PPT 8800 with Windows® Mobile 2003 Software for Pocket PCs

Product Reference Guide

PPT 8800 with Windows® Mobile 2003 Software for Pocket PCs Product Reference Guide

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symbol®

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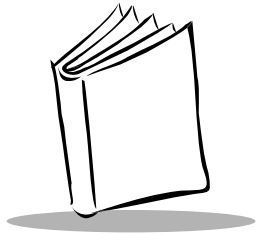


Contents

About This Guide

Chapter 1. Getting Started

Chapter 2. Operating the PPT 8800

Chapter 3. Settings

Chapter 4. Communication

Chapter 5. Spectrum24 Network Configuration

Chapter 6. AirBEAM Smart

Chapter 7. Applications

Chapter 8. Software Installation on Development PC

Chapter 9. Configuring the Terminal

Chapter 10. Maintenance and Troubleshooting

Appendix A. Block Recognizer Characters

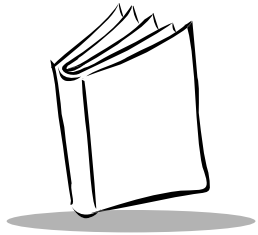
Appendix B. Demo Program

Appendix C. Technical Specifications

Appendix D. Keypad Maps

Index

Feedback



About This Guide

Introduction

The *PPT 8800 with Windows Mobile 2003 Software for Pocket PCs Product Reference Guide* provides information about the PPT 8800 Series terminal using the Microsoft Windows Mobile 2003 Operating System, and its accessories. The PPT 8800 Series includes the following variations of the terminal:

- PPT 8800: Batch
- PPT 8846: Spectrum24® WLAN
- PPT 8860: Bluetooth
- PPT 8866: Spectrum24 WLAN and Bluetooth.

Chapter Descriptions

Topics covered in this guide are as follows:

- Chapter 1, *Getting Started* explains the physical buttons and controls on the terminal, how to install and charge the batteries, replace the handstrap, and start your terminal for the first time.
- *Chapter 2, Operating the PPT 8800* explains how to use your terminal, including instructions for powering on and resetting the terminal, using the stylus and a headset, entering information, and scanning.
- *Chapter 3, Settings* explains how to adjust settings on the terminal, and add and delete programs.
- Chapter 4, *Communication* explains how to use Microsoft® ActiveSync™ for communication between the terminal and host computer.

- Chapter 5, *Spectrum24 Network Configuration* describes how to configure the Spectrum24 wireless connection.
- Chapter 6, *AirBEAM Smart* explains how to set up your terminal to synchronize with a server using the AirBEAM Client and AirBEAM Staging applications.
- Chapter 7, *Applications* describes how to use the applications installed on the terminal.
- Chapter 8, *Software Installation on Development PC* provides instructions for installing the Software Developer's Kit on your host computer.
- Chapter 9, *Configuring the Terminal* describes how to install and use the Terminal Configuration Manager (TCM) and Initial Program Loader (IPL).
- Chapter 10, *Maintenance and Troubleshooting* provides information to help you take proper care of your terminal and solve problems that may come up.
- Appendix A, *Block Recognizer Characters* describes how to using the Block Recognizer to write characters.
- Appendix B, *Demo Program* provides an overview of the terminal demo program applications, such as scanning, setup, diagnostic utilities, and file management.
- Appendix C, *Technical Specifications* includes a table listing the technical specifications for the terminal.
- *Appendix D, Keypad Maps* includes tables listing key functionality for the keypad.

Notational Conventions

This document uses these conventions:

- "terminal" or "PPT 8800" refers to any model of the terminal.
- "User" refers to anyone using an application on the terminal.
- "You" refers to the End User, System Administrator or Technical Support person using this manual as a reference to install, configure, operate, maintain and troubleshoot the terminal.
- *Italics* are used to highlight specific items in the general text, and to identify chapters and sections in this and related documents. It also identifies names of windows, menus, menu items, and fields within windows.
- **Bold** identifies buttons to be tapped or clicked.
- Bullets (•) indicate:
  - lists of alternatives or action items.
  - lists of required steps that are not necessarily sequential.

- Numbered lists indicate a set of sequential steps, i.e., those that describe step-by-step procedures.

Related Material

The following items provide more information about your terminal and accessories.

- *PPT 8800 with Windows Mobile 2003 Software for Pocket PCs Quick Reference Guide*, p/n 72-63153-xx
- *CRD8800-1000S Serial Cradle Quick Reference Guide*, p/n 72-58095-xx
- *CRD8800B-1000S Serial Cradle Quick Reference Guide*, p/n 72-64181-xx
- *CRD8800-4000S Serial Cradle Quick Reference Guide*, p/n 72-58096-xx
- *CRD8800-4000E Serial Cradle Quick Reference Guide*, p/n 72-59203-xx
- *UBC 2000 Product Guide*, p/n 70-33188-xx
- *AirBEAM Package Builder Product Reference Guide*, p/n 72-55769-xx
- *Windows CE Help File for Symbol Terminals*, p/n 72E-38880-xx
- *Symbol Mobility Developer's Kit for Embedded Visual C 4.0,* **http://software.symbol.com/devzone**
- *Device Configuration Package for PPT 8800,* available at **http://software.symbol.com/devzone**
- ActiveSync software, available at **http://www.microsoft.com.**

Service Information

If you have a problem with your equipment, contact the *Symbol Support Center* for your region. See page xvi for contact information. Before calling, have the model number, serial number, and several of your bar code symbols at hand.

Call the Support Center from a phone near the scanning equipment so that the service person can try to talk you through your problem. If the equipment is found to be working properly and the problem is symbol readability, the Support Center will request samples of your bar codes for analysis at our plant.

If your problem cannot be solved over the phone, you may need to return your equipment for servicing. If that is necessary, you will be given specific directions.

Note: *Symbol Technologies is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. If the original shipping container was not kept, contact Symbol to have another sent to you.*

Symbol Support Center

For service information, warranty information or technical assistance contact or call the Symbol Support Center in:

United States [1]
Symbol Technologies, Inc.
One Symbol Plaza
Holtsville, New York 11742-1300
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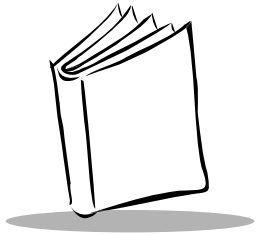
[1]Customer support is available 24 hours a day, 7 days a week.

If you purchased your Symbol product from a Symbol Business Partner, contact that Business Partner for service.

For the latest version of this guide go to:http://www.symbol.com/manuals.



Chapter 1
Getting Started

Chapter Contents

Introduction

This chapter explains the physical buttons and controls on your terminal, how to install and charge the batteries, replace the handstrap, and start your terminal for the first time.

Unpacking the Terminal

Carefully remove all protective material from around the terminal and save the shipping container for later storage and shipping.

Verify that you received all equipment listed below:

- terminal
- lithium-ion battery
- handstrap, attached to the terminal
- case
- stylus, in the stylus silo
- *Quick Reference Guide*.

Inspect the equipment for damage. If you are missing any equipment or if you find any damaged equipment, contact the Symbol Technologies Support Center immediately. See page xvi for contact information.

Parts of the Terminal

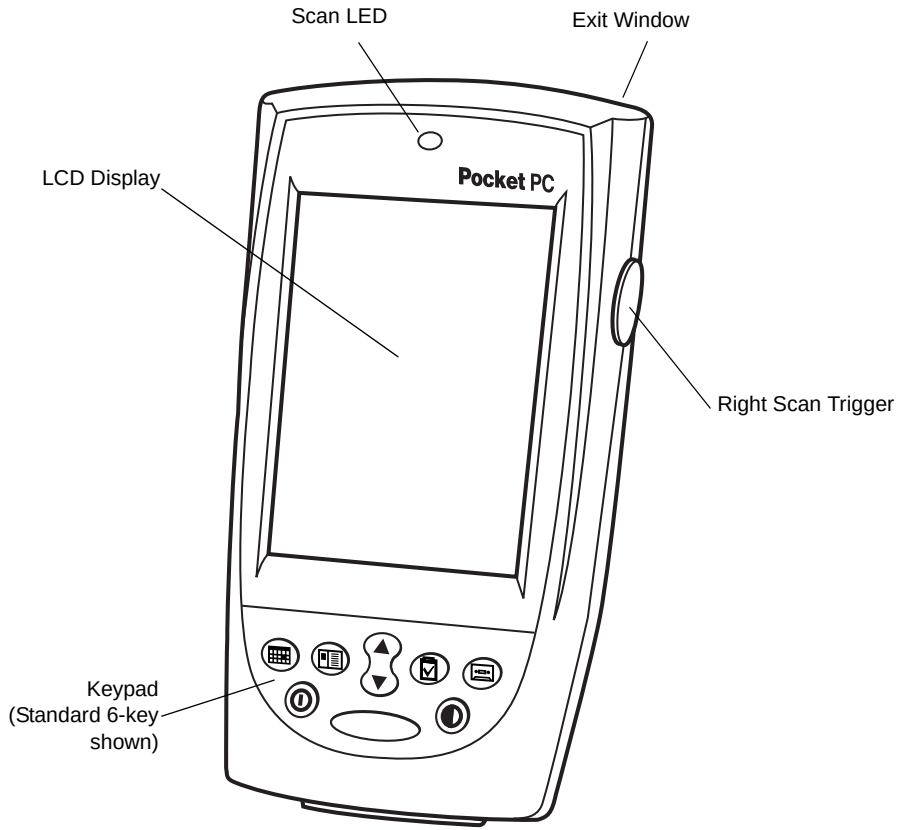


Figure 1-1. Front View

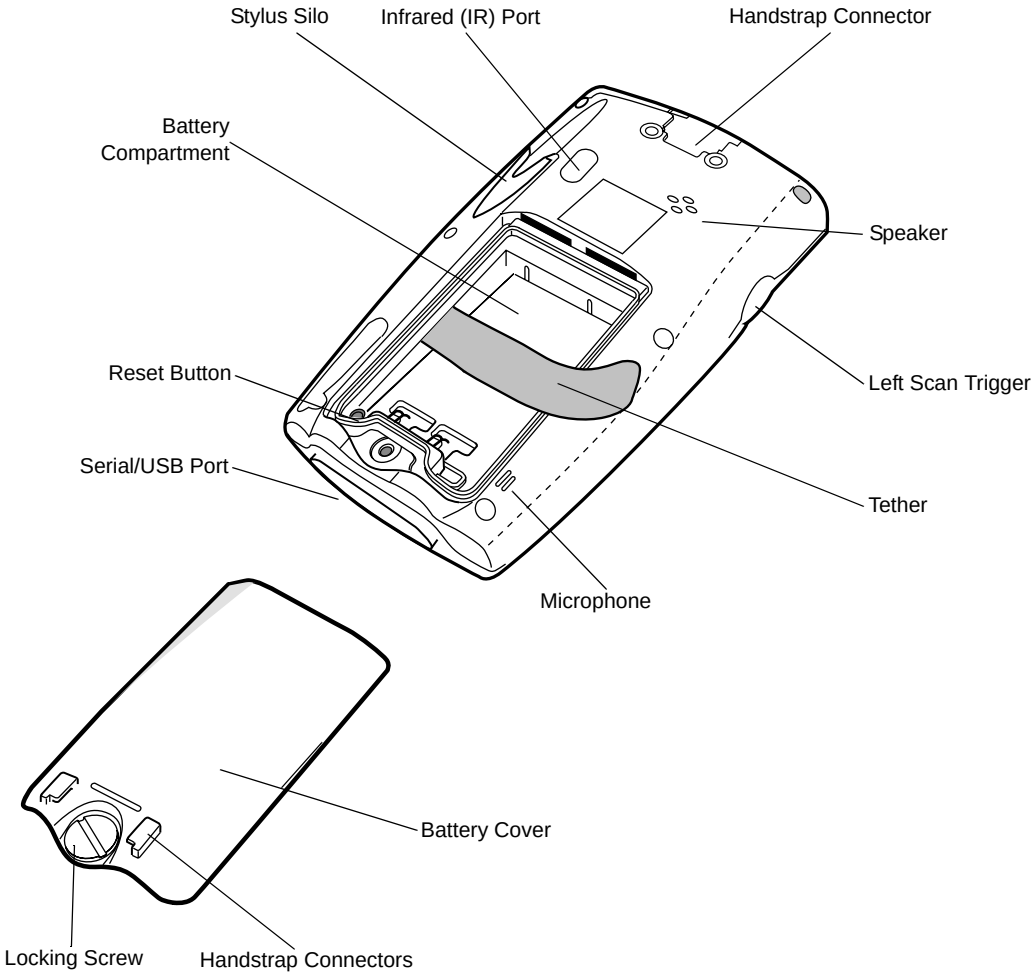


Figure 1-2. Back View

Accessories

- Spare standard lithium-ion battery.
- Larger capacity lithium-ion battery kit.
- Stylus: for performing pen functions.
- Universal Cable Cup: connects to the terminal to an autocharge adapter and various cables.
- Cables:
  - DEX Cable: connects the terminal to a vending machine.
  - Autocharger: connects to the cigarette lighter in a vehicle to charge the terminal.
  - Printer Cables: adds printing capabilities to the terminal.
  - USB Cable: allows USB connection from the Cable Cup to a host computer
  - Attachable power supply and line cord: allows charging of the terminal through the Universal Cable Cup.
- Serial Charging Cable: allows serial connection of the terminal to a host computer.
- Single-Slot Serial Cradle: charges the terminal and spare standard battery and synchronizes the terminal with a host computer through a serial connection.
- Single-Slot Serial Cradle with Larger Capacity Battery Support: charges the terminal with standard or larger capacity battery and spare standard and larger capacity battery; and synchronizes the terminal with a host computer through a serial connection.
- Four-Slot Serial Cradle: charges up to four terminals with standard and larger capacity battery and synchronizes the terminals with a host computer through a serial connection.
- Four-Slot Ethernet Cradle: charges the terminals with standard or larger capacity battery and synchronizes the terminal with a host computer through an ethernet connection.
- Holster: stores the terminal when not in use.
- Pistol Grip Handle: provides gun form factor ergonomics for scan intensive applications.
- Magnetic Stripe Reader (MSR): snaps on to the terminal to add magstripe capabilities.
- Vehicle Cradle: powers the terminal and charges its battery, and can be used to communicate with other devices such as printers.
- Symbol Mobility Developer's Kit (SMDK) for Embedded Visual C 4.0
- Device Configuration Package for PPT 8800.

Getting Started

In order to start using the terminal for the first time:

- install the battery
- charge the battery and backup battery
- start the terminal
- configure the terminal.

Installing the Battery

Installing the Standard Battery

Before using your terminal, install a lithium-ion battery:

1. Turn the locking screw counterclockwise until the cover releases from the terminal.
2. Lift the battery door away from the terminal.

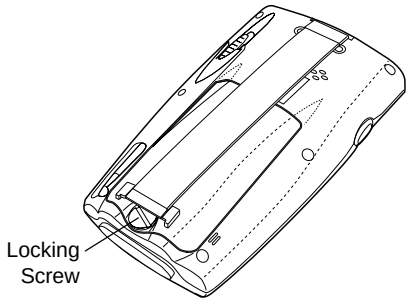


Figure 1-3. Locking Screw

3. Insert the lithium-ion battery in the battery compartment with the battery tether positioned as shown, ensuring the battery snaps into place.

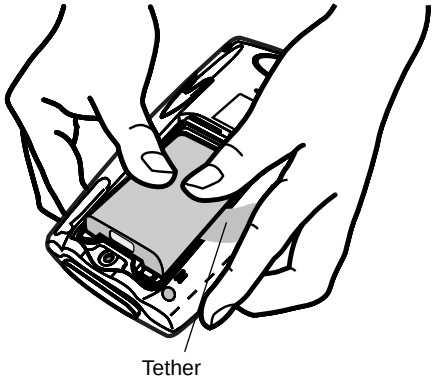


Figure 1-4. Inserting the Standard Battery

Note: *Ensure the battery is positioned correctly. The battery charging contacts should be placed on top of the charging contacts in the battery compartment.*

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4. Replace the battery cover by inserting the top first, then pressing the bottom down firmly.

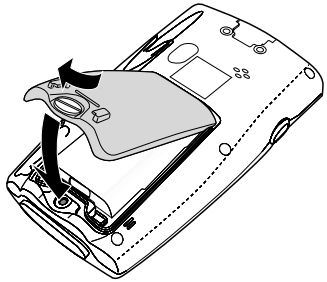


Figure 1-5. Closing the Back Cover

5. Turn the locking screw clockwise to secure the battery cover to the terminal.

Installing the Optional Larger Capacity Battery

To install the optional larger capacity battery:

1. Remove the bottom of the handstrap from the battery cover.
2. Unscrew the locking screw and remove the battery cover.

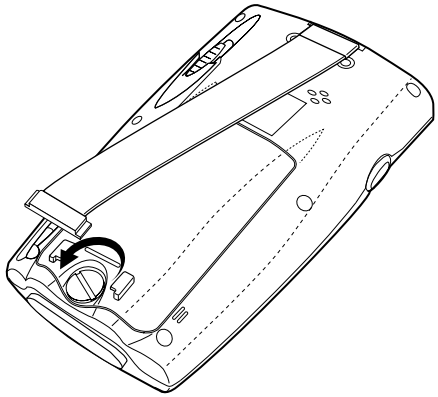


Figure 1-6. Unscrew Locking Screw

3. If a battery is installed, pull tether up to release battery.
4. Insert the larger capacity battery in the battery compartment with the battery tether positioned as shown, ensuring the battery snaps into place.

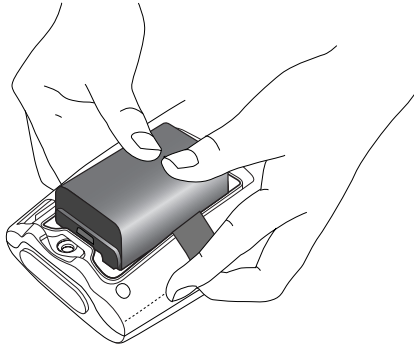


Figure 1-7. Installing the Larger Capacity Battery

5. Replace the new battery cover by inserting the top first, then pressing the bottom down firmly.

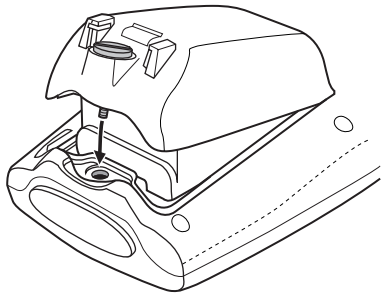


Figure 1-8. Secure New Battery Cover

6. Tighten the locking screw to secure the new battery cover to the terminal.
7. Re-attach the handstrap to the handstrap connector on the new battery cover.

Charging the Terminal Battery

Charging the Main Battery and Memory Backup Battery

Before using your terminal for the first time, charge the standard lithium-ion battery in the terminal for approximately 2 1/2 hours, using a cradle or the serial charging cable. The optional larger capacity battery charges in approximately five hours.

Note: *To ensure the quickest charging time, turn the terminal off while charging.*

Your terminal is equipped with a memory backup battery which automatically charges from the fully-charged lithium-ion battery. This backup battery retains data in memory when the terminal's battery is removed. When you first use your terminal, it takes about 24 hours to charge the backup battery from the main battery.

Note: *If you remove your lithium-ion battery before the backup battery is fully charged, data may be lost. For this reason, DO NOT remove the battery within the first 24 hours of use.*

Using the Serial Charging Cable

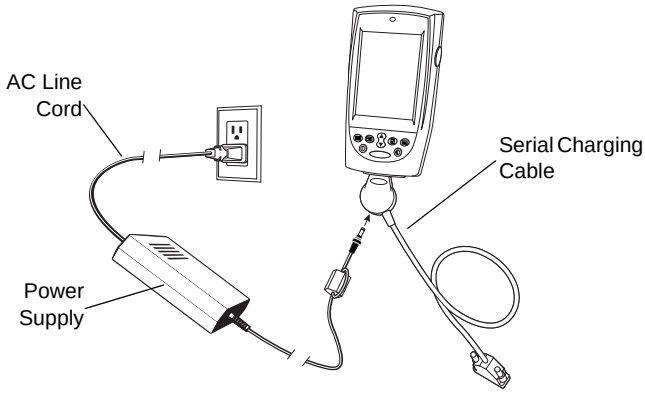


Figure 1-9. Power Set Up

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.

Using the Single-Slot Serial Cradles

You can charge the battery in the terminal using either the CRD 8800 or CRD 8800B Single-Slot Serial Cradle. The CRD 8800B cradle accepts a terminal with the larger capacity battery kit installed on the terminal. To charge the terminal's battery using the Single-Slot Serial cradle:

1. Connect the cradle to a power source.

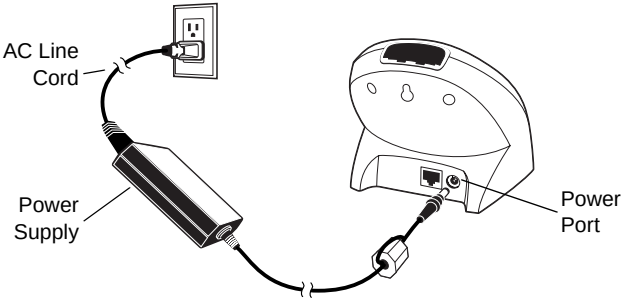


Figure 1-10. Connecting Power to the CRD 8800 Cradle

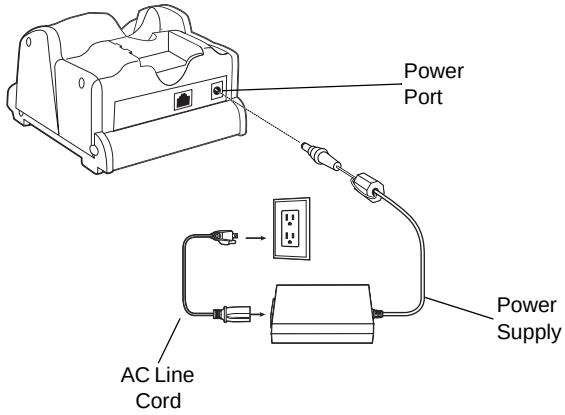


Figure 1-11. Connecting Power to the CRD 8800B Cradle

2. Insert the terminal into the cradle. The terminal starts to charge automatically.

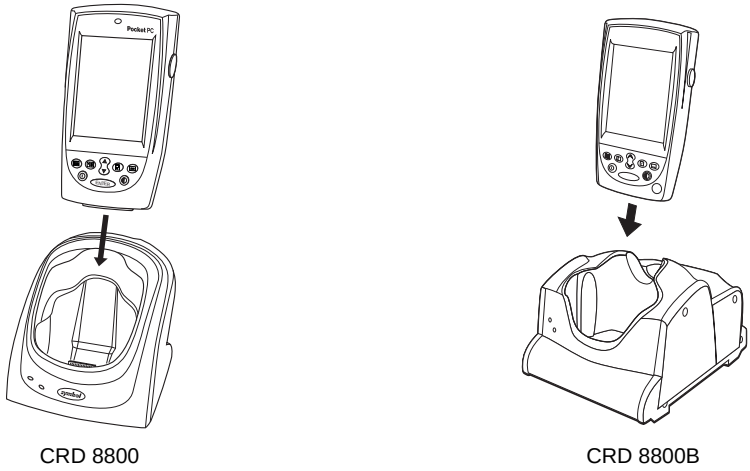


Figure 1-12. Inserting the Terminal into the Single-Slot Serial Cradle

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.

Using the Four-Slot Cradles

To charge the terminal's battery using the Four-Slot Charging Cradle or the Four-Slot Ethernet Cradle:

1. Connect the cradle to a power source.

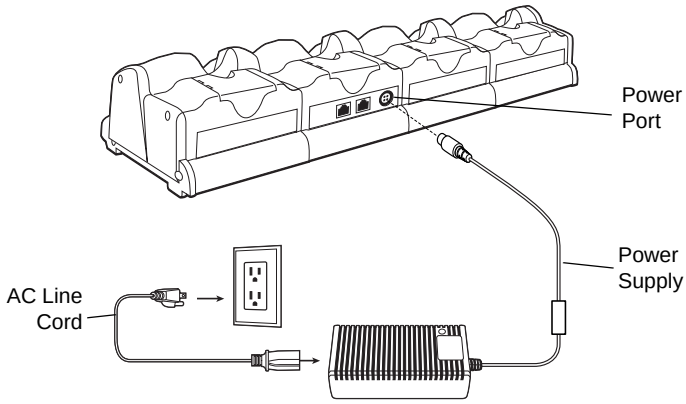


Figure 1-13. Connecting Power to the Four-Slot Cradle

2. Insert the terminal into the cradle. The terminal starts to charge automatically.

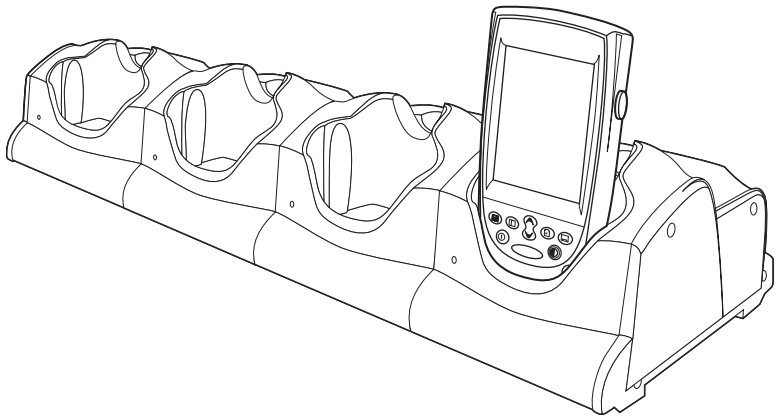


Figure 1-14. Inserting the Terminal into the Four-Slot Cradle

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.

Using the Universal Cable Cup

To charge the terminal's battery using the Universal Cable Cup with the vehicle charging adapter or the wall outlet power supply and line cord:

1. Ensure the locking tabs are in the open position (up).
2. Insert the terminal into the cable cup.
3. Press down on the two locking tabs.
4. Pull on the cable cup to ensure that it is securely attached to the terminal.

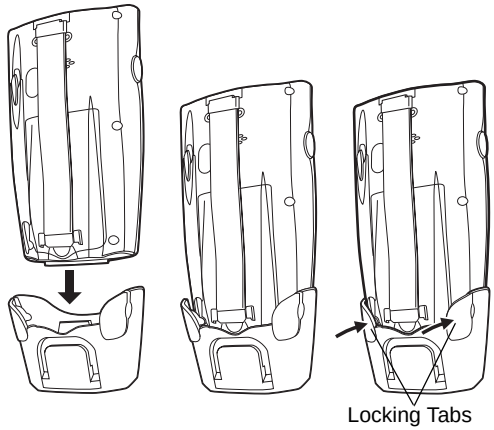


Figure 1-15. Attaching the Universal Cable Cup to the Terminal

5. Open the rubber cap covering the power port.

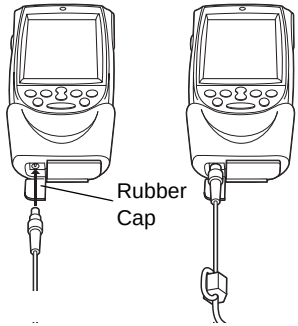


Figure 1-16. Connecting the Power Cable

6. Plug the power connector into the power port.

7. Wrap the cable around the cable support.

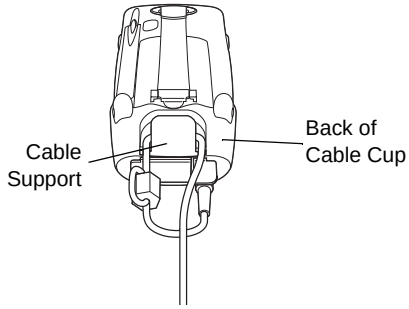


Figure 1-17. Securing the Cable

8. Connect the other end of the cable to a vehicle power adapter or appropriate power source.

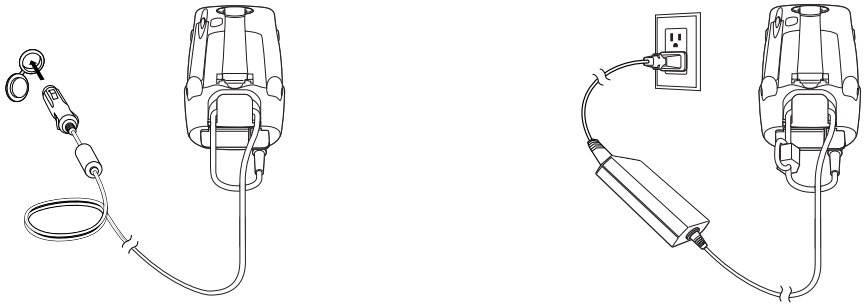


Figure 1-18. Connecting to Power Source

The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger capacity battery usually fully charges in approximately five hours.

Charging Spare Batteries

A spare battery can be charged using the single-slot cradle(s).

Note: *You can also use a UBC adapter to charge spare batteries. Refer to the* UBC 2000 Universal Battery Charge Product Guide *for more information.*

Using the CRD 8800 Single-Slot Cradle

The CRD 8800 Single-Slot Serial Cradle charges only the standard battery.

1. Connect the cradle to a power source.

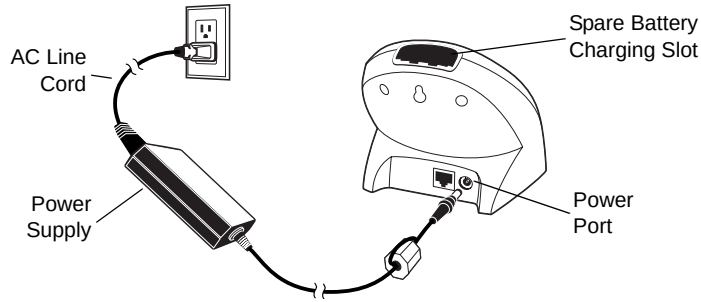


Figure 1-19. Connecting Power to the CRD 8800 Cradle

2. Insert the battery into the spare battery charging slot on the back of the cradle. Position it with the charging contacts facing down (over charging pins) and gently press down on the battery to ensure proper contact.

The spare battery charging LED turns red to indicate that the spare battery is charging. The battery fully charges in approximately 2 1/2 hours. See *Charge LED Indicator* on page 1-19 for spare battery charging indications.

Using the CRD 8800B Single-Slot Cradle

The CRD 8800B Single-Slot Serial Cradle charges both the standard and larger capacity battery in the spare battery well.

1. Connect the cradle to a power source.

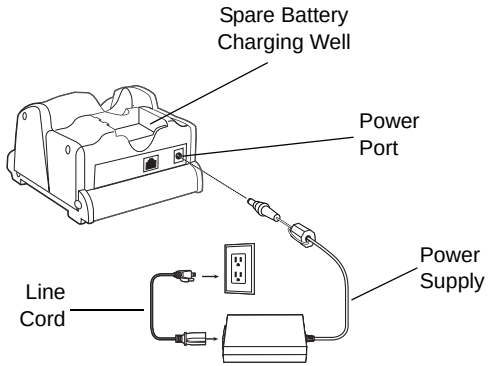


Figure 1-20. Connecting Power to the CRD 8800B Cradle

2. Insert the battery into the spare battery charging well on the back of the cradle. Insert the contact end first and then press the back end into the well.

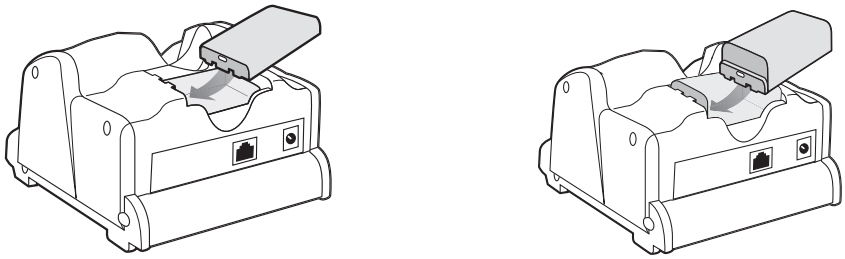


Figure 1-21. Inserting the Spare Battery into the Battery Well

The spare battery charging LED turns red to indicate that the spare battery is charging. The standard battery usually fully charges in approximately 2 1/2 hours and the optional larger

capacity battery usually fully charges in approximately five hours. See *Charge LED Indicator* on page 1-19 for spare battery charging indications.

Using the UBC Battery Adapter

1. Insert the appropriate battery adapter into the charger base.
2. Insert the battery into its appropriate adapter. Ensure the polarity markings on the battery (+, -) match with those of the adapter.

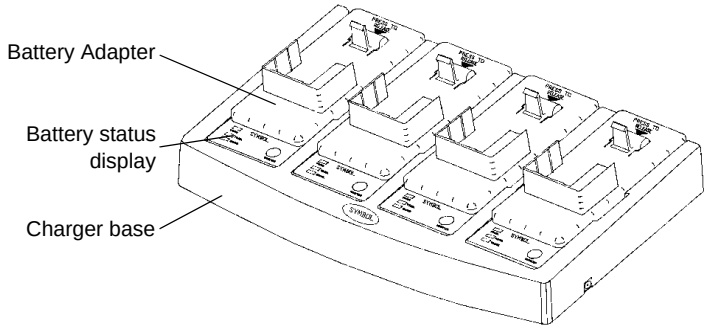


Figure 1-22. Inserting the Spare Battery

When the battery is inserted, the charging system begins the rapid charge cycle. When this cycle is completed, the "READY" indicator on the battery status display turns solid green, and the battery is charged to approximately 95% of its rated capacity. To attain 100% of its capacity the battery should remain in the charger for 3 hours. A charged battery may be stored in the charger indefinitely. Upon completion of the charging cycle, the charger switches to "Maintenance Mode" where it maintains the battery at 100% of its rated capacity.

Caution

Do not charge a battery that is below 0° C (32° F) or above 45° C (113° F). Allow the battery to warm up to room temperature before charging.

Charge LED Indicator

Table 1-1. Charge LED Indicator

LED	Indication
Spare Battery Charging (Cradle LED)	
Off	No spare battery in slot; spare battery not placed correctly; cradle is not powered.
Solid red	Spare battery is charging.
Flashing red	Error in charging; check placement of spare battery.
Solid green	Charging is complete.

Starting the Terminal

Press the Power button to turn on the terminal. If the terminal does not power on, perform a hard reset. See *Resetting the Terminal* on page 2-34.

When turning the terminal on for the first time, the terminal initializes its Flash File system, the Symbol splash screen displays for about a minute followed by the calibration window. Note that these windows also appear every time you perform a hard reset.

Calibrating the Screen

To calibrate the screen so the cursor on the touch screen aligns with the tip of your stylus:

1. Remove the stylus from its storage silo on the back of the terminal.

2. Carefully press and briefly hold the tip of stylus on the center of each target that appears on the screen.

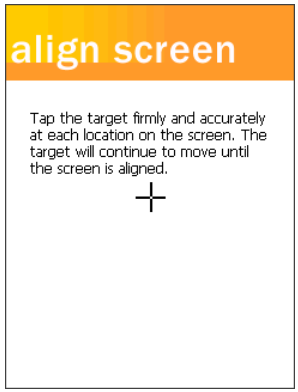


Figure 1-23. Align Screen

Note: *To re-calibrate the screen at anytime, press **FUNC** + **6** on a 15-key terminal or press Function + **F4** on the standard 6-key terminal to launch the calibration screen application.*

---

3. Follow the directions on the screen which lead you through a simple exercise illustrating how to use the stylus and pop-up menus.

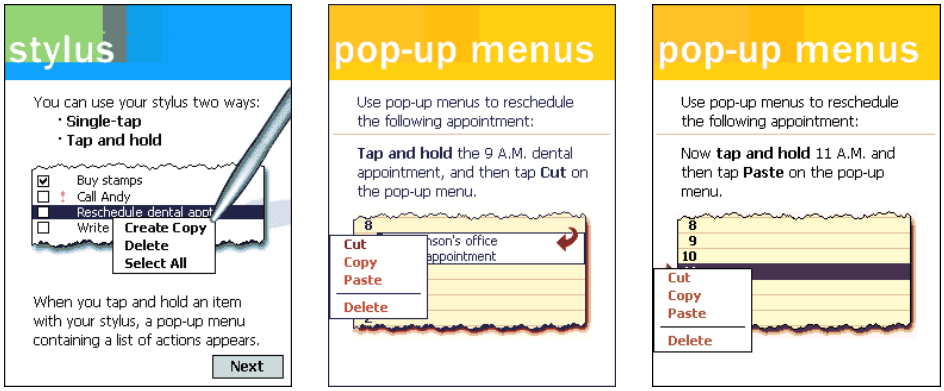


Figure 1-24. Using Pop-up Menus

4. Use the drop-down list to set your time zone, and tap **Next**.

Figure 1-25. Setting Time Zone

Note: *These initial setup screens appear each time you perform a hard reset.*

Setting Time and Date

The Time and Date window does not appear after setting the time zone. Tap *Start* - *Settings* - *System* tab - *Clock* icon to use the clock control panel applet to set the time and date after a hard reset.

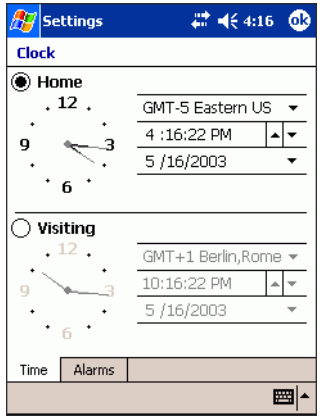


Figure 1-26. Setting Time and Date

Checking Battery Status

To check whether the main battery or backup battery in the terminal is charged, tap *Start* - *Settings* - *System* tab - *Power* icon to display the *Battery Status* window.

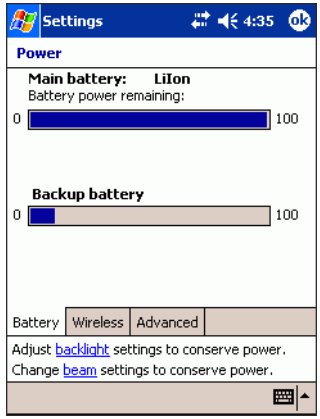


Figure 1-27. Battery Status Screen

To save battery power, set your terminal to turn off after a specified number of minutes. See *Power* on page 3-40 to set power management options.

Replacing the Handstrap

The terminal has a factory-installed handstrap which increases comfort when holding the terminal for extended periods of time. The handstrap may be removed or replaced, if damaged.

To replace the handstrap:

1. Unhook the bottom of the handstrap from the handstrap connector on the battery cover.
2. Unhook the top of the handstrap from the handstrap connector on the back of the terminal.

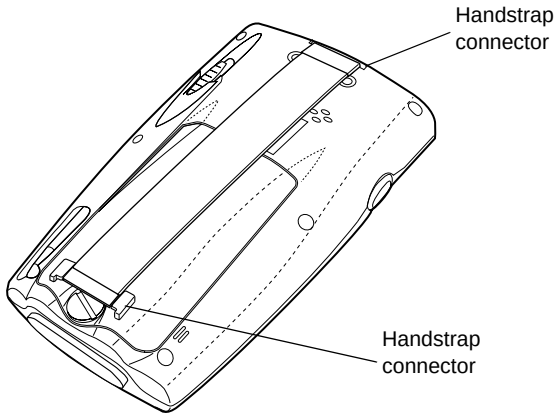
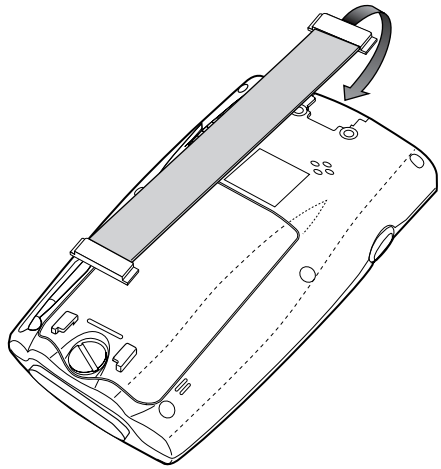
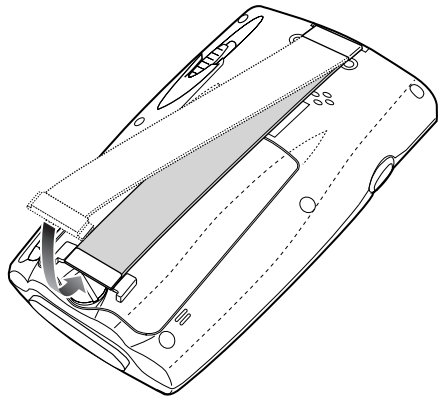


Figure 1-28. Handstrap Replacement

3. Slide the flat metal piece of the new handstrap into the handstrap connector on the back of the terminal.



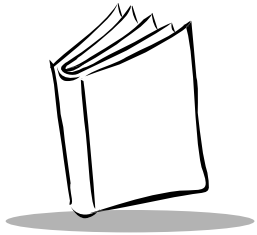
4. Slide the flat metal piece on the other end of the handstrap into the handstrap connector on the battery cover.



Configuring the Terminal

Refer to the following chapters to configure the terminal:

- For customizing the settings on your terminal, see Chapter 3, *Settings*.
- To set up ActiveSync to synchronize your terminal with your host computer, see Chapter 4, *Communication*.
- To configure your terminal for Spectrum24, see Chapter 5, *Spectrum24 Network Configuration*.
- To set up AirBEAM to synchronize your terminal with your host server, see Chapter 6, *AirBEAM Smart*.
- To install development software on your development PC, see Chapter 8, *Software Installation on Development PC*.
- To configure your terminal using the Terminal Configuration Manager, see Chapter 9, *Configuring the Terminal*.



Chapter 2
Operating the PPT 8800

Chapter Contents

Introduction

This chapter provides basic instructions for using and navigating the terminal.

Using the Power Button

Press the ⏻ button to turn the terminal on and off. See *Starting the Terminal* on page 1-19.

Adjusting the Backlight

Standard 6-Key Configuration

Use the key combinations listed in Table 2-1 to control the display and keypad backlight.

Table 2-1. Standard 6-Key Keypad Backlight Controls

Keys	Description
Press and hold ⏻	Turns the display backlight and keypad backlight on and off.
	When both backlights are off, the backlights turn on in the following order when the button is held: The display backlight turns on first, continue to hold and the keypad backlight turns on. When either backlight is on, the backlights turn off when the button is pressed and held.
Press ◐ + ∨	Decrease display backlight (decrease brightness).
Press ◐ + ∧	Increase display backlight (increase brightness).

15-Key Configuration

Use the key combinations listed in Table 2-2 to control the display and keypad backlight.

Table 2-2. 15-Key Keypad Backlight Controls

Keys	Description
Press and hold ⏻	Turns the display backlight and keypad backlight on and off.
	When both backlights are off, the backlights turn on in the following order when the button is held: The display backlight turns on first, continue to hold and the keypad backlight turns on. When either backlight is on, the backlights turn off when the button is pressed and held.
Press FUNC + PQRS F7 7	Decrease display backlight (decrease brightness).
Press FUNC + TUV F8 8	Increase display backlight (increase brightness).

Using the Stylus

Your terminal has a stylus for selecting items and entering information. The stylus functions as a mouse.

- **Tap**: Touch the screen once with the stylus to press option buttons and open menu items.
- **Tap and Hold**: Tap and hold the stylus on an item to see a list of actions available for that item. On the pop-up menu that appears, tap the action you want to perform.
- **Drag**: Hold the stylus on the screen and drag across the screen to select text and images. Drag in a list to select multiple items.

Using a Headset

You can use a stereo headset to listen to audio playback. To use a headset, plug the headset jack into the audio connector on the top of the terminal. Ensure that the terminal's volume is set appropriately before putting the headset on. When a headset is plugged into the jack, the speaker is muted.

Note: *The audio connector does not support headsets with a microphone.*

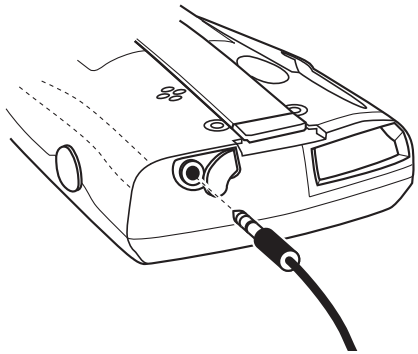


Figure 2-1. Using a Headset

Using the Keypad

The terminal has two keypad configurations: a standard 6-key configuration and a 15-key configuration.

Standard 6-Key Configuration

The standard 6-key keypad contains a power button, application keys, scroll keys, an Enter key and a function key. See Table 2-3 for descriptions of the keypad buttons and keys.

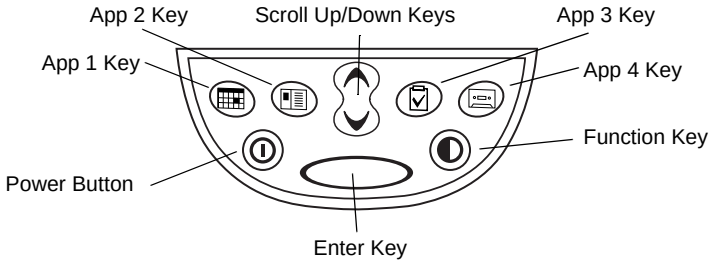


Figure 2-2. Standard 6-Key Configuration

Table 2-3. 6-Key Keypad Actions

Key	Action
App 1 - App 4	These keys can be assigned to an application. See *Buttons* on page 3-7 for default settings.
Scroll Up	Moves up from one item to another. Increases the brightness of the backlight when simultaneously pressed with the Function key.
Scroll Down	Moves down from one item to another. Decreases the brightness of the backlight when simultaneously pressed with the Function key.
Function	Executes an operation when it's pressed with another key (keys) simultaneously, such as one of the Scroll keys.
Power	Powers the terminal on and off and turns the backlight on and off when held.
Enter	Executes a selected item or function.

15-Key Configuration

The 15-key keypad uses an alphanumeric keypad that produces the 26-character alphabet (A-Z, both lowercase and uppercase), numbers (0-9), function keys (F1 - F10) and assorted characters. The keypad is color-coded to indicate which modifier key (ALPHA or FUNC) to press to produce a particular character or action. The keypad default is numeric, producing numbers.

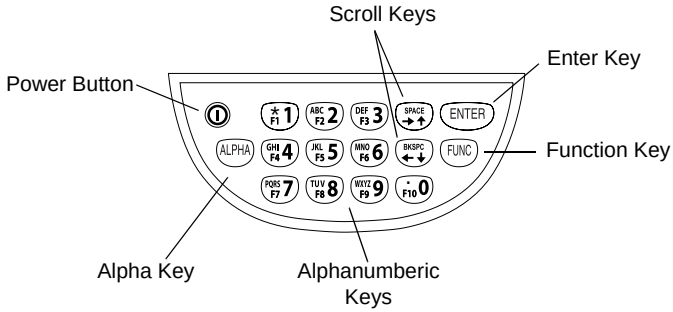


Figure 2-3. 15-Key Configuration

Table 2-4. 15-Key Keypad Actions

Key	Action
Alpha 	Press the **ALPHA** key to cycle through the input modes (Alpha Lowercase, Alpha Uppercase, Numeric). The default is numeric mode. In both alpha modes, pressing a key produces the yellow letter on that key; in numeric mode, pressing a key produces the white number on that key. See Table 2-5.
Scroll Up 	In the numeric mode, moves the cursor up on the window. In the function mode, moves the cursor to the right. In the alpha mode, is a space key.
Scroll Down 	In the numeric mode, moves the cursor down on the screen. In the function mode, moves the cursor to the left. In the alpha mode, is a backspace key.
Function 	Executes an operation when pressed with another key or keys simultaneously, such as one of the Scroll keys. Refer to Table 2-5. Executes the same function in both the alpha and numeric modes.

Table 2-4. 15-Key Keypad Actions (Continued)

Key	Action
Power 	Powers the terminal on and off and turns the backlight on and off when held.
Enter 	Executes a selected item or function.

Table 2-5. 15-Key Keypad Input Modes

Key	Numeric Mode		Alpha Lowercase Mode				Alpha Uppercase Mode			
		FUNC+ Key	1st Press	2nd Press	3rd Press	4th Press	1st Press	2nd Press	3rd Press	4th Press
1	1	F1	@	-	_	/	:	?	!	,
2	2	F2	a	b	c		A	B	C	
3	3	F3	d	e	f		D	E	F	
4	4	F4	g	h	i		G	H	I	
5	5	F5	j	k	l		J	K	L	
6	6	F6	m	n	o		M	N	O	
7	7	F7	p	q	r	s	P	Q	R	S
8	8	F8	t	u	v		T	U	V	
9	9	F9	w	x	y	z	W	X	Y	Z
0	0	F10								
UP	UP	RIGHT	SPACE				SPACE			
DOWN	DOWN	LEFT	BK SPC				BK SPC			
ENTER	ACTION		ACTION				ACTION			

Note: The key functions can be changed by an application. The keypad may not function exactly as described.

Note: *For detailed keypad configurations including ASCII values and VK codes, see Appendix D, Keypad Maps.*

For information about using the *soft* keyboard from the input panel, see to *Entering Information* on page 2-21.

Key Mode Icon

When you press the ALPHA or FUNC key, the Key Mode icon appears in the command bar indicating the key state. The icon disappears when in numeric mode.

Figure 2-4. Alpha Key Icon

When a program, such as Pocket Word, is open the icon appears in the command bar. You can move the icon anywhere on the screen by dragging it to a new location. Double-tap the icon to return it to it's default location in the command bar. To hide the icon, tap the icon and then tap *Hide*. To un-hide the icon, tap *Start - Today.* Tap the icon and then tap *Show*.

Today Screen

When you turn on your terminal for the first time each day (or after 4 hours of inactivity), the *Today* screen appears. You can also display it by tapping *Start* - *Today*. On the *Today* screen, you can see important information for the day.

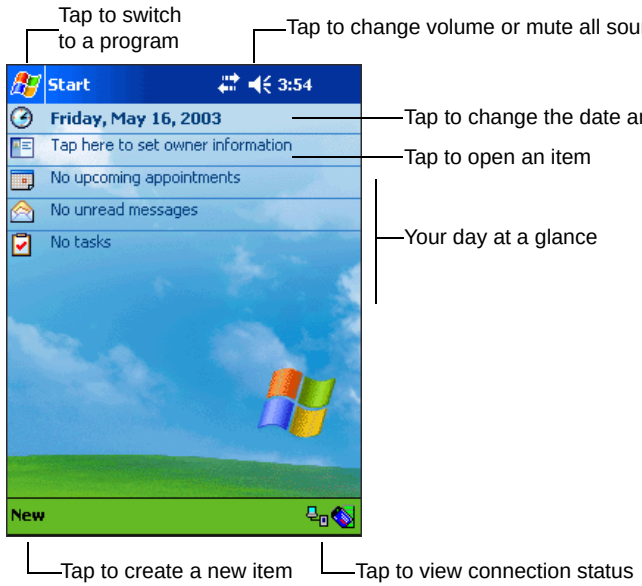


Figure 2-5. Today Screen

Note: *The Today screen may vary depending on your terminal configuration.*

The *Today* screen is customizable. Tap *Start* - *Settings* - *Today* icon. Use the *Appearance* tab to customize the background and the *Items* tab to change the list and order of items that appear on the screen.

Using the Navigation Bar and Command Bar

The navigation bar at the top of the screen displays the active program, various status icons (see Table 2-6) and current time. It also allows you to select 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, buttons, and the input panel button. To create a new item in the current program, tap *New*. To see the name of a button, hold the stylus on the button. Drag the stylus off the button so the command is not carried out.

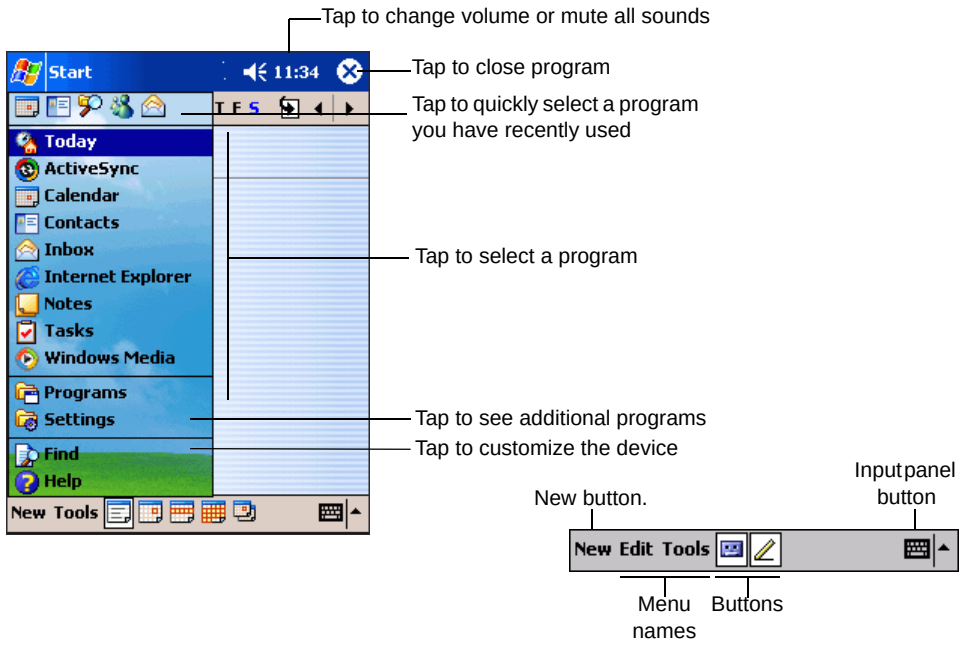


Figure 2-6. Screen Navigation

Status Icons

You may see the status icons listed in Table 2-6 on the navigation bar located at the top of the screen.

Table 2-6. Status Icons

Icon	Function	Description
	Speaker	Turns all sounds on and off.
	Battery	Backup battery is very low.
		Main battery is charging.*
		Main battery is low.
		Main battery is very low.
		Main battery is full.*
	Connectivity	Connection is active.
		Synchronization is occurring.
		IrDA connection is occurring.
	Instant Message	Notification that one or more instant messages were received.
	E-Mail	Notification that one or more e-mail messages were received.
	Time and Next Appointment	Displays current time in analog or digital format.
	Multiple Notifications	There are more notification icons than can be displayed. Tap to display remaining icons.
* Only appears in the *Time and Next Appointment* dialog box.		

Speaker Icon

You can adjust the system volume using the *Speaker* icon in the Navigation bar.

1. Tap the Speaker icon. The *Volume* dialog box appears.

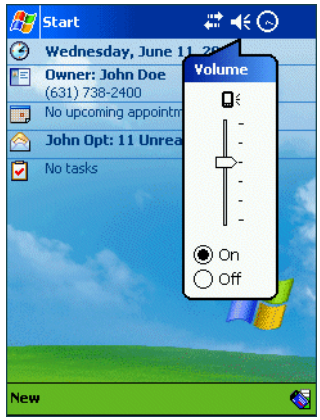


Figure 2-7. Volume Dialog Box

2. Tap and move the slide bar to adjust the volume.
3. Select the *On* or *Off* radio button to turn the volume on or off.

Note: *Use can also adjust the system volume using the Sounds & Notifications window. See Sounds & Notifications on page 3-21 for more information.*

Battery Icon

Battery icons display on the *Navigation Bar* when the main battery or backup battery power falls below a predetermined level. A *Battery* dialog box also appears indicating the status of the main or backup battery.

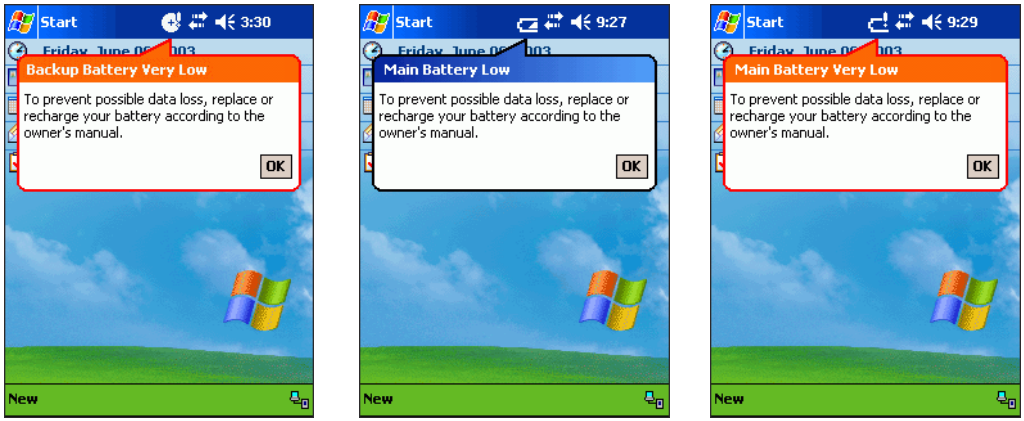


Figure 2-8. Battery Status Dialog Box

Note: *You can also view the battery status using the Power window. See Power on page 3-40 for more information.*

Connectivity Icon

The *Connectivity* icon indicates the communication status of the terminal when it's connecting to the internet or host computer.

Figure 2-9. Connectivity Dialog Box

Time Icon

The *Time* icon displays the current time in a digital or analog format. To change the time format, tap and hold the *Time* icon until a menu appears. Select the format you want.

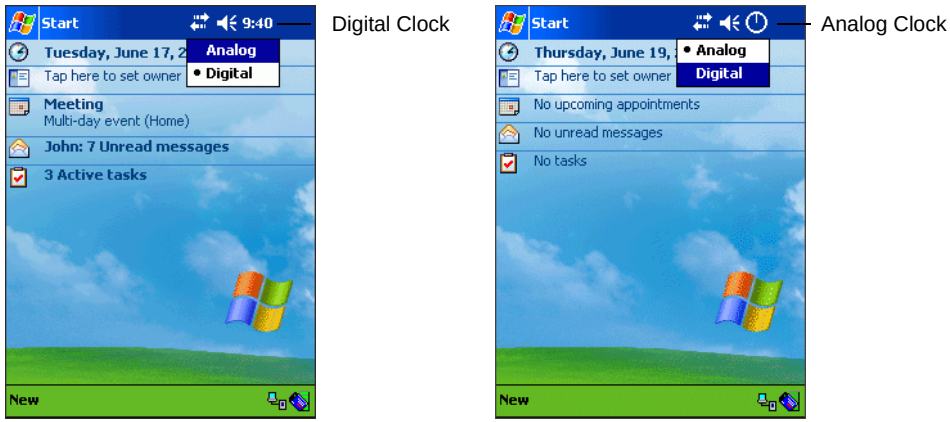


Figure 2-10. Time Icon Format Menu

To display current date, time and appointments:

1. Tap the *Time* icon to display the *Time and Next Appointment* dialog box.

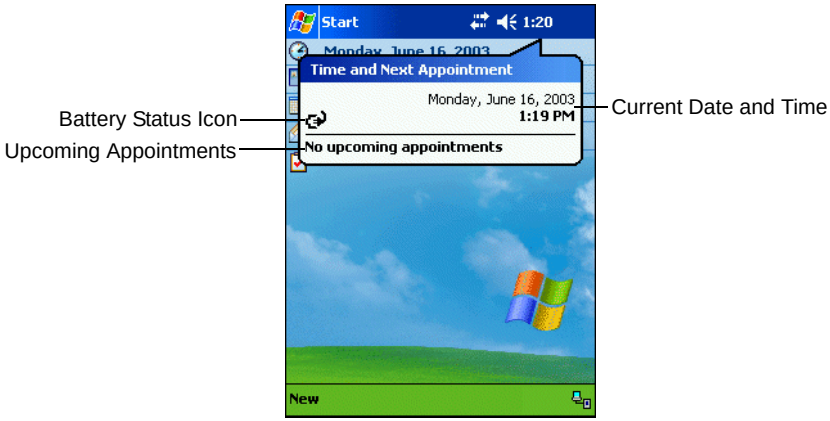


Figure 2-11. Time and Next Appointment Dialog Box

2. The dialog box displays the current date and time, the battery status and any upcoming appointments in the *Calendar*.

Instant Message Icon

The *Instant Message* icon notifies you when *MSN Messenger* has received a new incoming message. See *MSN® Messenger* on page 7-26 for more information.

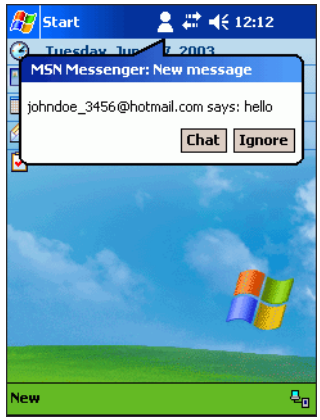


Figure 2-12. MSN Messenger Dialog Box

E-Mail Icon

The *E-Mail* icon notifies you when you have received incoming e-mails. See *Inbox* on page 7-14 for more information.

Figure 2-13. New E-mail Messages Dialog Box

Multiple Notification Icon

The *Multiple Notification* icon appears when two or more message notifications occur. Tap the icon to display the multiple notification icons.

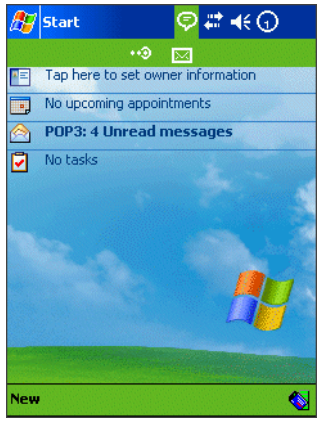


Figure 2-14. Multiple Notifications Icon

Selecting Programs

To select a program, tap *Start* - *Programs*, then the program name. (To select which programs appear on the *Program* menu, see Chapter 3, *Settings*.)

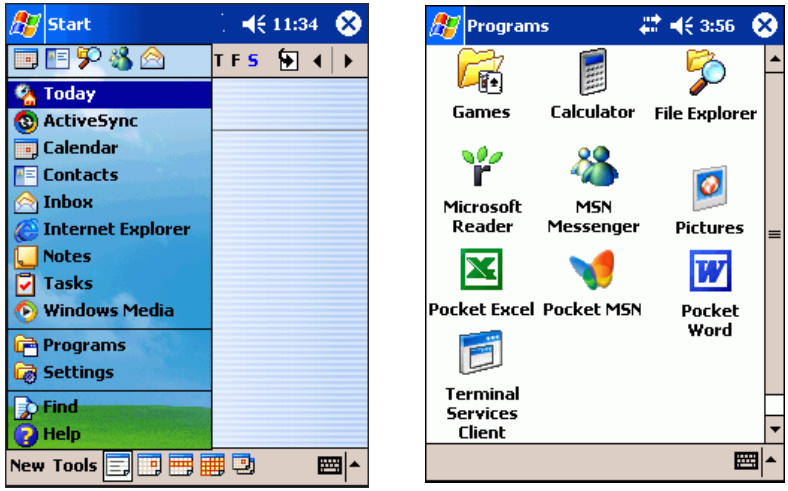


Figure 2-15. Start Menu

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

Using Pop-up Menus

With pop-up menus, you can quickly choose an action for an item. For example, use the pop-up menu in the contact list to delete a contact, make a copy of a contact, or send an e-mail message to a contact. The actions in the pop-up menus vary from program to program.

To access a pop-up menu, hold the stylus on the item you want to perform the action on. When the menu appears, lift the stylus, and tap the action to perform, or tap outside the menu to close it without performing an action.

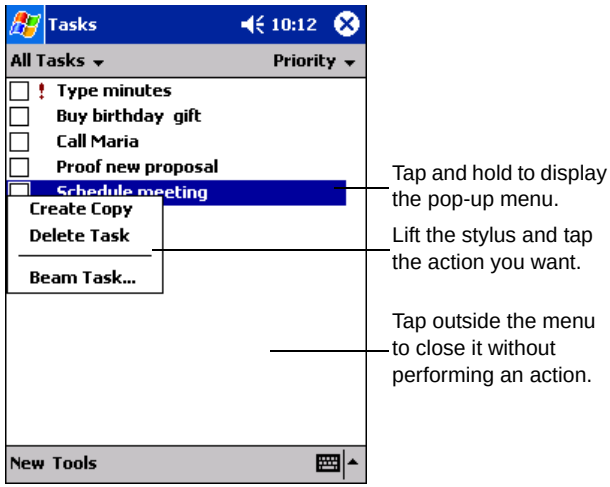


Figure 2-16. Pop-up Menu

Notifications

Your terminal notifies you when you have something to do. For example, if you've set up an appointment in *Calendar*, a task with a due date in *Tasks*, or an alarm in *Clock*, you'll be notified in any of the following ways:

- a message box appears on the screen
- a sound, which you can set, is played
- the terminal vibrates (this is a programmable feature).

To choose reminder types and sounds for your terminal, tap *Start* - *Settings* - *Personal* tab - *Sounds & Notifications* icon. Select the desired options. See *Sounds & Notifications* on page 3-21 for more information.

Entering Information

To enter information, you may:

- Use the keypad. (See *Using the Keypad* on page 2-5 and Appendix D, *Keypad Maps* for keypad functions.)
- Use the input panel to enter typed text, either using the soft keyboard or writing characters.
- Write directly on the screen.
- Draw pictures on the screen.
- Speak into the microphone to record a message.
- Scan bar code data into data fields.
- Use Microsoft® ActiveSync® to synchronize or copy information from your host computer to your terminal. For more information on ActiveSync, see Chapter 4, *Communication* or ActiveSync Help on your host computer.

Entering Information Using the Input Panel

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

To show or hide the input panel, tap the **Input Panel** button. Tap the arrow next to this button to view input methods.

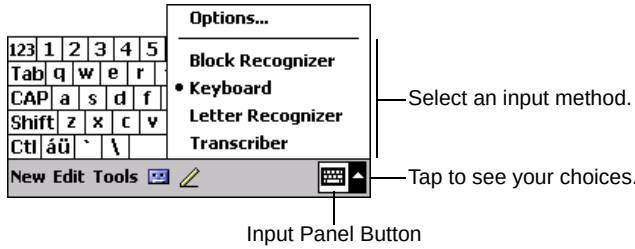


Figure 2-17. Input Panel Button

When you use the input panel, your terminal 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 terminal, the more words it learns to anticipate.

To change input settings, such as the number of words suggested at one time, select *Options* from the Input Panel menu, and tap the tabs to see each setting screen.

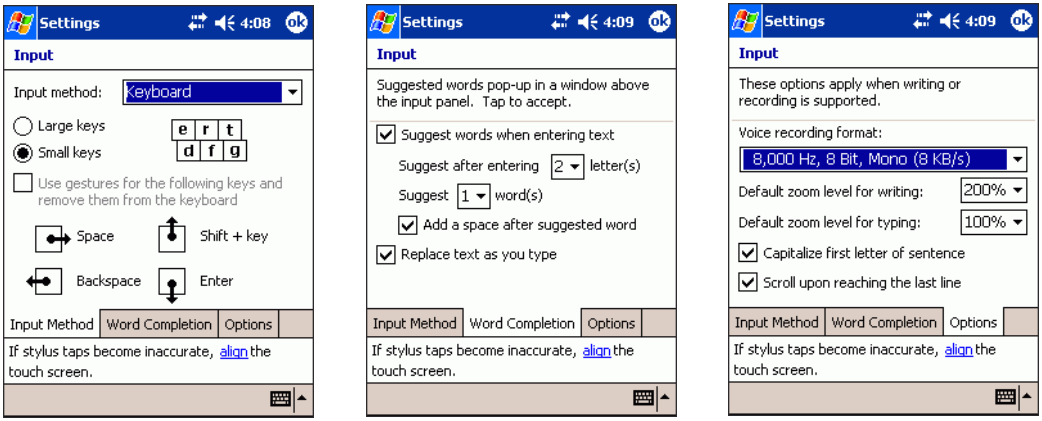


Figure 2-18. Input Panel Options

Using the Soft Keyboard

To type with the Soft Keyboard:

1. Tap the arrow next to the **Input Panel** button, then *Keyboard*.

2. On the Soft Keyboard, tap the keys with your stylus.

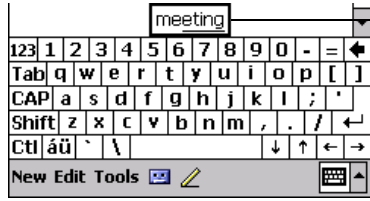


Figure 2-19. Soft Keyboard

Using the Block Recognizer

To use the Block Recognizer:

1. Tap the arrow next to the **Input Panel** button, then *Block Recognizer*.
2. Write a letter in the left side of the box, or a number in the right side, using special character strokes.

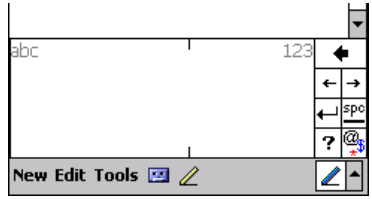


Figure 2-20. Block Recognizer

When you write a letter, it is converted to typed text on the screen. For specific instructions on using Block Recognizer, with Block Recognizer open, tap the question mark next to the writing area, or see Appendix A, *Block Recognizer Characters*.

Using the Letter Recognizer

To use Letter Recognizer:

1. Tap the arrow next to the **Input Panel** button, then *Letter Recognizer*.
2. Write letters or numbers in the writing area, just as you would on paper. Write capital letters in the left side of the box, numbers in the right side, and lower case letters in the center.

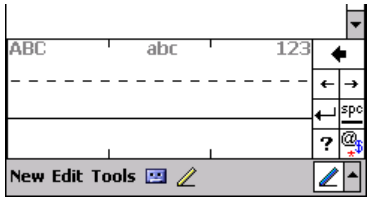


Figure 2-21. Letter Recognizer

When you write a letter, it is converted to typed text on the screen. For specific instructions on using Letter Recognizer, with Letter Recognizer open, tap the question mark next to the writing area.

Using the Transcriber

To use Transcriber:

1. Tap the arrow next to the **Input Panel** button, then *Transcriber*.

Figure 2-22. Transcriber

2. Write anywhere on the screen.

When you write anywhere on the screen, Transcriber changes the written characters to typed characters. For specific instructions on using Transcriber, with Transcriber open, tap the question mark under to the writing area.

Writing on the Screen

In any program that accepts writing, such as the Notes program and the *Notes* tab in Calendar, Contacts, and Tasks, you can use your stylus to write directly on the screen.

To write on the screen, tap the **Pen** button to switch to writing mode. Lines appear on the screen to guide you.

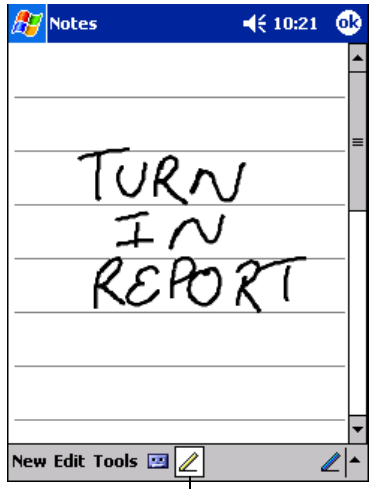


Figure 2-23. Writing on the Screen

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

Converting Writing to Text

To convert your writing to text, tap *Tools* - *Recognize*.

To convert certain words, select them before tapping *Recognize* on the *Tools* menu (or tap and hold the selected words, then tap *Recognize* on the pop-up menu). If a word is not recognized, it is left as writing.

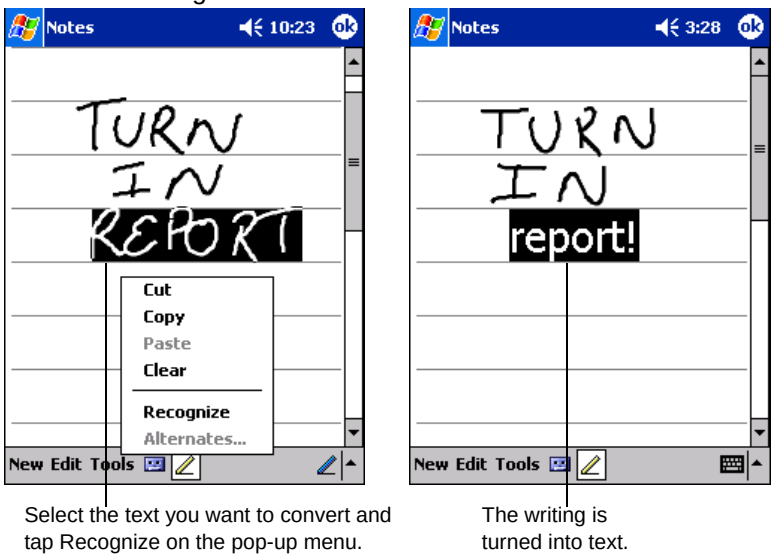


Figure 2-24. Writing on the Screen

If the conversion is incorrect, select different words from a list of alternates or return to the original writing. Tap and hold the incorrect word only. On the pop-up menu, tap *Alternates*.

A list of alternate words appears. Tap the word you want to use, or tap the writing at the top of the menu to return to the original writing.

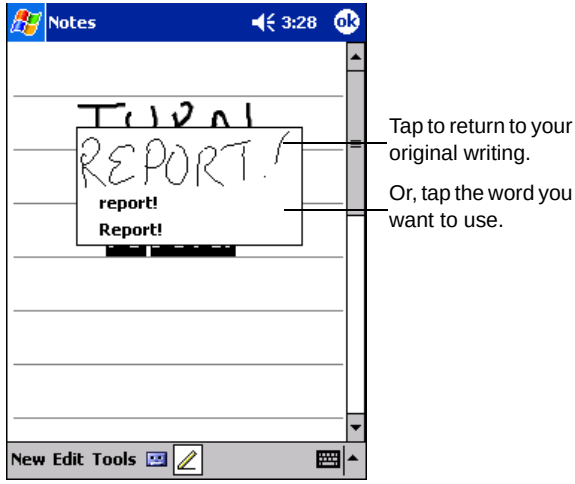


Figure 2-25. Alternate List

Writing Tips

- Write neatly.
- Write on the lines and draw descenders below the line. Cross off the "t" and write apostrophes below the top line so they are not confused with the word above. Write periods and commas above the line.
- For better recognition, try increasing the zoom level to 300% using the *Tools* menu.
- Leave large gaps between words so your terminal 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 try to recognize the writing again.

Selecting Text

To edit or format typed text, select it by dragging the stylus across the text. Cut, copy, and/or paste text by holding the selected words then tapping an editing command on the pop-up menu, or by tapping the command on the *Edit* menu.

Selecting Writing

To select writing to edit or format:

1. Tap and hold the stylus next to the text you want to select until the insertion point appears.
2. Drag the stylus across the text.

If you accidentally write on the screen, tap *Tools* - *Undo* and try again. You can also select text by tapping the **Pen** button to deselect it, 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, then tap the command from the pop-up menu, or select the command from the *Edit* menu.

Drawing on the Screen

Drawing on the screen is similar to writing on the screen. To create 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.

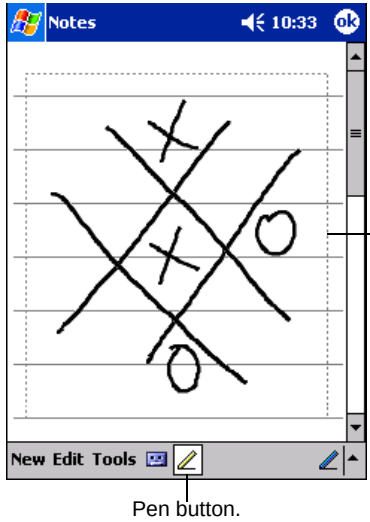


Figure 2-26. Drawing on the Screen

Note: *To change the zoom level, select a zoom level from the* Tools *menu.*

Selecting a Drawing

To select a drawing to edit or format, tap and hold the stylus on the drawing until the selection handle appears.

To select multiple drawings, deselect the **Pen** button, then drag to select the drawings you want.

To cut, copy, and paste drawings, tap and hold the selected drawing, then tap an editing command on the pop-up menu, or tap the command from the *Edit* menu. To resize a drawing, deselect the **Pen** button and drag a selection handle.

Recording a Message

You may record a message to capture thoughts, reminders, and phone numbers. In Calendar, Tasks, and Contacts, you can include a recording in the *Notes* tab. In the Notes program, you can either create a stand-alone recording or include a recording in a written note.

To create a recording:

1. Start the Notes application.
2. Tap the *Record* icon to begin recording.
3. Hold the terminal's microphone near your mouth or other source of sound.

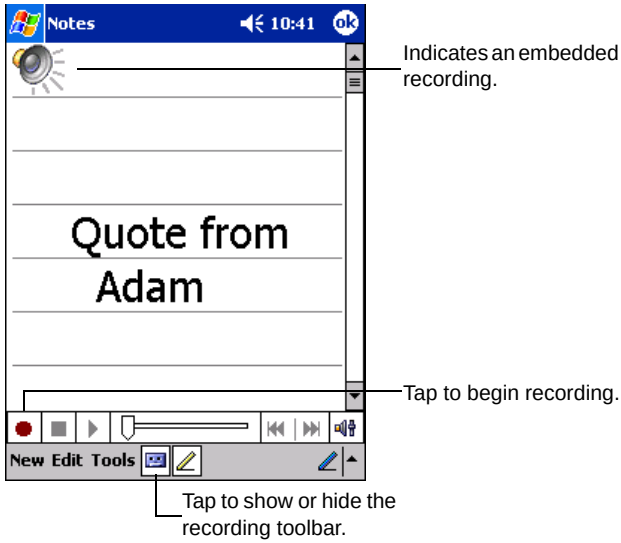


Figure 2-27. Recording Screen

4. When you are finished, tap the **Stop** button. The new recording appears in the note list or as an embedded icon.
5. 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.

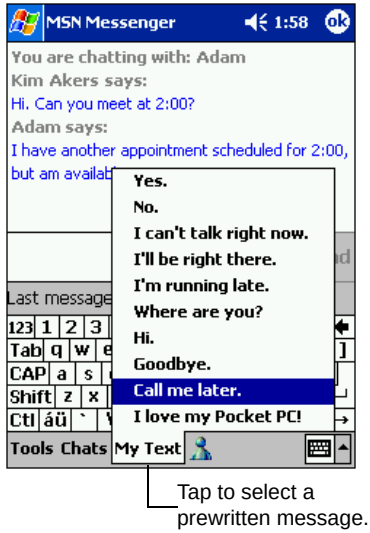


Figure 2-28. Using My Text

Note: *You can add text after inserting a My Text message before sending it.*

To edit a My Text message, tap *Tools - Edit - My Text Messages*. Select the message you wish to edit and make the changes.

Entering Information Using 15-Key Keypad

The 15-key keypad uses an alphanumeric keypad that produces the 26-character alphabet (A-Z, a-z), numbers (0-9), function keys (F1 - F10) and assorted characters. The keypad is color-coded to indicate which modifier key (ALPHA or function) to press to produce a particular character or action. The keypad default is numeric, producing numbers. See *Using the Keypad* on page 2-5 and Appendix D, *Keypad Maps* for keypad functions.

Finding Information

The Find feature locates information. Tap *Start* - *Find* to launch this feature. Enter the text you want to find, select a data type, then tap *Go*.

To find information taking up storage space on your terminal, select *Larger than 64 KB* from the *Type* drop-down list.

You can also use the File Explorer to find files and organize them into folders. Tap *Start* - *Programs* - *File Explorer* to launch Explorer.

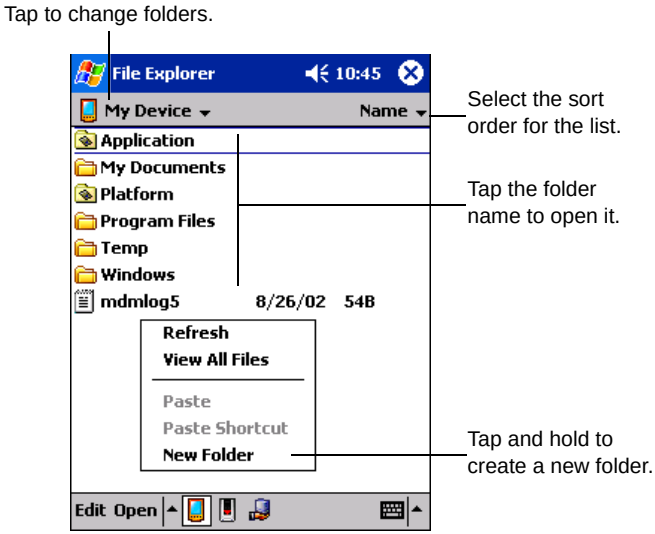


Figure 2-29. File Explorer

Note: *To move files in File Explorer, tap and hold the item, then tap* Cut *or* Copy *and* Paste *on the pop-up menu.*

Scanning

The terminal has an integrated scanner which allows you to collect data by scanning one dimensional bar codes.

To scan bar codes with the terminal:

1. Ensure that a scan enabled application is loaded on the terminal.
2. Aim the scan exit window at the bar code.
3. Press either the right or left scan trigger. Ensure the red scan beam covers the entire bar code. The green scan LED lights and a beep sounds to indicate a successful decode.

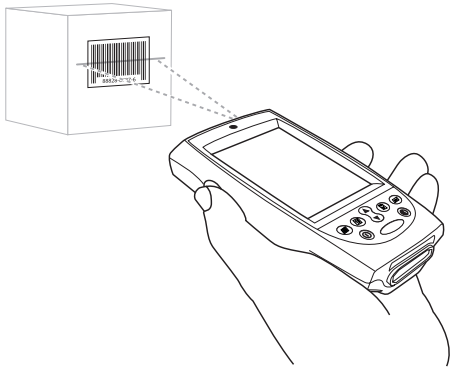


Figure 2-30. Scanning

Scan LED Indicator

See *Parts of the Terminal* on page 1-4 for the location of the scan LED on the terminal.

Table 2-7. Scan LED Indicator

LED Status	Indication
Off	Not scanning.
Solid Red	Laser enabled. Scanning in process.
Solid Green	Successful decode.

Resetting the Terminal

If the terminal stops responding to input, reset it.

Performing a Soft Reset

A soft reset restarts the terminal and saves all stored records and entries.

Caution

Files that remain open during a soft reset may not be retained.

DO NOT perform a soft reset if the terminal is suspended. Press the power button to wake the terminal.

To perform a soft reset on the standard 6-key keypad, press the Enter and Function keys while holding down either the left or right scan trigger and then release the keys.

To perform a soft reset on the 15-key keypad, press **ENTER** and **FUNC** keys while holding down either the left or right scan trigger and then release the keys.

Performing a Hard Reset

A hard reset also restarts the terminal, but erases all stored records and entries. *Therefore, never perform a hard reset unless a soft reset does not solve the problem.*

Note: *You can restore any data previously synchronized with a computer during the next ActiveSync operation. See Chapter 4, Communication for detailed ActiveSync instructions.*

To perform a hard reset:

Caution

With a hard reset, formats, preferences, and other settings are restored to their factory default settings.

1. Remove the battery cover.
2. While holding down the Function key, use the stylus to gently press the reset button.

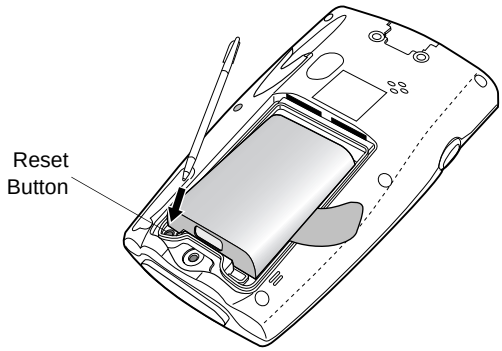
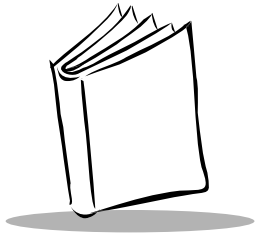


Figure 2-31. Reset Button

3. Release the Function key.
4. Replace the battery cover.
5. Press the Power button.
6. As the terminal initializes its Flash File system, the Symbol splash screen displays for about a minute.
7. Calibrate the screen. See *Calibrating the Screen* on page 1-19 to perform an initial setup of the terminal.



Chapter 3
Settings

Chapter Contents

Introduction

This chapter provides basic instructions for customizing your terminal by adjusting settings.

Adjusting Settings

To view available options for your terminal settings, tap *Start* - *Settings*. You can adjust settings in either the *Personal* tab or the *System* tab.

Personal Tab

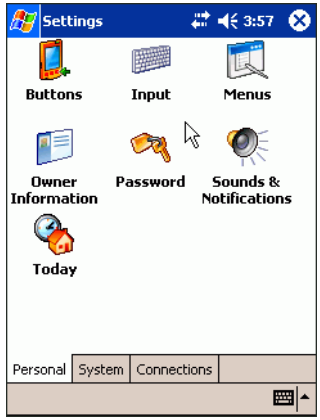


Figure 3-1. Settings - Personal Tab

Table 3-1 lists the applications available in the *Personal* tab.

Table 3-1. Personal Tab Applications

Icon	Description
Buttons	Assign programs to the application hardware buttons. See *Buttons* on page 3-7 for more information.
Input	Switch input methods and set input options. See *Input* on page 3-10 for more information.

Table 3-1. Personal Tab Applications (Continued)

Icon	Description
 Menus	Configure the items that appear in the *Start* menu. See *Menus* on page 3-13 for more information.
 Owner Information	Change owner's personal profiles. See *Owner Information* on page 3-15 for more information.
 Password	Change owner's password and set security options. See *Passwords* on page 3-18 for more information.
 Sounds & Notifications	Select the type of actions for which you want to hear sounds and customize how you are notified about different events. See *Sounds & Notifications* on page 3-21 for more information.
 Today	Customize the information displayed on the *Today* screen. See *Today* on page 3-23 for more information.

System Tab

Figure 3-2. Settings - System Tab

Table 3-2 lists the applications available in the *System* tab.

Table 3-2. System Tab Applications

Icon	Description
About	Provides device information and name. See *About* on page 3-25 for more information.
Backlight	Customize when and for how long the backlight should stay on. See *Backlight* on page 3-28 for more information.
Certificates	View and modify digital certificates which are used by some applications for establishing trust for secure communications. See *Certificates* on page 3-31 for more information.
Clock	Change date, time and time zone information. See *Clock* on page 3-33 for more information.

Table 3-2. System Tab Applications (Continued)

Icon	Description
 Memory	Adjust the allocation of storage and program memory. See *Memory* on page 3-37 for more information.
 Power	View battery status and change power management options. See *Power* on page 3-40 for more information.
 Regional Settings	Change how numbers, currencies, dates, and times are displayed. See *Regional Settings* on page 3-44 for more information.
 Remove Programs	Remove loaded programs from RAM. See *Remove Programs* on page 3-47 for more information.
 Screen	Align the touch screen and enable ClearType fonts. See *Screen* on page 3-48 for more information.
 Symbol Settings	Change settings unique to the terminal. See *Symbol Settings* on page 3-49 for more information.

Buttons

In addition to key functions, you can assign an application to a key. Then you can open a frequently used application by pressing one key.

Program Buttons

To assign an application to a key on the keypad:

1. Tap *Start* - *Settings* - *Personal* tab - *Buttons* icon - *Program Buttons* tab.

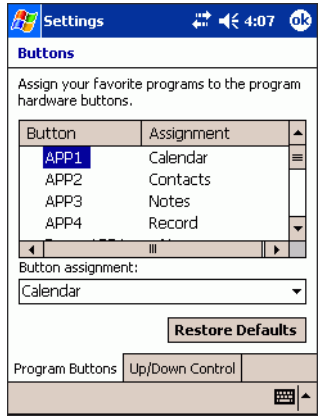


Figure 3-3. Buttons Window - Program Buttons Tab

2. Select a key from the *Button* list.
3. Select a key or application from the *Button assignment*: drop-down list.
4. Tap **ok**.

   To restore defaults at anytime tap **Restore Defaults**. Defaults are also restored when you hard reset the terminal. Table 3-3 lists the default button/key assignments.

Table 3-3. Default Button Assignments

Standard 6-key Keypad		15-key Keypad	
Button/Key	**Default**	**Button/Key**	**Default**
Trigger	Trigger	Trigger	Trigger
Enter	Action	Enter	Action

Table 3-3. Default Button Assignments (Continued)

Standard 6-key Keypad		15-key Keypad	
Button/Key	**Default**	**Button/Key**	**Default**
APP1	Calendar	F1	<None>
APP2	Contacts	F2	<None>
APP3	Tasks	F3	<None>
APP4	Record	F4	<None>
Func + APP1	<None>	F5	Soft Keyboard
Func + APP2	Soft keyboard	F6	Recalibrate
Func + APP3	<None>	F7	Decrease brightness
Func + APP4	Recalibrate	F8	Increase brightness
		F9	Escape
		F10	Tab

Up/Down Control

To set the key repeat rate:

1. Tap *Start* - *Settings* - *Personal* tab - *Buttons* icon - *Up/Down Control* tab.

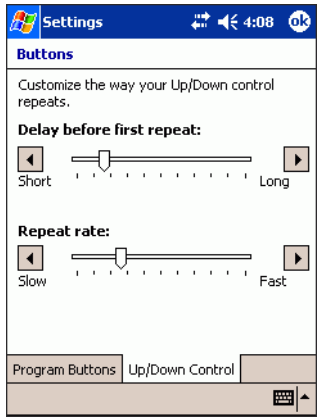


Figure 3-4. Buttons Window - Up/Down Control Tab

2. Adjust the *Delay before first repeat:* slide bar to change the time elapsed before scrolling begins.
3. Adjust the *Repeat rate* slide bar to change the time it takes to scroll from one item to the next.
4. Tap **ok**.

Input

Use the *Input* window to switch input methods and set input options.

Input Method

To select an input method:

1. Tap *Start* - *Settings* - *Personal* tab - *Input* icon - *Input Method* tab.

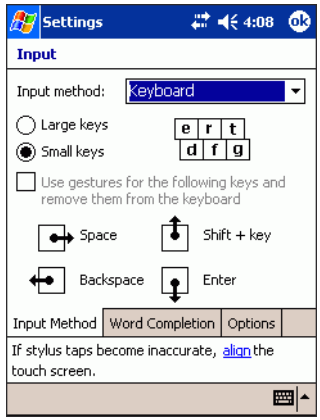


Figure 3-5. Input Window - Input Method Tab

2. From the *Input method:* drop-down list, select the input method.
3. Make any additional desired changes to the settings.
4. Tap **ok**.

Word Completion

To adjust how suggested words pop-up in a window above the input panel:

1. Tap *Start* - *Settings* - *Personal* tab - *Input* icon - *Word Completion* tab.

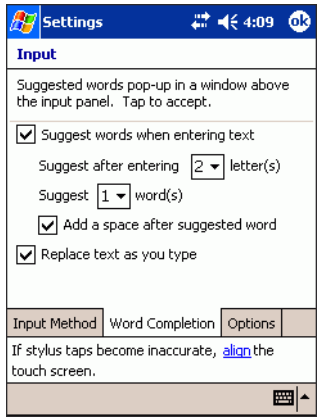


Figure 3-6. Input Window - Word Completion Tab

2. Make the desired changes to the settings.
3. Tap **ok**.

Options

To adjust the options for writing and recording:

1. Tap *Start* - *Settings* - *Personal* tab - *Input* icon - *Options* tab.

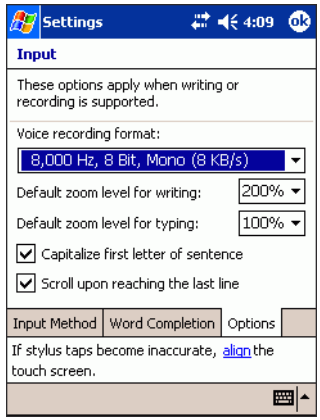


Figure 3-7. Input Window - Options tab

2. Make the desired changes to the settings.
3. Tap **ok**.

Menus

Use *Menus* window to change the items that appear in the *Start* menu.

Start Menu

To change the items that appear in the *Start* menu:

1. Tap *Start* - *Settings* - *Personal* tab - *Menus* icon - *Start Menu* tab.

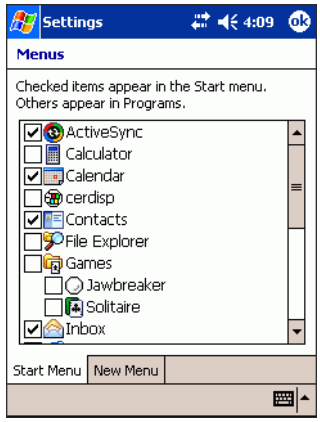


Figure 3-8. Menus Window - Start Menu Tab

2. Select the programs that you want to appear in the *Start* menu.
3. Tap **ok**.

You can create subfolders and shortcuts to appear under *Start* menu. In ActiveSync on the host computer, click *Explore*. Double-click *My Pocket PC*, double-click *Windows*, double-click *Start Menu*, and then create the folders and shortcuts that you want.

New Menu

To enable the *New* menu:

Tap *Start* - *Settings* - *Personal* tab - *Menus* icon - *New Menu* tab.

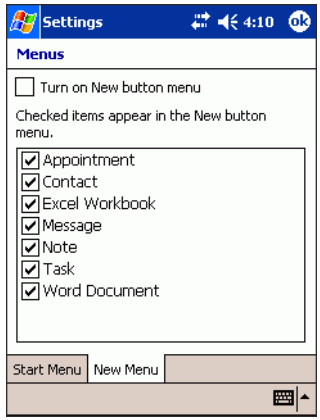


Figure 3-9. Menus Window - New Menu Tab

1. Select the *Turn on the New button menu* check box.
2. Select the items to appear on the menu.

   An arrow appears next to *New* in the command bar of certain programs such as Pocket Word, Pocket Excel, Contacts, Calendar, and Tasks. You can tap this arrow and then tap a new item to create.
3. Tap **ok**.

Owner Information

Use the *Owner Information* window to enter information about the owner. The information can be displayed when the terminal is turned on.

Identification

To enter personal information:

1. Tap *Start* - *Settings* - *Personal* tab - *Owner Information* icon - *Identification* tab.

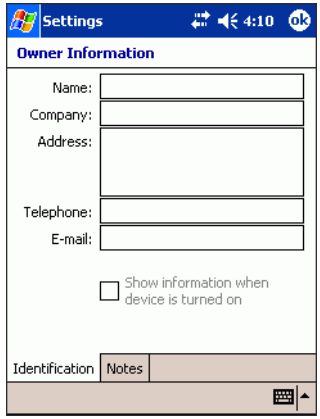


Figure 3-10. Owner Information Window - Identification Tab

2. Fill in or edit the data as desired.
3. To have this information display when you start the terminal, select the *Show information when device is turned on* check box.
4. Tap **ok**.

Notes

To add more information about the owner:

1. Tap *Start* - *Settings* - *Personal* tab - *Owner Information* icon - *Notes* tab.

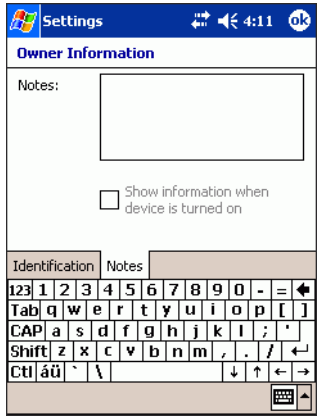


Figure 3-11. Owner Information Window - Notes Tab

2. Enter information in the *Notes:* box.
3. To have this information display when you start the terminal, select the *Show information when device is turned on* check box.
4. Tap **ok**.

After the information is entered and the *Show information when device is turned on* check boxes are selected, the *Welcome* window appears whenever the terminal is powered on.

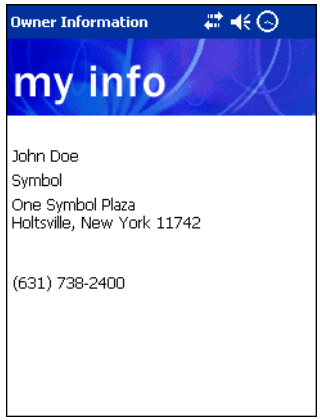


Figure 3-12. Welcome Screen

Passwords

Use the *Password* window to set a password to disable unauthorized access to the terminal.

Password

If your device is configured to connect to a network, use a strong (difficult to figure out) password to help protect network security. Password cracking tools continue to improve and the computers used to crack passwords are more powerful than ever.

Caution

If you forget your password, or if your terminal has become corrupted and soft resetting doesn't work, you must perform a hard reset. Performing a hard reset erases all files and data that you have created, and programs you have installed.

1. Tap *Start* - *Settings* - *Personal* tab - *Password* icon - *Password* tab.

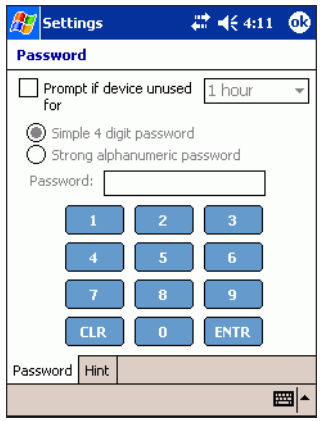


Figure 3-13. Password Window - Password Tab

2. Select *Prompt if device unused for* check box to enable password protection.
3. From the drop down list, select a time value for the protection to take affect after non-use.

4. Select either *Simple 4 digit password* or *Strong alphanumeric password* radio button to set a password.
5. For a simple password, In the *Password* field, enter a four digit password.
6. For a stronger password:
   a. In the *Password:* field, enter a seven character password . A strong password must contain at least seven characters that are a combination of uppercase and lowercase letters, numerals, and punctuation.

Figure 3-14. Alphanumeric Password

   b. In the *Confirm:* field, re-enter the password.
7. Tap **ok**.

Hint

To set hint so that you can remember your password:

1. Tap *Start* - *Settings* - *Personal* tab - *Password* icon - *Hint* tab.

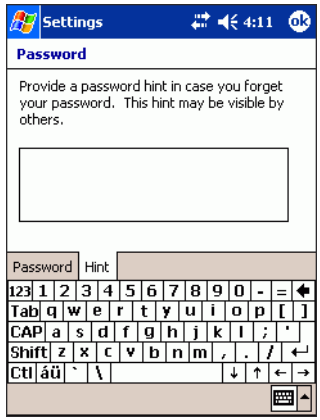


Figure 3-15. Password Window - Hint Tab

2. In the text box, enter a password hint that would remind you of the password you set.
3. Tap **ok**.

Sounds & Notifications

Use the *Sounds & Notifications* window to set event sounds and volume options.

Volume

To adjust the system volume and enable event sounds:

1. Tap *Start* - *Settings* - *Personal* tab - *Sounds & Notifications* icon - *Volume* tab.

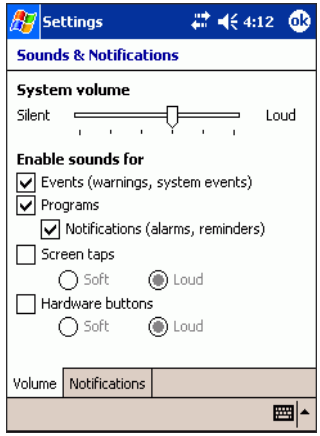


Figure 3-16. Sounds & Notifications Window - Volume Tab

2. Use the slide bar to change the system volume.
3. Select the desired *Enable Sound* options.

Note: *Turning off sounds saves power and prolongs battery life.*

---

4. Tap **ok**.

Notifications

On the Notifications tab, you can customize how you are notified about different events.

1. Tap *Start* - *Settings* - *Personal* tab - *Sounds & Notifications* icon - *Notifications* tab.

Figure 3-17. Sounds & Notifications Window - Notifications Tab

2. Select the event name from the *Select an event list* drop-down list.
3. Select the *Play sound* check box to enable the sound notification.
4. Select a sound from the drop-down list.
5. Tap **ok**.

Today

Use the *Today* window to customize the *Today* screen.

Appearance

To change the appearance of the *Today* screen:

1. Tap *Start* - *Settings* - *Personal* tab - *Today* icon - *Appearance* tab.

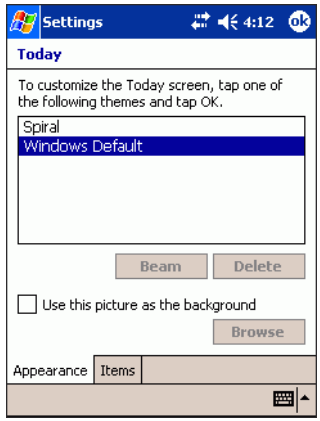


Figure 3-18. Today Window - Appearance Tab

2. Select the desired theme for the *Today* screen background. To use your own background, select *Use this picture as the background* check box and tap **Browse** to locate the desired file on the terminal.
3. To beam a theme to another terminal, select the desired theme and tap **Beam**.
4. To delete a theme, select the desired theme and tap **Delete**.
5. Tap **ok**.

Items

To select items that appear on the *Today* screen:

1. Tap *Start* - *Settings Personal* tab - *Today* icon - *Appearance* tab.

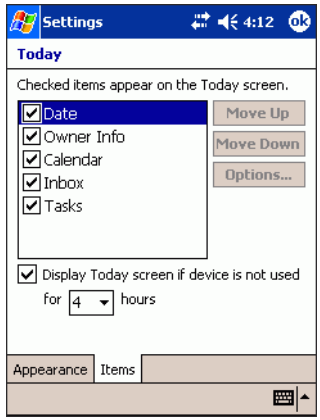


Figure 3-19. Today Window - Items Tab

2. Select the items you want to appear on the *Today* screen. To customize the information further, select an information type, and then tap **Options** (not available for all information types).
3. Tap **ok**.

About

Use the *About* window to view general system properties, change memory settings, input device name and view copyright information.

Version

The *Version* tab view displays general system settings:

1. Tap *Start* - *Settings* - *System* tab - *About* icon - *Version* tab.

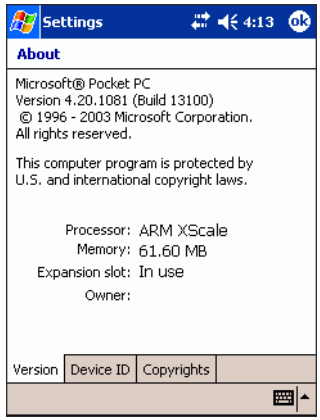


Figure 3-20. About Window - Version Tab

2. Tap **ok**.

Device ID

The *Device ID* tab allows you to customize the name and description of the terminal:

1. Tap *Start* - *Settings* - *System tab* - *About* icon - *Device ID* tab.

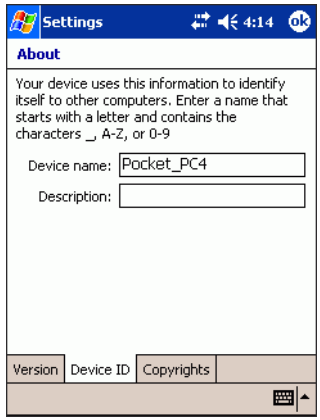


Figure 3-21. About Window - Device ID Tab

2. In the *Device name:* field, enter a name for the terminal. Ensure that you do not use spaces.
3. In the *Description:* field, enter a description for the terminal.
4. Tap **ok**.

Copyrights

The *Copyrights* tab allows you to view any relevant copyright information.

1. Tap *Start* - *Settings* - *System tab* - *About* icon - *Copyrights* tab.

Figure 3-22. About Window - Copyrights Tab

2. Tap **ok**.

Backlight

Use the *Backlight* window to conserve battery power or to turn off the backlight when the terminal is idle. You also have options to turn on the backlight when you tap the screen or press a key.

Battery Power

To set the backlight settings when using battery power:

1. Tap *Start* - *Settings* - *System* tab - *Backlight icon* - *Battery Power* tab.

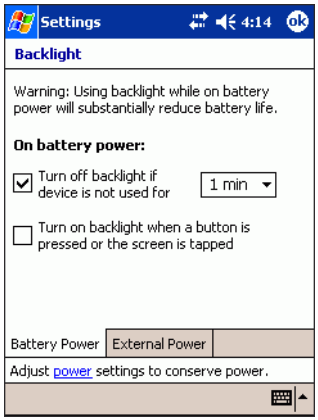


Figure 3-23. Backlight Window - Battery Power Tab

2. Make the desired selections. See Table 3-4 for backlight settings.
3. Tap **ok**.

Note: *When you perform a hard reset all settings selected in this view return to the default settings. The settings are maintained after a soft reset.*

Table 3-4. Battery Power Backlight Settings

Status	Conditions of light On/Off	Default (Hard Reset)
On Battery Power	Select the *Turn off backlight if device is not used for* check box to turn off the backlight after a certain period of time has passed unused. Period of time can be selected from the list. Available timings are 10 sec, 30 sec, 1 min, 2 min, 3 min, 4 min and 5 min.	Check box is selected. Default time is one minute.
	Select the *Turn on backlight when a button is pressed or the screen is tapped* check box to turn on the backlight when a key is pressed or the screen is tapped.	Check Box is not selected.

Note: *To change display brightness level, see Symbol Settings on page 3-49.*

External Power

To set the backlight settings when using external AC power:

1. Tap *Start* - *Settings* - *System* tab - *Backlight icon* - *External Power* tab.

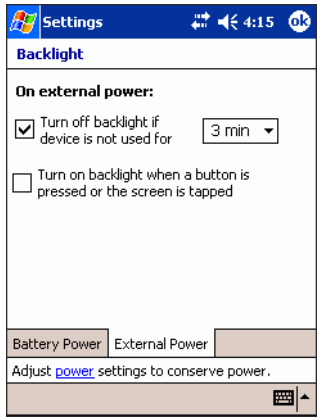


Figure 3-24. Backlight Window - External Power Tab

2. Make the desired selections. See Table 3-5 for backlight settings.
3. Tap **ok**.

Table 3-5. External Power Backlight Settings

Status	Conditions of light On/Off	Default (Hard Reset)
On External Power	Select the *Turn off backlight if device is not used for* check box to turn off the backlight after a certain period of time has passed unused. Period of time can be selected from the list. Available timings are 1 min, 2 min, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min and 10 min.	Check Box is selected. Default time is one minute.
	Select the *Turn on backlight when a button is pressed or the screen is tapped* check box to turn on the backlight when a key is pressed or the screen is tapped.	Check Box is not selected.

Certificates

On your terminal you can add and delete public key certificates. These certificates help establish your identity when you are logging onto a secured network, such as a corporate network. Certificates also help establish the identity of other computers, such as servers, with which you connect. This helps prevent unauthorized users from accessing your terminal and information.

You can store two types of certificates on your terminal: personal certificates that establish your identity, and root certificates that establish the identity of servers with which you connect. Your terminal may include a set of preinstalled certificates. For information about viewing and deleting certificates, see the sections below.

Personal

1. Tap *Start* - *Settings* - *System* tab - *Certificates* icon - *Personal* tab.

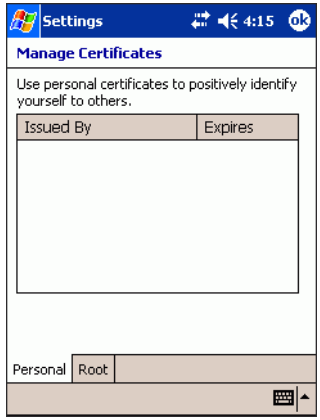


Figure 3-25. Certificates Window - Personal Tab

   The list box displays the name of the certificate issuer and the expiration date.

2. To view more information about a certificate, select it from the list box.
3. To delete a certificate, tap and hold it in the list box, and then tap *Delete*.
4. Tap **ok**.

Root

1. Tap *Start* - *Settings* - *System* tab - *Certificates* icon - *Root* tab.

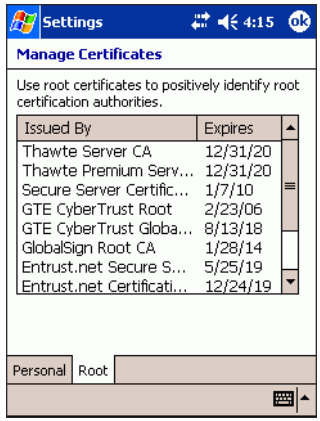


Figure 3-26. Certificates Window - Root Tab

The list box displays the name of the certificate issuer and the expiration date.

2. To view more information about a certificate, select it from the list box.
3. To delete a certificate, tap and hold it in the list box, and then tap *Delete*.
4. Tap **ok**.

Clock

Use the *Clock* window to change the date, time, time zone and set alarms.

Time

To set the date, time and time zone:

1. Tap *Start* - *Settings* - *System* tab - *Clock* icon - *Time* tab.

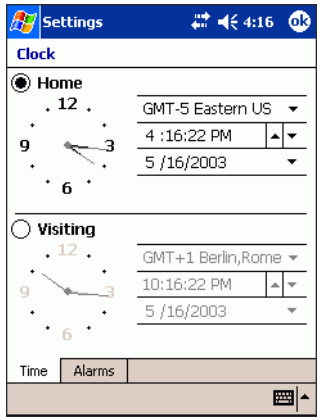


Figure 3-27. Clock Window - Time Tab

2. Select the *Home* radio button.
3. Select your current time zone from the time zone drop-down list.
4. To set the hour:
   a. Tap on the hour field and use the up and down arrows to the right of the time to adjust the hour.
   b. On the clock face, tap and drag the hour hand to the current hour.
5. To set the minutes:
   a. tap on the minute field and use the up and down arrows to the right of the time to adjust the minutes
   b. On the clock face, tap and drag the minute hand to the current minutes.
6. To set the date, tap in the date field.

7. Tap the down arrow to the right of the date field. The calendar displays.

Figure 3-28. Calendar

8. To select the month and year, tap the arrows to the right or left of the month until the current month displays.
9. Tap the day of the month. The calendar disappears.
10. Tap **ok**.

If you visit a particular time zone often, set it as your *Visiting* time zone so that you can quickly see the correct date and time.

A clock displays on the Navigation bar. To view the current date and time, tap the *Time* icon to see today's date. See *Time Icon* on page 2-16 for more information.

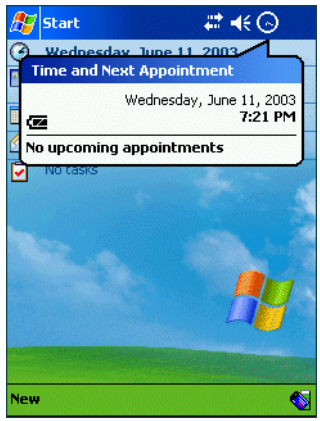


Figure 3-29. Time and Next Appointment Message

To switch from analog to digital clock display, tap and hold the *Time* icon. Select *Analog* or *Digital*.

Alarms

You can use your terminal as a travel alarm clock by setting a wake-up alarm.

1. Tap *Start* - *Settings* - *System* tab - *Clock* icon - *Alarms* tab.

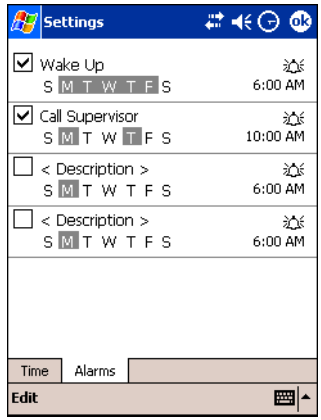


Figure 3-30. Clock Window - Alarms Tab

2. In the *Description* field, enter a name for the alarm.
3. Tap the letter(s) representing the day(s) of the week that the alarm be enabled.
4. Tap the bell icon to set alarm features. The alarm settings window appears.

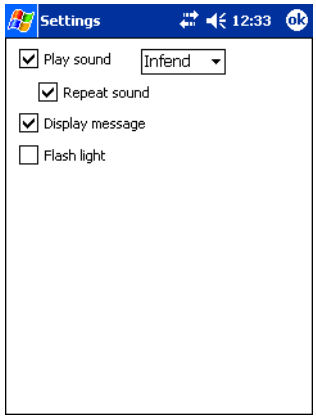


Figure 3-31. Alarm Settings Window

5. Select the *Play sound* check box to enable a sound when the alarm starts.
6. From the drop-down list, select the sound that plays when the alarm goes off.
7. Select *Repeat sound* check box to repeat the sound notification.
8. Select *Display message* checkbox to enable a message to appear on the screen when the alarm goes off.
9. Tap **ok**.
10. Tap the time field to set the alarm time. The clock window appears.

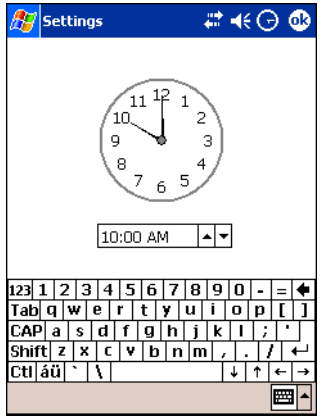


Figure 3-32. Alarm Clock Setting Window

11. Use the time field and arrow buttons to set the time.
12. Tap **ok**.
13. Set up to three more alarms.
14. Tap **ok**.
15. To change the way the date or time is displayed on the terminal, see *Regional Settings* on page 3-44.

Memory

Use the *Memory* window to adjust RAM allocation, view storage card memory usage and stop active programs.

Main

To temporarily adjust the allocation of storage and program memory:

1. Tap *Start* - *Settings* - *System* tab - *Memory* icon - *Main* tab.

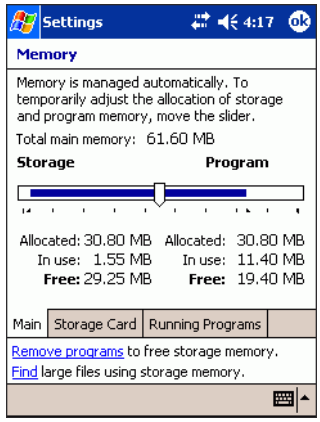


Figure 3-33. Memory Window - Main Tab

2. To adjust RAM allocation move the slider to allocate more memory for programs or storage. If you don't have enough space for a file, increase the amount of storage memory. If your terminal is running slowly, try increasing the amount of program memory.
3. Tap **ok**.

Note: *Resetting your terminal can make additional storage or program memory available. If you continue to experience memory problems, reset your terminal.*

Programs supplied with the terminal are located in ROM and remain after a hard reset. Programs you install are located in RAM and need to be reinstalled after a hard reset. If you have trouble reinstalling programs, adjust RAM allocation.

Storage Card

The *Storage Card* tab displays how much memory is available on a memory card in the terminal.

1. Tap *Start* - *Settings* - *System* tab - *Memory* icon - *Storage Card* tab.

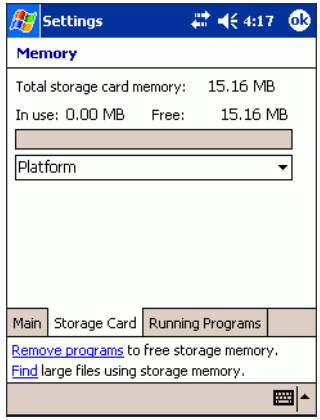


Figure 3-34. Memory Window - Storage Card Tab

2. If you have more than one card inserted, tap the drop-down list and then the name of the storage card whose information you want to view.
3. Tap **ok**.

Running Programs

The *Running Programs* tab displays the list of currently active programs.

1. Tap *Start* - *Settings* - *System* tab - *Memory* icon - *Running Programs* tab.

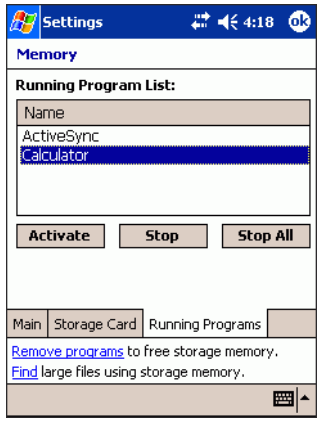


Figure 3-35. Memory Window - Running Programs Tab

The *Running Program List:* lists all running (active) programs.

2. To stop an active program, select the program from the *Running Program List:* list and tap **Stop**.
3. To display an active program, select the program from the *Running Program List:* list box and tap **Activate**.
4. To stop all active programs tap **Stop All**.
5. Tap **ok**.

Power

Use the *Power* window to view the status of the main and backup batteries and set power management options.

Battery

To check the main battery and backup battery status:

1. Tap *Start* - *Settings* - *System* tab - *Power* icon - *Battery* tab.

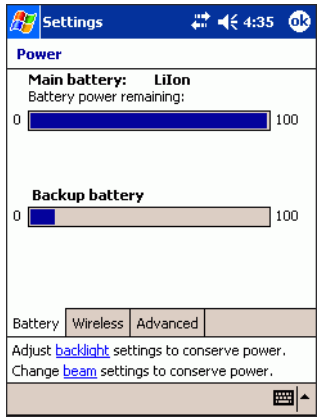


Figure 3-36. Power Window - Battery Tab

The *Battery* tab provides general information about battery conditions. The amount of useful operating time remaining varies depending on battery type and how you use the terminal.

2. Tap **ok**.

Wireless

To turn the terminal's wireless capabilities on and off:

1. Tap *Start* - *Settings* - *System* tab - *Power* icon - *Wireless* tab.

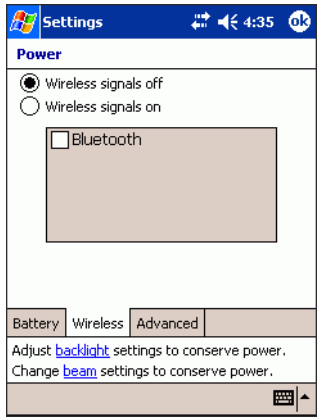


Figure 3-37. Power Window - Wireless Tab

2. In the list box, select the wireless device check box.
3. Select *Wireless signals off* radio button or *Wireless signals on* radio button.
4. Tap **ok**.

Advanced

You can select options for turning off the terminal to conserve battery power. To conserve the most power, select the option to turn off the device after 3 minutes or less.

1. Tap *Start* - *Settings* - *System* tab - *Power* icon - *Advanced* tab.

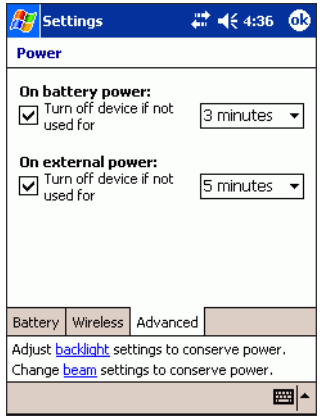


Figure 3-38. Power Window - Advanced Tab

2. Select *On battery power: Turn off device if not used for* check box.
3. Select time value from the drop-down list.
4. Select *On external power: Turn off device if not used for* check box.
5. Select time value from the drop-down list.
6. Tap **ok**.

Optimizing Battery Life

You want your batteries to last as long as possible, especially when you're on the road. Under normal conditions, you can get many hours of use from a single charge. Here are a few tips to help you get the most of the battery:

- Use external power whenever possible, especially when:
  - Using the backlight.
  - Connecting to a host computer.
  - Using accessories.

- Set the terminal to turn off when idle. While on battery power, the terminal automatically turns off, or suspends operation, if you don't touched the keyboard or used the stylus for three minutes. Maximize battery life by shortening this time.
- Turn off sounds you don't need. By default, the terminal produces sounds in response to a number of events, such as warnings, appointments, and key presses. To optimize battery life, turn off any sounds you don't need. See *Sounds & Notifications* on page 3-21 for instructions.

Note: *When batteries are low, a battery icon appears in the Navigation bar. See Status Icons on page 2-12 for more information.*

Regional Settings

With regional settings, you can change the way the terminal displays dates, times, currency amounts, large numbers, and numbers with decimal fractions. You can also choose the metric or U.S. system of measurement.

You can also choose from a large number of input locales. When you switch to another input locale, some programs offer special features, such as font characters or spell checkers designed for different languages.

1. Tap *Start* - *Settings* - *System* tab - *Regional Settings* icon - *Region* tab.

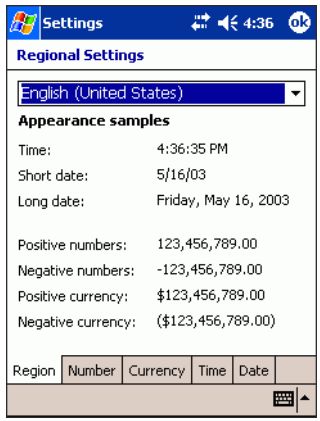


Figure 3-39. Regional Settings Window - Region Tab

2. From the drop-down list, select the country in which you are currently located.

3. Select the *Number* tab.

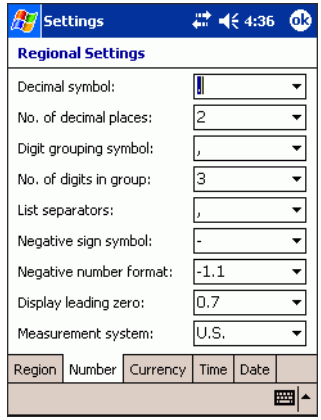


Figure 3-40. Regional Settings Window - Number Tab

4. Select the desired options. The characteristics available are determined by the region selected on the *Region* tab.
5. Select the *Currency* tab.

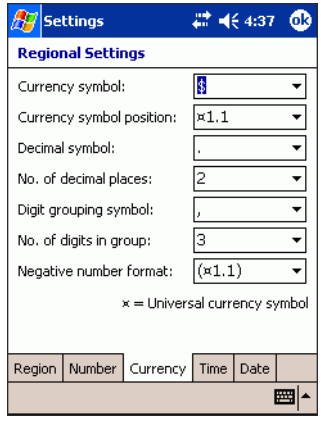


Figure 3-41. Regional Settings Window - Currency Tab

6. Select the desired options. The characteristics available are determined by the region selected on the *Regional* tab.

7. Select the *Time* tab.

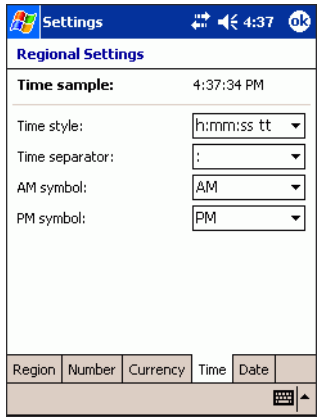


Figure 3-42. Regional Settings Window - Time Tab

8. Select the desired options. The characteristics available are determined by the region selected on the *Region* tab.
9. Select the *Date* tab.

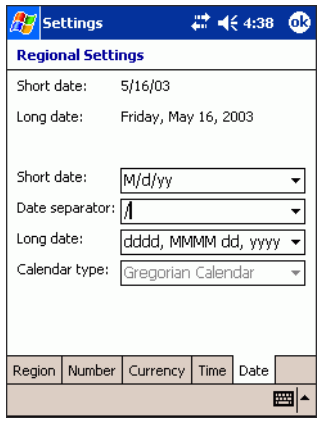


Figure 3-43. Regional Settings Window - Date Tab

10. Select the desired options. The characteristics available are determined by the region selected on the *Region* tab.
11. Tap **ok**.

Remove Programs

Use the *Remove Programs* window to remove programs that were loaded onto the terminal:

1. Tap *Start* - *Settings* - *System* tab - *Remove Programs* icon.

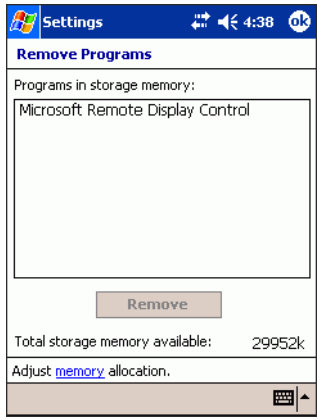


Figure 3-44. Remove Programs Window

2. From the *Programs in storage memory:* list box, select the program you want to remove.
3. Tap **Remove**.

Note: *You can only remove programs that you have installed in RAM.*

4. Tap **ok**.

Screen

Use the *Screen* window to align the screen and to enable ClearType fonts.

1. Tap *Start* - *Settings* - *System* tab - *Screen* icon.

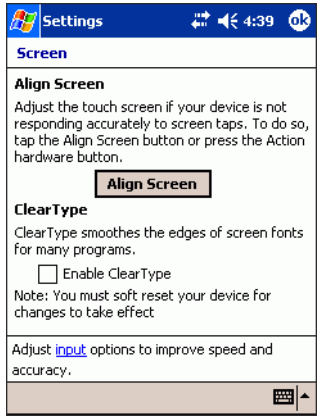


Figure 3-45. Screen Window

2. Tap **Align Screen**.
3. The *align screen* appears. Tap each target with the stylus and following the on-screen messages.
4. Select the **Enable ClearType** check box to enable easier reading of text in programs that support ClearType.
5. Tap **ok**.

Symbol Settings

Use the *Symbol Settings* window to set specific settings for the terminal.

Wakeups

The terminal can be configured to wakeup from sleep mode.

1. Tap *Start* - *Settings* - *System* tab - *Symbol Settings* icon - *Wakeups* tab.

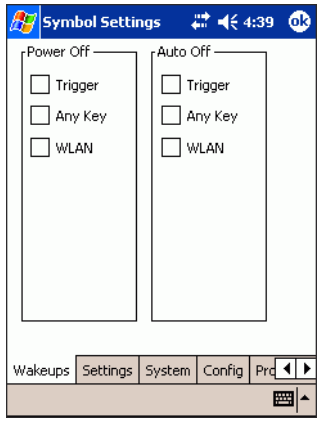


Figure 3-46. Symbol Settings Window - Wakeups Tab

2. Select the *Trigger, Any Key and/or WLAN* check box in the *Power Off or Auto Off* list box. See Table 3-6 for a list of wakeup conditions settings.
3. Tap **ok**.

Note: *All wakeup condition settings are not retained after a hard reset. After a hard reset, wakeup only occurs with the Power button. However, all settings are maintained after a soft reset.*

Table 3-6. Wakeup Conditions

Status	Description	Action	Conditions for wakeup
Power Off	When the terminal goes into sleep mode by pressing the Power button, these actions wake the terminal up.	Trigger	Trigger button is pressed.
		Any Key	Any key on the keypad is pressed.
		WLAN	Wireless LAN accesses the terminal.
Auto Off	When the terminal goes into sleep mode by an automatic power-off function, these actions wake the terminal up.	Trigger	Trigger button is pressed.
		Any Key	Any key on the keypad is pressed.
		WLAN	Wireless LAN accesses the terminal.

Settings

Use the *Settings* tab to control power to the external connector and decode beep volume.

1. Tap *Start* - *Settings* - *System* tab - *Symbol Settings* icon - *Settings* tab.

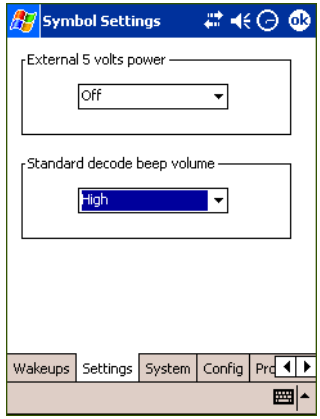


Figure 3-47. Symbol Settings Window - Settings Tab

2. From the *External 5 volts power* drop-down list select the appropriate options to control power to the external connector. The settings listed in Table 3-7 can be selected from the *External 5 volts power* drop-down list.

Table 3-7. External 5 Volts Power Settings

Setting	Description
Off	5V is not supplied to the serial port.
Active On	The terminal outputs 5V while the serial port is open (by an application).
Always On	5V is always available at the serial port
The default setting is Off after a hard reset. The selected setting is maintained after soft reset.	

3. From the *Standard decode beep volume* drop-down list, select the appropriate volume setting.
4. Tap **ok**.

System

The *System* tab displays terminal system data.

1. Tap *Start* - *Settings* - *System* tab - *Symbol Settings* icon - *System* tab.

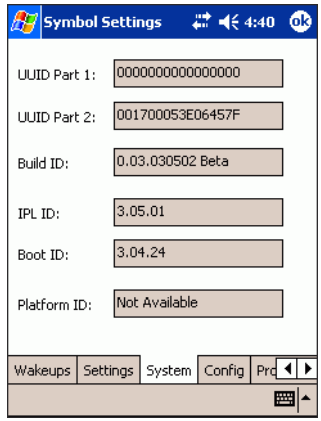


Figure 3-48. Symbol Setting Window - System Tab

2. In the *System* tab you can view the system data listed in *Table 3-8*.

Table 3-8. System Tab Data

Item	Description	Format
UUID	Inherent value of built-in flash ROM. Part 1: Flash ROM of data bus high order word. Part 2: Flash ROM of data bus low order word.	XXXXXXXXXXXXXXXX (where X is an alphanumeric character)
Build ID	Control version of when OS image is built.	X.XX.XXXXX (where X is an alphanumeric character)
IPL ID	Version of IPL.	X.XX (where X is an alphanumeric character)
Boot ID	Version of Boot.	X.XX (where X is an alphanumeric character)
Platform ID	Version of Platform.	PPT 88XX-XXX (where X is an alphanumeric character)

3. Tap **ok**.

Config

The *Config* tab displays terminal configuration data.

1. Tap *Start* - *Settings* - *System* tab - *Symbol Settings* icon - *Config* tab.

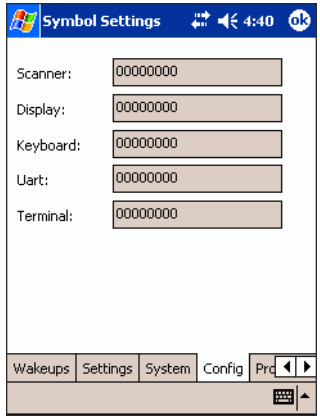


Figure 3-49. Symbol Settings Window - Config Tab

2. In the *Config* tab you can view the configuration data.
3. Tap **ok**.

Processor

You can change the speed at which the processor is running. It can operate at either 400 MHz or 300 MHz.

1. Tap *Start* - *Settings* - *System* tab - *Symbol Settings* icon - *Processor* tab.

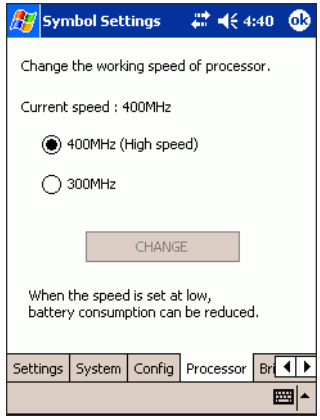


Figure 3-50. Symbol Settings Window - Processor Tab

2. Select either the *400 MHz* or *300 MHz* radio button.
3. Tap **CHANGE**.
4. A notification window appears.

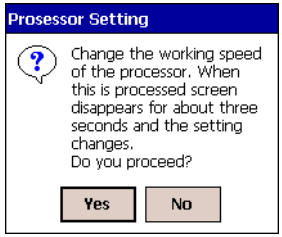


Figure 3-51. Processor Setting Notification Window

5. Tap **Yes** to change the processor speed or **No** to keep the current processor speed.
6. Tap **ok**.

Brightness

The *Brightness* tab allows you to change the brightness of the backlight.

1. Tap *Start* - *Settings* - *System tab* - Symbol Settings *icon* - *Brightness* tab.

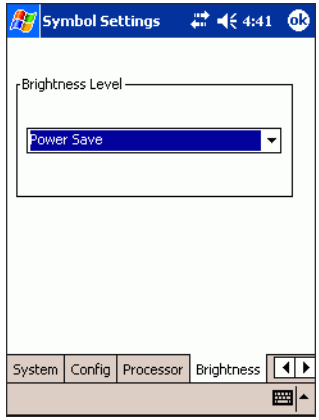


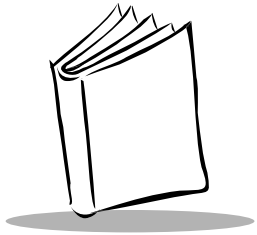
Figure 3-52. Symbol Settings Window - Brightness Tab

2. Select one of the brightness levels listed in Table 3-9 from the *Brightness Level* drop-down list.

Table 3-9. Brightness Level Settings

Brightness	Comment
Power save	Power-saving mode. Default after hard reset.
Low Bright	Slightly dark
Med Bright	Medium
High Bright	Slightly bright
Super Bright	Very bright

Note: *Backlight brightness goes to "Power save" automatically when the battery is low, regardless of the setting.*



Chapter 4
Communication

Chapter Contents

Introduction

Your terminal is capable of communicating with a number of hosts, including development PCs, serial devices, printers, etc. The available accessories serve as essential data communication devices, enabling you to synchronize the information on your terminal with the information on your host device using ActvieSync. With the appropriate accessory and software, the terminal can establish a number of connection types, such as a serial connection and a modem connection.

This chapter provides information on installing the appropriate communication software and setting up the appropriate accessory to enable communication between the terminal and the host device.

Installing Communication Software

Below is a list of software applications you need to successfully communicate with the various host devices:

- Microsoft ActiveSync 3.7 or higher

Installing ActiveSync

Using ActiveSync, you can synchronize the information on your terminal with the information on your host computer. Changes you make on your terminal or host computer appear in both places after you synchronize.

With ActiveSync software you can:

- Work with terminal-compatible host applications on your host computer. ActiveSync replicates data from your terminal so you can view, enter and modify any data stored on your terminal with the host application.
- Synchronize files between your terminal and host computer. Your files are automatically converted to the correct format.
- Back up the data stored on your terminal. Synchronization is a one-step procedure that ensures your data is always safe and up-to-date.
- Copy (rather than synchronize) files between your terminal and host computer.
- Control when synchronization occurs by selecting a synchronization mode. For example, you may synchronize continually while the terminal is connected to the host computer, or only when you select the synchronize command.

- Select the types of information to synchronize, and control how much data is synchronized.

To install ActiveSync on your host computer:

1. Download version 3.7 or higher of the software from http://www.microsoft.com. Refer to the installation and RAS instructions included with the ActiveSync software you download.
2. Set up a partnership between the terminal and host computer through the ActiveSync connection using a serial connection or Universal Cable Cup/USB cable.

Setting up a Partnership

After installation is complete, the ActiveSync Setup Wizard helps you connect your terminal to your host computer, set up a partnership so you can synchronize information between your terminal and host computer, and customize synchronization settings.

1. If the *Get Connected* window does not appear on the host computer, select *Start - Programs - Microsoft ActiveSync*.

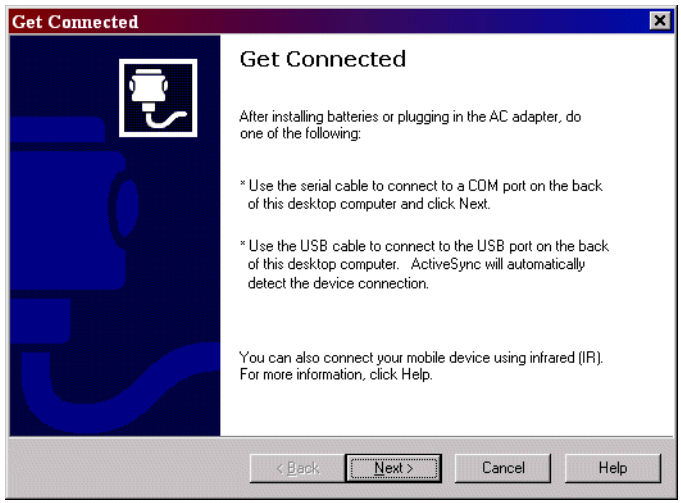


Figure 4-1. Get Connected Window

2. Connect the terminal to the host computer. See *Communication Setup* on page 4-9.

3. Select **Next** in the *Getting Connected* window.
4. The host computer and the terminal attempts to synchronize. The *New Partnership* window appears.

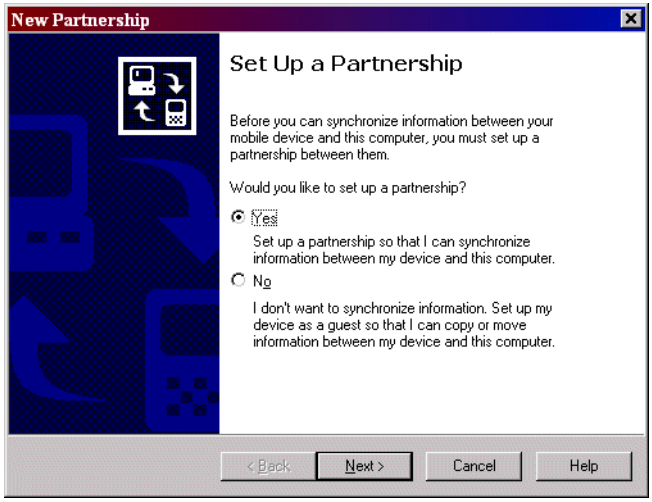


Figure 4-2. New Partnership Window

5. Click the *Yes* radio button and then select **Next**. The *New Partnership/Select Number of Partnerships* window appears.

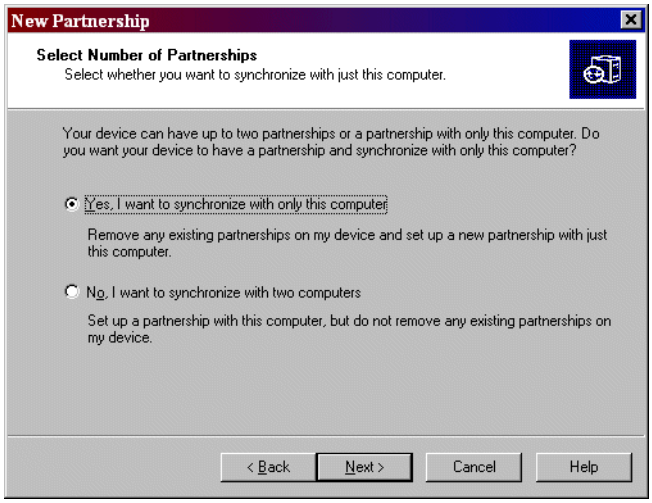


Figure 4-3. Select Number of Partnerships

6. Select **Next**. The *New Partnership/Select Synchronization Settings* window appears.

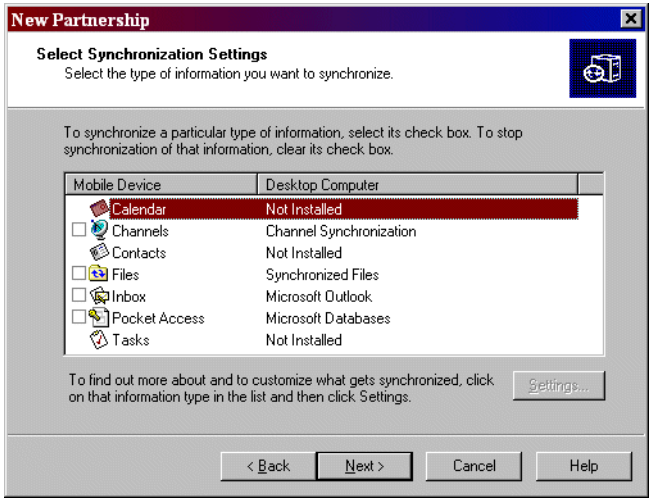


Figure 4-4. Select Synchronization Settings Window

7. To synchronize a particular type of information, select its check box. To stop synchronization of that information, clear its check box.
8. Select **Next**.

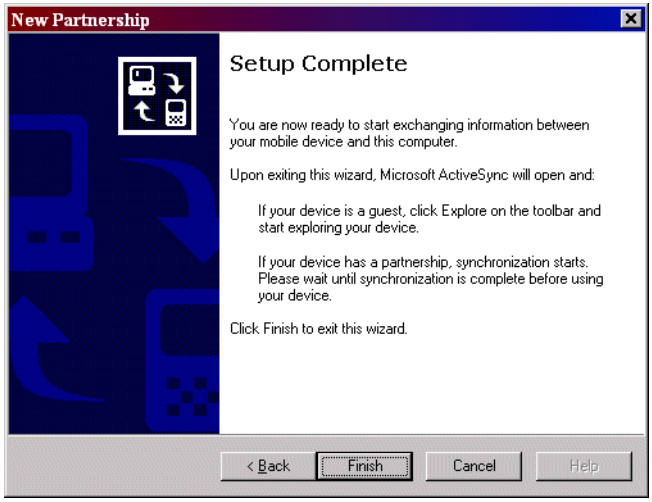


Figure 4-5. Setup Complete Window

9. Select **Finish**. The *Microsoft ActiveSync* window appears.

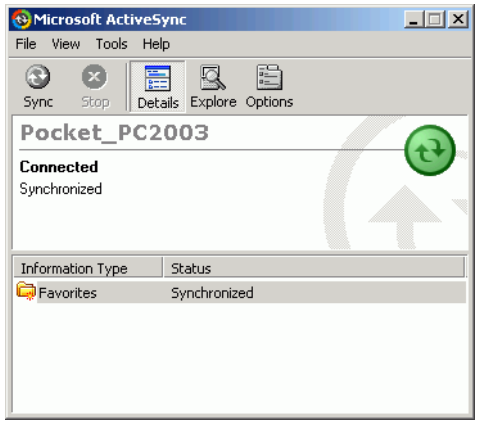


Figure 4-6. ActiveSync Connected Window

During the first synchronization, information stored on your host computer is copied to your terminal. When the copy is complete and all data is synchronized, you can disconnect your terminal from your host computer.

Note: *You must perform your first ActiveSync operation with a local, direct connection.*
To retain partnerships after a hard reset, capture partnership registry information in a .reg file and save it in the Flash File System. See the Windows CE Help File for Symbol Terminals for details.

For more information about using ActiveSync, start ActiveSync on your host computer, then see ActiveSync Help.

Communication Setup

The terminal can communicate with the host computer to exchange data using the following accessories:

- Serial Charging Cable (through a serial connection)
- Universal Cable Cup (through a serial connection)
- Single-Slot Serial Cradle (through a serial connection)
- Four -Slot Ethernet Cradle (through an Ethernet connection).

For each accessory, you need to follow instructions on configuring your host computer, setting up the connection between the terminal and the host computer, and configuring the terminal.

Using the Serial Charging Cable

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.
2. Start ActiveSync on the host computer, if it is not running. To start, select *Start* - *Programs* - *Microsoft ActiveSync*. The *Microsoft ActiveSync* window appears.

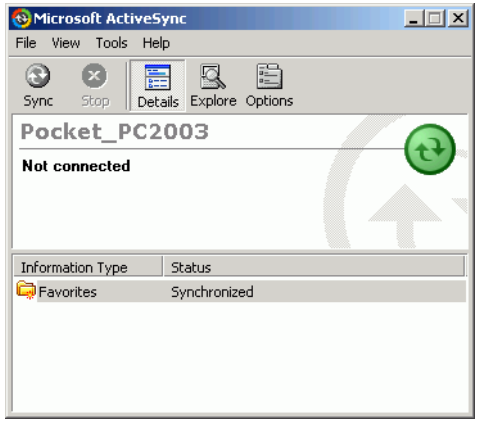


Figure 4-7. ActiveSync - Not Connected

Note: *Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See Device ID on page 3-26 for instructions on changing the device name.*

3. Connect the Serial Charging Cable to your terminal and host computer as shown in Figure 4-8.

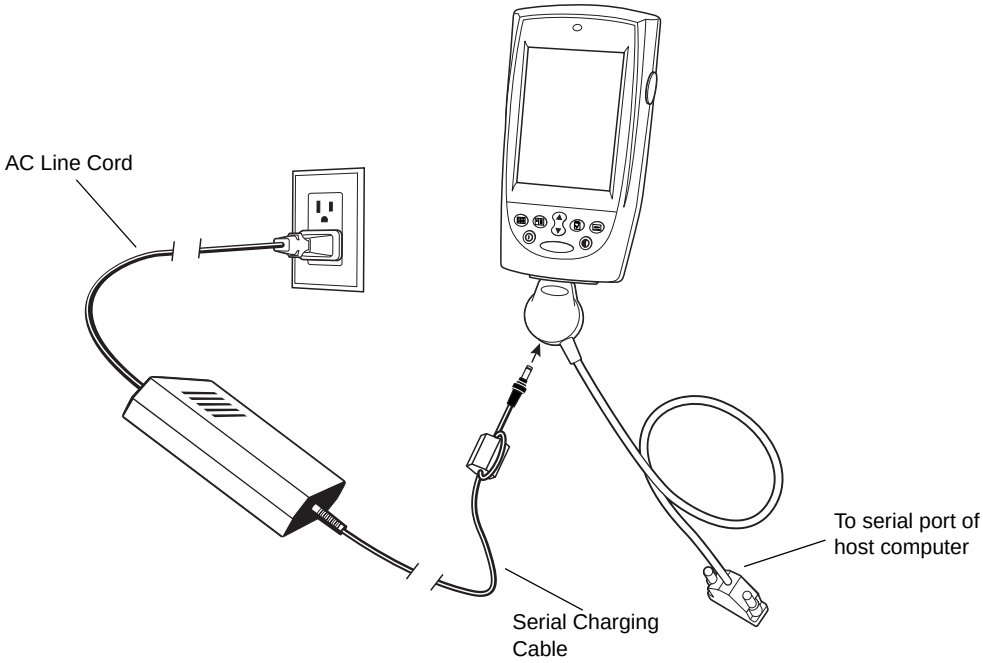


Figure 4-8. Connecting the Serial Charging Cable

Note: *The Serial Charging Cable requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your computer, refer to the user's manual supplied with the computer.*

4. Upon connection, synchronization occurs automatically.

Using the Single-Slot Serial Cradles

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.
2. Start ActiveSync on the host computer, if it is not running. To start, select *Start* - *Programs* - *Microsoft ActiveSync*. The *Microsoft ActiveSync* window appears.

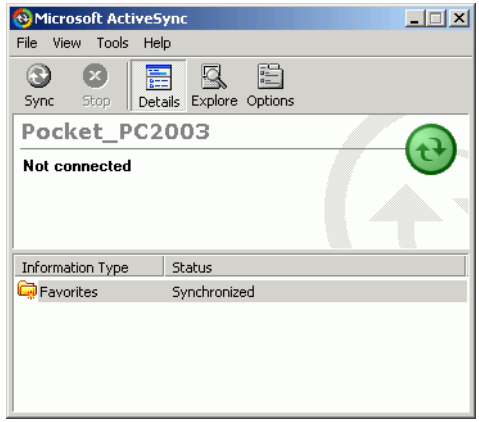


Figure 4-9. ActiveSync - Not Connected

Note: *Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See Device ID on page 3-26 for instructions on changing the device name.*

---

3. Connect your CRD 8800-1000S or CRD 8800B-1000S cradle to your host computer as shown in Figure 4-10.

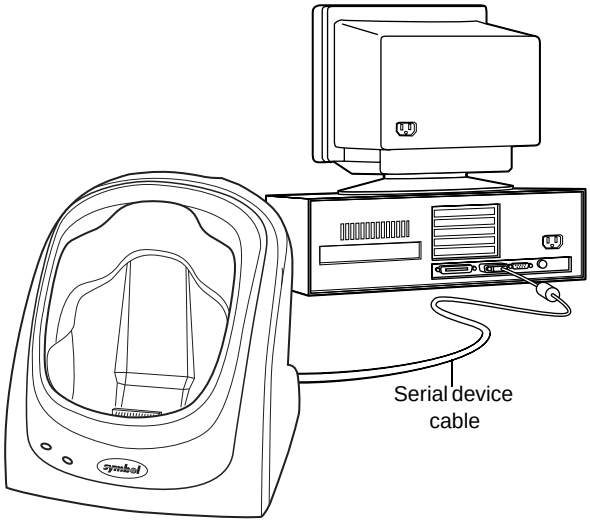


Figure 4-10. Connecting the Cradle to the Host

Note: *The cradle requires a dedicated port. It cannot share a port with an internal modem or other device. If you are unsure about the location of the serial port on your host computer, refer to the user's manual supplied with the computer.*

---

4. Turn on the terminal and slide it into the cradle.

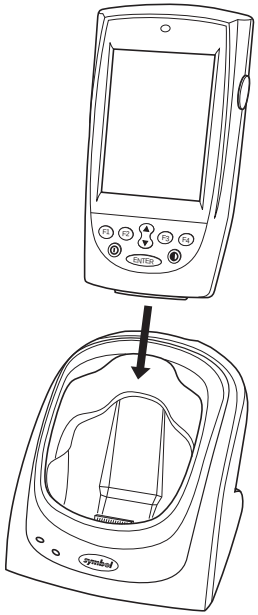


Figure 4-11. Inserting the Terminal in the Cradle

5. Upon connection, synchronization occurs automatically.

Communication LED Indicator

Table 4-1. Communication LED Indicator

LED	Indication
Off	Terminal not in cradle; terminal not placed correctly; cradle is not powered.
Solid Red	Terminal is present, but communication has not started.
Flashing Green	Terminal is in the cradle, and communicating with the host computer.
Slow Flashing Red	Error, communication did not start.

Table 4-1. Communication LED Indicator (Continued)

LED	Indication
Fast Flashing Red	Warning: Terminal inactivity timeout. The terminal did not finish data synchronization or had an open connection for more than 15 minutes. This time is programmable in the cradle flash parameters.
Solid Green	Terminal is present in the slot and communication is complete.
All LEDs Flashing Red	Failed automatic cradle configuration via local DHCP Service.

Using the Universal Cable Cup

1. Ensure that ActiveSync was installed on the host computer and a partnership was created. See *Installing ActiveSync* on page 4-3 and *Setting up a Partnership* on page 4-4.
2. Start ActiveSync if it is not running on the host computer. To start, select *Start* - *Programs* - *Microsoft ActiveSync*. The *Microsoft ActiveSync* window appears.

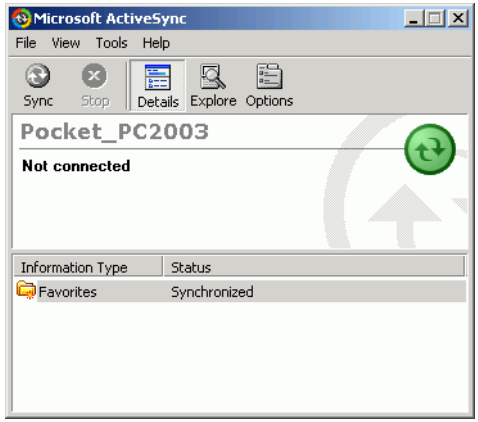


Figure 4-12. ActiveSync - Not Connected

Note: *Every terminal should have a unique device name. Never try to synchronize more than one terminal to the same name. See Device ID on page 3-26 for instructions on changing the device name.*

---

3. Ensure that locking tabs on the cable cup are in the open position (up).
4. Insert the terminal into the cable cup.
5. Press down on the two locking tabs.
6. Pull on the cable cup to ensure that it is securely seated on the terminal.

7. Open the rubber cap covering the serial port.

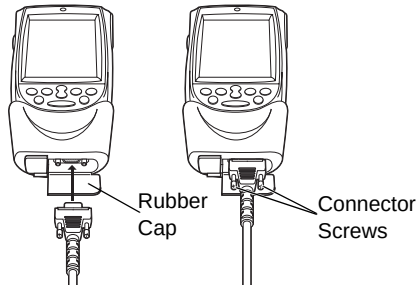


Figure 4-13. Connecting the Communication Cable

8. Connect the cable connector to the serial port.
9. Secure the connector to the cable cup by tightening the two connector screws.
10. Connect the other end of the USB cable to the USB port on your host computer.

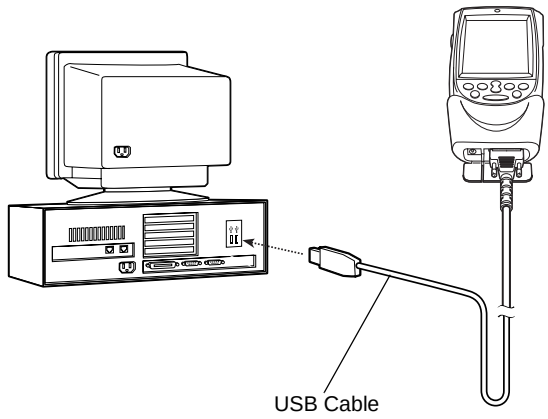


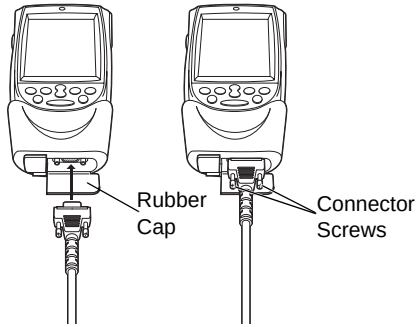
Figure 4-14. Connecting the Cable Cup to Host Computer

11. Turn on the terminal.
12. Upon connection, synchronization occurs automatically.

Serial Communication

The UCC 8800 Universal Cable Cup provides the ability to connect the terminal to printers and vending machines.

1. Ensure that locking tabs are in the open position (up).
2. Insert the terminal into the cable cup.
3. Press down on the two locking tabs.
4. Pull on the cable cup to ensure that it is securely seated on the terminal.
5. Open the rubber cap covering the serial port.



6. Connect the cable connector to the serial port.
7. Secure the connector to the cable cup by tightening the two connector screws.
8. Connect the other end of the serial cable to the appropriate device.

Connecting to the Internet on a Wireless Network

With a PPT 8846 terminal, you can connect to the Internet across a wireless network. To set up a wireless connection:

1. Tap the *Mobile Companion* icon on the task tray. The *Mobile Companion* menu appears.

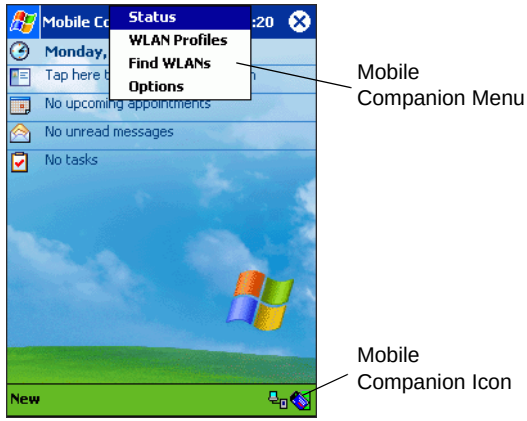


Figure 4-15. Mobile Companion Menu

2. Tap *Find WLANs*. The *Mobile Companion* window appears.

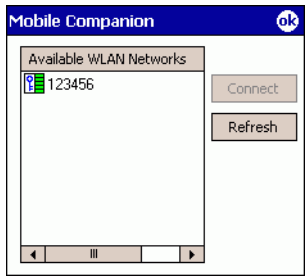


Figure 4-16. Mobile Companion Window

3. The terminal tries to locate Access Points (APs) in the area. When it locates a wireless LAN(s), the ESSID name displays in the *Available WLAN Networks* list.
4. Tap the ESSID name and then tap **Connect**.

5. The Mobile Companion *Mode* tab appears.

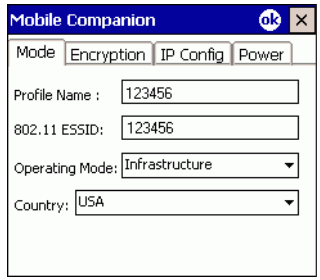


Figure 4-17. Mobile Companion - Mode Tab

6. The profile name and ESSID name appears in the respective fields.
7. Select *Infrastructure* from the *Operating Mode:* drop-down list.
8. Tap the *Encryption* tab.

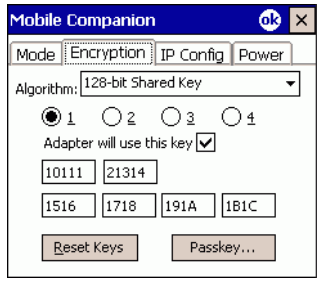


Figure 4-18. Mobile Companion - Encryption Tab

9. Select the encryption algorithm used on the wireless network (Open System, 40-bit Shared Key, 128-bit Shared Key, Kerberos or LEAP) from the *Algorithm* drop-down list.

   If you select 40-bit Shared Key, 128-bit Shared Key or Kerberos, enter the required data in the fields that appear in the window. See your network administrator for this information.

10. Tap the *IP Config* tab.

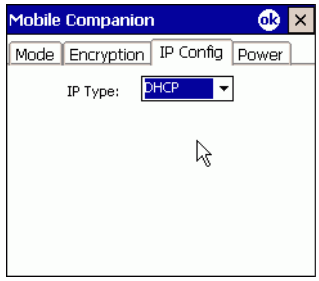


Figure 4-19. Mobile Companion - IP Config Tab (DHCP)

11. Select either *DHCP* or *Static* from the *IP Type* drop-down list.

    If you select Static IP, enter the required data in the fields that appear in the window. See your network administrator for this information.

12. Tap **ok**.
13. Tap **ok**.
14. The Mobile Companion wireless status icon should indicate that the terminal is connected to the AP. If the status icon does not indicate that the terminal is connected to the AP, see your network administrator.
15. Tap *Start* - *Settings* - *Connections* tab - *Connections* icon - *Advanced* tab.

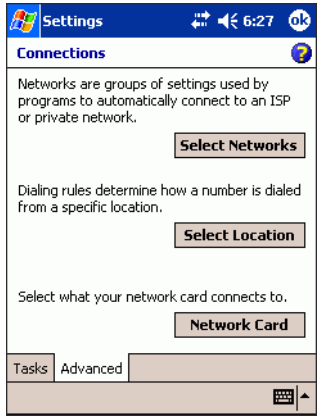


Figure 4-20. Connections Window - Advanced Tab

16. Tap **Network Card**. The *Configure Network Adapters* window appears.

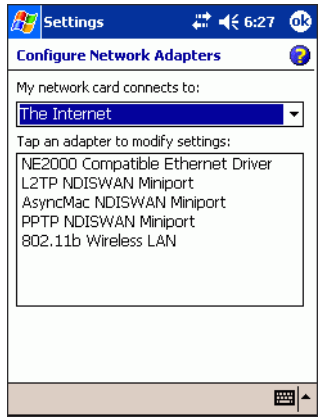


Figure 4-21. Configure Network Adapters Window

17. Select *The Internet* from the *My network card connects to:* drop-down list.
18. Select *802.11b Wireless LAN* from the *Tap an adapter to notify settings:* list box. The *802.11b Wireless LAN* window appears.

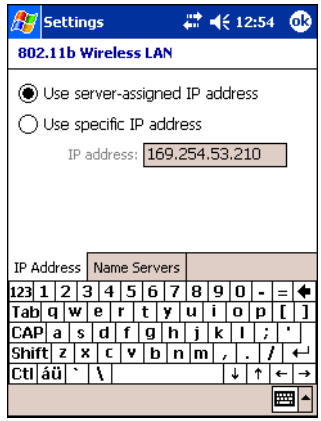


Figure 4-22. 802.11b Wireless LAN Window

19. Tap **ok**. A notification window appears indicating that the next time the adapter (radio card) is used it will have the new settings.

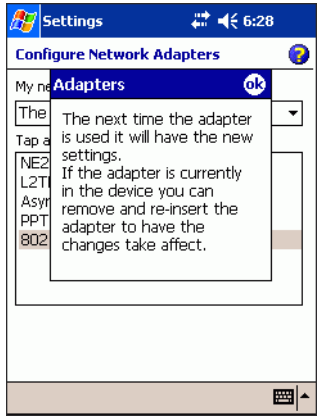


Figure 4-23. Adapters Message Window

20. Tap **ok**.
21. Tap **ok**.
22. Tap **ok**.
23. Tap *Start - Programs - Internet Explorer*. The *Pocket Internet Explorer* window appears.

Figure 4-24. Pocket Internet Explorer Window

24. In the address bar, enter the URL for a web site.

Infrared Communication

Using Infrared Receive (IR), you can send and receive information, such as contacts, appointments and files between two terminals.

Send Information

To send information:

1. Open the program in which you created the item you want to send and locate the item in the list. For example, a contact name in the *Contacts* application.

Note: *Ensure that the receiving terminal is enabled to accept IR beams. See Receive Information on page 4-25.*

---

2. Align the IR port of your terminal with the IR port of the receiving device so that they are unobstructed and within close range.
3. Tap and hold the item to send until the menu appears.

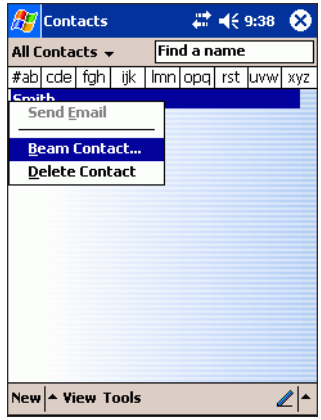


Figure 4-25. Beaming Contact Information

4. Tap *Beam [Item]* on the menu. A window displays showing the terminal searching for a device.

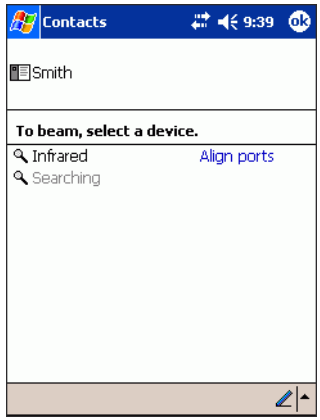


Figure 4-26. Searching for a Device

5. After the file is sent a message appears indicating successful data transfer.

Note: *You can also send items, but not folders, from File Explorer. Tap and hold the item, then tap* Beam File *on the pop-up menu.*

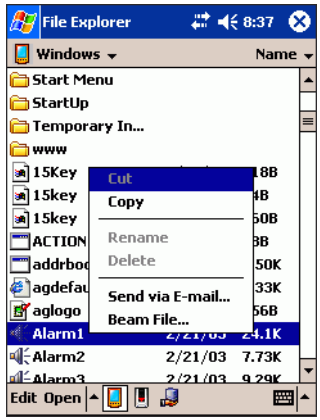


Figure 4-27. Beaming a File from File Explorer

Receive Information

To receive information, align the IR ports so that they are unobstructed and within close range. When information is sent from the other terminal, your terminal (if configured) receives it automatically.

1. In order to receive information automatically, tap *Start* - *Settings* - *Connection* tab - *Beam* icon. The *Beam* window appears.

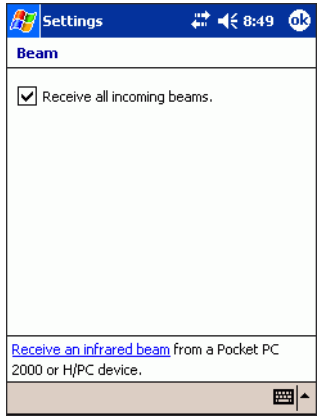


Figure 4-28. Beam Window

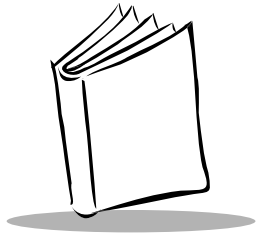
2. Select the *Receive all incoming beams* check box to receive beams.

3. By default the terminal detects incoming infrared (IR) beams and prompts you to accept them.

Figure 4-29. Receiving Beam Data Acknowledgement

4. If you do not want the terminal to detect or receive beams, deselect the *Receive all incoming beams* check box.

Note: *If someone attempts to send you an IR beam from an older terminal, you may not be prompted to accept it. In this case, before the beam is sent from the other terminal, tap* Receive an infrared beam *at the bottom of the Beam window.*



Chapter 5
Spectrum24 Network Configuration

Chapter Contents

Introduction

Wireless LANs allow PPT 8846 terminals to communicate wirelessly, and to send captured data “real time” to a host device. Before a terminal can be used on a Spectrum24 LAN your facility must be set up with the equipment required to run the wireless LAN and the terminal must be properly configured. Refer to the documentation that came with your Access Points (APs) for instructions on setting up the required hardware.

The PPT 8846 terminal Network Adapter settings and Spectrum24 settings configure and monitor the wireless connection. The *Mobile Companion* icon appears in the task tray, and indicates terminal signal strength as follows:

Icon	Status
	Excellent signal strength
	Very good signal strength
	Good signal strength
	Fair signal strength
	Poor signal strength
	Out-of-network range (not associated)

Mobile Companion

The *Mobile Companion* utility is used to configure the terminal’s wireless network settings. The *Mobile Companion* utility starts automatically and appears as an icon on the task tray. The status icon changes in real-time to reflect the signal strength and availability of the

adapter and the wireless network. Tap the icon on the task tray to open the *Mobile Companion* menu.

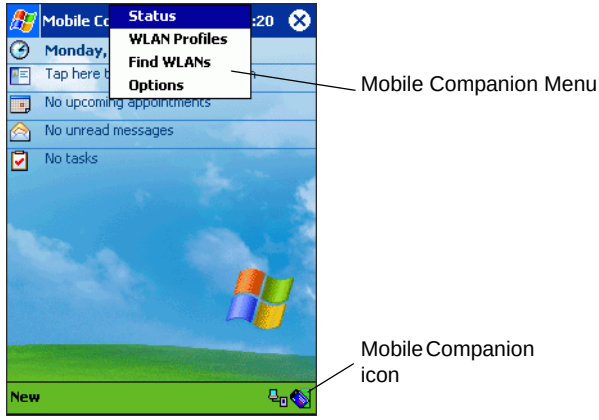


Figure 5-1. Mobile Companion Menu

When the menu opens, select *Status*, *WLAN Profiles, Find WLANs* or *Options* from menu.

Table 5-1. Mobile Companion Menu Descriptions

Menu Item	Description
Status	Displays the current status and information for the wireless connection. *Signal* tab view - displays radio signal transmission strength from the adapter (using its current profile) to the associated AP. *Info* tab view - displays software, driver, firmware, hardware, and country information for the current profile. *IP Status* tab view - displays network address information. *Ping* tab view - displays signal strength data, data rate, and conduct data transmission tests between the terminal and associated AP or client.

Table 5-1. Mobile Companion Menu Descriptions (Continued)

Menu Item	Description
Status (Cont'd)	*APs* tab view - displays APs with the same ESSID as the current terminal profile. The terminal's roaming capabilities can be set from this tab. When not in Ad Hoc operating mode, the *APs* tab displays instead of the *Peers* tab. *Peers* tab view - displays the BSSIDs, power modes, transmit rates and data rates of other networked clients within the Ad Hoc (peer-to-peer) network. When in *Ad Hoc* operating mode, the *Peers* tab view displays instead of the *APs* tab.
WLAN Profiles	Displays the current profiles and allows the user to add, edit and delete profiles.
Find WLANs	Displays a list of Spectrum24 networks (APs and networked peers) available to the terminal for association. The networks are listed by their ESSID. To the right of each network is a signal strength icon. Networks with a signal strength of Good (three green bars out of five) or better should be considered for connection. Tap a network and tap **Connect** to interoperate with the AP representing that network. Once connected, the *Mode*, *Encryption*, *IP Config* and *Power* tab views display the ESSID, security settings, network address information and power consumption level set for that network. See *Finding WLANs* on page 5-5 for more information.
Options	Displays settings for configuring battery consumption avoidance capabilities, system sounds, AP and terminal association capabilities, profile roaming options, as well as the password protecting the Mobile Companion utility.

Finding WLANs

A completed profile is a set of terminal configuration settings that can be used in different locations to connect to a Spectrum24 network. Creating different profiles is a good way of having pre-defined terminal operating parameters available for use in various Spectrum24 network environments.

Select *Find WLANs* from the *Mobile Companion* menu to locate the APs in the area. The *Mobile Companion* window displays the available WLAN networks.

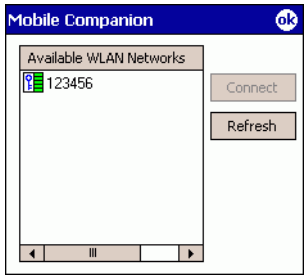
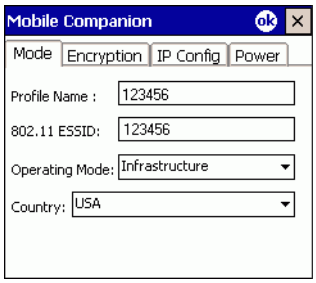
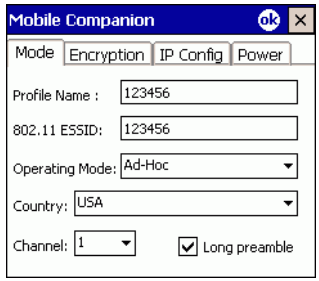


Figure 5-2. Available WLAN Networks

1. Select an available WLAN network from the list box.
2. Tap **Connect**. The *Mode* tab appears.



Infrastructure Mode



Ad Hoc Mode

Figure 5-3. Mode Tab

3. The *Profile Name:* and *802.11 ESSID:* fields are populated with the name and (WLAN) identifier of the network connection. You can change the *Profile Name:* if desired.

   Use the *Profile Name* field to enter the name of the terminal profile used to transmit with either an AP or another networked computer.

   The ESSID is the 802.11 Extended Service Set Identifier. The ESSID is 32-character (maximum) string identifying the WLAN. The ESSID assigned to the terminal is required to match the AP ESSID for the terminal to communicate with the AP.

4. Select the operating mode from the *Operating Mode:* drop-down list:

Infrastructure	Select *Infrastructure* to enable the terminal to transmit and receive data with an AP. Infrastructure is the terminal default mode when Mobile Companion initially displays.
Ad Hoc	Select *Ad Hoc* to enable the terminal to form its own local network where terminals communicate peer-to-peer without APs using a shared ESSID. Select the *Long preamble* check box if the terminal and its profile are using a long preamble when transmitting data. A long preamble is approximately 8 bytes of the packet header attached to the packet prior to transmission. Devices in Ad Hoc mode are required to use the same preamble length to interoperate. The terminal initiating the Ad Hoc network sets the channel (using the *Channel* drop-down list) used by each peer in the Ad Hoc network.

5. Select the country of operation for the terminal from the *Country:* drop-down list. This ensures the terminal is using country code information compatible with the country code data used by the associated AP. Select *International* if using the terminal with a non-Symbol AP or a pre AP-4131 model.
6. Select the *Encryption* tab to set the terminal profile security level.

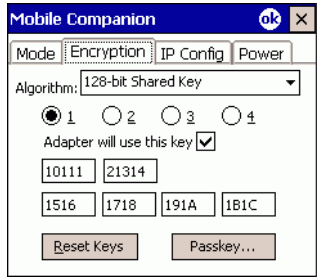


Figure 5-4. Encryption Tab

The terminal supports Open System (no encryption), 40-bit Shared Key, 128-bit Shared Key, Kerberos and LEAP encryption algorithms. The absence of a physical connection makes wireless links vulnerable to information theft. Encryption is an efficient method of preventing data theft and improving data security.

The AP and the terminal are required to use the same encryption algorithm to associate and transmit data. If an AP is set to Open System and an adapter is set to 40-bit or 128-bit, no association takes place. Similarly, if an adapter is set to Open System and an AP is set to 40-bit or 128-bit, no association takes place.

If an AP is set to 40-bit and a terminal is set to 128-bit the terminal can associate with the AP, but no data transmission and reception can take place.

7. Select one of the following *Encryption* options from the *Algorithm:* drop-down list:

Open System (no encryption)	Use the Open System option as the default setting when no data packet encryption is needed over the network. Selecting Open System provides no security for the data being transmitted over the network.
40-bit Shared Key	Select 40-bit encryption and enter a 10-digit hex encryption key. Tap **Reset Keys** to set the encryption key to the default values.
128-bit Shared Key	Select 128-bit encryption and enter a 26-digit hex encryption key. The 128-bit encryption option provides a higher level of security than 40-bit encryption while maintaining an 11 Mbps data rate. Tap **Reset Keys** to set the encryption key to the default values. **Note:** The default Hex digit keys are visible any time they are used. As a security precaution after setting the key values for the network, the digits are replaced with asterisks ***** within the encryption key fields. If the associated AP is using an optional **Passkey**, the "active" terminal profile is required to use one as well. The Passkey is a plain text representation of the WEP keys displayed in the *Encryption* tab. The Passkey provides an easy way to enter WEP key data without having to remember the entire 40-bit (10 character) or 128-bit (26 character) Hex digit string.

Tap **Passkey** to display the *Passkey* window. Enter an easy-to-remember 4 to 26 character string to be used as the WEP algorithm. Tap **OK**. The AP transforms the Passkey string into a set of four WEP keys using MD5 algorithms and displays them in the *WEP* fields. These are the new WEP keys for the terminal profile. Once displayed in the WEP key fields, the adapter profile behaves as if the keys were entered manually.

Kerberos	Kerberos is a different form of 128-bit data security whereby a terminal is required to have its request for AP resources authenticated with a Kerberos server before the server permits the AP to transmit and receive data with the associated terminal. Select *Kerberos* and enter the key distribution center *(KDC*) and *Realm* values. The KDC is located on a server and maintains information about the APs and users it supports. The KDC also permits the transmission and receipt of data once the credentials of the user are verified. Enter the name of the server that hosts the Kerberos KDC in the *Realm* field.
LEAP	LEAP (Lightweight Extensible Authentication Protocol) is an 802.1X authentication type for wireless LANs that supports strong mutual authentication between the client and a RADIUS server. It provides dynamic per-user, per-session Wired Equivalent Privacy (WEP) key enhancements to mitigate a variety of network attacks. Select *LEAP*. When you attempt to connect to the server, the *Network Log On* screen displays. Enter your user name, password and domain name. Consult your system administrator for this information.

8. Select the *IP Config* tab to configure the following terminal profile network address parameters: IP address, subnet, gateway, DNS and WINS. Changes made within

the *IP Config* tab only impact the profile selected in the *Mode* tab and do not impact the network address parameters configured for other profiles.

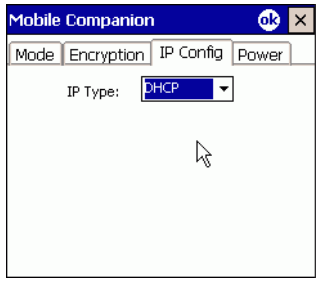


Figure 5-5. Mobile Companion - IP Config Tab (DHCP)

- Select Dynamic Host Configuration Protocol (*DHCP*) from the *IP Type* drop-down list to obtain a leased IP address and network configuration information from a remote server. DHCP is the default setting for the terminal profile. When DHCP is selected, the IP address fields are read-only.
- Select *Static* to manually assign the IP, subnet mask, default gateway, DNS and WINS addresses used by the terminal profile.

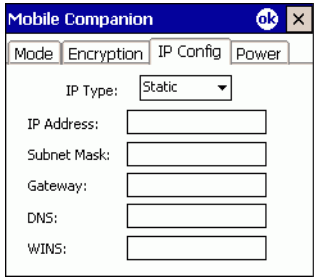
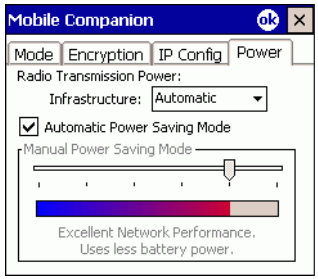


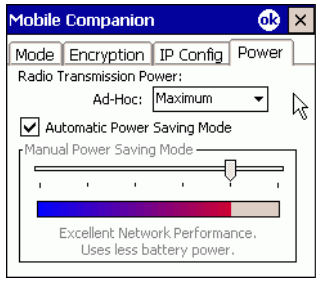
Figure 5-6. Mobile Companion - IP Config Tab (Static)

IP Address	The Internet is a collection of networks with users that communicate with each other. Each communication carries the address of the source and destination networks and the particular machine within the network associated with the user or host computer at each end. This address is called the IP address (Internet Protocol address). Each node on the IP network must be assigned a unique IP address that is made up of a network identifier and a host identifier. Enter the IP address as a dotted-decimal notation with the decimal value of each octet separated by a period, for example, 192.168.7.27.
Subnet Mask	Most TCP/IP networks use subnets in order to effectively manage routed IP addresses. Having an organization's network divided into subnets allows it to be connected to the Internet with a single shared network address, for example, 255.255.255.0.
Gateway	The default gateway is a device that is used to forward IP packets to and from a remote destination.
DNS	The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate domain names and IP addresses. It is also used to control Internet email delivery. Most Internet service requires DNS to operate properly. If DNS is not configured, Web sites cannot be located and/or email delivery fails.
WINS	WINS is a Microsoft® Net BIOS name server. WINS eliminates the broadcasts needed to resolve computer names to IP addresses by providing a cache or database of translations.

9. Select the *Power* tab to set the *Radio Transmission Power* level and the *Power Saving Modes* for the terminal profile.



Infrastructure Mode



Ad Hoc Mode

Figure 5-7. Mobile Companion - Power Tab

Adjusting the *Radio Transmission Power* level enables you to expand or confine the transmission area with respect to other wireless devices that could be operating nearby. Reducing a coverage area in high traffic areas improves transmission quality by reducing the number of noises in that coverage area.

- In Infrastructure mode there are two transmission power options:
  - Select *Automatic* to use the AP power level. *Automatic* is the default mode for terminals operating in Infrastructure mode.
  - Select *Power Plus* to set the terminal transmission power one level higher than the level set for the AP.

- In Ad Hoc mode there are five transmission power options:
  - Select *Maximum* power to set the terminal to the highest transmission power level. Select *Maximum* power when operating in highly reflective environments and areas where other devices could be operating nearby. Additionally, use the maximum power level when attempting to communicate with devices at the outer edge of a coverage area.
  - Select *50%*, *25%* or *10%* to set the transmit power level to that percentage of the maximum power level.
  - Select *Minimum* power to set the terminal to the lowest transmission power level. Use the minimum power level when communicating with other devices in very close proximity. Additionally, select minimum

power in instances where little or no radio interference from other devices is anticipated.

The *Automatic Power Saving Mode* switches to *Best Network Performance* when an AC power supply is detected. If a battery is used, an appropriate setting between *Best Network Performance* and *Acceptable Network Performance* is automatically chosen based on a real-time analysis of network usage. The *Automatic Power Saving Mode* is the default setting and extends the operating time before the battery is recharged.

The *Manual Power Saving Mode* allows you to select a performance level suited to intended operation. There are six settings ranging from the *Best Network Performance* (using the most battery power) to *Acceptable Network Performance* (using the least battery power). A network performance description is displayed for each power range.

10. Tap **OK** to implement power consumption changes for the terminal profile.

Status

To view the status of the wireless network connection, select *Status* from the *Mobile Companion* menu.

1. Select the *Signal* tab to display a real-time graph of the signal quality of the terminal to the associated AP (Infrastructure Mode only). The number of times the terminal has roamed to and from APs, the current data rate, and the network status are displayed. Signal quality is an indicator of how clearly the adapter can hear the associated AP.

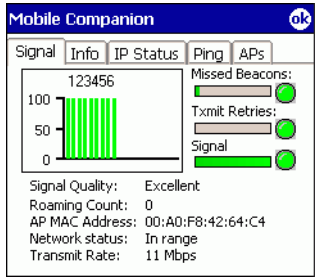


Figure 5-8. Mobile Companion - Signal Tab

Note: *The Signal tab is view only and is not available if the current operating mode is Ad Hoc.*

Missed Beacons	Displays the amount of beacons (uniform system packets broadcast by the AP to keep the network synchronized) missed by the terminal. The fewer the missed beacons the better the signal. As long as the LED to the right of the graph is green the AP association is not jeopardized by an excess of missed AP beacons. If the LED is Red, an association with a different AP could be warranted to reduce the amount of missed beacons and improve the signal.
Txmit Retries (Transmit Retries)	Displays the number of data packets retransmitted by the terminal. The fewer transmit retries the stronger the signal. As long as the LED to the right of the graph is green the AP association is not jeopardized. If the LED is red, an association with a different AP could be warranted to reduce the amount of transmit retries and improve the signal.
Signal	Displays the Relative Signal Strength Indicator (RSSI) of the signal transmitted between the AP and terminal. As long as the LED to the right of the graph is green the AP association is not jeopardized. If the LED is red, an association with a different AP could be warranted to improve the signal.

2. Select the *Info* tab to view the terminal's current software and driver revision data as well as the operating parameters of the current profile.

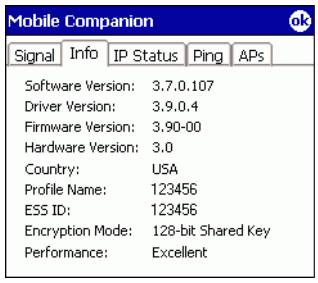


Figure 5-9. Mobile Companion - Info Tab

Version Information	Displays the terminal's software, driver, firmware and hardware versions as well as country information. This data is consistent for the terminal regardless of which terminal profile is the current profile.
Current Status	Displays the terminal's current Profile Name, ESSID, and Encryption mode. Terminal performance is displayed using a verbal indicator of signal strength. Terminal operating information differs depending on which profile has been enabled as the current profile.

3. Select the *IP Status* tab to view the terminal's network address information. Unlike the *IP Config* tab in Finding WLANs, the *IP Status* tab is view only with no user-configurable data fields.

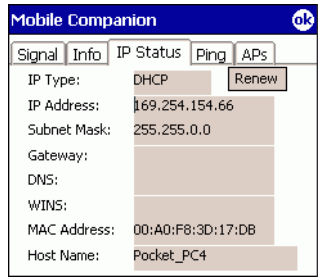


Figure 5-10. Mobile Companion - IP Status Tab

IP Type	If DHCP was selected from the *IP Config* tab, leased IP address and network address data displays for the terminal. If Static was selected, the values displayed were input manually in the *IP Config* tab on page 5-10.

IP Address	The Internet is a collection of networks with users that communicate with each other. Each communication carries the address of the source and destination networks and the particular machine within the network associated with the user or host computer at each end. This address is called the IP address. Each node on the IP network must be assigned a unique IP address that is made up of a network identifier and a host identifier. Enter the IP address as a dotted-decimal notation with the decimal value of each octet separated by a period, for example, 192.168.7.27.
Subnet Mask	Most TCP/IP networks use subnets in order to effectively manage routed IP addresses. Having an organization's network divided into subnets allows it to be connected to the Internet with a single shared network address, for example, 255.255.255.0.
Gateway	The gateway is a device that is used to forward IP packets to and from a remote destination.
DNS	The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate domain names and IP addresses. It is also used to control Internet e-mail delivery. Most Internet service requires DNS to operate properly. If DNS is not configured, Web sites cannot be located or e-mail delivery fails.
WINS	WINS is a Microsoft Net BIOS name server. WINS eliminates the broadcasts needed to resolve computer names to IP addresses by providing a cache or database of translations.
MAC Address	An IEEE 48-bit address the terminal is assigned at the factory that uniquely identifies the adapter at the physical layer.
Host Name	Displays the name of the terminal.

4. Tap **Renew** to refresh the information displayed on the *IP Status* tab.

5. Select the *Ping* tab to send and receive ICMP ping packets across the network to the specified IP address.

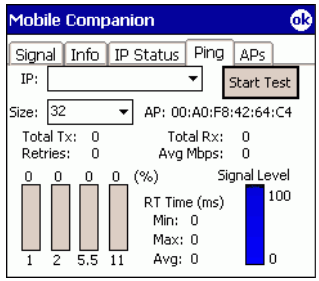


Figure 5-11. Mobile Companion - Ping Tab

6. Select a target device IP address from the *IP* drop-down list.
7. Select the size of the packet transmission from the *Size* drop-down list.
8. Tap **Start Test** to begin the ping test.
9. Tap **Stop Test** to terminate the ping test.

   The average mega-bits per second, signal strength, data rate currently in use, test statistics and round trip (RT) times are displayed for each test. The associated AP MAC address is also displayed. The signal strength level and the data transmission rate are displayed in real-time bar graphs.

10. Select the *APs* tab to view APs with the same ESSID as the terminal's profile.

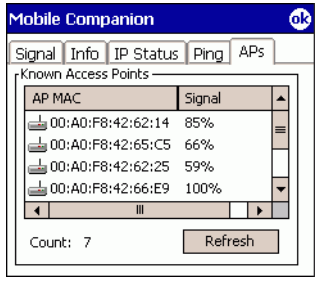


Figure 5-12. Mobile Companion - APs Tab

The associated AP displays a radio wave radiating from its antenna to indicate its associated status. Tapping on the icon displays a menu with *Set Mandatory* and *Set Roaming* options.

Selecting the *Set Mandatory* item prohibits the terminal from associating with a different AP. The letter *M* displays on top of the icon when the *Set Mandatory* option has been selected.

Selecting *Set Roaming* allows the terminal to roam to any AP with a better signal. These settings are temporary and never saved to the registry.

Tap **Refresh** to update the list of the APs with the same ESSID. A signal strength value of 32 is the highest possible. The *APs* tab only displays when Infrastructure is selected as the terminal operating mode from the *Mode* tab.

11. If the terminal is in Ad Hoc mode, select the *Peers* tab to display the BSSID or MAC addresses of the other terminals in the network, their operating mode (PSP or CAM), their transmit rate, their supported data rate and the length of time an adapter has been out of the Ad Hoc network. Tap **Refresh** to update the *Peers* tab to the latest Ad Hoc network performance and terminal membership data.

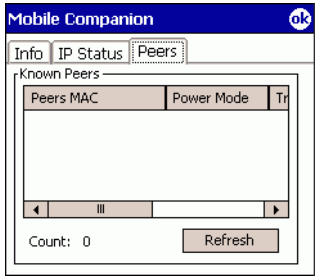


Figure 5-13. Mobile Companion - Peers Tab

Setting Options

Select *Options* from the Mobile Companion menu to enable or disable international roaming, configure consumption avoidance capabilities, enable system sounds, and set temporary settings.

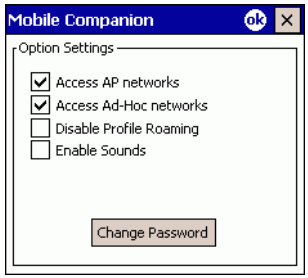


Figure 5-14. Mobile Companion - Option Settings

1. Select the *Access AP networks* check box to display available AP networks and their signal strength within the *Available WLAN Networks* tab. These are the APs available to the terminal profile for association. If this option was previously disabled, refresh the *Available WLAN Networks* tab to display the AP networks available to the terminal.
2. Select the *Access Ad-Hoc networks* check box to display available peer (adapter) networks and their signal strength within the *Available WLAN Networks* tab. These are peers available to the terminal profile for association. If this option was previously disabled, refresh the *Available WLAN Networks* tab to display the Ad Hoc networks available to the terminal.
3. Select the *Disable Profile Roaming* check box to disable the terminal from roaming and associating to APs with country codes other than the United States.
4. Select the *Enable Sounds* check box to initiate an audible signal when performing a ping test and associating with an AP. The tones are important to notify users if the pinging is received or if the terminal has roamed to another AP.

Note: *Mobile Companion has a password protection feature. When Mobile Companion initially displays, the password is off by default.*

---

5. To create a password, tap **Change Password**.

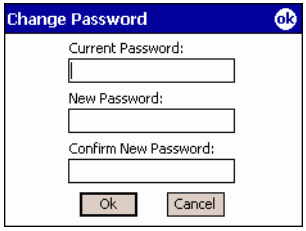


Figure 5-15. Mobile Companion - Change Password

6. Enter a case sensitive password (10 characters maximum) in the *Current Password* field and tap **OK**. To change the current password, enter the current password in the *Current Password* field and enter a new password in the *New Password* and *Confirm Password* fields and tap **OK**.

Changing Profiles

Select *WLAN Profiles* from the *Mobile Companion* menu to view, connect to, create and edit a profile. A completed profile is a set of adapter configuration settings that can be used in different locations to connect to a wireless network. Creating different profiles is a good way of having pre-defined operating parameters available for use in various network environments. When the *WLAN Profile*s window initially displays, existing profiles appear in the *WLAN Profiles* list box.

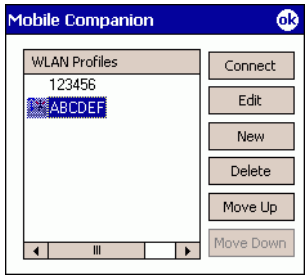


Figure 5-16. Mobile Companion - WLAN Profiles

Select a profile from the list box and tap **Connect** to set that profile as the active profile. The active profile displays the transmit and receive icon to the left. Once selected, the terminal is using the ESSID, encryption and power consumption settings initially configured for that profile.

Editing a Profile

Select a profile from the list box and tap **Edit** to display the *Mode* tab where the ESSID and operating mode can be changed for the profile. Use the *Encryption*, *IP Config, and Power* tabs as necessary to edit the profile power consumption and security parameters.

Creating a New Profile

Tap **New** to display the *Mode* tab wherein the profile name and ESSID can be set. Use the *Encryption*, *IP Config* and *Power* tabs as required to set security, network address information and power consumption level for the new profile.

Deleting a Profile

Select a profile to delete from the list box and tap **Delete** to remove the selected profile.

Ordering Profiles

Select a profile from the list box and tap **Move Up** or **Move Down** to order the profile. If the current profile association is lost, Mobile Companion attempts to associate with the first profile in the list and then the next until a new association is achieved.

Configuring the Radio Using a Registration File

Default settings for the Spectrum24 radio card can be set on the terminal using a registration (.reg) file. A sample .reg file is provided on the SMDK. Edit the file using a text editor. See notes in the sample file for the key information that can be modified.

Save this text file as SPECTRUM24DS.REG. Use ActiveSync to copy this file to the *Platform* folder on the terminal. Once this file is loaded onto the terminal, these settings are restored after a hard reset.

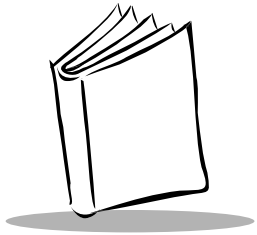
Note: *Refer to the SMDK for the latest SPECTRUM24DS.REG sample file.*

Sample Spectrum24DS .Reg File

```
[HKEY_LOCAL_MACHINE\Comm\NETWLAN]
  "Group"="NDIS"
  "ImagePath"="NETWLAN.dll"
  "DisplayName"="802.11b Wireless LAN"

[HKEY_LOCAL_MACHINE\Comm\NETWLAN\Linkage]
  "Route"=multi_sz:"NETWLAN1"

[HKEY_LOCAL_MACHINE\Comm\NETWLAN1]
  "Group"="NDIS"
  "ImagePath"="NETWLAN.dll"
  "DisplayName"="802.11b Wireless LAN"

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\EAPWLAN]
  "Prefix"="LEP"
  "Dll"="EAPWLAN.dll"
  "Index"=dword:00000001
  "Order"=dword:00000004

[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\TRANS]
  "Prefix"="PRT"
  "Dll"="TRANS.dll"
  "Index"=dword:00000001
  "Order"=dword:00000004

; TYPE 2 TRILOGY
[HKEY_LOCAL_MACHINE\Drivers\PCMCIA\Symbol_Technologies-LA4111_Spectrum24_Wireless_LAN_PC_Card-077d]
  "Dll"="NDIS.dll"
  "Prefix"="NDS"
  "Miniport"="NETWLAN"
  "Index"=dword:00000001

; TYPE 3 TRILOGY
[HKEY_LOCAL_MACHINE\Drivers\PCMCIA\Symbol-Spectrum24_LA4100_Series_WLAN_PC_Card-e063]
  "Dll"="NDIS.dll"
  "Prefix"="NDS"
  "Miniport"="NETWLAN"
```

```
  "Index"=dword:00000001

; TYPE 3 Socketcom
[HKEY_LOCAL_MACHINE\Drivers\PCMCIA\Socket-CF+_LP_WLAN_Card_Rev_A-09DF]
  "Dll"="NDIS.dll"
  "Prefix"="NDS"
  "Miniport"="NETWLAN"
  "Index"=dword:00000001

[HKEY_LOCAL_MACHINE\Comm\NETWLAN1\Parms]
  "AdapterModel"="802.11b Wireless LAN     "; must match DisplayName value
  "Version"="3.7.11.4"
  "CardType"=dword:00000000
  "IoBaseAddress"=dword:00000300
  "IoLength"=dword:00000046
  "Password"="3745A4CA1FD2D1CFC10041C7576C0E6423A815E6D4D094C8D87441C26A6C0211153DDE9C851085"
  "RogueAPDetection"=dword:00000001
  "ProtocolsToBindTo"=multi_sz:"NOT","NDISUIO","EAPWLAN"
  "Profile"="Default"
  "Index"=dword:00000000
  "ESS_ID"="101"
  "Ess_TxPower"=dword:00000000
  "AdHoc_TxPower"=dword:00000000
  "Channel"=dword:00000011
  "PortType"=dword:00000001
  "LongPreamble"=dword:00000000
  "ChannelMask"="000007FF"
  "IntlRoaming"=dword:00000000
  "MUEncryptionAlgorithm"=dword:00000001
  "EncryptionKey4"="292E6BE5D61CEB092CEEA957038A21B5BBEAEF8C5F8D5FC24CDCFC0CCB"
  "EncryptionKey3"="295EEC95BE6CD479ED9E512706FA45C54D9A99FC25FD8EB251AC650C8B"
  "EncryptionKey2"="060105285C8933EEECCA3F7154FB1636A719221BCDDBCCF98FE9600C4A"
  "EncryptionKey1"="1AA4F34F4E884A1960A63DD9CBB0EEBA2FFA689D16C7751D933D6D0C80"
  "EncryptionKeyId"=dword:00000001
  "PowerIndex"=dword:00000001
  "BT_TIME"=dword:00000030
  "Diversity"=dword:00000000
  "LCachePwd"=dword:1                              ; 0 = Save always in plain text
                                                   ; 1 = Save until a Warm Boot (not in registry, not in plain text)
                                                   ; 2 = Do not save password at all
  "LTimeoutMinutes"=dword:00000000         ; In Hexidecimal, only used for LCachePwd = 1
                                                   ; Typical Examples:
                                                   ; dword:00000000 = Do not use timeout
                                                   ; dword:0000000F =   15 = 15 minutes
                                                   ; dword:0000001E =   30 = 30 minutes
                                                   ; dword:0000003C =   60 = 1 hour
                                                   ; dword:00000078 = 120 = 2 hours
                                                   ; dword:000000F0 = 240 = 4 hours
                                                   ; dword:000001E0 = 480 = 8 hours
                                                   ; dword:000002D0 = 720 = 12 hours
                                                   ; dword:000005A0 = 1440 = 1 Day

;  "UNAME"="myLEAPUserName                    "; Only uncomment when LCachePwd = 0
;  "UPwd"="myLEAPPassword                     "; Only uncomment when LCachePwd = 0

[HKEY_LOCAL_MACHINE\Comm\NETWLAN1\Parms\TcpIp]
  "DhcpMaxRetry"=dword:00000001
  "DhcpRetryDialogue"=dword:ffffffff
  "DhcpInitDelayInterval"=dword:00002710
  "UseZeroBroadcast"=dword:00000000
```

```
  "AutoCfg"=dword:00000001
  "EnableDHCP"=dword:00000001                    ; 0 = Use static IP
                                                 ; 1 = Use DHCP
;*****************************************************
; Uncomment the next keys if Static IPs are used
;*****************************************************
;   "IpAddress"="192.168.1.1                     "; Replace these IP address with the required static values
;   "Subnetmask"="192.168.1.2"
;   "DefaultGateway"="192.168.1.3"
;   "DNS"="192.168.1.4"
;   "WINS"="192.168.1.5"
;*****************************************************
; End of static IP keys
;*****************************************************

[HKEY_LOCAL_MACHINE\SOFTWARE\Symbol Technologies, Inc.\NICTT]
  "EncryptionMask"=dword:00000007
  "APNetworks"=dword:00000001
  "AdHocNetworks"=dword:00000001
  "ManualConfig"=dword:00000000
  "Sounds"=dword:00000000

[HKEY_LOCAL_MACHINE\SOFTWARE\Symbol Technologies, Inc.\Profiles]
  "ProfileVersion"="3.7.0.0"
  "Password"="295E6B91D66EEB7B2C9DA95403F521B7BBE3EF875FF55FBF4CD3FC71104DECCFBED6D4C9ED1181"
  "CurrentProfileName"="Default"

[HKEY_LOCAL_MACHINE\SOFTWARE\Symbol Technologies, Inc.\Profiles\Default]
  "Index"=dword:00000000
  "ESS_ID"="101"
  "Channel"=dword:00000011
  "PortType"=dword:00000001
  "LongPreamble"=dword:00000000
  "TxPower"=dword:00000000
  "CountryCode"="US"
  "IntlRoaming"=dword:00000000
  "MUEncryptionAlgorithm"=dword:00000001
  "EncryptionKey4"="132733C8F4D20D704C31E667052839F3211610D3734011F98B80D00B97"
  "EncryptionKey3"="36035A4450CD63D191CA3202D8B7F662A819E9D0F99E80D972C2400BFB"
  "EncryptionKey2"="04A06E757903EC2AA18F2BE872C8367392F56738B61B761935DD2A0C05"
  "EncryptionKey1"="11C2DDD4F375059A31844E260963F035CF760BAD3544C981B016B90BF2"
  "EncryptionKeyId"=dword:00000001
  "EnableDHCP"=dword:00000001
  "Aps"=dword:00000001
  "PowerIndex"=dword:00000001
  "Enabled"=dword:00000001
  "MaybeVLan"=dword:00000000
  "EnableDHCP"=dword:00000001                    ; 0 = Use static IP
                                                 ; 1 = Use DHCP
;*****************************************************
; Uncomment the next keys if Static IPs are used
;*****************************************************
;   "IpAddress"="192.168.1.1                     "; Replace these IP addresses with the required static values
;   "Subnetmask"="192.168.1.2"
;   "DefaultGateway"="192.168.1.3"
;   "DNS"="192.168.1.4"
;   "WINS"="192.168.1.5"
;*****************************************************
; End of static IP keys
;*****************************************************
```



Chapter 6
AirBEAM Smart

Chapter Contents

Introduction

The AirBEAM Smart product allows specially designed software packages to be transferred between a host server and Symbol wireless handheld devices. Before transfer, AirBEAM Smart checks and compares package version, so that only updated packages are loaded.

AirBEAM Smart resides on radio-equipped client devices, and allows them to request, download, and install software, as well as to upload files and status data. Both download and upload of files can be accomplished in a single communications session. The ability to transfer software over a radio network can greatly reduce the logistical efforts of client software management.

In an AirBEAM Smart system, a network-accessible host server acts as the storage point for the software transfer. The AirBEAM Smart Client uses the industry standard FTP or TFTP file transfer protocols to check the host system for updates, and if necessary, to transfer updated software.

AirBEAM Package Builder

In a typical distributed AirBEAM system, software to be transferred is organized into packages. In general, an AirBEAM package is simply a set of files that are assigned attributes both as an entire package and as individual component files. The package is assigned a version number, and the transfer occurs when an updated version is available.

An AirBEAM package can optionally contain developer-specified logic to be used to install the package. Installation logic is typically used to update client device flash images or radio firmware. Examples of common AirBEAM packages would include packages for custom client application software, radio firmware and AirBEAM Smart Client software.

Once these packages are built, they are installed on the host server for retrieval by the handheld device. The AirBEAM Package Builder is a utility used to define, generate and install AirBEAM packages to a server. The packages are then loaded from the server onto a client device equipped with an AirBEAM Smart Client executable.

For detailed instructions on how to define, generate and install AirBEAM packages to the server, refer to the *AirBEAM Package Builder Product Reference Guide*, p/n 72-55769-xx.

AirBEAM Smart Client

The AirBEAM Smart Client is installed on your handheld terminal. It is configured with the server access information, the names of the packages to be downloaded and other controlling parameters. When the AirBEAM Smart Client is launched, the device connects to the specified FTP server and checks the packages it is configured to look for. If the package version was updated, the client requests the transfer.

AirBEAM License

The AirBEAM Smart Client is a licensed software product. The AirBEAM Smart Client's version synchronization functionality is enabled through a license key file that is stored on the client device. The license key file can be built into AirBEAM Smart Client's image, or downloaded in a special AirBEAM package.

The AirBEAM license key file contains a unique key and a customer specific banner that is displayed when the AirBEAM Smart Client version synchronization logic is invoked.

Configuring the AirBEAM Smart Client

1. Tap *Start - Programs - AirBEAM Smart Client*. The *AirBEAM Smart CE* window appears.
2. Tap *File - Configure*. The *AirBEAM* configuration window appears.

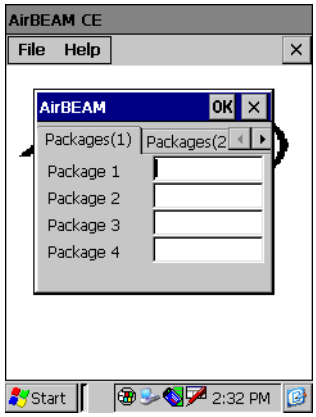
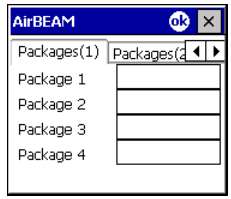


Figure 6-1. AirBEAM Configuration Window

The configuration window is used to view and edit AirBEAM Smart Client configurations. This dialog box has six tabs that you can modify - Packages(1), Packages(2), Server, Misc(1), Misc(2) and Misc(3).

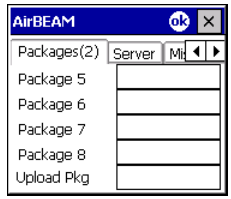
Packages(1) Tab



This tab is used to specify the package name of the first four of eight packages that are to be loaded during the AirBEAM synchronization process. The specified package name must correspond to a package that is available on the specified package server.

Field	Description
Package 1	Package name of the first of eight packages. This is an optional field.
Package 2	Package name of the second of eight packages. This is an optional field.
Package 3	Package name of the third of eight packages. This is an optional field.
Package 4	Package name of the fourth of eight packages. This is an optional field.

Packages(2) Tab

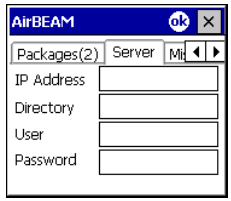


This tab is used to specify the package name of the last four of eight packages that are to be loaded during the AirBEAM synchronization process. The specified package name must correspond to a package that is available on the specified package server.

Field	Description
Package 5	Package name of the fifth of eight packages. This is an optional field.
Package 6	Package name of the sixth of eight packages. This is an optional field.
Package 7	Package name of the seventh of eight packages. This is an optional field.
Package 8	Package name of the eighth of eight packages. This is an optional field.
Upload Pkg	Package name of a package that is to be processed for “upload files” during the AirBEAM synchronization process. The specified package name must correspond to a package that is available on the specified package server. This is an optional field.

Server Tab

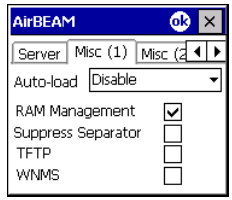
This tab is used to specify the configurations of the server to which the client connects during the package synchronization process.



Field	Description
IP Address	The IP Address of the server. It may be a host name or a dot notation format.
Directory	The directory on the server that contains the AirBEAM package definition files. All AirBEAM package definition files are retrieved from this directory during the package synchronization process.
User	The FTP user name that is used during the login phase of the package synchronization process.
Password	The FTP password that corresponds to the FTP user specified in the **User** field. The specified password is used during the login phase of the package synchronization process.

Misc(1) Tab

This tab is used to configure various miscellaneous features.

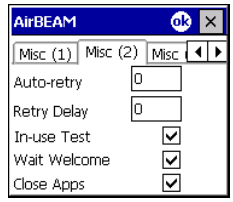


Field	Description
Auto-load	This drop-down list is used to specify how the AirBEAM Smart Client is to be invoked automatically when the client device is rebooted. The selections are: **Disable**: the AirBEAM Smart Client is not invoked automatically during the boot sequence. **Interactive**: the AirBEAM Smart Client is invoked automatically during the boot sequence. The package synchronization process is started automatically. The *Synchronization Dialog* box appears, and the user is required to press the **OK** button when the process is complete. **Non-interactive**: the AirBEAM Smart Client is invoked automatically during the boot sequence. The package synchronization process is started automatically. The *Synchronization Dialog* box is displayed, but the user is not required to tap **OK** when the process is complete. The *Synchronization Dialog* box terminates automatically. **Background**: the AirBEAM Smart Client is invoked automatically during the boot sequence. The package synchronization process is started automatically. Nothing is displayed while the synchronization process is occurring.
RAM Management	This check box specifies whether the automatic RAM management is enabled during the package synchronization process. If enabled, RAM management logic is invoked when there is not enough free disk space to download a package. The RAM management logic attempts to remove any discardable AirBEAM packages resident on the client.

Field	Description
Suppress Separator	This check box specifies whether the automatic insertion of a file path separator character should be suppressed when the client generated server package definition file names. When enabled, the parameter also disables the appending of .apd to the package. This feature is useful for AS/400 systems, in which the file path separator character is a period. When this feature is enabled, the server directory (Directory) and package name (Package 1, Package 2, Package 3, and Package 4) are appended "as is" when building the name for the server package definition file. When this feature is disabled, a standard file path separator is used to separate the server directory (Directory) and package name (Package 1, Package 2, Package 3, and Package 4) when building the name for the server package definition file. In addition, an .apd extension is appended automatically.
TFTP	This check box specifies whether the TFTP protocol is to be used to download files. By default, the AirBEAM Smart Client uses the FTP protocol.
WNMS	This check box specifies whether the AirBEAM Smart Client uploads a WNMS information file at the end of each version synchronization.

Misc(2) Tab

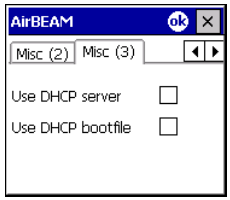
This tab is used to configure various miscellaneous features.



Field	Description
Auto-retry	This field is used to specify whether the AirBEAM Smart Client automatically retries if there is a failure during the synchronization process. If this feature is enabled, the AirBEAM Smart Client displays a popup dialog indicating the attempt of a retry. The popup dialog is displayed for the number of seconds specified in the *Retry Delay* field. The valid values for this field are: **-1**: the AirBEAM Smart Client automatically retries indefinitely. **0**: the AirBEAM Smart Client does not automatically retry. **-0**: the AirBEAM Smart Client automatically retries up to the number of times specified.
Retry Delay	This field specifies the amount of time, in seconds, that the AirBEAM Smart Client delays before automatically retrying after a synchronization failure.
In-use Test	This check box specifies whether the AirBEAM Smart Client tests to determine if a file is in-use before downloading. If the *In-use Test* feature is enabled, the AirBEAM Smart Client downloads a temporary copy of any files that are in-use. If any temporary in-use files are downloaded the AirBEAM Smart Client automatically resets the client to complete the copy of the in-use files. If the *In-use Test* feature is disabled, the synchronization process fails (-813) if any download files are in-use.
Wait Welcome	This check box specifies whether the AirBEAM Smart Client waits for the WELCOME windows to be completed before automatically launching the synchronization process after a reset.
Close Apps	This check box specifies whether the AirBEAM Smart Client automatically attempts to close non-system applications prior to resetting the mobile unit. If enabled the AirBEAM Smart Client sends a WM_CLOSE message to all non-system applications before resetting the mobile unit. This feature offers applications the opportunity to prepare (i.e. close open files) for the pending reset.

Misc(3) Tab

This tab is used to configure various miscellaneous features.



Field	Description
Use DHCP server	This check box control specifies whether the AirBEAM Smart Client uses the DHCP response option 66 to specify the *IP address* of the FTP/TFTP server. If enabled, special RF network registry settings are required to force the DHCP server to return the "TFTP server name" field (option 66). The special RF network registry settings are included, but commented out, in the radio network registry initialization files (essid_xxxx_yy.reg).
Use DHCP bootfile	This check box control specifies whether the AirBEAM Smart Client uses the DHCP response option 67 to specify the *Package* and *Package 1* parameters. If enabled, special RF network registry settings are required to force the DHCP server to return the "Bootfile name" field (option 67). The special RF network registry settings are included, but commented out, in the radio network registry initialization files (essid_xxxx_yy.reg).

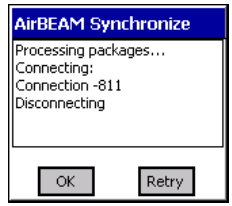
Synchronizing with the Server

When the synchronization process is initiated, the AirBEAM Smart Client attempts to open an FTP session using the AirBEAM Smart Client configuration. Once connected, the client processes the specified packages. Packages are loaded only if the server version of a given package is different from the version loaded on the client. Once the upload process is complete, the AirBEAM Smart Client closes the FTP session with the server.

The AirBEAM Smart Client can launch an FTP session with the server either manually, when initiated by the user, or automatically.

Manual Synchronization

1. Configure the AirBEAM Smart Client. See *Configuring the AirBEAM Smart Client* on page 6-4.
2. From the main *AirBEAM CE* window, tap *File* - *Synchronize*.
3. Once connected, the AirBEAM Synchronize window appears.
   - The Status List displays status messages that indicate the progress of the synchronization process.
   - Tap **OK** to return to the Main Menu. This button remains inactive until the synchronization process is complete.
   - Tap **Retry** to restart the synchronization process. This button is activated only if there is an error during the synchronization process.



Automatic Synchronization

The AirBEAM Smart Client can be configured to launch automatically using the Misc(1) Preference tab (see *Misc(1) Tab* on page 6-7). When setting automatic synchronization, use the Auto-load drop-down list to specify how the AirBEAM Smart Client should be invoked automatically when the client device is rebooted. Refer to *Misc(1) Tab* on page 6-7 for instructions on enabling Auto Sync.

AirBEAM Staging

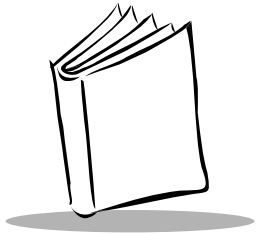
The AirBEAM Smart staging support is intended to speed up and simplify the process of staging custom or updated operating software onto mobile devices directly from manufacturing. The staging support is part of the AirBEAM Smart CE Client that is integrated into the terminal.

The AirBEAM Smart support works by defaulting the AirBEAM Client configuration to a known set of values and launching the AirBEAM Smart package download logic. A staging environment, including an RF network, FTP server and AirBEAM packages must be setup. Ideally a staging network and server should be setup to match the default AirBEAM Staging client configuration.

The AirBEAM Smart staging utility is invoked by tapping *Start* - *Programs* - *AirBEAM Staging*.

The AirBEAM Staging support provides several benefits:

- Many devices can be simultaneously loaded over the RF network.
- The AirBEAM staging utility provides a simple single dialog user interface that is used to quickly start the software installation process.



Chapter 7
Applications

Chapter Contents

Introduction

Your terminal includes Calendar, Contacts, Tasks, Inbox, and Notes applications. You can use these programs individually or together. For example, e-mail addresses stored in Contacts can be used to address e-mail messages in Inbox.

Using ActiveSync, you can synchronize information in these applications between your host computer and your terminal. Each time you synchronize, ActiveSync compares the changes you made on your terminal and host computer and updates both with the latest information. For information on using ActiveSync, see Chapter 4, *Communication*, and ActiveSync Help on the host computer.

You can switch to any of these programs by tapping them on the *Start* menu.

Calendar

Use Calendar to schedule appointments such as meetings. You can view your appointments in different ways (Agenda, Day, Week, Month, and Year) and easily change views using the *View* menu.

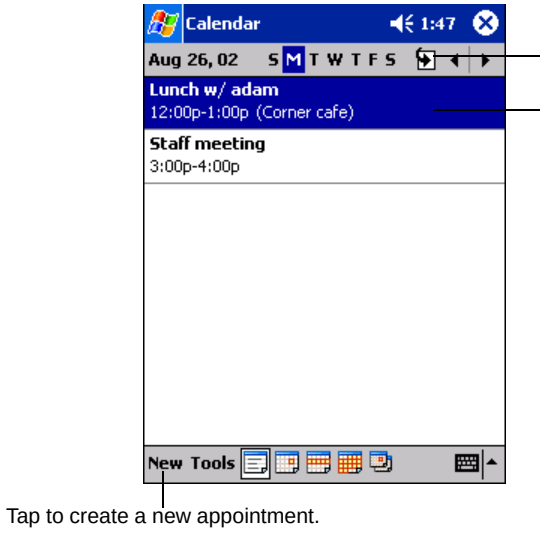


Figure 7-1. Calendar Application

Note: *You can customize the Calendar display, such as changing the first day of the week, by tapping* Tools - Options.

Creating Appointments

To create an appointment:

1. Tap *Start* - *Calendar* to open the application.
2. If you are in Day or Week view, tap the desired date and time for the appointment.
3. Tap *New*.

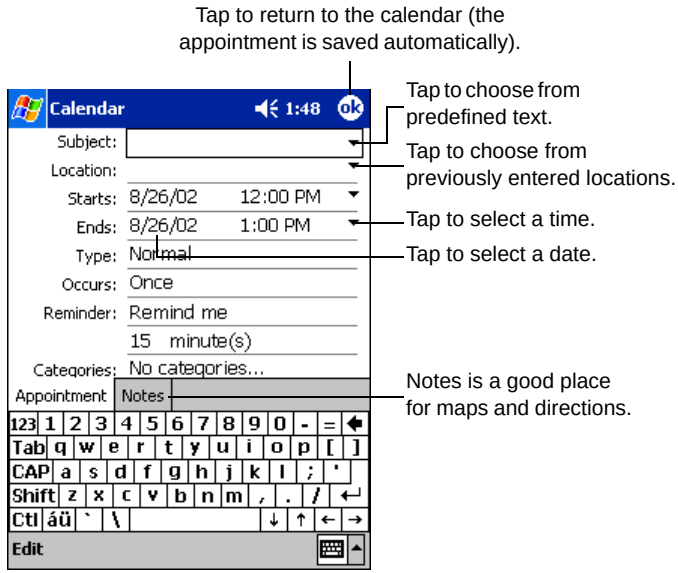


Figure 7-2. Entering an Appointment

4. Using the input panel, enter the subject and a location. Tap first to select the field.
5. If needed, tap the date and time to change them.
6. Enter other desired information. Hide the input panel to see all available fields.
7. To add notes, tap the *Notes* tab. You can enter text, draw, or create a recording. For more information on creating notes, see *Notes* on page 7-12.
8. When finished, tap **OK** to return to the Calendar.

Note: *If you select* Remind me *in an appointment, your terminal notifies you according to the options set in* Start - Settings - Personal *tab* - Sounds & Notifications.

Using the Summary Screen

When you tap an appointment in Calendar, a summary screen displays. Tap *Edit* to change the appointment.

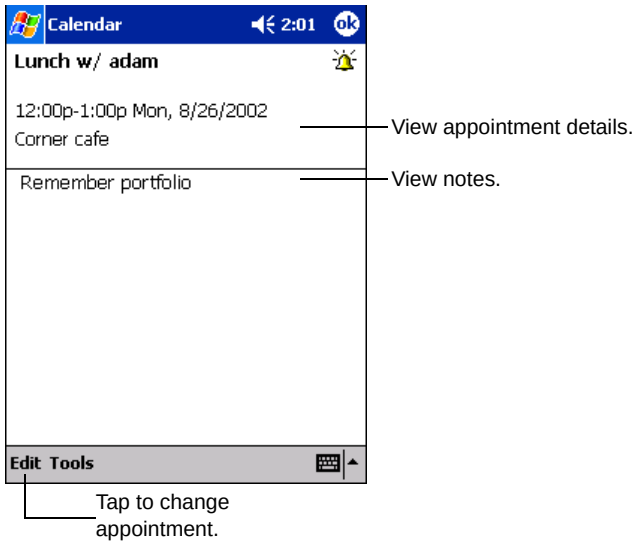


Figure 7-3. Appointment Summary Screen

Creating Meeting Requests

You can use Calendar to set up meetings with users of Outlook or Pocket Outlook. The meeting notice is created automatically and sent either when you synchronize Inbox or when you connect to your e-mail server. Indicate how you want meeting requests sent by tapping *Tools* - *Options*. If you send and receive e-mail messages through ActiveSync, select *ActiveSync*.

To schedule a meeting:

1. Create an appointment.
2. In the appointment details, hide the input panel, then tap *Attendees*.

3. From the list of e-mail addresses you've entered in Contacts, select the meeting attendees.

The meeting notice is created and placed in the Outbox folder. For more information on sending and receiving meeting requests, see Calendar Help and Inbox Help on your terminal.

Contacts

Contacts maintains a list of associates and friends so you can easily locate information at home or on the road. Using the infrared (IR) port, you can share Contacts information with other users.

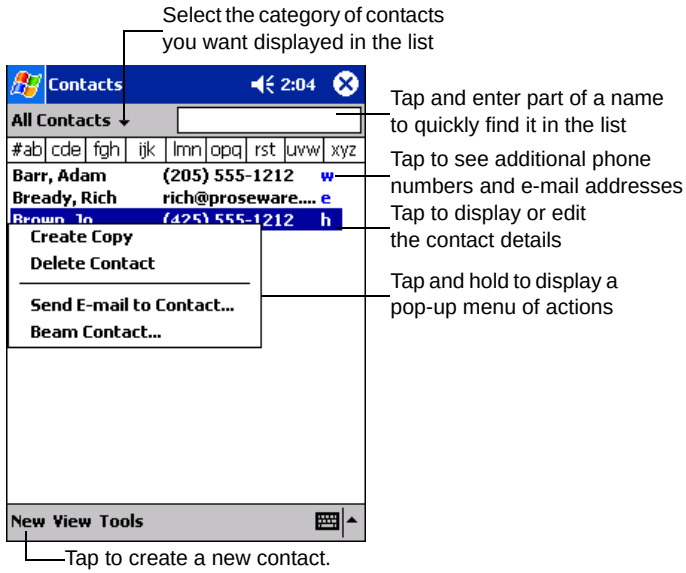


Figure 7-4. Contact Application

Note: *To change the way information is listed, tap* Tools - Options.

To create a contact:

1. Tap *Start - Contacts to open the application.*

2. Tap *New*.

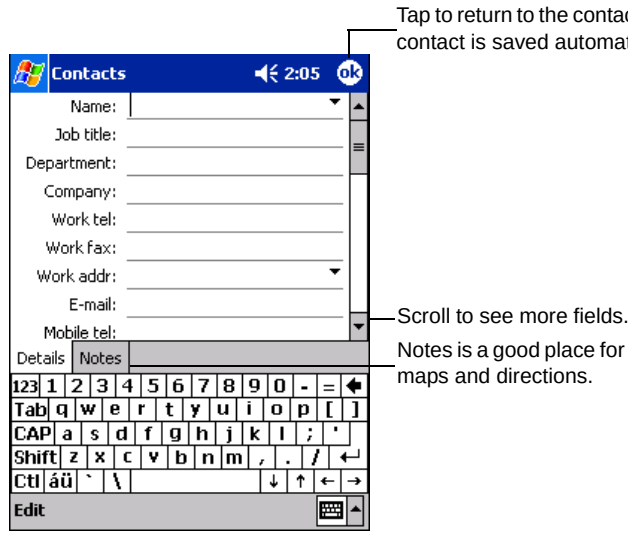


Figure 7-5. Creating a Contact

3. Using the input panel, enter a name and other contact information. Scroll down to see all fields.
4. To assign the contact to a category, scroll to and tap *Categories*. Select a category from the drop-down list. In the contact list, you can display contacts by category.
5. To add notes, tap the *Notes* tab. You can enter text, draw, or create a recording. For more information on creating notes, see *Notes* on page 7-12.
6. When finished, tap **OK** to return to the contact list.

You may find a contact in one of four ways:

- In the contact list, enter a contact name in the box under the navigation bar. To show all contacts again, clear text from the box or tap the button to the right of the box.
- In the contact list, tap the category list (labeled All Contacts by default) and select the type of contact to display. To show all contacts again, select *All Contacts*. To view a contact not assigned to a category, select *None*.
- To view the names of companies your contacts work for, in the contact list, tap *View - By Company*. The number of contacts that work for that company appears to the right of the company name.
- Tap *Start - Find*, enter the contact name, select *Contacts* for the type, then tap *Go*.

Using the Summary Screen

When you tap a contact in the contact list, a summary screen displays. Tap *Edit* to change the information.

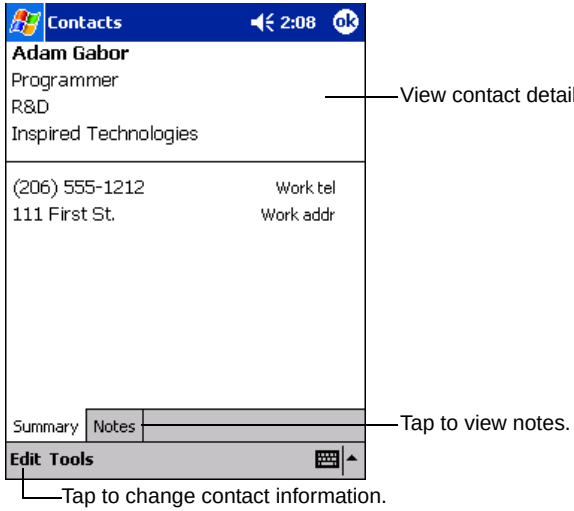


Figure 7-6. Contacts Summary Screen

Tasks

Use Tasks to keep a “to do” list.

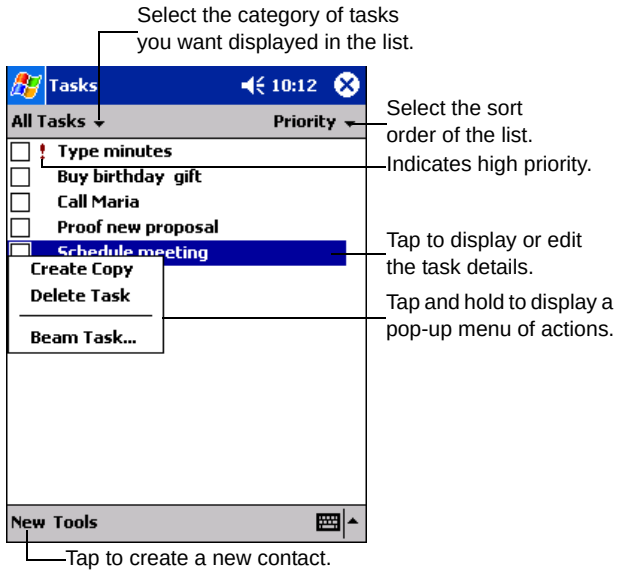


Figure 7-7. Task Application

Note: *To change the way information displays in the list, tap* Tools - Options.

To create a task:

1. Tap *Start* - *Tasks* to open the application.

2. Tap *New*.

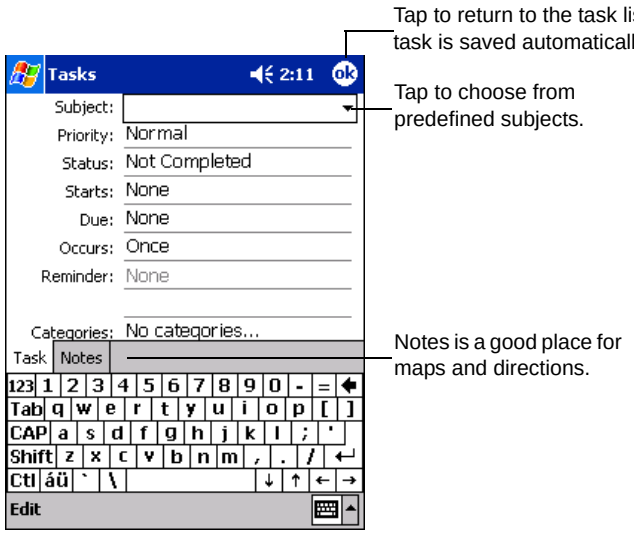


Figure 7-8. Creating a Task

3. Using the input panel, enter a description in the *Subject* field.
4. You can enter a start date and due date or enter other information by first tapping the field. If the input panel is open, hide it to see all available fields.
5. 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.
6. To add notes, tap the *Notes* tab. You can enter text, draw, or create a recording. For more information on creating notes, see *Notes* on page 7-12.
7. Tap **OK** to return to the task list.

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

Using the Summary Screen

When you tap a task in the task list, a summary screen displays. To change the task, tap *Edit*.

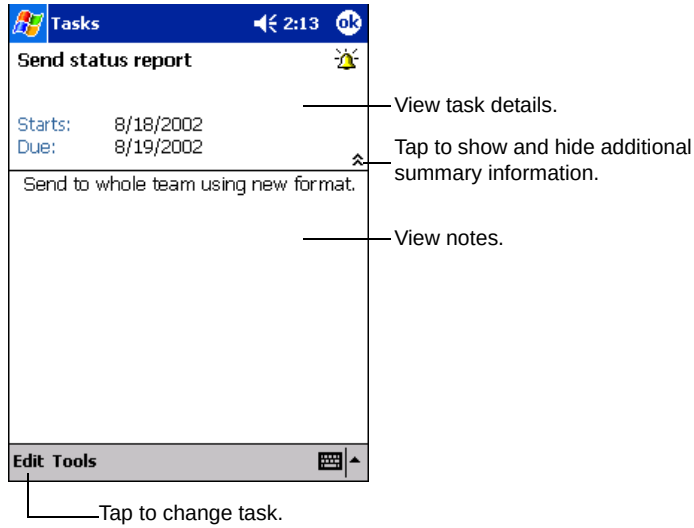


Figure 7-9. Task Summary Screen

Notes

Capture thoughts, reminders, ideas, drawings, and phone numbers with Notes. You can create a written note or a recording. You can also include a recording in a note. If a note is open when you create the recording, it is included in the note as an icon. If the note list is displayed, it is created as a stand-alone recording.

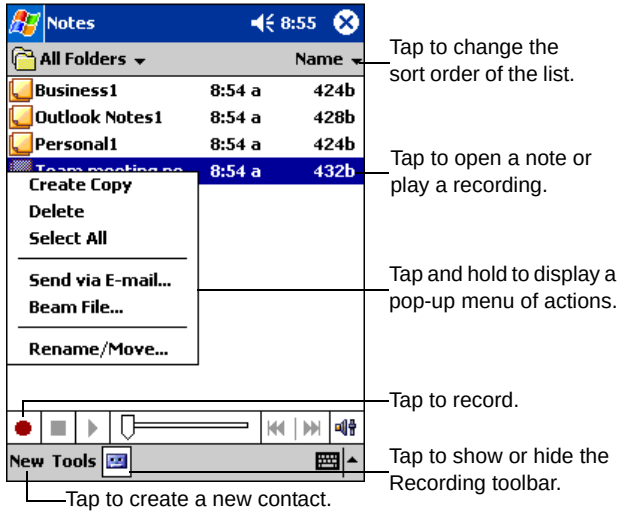


Figure 7-10. Notes Application

To create a note:

1. Tap *Start* - *Notes* to open the application.
2. Tap *New*.
3. Create your note by writing, drawing, typing, and recording. For more information about using the input panel, writing and drawing on the screen, and creating recordings, see Chapter 2, *Operating the PPT 8800*.

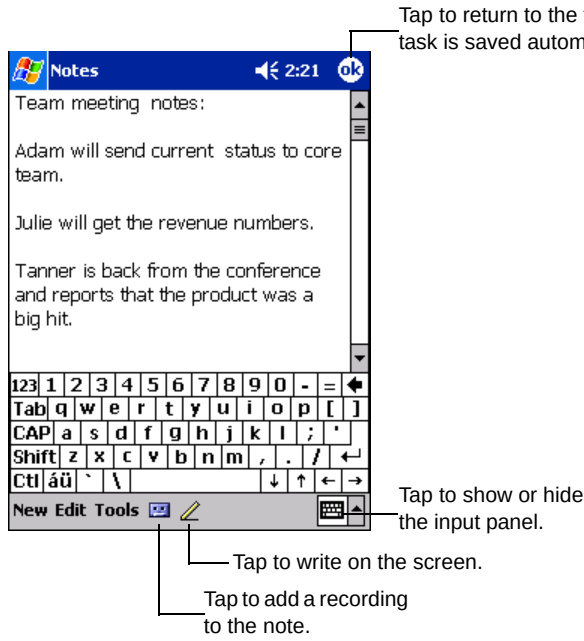


Figure 7-11. Creating a Note

Inbox

Use Inbox to send and receive e-mail messages in the following ways:

- Synchronize e-mail messages with Microsoft Exchange or Outlook on your host computer.
- Send and receive e-mail messages by connecting directly to an e-mail server through an Internet service provider (ISP) or a network.

Synchronizing E-mail Messages

To synchronize e-mail messages, first enable Inbox synchronization in ActiveSync options. For information on enabling Inbox synchronization, see ActiveSync Help on the host computer.

During synchronization:

- E-mail messages are copied from the Inbox folder of Exchange or Outlook on your host computer to the ActiveSync folder on your terminal. By default, you receive messages from the last three days only, the first 100 lines of each message, and file attachments of less than 100 KB in size.
- E-mail messages in the Outbox folder on your terminal are transferred to Exchange or Outlook, then sent from those programs.
- E-mail messages in subfolders must be selected in ActiveSync on your host computer to be transferred.

Connecting Directly to an E-mail Server

You can set up a connection to an e-mail server to send and receive e-mail messages using a network connection and Inbox on your terminal.

Note: *The ISP or network must use a POP3 e-mail server and an SMTP gateway.*

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

Messages that you receive directly from an e-mail server are linked to your e-mail server rather than your host computer. When you delete a message on your terminal, it's also deleted from the e-mail server the next time you connect.

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 terminal.

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

You can use multiple e-mail services to receive your messages. For each e-mail service you intend to use, first set up and name the e-mail service. If you use the same service to connect to different mailboxes, set up and name each mailbox connection.

Setting Up an E-mail Service

In Inbox on your terminal, tap *Accounts*, then *New Account*. Follow the instructions in the wizard on the screen. For an explanation of a screen, tap *Start*, then *Help*.

When finished, tap *Accounts*, then *Connect* to connect to your e-mail server. For more information on using the Inbox program, see *Inbox* on page 7-14.

Using the Message List

Messages you receive display in the message list box. By default, the most recently received messages are listed first.

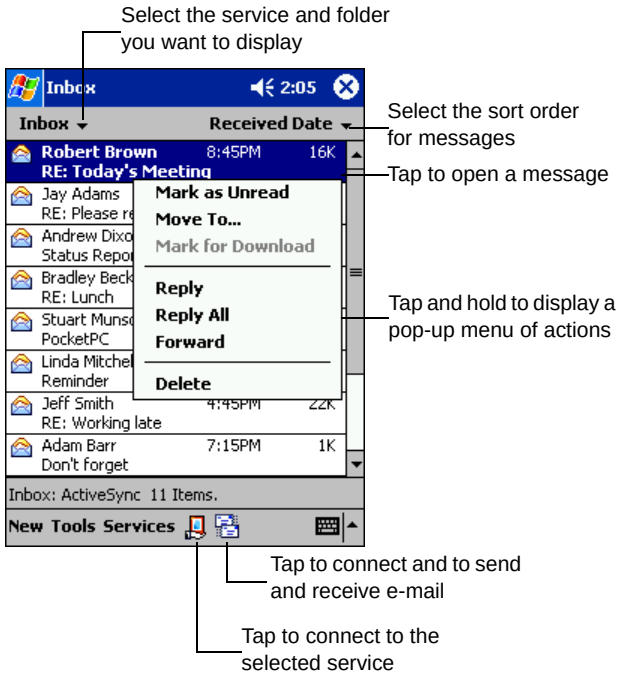


Figure 7-12. Inbox Application

When you receive a message, tap it in the list box to open it. Unread messages display in bold.

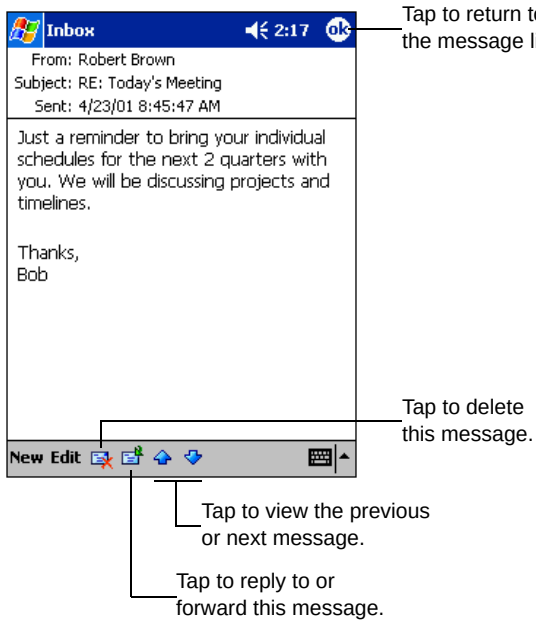


Figure 7-13. Viewing a Message

When you connect to your e-mail server or synchronize with your host computer, Inbox downloads by default only messages from the last three days, the first 100 lines of each new message, and file attachments of less than 100 KB in size. The original messages remain on the e-mail server or your host computer.

You can mark the messages that you want to retrieve completely the next time you synchronize or connect to your e-mail server. In the message list, tap and hold the message you want to retrieve. On the pop-up menu, tap *Mark for Download*. The icons in the Inbox message list indicates message status.

You specify your downloading preferences when you set up the service or select your synchronization options. You can change them at any time:

- Change options for Inbox synchronization using ActiveSync options. For more information, see ActiveSync Help.

- Change options for direct e-mail server connections in Inbox on your terminal. Tap *Tools* - *Options*. On the *Accounts* tab, tap the account you want to change. Tap and hold the account and select *Delete* to remove it.

Creating E-mail Messages

To create an e-mail message:

1. Tap *New*.
2. In the *To* field, enter an e-mail or SMS address of one or more recipients, separating each with a semicolon, or select a name from the contact list by tapping the *Address Book* icon. All e-mail addresses entered in the e-mail fields in Contacts appear in the Address Book.

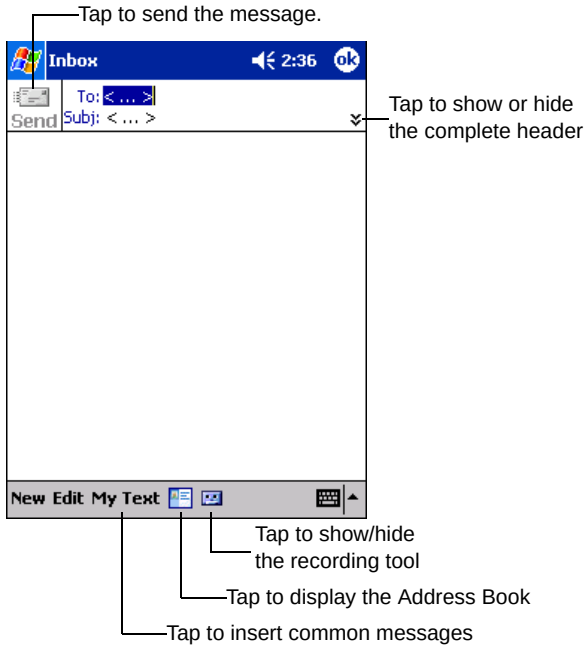


Figure 7-14. Creating a Message

3. Enter your message. To enter preset or frequently used messages, tap *My Text* and select a message.
4. Tap *Send* when you're finished. If you're working offline, the message is transferred to the Outbox folder and sent the next time you synchronize.

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

Managing E-mail Messages and Folders

By default, messages are displayed in one of five folders for each account you've created: Inbox, Deleted Items, Drafts, Outbox, and Sent Items. The Deleted Items folder contains messages that have been deleted on the terminal. The behavior of the Deleted and Sent Items folders depends on the options you selected. In the message list, tap *Tools - Options*. On the *Message* tab, select your options.

To organize messages into additional folders, tap *Tools - Manage Folders* to create new folders. To move a message to another folder, in the message list, tap and hold the message, then tap *Move to* on the pop-up menu.

Folder Behavior with ActiveSync and Direct Connection to Server

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 are automatically synchronized with your terminal. You can select to synchronize additional folders by designating them for ActiveSync. The folders you create and the messages you move are 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 host computer.
- 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 your terminal and their copies on the mail server. The next time you connect, the mail server notes the messages missing from the terminal 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 moved to folders created from anywhere except the terminal.
- 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 terminal or host computer. This synchronization of folders occurs whenever you connect to your mail server, create new folders, or rename/delete folders when connected.

Pocket Word

Pocket Word works with Microsoft Word on your host computer to give you access to copies of your documents. You can create new documents on your terminal, or copy documents from your host computer to your terminal. Synchronize documents between your host computer and your terminal so that you have the most up-to-date information in both locations.

To create a new document in Pocket Word, such as a letter, meeting minutes, or a trip report, tap *Start - Programs - Pocket Word - New* icon. A blank document appears. Or, if you've selected a template for new documents in the *Options* dialog box, that template appears with appropriate formatting applied. You can open only one document at a time; when you open a second document, you'll be asked to save the first. You can save a document in a variety of formats, including Word (.doc), Pocket Word (.psw), Rich Text Format (.rtf), and Plain Text (.txt).

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

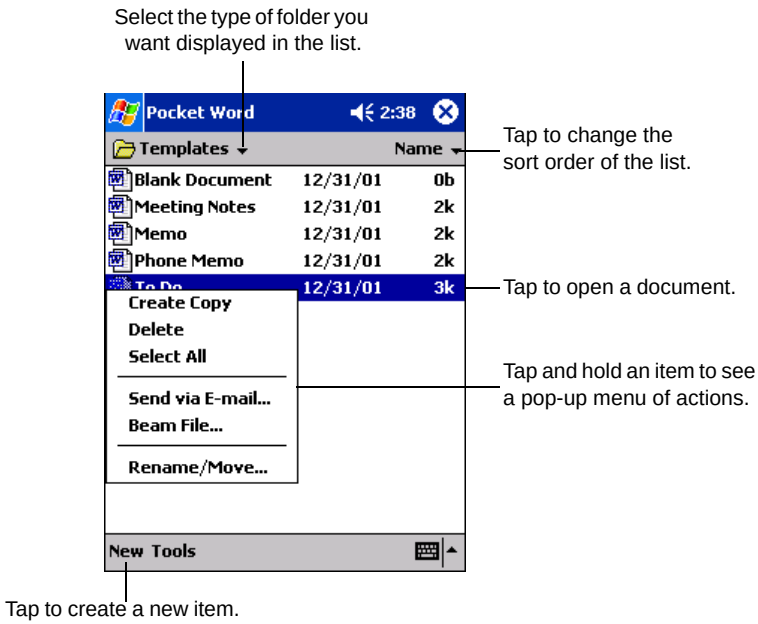


Figure 7-15. Using Pocket Word

You can enter information in Pocket Word in one of four modes (writing, drawing, typing, and recording) displayed on the *View* menu. Tap the *Show/Hide Toolbar* icon on the command bar to show or hide each mode's toolbar.

To change the zoom magnification, tap *View - Zoom*. Select the percentage. Select a higher percentage to enter text and a lower one to see more of your document.

If you're opening a Word document created on a host computer, tap *View - Wrap to Window* to see the entire document.

Typing Mode

Use the input panel to enter typed text into a document. See *Entering Information* on page 2-21 for more information.

To format or edit text, select the text using your stylus instead of the mouse to drag across the text. To search a document for the text you want, tap *Edit - Find/Replace*.

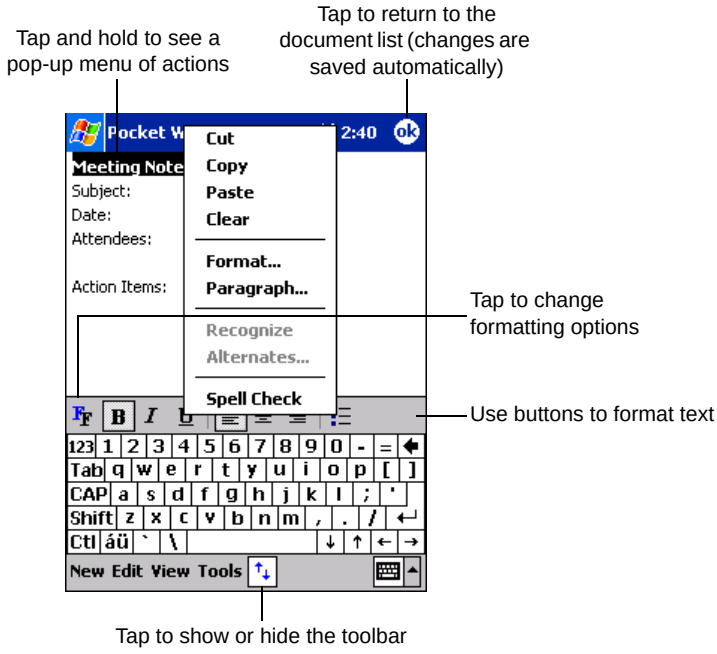


Figure 7-16. Formatting Text

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 increases to allow you to write more easily. For more information, see *Writing on the Screen* on page 2-24.

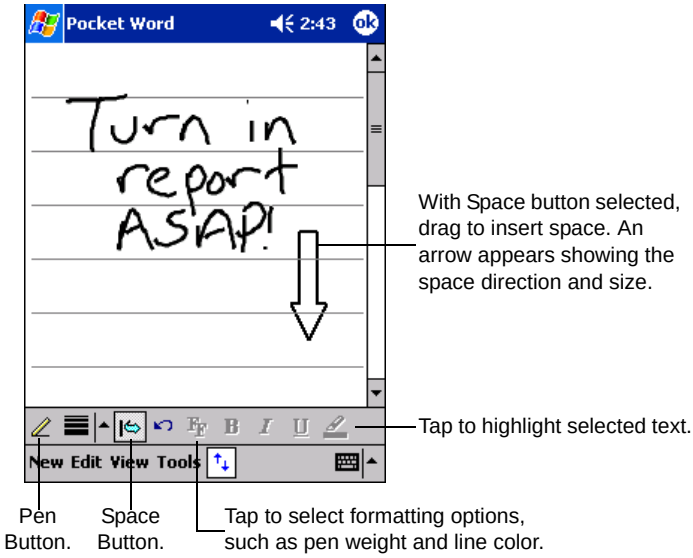


Figure 7-17. Writing on the Screen in Pocket Word

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 the following section.

Written words are converted to graphics (metafiles) when a Pocket Word document is converted to a Word document on your host computer.

Drawing Mode

In drawing mode, use your stylus to draw on the screen. Gridlines appear as a guide. When you lift your stylus after the first stroke, a drawing box indicates the boundaries of the

drawing. Every subsequent stroke within or touching the drawing box becomes part of the drawing. For more information, see *Drawing on the Screen* on page 2-29.

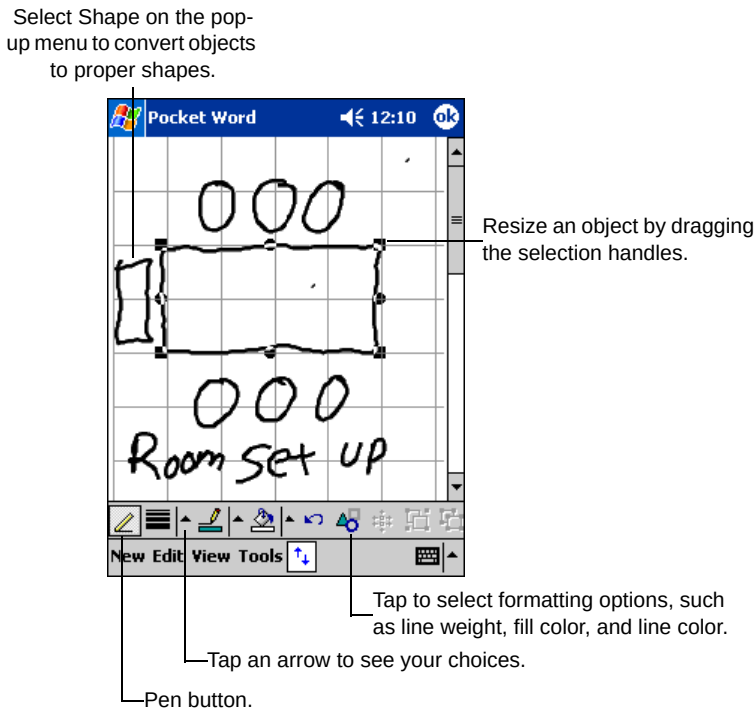


Figure 7-18. Drawing on the Screen in Pocket Word

Recording Mode

In recording mode, you may embed a recording into your document. Recordings are saved as .wav files. For more information, see *Recording a Message* on page 2-30.

For more information on using Pocket Word, tap *Start* - *Help*.

Pocket Excel

Pocket Excel works with Microsoft Excel on your host computer to provide easy access to copies of your workbooks. You can create new workbooks on your terminal, or copy workbooks from your host computer to your terminal. Synchronize workbooks between your host computer and your terminal so you have up-to-date content in both locations.

To create a new workbook in Pocket Excel, such as an expense report or mileage log, tap *Start - Programs - Pocket Excel - New*. A blank workbook appears. Or, if you've selected a template for new workbooks in the *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, you'll be asked to save the first. You can save a workbook in a variety of formats, including Pocket Excel (.pxl) and Excel (.xls).

Pocket Excel lists the files stored on your terminal. Tap a file in the list to open it. To delete, make copies of, or send a file, tap and hold a file in the list, then select the appropriate action from the pop-up menu.

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

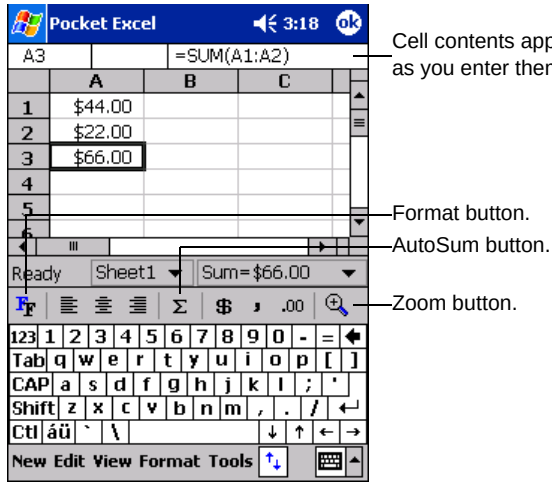


Figure 7-19. Using Pocket Excel

If your workbook contains sensitive information, you can protect it with a password. Open the workbook, tap *Edit* - *Password*. Every time you open the workbook, you must enter the password, so choose one easy for you to remember but hard for others to guess.

Tips for Working in Pocket Excel

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*.
- Show and hide window elements. Tap *View*, then 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 may want to freeze the top and leftmost panes in a worksheet to keep row and column labels visible as you scroll through a sheet.
- Split panes to view different areas of a large worksheet. Tap *View* - *Split*. Drag the split bar to where you want it. To remove the split, tap *View* - *Remove Split*.
- Show and hide rows and columns. To hide a row or column, select a cell in that row or column. Tap *Format* - *Row* or *Column* - *Hide*. To show a hidden row or column,

tap *Tools* - *Go To*, then type a reference that is in the hidden row or column. Tap *Format* - *Row* or *Column* - *Unhide*.

For more information on using Pocket Excel, tap *Start* - *Help*.

MSN® Messenger

With the MSN Messenger instant messaging program on your terminal you can:

- see who is online
- send and receive instant messages
- have instant message conversations with groups of contacts.

To use MSN Messenger, you need a Microsoft Passport™ account or a Microsoft Exchange e-mail account. You need a Passport to use MSN Messenger Service. If you have a Hotmail® or MSN account, you already have a Passport. Once you have either a Microsoft Passport or a Microsoft Exchange account, you can set up your account.

To switch to MSN Messenger, tap *Start* - *Programs* - *MSN Messenger* icon.

Setting Up Your Account

Before you can connect, set up the Passport or Exchange account and sign in:

1. Tap *Tools* - *Options*.
2. Enter your e-mail address and password.
3. Tap **Sign In**.

If you use MSN Messenger on your host computer, your contacts automatically appear on your terminal.

Working with Contacts

The MSN Messenger window is 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.

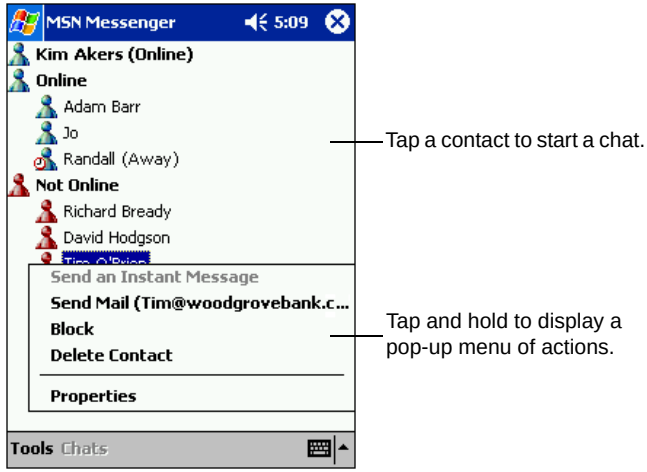


Figure 7-20. MSN Messenger Contacts

Note: *To see others online without being seen, tap* Tools - My Status - Appear Offline*. You appear offline but remain on the blocked contact's list.*

To unblock a contact, tap and hold the contact, then tap Unblock *on the pop-up menu.*

Chatting with Contacts

Tap a contact name to open a chat window. Enter your message in the text entry area at the bottom of the screen, or tap *My Text* to enter a preset message, and tap **Send**. To invite another contact to a multi-user chat, tap *Tools* - *Invite* and tap the contact you want to invite.

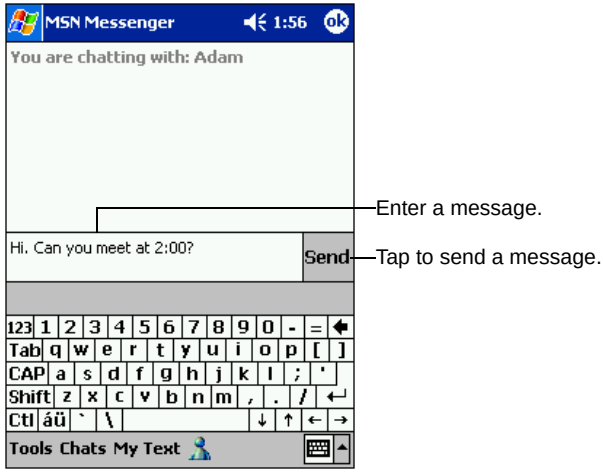


Figure 7-21. Sending a Message

To switch back to the main window without closing a chat, tap *Contacts*. To revert back to your chat window, tap *Chats* and select the person you were chatting with.

To know if the contact you are chatting with is responding, look for the message under the text entry area.

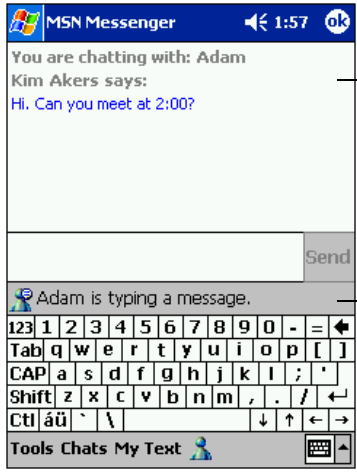


Figure 7-22. Receiving a Message

For more information on using MSN Messenger, tap *Start - Help*.

Windows Media Player

With Windows Media Player on your terminal you can play digital audio and video files that are stored on your terminal. To switch to Windows Media Player, tap *Start* - *Windows Media*.

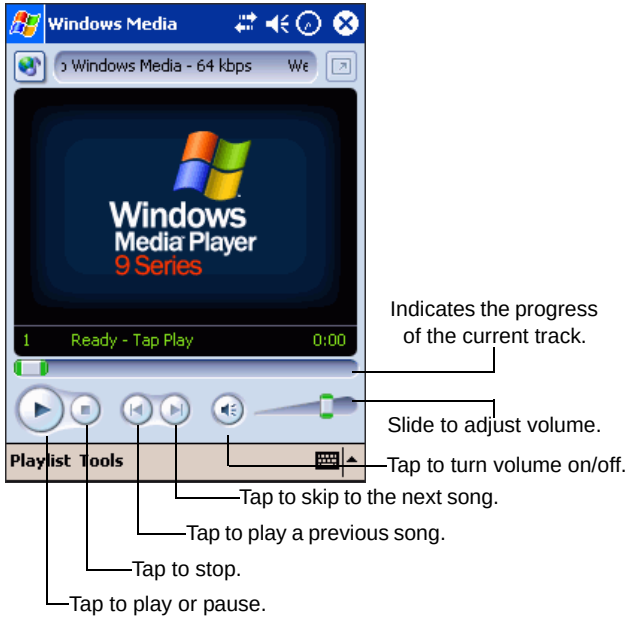


Figure 7-23. Using Windows Media Player

Use your host computer to copy digital audio and video files to your terminal. Your terminal can play Windows Media and MP3 files.

For more information on using Windows Media Player, tap *Start* - *Help*.

Microsoft Reader

Use Microsoft Reader to read eBooks on your terminal. Download books to your host computer from your favorite eBook Web site. Then, use ActiveSync to copy the book files to your terminal. 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 device 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.

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

Getting Books on Your Device

You can download book files from the Web. Just visit your favorite eBook retailer and follow the instructions to download the book files. Use ActiveSync to download the files from your host computer to your terminal as described in the Read Me file in the MSReader folder.

Using the Library

The Library is your Reader home page; it displays a list of all books stored on your terminal. To open the Library:

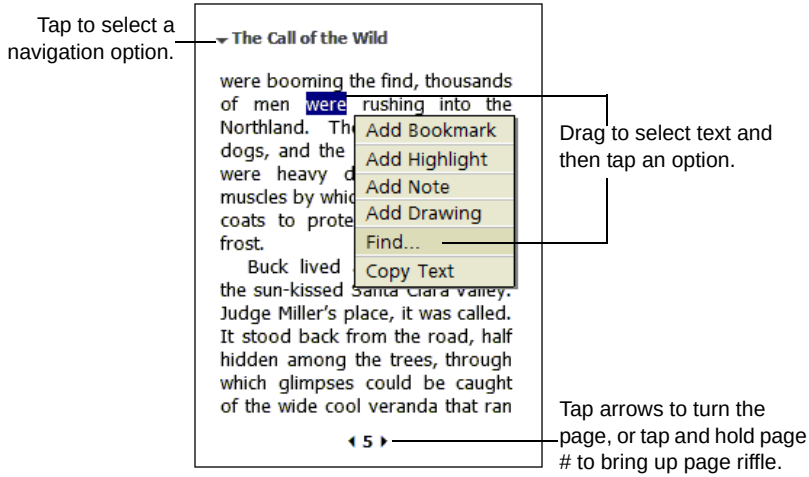
1. On the Reader command bar, tap **Library**.
2. On a book page, tap the book title, and then tap *Library* on the pop-up menu.
3. To open a book, tap its title in the *Library* list box.

Reading a Book

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

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

In addition to the text, each book page includes a page number and book title.



You can also page through a book using the Up/Down arrow keys on the keypad of your terminal.

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:
  - Search 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.
  - Copy 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.

- 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.
- Highlights. When you highlight text, it appears with a colored background.
- Notes. When you attach a note to text, you enter the text in a note pad 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.
- 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.

- 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 terminal. If a copy of the book is stored on your host computer, you can download it again at any time.

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

For more information on using Microsoft Reader, tap *Start* - *Help*.

Pocket Internet Explorer

With Microsoft Pocket Internet Explorer, you can view Web or Wireless Application Protocol (WAP) pages in the following ways:

- During synchronization with your host computer, download your favorite links and mobile favorites stored in the Mobile Favorites subfolder in Internet Explorer on the host computer.
- Connect to an Internet service provider (ISP) or network and browse the Web. First create the connection (see *Connecting to the Internet on a Wireless Network* on page 4-18).

To select Pocket Internet Explorer, tap *Start* - *Internet Explorer*.

Mobile Favorites

Items stored in the Mobile Favorites subfolder in the Favorites folder in Internet Explorer on your host computer are synchronized with your terminal. This folder was created automatically when you installed ActiveSync.

Favorite Links

Synchronization updates the list of favorite links both in the Mobile Favorites folder on your host computer and in Pocket Internet Explorer on your terminal. Unless you mark the favorite link as a mobile favorite, only the link is downloaded to your terminal; you must connect to your ISP or network to view the content. For more information on synchronization, see ActiveSync Help on the host computer.

Creating Mobile Favorites

If you are using Microsoft Internet Explorer 5 or later on your host computer, you can download mobile favorites. Synchronizing mobile favorites downloads Web content to your terminal so you can view Web pages while disconnected from your ISP and host computer.

Use the Internet Explorer plug-in installed with ActiveSync to create mobile favorites:

1. In Internet Explorer on your host computer, click *Tools* - *Create Mobile Favorite*.
2. To change the link name, enter a new name in the *Name* field.
3. If desired, select a desired update schedule in *Update*.
4. Click **OK**. Internet Explorer downloads the latest version of the Web page to your host computer.

5. To download the pages linked to the mobile favorite you just created, in Internet Explorer on the host computer, right-click the mobile favorite, then click *Properties*. On the *Download* tab, specify the number of links deep you want to download. To conserve terminal memory, only go one level deep.
6. Synchronize your terminal and host computer. Mobile favorites stored in the Mobile Favorites folder in Internet Explorer are downloaded to your terminal.

   If you did not specify an update schedule in step 3, you must manually download content to keep the information updated on your host computer and terminal. Before synchronizing, in Internet Explorer on your host computer, click *Tools* - *Synchronize*. Note the last time content was downloaded to the host computer; if necessary, manually download content.

   You can add a button to the Internet Explorer toolbar for creating mobile favorites. In Internet Explorer on your host computer, click *View* - *Toolbars* - *Customize*.

Saving Memory on your Terminal

Mobile favorites take up storage memory on your terminal. 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 downloading. For more information, see ActiveSync Help.
- Limit the number of downloaded linked pages. In Internet Explorer on the host computer, right-click the mobile favorite you want to change, then select *Properties*. On the *Download* tab, specify 0 or 1 for the number of linked pages to download.

Using AvantGo Channels

AvantGo is a free interactive service that gives you access to personalized content and thousands of popular Web sites. Subscribe to AvantGo channels directly from your terminal, then synchronize with your host computer, or connect to the Internet to download the content. For more information, visit the AvantGo Web site.

To sign up for AvantGo:

1. In ActiveSync options on the host computer, turn on synchronization for the AvantGo information type.
2. In Pocket Internet Explorer on your terminal, tap *Favorites* icon to display your list of favorites.

3. Tap *AvantGo Channels*.
4. Tap **Activate** .
5. Follow the directions on the screen. You must synchronize your terminal with your host computer, then tap **My Channels** to complete setup.

When synchronization is complete, tap *AvantGo Channels* in your list of favorites to see a few of the most popular channels. To add or remove channels, tap *Add* or *Remove*.

Using Pocket Internet Explorer

With Pocket Internet Explorer, you can browse mobile favorites and channels downloaded to your terminal without connecting to the Internet. You can also connect to the Internet through an ISP or a network connection and browse the Web.

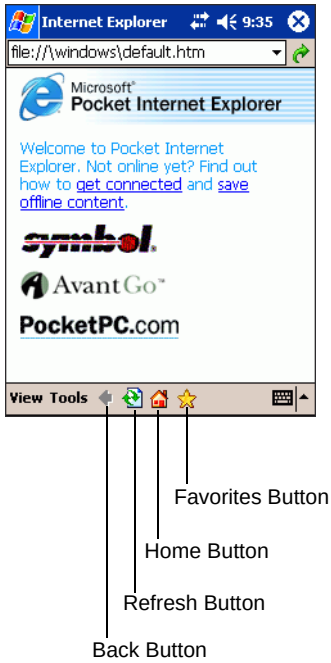


Figure 7-24. Pocket Internet Explorer

To view mobile favorites and channels, tap *Favorites* icon to display your list of favorites, then tap the page you want to view.

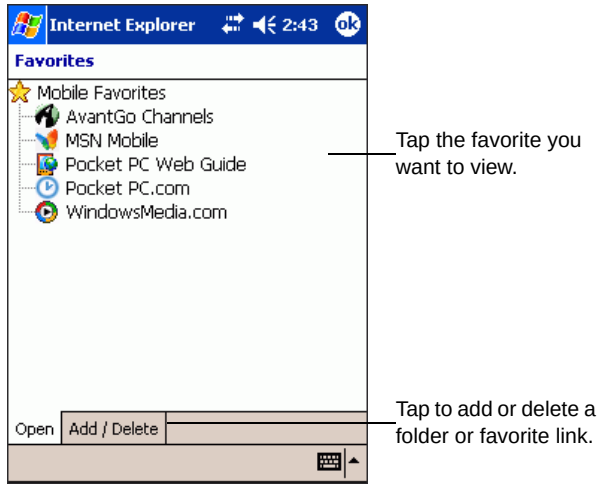


Figure 7-25. Mobile Favorites

You'll see the page that was downloaded the last time you synchronized with your host computer. If the page is not on your terminal, the favorite is dimmed. Synchronize with your host computer again to download the page to your terminal, or connect to the Internet to view the page.

Browsing the Web

1. Connect to your ISP or network using a Spectrum24 connection; see *Connecting to the Internet on a Wireless Network* on page 4-18.
2. Once connected, go to a specific Web page in one of the following ways:
   - Tap *Favorites*, then tap the favorite you want to view.
   - In the address bar at the top of the screen, enter the Web address and tap the go button or tap the arrow to choose from previously entered addresses.

Note: *If you select Pocket Internet Explorer before setting up the network connections, a screen may appear allowing you to proceed to the connection settings screen. After you select your settings, you return to Pocket Internet Explorer.*

To add a favorite link while using the terminal, go to the Web page you want to add, tap and hold on the page, and tap Add to Favorites*.*

Pictures

Use *Pictures* to view .jpg format pictures stored on the terminal, send pictures to others, view a slideshow of your pictures or set a picture as the background on the Today screen.

Copy Pictures to your Device

You can copy .jpg pictures from your PC and view them in *Pictures*.

Copy the picture files from your PC to the My Pictures folder, within the My Documents folder on your terminal. For more information on copying files from your PC to your terminal, see ActiveSync Help on your PC.

Edit Pictures

You can rotate, crop, zoom, and adjust the brightness and color contrast of your .jpg pictures.

1. Tap  to rotate a picture 90 degrees counter-clockwise.
2. Tap  to crop a picture by dragging and selecting the crop area. Tap outside of the box to stop cropping.
3. Tap  to display the Zoom panel, from which you can zoom in or out of a picture, or return a picture to full-screen size.
4. Tap *Edit - Brightness and Contrast* to adjust the brightness and contrast levels of a picture.

Send Pictures

You can send a .jpg picture to others as an e-mail attachment. The picture is resized to approximately 30 KB, making it easier to send over wireless connections.

1. In Pictures, tap the picture you want to send as an e-mail attachment.
2. Tap *Tools - Send via E-mail* to create an e-mail message with the picture attached.

Set Picture as Background

You can use one of your own .jpg pictures as the background on the Today screen, and specify how you want it displayed on the screen, such as adjusting the transparency level.

1. In Pictures, tap the picture you want to set as the background.
2. Tap *Tools - Set as Today Wallpaper*.

View Pictures

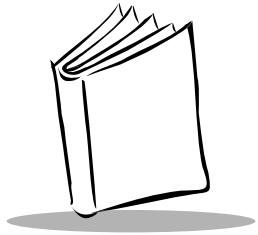
Using Pictures, you can view thumbnails of .jpg pictures stored in your My Pictures folder and select a picture that you want to see in full-screen view.

1. In Pictures, tap the thumbnail of the picture you want to view.
2. Tap  to view pictures stored on a storage card.
3. Tap  to view pictures stored in your My Pictures folder.

View Slideshow of Pictures

You can view your .jpg pictures as a slideshow. Pictures displays slides of the pictures shown in thumbnail view with 5-second intervals between slides.

1. In Pictures, tap  to view pictures as a slideshow.
2. Tap anywhere on the screen to display the Slideshow toolbar, which you can use to pause the slideshow, rotate the view, and more.
3. Press the left/right controls to move forward or backward through the slides.



Chapter 8
Software Installation on Development PC

Chapter Contents

Introduction

To develop applications to run on the terminal, the following are required:

- Symbol Mobility Developer's Kit (SMDK) for Embedded Visual C 4.0 (eVC4)
- Symbol Device Configuration Package (DCP) for PPT 8800.

The SMDK for eVC4 is a development tool used to create native C and C++ applications for all Symbol terminals running the Microsoft Windows Mobile 2003 Software for Pocket PCs operating system. It includes documentation, header files (.H), and library files (.LIB) for native code application development that targets Symbol value-add APIs.

The DCP provides the Product Reference Guide (PRG), flash partitions, Terminal Configuration Manager (TCM) and the associated TCM scripts. With this package hex images that represent flash partitions can be created and downloaded to the terminal.

The minimum system configuration required to install the SMDK and DCP is:

- IBM-compatible host computer with Pentium 450 MHz processor or higher
- Microsoft Windows XP or Microsoft Windows 2000 operating system
- 128 MB RAM
- 100 MB available hard disk space
- CD-ROM drive
- One available serial port
- Mouse
- ActiveSync software, available at http://www.microsoft.com.

In order to install the SMDK, the following components must first be installed on the development PC:

- Microsoft Windows XP or Windows 2000
- Microsoft Embedded Visual C++ v4.0 with SP2
- Microsoft Windows Mobile 2003 SDK
- Microsoft ActiveSync version 3.7 or higher
- Adobe® Acrobat® Reader® 3.0 or higher.

The SMDK for eVC4 contains the components listed in Table 8-1.

Table 8-1. SMDK Contents and Location

Components	Directory Location
Readme/Release Notes/License	\Program Files\Symbol Mobility Developer Kit v1.0 for eVC4\
C\C++ Samples (Standard)	\Program Files\Symbol Mobility Developer Kit v1.0 for eVC4\Samples\evc\standard
C\C++ Samples (Basic)	\Program Files\Symbol Mobility Developer Kit v1.0 for eVC4\Samples\evc\basic
HTML Help (APIs)	\Program Files\ Symbol Mobility Developer Kit v1.0 for eVC4\
Symbol Libraries (.LIB)	\Program Files\Windows CE Tools\wce420\POCKET PC 2003\Lib\armv4
Symbol Headers (.H)	\Program Files\Windows CE Tools\wce420\POCKET PC 2003\Include\armv4
Start Menu	\Documents and Settings\All Users\Start Menu\Programs
Readme	
Help	
Samples	
WEB Updates	

The DCP contains the components listed in Table 8-2.

Table 8-2. DCP Contents and Locations

Components	Directory Location
TCM (and INI file)	\Program Files\Symbol\TCM
Readme/Release Notes/License	\Program Files\Symbol Device Configurations\PPT 8800\v1.0
Product Reference Guide	\Program Files\Symbol Device Configurations\PPT 8800\v1.0
HexImages	\Program Files\Symbol Device Configurations\PPT 8800\v1.0\Hex Images

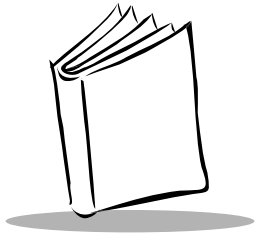
Table 8-2. DCP Contents and Locations (Continued)

Components	Directory Location
Flash File Folders	\Program Files\Symbol Device Configurations\PPT 8800\v1.0\Flash Folders
Tools (ex Keyboard remap, if any)	\Program Files\Symbol Device Configurations\PPT 8800\v1.0\Tools
TCM Scripts	\Program Files\Symbol Device Configurations\PPT 8800\v1.0\TCMScripts
Start Menu	\Documents and Settings\All Users\Start Menu\Programs
Readme	
PRG	
TCM PPT 8800	
WEB Updates	

The SMDK and DCP are available from the Symbol Developer's Zone web site, http://devzone.symbol.com.

Installing Other Development Software

Developing applications for the terminal may require installing other development software such as application development environments on the development PC. Follow the installation instructions provided with this software.



Chapter 9
Configuring the Terminal

Chapter Contents

Introduction

Terminal Configuration Manager (TCM) is an application that allows developers to customize flash file system partitions for the terminal. The most common use is to create an Application partition hex file that contains the customer's application. TCM can also be used to load hex files to the flash memory of the terminal.

The program resident on the terminal that receives the hex file and burns it to the flash memory is called Initial Program Loader (IPL).

The customization of partitions is controlled by TCM scripts. The scripts contain all of the necessary information for building an image. The script is essentially a list of copy commands specifying the files to copy from the host computer to the partition.

TCM works with a pair of directory windows, one displaying the script and the other displaying the source files resident on the host computer. Using standard windows drag and drop operations, files can be added and deleted from the script window.

The SDK includes scripts used by Symbol Technologies to build the standard Platform and Application partitions that are resident on the terminal when the terminal ships from the factory. The standard Platform partition contains drivers while the Application partition contains Demo applications and optional components. The standard TCM scripts can be found in the following folder:

C:\Program Files\Symbol Windows CE SDK (PPT8800)\SymbolPlatforms\PPT8800\TCMScripts

The process for building and loading a hex file can be summarized in the following steps:

1. Start Terminal Configuration Manager
2. Create a new script or modify an existing one
3. Build the hex file
4. Load the hex file to the terminal.

Starting Terminal Configuration Manager

To start TCM on the host computer, select *Start - Programs - Symbol - TCM*. The following window appears, displaying two sub-windows. One contains a newly created script and the other contains a file explorer view used for selecting files to be placed in the script.

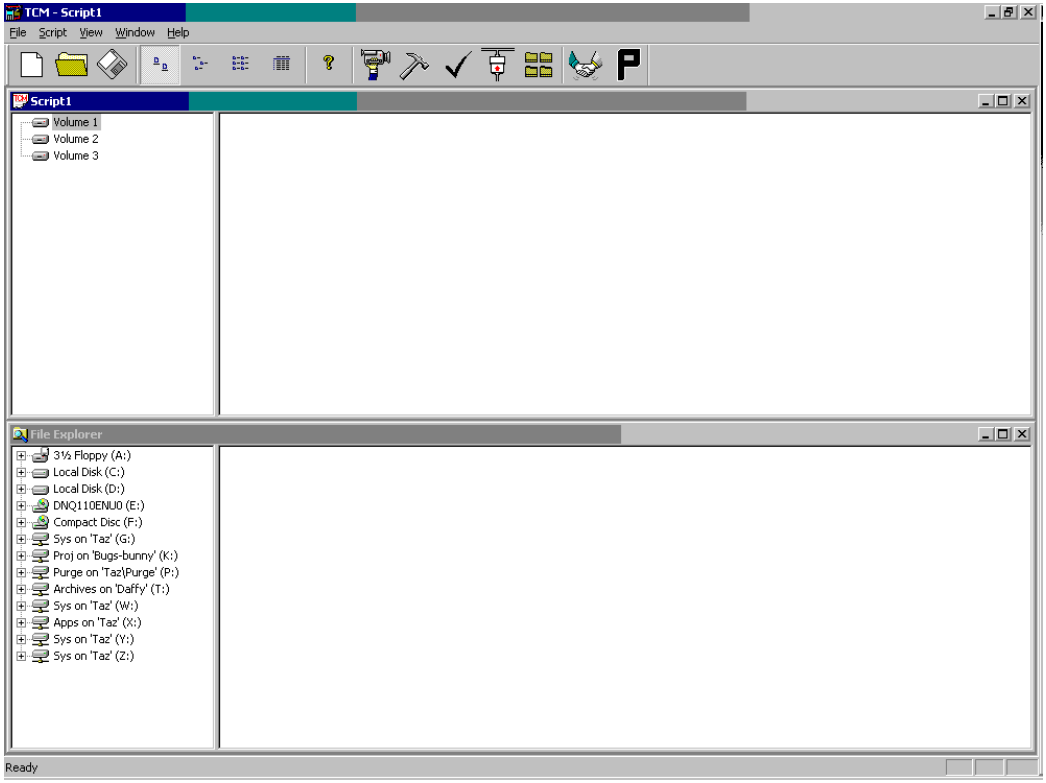


Figure 9-1. TCM Window

Table 9-1 lists the main components for the TCM main window.

Table 9-1. TCM Window Components

Component	Icon	Description
Script Window		Displays the files to be used in the creation of the partition(s).

Table 9-1. TCM Window Components (continued)

Component	Icon	Description
File Explorer		Used to select the files to be added to the script.
Create		Create a new script file.
Open		Open a existing script file.
Save		Save the current script file.
Large Icon		View the current script items as large icons.
Small Icon		View the current script items as small icons.
List		View the current script items as a list.
Details		View the current script items with more details.
About		Displays version information for TCM.
Properties		View or change the current script properties.
Build		Build the current script into a set of hex images.
Check		Check the script for errors (files not found).
Send		Download the hex image to the terminal.
Tile		Arrange the sub-windows in a tiled orientation.

Table 9-1. TCM Window Components (continued)

Component	Icon	Description
Preferences		View or change the global TCM options.
Build and Send		Build the current script into a set of hex images and send the hex images to the terminal.

Defining Script Properties

Before a script is created, the script properties must be defined. The properties include the terminal type, the flash type, the number of disks being created and the memory configuration of each disk partition.

To define the script properties:

1. With *TCM* open, click on the *Script Window* to make it the active window.
2. Select *Script - Properties* or click the Properties button. The *SCRIPT PROPERTIES* window displays.

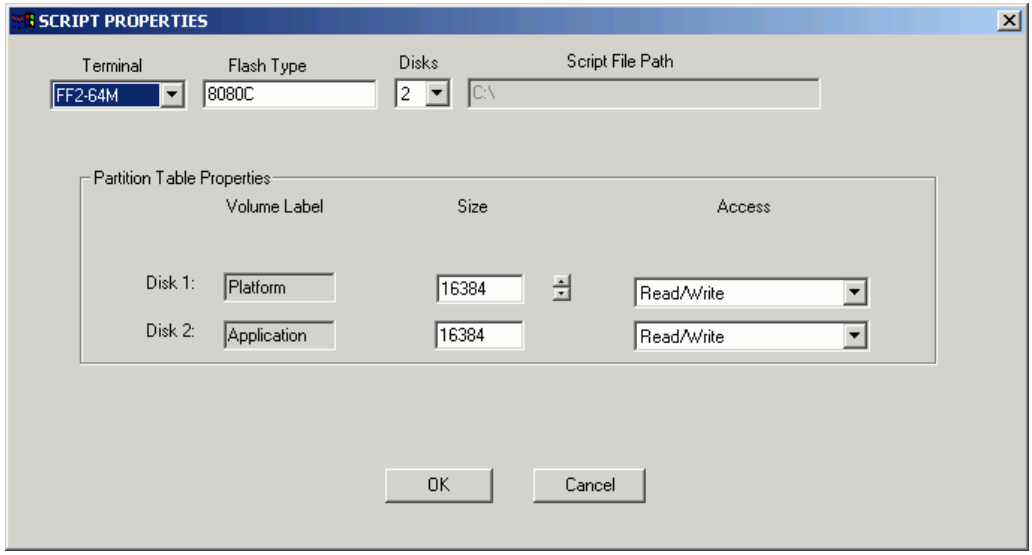


Figure 9-2. Script Properties Window

3. Select FF2-64M from the *Terminal* drop-down list.
4. Use the default flash type.
5. Select the number of disk partitions to create from the *Disks* drop-down list.
6. Select the memory size for each partition from the *Size* list boxes. Note that added space on one disk partition subtracts it from the other partition.
7. Each each partition, select read/write access from the *Access* drop-down lists.
8. The file path displays in the *Script File Path* field.
9. Select a cushion percentage from the *Cushion* drop-down list to specify the percent of flash reserved for cushion. Choosing a higher number reduces disk storage space, but also increases write performance on fragmented disks or disks becoming full. To speed the writing process, select as high a number as storage needs permit (up to 25%).
10. Click **OK** to complete the settings.

Creating a Hex Image Script

TCM operations are controlled by script files. Script files are created using the following steps:

1. Open a new or existing script file
2. Copy components to the script window
3. Save the script file.

Open a New or Existing Script File

A script file can be created from scratch or based on an existing script file. Click the New button to create a new script or click the Open button to open an existing script (for example, a script provided in the SDK). If an existing script is opened and changes are made, saving the changes overwrites the original script. To use an original or Symbol supplied standard script as a base and save the changes in a new script, use the Save As function which allows saving to a different filename.

Copy Components to the Script Window

Script contents are managed using standard file operations such as New Folder, Delete and Rename. Items can be added to the script by selecting files and folders in the *File Explorer* window and dragging them to the *Script* window. The *File Explorer* window supports standard windows; multiple file selection using **SHIFT** and **CTRL** and mouse clicking.

Save the Script File

Modifications to a script file can be saved using the Save or the Save As function. Saving changes to an existing script, writes over the original script. To use a Symbol-supplied standard script as a base and save the changes in a new script, use the Save As function.

Building the Image

Once the script has been created, the hex image defined by the script can be built.

As part of the build, TCM performs a check on the script which verifies that all files referenced in the script exist. This check is important for previously created scripts to ensure that files referenced in the script are still in the designated locations.

Scripts are built using the following steps:

1. Click the Build button. The *Configure Build* window appears.

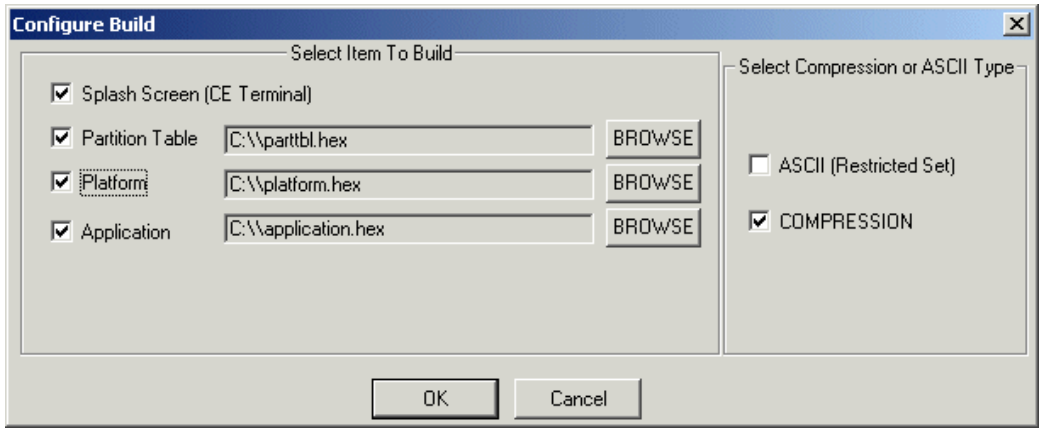


Figure 9-3. Configure Build Window

2. Select the partitions to build using the check boxes to the left of each partition name.
3. Select the filename and location for each partition file using the **BROWSE** button.
4. Select Compression for the hex image, which reduces the size and speeds up the download.
5. Click **OK** and follow the on-screen instructions:

   If one of the partitions being built is the Splash Screen partition, the *Splash Screen Creation Dialog* window appears prompting you for both the source Bitmap file. as well as the destination HEX file.

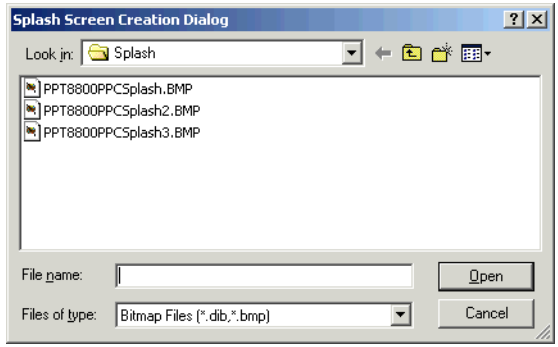


Figure 9-4. Splash Screen Creation Dialog Window

6. A check will be performed and if there are no errors, the partition hex files are created.

If the build fails, the hex files are not be created and TCM displays an error message. Two of the most common reasons for a build failure are:

- Files defined in the script can not be found. This error can occur when the files referenced by the script are no longer stored on the host computer or the folders where they are stored were renamed.
- The total amount of flash memory space required by the script exceeds the image size. To correct this, reduce the number of files in the partition or increase the size of the partition. See *Defining Script Properties* on page 9-6 for more information on setting the image size appropriately.

Sending the Hex File

Once the hex file is built, it can be downloaded to the terminal.

1. Connect the Serial Charging Cable or the Single-Slot Cradle to the development computer.

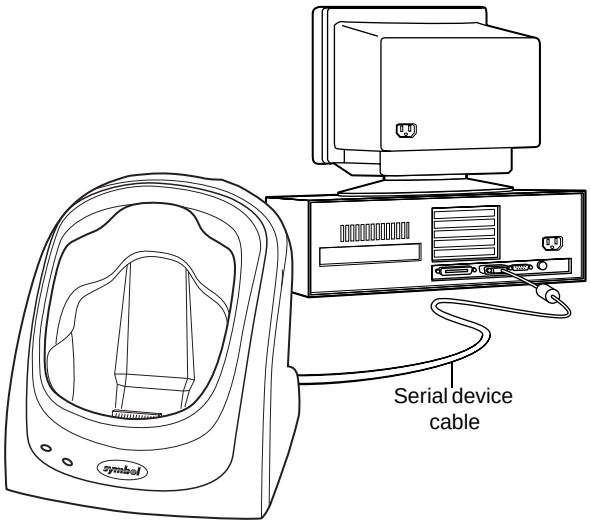


Figure 9-5. Cradle Connection to Development Computer

2. Connect the power supply to the Serial Charging Cable or the cradle and the AC line cord to the power supply and the AC outlet.
3. Perform a hard reset of the terminal, see *Performing a Hard Reset* on page 2-34.
4. Replace the battery cover.
5. On the Standard 6-key keypad, simultaneously press and hold the APP 1 and the APP 4 keys then press and release the Power button.
6. On the 15-key keypad, simultaneously press and hold the 1 and 4 keys then press and release the Power button.
7. Continue to hold down the keys until the IPL screen appears.

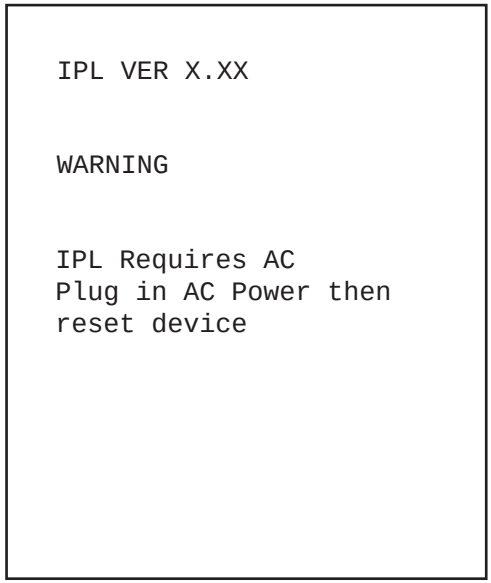


Figure 9-6. IPL AC Power Warning Screen

8. Place the terminal into the cradle or connect the Serial Charging Cable to the terminal.

Caution

Do not remove power from the terminal while in IPL mode. If the battery fully depletes during OS upgrade, serious damage to the terminal can occur.

9. IPL displays the Baud Rate screen which lists the available baud rates for the serial connection.

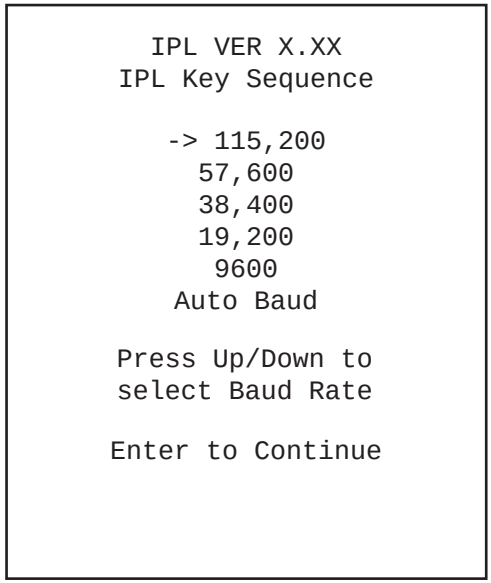


Figure 9-7. Baud Rate Screen

10. Use the up and down keys to select the appropriate baud rate, then press the Enter key or wait 10 seconds for the 115,200 default baud rate.

11. The IPL Main Menu screen lists the partitions and/or applications that can be downloaded.

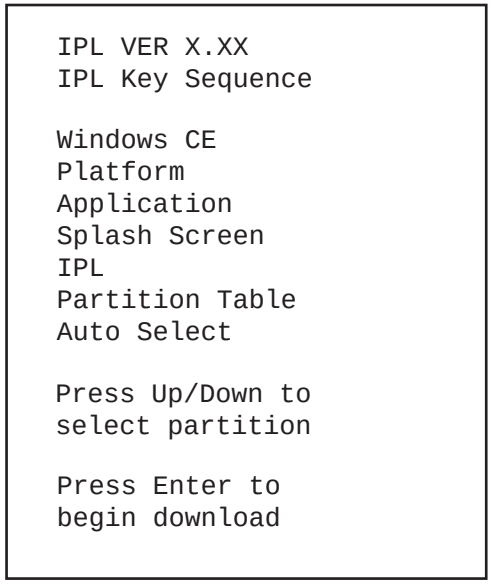


Figure 9-8. IPL Main Menu Screen

- Use the up and down keys to select *Auto Select*, then press the Enter key. *Auto Select* is the default, and is selected if no other selection is made within three seconds.

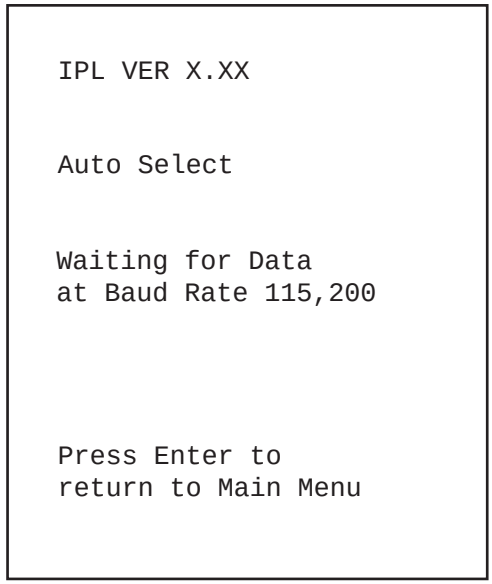


Figure 9-9. Waiting for Data

12. In TCM, press the *Load* button on the TCM toolbar. The *Load Terminal Dialog* window appears.

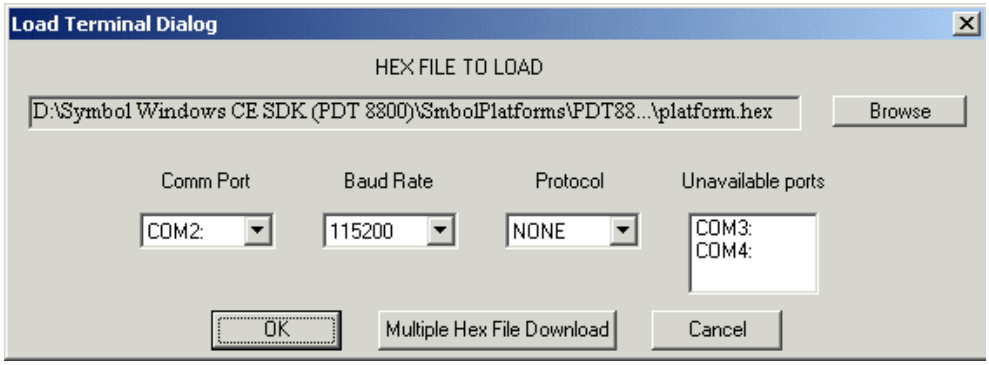


Figure 9-10. Load Terminal Dialog Window

13. If the correct hex file is not displayed in the *HEX FILE TO LOAD* field, click **Browse** and navigate to the correct hex file to be downloaded.
14. Select the COM port being used from the *Comm Port* drop-down list. Ports already in use display in the *Unavailable ports* field.
15. Select the appropriate baud rate from the *Baud Rate* drop-down list.
16. Select *NONE* from the *Protocol* drop-down list.
17. Insert the terminal in a cradle, or connect it to a development computer with a serial cable.
18. Click **OK** to load the file, or **Multiple Hex File Download** if more than one file is being loaded.
19. As soon as the first character of data is received, IPL displays the Receiving Data screen.

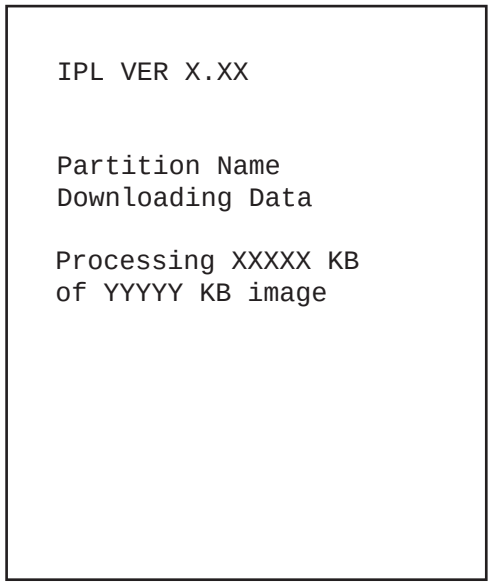


Figure 9-11. Receiving Data Screen

Note: *If the partition being downloaded was set to first erase the flash, the message "Pre-Erasing Flash" first appears before downloading begins.*

This screen indicates that the area selected in the Main Menu is currently downloading and displays until an entire image is received, or until an error is detected. As more data is received, the Receiving Data screen is updated to reflect the current status.

20. When the entire image is received, IPL displays the *Download Complete* screen to indicate that the download is complete.

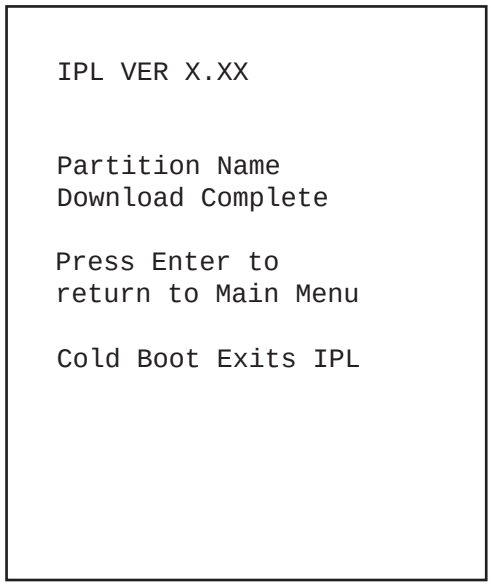


Figure 9-12. Download Complete Screen

21. Press the Enter key to return to the Main Menu screen.
22. Hard reset the terminal (see *Performing a Hard Reset* on page 2-34) when all partitions are downloaded successfully.
23. On the development computer, select *File* - *Exit* to exit TCM.

Error Messages

IPL Error Detection

While receiving data, IPL performs many checks on the data to ensure that the data is received correctly. If an error is detected, IPL immediately aborts the download, and reports the error on the terminal.

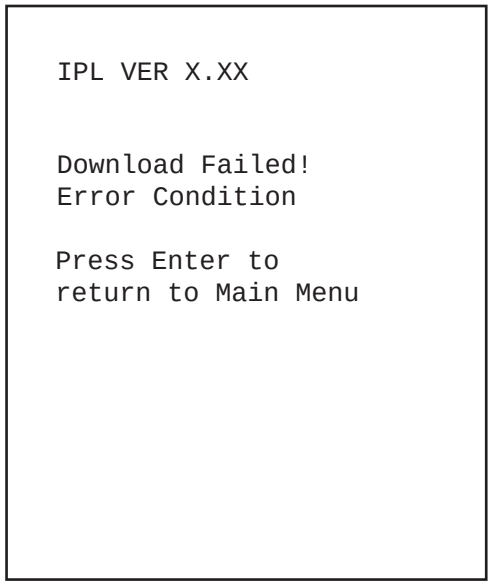


Figure 9-13. IPL Error Message

This screen displays until you press the Enter key. Once the screen is acknowledged, IPL returns to the Main Menu screen to wait for a new selection.

The cause of the error displays under the *Download Failed!* indication. The errors that can be reported, and the probable cause of the error, are described in Table 9-2.

Table 9-2. IPL Error Messages

Error	Description
Invalid Image	This error occurs if another record is received before the Header Record. Ensure the Header Record is the first record downloaded.
Partition Not Defined	The destination code is a part of the Header record and is used as an index into the partition table. The partition table entry located at this index contains partition information for the data downloaded. If the Auto Select option is selected, a check is made to ensure that valid partition information exists in the partition table at this index. The check verifies that the Area Name and Sector Size are both non-zero. If not, this error occurs.
Wrong Partition	If a specific partition is selected from the partition list, and the destination code of the Header record downloaded does not match the index of that partition, this error occurs.
Image Too Big	The size of the image is also part of the Header record. If the data to be written exceeds the size of the partition as indicated in the partition table, this error occurs.
Incorrect Byte Count	Image data is processed until the End Of File (EOF - Record Type 01) record is received. This error occurs if IPL detects that the number of bytes received does not equal the number of bytes sent.
Unable to Verify Partition Data	If the Receive and Verify bit is set for that partition, the data (the Flash sector erased and the data written to the Flash part) is verified. If this data can not be verified, this error occurs.
Transmission Errors	The following error messages may appear if an error occurs during transmission: • “Checksum Error" occurs if an invalid checksum is detected in the record. • “Invalid Record" occurs if a record is not defined in the Symbol Hex File Format. • “Connection Lost" occurs if one of the handshaking lines is de-asserted during download. • “Address Out of Sequence" occurs if the address of the data received is not sequential.

TCM Error Messages

TCM validates the cells in your partition table when you press the Enter button. Cells highlighted in red contain an error. Partition loading is disabled until all errors are corrected. The errors that TCM may encounter and possible solutions are described in Table 9-3.

Table 9-3. TCM Error Messages

Error	Description/Solution
Error - Partition Size	The size of a partition must be an integral multiple of the FFSSectorSizeInBytes specified by the .ini file. When the user enters a partition size, TCM rounds up to the next highest integral multiple of the sector size and displays this value in the partition table grid. This error check is made upon value entry, independent of the **Execute** button.
Error - Image Larger than Partition	If the required size of the binary image file is larger than the associated partition size, the Partition Size cell in the partition grid turns red to highlight the error. The Required Size cell indicates the actual size required.
Error - Total size of all FFS Partition	If the total memory allocated to the 3 FFS partitions is greater than the total Flash Memory on the terminal, the Used FFS Memory display box turns red. Decrease the size of one or more of the partitions, then recheck the configuration using the **Execute** button.
Error - Source/ Destination Path Verification	If the directory paths specified by the Source and Destination cells do not exist, the cell containing the non-existent path turns red to highlight the error.

For more information on FFS Partitions and Non-FFS Partitions, see *Flash Storage* on page 9-21.

Creating and Loading a Splash Screen

To generate a custom splash screen, use a bitmap editor.

1. Create a color bitmap with dimensions of BX x BY where:
   - BX is less than or equal to 240 pixels
   - BY is less than or equal to 320 pixels

Note: *For best quality use a relatively high resolution color image (for example, 16-bit Color). Lower resolution images also work.*

2. Save the file as a 24-bit bitmap.
3. Use TCM to convert the bitmap image file to a Hex file (see *Building the Image* on page 9-8).

Loading the Splash Screen via TCM

To load the bitmap:

1. Click **TCM.exe** in the TCM directory.
2. Connect the terminal to the host computer and invoke IPL to prepare the terminal to receive the splash screen download.
3. In TCM, select File - *Load Terminal*.
4. Select your splash screen Hex file to begin downloading to the terminal.
5. Close TCM.

Flash Storage

Programs pre-installed on your terminal are stored in read-only memory (ROM). You cannot remove, modify, or accidentally lose this software. You may add programs and data files to random access memory (RAM).

In addition to the RAM-based storage standard on Windows CE terminals, the terminal is also equipped with a non-volatile Flash-based storage area which can store data (partitions) that can not be corrupted by a hard reset. This Flash area is divided into two categories: Flash File System (FFS) Partitions and Non-FFS Partitions.

FFS Partitions

The terminal includes two FFS partitions. These partitions appear to the terminal as a hard drive that the OS file system can write files to and read files from. Data is retained even if power is removed.

The two FFS partitions appear as two separate folders in the Windows CE file system and are as follows:

- **Platform**: The Platform FFS partition contains Symbol-supplied programs and Dynamic Link Libraries (DLLs). This FFS is configured to include DLLs that control system operation. Since these drivers are required for basic terminal operation, only experienced users should modify the content of this partition.
- **Application**: The Application FFS partition is used to store application programs needed to operate the terminal.

Working with FFS Partitions

Because the FFS partitions appear as folders under the Windows CE file system, they can be written to and read like any other folder. For example, an application program can write data to a file located in the Application folder just as it would to the Windows folder. However, the file in the Application folder is in non-volatile storage and is not lost on a hard reset (e.g., when power is removed for a long period of time).

Standard tools such as ActiveSync can be used to copy files to and from the FFS partitions. They appear as the “Application,” and “Platform” folders to the ActiveSync explorer. This is useful when installing applications on the terminal. Applications stored in the Application folder are retained even when the terminal is hard reseted, just as the PPT 8800 Demo program is retained in memory.

Windows CE expects certain files to be in the Windows folder, residing in volatile storage. Windows CE maintains the System Registry in volatile storage. There are two device drivers included in the Windows CE image to assist developers in configuring the terminal following a hard reset: **RegMerge** and **CopyFile**.

RegMerge.dll

RegMerge.dll is a built-in driver that allows registry edits to be made to the Windows CE Registry. Regmerge.dll runs very early in the boot process and looks for registry files (.reg files) in certain Flash File System folders during a hard reset. It then merges the registry changes that are in these files into the system registry located in RAM.

Since the registry is re-created on every hard reset from the default ROM image, the RegMerge driver is necessary to make registry modifications persistent over hard resets.

RegMerge is configured to look in three specific folders for .reg files in the following order:

\Platform

\Application

Regmerge continues to look for .reg files in these folders until all folders are checked. This allows folders later in the list to override folders earlier in the list. This way, it is possible to override Registry changes made by the Platforms partitions folders. Take care when using Regmerge to make Registry changes. The SMDK contains examples of .reg files.

Note: *Regmerge only merges the .reg files on hard resets. The merge process is skipped during a soft reset.*

Typically, you should not need to make modifications to registry values for drivers loaded before RegMerge. However, sometimes during software development, you may need to modify these values. Since these early loading drivers read these keys before RegMerge gets a chance to change them, you must soft reset the terminal after a hard reset. The soft reset does not re-initialize the registry, and the early loading driver reads the new registry values.

Do not use Regmerge to modify built-in driver registry values, or merge the same Registry value to two files in the same folder, as the results are undefined.

CopyFile

CopyFile copies files from one folder to another on a hard reset. Files can be copied from a non-volatile partition (Application or Platform) to the Windows or other volatile partition

during a hard reset. During a hard reset **CopyFile** looks for files with a .CPY extension on the FFS partition. These files are text files containing the source and destination for the desired files to be copied separated by “>”.

Non-FFS Partitions

Non-FFS Partitions include additional software and data pre-loaded on your terminal that can be upgraded. Unlike FFS Partitions, these partitions are not visible when the operating system is running. They also contain system information. Non-FFS partitions include the following:

- **Windows CE**: The complete Windows CE operating system is stored on Flash devices. If necessary, the entire OS image may be downloaded to the terminal using files provided by Symbol. The current OS partition on the terminal is included as part of the TCM installation package. Any upgrades must be obtained from Symbol. This partition is mandatory for the terminal.
- **Splash Screen**: a bitmap smaller than 16 Kb, displayed as the terminal hard resets. You may download a customized screen to display (see *Configuring the Terminal* on page 9-1).
- **IPL (Initial Program Loader)**: This program interfaces with the host computer and allows you to download via cradle or serial cable any or all of the partitions listed above, as well as updated versions of IPL. Use caution downloading updated IPL versions; incorrect downloading of an IPL causes permanent damage to your terminal. IPL is mandatory for the terminal.
- **Partition Table:** Identifies where each partition is loaded in the terminal.

Assigning User-Written Applications to Buttons

Use **RegMerge** to modify the registry during a hard reset to assign user-written applications to the application buttons. These buttons remain assigned after a hard reset.

Note: *Although located in the Flash File System, we recommend copying user applications to the Windows directory (using CopyFile) and running them from there. See the WinCE Help file on the SMDK for more information.*

Adding Programs

Install the appropriate software on your host computer before installing it on your terminal.

1. Select *Start* - *Settings* - *About* icon - *Version* tab. Note the information in *Processor* field.
2. Download the program to your host computer (or insert the CD or disk that contains the program into your host computer). You may see a single *.xip file, *.exe file, a *.zip file, or a Setup.exe file.
3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
4. Connect your terminal to the host computer.
5. Double-click the executable file on the host computer.

   If the file is an installer, the installation wizard begins. Follow the directions on the window. Once the software is installed on your host computer, the installer transfers the software to your terminal.

   If the file is not an installer, an error message states that the program is valid but is designed for a different type of computer. Move this file to your terminal. If you cannot find 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 terminal. For more information on copying files using ActiveSync, see ActiveSync Help.
6. When installation is complete, tap *Start* - *Programs* on the terminal, then tap the program icon.

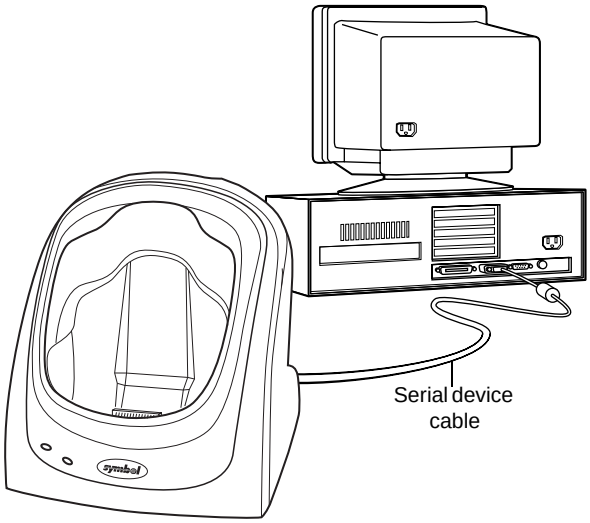
Adding a Program from the Internet

1. Select *Start* - *Settings* - *About* icon - *Version* tab. Note the information in *Processor* field.
2. Download the program to your terminal from the Internet using Pocket Internet Explorer. You may see a single *.xip, *.exe, *.zip file, or a Setup.exe file.
3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
4. Tap the file, such as a *.xip or *.exe file, to launch the installation wizard. Follow the directions on the window.

Update the ROM Image Using IPL

To update the ROM Image on the terminal using IPL:

1. Connect the Serial Charging Cable or the CRD 8800 Single-Slot Cradle to the host computer.



2. Connect the power supply to the Serial Charging Cable or the cradle and the AC line cord to the power supply and the AC outlet.
3. Perform a hard reset, see *Performing a Hard Reset* on page 2-34.
4. Replace the battery cover.
5. On the standard 6-key keypad, simultaneously press and hold the APP 1 and APP 4 keys and then press and release the Power button. Continue to hold the APP 1 and APP 4 keys the IPL screen appears.

6. On the 15-key keypad, simultaneously press and hold the 1 and 4 keys then press and release the Power button. Continue to hold the 1 and 4 keys until the IPL screen appears.

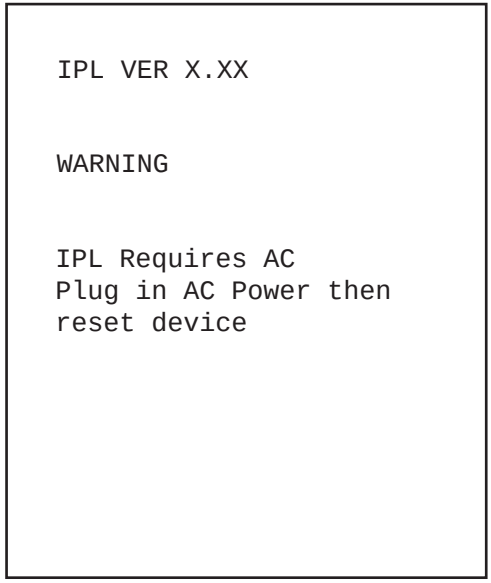


Figure 9-14. IPL AC Power Warning Screen

7. Place the terminal into the cradle or connect the Serial Charging Cable to the terminal.

Caution

Do not remove power from the terminal while in IPL mode. If the battery fully depletes during OS upgrade, serious damage to the terminal can occur.

8. The *Baud Rate Selection* screen appears.

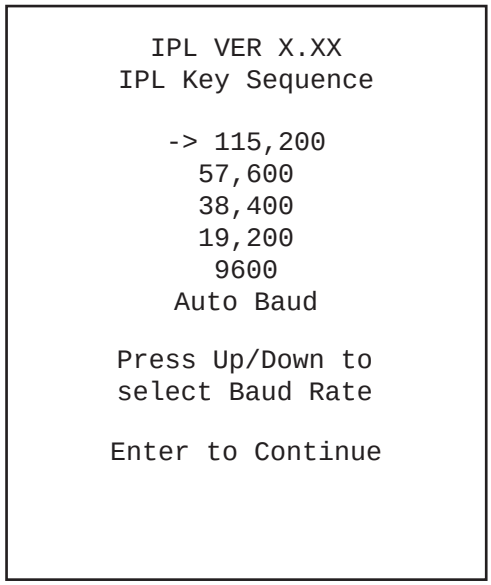


Figure 9-15. IPL Baud Rate Screen

9. Select a baud rate of 115,200 then press the Enter key or wait till it times out. The *IPL Download* screen displays.

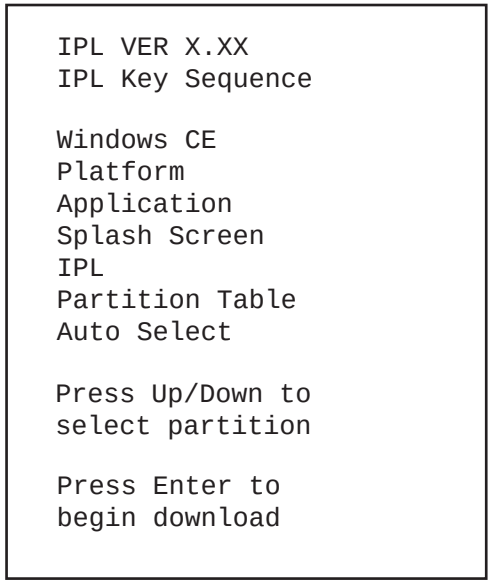


Figure 9-16. IPL Download Screen

10. Select *Auto Select*.
11. Press the Enter key.
12. On the host computer, launch TCM.

13. Select *File - Load Terminal*. The *Load Terminal Dialog* window appears.

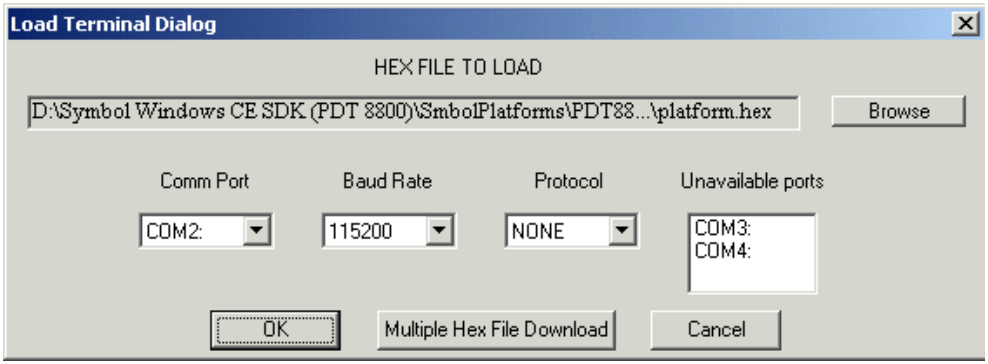


Figure 9-17. Load Terminal Dialog Window

14. Select the COMM port to be the comm port on the host computer from the *Comm Port* drop-down list.
15. Select *115,200* from the *Baud Rate* drop-down list.
16. Select *None* from the *Protocol* drop-down list.
17. Click **Multiple Hex File Download**. The *Multiple File Transfer* window appears. Change the directory to the subdirectory where the hex images are located (C:\Program Files\Symbol Device Configuration Packages\PPT8800\v1.0\Flash Folders\Hex Images.)

    The specific files that you select depends upon the model number of the terminal you are downloading to.

18. Click **Open** and start the download. The terminal indicates it is pre-erasing the flash for each file separately and displays a progress status for the download.

Note: *The host computer progress status screen may be completed but the terminal might still be updating.*

---

19. TCM also displays a status update for the download.

Caution

Do not remove the terminal from the cradle until the TCM progress dialog box has disappeared and the terminal indicates it has downloaded successfully.

20. When completed the *Download Complete* screen appears:

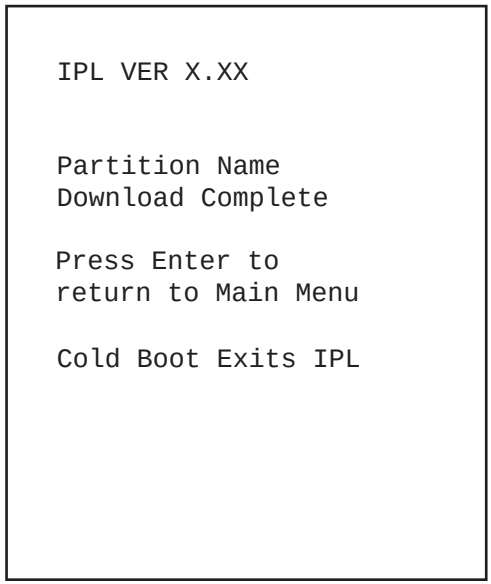


Figure 9-18. Download Complete Screen

21. Perform a hard reset, see *Performing a Hard Reset* on page 2-34.
22. Tap *Start* - *Settings* - *System* tab - *Symbol Settings* icon - *System* tab to view the new system information.

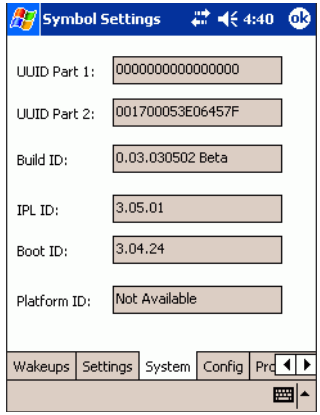
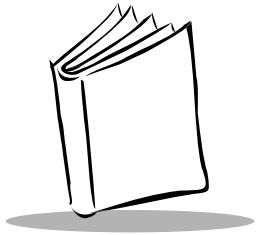


Figure 9-19. Symbol Settings Window - System Tab



Chapter 10
Maintenance and Troubleshooting

Chapter Contents

Introduction

This chapter includes instructions on cleaning and storing your terminal, and provides troubleshooting solutions for potential problems during terminal operating.

Maintaining the PPT 8800

For trouble-free service, observe the following tips when using your terminal:

- Take care not to scratch the screen of your terminal. When working with your terminal, use the supplied stylus or plastic-tipped pens intended for use with a touch-sensitive screen. Never use an actual pen or pencil or other sharp object on the surface of the terminal screen.
- Although your terminal is water and dust resistant, do not expose it to rain or moisture for an extended period of time. In general, treat your terminal as you would a pocket calculator or other small electronic instrument.
- The touch-sensitive screen of your terminal contains glass. Take care not to drop your terminal or subject it to strong impact.
- Protect your terminal from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- Do not store or use your terminal in any location that is extremely dusty, damp or wet.
- Use a soft lens cloth to clean your terminal. If the surface of the terminal screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution.

Troubleshooting

Table 10-1. Troubleshooting Your Terminal

Problem	Cause	Solution
Terminal does not turn on.	Lithium-ion battery not charged.	Charge or replace the lithium-ion battery in the terminal.
	Lithium-ion battery not installed properly.	Ensure battery is installed properly. See *Installing the Battery* on page 1-7.
	System crash.	Perform a soft reset. If the terminal still does not turn on, perform a hard reset. See *Resetting the Terminal* on page 2-34.
Rechargeable lithium-ion battery did not charge.	Battery failed.	Replace battery. If your terminal still does not operate, try a soft reset, then a hard reset. See *Resetting the Terminal* on page 2-34.
	Terminal removed from cradle while battery was charging.	Insert terminal in cradle and begin charging. The standard battery requires approximately 2 1/2 hours to recharge fully and the optional larger capacity battery charges in approximately five hours.
Cannot see characters on display.	Terminal not powered on.	Press the Power button.
Fail to communicate with IrDA printer.	Distance from printer is between 5 inches and 39 inches.	Bring the terminal closer to the printer and attempt communication again.
	Obstruction interfered with communication.	Check the path to ensure no objects were in the way.
	Application is not enabled to run IrDA printing.	Printer support must be included with the application to run IrDA printing on the terminal. See your System Administrator.

Table 10-1. Troubleshooting Your Terminal (continued)

Problem	Cause	Solution
During data communication, no data was transmitted, or transmitted data was incomplete.	Terminal removed from cradle or unplugged from host PC during communication.	Replace the terminal in the cradle, or replace the Synchronization cable, and re-transmit.
	Incorrect cable configuration.	See your System Administrator.
	Communication software was incorrectly installed or configured.	Perform setup. See Chapter 4, *Communication* for details.
No sound is audible.	Volume setting is low or turned off.	Check the volume slider in the *Volume & Sound* properties dialog box in the Control Panel to ensure the volume is not turned down.
Terminal turns itself off.	Terminal is inactive.	Your terminal turns off after a period of inactivity. If the terminal is running on battery power, this period can be set from 1 to 5 minutes, in one-minute intervals. If the terminal is running on external power, this period can be set to 1, 2, 5, 10, 15, and 30 minutes. Check the *Power* dialog box (in the Control Panel), and change the setting if you need a longer delay before the automatic shutoff feature activates.
	Battery is depleted.	Replace the battery.
	Battery cover is removed.	Replace the battery cover.
Tapping the window buttons or icons does not activate the corresponding feature.	LCD screen not aligned correctly.	Re-calibrate the screen. See *Screen* on page 3-48.
	The system is hung.	Soft reset the system. To perform a soft reset, see *Resetting the Terminal* on page 2-34.

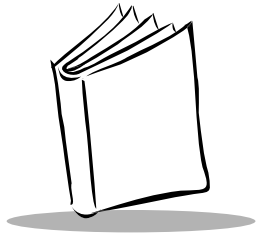
Table 10-1. Troubleshooting Your Terminal (continued)

Problem	Cause	Solution
A message appears stating that your terminal memory is full.	Too many files stored on the terminal.	Delete unused memos and records. You can save these records on your host computer.
	Too many applications installed on the terminal.	If you have installed additional applications on your terminal, remove them to recover memory. Select *Start - Settings -Control Panel.* Double-tap the *Remove Programs* icon. Select the unused program and tap **Remove.**
Beamed data does not transmit.	Terminals too close together or too far apart.	Confirm that the terminals are at least 5 inches and at most 39 inches apart. Also ensure that there is a clear path between the two devices.
	Insufficient room lighting.	Adjust the room lighting or move to a different location.
When receiving beamed data an out of memory message appears.	Not enough free memory available for receiving data.	Your terminal requires at least twice the amount of memory available as the data you are receiving. For example, if you are receiving a 30K application, you must have at least 60K free.

Table 10-1. Troubleshooting Your Terminal (continued)

Problem	Cause	Solution
Your terminal does not accept scan input.	Scanning application is not loaded.	Verify that the unit is loaded with a scanning application. See your System Administrator.
	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Ensure you are within proper scanning range.
	Terminal is not programmed for the bar code.	Ensure the terminal is programmed to accept the type of bar code you are scanning.
	Terminal is not programmed to generate a beep.	If you are expecting a beep on a good decode and don't hear one, check that the application is set to generate a beep on good decode.
	Battery is low.	If the scanner stops emitting a laser beam when you press the trigger, check your battery level. When the battery is low, the scanner shuts off before the terminal notifies you of the low battery condition. **Note**: If the scanner is still not reading symbols, contact your distributor or Symbol Technologies.

Note: *If, after performing these checks, the terminal is still not reading symbols, contact your distributor or Symbol Technologies.*



Appendix A
Block Recognizer Characters

Introduction

Using the Block Recognizer, you can write characters directly on your terminal screen with your stylus. These characters are translated into typed text. Use Block Recognizer to enter text, for example, to write a note or to fill in fields in a dialog box.

Figure A-2 provides examples of how to write characters in lowercase. The Block Recognizer input panel is divided into two writing areas. Letters written in the left area

(labeled abc) create lowercase letters. Use the right area (labeled 123) for writing numbers, symbols, special characters, and punctuation.

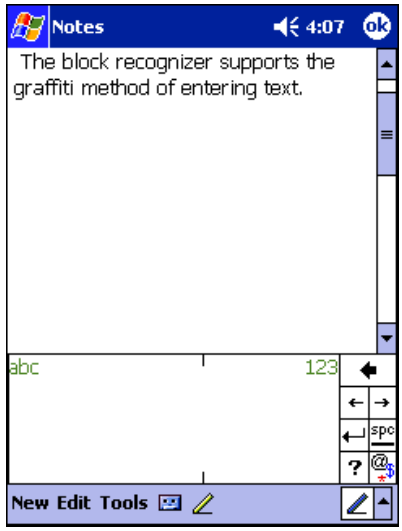


Figure A-1. Using Block Recognizer

The following chart illustrates some of the characters you can write (the dot on each character is the starting point for writing).

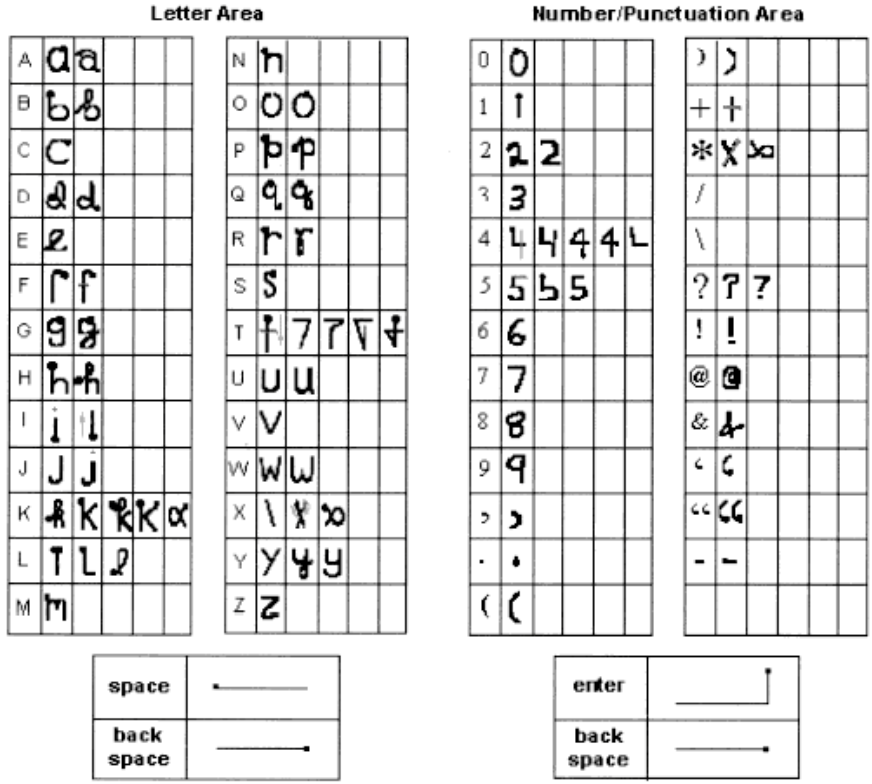
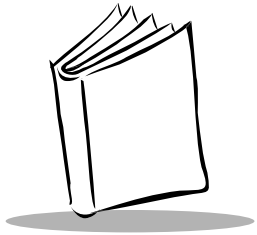


Figure A-2. Character Chart

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



Appendix B
Demo Program

Introduction

The demo program illustrates how to use some of the terminal's many applications. If the demo program is not already on the terminal (check the *Start* menu), you may download the program from the *Symbol Device Configuration Package for PPT 8800.* See Chapter 9, *Configuring the Terminal* for instructions on adding programs to your terminal.

The following options are available via the demo program.

- *Notify* - tests the green/amber/yellow LED, vibrator and beeper functionality
- *Scan* - sample scanning application for Visual C/C++
- *Files* - sample file management utility
- *Settings* - accesses the Control Panel screen
- *About* - provides version number, and other information, for the Demo program
- *Exit* - exits the Demo program.

The demo programs are loaded into the *Application* directory. Navigate to the directory using *File explorer* and tap the *Blt* file. The *Symbol Launcher* window appears.

Figure B-1. Symbol Launcher Window

Notify

Notify tests the LED, vibrator and beeper functionality of the terminal.

1. Tap the *Notify button.* The *Notify Example* window appears.

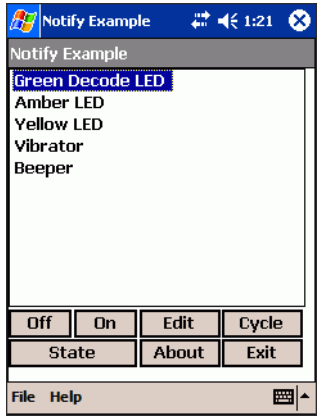


Figure B-2. Notify Window

2. Select one of the items from the list.

3. Tap the **On** button. The selected item is activated.
4. Tap the **Off** button.
5. Tap **Exit** to closed the application.

Scan

The Visual C/C++ sample scanning application enables the terminal's scanner, allows the user to change scan parameters, and displays scanned data. To access the Scan demo, tap *Scan* on the *Symbol Launcher window*.

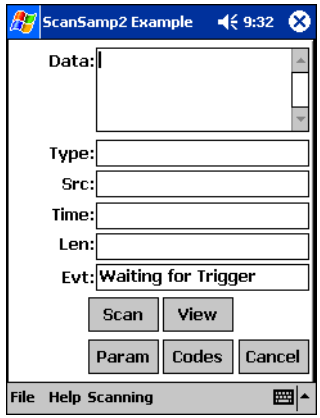


Figure B-3. Scan Sample Screen

Scanning Data Fields

After a bar code is scanned, the following data appears in the screen:

- *Data* displays the data encoded in the scanned bar code.
- *Type* indicates the hex type scanned.
- *SRC* indicates the scanner being used, and the bar code type scanned (e.g., Code 128).
- *Time* displays the time the bar code was scanned.
- *Len* indicates the number of digits in the bar code.
- *Evt.* indicates the status of the application, "Waiting for Trigger" or "Scanning."

Scanning Options

The following options are available in the *Scan* screen:

- *Scan* provides an alternative to the trigger buttons on the terminal.
- *View* displays the bar code content in a separate screen.
- *Params* is used to change scanning parameter options, such as:
  - beep time (length of decode beep)
  - beeper frequency (tone)
  - LED-on time (length of time LED remains on upon decode)
  - Code ID (AIM, Symbol)
  - Wav File (sound of decode beep).
- *Codes* selects the code types the terminal is able to decode, and sets the options for each code type.
- *Cancel* closes the *Scan* screen.

Files

Tap *Files* on the *Symbol Launcher* window for a file browser utility, *InkWiz Example*, It provides similar Windows Explorer-like functionality and allows the user to browse, cut, copy, paste and delete files as well as execute the program.

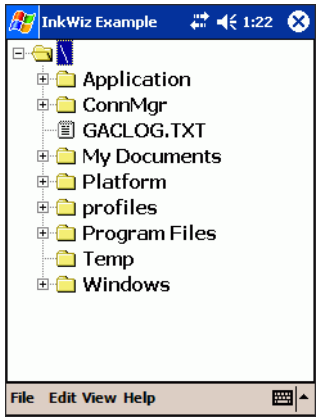


Figure B-4. InkWiz Example Window

Settings

Tap *Settings* on the Symbol Launcher window to access the *Control Panel*, where you can specify settings for your terminal.

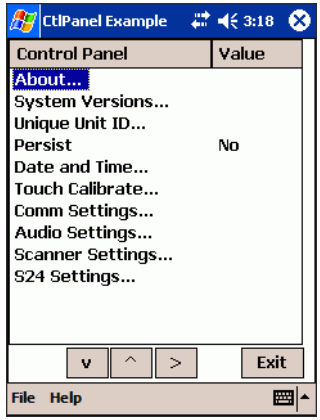


Figure B-5. Control Panel Screen

About

Tap *About* on the *Control Panel* to view the version of the *Control Panel*.

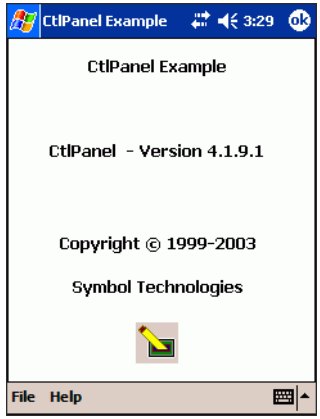


Figure B-6. About Screen

System Versions

Tap *System Versions* to view version information for the applications on your terminal.

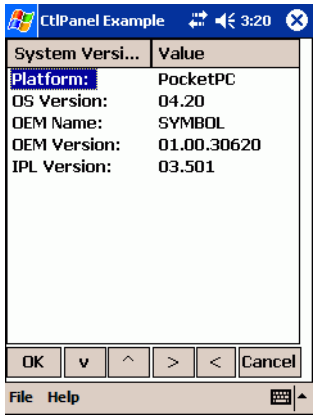


Figure B-7. System Versions Screen

On the *System Versions* window:

- *Platform* indicates the operating system running on the terminal (Pocket PC).
- *OS Version* specifies the version of the operating system.
- *OEM Name* is the OEM name of the terminal.
- *OEM Version* indicates the build version of the operating system.
- *IPL Version* identifies the build version of the system loader.

Unique Unit ID

Tap *Unique Unit ID* on the *Control Panel* to view the terminal's unique unit ID (a 16-byte hex number identifier), and the version numbers for RCM (Resource Coordinator Manager) API, Rescoord (Resource Coordinator) DLL, UUID DLL, and Temperature DLL.

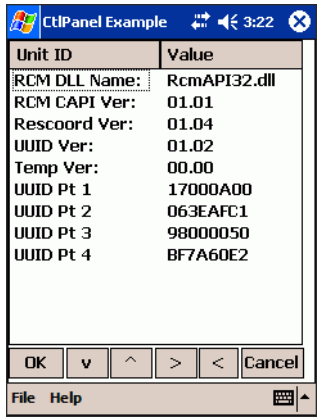


Figure B-8. Unique Unit ID Screen

Note: *PDT 8800 terminals do not support the Temperature DLL.*

Persist

Persist allows changes made by the *Control Panel* to remain in effect after a hard reset. When enabled, *Persist* creates .reg files which save specific settings that are made and restore the settings to the registry after a hard reset.

Toggle *Persist* to *Yes* to retain these changes made after a hard reset.

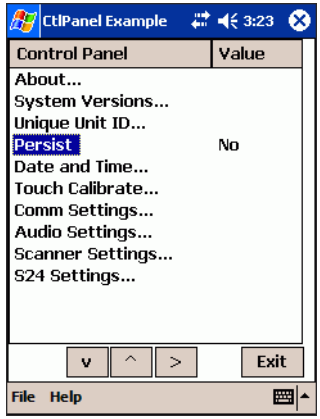


Figure B-9. Persist

Note: *Not all options support Permanent Persistence.*

Date and Time

Tap *Date and Time* on the *Control Panel* to change the date and time. The Date and Time window appears.

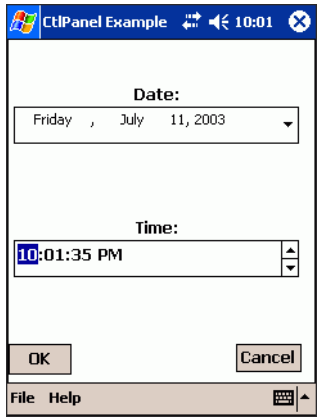


Figure B-10. Date and Time Window

To change the time, tap the *Time:* field and up the up and down arrows to change the value.

To change the date, tap the down arrow in the *Date:* field. A calendar box appears. Select the month and then select the day.

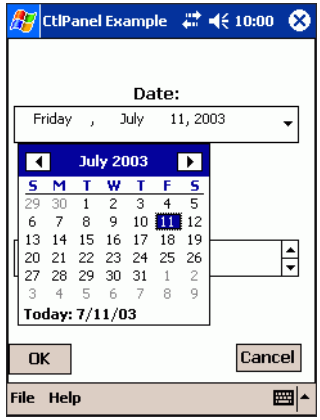


Figure B-11. Date Selection

Touch Calibrate

Select *Touch Calibrate* to re-align the screen.

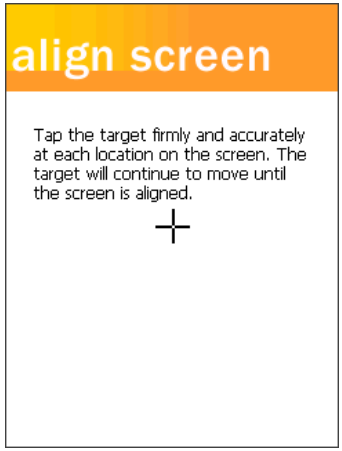


Figure B-12. Align Screen

Communication Settings

Select *Comm Settings* on the *Control Panel* to specify the settings to use when communicating with other devices.

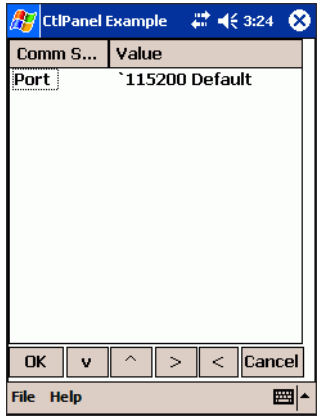


Figure B-13. Communication Settings Screen

Tap *Port* to select the appropriate communication settings to be used by ActiveSync. Scroll through the communication settings to select the appropriate value.

Audio Settings

Select *Audio Settings* on the Control Panel to specify the beeper volume and view the version numbers for the Audio and Notify APIs.

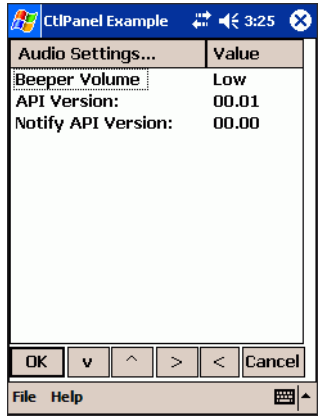


Figure B-14. Audio Settings Screen

- Tap *Beeper Volume* to toggle the beeper volume between low, medium, and high. As you change the value, the beeper sounds to demonstrate the level.
- *API Version* displays the version number of the Audio API.
- *Notify API Version* displays the version number of the Notify API.

Scanner Settings

Select *Scanner Settings* on the Control Panel to specify scanner-related parameters.

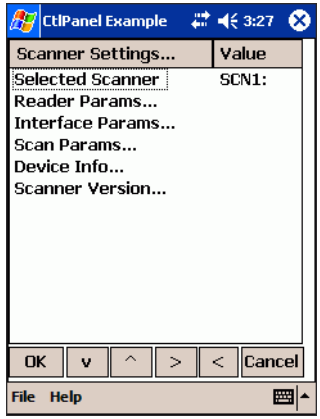


Figure B-15. Scanner Settings Screen

- *Selected Scanner* displays the value of the selected scanner.
- Tap *Reader Parameters* to view and modify the values of various reader parameters.
- Tap *Interface Parameters* to view and modify the values of the following interface parameters:
  - Interface Type
  - Enable Settle Time
  - Inverse Label
  - White Level
  - Clock Resolution
  - Power Settle Time.
- Tap *Scan Parameters* to view and modify the values of various scanner parameters.
- Tap *Device Info* to see the values of the following parameters:
  - Beam Width
  - Aim Mode
  - Scan Direction
  - Feedback

  - Supported Fmts
  - Max Image Rect.
- Tap *Scanner Version* to view the version numbers for the hardware, decoder, PPD, MDD, and API.

Refer to the Help file on the SDK for details on the available parameter options.

S24 Settings

Select *S24 Settings* on the Control Panel to specify S24-related parameters.

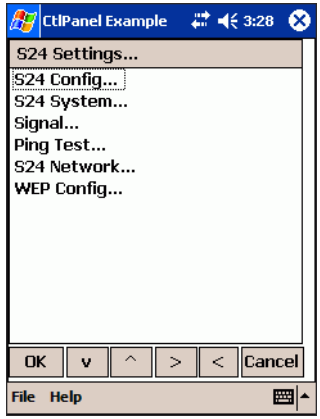
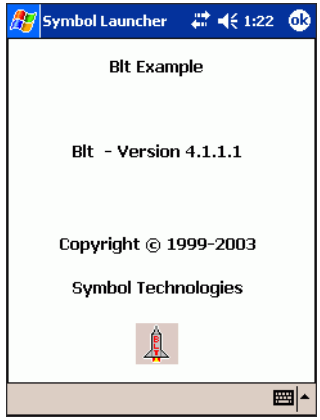


Figure B-16. S24 Settings Screen

- Tap *View Config* to view the current S24 settings.
- Tap *S24 System* to view and modify the system parameters.
- Tap *Signal* to view the signal strength in your current location.
- Tap *Ping Test* to view and modify settings for a ping test and perform a ping test.
- Tap *S24 Network* to view and modify the network parameters.
- Tap *S24 WEP Config* to view and modify the WEP configuration.

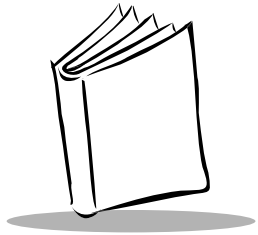
About

Select the *About* button on the *System Launcher* window to view information about the demo program.



Exit

Select the *Exit* button to exit the demo program.



Appendix C
Technical Specifications

Environment

The following table summarizes the terminal's intended operating environment.

Table C-1. Technical Specifications

Operating Temperature	14° to 122° F (-10° to +50° C)
Storage Temperature	-13° to 158° F (-25° to 70° C)
Humidity	5% to 90% non-condensing
Electrostatic Discharge (ESD)	+/-15 kVDC (air); +/- 8 kVDC (contact)
Drop to Concrete	4 feet (1.2 meters)
Sealing	IP54 (dust category 2)
Dimensions	1.28 in. H x 3.22 in. W x 5.75 in. L (32.4 mm H x 81.8 mm W x 146 mm L)
Weight (including battery)	10.8 oz (306 g)
Display	Transflective color TFT-LCD, 65K colors, 240 (W) x 320 (L) (QVGA size)
Touch Panel	Glass analog resistive touch
Main Battery Standard:	Rechargeable Lithium-Ion 1700 mAh minimum (3.7V)
Backup Battery	Ni-MH battery (rechargeable), 15mAh (2.4V) 2 cells
CPU	Intel® XScale™ PXA255

Table C-1. Technical Specifications (Continued)

Operating Platform	Microsoft® Windows® Mobile 2003 Software for Pocket PCs
Memory	64 MB RAM/ 64 MB ROM
Interface	RS-232, max. 115.2 kbps min. 1200bps, USB Client
CF Card Slot	Type II
Keypad Options	Standard 6-key and 15-key versions with power button.
1D Decode Capability	UPC/EAN/JAN, Code 39, Code 93, Code 128, Interleaved 2 of 5, Discrete 2 of 5, Codabar (NW-7), UCC/EAN-128, RSS Composite

COM Port Definitions

Table C-2. PPT 8800 COM Port Definitions

COM Port	Definition
COM1	Serial/Cradle
COM3	IRComm
COM4	Raw IrDA
COM7	VCOM Ext Power

Pin-Outs

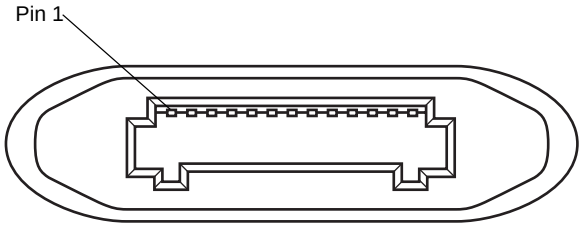
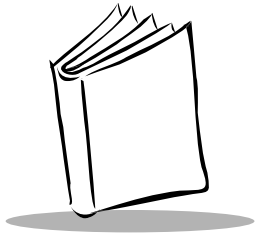


Figure C-1. ActiveSync Port (COM1)

Table C-3. PPT 8800 ActiveSync Port (COM1) Pin-Outs

Pin	Description
1	ext ±5 volts
2	DSR
3	RXD
4	RTS
5	TXD
6	CTS
7	DCD
8	RI
9	DTR
10	RS232_gnd
11	Power_GND
12	9 Volts_In
13	NC
14	NC



Appendix D
Keypad Maps

Introduction

This appendix contains the keypad map for the keypad configuration of the terminal. Each key is listed in the table with its value, depending on the state of the keypad.

As shown below, when the 1 key is pressed on the keypad, the default state displays the number ‘1’. After pressing the Shift key, the press of the ‘1’ key acts as a Clear button.

Key	Default State	Shift State	VK Code (Decimal)	ASCII Value (Decimal)
1	1		49	49
		Clear	46	

In addition to key values, VK codes and ASCII values are listed for each key, where applicable.

Keypads

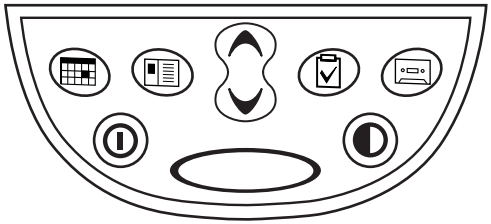


Figure D-1. Standard 6-Key Keypad

Table D-1. Standard 6-Key Keypad Functionality

Key	Default State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Calendar			9	9
			-	-	-
	Contacts			37	-
			Software Keyboard	-	-
	Tasks			39	-
			-	-	-
	Notes			27	27
			Calibrate	-	-
	UP			38	-
			Lighten screen	-	-
	DOWN			40	-
			Darken screen	-	-

Table D-1. Standard 6-Key Keypad Functionality (Continued)

Key	Default State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	ENTER			13	13
				-	-

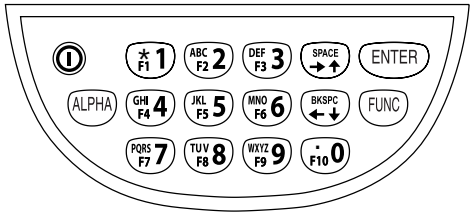


Figure D-2. 15-Key Keypad

Table D-2. 15-Key Keypad Functionality

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
* F1 1	1					49	49
		@				16+50	64
		-				189	45
		_				16+189	95
		/				191	47
			:			16+186	58
			?			16+191	63
			!			16+49	33
			,			188	44
					F1	112	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

Table D-2. 15-Key Keypad Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	2					50	50
ABC F2 2		a				65	97
		b				66	98
		c				67	99
			A			65	65
			B			66	66
			C			67	67
					F2	113	-
	3					51	51
DEF F3 3		d				68	100
		e				69	101
		f				70	102
			D			68	68
			E			69	69
			F			70	70
					F3	114	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

Table D-2. 15-Key Keypad Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	4					52	52
GHI F4 4		d				71	103
		e				72	104
		f				73	105
			D			71	71
			E			72	72
			F			73	73
					F3	115	-
	5					53	53
JKL F5 5		j				74	106
		k				75	107
		l				76	108
			J			74	74
			K			75	75
			L			76	76
					F5	116	-
* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.							

Table D-2. 15-Key Keypad Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	6					54	54
MNO F6 6		m				77	109
		n				78	110
		o				79	111
			M			77	77
			N			78	78
			O			79	79
					calibrate		-
					*F6	117	-
	7					55	55
PQRS F7 7		p				80	112
		q				81	113
		r				82	114
		s				83	115
			P			80	80
			Q			81	81
			R			82	82
			S			83	83
					Darken screen		-
					*F7	118	-

* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.

Table D-2. 15-Key Keypad Functionality (Continued)

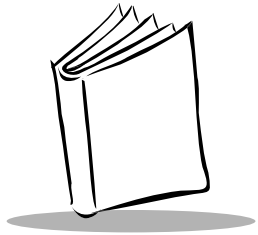
Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
TUV F8 8	8					56	56
		t				84	116
		u				85	117
		v				86	118
			T			84	84
			U			85	85
			V			86	86
					Lighten screen		
					*F8	119	-
WXYZ F9 9	9					57	57
		w				87	119
		x				88	120
		y				89	121
		z				90	122
			W			87	87
			X			88	88
			Y			89	89
			Z			90	90
					ESCAPE	27	27
					*F9	120	-

* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.

Table D-2. 15-Key Keypad Functionality (Continued)

Key	Default State	Alpha State	Alpha CAPS State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	0					48	48
		.				190	46
			.			190	46
					TAB	9	9
					*F10	121	-
	UP					38	-
		SPACE				32	32
			SPACE			32	32
					RIGHT	39	-
	DOWN					40	-
		BK SPC				8	8
			BK SPC			8	8
					LEFT	37	-
	ENTER					13	13
		ENTER				13	13
			ENTER			13	13

* F6, F7, F8, F9 and F10 VK codes are generated when no function is defined on each key at Control Panel.



Index

C

D

E

F

G

H

I

K

L

M

N

O

P

R

S

T

U

V

W

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How familiar were you with this product before using this manual?

☐ Very familiar ☐ Slightly familiar ☐ Not at all familiar

Did this manual meet your needs? If not, please explain.

_____
_____

What topics need to be added to the index, if applicable?

_____
_____

What topics do you feel need to be better discussed? Please be specific.

_____
_____

What can we do to further improve our manuals?

_____
_____

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