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## **Falcon<sup>®</sup> PT40**



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## **Product Reference Guide**

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**PSC Inc**

959 Terry Street

Eugene, Oregon 97402

Telephone: (541) 683-5700

Fax: (541) 345-7140

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# Preface

## About this Guide

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### How to Use This Manual

This Product Reference Guide contains comprehensive instructions on the Falcon PT40's software, batteries, dock, serial cable, data transfer. It also contains advanced user information such as pinouts, bar code configuration and parameters. This section of the manual provides both a general description of the product's features and an overview of the manual's contents and organization.

### Manual Overview

This manual contains the following sections:

- The [Preface, About this Guide](#) presents the manual's contents, shows manual style conventions, and information regarding registering your Falcon PT40 unit.
- [Chapter 1, Introduction on page 1-1](#) lists the bar code symbologies the scanner will read. It describes features and specifications, of the PT40, including keypad, the display, and accessories. Read this section before using the PT40.
- [Chapter 2, Data Collection with PT40 Software Applications on page 2-1](#) contains complete information about using the PALPRO40 and data collection applications that are loaded in memory on the PT40, setting the date, time, and password.
- [Chapter 3, Transferring Files and Data on page 3-1](#) contains information about transferring application, and data files between the PT40 and a Host PC. Read this section to upload collected data.

- [Appendix A, Falcon PT40 Batteries on page A-1](#), describes installation, charging, and disposal information on the PT40's main battery and backup battery.
- [Appendix B, PT40 Dock, Serial Cable, and Power Adaptor on page B-1](#), describes how to set up and use the Dock or serial cable to transfer data between the PT40 and a Host PC. Refer to this section before using the dock for the first time or when connecting it to a PC.
- [Appendix C, Connector Configurations on page C-1](#), identifies pin assignments for the connectors on the PT40 and PT Dock. Refer to this section to order cables or make your own cables.
- [Appendix D, Configuring with Bar Codes on page D-1](#), explains how to customize the PT40's settings using bar codes. It contains bar codes for scanning to set selected programming parameters. Use this section to change settings in the PT40.
- [Appendix E, Programming Parameters on page E-1](#), contains ID numbers, acceptable settings, and defaults for all programming parameters for the PT40. Refer to this section to change settings in the PT40.
- [Appendix E, Memory Table on page F-1](#), is a table that shows the relationship between the amount of installed RAM and the number and size of records the PT40 will hold.
- [Appendix G, Maintenance, Troubleshooting, and Technical Support on page G-1](#), provides information about care and cleaning your Falcon PT40, troubleshooting, and technical support.

## Registering Your Falcon PT40

PSC values your feedback. Please take a few moments and complete the Product Registration form located on PSC's website or on the PSC Manuals CD. Registering your products ensures that you will be informed of the latest product news, software updates and other future developments from PSC.



# Document Conventions

Formatting conventions are used throughout this guide as a method of providing consistency for notes, cautions, and warnings.



Notes appear throughout the manual to provide additional information on a topic, including technical details, exceptions to instructions and other pertinent information. These notes are identified by the notepad symbol.



Cautions indicate potential damage to data or the unit if directions on are not followed correctly. They also indicate when you should take care to use the correct PSC accessories, parts and connectors.



Warnings indicate potential damage to the Falcon PT40, docks, and battery chargers if directions are not followed correctly.

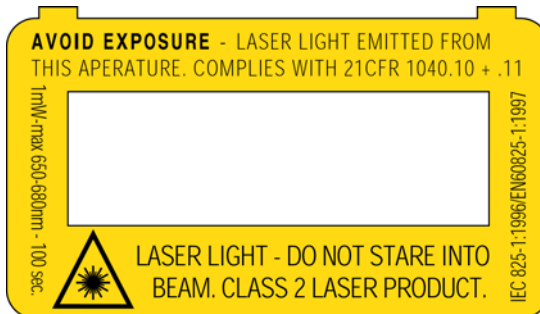
## Keys and Keystroke Conventions

PT40 keys and keystroke conventions are used throughout this manual to identify the difference between a key on the PT40 and keystrokes input by the user. Brackets such as: `<ENT>`, indicate a key on the Falcon PT40. Data or keystrokes entered by the user, and directories, filenames, file extensions, and path names are printed in this **monospaced typeface**.

## PT40 Labels

These labels are for illustrative purposes only.

**Figure 1. Falcon PT40 Laser Label**



**Figure 2. Falcon PT40 Battery Compartment Label**



**Figure 3. Falcon PT40 Dock Label**



# Chapter 1

# Introduction

## Overview of the PSC Falcon PT40

The Falcon PT40 is a rugged, handheld, portable data-collection terminal that allows bar code scanning technology anywhere. The PT40 automatically recognizes and discriminates among the following bar code symbologies when using the laser scanner:

Codabar	EAN-8	Interleaved 2 of 5
Code 39	EAN-13	UPC-A
Code 93	JAN-8	UPC-E
Code 128	JAN-13	UPC/EAN/JAN extensions

The PT40 verifies input by sounding a beep. The beeper's tone, volume, pitch, and duration can be changed to suit your work environment and personal preferences.

The PT40's liquid crystal display (LCD) is easy to read and can be backlit for poorly lit work environments. Use the keypad to input numbers and letters, change input modes, and navigate the display and application menus.

This introduction covers the basic functions of the PT40 operation, including turning the PT40 on and off, using action keys, inputting data and alpha-numeric key use, navigating the display screen, scanning bar codes, an overview of PT40 applications, and accessories.

- [PT40 Power Button and Reset starting on page 1-2.](#)
- [The Keypad starting on page 1-3.](#)
- [The Display Screen starting on page 1-6.](#)
- [The PT40 Laser starting on page 1-8.](#)
- [The Beeper on page 1-9.](#)
- [PT40 Software Applications starting on page 1-9.](#)
- [Accessories starting on page 1-12.](#)

# PT40 Power Button and Reset

## Turning the PT40 On



Press the green **<PWR>** key displayed at left to turn the PT40 on. The first screen that appears on the PT40, unless the software has been customized, is shown below.

```
-Falcon PT40z-
Ver 020.5/Z0.2
System RAM 256K
10/16/02 14:09
␣
press any key
```

If the unit had been running before it was turned off, the display screen returns to the view displayed when the unit was turned off.

## Auto-Off Timeout

The PT40 is programmed to shut itself off automatically if it is not used for ten (10) minutes. This **Auto-Off** timeout conserves power in the PT 40 by partially shutting down when it is not in use. Press the **<PWR>** key to return the PT40 to full power.

The following Auto-Off timeout values can be customized:

Auto-Off Timeout	Values
Value range	1 - 99 minutes
Default value	10 minutes
Disable value	00

Refer to [Auto-Off on page E-11](#) for more information on customizing this feature.

## Turning the PT40 Off



Turn the PT40 off by pressing the **<PWR>** key displayed at left. This turns the screen display off, but does not clear any information in the PDT's random-access memory (RAM). The PT40 will return to this location when it is turned on again. There is no beep when the **<PWR>** key is pressed to turn the PT40 off.

## Resetting the PT40

Sometimes you will need to reset the PT40. Both Soft Reset and Hard Reset return the PT40 to the opening display screen (refer to [Figure 1-1 on page 1-2](#)) and return a unique series of beeps and tones to verify the reset.



Resetting the PT40 is similar to pressing **<Ctrl>+<Alt>+<Delete>** on a PC. All data stored in the portable's memory is cleared.

**Soft Reset:** Use a soft reset to reboot a PT40 when there is power available. Scan the following reset bar code:

Reset



**Hard Reset:** Use a hard reset to reboot a PT40 without power.

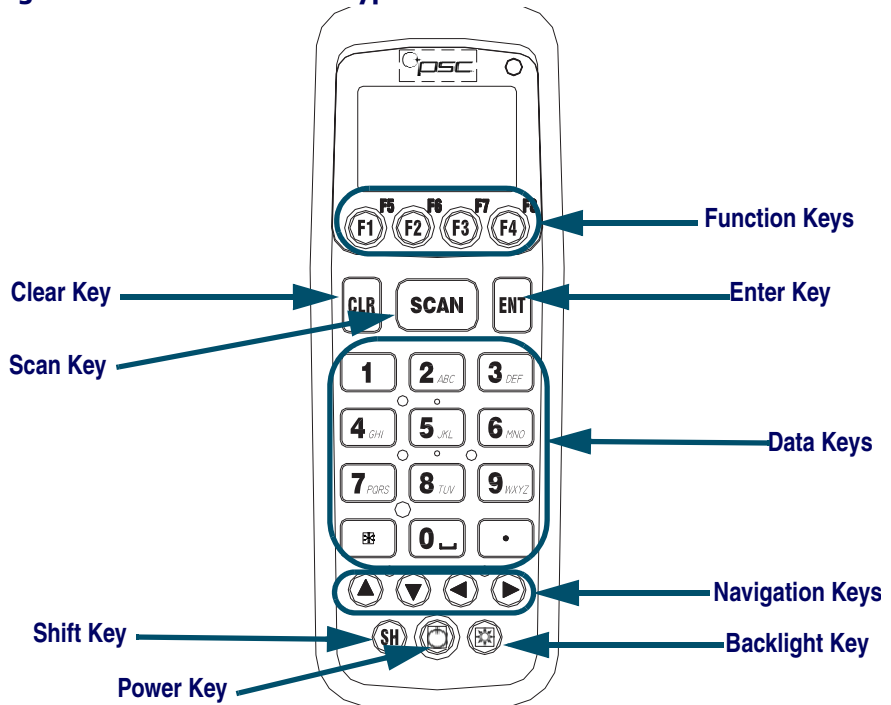
1. Remove the main battery or external power supply.
2. Press and hold the **<CLR>** and **<ENT>** keys while reinserting the main battery or reconnecting the power supply.

## The Keypad

The keypad on the PT40 has three types of keys: action keys, function keys, and data keys. Each key produces a beep when pressed.

- Refer to [Figure 1-2 on page 1-4](#) for an illustration of the Falcon PT40.
- Refer to [Table 1-1 on page 1-5](#) for a list of data keys and cycles.
- Refer to [Table 1-2 on page 1-5](#) for a list of action keys and functions.

**Figure 1-1. Falcon PT40 Keypad**



## Data Keys

Use the twelve (12) data keys to enter letters, numbers, and other characters. If you enter an incorrect number or character, press the **<CLR>** key to move the cursor back one position. Press and hold the **<CLR>** key to clear an entire line.

**Normal Mode.** By default, data keys yield numbers.

**Shift Mode.** To input letters, press the **<SH>** key to enter Shift mode. The Shift mode cursor is displayed with reverse video. The PT40 remains in Shift mode until you press **<SH>** again.

Press the data key once, twice, or more times to cycle through the letters until the desired letter appears on the display. After the last letter in the sequence for that key, the next keypress yields the number. Another keypress starts the letter sequence again. Letters are only available in upper case.

**Table 1-1. Inputting Characters Using Data Keys**

Normal Mode	Shift Mode				
	First Keypress	Second Keypress	Third Keypress	Fourth Keypress	Fifth Keypress
0	space	0	space	0	space
1	1	1	1	1	1
2	A	B	C	2	A
3	D	E	F	3	D
4	G	H	I	4	G
5	J	K	L	5	J
6	M	N	O	6	M
7	P	Q	R	S	7
8	T	U	V	8	T
9	W	X	W	Z	9
* (Asterisk)	In both Normal and Shift mode, press the * key to insert an asterisk.				
. (Decimal/Period)	In both Normal and Shift modes, press the <b>Decimal/Period</b> key to insert a decimal or period into a number sequence or character string.				

There is a default one (1) second time-delay before the cursor moves to the next position. This duration value can be customized. Use the **<RIGHT>** arrow navigation key to move one position right before delay expires.











## Function Keys

There are four function keys, **<F1>** through **<F4>**, at the top of the keypad. Press the **<SH>** key to enter Shift mode and access function keys **<F5>** through **<F8>**. The actions for function keys are determined by the active program.

## Action Keys

Ten action keys, including the four navigation keys, are described in [Table 1-1](#).

**Table 1-2. Falcon PT40 Action Keys**

Button	Function /Mode	Description	Referred to As
	Clear	Press <b>&lt;CLR&gt;</b> to move the cursor back one position. Press and hold <b>&lt;CLR&gt;</b> to clear an entire line of text.	<b>&lt;CLR&gt;</b>
	Scan	Aim the PT40 at a bar code and press the <b>&lt;SCAN&gt;</b> key to activate laser scanning mode.	<b>&lt;SCAN&gt;</b>
	Enter	Press the <b>&lt;ENT&gt;</b> key to enter the current data string and move to the next command.	<b>&lt;ENT&gt;</b>
	Up Arrow	Press the <b>&lt;UP&gt;</b> arrow to move the actual display up one line in the virtual display.	<b>&lt;UP&gt;</b>
	Down Arrow	Press the <b>&lt;DOWN&gt;</b> arrow to move the actual display down one line in the virtual display.	<b>&lt;DOWN&gt;</b>
	Left Arrow	Press the <b>&lt;LEFT&gt;</b> arrow to move the actual display to the left 4 characters in the virtual display.	<b>&lt;LEFT&gt;</b>
	Right Arrow	Press the <b>&lt;RIGHT&gt;</b> arrow to move the actual display to the right 4 characters in the virtual display. In Shift mode, the <b>&lt;RIGHT&gt;</b> arrow key acts as an insert key to override the time delay.	<b>&lt;RIGHT&gt;</b>
	<a href="#">Shift Mode</a>	Press the <b>&lt;SH&gt;</b> key to enter Shift mode. Use Shift mode to access alpha characters or toggle the function keys between <b>&lt;F1&gt;-&lt;F4&gt;</b> and <b>&lt;F5&gt;-&lt;F8&gt;</b> .	<b>&lt;SH&gt;</b>
	Power	Press the <b>&lt;PWR&gt;</b> key to turn the PT40 on and off. When the PT40 is turned on, it beeps and returns to the location at last shut off.	<b>&lt;PWR&gt;</b>
	Backlight On/Off	Press the <b>&lt;BL&gt;</b> key to turn the LCD backlight on or off. The default timeout on the backlight is 30 seconds. The duration value can be customized.	<b>&lt;BL&gt;</b>



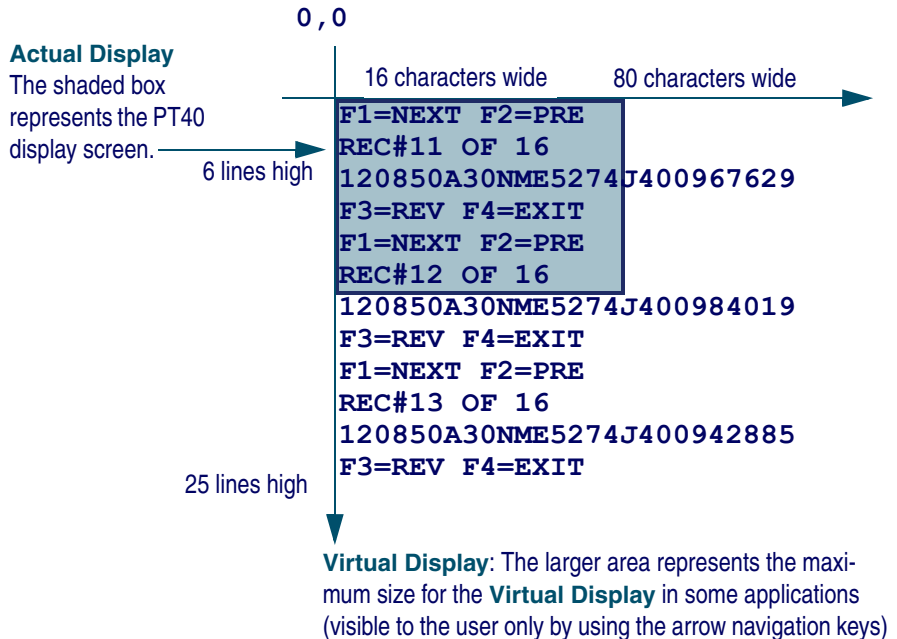
## The Display Screen

The default system font for the PT40 is a 5x7 (width x height in pixels) font based on the Codepage 850 Western European character set. This size font allows the PT40's LCD display screen to show 6 lines of text with up to 16 characters on each line when using only the default system font.

## Actual vs. Virtual Display

The Falcon PT40's actual display screen is a window to a larger display area called the virtual display (refer to [Figure 1-3](#)). Most applications you will use will fit into the actual display. However, applications can sometimes contain data longer than the default 6 line x 16 character view of the actual display.

**Figure 1-2. Virtual vs. Actual Display Using Default System Font**



**Adding or changing character sizes will change the appearance of the actual display. The number of lines and characters will vary with the character sizes.**

The actual display screen shows only a portion of the available data in the virtual display. Use the arrow keys to navigate the actual display screen to view

the virtual display data. The text in the virtual display remains in place and the actual display screen changes its view within the virtual display.

If you scan longer bar codes or enter more data than can fit in a single line of the virtual display, the data automatically wraps to the next line. Because applications for the PT40 can contain and use different fonts, the amount of data that is available within the virtual display will vary.

The virtual display maintains the latest lines of data once all lines of the virtual display are full. The oldest lines of data are “pushed off the top” as new data is added at the bottom.

## Contrast

To adjust the screen contrast while the PT40 is running an application, press the **<SH>** key to enter Shift Mode. Use the **Up** or **Down** arrow keys to increase or decrease the screen contrast.

## Backlight

The PT40’s liquid crystal display (LCD) is easy to read in all lighting situations using the backlight feature. Press the **<BL>** key to turn the backlight on or off.

## Displaying Information about the PT40

Display information about the PT40 by scrolling the actual display past the last character on a current line. Press the **<Right>** arrow key until the version number and current application name are displayed. The actual display lists the system version number and the amount of random-access memory installed (refer to [Figure 1-1 on page 1-2](#)).

## The PT40 Laser

The PT40 laser is an integral part of the Falcon PT40. Use the PT40 to scan bar code labels on flat, curved, or irregular surfaces at distances ranging from one inch to 18 inches.



**The actual scan distance depends upon the symbology, density, and the lighting conditions.**

## Scanning Bar Codes with the PT40

Aim and press the **<SCAN>** key. [Figure 1-4](#) illustrates the correct orientation for best scanning results.

- The laser should be pointed at a slight angle to the bar code. Do not orient the PT40's laser parallel or perpendicular to the bar code.
- The laser beam must cross the entire bar code. The PT40 cannot correctly read if the entire bar code is not scanned.

**Figure 1-3. How to Scan**



### Verifying Operation

A red LED (light-emitting diode) on the top right indicates laser activation and good reads. The PT40 verifies that it accepts the scanned input by sounding an audible tone.

## The Beeper

The PT40 provides audible feedback to indicate when a bar code has been scanned successfully and to acknowledge when a key has been pressed. The default setting provides one beep to indicate a good scan or key entry. Another beep sequence warns of possible problems. The tone, pitch, volume, number, and length of beeps can all be modified. Refer to [Configuring with Bar Codes starting on page D-1](#) for more information on customizing your Falcon PT40.

# PT40 Software Applications

The Falcon PT40 comes from the factory with PSC's **PALPRO40** application and three other data collection applications already installed.



If your PT40 software has been customized, it may operate differently. Check with your systems administrator for instructions.

## PALPRO40

**PALPRO40** is part of the PSC **Portable Applications Library (PAL)**. With **PAL**, you can customize the PT40 without programming. **PALPRO40** consists of three programs, which coexist in memory:

**ASSETPRO** Use **ASSETPRO** for tracking assets at various locations.

**INVPRO** Use **INVPRO** for inventory control. Customize it to collect item-and-quantity information or item-only data.

**TRACKPRO** Use **TRACKPRO** for tracking check-in and check-out of articles at one or more locations. An optional date-and-time stamp records when each item is checked in or out.

A password is required when all three **PALPRO40** applications are loaded at the same time.

## Data Collection Applications

In addition to **PALPRO40**, the PT40 also comes with the following basic data collection applications loaded in memory:

**DESCRIPT** **DESCRIPT** is a description application.

**INVMODEM** **INVMODEM** is an inventory application with a modem option.

**TIMESTMP** **TIMESTMP** is an item-tracking application that records the date and time data was entered.

No password is required for these applications.

## PT Program Generator (PPG)

**PT Program Generator™ v5.0 (PPG™)** is an application designed to work with the Falcon PT40 to create custom applications that collect, verify, and

store data. Use **PPG** and its utilities to create, compile and download custom applications to the PT40. For more information about **PPG**, go to the **Product Manuals** link at [www.pscnet.com](http://www.pscnet.com) to view the most current *PPG User's Guide*.

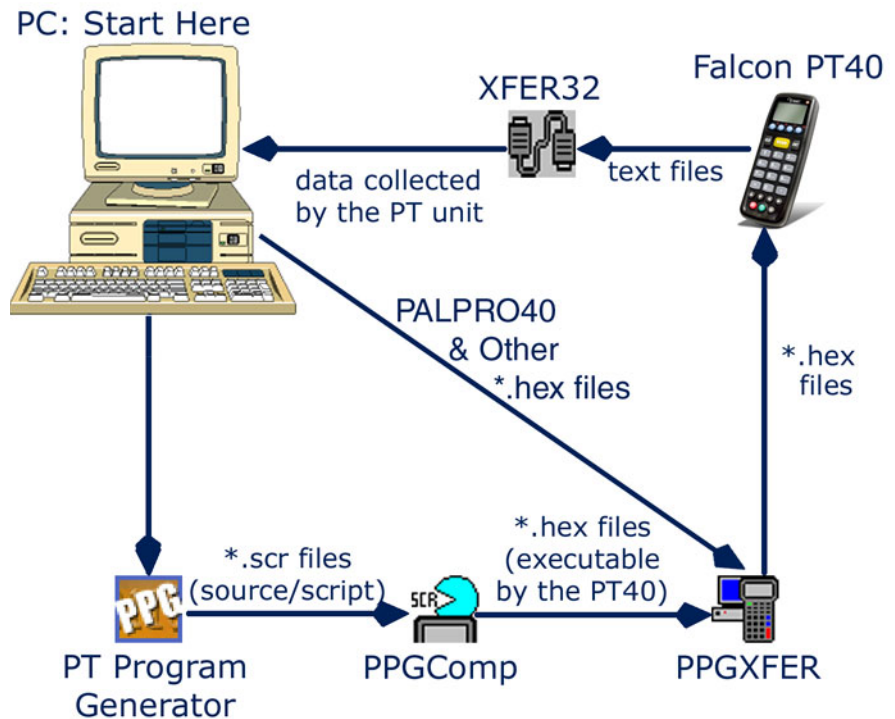


There is no longer keyboard wedge support in PPG v5.0. Applications created in previous versions of PPG that use the keyboard wedge option can be saved in PPG v5.0, but they must be updated with a new input method after you save them..

## Application and Data Flow

[Figure 1-5](#) illustrates data and application file flow between the PC and PT40.

**Figure 1-4. Application and Data Flow on the PT40**



- PPG** PPG is designed to work with the Falcon PT40 to create custom applications that collect, verify, and store data. Refer to [PT Program Generator \(PPG\)](#).
- PPGXFER** Use **PPGXFER** to download the operating system and applications. Refer to [Downloading Applications with PPGXFER starting on page 3-8](#).
- XFER32** Use **XFER32** to transfer data files. Refer to [Using XFER32 on page 3-2](#).

## Accessories

### PT40 Dock, Serial Cable and Power Adaptor

The PSC Falcon PT40 Dock, Serial Cable, and Power Adaptor are specifically designed for use with the Falcon PT40. Use the dock or serial cable for data transmission between the portable and a PC. They can also be used to recharge the portable's rechargeable main Lithium-ion battery.

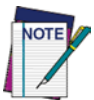
When the portable is connected to the dock or serial cable connected to a PC, you can download programs or data to it, or upload data from it. For more detailed information about the Falcon PT40 Dock and serial cable, refer to [PT40 Dock, Serial Cable, and Power Adaptor on page B-1](#).

### PT40 Batteries

The PT40 runs on two types of batteries. The main Lithium-ion battery supplies operating power for the PT40. The internal lithium-ion battery provides backup power to maintain the random-access memory and the real-time clock when the main batteries are removed. The backup battery is recharged by the main battery.

**When you first remove your Falcon PT40 from the box, the main battery may require charging.**

PSC recommends that you purchase two main batteries and keep a spare battery charging in the battery slot at all times. Then you can swap out the batteries when the main battery runs low, rather than stopping to recharge a single battery.



Lithium-ion batteries benefit from an initial 'conditioning'. For the first 3 charge cycles, fully charge the main battery for at least 12 to 24 hours. Then allow it to fully discharge before recharging it again.

After a prolonged storage period the main battery may again require three to four charge/discharge cycles to achieve maximum capacity.



**Recycle Lithium-Ion Batteries.**



**CAUTION**



**Do not throw Lithium-Ion Batteries in the trash.**

Always charge the battery within the temperature range of 32°–113°F (0°–45°C).

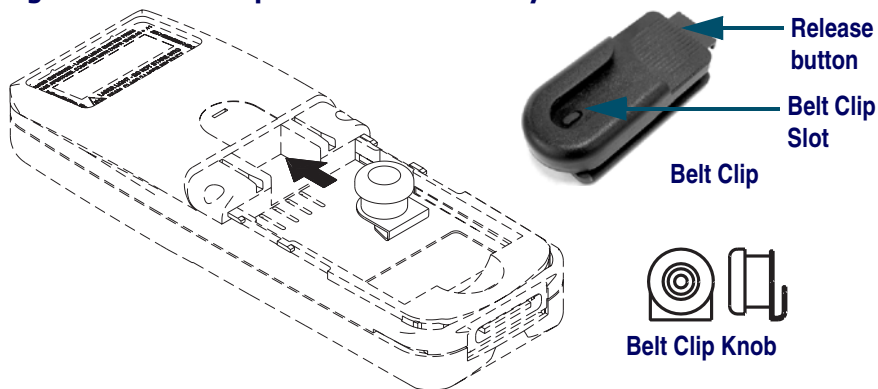
To recharge the PT40's batteries and for more detailed information about the main and backup batteries, refer to [Falcon PT40 Batteries on page A-1](#) and [Using the Dock to Recharge the Main Battery on page B-4](#).

## PT40 Belt Clip

To install the belt clip, complete the following steps:

1. Follow the instructions for [Main Battery Installation starting on page A-3](#) to remove the main battery and battery cover door.

**Figure 1-5. Belt Clip and Knob Assembly**



2. Align the belt clip knob with the slight depression just above the battery compartment.
  - Position the knob facing out and the small clip lined up with the small slot inside the unit. ([Figure 1-6](#) shows the belt clip knob)
  - Press up firmly on the belt clip to insert it into the slot (refer to [Figure 1-6](#) for the location of an installed belt clip knob).
3. Replace the battery and battery compartment cover as described in [Main Battery Installation starting on page A-3](#).
4. Slip the belt clip knob (refer to [Figure 1-6](#)) into the slot in the belt clip.
5. Attach the belt clip to your belt.
6. To release the unit from the belt clip, press the button at the top of the belt clip and slip the unit up from the slot.

## PT40 Soft Case

Your PT40 may also come with a soft case. If you wish to use it, open the back and put the PT40 inside, bottom first.

**Figure 1-6. Falcon PT40 Soft Case**



## Falcon PT40 Product CD

Contains the following applications and documents:

- **PALPRO40** (Refer to [Using PALPRO40 starting on page 2-7](#)).
- **XFER32** (Refer to [Using XFER32 starting on page 3-2](#)).
- *Falcon PT40 Quick Reference Guide* (QRG) in PDF format.
- *Falcon PT40 Product Reference Guide* (PRG) in PDF format.

PDF (portable document format) files of the QRG and PRG are both available on the product CD included with your PT40. Or you can download the most recent version of any PSC manual from the website at [www.pscnet.com](http://www.pscnet.com).

View PDF files with **Adobe Acrobat Reader** v4.0 or higher, which you can download from Adobe's website at [www.adobe.com](http://www.adobe.com).



A printed version of the *Falcon PT40 Quick Reference Guide* (QRG) shipped with your Falcon PT40. Use this document to get the Falcon PT40 up and running quickly.



# Chapter 2

# Data Collection with PT40

# Software Applications

---

## Overview

This section of the manual describes the following data collection processes with the PT40:

- [Quick Start starting on page 2-2.](#)
- [Setting Up the PT40 starting on page 2-3.](#)
  - [Getting Started starting on page 2-3.](#)
  - [Switching Applications starting on page 2-4](#)
  - [Setting the Time and Date starting on page 2-5.](#)
  - [Setting a Password starting on page 2-6.](#)
- [Using PALPRO40 to Collect Data starting on page 2-7.](#)
  - [Installing PALPRO40 starting on page 2-7.](#)
  - [Using PALPRO40 starting on page 2-7.](#)
  - [Using ASSETPRO starting on page 2-10.](#)
  - [Using INVPRO starting on page 2-12.](#)
  - [Using TRACKPRO starting on page 2-15.](#)
- [Other Data Collection Applications starting on page 2-18.](#)
  - [DESCRIPT starting on page 2-18.](#)
  - [INVMODEM starting on page 2-23.](#)
  - [TIMESTMP starting on page 2-25.](#)
- [Reviewing the Collected Data starting on page 2-27.](#)

**PALPRO40** and the other data collection applications are loaded in the PT40's memory when it arrives from the factory, unless it is customized.

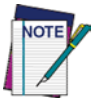
If you want to work with PPG, please refer to the PPG User's Guide, included on the CD that came with your PT40.

## Quick Start

The Falcon PT40 comes with an application named **PALPRO40** loaded in memory. **PALPRO40** includes three useful data-collection programs for using the PT40 without additional programming.

Follow the steps below to begin using the PT40 with **PALPRO40** immediately. Page references show where to find more information.

1. Fill out and return the registration card enclosed with the unit.
2. Turn the PT40 on by pressing the **<PWR>** key. Refer to [Turning the PT40 On on page 1-2](#) for additional information about starting the PT40.



If the PT40 does not turn on when the **<PWR>** key is pressed, you may need to recharge the main battery (refer to [Falcon PT40 Batteries starting on page A-1](#)).

If the PT40's software has been customized, it may operate differently. Check with a systems administrator for instructions.

3. Press the **<ENT>** key twice to accept the displayed date and time. If necessary, change the date and time settings. (Refer to [Setting the Time and Date on page 2-5](#).)

**Figure 2-1. The Application/Test menu**

```
APPLICATION/TEST
F1=PALPRO40
F2=DESCRIPT
F3=INVMODEM
F4=TIMESTP
F5=UTILITIES
```

4. Once the unit has been initialized, the display will show the **APPLICATION/TEST** menu in [Figure 2-1 on page 2-2](#), above.
  - Press **<F1>** to begin using **PALPRO40**.
5. The application requests an update to the date and time again. You can change them here if necessary. Or, press **<ENT>** twice to skip either the date or the time.

6. Enter a password. (Refer to [Setting a Password on page 2-6.](#))
7. Press any function key to continue on to the **PALPRO40 Options** menu.
8. Press the <F2> key to display the list of available applications. Select the application to use. (Refer to [Switching to Another PALPRO40 Application on page 2-9.](#))

The PT40 is now ready to begin collecting data. For information about sending collected data from the PT40 to a PC, refer to [Uploading Data to the Host PC starting on page 3-2.](#)

## Setting Up the PT40

You can collect data records on the PT40, and send the records later to a host PC. The number of data records that can be collected before being uploaded depends on how much random-access memory (RAM) is installed in the PT40.

The PT40 stores data records in files in random-access memory (RAM). The number of records that can be collected depends upon the amount of RAM available to the application. Refer to the [Memory Table on page F-1](#) to determine the amount of RAM you need.

## Getting Started

Unless it has been customized, the Falcon PT40 is programmed from the factory for basic data collection using **PALPRO40**.



**This chapter describes how to use the PT40 with its original PSC programming (i.e. PALPRO40). If the PT40 has been customized, it may operate differently. Check with a systems administrator for revised operating instructions.**

**If the PT40 does not turn on when the <PWR> key is pressed, you may need to recharge the main battery (refer to [Falcon PT40 Batteries starting on page A-1](#)).**

## Switching Applications

The PT40 can have as many as 4 different applications in memory, any one of which can be selected and run. To move to a different application from the application currently running, you must initiate a special key-sequence on the keypad. Simultaneously press the <SH>+<CLR>+<ENT> keys to put the currently running application on hold. A special dialog display opens

```
You selected the
  termination of
  the application!
F1= Terminate
F2= Upload files
F4= Continue app
```

### Terminating the Application <F1>

1. Press the <F1> key to terminate execution of the current application. The PT40 returns to the opening sign-on screen.



If you select terminate the application at this screen, you will permanently destroy any data you collected while the application was running.

2. Press any key to enter the **APPLICATION/TEST** menu and can then select another application to run.

### Uploading Files <F2>

1. Press the <F2> key to upload any data that has been collected while running the application.
2. A new display appears, with instructions for uploading the data from the application.

```
Prepare host to
rcv files, and
connect I/O to
host I/O port.
To save the data
press any key
```

3. Press any key to initiate the data upload. (This is similar to transferring data files using **XFER32**; refer to [Using XFER32 starting on page 3-2.](#))

## Continuing the Application <F4>

Press the <F4> key to return to the current application and continue collecting data with the application.

## Setting the Time and Date



In the representations of the display of the Falcon PT40 that follow, the  $\alpha$  symbol indicates the blinking cursor.

You can access the date and time prompts from other display screens and menus (such as the password prompt in [Figure 2-4 on page 2-6](#)).

### Figure 2-2. The Time and Date Display

```
Current Date:
09/23/02
Enter New Date:
 $\alpha$ 
```

When starting the application for the first time, the display screen shows the date currently loaded in memory. If the displayed date is correct, press the <ENT> key. If the date is wrong, enter the correct date. Use two digits each for the month, day, and year (e.g., **092302** for [Figure 2-2](#), above). Press <ENT> to accept the entry.

### Figure 2-3. The Current Time Display

```
Current Time:
21:17:32
Enter New Time:
 $\alpha$ 
```

The next display screen shows the time currently loaded in the PT40's memory. If the displayed time is correct, press the <ENT> key. If the time is wrong, enter the correct time in 24-hour format. Use two digits each for the hour, minute, and seconds (e.g., **211732** for [Figure 2-3](#), above).

## Setting a Password

A password is required when you install the entire suite of **PALPRO40** applications. Password security allows a manager or supervisor to customize the **PALPRO40** software and then hand it off to a worker. A password can contain up to 128 characters and can use any characters available on the PT40.

**Figure 2-4. The Password Display**

```
ENTER CURRENT  
OR NEW PASSWORD  
␣  
F-KEY=SET TIME
```

Without the password, the worker cannot switch applications or make changes to an application's title or prompts. The password prompt screen appears after entering the date and time from the application's initial startup.



If you lose or forget your password, you must reset the PT40 and start over with a new password.

After you enter your password, the text in [Figure 2-5](#) is displayed.

**Figure 2-5. The PALPRO40 Opening Display**

```
PSC PALPRO40  
08:18:04␣  
10/16/02  
F-KEY=CONTINUE
```

Press any function key to bring up the **PALPRO40 Options** menu. The PT40 is now ready to collect data.

## Using PALPRO40 to Collect Data

When finished setting up the PT40 (refer to the previous section), the **PALPRO40 Options** menu appears on the display screen. Use the menu to choose a **PALPRO40** application.

### Installing PALPRO40

**PALPRO40** comes installed on your PT40 from the factory. If you need to reinstall **PALPRO40**, refer to [Downloading Applications with PPGXFER starting on page 3-8](#) for instructions on this process.

### Using PALPRO40

**PALPRO40** combines three Portable Applications Library (PAL) applications into a single, convenient program (refer to [PALPRO40 on page 1-10](#) for an overview of **PALPRO40**). With **PALPRO40** installed on the PT40, you can switch from one PAL application to another without installing each application.

### Selecting a PALPRO40 Application

Complete the following steps to select a **PALPRO40** application:

1. With the **PALPRO40 Options** menu displayed, press the **<F2>** key to select a PAL application.

```
PALPRO40 OPTIONS
F2=SELECT PROG
F4=PASSWORD
▣
```

2. Press **<F1>** to use **ASSETPRO**, press **<F2>** to use **INVPRO**, or press **<F3>** to use **TRACKPRO**.

```
F1=ASSET MGMT
F2=INV MGMT
F3=ITEM TRACKING
F4=EXIT▣
```



If you select **INVPRO**), the next screen asks you to select one or two prompts (refer to the [Steps on page 2-12](#)). Make a selection before going on to the next step.

If you select **TRACKPRO**, the next screen asks you if you want to add a date/time stamp before getting to the application menu. (Refer to the [Steps on page 2-15](#).)

## Changing Program Titles and Prompts

**PALPRO40** allows the user to change the title that appears on the menu for each application, or change the prompts for each application. Changing titles or prompts can be done after selecting an application. To change the title or prompts, complete the following steps:

1. Press the **<F3>** key at the prompt. To use the application's current title and prompts, select **<F4>** at the prompt in [Figure 2-6](#).

**Figure 2-6. The Change Prompts? Screen**

```
CHANGE PROMPTS?  
F3=YES  
F4=NO
```

2. Enter a name for the application (for example, **FIXED ASSETS**) followed by the **<ENT>** key. The entered name appears at the top of the application menu for the current application.

```
ENTER APPL TITLE  
FIXED ASSETS
```

3. Enter the text for the first prompt (for example, **BUILDING ID**) followed by the **<ENT>** key.

```
ENTER PROMPT 1  
BUILDING ID
```



4. Enter the text for the second prompt (for example, **ASSET NO.**) followed by the **<ENT>** key.

```
ENTER PROMPT 2
ASSET NO. ▣
```

## Switching to Another PALPRO40 Application

To switch from one **PALPRO40** application to another, complete the following steps:

1. Select **<F5>** from the current application's menu to exit the application.

```
ASSET MGMT▣
F2=COLLECT
F3=FILE OPTIONS
F5=EXIT
```



Enter **<F5>** on the keypad by pressing the **<Shift>** key and then the **<F1>** key.

2. At the prompt, enter the current password, or press any function key (the blue keys at the top of the keypad) to return to the menu for the current application.

```
ENTER PASSWORD
▣

F-KEY=EXIT
```

3. When the correct password is entered, the first **PALPRO40** screen opens.
4. Press any function key to display the **PALPRO40 Options** menu.
5. Follow the [Steps on page 2-7](#).

## Using ASSETPRO

Use **ASSETPRO** to track assets (such as furniture, phones, computers, and electronic equipment) at various locations (e.g., departments, rooms, floors, buildings). With **ASSETPRO**, enter an identification code for a location, collect all the asset IDs at the location, and then enter an identification code for a different location.

To use **ASSETPRO**, complete the following steps:

1. From the **ASSETPRO** application menu, select **<F2>**.

```
ASSET MGMT␣  
F2=COLLECT  
F3=FILE OPTIONS  
F4=EXIT
```

2. The first prompt appears on the screen. Enter the identification code for the location (example, **WH3E**).
  - Scan a bar code for the location or use the keypad to enter the location ID.

```
LOCATION ID  
␣  
F3=REV F4=EXIT
```



The code is entered automatically when using a scanner; when using a keypad, press the **<ENT>** key.

3. The second prompt now appears on the first line of the screen, and the location ID appears on the third line.
  - Scan the bar code identifying an asset, or use the keypad to enter the asset's ID number or description (for example, **004322**).

```
ITEM ID  
␣  
WH3E  
F3=REV F4=EXIT
```

4. The location ID and item ID appear together on the third line of the screen, separated by a comma, and the second prompt remains on the screen.
  - The PT40 is ready to accept another ID for an asset at the current location.

```

ITEM ID
▣
WH3E, 004322
F3=REV F4=EXIT

```

5. When finished collecting asset IDs for the location, press the <F4> key to return to the first prompt.
6. Repeat steps 2 through 5, above, until IDs for each asset at every location is collected.
7. Press the <F4> key to return to the first prompt.
8. Press the <F4> key again to return to the application menu.

Refer to [Uploading Data to the Host PC starting on page 3-2](#) to upload your data.

The PT40 stores the collected data in a single ASCII text file. When uploading the file to the PC, the data appears as a list. Each line in the list contains two fields separated by a comma. The first field is the location, and the second field is the item's identification number. The example in [Figure 2-7](#) is part of a data file uploaded from a PT40 that used **ASSETPRO** to collect data.

**Figure 2-7. ASSETPRO Collected Data in ASCII text file**

```

BLDG1,000295
BLDG1,001862
BLDG1,000945
BLDG1,001008
BLDG1,000036
BLDG1,000490
BLDG2,000288
BLDG2,002596

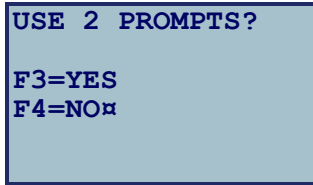
```

## Using INVPRO

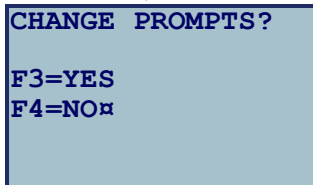
Use this application to track inventory. **INVPRO** provides a choice of one prompt or two. For example, use one prompt to scan or enter an ID number or description for each item. Two prompts would be used to scan or enter an item ID and the quantity of that item.

To use **INVPRO**, complete the following steps:

1. At the first screen that appears, press the **<F4>** key to use the application with only one prompt, or use the **<F3>** key for two prompts.



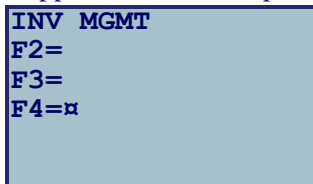
2. Press the **<F3>** key to change the title or prompts that appear on the application's display screens.
  - Refer to [Changing Program Titles and Prompts on page 2-8](#) for instructions.
  - Otherwise, press the **<F4>** key to use the current title and prompts.



3. The application menu appears next on the display screen.
4. Continue with the instructions for [Using One Prompt](#) below, or continue with [Using Two Prompts on page 2-13](#).

## Using One Prompt

1. Select **<F2>** from the application menu. A prompt appears on the screen.



2. Scan the bar code for an inventory item, or use the keypad to enter the item's ID number or description.



Using a scanner, the code is entered automatically; with a keypad, press the <ENT> key.

3. The item ID number appears on the third line of the screen. The PT40 is ready to accept another item ID.

```
ITEM ID
␣
40-000-00
F3=REV F4=EXIT
```

4. Repeat step 2 until all IDs for all items are collected.
5. Press the <F4> key to return to the application menu.

Refer to [Uploading Data to the Host PC starting on page 3-2](#) to upload your data.

The PT40 stores the collected data in a single ASCII text file. When uploading the file to the PC, the data appears as a list. Each line in the list contains the ID for a single item. The example in [Figure 2-8 on page 2-13](#) is part of a data file uploaded from a PT40 that used **INVPRO** with one prompt to collect data.

### Figure 2-8. INVPRO Collected Data in ASCII text file

```
R44-2173
R44-2260
R44-2278
R44-2283
R44-2285
R44-2287
R44-2289
R44-2314
```

### Using Two Prompts

1. Select <F2> from the application menu. The first prompt appears on the screen.

```
ITEM ID
␣
F3=REV F4=EXIT
```

2. Scan the bar code for an inventory item, or use the keypad to enter the item's ID number or description.



The code is entered automatically with a scanner; with a keypad, press the <ENT> key.

3. The second prompt now appears on the first line of the screen, and the item ID appears on the third line.

```
QUANTITY
▣
40-000-00
F3=REV F4=EXIT
```

4. Enter the number of individual units of the item in inventory.
5. The item number and quantity appear together on the third line of the screen, separated by a comma, and the first prompt reappears on the screen. The PT40 is ready to accept another item ID.

```
ITEM ID
▣
40-000-00, 25
F3=REV F4=EXIT
```

6. When finished collecting inventory data, press the <F4> key to return to the application menu.

Refer to [Uploading Data to the Host PC starting on page 3-2](#) to upload your data.

The PT40 stores the collected data in a single ASCII text file. When uploading the file to the PC, the data appears as a list. Each line in the list contains two fields separated by a comma. The first field is the item ID, and the second field is the number of units of that item. [Figure 2-9](#) shows part of a data file uploaded from a PT40 that used **INVPRO** with two prompts to collect data.

**Figure 2-9. INVPRO Collected Data in ASCII text file**

```

R44-2173 , 25
R44-2260 , 12
R44-2278 , 56
R44-2283 , 30
R44-2285 , 47
R44-2287 , 16
R44-2289 , 4
R44-2314 , 85

```

**Using TRACKPRO**

Use this application to record check-in and check-out of articles (e.g., supplies, books, files, tools, equipment) at one or more locations. **TRACKPRO** uses two prompts, one for location and one for item, looping at the second prompt until the user exits to record a new location ID. An optional date/time stamp records exactly when each item is taken or returned.

To use **TRACKPRO**, complete the following steps:

1. At the first screen, press the **<F3>** key to change the title or prompts that appears on the application's display screens.
  - Refer to [Changing Program Titles and Prompts on page 2-8](#).
  - To use the current title and prompts, press the **<F4>** key.

```

CHANGE PROMPTS?

F3=YES
F4=NO

```



The following displays assume the default prompts.

2. At the next prompt, select **<F3>** to use the date/time stamp. Otherwise, select **<F4>**.

```

ADD DATE/TIME
STAMP?
F3=YES
F4=NO

```

3. From the application menu, select <F2>.

```
ITEM TRACKING␣  
F2=COLLECT  
F3=FILE OPTIONS  
F5=EXIT
```

4. Press the <F1> key to record an item being checked in. Press <F2> to record an item being checked out.

```
F1=CHECK IN  
F2=CHECK OUT  
  
F4=EXIT␣
```

5. Enter the code or name for the location by scanning a bar code or using the keypad (e.g. **MAIN**).

```
LOCATION ID  
␣  
IN :  
F3=REV F4=EXIT
```



The code is entered automatically with a scanner; with a keypad, press the <ENT> key.

6. The ITEM ID prompt appears on the first line of the screen, and the location ID appears on the third line.
7. Scan the bar code for the item, or use the keypad to enter the item's ID number or description (for example, **P203**).

```
ITEM ID  
␣  
IN :  
F3=REV F4=EXIT
```

8. The location ID and item ID appear on the third line of the screen, separated by a comma. The prompt for the ITEM ID remains on the



screen, and the PT40 is ready to accept another ID for an item at the current location.

```
ITEM ID
␣
IN :MAIN,P203
F3=REV F4=EXIT
```



If the application is set up to add a date/time stamp, the date and time that the item was checked out will follow the item ID on the third line. (You must scroll the display to see the entire line.)

9. When finished collecting ITEM IDs for the location, press the <F4> key to return to the prompt for the LOCATION ID.
10. Repeat steps 5 through 10 until all the IDs for the ITEMS at every location are collected.
11. Press the <F4> key again to return to the menu shown at step 4.
12. To change from check-in to check-out (or vice versa), repeat step 4.
  - Otherwise, press the <F4> key to return to the application menu.

Refer to [Uploading Data to the Host PC starting on page 3-2](#) to upload your data.

The PT40 stores check-in data in one ASCII text file and check-out data in another file. When uploading one of the files to the PC, the data appears as a list. Each line in the list contains two fields separated by a comma. The first field is the LOCATION ID, and the second field is the ITEM ID.

When using the date/time stamp, each line also includes the check-in or check-out date and time. The list shown in [Figure 2-10](#) is part of a check-out file uploaded from a PT40 that used **TRACKPRO** with the date/time stamp.

#### Figure 2-10. TRACKPRO Collected Data in ASCII text file

```
MAIN,R44-2173,10/16/02,10:27:18
MAIN,R44-2260,10/16/02,10:27:45
MAIN,R44-2278,10/16/028,11:04:51
MAIN,R44-2283,10/16/028,11:22:02
WHS,R44-2285,10/16/028,11:40:53
WHS,R44-2287,10/16/028,11:40:57
WHS,R44-2289,10/16/028,11:41:11
WHS,R44-2314,10/16/02,11:41:15
```

## Other Data Collection Applications

This section describes some other applications that are provided along with **PALPRO40**. They can be loaded onto the PT40 using **PPGXFER**. (Refer to [Downloading Applications with PPGXFER starting on page 3-8](#).)

### DESCRIPT

The **DESCRIPT** application is another useful program for tracking inventory. You can use this application with item and description files that you create and load in advance. You can also add to files or create them from scratch in the PT40 as you collect inventory data.

When you enter an item ID into the PT40, the **DESCRIPT** application checks the loaded item file for that entry. If the ID matches one in the file, the PT40 displays a description of the item (which it gets from the loaded description file) and prompts you for the number of individual units of the item. If the ID does not match one in the item file, the application allows you to add the ID and a description to the database.

The item and description files are simple ASCII text files consisting of single lines of data. The lines in the two files correspond to each other; that is, the first line in the description file is the description of the item in the first line of the item file, the second line in the description file is the description of the item in the second line of the item file, and so on.

Examples of the two types of files are shown below. The item file is on the left, and the description file is on the right.

#### Figure 2-11. Item and Description ASCII Files

R44-2314	Falcon PDT User's Guide
R44-2278	Falcon Adv User's Guide
R44-2247	Falcon Developer's Toolkit
R44-2342	PT Program Generator User's Guide v5.0
R44-2343	PPG Quick Start Guide v5.0
R44-2340	Falcon PT40 Product Reference Guide
R44-2341	Falcon PT40 Quick Reference Guide
R44-2260	UPG User's Guide, v 3.0



The two files must have the same number of lines, even if some of the description lines are blank.

Refer to [PT40 Serial Configuration and Connection on page C-1](#) for instructions on connecting the PT40 to a PC.

You can access the date and time prompts from other display screens and menus (such as the password prompt in [Figure 2-4 on page 2-6](#)).

## Loading Item and Description Files into the PT40

1. At the screen displaying the program name, press any function key to display the application menu.

```
PSC DESCRIPT
08:17:32
10/16/02
F-KEY=CONTINUE
```

2. From the application menu, select <F2>.

```
F1=COLLECT
F2=RECEIVE LISTS
F3=FILE OPTIONS
F4=EXIT
```

3. If item and description lists are already loaded in the PT40, the screen shown below is displayed. To replace a list, select <F2> and go to step 4. To add new items to an existing list, select <F3> and go to step 7.

```
FILE NOT EMPTY
F2=ERASE
F3=APPEND
F4=EXIT
```

4. To erase the item and description lists that are currently loaded in the PT40, select <F2>. The second line of the display screen will become blank, and the lists will be removed from the PT40's memory.

```
ERASE
F2=PICKLIST
F3=COLLECT
F4=EXIT
```

5. Press the <F4> key to return to the application menu, and select <F2> to display the **Receive Lists** menu.
6. From the **Receive Lists** menu, select <F2> to download the item list or <F3> to download the description list.

```
RECEIVE LISTS
F2=RECEIVE ITEM
F3=RECEIVE DESC
F4=EXIT
```

7. The next screen will prompt you to connect the PT40 to the computer. When you are sure the PT40 is connected properly, run the appropriate transfer program to download the list. (Use **XFER32** with Windows). Then select <F3> on the PT40 to transfer the file.

```
CONNECT FOR REC
ITEM LIST
F3=CONTINUE
F4=EXIT
```

8. When the transfer is completed, the PT40's screen will report on the number of records in the list in memory. Press the <F4> key to return to the **Receive Lists** menu.

```
RESULTS
RECORDS=16
F4=CONTINUE
```

9. To load another file, repeat steps 6 through 8. When both files are loaded, press the <F4> key to return to the **Receive Lists** menu.
10. Press <F4> again to return to the **Applicaiton** menu.



To set a new date or time, refer to [Setting the Time and Date on page 2-5](#).

## Using DESCRIPT

- From the application menu, select <F1>.

```
F1=COLLECT
F2=RECEIVE LISTS
F3=FILE OPTIONS
F4=EXIT
```

- The screen prompts you for an item identification. Scan the bar code for an item, or use the keypad to enter the item's ID number or description.

```
ITEM ID
R44-2342
F3=REV F4=EXIT
```



The code is entered automatically with a scanner; with a keypad, press the <ENT> key.

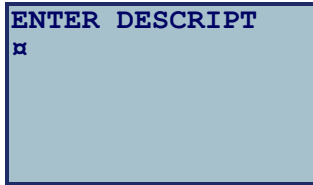
- If the item ID matches an ID in the item file, the PT40 displays the text from the corresponding line in the description file and prompts you for the number of units of the item.

```
QUANTITY
R
PPG USER'S GUIDE
F3=REV F4=EXIT
```

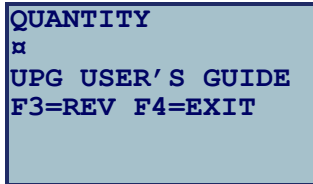
- If there is no match for an item ID, the PT40 prompts you to reenter the item ID or add it to the item list. To add an item to the list, press the <F3> key.

```
NO MATCH RESCAN
R
F3=CREATE
F4=EXIT
```

- The application adds the item ID to the item list and prompts you for a description of the item. Use the keypad to enter a description (e.g. **UPG USER'S GUIDE**).



- The application adds the description to the description file and prompts you for the number of units of the item.



4. When you enter a number (e.g. **50**), the PT40 returns to the first prompt, ready to accept another item ID
5. When you are done collecting inventory data, press the **<F4>** key to return to the application menu.

Refer to [Uploading Data to the Host PC starting on page 3-2](#) to upload your data.

The PT40 stores the collected data in a single ASCII text file. When you upload the file to your computer, the data appears as a list. Each line in the list contains two fields separated by a comma. The first field is the item ID, and the second field is the number of units of that item. [Figure 2-12 on page 2-22.](#) contains part of a data file uploaded from a PT40 that used **DESCRIPT** to collect data.

**Figure 2-12. DSCRIPT Item ID and Number of Units ASCII File**

```
R44-2173,46  
R44-2278,159  
R44-2283,244  
R44-2285,90  
R44-2287,135  
R44-2289,19  
R44-2314,72
```

## INVMODEM

The **INVMODEM** application works like **INVPRO** and contains an additional feature that lets you send the collected data to a computer over a modem.

To use this application, you should have experience with modem communications. You should know how to set up the modem for your system and how to use the communications software that runs it.

### Using the Modem Feature



The modem should be set up for transmission at either 2400 or 9600 baud with **No parity**, 8 data bits, 1 stop bit, and no data compression.

**INVMODEM** uses **Xmodem** protocol for file transmissions.

1. From the application menu, select **<F3>** for **File Options**.

```
INV W/MODEM
F2=COLLECT
F3-FILE OPTIONS
F4=EXIT↵
```

2. From the **File Options** menu, select **<F2>**.

```
*FILE OPTIONS*
F2=SEND FILE
F3=ERASE FILE
F4=EXIT↵
```

3. Use a cable supplied by your PSC dealer to connect the PT40 to your modem, and select **<F3>** from the **Send File** menu.

```
*SEND FILE*
F2=SERIAL
F3=MODEM
F4=EXIT↵
```

4. Select **<F2>** to transmit the file at 2400 baud or **<F3>** to transmit it at 9600 baud.

```
SELECT BAUD RATE
F2=2400 , N , 8 , 1
F3=9600 , N , 8 , 1
F4=EXIT
```

- 5. Enter the telephone number to dial. Be sure to use the format that your modem requires. (For example, you may need to use “9,” as a prefix for the number). When you press the <ENT> key on the keypad, the application connects to the modem and calls the number.

```
NUMBER TO DIAL

```

```
F4=EXIT
```

- 6. When the modem connects to the remote computer, two-way communications between the PT40 and the computer is established. Use the PT40 to enter the commands you need to prepare the computer to receive a file.
- 7. When the computer is ready, press the <F3> key on the PT40 to begin the file transmission.

```


```

```
F3=UPLD F4=EXIT
```

- 8. When the transmission is completed, the application displays a message. Select <F4> to return to the previous screen.

```
UPLOAD COMPLETE

```

```
F4=EXIT
```

- 9. Select <F4> to hang up the modem and return to the application menu.



# TIMESTMP

**TIMESTMP** is a simple item-tracking application that records the date and time that each item is entered into the PT40.

## Using TIMESTMP

1. At the screen displaying the program name, press any function key.

```
TIMESTMP
08:17:32
10/16/02
F-KEY=CONTINUE
```

2. At the next screen, press the <F1> key to display the application menu or press the <F2> key to set the time (refer to [Setting the Time and Date starting on page 2-5](#)).

```
F1=TIME STAMP
F2=SET TIME
F4=EXIT
```

3. From the application menu, select <F2>.

```
TIME STAMP
F2=COLLECT
F3=FILE OPTIONS
F4=EXIT
```

4. Scan the bar code for an item, or use the keypad to enter the item's ID number or description (for example, R44-2342).

```
ITEM ID
R44-2342

F3=REV F4=EXIT
```



The code is entered automatically with a scanner; with a keypad, press the **<ENT>** key.

Use the arrow navigation keys to scroll the display window to the right to see all the date and time information.

- The item ID appears on the third line of the screen, followed by the date and time, and the PT40 is ready to accept another item ID.

```
ITEM ID
▣
R44-2342, 10/16/
F3=REV F4=EXIT▣
```

5. Repeat step 4 until you have collected IDs for all items. Then press the **<F4>** key to return to the application menu.

Refer to [Uploading Data to the Host PC starting on page 3-2](#) to upload your data.

The PT40 stores the collected data in a single ASCII text file. When you upload the file to your computer, the data will appear as a list. Each line in the list will contain the ID for a single item, followed by the date and time that the item ID was entered in the PT40. The list below is part of a data file uploaded from a PT40 that used **TIMESTMP** to collect data.

**Figure 2-13. TIMESTMP Item ID and Number of Units ASCII File**

```
R44-2314,10/16/02,10:27:18
R44-2278,10/16/02,10:27:45
R44-2247,10/16/02,11:04:51
R44-2342,10/16/02,11:22:02
R44-2343,10/16/02,11:40:53
R44-2340,10/16/02,11:40:57
R44-2341,10/16/02,11:41:11
R44-2260,10/16/02,11:41:15
```

## Changing the Date and Time Setting

1. From the application menu, select **<F2>**.

```
F1=TIME STAMP
F2=SET TIME
F4=EXIT▣
```

- If the displayed date is correct, press the **<ENTER>** key. If the date is wrong, enter the correct date. Use two digits each for the month, for the day, and for the year (e.g. **101602**). The program will automatically format the entry (e.g. **10/16/02**).

```
Current Date:
10/16/02
Enter New Date:
□
```

- If the displayed time is correct, press the **<ENT>** key. If the time is wrong, enter the correct time in 24-hour format. Use two digits each for the hour, minute, and seconds (e.g., **211732**).

```
Current Time:
21:17:32
Enter New Time:
□
```

## Reviewing the Collected Data

Before uploading collected data, review it on the PT40 and delete incorrect or unnecessary records.

- From any screen that offers **REV** as an option, select **<F3>** to display the data-review screen (shown in [Figure 2-14 on page 2-28](#)).

```
ITEM ID
□

F3=REV F4=EXIT
```

- The last data that was input is displayed on the third line of the screen.
- If the record includes a quantity, the quantity is given after a comma at the end of the line.

- The second line of the data-review screen tells the number of the currently displayed record and the total number of records. The top line of the data-review screen offers options for moving through the records in memory.

**Figure 2-14. Data Review Displays**

```
F1=PREV F2=NEXT
REC#65 OF 65
R44-2342
F3=DEL F4=EXIT
```

Item-only data

```
F1=PREV F2=NEXT
REC#65 OF 65
R44-2342, 15
F3=DEL F4=EXIT
```

Item-and-quantity data

2. Press the **<F2>** key to move to the next record.
  - If the currently displayed record is the last one, the PT40 will briefly display **END OF FILE** on the second line.
3. Press the **<F1>** key to move to the previous record.
  - If the currently displayed record is the first one, the PT40 will briefly display **START OF FILE** on the second line.
4. The 4th line of the screen offers options for deleting records and returning to the data-collection screen.
  - To delete the currently displayed record, press the **<F3>** key. The message **ARE YOU SURE?** appears on the first line of the screen.
  - To delete the record, press **<F3>** again; to cancel, press **<F4>**.
5. When finished reviewing the data records, press **<F4>** once to return to the data-collection screen or twice to return to the application menu.

# Chapter 3

# Transferring Files and Data

## Overview

When you are finished inputting data by scanning bar codes or collecting data in a file, transmit (upload) the files from the PT40 to the host PC using **XFER32**. **XFER32** is a data transfer application that is included on the CD that came with your Falcon PT40. Refer to [Using XFER32 on page 3-2](#).

**XFER32** runs on Microsoft Windows versions '98, 2000, Me, NT, and XP.

Utilities are available on the CD that came with your PT40 and updates are free from PSC's website. Click on the **Support** link at [www.pscnet.com](http://www.pscnet.com) to download the most current file transfer program.



You can also download **PDTFER** from PSC's website if you use a DOS Host PC. **PDTFER** is a DOS file transfer program that runs on a DOS Host PC by issuing commands on the DOS command line.

Refer to [PT40 Dock, Serial Cable, and Power Adaptor on page B-1](#) for detailed information on how to connect the PT40 to a PC.

Use only the Falcon PT40 Dock or PT40 serial cable for data transfer. The use of another dock or serial cable could void your warranty. For a list of PT40 accessories and part numbers, refer to PSC's Price Book at: <http://www.pscnet.com>.

The following topics are covered in this section of this manual:

- [Uploading Data to the Host PC starting on page 3-2](#).
- [Using XFER32 starting on page 3-2](#).
  - [XFER32 Setup starting on page 3-3](#).
  - [Sending and Receiving Data with XFER32 starting on page 3-6](#)
- [Downloading Applications with PPGXFER starting on page 3-8](#)
- [Removing Collected Data from Memory starting on page 3-13](#).

## Uploading Data to the Host PC

To upload data to the Host PC from the PT40, complete the following steps:

1. Prepare the Host PC to receive the collected data.
2. Prepare the Falcon PT40 to upload (transmit) the collected data.  
From the program menu on the PT40; select <F3> to display the **File Options** menu.

```
INV MGMT␣  
F2=COLLECT  
F3=FILE OPTIONS  
F4=EXIT
```

3. Select <F2> to display the **Send File** menu.

```
*FILE OPTIONS*  
F2=SEND FILE  
F3=ERASE FILE  
F4=EXIT␣
```

4. Select <F2> to upload the data via the serial connection.

```
*SEND FILE*  
F2=SERIAL  
F4=EXIT  
␣
```

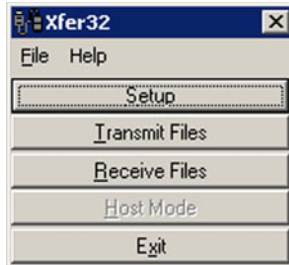
## Using XFER32

**XFER32** is a communications application used to transfer data between the Falcon PT40 and a Host PC. A copy of **XFER32** was included on the CD that came with your Falcon PT40 and is installed with the PT40 applications automatically.

## XFER32 Setup

When you start **XFER32**, the user interface, shown in [Figure 3-1](#), opens.

**Figure 3-1. XFER32 User Interface**



To prepare for data transfer between the PC and the PT40, click on the **Setup** button to open the **Setup** dialog box, which contains three tabbed sections:

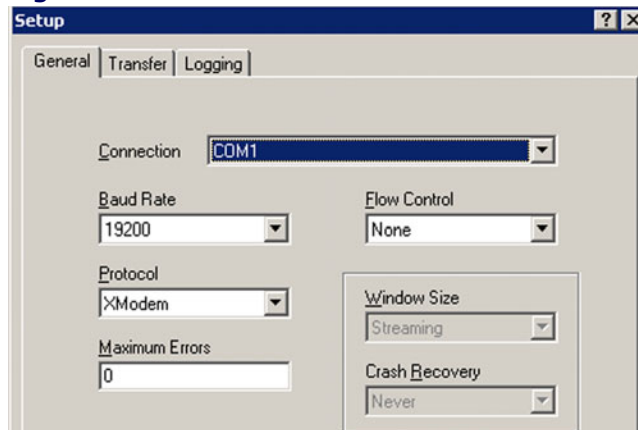
- [General Tab on page 3-3.](#)
- [Transfer Tab on page 3-5.](#)
- [Logging Tab on page 3-6.](#)

The settings in these dialogs can be modified or customized to meet your communications requirements.

### General Tab

The **General** tab is the first tab displayed on the **XFER32 Setup** dialog box. Modify the PT40's **Connection**, **Baud Rate**, **Flow Control**, **Protocol** (**ACK/NAK** and **XModem** are the only protocols supported by the PT40) on this tab.

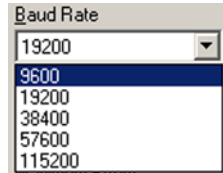
**Figure 3-2. General Tab**



**Connection** Enter the **Connection** port for file transfers. Select from the list of detected serial ports or modems.



**Baud Rate** Select a **Baud Rate** for serial communications from the pull-down list. The default value for XFER32 is 19200. The default value for the PT40 is 9600.



**Note:** The PT40 supports only baud rates up to 38400.

**Protocol** Select either **XModem** or **ACK/NAK** as the file transfer **Protocol** for sending and receiving files.

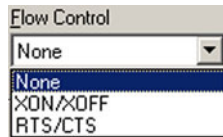


**NOTE:** ZModem Protocol is NOT supported by the Falcon PT40.

**NOTE:** The PT40 defaults to the **ACK/NAK** protocol unless you select **XModem**. XFER32 defaults to the **ZModem** Protocol. **ACK/NAK** and **XModem** Protocol are the only two protocols supported by the PT40.

**Maximum Errors** Enter the maximum number of **Errors** permitted before a file transfer is aborted. Range: 1 to 50. 0 specifies no limit to the number of file transfer errors.

**Flow Control** Select the mechanism used to control the flow of data. Sender and receiver must agree on the flow control method.



**Note:** **RTS/CTS** is the default. Use either **None** or **RTS/CTS**. **XON/XOFF** is not supported by the PT40.

**None** No flow control used.

**XON/XOFF** **NOTE:** ZModem Protocol is NOT supported by the Falcon PT40. This feature is only available with ZModem protocol.

**RTS/CTS** Hardware flow control that uses **Request to Send (RTS)**, and **Clear to Send (CTS)** serial port lines to communicate when to suspend and resume data transfer.

**Window Size** **NOTE:** ZModem Protocol is NOT supported by the Falcon PT40. This feature is only available with ZModem protocol.

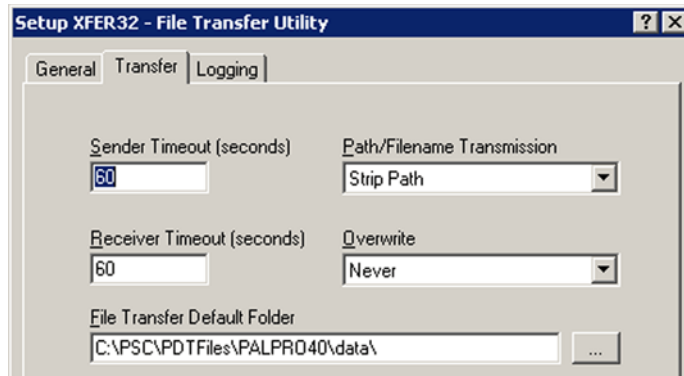


**Crash Recovery** NOTE: ZModem Protocol is NOT supported by the Falcon PT40. This feature is only available with ZModem protocol.

## Transfer Tab

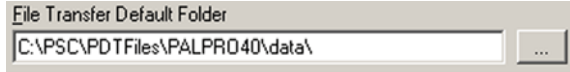
Select the **Transfer** tab to establish file transfer settings.

**Figure 3-3. Transfer Tab of the File Transfer Utility**



<b>Sender Timeout (Seconds)</b>	Enter the maximum number of seconds to wait for a connection when sending files. A value of 0 waits indefinitely.
<b>Receiver Timeout</b>	Enter the maximum number of seconds to wait for a connection when receiving files. A value of 0 waits indefinitely.
<b>Path/Filename Transmission</b>	NOTE: ZModem Protocol is NOT supported by the Falcon PT40. This feature is only available with ZModem protocol.
<b>Overwrite</b>	Select to determine the action the receiver takes when a received file already exists.
Source Longer or Newer	Overwrites the existing file if the received file is longer or newer.
CRCs Don't Match	Overwrites the existing file if the CRCs of both files don't match.
Append	Appends the received file to the existing one.
Always	Overwrites the existing file with the one received.
Source Newer	Overwrites the existing file if the received file is newer.
Date/Length Don't Match	Overwrites the existing file if the dates or lengths of both files don't match.
Never	Skips the transfer if the received file already exists.

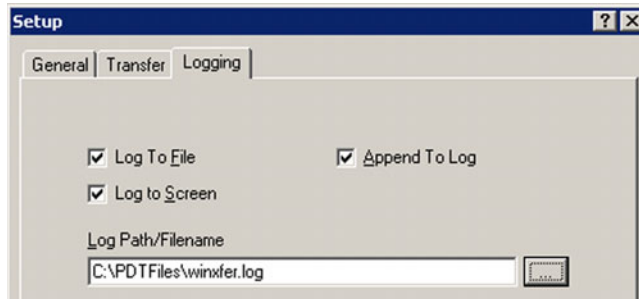
**File Transfer Default** Enter the **File Transfer Default** folder for storing received files. Use the **Browse** button to locate a new location.



## Logging Tab

Select the **Logging** tab to establish settings for the communications log. The communications log can be helpful as a trouble-shooting aid.

**Figure 3-4. Logging Tab of the File Transfer Utility**



- Log To File** Specifies that the log is to be written to a text file.
- Log To Screen** Specifies that the log is displayed on screen.
- Append to Log** This option becomes available when you select **Log to File**. When enabled, **Append to Log** adds log information to the end of the log file. If not enabled, new log information replaces the previous log file.
- Log Path/ Filename** Specify the location for storing the communications log. If a path is not given, the file is stored in the **Default File Transfer** folder.
- Browse** Use the **Browse** button to locate a new log file.

## Sending and Receiving Data with XFER32

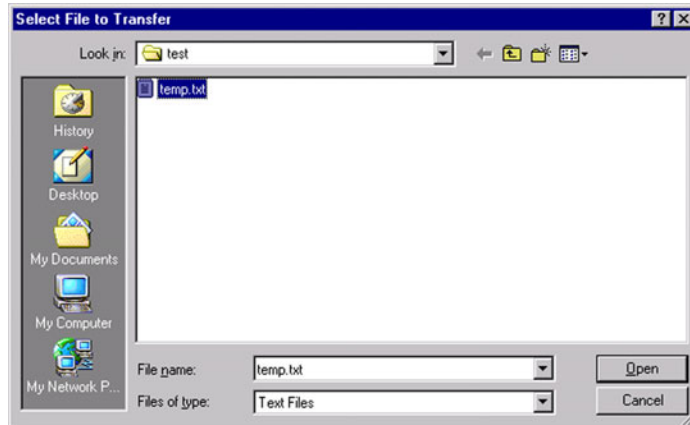
Verify that the PT40 is properly attached to the host PC. If you have a PT40 dock for your PT40, make sure that the dock is properly attached to the PC.

Refer to [Transmit Files](#), below for specifics on sending files. Refer to [Receive Files on page 3-7](#) for specifics on receiving files

## Transmit Files

1. To transmit files from the Host PC to the PT40, select the **Transmit Files** button from the **XFER32** user interface. [Figure 3-1 on page 3](#) illustrates the user interface.

**Figure 3-5. Send File to PT40 Window**

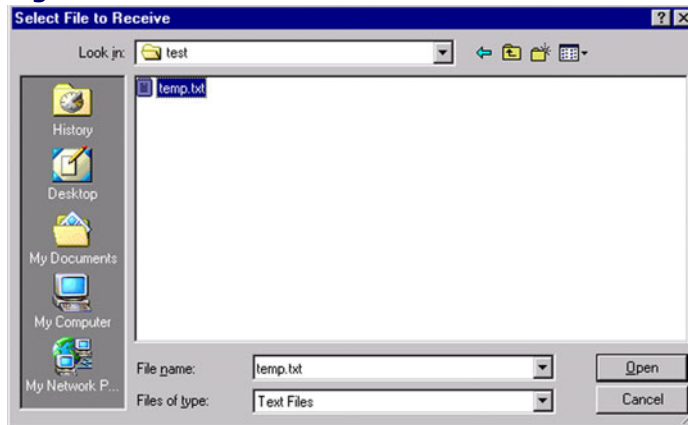


2. Select the file to send.
3. Click **Open** to send the file to the data collection terminal

## Receive Files

When receiving files from a data collection terminal, a prompt appears. Enter the name of the incoming file.

1. To receive files from the Host PC to the PT40, select the **Receive Files** button from the **XFER32** user interface. [Figure 3-1 on page 3](#) illustrates the user interface.
2. Select (or enter) a filename for the file.

**Figure 3-6. Receive File from PT40 Window**

3. Click **Open** to begin receiving the file.

## Downloading Applications with PPGXFER

The Falcon PT40 comes with a collection of applications and utilities. This collection is called the **PALPRO40**. Use **PPGXFER** to download programs to the PT40 from your Windows compatible PC. A copy of **PPGXFER** is included on the CD that came with your Falcon PT40 and is installed automatically when you install **PPG**.

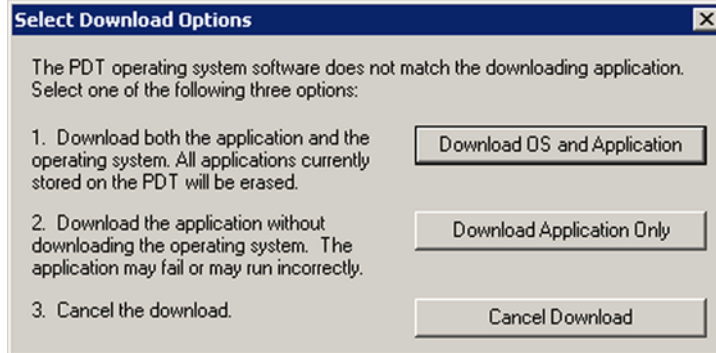


The windows shown for **PPGXFER** were captured on a PC running Microsoft Windows® 2000. If your PC uses another version of Windows, **PPGXFER** windows may appear slightly different.

**PPGXFER** checks the version number of the PT40's operating system. If it is different from the **PALPRO40** version, it installs the operating system along with the application. During the application download process, a number of steps take place.

1. The downloader checks the version number of the portable's operating system.
2. If the portable's operating system is out-dated, the downloader allows you to choose from three different options.

**Figure 7. Updating the Operating System’s Download software.**



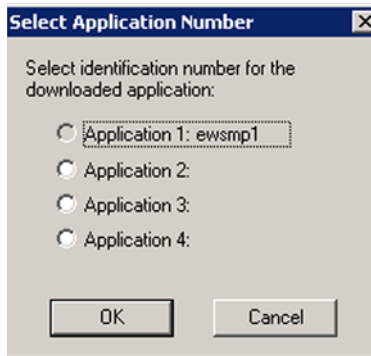
**Download the new OS and Application** This option removes any application currently stored on the Falcon PT40.

**Download Application Only** The currently loaded application are not deleted, but the currently downloading application may not run correctly on the outdated operating system.

**Cancel Download** The download process ends without downloading your application.

3. The downloader requests a list of currently loaded applications from the Falcon PT40. The Falcon PT40 can hold up to four applications.

**Figure 8. Select an Application from the List of Options.**

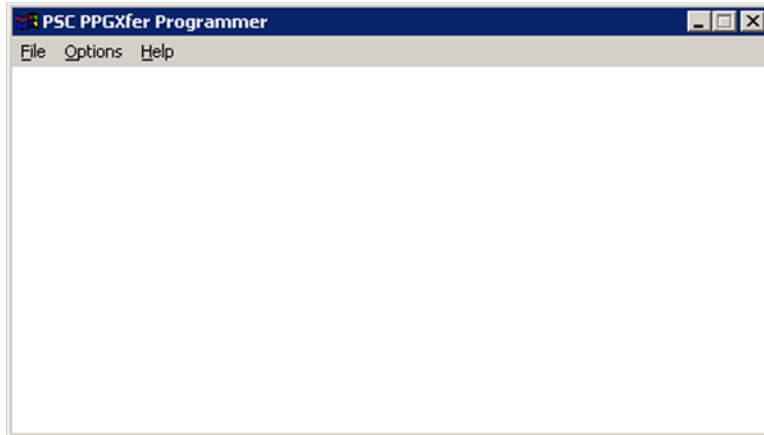


4. Choose the location where you want to load your new application. Once you select a location, your application is downloaded.

To customize the installation of an application, complete the following steps:

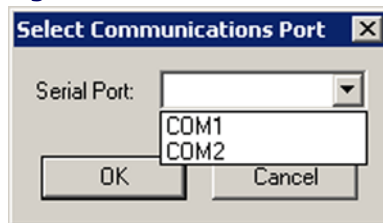
5. Connect the PT40 to the PC (refer to [PT40 Serial Configuration and Connection on page C-1.](#)).
6. Double-click on the **Portable Programmer** icon in the PSC PAL program group to open the **PSC PPGXFER Programmer** window.

**Figure 3-9. PPGXFER Programmer Window**



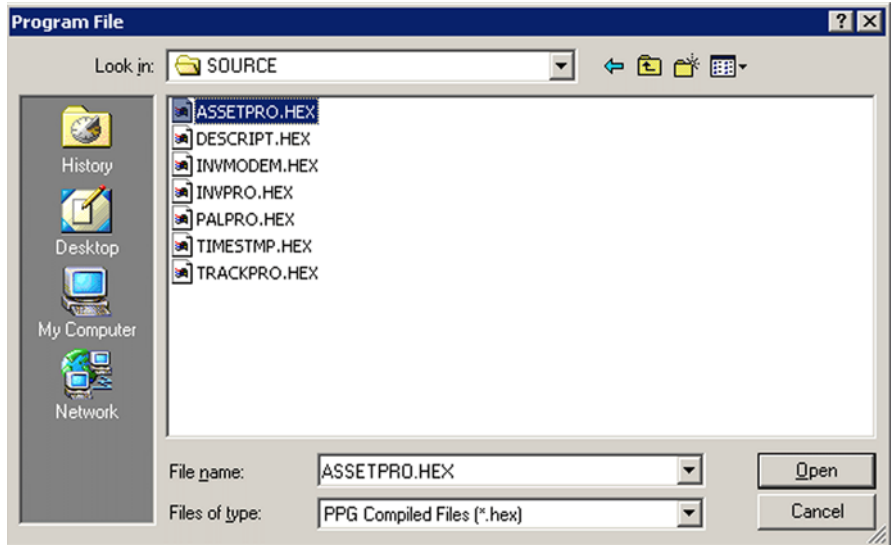
7. From the menu, select **Options > Settings** to open the **Communications Settings** dialog box.

**Figure 3-10. The Communications Settings Dialog**



8. Select the desired serial port. Then select **OK**.
9. From the **PSC PPGXFER Programmer** main window, select **File > Open** to open the **Program File** window. Refer to [Figure 3-11 on page 11.](#)
10. Select the application to be installed in the PT40, and click **OK**.
  - A **Programming the portable** message opens in the programmer window. Additional messages and the percentage of completion are displayed as the programming progresses.

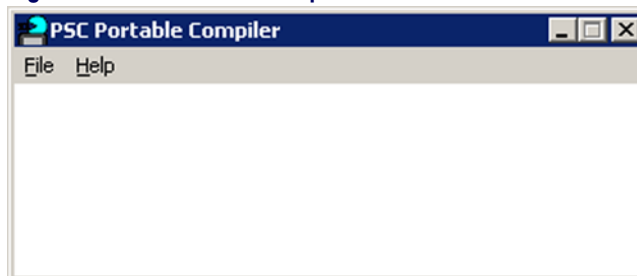
**Figure 3-11. The Program File Window**



- When programming is completed, the message **Portable successfully programmed** opens in the window, and the name of the program file is displayed in the window's title bar.

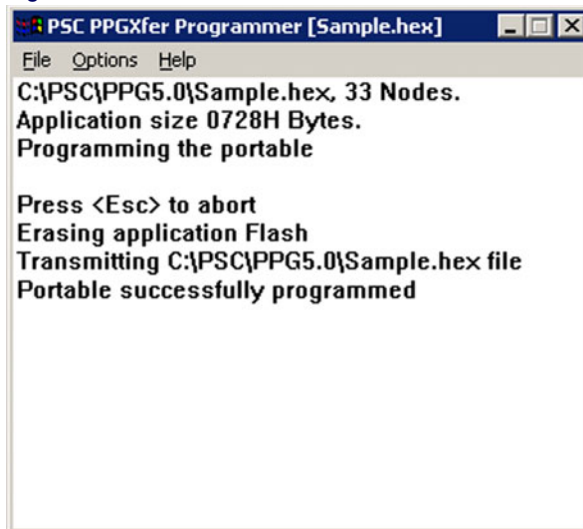
11. Select **File > Exit** to close the **PSC PPGXFER Programmer** main window.
12. Turn the portable on.
13. In the PPG window, if the application to be downloaded is not already open, use the **File > Open** command to open it.
14. Select **File > Download Program** from the menu. If a dialog box appears, asking if you want to save changes to the file, answer **Yes** or **No**.
  - The Compiler window appears momentarily as PPG compiles the program, translating it into a language understood by the portable.

**Figure 12. PSC Portable Compiler Window**



- The original **\*.scr** file remains intact, and the compiled file is given the same name, but with a **\*.hex** extension. It is this **\*.hex** file that is downloaded into the portable.
- When compilation is complete, the **PPGXFER** window opens, displaying the message **Initiating Download**.
- If a connection between the PC and the PDT is successfully established, the window shows further messages as the compiled **\*.hex** file is loaded into the portable.

Figure 13. PPGXFER Window



- When downloading is complete, you'll see the message **Portable successfully programmed** in the **PPGXFER** window, and your application's initial window appears in the portable's display.
15. Double-click on the **PPGXFER** window's **Control Menu** box or select **File > Exit** to close the **PPGXFER** window.



## Removing Collected Data from Memory

After uploading a file from the PT40 to the PC, erase the file from the PT40's memory. To do so, complete the following steps:

1. From the program menu on the PT40 (such as the one from **TRACK-PRO** below), select **<F3>** to display the **File Options** menu.

```
ITEM TRACKING␣  
F2=COLLECT  
F3=FILE OPTIONS  
F4=EXIT
```

2. Select **<F3>** to display the **Erase File** menu.

```
*FILE OPTIONS*  
F2=SEND FILE  
F3=ERASE FILE  
F4=EXIT␣
```

3. Press the **<F3>** key to erase the file.

```
*ERASE FILE*  
  
F3=ERASE  
F4=EXIT␣
```

# NOTES

# Appendix A

## Falcon PT40 Batteries

### Battery Overview

The PT40 runs on two types of batteries. The main lithium-ion battery supplies operating power for the PT40. The internal lithium battery provides backup power to maintain the random-access memory and the real-time clock when the main battery is discharged or removed.

The following topics are covered in this section of this manual:

- [Battery Overview](#)
- [Main Battery Installation page A-3.](#)
- [Recharging the Batteries starting on page A-4.](#)
  - [Using the Dock Charging Slot \(Battery only\) page A-4.](#)
  - [Using the PT40 Dock \(PT40 Unit\) page A-5.](#)
  - [Using the Serial Cable and Power Adaptor \(PT40 Unit\) page A-6](#)
  - [Storing the Main Battery page A-7.](#)
  - [Backup Battery page A-7.](#)
- [Low Battery Indication starting on page A-7.](#)
  - [Main Battery page A-7.](#)
  - [Backup Battery page A-8.](#)

When you first remove your Falcon PT40 from the box, the main battery may require charging. Please check the charge on the battery prior to first use.



PSC recommends that you purchase two main Lithium-ion batteries and keep a spare battery charging in the battery slot at all times. Then you only have to swap out the batteries when the main battery runs low, rather than stopping to recharge one battery.

Always charge the battery within the temperature range of 32°–113°F (0°–45°C).



Recycle Lithium-Ion Batteries.



CAUTION



Do not throw Lithium-Ion Batteries in the trash.

Use only a power adaptor and main battery supplied by a PSC dealer. The user of another adaptor or battery can damage the PT40 and void your warranty. For the correct power adaptor and main battery for the Falcon PT40, please refer to the PSC Price Book on [www.pscnet.com](http://www.pscnet.com)

Lithium-ion batteries benefit from an initial 'conditioning'. For the first 3 charge cycles, fully charge the main battery for at least 12 to 24 hours. Then allow it to fully discharge before recharging it again.

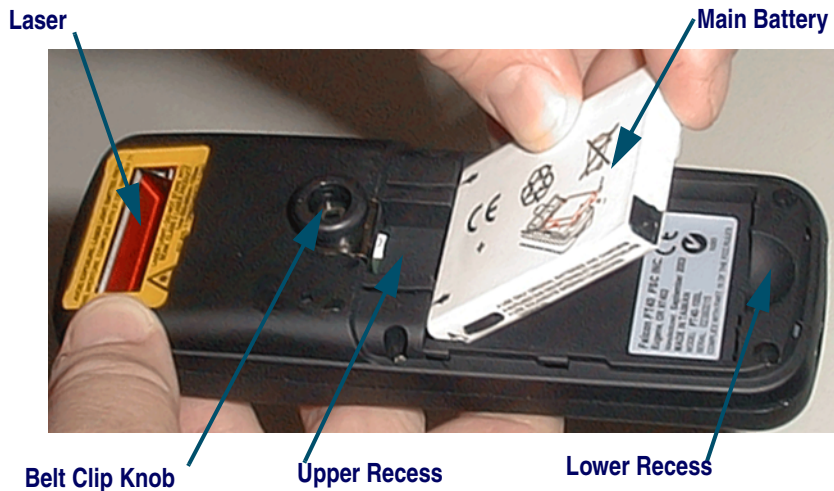


After a prolonged storage period the main battery may again require three to four charge/discharge cycles to achieve maximum capacity.

Power is not required to transfer data to the Host PC using the serial cable, but is required when using the dock. Use the Power Adaptor if the battery is discharged.

While the PT40 is recharging, the LED on the front of the PDT is red. When the battery is fully charged, the LED changes from red to green.

**Figure A-1. The PT40 and Main Battery**

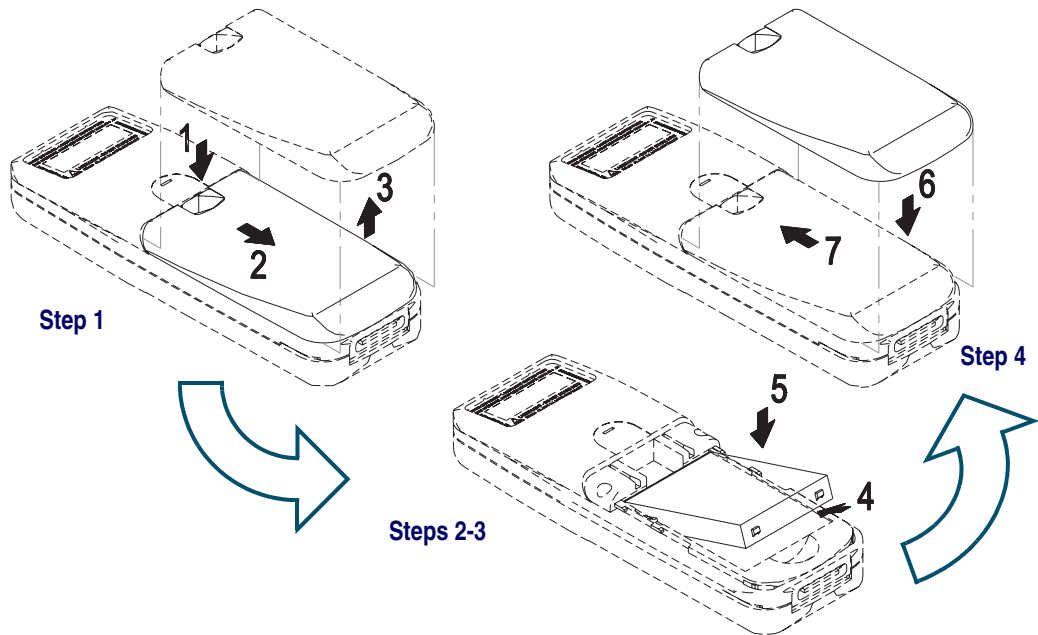


# Main Battery Installation

To install the main lithium ion battery, complete the following steps as shown in [Figure A-2 on page A-3](#):

1. Press the release button on the back of the unit, while sliding the battery cover down until it stops. Lift the cover off from the bottom of the unit.

**Figure A-2. Battery Insertion**



2. Line up the four metal contact points on the back of the battery with the matching contact wires inside the battery compartment.
3. Insert the battery, with the arrows and connectors oriented at the top of the compartment as shown in [Figure A-1 on page A-2](#). Press the bottom edge until it snaps into place.
4. To replace the battery cover door, insert the release button into the upper recess, press the battery cover down, and slide the cover up until it locks into place.

## Recharging the Batteries

If the PT40 will not turn on or if the message **Low Battery** appears on the display, the main battery needs recharging. A full charge takes about 4 hours. There are three ways to recharge the main lithium ion battery of the PT40 portable.

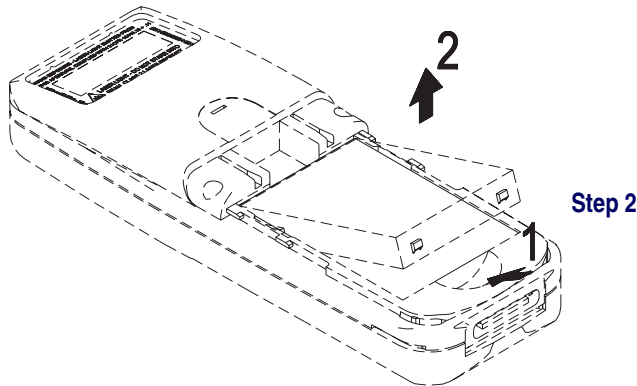
1. Connect the PT40 to a serial cable and power adaptor connected to a power source.
2. Place the PT40 into a PT40 dock connected to a power source.
3. You can also remove the main battery from the PT40 and insert it into the charging slot at the back of the dock. While charging a battery in the slot, the red LED on the right front of the dock remains on.

### Using the Dock Charging Slot (Battery only)

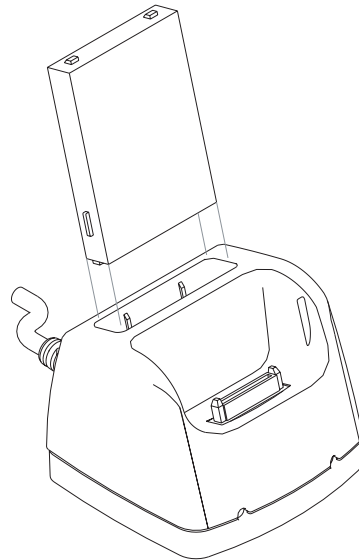
To recharge the main battery without the PT40, complete the following steps:

1. If the PT40 is on, turn it off.
2. Remove the main battery from the PT40 as shown in [Figure A-3](#).

**Figure A-3. Removing the Main Battery from the PT40**



3. Place the main battery into the charging slot at the back of the PT40 Dock as shown in [Figure A-4 on page A-5](#).

**Figure A-4. Charging the Main Battery in the Charging Slot****Step 3**

4. Attach the small, round plug of the 9-volt power adapter to the round power input jack on the 9-pin connector at the end of the Dock's cable.
5. Plug the power adapter into a wall outlet or a power strip. The LED on the left front of the Dock will be red while it is powered.

## Using the PT40 Dock (PT40 Unit)

To recharge the PT40 using the PT40 Dock, leave the main battery in the PT40 and complete the following steps as shown in [Figure A-5 on page A-6](#):

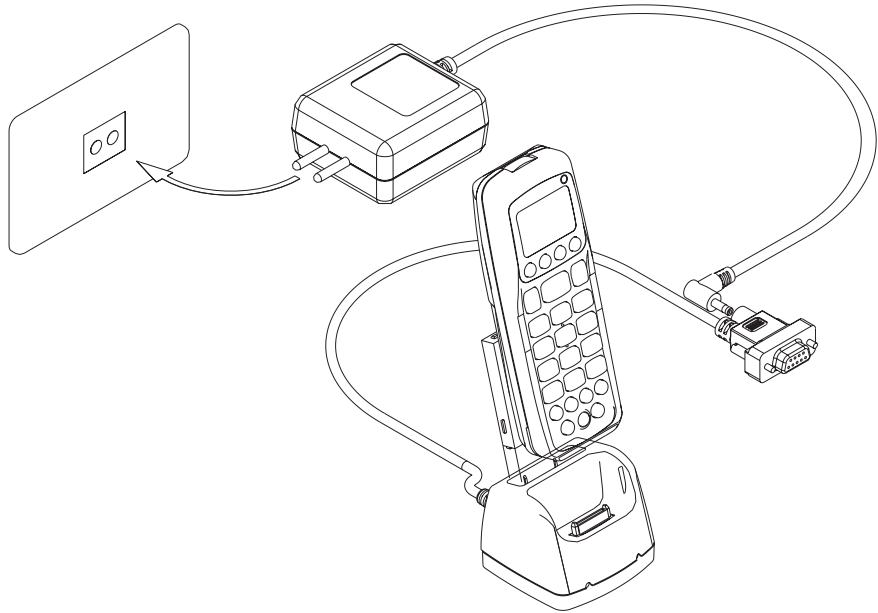
1. If the PT40 is on, turn it off.



**If the PT40 remains in the dock for an extended period of time, the charger in the PT40 will cycle (several hours per cycle) between charged (green LED) and charging (red LED) to keep the battery topped off.**

2. Place the PT40 into the docking space in the PT40 Dock.
3. Attach the small, round plug of the 9-volt power adapter to the round power input jack on the 9-pin connector at the end of the Dock's cable as shown in [Figure A-5 on page A-6](#).

**Figure A-5. Charging the PT40 in the Dock**



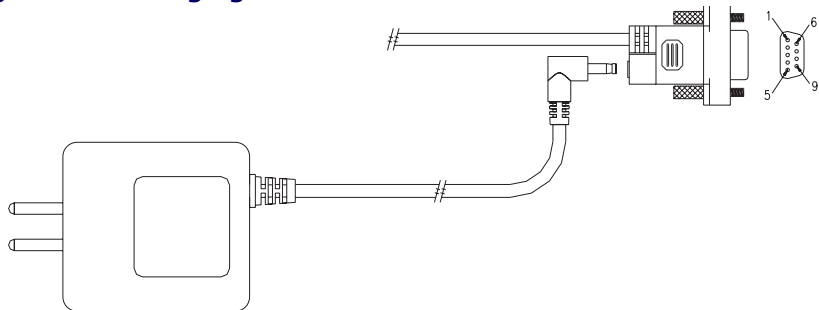
4. Plug the power adapter into a wall outlet or a power strip. The LED on the left front of the Dock will be red while it is powered.

## Using the Serial Cable and Power Adaptor (PT40 Unit)

To recharge the main battery using the serial cable and power adapter, complete the following steps:

1. If the PT40 is on, turn it off.

**Figure A-6. Charging the PT40 with the Serial Cable**





2. Connect the PSC serial cable to the serial interface connector at the bottom of the PT40. (It is not necessary to have the other end of the cable connected to a PC when recharging.)
3. Attach the small, round plug of the 9-volt power adapter to the round power input jack on the 9-pin connector of the serial cable as shown in [Figure A-6 on page A-6](#).
4. Plug the power adapter into a wall outlet or a power strip.
5. While the PT40 is being charged, the LED on the front of the PT40 will be red. When the PT40 is done charging, the LED will change to green.

## Storing the Main Battery

The typical life-span of a Lithium-ion battery is 2-3 years from the date of manufacture whether or not it is used. When a Lithium-ion battery is used, the typical life span is approximately 300-500 discharge/charge cycles.

Store the main battery between -4° and 122°F (-20° to 50°C). Cool storage and maintaining the battery in a partially charged state when it is not in use retard the aging process.

## Backup Battery

The PT40 contains a lithium battery as a backup to save application program codes, collected data and system information, including the clock setting. Under most circumstances, a fully charged backup battery will keep information for 7-10 days if the main battery is completely discharged or removed. This should provide sufficient time to recharge the main battery without risk of losing data. The backup battery is recharged whenever a charged main battery is installed as well as when the power supply is connected.

## Low Battery Indication

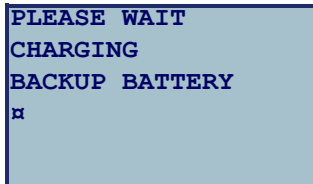
### Main Battery

The PT40 indicates when the main battery is low by flashing **LOW BATTERY** on the display. About 2 hours of use remain before the main battery reaches its automatic low-power shutdown point.

If the main battery is not recharged before it reaches the low-power shutdown point, it continues to discharge, and the PT40 turns off automatically. Even then, the PT40 continues to save data, because of the backup battery. It is important, however, to recharge the main battery at this time to avoid running down the backup battery and losing data.

## Backup Battery

When the backup battery is low, or after inserting a main battery if the PT40 has been stored for a long time without charging, the following message appears on the display:



The backup battery begins recharging as soon as a charged main battery is inserted. The message should disappear in less than 30 minutes. After the message disappears, there will be at least 2 hours of backup power available for the RAM and clock. It will take about 20 hours to fully charge a completely discharged backup battery.



**Do not remove the main battery while the message is on the display, or data may be lost. Charge the main battery inside the PT40 while using the Dock or serial cable connected to a power source.**

If the message does not disappear or occurs other than at initial use after prolonged storage, then the backup battery may no longer be accepting a charge and should be replaced by an authorized PSC Service Center.

# Appendix B

## PT40 Dock, Serial Cable, and Power Adaptor

### Overview

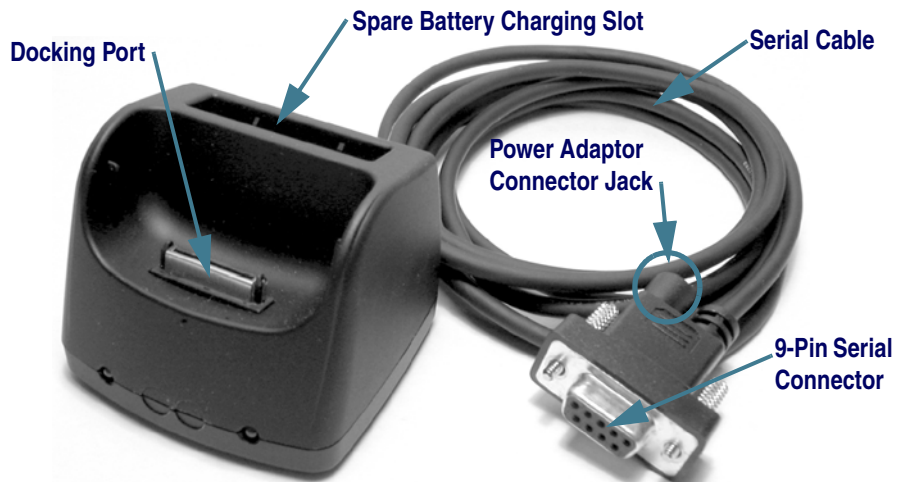
The PSC PT40 Dock and Serial cable are specially designed for use with the PT40. Use the Dock or Serial cable for transferring data and files between the PT40 and a PC, and for recharging the PT40's batteries.

To transmit data to or from the PT40, place the unit in the dock or connect the serial cable. To use the PT40 for data collection, you must disconnect it from the dock or serial cable. You can also use the PT40 Dock to recharge the PT40's rechargeable main battery and backup battery. For more information on batteries, refer to [Falcon PT40 Batteries on page A-1](#).

### PT40 Dock

Set up the PT40 Dock as described in [Attaching the PT40 to a PC page B-3](#).

**Figure B-1. Falcon PT40 Dock**



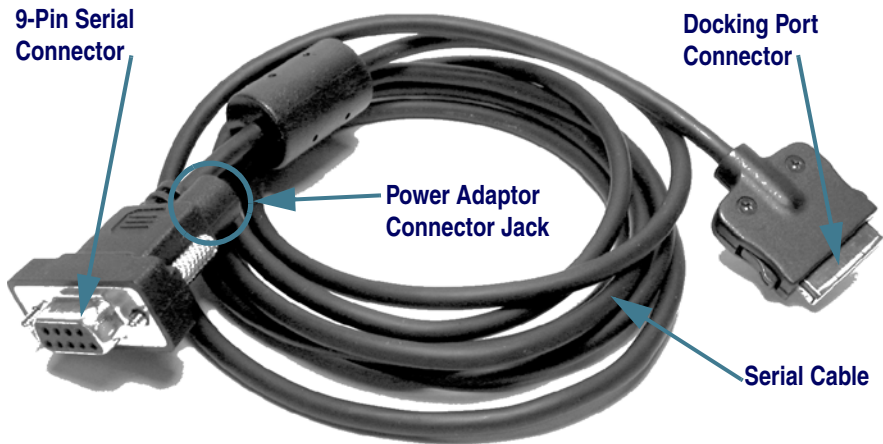
When the PT40 is in the Dock, and the Dock is connected to a PC, you can download programs or data to it, or upload data from it.

## Serial Cable

The serial cable works much like a dock, in that you can use it to transfer data or charge the PT40's main battery.

- To transfer data, set up the PT40 and serial cable as described in [Attaching the PT40 to a PC page B-3](#).
- To charge the PT40's batteries, connect the PT40, serial cable, and power adaptor to a 110-volt outlet or power strip.

**Figure B-2. Falcon PT40 Serial Cable**



## Power Adaptor

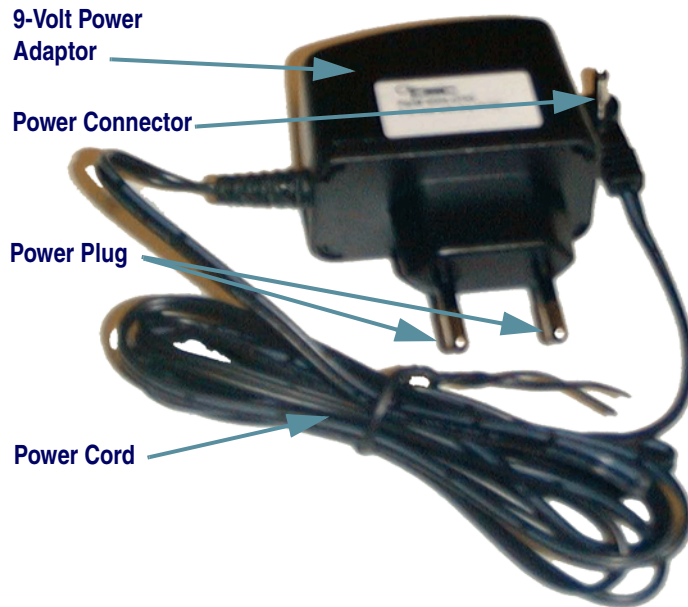
To recharge the PT40's batteries, the Power Adaptor is also required. You do not need a Power Adaptor to transfer data using the serial cable, but it is required to transfer data using the Dock.



**Use only a 9-volt power adaptor for your country supplied by PSC. The use of another adaptor can damage the PT40 and void your warranty.**

The EU connector is shown in [Figure B-3 on page B-3](#). Depending upon your country, the power supply may look different. For the correct adaptor for the PT40 for your country, refer to the PSC Price Book at [www.pscnet.com](http://www.pscnet.com).

The power adaptor is AC input rated 100 to 240 VAC (50--60 Hz); Output = 9 VDC @ 1.3A.

**Figure B-3. Falcon PT40 Power Adaptor**

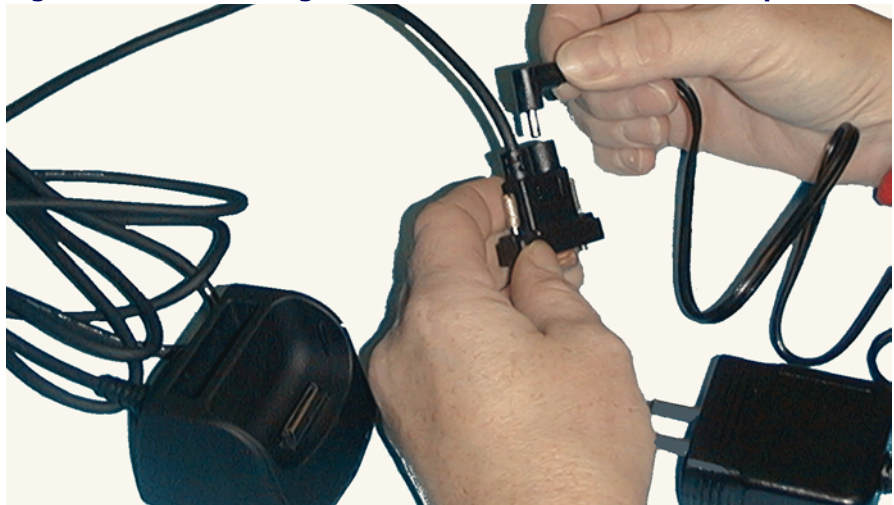
## Attaching the PT40 to a PC

Use PT40 Dock or Serial cable to connect the PT40 to a PC. The PT40 9-volt power adaptor is required in conjunction with the dock or serial cable to recharge the main battery on the PT40.

To connect the dock to a PC, complete the following steps:

1. Turn off the PC or workstation.
2. Attach the 9-pin serial connector of the Dock's cable to an available serial port on the PC. Make note of which one you use.
3. Insert the small, round plug of the power adapter to the power adaptor jack on the back of the 9-pin serial connector on the Docks' cable. (Refer to [Figure B-4](#).)
4. Place the PT40 into the dock, with the keypad facing out, or insert the docking port connector of the serial cable, into the matching port at the bottom of the PT40. (Refer to [Figure B-1](#) and [Figure B-2](#).)
5. Connect the PT40's 9-pin Serial Adaptor into the PC's COM1 or COM2 Serial port. (Refer to [Figure B-1](#).)

**Figure B-4. Connecting a Serial Device to the Power Adaptor**



6. Insert the power plug on the power adaptor into the correct outlet or power strip for your country. When the power adaptor is correctly connected, the left-most red light-emitting diode (LED) on the PT40 Dock lights up.
7. Turn the PC back on.

Remove the portable from the dock to use it for data collection.

## Using the Dock to Recharge the Main Battery

There are two methods for using the PT40 Dock to recharge the main Lithium-ion battery of the Falcon PT40.

- To use the first method, connect the PT40 to the dock connected to a power source, and charging takes place automatically. While the PT40 is being charged, the LED on the front of the PT40 will be red. When the PT40 is fully charged, the LED will change from red to green.
- To use the second method, remove the main battery or spare battery from the PT40 and insert it into the charging slot at the rear of the Dock. When you charge a battery in the slot, the red right-most LED stays on. The LED turns off when there is no battery in the slot.

Always charge the battery within the temperature range of 32°–113°F (0°–45°C). Refer to [Falcon PT40 Batteries on page A-1](#) for complete information on charging and recharging the PT40's batteries.

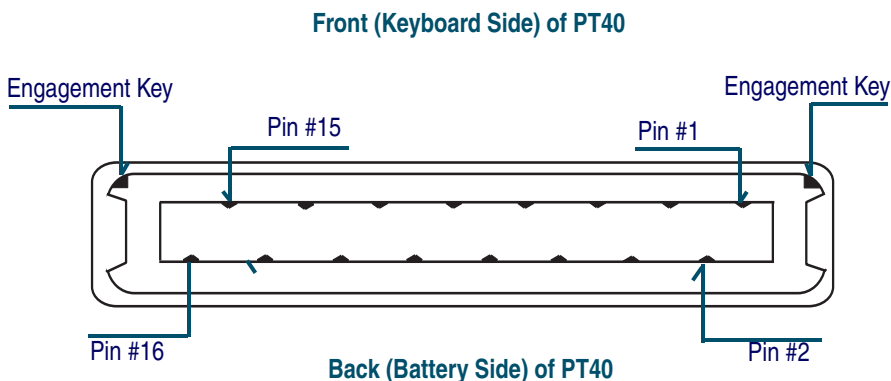
# Appendix C

## Connector Configurations

### Interface Cable Connector

Determine which pins are which, based upon the location of the engagement keys, located in the corners of the side that the odd pins are located on.

**Figure C-1. Interface Cable Connector Pinouts**



**Table C-1. Interface Cable Connector Pinouts**

Docking Connector Pin #s	Signal Name (I=Input, O=Output)	Description
1	I - RI	Ring
2	I - CD	Carrier Detect
3	I - DSR	Data Set Ready
4	I - CTS	Clear to Send
5	I - RXD~	Received Data
6	O - DTR	Data Terminal Only
7	O - RTS	Request to Send

Docking Connector Pin #s	Signal Name (I=Input, O=Output)	Description
8	O - TXD~	Transmitted Data
9	I - Docked ~	Connected to GND in Dock
10	GND	Power and Signal Ground
11	GND	Power and Signal Ground
12	I - V_CHARGE	Battery Charging Voltage (~ 9 volts)
13	I - V_CHARGE	Battery Charging Voltage (~ 9 volts)
14	O - VCC1	Signal to Dock (~ 3.3 volts)
15	I - VPP	Power from Dock (~ 4.75 volts)
16	I - VPP	Power from Dock (~ 4.75 volts)

## PT40 Dock

Figure C-2. PT40 Dock Pinouts

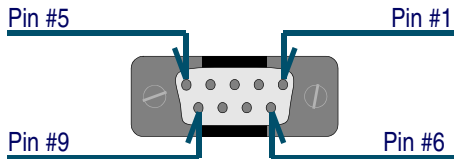


Table C-1. PT40 Dock Pinouts

Docking Connector Pin #	Signal Name
1	CD
2	TXD~
3	RXD~
4	DSR
5	GND
6	DTR
7	CTS
8	RTS
9	RI



# Appendix D

## Configuring with Bar Codes

This section provides bar codes for common setup parameters that can be used for programming the PSC PT40. Factory default settings are underlined.

### Predefined Defaults

D0



D2



D1



Serial defaults



### Code 39

#### ENABLE

On



Off



#### MINIMUM LENGTH

00



40



10



50



20



60



30



### MAXIMUM LENGTH

10



40



20



50



30



60



### ENABLE CHECKSUM

On



Off



### SEND CHECKSUM

On



Off



### FULL ASCII MODE

On



Off



### ACCUMULATE MODE

On



Off



### ENABLE AIAG ALTERNATE CHECK DIGIT

On



Off



# Interleaved 2 of 5

## ENABLE

On



Off



## MINIMUM LENGTH

2



30



6



40



10



50



20



60



## MAXIMUM LENGTH

10



40



20



50



30



60



## REQUIRED LENGTH *(no default; overrides minimum and maximum settings)*

2



12



4



14



6   
\* \$ + \$ - 0 9 0 6 0 A 0 6 E E \*

16   
\* \$ + \$ - 0 9 1 6 0 A 1 6 E E \*

8   
\* \$ + \$ - 0 9 0 8 0 A 0 8 E E \*

18   
\* \$ + \$ - 0 9 1 8 0 A 1 8 E E \*

10   
\* \$ + \$ - 0 9 1 0 0 A 1 0 E E \*

20   
\* \$ + \$ - 0 9 2 0 0 A 2 0 E E \*

**ENABLE CHECKSUM**

On   
\* \$ + \$ - 0 B 1 E E \*

Off   
\* \$ + \$ - 0 B 0 E E \*

**SEND CHECKSUM**

On   
\* \$ + \$ - 0 C 1 E E \*

Off   
\* \$ + \$ - 0 C 0 E E \*

**USE LENGTHS 6 AND 14 ONLY** *(case code)*

On   
\* \$ + \$ - 0 D 1 E E \*

Off   
\* \$ + \$ - 0 D 0 E E \*

**Codabar**

**ENABLE**

On   
\* \$ + \$ - 2 0 1 E E \*

Off   
\* \$ + \$ - 2 0 0 E E \*

**MINIMUM LENGTH**

04   
\* \$ + \$ - 2 1 0 4 E E \*

40   
\* \$ + \$ - 2 1 4 0 E E \*

10   
\* \$ + \$ - 2 1 1 0 E E \*

50   
\* \$ + \$ - 2 1 5 0 E E \*

20



60



30

**MAXIMUM LENGTH**

10



40

20

50



30



60

**SEND STOP/START**

On

Off**CONVERT CODABAR TO CLSI**

On

Off**Code 93****ENABLE**On

Off

**MINIMUM LENGTH**2

30





**MAXIMUM LENGTH**



**UPC-A**

**ENABLE UPC-A**



**SEND SYSTEM DIGIT**



**SEND CHECK DIGIT**



**CONVERT UPC-A TO EAN-13**



# UPC-E

## USE SYSTEM DIGIT 0

On



Off



## USE SYSTEM DIGIT 1

On



Off



## CONVERT UPC-E TO UPC-A

On



Off



## SEND SYSTEM DIGIT

On



Off



## SEND CHECK DIGIT

On



Off



# EAN/JAN

## ENABLE EAN-8/JAN-8

On



Off



## ENABLE EAN-13/JAN-13

On



Off



### CONVERT EAN-13 TO ISBN

On   
\* \$ + \$ - 3 B 1 E E \*

Off   
\* \$ + \$ - 3 B 0 E E \*

### SEND CHECK DIGIT

On   
\* \$ + \$ - 3 F 1 E E \*

Off   
\* \$ + \$ - 3 F 0 E E \*

## UPC/EAN/JAN Extensions

### ALLOW 2-DIGIT EXTENSIONS

On   
\* \$ + \$ - 3 C 1 E E \*

Off   
\* \$ + \$ - 3 C 0 E E \*

### ALLOW 5-DIGIT EXTENSIONS

On   
\* \$ + \$ - 3 D 1 E E \*

Off   
\* \$ + \$ - 3 D 0 E E \*

### REQUIRE EXTENSIONS

On   
\* \$ + \$ - 3 E 1 E E \*

Off   
\* \$ + \$ - 3 E 0 E E \*

## Code 128

### ENABLE

On   
\* \$ + \$ - 4 0 1 E E \*

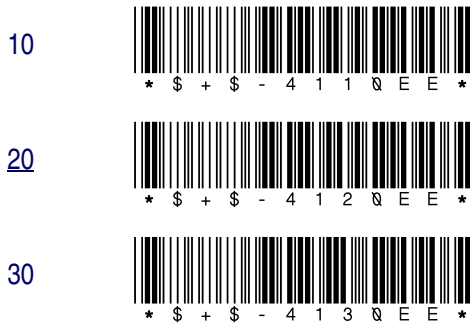
Off   
\* \$ + \$ - 4 0 0 E E \*

### MINIMUM LENGTH

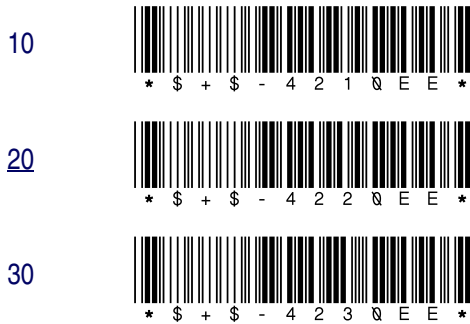
2   
\* \$ + \$ - 4 1 0 2 E E \*

40   
\* \$ + \$ - 4 1 4 0 E E \*





**MAXIMUM LENGTH**



**ENABLE UCC128**



**Other Controls**

**ENABLE MANUAL RESET**



**ADD CODE ID**



**AUTO-OFF** *(in minutes)*

Off   
\* \$ + \$ - B 2 0 0 E E \*

30   
\* \$ + \$ - B 2 3 0 E E \*

5   
\* \$ + \$ - B 2 0 5 E E \*

60   
\* \$ + \$ - B 2 6 0 E E \*

10   
\* \$ + \$ - B 2 1 0 E E \*

90   
\* \$ + \$ - B 2 9 0 E E \*

**BACKLIGHT DURATION** *(in seconds)*

Always On   
\* \$ + \$ - E 2 0 0 E E \*

30   
\* \$ + \$ - E 2 1 5 E E \*

10   
\* \$ + \$ - E 2 1 0 E E \*

60   
\* \$ + \$ - E 2 6 0 E E \*

**BEEPER VOLUME**

Increase   
\* \$ + \$ - B C 0 8 E E \*

Low   
\* \$ + \$ - B C 0 1 E E \*

Decrease   
\* \$ + \$ - B C 0 9 E E \*

High   
\* \$ + \$ - B C 0 7 E E \*

Off   
\* \$ + \$ - B C 0 0 E E \*

**ERROR TONE**

Low   
\* \$ + \$ - B D 0 1 E E \*

High   
\* \$ + \$ - B D 0 7 E E \*

Medium   
\* \$ + \$ - B D 0 4 E E \*

**GOOD-READ TONE**

Low



Medium High



Medium Low



High



**GOOD-READ BEEPS**

1



3



2



4



**GOOD-READ TONE DURATION** *(in seconds)*

0.07



0.22



0.14



0.45



**KEYPAD TIMEOUT** *(Intercharacter Delay in seconds)*

Off



2 Sec



1/4 Sec



4 Sec



1/2 Sec



8 Sec



3/4 Sec



16 Sec



1 Sec



24 3/4 Sec



### KEYBOARD CLICK

On



Off



## Clock and Calendar

### TIME / DATE FORMAT

Set Time



Set Date



### TIME FORMAT

12-Hour



24-Hour



### DATE FORMAT

U.S.



International



## Serial Parameters

### HOST SELECT *(no default)*

AT, PS/2, or compatible



IBM terminal



### BAUD RATE

300



1200



600   
\* \$ + \$ - C 1 0 1 E E \*

2400   
\* \$ + \$ - C 1 0 3 E E \*

4800   
\* \$ + \$ - C 1 0 4 E E \*

38,400   
\* \$ + \$ - C 1 0 7 E E \*

9600   
\* \$ + \$ - C 1 0 5 E E \*

76,800   
\* \$ + \$ - C 1 0 8 E E \*

19,200   
\* \$ + \$ - C 1 0 6 E E \*

**DATA BITS**

7   
\* \$ + \$ - C 2 0 7 E E \*

8   
\* \$ + \$ - C 2 0 8 E E \*

**PARITY**

None   
\* \$ + \$ - C 3 0 0 E E \*

Even   
\* \$ + \$ - C 3 0 4 E E \*

Odd   
\* \$ + \$ - C 3 0 3 E E \*

**STOP BITS**

1   
\* \$ + \$ - C 4 0 1 E E \*

2   
\* \$ + \$ - C 4 0 2 E E \*

**ENABLE XON/OFF**

On   
\* \$ + \$ - C 5 1 E E \*

Off   
\* \$ + \$ - C 5 0 E E \*

**LINEFEED**

None   
\* \$ + \$ - C 6 0 0 E E \*

Add LF   
\* \$ + \$ - C 6 0 2 E E \*

Strip LF



**PROTOCOL**

EOR only



Xmodem



CR with checksum and ACK/NAK response



**TIMEOUT** *(in 100-millisecond units)*

0



50



10



75



25



99



# Appendix E

## Programming Parameters

### Overview

The application PALPRO40 loaded some default parameter settings. (Refer to [Table E-2 on page E-3](#).) These settings work for most applications.

This appendix provides specifics on all programmable parameter settings for the PT40.

- [Table E-1 on page E-2](#), lists programmable settings and parameter terms.
- [Table E-2 on page E-3](#), lists default parameters and programming IDs for predefined defaults. These settings work for most applications.
- [Table E-4 on page E-7](#) lists save-and-exit settings.
- [Table E-6 on page E-9](#) provides **Code Parameters, ID#s, Type, On/Off, Value, Strings, Immediate, and Acceptable Input**.
- [Table E-9 on page E-13](#) provides **Code Parameters** for serial communications, **ID#s, Type, On/Off, Value, Strings, Immediate, and Acceptable Input**.

To reset or change the settings on your PT40, you can:

- Scan the bar codes in [Table E-2 on page E-3](#), [Table E-3 on page E-4](#), or [Configuring with Bar Codes on page D-1](#).
- Create custom bar codes for specific settings (refer to [Guidelines for Creating Programming Bar Codes starting on page E-5](#)).
- Download new programs to the PT40 from Windows (refer to [Downloading Applications with PPGXFER starting on page 3-8](#))
- Refer to [Serial Parameters on page E-12](#).

For information about using PAL, including installation instructions refer to [Using PALPRO40 to Collect Data starting on page 2-7](#), or to the *Portable Applications Library (PAL) User's Guide*, available at [www.pscnet.com](http://www.pscnet.com) from the **Product Manuals** link.



For an overview of using PPG to program the PT40, refer to [PT Program Generator \(PPG\) on page 1-10](#). For complete information refer to the *PT Program Generator (PPG) User's Manual*, available at [www.pscnet.com](http://www.pscnet.com) from the **Product Manuals** link.

The human readable portion of the barcode symbol, as shown in this manual, is optional and not required for scanning purposes.

**Table E-1. Programmable Settings and Parameter Terms**

Settings	Description
<b>Code Parameter</b>	The “human” name for programming options.
<b>ID#</b>	The “PT40” name for programming options. For example, to set a Code 39 minimum label length, enter <b>01</b> when programming the PT40. Programming ID numbers given in this appendix can be used with all programming methods.
<b>Type</b>	Indicates the kind of setting to use for each code parameter:
<b>On/Off</b>	A toggle. <b>1</b> turns the parameter on, and <b>0</b> turns it off.
<b>Value</b>	Requires a two-character entry (e.g., <b>02</b> for two beeps after each good read, or <b>05</b> for a length of five).
<b>String</b>	Uses one or more ASCII characters, followed by <b>//</b> to indicate the end of the string.
<b>Immediate</b>	Takes effect as soon as the ID number is entered.
<b>Acceptable Input</b>	Gives the settings or range of settings that you can use for each code parameter.
<b>Predefined Defaults</b>	Tells how the parameter is set when you select predefined default D0, D1, or D2 (refer to <a href="#">Table E-2</a> ).



## Using Bar Codes

To program the PT40, scan Code 39 bar codes that contain the desired parameters and settings. This section provides several programming bar codes. Custom bar codes can be made using any bar code printing software that supports Code 39.

## Using Predefined Defaults

The PT40 has the following four sets of parameter defaults. These parameters can be used during trouble-shooting, initialization, or setup. Reset the PT40 to a predefined default set by scanning one of the following bar codes:

**Table E-2. Predefined Defaults for the PT40**







Predefined Defaults			
Default Name	Type	Bar Code	Description
<b>Predefined Default 0 (D0)</b>	Immediate	* \$ + \$ - D 0 E E *	Turns every <b>ON/OFF</b> parameter <b>OFF</b> and sets all minimum and maximum lengths to zero.
<b>Predefined Default 1 (D1)</b>	Immediate	* \$ + \$ - D 1 E E *	Turns every <b>ON/OFF</b> parameter <b>ON</b> , sets all minimum lengths as low as possible, and sets all maximum lengths as high as possible.
<b>Predefined Default 2 (D2)</b>	Immediate	* \$ + \$ - D 2 E E *	Default set installed on the PT40 at the factory. This default set will work for most applications.
<b>Serial Default</b>	Immediate	* \$ + \$ - C 8 E E *	Restores the default serial communications settings. Refer to <a href="#">Table E-7 on page E-12</a> for the default settings.

## Alternate Parameters for the Falcon PT40

Enter these commands by scanning the bar codes with the PT40's laser or through the PC's serial port. With PT Program Generator (PPG), you can embed these codes in a PPG application.

The Falcon PT40 recognizes the following bar code commands at all times:

**Table E-3. Scannable Bar Codes of Alternate Settings for the PT40**

Scannable Bar Codes of Alternate Settings for the PT40		
Setting Name	Bar Code	Description
Clear Mode	 * - - *	Has the same effect as the <CLR> key
Character Clear Mode	 * - + *	Has the same effect as the <CLR> key for the last character entered.
High Beep Mode	 * . + *	Sounds a high beep on the PT40.
Low Beep Mode	 * . - *	Sounds a low beep on the PT40.
Receive File Mode	 * / . *	Prepares the PT40 to accept a program.
Retrieve Data Mode	 * \$ \$ *	Retrieves data if the application program stops execution and gives the <b>PROGRAM FAILED</b> message. Connect the PT40 to the PC and start the communications program on the PC, then scan this bar code. The data will transmit, one file at a time.



Reset Mode	 * + . *	Clears all memory and resets the PT40.
------------	--	--

## Guidelines for Creating Programming Bar Codes

Keep the following in mind when creating bar codes for programming the PT40:

- Create custom programming bar codes using the extended (full ASCII) Code 39 character set.)
- The first and last character of each bar code must be an asterisk (\*), the start and stop character for Code 39.
- The first asterisk of the programming bar code must be followed immediately by the characters **\$+\$-**.
- The programming bar code must end with **EE** followed by the last asterisk. The PT40 will treat multiple bar codes of programming information as one entry as long as **\*\$+\$-** appears at the beginning of the first bar code and **EE\*** does not appear until the end of the last bar code.

Scan the following bar code to enable Code 39 scanning and set the maximum length for Code 39 to 35 characters:

**Enable Code 39;  
set max length to  
35 characters**



Like all Code 39 bar codes, this sample starts and ends with an asterisk (\*). **\$+\$-** starts programming mode. **00** is the ID number for the parameter that enables Code 39, and **1** turns it on. **02** specifies the Code 39 maximum-length parameter, and **35** sets it to 35 characters per label. **EE** saves the new settings and exits programming mode.

## Using Multiple Bar Codes

You can create multiple bar codes to program the PT40. After making the settings in the first bar code (which must begin with **\*\$+\$-**), the PT40 waits for additional programming bar code entry if the first bar code does not include **EE\***.

You can scan the single bar code above or the following two bar codes to achieve the same results:



Commands cannot be split between two or more bar codes. It is not possible to have a parameter ID number at the end of one bar code and its setting or string at the beginning of the next.

## Programming Parameters

For a description of serial parameters, refer to [Table E-8 on page E-12](#). For a complete list of parameters and defaults, refer to [Programming Parameters on page E-1](#).

### Setting the Hour Format, Time, and Date

Use the PT40's keyboard to enter the time and date in the current format.

#### Time

Turn on parameter ID value D8 to set the PT40's real-time clock display to 24-hour (military-style) format. When this parameter is set to **Off**, the time is displayed in 12-hour format. The default time display is 24-hour format. Use the 12- and 24-hour bar codes to change the format. To set the time on the PT40's clock, scan the **Time** bar code.

Time



#### Date

Turn on parameter ID value D9 to set the PT40's date display to international format (day/month/year) or off to set it to U.S. format (month/day/year). The default format is U.S. Format. To set the date in the PT40, scan the **Date** bar code. Use the **International** Format bar codes to change the format. Refer to [Clock and Calendar on page D-12](#) for these bar codes.

Date



When finished setting the date and time formats, press any function key to return to the program.

## Xmodem Protocol

The PT40 supports the Xmodem (checksum) file-transfer protocol for serial communication, which is available in many commercially marketed products.

Xmodem is a simple send-and-wait-for-response protocol using a fixed-length data field. The data field is embedded in an Xmodem packet, which also contains a packet number and a single-byte arithmetic checksum. The protocol link is established by the receiver transmitting a NAK character until the sender responds. The sender responds by transmitting an Xmodem packet. The sender then waits for either an ACK signal, in which case it transmits the next packet, or a NAK signal, in which case it retransmits the packet. Once all packets are transmitted, the sender transmits an EOT signal, indicating the end of transmission.

Scan the following bar code to set a PT40 to use the Xmodem protocol:

Xmodem protocol



## Save-and-Exit Settings

**Table E-4. Save-and-Exit Settings**

Setting	ID #	Type
Save and exit	EE	Immediate
Exit only, no save	EF	Immediate

## Code 39 and ASCII Equivalents for Serial Characters

[Table E-5](#) provides Code 39 and ASCII equivalents for serial characters.

**Table E-5. Code 39 and ASCII Equivalents for Serial Characters**

ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex
NUL	00	SP	20	@	40		60
SOH	01	!	21	A	41	a	61
STX	02	"	22	B	42	b	62
ETX	03	#	23	C	43	c	63
EOT	04	\$	24	D	44	d	64
ENQ	05	%	25	E	45	e	65
ACK	06	&	26	F	46	f	66
BEL	07	&	26	G	47	g	67
BS	08	(	28	H	48	h	68
HT	09	)	29	I	49	i	69
LF	0A	*	2A	J	4A	j	6A
VT	0B	+	2B	K	4B	k	6B
FF	0C	,	2C	L	4C	l	6C
CR	0D	-	2D	M	4D	m	6D
SO	0E	.	2E	N	4E	n	6E
SI	0F	/	2F	O	4F	o	6F
DLE	10	0	30	P	50	p	70
DC1	11	1	31	Q	51	q	71
DC2	12	2	32	R	52	r	72
DC3	13	3	33	S	53	s	73
DC4	14	4	34	T	54	t	74
NAK	15	5	35	U	55	u	75
SYN	16	6	36	V	56	v	76
ETB	17	7	37	W	57	w	77
CAN	18	8	38	X	58	x	78
EM	19	9	39	Y	59	y	79
SUB	1A	:	3A	Z	5A	z	7A
ESC	1B	;	3B	[	5B	{	7B
FS	1C	<	3C	\	5C		7C
GS	1D	=	3D	]	5D	}	7D
RS	1E	>	3E	^	5E	~	7E
US	1F	?	3F	_	5F	DEL	7F

# General Programming Parameters

**Table E-6. General Programming Parameters**

Code Parameter	ID #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
<b>Code 39</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable	00	On/Off	On or Off	Off	On	On
Minimum length	01	Value	00–60	00	00	00
Maximum length	02	Value	00–60	00	60	20
Enable checksum	03	On/Off	On or Off	Off	Off	Off
Send checksum	04	On/Off	On or Off	Off	Off	Off
Full ASCII mode	05	On/Off	On or Off	Off	On	On
Accumulate mode	06	On/Off	On or Off	Off	On	Off
Enable AIAG alternate check digit	07	On/Off	On or Off	Off	Off	Off
<b>Interleaved 2 of 5</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable	08	On/Off	On or Off	Off	On	On
Minimum length	09	Value	02–60	02	02	06
Maximum length	0A	Value	02–60	02	60	10
Enable checksum	0B	On/Off	On or Off	Off	Off	Off
Send checksum	0C	On/Off	On or Off	Off	Off	Off
Use lengths 6 and 14 only (case code)	0D	On/Off	On or Off	Off	Off	Off
<b>Codabar</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable	20	On/Off	On or Off	Off	On	On
Minimum length	21	Value	00–60	00	02	04
Maximum length	22	Value	00–60	00	60	20
Send start/stop	23	On/Off	On or Off	Off	Off	Off
Convert Codabar to CLSI	24	On/Off	On or Off	Off	Off	Off
<b>Code 93</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable	2C	On/Off	On or Off	Off	On	On
Minimum length	2D	Value	00–50	00	01	02
Maximum length	2E	Value	01–50	00	50	20

Code Parameter	ID #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
<b>Universal Product Code-A (UPC-A)</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable	30	On/Off	On or Off	Off	On	On
Send system digit	31	On/Off	On or Off	Off	On	On
Send check digit	32	On/Off	On or Off	Off	On	Off
Convert UPC-A to EAN-13	33	On/Off	On or Off	Off	On	Off
<b>Universal Product Code-E (UPC-E)</b>				<i>Enter 1 for On and 0 for Off.</i>		
Use system digit 0	34	On/Off	On or Off	Off	On	On
Use system digit 1	35	On/Off	On or Off	Off	On	On
Convert UPC-E to UPC-A	36	On/Off	On or Off	Off	On	Off
Send system digit	37	On/Off	On or Off	Off	On	Off
Send check digit	38	On/Off	On or Off	Off	On	Off
<b>European Article Numbering (EAN)/ Japan Article Numbering (JAN)</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable EAN-8/JAN-8	39	On/Off	On or Off	Off	On	On
Enable EAN-13/JAN-13	3A	On/Off	On or Off	Off	On	On
Convert EAN-13 to ISBN	3B	On/Off	On or Off	Off	Off	Off
Send check digit	3F	On/Off	On or Off	Off	Off	On
<b>UPC, EAN, JAN Extensions</b>				<i>Enter 1 for On and 0 for Off.</i>		
Allow 2-digit extensions	3C	On/Off	On or Off	Off	On	On
Allow 5-digit extensions	3D	On/Off	On or Off	Off	On	On
Require extensions	3E	On/Off	On or Off	Off	Off	Off
<b>Code 128</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable	40	On/Off	On or Off	Off	On	On
Minimum length	41	Value	00–60	00	02	02
Maximum length	42	Value	00–60	00	60	20
Enable UCC128	43	On/Off	On or Off	Off	Off	Off



Code Parameter	ID #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
<b>Other Controls</b>				<i>Enter 1 for On and 0 for Off.</i>		
Enable manual reset	B0	On/Off	On or Off	On	On	On
Add symbology identifiers	B5	On/Off	On or Off	Off	On	Off
Auto-Off	B2	Value	00–99 (minutes)	00	60	10
BackLight Timeout	E2	Value	00-99 (1 second units)	16	16	16
Beeper volume	BC	Value	00 = Off 01 (low) – 07 (high) 08 = One level higher 09 = One level lower	07	07	07
Contrast (LCD)	E3	Value	01 (low) – 63 (high)	16	16	16
Date format	D9	On/Off	On = International Off = U.S.	Off	Off	Off
Error tone	BD	Value	00 (low) – 07 (high)	03	03	03
Good-read tone	B8	Value	00 (low) – 07 (high)	05	05	05
Good-read number of beeps	B9	Value	01–04	01	01	01
Good-read tone duration	BA	Value	00 = 0.14 sec. 01 = 0.07 sec. 02 = 0.45 sec. 03 = 0.22 sec.	01	01	01
Keyboard click	DD	On/Off	On or Off	On	On	On
Keypad Timeout (Intercharacter delay)	E4	Value	00-99 (1/4 second units)	3	3	3
Laser delay	DE	Value	00–99 (10-millisecond units)	01	01	01
Time format	D8	On/Off	On = 24-hour Off = 12-hour	On	On	On
A = UPC-A B = Interleaved 2 of 5	C = Code 39 E = UPC-E	G = EAN-8 I = Codabar	K = Code 128 L = Code 93	M = EAN-13		

# Serial Parameters

The PT40 is pre-configured at the factory with the parameter settings for serial communications found in [Table E-7](#).

**Table E-7. Default Parameter Settings for Serial Communications**

Parameter	Default Setting
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Enable Xon/Xoff	Off
Linefeed	None
Protocol	CR with checksum & ACK/NAK response
End of Record Character	CR
Timeout	1 second

[Table E-8](#) specifies serial parameters. Refer to [Serial Parameters starting on page D-12](#) for bar codes to set serial parameters.

[Table E-5 on page E-8](#) includes Code 39 and ASCII equivalents for serial characters. Use the Code 39 equivalents when creating bar codes for programming. For a complete listing of parameters and defaults, refer to [Programming Parameters on page E-1](#).

**Table E-8. Serial Parameters**

ID #	Parameter	Description
C1	Baud rate	Determines the communication speed. The setting for the PT40 must match the setting that the host computer uses.
C2	Data bits	Specifies the number of data bits in each character.
C3	Parity	Specifies the parity of the data characters.
C4	Stop bits	Selects the minimum space between data characters.
C5	Xon/Xoff hand-shaking	Used for software data-flow control. With this option enabled, the PT40 transmits an Xoff character when its serial input buffer has fewer than ten characters of free space. Once all the data in the serial buffer is processed, the PT40 transmits an Xon character.

**Table E-9. Serial Programming Parameters**

Code Parameter	ID #	Type	Acceptable Input	Predefined Default (C8)
<b>Serial Programming Parameter</b>		<i>Enter 1 for On and 0 for Off.</i>		
Host select	C0	Value	11 = ATs, PS/2s, and compatibles 15 = IBM terminals	None
Baud rate	C1	Value	00 = 300 01 = 600 02 = 1200 03 = 2400 04 = 4800 05 = 9600 06 = 19,200 07 = 38,400 08 = 76,800	05
Data bits	C2	Value	07 = 7 bits 08 = 8 bits	08
Parity	C3	Value	00 = None 03 = Odd 04 = Even	00
Stop bits	C4	Value	01 = 1 bit 02 = 2 bits	01
Enable Xon/Xoff	C5	On/Off	On <i>or</i> Off	Off
Linefeed (LF) (Valid for CA = 00 only)	C6	Value	00 = None 01 = Strip LF 02 = Add LF	00
Predefined serial defaults	C8			
End-of-file character	C9	Value	Any single ASCII character	1A
Protocol	CA	Value	00 = EOR only 01 = CR with checksum and ACK/NAK response 02 = Xmodem	01
End-of-record (EOR) character	CC	Value	Any single ASCII character	(CR)
Timeout	CD	Value	00–99 (100-millisecond units)	10

# NOTES

# Appendix F

## Memory Table

[Table F-1](#) shows the relationship between the number of characters, records, and files you can store on a Falcon PT40 based upon the amount of random access memory (RAM) installed on your PT40.

**Table F-1. Falcon PT40 Memory**

Record Size	Number of Records	
Characters	256K Memory	2 Meg Memory
1 - 7	15,000	File #1 65,490
		File #2 64,200
8 - 15	10,000	File #1 65,490
		File #2 21,000
16 - 23	7,500	64,850
24 - 31	6,000	51,875
32 - 39	5,000	43,200
40 - 47	4,275	37,050
48 - 55	3,750	32,400
56 - 63	3,300	28,800
64 - 71	3,000	25,925
72 - 79	2,725	23,575
80 - 87	2,500	21,600
88 - 95	2,300	19,950
96 - 103	2,125	18,500
104 - 111	2,000	17,275
112 - 119	1,875	16,200
120 - 127	1,750	15,250
The maximum number of records per file = 65,490.		

# NOTES

# Appendix G

## Maintenance, Troubleshooting, and Technical Support

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### Overview

This section of the manual contains material on the following topics:

- [Maintaining your Falcon PT40 starting on page G-1.](#)
- [Troubleshooting starting on page G-2.](#)
- [Technical Support starting on page G-3.](#)

### Maintaining your Falcon PT40

With normal use, the Falcon PDT, Dock, and battery chargers require no maintenance. For trouble-free service, observe the following tips when using the PT40:

- To prolong its life and avoid problems, keep the Falcon clean. Use a clean, soft cloth dampened with a mild, dilute cleanser.
- If you need to clean the Falcon's display, clean it with a lens cloth or other soft cloth dampened with a mild, dilute cleaning solution.



**Do not scratch the PT40's screen.**

**Do not drop the PT40 or subject it to strong impact.**

**Do not immerse the Falcon PT40, docks, or battery chargers in liquid.**

**Do not use abrasive paper, cloth, or abrasive or corrosive cleaners to clean the PT40.**

# Troubleshooting

**Table G-1. Troubleshooting Problems, Causes, and Solutions**

Problem	Possible Cause	Solution
The Falcon PT40 does not turn on.	Main battery not charged.	Charge or replace the main battery in the Falcon PT40.
	Main battery not installed properly.	Ensure battery is installed properly.
	System crash.	Perform a hard reset. Refer to <a href="#">Resetting the PT40 starting on page 1-3</a> .
Rechargeable main battery did not charge.	Battery failed.	Replace battery. If your Falcon PT40 terminal still does not operate, try a soft reset, then a hard reset; refer to <a href="#">Resetting the PT40 starting on page 1-3</a> .
	The Falcon PT40 was removed from the cradle while battery was charging.	Insert the Falcon PT40 in cradle and begin charging. The main battery requires up to 4 hours to recharge fully.
Cannot see characters on display.	The Falcon PT40 is not powered on.	Press the <PWR> key.
	Ambient room light is too dark.	Turn on the backlight. Refer to <a href="#">Backlight starting on page 1-8</a> .
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 serial cable, and retransmit.
	Incorrect cable configuration.	See your System Administrator.
	Communication software was incorrectly installed or configured.	Perform setup as described in the <i>PSC Falcon PT40 Product Reference Guide</i> .
No sound is audible.	Volume setting is low or turned off.	Scan a bar code for the correct volume level in the <i>PSC Falcon PT40 Product Reference Guide</i> .
The Falcon PT40 turns itself off.	The Falcon PT40 is inactive.	The Falcon PT40 turns off after a period of inactivity. This duration can be set from five to 60 minutes. Scan a bar code for the desired duration in the <i>PSC Falcon PT40 Product Reference Guide</i> .



Problem	Possible Cause	Solution
<p>The Falcon PT40 does not accept scan input.</p>	<p>Scanning application is not loaded.</p>	<p>Verify that the unit is loaded with a scanning application. See your System Administrator.</p>
	<p>Unreadable bar code.</p>	<p>Be sure the symbol is not defaced.</p>
	<p>Distance between exit window and bar code is incorrect.</p>	<p>Be sure you are within proper scanning range.</p>
	<p>The Falcon PT40 is not programmed for the bar code.</p>	<p>Be sure the terminal is programmed to accept the type of bar code you are scanning.</p>
	<p>The Falcon PT40 is not programmed to generate a beep.</p>	<p>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.</p>
	<p>Battery is low.</p>	<p>If the scanner stops emitting a laser beam when you press the trigger, check your battery level. <b>Note: If the scanner is still not reading symbols, contact your distributor or PSC Inc.</b></p>

# Technical Support

## PSC Website Support

The most comprehensive source for technical support and information for PSC products is the PSC website: [www.pscnet.com](http://www.pscnet.com). The site offers product support, product registration, warranty information, answers to frequently asked questions (product FAQs), PSC's new TekForum, product manuals, product tech notes, software updates, patches, demos, and instructions for returning products for repair. Search for information on the TekForum by clicking on the **Support** link at the top of PSC's home page.

## Reseller Technical Support

Another excellent source for technical assistance and information is an authorized PSC reseller. A reseller is directly acquainted with specific types of businesses, application software, and computer systems and, therefore, is in the best position to provide individualized assistance.

## PSC Website TekForum

Browse the TekForum at PSC's website to find answers to your questions about common technical issues. If you can't find an answer to your question, register with TekForum and submit your question to the PSC Technical Support Staff. Receive confirmation emails when answers to your questions are posted within 48 hours through TekForum.

## Telephone Technical Support

If you don't have access to the internet or email, contact PSC technical support toll-free at 1 (800) 547-2507 in the USA or (541) 683-5700 from outside the USA.

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# NOTES



## DECLARATION OF CONFORMITY

**PSC hereby declares that the Equipment specified below has been tested and found compliant to the following Directives and Standards:**

**Directives:** EMC 89/336/EEC  
Low Voltage 73/23/EEC

**Standards:** EN 55022-B:1998 - Generic Emission  
CISPR 22-B:1997 - Generic Emission  
EN 55024:1998 - - Generic Immunity - ITE  
EN 60825-1:1997 - Laser Safety  
EN61000-3-2+A14:2000 - Harmonic Current  
EN61000-3-3:1995 - Voltage Fluctuation/Flicker

**Equipment Type:** Portable Data Terminal Equipment

**Product:** Falcon PT40 and Dock



Al Eckerdt  
Director, Corporate Quality  
PSC, Inc.  
959 Terry Street  
Eugene, OR 97402  
U.S.A.



Peter Lomax  
Vice President  
Europe, Middle East & Africa  
PSC Bar Code Ltd.  
Axis 3, Rhodes Way  
Watford  
Hertfordshire WD24 4TR  
UK



## **Asia Pacific**

PSC Hong Kong  
Hong Kong  
Telephone: [852]-2-584-6210  
Fax: [852]-2-521-0291

## **Australia**

PSC Asia Pacific Pty Ltd.  
North Ryde, Australia  
Telephone: [61] 0 (2) 9878 8999  
Fax: [61] 0 (2) 9878 8688

## **France**

PSC S.A.R.L.  
LES ULIS Cedex, France  
Telephone: [33].01.64.86.71.00  
Fax: [33].01.64.46.72.44

## **Germany**

PSC GmbH  
Darmstadt, Germany  
Telephone: 49 (0) 61 51/93 58-0  
Fax: 49 (0) 61 51/93 58 58

## **Italy**

PSC S.p.A.  
Vimercate (MI), Italy  
Telephone: [39] (0) 39/62903.1  
Fax: [39] (0) 39/6859496

## **Japan**

PSC Japan K.K.  
Shinagawa-ku, Tokyo, Japan  
Telephone: 81 (0)3 3491 6761  
Fax: 81 (0)3 3491 6656

## **Latin America**

PSC S.A., INC.  
Miami, Florida, USA  
Telephone: (305) 539-0111  
Fax: (305) 539-0206

## **United Kingdom**

PSC Bar Code Ltd.  
Watford, England  
Telephone: 44 (0) 1923 809500  
Fax: 44 (0) 1923 809 505



[www.pscnet.com](http://www.pscnet.com)

## **Corp. Headquarters**

PSC Inc.  
Portland, OR  
Telephone: (503) 553-3920  
Fax: (503) 553-3940

## **PSC Inc.**

959 Terry Street  
Eugene, OR  
Telephone: (541) 683-5700  
Fax: (541) 345-7140

