one file. Compressing multiple files into one file provides the following benefits:

- All application files are present.
- A partial installation is prevented.
- The application can be installed from several sources, such as a desktop computer or a Web site.

Use the CAB Wizard application (CABWIZ.EXE) to generate a .CAB file for your application.

Creating Device-Specific CAB Files

Do the following to create a device-specific .CAB file for an application, *in the order provided*:

- 1 Create an .INF file with Windows CE-specific modifications (*page 188*).
- 2 *Optional* Create a SETUP.DLL file to provide custom control of the installation process (*page 197*).
- 3 Use the CAB Wizard to create the .CAB file, using the .INF file, the optional SETUP.DLL file, and the device-specific application files as parameters (*page 201*).

Creating an .INF File

An .INF file specifies information about an application for the CAB Wizard. Below are the sections of an .INF file:

[Version]

This specifies the creator of the file, version, and other relevant information.

Required? Yes

- **Signature:** “*signature_name*”
 “\$Windows NT\$”
- **Provider:** “*INF_creator*”
 The company name of the application, such as “Microsoft.”
- **CESignature**
 “\$Windows CE\$”

Example

```
[Version]
Signature = "$Windows NT$"
Provider = "Intermec"
CESignature = "$Windows CE$"
```

[CEStrings]

This specifies string substitutions for the application name and the default installation directory.

Required? Yes

- **AppName:** *app_name*
Name of the application. Other instances of %AppName% in the .INF file are replaced with this string value, such as RP32.
- **InstallDir:** *default_install_dir*
Default installation directory on the device. Other instances of %InstallDir% in the .INF file are replaced with this string value. Example:
\\SDMMC_Disk\%AppName%

Example

```
[CEStrings]
AppName="Game Pack"
InstallDir=%CE1%\%AppName%
```

[Strings]

This section is optional and defines one or more string keys. A string key represents a string of printable characters.

Required? No

- **string_key:** *value*
String consisting of letters, digits, or other printable characters. Enclose *value* in double quotation marks “” if corresponding string key is used in an item requiring double quotation marks. No string_keys is okay.

Example

```
[Strings]
reg_path = Software\Intermec\My Test App
```

[CEDevice]

Describes the platform for the targeted application. All keys are optional. If a key is nonexistent or has no data, Windows CE does not perform any checking except the *UnsupportedPlatforms*. If the *UnsupportedPlatforms* key exists but no data, the previous value is not overridden.

Required? Yes

- **ProcessorType :** *processor_type*
The value that is returned by `SYSTEMINFO.dwProcessorType`. For example, the value for the ARM CPU is 2577
- **UnsupportedPlatforms:** *platform_family_name*
This lists known unsupported platform family names. If the name specified in the [CEDevice.xxx] section is different from that in the [CEDevice] section, both *platform_family_name* values are unsupported for the microprocessor specified by xxx. That is, the list of unsupported platform family names is appended to the previous list of unsupported names. Application Manager will not display the application for an unsupported platform. Also, a user will be warned during the setup process if the .CAB file is copied to an unsupported device.

Example

```
[CEDevice]
UnsupportedPlatforms = pltfrm1 ; pltfrm1 is unsupported
[CEDevice.SH3]
UnsupportedPlatforms = ; pltfrm1 is still unsupported
```

- **VersionMin:** *minor_version*
Numeric value returned by OSVERSIONINFO.dwVersionMinor. The .CAB file is valid for the currently connected device if the version of this device is greater than or equal to **VersionMin**.
- **VersionMax:** *major_version*
Numeric value returned by OSVERSIONINFO.dwVersionMajor. The .CAB file is valid for the currently connected device if the version of this device is less than or equal to **VersionMax**.
- **BuildMin:** *build_number*
Numeric value returned by OSVERSIONINFO.dwBuildNumber. The .CAB file is valid for the currently connected device if the version of this device is greater than or equal to **BuildMin**.
- **BuildMax:** *build_number*
Numeric value returned by OSVERSIONINFO.dwBuildNumber. The .CAB file is valid for the currently connected device if the version of this device is less than or equal to **BuildMax**.

Example

The following code example shows three [CEDevice] sections: one that gives basic information for any CPU and two that are specific to the SH3 and the MIPS microprocessors.

```
[CEDevice] ; A "template" for all platforms
UnsupportedPlatforms = pltfrm1 ; Does not support pltfrm1

; The following specifies version 1.0 devices only.
VersionMin = 1.0
VersionMax = 1.0

[CEDevice.ARM] ; Inherits all [CEDevice] settings
; This will create a .CAB file specific to ARM devices.
ProcessorType = 2577 ; ARM .cab file is valid for ARM microprocessors.
UnsupportedPlatforms = ; pltfrm1 is still unsupported

; The following overrides the version settings so that no version checking is
; performed.
VersionMin =
VersionMax =

[CEDevice.MIPS] ; Inherits all [CEDevice] settings
; This will create a .CAB file specific to "MIPS" devices.
ProcessorType = 4000 ; MIPS .CAB file is valid for MIPS
microprocessor.
UnsupportedPlatforms =pltfrm2 ; pltfrm1, pltfrm2 unsupported for MIPS .CAB
file.
```



Note: To create the two CPU-specific .CAB files for the SETUP.INF file in the previous example, run the CAB Wizard with the “/cpu arm mips” parameter.

[DefaultInstall]

This describes the default installation of your application. Note that under this section, you will list items expanded upon later in this description.

Required? Yes

- **Copyfiles:** *copyfile_list_section*
Maps to files defined later in the .INF file, such as Files.App, Files.Font, and Files.Bitmaps.
- **AddReg:** *add_registry_section*
Example: RegSettings.All
- **CEShortcuts:** *shortcut_list_section*
String that identifies one more section that defines shortcuts to a file, as defined in the [CEShortcuts] section.
- **CESetupDLL:** *setup_DLL*
Optimal string that specifies a SETUP.DLL file. It is written by the Independent Software Vendor (ISV) and contains customized functions for operations during installation and removal of the application. The file must be specified in the [SourceDisksFiles] section.
- **CESelfRegister:** *self_reg_DLL_filename*
String that identifies files that self-register by exporting the **DllRegisterServer** and **DllUnregisterServer** Component Object Model (COM) functions. Specify these files in the [SourceDiskFiles] section. During installation, if installation on the device fails to call the file's exported **DllRegisterServer** function, the file's exported **DllUnregisterServer** function will not be called during removal.

Example

```
[DefaultInstall]
AddReg = RegSettings.All
CEShortcuts = Shortcuts.All
```

[SourceDiskNames]

This section describes the name and path of the disk on which your application resides.

Required? Yes

- **disk_ordinal:** *disk_label,,path*
1 = , "App files" , C:\Appsoft\RP32\...
2 = , "Font files" , C:\RpTools\...
3 = , "CE Tools" , C:\windows ce tools...
- **CESignature:** "\$Windows CE\$"

Example

```
[SourceDisksNames]                                ; Required section
1 = , "Common files" , , C:\app\common              ; Using an absolute path
[SourceDisksNames.SH3]
2 = , "SH3 files" , , sh3                          ; Using a relative path
[SourceDisksNames.MIPS]
2 = , "MIPS files" , , mips                        ; Using a relative path
```

[SourceDiskFiles]

This describes the name and path of the files in which your application resides.

Required? Yes

- **filename:** *disk_number[,subdir]*
 RPM.EXE = 1,c:\appsoft\...
 WCESTART.INI = 1
 RPMCE212.INI = 1
 TAHOMA.TTF = 2



Note: [,subdir] is relative to the location of the INF file.

Example

```
[SourceDisksFiles]           ; Required section
begin.wav = 1
end.wav = 1
sample.hlp = 1
[SourceDisksFiles.SH3]
sample.exe = 2             ; Uses the SourceDisksNames.SH3 identification of 2.
[SourceDisksFiles.MIPS]
sample.exe = 2             ; Uses the SourceDisksNames.MIPS identification of 2.
```

[DestinationDirs]

This describes the names and paths of the destination directories for the application on the target device. *Note Windows CE does not support directory identifiers.*

Required? Yes

- **file_list_section:** *0,subdir*
 String that identifies the destination directory. The following list shows the string substitutions supported by Windows CE. Use these only for the beginning of the path. \
 %CE1% \Program Files
 %CE2% \Windows
 %CE3% \My Documents
 %CE4% \Windows\Startup
 %CE5% \My Documents
 %CE6% \Program Files\Accessories
 %CE7% \Program Files\Communication
 %CE8% \Program Files\Games
 %CE9% \Program Files\Pocket Outlook
 %CE10% \Program Files\Office
 %CE11% \Windows\Start Menu\Programs
 %CE12% \Windows\Start Menu\Programs\Accessories
 %CE13% \Windows\Start Menu\Programs\Communications
 %CE14% \Windows\Start Menu\Programs\Games
 %CE15% \Windows\Fonts
 %CE16% \Windows\Recent
 %CE17% \Windows\Start Menu
 %InstallDir%

Contains the path to the target directory selected during installation. It is declared in the [CEStrings] section

%AppName%

Contains the application name defined in the [CEStrings] section.

Example

[DestinationDirs]

```
Files.Common = 0,%CE1%\My Subdir      ; \Program Files\My Subdir
Files.Shared = 0,%CE2%                ; \Windows
```

[CopyFiles]

This section, under the [DefaultInstall] section, describes the default files to copy to the target device. Within the [DefaultInstall] section, files were listed that must be defined elsewhere in the INF file. This section identifies that mapping and may contain flags.

Required? Yes

- **copyfile_list_section:** *destination_filename,[source_filename]*
The *source_filename* parameter is optional if it is the same as *destination_filename*.
- **copyfile_list_section:** *flags*
The numeric value that specifies an action to be done while copying files. The following table shows values supported by Windows CE.

Flag	Value	Description
COPYFLG_WARN_IF_SKIP	0x00000001	Warn user if skipping a file is attempted after error.
COPYFLG_NOSKIP	0x00000002	Do not allow a user to skip copying a file.
COPYFLG_NO_OVERWRITE	0x00000010	Do not overwrite files in destination directory.
COPYFLG_REPLACEONLY	0x00000400	Copy the source file to the destination directory only if the file is already in the destination directory.
CE_COPYFLG_NO_DATE_DIALOG	0x20000000	Do not copy files if the target file is newer.
CE_COPYFLG_NODATECHECK	0x40000000	Ignore date while overwriting the target file.
CE_COPYFLG_SHARED	0x80000000	Create a reference when a shared DLL is counted.

Example

[DefaultInstall.SH3]

```
CopyFiles = Files.Common, Files.SH3
```

[DefaultInstall.MIPS]

```
CopyFiles = Files.Common, Files.MIPS
```

[AddReg]

This section, under the [DefaultInstall] section, is optional and describes the keys and values that the .CAB file adds to the device registry. Within the [DefaultInstall] section, a reference may have been made to this section, such as “AddReg=RegSettings.All”. This section defines the options for that setting.

Required? No

- **add_registry_section:** *registry_root_string*
String that specifies the registry root location. The following list shows the values supported by Windows CE.
 - HKCR Same as HKEY_CLASSES_ROOT
 - HKCU Same as HKEY_CURRENT_USER
 - HKLM Same as HKEY_LOCAL_MACHINE
- **add_registry_section:** *value_name*
Registry value name. If empty, the “default” registry value name is used.
- **add_registry_section:** *flags*
Numeric value that specifies information about the registry key. The following table shows the values that are supported by Window CE.

Flag	Value	Description
FLG_ADDREG_NOCLOBBER	0x00000002	If the registry key exists, do not overwrite it. Can be used with any of the other flags in this table.
FLG_ADDREG_TYPE_SZ	0x00000000	REG_SZ registry data type.
FLG_ADDREG_TYPE_MULTI_SZ	0x00010000	REG_MULTI_SZ registry data type. Value field that follows can be a list of strings separated by commas.
FLG_ADDREG_TYPE_BINARY	0x00000001	REG_BINARY registry data type. Value field that follows must be a list of numeric values separated by commas, one byte per field, and must not use the 0x hexadecimal prefix.
FLG_ADDREG_TYPE_DWORD	0x00010001	REG_DWORD data type. The noncompatible format in the Win32 Setup .INF documentation is supported.

Example

```
AddReg = RegSettings.All
```

[RegSettings.All]

```
HKLM,%reg_path%, ,0x00000000,alpha ; <default> = "alpha"
HKLM,%reg_path%,test,0x00010001,3 ; Test = 3
HKLM,%reg_path%\new,another,0x00010001,6 ; New\another = 6
```

[CEShortCuts]

This section, a Windows CE-specific section under the [DefaultInstall] section, is optional and describes the shortcuts that the installation application creates on the device. Within the [DefaultInstall] section, a reference may have been made to this section, such as “ShortCuts.All”. This section defines the options for that setting.

Required? No

- **shortcut_list_section:** *shortcut_filename*
String that identifies the shortcut name. It does not require the .LNK extension.
- **shortcut_list_section:** *shortcut_type_flag*
Numeric value. Zero or empty represents a shortcut to a file; any non-zero numeric value represents a shortcut to a folder.

- **shortcut_list_section:** *target_file_path*
String value that specifies the destination location. Use the target file name for a file, such as MyApp.exe, that must be defined in a file copy list. For a path, use a *file_list_section* name defined in the [DestinationDirs] section, such as *DefaultDestDir*, or the *%InstallDir%* string.
- **shortcut_list_section:** *standard_destination_path*
Optional string value. A standard *%CEX%* path or *%InstallDir%*. If no value is specified, the *shortcut_list_section* name of the current section or the *DefaultDestDir* value from the [DestinationDirs] section is used.

Example

```
CEShortcuts = Shortcuts.All
[Shortcuts.All]
Sample App,0,sample.exe           ; Uses the path in DestinationDirs. Sample
App,0,sample.exe,%InstallDir%     ; The path is explicitly specified.
```

Sample .INF File

```
[Version]                ; Required section
Signature = "$Windows NT$"
Provider = "Intermec Technologies Corporation"
CESignature = "$Windows CE$"

;[CEDevice]
;ProcessorType =

[DefaultInstall]        ; Required section
CopyFiles = Files.App, Files.Fonts, Files.BitMaps, Files.Intl,
Files.TelecomNcsCE, Files.Windows, Files.Import, Files.Export, Files.Work,
Files.Database, Files.WinCE AddReg = RegSettings.All ;CEShortcuts =
Shortcuts.All

[SourceDisksNames]      ; Required section
1 = ,"App files" , ,c:\appsoft\...
2 = ,"Font files" , ,c:\WinNT\Fonts
3 = ,"CE Tools" , ,c:\windows ce tools\wce400\700ie\mfc\lib\x86

[SourceDisksFiles]      ; Required section
rpm.exe = 1,C:\Appsoft\program\wce400\WCEX86Rel1700
wcestart.ini = 1
rpmce212.ini = 1
intermec.bmp = 1
rpmlogo.bmp = 1
rpmname.bmp = 1
import.bmp = 1
export.bmp = 1
clock.bmp = 1
printer.bmp = 1
filecopy.bmp = 1
readme.txt = 1
lang_eng.bin = 1
rpmdata.dbd = 1,database\wce1
tahoma.ttf = 2
mfce212.dll = 3
olece212.dll = 3
olece211.dll = 1,c:\windows ce tools\wce400\NMSD61102.11\mfc\lib\x86
rdm45wce.dll = 1,c:\rptools\rdm45wce\4_50\lib\wce400\wce86rel
picfmt.dll = 1,c:\rptools\picfmt\1_00\wce400\wce86rel6110
```

```
fmtctrl.dll = 1,c:\rptools\fmtctrl\1_00\wce400\wcex86rel6110
ugrid.dll = 1,c:\rptools\ugrid\1_00\wce400\wcex86rel6110
simple.dll = 1,c:\rptools\pspbm0c\1_00\wce400\wcex86rel
psink.dll = 1,c:\rptools\psink\1_00\wce400\WCEX86RelMinDependency
pslpwce.dll = 1,c:\rptools\pslpm0c\1_00\wce400\WCEX86RelMinDependency
npcpport.dll = 1,c:\rptools\cedk\212_03\installable drivers\printer\npcp
;dexcom.dll = 1,c:\rptools\psdxm0c\1_00\x86
ncsce.exe = 1,c:\rptools\ncsce\1_04
nrinet.dll = 1,c:\rptools\ncsce\1_04
```

```
[DestinationDirs] ; Required section
;Shortcuts.All = 0,%CE3% ; \Windows\Desktop
Files.App = 0,%InstallDir%
Files.DataBase = 0,%InstallDir%\DataBase
Files.BitMaps = 0,%InstallDir%\Bitmaps
Files.Fonts = 0,%InstallDir%\Fonts
Files.Intl = 0,%InstallDir%\Intl
Files.TelecomNcsCE = 0,%InstallDir%\Telecom\NcsCE
Files.Windows = 0,%InstallDir%\Windows
Files.Import = 0,%InstallDir%\Import
Files.Export = 0,%InstallDir%\Export
Files.Work = 0,%InstallDir%\Work
Files.WinCE = 0,\storage_card\wince
```

```
[CEStrings] ; Required section
AppName = Rp32
InstallDir = \storage_card\%AppName%
```

```
[Strings] ; Optional section
;[Shortcuts.All]
;Sample App,0,sample.exe ; Uses the path in DestinationDirs.
;Sample App,0,sample.exe,%InstallDir% ; The path is explicitly specified.
```

```
[Files.App]
rpm.exe,,,0
rpm.ini,rpmce212.ini,,0
mfcce212.dll,,,0
olece212.dll,,,0
olece211.dll,,,0
rdm45wce.dll,,,0
picfmt.dll,,,0
fmtctrl.dll,,,0
ugrid.dll,,,0
simple.dll,,,0
psink.dll,,,0
pslpwce.dll,,,0
npcpport.dll,,,0
;dexcom.dll,,,0
```

```
[Files.DataBase]
rpmdata.dbd,,,0
```

```
[Files.Fonts]
tahoma.ttf,,,0
```

```
[Files.BitMaps]
intermec.bmp,,,0
rpmlogo.bmp,,,0
rpmname.bmp,,,0
```

```

import.bmp,,,0
export.bmp,,,0
clock.bmp,,,0
printer.bmp,,,0
filecopy.bmp,,,0

[Files.Intl]
lang_eng.bin,,,0

[Files.TelecomNcsCE]
ncsce.exe,,,0
nrinet.dll,,,0

[Files.Windows]
readme.txt,,,0

[Files.Import]
readme.txt,,,0

[Files.Export]
readme.txt,,,0

[Files.Work]
readme.txt,,,0

[Files.WinCE]
wcestart.ini,,,0

[RegSettings.All]
HKLM,"SOFTWARE\Microsoft\Shell\AutoHide",,0x00010001,1
; Autohide the taskbar HKLM,"SOFTWARE\Microsoft\Shell\OnTop",,0x00010001,0
; Shell is not on top
HKLM,"SOFTWARE\Microsoft\Clock",SHOW_CLOCK,0x00010001,0
; Clock is not on taskbar

```

Using Installation Functions in SETUP.DLL

SETUP.DLL is an optional file that enables you to perform custom operations during installation and removal of your application. The following list shows the functions that are exported by SETUP.DLL.

Install_Init	Called before installation begins. Use this function to check the application version when reinstalling an application and to determine if a dependent application is present.
Install_Exit	Called after installation is complete. Use this function to handle errors that occur during application installation.
Uninstall_Init	Called before the removal process begins. Use this function to close the application, if the application is running.
Uninstall_Exit	Called after the removal process is complete. Use this function to save database information to a file and delete the database and to tell the user where the user data files are stored and how to reinstall the application.



Note; Use [DefaultInstall] > CESelfRegister (page 191) in the .INF file to point to SETUP.DLL.

After the CAB File Extraction

Cab files that need to cause a warm reset after cab extraction will need to create the `__RESETMEPLEASE__.TXT` file in the “\Windows” directory. The preferred method to create this file is within the `DllMain` portion of the `SETUP.DLL` file. It looks like this:

```
#include <windows.h>
#include <Tlhelp32.h>
#include <winioctl.h>
#include <ce_setup.h>    // in the public SDK dir

#define IOCTL_TERMINAL_RESET CTL_CODE (FILE_DEVICE_UNKNOWN, FILE_ANY_ACCESS,
2050, METHOD_NEITHER)

BOOL APIENTRY DllMain( HANDLE h, DWORD reason, LPVOID lpReserved )
{
    return TRUE;
} // DllMain

//*****
// $DOCBEGIN$
// BOOL IsProcessRunning( TCHAR * pname );
//
// Description: Get process table snapshot, look for pname running.
//
// Arguments: pname - pointer to name of program to look for.
// for example, app.exe.
//
// Returns: TRUE - process is running.
//         FALSE - process is not running.
// $DOCEND$
//*****
BOOL IsProcessRunning( TCHAR * pname )
{
    HANDLE hProcList;
    PROCESSENTRY32 peProcess;
    DWORD thDeviceProcessID;
    TCHAR lpname[MAX_PATH];

    if ( !pname || !*pname ) return FALSE;

    _tcscpy( lpname, pname );
    _tcslwr( lpname );

    hProcList = CreateToolhelp32Snapshot( TH32CS_SNAPPROCESS, 0 );

    if ( hProcList == INVALID_HANDLE_VALUE ) {
        return FALSE;
    } // end if

    memset( &peProcess, 0, sizeof(peProcess) );
    peProcess.dwSize = sizeof(peProcess);

    if ( !Process32First( hProcList, &peProcess ) ) {
        CloseToolhelp32Snapshot( hProcList );
        return FALSE;
    } // end if
}
```



```

thDeviceProcessID = 0;

do {
    _tcslwr( peProcess.szExeFile );

    if ( _tcsstr( peProcess.szExeFile, lpname ) ) {
        thDeviceProcessID = peProcess.th32ProcessID;
        break;
    } // end if
} while ( Process32Next( hProcList, &peProcess ) );

if ( ( GetLastError() == ERROR_NO_MORE_FILES ) && ( thDeviceProcessID == 0
) ) {
    CloseToolhelp32Snapshot( hProcList );
    return FALSE;
} // end if

CloseToolhelp32Snapshot( hProcList );
return TRUE;
} // IsProcessRunning

codeINSTALL_INIT Install_Init(
    HWND hwndParent,
    BOOL fFirstCall,
    BOOL fPreviouslyInstalled,
    LPCTSTR pszInstallDir )
{
    return codeINSTALL_INIT_CONTINUE;
}

codeINSTALL_EXIT Install_Exit (
    HWND hwndParent,
    LPCTSTR pszInstallDir,
    WORD cFailedDirs,
    WORD cFailedFiles,
    WORD cFailedRegKeys,
    WORD cFailedRegVals,
    WORD cFailedShortcuts )
{
    HANDLE h;
    TCHAR srcfile[MAX_PATH];
    TCHAR dstfile[MAX_PATH];

    if ( cFailedDirs || cFailedFiles || cFailedRegKeys ||
        cFailedRegVals || cFailedShortcuts )
        return codeINSTALL_EXIT_UNINSTALL;

    if ( IsProcessRunning( L"autocab.exe" ) )
    {
        h = CreateFile( L"\\Windows\\__resetmeplease__.txt",
            (GENERIC_READ | GENERIC_WRITE), 0, NULL, CREATE_ALWAYS,
            FILE_ATTRIBUTE_HIDDEN, NULL );

        if ( h != INVALID_HANDLE_VALUE )
            CloseHandle( h );
        else
        {
            // Couldn't create the file. If it failed because the file already

```

```

exists, it is not fatal.
    // Otherwise, notify user of the inability to reset the device and they
will have to
    // perform it manually after all of the installations are complete.
    } // end if
}
else
{
    DWORD dret;

    h = CreateFile( L"SY11:",
        (GENERIC_WRITE | GENERIC_READ), 0, NULL, OPEN_EXISTING,
        FILE_ATTRIBUTE_NORMAL, NULL );

    // Force a warm start NOW.
    if ( h != INVALID_HANDLE_VALUE )
    {
        DeviceIoControl( h, IOCTL_TERMINAL_RESET, NULL, 0, NULL, 0, &dret,
NULL);

        // Won't return, but we'll show clean up anyway
        CloseHandle( h );
    }
    else
    {
        // Couldn't access SYSIO. Notify user.
    } // end if
} // end if

return codeINSTALL_EXIT_DONE;
}

codeUNINSTALL_INIT
Uninstall_Init(
    HWND hwndParent,
    LPCTSTR pszInstallDir ) {

    // TODO: Perform the reverse of INSTALL_INIT here
    return codeUNINSTALL_INIT_CONTINUE;
}

codeUNINSTALL_EXIT
Uninstall_Exit(HWND hwndParent) {

    // TODO: Perform the reverse of INSTALL_EXIT here
    return codeUNINSTALL_EXIT_DONE;
}

```

The system software looks for the following directory structure and files on the installed media card whether it be a Secure Digital storage card or CompactFlash storage card or embedded flash file system. No other folders need exist.

```

\2577\autorun.exe
\2577\autorun.dat
\2577\autocab.exe
\2577\autocab.dat
\cabfiles\*.cab

```

Creating CAB Files with CAB Wizard

After you create the .INF file and the optional SETUP.DLL file, use the CAB Wizard to create the .CAB file. Below is the command-line syntax:

```
cabwiz.exe "inf_file" [/dest dest_directory] [/err error_file] [/cpu cpu_type  
[cpu_type]]
```

A batch file in <program> directory, with these commands, works well:

```
cabwiz.exe c:\appsoft\<<program>\<inf_file_name>  
cd \appsoft\<<program>
```

<i>“inf_file”</i>	The SETUP.INF file path.
<i>dest_directory</i>	The destination directory for the .CAB files. If no directory is specified, the .CAB files are created in the “inf_file” directory.
<i>error_file</i>	File name for a log file that contains all warnings and errors that are encountered when the .CAB files are compiled. If no file name is specified, errors are displayed in message boxes. If a file name is used, the CAB Wizard runs without the user interface (UI); this is useful for automated builds.
<i>cpu_type</i>	Creates a .CAB file for each specified microprocessor tag, which is a label used in the Win32 SETUP.INF file to differentiate between different microprocessor types. The /cpu parameter, followed by multiple <i>cpu_type</i> values, must be the last qualifier in the command line.

Example

This example creates .CAB files for the ARM and MIPS microprocessors, assuming the Win32 SETUP.INF file contains the ARM and MIPS tags:

```
cabwiz.exe "c:\myfile.inf" /err myfile.err /cpu arm mips
```



Note: CABWIZ.EXE, MAKECAB.EXE, and CABWIZ.DDF (Windows CE files available on the Windows CE Toolkit) must be installed in the same directory on the desktop computer. Call CABWIZ.EXE using its full path for the CAB Wizard application to run correctly.

Troubleshooting the CAB Wizard

To identify and avoid problems that might occur when using the CAB Wizard, follow these guidelines:

- Use %% for a percent sign (%) character when using this character in an .INF file string, as specified in Win32 documentation. This will not work under the [Strings] section.
- Do not use .INF or .CAB files created for Windows CE to install applications on Windows-based desktop platforms.
- Ensure the MAKECAB.EXE and CABWIZ.DDF files, included with Windows CE, are in the same directory as CABWIZ.EXE.
- Use the full path to call CABWIZ.EXE.
- Do not create a .CAB file with the MAKECAB.EXE file included with Windows CE. You must use CABWIZ.EXE, which uses MAKECAB.EXE to generate the .CAB files for Windows CE.
- Do *not* set the read-only attribute for .CAB files.

Customization and Lockdown

Pocket PC (Windows Mobile) is a hardware specification created by Microsoft Corporation. Devices that wish to carry the Pocket PC logo must meet the minimum hardware requirements set in the Pocket PC specification. Manufacturers are free to add extra hardware functionality.

Pocket PC devices also use a specialized version of the CE operating system. This operating system is built from Windows CE 4.2 but contains customizations, most notably the lack of a desktop and the addition of the Today Screen.

To carry the Pocket PC logo, all devices must be tested at an Independent Test Laboratory. The ITL testing is done based on Microsoft requirements. The test lab then reports the findings back to Microsoft Corporation and Intermec. If the 700 Color Computer passed all tests, Intermec is allowed to ship the device with the Pocket PC logo. Each time the operating system is modified, Intermec must resubmit to ITL testing.

This means we cannot change the operating system much and still be a Pocket PC device. For example, if we remove Word from the Start menu, the device would fail ITL testing and we would not be able to ship devices with the Pocket PC logo.

Although many customers want a Pocket PC device, some customers would prefer that their users not have access to all of the Pocket PC features. Intermec cannot customize the operating system in any way but a custom application can:

Delete items from the Start menu, and Programs folder. These items are just shortcuts in the file system so the application is not really being deleted. Cold booting the device will bring these items back so the application will need to be run on every cold boot.

Use the RegFlushKey() API to save a copy of the registry to a storage device. See the 700 Color Management Tools portion for more information on how to do this. Saving a copy of the registry restores most system settings in a cold boot situation.

Use the SHFullScreen() API in conjunction with other APIs to make the application take up the entire display and prevent the start menu from being available.

Remap keys and disable keys on the keypad.

Create a custom SIP.

Make changes to the registry to configure the device.

Should you want your 700 Color Computer to display a full screen, keep in mind that your computer is Pocket-PC certified by Microsoft Corporation. Check out resources on programming for the Pocket PC, using the following links. These give full instructions on how to display full screen.

- Instructions on how to create a full screen application for eVC++ applications using an SHFullScreen() API:
support.microsoft.com/support/kb/articles/Q266/2/44.ASP
- Instructions on how to create a full screen application for eVB applications also using the SHFullScreen() API:
support.microsoft.com/support/kb/articles/Q265/4/51.ASP

FTP Server

FTP support is provided through the FTP Server application FTPDCE.EXE (MS Windows CE Versions) which is provided as part the base system.

FTPDCE is the Internet File Transfer Protocol (FTP) server process. The server can be invoked from an application or command line. Besides servicing FTP client requests the FTP Server also send a “network announcement” to notify prospective clients of server availability.



Note: You should consult the RFC959 specification for proper use of some of these commands at the following URL:

- www.ietf.org/rfc/rfc959.txt for the text version, or
- www.w3.org/Protocols/rfc959/ for an html version

Do the following to send commands:

- 1 Start an FTP client and connect to the device FTP server.
- 2 Log in with “intermec” as the user name and “cr52401” - the password.
- 3 From the FTP client, send the command.
- 4 Wait for a response.

Synopsis

`ftpdce [options]`

Options

<code>-Aaddr</code>	(where <i>addr</i> is in the form of a.b.c.d) Sets the single target address to which to send the network announcement. <i>Default is broadcast.</i>
<code>-Bbyte</code>	Sets the FTP data block size. Smaller sizes may be useful over slower links. <i>Default is 65536.</i>
<code>-Cname</code>	Sets the device name. Used by Intermec management software.
<code>-Fvalue</code>	Disables the default Intermec account. A value of “0” disables the account. <i>Default is “1”.</i> Note that disabling the default account without providing a working access control list on the server will result in a device that will not accept any FTP connections.
<code>-Hsec</code>	Sets the interval between network announcements in seconds. A value of “0” turns the network announcement off. <i>Default is 30 seconds.</i>
<code>-Iaddr</code>	(where <i>addr</i> is in the form of a.b.c.d) Sets the preferred 6920 Communications Server (<i>optional</i>).
<code>-Llog</code>	(where <i>log</i> is either “0” or “1”) Sets the state of logging. <i>Default is 0 (disabled).</i>
<code>-Nsec</code>	Specifies the number of seconds to wait before initially starting FTP server services.
<code>-Pport</code>	Sets the UDP port on which the network announcement will be sent. <i>Default port is 52401.</i>
<code>-Qport</code>	Sets the port on which the FTP Server will listen for connections. <i>Default port is 21.</i>
<code>-Rdir</code>	Sets the FTP mount point to this directory. Default is the root folder of the object store.
<code>-Tscrip</code>	Sets the script name for the 6920 Communications Server to process.
<code>-Uurl</code>	Sets the default URL for this device.
<code>-Z“parms”</code>	Sets extended parameters to be included in the network announcement.

Configurable Parameters Via the Registry Editor

These parameters receive default values during the Intermecc FTP Server component installation. Few of the parameters are visible in the registry by default, but most must be created to modify the FTP server behavior.

BlockSize

Setting this parameter configures the Intermecc FTP Server to transmit and receive Ethernet packets using the specified data block size. By default, the FTP server transmits and receives data using a 64K data block size. Adjusting this value may be useful in certain wireless TCP/IP installations.

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_DWORD - data block size, in bytes.
Valid Range	0x100-0x10000 (256-65536 decimal).
Default	65536

DeviceName

This configures the Intermecc FTP Server to include the specified device name in the Intermecc Device Network Announcement (IDNA). Adjusting this value may assign a symbolic name to this device for asset tracking.

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_SZ
Valid Range	None.
Default	None.

DeviceURL

This parameter configures the Intermecc FTP Server to transmit the specified URL in the IDNA. This can be used by Intermecc management software for asset management.

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_SZ
Valid Range	None.
Default	None.

IDNATarget

This parameter configures the Intermecc FTP Server to transmit the IDNA to a specific destination instead of a general UDP broadcast. This parameter is useful on networks that do not allow UDP broadcasts to be routed between subnets. The use of this parameter restricts the reception of the IDNA to the target destination only.

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_SZ
Valid Range	None.
Default	None.

ManifestName

This parameter configures the Intermecc FTP Server to transmit the specified manifest name in the IDNA. This parameter is used by the Intermecc 6920 Communications Server for communication transactions. See the 6920 Server documentation for proper use of this parameter.

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_SZ
Valid Range	None.
Default	iftp.ini

PauseAtStartup

This configures the Intermecc FTP Server to sleep for the specified number of seconds before making the FTP service available on the device.

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_DWORD - stored in seconds.
Valid Range	None.
Default	0

Root

This parameter configures the Intermecc FTP Server to set the root of the FTP mount point to the specified value. *Note that this must map to an existing directory or you will not be able to log into the FTP Server.*

Key	HKLM\Software\Intermec\IFTP
Value Type	REG_SZ
Valid Range	None.
Default	\

Transferring Files Over TCP/IP Networks

The File Transfer Protocol (FTP) server transfers files over TCP/IP networks. The FTPDCE.EXE program is a version that does not display a window, but can run in the background.

FTPDCE is the Internet File Transfer Protocol (FTP) server process. The server can be invoked from an application or command line. Besides servicing FTP client requests, the FTP Server also sends a “network announcement” to notify prospective clients of server availability.

Remarks

The FTP Server currently supports the following FTP requests:

CDUP	Changes to the parent directory of the current working directory.
CWD	Changes working directory.

	<p>If the flag exists in its position shown previously, it is set. Also, in addition to the values defined above, there is also defined:</p> <ul style="list-style-type: none"> <i>C</i> Compressed file attribute. <i>E</i> Encrypted file attribute. <i>I</i> INROM file attribute. <i>X</i> XIP file attribute (execute in ROM, not shadowed in RAM).
BOOT	<p>Reboots the server OS. This will cause the system on which the server is executing to reboot. The FTP Server will shut down cleanly before reboot. All client connections will be terminated. Cold boot is default except for the PocketPC build in which the default is warm boot. (SITE BOOT)</p> <p>Usage: QUOTE SITE BOOT [<i>WARM</i> <i>COLD</i>]</p>
COPY	<p>Copies a file from one location to another. (SITE COPY)</p> <p>Usage: QUOTE SITE COPY [<i>source</i>] [<i>destination</i>]</p> <p>Example: QUOTE SITE COPY '\\Storage Card\one.dat' '\\Storage Card\two.dat'</p>
EXIT	<p>Exits the FTP Server. This command will shut down the FTP Server thus terminating all client connections. (SITE EXIT)</p> <p>Usage: QUOTE SITE EXIT</p>
HELP	<p>Gives site command help information. (SITE HELP)</p> <p>Usage: QUOTE SITE HELP [<i>command</i>]</p>
KILL	<p>Terminates a running program. (SITE KILL)</p> <p>Usage: QUOTE SITE KILL [<i>program</i> <i>pid</i>]</p>
LOG	<p>Opens or closes the program log. (SITE LOG)</p> <p>Usage: QUOTE SITE LOG [<i>open</i> [<i>filename</i>]] <i>close</i></p>
PLIST	<p>Lists the running processes (SITE PLIST)</p> <p>Usage: QUOTE SITE PLIST</p>
RUN	<p>Starts a program running. If the program to run has spaces in path or filename, wrapping the name with single quotes is required.</p> <p>Usage: QUOTE SITE RUN [<i>program</i>]</p> <p>Example: QUOTE SITE RUN '\\Storage Card\app.exe'</p>
STATUS	<p>Returns the current settings of the FTP Server. MAC, serial number, model, IP address, network announcement information as well as OS memory usage are returned. (SITE STATUS)</p> <p>Usage: QUOTE SITE STATUS</p>
TIMEOUT	<p>Toggles idle timeout between 120 to 1200 seconds (2 to 20 minutes). If this timer expires with no activity between the client and the server, the client connection will be disconnected. If the optional seconds argument is supplied, the server will set the connection timeout to the number of seconds specified. <i>Default is 120 seconds or 2 minutes.</i> (SITE TIMEOUT)</p> <p>Usage: QUOTE SITE TIMEOUT [<i>seconds</i>]</p>
EKEY	<p>Gives site command electronic key information. (SITE HELP)</p> <p>Usage: QUOTE SITE EKEY [<i>command</i>]</p>
EVAL	<p>Gives site command electronic value information. (SITE HELP)</p> <p>Usage: QUOTE SITE EVAL [<i>command</i>]</p>

GVAL	Gives site command general value information. (SITE HELP) Usage: <code>QUOTE SITE GVAL [command]</code>
PVAL	Gives site command value information. (SITE HELP) Usage: <code>QUOTE SITE PVAL [command]</code>

The remaining FTP requests specified in RFC 959 are recognized, but not implemented.

The banner returned in the parenthetical portion of its greeting shows the version number of the FTP Server as well as the MAC address, serial number and operating system of the machine hosting the server.

The FTP Server supports browsing from the latest Netscape and Microsoft web browsers. Drag-and-drop capability is available using this environment.

The FTPDCMDS subdirectory contains commands to use from the web browser.

- Click EXITME.BIN to execute a SITE EXIT command.
- Click REBOOTME.BIN to execute SITE BOOT command.
- Use the GET command on these files to have the FTP Server execute these commands.

- **Security:**

A customer configurable access control list may be installed on the 700 Color Computer. This list will allow customers to restrict access via the FTP Server to users they wish and is in addition to default Intermecc accounts that are disabled using the *-FO* option at runtime.

The access control list is named FTPDCE.TXT and is placed in the same directory on the 700 Color Computer as the FTPDCE.EXE server. The FTP Server encrypts this file to keep the information safe from unauthorized users. This file is encrypted when the FTP Server is started so a file that is placed onto the 700 Color Computer after the FTP Server starts will require a restart of the FTP Server to take effect.

The format of the FTPDCE.TXT is as follows:

```
FTPDCE:user1!passwd1<cr><lf>user2!passwd2<cr><lf>user3
!passwd3<cr><lf>...
```



Note: The user accounts and passwords are case sensitive.

Once the access control list is encrypted on the 700 Color Computer, the FTP Server hides this file from users. Once an access control list is installed on the 700 Color Computer, a new one is not accepted by the FTP Server until the previous one is removed. Encrypted access control lists are not portable between 700 Color Computers.

Stopping the FTP Server from Your Application

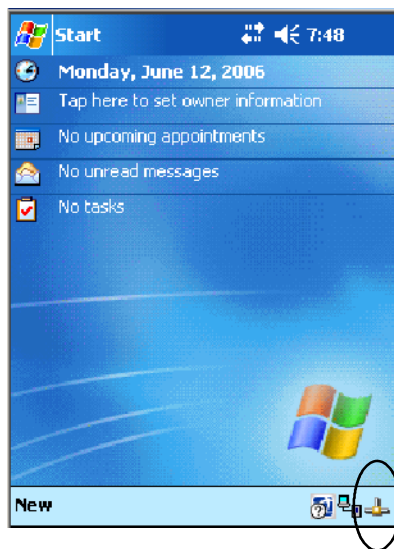
To allow application programmers the ability to programmatically shut down the FTP Server, the FTP Server periodically tests to see if a named event is signaled. ITC_IFTP_STOP is the name of this event.

For examples on how to use events, consult the Microsoft Developer Network Library at www.msdn.com. The MSDN Library is an essential resource for developers using Microsoft tools, products, and technologies. It contains a bounty of technical programming information, including sample code, documentation, technical articles, and reference guides.

Autostart FTP



This automatically starts the FTP Server (FTPDCE.EXE) when the 700 Color Computer is powered on. This is provided with the NDISTRAY program (the Network Driver Interface Specification tray application), which displays the popup menu that currently allows you to load and unload the network drivers. Tap the antenna icon in the System Tray of the Today screen (*a sample antenna icon is circled below*) for this pop-up menu.



The default is to start the FTP Server at boot time, unless the following registry entry is defined and set to “0” which disables AutoFTP. “1” enables the AutoFTP. The entry can be set from the NDISTRAY pop-up menu by selecting either **AutoFTP On** or **AutoFTP Off**.

```
HKEY_LOCAL_MACHINE\Software\Intermec\Ndistray\StartupIFTP
```

These new entries are located below the selections to load the network drivers. If the StartupIFTP registry key is not defined, the FTP Server is loaded by default, to provide “out-of-the-box” capability for customers who want to begin loading files to the 700 Color Computer without any prior configuration.

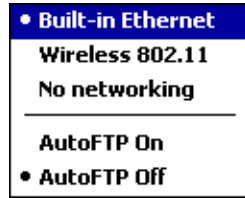


Note: If a network driver is unloaded using the NDISTRAY popup menu, and the FTP Server is running, the FTP Server is stopped.

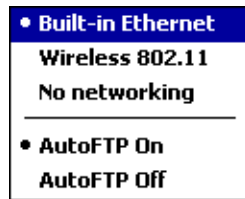
On a resume, if AutoFTP is enabled and the FTP Server is running, it is stopped and restarted. NDISTRAY uses a helper application named RESETIFTP to implement the restart on resume feature.

To do an AutoFTP Installation Check:

- 1 Ensure the FTP Server is running “out-of-the-box” the first time.
- 2 Tap **Start > Today** to access the Today screen, then tap the antenna icon in the System Tray to bring up the NDISTRAY pop-up menu. Select **AutoFTP Off** to disable AutoFTP. Do a warm boot and confirm the FTP Server is not running.



- 3 Tap **Start > Today** to access the Today screen, then tap the antenna icon in the System Tray to bring up the NDISTRAY pop-up menu. Select **AutoFTP On** to enable AutoFTP, reboot, confirm it is running.



- 4 Unload the network driver when the FTP Server is running and confirm that it is not running any more.
- 5 Load the FTP Server, establish a connection, then suspend and resume. The server should still run, but the FTP connection to the client should be dropped.

Kernel I/O Controls

This describes the `KernelIoControl()` functions available to application programmers. Most C++ applications will need to prototype the function as the following to avoid link and compile errors.

```
extern "C" BOOL KernelIoControl(DWORD dwIoControlCode, LPVOID lpInBuf, DWORD nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned);
```

You can also see the Device Resource Kit in the Intermec Developer Library (IDL) for information about these functions. The IDL is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for more information.

IOCTL_HAL_GET_DEVICE_INFO

This IOCTL returns either the platform type or the OEMPLATFORM name based on an input value.

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_GET_DEVICE_INFO, LPVOID lpInBuf, DWORD nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Points to a DWORD containing either the SPI_GETPLATFORMTYPE or SPI_GETOEMINFO value.
lpInBufSize	Must be set to sizeof(DWORD).
lpOutBuf	Must point to a buffer large enough to hold the return data of the function. If SPI_GETPLATFORMTYPE is specified in <i>lpInBuf</i> , then the “PocketPC\0” Unicode string is returned. If SPI_GETOEMINFO is specified in <i>lpInBuf</i> , then the “Intermec 700\0” Unicode string is returned.
nOutBufSize	The size of <i>lpOutBuf</i> in bytes. Must be large enough to hold the string returned.
lpBytesReturned	The actual number of bytes returned by the function for the data requested.

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

IOCTL_HAL_ITC_READ_PARM**Usage**

#include “oemioctl.h”

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_ITC_READ_PARM, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Points to this structure. See “ID Field Values” below. <pre>struct PARMS { BYTE id; BYTE ClassId; };</pre>
nInBufSize	Must be set to the size of the PARMS structure.
lpOutBuf	Must point to a buffer large enough to hold the return data of the function. If this field is set to NULL and <i>nOutBufSize</i> is set to zero when the function is called the function will return the number bytes required by the buffer.
nOutBufSize	The size of <i>lpOutBuf</i> in bytes.
lpBytesReturned	Number of bytes returned by the function for the data requested.

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the error value. Either ERROR_INVALID_PARAMETER or ERROR_INSUFFICIENT_BUFFER may be returned when this function is used to get the error.

ID Field Values

The *id* field of the PARMS structure may be one of the following values:

ID Field Values	
ITC_NVPARAM_ETHERNET_ID	Returns Ethernet 802.11b or 802.11b/g MAC Address. Six bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_SERIAL_NUM	Returns serial number of device in BCD format. Six bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_MANF_DATE	Returns device manufacture date in BCD YYYY/MM/DD format. 4 bytes sent in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_SERVICE_DATE	Returns last device service date in BCD YYYY/MM/DD format. Four bytes sent in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_DISPLAY_TYPE	Returns device display type. One byte returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_EDG_IP	Returns device Ethernet debug IP address. Four bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_EDBG_SUBNET	Returns device Ethernet debug subnet mask. Four bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_ECN	Returns ECNs applied to device in bit array format. Four bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_CONTRAST	Returns device default contrast setting. Two bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_MCODE	Returns manufacturing configuration code for device. Sixteen bytes returned in buffer pointed to by <i>lpOutBuffer</i>
ITC_NVPARAM_VERSION_NUMBER	Returns firmware version for various system components. These values for <i>ClassId</i> field of PARMS structure are allowed when ITC_NVPARAM_VERSION_NUMBER used in <i>id</i> field: <ul style="list-style-type: none"> • VN_CLASS_KBD Returns five-byte string, including null terminator, with ASCII value representing keypad microprocessor version in system. String format is <i>x.xx</i> with terminating null character. • VN_CLASS_ASIC Returns five-byte string, including null terminator, with ASCII value representing version of FPGA firmware in system. String format is <i>x.xx</i> with terminating null character. • VN_CLASS_BOOTSTRAP Returns five-byte string, including null terminator, with ASCII value representing version of Bootstrap Loader firmware in system. String format is <i>x.xx</i> with terminating null character.
ITC_NVPARAM_INTERMEC_SOFTWARE_CONTENT	Reads manufacturing flag bits from non-volatile data store dictating certain software parameters. BOOLEAN DWORD returned in buffer pointed to by <i>lpOutBuffer</i> indicating whether Intermec Content enabled in XIP regions. TRUE indicates enabled. FALSE is not enabled.
ITC_NVPARAM_ANTENNA_DIVERSITY	Reads state of antenna diversity flag. BOOLEAN DWORD returned in buffer pointed to by <i>lpOutBuffer</i> indicating whether diversity antenna is installed. TRUE indicates installed. FALSE is not installed.
ITC_NVPARAM_WAN_RI	Reads state of WAN ring indicator flag. BOOLEAN DWORD returned in buffer pointed to by <i>lpOutBuffer</i> indicating polarity of WAN RI signal. TRUE indicates active high. FALSE is active low.
ITC_NVPARAM_RTC_RESTORE	Reads state of real-time clock restore flag. BOOLEAN DWORD returned in buffer pointed to by <i>lpOutBuffer</i> . TRUE indicates RTC is restored on cold-boot. FALSE is RTC is not restored.
ITC_NVPARAM_INTERMEC_DATACOLLECTION_SW	Reads state of data collection software enabled flag. BOOLEAN DWORD returned in buffer pointed to by <i>lpOutBuffer</i> indicating data collection software installs at boot time. FALSE is do not install data collection software

ID Field Values (continued)**ITC_NVPARM_INTERMEC_DATACOLLECTION_HW**

Reads data collection hardware flags. BYTE returned in buffer pointer to by *lpOutBuffer* indicating type of data collection hardware installed. Maximum value returned is ITC_DEVID_SCANHW_MAX:

- ITC_DEVID_SCANHW_NONE No scanner hardware installed.
- ITC_DEVID_OEM2D_IMAGER OEM 2D imager installed.
- ITC_DEVID_INTERMEC2D_IMAGER Intermec 2D imager installed.
- ITC_DEVID_SE900_LASER SE900 laser installed.
- ITC_DEVID_SE900HS_LASER SE900HS laser installed.
- ITC_DEVID_INTERMEC_EVIO EVIO linear imager installed.

High bit non-zero value indicates S6 scanning engine is installed. Bit mask is ITC_DEVID_S6ENGINE_MASK.

ITC_NVPARM_WAN_INSTALLED

Reads state of WAN radio installed flag. BOOLEAN DWORD is returned in buffer: TRUE = WAN radio installed.

ITC_NVPARM_WAN_FREQUENCY

Reads state of WAN radio frequency flag. BOOLEAN DWORD is returned in buffer: TRUE indicates WAN radio frequency is United States. FALSE is a European WAN radio frequency.

ITC_NVPARM_WAN_RADIOTYPE

Reads WAN radio ID installed by manufacturing. BYTE returned in buffer pointer to by *lpOutBuffer* indicating type of WAN radio hardware installed. Maximum value returned is ITC_DEVID_WANRADIO_MAX:

- ITC_DEVID_WANRADIO_NONE No WAN radio installed
- ITC_DEVID_WANRADIO_SIERRA_SB555 CDMA Sierra Wireless radio
- ITC_DEVID_WANRADIO_XIRCOM_GEM3503 GSM/GPRS Intel (Xircom) radio
- ITC_DEVID_WANRADIO_SIEMENS_MC45 GSM/GPRS Siemens radio
- ITC_DEVID_WANRADIO_SIEMENS_MC46 GSM/GPRS Siemens radio

ITC_NVPARM_80211_INSTALLED

Reads state of 802.11b or b/g radio installed flag. BOOLEAN DWORD returned in buffer: TRUE = radio installed.

ITC_NVPARM_80211_RADIOTYPE

Reads 802.11b or b/g radio ID installed by manufacturing. BYTE returned in buffer pointer to by *lpOutBuffer* indicates type of radio hardware installed. ITC_DEVID_80211RADIO_MAX is maximum value returned:

- ITC_DEVID_80211RADIO_NONE No 802.11b or 802.11b/g radio installed.
- ITC_DEVID_80211RADIO_INTEL_2011B Intel 2011B radio installed.

ITC_NVPARM_BLUETOOTH_INSTALLED

Reads state of Bluetooth radio installed flag. BOOLEAN DWORD returned in buffer pointed to by *lpOutBuffer*. TRUE indicates Bluetooth radio installed. FALSE is no Bluetooth radio installed.

ITC_NVPARM_SERIAL2_INSTALLED

Reads state of serial 2 (COM2) device installed flag. BOOLEAN DWORD returned in buffer pointed to by *lpOutBuffer*. TRUE indicates serial 2 device is installed. FALSE is no serial 2 device is installed.

ITC_NVPARM_VIBRATE_INSTALLED

Reads state of vibrate device installed flag. BOOLEAN DWORD is returned in buffer pointed to by *lpOutBuffer*. TRUE indicates vibrate device is installed. FALSE is no vibrate device is installed.

ITC_NVPARM_LAN9000_INSTALLED

Reads state of Ethernet device installed flag. BOOLEAN DWORD is returned in buffer pointed to by *lpOutBuffer*. TRUE indicates Ethernet device is installed. FALSE is no Ethernet device is installed.

ITC_NVPARM_SIM_PROTECT_HW_INSTALLED

Reads state of SIM card protection hardware installed flag. BOOLEAN DWORD returned in buffer pointed to by *lpOutBuffer*. TRUE indicates SIM card protection hardware installed. FALSE is no such hardware installed.

ITC_NVPARM_SIM_PROTECT_SW_INSTALLED

Reads state of SIM card protection software installed flag. BOOLEAN DWORD returned in buffer pointed to by *lpOutBuffer*. TRUE indicates SIM card protection software is installed. FALSE is no such software installed.

IOCTL_HAL_ITC_WRITE_SYSPARM

Describes and enables the registry save location.

Usage

#include "oemioctl.h"

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_ITC_WRITE_SYSPARM, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	A single byte that may be one of the <i>id</i> values. See “ID Field Values” on the next page.
nInBufSize	Must be set to the size of the <i>lpInBuf</i> in bytes.
lpOutBuf	Must point to a buffer large enough to hold the data to be written to the non-volatile data store.
nOutBufSize	The size of <i>lpOutBuf</i> in bytes.
lpBytesReturned	The number of bytes returned by the function.

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the error value. Either ERROR_INVALID_PARAMETER or ERROR_INSUFFICIENT_BUFFER may be returned when this function is used to get the error.

ID Field Values

The *id* field of *lpInBuf* may be one of the following values:

ID Field Values

ITC_REGISTRY_SAVE_ENABLE

Enables or disables the save registry to non-volatile media feature of the RegFlushKey() function. *lpOutBuf* must be set to zero (FALSE) if the feature is to be disabled or one (TRUE) if the feature is to be enabled.

ITC_DOCK_SWITCH

This IOCTL sets a position of the dock switch. The dock switch may be set to either “modem” or “serial” positions. *lpOutBuf* must point to a buffer that contains a byte value of either DOCK_MODEM or DOCK_SERIAL as defined in OEMIOCTL.H; the value specifies the position the switch is to be set. The call appears as follows:

```
// port = DOCK_MODEM or DOCK_SERIAL as defined in oemioctl.h
BOOL SetDockSwitch( BYTE port)
{
    DWORD cmd = ITC_DOCK_SWITCH;
    DWORD cbRet;

    return KernelIoControl( IOCTL_HAL_ITC_WRITE_SYSPARM, &cmd, sizeof(cmd),
&port, sizeof(port), &cbRet)
}
```


ID Field Values (continued)**ITC_WAKEUP_MASK**

This IOCTL sets a bit mask that represents the mask for the five programmable wakeup keys. The I/O key is not a programmable wakeup key. By default it is always the system resume key and all other keys are set to disable key wakeup. A zero in a bit position masks the wakeup for that key. A one in a bit position enables wakeup for that key. *lpOutBuf* must point to a buffer that contains a byte value of a wakeup mask consisting of the OR'ed constants as defined in OEMIOCTL.H. Only the following keys are programmable as wakeup events.

```
#define SCANNER_TRIGGER 1
#define SCANNER_LEFT 2
#define SCANNER_RIGHT 4
#define GOLD_A1 8
#define GOLD_A2 0x10
```

ITC_AMBIENT_KEYBOARD *(does not apply to the 730 Computer)*

This IOCTL sets the threshold for the keypad ambient sensor. This can be a value from 0 (always off) to 255 (always on). *lpOutBuf* must point to a buffer that contains a byte value of the desired setting.

ITC_AMBIENT_FRONTLIGHT *(does not apply to the 730 Computer)*

This IOCTL sets the threshold for the frontlight ambient sensor. This can be a value from 0 (always off) to 255. *lpOutBuf* must point to a buffer that contains a byte value of the desired setting.

IOCTL_HAL_GET_DEVICEID

This returns the device ID. There are two types of device IDs supported, which are differentiated based on the size of the *output* buffer. The UUID is returned if the buffer size is set to *sizeof(UNIQUE_DEVICEID)*, otherwise the oldstyle device ID is returned.

Usage

```
#include "pkfuncs.h"
#include "deviceid.h"
```

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_GET_DEVICEID, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

<i>lpInBuf</i>	Should be set to NULL. STRICT_ID settings are not supported.
<i>lpInBufSize</i>	Should be set to zero.
<i>lpOutBuf</i>	Must point to a UNIQUE_DEVICEID structure as defined by DEVICEID.H if the UUID is to be returned
<i>nOutBufSize</i>	The size of the UNIQUE_DEVICEID in bytes if the UUID is to be returned. A DEVICE_ID as defined by PKFUNCS.H is returned if the size in bytes is greater than or equal to <i>sizeof(DEVICE_ID)</i> .
<i>lpBytesReturned</i>	The number of bytes returned by the function.

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

IOCTL_HAL_GET_OAL_VERINFO

Returns the HAL version information of the Pocket PC image.

Usage

```
#include "oemioctl.h"
```

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_GET_OAL_VERINFO, LPVOID lpInBuf, DWORD  
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.
lpInBufSize	Should be set to zero.
lpOutBuf	Must point to a VERSIONINFO structure as defined by OEMIOCTL.H. The fields should have these values: <ul style="list-style-type: none"> • cboemverinfo sizeof (tagOemVerInfo); • verinfover 1 • sig; "ITC\0" • id; 'N' • tgtcustomer "" • tgtplat SeaRay • tgtplatversion Current build version number • tgtcpu "Intel\0" • tgtcpu "PXA255\0"; • tgtcoreversion "" • date Build time • time Build date
nOutBufSize	The size of VERSIONINFO in bytes.
lpBytesReturned	Returns <i>sizeof(PVERSIONINFO)</i> .

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

IOCTL_HAL_GET_BOOTLOADER_VERINFO

Returns the HAL version information of the Pocket PC image.

Usage

```
#include "oemioctl.h"
```

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_GET_OAL_VERINFO, LPVOID lpInBuf, DWORD  
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.
nInBufSize	Should be set to zero.

<code>lpOutBuf</code>	Must point to a <code>VERSIONINFO</code> structure as defined by <code>OEMIOCTL.H</code> . The fields should have these values: <ul style="list-style-type: none"> • <code>cboemverinfo</code> <code>Sizeof (tagOemVerInfo);</code> • <code>verinfover</code> <code>1</code> • <code>sig;</code> <code>"ITC\0"</code> • <code>id;</code> <code>'B'</code> • <code>tgtcustomer</code> <code>"</code> • <code>tgtplat</code> <code>SeaRay</code> • <code>tgtplatversion</code> <code>Current build version number of the bootstrap loader</code> • <code>tgtcputype[8];</code> <code>"Intel\0";</code> • <code>tgcpu</code> <code>"PXA255\0"</code> • <code>tgcoreversion</code> <code>"</code> • <code>date</code> <code>Build time</code> • <code>time</code> <code>Build date</code>
<code>nOutBufSize</code>	The size of <code>VERSIONINFO</code> in bytes.
<code>lpBytesReturned</code>	The number of bytes returned to <code>lpOutBuf</code> .

Return Values

Returns `TRUE` if function succeeds. Returns `FALSE` if the function fails. `GetLastError()` may be used to get the extended error value.

IOCTL_HAL_WARMBOOT

Causes the system to perform a warm-boot. The object store is retained.

Usage

`#include "oemioctl.h"`

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_WARMBOOT, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

<code>lpInBuf</code>	Should be set to <code>NULL</code> .
<code>lpInBufSize</code>	Should be set to zero.
<code>lpOutBuf</code>	Should be <code>NULL</code> .
<code>nOutBufSize</code>	Should be zero.

Return Values

None.

IOCTL_HAL_COLDBOOT

Causes the system to perform a cold-boot. The object store is cleared.

Usage

`#include "oemioctl.h"`

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_COLDBOOT, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.
lpInBufSize	Should be set to zero.
lpOutBuf	Should be NULL.
nOutBufSize	Should be zero.

Return Values

None.

IOCTL_HAL_GET_RESET_INFO

This code allows software to check the type of the most recent reset.

Usage

```
#include "oemioctl.h"
```

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_GET_RESET_INFO, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.
lpInBufSize	Should be set to zero.
lpOutBuf	Must point to a HAL_RESET_INFO structure. See sample below.
nOutBufSize	The size of HAL_RESET_INFO in bytes.
lpBytesReturned	The number of bytes returned by the function.

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

Sample

```
typedef struct {
    DWORD ResetReason;           // most recent reset type
    DWORD ObjectStoreState;     // state of object store
} HAL_RESET_INFO, * PHAL_RESET_INFO;

// Reset reason types
#define HAL_RESET_TYPE_UNKNOWN 0
#define HAL_RESET_REASON_HARDWARE 1 // cold
#define HAL_RESET_REASON_SOFTWARE 2 // suspend
#define HAL_RESET_REASON_WATCHDOG 4
#define HAL_RESET_BATT_FAULT 8 // power fail
#define HAL_RESET_VDD_FAULT 16 // warm boot

// Object store state flags
#define HAL_OBJECT_STORE_STATE_UNKNOWN 0
#define HAL_OBJECT_STORE_STATE_CLEAR 1
```

IOCTL_HAL_GET_BOOT_DEVICE

This IOCTL code allows software to check which device CE booted from.

Usage

#include "oemioctl.h"

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_GET_BOOT_DEVICE, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.
lpInBufSize	Should be set to zero.
lpOutBuf	Must point to a buffer large enough to hold a DWORD (4 bytes) with the boot device. The following boot devices are supported: <pre>#define HAL_BOOT_DEVICE_UNKNOWN 0 #define HAL_BOOT_DEVICE_ROM_XIP 1 #define HAL_BOOT_DEVICE_ROM 2 #define HAL_BOOT_DEVICE_PCMCIA_ATA 3 #define HAL_BOOT_DEVICE_PCMCIA_LINEAR 4 #define HAL_BOOT_DEVICE_IDE_ATA 5 #define HAL_BOOT_DEVICE_IDE_ATAPI 6</pre>
nOutBufSize	The size of <i>lpOutBuf</i> in bytes (4).
lpBytesReturned	The number of bytes returned by the function.

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

IOCTL_HAL_REBOOT



Note: Using this is no longer recommended, use IOCTL_HAL_WARMBOOT (page 217) or IOCTL_HAL_COLDBOOT (page 217). This is supported for backward-compatibility but its use can lead to difficulties.

Causes the system to perform a warm-boot. The object store is retained.

Usage

#include "oemioctl.h"

Syntax

```
BOOL KernelIoControl( IOCTL_HAL_REBOOT, LPVOID lpInBuf, DWORD nInBufSize, LPVOID
lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.	lpOutBuf	Should be NULL.
lpInBufSize	Should be set to zero.	nOutBufSize	Should be zero.

Return Values

None.

IOCTL_PROCESSOR_INFORMATION

Returns processor information.

Usage

#include "pkfuncs.h"

Syntax

```
BOOL KernelIoControl( IOCTL_PROCESSOR_INFORMATION, LPVOID lpInBuf, DWORD
nInBufSize, LPVOID lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should be set to NULL.
nInBufSize	Should be set to zero.
lpOutBuf	Should be a pointer to the PROCESSOR_INFO structure. Its structure stores information describing the CPU more descriptively.
<pre>typedef __PROCESSOR_INFO { WORD wVersion; // Set to value 1 WCHAR szProcessorCore[40]; // "ARM\0" WORD wCoreRevision; // 4 WCHAR szProcessorName[40]; // "PXA255\0" WORD wProcessorRevision; // 0 WCHAR szCatalogNumber[100]; // 0 WCHAR szVendor[100]; // "Intel Corporation\0" DWORD dwInstructionSet; // 0 DWORD dwClockSpeed; // 400 }</pre>	
nOutBufSize	Should be set to sizeof(PROCESSOR_INFO) in bytes.
lpBytesReturned	Returns sizeof(PROCESSOR_INFO);

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

IOCTL_GET_CPU_ID

Returns Xscale processor ID.

Usage

#include "oemioctl.h"

Syntax

```
BOOL KernelIoControl( IOCTL_GET_CPU_ID, LPVOID lpInBuf, DWORD nInBufSize, LPVOID
lpOutBuf, DWORD nOutBufSize, LPDWORD lpBytesReturned );
```

Parameters

lpInBuf	Should point to a CPUIdInfo structure defined in OEMIOCTL.H.
lpInBufSize	Should be sizeof(CPUIdInfo).

lpOutBuf	Should be NULL.
nOutBufSize	Should be set to 0.
lpBytesReturned	Returns <i>sizeof(PROCESSOR_INFO)</i> ;

Return Values

Returns TRUE if function succeeds. Returns FALSE if the function fails. GetLastError() may be used to get the extended error value.

Network Selection APIs

Network Selection APIs change the network adapter configuration programmatically. See the Communications Resource Kit in the IDL for information about these APIs. The IDL is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for more information.

Notifications

Use the following information to programmatically control the vibrator, to write an application to turn on the vibrator when a message is received via the WLAN radio link, and turn it off when the user hits a key.

Vibrator support is in the NLED driver as a false LED. The vibrator is LED 5 and identified with an CycleAdjust of -1. The vibrate option is available in the notifications panel when the vibrator is in the system.

Regarding an applications interface to NLED.DLL, LEDs must be available for applications to use through the COREDLL.DLL file. To use the LED functions, declare these as extern "C" as follows:

```
extern "C" BOOL WINAPI NLEDGetDeviceInfo(UINT nInfoId, void *pOutput);
extern "C" BOOL WINAPI NLEDSetDevice( UINT nDeviceId, void *pInput);
```

The LEDs are enumerated for access through the data structures associated with these APIs:

- Notification LED 0
- Radio On LED 1 (*does not apply to the 730 Computer*)
- Alpha Lock LED 2
- Scanner LED 3
- Low Battery 4
- Vibrator 5 (*does not apply to the 730 Computer*)

NLEDGetDeviceInfo

Usage

```
#include "nled.h"
```

Syntax

```
BOOL NLEDGetDeviceInfo ( UINT nInfoId, void *pOutput );
```

Parameters

nInfoId	Integer specifying the information to return. These values are defined: NLED_COUNT_INFO <i>pOutput</i> buffer specifies the number of LEDs on the device. NLED_SUPPORTS_INFO_ID <i>pOutput</i> buffer specifies information about the capabilities supported by the LED. NLED_SETTINGS_INFO_ID <i>pOutput</i> buffer has information about LED current settings.								
pOutput	Pointer to the buffer to which the information is returned. The buffer points to various structure types defined in “nled.h”, depending on the value of <i>nId</i> , as detailed in the following table:								
	<table border="1"> <thead> <tr> <th>Value of <i>nID</i></th> <th>Structure in <i>pOutput</i></th> </tr> </thead> <tbody> <tr> <td>LED_COUNT_INFO</td> <td>NLED_COUNT_INFO</td> </tr> <tr> <td>NLED_SUPPORTS_INFO</td> <td>NLED_SUPPORTS_INFO</td> </tr> <tr> <td>NLED_SETTINGS_INFO</td> <td>NLED_SETTINGS_INFO</td> </tr> </tbody> </table>	Value of <i>nID</i>	Structure in <i>pOutput</i>	LED_COUNT_INFO	NLED_COUNT_INFO	NLED_SUPPORTS_INFO	NLED_SUPPORTS_INFO	NLED_SETTINGS_INFO	NLED_SETTINGS_INFO
Value of <i>nID</i>	Structure in <i>pOutput</i>								
LED_COUNT_INFO	NLED_COUNT_INFO								
NLED_SUPPORTS_INFO	NLED_SUPPORTS_INFO								
NLED_SETTINGS_INFO	NLED_SETTINGS_INFO								

NLEDSetDevice

Usage

#include “nled.h”

Syntax

```
BOOL NLEDSetDevice ( UINT nDeviceId, void *pInput );
```

Parameters

nDeviceId	Integer specifying the device identification. The following is defined: NLED_SETTINGS_INFO_ID Contains information about the desired LED settings.
pInput	Pointer to the buffer that contains the NLED_SETTINGS_INFO structure.

Reboot Functions

There are several methods, via Kernel I/O Control functions, that an application program can use to force the 700 Color Computer to reboot. You can also see the Device Resource Kit in the IDL for information about these functions. The IDL is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for information.

- **IOCTL_HAL_REBOOT**
This performs a warm-boot (page 219). *See note below.*
- **IOCTL_HAL_COLDBOOT**
Forces a cold reboot. This resets the 700 Color Computer, reloads Windows CE as if a power-up was performed, and discards the contents of the Windows CE RAM-based object store (page 217).
- **IOCTL_HAL_WARMBOOT**
Performs a system warm-boot, preserving the object store (page 217).



Note: Using IOCTL_HAL_REBOOT is no longer recommended, use either IOCTL_HAL_WARMBOOT or IOCTL_HAL_COLDBOOT. IOCTL_HAL_REBOOT is still supported for backward-compatibility but its use can lead to difficulties.

Remapping the Keypad



Note: Use caution when remapping the keypad. Improper remapping may render the keypad unusable. Data within the 700 Color Computer could also be lost, should any problems occur.

Applications have the ability to remap keys on the 700 Color Numeric Keypad and 700 Color Alphanumeric Keypad. This will allow applications to enable keys that would otherwise not be available, such as the [F1] function key. Also, to disable keys that should not be available, such as the alpha key because no alpha entry is required. Care should be exercised when attempting to remap the keypad because improper remapping may cause the keypad to become unusable. This can be corrected by cold booting the device which loads the default keymap again.

Note that remapping the keys in this way affects the key mapping for the entire system, not just for the application that does the remapping.

There are three “planes” supported for the 700 Color Numeric Keypad and Alphanumeric Keypad. Keys that are to be used in more than one shift plane must be described in each plane.

Unshifted Plane

The unshifted plane contains values from the keypad when not pressed with other keys, such as the following:

Press the Keys		
Numeric Keypad	Alphanumeric Keypad	To Enter This
		1
		5
		9













Gold Plane

The gold plane contains values from the keypad when a key is simultaneously pressed with the [Gold] key on the numeric keypad or the [Gold/White] key on the alphanumeric keypad, such as the following:

Press the Keys		
Numeric Keypad	Alphanumeric Keypad	To Enter This
[Gold]	[Gold/White]	Send
[Gold]	[Gold/White]	A3
[Gold]	[Gold/White]	PgDn

Alpha (Blue) Plane

The alpha plane contains values from the keypad when the keypad has been placed in alpha mode by pressing the blue alpha key, such as:

Press the Keys		
Numeric Keypad	Alphanumeric Keypad	To Enter This
[Alpha]  	[Alpha]  	Caps
[Alpha]  	[Alpha]  	j
[Alpha]  	[Alpha]  	w

Key Values

Key values are stored in the registry. All units ship with a default key mapping in its registry. Applications to change the default mapping need to read the appropriate key from the registry into an array of Words, modify the values required and then write the updated values back into the registry. The registry access can be done with standard Microsoft API calls, such as `RegOpenKeyEx()`, `RegQueryValueEx()`, and `RegSetValueEx()`.

Numeric Keypad

The following registry keys contain the plane mappings:

- The unshifted plane mapping can be found in the registry at:
`HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD\Vkey`
- The gold plane mapping can be found in the registry at:
`HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD\VkeyGold`
- The alpha plane mapping can be found in the registry at:
`HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD\VkeyAlpha`

Alphanumeric Keypad

The following registry keys contain the plane mappings:

- The unshifted plane mapping can be found in the registry at:
`HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD\ALPHA\Vkey`
- The gold plane mapping can be found in the registry at:
`HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD\ALPHA\VkeyGold`
- The alpha plane mapping can be found in the registry at:
`HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD\ALPHA\VkeyAlpha`

How Key Values Are Stored in Registry

To know which fields to update in the registry, you must know what Scan Codes are assigned to each physical key (see the “*Keypad Scan Codes and Meanings*” table on the next page). The Scan Code is used at the lowest level of the system to let the keypad driver know which physical key has been pressed. The keypad driver takes that scan code and looks it up in a table (a copy of the one stored in the registry) to determine which values to pass on to the operating system.

Each registry key is just an array that describes to the keypad driver what value needs to be passed for each physical key. The key values are indexed by the scan code, this is a zero-based index. For example in the unshifted plane, the [4] key has a scan code of 0x06. This means that the seventh word under the “Vkey” registry key will have the value for the [4] key. Taking a sample of the “Vkey” registry key shows the following values:

```
00,00,0B,05,02,03,C1,07,04,03,BE,00,34,00,00,00, . . .
```

The value is 34,00. The values are in reverse byte order as that is the way the processor handles data. When writing an application, nothing needs to be done to swap the bytes, as this will happen automatically when the data is read into a byte value. This is something you just need to be aware of when looking at the registry. Knowing this, we can see that the value that the keypad driver will pass to the system is a hex 34. Looking that up on an UNICODE character chart, we see that it maps to a “4”. If you wanted the key, labeled “4”, to output the letter “A” instead, you would need to change the seventh word to “41” (the hexadecimal representation of “A” from the UNICODE chart), then put the key back into the registry.

If you wish to disable a certain key, remap its scan code to 0x00.



Note: Do not remap scan codes 0x01, 0x41, 0x42, 0x43, 0x44. Doing so could make your 700 Color Computer unusable until you do a cold-boot.

Change Notification

Changing registry keys does not immediately change key mappings. To notify the keypad driver the registry is updated, use the CreateEvent() API to signal the “ITC_KEYBOARD_CHANGE” named event.

Advanced Keypad Remapping

It is also possible to map multiple key presses to one button and to map named system events to a button. The multiple key press option could be useful to cut down on the number of keys needed to press in a given situation or to remap which key behaves like the action key. Mapping events to a button could be useful to change which buttons will fire the scanner, control volume, and allow for suspending and resuming the device. Contact Intermec Technical Support for more information.

Scan Codes

At the lowest driver level, the 700 Color Numeric and Alphanumeric Keypads identify keys as scan codes. The keypad microcontroller sends the codes and only the keypad firmware changes the codes.

Numeric Keypad Scan Codes and Meanings

Press this Key	Meaning	ScanCode	Press this Key	Meaning	ScanCode
	Reserved	0x00		Scanner Left	0x03
I	I/O button	0x01		Scanner Right	0x04
	Scanner Handle Trigger	0x02			
4	4/GHI/A2	0x06	R	Right arrow/Tab	0x14
	None	0x07	2	2/ABC/End	0x15
L	Left arrow/Back Tab	0x08	8	8/TUV/* (asterisk)	0x16
	None	0x09	0	0/Win	0x17
K	BkSp// (forward slash)	0x0A	5	5/JKL/A3	0x18
b	[Gold] key	0x0B		None	0x19
	None	0x0C	A	Action/+ (plus symbol)	0x1A
E	Esc/– (minus sign)	0x0D	3	3/DEF/backlight	0x1B
D	Down arrow/Volume decrease	0x0E	9	9/WXYZ/PgDn	0x1C
1	1/Caps/Send	0x0F	e	Enter/@ (at symbol)	0x1D
7	7/PQRS/PgUp	0x10	6	6/MNO/A4	0x1E
F	[Alpha] key	0x11		None	0x1F-0x40
	None	0x12	B	Charge Detect	0x41
U	Up arrow/Volume increase	0x13			
C	LCD frontlight	0x42		Threshold crossed	0x42
b	Ambient light	0x42			
	Headset detected	0x43			
	Keypad Backlight	0x44		Threshold Crossed	0x44
b	Ambient Light	0x44			

Alphanumeric Keypad Scan Codes and Meanings

Press this Key	Meaning	ScanCode	Press this Key	Meaning	ScanCode
	Reserved	0x00	N	N/2	0x17
i	I/O button	0x01	I	I/backlight	0x18
	Scanner Handle Trigger	0x02	P	P/PgDn	0x19
	Scanner Left	0x03	Q	Q/, (comma)	0x1A
	Scanner Right	0x04	R	R/+ (plus sign)	0x1B
A	A/A1 key	0x05	S	S/4	0x1C
B	B/A2 key	0x06	T	T/5	0x1D
e	Escape/Send	0x07	O	O/3	0x1E
j	Left arrow/Back Tab	0x08	g	Caps/Lock	0x1F
k	Up arrow/Volume increase	0x09	h	BkSp	0x20
m	Down arrow/Volume decrease	0x0A	V	V/. (period)	0x21
l	Right arrow/Tab	0x0B	W	W/7	0x22
a	Action/End	0x0C	X	X/8	0x23
E	E/Win	0x0D	U	U/6	0x24
F	F/= (equal sign)	0x0E	c	Gold/White	0x25
G	G/* (asterisk)	0x0F	b	NumLock	0x26
C	C/A3	0x10		Space	0x27
H	H// (forward slash)	0x11	Z	Z/0	0x28
D	D/A4	0x12	f	Enter	0x29
J	J/PgUp	0x13	Y	Y/9	0x2A
K	K/@ (as symbol)	0x14		None	0x2B–0x40
L	L/- (minus sign)	0x15	B	Charge Detect	0x41
M	M/1	0x16			
☑	LCD frontlight	0x42		Threshold Crossed	0x42
☉	Ambient light	0x42			
	Headset detected	0x43			
	Keypad Backlight	0x44		Threshold Crossed	0x44
☉	Ambient Light	0x44			

Sample View of Registry Keys

Below is a sample of the current default key mapping for the 700 Color Numeric Keypad. See your device registry for the latest key mappings.

```
[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
"ResumeMask"=dword:7
"Vkey"=hex: 00,00,0B,05,02,03,C1,07,04,03,BE,00,34,00,00,00,\
 25,00,00,00,08,00,03,02,00,00,1B,00,28,00,31,00,\
 37,00,01,02,00,00,26,00,27,00,32,00,38,00,30,00,\
 35,00,00,00,01,03,33,00,39,00,0D,00,36,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,07,05,01,05,03,05,02,05
"VkeyGold"=hex: 00,00,0B,05,02,03,C1,07,04,03,BE,00,34,00,00,00,\
 09,01,00,00,BF,00,03,02,00,00,BD,00,75,00,72,00,\
 21,00,01,02,00,00,76,00,09,00,73,00,38,01,5B,00,\
 35,00,00,00,BB,01,09,05,22,00,32,01,36,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,07,05,01,05,03,05,02,05
"VkeyAlpha"=hex: 00,00,0B,05,02,03,C1,07,04,03,BE,00,47,00,00,00,\
 25,00,00,00,08,00,03,02,00,00,1B,00,28,00,02,02,\
 50,00,01,02,00,00,26,00,27,00,41,00,54,00,20,00,\
 4A,00,00,00,01,03,44,00,57,00,0D,00,4D,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,\
 00,00,07,05,01,05,03,05,02,05
```



A Configurable Settings

This appendix contains information about the Intermecc Settings, Utilities, and Wireless Network applets on the 700 Color Mobile Computer.



Note: “700 Color” pertains to 740, 741, 750, 751, 760, and 761 Computers unless otherwise noted.

The contents of the Intermecc Settings applet are dependent on what hardware configuration is done for each 700 Color Computer at the time of shipment. These settings currently only appear if a scanner or an imager option is present.

Likewise, other applets that are specifically related to the 802.11b or 802.11b/g radio module appear when a 802.11b or 802.11b/g radio module is installed in a 700 Color Computer. Applets that are specific for Bluetooth, CDMA/1xRTT, and GSM/GPRS radio modules only appear when each respective hardware configuration is done on the 700 Color Computer. *See Chapter 4, “Network Support,” for more information about the radio modules or Bluetooth.*

Information about using reader commands and configuration bar codes to configure some of your settings is also in this appendix.



Note: Information about the settings you can configure with the Intermecc Settings applet is described in the *Intermecc Computer Command Reference Manual* (P/N: 073529). The online manual is available from the Intermecc web site at www.intermecc.com.

Configuration Parameters

A configuration parameter changes the way the 700 Color Computer operates, such as configuring a parameter to have the 700 Color Computer emit a very loud beep in a noisy environment.

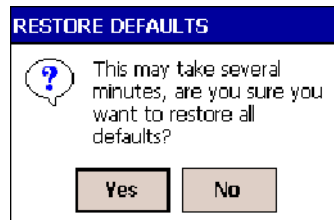
To execute configuration parameters, scan EasySet bar codes. You can use the EasySet bar code creation software from Intermec to print configuration labels. Scan the labels to change the scanner configuration and data transfer settings.

For more information, see the EasySet online help. EasySet is available from the Intermec Data Capture web site.

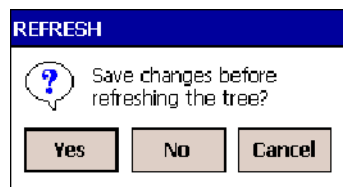
Menus of available parameters for each group are listed. Use the scroll bars to go through the list. Expand each menu (+) to view its parameter settings. Tap a parameter to select, or expand a parameter (+) to view its subparameters.

Note that each parameter or subparameter is shown with its default setting or current setting in (< >) brackets. Tap a parameter or subparameter to select that parameter, then do any of the following to change its setting:

- Typing a new value in an entry field.
- Choosing a new value from the drop-down list.
- Selecting a different option. The selected option contains a bullet.
- Tap **Edit > Restore Item Defaults** to restore factory-default settings. Tap **Yes** when you are prompted to verify this action.



- Tap **View > Refresh** to discard changes and start again. Tap **Yes** to save changes when you are prompted to verify this action.



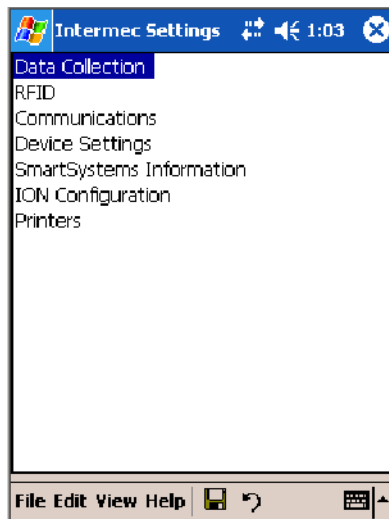
Intermec Settings Applet

Information about the settings you can configure with this applet is described in the *Intermec Computer Command Reference Manual*. The online manual is available from the Intermec web site at www.intermec.com.

See the Data Collection Resource Kit in the Intermec Developer Library (IDL) for information about data collection functions. The IDL is available as a download from the Intermec web site at www.intermec.com/idl. Contact your Intermec representative for more information.



To access the settings from the 700 Color Computer, tap **Start > Settings > the System tab > Intermec Settings** to access its applet.



Utilities Applet

The Utilities applet examines and modifies settings and operational modes of specific hardware and software on the 700 Color Computer: the dock switch, registry storage, wakeup mask, and application launch keys.



To access the settings from the 700 Color Computer, tap **Start > Settings > the System tab > Utilities** to access its applet.

Use the left and right arrows to scroll through the tabs along the bottom of the applet, then tap a tab to access its menus. These tabs represent the following groups of settings or parameters:

- Dock Switch (*next page*)
- Registry Save (*page 232*)
- Wakeup Mask (*page 233*)
- App Launch (*page 234*)

Dock Switch

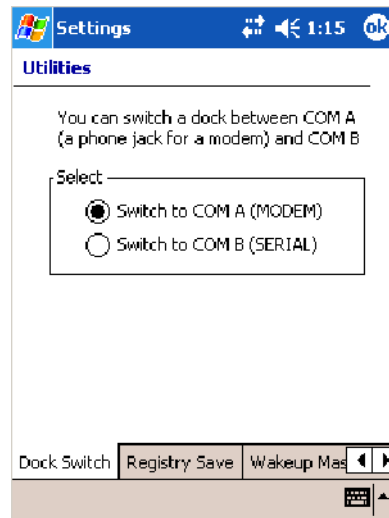


From the 700 Color Computer, tap **Start** > **Settings** > the **System** tab > **Utilities** > the **Dock Switch** tab to access the Dock Switch applet.

Use this applet to control the position of the dock switch. This can be set either to a COM A (phone jack for a modem) position or to a COM B (serial) position.

If switched to COM B and suspended, the terminal has the following behavior:

- If the 700 Color Computer is on charge, the dock switch remains switched to COM B.
- If the 700 Color Computer is off charge, the dock switch switches to COM A and remain in this position until the 700 Color Computer resumes charge.



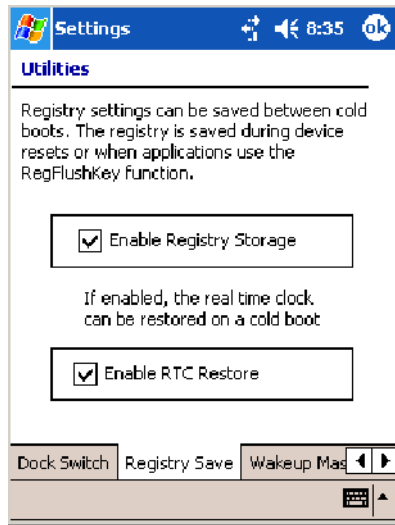
Registry Save



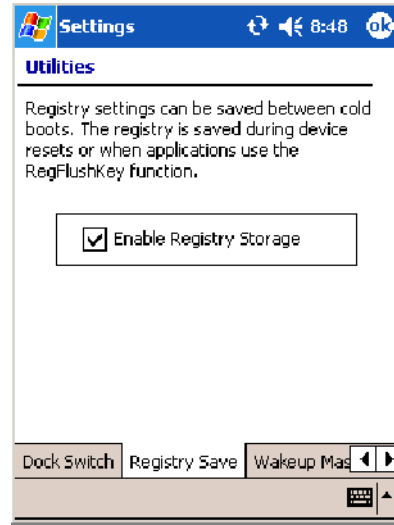
From the 700 Color Computer, tap **Start** > **Settings** > the **System** tab > **Utilities** > the **Registry Save** tab to access the Registry Save applet.

For Windows Mobile 2003, the only medium available for saving the registry is the Flash File System (PSM). Registry data is stored in the “\Flash_File_Store\Registry” path. Check **Enable Registry Storage** to enable this function.

To ensure that the 700 Color Computer restores the real-time clock after a cold-boot, check the **Enable RTC Restore** option. *Note that this does not apply to the 730 Computer.*



700 Color Screen



730 Screen

Wakeup Mask

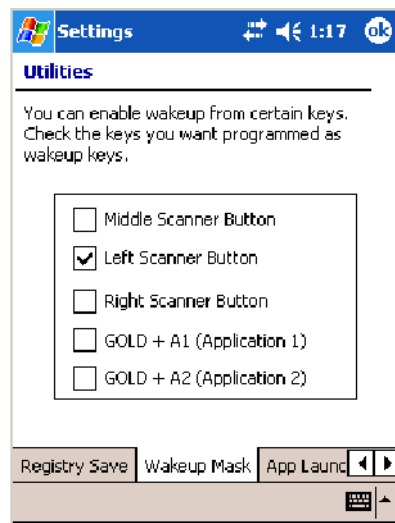


Utilities









From the 700 Color Computer, tap **Start > Settings > the System tab > Utilities > the Wakeup Mask tab** to access the Wakeup Mask applet.

This applet programs three scanner buttons and the A1 and A2 application keys to be “wakeup” or resume keys. That is, to prompt the 700 Color Computer to “wake up” or resume activity after going to “sleep” as a result of being inactive after a length of time. This information will remain between warm and cold boots.

Check the appropriate box, then tap **ok** to apply your settings.



Based on your setting, do the following to “wake up” the 700 Computer:

If you select:	Then do this on Numeric Keyboard	Then do this on Alphanumeric Keyboard
Middle Scanner Button	Squeeze the button on the Scan Handle	Squeeze the button on the Scan Handle
Left Scanner Button	Squeeze the left scanner button	Squeeze the left scanner button
Right Scanner Button	Squeeze the right scanner button	Squeeze the right scanner button
GOLD + A1 (Application 1)	Press [Gold]  	Press [Gold/White]  
GOLD + A2 (Application 2)	Press [Gold]  	Press [Gold/White]  

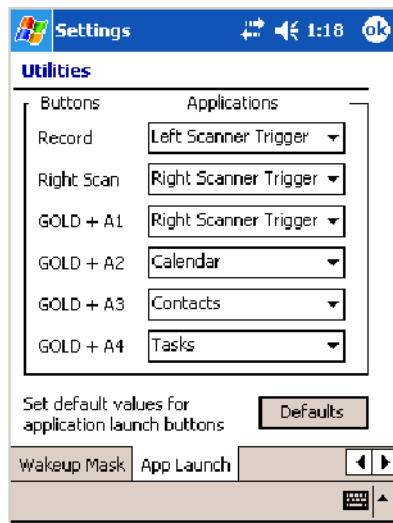
App Launch



From the 700 Color Computer, tap **Start** > **Settings** > the **System** tab > **Utilities**, then scroll to the right to tap the **App Launch** tab to access the Application Launch applet.

This applet programs or maps two scanner buttons and four application keys to start up to six applications. *Note the left scanner button also acts as the record button.*

For 700 Color Computers with either a laser scanner or an imager, default mappings are shown in the following illustration.



For 700 Color Computers without either a laser scanner or an imager, the default maps the Record, Calendar, Contacts, and Tasks applications the top four and the A3 and A4 buttons are “unassigned” or available for two more applications.



Note: Record, Calendar, Contacts, and Tasks are Pocket PC applications. See Chapter 2, “Windows Mobile 2003,” for more information.

- To assign an application to a button, select an application from the applicable drop-down list box.
- To assign a new application, select the “Add new application” option, which brings up an Open File dialog and browse Secure Digital or CompactFlash storage cards for new applications.

- To disable or unmap a currently mapped application from a corresponding button, select “unassigned” from the applicable drop-down list.
- To restore these buttons to their defaults, tap **Defaults** in the lower right corner.



Note: You cannot map an application to more than one button. Should you assign the same application to two buttons, a verification prompt will appear after the second button to confirm whether you want to remap the application. If you tap **Yes**, the applet changes the first button to “unassigned” and map the application to the second button.



Note: All changes are activated immediately upon selection.

Wireless Network Applet



Note: See Chapter 4, “Network Support,” for information about the 802.11b or 802.11b/g radio module.

About the Wireless Network

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

- Infrastructure networks get you onto your corporate network and the internet. Your 700 Color Computer establishes a wireless connection to an access point, which links you to the rest of the network. When you connect to a network via an access point, you are using the 802.11b or 802.11b/g infrastructure mode.
- Ad-hoc networks are private networks shared between two or more clients, even with no access point.

Each wireless network is assigned a name (or Service Set Identifier — 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 your privacy of transmitted data. The following are required elements for secure networks:

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

There are many schemes available for implementing these features.

Terminology

Below and on the next page are terms you may encounter as you configure your wireless network:

- **CKIP** (Cisco Key Integrity Protocol)
This is Cisco’s version of the TKIP protocol, compatible with Cisco Airnet products.

- **EAP** (Extensible Authentication Protocol)
802.11b or 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 to choose for your network.
- **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 Installation Vector (IV) reuse protection
 - Weak keys
 - No protection against message replay
 - No detection of message tampering
 - No key updates
- **WEP** (Wired Equivalent Privacy) **encryption**
With preconfigured WEP, both the client 700 Color Computer and access point are assigned the same key, which can encrypt all data between the two devices. WEP keys also authenticate the 700 Color Computer to the access point — unless the 700 Color Computer 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). Enter these as either ASCII (12345) or Hex (0x3132333435).
- **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 or 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.

Configuring Your Wireless Network

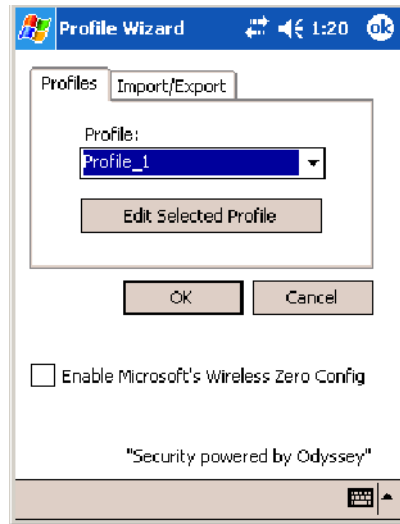


To start 802.11b or 802.11b/g communications on the 700 Color Computer, tap **Start** > **Settings** > the **System** tab > **Wireless Network** to access the Profile Wizard for the 802.11b or 802.11b/g radio module.

A profile contains all the information necessary to authenticate you to the network, such as login name, password or certificate, and protocols by which you are authenticated.

You can have up to four profiles for different networks. For example, you may have different login names or passwords on different networks, or you may use a password on one network, and a certificate on another.

Use the Profiles page to select and configure between the networking environments assigned to this 802.11b or 802.11b/g radio.



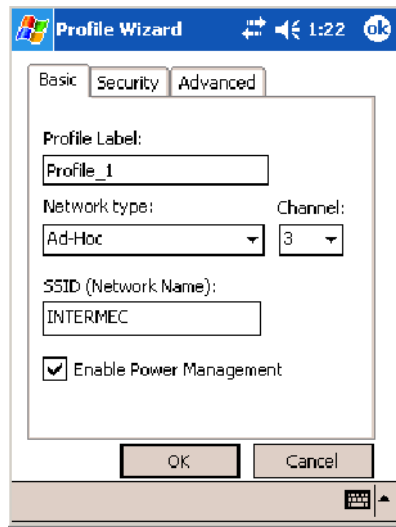
- **Profile:**
Tap the drop-down list to choose between four different profiles assigned to this unit, then tap **Edit Select Profile**, make the changes needed for this profile (*starting on the next page*), then tap **OK** to return to the Profiles page.
- **Enable Microsoft's Wireless Zero Config**
Check this box to enable Microsoft's Wireless Zero Config application. This effectively disables the Intermec software solution for 802.11b or 802.11b/g, including configuration via the Wireless Network applet.

Basic

Use the Basic page to set the network type, name, and manage battery power for this profile. Tap **ok** to return to the Profiles page.

- **Profile Label:**
Enter a unique name for your profile.
- **Network type:**
Tap the drop-down list to select either "Infrastructure" if your network uses access points to provide connectivity to the corporate network or internet; or "Ad-Hoc" to set up a private network with one or more participants.
- **Channel:**
If you selected "Ad-Hoc" for the network type, select the channel on which you are communicating with others in your network. There are up to 11 channels available.
- **SSID (Network Name):**
This assumes the profile name *unless another name is entered in this field*. If you want to connect to the next available network or are not familiar with the network name, enter "ANY" in this field. Consult your LAN administrator for network names.

- **Enable Power Management:**
Check this box to conserve battery power (default), or clear this box to disable this feature.



Security

The following are available from the **802.1x Security** drop-down list. *Note the last four methods are available if you have purchased the security package. Contact your Intermec representative for information.*

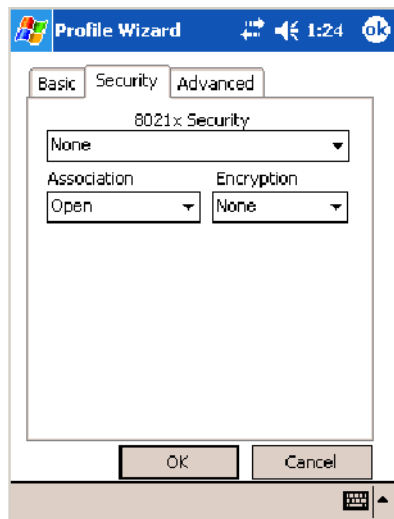
- None (below)
- PEAP (page 240)
- TLS (page 242)
- TTLS (page 244)
- LEAP (page 247)
- EAP-FAST (page 249)

None

Use “None” to disable 802.11b or 802.11b/g Security and enable either WEP or WPA-PSK encryption.

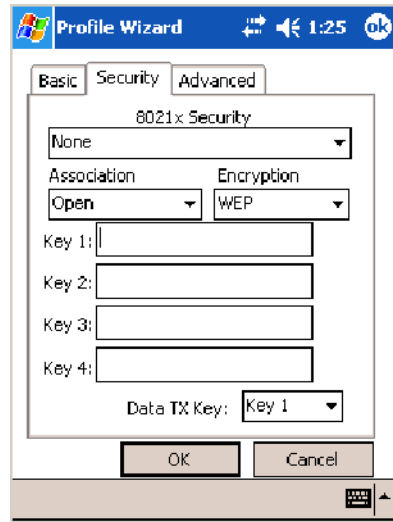
To Disable 802.1x Security

Set **802.1x Security** and **Encryption** as “None” and **Association** to “Open.”



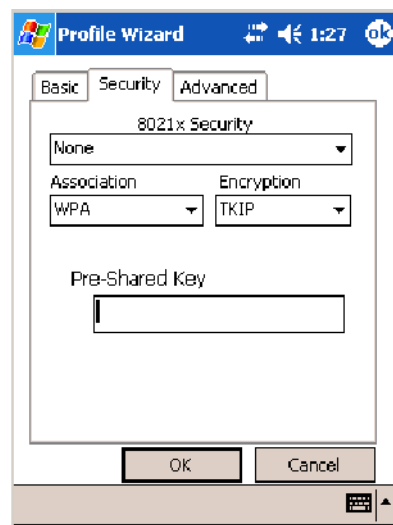
To Enable WEP Encryption

- 1 Set **8021x Security** as “None.”
- 2 Set **Association** to either “Open” if WEP keys are not required; or “Shared” when WEP keys are required for association.
- 3 Set **Encryption** to “WEP” (see page 236).
- 4 If you had set **Association** to “Shared,” then select a data transmission key from the **Data TX Key** drop-down list near the bottom of this screen, then enter the encryption key for that data transmission in the appropriate **Key #** field.



To Enable WPA Encryption Using a Preshared Key

- 1 Set **8021x Security** as “None.”
- 2 Set **Association** to “WPA” (see page 236).
- 3 Enter the temporal key as ASCII (12345) in the **Pre-Shared Key** field.



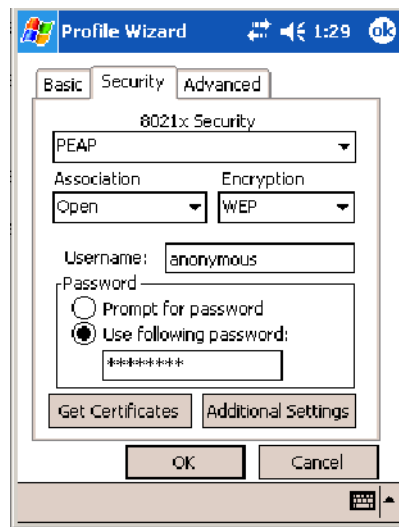
PEAP (Protected EAP)

This protocol is suitable for performing secure authentication against Windows domains and directory services. It is comparable to EAP-TTLS (see page 244), 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.

Use “PEAP” to configure the use of PEAP as an authentication protocol and to select “Open,” “WPA,” or “Network EAP” as an association mode.

To Enable PEAP with an Open Association

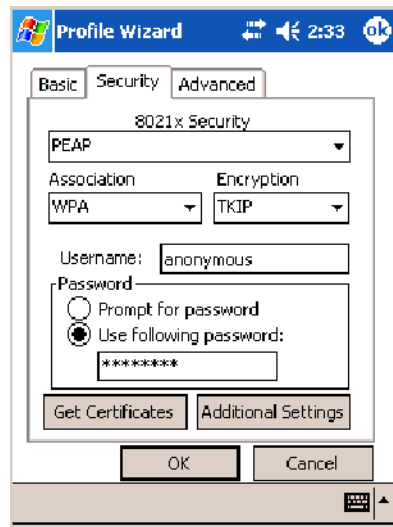
- 1 Set **8021x Security** as “PEAP.”
- 2 Set **Association** to “Open.”
- 3 Enter your unique user name and password to use this protocol. Select **Prompt for password** to have the user enter this password each time to access the protocol; or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 4 Tap **Get Certificates** to obtain or import server certificates (page 247).
- 5 Tap **Additional Settings** to assign an inner PEAP authentication and set options for server certificate validation and trust (see page 242).



To Enable PEAP with WPA Encryption

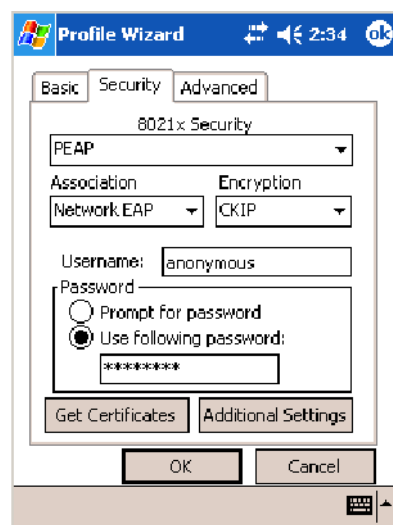
- 1 Set **8021x Security** as “PEAP.”
- 2 Set **Association** to “WPA” (see page 236).
- 3 Enter your unique user name and password to use this protocol. Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 4 Tap **Get Certificates** to obtain or import server certificates (page 247).

- 5 Tap **Additional Settings** to assign an inner PEAP authentication and set options for server certificate validation and trust (see page 242).



To Enable PEAP with Network EAP

- 1 Set **802.1x Security** as “PEAP.”
- 2 Set **Association** to “Network EAP” (see page 236).
- 3 Set **Encryption** to either “WEP” (page 236) or “CKIP” (page 235).
- 4 Enter your unique user name and password to use this protocol. Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 5 Tap **Get Certificates** to obtain or import server certificates (page 247).
- 6 Tap **Additional Settings** to assign an inner PEAP authentication and set options for server certificate validation (see page 242).

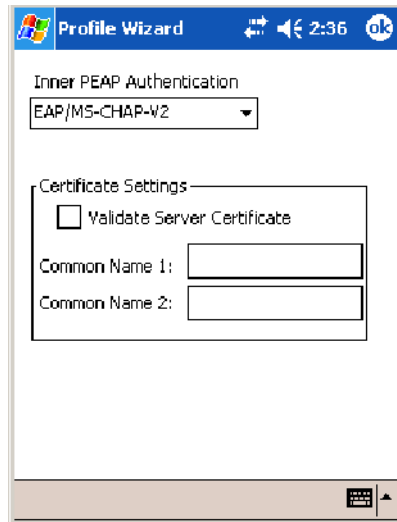


Additional Settings

- 1 Select an authentication method from the **Inner PEAP Authentication** drop-down list.

EAP/MS-CHAP-V2	Authenticates against a Windows Domain Controller and other non-Windows user databases. This is Microsoft's implementation of PEAP.
EAP/Token Card	Use with token cards. The password value entered is never cached. This is Cisco's implementation of PEAP.
EAP/MD5-Challenge	Message Digest 5. A secure hashing authentication algorithm.

- 2 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using TTLS or PEAP.
- 3 Enter the **Common Names** of trusted servers. *Note if these fields are left blank, the server certificate trust validation is not performed or required.*
- 4 Click **ok** to return to the Security page.



TLS (EAP-TLS)

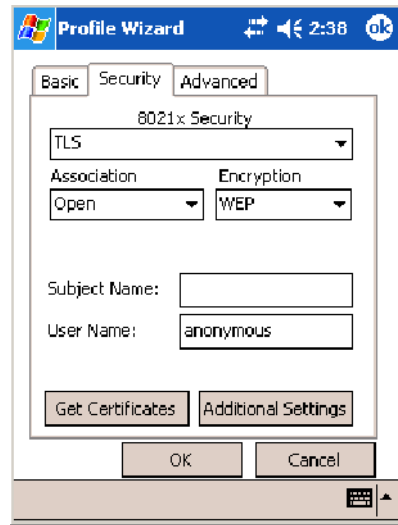
EAP-TLS is a protocol that is based on the TLS (Transport Layer Security) protocol widely used to secure web sites. This requires both the user and authentication server have certificates for mutual authentication. While cryptically strong, this requires corporations that deploy this to maintain a certificate infrastructure for all their users.

Use “TLS” to configure the use of EAP-TLS as an authentication protocol, and select either “Open” or “WPA” as an association mode.

To Enable TLS with an Open Association

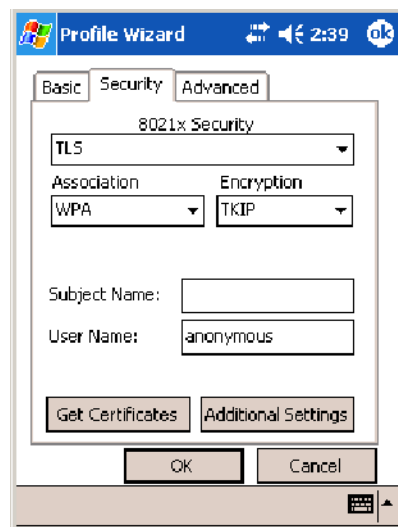
- 1 Set **8021x Security** as “TLS.”
- 2 Set **Association** to “Open.”
- 3 Enter your unique **Subject Name** and **User Name** to use this protocol.

- 4 Tap **Get Certificates** to obtain or import server certificates (page 247).
- 5 Tap **Additional Settings** to set server certificate validation (page 244).



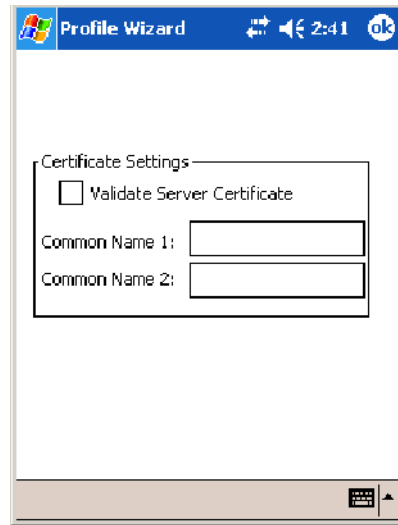
To Enable TLS with WPA Encryption

- 1 Set 8021x Security as “TLS.”
- 2 Set Association to “WPA” (see page 236).
- 3 Enter unique Subject Name and User Name credentials for this profile.
- 4 Tap **Get Certificates** to obtain or import server certificates (page 247).
- 5 Tap **Additional Settings** to set server certificate validation (page 244).



Additional Settings

- 1 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using PEAP or TLS.
- 2 Enter the **Common Names** of trusted servers. *Note that if these fields are left blank, the server certificate trust validation is not performed or required.*
- 3 Click **ok** to return to the Security page.



TTLS (EAP-Tunneled TLS)

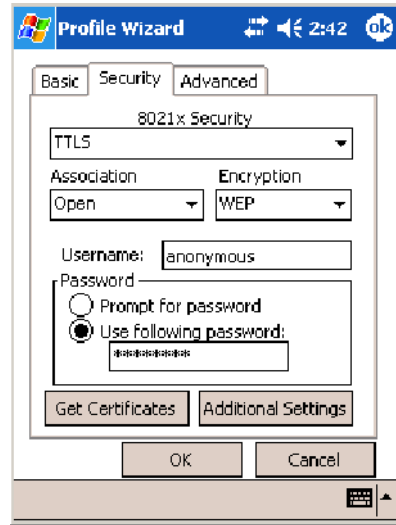
This protocol provides authentication like EAP-TLS (see page 242) but does not require certificates for every user. Instead, authentication servers are issued certificates. User authentication is done using a password or other credentials that are transported in a securely encrypted “tunnel” established 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 Settings.

Use “TTLS” to configure the use of EAP-TTLS as an authentication protocol, and select either “Open” or “WPA” as an association mode.

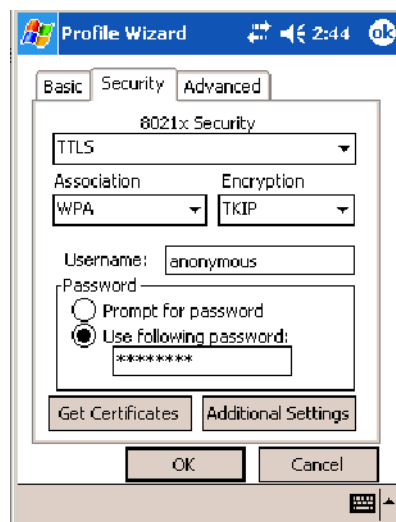
To Enable TTLS with an Open Association (default configuration)

- 1 Set **8021x Security** as “TTLS.”
- 2 Set **Association** to “Open.”
- 3 Enter your unique user name and password to use this protocol. Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 4 Tap **Get Certificates** to obtain or import server certificates (page 247).
- 5 Tap **Additional Settings** to assign an inner TTLS authentication and an inner EAP, and set server certificate validation and trust (page 246).



To Enable TTLS with WPA Encryption

- 1 Set **802.1x Security** as “TTLS.”
- 2 Set **Association** to “WPA” (see page 236).
- 3 Enter your unique user name and password to use this protocol. Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 4 Tap **Get Certificates** to obtain or import server certificates (page 247).
- 5 Tap **Additional Settings** to assign an inner TTLS authentication and an inner EAP, and set server certificate validation and trust (see page 246).

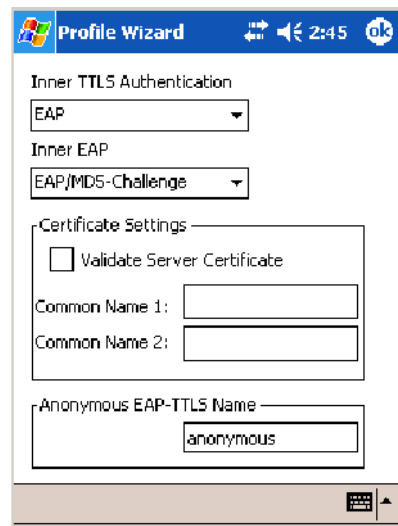


Additional Settings

- 1 Select an authentication protocol from the **Inner TTLS Authentication** drop-down list:

PAP	Password Authentication Protocol. A simple authentication protocol that sends security information in the clear.
CHAP	Challenge Handshake Authentication Protocol. Use of Radius to authenticate a terminal without sending security data in the clear. Authenticates against non-Windows user databases. <i>You cannot use this if authenticating against a Windows NT Domain or Active Directory.</i>
MS-CHAP; MS-CHAP-V2	Authenticates against a Windows Domain Controller and other non-Windows user databases.
PAP/Token Card	Use with token cards. The password value entered is never cached.
EAP	Extensible Authentication Protocol. See page 236 for information about EAP.

- 2 If you select “EAP” for the inner authentication protocol, then select an inner EAP protocol from the **Inner EAP** drop-down list.
- 3 Enter the **Common Names** of trusted servers. *Note that if these fields are left blank, the server certificate trust validation is not performed or required.*
- 4 Check **Validate Server Certificate** to verify the identity of the authentication server based on its certificate when using TTLS, PEAP, and TLS.
- 5 Enter the **Anonymous EAP-TTLS Name** as assigned for public usage. Use of this outer identity protects your login name or identity.
- 6 Click **ok** to return to the Security page.



To Get Certificates

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.

Use this page to import a certificate onto the 700 Color Computer.

Root Certificates

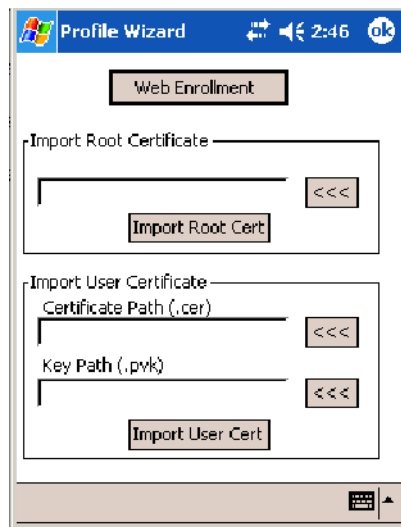
- 1 Tap the <<< button next to the **Import Root Certificate** field to select the root certificate (DER-encoded .CER file) to import.
- 2 Click **Import Root Cert** to install the selected certificate.

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.
- 3 Tap **Import User Cert** to install the selected certificate.

Web Enrollment

Tap **Web Enrollment** to obtain a user certificate over the network from an IAS Server. Tap **ok** to return to the Security page.



LEAP (Cisco Lightweight EAP)

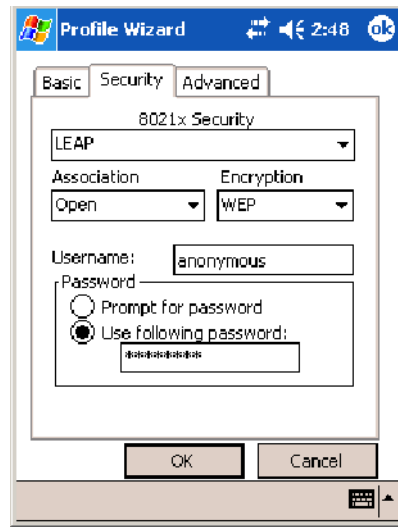
LEAP is the Cisco Lightweight version of EAP. See page 236 for information about EAP.

Use “LEAP” to configure the use of LEAP as an authentication protocol, select “Open,” “WPA,” or “Network EAP” as an association mode. *Note this defaults to the Network EAP.*

To Enable LEAP with an Open Association

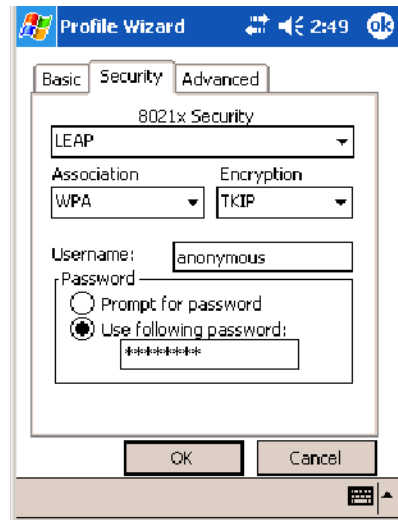
- 1 Set **8021x Security** as “LEAP” and **Association** to “Open.”
- 2 Enter your unique **User Name** to use this protocol.

- 3 Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.



To Enable LEAP with WPA Encryption

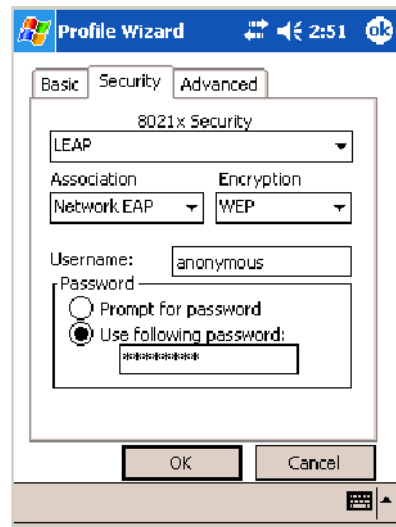
- 1 Set 8021x Security as “LEAP” and Association to “WPA” (see page 236).
- 2 Enter your unique User Name to use this protocol.
- 3 Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.



To Enable LEAP with Network EAP

- 1 Set 8021x Security as “LEAP,” Association to “Network EAP” (see page 236), and Encryption to either “WEP” (page 236) or “CKIP” (page 235).
- 2 Enter your unique User Name to use this protocol.

- 3 Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.



EAP-FAST (EAP -Flexible Authentication via Secured Tunnel)

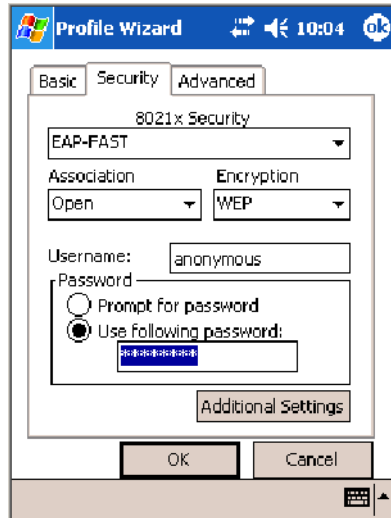
The EAP-FAST protocol is a client-server security architecture that encrypts EAP transactions with a TLS tunnel. While similar to PEAP, it differs significantly as EAP-FAST tunnel establishment is based on strong secrets unique to users. These secrets are called Protected Access Credentials (PACs), which CiscoSecure ACS generates using a master key known only to CiscoSecure ACS. Because handshakes based upon shared secrets are intrinsically faster than handshakes based upon PKI, EAP-FAST is the significantly faster of the two solutions that provide encrypted EAP transactions. No certificate management is required to implement EAP-FAST.

Use “EAP-FAST” to configure the use of EAP-FAST as an authentication protocol, select “Open,” “WPA,” or “Network EAP” as an association mode. *Note this defaults to the Network EAP.*

To Enable EAP-FAST with an Open Association

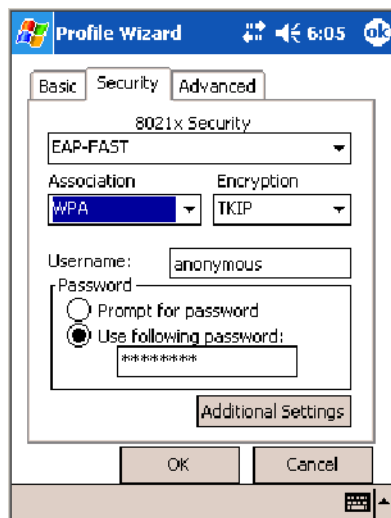
- 1 Set **8021x Security** as “EAP-FAST” and **Association** to “Open.”
- 2 Enter your unique **Username** to use this protocol.
- 3 Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.

- 4 Tap **Additional Settings** to set options for PAC management and assign an anonymous EAP-FAST name (see page 251).



To Enable EAP-FAST with WPA Encryption

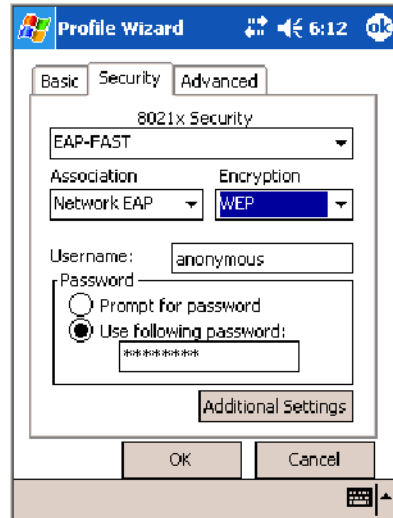
- 1 Set **8021x Security** as “EAP-FAST” and **Association** to “WPA” (see page 236).
- 2 Enter your unique **Username** to use this protocol.
- 3 Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 4 Tap **Additional Settings** to set options for PAC management and assign an anonymous EAP-FAST name (see page 251).



To Enable EAP-FAST with Network EAP

- 1 Set **8021x Security** as “EAP-FAST,” **Association** to “Network EAP” (page 236), and **Encryption** to either “WEP” (page 236) or “CKIP” (page 235).

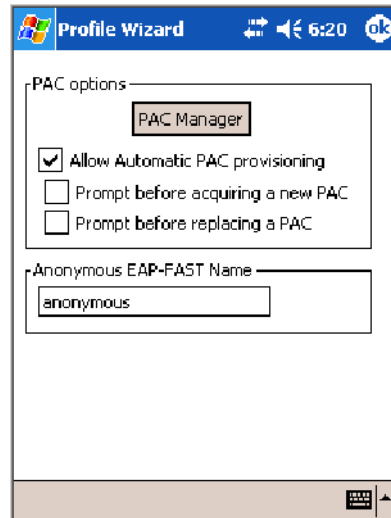
- 2 Enter your unique **Username** to use this protocol.
- 3 Select **Prompt for password** to have the user enter this password each time to access the protocol, or leave **Use following password** as selected to automatically use the protocol without entering a password.
- 4 Tap **Additional Settings** to set options for PAC management and assign an anonymous EAP-FAST name. See below for more information.



Additional Settings

- 1 Tap **PAC Manager** to view the PAC files currently installed on your 700 Color Computer. Tap **ok** to return to the Additional Settings screen.
- 2 If you already have a PAC on your 700 Color Computer, clear **Allow Automatic PAC provisioning** to avoid receiving additional PACs from the server.
- 3 If **Allow Automatic PAC provisioning** is checked, 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.
- 4 Enter the **Anonymous EAP-FAST Name** as assigned for public usage. This outer identity protects your login name or identity.

5 Check **ok** to return to the Security page.



Advanced

Use this page to configure additional settings for this profile. Tap **ok** or **OK** to return to the Profiles page.

- **Detect Rogue APs:**

Wireless NICs and APs associate based on the SSID configured for the NIC. Given an SSID, the BSSID with the strongest signal is often chosen for association. After association, 802.1x authentication may occur and during authentication credentials to uniquely identify a user — these are passed between the NIC and the AP.

The base 802.1x technology does not protect the network from “rogue APs.” These can mimic a legitimate AP to authentication protocols and user credentials. This provides illegal users ways to mimic legitimate users and steal network resources and compromise security.

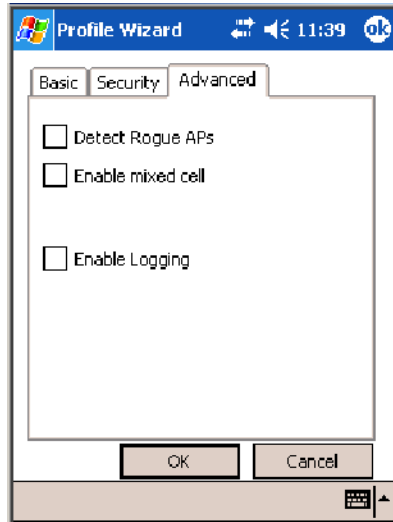
Check this box to detect and report client behavior suspected of being rogue APs. Once a rogue AP is detected, your 700 Series Computer no longer associates with that AP until you perform a warm boot.

Clear this box to solve AP connection problems that result when an AP gets put on the rogue AP list due to inadvertent failed authentications and *not* because it is a *real* rogue.

- **Enable mixed cell:**

Mixed cell is a profile-dependent setting. If enabled, you can connect to mixed cell without using WEP, then you can query the cell to determine whether you can use encryption.

- **Enable Logging:**
Check this box to log what activity incurs for this profile.



Other Configurable Parameters

These can be configured by sending reader commands (next page) through the network or from an application.

Audio Volume	Changes the volume of all audio signals.	0 Off 1 Very quiet 2 Quiet 3 Normal (default) 4 Loud 5 Very loud
Automatic Shutoff	Sets the length of time the 700 Color Computer remains on when there is no activity. When you turn on the 700 Color Computer, it either resumes exactly where it was when you turned it off or boots and restarts your application.	1 1 minute 2 2 minutes 3 3 minutes (default) 4 4 minutes 5 5 minutes
Backlight Timeout	Sets the length of time that the display backlight remains on. If you set a longer timeout value, you use the battery power at a faster rate.	10 10 seconds 30 30 seconds 60 1 minute (default) 120 2 minutes 180 3 minutes 240 4 minutes 300 5 minutes
Date/Time	Sets the current date and time.	Date Year 0000–9999 (1999) Month 1–12 (6) Day 1–31 (1) Time Hour 0–23 (0) Minute 0–59 (00) Second 0–59 (00)
Key Clicks	Enables or disables the keypad clicks. The 700 Color Computer emits a click each time you press a key or decode a row of a two-dimensional symbology.	0 Disable clicks 1 Enable soft key clicks 2 Enable loud key clicks (default)

Using Reader Commands

After the 700 Color Computer is connected to your network, you can send the 700 Color Computer a reader command from an application to perform a task, such as changing the time and date. Some reader commands temporarily override the configuration settings and some change the configuration settings.

Change Configuration

The Change Configuration command must precede any configuration command. If you enter a valid string, the 700 Color Computer configuration is modified and the computer emits a high beep. To send the Change Configuration command through the network, use the `$+ [command]` syntax where *command* is the two-letter command syntax for the configuration command followed by the value to be set for that command.

You can also make changes to several different commands by using the `$+ [command] . . . [command n]` syntax. There are seven configuration command settings that can be changed in this way. *See each command for information on respective acceptable "data" values.*

Command	Syntax
Audio Volume	BV <i>data</i>
Automatic Shutoff	EZ <i>data</i>
Backlight Timeout	DF <i>data</i>
Key Clicks	KC <i>data</i>
Virtual Wedge Grid	AF <i>data</i>
Virtual Wedge Postamble	AE <i>data</i>
Virtual Wedge Preamble	AD <i>data</i>

Example 1

To change the Beep Volume to Off, you can send this string to the 700 Color Computer through the network: `$+BV0`

where:

- `$+` Indicates Change Configuration.
- `BV` Specifies the Audio Volume parameter.
- `0` Specifies a value of Off.

Example 2

To change the Beep Volume to Very Quiet and the Virtual Wedge Grid to 123: `$+BV1AF123`

where:

- `$+` Indicates Change Configuration
- `BV1` Specifies Audio Volume, set to Very Quiet (1)
- `AF123` Specifies Virtual Wedge Grid, set to a value of 123.

Set Time and Date

This command sets the date and time on the 700 Color Computer. The default date and time is *June 1, 1999 at 12:00 AM*.

From the network, send the following:

```
/+ yyyymmddhhmmss
```

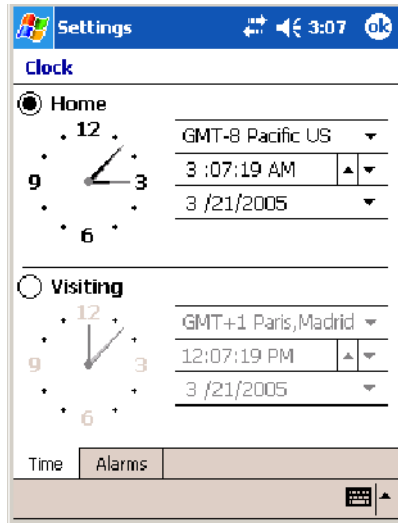
where acceptable values for the date are:

yyyy	0000–9999	Year
mm	01–12	Month of the year
dd	01–31	Day of the month
hh	00–23	Hour
mm	00–59	Minutes
ss	00–59	Seconds



Clock

You can also set the time and date by using Configuration Management in Unit Manager, or by using the Clock applet in the Settings menu. To access this applet, tap **Start > Settings > the System tab > the Clock icon**.



Configuration Bar Codes

You can change some settings on your 700 Color Computer by scanning the following Code 39 bar code labels.



Note: When you use a bar code creation utility to make a scannable bar code label, the utility probably adds opening and closing asterisks automatically. Asterisks are included here for translation purposes.

Audio Volume



Note: The Audio Volume parameter information is on page 253.

Turn Audio Off



\$+BV0

Set Audio Volume to very quiet



\$+VB1

Set Audio Volume to quiet



\$+BV2

Set Audio Volume to normal (default)



\$+BV3

Set Audio Volume to loud



\$+BV4

Set Audio Volume to very loud



\$+BV5

Automatic Shutoff



Note: The Automatic Shutoff parameter information is on page 253.

Set Automatic Shutoff to 1 minute



\$+EZ1

Set Automatic Shutoff to 2 minutes



\$+EZ2

Set Automatic Shutoff to 3 minutes (default)



\$+EZ3

Set Automatic Shutoff to 4 minutes



\$+EZ4

Set Automatic Shutoff to 5 minutes



\$+EZ5

Backlight Timeout



Note: The Backlight Timeout parameter information is on page 253.

Backlight Timeout 10 seconds



\$+DF10

Backlight Timeout 30 seconds



\$+DF30

Backlight Timeout 1 minute (default)



\$+DF60

Backlight Timeout 2 minutes



\$+DF120

Backlight Timeout 3 minutes



\$+DF180

Backlight Timeout 4 minutes



\$+DF240

Backlight Timeout 5 minutes



\$+DF300

Key Clicks



Note: The Key Clicks parameter information is on page 253.

Disable key clicks



\$+KC0

Enable soft key clicks



\$+KC1

Enable loud key clicks (default)



\$+KC2

Virtual Wedge Grid, Preamble, Postamble

The following parameters are user-configurable strings. Refer to a full ASCII chart for more information.

Grid

For Virtual Wedge Grid, the first part of the bar code is the following, which can include a string of up to 240 characters.



*\$+AF

Preamble

For Virtual Wedge Preamble, the first part of the bar code is below, followed by a string of up to 31 characters (*no <NUL>*) and an asterisk. *Default is no characters.*




*\$+AD

Postamble

For Virtual Wedge Postamble, the first part of the bar code is below, followed by a string of up to 31 characters (*no <NUL>*) and an asterisk. *Default is no characters.*



*\$+AE



B Troubleshooting

This appendix contains a brief explanation of what you can do to troubleshoot your 700 Color Mobile Computer.

Problem	Solutions
The 700 Color Computer does not respond when connected to a power supply.	Make sure your ac adapter or dock is plugged in and is making good contact with your mobile computer.
The 700 Color Computer will not turn on when the I/O key is pressed.	The AB10 battery may be low and need recharging.
The Power status LED starts blinking.	The Power status LED provides the status of your battery pack when it is connected to a charging device. See Chapter 1, "Introduction," for LED descriptions.
The 700 Color Computer will not turn on and the screen is blank.	<p>The battery may be <i>critically low</i>. Put your mobile computer in an AD15 or AD18 charger for at least five minutes, remove it from the dock, then press the I/O button. The screen should turn on.</p> <p>Put your mobile computer back in the charger and continue to charge your mobile computer for at least four hours to make sure the battery is fully charged.</p>
The 700 Color Computer will not turn on when placed in a dock.	Make sure the dock is plugged in and your mobile computer is securely seated in the dock.
The 700 Color Computer shuts down during operation.	You may have a very low battery. Put the battery in an AC15 or AC16 charger.
The 700 Color Computer does not turn off.	<p>The 700 Color Computer does not turn off while it is processing data. If this situation continues for a long period of time, it does run down the battery unless you have it connected to an external power, or in a charging dock.</p> <p>Should the 700 Color Computer lock up, perform a warm-boot. If the mobile computer stays locked up, then perform a cold-boot. See Chapter 1, "Introduction," for information on performing warm-boots and cold-boots.</p>
The 700 Color Computer takes a long time to boot up after a warm- or cold-boot is performed.	Normal recovery time is 30 to 45 seconds. If the recovery takes longer, then contact support personnel.



The Classes and Functions Index covers 700 Color classes and functions.

The General Index covers all topics. Those in italics are figures, those in bold are tables.

The Files Index is to assist you in locating descriptions for device drivers, applications, utilities, batch files, or other files within this publication.

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Worldwide Headquarters
6001 36th Avenue West
Everett, Washington 98203
U.S.A.

tel 425.348.2600

fax 425.355.9551

www.intermec.com

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