

# PDT 8100 Series



## Product Reference Guide





***PDT 8100 Series  
Product Reference Guide***

*72-50932-02*

*Revision A*

*May 2002*



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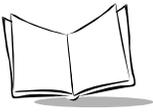
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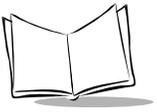
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*PDT 8100 Series Product Reference Guide*



## About This Guide

### Introduction

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The *PDT 8100 Series Product Reference Guide* provides information about the PDT 8100 Series terminal and its accessories. The PDT 8100 Series includes the following variations of the terminal:

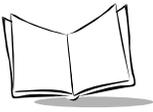
- PDT 8100: batch
- PDT 814x: Spectrum24 LAN radio.

### Chapter Descriptions

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Topics covered in this guide are as follows:

- Chapter 1, *Getting Started* explains the physical buttons and controls on your PDT 8100 terminal, how to install and charge the batteries, start your PDT 8100 terminal for the first time, and attach the handstrap and wriststrap.
- Chapter 2, *Operating the PDT 8100* explains how to use your terminal, including instructions for powering on and resetting the terminal, entering information, scanning, and using the stylus.
- Chapter 3, *Customizing Your PDT 8100* explains how to adjust settings on the terminal, and add and delete programs.
- Chapter 4, *Communications* explains how to use Microsoft® ActiveSync™ for communications between the terminal and host PC.
- Chapter 5, *Applications* describes how to use the Calendar, Contacts, Tasks, Notes and Inbox applications.
- Chapter 6, *Companion Programs* describes how to use the Pocket Word, Pocket Excel, and Microsoft Money.



- Chapter 7, *Pocket Internet Explorer* explains how to set up favorite links and channels, and browse the web on your terminal.
- Chapter 8, *Connections* describes how to connect the terminal to your network and e-mail server, and transfer information via infrared.
- Chapter 9, *Spectrum24 Network Configuration* describes NICTT and Spectrum24 Settings Control Panel Applet, the utilities that monitor and configure the Spectrum24 wireless connection.
- Chapter 10, *Wireless Wide Area Network Configuration* describes how to configure the terminal for CDPD and GSM wireless WAN connection.
- Chapter 11, *Software Installation on Development PC* provides instructions for installing the Software Developer's Kit on your host PC.
- Chapter 12, *Configuring the Terminal* provides instructions for installing the Software Developer's Kit on your host PC.
- Chapter 13, *Maintenance and Troubleshooting* describes how to install and use the Terminal Configuration Manager (TCM) and Initial Program Loader (IPL).
- Appendix A, *Character Recognizer* details how to write letters on your terminal so they are correctly translated into text.
- Appendix B, *Demo Program* provides an overview of the PDT 8100 demo program applications, such as scanning, setup, diagnostic utilities, and file management.
- Appendix C, *GSM Demo Program* explains how to explore the features GSM and the PDT 8134 terminal offer, including sending and receiving SMS messages.
- Appendix D, *Technical Specifications* includes a table listing the technical specifications for the terminal.
- Appendix E, *Keyboard Maps* includes tables listing key functionality for the 28-key, 37-key, and 47-key keyboards.

## Notational Conventions

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This document uses these conventions:

- "Terminal" or "PDT 8100" refers to any model of PDT 8100.
- "User" refers to anyone using an application on the PDT 8100.
- "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 PDT 8100.

- **Bold** type is used to identify menu items and input or text fields on a terminal screen, and keys or buttons pressed on the terminal.
- *Italics* are used to highlight specific items in the general text, and to identify chapters and sections in this and related documents. They also identify names of dialog boxes and tabs within dialog boxes.
- 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 Documents

---

The following documents provide more information on your PDT 8100 terminal.

- *PDT 8100 Quick Reference Guide*, p/n 72-52269-xx
- *CRD 8100-1000S Cradle Quick Reference Guide*, p/n 72-50974-xx
- *CRD 8100-4000E Ethernet Cradle Quick Reference Guide*, p/n 72-51002-xx
- *MDM 8100 Modem Module Quick Reference Guide*, p/n 72-50980-xx
- *MSR 8100 Magnetic Stripe Reader Quick Reference Guide*, p/n 72-50979-xx
- *VCA 8100 Charging Adapter Quick Reference Guide*, p/n 72-53818-xx
- *VCD 8100 Vehicle Cradle Quick Reference Guide*, p/n 72-50978-xx
- *Windows CE Help File for Symbol Terminals*, p/n 72E-38880-xx.
- *Symbol Software Developer's Kit (SDK) for the PDT 8100 Pocket PC*, available at <http://Software.Symbol.com/DevZone>.

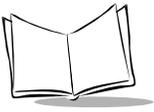
## Service Information

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If you have a problem with the PDT 8100 equipment, contact the Symbol Support Center. If your problem cannot be resolved over the phone, you may need to return your equipment for servicing. If that is necessary, you will be given special 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 has not been kept, contact Symbol to have another sent to you.*

---

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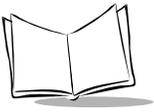
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---

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Symbol will use new or refurbished parts at its discretion and will own all parts removed from repaired products. Customer will pay for the replacement product in case it does not return the replaced product to Symbol within 3 days of receipt of the replacement product. The process for return and customer’s charges will be in accordance with Symbol’s Exchange Policy in effect at the time of the exchange.

Customer accepts full responsibility for its software and data including the appropriate backup thereof.

Repair or replacement of a product during warranty will not extend the original warranty term.

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# *Chapter 1*

## *Getting Started*

### **Introduction**

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This chapter explains the physical buttons and controls on your PDT 8100 terminal, how to install and charge the batteries, attach the handstrap, and start your PDT 8100 terminal for the first time.

### **Unpacking the Terminal**

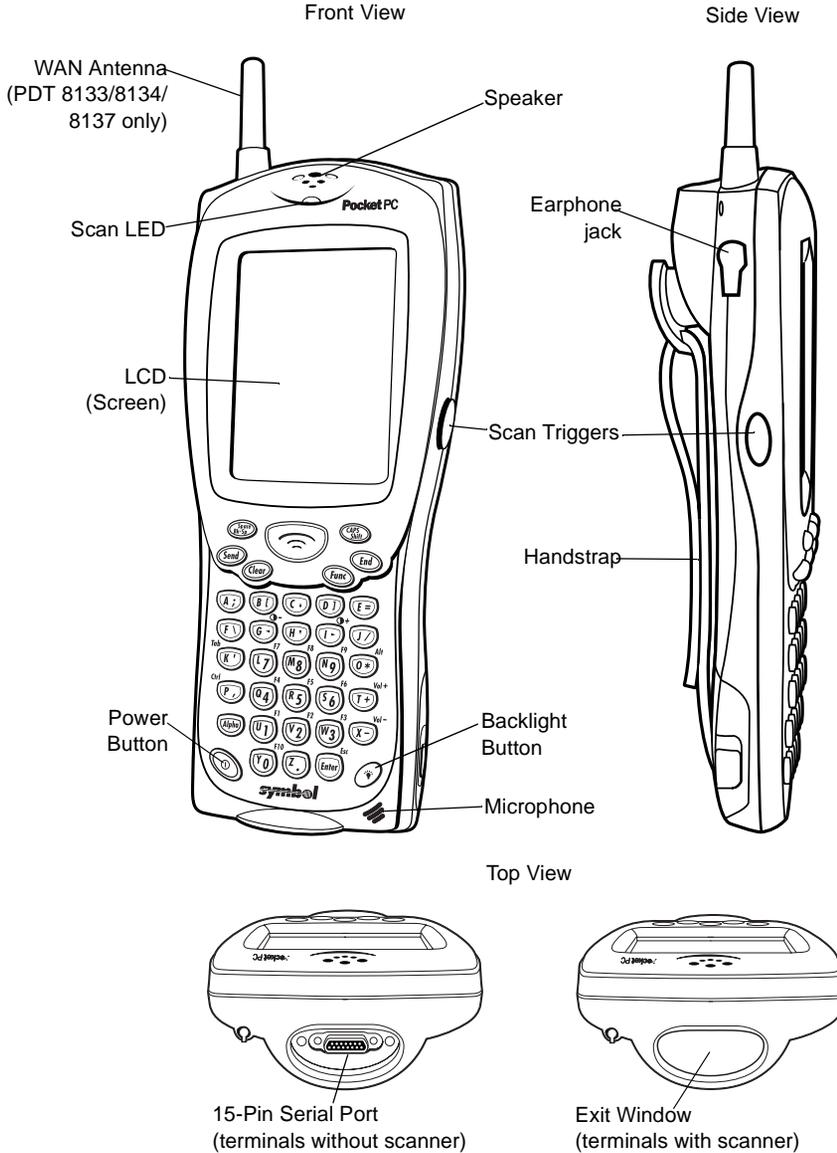
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Carefully remove all protective material from around the terminal and save the shipping container for later storage and shipping.

Verify that you received all equipment listed on the packing slip and 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 xiv for contact information.



# Parts of the PDT 8100

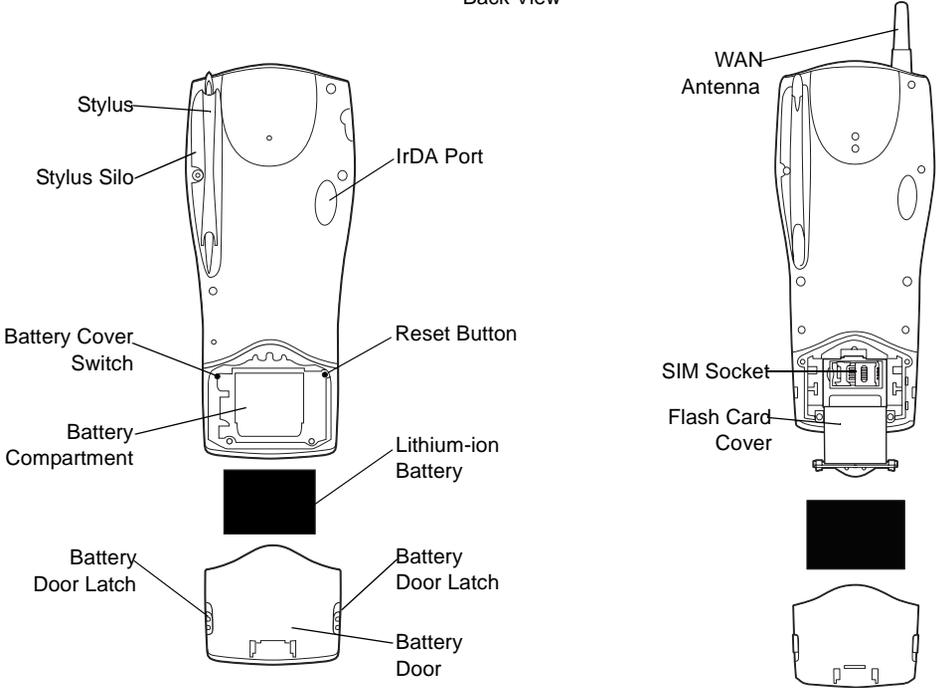


Bottom View



Serial Communications Port

Back View





## Accessories

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The following accessories are available for the PDT 8100:

- **Battery:** 1550 mAH lithium-ion battery (part number 21-52319-01)
- **Printer Cables:**
  - CBL8100-100-MON1
  - CBL8100-100-ELT
  - CBL8100-100-ON2
  - CBL8100-100-ZEB
  - CBL8100-100-CTC
- **CRD 8100-1000S Single-Slot Serial Charging Cradle** charges and synchronizes the PDT 8100 terminal with a desktop computer.
- **CRD 8100-4000E 4-Slot Ethernet Cradle** charges the PDT 8100 and synchronizes the terminal with a desktop computer.
- **VCD 8100-R000 Vehicle Cradle** powers the terminal and charges its battery, and can be used to communicate with other devices such as printers.
- **MDM 8100-100 Snap-On Modem Module** allows dial-up connections of the PDT 8100 terminal to a remote host computer, while maintaining the portability of the terminal.
- **VCA 8100-00 Auto Charging Adapter** connects to the cigarette lighter in a vehicle to charge the terminal.
- **MSR 8100-100 Magstripe Reader Attachment** snaps on to the PDT 8100 to add magstripe capabilities.
- **CBL 8100-100-DEX** is a DEX cable for the PDT 8100 terminal to add magstripe capabilities.
- **Symbol Software Developer's Kit (SDK)** for the PDT 8100 Pocket PC
- **Carrying Case** (part number 11-53814-01).

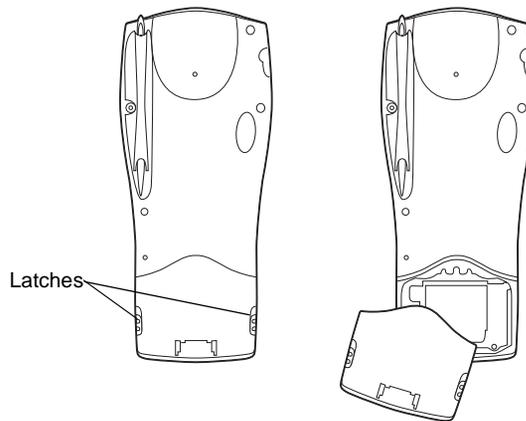
## Installing Batteries

---

Before using your PDT 8100, install the lithium-ion battery. The battery fits behind the battery door on the back of the PDT 8100.

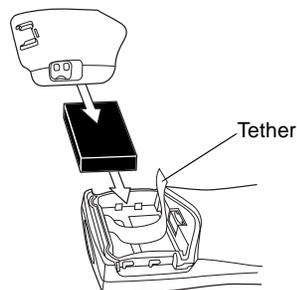
To install the battery in your PDT 8100:

1. Slide the latches on the battery cover up and lift the battery cover away from the PDT 8100.



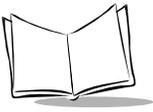
**Figure 1-1. Removing the Battery Cover**

2. Insert the lithium-ion battery in the battery compartment with the battery tether positioned properly (as shown below), making sure the battery snaps into place.



**Figure 1-2. Inserting the Battery**

3. Replace the battery cover and press down firmly along the top edge of the cover while sliding the latches down into the locked position.



---

**Note:** Ensure that the battery latches are in the up position while securing the battery cover on the terminal.

---

## Charging the Battery

---

Before using your terminal for the first time, charge the lithium-ion battery in the terminal for approximately 2 1/2 hours. Also, when battery voltage is low, a warning message appears indicating the battery needs to be charged. You can charge the battery using either the CRD 8100-1000S cradle or the Synchronization Cable.

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, and takes several hours to charge when you first use your terminal.

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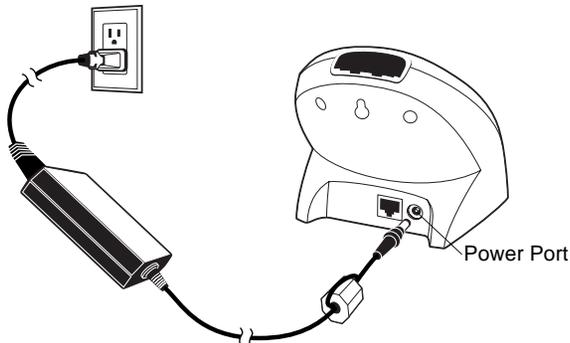
**Note:** If you remove your lithium-ion battery before the backup battery is fully charged, data may be lost. For this reason, DO NOT remove the battery within the first ten hours of use.

---

## Using the Cradle to Charge the Battery

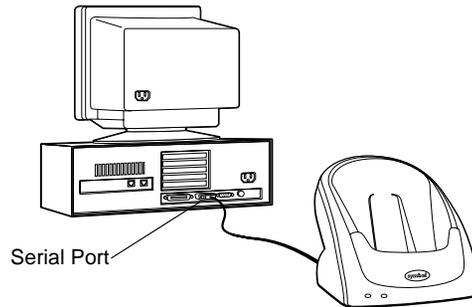
To charge the terminal's battery using the CRD 8100-1000S cradle:

1. Connect the power supply to the power port on the back of the cradle, and the other end of the power supply to a wall outlet.



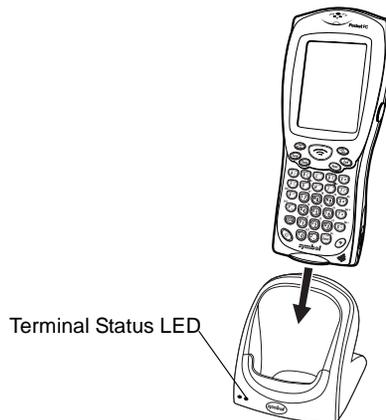
**Figure 1-3. Connecting the Power Supply**

2. Connect the cradle to your computer by plugging the serial cable into the serial port on the back of the cradle, and the other end of the cable into the serial port on your computer.



**Figure 1-4. Connecting the Cradle to the Host Computer**

3. Insert the PDT 8100 terminal in the cradle.



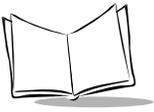
**Figure 1-5. Inserting the Terminal in the Cradle**

4. The Terminal Status LED turns red (may take up to one minute) to indicate charging. When the terminal battery is fully charged, the Terminal Status LED turns green if the cradle is connected to a host PC by serial cable.

---

**Note:** *If the cradle is not connected to a host PC via serial cable, the Terminal Status LED flashes red twice and goes out when the battery is fully charged.*

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The terminal's battery is fully charged after approximately 2 1/2 hours.

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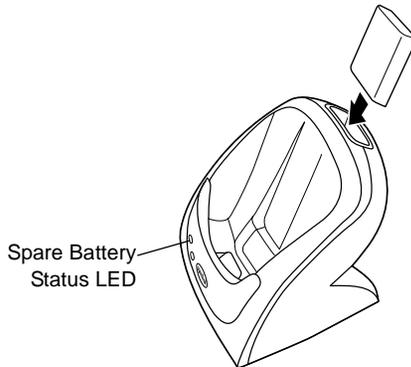
**Note:** *If the battery in the terminal is low, the Terminal Status LED may flicker or turn yellow during an ActiveSync operation. The LED returns to red when the operation is complete.*

---

## Charging Spare Batteries

To charge a spare battery, insert the battery in the spare battery charging slot in the back of the cradle, so the contacts are facing down and towards the back of the cradle. Press the battery down into the slot until firmly seated.

The Spare Battery Status LED turns red to indicate charging, then green when the battery is fully charged. The battery is fully charged after approximately 2 1/2 hours.

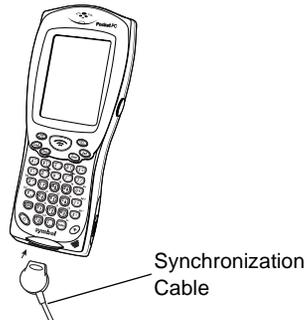


**Figure 1-6. Charging the Spare Battery**

## Using the Synchronization Cable to Charge the Battery

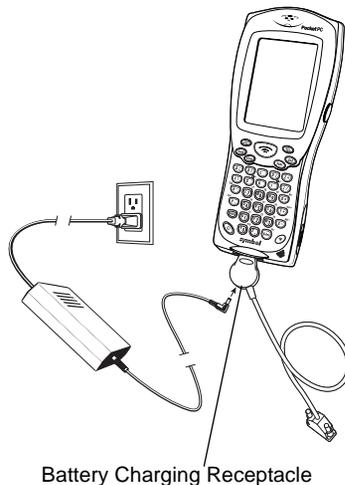
To charge the terminal's battery using the optional Synchronization Cable:

1. Insert the cable into the bottom of the terminal.

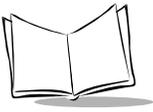


**Figure 1-7. Inserting the Cable in the Terminal**

2. Plug the power cable into a wall outlet and plug the other end into the battery charging receptacle on the side of the Synchronization Cable.



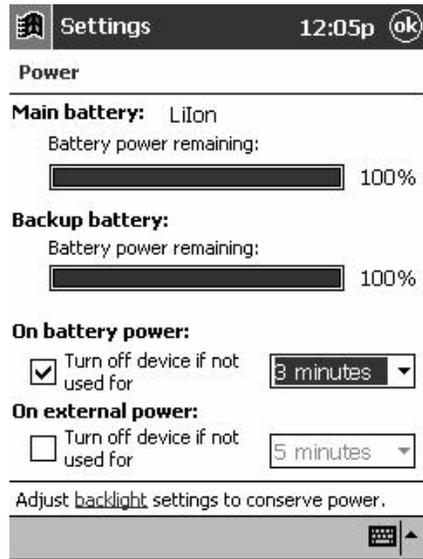
**Figure 1-8. Connecting the Power Cable**



## Checking Battery Power

---

To check whether the battery in the terminal is charged, tap **Start, Settings, System, Power** to display the following Battery Status screen.



**Figure 1-9. Battery Status Screen**

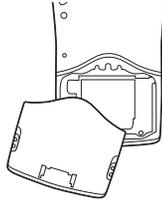
To save battery power, set your terminal to turn off after a specified number of minutes on battery power.

## Installing a SIM Card (PDT 8134/8137 Only)

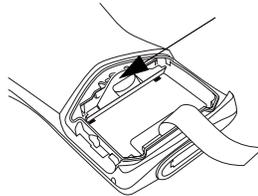
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To install a SIM card into the PDT 8134 and PDT 8137:

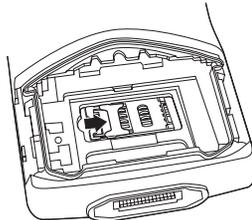
1. Slide the latches on the battery door up and lift the battery door away from the PDT 8137. If the battery is installed, remove it.



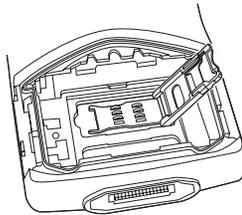
2. Remove the flash card cover at the top of the battery compartment by pulling the top out, and lifting the cover up.

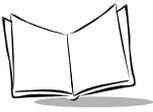


3. Slide the metal clip on the SIM cardholder door to the right to release the SIM cardholder.

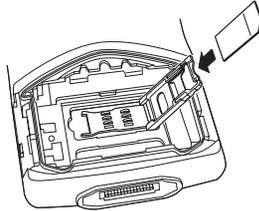
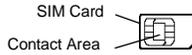


4. Lift the cardholder door to an upright position.

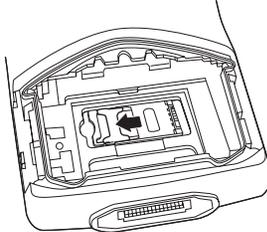




5. Insert the card between the cardholder body and the metal clip; be sure the beveled corner of the SIM card is on the top right.



6. Close the cardholder door (with the contact area of the card facing down).
7. Slide the metal clip to the left to lock it in place.



8. Replace the flash card cover.
9. Reinsert the battery and battery door.

## Inserting a Compact Flash Card

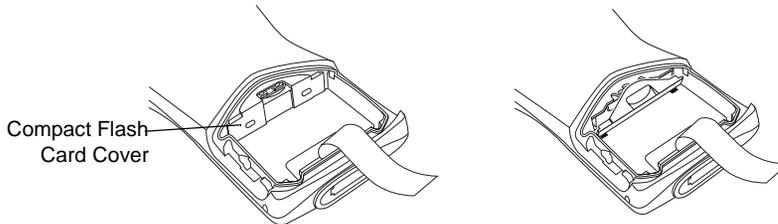
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The PDT 8100 has a slot for a standard compact flash card, which includes a locking mechanism that prevents the card from coming loose if the PDT 8100 is dropped. Insert the compact flash card carefully to make sure it engages this locking mechanism.

To install a compact flash card in your PDT 8100:

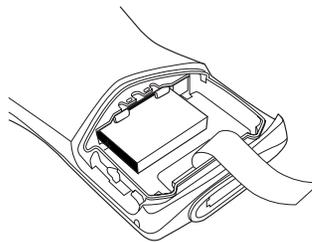
1. Open the battery cover and remove the battery.

2. Remove the flash card cover at the top of the battery compartment by pulling the top out, and lifting the cover up.



**Figure 1-10. Removing the Compact Flash Card Cover**

3. Insert the flash card into the compartment with the pins facing forward, and the main label facing down. It only fits one way. The two metal tabs on the locking mechanism will prevent you from pushing the card all of the way in.



**Figure 1-11. Inserting a Compact Flash Card**

4. To fit the card into place, push down and in at the same time, so that the lip of the compact flash card slips *under* the tabs of the locking mechanism.
5. Replace the flash card cover by inserting the bottom first, and pressing the top in.

---

**Note:** *After you insert or remove a compact flash card, you must replace the flash card cover or the terminal will not function.*

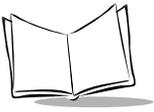
---

6. Reinsert the battery and battery cover.
7. Perform a soft reset (see *Performing a Warm Boot* on page 2-21).

## ***Removing a Compact Flash Card***

To remove the compact flash card:

1. Open the battery cover and remove the battery and flash card cover.



2. Use the stylus to press the flash card release button inside the flash card compartment.

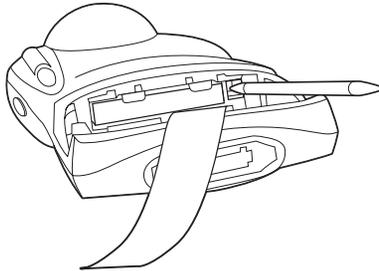


Figure 1-12. Removing a Compact Flash Card

## 15-Pin Serial Port Connector (Terminals without Scanner)

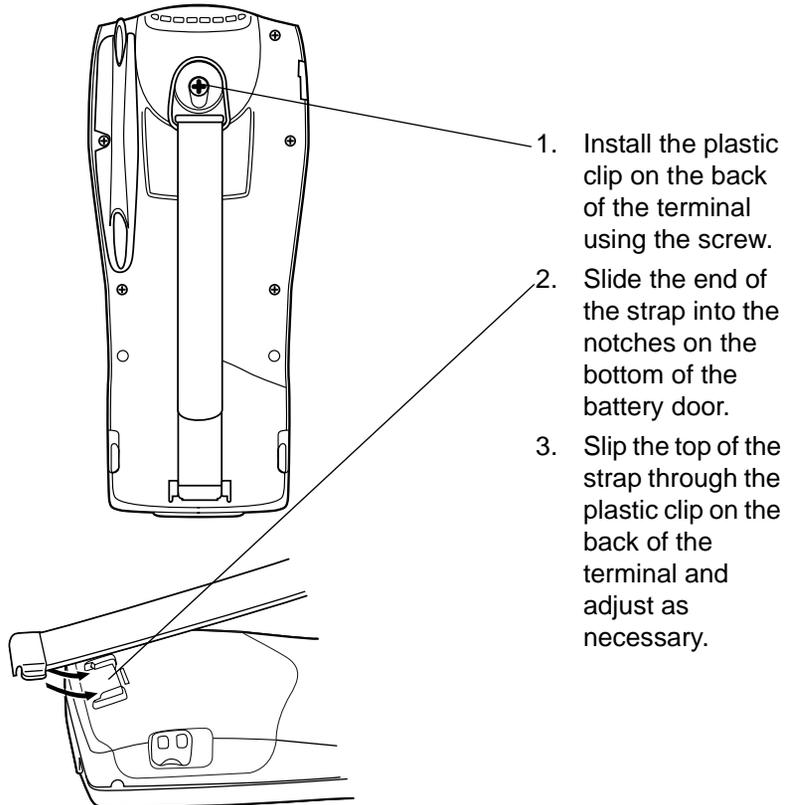
---

To connect to the Micro-D RS-232 port at the top of the terminal, use an ITT Cannon brand mil-spec connector (MDM-15SSB) with captivated jack screws (mil p/n M83513/5-6) to protect the connector's contacts from damage during insertion and removal.

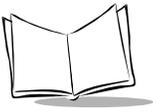
## Attaching the Handstrap

---

The PDT 8100 has an optional handstrap which increases comfort when holding the terminal for extended periods of time. To attach the handstrap to the back of the terminal:



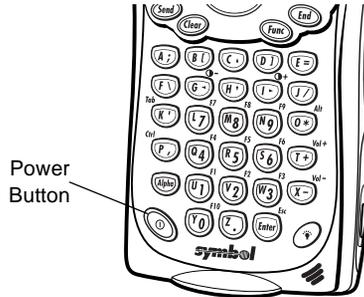
**Figure 1-13. Attaching the Handstrap**



## Starting the PDT 8100

---

After installing and charging the battery, start the terminal by pressing the red power button (see Figure 1-14). If the terminal does not power on, reset it. See *Performing a Cold Boot* on page 2-22.



**Figure 1-14. Power Button**

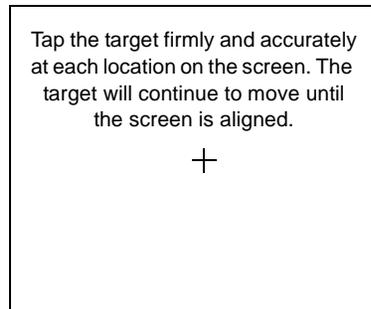
As the terminal initializes its unique Flash File system, the Symbol splash screen displays for about 10 seconds. When the Welcome screen appears, tap anywhere on the screen to continue to the Align screen. Note that these screens also appear every time you perform a cold boot.

### ***Aligning the Screen***

To align your PDT 8100 so the cursor on the touch screen aligns with the tip of your stylus:

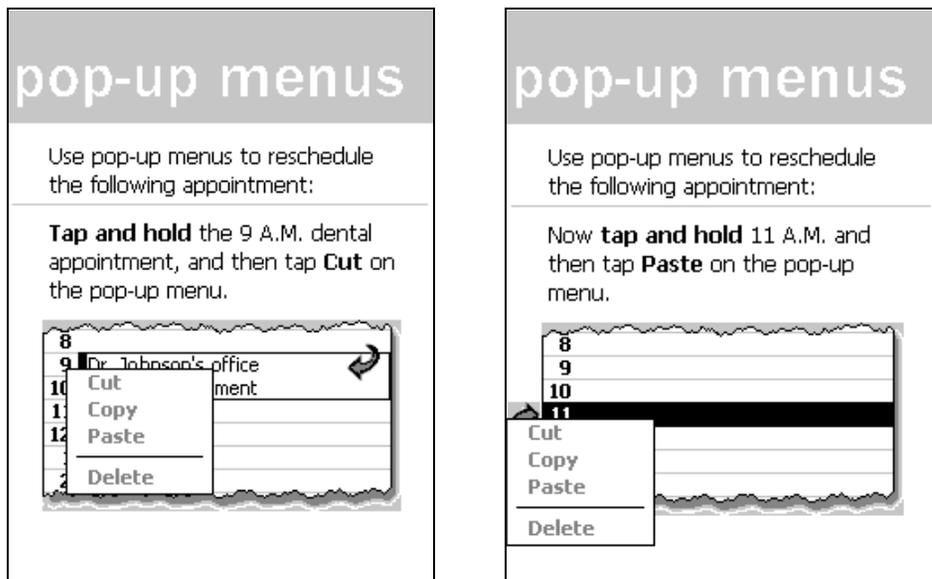
1. If necessary, adjust the contrast on the PDT 8100 so the screen is clear and readable. See *Adjusting the Contrast* on page 2-2 for instructions.
2. Remove the stylus from its storage silo on the back of the PDT 8100.

3. Tap the center of each target that appears on the screen with the tip of the stylus.

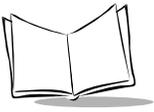


**Figure 1-15. Tapping the Target**

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



**Figure 1-16. Using Pop-up Menus**



5. Use the drop-down menus to set your city and time zone, and tap **Next**.

location

Select your city and time zone:

City: Seattle, WA (USA) ▼

Time zone: GMT-8 Pacific US ▼

Next

**Figure 1-17. Setting City and Time Zone on the PDT 8100**

---

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

---

## Setting Up Your Terminal

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Refer to the following chapters for setting up your terminal:

- For customizing the settings on your PDT 8100, see Chapter 3, *Customizing Your PDT 8100*.
- To configure your PDT 814x for Spectrum24, see Chapter 8, *Connections*.
- To install development software on your development PC, see Chapter 11, *Software Installation on Development PC*.
- To configure your terminal using the Terminal Configuration Manager, see Chapter 12, *Configuring the Terminal*.



## *Chapter 2*

# *Operating the PDT 8100*

### **Introduction**

---

This chapter provides basic instructions for using and navigating your PDT 8100 terminal.

### **Using the Power Button**

---

Press the power button on the lower left-hand side of the terminal to turn the PDT 8100 on and off.



## Using the Backlight Button

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Press the backlight button on the lower right-hand side of the terminal to turn the PDT 8100 LCD screen light on and off.

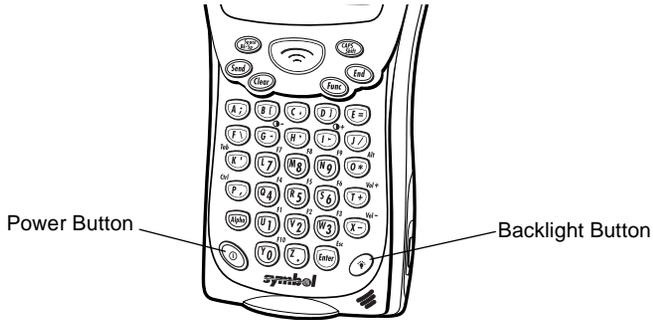


Figure 2-1. Power and Backlight Buttons

## Adjusting the Contrast

---

Use the following key combinations to adjust the contrast:

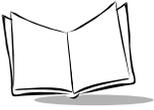
Keyboard	Keys	Description
28-key	Function + "1"	Decrease contrast (lighten the screen)
	Function + "2"	Increase contrast (darken the screen)
37-key	Function + "G"	Decrease contrast (lighten the screen)
	Function + "I"	Increase contrast (darken the screen)
47-key	Function + "Y"	Decrease contrast (lighten the screen)
	Function + "W"	Increase contrast (darken the screen)

## Using the Stylus

---

Your PDT 8100 has a stylus for selecting items and entering information. The stylus functions as a mouse.

- **Tap:** Touch the screen once with the stylus to open items and select options.
- **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.
- **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.



## Using the Keyboards

---

Refer to Table 2-1 on page 2-5, Table 2-2 on page 2-7, and Table 2-3 on page 2-9 respectively for 28-, 37-, and 47-key functionality. Note that key functions can be changed by an application. Your keyboard may not function exactly as described in these tables.

---

**Note:** For detailed keyboard configurations including ASCII values and VK codes, see Appendix E, Keyboard Maps.

---

## PDT 8100 28-Key Keyboard

The 28-key keyboard uses an alphanumeric keypad that produces the 26-character alphabet (A-Z), numbers (0-9), and assorted characters. The keyboard is color-coded to indicate which modifier key (Alpha-Numeric, **Func**) to press to produce a particular character or action. The keyboard default is numeric, producing numbers.

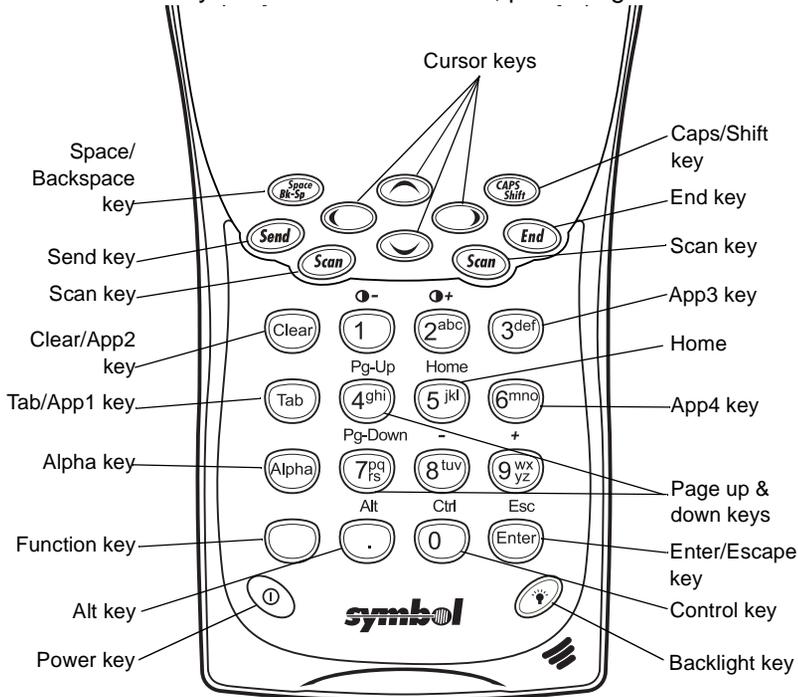
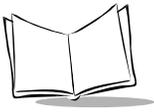


Figure 2-2. PDT 8100 28-key Keyboard

Table 2-1. 28-key Keyboard Actions

Key	Action
Note: Press <b>Func</b> , then another key to produce the value or function above that key. See individual key descriptions in this table for additional Function key usage.	
Alpha	Press <b>Alpha</b> to toggle between alpha and numeric mode. In alpha mode, pressing a key produces the yellow letter on that key; in numeric mode, pressing a key produces the number in gray.
App3	Press <b>Func</b> + <b>3</b> to activate the App3 key.



**Table 2-1. 28-key Keyboard Actions (Continued)**

<b>Key</b>	<b>Action</b>
App4	Press <b>Func + 6</b> to activate the App4 key.
Backlight	See <i>Using the Backlight Button</i> on page 2-2.
Caps/Shift	Press <b>Shift</b> when in alpha mode, then another key to capitalize the letter on that key. Press <b>Func + Shift</b> to toggle All Caps on and off. <b>Func + Shift</b> also erases all entered data from the screen.
Clear/App2	Press <b>Clear</b> to clear the screen. Press <b>Func + Clear</b> to activate the App2 key.
Contrast	See <i>Adjusting the Contrast</i> on page 2-2.
Cursor	Press cursor keys to move the cursor left, right, up and down on the screen. Press <b>Func + up cursor</b> to raise the volume. Press <b>Func + down cursor</b> to lower the volume.
End	Press <b>End</b> to move the cursor to the end of a line.
Enter/Escape	Press <b>Enter</b> after entering data or a command. Press <b>Func + Enter</b> to partially or completely escape from an application level or screen.
Power	See <i>Using the Power Button</i> on page 2-1.
Scan	Press <b>Scan</b> to scan bar codes. (Also use right and left scan triggers.)
Send	The <b>Send</b> key is application dependent.
Space/ Backspace	Press <b>Func + Bk-Sp</b> to enter a blank space. Press <b>Bk-Sp</b> to erase information entered on the display, one character at a time.
Tab/App1	Press <b>Tab</b> to move from field to field. Press <b>Func + Tab</b> to activate the App1 key.

## PDT 8100 37-Key Keyboard

The 37-key keyboard uses an alphanumeric keypad that produces the 26-character alphabet (A-Z), numbers (0-9), and assorted characters. The keyboard is color-coded to indicate which modifier key (Alpha-Numeric, **Func**) to press to produce a particular character or action. The keyboard default is numeric, producing the gray number or white character on that key.

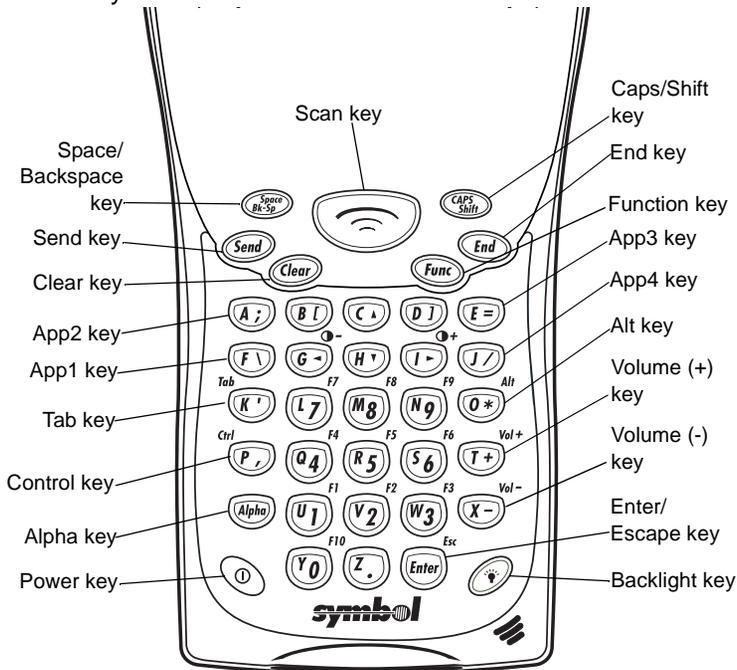
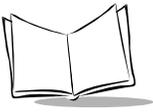


Figure 2-3. PDT 8100 37-key Keyboard

Table 2-2. 37-key Keyboard Actions

Key	Action
Note: Press <b>Func</b> , then another key to produce the value or function above that key. See individual key descriptions in this table for additional Function key usage.	
Alpha	Press <b>Alpha</b> to toggle between alpha and numeric mode. In alpha mode, pressing a key produces the yellow letter on that key; in numeric mode, pressing a key produces the gray number or character in white.
App1	Press <b>Func</b> + <b>F</b> to activate the App1 key.



**Table 2-2. 37-key Keyboard Actions (Continued)**

<b>Key</b>	<b>Action</b>
App2	Press <b>Func + A</b> to activate the App2 key.
App3	Press <b>Func + E</b> to activate the App3 key.
App4	Press <b>Func + J</b> to activate the App4 key.
Backlight	See <i>Using the Backlight Button</i> on page 2-2.
Caps/Shift	Press <b>Shift</b> when in alpha mode, then another key to capitalize the letter on that key. Press <b>Func + Shift</b> to toggle All Caps on and off. <b>Func + Shift</b> also erases all entered data from the screen.
Clear	Press <b>Clear</b> to clear the screen.
Contrast	See <i>Adjusting the Contrast</i> on page 2-2.
Cursor keys: C, G, H, I	Press cursor keys to move the cursor left, right, up and down on the screen.
End	Press <b>End</b> to move the cursor to the end of a line.
Escape/Enter	Press <b>Enter</b> after entering data or a command. Press <b>Func + Enter</b> to partially or completely escape from an application level or screen.
Power	See <i>Using the Power Button</i> on page 2-1.
Scan	Press <b>Scan</b> to scan bar codes. (Also use right and left scan triggers.)
Send	The <b>Send</b> key is application dependent.
Space/ Backspace	Press <b>Func + Bk-Sp</b> to enter a blank space. Press <b>Bk-Sp</b> to erase information entered on the display, one character at a time.

## PDT 8100 47-Key Keyboard

The 47-key keyboard uses an alphanumeric keypad that produces the 26-character alphabet (A-Z), numbers (0-9), and assorted characters. The keyboard is color-coded to indicate which modifier key (Alpha-Numeric, **Func**) to press to produce a particular character or action. The keyboard default is the key value, producing the gray number or lower case yellow letter on that key.

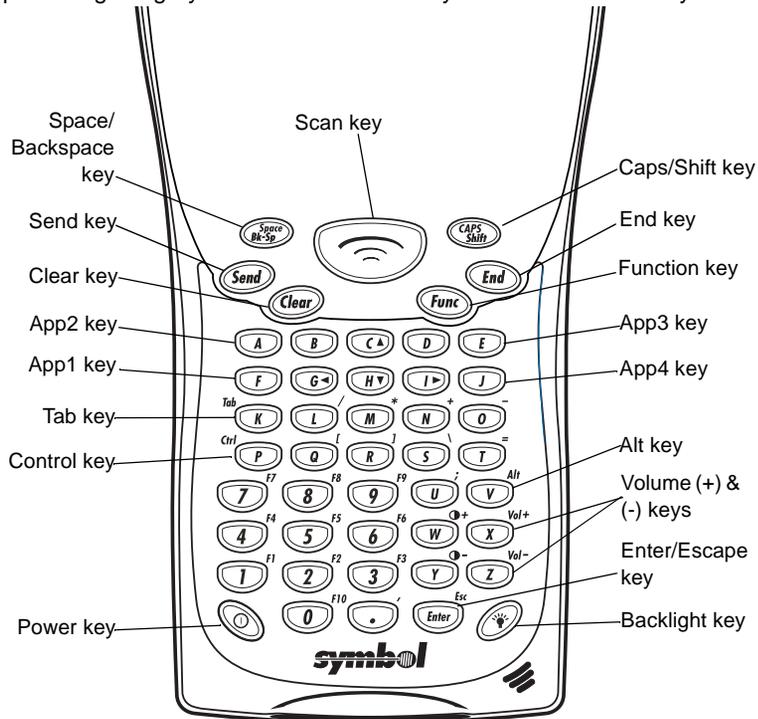


Figure 2-4. PDT 8100 47-key Keyboard

Table 2-3. 47-key Keyboard Actions

Key	Action
Note: Press <b>Func</b> , then another key to produce the value or function above that key. See individual key descriptions in this table for additional Function key usage.	
App1	Press <b>Func</b> + <b>F</b> to activate the App1 key.
App2	Press <b>Func</b> + <b>A</b> to activate the App2 key.
App3	Press <b>Func</b> + <b>E</b> to activate the App3 key.

**Table 2-3. 47-key Keyboard Actions (Continued)**

<b>Key</b>	<b>Action</b>
App4	Press <b>Func + J</b> to activate the App4 key.
Backlight	See <i>Using the Backlight Button</i> on page 2-2.
Caps/Shift	Press <b>Shift</b> when in alpha mode, then another key to capitalize the letter on that key. Press <b>Func + Shift</b> to toggle All Caps on and off. <b>Func + Shift</b> also erases all entered data from the screen.
Clear	Press <b>Clear</b> to clear the screen.
Contrast	See <i>Adjusting the Contrast</i> on page 2-2.
Cursor keys: C, G, H, I	Press cursor keys to move the cursor left, right, up and down on the screen.
End	Press <b>End</b> to move the cursor to the end of a line.
Escape/Enter	Press <b>Enter</b> after entering data or a command. Press <b>Func + Enter</b> to partially or completely escape from an application level or screen.
Power	See <i>Using the Power Button</i> on page 2-1.
Scan	Press <b>Scan</b> to scan bar codes. (Also use right and left scan triggers.)
Send	The <b>Send</b> key is application dependent.
Space/Backspace	Press <b>Func + Bk-Sp</b> to enter a blank space. Press <b>Bk-Sp</b> to erase information entered on the display, one character at a time.

## PDT 8100 Soft Keyboard

In applications that accept keyed input, you may use the input panel (soft keyboard) to enter data. To display the input panel, tap the Keyboard icon on the bottom of the screen. Tap the keys with your stylus to enter data.

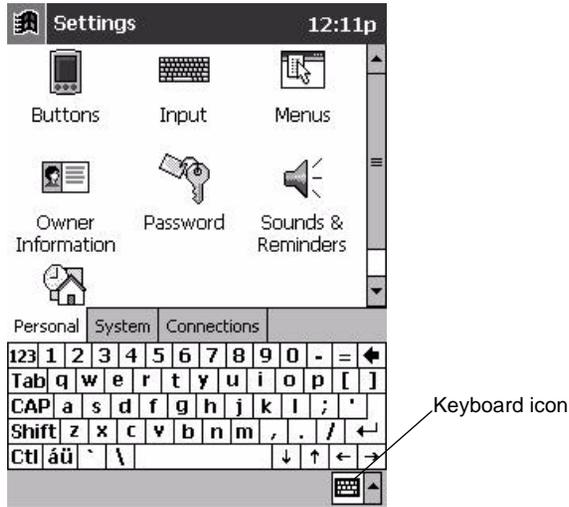


Figure 2-5. Input Panel

You can toggle between alpha and numeric mode by using the '123' button on the first row of the soft keyboard. Tap the '123' button using your stylus to switch between alpha or numeric mode.

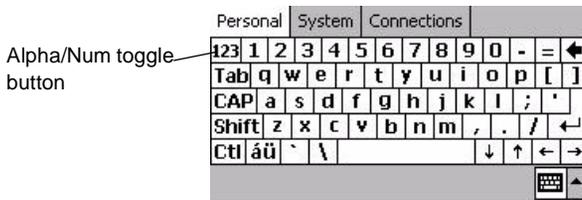
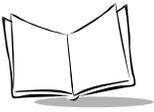


Figure 2-6. Alpha/Num Toggle



# 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 , then Today. On the Today screen, you can see important information for the day.

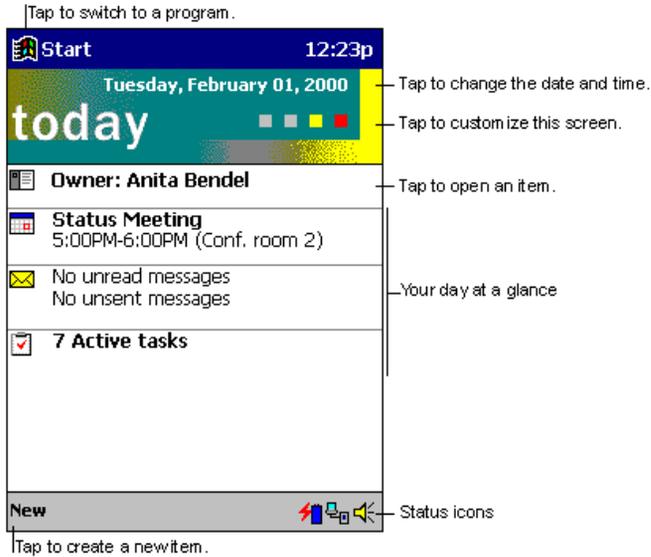


Figure 2-7. Today Screen

You may see the following status icons on the command bar located at the bottom of the screen:

Table 2-4. Status Icons

Icon	Meaning
	Turns all sounds on and off.
	Backup battery is low.
	Backup battery is very low.
	Main batteries are charging.

**Table 2-4. Status Icons (Continued)**

Icon	Meaning
	Main batteries are low.
	Main batteries are very low.
	External (AC) power source is connected.
	Dial-up connection is active.
	Direct connection is active.

## Selecting Programs

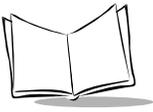
To select a program, tap , Programs, then the program name. (To select which programs appear on this menu, see *Adjusting Settings* on page 3-1.)

**Note:** *Some programs have abbreviated labels for check boxes and drop-down menus. 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.*

Table 2-5 lists the default programs you can access by pressing the button combinations on the front of the terminal. The icons on the buttons identify the programs they access.

**Table 2-5. Program Icons**

Icon	Button	Program	Description
	App1	Calendar	Keep track of your appointments and create meeting requests.
	App2	Contacts	Keep track of your friends and colleagues.
	App3	Tasks	Keep track of your tasks.
	App4	Notes	Create handwritten or typed notes, drawings, and recordings.



You can assign a different application to each application button. See Chapter 3, *Customizing Your PDT 8100*.

## Using the Navigation Bar and Command Bar

The navigation bar at the top of the screen displays the active program and current time, and 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, tap and hold the stylus on the button. Drag the stylus off the button 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.

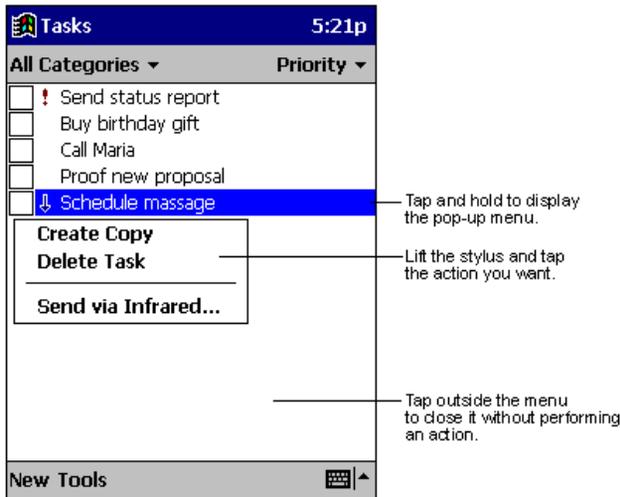


Figure 2-8. Pop-up Menu

## Entering Information

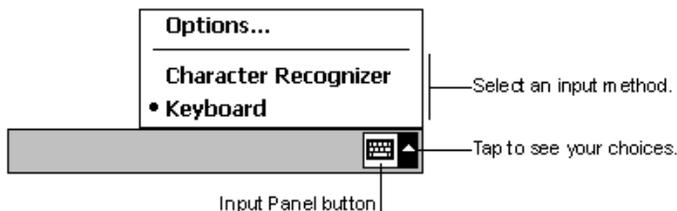
To enter information, you may:

- Use the 28-key, 37-key, or 47-key keyboard. (See *Using the Keyboards* on page 2-4 and Appendix E, *Keyboard Maps* for keyboard functions.)
- Use the input panel to enter typed text, either using the soft keyboard or Character Recognizer.
- Write directly on the screen.
- Draw pictures on the screen.
- Use ActiveSync to synchronize or copy information from your desktop computer to your terminal. For more information on ActiveSync, see Chapter 4, *Communications* or ActiveSync Help on your desktop computer.

### Typing 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 Character Recognizer. In either case, the characters appear as typed text on the screen.

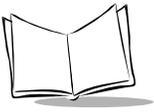
To show or hide the input panel, tap the **Input Panel** button. Tap the arrow next to this button to see your choices.



**Figure 2-9. 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 word suggestion options, such as the number of words suggested at one time, tap , **Settings**, **Personal** tab, **Input**, then the **Word Completion** tab.



To type with the soft keyboard:

1. Tap the arrow next to the **Input Panel** button, then **Keyboard**.
2. On the soft keyboard that is displayed, tap the keys with your stylus.

To use Character Recognizer:

1. Tap the arrow next to the **Input Panel** button, then **Character Recognizer**.
2. Write a letter in the box.

When you write a letter, it is converted to typed text that appears on the screen. For instructions on using Character Recognizer, see Appendix A, *Character Recognizer*.

## 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.

## 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 help you write.



**Figure 2-10. Writing on the Screen**

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**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.*

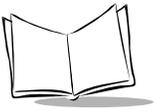
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## Selecting Writing

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**, then **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.

---

**Note:** *To change the zoom level, tap **Tools**, then a zoom level.*

---

## **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 on 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. If you want to include the recording in a note, open the note first.

To create a recording:

1. Tap the tape icon to display the voice bar.
2. Hold the terminal's microphone near your mouth or other source of sound.
3. Tap the Record button. A beep sounds, instructing you to begin recording.
4. Make your recording.
5. When you are finished, tap the Stop button. Two beeps sound. The new recording appears in the note list or as an embedded icon.

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

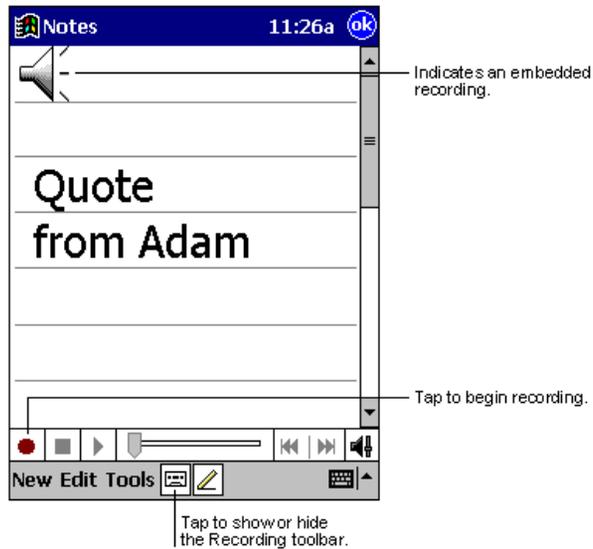
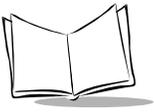


Figure 2-11. Recording Screen

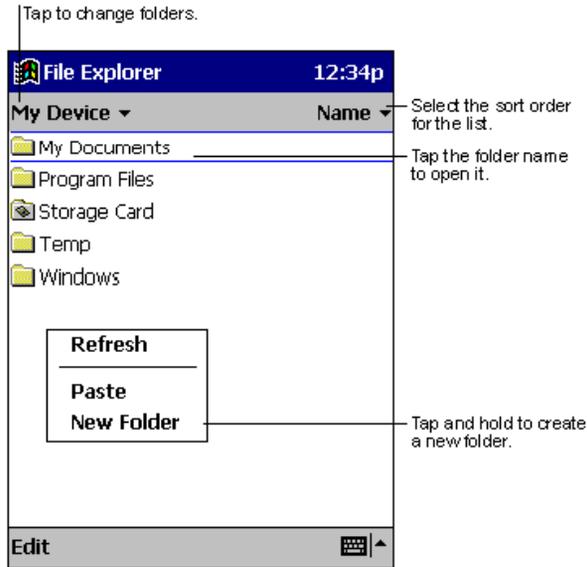
## Finding Information

The Find feature locates information. On the  menu, tap **Find**. 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 in Type**.



You can also use the File Explorer to find files and organize them into folders. On the menu, tap **Programs**, then **File Explorer**. 



**Figure 2-12. 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

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The PDT 8100 has an integrated scanner which allows you to collect data by scanning 1 dimensional bar codes. See Appendix B, *Demo Program* for a sample scanning application.

To scan bar codes with the PDT 8100:

1. Aim the scan window at the bar code.
2. Press the 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.

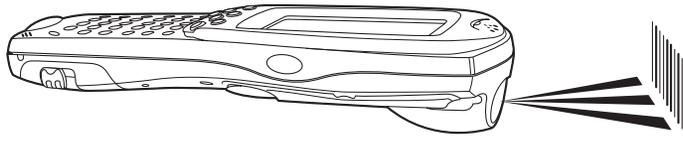


Figure 2-13. Scanning

## Resetting Your PDT 8100 Terminal

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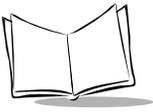
If your PDT 8100 terminal stops responding to input from buttons or the screen, you must reset it by performing a warm or cold boot.

### ***Performing a Warm Boot***

A warm boot restarts the terminal and saves all stored records and entries.

### ***Caution***

Files that remain open during a warm boot may not be retained.



To perform a warm boot:

**Table 2-6. Warm Boot Key Functions**

Keyboard	Keys
28-key	Backlight + Down Arrow + Function
37-key	Backlight + Alpha + Function
47-key	Backlight + End + Function

## Performing a Cold Boot

A cold boot also restarts your PDT 8100 terminal, but erases all stored records and entries. *Therefore, never perform a cold boot unless a warm boot does not solve your problem.*

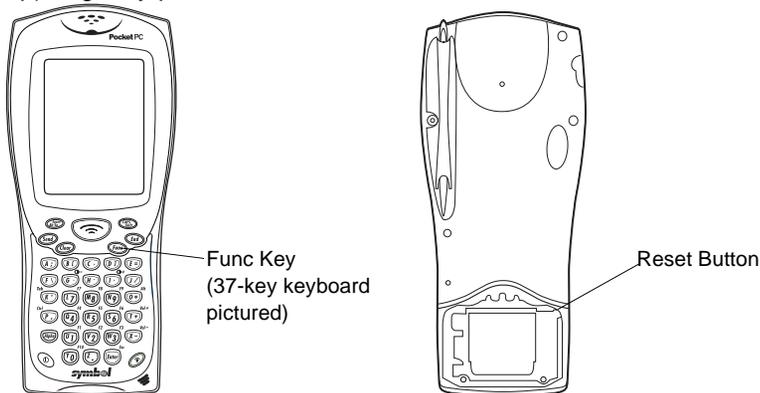
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**Note:** You can restore any data previously synchronized with your computer during the next ActiveSync operation. See the CRD 8100 Quick Reference Guide.

---

To perform a cold boot:

1. Remove the battery cover.
2. While holding down the **Func** key, use the tip of the stylus (or similar object *without* a sharp tip) to gently press the reset button.



**Figure 2-14. Cold Boot Buttons**

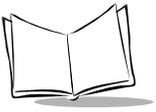
3. Replace the battery cover and press the Power button.

4. As the terminal initializes its unique Flash File system, the Symbol splash screen displays for about 10 seconds.
5. See *Aligning the Screen* on page 1-16 to perform an initial setup of the terminal.

---

**Note:** *With a cold boot, the current date and time, formats, preferences, and other settings are restored to their factory default settings.*

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*PDT 8100 Series Product Reference Guide*



## Chapter 3

# Customizing Your PDT 8100

### Introduction

---

This chapter provides basic instructions for customizing your terminal by adjusting settings and installing additional software.

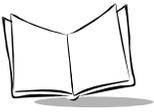
### Adjusting Settings

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To view available options for your terminal settings, tap  , **Settings**, then the **Personal** or **System** tab at the bottom of the screen.

You might want to adjust the following:

- **Clock**: change the time or set alarms
- **Buttons**: assign applications to the application hardware buttons
- **Menus**: customize what appears on the  menu and enable a pop-up menu from the **New** button
- **Owner Information**: enter your contact information
- **Password**: limit access to your terminal
- **Power**: maximize battery life
- **Today**: customize the information displayed on the Today screen.



## Adding and Removing Programs

---

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

In addition to the RAM-based storage standard on Pocket PC terminals, the PDT 8100 is also equipped with a non-volatile Flash-based storage area which can store data (partitions) that can not be corrupted by a cold boot. This Flash area is divided into two categories: Flash File System (FFS) Partitions and Non-FFS Partitions.

### ***FFS Partitions***

The PDT 8100 terminal includes three 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 three FFS Partitions appear as three 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. This partition includes the Symbol demo program, which can be overwritten with your own program.
- **Data:** The Data FFS Partition is optional and if present contains user data files generated by your custom programs. The default PDT 8100 image does not contain a Data FFS partition.

### ***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 cold boot (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,” “Platform,” and “Data” folders to the ActiveSync explorer.

This is useful when installing applications on the PDT 8100. Applications stored in the Application folder are retained even when the terminal is cold booted, just as the PDT 8100 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 cold boot: **RegMerge** and **CopyFile**.

## Regmerge

**Regmerge** merges registry entries with the System registry at Boot time. During a cold boot **RegMerge** looks for files with a .REG extension on the FFS partition and merges these with the system Registry. The default application partition shipped with the PDT 8100 includes the following example from the file **application.reg**:

```
[HKEY_CURRENT_USER\Software\Symbol\Launcher\Default\Programs\Prog2]
"Name"="\Application\ScanSamp2.exe"
"Description"="Scanner"
"Command"=""
```

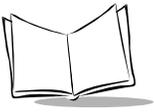
## CopyFile

**CopyFile** copies files from one folder to another on a cold boot. Files can be copied from a non-volatile partition (Application or Platform) to the Windows or other volatile partition during a cold re-boot. During a cold boot **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 ">". The following example from the file **application.cpy** is contained on the default application partition shipped with the PDT 8100.

```
\application\PDT 8100 Demo.lnk > \windows\start menu\PDT 8100 Demo.lnk
\application\Scout Help.lnk > \windows\help\Scout Help.lnk
\application\ScoutSync.htm > \windows\ScoutSync.htm
```

## 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 PDT 8100.
- **Splash Screen:** a Device Independent Bitmap (DIB) smaller than 16 Kb, displayed as the terminal cold-boots. You may download a customized screen to display (see *Creating a Splash Screen* on page 12-19).
- **IPL (Initial Program Loader):** This program interfaces with the host computer and allows you to download via serial cable or cradle 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 PDT 8100.

## ***Downloading Partitions to the Terminal***

TCM is used to specify a hex destination file for each partition and download each file to the terminal. This download requires a program loader stored on the terminal. The terminal comes with a program loading utility, Initial Program Loader (IPL), stored in the terminal's write-protected flash. See Chapter 12, *Configuring the Terminal* for details on using IPL and TCM to download partitions to the PDT 8100.

## ***Adding Programs***

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

1. Tap , then **Settings**. On the **System** tab, tap **About**. In the **Version** tab, note the information in **Processor**.
2. Download the program to your desktop computer (or insert the CD or disk that contains the program into your desktop computer). You may see a single \*.exe file, a \*.zip file, a Setup.exe file, or several versions of files for different device types and processors. Be sure to select the program designed for the Pocket PC and the PDT 8100 processor type.
3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
4. Connect your terminal and desktop computer.
5. Double-click the \*.exe file.

If the file is an installer, the installation wizard begins. Follow the directions on the screen. Once the software is installed on your desktop 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 it 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.

When installation is complete, tap , Programs, then the program icon to select it.

## ***Adding a Program to the Start Menu***

Tap , **Settings, Menus**, the **Start Menu** tab, then the check box for the program.

If you do not see the program listed, either use File Explorer to move the program to the Start Menu folder or use ActiveSync on the desktop computer to create a shortcut to the program and place the shortcut in the Start Menu folder.

### **Using File Explorer to Add to the Start Menu**

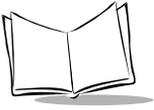
1. Tap , **Programs, File Explorer**, and locate the program (tap the folder list, labeled **My Documents** by default, then **My Device** to list all folders on the terminal).
2. Tap and hold the program and tap **Cut** on the pop-up menu.
3. Open the Start Menu folder located in the Windows folder, tap and hold a blank area of the window, and tap **Paste** on the pop-up menu. The program appears on the  menu.

For more information on using File Explorer, see *Finding Information* on page 2-19.

### **Using ActiveSync to Add to the Start Menu**

1. Use the Explorer in ActiveSync on your desktop computer to explore your terminal's files and locate the program.
2. Right-click the program, then click Create Shortcut.
3. Move the shortcut to the Start Menu folder in the Windows folder. The shortcut appears on the  menu.

For more information, see ActiveSync Help.



## ***Removing Programs***

To remove a program, tap , then **Settings**. On the **System** tab, tap **Remove Programs**.

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



## *Chapter 4*

# *Communications*

### **Introduction**

---

The CRD 8100-1000S Cradle serves as an essential data communications device, enabling you to synchronize the information on your PDT 8100 terminal and the ActiveSync® software on your desktop computer. With customized or third party software, it can also be used to synchronize your PDT 8100 terminal with corporate databases and other host computers. Setting up the CRD 8100-1000S cradle involves installing the ActiveSync software to enable synchronization, and connecting your cradle to your computer.

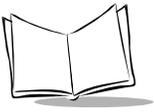
### **Installing ActiveSync Software**

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Using ActiveSync technology, you can synchronize the information on your PDT 8100 terminal with the information on your computer. Changes you make on your terminal or desktop computer appear in both places after you synchronize.

With ActiveSync software you can:

- Work with your terminal applications on your computer. ActiveSync duplicates applications on your PDT 8100 terminal (such as Calendar and Contacts) so you can view, enter and modify any data stored on your PDT 8100 terminal.
- Back up the data stored on your PDT 8100 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 computer.



- Control when synchronization occurs by selecting a synchronization mode, e.g., you may synchronize continually while the terminal is in the cradle, or only when you select the synchronize command.
- Select the types of information to synchronize, and control how much data is synchronized.

## Performing an ActiveSync for the First Time

---

The first time you synchronize your data, you need to enter user information on both the PDT 8100 terminal and desktop computer. Once you enter this information and synchronize, you don't need to enter this information again.

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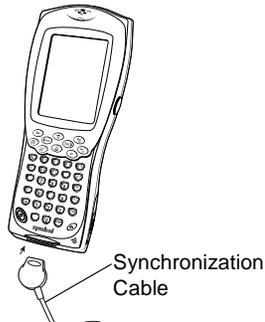
**Note:** *You must perform your first ActiveSync operation with a local, direct connection, rather than using a modem.*

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### Performing ActiveSync using the Synchronization Cable

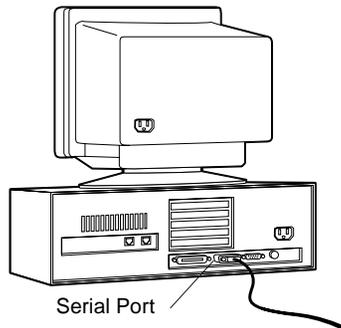
To perform an ActiveSync operation for the first time using the synchronization cable:

1. After installing the ActiveSync software, restart your desktop computer.
2. Insert the cable into the bottom of the terminal.



**Figure 4-1. Inserting the Cable in the Terminal**

3. Connect the other end of the cable to the serial communications port on your computer.



**Figure 4-2. Connecting the Synchronization Cable to the Computer**

---

**Note:** *The synchronization 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. On the desktop computer, enter a name for your PDT 8100 terminal and click the Next button. Follow the instructions on the screen to set up a partnership that allows synchronization of information between the two computers. Items to be synchronized may be customized, and you may select to synchronize automatically upon connect.

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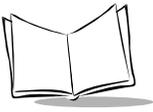
**Note:** *Every PDT 8100 terminal should have a unique name. Never try to synchronize more than one PDT 8100 terminal to the same user name.*

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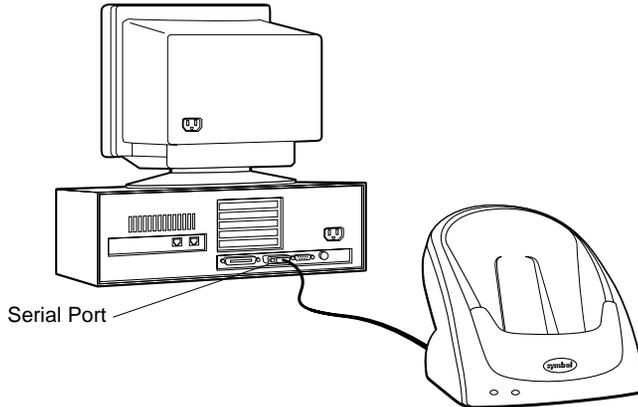
## ***Performing ActiveSync using the Cradle***

To perform an ActiveSync operation for the first time using the cradle:

1. After installing the ActiveSync software, restart your desktop computer.



2. Connect your CRD 8100-1000S cradle to your computer by plugging the cable from the cradle into the serial communications port on your computer.



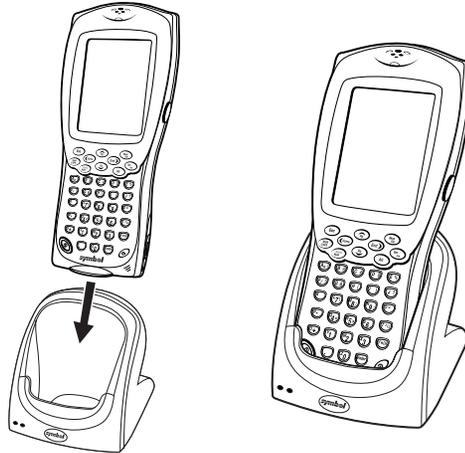
**Figure 4-3. Connecting the Cradle to the Computer**

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**Note:** *The CRD 8100-1000S 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.*

---

3. Turn on the PDT 8100 terminal and slide it into the cradle.



**Figure 4-4. Inserting the Terminal in the Cradle**

The curved edge on the bottom of the PDT 8100 terminal should align smoothly with the cradle when it is inserted properly.

4. On the desktop computer, enter a name for your PDT 8100 terminal and click the **Next** button. Follow the instructions on the screen to set up a partnership that allows synchronization of information between the two computers. Items to be synchronized may be customized, and you may select to synchronize continuously as information changes, upon connection, or manually by clicking the Sync button on the toolbar of your desktop computer.

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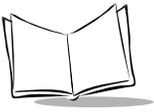
**Note:** Every PDT 8100 terminal should have a unique name. Never try to synchronize more than one PDT 8100 terminal to the same user name.

---

## Performing Subsequent ActiveSync Operations

---

After you complete the first ActiveSync operation, you just need to place the terminal in the connected cradle or connect the synchronization cable and synchronization occurs automatically.



## Performing a Remote ActiveSync

You can also sync your PDT 8100 remotely using a modem. See *Creating a Modem Connection to a Network* on page 8-4 to set up your terminal for a modem ActiveSync.

Before leaving your desktop computer, prepare the computer for a remote ActiveSync:

1. Start ActiveSync on your desktop computer.
2. On the **File** menu, select **Connection Settings**.
3. Select **Allow network (Ethernet) and Remote Access Service (RAS) server connection with this desktop computer**.
4. Leave your computer on and logged on.

To remotely sync your PDT 8100 terminal with your desktop computer:

1. Insert the terminal in the modem cradle, or attach the MDM3000 Modem Module. If using the cradle, set the Sync Select switch on the back of the cradle to the Modem position.
2. On the PDT 8100, select , **Programs, Connections**.
3. Tap your connection icon.
4. Enter your user name, domain, and password, and tap **Connect**.



## *Chapter 5* *Applications*

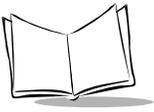
### **Introduction**

---

Your PDT 8100 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 desktop computer and your terminal. Each time you synchronize, ActiveSync compares the changes you made on your terminal and desktop computer and updates both with the latest information. For information on using ActiveSync, see Chapter 4, *Communications*, and ActiveSync Help on the desktop computer.

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

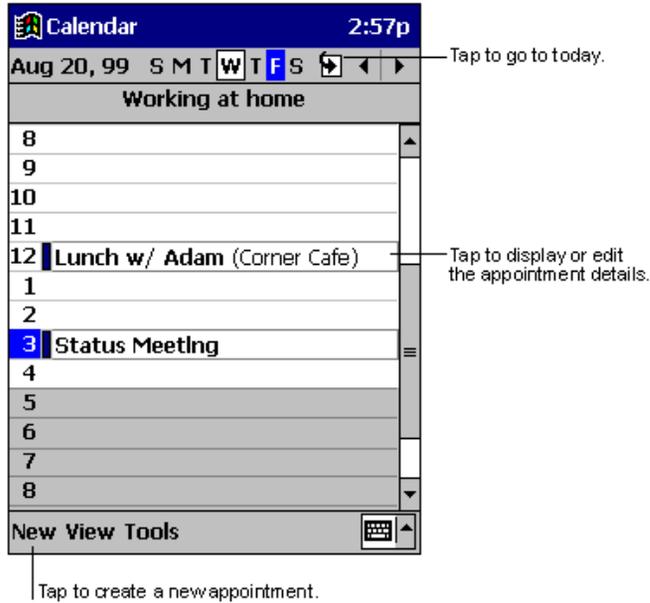


Figure 5-1. Calendar Application

---

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

---

## Creating Appointments

To create an appointment:

1. To select Calendar, press the App1 key combination or select Calendar from the  menu.
2. If you are in Day or Week view, tap the desired date and time for the appointment.

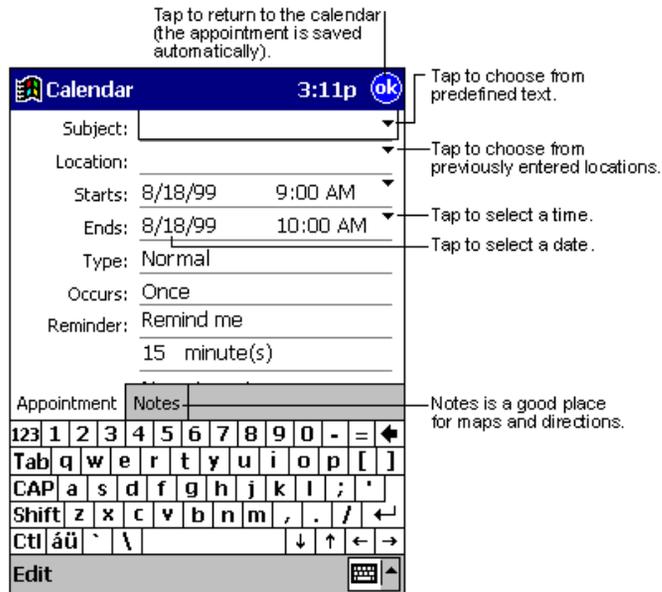
3. Tap **New**.

Figure 5-2. 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 5-11.
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 , *Settings, Personal tab, Sounds & Reminders*.

---



## Using the Summary Screen

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

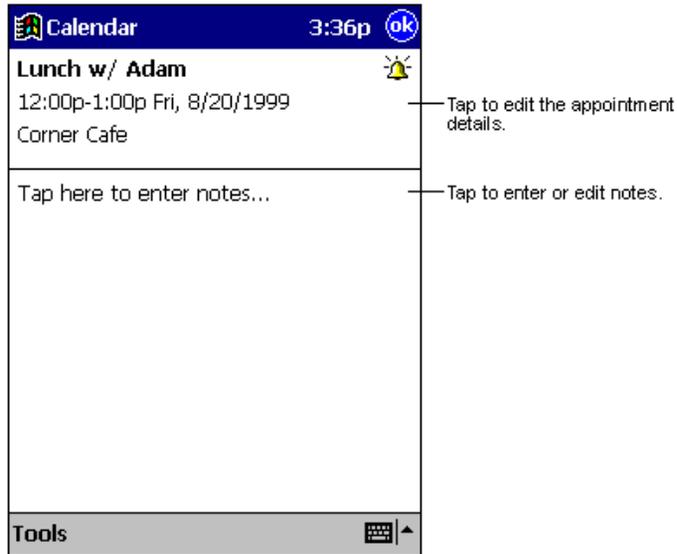


Figure 5-3. Appointment Summary Screen

## Creating Meeting Requests

You can use Calendar to set up meetings with users of Outlook 2000. 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**, then **Options**. If you send and receive e-mail messages through ActiveSync, select **ActiveSync**.

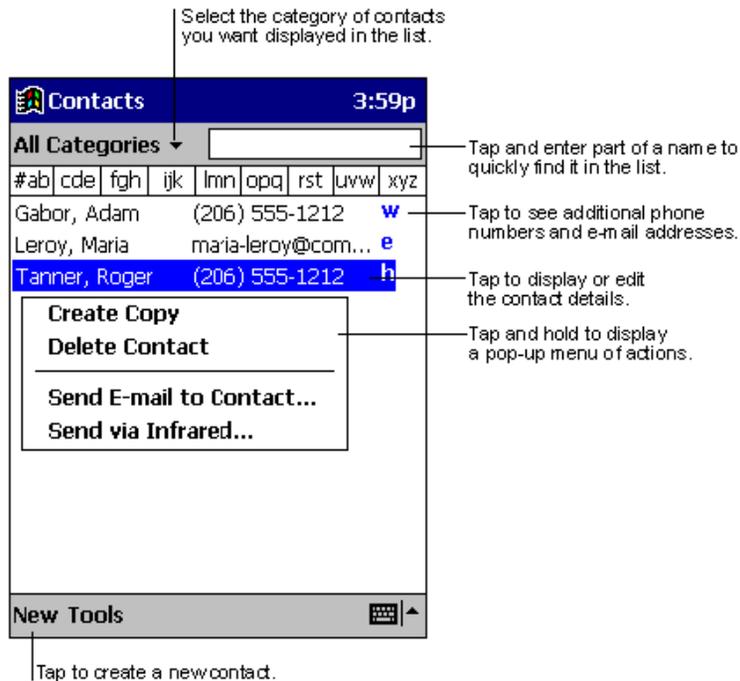
To schedule a meeting:

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 that you can easily locate information at home or on the road. Using the infrared (IR) port, you can share Contacts information with other terminal users.



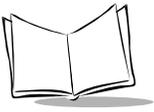
**Figure 5-4. Contact Application**

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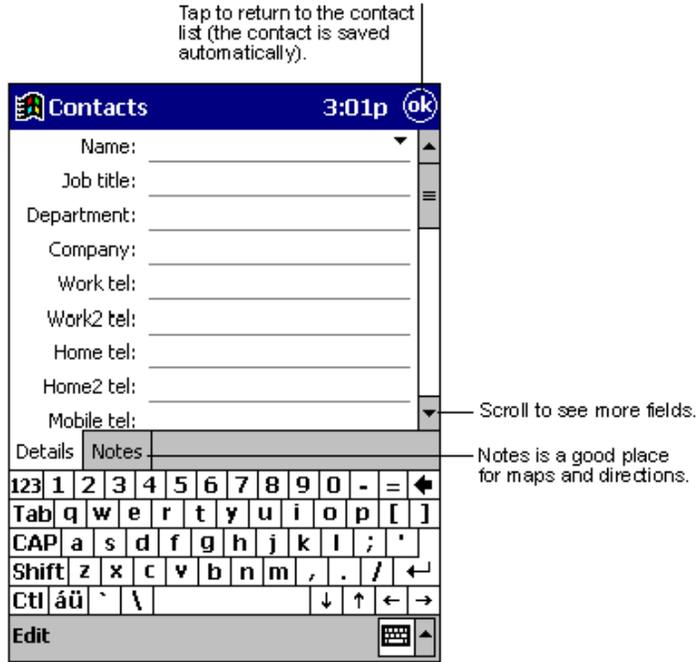
**Note:** To change the way information is listed, tap **Tools**, then **Options**.

---

To create a contact:



1. Tap **New**.

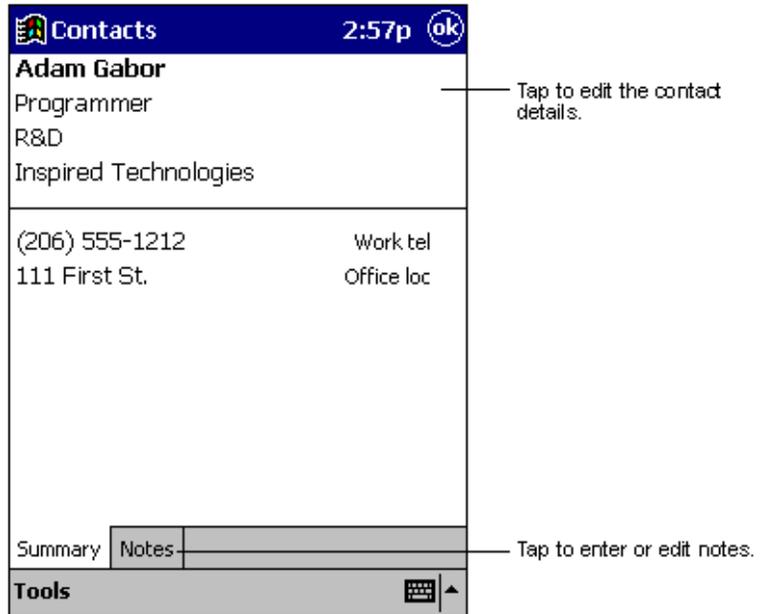


**Figure 5-5. Creating a Contact**

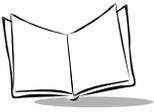
- Using the input panel, enter a name and other contact information. Scroll down to see all fields.
- To assign the contact to a category, scroll to and tap **Categories**. Select a category from the list. In the contact list, you can display contacts by category.
- To add notes, tap the **Notes** tab. You can enter text, draw, or create a recording. For more information on creating notes, see *Notes* on page 5-11.
- When finished, tap **OK** to return to the contact list.

## Using the Summary Screen

When you tap a contact in the contact list, a summary screen displays.



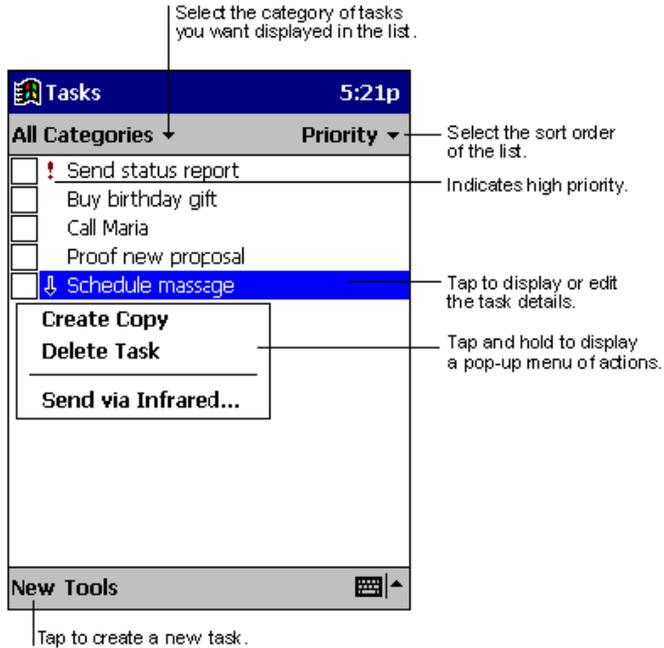
**Figure 5-6. Contacts Summary Screen**



# Tasks

---

Use Tasks to keep a “to do” list. In the task list, overdue tasks display in bold.



**Figure 5-7. Task Application**

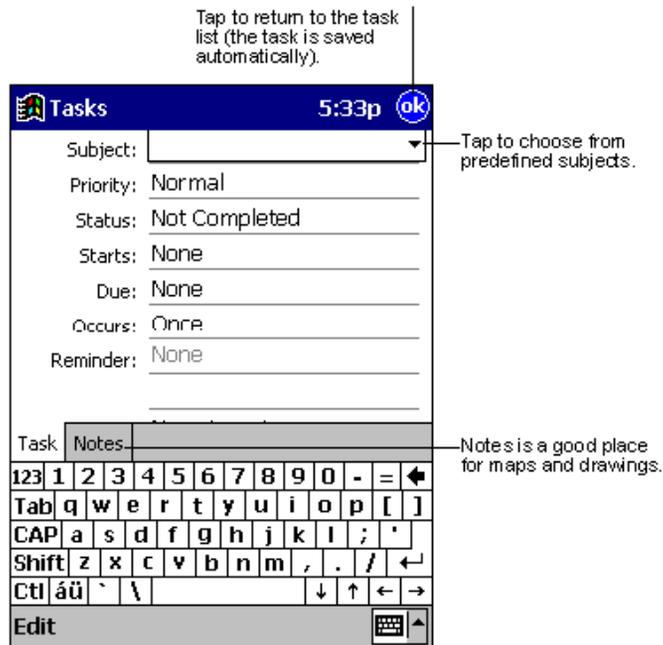
---

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

---

To create a task:

1. Tap **New**.



**Figure 5-8. Creating a Task**

2. Using the input panel, enter a description.
3. 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.
4. 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.
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 5-11.
6. Tap **OK** to return to the task list.

---

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

---



## Using the Summary Screen

When you tap a task in the task list, a summary screen displays.

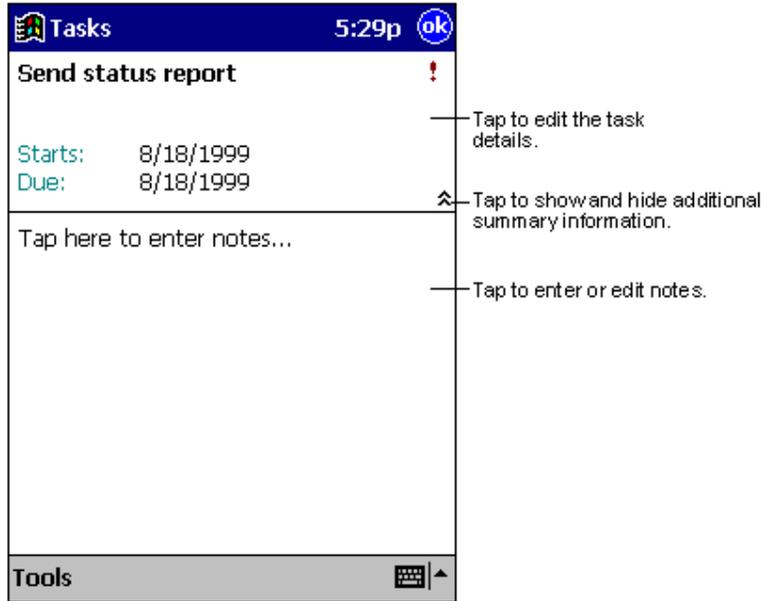
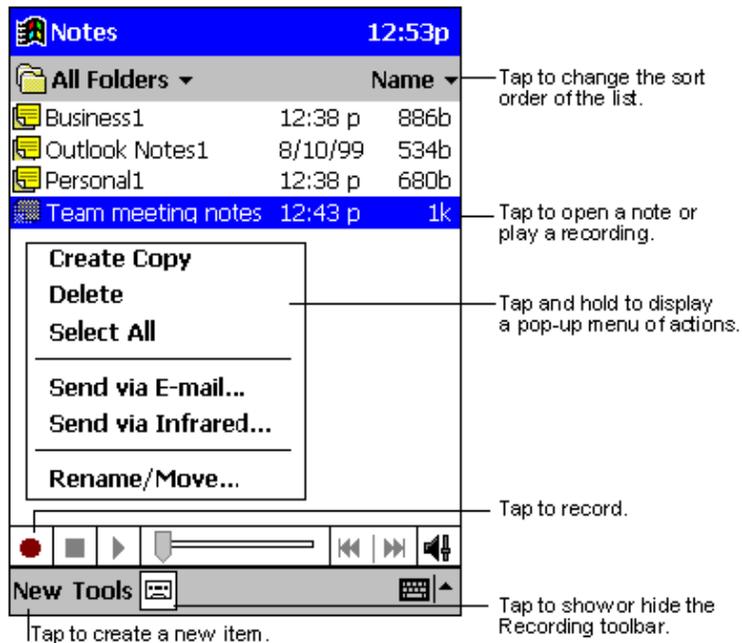


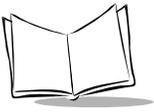
Figure 5-9. Task Summary Screen

## 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 5-10. Notes Application**



To create a note:

1. Tap **New**.
2. 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 PDT 8100*.

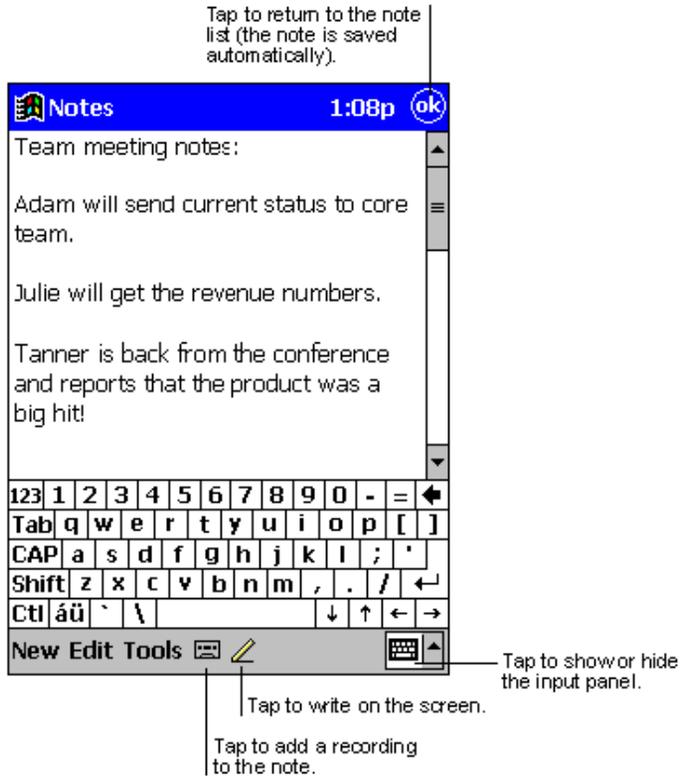


Figure 5-11. Creating a Note

## Inbox

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

- Synchronize e-mail messages with Microsoft Exchange or Outlook 2000 on your desktop 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 desktop computer.

During synchronization:

- E-mail messages are copied from the Inbox folder of Exchange or Outlook 2000 on your desktop computer to the Inbox folder on your terminal. The e-mail messages on the two computers are linked, so when you delete an e-mail message on your terminal, it's also deleted from your desktop computer the next time you synchronize.
- E-mail messages in the Outbox folder on your terminal are transferred to Exchange or Outlook 2000, then sent from those programs.

---

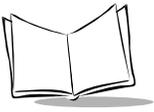
**Note:** *You can also synchronize e-mail messages with your desktop computer from a remote location. For more information, see Chapter 8, Connections.*

---

### ***Connecting Directly to an E-mail Server***

You can also send and receive e-mail messages by connecting to an e-mail server using a modem or network card connected to your terminal. You'll need to set up a remote connection to a network or an ISP, and a connection to your e-mail server. For more information, see *Chapter 8, Connections*.

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 desktop 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 composed.

## Using the Message List

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

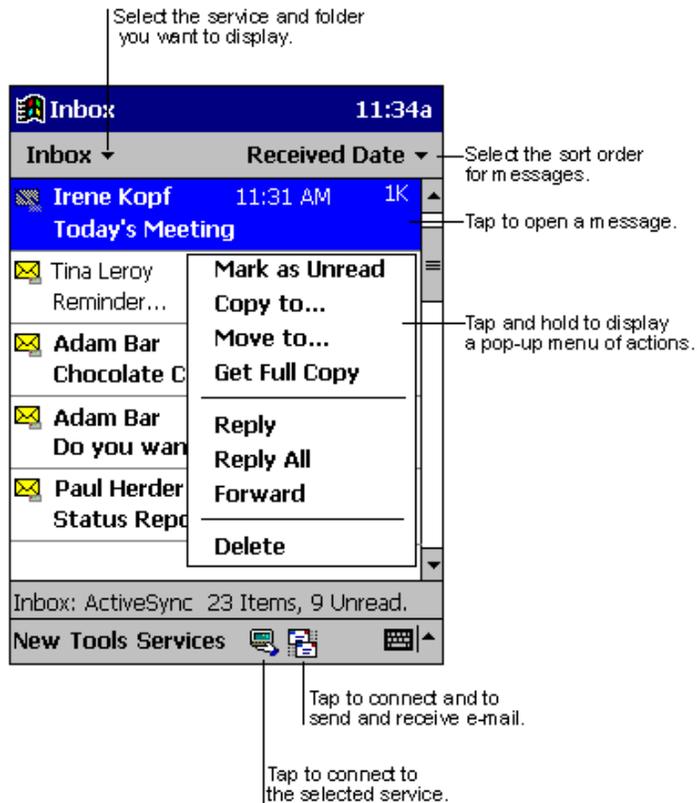
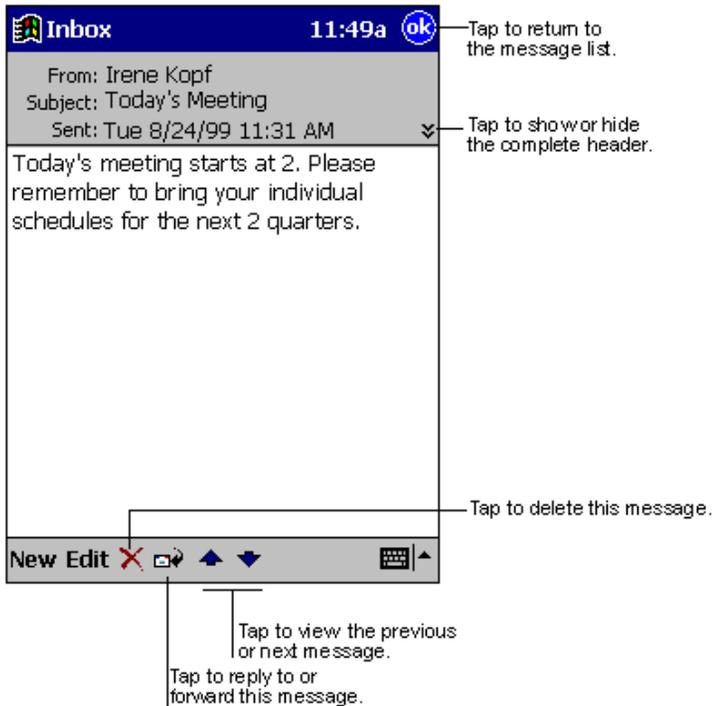


Figure 5-12. Inbox Application



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



**Figure 5-13. Viewing a Message**

When you connect to your e-mail server or synchronize with your desktop computer, Inbox downloads only the first 100 lines of each new message by default. No e-mail attachments are downloaded. The original messages remain on the e-mail server or your desktop 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 **Get Full Copy**. The icons in the Inbox message list indicates message status.

You must download a full message before you can view its attachments. Attachments appear as icons in a window pane at the bottom of the message. Tapping an attachment icon opens the attachment if it was fully downloaded or marks it for download the next time you synchronize or connect to your e-mail server.

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**, then **Options**. On the **Service** tab, tap the service you want to change.

## Creating E-mail Messages

To create an e-mail message:

1. Tap New.
2. Enter an e-mail address in **To**, or select a name from the contact list by tapping the **Address Book** button. All e-mail addresses entered in the e-mail fields in Contacts appear in the Address Book.

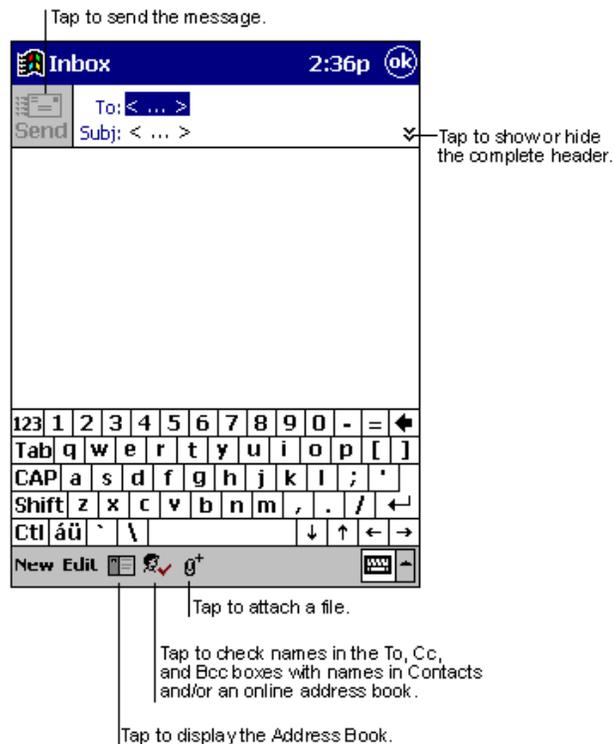
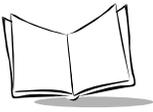


Figure 5-14. Creating a Message



3. Compose your message. Tap **Send** when you're finished.

The message is placed in the Outbox folder on your terminal and is delivered in one of two ways:

- It is transferred to the Outbox folder in Exchange or Outlook 2000 on your desktop computer and sent the next time you synchronize.
- It is transferred to your e-mail server the next time you connect. In Inbox, make sure the appropriate service is selected on the Services menu. Then tap the **Connect** button (or **Connect** on the **Services** menu).

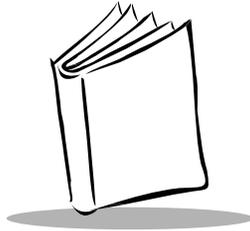
## ***Managing E-mail Messages and Folders***

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

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

## **Folder Behavior with ActiveSync and Direct Connection to Server**

If you move e-mail messages into a folder you create, the link is broken between these e-mail messages and their copies on the desktop computer. When you synchronize, the e-mail messages in the folder you created are not synchronized. These e-mail messages missing from the terminal Inbox folder are deleted from the Inbox folder on the desktop computer so that both Inbox folders match. This prevents you from getting duplicate copies of an e-mail message, and you can only access the e-mail messages you move out of Inbox from the terminal.



## Chapter 6

# Companion Programs

### Introduction

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The PDT 8100 contains the companion programs Microsoft Pocket Word, Microsoft Pocket Excel, and Microsoft Money. To select a companion program, tap *Programs* on the  menu, then the program name.

### Pocket Word

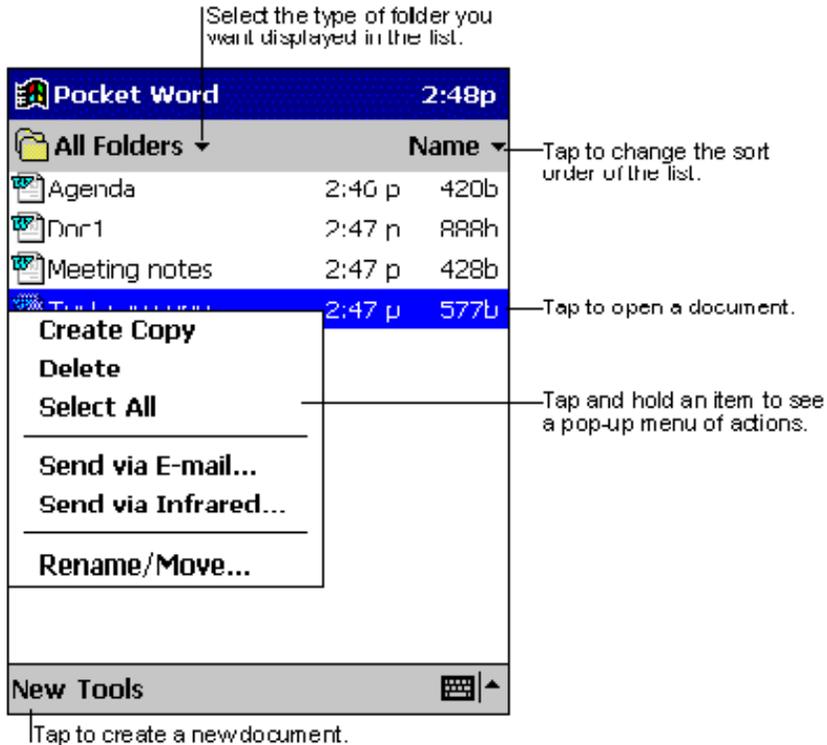
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Pocket Word works with Microsoft Word on your desktop computer to give you access to copies of your documents. You can create new documents on your PDT 8100, or copy documents from your desktop computer to your terminal. Synchronize documents between your desktop computer and your PDT 8100 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 , *Programs*, *Pocket Word*, then *New*. 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 Pocket Word (.psw), Rich Text Format (.rtf), and Plain Text (.txt).



Pocket Word contains a list of the files stored on your device. 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 6-1. 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 button on the command bar to show or hide each mode's toolbar.

To change the zoom magnification, tap *View*, then *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 desktop computer, select *Wrap to Window* on the *View* menu to see the entire document.

## Typing Mode

Use the input panel to enter typed text into a document. See *Entering Information* on page 2-15 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*, then *Find/Replace*.

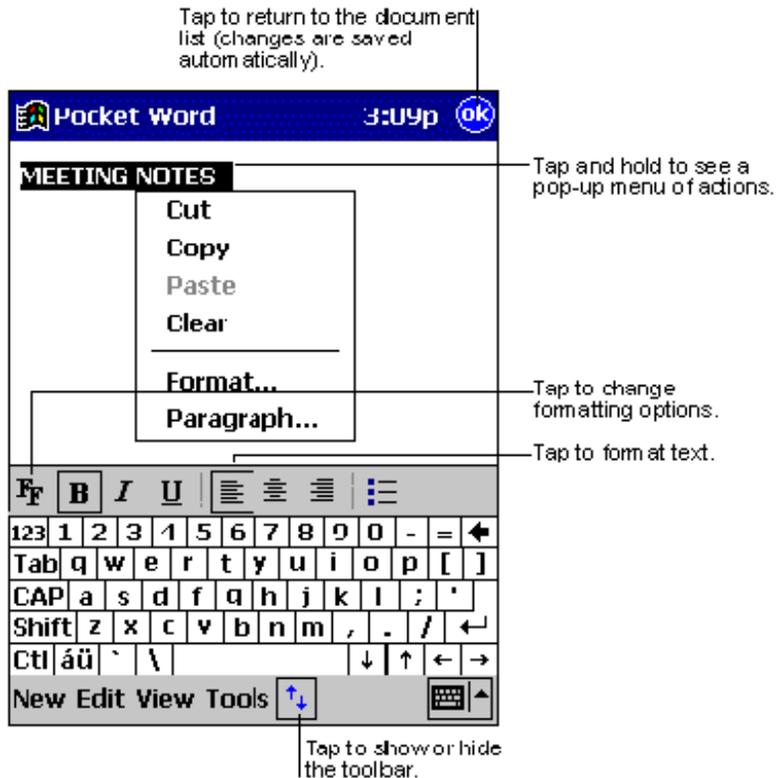
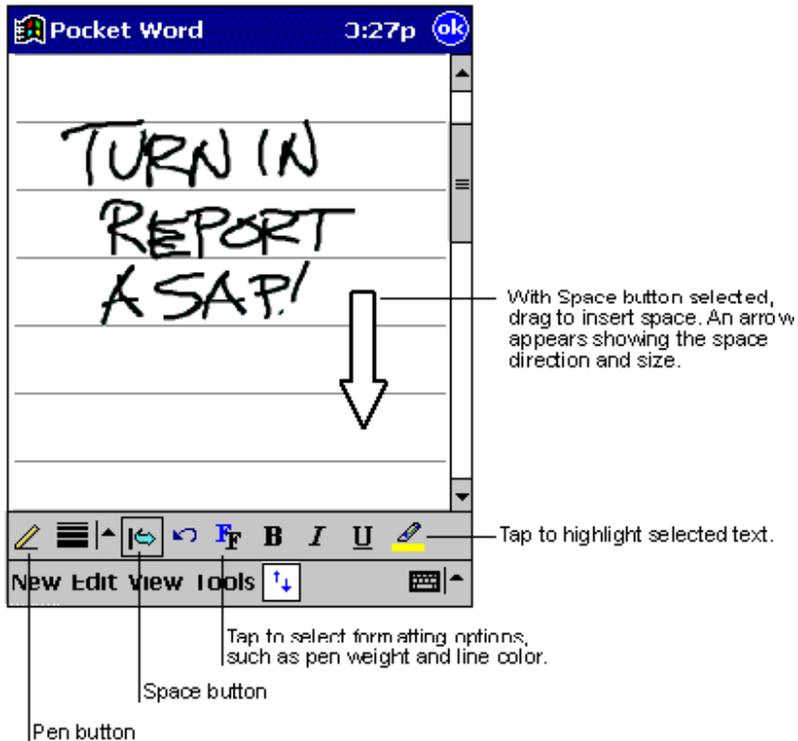


Figure 6-2. Formatting Text



## 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 2-16.



**Figure 6-3. 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 desktop computer.

## Drawing Mode

In drawing mode, use your stylus to draw on the screen. Gridlines appear as a guide. When you lift your stylus off the screen 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 2-18.

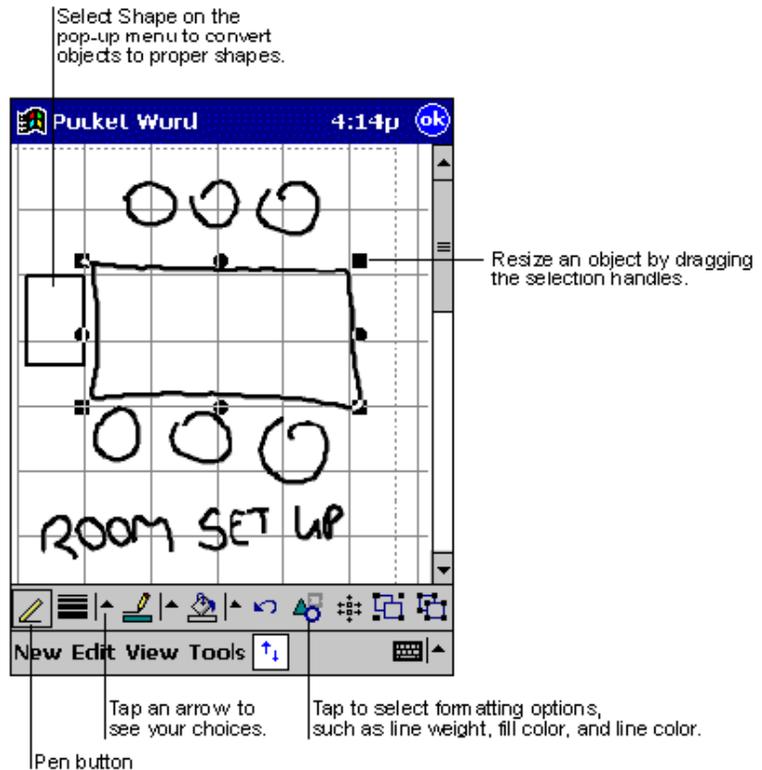
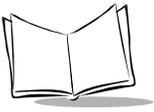


Figure 6-4. Drawing on the Screen in Pocket Word

## 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 2-18.

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



## Pocket Excel

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Pocket Excel works with Microsoft Excel on your desktop computer to provide easy access to copies of your workbooks. You can create new workbooks on your PDT 8100, or copy workbooks from your desktop computer to your PDT 8100. Synchronize workbooks between your desktop computer and your PDT 8100 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  , *Programs*, *Pocket Excel*, then *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 PDT 8100. 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*, then *Toolbar*.

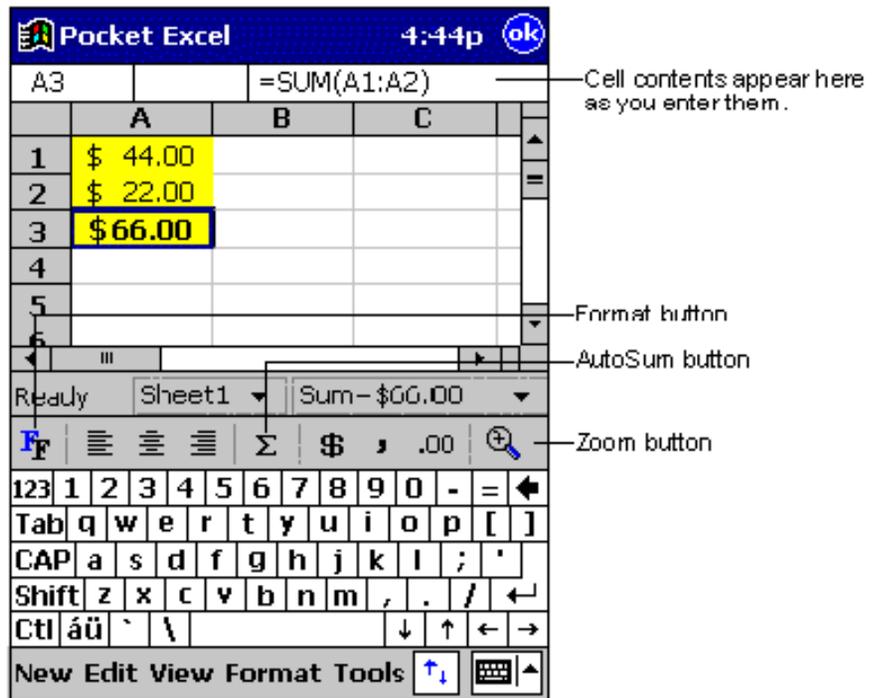


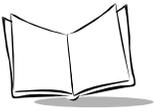
Figure 6-5. Using Pocket Excel

If your workbook contains sensitive information, you can protect it with a password. Open the workbook, tap *Edit*, then *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*, then *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*, then *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*, then *Split*. Drag the split bar to where you want it. To remove the split, tap *View*, then *Remove Split*.
- Show and hide rows and columns. To hide a row or column, select a cell in that row or column. Tap *Format*, then *Row* or *Column*, then *Hide*. To show a hidden row or column, tap *Tools*, then *Go To*, then type a reference that is in the hidden row or column. Tap *Format*, then *Row* or *Column*, then *Unhide*.

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

## Microsoft Money

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Use Microsoft Money to enter and view your financial transactions, check your account balances, and track your investments. If you are using Microsoft Money on your desktop computer, synchronize first so you don't have to manually enter your accounts and other required information on your PDT 8100. Before you can synchronize, run the Setup program found in the MSMoney folder under Extras on the ActiveSync CD.

The first time you synchronize, all Microsoft Money information on the PDT 8100 is replaced with information from your desktop computer. If you do not use Microsoft Money on your desktop computer, Microsoft Money on your terminal can still be used to help organize your finances, but you will not be able to synchronize the financial information with your desktop computer.

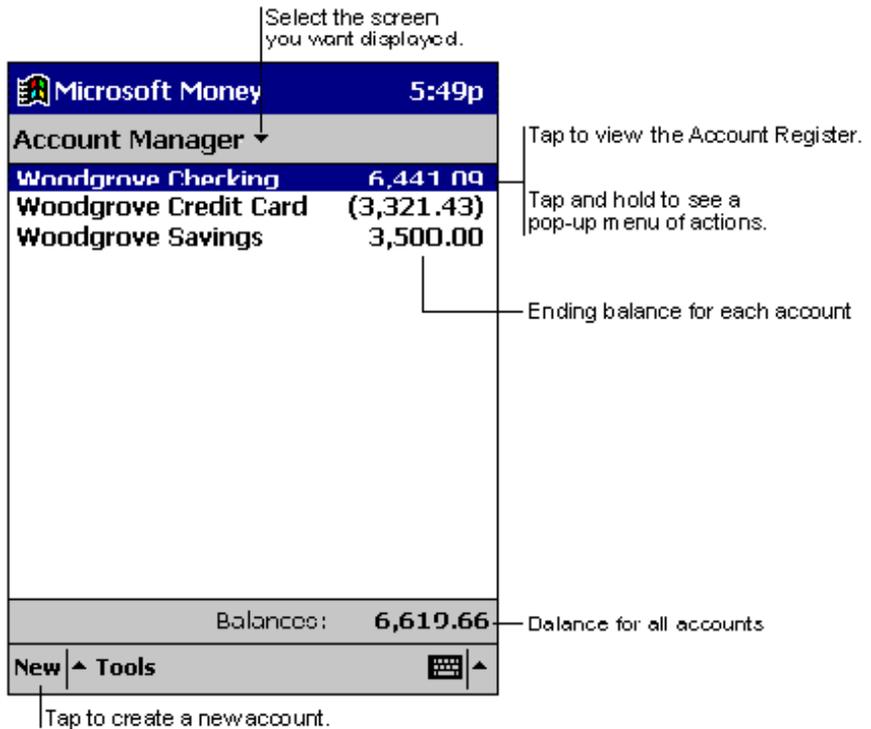
### ***Installing Microsoft Money***

Microsoft Money is included in the Extras folder on the ActiveSync CD. To install Microsoft Money on your PDT 8100, select the MSMoney folder under Extras on the ActiveSync CD, and follow the instructions in the Read Me file.

### ***Creating Accounts***

To create a new account, tap , *Programs*, *Microsoft Money*, then *New*. A screen for entering account details appears. Enter the name and type of the account on the *Required* tab, and other information you want to record on the *Optional* tab, then tap *OK*. The name of the account appears in the Account Manager with its opening balance. The total of all balances for your accounts appears at the bottom of the screen.

To navigate within Microsoft Money, tap the name *Account Manager*. A list of the five screens within Microsoft Money appears. Tap the screen you want to see.



**Figure 6-6. Using Microsoft Money**

### ***Using the Account Register***

To view the Account Register for an account, tap it in the Account Manager. The Account Register displays all transactions stored on your PDT 8100 for that account. For each transaction, you will see the date, the payee, the amount, and the running balance of your



account as a result of the transaction. The ending account balance is displayed at the bottom of the screen.

The screenshot shows the Microsoft Money Account Register for the Woodgrove Ch account. The interface includes a header with the Microsoft Money logo and the time 5:51p. Below the header, the account name 'Woodgrove Ch' is displayed with a dropdown arrow. A list of transactions follows, each with a date, payee name, and amount. The running balance for the account is shown at the bottom of the list as 6,441.09. At the bottom of the screen, there is a 'New' button and a 'Tools' button. Annotations with arrows point to various elements: 'Transaction payee' points to the payee column; 'Select the account you want displayed.' points to the account name dropdown; 'Transaction amount' points to the amount column; 'Tap to view details.' points to a small icon next to a transaction; 'Tap and hold to see a pop-up menu of actions.' points to a small icon next to another transaction; 'Running balance for account' points to the 6,441.09 value; 'Ending balance for account' points to the same value; and 'Tap to create a new transaction.' points to the 'New' button.

Date	Payee	Amount
11/8/1999	Cash	100.00
	<b>Cash</b>	<b>7,342.03</b>
11/8/1999	The Health Club	312.00
	<b>The Health Club</b>	<b>7,030.03</b>
11/8/1999	Parnell Aerospace	1,216.82
	<b>Parnell Aerospace</b>	<b>8,246.85</b>
11/0/1999	The Catering Company	1,016.44
	<b>The Catering Company</b>	<b>9,263.29</b>
11/16/1999	SpringFirst Home Loans	1,264.62
	<b>SpringFirst Home Loans</b>	<b>7,998.67</b>
11/16/1999	Woodgrove Bank	327.73
	<b>Woodgrove Bank</b>	<b>7,670.94</b>
11/23/1999		100.00
	<b>Balance:</b>	<b>6,441.09</b>

Figure 6-7. Account Register

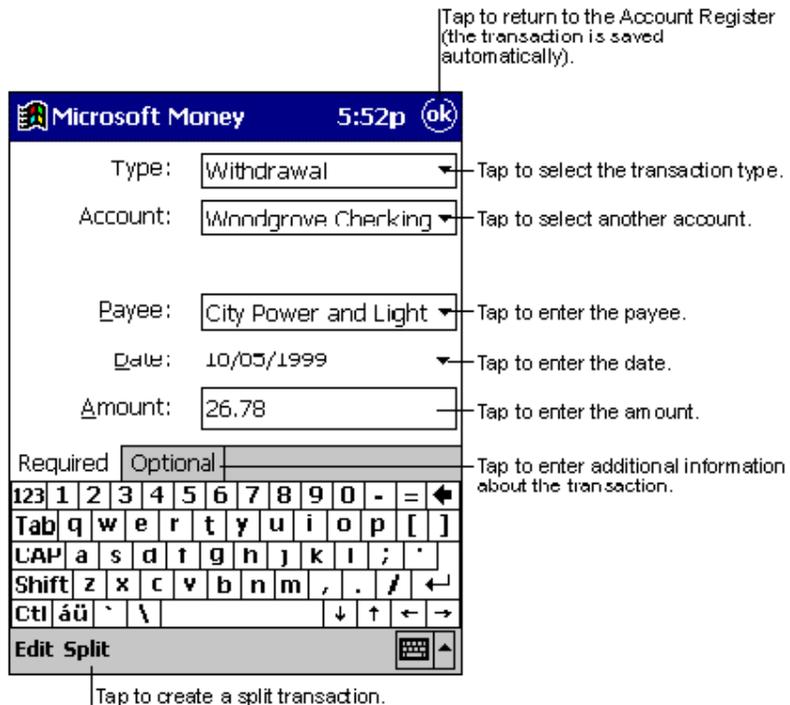
To switch between accounts, tap the name of the current account in the upper-right corner and select another account from the list.

## Entering Transactions

Once you have the Account Register open, tap *New* to create a new transaction.

On the *Required* tab, Microsoft Money creates a withdrawal and enters today's date. If you are not entering a withdrawal, tap the *Type* box and select *Deposit* or *Transfer*. You can also change the account in which the transaction is being created. Then, tap the *Payee* box. Using the input panel, enter the payee for your transaction. As you type, Microsoft Money tries to guess the payee that you are entering from your list of existing payees. If Microsoft Money guesses correctly, tap another field or tap *Tab* to accept the payee.

When you accept a payee, Microsoft Money enters the same amount, category, and subcategory that you used for the last transaction with that same payee. This information is entered on the *Required* tab and the *Optional* tab. This AutoComplete+ feature helps you quickly enter similar transactions, such as ATM withdrawals. If AutoComplete+ enters the wrong information, use the input panel to correct it.



**Figure 6-8. Entering Transactions**

If you do not want Microsoft Money to automatically enter information, tap *Tools*, then *Options* and turn off AutoComplete+.

## ***Entering and Tracking Investments***

Use the Investments screen to track the value of the investments in your portfolio. This screen displays each investment with the current number of shares, their price, and market value. The total market value for all your investments is displayed at the bottom of the screen.



To create a new investment, tap *New*. Enter the name, symbol, current price, and number of shares. Tap *OK* to save the new investment.

Microsoft Money can update investment prices from the MoneyCentral Web site. To do this, open a connection to the Internet and tap *Update Investments* on the *Tools* menu. When the update is complete, Microsoft Money displays the date and time after Last Quote Update at the bottom of the screen. To manually update the investment prices, tap the investment and enter a new price with the input panel.

Market symbol for investment	Number of shares	Price per share	Total Value
AMZN	100	@ \$105.81	\$10,581.00
DIS	55	@ \$28.88	\$1,588.13
EBAY	250	@ \$165.88	\$41,470.00
TOY	95	@ \$20.25	\$1,923.75
WOGSX	150	@ \$44.73	\$6,709.50

Total Market Value: 62,272.38

Last Quote Update: Not Available

Quotes provided by Standard & Poor's Comstock; prices delayed at least 20 minutes

New | Tools | [Keyboard Icon]

Figure 6-9. Investments Screen

Microsoft Money can get a quote update over any direct (IP) Internet connection, including a wireless connection or network connection. If you cannot get a quote update, check with your Internet service provider (ISP) or network administrator to see if you require a proxy server to connect to the Internet. If so, tap *Tools*, then *Options* and set up the proxy server.

For more information on using Microsoft Money, tap , then *Help*.

## Microsoft Reader

---

Reader enables you to read electronic books on your PDT 8100. To open Microsoft Reader, tap *Start, Programs*, then *Microsoft Reader*.

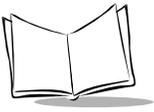
For more specific instructions on using Reader, open the Reader Guidebook by tapping Guidebook on the Reader command bar, or, on a book page, tap the book title, then tap Guidebook on the pop-up menu.

### ***Getting Books on Your PDT 8100***

To download book files from the Web, visit an eBook retailer and follow the instructions provided. Use ActiveSync to download the files from your desktop computer to your PDT 8100.

### ***Using the Library***

The Library displays a list of all books stored on your terminal. To open the Library, tap *Library* on the *Reader* command bar, or on a book page, tap the book title, then *Library* on the pop-up menu.



To open a book, tap its title in the Library list.

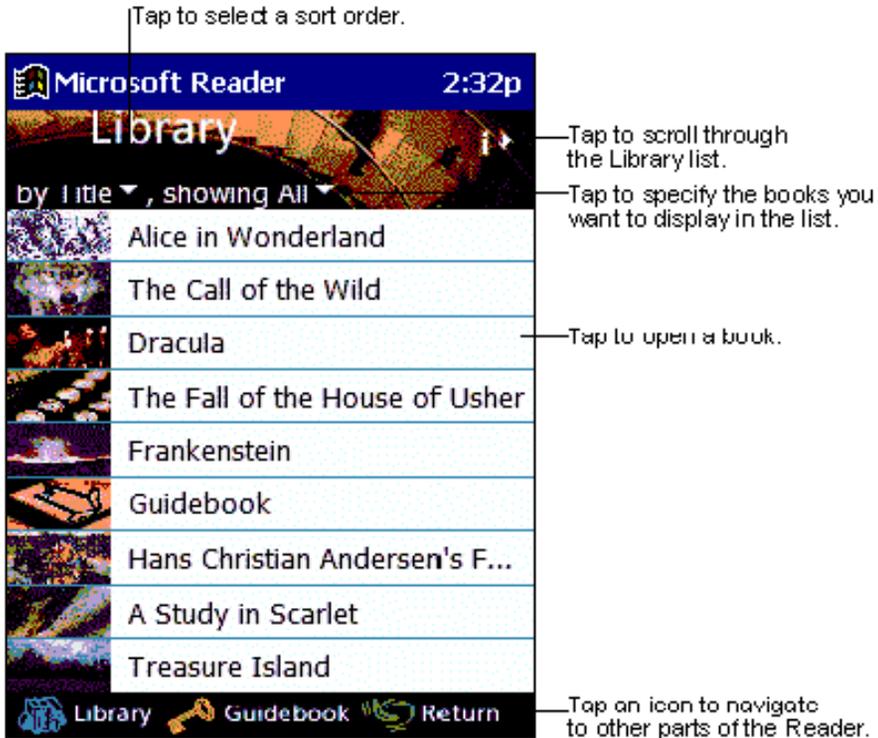
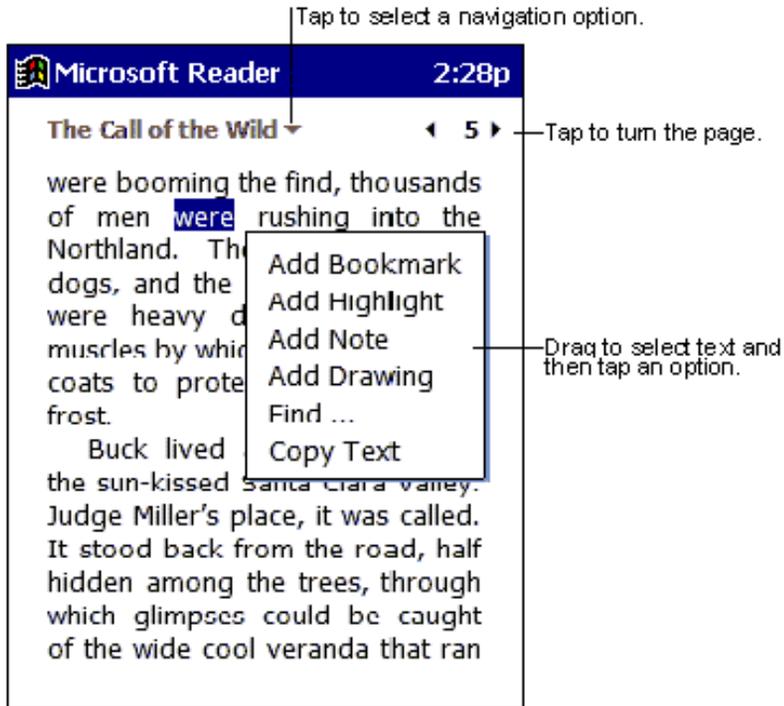


Figure 6-10. Reader Library

## Reading a Book

Each book consists of a cover page, an optional table of contents, and the pages of the book. The first time you open a book, navigation options on the bottom of the cover page allow you to go where you want in the book (e.g., the first page or table of contents). Afterwards, when you open the book Reader takes you to the last page read.

Each page also includes a page number and book title.



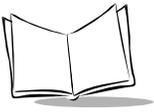
**Figure 6-11. Annotating and Navigating a Book**

Use the Up and Down scroll buttons to page through a book, or tap the page number on each page.

## ***Using Reader Features***

To use Reader options, select text by dragging across the text on the page. Then tap one of the following options on the pop-up menu:

- **Find:** Use this option to search for text in a book. Change the text that appears in the Find box, if necessary, and tap the desired Find option. Reader highlights the text on the page. Tap outside the Find box to close it. To return to your original page, tap the title, then Return on the pop-up menu.
- **Copy Text:** To copy text from a book page, select the text, then tap *Copy Text* on the pop-up menu. Paste the text into any program that accepts text.

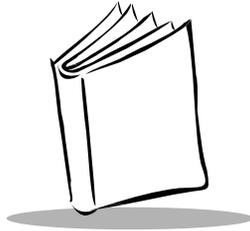


- **Add Bookmark:** Select this option to add a bookmark to a book. A color-coded bookmark icon appears in the right margin. Tap this icon from anywhere in the book to go to the bookmarked page.
- **Add Highlight:** Highlighted text appears with a colored background.
- **Add Note:** Add a note to text to enter the text in a note pad that appears on top of the book page. A note icon appears in the left margin. Show or hide the note by tapping the icon.
- **Add 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. Drag your stylus to draw.

Tap Annotations Index on the book's cover page to see a list of a book's annotations, including bookmarks, highlights, text notes, and drawings. Tap an entry in the list to go to the annotated page.

## ***Removing a Book***

When you've finished a book, you may delete it to free space on your PDT 8100. If you saved a copy of the book on your desktop computer, you can download it again at any time. To remove a book, tap and hold the title in the Library list, then tap Delete on the pop-up menu.



# Chapter 7

## *Pocket Internet Explorer*

### **Introduction**

---

With Pocket Internet Explorer, you can view Web pages in the following ways:

- During synchronization with your desktop computer, download your favorite links, mobile favorites, and mobile channels stored in the Mobile Favorites subfolder in Internet Explorer on the desktop computer.
- Connect to an Internet service provider (ISP) or network and browse the Web. First create the connection (see *Chapter 8, Connections*).

To select Pocket Internet Explorer, tap  , then Internet Explorer.

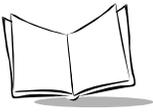
### **Mobile Favorites**

---

Items stored in the Mobile Favorites subfolder in the Favorites folder in Internet Explorer on your desktop 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 desktop 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 desktop computer.



## Creating Mobile Favorites

If you are using Microsoft Internet Explorer 5 on your desktop computer, you can download mobile favorites. (You can install Microsoft Internet Explorer 5 from the Extras folder on the ActiveSync CD.) Synchronizing mobile favorites downloads Web content to your terminal so you can view Web pages while disconnected from your ISP and desktop computer.

Use the Internet Explorer 5 plug-in installed with ActiveSync to create mobile favorites:

1. In Internet Explorer 5 on your desktop computer, click **Tools**, then **Create Mobile Favorite**.
2. To change the link name, enter a new name in the **Name** box.
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 desktop computer.
5. To download the pages linked to the mobile favorite you just created, in Internet Explorer on the desktop 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 desktop computer. Mobile favorites stored in the Mobile Favorites folder in Internet Explorer 5 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 desktop computer and terminal. Before synchronizing, in Internet Explorer on your desktop computer, click **Tools**, then **Synchronize**. Note the last time content was downloaded to the desktop computer; if necessary, manually download content.

You can add a button to the Internet Explorer toolbar for creating mobile favorites. In Internet Explorer 5 on your desktop computer, click **View, Toolbars**, then **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 desktop 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.

## Channels

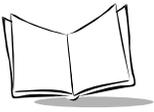
---

Channels are Web sites designed for offline viewing on your terminal. You can use mobile channels on your PDT 8100.

### *Using Mobile Channels*

Mobile channels are sites you subscribe to on your desktop computer. They are stored in the Channels subfolder in the Mobile Favorites folder in Internet Explorer 4.0 or later and are downloaded to your terminal during synchronization.

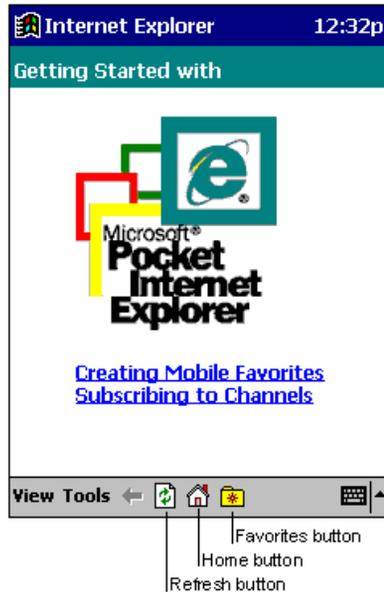
To see a list of mobile channels you can subscribe to at no fee, visit the Windows CE Mobile Channel List Web page (<http://www.microsoft.com/windowsce/channels>). Click the **Add Mobile Channel** button and select **Make available offline** to download the channel to your desktop computer. The mobile channel is transferred to your terminal when you synchronize.



## Using Pocket Internet Explorer

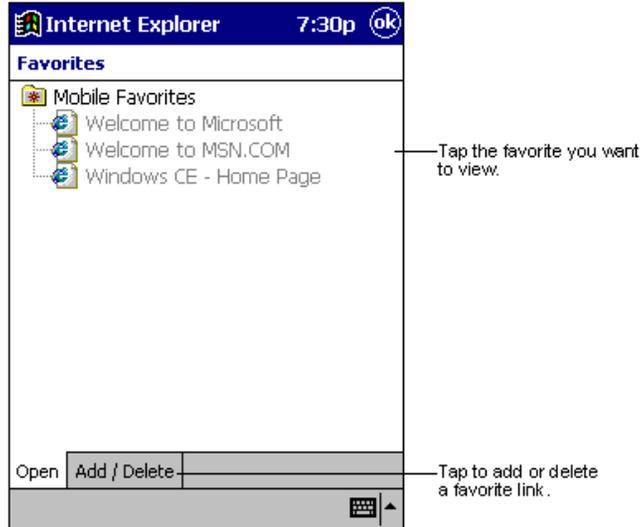
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With Pocket Internet Explorer, you can browse mobile favorites and channels downloaded to your terminal without connecting to the Internet. You can also connect to the Internet through an ISP or a network connection and browse the Web.



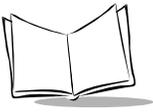
**Figure 7-1. Pocket Internet Explorer**

To view mobile favorites and channels, tap the **Favorites** button to display your list of favorites, then tap the mobile favorite or channel you want to view.



**Figure 7-2. Mobile Favorites**

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



## Browsing the Web

1. Connect to the Internet or your network in one of the following ways:
  - Using Connections, as described in Chapter 8. Then select Pocket Internet Explorer from the  menu.
  - In Pocket Internet Explorer. To select a service or type of connection, tap **Tools**, then **Options**. Tap the **Connections** tab and select the connection type. Then, when you want to connect to the selected service, tap **Tools**, then **Connect**.

---

**Note:** *Pocket Internet Explorer can automatically connect to the Internet when you attempt to access a page not stored on your terminal. Specify a connection in the **Connection** tab in **Options**, then select **Access remote content automatically**.*

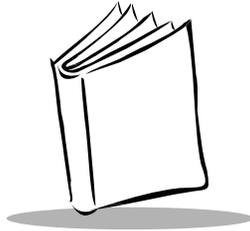
---

2. Once connected, go to a specific Web page in one of the following ways:
  - Tap the **Favorites** button, then tap the favorite you want to view.
  - Tap **View**, then **Address Bar**. In the address bar at the top of the screen, enter the Web address and tap **Go**. Tap the arrow to choose from previously entered addresses.
3. To end the connection, tap **Tools**, then **Disconnect**.

---

**Note:** *To add a favorite link while using the terminal, go to the Web page you want to add, tap the **Favorites** button, tap the **Add/Delete** tab, tap the **Add** button, and enter a name for the favorite link.*

---



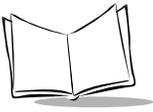
## Chapter 8 Connections

### Introduction

---

Your terminal can exchange information with other Windows-powered devices using its infrared (IR) port. In addition to using a cradle, cable, or IR port to connect your terminal to your desktop computer, you can also:

- Connect to your Internet service provider (ISP) to send and receive e-mail messages using Inbox and view Web pages using Pocket Internet Explorer. See *Connecting to an ISP* on page 8-2. The communication software for creating an ISP connection is already installed on your terminal. Your service provider provides software needed to install other services, such as paging and fax services.
- Create a modem connection to connect to the network at your office to send and receive e-mail messages using Inbox, view Web pages using Pocket Internet Explorer, and synchronize with your desktop computer. See *Connecting to Your Network* on page 8-4.
- Wirelessly via Spectrum24 LAN. See Chapter 8, *Connections*.
- Connect to your desktop computer to synchronize remotely. See ActiveSync Help on your desktop computer or Connections Help on your terminal.



## Transferring Items Using Infrared

---

Using infrared (IR), you can send and receive information, such as contacts and appointments, between two Windows-powered devices.

To send information:

1. Open the program where you created the item you want to send and locate the item in the list. To send more than one item, drag the stylus across the items you want to send.
2. Align the IR ports so that they are unobstructed and within a close range.
3. Tap and hold the item, and tap **Send via Infrared** on the pop-up menu.

---

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

---

To receive information:

1. Align the IR ports so that they are unobstructed and within a close range.
2. Tap , **Programs**, then **Infrared Receive**.

---

**Note:** You can also receive items from Tasks, Contacts, Calendar, and Notes by tapping **Tools**, then **Receive via Infrared** in list view.

---

## Connecting to an ISP

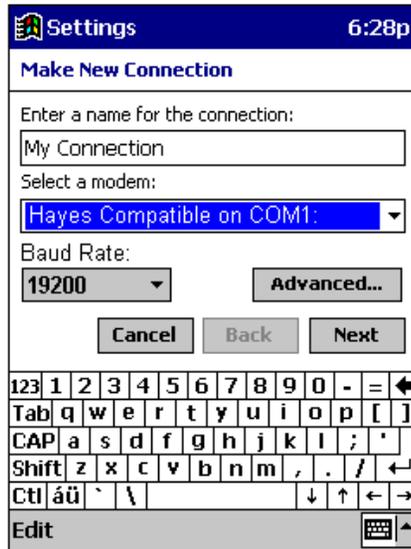
---

Create a modem connection to connect to your ISP. Once connected, you can send and receive e-mail messages and view Web pages.

To create a modem connection to an ISP, use the modem cradle or snap-on modem. See the *Quick Reference Guide* for each device for connection information.

1. Get the ISP dial-up access telephone number, user name, password, and TCP/IP settings from your ISP. Some ISPs require information in front of the user name, such as MSN/username.
2. Tap , then **Settings**. On the **Connections** tab, tap **Modem**.

3. Tap **New connection**.



**Figure 8-1. Creating a Modem Connection**

4. Enter a name for the connection.
5. In the **Select a modem** list, select Hayes Compatible on COM1.
6. You should not need to change any settings in **Advanced**. Most ISPs now use a server-assigned address. If the ISP you are connecting to does not use a server-assigned address, tap **Advanced**, then the **TCP/IP** tab and enter the address. When finished, tap **OK**, then **Next**.
7. Enter the access phone number and tap **Next**.
8. Select other desired options, and tap **Finish**.
9. On the **Dialing** tab, specify your current location and phone type (most phone lines are tone). These settings apply to all connections you create. Tap **OK** to return to **Settings**.

After you create the connection, it appears in , **Programs, Connections**. To start the connection, remove your terminal from the cradle, tap the connection icon, enter your user name and password, and tap **Connect**. Once connected, you can:



- Send and receive e-mail messages using Inbox. You first must provide the information it needs to communicate with the e-mail server. For instructions, see *Connecting Directly to an E-mail Server* on page 8-6.
- Visit Web pages using Pocket Internet Explorer. For more information, see Chapter 7, *Pocket Internet Explorer*.

To change connection settings, return to Modem Settings. Tap the Modem link at the bottom of the **Connections** folder. To return to the **Connections** folder, tap the Connections link.

## Connecting to Your Network

---

If you have access to a network, you can send e-mail messages, view intranet pages, synchronize your terminal, and possibly access the Internet. You can connect to your network in one of the following ways:

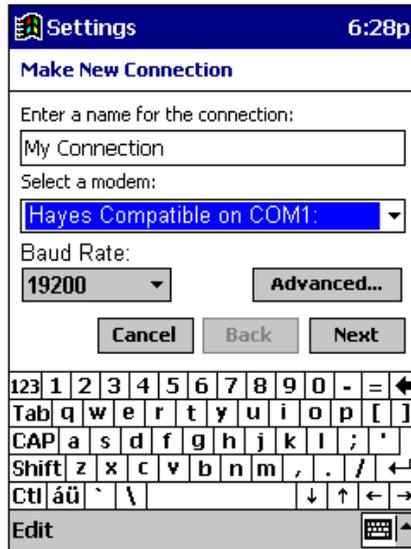
- Create a modem connection using an RAS account. Your network administrator must first set up an RAS account for you.
- Wirelessly via Spectrum24 LAN. See Chapter 8, *Connections*.

### ***Creating a Modem Connection to a Network***

To create a modem connection, use the modem cradle or snap-on modem. See the *Quick Reference Guide* for each device for connection information.

1. Obtain the dial-up access telephone number, user name, password, domain name, and TCP/IP settings from your network administrator.
2. Tap , then **Settings**. On the **Connections** tab, tap **Modem**.

3. Tap **New connection**.

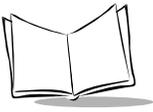


**Figure 8-2. Creating a Modem Connection**

4. Enter a name for the connection.
5. Select Hayes Compatible on COM1.
6. You should not need to change any settings in **Advanced**. Most servers use a server-assigned address. If not, tap **Advanced**, then the **TCP/IP** tab and enter the address. When finished, tap **OK**, then **Next**.
7. Enter the access phone number, and tap **Next**.
8. Select other desired options, and tap **Finish**.
9. On the **Dialing** tab, specify your current location and phone type (most phone lines are tone). These settings apply to all connections you create. Tap **OK** to return to **Settings**.

When you have created the connection, it appears in , **Programs, Connections**. To start the connection, remove your terminal from the cradle, tap the connection icon, enter your user name, domain, and password, and tap **Connect**. Once connected, you can:

- Send and receive e-mail messages using Inbox. Before you can use Inbox, provide the information it needs to communicate with the e-mail server. See *Connecting Directly to an E-mail Server* on page 8-6.



- Visit Internet or intranet Web pages using Pocket Internet Explorer. You may need to set up a proxy server to visit Internet Web pages. For more information on setting up a proxy server, see Pocket Internet Explorer Help on the terminal.
- Synchronize. For more information, see ActiveSync Help on the desktop computer.

## Disconnecting

---

If you started the connection from a program such as Inbox or Pocket Internet Explorer, disconnect from that program first. Tap , then **Today**. Tap  or  at the bottom of the screen, then **Disconnect**. To end a network connection, remove the card from your terminal.

## 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 modem or network connection and Inbox on your terminal.

---

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

*Inbox does not currently support connecting with proprietary e-mail protocols, such as AOL and MSN™. However, you can still access the Internet through these services. There may be third-party programs available to enable you to send and receive e-mail messages through proprietary protocols.*

---

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

1. In Inbox on your terminal, tap **Services**, then **New Service**.

The screenshot shows a terminal window titled 'Inbox' with the time '6:15p'. The main content area is titled 'Service Name' and contains the following elements:

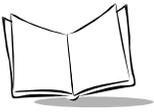
- 'Service type:' dropdown menu with 'IMAP4 Mail' selected.
- 'Service name:' text input field containing 'IMAP4 Mail'.
- Three buttons at the bottom: 'Cancel', 'Back', and 'Next'.

Below the form is a standard terminal keyboard layout with rows for numbers, letters, and function keys.

**Figure 8-3. Setting Up E-mail Service**

2. Select POP3 as the service type, name the service, and tap **Next**. Ask your ISP or network administrator which service type to select.
3. If you have already created a connection, select it from the **Connection** list. If you have not, select **Create new connection** and follow the steps in the wizard. When you return to this screen at the end of the wizard, select the connection you created from the **Connection** list.

Follow the directions on the screen. For an explanation of a screen, tap **Start**, then **Help**. When finished, tap **Services**, then **Connect** to connect to your e-mail server. For more information on using the Inbox program, see *Inbox* on page 5-13.

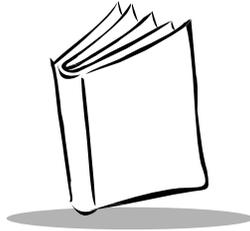


## Getting Help Connecting

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See the following for more connection information:

- *Inbox* on page 5-13.
- Online Help on the terminal. Tap  , then **Help**. Tap **View, All Installed Help**, then **Inbox** or **Connections**.
- ActiveSync Help on the desktop computer. In ActiveSync, click **Microsoft ActiveSync Help** on the Help menu.
- *Maintenance and Troubleshooting* on page 13-1.



# *Chapter 9*

## *Spectrum24 Network Configuration*

### **Introduction**

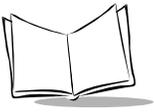
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Wireless LANs allow PDT 8100 series terminals to communicate wirelessly, and to send captured data “real time” to a host device. Before a terminal can be used on a Spectrum24 LAN your facility must be set up with the equipment required to run the wireless LAN and the terminal must be properly configured. Refer to the documentation which came with your access points for instructions on setting up the required hardware.

### ***NICTT***

The PDT 814x terminal supports two utilities that configure and monitor the Spectrum24 connection. The Network Interface Card Task Tray (NICTT) utility checks the status of Symbol Spectrum24 WLAN adapter operating within a Spectrum24 wireless network. The Spectrum24 Settings Control Panel Applet utility configures the Spectrum24 adapter.

NICTT provides signal, transmission quality and power management status for the Spectrum24 network connection. The NICTT taskbar tray icons convey signal strength and service quality information. NICTT property pages allow you to view driver and firmware revision data and view terminal transmission and signal quality.



The NICTT task tray icon appears at the top of the **Start** menu, 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)
	Adapter not found

Tap the icon above to display NICTT properties.

## ***Spectrum24 Settings Control Panel Applet***

The Spectrum24 Settings Control Panel Applet allows you to view and edit Spectrum24 terminal settings.

## Configuring the PDT 8142 (2 MB radio)

### Using NICTT on the PDT 8142

The NICTT property pages contain a variety of wireless network and service quality information. Select help for a detailed explanation within each NICTT property page.

### General Property Page

Before the PDT 8142 can be used, it must be properly configured with the correct ESS ID. The ESS ID identifies the radio network and is used to differentiate between different radio networks. All PDT 8142 terminals on the same network must be set up with the same ESS ID Code. The ESS ID on the terminal is the same as that of the access points in your facility. The *General* page displays driver firmware and revision information, and allows you to change the ESSID on the NIC 802.11.

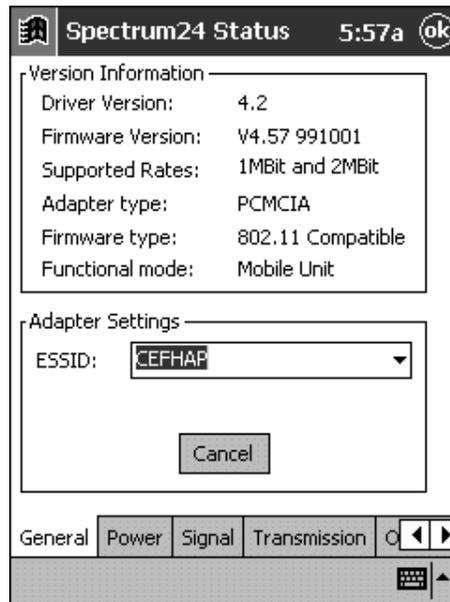


Figure 9-1. General Properties Page



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**Note:** A PC Card adapter installation displays PCMCIA as the Adapter Type.

---

## Power Mode Property Page

The Spectrum24 WLAN adapter Power Mode management properties allows automatic or manual setting of the adapter power management mode from Continuous Access Mode (CAM) to Power Save Polling (PSP) mode and controls the adapter Beacon Algorithm. Do NOT select the **Switch mode based on power source** option.

CAM mode is not a valid operating mode for the PDT 8142, and should only be used for short duration testing. AC power supplies power to the battery charger only.

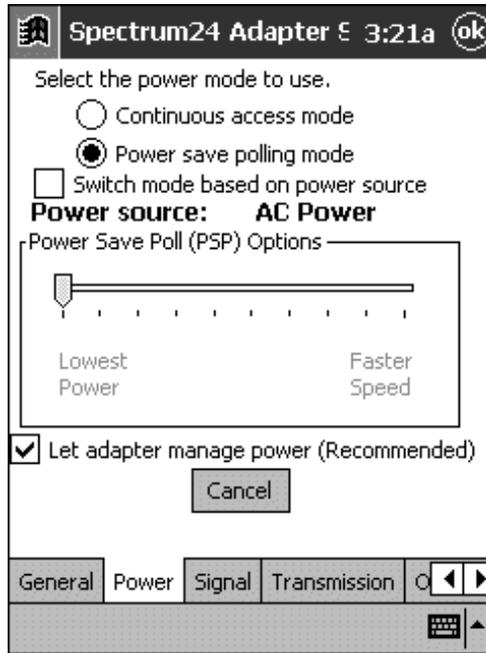


Figure 9-2. Power Property Page

## Signal Strength Property Page

The *Signal* page displays a real-time graph of the signal quality being received by the adapter, and displays a description of the signal quality.

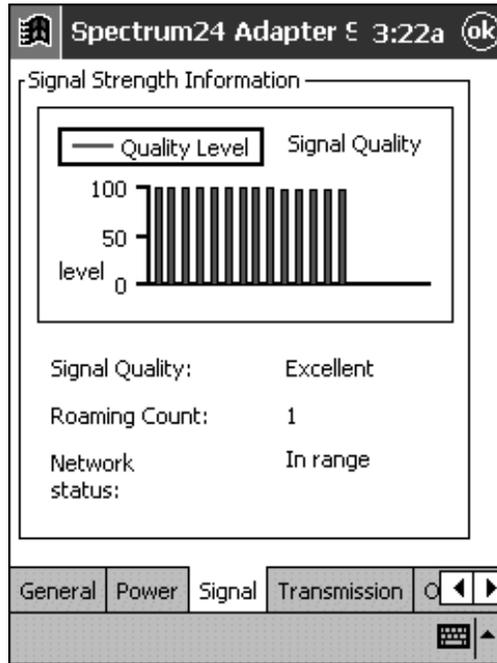
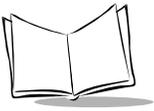


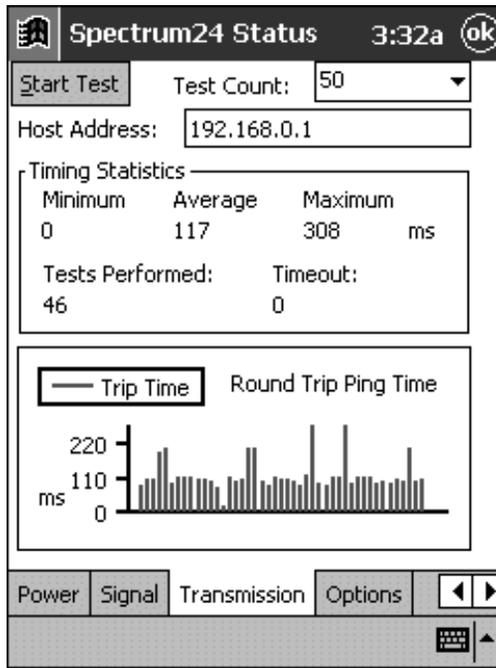
Figure 9-3. Signal Property Page



## Transmission Quality Property Page

The *Transmission* page displays a real-time graph as a series of ICMP ping tests initiated by the user. The transmission quality test does not run all the time because it consumes network bandwidth.

The transmission quality test also displays a description of the transmission quality.



**Figure 9-4. Transmission Property Page**

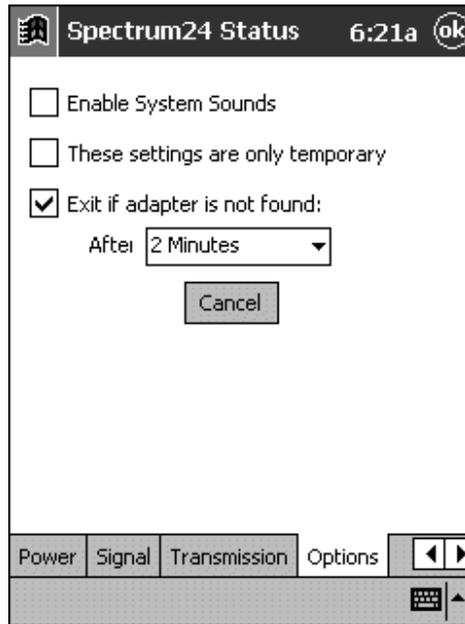
---

**Note:** Load and configure the TCP/IP protocol before running the Transmission Quality test.

---

## Options Property Page

The *Options* page controls system sounds, whether specified settings are temporary, and the NICTT exit option.



**Figure 9-5. Options Property Page**

### ***Enable System Sounds***

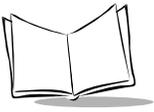
You can enable or disable NICTT system sounds. NICTT uses standard wav-table sounds supplied by the Windows operating system. NICTT plays a wav file when it detects the PDT 8142 roaming between Spectrum24 APs, and also during a transmission test.

### ***Temporary Settings***

Check *These settings are only temporary* to use temporary values only until the computer system reboots. When not checked, any value entered in NICTT is saved and used even after the system is rebooted.

### ***Exit If Adapter Is Not Found***

Specify the amount of time (1 to 5 minutes) NICTT waits for the adapter to be located in the network before exiting.



## Using Spectrum24 Settings Control Panel Applet for the PDT 8142

The Spectrum24 Settings Control Panel Applet allows you to view and edit Spectrum24 terminal settings. On the Start menu, select **Settings**, the **System** tab, then **Spectrum24 Settings**. The *Spectrum24 WLAN Easy Setup* dialog box appears. This dialog box allows you to set a new 802.11 ESSID.

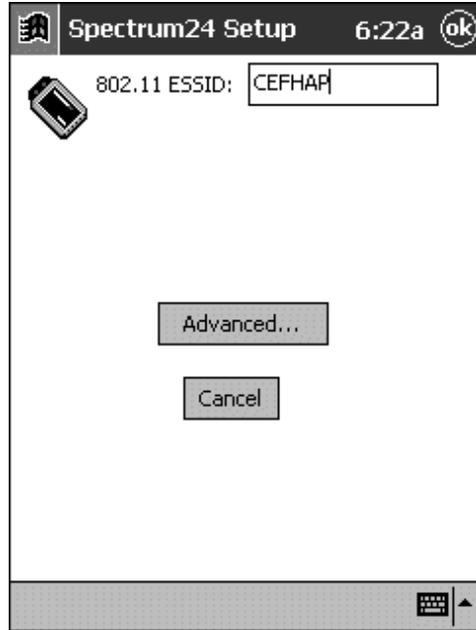


Figure 9-6. Easy Setup Dialog Box

Selecting the Advanced button allows you to view or edit 802.11 parameters using the *Spectrum24 WLAN Advanced Properties* dialog box.

## Mobile Unit Properties

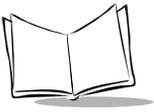
The screenshot displays the '802.11 Mobile Unit Settings' dialog within the 'Spectrum24 Setup' application. The interface includes the following elements:

- Title Bar:** 'Spectrum24 Setup' on the left, '3:50a' in the center, and an 'ok' button on the right.
- Section Header:** '802.11 Mobile Unit Settings'.
- ESSID:** A text field containing 'CEFHAP'.
- RTS Threshold:** A dropdown menu set to '1600'.
- International Roaming:** An unchecked checkbox.
- Preferred BSS ID:** A field with five colons (': : : : :').
- Mandatory BSS ID:** A field with five colons (': : : : :').
- Power Management Section:**
  - Power Mode:** A dropdown menu set to 'PSP'.
  - Beacon Algorithm:** A dropdown menu set to '11'.
  - Minimum:** A dropdown menu set to '1'.
  - Maximum:** A dropdown menu set to '10'.
- Buttons:** A 'Cancel' button is located below the Power Management section.
- Navigation:** At the bottom, there are tabs for 'Mobile Unit', 'MicroAP', 'Encryption', and 'WLAN'. The 'Mobile Unit' tab is currently selected. To the right of these tabs are left and right arrow buttons.
- Footer:** A small icon and a right-pointing arrow are visible in the bottom right corner.

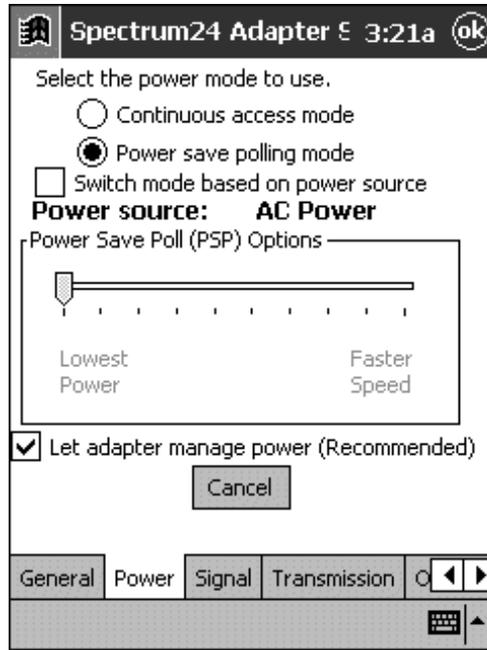
**Figure 9-7. Mobile Unit Property Page**

The *Mobile Unit* page configures NIC ESSID, Power Management, Request To Send (RTS) Threshold, Preferred BSS ID, and Mandatory BSS ID values. These values control how the terminal associates and consumes power in the MU mode.

To use the Power Management settings in the Spectrum24 Settings Control Panel Applet, disable Power Mode Management capabilities in NICTT as follows:



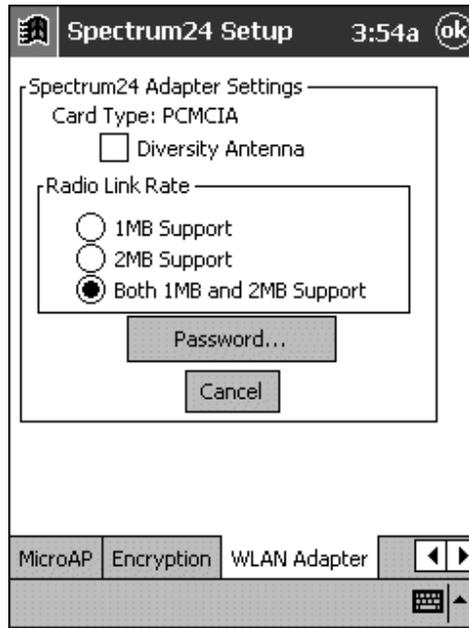
1. In NICTT select the *Power* tab.



**Figure 9-8. Power Property Page**

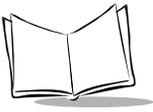
2. If checked, uncheck *Switch power mode based on power source*.
3. Select *Power save polling mode*.
4. Uncheck *Let adapter manage power* (recommended).
5. Select the *General* tab.
6. Uncheck *These settings are only temporary*.
7. Tap OK.
8. Reboot the terminal.

## WLAN Adapter Settings



**Figure 9-9. WLAN Adapter Property Page**

On the *WLAN Adapter* page, the Card Type (the only visible field), interrupt Number, IO Port Address and Memory Base Address are automatically selected in a Plug and Play environment and are not visible. Select the Radio Link Rate here along with the antenna options.



## Configuring the PDT 8146 (11 MB radio)

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### Using NICTT on the PDT 8146

The NICTT property pages contain a variety of wireless network and service quality information. Select help for a detailed explanation within each NICTT property page.

#### Mode Property Page

The *Mode* page on the Spectrum24 Status screen allows you to set the operational mode and ESSID.

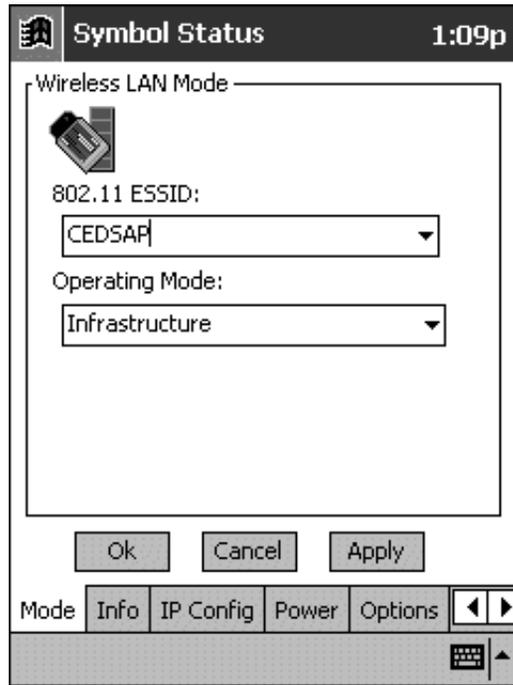


Figure 9-10. Mode Properties Page

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**Note:** The operating mode and ESS ID set in NICTT override those settings in Network Control Panel Applet (NCPA).

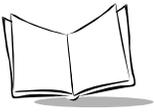
---

Use the Operating Mode pull-down menu to select one of the following options:

- **Infrastructure** - Select **Infrastructure** to enable the adapter to transmit and receive data with an access point. The **Channel** field and the **Send Long Preamble Headers** checkbox are not visible when the adapter is in Infrastructure mode. Infrastructure is the adapter default mode when Symbol Status initially displays
- **Enhanced Ad Hoc** - Select **Enhanced Ad Hoc** when the highest throughput is required in an Ad Hoc network for testing adapter performance. Enhanced Ad Hoc does not support adapters operating in PSP mode (battery power) and does not use beacons or authentication. Use the **Channel** field to enter the channel for the network. Each adapter is required to be on the same channel. Enhanced Ad Hoc is not recommended as a normal operational mode or for adapters operating on battery power. When Enhanced Ad Hoc is selected the **Signal** and **APs** property page are no longer available.
- **Ad Hoc** - Select **Ad Hoc** to enable the adapter to form its own local network where adapters communicate peer-to-peer without access points using a shared ESSID. Use Ad Hoc to create networks where needed within established cells. In Ad Hoc, adapters take turns generating beacons and handling probe responses. The adapter starting the Ad Hoc network (the first station transmitting a beacon) sets the channel in the **Channel** field. Each adapter in the Ad Hoc network is required to use the same channel to transmit and receive data peer-to-peer. If a single adapter is sending every beacon, there are no other adapters in the Ad Hoc network.

When **Ad Hoc** is selected, the **APs** property page turns into the Peers Property Page. Select Peers to view the BSSID or MAC addresses of the other adapters 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** property page to the latest Ad Hoc network performance and adapter membership data.

Enter a 32-character (maximum) string NIC ESS ID (802.11 Extended Service Set Identifier) in the **ESSID** field to identify the wireless network. The ESS ID assigned to the terminal must match the ESS ID of the access point.



## Info Property Page

Use the *Info* page to view version and operating mode information. All of the fields are read-only windows. There are no user configurable data fields.



Figure 9-11. Info Property Page

Use the **Version and Mode Information** field to view the driver version, adapter firmware version, hardware version, supported data rate, adapter type, firmware type, operating country, operating mode (Infrastructure, Ad Hoc, Enhanced Ad Hoc), encryption mode and transmit power.

Use the firmware data to determine if a firmware upgrade would improve performance. The encryption information is useful when associating to an access point, as the adapter and access point are required to use the same encryption algorithm to inter-operate. Changes to the operating mode can be made using the **Mode** property page. Transmit power can be adjusted in the **Radio Transmission Power** field of the **Power** property page.

## IP Config Property Page

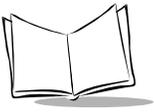
Use the **IP Config** property page to view the current adapter IP configuration settings. Select **DHCP** (Dynamic Host Configuration Protocol) to obtain a leased IP address and network configuration information from a remote server. An access point sends out a DHCP request searching for a DHCP server to acquire the network configuration and firmware filenames. DHCP is the default setting. Select **Static** to manually assign an IP address and a subnet mask. Use the **IP Config** property page to view and adjust the following: IP address, subnet, gateway, DNS, WINS, MAC address, and host name.

The screenshot shows a window titled "Symbol Status" with a clock showing "1:20p". The main content area is titled "IP Configuration" and contains two radio buttons: "DHCP" (which is selected) and "Static". Below the radio buttons are several input fields with their current values:

IP Address:	192.168.10.12
Subnet Mask:	255.255.255.0
Gateway:	0.0.0.0
DNS:	
WINS:	
MAC Address:	00:A0:F8:31:9E:1F
Host Name:	PDT8100

At the bottom of the main area are three buttons: "Ok", "Cancel", and "Apply". Below this is a navigation bar with tabs for "Mode", "Info", "IP Config" (which is selected), "Power", and "Options". To the right of the tabs are left and right arrow buttons. At the very bottom right is a small icon of a keyboard.

Figure 9-12. IP Config Property Page



## **IP Address**

A 32-bit (max) number (expressed in dotted-decimal notation 157.235.90.24) that the Domain server uses to transmit and receive data. The IP address of the adapter is required to be in the same subnet as that of the access point for the devices to interoperate in Infrastructure mode.

## **Subnet**

A subnet mask is required in order for the subnet to exist. Its purpose is to *mask out* IP addresses that are not part of the subnet. The network administrator usually has the required subnet mask.

## **Gateway**

Used to connect to the corporate network. The network administrator usually has the IP address required for the default gateway.

## **DNS (Domain Name System)**

The IP address of a server containing a database of host names and their associated IP addresses so that when a host name is used, it can be resolved into its IP address.

## **WINS (Windows Internet Name Service)**

WINS is a NetBIOS Name Server that registers your NetBIOS names and resolves into IP addresses. It works in a manner similar to DNS.

## **MAC Address**

An IEEE 48-bit address that the adapter is given at the factory which allows all of the adapters on the network to communicate at the physical layer level, either by an actual wire or by radio waves.

## **Host Name**

User assigned handheld device host name.

## Power Mode Property Page

The Power Mode management properties allow automatic or manual setting of the adapter power management mode.

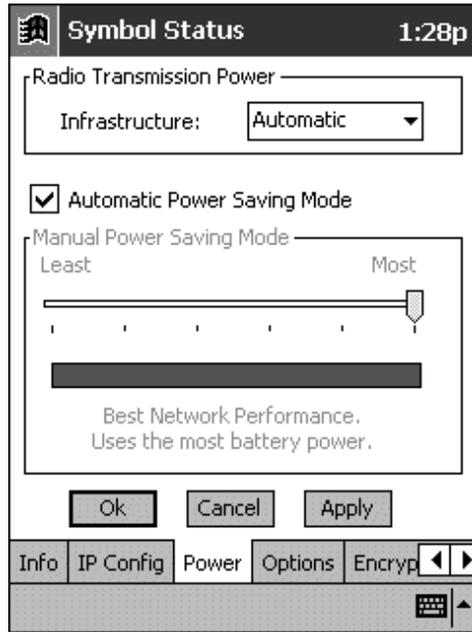
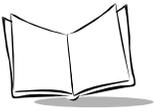


Figure 9-13. Power Property Page

The adapter has two power consumption modes, **Continuous Access Mode (CAM)** and **Power Save Poll (PSP)** mode. Selecting CAM yields the best performance but uses the most power. CAM mode is the preferred mode for systems running on AC power. The **Automatic Power Saving Mode** is the default power mode setting.

Clear the **Automatic Power Saving Mode** checkbox and use the sliding scale in the **Manual Power Saving Mode** field to select a PSP performance index (1 to 5) suited to the intended operation of the adapter. Selecting PSP saves significant amounts of power over CAM. PSP is the preferred mode for systems running on battery power.

Use the **Radio Transmission Power** field to set the power level for data transmitted to either an access point (Infrastructure mode) or other adapters in an Ad Hoc cell (Ad Hoc or Enhanced Ad Hoc mode). Set the operating mode for each adapter using the **Mode** property page.



Adjusting the adapter transmit power level enables users to expand or confine a transmission area in respect to interference or other wireless devices that could be operating nearby. Reducing a coverage area in high traffic areas improves transmission quality by reducing the number of missed beacons and noise in that coverage area.

### **Radio Transmission Power Field**

Use the **Radio Transmission Power** field to set the transmission power level for adapters operating in Infrastructure mode. There are two transmission power options available in Infrastructure mode: **Automatic** and **Power Plus**.

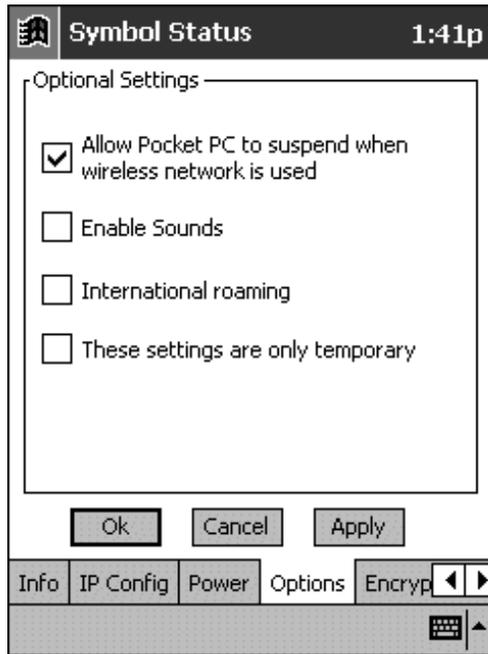
- Select **Automatic** to use the current access point transmit power level for the adapter. Automatic mode is the default mode for adapters operating in Infrastructure mode.
- Select **Power Plus** from the pull down menu to set the adapter transmission power one level higher than the level set for the access point. If the access point is set to the highest power level, than that is the level used by the adapter.

Use the **Radio Transmission Power** field to select the transmission power level for the adapters operating in Ad Hoc or Enhanced Ad Hoc mode. Select a transmission power level from the **Ad Hoc** pull-down menu and tap **Apply** to implement that level for the adapter. There are five transmission power options available in Ad Hoc and Enhanced Ad Hoc mode.

- Select **Maximum** power to set the adapter 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.
- Choose **50%** power to set the adapter to a transmit power level that is half of the maximum power level.
- Specify **25%** power to set the adapter to a transmit power level that is half of the 50% power level.
- Select **10%** power to set the adapter to a transmit power level that is a little less than half of the 25% power level.
- Choose **Minimum** power to set the adapter 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.

## Options Property Page

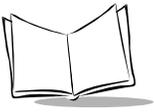
Use the **Options** property page to enable or disable suspend wireless network, system sounds, set temporary setting and set International roaming option.



**Figure 9-14. Options Property Page**

Select **Allow Pocket PC to suspend when wireless network is used** to suspend all functions when the adapter is still active to avoid drainage of battery power. The Pocket PC will not suspend if the suspend option is disabled allowing the adapter to continue beaconing and result in unnecessary battery power consumption.

Select **Enable Sounds** from the **Optional Settings** field to initiate an audible signal when performing a ping test and associating with an access point. The tones are important to notify users if the pinging is received or if the adapter has roamed to another access point. **Enable Sounds** is a default setting.



Values saved to the Windows Registry are used by the adapter when the computer starts. Select **These settings are only temporary** from the **Optional Settings** field to enter only Symbol Status temporary values. Temporary values apply to each property page and last until the system is restarted or the values are changed. If the checkbox is not selected, any value entered is saved and used by the adapter after the system is rebooted.

Check the **International roaming** checkbox to enable the adapter to roam and associate to access points with different country codes.

## Encryption Property Page

Use the **Encryption** property page to set the adapter security level. The firmware supports **Open System (no encryption)**, **40-bit Shared Key algorithm (40-bit)**, **128-bit Shared Key algorithm (128-bit)** and **Kerberos** 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 access point and the adapter are required to use the same encryption algorithm to associate and transmit data. If an access point 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 access point is set to 40-bit or 128-bit no association takes place.

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**Note:** *If an access point is set to 40-bit and an adapter is set to 128-bit the devices can associate, but no data transmission and reception can take place between the two devices.*

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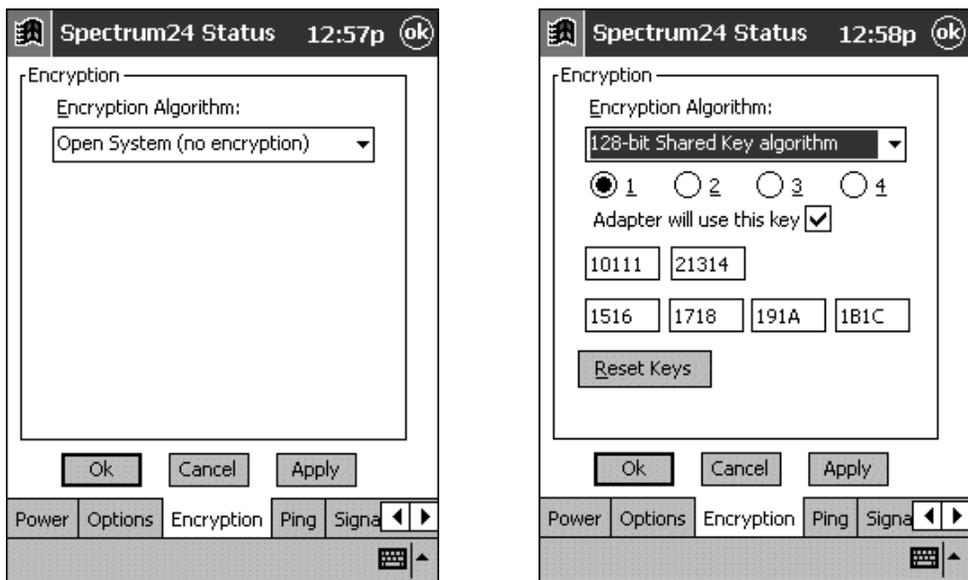
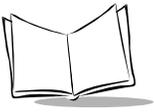


Figure 9-15. Encryption Property Pages

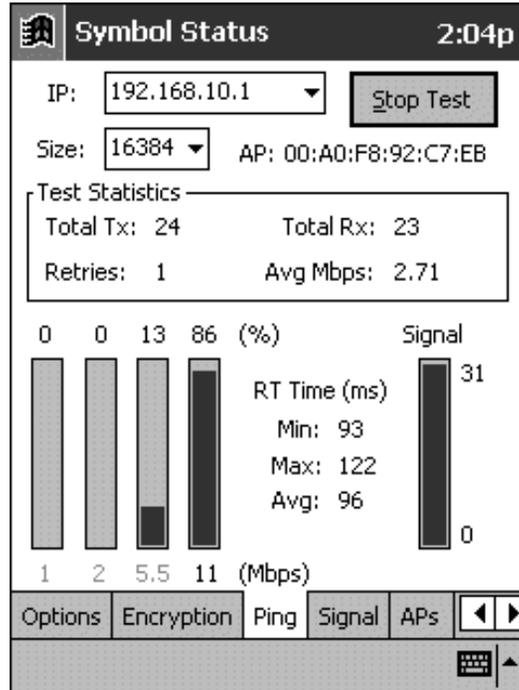


Choose one of the following Encryption options from the **Encryption Algorithm** pull-down menu:

- **Open Systems (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. Tap **Apply** to enable Open System encryption.
- **40-bit Shared Key algorithm** - Select 40-bit encryption and enter a 10 Hex digit encryption key that can be entered by spreading the 10 Hex digits between the two encryption key fields provided. Tap **Apply** to save and implement the encryption key data. Tap **Reset Keys** to clear the entries in the **Shared Encryption Keys** field.
- **128-bit Shared Key algorithm** - Choose 128-bit encryption and enter a 26 Hex digit encryption key that can be entered by spreading the 26 Hex digit characters across the six encryption key fields provided. The 128-bit encryption option provides a higher level of security than 40-bit encryption while maintaining an 11 Mbps data rate. Tap **Apply** to save and implement the encryption key data. Tap **Reset Keys** to clear the entries in the **Shared Encryption Keys** field.
- **Kerberos Encryption Algorithm** – Not supported in this release.

## Ping Property Page

Select the **Ping** property page to view the signal strength, data rate transmission, test statistics and to perform data transmission test.



**Figure 9-16. Ping Property Page**

Transmission quality tests send an ICMP ping packet across the network to a selected address to test data transmission between an adapter and an access point/adapter. The transmission quality indicates an importance in determining if the adapter should associate with a different access point/adapter to optimize its transmission capabilities or if the adapter is properly configured to transmit and receive with that access point/adapter. Configure the following parameters to conduct a transmission test:

- Enter an IP address as a dotted string (192.168.10.1). The TCP/IP protocol must be installed.
- Select the size of packets sent from the **Size** pull-down menu.



- Tap **Start Test** to begin the test. Each ping displays the round trip time it took the ICMP ping to complete. The minimum, maximum and average values are displayed as results. A real-time bar graph indicates the signal strength and the data transmission rate.

## Signal Strength Property Page

The *Signal* page displays signal transmission quality from the terminal to the associated access point. Signal quality indicates how clearly the terminal can hear the associated access point.

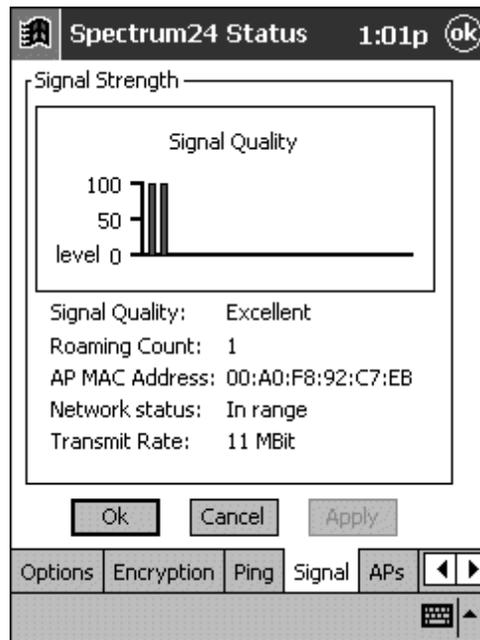


Figure 9-17. Signal Property Page

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**Note:** The *Signal* property page is not be accessible if Ad Hoc or Enhanced Ad Hoc is selected as the operating mode from the *Mode Property* page.

---

The **Signal** Property Page displays the following information:

- A graph displays signal quality from 0 to 100 percent. The terminal continuously looks for a stronger signal from a different access point on the network, and roams to that access point if the quality of the radio signal drops below an acceptable level.
- The bottom of the **Signal** page displays the current signal quality, the number of times the terminal has roamed, associated AP MAC address, the network in-range status, and the current data rate.

## APs Property Page

Use the **APs** property page in Infrastructure mode to view access points with the same ESSID as the adapter within the network.

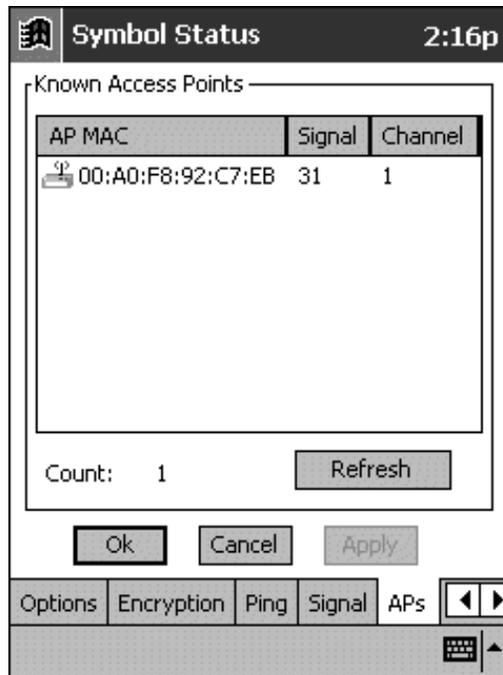
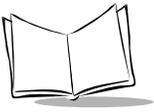


Figure 9-18. APs Property Page



View the AP MAC address, direct sequence channel of each located access point. If choosing to associate with one of the access points displayed, the adapter is required to use the same channel number and MAC address of the access point. If the current adapter signal strength is poor, one of the access points displayed could provide a stronger signal.

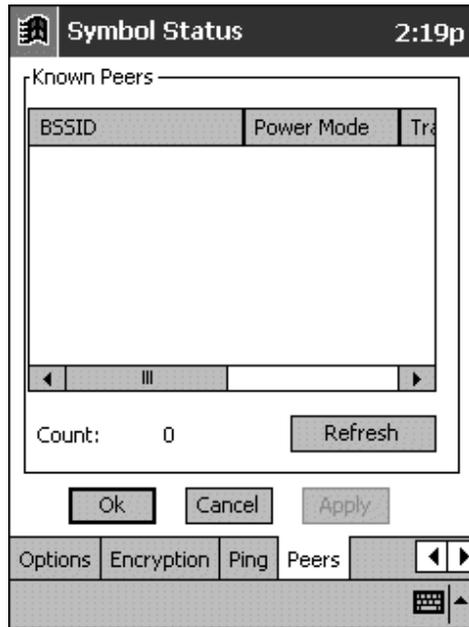
Select and tap on an access point to display a pull-down menu used for setting the adapter's access point roaming capabilities. Selecting **Set Mandatory** prohibits the adapter from associating with a different access point. The letter **M** displays on top of the AP diagram when **Set Mandatory** options is selected. Selecting **Set Roaming** enables the adapter to roam to an access point with a stronger signal when the current access point signal strength falls below Good.

Tap **Refresh** to update the list of the known APs. The **Known APs** field is a read-only window with no user configurable data fields

When Ad Hoc is selected as the operating mode, the **Signal** and **APs** property pages turn into the **Peers** property page.

## Peers Property Page

When **Ad Hoc** is selected as the operating mode from within the **Mode** property page, the **Signal** and **APs** property pages turn into the **Peers** property page.



**Figure 9-19. Peers Property Page**

Use the **Peers** property page to view the BSSID or MAC addresses of the other adapters in the network, their operating mode (PSP or CAM), their transmit rate, their supported data rate, supported data rate and length of time an adapter has been out of the Ad Hoc network. The number of adapters in the network is displayed at the bottom of the screen. The **Peers** property page is view only with no configurable data fields.

Tap **Refresh** to update the **Peers** property page to the latest Ad Hoc network performance and membership data.



## Using Spectrum24 Settings Control Panel Applet for PDT 8146

The Spectrum24 Settings Control Panel Applet allows you to view and edit Spectrum24 NIC settings. On the Start menu, select Settings, the System tab, then Spectrum24 Settings.

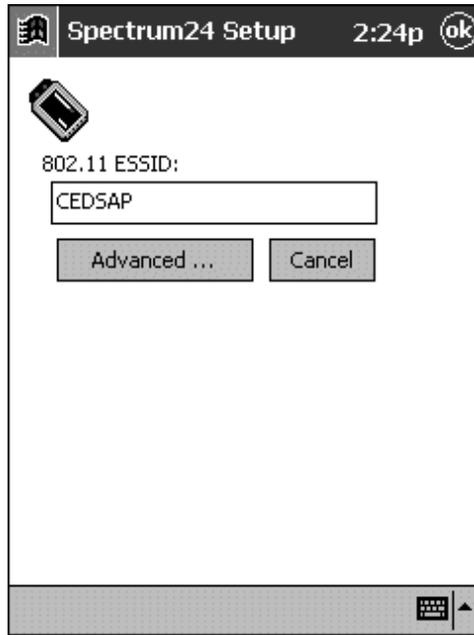


Figure 9-20. WLAN Setup Screen

Enter an ESSID (802.11 Extended Service Set Identifier) matching the access point ESSID to enable the terminal to communicate with the access point. This value is a unique 32-character (maximum) string that identifies the wireless local area network. If the ESSID is unknown, ask the IS department for assistance.

### Advanced Settings

Only system administrators should modify the advanced settings. Select the **Advanced** button to view and edit the **Advanced** property pages and create a password for these pages. The Advanced property pages control all aspects of the terminal, including Mobile Unit settings, Power settings, Encryption settings, and WLAN Adapter hardware settings.

## Mobile Unit Properties

**Figure 9-21. Mobile Unit Property Page**

The **Mobile Unit** page in the **Advanced Properties** window configures the terminal's operating mode and ESS ID. Selecting an operating mode in NICTT disables the operating mode selected in NCPA.

Use the **Operating Mode** pull-down menu to select one of the following operating modes for the terminal:

- **ESS (802.11 Station)** allows the terminal to transmit and receive data with an access point. The data rate is based on the number of transmit retries. This is the default.
- **IBSS (802.11 Ad Hoc)** enables terminals to form their own local network where they can communicate peer-to-peer without access points. Use IBSS to create networks within established cells. Terminals take turns generating beacons and handling probe responses. The terminal starting the IBSS network (i.e., the first terminal transmitting a beacon) determines the channel number and data rate used within the network.



- Select **Pseudo IBSS (Proprietary Ad Hoc)** for the highest throughput in an IBSS network for terminal testing. Pseudo IBSS does not support PSP terminals and does not use beacons or authentication. Each terminal must be on the same channel. If you select this option, the **Signal** and **Peers** tabs are no longer available. Pseudo IBSS is not recommended as a normal operational mode or for terminals operating on battery power.

Enter a 32-character (maximum) case-sensitive string NIC ESS ID (802.11 Extended Service Set Identifier) in the **ESSID** field to identify the wireless network. The ESS ID assigned must match the ESS ID of the access point. This value can also be set during Easy Installation.

The **Mandatory AP address** is the IEEE MAC address of the access point (AP) where the adapter associates. The adapter only associates to this access point when communicating on the network.

## Power Properties

Select the **Power** tab in the Advanced Properties window to display the Power Settings property page. Use the Power property page to control terminal power consumption.

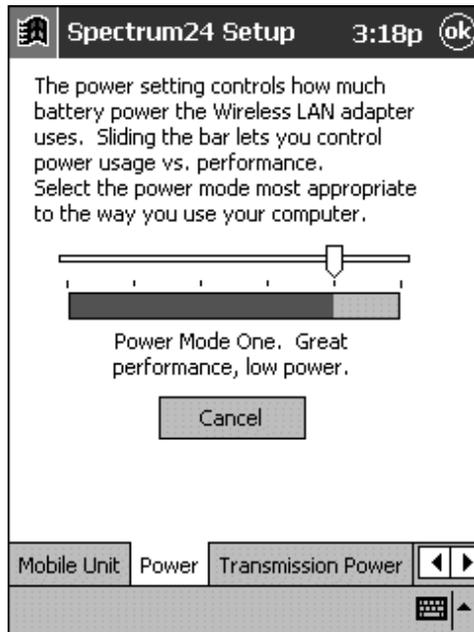


Figure 9-22. Power Property Page

There are two power consumption modes: Continuous Access Mode and Power Save Poll mode. CAM yields the best performance but uses the most power. CAM is the preferred mode for systems running on AC power. PSP saves significant amounts of power over CAM. PSP is the preferred mode for systems running on battery power.

Set the slider to the far right to retain CAM or set the slider to a PSP performance index (1 to 5). Each mode is described underneath the sliding scale.

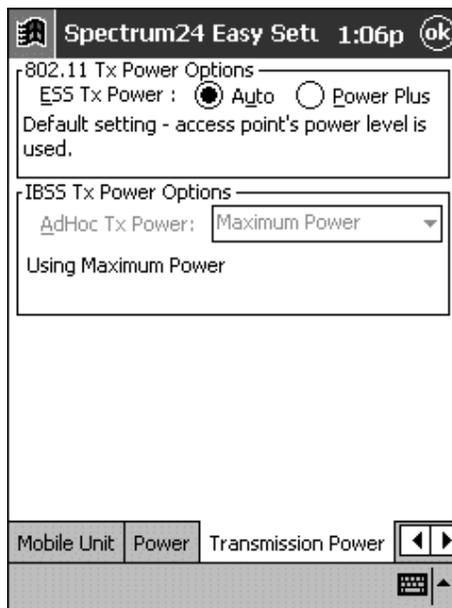
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**Note:** You must disable the Power Management capabilities in NICTT to use the settings in the NCPA Power property page.

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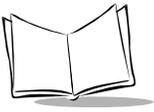
## Transmission Power Properties

Use the Radio Transmission Power field to set the power level for data transmitted to either an access point (ESS) or other adapters in an Ad Hoc cell (PIBSS or IBSS).



**Figure 9-23. Transmission Power Page**

Adjusting the adapter transmit power level enables users to expand or confine a transmission area in respect to interference or other wireless devices that could be



operating nearby. Reducing a coverage area in high traffic areas improves transmission quality by reducing the number of missed beacons and noise in that coverage area.

Use the **802.11 Tx Power Options** field to set the transmission power level for adapters operating in Infrastructure mode. There are two transmission power options available in Infrastructure mode: **Automatic** and **Power Plus**.

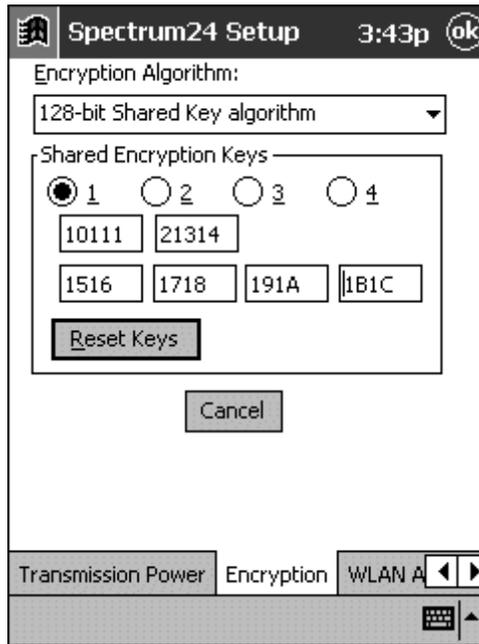
- Select **Automatic** to use the current access point transmit power level for the adapter. Automatic mode is the default mode for adapters operating in Infrastructure mode.
- Select **Power Plus** from the pull down menu to set the adapter transmission power one level higher than the level set for the access point. If the access point is set to the highest power level, than that is the level used by the adapter.

Use the **IBSS Tx Power Option** field to select the transmission power level for the adapters operating in Ad Hoc or Enhanced Ad Hoc mode. There are five transmission power options available in Ad Hoc and Enhanced Ad Hoc mode.

- Select **Maximum** power to set the adapter 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.
- Choose **50%** power to set the adapter to a transmit power level that is half of the maximum power level.
- Specify **25%** power to set the adapter to a transmit power level that is half of the 50% power level.
- Select **10%** power to set the adapter to a transmit power level that is a little less than half of the 25% power level.
- Choose **Minimum** power to set the adapter 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.

## Encryption

Select the **Encryption** tab in the Advanced Properties window to view the Encryption property page.



**Figure 9-24. Encryption Property Page**

Encryption is an efficient method of preventing data theft and improving data security in a wireless environment. Use the Encryption property page to configure WLAN adapter data packet Encryption settings.

Choose one of the following Encryption options from the **Encryption Algorithm** pull-down menu:

- Use the **Open Systems** option as a default setting when no data packet Encryption is needed over the network. Selecting Open Systems provides no security for the data being transmitted over the network. Select **OK** to enable Open System Encryption.
- Select **40-bit Encryption** and enter a 10 Hex digit password by spreading the 10 Hex digits between the two password fields provided for each Encryption key. Select **OK** to save.



- Select **128-bit Encryption** from the Encryption Algorithm pull-down menu and enter a 26 Hex digit password by spreading the 26 Hex digits across the six fields provided for each Encryption key. The 128-bit Encryption option provides the highest level of security. Select **OK** to save the Encryption keys.

## WLAN Adapter Settings

Select the **WLAN Adapter** tab within the Advanced Properties window to view the WLAN Adapter property page. Use this page to configure hardware and radio settings and set an optional password for user access to the four advanced property pages.

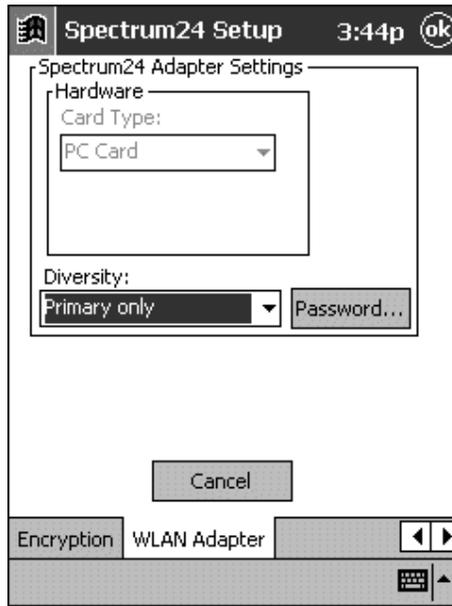
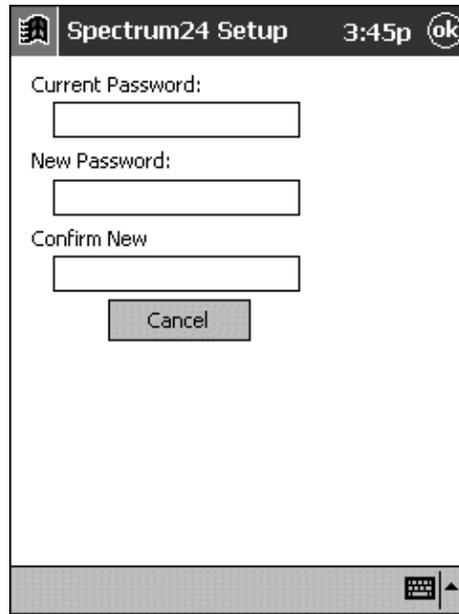


Figure 9-25. WLAN Adapter Property Page

Select **Diversity On** in the **Diversity** drop-down menu if you have a dual antenna on your WLAN adapter card. This can improve communication in highly reflective environments. Select **Primary only** if you do not have a dual antenna WLAN adapter card or a secondary antenna. Using diversity without dual antennas can cause poor wireless network performance.

To create a password, select the **Password** button. Enter a case-sensitive password (10 characters maximum) in the password field and select OK. This enables the Advanced

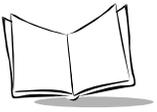
property pages password dialog box which appears when Advanced is selected from the Easy Setup window.



**Figure 9-26. Password Page**

To disable the password dialog box, enter the current password and leave the two new passwords fields blank. Select **OK**.

To change the password, enter the current password and type a new password in the two new password fields. Select **OK**.



*PDT 8100 Series Product Reference Guide*



# *Chapter 10*

## *Wireless Wide Area Network Configuration*

### **Introduction**

---

Before a terminal can be used on a CDPD/GSM wireless network, you must select a provider and establish a service plan, and the terminal must be properly configured.

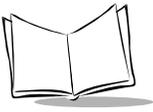
### **Configuring a CDPD WAN Connection (PDT 8133)**

---

Before the PDT 8133 terminal can be used, you must get an account with an internet service provider.

All CDPD identification and address information is entered through the Preferences application on the PDT 8133 terminal.

To configure your PDT 8133 terminal for use on a CDPD network, tap Configuration Wizard on the Modem menu in Modem Manager.



## Configuration Wizard

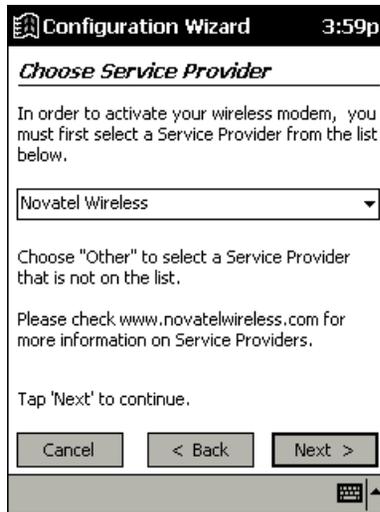
The first time the Modem Manager software is started, or when Configuration Wizard is selected from the Modem menu within Modem Manager, the Configuration Wizard prompts you through the steps to configure and set up the terminal for operation.



**Figure 10-1. Configuration Wizard Welcome Screen**

At any time, you can choose to cancel the Configuration Wizard by tapping **Cancel**. If you do choose to cancel, the Configuration Wizard appears the next time the Modem Manager is selected. It is recommended that once you begin the setup process you continue until it is completed.

1. To begin configuration, tap **Next**. The *Choose Service Provider* screen displays.

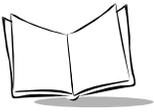


**Figure 10-2. Choose Service Provider Screen**

2. Select a Wireless Provider from the drop-down menu, and tap **Next**. The Contact Service Provider screen displays:



**Figure 10-3. Contact Service Provider Screen**



This screen tells you to note the modem Equipment ID number shown. Tap **Next** to continue.

3. The *Enter Modem Settings* screen displays:

The screenshot shows a mobile application interface titled "Configuration Wizard" with a time of 4:00p. The main heading is "Enter Modem Settings". Below the heading, there is a prompt: "Please enter the information given to you by your service provider." The form contains four input fields: "IP Address" with the value "192 . 0 0 . 1", "Primary DNS" with "0 . 0 0 . 0", "Secondary DNS" with "0 . 0 0 . 0", and "SPI" with "0". Below the fields, there is a note: "Tap 'Next' once you have entered this information." At the bottom, there are three buttons: "Cancel", "< Back", and "Next >". A keyboard icon is visible in the bottom right corner of the screen.

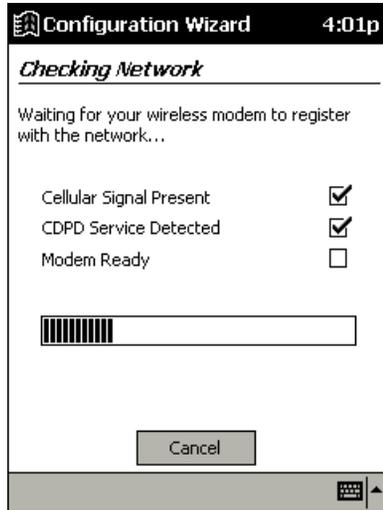
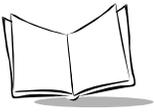
**Figure 10-4. Enter Modem Settings Screen**

4. Enter the required information and tap **Next** to continue. You are prompted to confirm the settings. Verify the information you entered is accurate and tap **Next**. The *Modem Configured* screen displays.



**Figure 10-5. Modem Configured Screen**

5. After you have waited the appropriate amount of time indicated by your service provider, tap **Next**. The *Checking Network* screen tells you to wait for your modem to register with the network.



**Figure 10-6. Checking Network Screen**

6. A screen displays indicating that the modem successfully connected.

---

**Note:** *The Configuration Wizard does not proceed until a CDPD carrier selection is made.*

---

## Maintenance Screens and Menus

The PDT 8133 terminal includes menu commands to make it fast and easy to configure and check the status of your modem. This section explains the menu commands specific to the Modem Manager.

### Status Screen

The **Status** tab of the Modem Manager displays modem parameters. The modem's status is updated every 3 seconds.

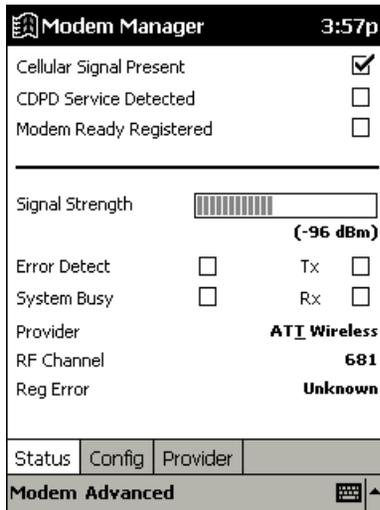


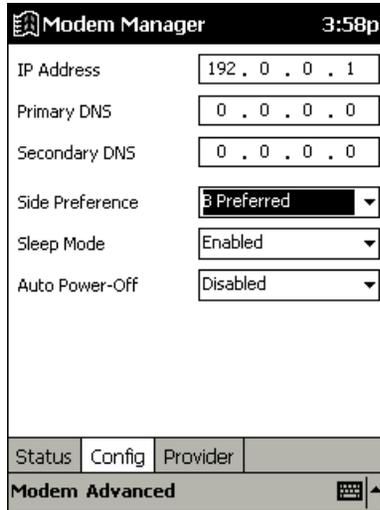
Figure 10-7. Modem Manager Status Screen



The following information is available from this screen:

<b>Setting</b>	<b>Description</b>
<b>Cellular Signal Present</b>	When checked, it indicates that the modem has identified a cellular signal.
<b>CDPD Service Detected</b>	When checked, it indicates that the modem has identified and is synchronized to a CDPD signal in the area.
<b>Modem Ready Registered</b>	When checked, it indicates that the modem has successfully registered with a CDPD service provider in the coverage area. A working data connection exists and can be used by other applications to transmit and receive data. Until this checkbox is selected, the modem can neither transmit nor receive data.
<b>Signal Strength</b>	Measures Received Signal Strength from the wireless base station. These values range from one to ten bars. The greater the number of bars, the better the performance of the modem.
<b>Error Detect</b>	When checked, it indicates that a large number of errors have been detected by the modem. The modem may continue to operate but with a severely reduced performance, caused by the increased likelihood of connection retries and data errors when communicating with the wireless base station.
<b>System Busy</b>	When checked, it indicates that the currently detected CDPD system is busy. The modem may continue to operate but at a decreased level of performance.
<b>Provider</b>	Displays the CDPD channel's System Provider's Identifier.
<b>RF Channel</b>	Shows the CDPD channel currently active. If the terminal is not registered or is searching for a channel, the value displayed is either "Searching A" or "Searching B", depending on the state of the modem. Once a channel is detected, a numeric value for the channel displays.
<b>Reg Error</b>	This shows either "None" or a numeric value between 1 and 7. "None" indicates a successful registration without any errors. If a numeric error code is displayed, an error has occurred. Tap the button to display details about the error.

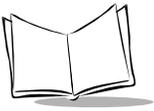
## Configuration Screen



**Figure 10-8. Modem Manager Configuration Screen**

On the **Config** tab, you can edit configuration settings. The following settings are available:

Setting	Description
<b>IP Address</b>	This is the current IP address of the modem. Tap to enter a new IP address.
<b>Primary DNS</b>	This is the current Primary DNS address of the modem. Tap to enter a new DNS address.
<b>Secondary DNS</b>	This is the current Secondary DNS address of the modem. Tap to enter a new DNS address.
<b>Side Preference</b>	Configure the side preferences for the modem. All CDPD systems are categorized into "A" systems or "B" systems. This setting determines how the modem searches for a CDPD system among the two system category choices. See <i>Side Preference Drop-Down</i> on page 10-10.
<b>Sleep Mode</b>	Allows or disallows the modem to enter the low-power mode. This feature only functions on Wireless IP networks that support it. See <i>Sleep Mode Drop-Down</i> on page 10-10 for detailed information.



Setting	Description
<b>Auto Power-Off</b>	When enabled, this shuts off the modem when the session is disconnected.

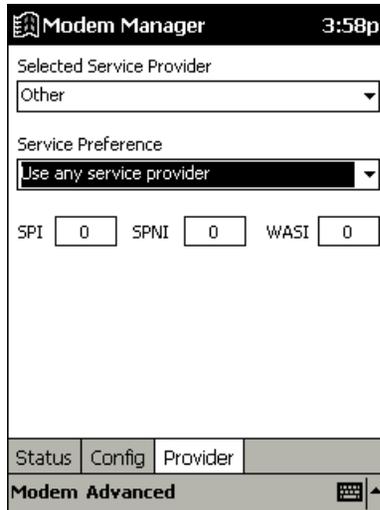
### **Side Preference Drop-Down**

Setting	Description
<b>A only</b>	The modem searches for a CDPD system on the "A" side only. For users who do not roam, this selection can sometimes speed the registration process, as the modem does not have to look on the "B" side as well before it can register.
<b>B only</b>	Same as "A only" except on the "B" side.
<b>A Preferred</b>	The modem searches for a CDPD system on the "A" side first and attempt registration on any system it finds. However, if the modem cannot register on the "A" side, it then attempts to find service on the "B" side. For users who roam, this setting would be appropriate if the home system was on the "A" side.
<b>B Preferred</b>	The modem searches for a CDPD system on the "B" side first and attempt registration on any system it finds. However, if the modem cannot register on the "B" side, it attempts to find service on the "A" side. For users who roam, this setting would be appropriate if the home system was on the "B" side.

### **Sleep Mode Drop-Down**

Setting	Description
<b>Enabled</b>	The modem attempts to enter a low-power mode if it is not required to carry out any communications with a Network. The modem may respond sluggishly to the first communication request when it is required again.
<b>Disabled</b>	The modem is not allowed to enter sleep mode.

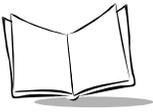
## Provider Screen



**Figure 10-9. Modem Manager Provider Screen**

On the **Provider** tab, you can modify provider settings. The following settings are available.

Setting	Description
<b>Selected Service Provider</b>	Selects the CDPD channel's System Provider's Identifier.
<b>Service Preference</b>	Configures the preferences for the service ID parameters. Refer to <i>Service ID Preferences</i> on page 10-12 for detailed information.
<b>Service ID Parameters</b>	Configures all identification values for a particular system or Wireless IP network: <b>SPI</b> is the current CDPD Base Station Service Provider Identifier. <b>SPNI</b> is the current CDPD Base Station Service Provider Network Identifier. <b>WASI</b> is the current CDPD Base Station Wide Area Service Identifier.



## Service ID Preferences

Setting	Description
<b>Only use selected service provider</b>	The modem attempts to detect <i>only</i> the system in the Service ID parameters for registration. This is useful when you want to prevent roaming to any other system but your home system.
<b>Prefer to use selected service provider</b>	The modem first attempts to register on the system described by the SPI/WASI/SPNI entries. If no system is found, the modem attempts to register on the remaining available systems in the area. This is useful when you spend most time in one area and occasionally roam, or in cases where you have two systems but prefer service on one due to, for example, rate advantages. In these cases, enter the Network ID parameters that reflect the system you most often will register on.
<b>Don't use selected service provider</b>	The modem attempts to register on any system but that reflected in the Network ID entries. This is useful if you want to block registration on systems in your area that you do not have an agreement with. This may speed up the registration process in some areas.
<b>Use any service provider</b>	The SPI/WASI/SPNI entries are ignored. This is the default configuration and ensures that the modem attempts to register on any valid system that it can find.

## Modem Menu

Tap **Modem** to display the *Modem Menu*. Options are described below.

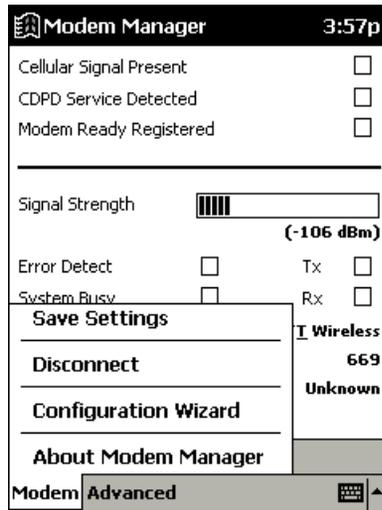
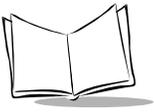


Figure 10-10. Modem Menu

Setting	Description
<b>Save Settings</b>	Saves any settings made in the Modem Manager Configuration and Provider screens.
<b>Disconnect</b>	Terminates the active Network session with the modem. If you have configured the AutoOff preference to turn the modem off when the session is disconnected, the modem may also power down. If disconnected, the Modem Manager can no longer perform 3-second updates.
<b>Configuration Wizard</b>	Launches the Configuration Wizard to configure your modem.



## Advanced Menu

Tap **Advanced** to display the *Advanced Menu*. Options are described below

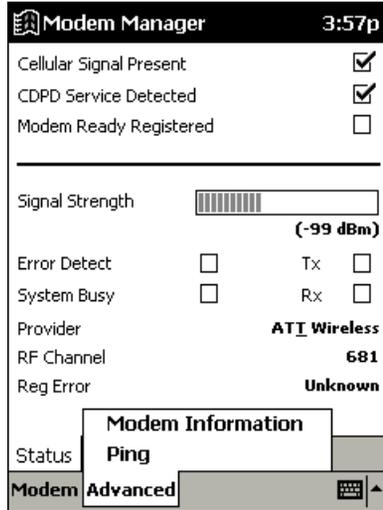


Figure 10-11. Advanced Menu

## Modem Information

Tap **Modem Information** to view the modem manufacturer, equipment ID and model, and firmware version.

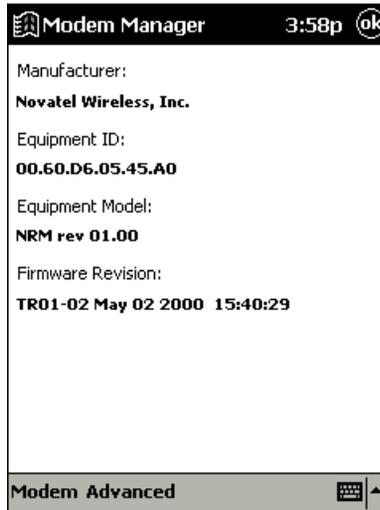
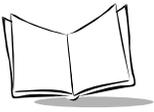
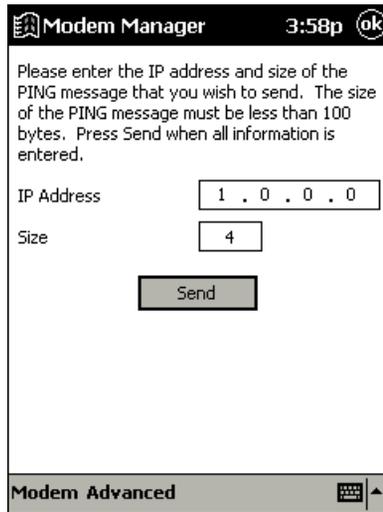


Figure 10-12. Modem Information Screen



## Ping Screen

Tap **Ping** to send a packet to a particular IP address to determine if it is online. From this screen you can send a PING request to another network device whose network address you already know. This is useful to verify network connectivity.



**Figure 10-13. Ping Screen**

As with other PING applications, enter the IP address of the other network device in the IP field, then select the desired payload size. Tapping *Send* sends the PING. A status line displays a "Success" or "Fail" message to indicate whether or not the PING was successful. There is a 20 second timeout for a response before a "Success" or "Fail" message may display.

There are some limitations on this PING implementation:

- The size of PING payload is limited to 99 bytes. If a payload of greater than that is entered, a data error message will be displayed.
- The delay to wait for response is fixed at 20 seconds.

Tap **OK** to return to the Modem Manager screen.

## Help

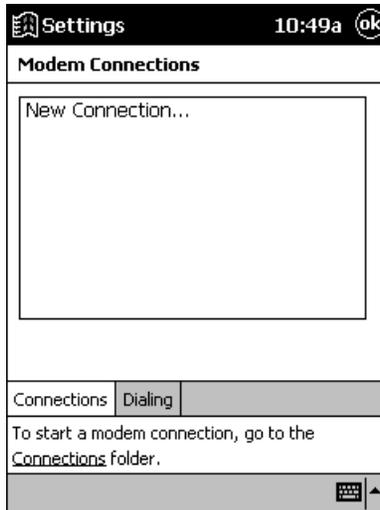
Select **Help** from the **Start** menu for more information on Modem Manager.

## Configuring a GSM WAN Connection (PDT 8134)

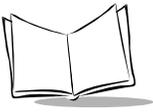
---

To set up a new connection configuration:

1. Tap **Settings** from the **Start** menu.
2. Tap the **Connections** tab, and select **Modem** to display the *Modem Connections* screen.



**Figure 10-14. Modem Connections Screen**



3. Tap **New Connection**. The *Make New Connection* screen displays.

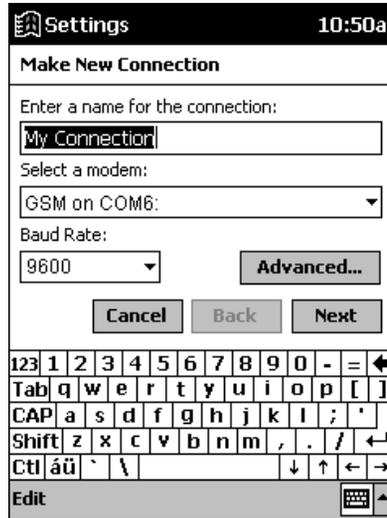


Figure 10-15. Make New Connection Screen

4. Enter a name for your connection, then select **UbiNetics-GSM\_PC\_Card** from the drop-down menu.

- Your modem settings and TCP/IP address should be set automatically, but if you need to set them manually, tap the **Advanced** button and enter the information in the **Port Settings**, **TCP/IP**, and **Name Servers** tabs.

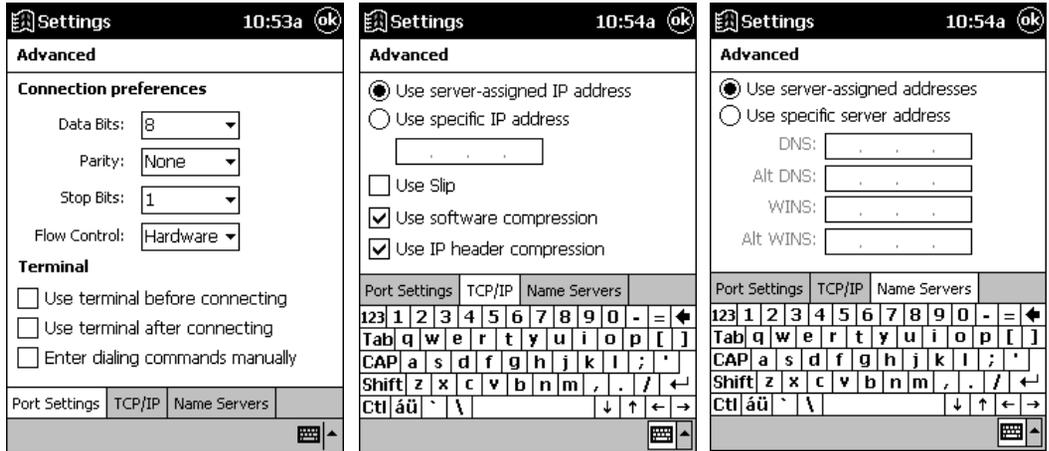


Figure 10-16. Advanced Settings

- When you have completed entering your settings, tap **OK**, then select **Next** from the *Make New Connection* screen.

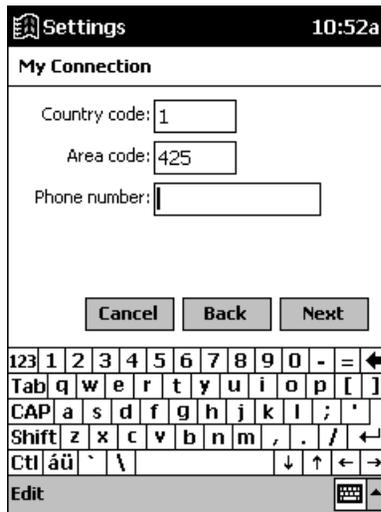


Figure 10-17. Advanced Settings



7. Enter the phone number, and tap **Next**..



**Figure 10-18. Dialing Settings**

8. Set the dialing settings on the next screen, and tap **Finish**. Your new connection is created.

## Connecting via GSM

To connect using the GSM WAN connection you created:

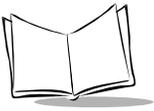
1. Select **Programs** from the **Start** menu.
2. Tap the **Connections** icon.
3. Select the connection you created..

The screenshot shows a 'Connect To' dialog box with the following elements:

- Title bar: **Connect To** (7:58a)
- Section: **My Connection**
- Fields:
  - User name: [ ]
  - Password: [ ]
  - Domain: [ ]
  - Save password:
  - Phone: T9,7382424
  - Dial from: Work (dropdown)
- Buttons: **Cancel**, **Connect**, **Dialing Options...**
- Keyboard: A full QWERTY keyboard layout is visible below the buttons.

**Figure 10-19. Personalizing your Connection**

4. Enter a user name, password and domain. Also select if you are dialing from Work or Home, and check the **Save Password** box if you'd like the terminal to remember your password next time.



- If you'd like to edit any dialing selections, tap **Dialing Options**.

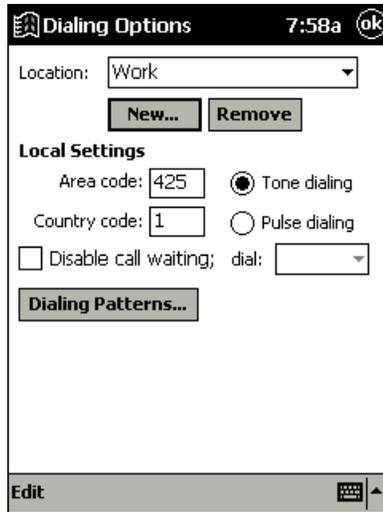


Figure 10-20. Dialing Options

- Tap **Dialing Patterns** to edit country code, area code, or number dialing patterns.

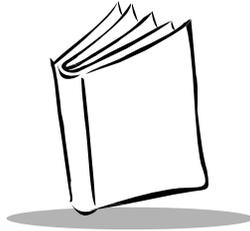


Figure 10-21. Dialing Patterns

7. Tap **OK** until you return to your connection screen, and tap **Connect**. The terminal attempts to connect.



*PDT 8100 Series Product Reference Guide*



# Chapter 11

## *Software Installation on Development PC*

### **Introduction**

---

To develop applications to run on the PDT 8100, the *Symbol Windows CE Software Developer's Kit (SDK)* is available. This SDK contains PDT 8100-specific software not available in the standard Microsoft Windows CE Platform SDK.

The minimum system configuration required to install the SDK is:

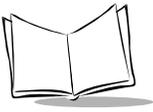
- IBM-compatible PC with Pentium 150 MHz processor or higher
- Windows® 98 second edition, or Windows® NT operating system version 4.0 with Service Pack 5 or later, or Microsoft Windows 2000 operating system
- 24MB RAM for Windows 98, 32 MB RAM for Windows NT
- 100MB available hard disk space
- CD-ROM drive
- One available serial port
- Mouse.

Also, be sure the drive you are installing to accepts long filenames (larger than the 8.3 filename convention).

### ***Before You Install the SDK***

Before you install the Symbol Windows CE SDK, install the following tools:

- Microsoft eMbedded Visual Tools 3.0
- Windows CE Platform SDK for Pocket PC
- Microsoft ActiveSync.



## Symbol Windows CE SDK

---

The SDK installation program loads the required Windows CE components on the development PC used to create the image files (via Terminal Configuration Manager) for download to the terminal.

The Symbol SDK includes:

- Symbol-provided files
- Printer drivers
- TCM scripts
- Sample code
- This Product Reference Guide.

## Installing the SDK on the Development PC

---

The Symbol SDK installs files to the directory "Symbol Windows CE SDK (PDT 8100)" and the directory "Windows CE Tools".

### *Installing the SDK*

Obtain the SDK from the Symbol website <http://Software.Symbol.com/DevZone>. After downloading, run the executable and follow the installation prompts.

Once installation of the SDK is complete, use eMbedded Visual C++ to view the active Windows CE configuration, "PDT 8100 PPC".

Use eMbedded Visual Basic to view the active Windows CE configuration, Microsoft Pocket PC.

## Installing Other Development Software

---

Developing applications for the PDT 8100 may require installing other development software such as application development environments on the development PC. Follow the installation instructions provided with this software.



# Chapter 12

## Configuring the Terminal

### Introduction

---

This chapter describes the Terminal Configuration Manager (TCM), and how it is used to specify and load files into the flash memory of the PDT 8100 using the terminal's Initial Program Loader (IPL).

In TCM, you create a *script* that contains the information (commands to copy files) for building the image. TCM works with directory windows which display the directory structure of your script and the source directories, files, and scripts from which you pull components. You can open multiple scripts, drag and drop items from a drive/directory to the script, rename and delete files in the script, etc. Upon building the image, TCM adds all the files, directories, and scripts referenced in the script to the image.

The SDK includes a number of standard scripts and demos/samples for you to use as a base for creating your own scripts. These scripts can be found in the SYMSDK\SCRIPTS directory.

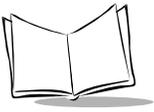
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**Note:** *Before you create a script to build a hex image, identify the files required (system files, drivers, applications, etc.) and locate the files' source directories to make the script building process easier.*

---

The required processes for building a hex image in TCM include:

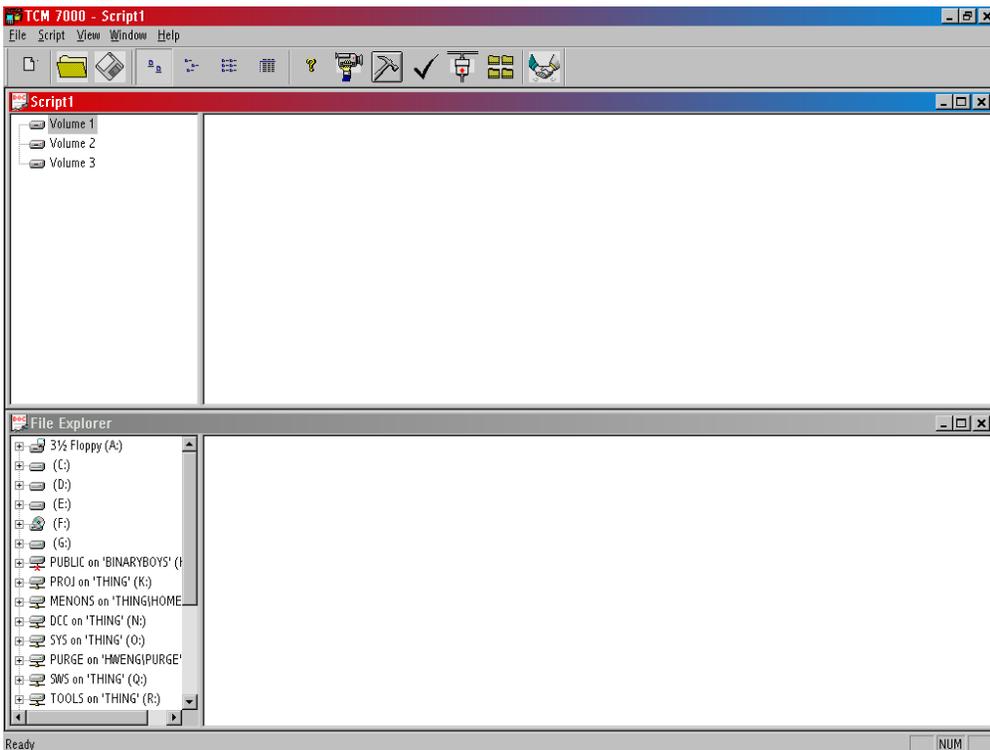
- Starting TCM
- Creating or modifying a script



- Building the hex image
- Sending the hex image.

## Starting Terminal Configuration Manager

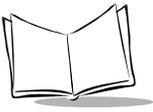
To start TCM, double click on the TCM icon in the SYMSDK group. The following screen appears, displaying two directory windows; Script1 and File Explorer. Each directory window is split; the left half (or *pane*) of the window displays the directory tree for the current drive, and the right half displays the directory contents for the current drive.



The following table lists the components of the TCM start-up screen.

**Table 12-1. TCM Screen Components**

Component	Description			
Script Window	<p>Associated with a script file containing the information to create a Flash Disk image. This window is the <i>target</i> window, or the primary TCM window in which you can create a script or change a script file's contents by copying, deleting, and renaming files and directories. More than one script window can be open at a time.</p> <p>The Script Window consists of two panes, the Directory Tree Pane on the left and the Directory Contents Pane on the right. Subordinate directories and files of each volume are listed in the Directory Contents Pane.</p>			
File Explorer	A <i>read-only source</i> window for files and/or directories to include in the script being built.			
Tool Bar	Contains the tools, illustrated below, for taking action on a script.			
		Create a new script file.		Check script for existing files.
		Open a script file.		Select the hex image to load.
		Save a script file.		Tile windows.
		View script properties.		Build and send the hex image to the terminal.
	Build a script.			



## Defining Script Properties

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

To define the script properties:

1. With TCM open, click on the Script Window to make it the active window.
2. Under the script menu, select the Properties option.

OR

Click on  from the tool bar. The Script Properties window displays.

Terminal	Flash Type	Disks	Script File Path	Cushion
8100CE	0808A	2	D:\work\8100\TCM	15

Partition Table Properties			
	Volume Label	Size	Access
Disk 1:	PlatForm	2048	Read/Write
Disk 2:	Application	2048	Read/Write

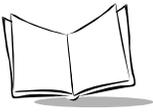
3. Under the Terminal pull-down menu, select 8100CE.
4. In the Flash Type field, select 0808A Flash Type.
5. Under the Disks pull-down menu, select the number of disk volumes to be created.

---

**Note:** *The options available under the disks pull-down menu changes depending on the flash type. Some flash types only have one option for the number of disk volumes, others have two options.*

---

6. If you have selected three volumes under the disk pull-down menu, you have the option to change the memory configuration of the second and third volumes. To do so, click on the up or down arrow for either of the volumes, until the memory configuration of each is set to the desired value. You will notice that as you change the values for one of the volumes, the other volume is automatically changed accordingly.
7. For each disk volume, determine the Read/Write access option.
8. The Script File Path displays the path of the selected script file.
9. Select a Cushion percentage from the Cushion pull-down menu 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 your storage needs permit (up to 25%).



## Creating the Script for the Hex Image

---

On start-up, TCM displays the screen shown on page 12-2, with the Script1 window and File Explorer window pointing to the SYMSDK\SCRIPTS directory and the SDK7X00 directory. The Script1 Window directory pane displays three volumes: Volume1, Volume2, and Volume3. Depending on the type of flash chip you have, the number of volumes may change. Files can be added to each of the volumes.

- Create a new script file or open an existing script
- Drag and drop existing files and directories to that script
- Set the script parameters
- Save the script
- Review and modify the script.

Each process is described in the sections that follow.

### ***Open a New or Existing Script***

Scripts are created in the Script Window.

To open a new script:

- Choose New from the File Menu, OR
- Click on  from the tool bar.

To open an existing script (e.g., a standard script provided in the SDK):

- Choose Open from the File Menu and select the script file name, OR
- Click on  from the toolbar and select the script file name, OR
- Double click on an existing script in the Script Browser window.

---

**Note:** *If you open and make changes to an existing script, saving the changes writes over the existing script. If you wish to use an original or Symbol-supplied standard script as a base and save the changes in a new script, use Save As instead of Save after making the changes.*

---

## Copy Components to the Script

Copy *files or directories* to the script being generated:

1. Click on the File Explorer Window to make it the active window.
2. Click on the source directory in the Directory Tree Pane. TCM displays the directory contents in the Contents Pane.
3. Click on the file(s) and/or directory in File Explorer.

---

**Note:** *Optionally, use the standard Windows Shift+Left-click and Control+Left-click features to select multiple files and directories.*

---

4. Drag and drop the selected file(s) and/or directory from File Explorer to the target directory in the Script Window.

OR

Click on the target directory and select the File Explorer Copy icon from the toolbar.

## Save the Script

To save the changes to a new script:

1. From the File menu, choose Save As.

OR

On the toolbar, click on  .

2. Enter the path and filename. TCM appends a .TCM extension to the script.
3. Choose the OK button.

---

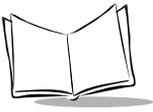
**Note:** *If you save an untitled script, TCM by default saves the script to the directory that the Script Browser is pointing to.*

---

To save changes to an existing script:

- From the File menu, choose Save, OR

- On the toolbar, click  .



---

**Note:** *If you open and make changes to an existing script, saving the changes writes over the existing script.*

---

If you wish to use an original or Symbol-supplied standard script as a base and save the changes in a new script, use Save As instead of Save after making the changes.

## Building the Image

---

As part of the build, TCM performs a check on the script which verifies that all files referenced in the script exist. If the image is bootable, TCM verifies that the boot files are available.

---

**Note:** *Performing a check is more important for previously existing scripts to ensure that files referenced in the script are still in the designated locations.*

---

To check a script:

1. In the Script Window, select the script.
2. Save the script, if not already saved.
3. From the Script Menu, choose Check.

OR

On the toolbar, choose  .

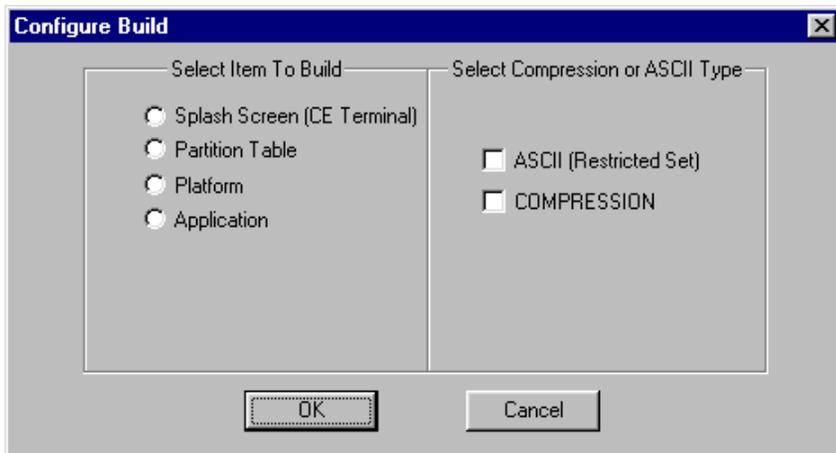
4. TCM verifies that files referenced in the script exist on available drives and lists an error message in the Errors found box for any missing files.
5. Choose the OK button to exit.

To build a script:

1. In the Script Window, select the script to be built.
2. From the Script menu, select Build.

OR

On the toolbar, choose  . The Configure Build window appears.



3. Select whether to build the partition table, or one volume.
4. Select ASCII format for your hex image, or Compression, which reduces the size of most hex images in order to speed downloading. Click OK.
5. TCM performs a check. If the script is has no errors, TCM proceeds with the build.

### If the Build Fails

If the build fails, TCM displays a message indicating which file(s) are missing.

If the total amount of flash required by the script exceeds the image size, a TCM error results. To correct this, reduce the number of files in the volume, or make the disk non-bootable. Refer to *Defining Script Properties* on page 12-4 for more information on setting the image size appropriately.



## Sending the Hex Image

---

Once the hex file is built, you are ready to download it to the terminal. A Hex image download requires both TCM and a program loader stored on the terminal. The terminal comes with a program loading utility, Initial Program Loader (IPL), stored in the terminal's write-protected flash. To run IPL, the terminal must be inserted in a cradle or connected to a host PC by direct serial connection.

### ***Saving the Script***

If you made changes to the script since last saving it, save the script again.

### ***Connect The Terminal and Development PC***

To send the hex file to the terminal, first link the terminal and development PC by one of the following devices:

- Direct serial link
- Cradle (refer to Chapter 1, *Getting Started* for more information on setting up the cradle).

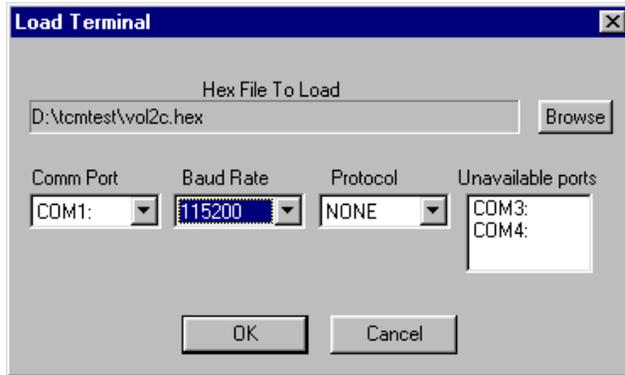
### ***Begin the Send in TCM***

In TCM on the PC:

1. Select the script.
2. From the file menu, choose Load Terminal.

OR

On the toolbar, choose  . The Load Terminal screen displays.

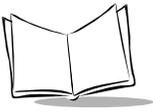


3. If the correct hex file is not displayed in the Hex File to Load field, click on the browse button and navigate to the correct hex file to be downloaded.
4. Click on the Comm Port pull-down menu and select the COM port being used. Ports already in use display in the Unavailable Ports field.
5. Click on the Baud Rate pull-down menu and select the appropriate baud rate. Your options are 2400, 4800, 9600, 19200, 38400, 57600, 115200.
6. On the Protocol pull-down menu, select None.

## ***Setting Up IPL to Receive the File***

To set up IPL on the terminal to receive the files being downloaded via TCM:

1. Connect AC power to the terminal.
2. Cold boot the terminal by pressing the reset button inside the battery compartment while holding down the Function button.
3. Press and hold any Trigger (Scan) button. While holding down the Trigger (Scan) button, press and hold the battery door switch inside the battery compartment (on the left). This all must occur within 3 seconds after resetting the terminal.



4. Continue to hold these buttons, including the battery door switch, until the IPL Baud Rate menu displays:

```
IPL VER X.XX
IPL Key Sequence

-> 115,200
   57,600
   38,400
   19,200
   9600
   Auto Baud

Press Up/Down to
select Baud Rate

Action to Continue
```

If necessary, adjust the contrast (see *Adjusting the Contrast* on page 2-2).

5. The version number on the top of the screen identifies the version of IPL you are using. After the version number one of the following messages appears, indicating why IPL was invoked:
  - IPL Key Sequence: IPL key sequence was pressed.
  - Partition Table not found: indicates no partition table was found.
  - Partition Table Checksum Error: indicates a checksum error was detected in the partition table.

Use the up and down cursor buttons on the terminal to scroll to the appropriate baud rate, then press the Enter (Action) key to accept the selected baud rate. If no selection is made within 10 seconds, the baud rate 115,200 is automatically selected.

- IPL displays the Main Menu which lists the partitions/applications that can be downloaded.

```
IPL Ver X.XX
IPL Key Sequence

Windows CE
Platform
Application
Data
Splash Screen
IPL
Partition Table
Auto Select

Press Up/Down to
select partition

Press Action to
begin download
```

- Use the up and down cursor buttons to select the partition to be received, then press the Enter (Action) key, or select Auto Select to download several partitions in sequence.

---

**Note:** *Auto Select is the default, and will be selected if no other selection is made within 10 seconds.*

---

- The following screen displays:

```
IPL VER X.XX

Partition Name

Waiting for Data
at Baud Rate XXX,XXX

Press Action to
return to Main Menu
```

*Partition Name* reflects the selection made on the Main Menu, and *Baud Rate XXX,XXX* displays the selection chosen from the baud rate menu.



This screen continues to display until the first character of the image to be downloaded is received from the host. While this screen is displayed, pressing the Enter (Action) key returns IPL to the Main Menu screen.

9. Insert the terminal in a cradle, or connect it to a host PC with a serial cable.
10. Return to the host PC, and press the OK button on the *Load Terminal* dialog box.
11. As soon as the first character of data is received, IPL displays the receiving screen:

IPL VER X.XX

Partition Name  
Downloading Data

Processing XXXXX KB  
of YYYYY KB image

---

**Note:** *If the Pre-erase Attribute bit is set on the partition being downloaded, the message “Pre-Erasing Flash” also appears.*

---

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

To process the data, IPL must receive, erase, and write the entire image. With the exception of the disk images, IPL receives the entire image before starting the erase, and completes the erase before starting to write. With disk images, IPL multiplexes all three operations as data is received.

12. When the entire image is received, IPL indicates that the download is complete.

IPL VER X.XX

Partition Name  
Download Complete

Press Action to  
return to Main Menu

Cold Boot Exits IPL

If Auto Select was selected on the Main Menu, the text “Auto Select Enabled” appears in place of “Cold Boot Exits IPL.”

13. If Auto Select was selected on the Main Menu, IPL immediately returns to the Waiting for Data Screen to wait for the next image. If any other selection was made on the Main Menu, IPL stays at the success screen until you press Enter (Action). Once the screen is acknowledged, IPL returns to the Main Menu to wait for a new selection.
14. When all partitions are downloaded successfully, cold boot the terminal by pressing the reset button inside the battery compartment while holding down the Function button.
15. Close TCM on the host PC by selecting Exit from the File Menu.

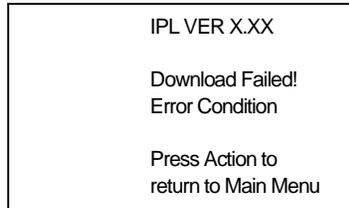


## Error Messages

---

### ***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 an error screen:



This screen displays until you press Enter (Action). 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 as follows:

- |                              |   |
|------------------------------|---|
| <b>Invalid Image</b>         | This error occurs if another record is received before the Header Record. Ensure the Header Record is the first record downloaded.  |
| <b>Partition Not Defined</b> | The destination code is 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 AutoSelect 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. |
| <b>Wrong Partition</b>       | 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.  |
| <b>Image Too Big</b>         | 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.  |

<b>Invalid Image</b>	This error occurs if another record is received before the Header Record. Ensure the Header Record is the first record downloaded.
<b>Incorrect Byte Count</b>	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.
<b>Unable to Verify Partition Data</b>	If the Receive and Verify bit is set for that partition, the data is verified, the flash sector erased, and the data written to the flash part. If this data can not be verified, this error occurs.
<b>Transmission Errors</b>	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 the Execute button is pressed. Cells highlighted in red contain an error. Partition loading is disabled until all errors are corrected. Following are errors that TCM may encounter, and possible solutions.

<b>Error - Partition Size</b>	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.
<b>Error - Image Larger than Partition</b>	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.
<b>Error - Total size of all FFS Partition</b>	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 - 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 - 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.

## Creating a Splash Screen

---

To create a custom splash screen, use Microsoft Visual C++ 6.0 and TCM.

### ***Creating the Bitmap***

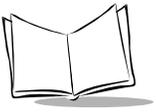
1. Open Microsoft Visual C++ 6.0 and select *File, New, Bitmap File*.
2. Enter a file name and location, and click the **OK** button.
3. Select *Properties* from the *View* menu and change the Bitmap Properties to a width of 240, a height of 320, and 16 colors.
4. Edit the bitmap data and save it to a file.

### ***Creating the Hex File***

1. Select *TCM* from the Windows Start menu.
2. Load one of the TCM script files installed with the SDK.
3. Select *Build* from the *Script* menu, check the Splash Screen box, and click the **OK** button.
4. Browse to the previously created 16-color bitmap file and click the **Open** button.
5. Enter the name of the destination hex file and click the **Save** button.

### ***Loading the Hex File***

1. Connect the terminal to the desktop computer.
2. Invoke IPL, getting the terminal into a mode where it is ready to accept a splash screen hex file.
3. Select *Load Terminal* from the *TCM File* menu.
4. Browse to the previously created hex file and click the **Open** button.
5. Select the desired comm port, baud rate and protocol, and click the **OK** button to start the load.
6. Wait for the terminal to display a "download complete" message.
7. Cold boot the terminal to see the new splash screen.



*PDT 8100 Series Product Reference Guide*



## *Chapter 13*

# *Maintenance and Troubleshooting*

### **Introduction**

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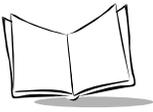
This chapter includes instructions on cleaning and storing your terminal, and provides troubleshooting solutions for potential problems during terminal operating.

### **Maintaining the PDT 8100**

---

For trouble-free service, observe the following tips when using your PDT 8100:

- Take care not to scratch the screen of your PDT 8100. When working with your PDT 8100, 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 PDT 8100 screen.
- Although your PDT 8100 is water and dust resistant, do not expose it to rain or moisture for an extended period of time. In general, treat your PDT 8100 as you would a pocket calculator or other small electronic instrument.
- The touch-sensitive screen of your PDT 8100 contains glass. Take care not to drop your PDT 8100 or subject it to strong impact.
- Protect your PDT 8100 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 PDT 8100 in any location that is extremely dusty, damp or wet.



- Use a soft lens cloth to clean your PDT 8100. If the surface of the PDT 8100 screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution.

## Troubleshooting

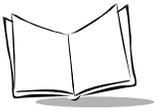
---

**Table 13-1. Troubleshooting the PDT 8100**

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
PDT 8100 does not turn on.	Lithium-ion battery not charged.	Charge or replace the lithium-ion battery in the PDT 8100.
	Lithium-ion battery not installed properly.	Ensure battery is installed properly.
	System crash.	Perform a cold boot. See <i>Resetting Your PDT 8100 Terminal</i> on page 2-21.
Rechargeable lithium-ion battery did not charge.	Battery failed.	Replace battery. If your PDT 8100 terminal still does not operate, try a soft reset, then a hard reset (cold boot); see <i>Resetting Your PDT 8100 Terminal</i> on page 2-21.
	PDT 8100 removed from cradle while battery was charging.	Insert PDT 8100 in cradle and begin charging. The lithium-ion battery requires up to 4 hours to recharge fully.
Cannot see characters on display.	PDT 8100 not powered on.	Press the <b>PWR</b> key.
	Contrast not adjusted properly.	To adjust the contrast on your PDT 8100 terminal, see <i>Adjusting the Contrast</i> on page 2-2.
Fail to communicate with IrDA printer.	Distance from printer is more than 1 meter (39 inches).	Bring the terminal closer to the printer and attempt communications 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 13-1. Troubleshooting the PDT 8100**

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 communications.	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 as described in the <i>PDT 8100 Product Reference Guide</i> .
No sound is audible.	Volume setting is low or turned off.	Check the System Volume slider in the <b>Sounds &amp; Reminders</b> properties dialog box (under <b>Start/Settings</b> ) to make sure the volume is not turned down.
PDT 8100 turns itself off.	PDT 8100 is inactive.	Your PDT 8100 turns off after a period of inactivity. This period can be set from one to five minutes, in one-minute intervals. Check the <b>Power</b> dialog box (in the <b>System</b> tab under <b>Start/Settings</b> ), and change the setting if you need a longer delay before the automatic shutoff feature activates.
PDT 8100 doesn't recognize my handwriting.	Character strokes written incorrectly with the stylus.	For your PDT 8100 to recognize handwriting input with the stylus, characters must be written a certain way. See the <i>PDT 8100 Product Reference Guide</i> for information about how to write character strokes.
	Character strokes written on the wrong part of the LCD screen.	Make the character strokes in the lower character entry area on the screen — not on the display part of the screen.
	Lower- case and upper- case letters, and numbers written on the wrong parts of the LCD screen.	Make sure you are writing lower-case letters in the left-hand side, numbers in the right-hand side, and upper-case letters in the center of the writing area.



**Table 13-1. Troubleshooting the PDT 8100**

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Tapping the screen buttons or icons does not activate the corresponding feature.	LCD screen not aligned correctly.	Align the screen. Choose <b>Align Screen</b> from the <b>System</b> tab under <b>Start/Settings</b> , or hold down the Function button and press the Enter (Action) key.
A message appears stating that your PDT 8100 terminal memory is full.	Too many files stored on the terminal.	Delete unused memos and records. You can save these records on your computer.
	Memory allocation too low.	Adjust the memory allocation. Select <b>Start</b> , then <b>Settings</b> , and select the <b>System</b> tab. Tap <b>Memory</b> and adjust the slider.
	Too many applications installed on the terminal.	If you have installed additional applications on your PDT 8100, remove them to recover memory. Select <b>Start</b> , then <b>Settings</b> , and select the <b>System</b> tab. Tap <b>Remove Programs</b> , select the unused program and tap <b>Remove</b> .
Beamed data does not transmit.	PDT 8100 terminals too close together.	Confirm that the PDT 8100 terminals are 5" apart, and 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 PDT 8100 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.

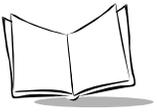
**Table 13-1. Troubleshooting the PDT 8100**

Problem	Cause	Solution
Your PDT 8100 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.	Be sure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Be sure you are within proper scanning range.
	Terminal is not programmed for the bar code.	Be sure 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 (scan button), check your battery level. When the battery is low, the scanner shuts off before the terminal notifies you of the low battery condition. <b>Note:</b> 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.*

---



*PDT 8100 Series Product Reference Guide*



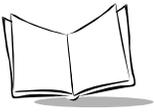
## *Appendix A*

# *Character Recognizer*

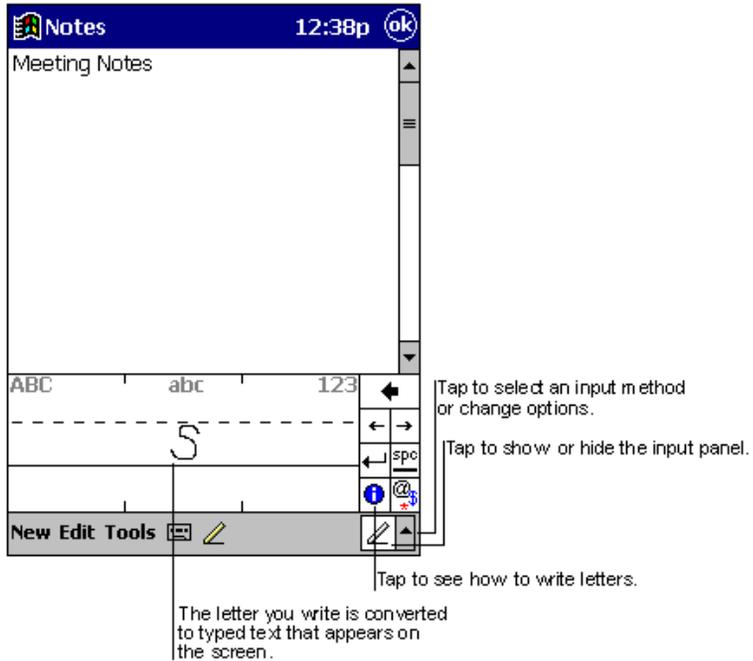
Using Character Recognizer, you can write characters directly on your terminal screen with your stylus. These characters are translated into typed text. Use Character Recognizer to enter text, for example, to write a note or to fill in fields in a dialog box.

The default writing mode for Character Recognizer is lowercase (Jot-compatible) mode. Figure A-2 on page -3 provides examples of how to write characters in lowercase mode. To use uppercase (Graffiti-compatible) mode, tap **Uppercase Mode** in **Options** on the input method menu. Whether a letter appears in uppercase or lowercase when it is converted to typed text depends on where in the input panel you write it, not on the mode selected.

The Character Recognizer input panel is divided into three writing areas. Letters written in the left area (labeled ABC) creates uppercase letters, and letters written in the middle area



(labeled abc) creates lowercase letters. Use the right area (labeled 123) for writing numbers, symbols, special characters, and punctuation.



**Figure A-1. Using Character Recognizer**

The following chart illustrates some of the characters you can write in lowercase mode (the dot on each character is the starting point for writing). Note that although you write a letter in lowercase, the case of the text displayed depends on where you write the letter. For

example, if you write a lowercase "a" in the ABC area, an uppercase "A" displays on the screen.

Letter Area					Number/Punctuation Area														
A	a	a			N	n				0	0				)	)			
B	b	b			O	o	o			1	1				+	+			
C	c				P	p	p			2	2	2			*	*	*		
D	d	d			Q	q	q			3	3				/	/			
E	e				R	r	r			4	4	4	4	4	\	\			
F	f	f			S	s				5	5	5	5		?	?	?		
G	g	g			T	t	7	7	7	6	6				!	!			
H	h	h			U	u	u			7	7				@	@			
I	i	i			V	v				8	8				&	&			
J	j	j			W	w	w			9	9				'	'			
K	k	k	k	α	X	x	x			>	>				“	“			
L	l	l	l		Y	y	y			·	·				-	-			
M	m				Z	z				(	(								

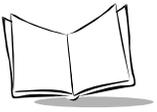
space	←
back space	→

enter	↵
back space	←

Figure A-2. Character Chart

For more information on using Character Recognizer and for demos of all characters, tap  on the Character Recognizer input panel.



*PDT 8100 Series Product Reference Guide*



# *Appendix B*

## *Demo Program*

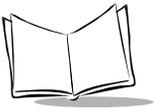
### **Introduction**

---

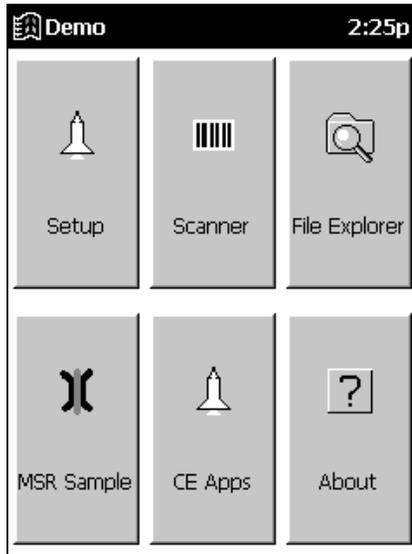
A button-launch demo program illustrates how to use some of the terminal's many applications. If the demo program is not already on your PDT 8100 (check the Start menu), you may download the program from the *Symbol Windows CE Software Developer's Kit (SDK)*. See Chapter 3, *Customizing Your PDT 8100* for instructions on adding programs to your terminal.

The following options are available on the Button Launcher Task, and are described in this chapter.

- Setup: accesses the Control Panel, NICTT, and Diagnostics.
- Scanner: sample scanning application.
- File Explorer: File management utility.
- MSR Sample: sample Magstripe reader application.
- CE Apps: accesses standard Windows CE applications.



To initiate the demo program, select **PDT 8100 Demo** from the **Start** menu. The initial demo program dialog box appears.

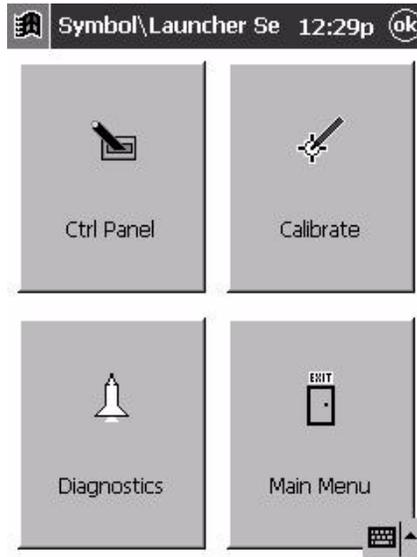


**Figure B-1. Main Dialog Box**

# Setup

---

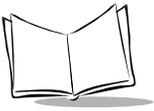
Select the **Setup** button to display the following dialog box:



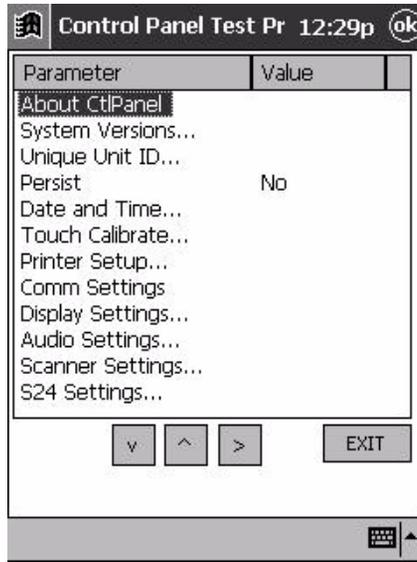
**Figure B-2. Symbol Setup Dialog Box**

## ***Control Panel***

Select **CtrlPanel** to display the *Control Panel Test Program* dialog box. This dialog box provides a convenient way to view and set terminal settings, such as scanner parameters, display settings (e.g., contrast), audio settings, printer settings, setting date and time, and



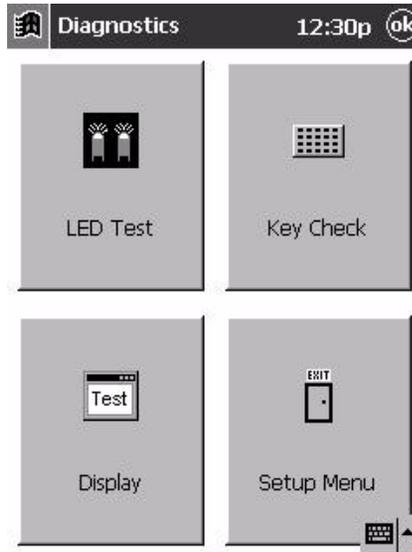
aligning the touch screen. It also serves as a sample code on many of the Symbol-specific CAPI calls.



**Figure B-3. Control Panel Test Program Dialog Box**

## Diagnostics

Select **Diagnostics** to display the following dialog box:



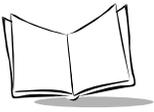
**Figure B-4. Diagnostics Dialog Box**

This dialog box provides testing to ensure various aspects of the terminal are functioning correctly. The following options are available:

- LED Test tests the green decode LED-on and LED cycle to ensure it is functioning properly. This option also allows you to view the state of the LED (on or off).
- Key Check identifies each button on the terminal (except the Scan buttons) when each button is pressed.
- Display tests the pixels on the screen.
- Setup Menu returns to the *Setup* dialog box.

## Main Menu

This option returns you to the demo's Main Menu.



## Scanner

---

The sample scanning application enables the terminal's scanner, allows the user to change scan parameters, and displays scanned data.

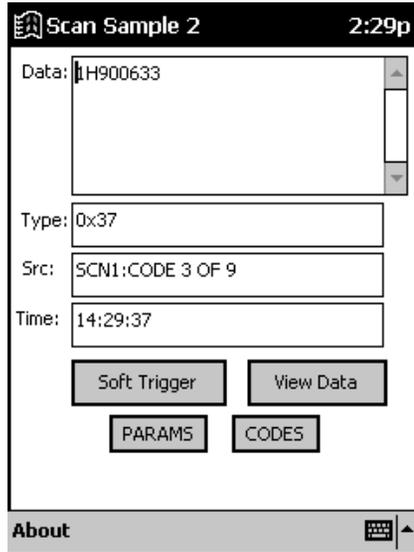


Figure B-5. Scan Sample Dialog Box

### Scanning Data Fields

After a bar code is scanned, the following data appears in the dialog box:

- *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.

## Scanning Options

The following options are available in the Scan dialog box:

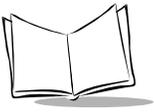
- *Soft Trigger* provides an alternative to the Trigger (Scan) buttons on the terminal.
- *View Data* displays the bar code content in a separate screen.
- *Params* is used to change scanning parameter options, such as:
  - beep time (length of decode beep)
  - beeper frequency (tone)
  - LED-on time (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.
- *Exit* closes the Scan dialog box.

## File Explorer

---

File Explorer is a file browser utility that provides similar Windows Explorer-like functionality on Symbol CE terminals. File Explorer allows the user to browse, cut, copy, paste, and delete files as well as execute the program. It also provides file transfer capability via the IrDA port.

You can also access File Explorer by selecting Programs under the **Start** menu.



## MSR Sample

---

This selection provides a sample MSR application.



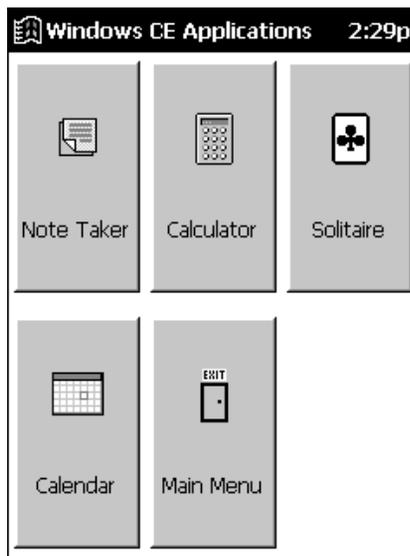
Figure B-6. MSR Sample Dialog Box

## CE Apps

---

Select CE Apps button on the main menu to access the following standard Windows CE applications:

- Voice Recorder
- Calculator
- Solitaire
- Calendar.



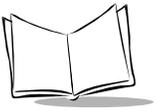
**Figure B-7. CE Apps Dialog Box**

See Chapter 5, *Applications* for information on these applications.

## About

---

Select the **About** button on the demo program to view information about the demo program.



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# *Appendix C*

## *GSM Demo Program*

### **Introduction**

---

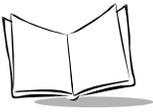
GsmDemo allows you to explore what features GSM and the PDT 8134 terminal offer you, including sending and receiving SMS messages.

### **GsmDemo Screens**

---

To start GsmDemo:

1. Select **Programs** from the **Start Menu**.
2. Tap the GSM Demo icon.



## Main Screen

When GsmDemo opens, it opens the internal serial port to the GSM modem and attempts to register with a network. The following screen displays. The Network Status field displays Searching, then Registered if the search is successful.

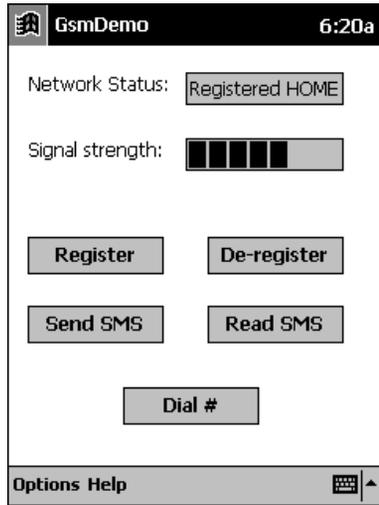


Figure C-1. GsmDemo Main Screen

<b>Network Status</b>	Displays Not registered, Searching, Registered, or Registration failed.
<b>Signal strength</b>	Displays signal strength.
<b>Register</b>	Tap to register with the network now.
<b>De-register</b>	Tap to end your network session.
<b>Send SMS</b>	Sends a message to another terminal or modem (see <i>Send SMS</i> on page C-4).
<b>Read SMS</b>	Displays a message from another terminal or modem (see <i>Read SMS</i> on page C-3).
<b>Dial #</b>	Sets dial properties and places call (see <i>Dial #</i> on page C-5).

## Read SMS

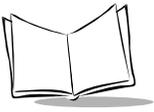
To read your SMS messages:

1. Tap **Read SMS** on the main screen. The following screen displays:



**Figure C-2. Read SMS Screen**

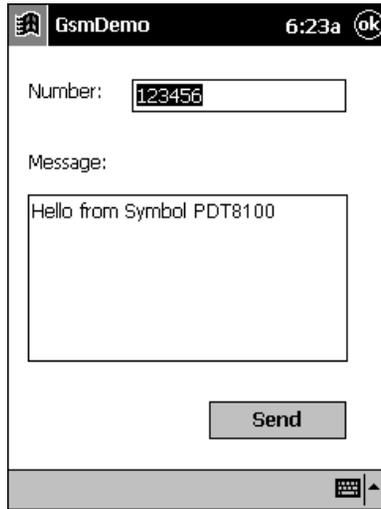
2. The terminal receives and displays the current message, then deletes it automatically. Tap the **Clear** button to manually delete a message.



## Send SMS

To send an SMS message:

1. Tap **Send SMS** on the main screen.

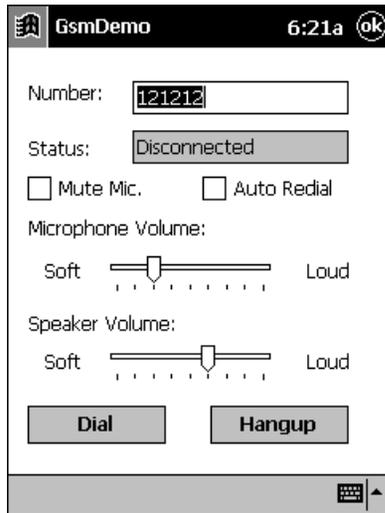


**Figure C-3. Send SMS Screen**

2. Enter the phone number of the message recipient and the message.
3. Tap **Send** to send the message. A successful message screen displays.

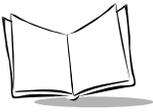
## Dial #

The Dial # feature controls the dial properties of the modem. Select **Dial** on the main menu:



**Figure C-4. Dial Screen**

<b>Number</b>	Phone number to dial.
<b>Status</b>	Indicates if modem is connected to the specified number.
<b>Mute Mic.</b>	Turns microphone off.
<b>Auto Redial</b>	Automatically redials specified number.
<b>Microphone Volume</b>	Slide bar controls volume of microphone.
<b>Speaker Volume</b>	Slide bar controls volume of speaker.
<b>Dial</b>	Dials the number specified.
<b>Hangup</b>	Disconnects the session.



## GsmDemo Menu Commands

---

This section explains the menu commands specific to GsmDemo, accessed from the bottom of the screen.

### *Options Menu*

Select Settings from the Options menu to view the status of the SIM card.

The screenshot shows a mobile application interface titled "GsmDemo". At the top right, the time is "6:25a" and there is an "OK" button. The interface is divided into two main sections. The first section is titled "Service center address" and contains two input fields: "Current:" with the value "121212" and "New:" which is empty. The second section is titled "PIN #" and contains two input fields: "Status:" with the value "SIM Ready" and "New:" which is empty. At the bottom of the form are two buttons: "Update" and "Cancel". A navigation bar at the very bottom contains a keypad icon and an up arrow icon.

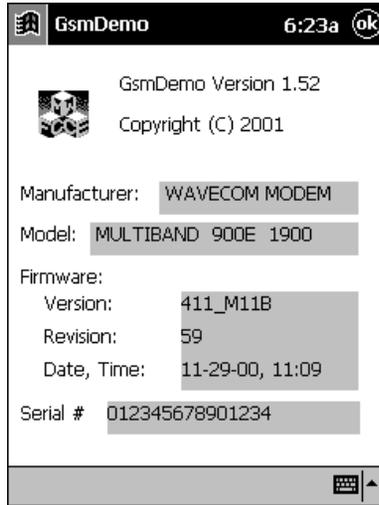
**Figure C-5. Information Screen**

You may need to change the service center phone number if the number is missing, its phone number has changed, or you wish to choose an alternate service center. To do this, enter the new service center number in the New field and tap **Update**.

The PIN # Status field indicates the status of the SIM card. If the SIM is not ready, enter the PIN # in the New field and tap **Update**.

## Help Menu

Select About from the Help menu to view information about your GSM modem.





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## *Appendix D*

# *Technical Specifications*

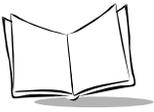
## **Environment**

---

Table D-1 summarizes the PDT 8100's intended operating environment.

**Table D-1. PDT 8100 Operating Environment**

<b>Operating Temperature</b>	-20° C to 50° C (-4° F to 122° F)
<b>Storage Temperature</b>	-40° C to 70° C (-40° F to 158° F)
<b>Humidity</b>	5% to 95% non-condensing
<b>Electrostatic Discharge (ESD)</b>	15 kVdc air; 8 kVdc contact
<b>Drop to Concrete</b>	1.2 meters (4 feet)
<b>Sealing</b>	IP54 (windblown rain and dust)
<b>Decode Distance</b>	3" - 10.5" (7.6 cm - 26.7 cm)
<b>Size</b>	7"L x 3.625"W x 1"H (177.8mm x 92mm x 25.4mm)
<b>Weight (including battery)</b>	10.3 oz / 288 gm (batch); 11.8 oz / 330 gm (wireless)



## COM Port Definitions.

---

**Table D-2. PDT 8100 COM Port Definitions**

<b>COM Port</b>	<b>Definition</b>
<b>COM1</b>	Serial/Cradle
<b>COM2</b>	Raw IrDA
<b>COM3</b>	IRComm
<b>COM4</b>	Scanning
<b>COM5</b>	Reserved
<b>COM6</b>	WAN
<b>COM7</b>	VCOM Ext Power
<b>COM8</b>	V2COM Ext Power

# Pin-Outs

---

**Table D-3. PDT 8100 ActiveSync Port (COM1) Pin-Outs**

Pin	Description
1	ext $\pm 5$ 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



**Table D-4. PDT 8100 15-Pin Micro D Port (COM5) Pin-Outs**

<b>Pin</b>	<b>Description</b>
1	GND
2	DSR
3	RXD
4	CTS
5	DCD
6	GND
7	NC
8	NC
9	DTR
10	RI
11	TXD
12	RTS
13	NC
14	NC
15	NC



## Appendix E Keyboard Maps

### Introduction

---

This appendix contains the keyboard maps for all keyboard configurations of the PDT 8100 terminal. Each key is listed in the table with its value, depending on the state of the keyboard.

As shown below, when the  key is pressed on the 28-key keyboard, the default state displays the number '2'. After pressing the Alpha key, the first press of the '2' key displays a lower case 'a', the second press within an allotted time frame displays a lower case 'b', and so on.

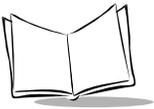
Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	2					50	50
		a				65	97
		b				66	98

In addition to key values, VK codes and ASCII values are listed for each key, where applicable.

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**Note:** *Function keys must be pressed and held to produce the values indicated. Blank table entries indicate 'no functionality' for the key in the specific keyboard state.*

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## 28-Key Keyboard

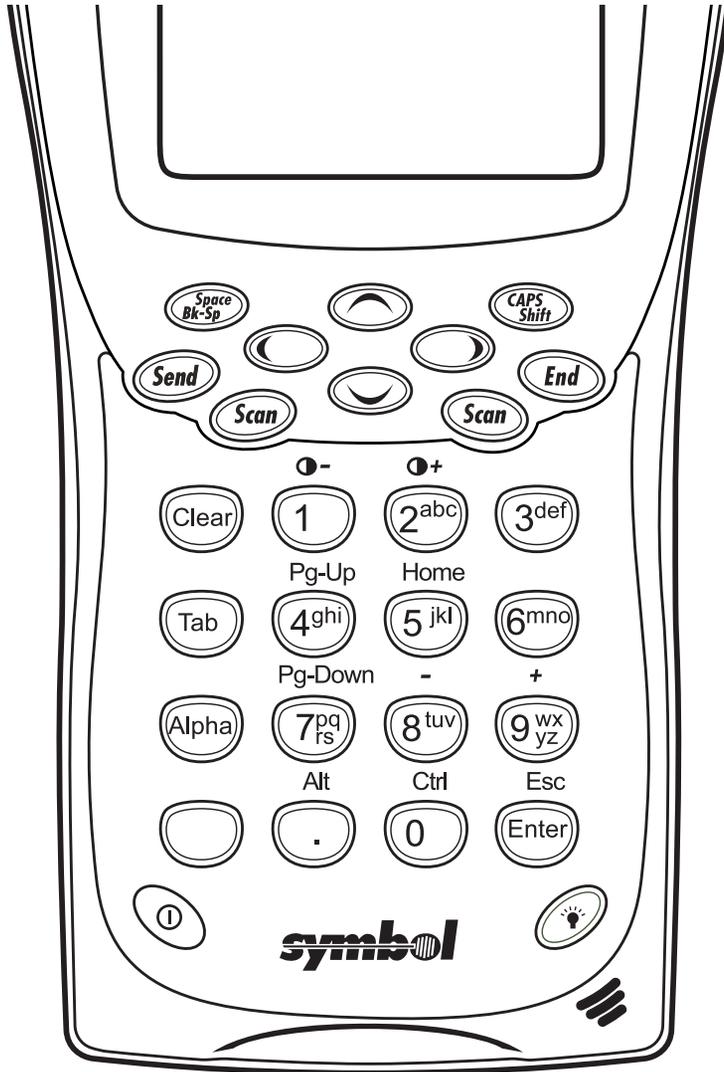


Figure E-1. PDT 8100 28-Key

**Note:** Keys on the 28-key keyboard can have more than one letter value. To type a letter, press the key again for the next letter in the sequence. For example, to type the letter 'l', press the Alpha key once, then press the '5' key three times within the allotted time frame.

**Table E-1. 28-Key Keyboard Functionality**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
1	1					49	49
					Lighten screen		
2 <sup>abc</sup>	2					50	50
		a				65	97
		b				66	98
		c				67	99
			A			65	65
			B			66	66
			C			67	67
						Darken screen	



**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
3 <sup>def</sup>	3					51	51
		d				68	100
		e				69	101
		f				70	102
			D			68	68
			E			69	69
			F			70	70
						APP3	
4 <sup>ghi</sup>	4					52	52
		g				71	103
		h				72	104
		i				73	105
			G			71	71
			H			72	72
			I			73	73
						Page Up	33

**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
5 <sup>ijkl</sup>	5					53	53
		j				74	106
		k				75	107
		l				76	108
			J			74	74
			K			75	75
			L			76	76
						Home	36
6 <sup>mno</sup>	6					54	54
		m				77	109
		n				78	110
		o				79	111
			M			77	77
			N			78	78
			O			79	79
						APP4	

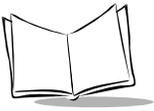


**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	7					55	55
		p				80	112
		q				81	113
		r				82	114
		s				83	115
				P		80	80
				Q		81	81
				R		82	82
				S		83	83
						Page Down	34
	8					56	56
		t				84	116
		u				85	117
		v				86	118
				T		84	84
				U		85	85
				V		86	86
						-	189

**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)	
	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	
						+	107	43
		0					48	48
						Ctrl	17	

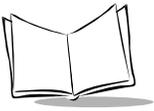


**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Backspace					08	08
		Backspace				08	08
					Space	32	32
	The Send key is application dependent. The Virtual Key (VK) code sent is 121.						
	Scan						
		Scan					
			Scan				
				Scan			
	Left Arrow					37	00
		Left Arrow				37	00

**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Right Arrow					39	00
		Right Arrow				39	00
	Up Arrow					38	00
		Up Arrow				38	00
					Increase Volume		
	Down Arrow					40	00
		Down Arrow				40	00
					Decrease Volume		

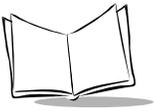


**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	To Shift					16	
		To Shift				16	
			No Shift				
				No Shift			
					Caps Lock		
	End					35	
		End				35	
	Clear					27	27
		Clear				27	27
					APP2		

**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Tab					09	09
		Tab				09	09
					APP1		
	To Alpha					20	
			To Numeric (default)				
 (Blue key)	Function						
		Function					

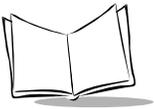


**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	.					190	46
		.				190	46
			>			190	62
				>		190	62
					Alt	17	
	Enter					13	13
		Enter				13	13
					Escape	27	27
	Power						
		Power					
			Power				
				Power			
					Power		

**Table E-1. 28-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Backlight						
		Backlight					
			Backlight				
				Backlight			
					Backlight		



## 37-Key Keyboard

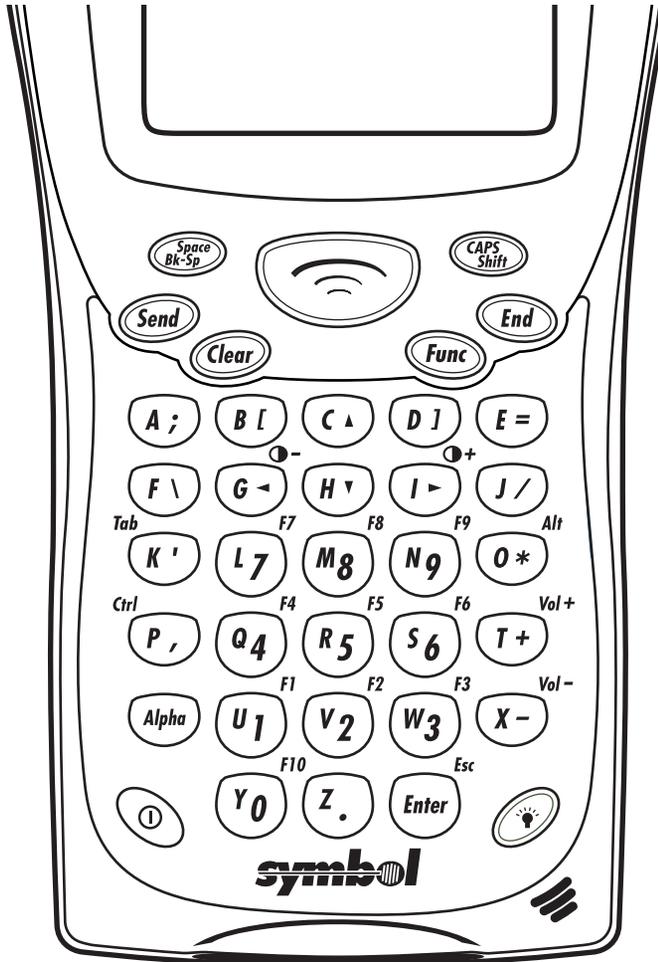


Figure E-2. PDT 8100 37-Key Keyboard

**Table E-2. 37-Key Keyboard Functionality**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	;					186	59
		a				65	97
			A			65	65
				:		186	58
					APP2		
	[					219	91
		b				66	98
			B			66	66
				{		219	123
	Up Arrow					38	00
		c				67	99
			C			67	67



**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	]					221	93
		d				68	100
			D			68	68
				}		221	125
	=					187	61
		e				69	101
			E			69	69
				+		107	43
					APP3		
	\					220	92
		f				70	102
			F			70	70
						220	124
					APP1		

**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Left Arrow					37	00
		g				71	103
			G			71	71
					Lighten screen		
	Down Arrow					40	00
		h				72	104
			H			72	72
	Right Arrow					39	00
		i				73	105
			I			73	73
					Darken screen		

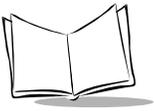


**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
J /	/					191	47
		j				74	106
			J			74	74
				?		191	63
					APP4		
K ' "	,					222	39
		k				75	107
			K			75	75
				"		222	34
					Tab	09	09
L 7	7					55	55
		l				76	108
			L			76	76
				&		55	38
					F7	118	00

Table E-2. 37-Key Keyboard Functionality (Continued)

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	8					56	56
		m				77	109
			M			77	77
				*		106	42
					F8	119	00
	9					57	57
		n				78	110
			N			78	78
				(		57	40
					F9	120	00
	*					106	42
		o				79	111
			O			79	79
					Alt	17	



**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
P ,	,					188	44
		p				80	112
			P			80	80
				<		188	60
					Ctrl	17	
Q 4	4					52	52
		q				81	113
			Q			81	81
				\$		52	36
					F4	115	00
R 5	5					53	53
		r				82	114
			R			82	82
				%		53	37
					F5	116	00

Table E-2. 37-Key Keyboard Functionality (Continued)

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	6					54	54
		s				83	115
			S			83	83
				^		54	94
					F6	117	00
	+					107	43
		t				84	116
			T			84	84
					Increase Volume		
	1					49	49
		u				85	117
			U			85	85
				!		49	33
					F1	112	00

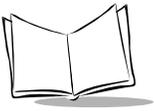


**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
V2	2					50	50
		v				86	118
			V			86	86
				@		50	64
					F2	113	00
W3	3					51	51
		w				87	119
			W			87	87
				#		51	35
					F3	114	00
X-	-					189	45
		x				88	120
			X			88	88
				-		109	45
					Decrease Volume		

**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	0					48	48
		y				89	121
			Y			89	89
				)		48	41
					F10	121	00
	.					190	46
		z				90	122
			Z			90	90
				>		190	62
	Backspace					08	08
		Backspace				08	08
					Space	32	32
	The Send key is application dependent. The Virtual Key (VK) code sent is 121.						



**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Clear					27	27
		Clear				27	27
	Scan						
		Scan					
			Scan				
				Scan			
	Shift					16	
		Shift				16	
			No Shift				
				No Shift			
					Caps Lock		

**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
<b>End</b>	End					35	
		End				35	
<b>Func</b>	Function						
		Function					
			Function				
				Function			
					Function		
<b>Alpha</b>	To Alpha					20	
		Alpha				20	
			To Default State				
				To Alpha		20	



**Table E-2. 37-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha State	Alpha, Shift State	Shift State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Enter					13	13
		Enter				13	13
			Enter			13	13
				Enter		13	13
					Escape	27	27
	Power						
		Power					
			Power				
				Power			
					Power		
	Backlight						
		Backlight					
			Backlight				
				Backlight			
					Backlight		

## 47-Key Keyboards

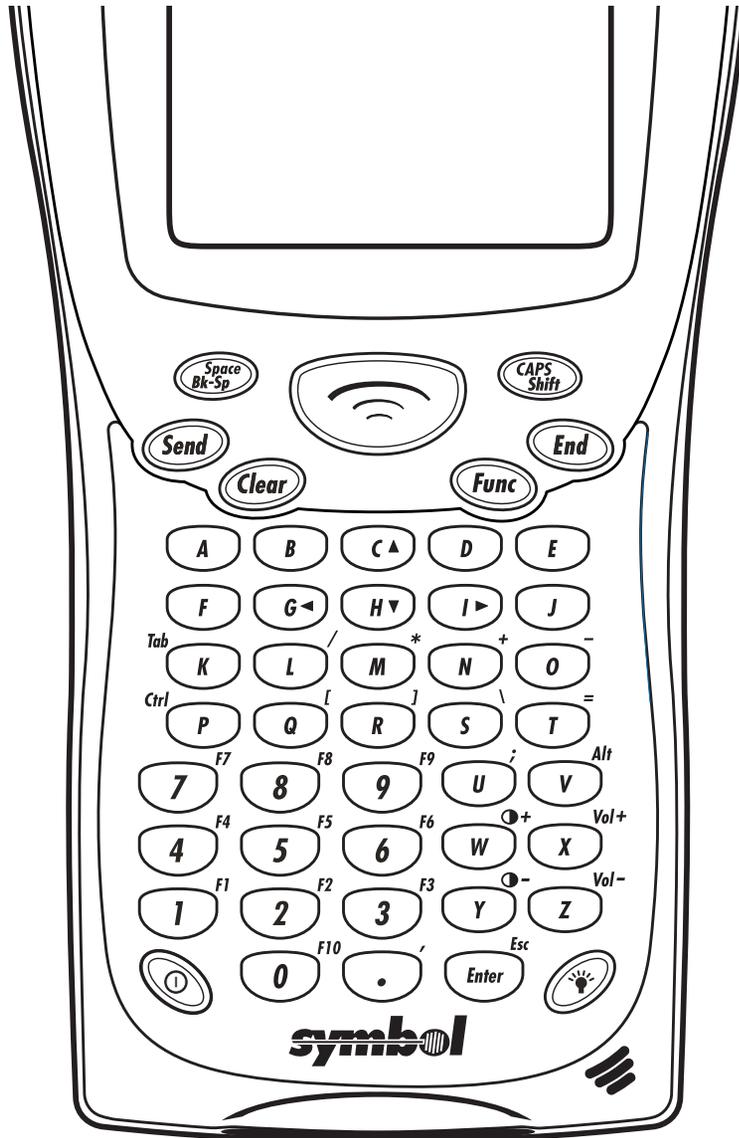


Figure E-3. PDT 8100 47-Key Keyboard

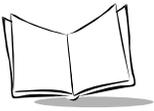


**Table E-3. 47-Key Keyboard Functionality**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
A	a					65	97
		A				65	65
			Ctrl a			65	01
				Alt a		65	97
					APP2		
B	b					66	98
		B				66	66
			Ctrl b			66	02
				Alt b		66	98
C ▲	c					67	99
		C				67	67
			Ctrl c			67	03
				Alt c		67	99
					Up Arrow	38	00

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
D	d					68	100
		D				68	68
			Ctrl d			68	04
				Alt d		68	100
E	e					69	101
		E				69	69
			Ctrl e			69	05
				Alt e		69	101
					APP3		
F	f					70	102
		F				70	70
			Ctrl f			70	06
				Alt f		70	102
					APP1		



**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	g					71	103
		G				71	71
			Ctrl g			71	07
				Alt g		71	103
					Left Arrow	37	00
	h					72	104
		H				72	72
			Ctrl h			72	08
				Alt h		72	104
					Down Arrow	40	00
	i					73	105
		I				73	73
			Ctrl i			73	09
				Alt i		73	105
					Right Arrow	39	00

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
J	j					74	106
		J				74	74
			Ctrl j			74	10
				Alt j		74	106
					APP4		
K	k					75	107
		K				75	75
			Ctrl k			75	11
				Alt k		75	107
					Tab	09	09
L	l					76	108
		L				76	76
			Ctrl l			76	12
				Alt l		76	108
					\		



**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
M	m					77	109
		M				77	77
			Ctrl m			77	13
				Alt m		77	109
					*	106	42
N	n					78	110
		N				78	78
			Ctrl n			78	14
				Alt n		78	110
					+	107	43
O	o					79	111
		O				79	79
			Ctrl o			79	15
				Alt o		79	112
					-	189	45

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
P	p					80	112
		P				80	80
			Ctrl p			80	16
				Alt p		80	112
					Ctrl	17	
Q	q					81	113
		Q				81	81
			Ctrl q			81	17
				Alt q		81	113
					[	219	91
R	r					82	114
		R				82	82
			Ctrl r			82	18
				Alt r		82	114
					]	221	93

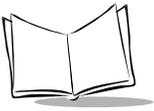


**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
S	s					83	115
		S				83	83
			Ctrl s			83	19
				Alt s		83	115
					\	220	92
T	t					84	116
		T				84	84
			Ctrl t			84	20
				Alt t		84	116
					=	187	61
U	u					85	117
		U				85	85
			Ctrl u			85	21
				Alt u		85	117
					;	186	59

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
V	v					86	118
		V				86	86
			Ctrl v			86	22
				Alt v		86	118
					Alt	17	
W	w					87	119
		W				87	87
			Ctrl w			87	23
				Alt w		87	119
					Darken Screen		
X	x					88	120
		X				88	88
			Ctrl x			88	24
				Alt x		88	120
					Increase Volume		



**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
Y	y					89	121
		Y				89	89
			Ctrl y			89	25
				Alt y		89	121
					Lighten Screen		
Z	z					90	122
		Z				90	90
			Ctrl z			90	26
				Alt z		90	122
					Decrease Volume		
1	1					49	49
		!				49	33
			Ctrl 1				
				Alt 1		49	49
					F1	112	00

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
<b>2</b>	2					50	50
		@				50	64
			Ctrl 2				
				Alt 2		50	50
					F2	113	00
<b>3</b>	3					51	51
		#				51	35
			Ctrl 3				
				Alt 3		51	51
					F3	114	00
<b>4</b>	4					52	52
		\$				52	36
			Ctrl 4				
				Alt 4		52	52
					F4	115	00



**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
5	5					53	53
		%				53	37
			Ctrl 5				
				Alt 5		53	53
					F5	116	00
6	6					54	54
		^				54	94
			Ctrl 6				
				Alt 6		54	54
					F6	117	00
7	7					55	55
		&				55	38
			Ctrl 7				
				Alt 7		55	55
					F7	118	00

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
<b>8</b>	8					56	56
		*				106	42
			Ctrl 8				
				Alt 8		56	56
					F8	119	00
<b>9</b>	9					57	57
		(				57	40
			Ctrl 9				
				Alt 9		57	57
					F9	120	00
<b>0</b>	0					48	48
		)				48	41
			Ctrl 0				
				Alt 10		48	48
					F10	121	00

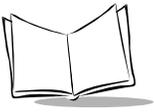


**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	.					190	46
		>				190	62
					"	222	34
	Backspace					08	08
			Backspace			08	08
	The Send key is application dependent. The Virtual Key (VK) code sent is 121.						
	Clear					27	27

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Scan						
		Scan					
			Scan				
				Scan			
	Shift					16	
			Shift			16	
					Caps Lock		
	End					35	
			End			35	

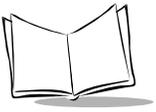


**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Function						
		Function					
			Function				
				Function			
	Enter					13	13
		Enter				13	13
			Ctrl Enter				
				Alt Enter			
					Escape	27	27
	Power						
		Power					
			Power				
				Power			
					Power		

**Table E-3. 47-Key Keyboard Functionality (Continued)**

Key	Default State	Alpha, Shift State	Control State	Alt State	Func State	VK Code (Decimal)	ASCII Value (Decimal)
	Backlight						
		Backlight					
			Backlight				
				Backlight			
					Backlight		



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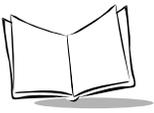
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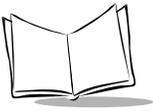
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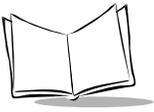
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What topics need to be added to the index, if applicable?

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What can we do to further improve our manuals?

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## **PDT 8100 Series Product Reference Guide**



**72-50932-02**  
**Revision A — May 2002**