PT 2000™ & TopGun™

Portable Data Terminals

User's Guide

PERCON

Percon PT 2000™ and TopGun™ User's Guide
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Contents

Introduction and Quick-Start Guide

Thank you for buying the Percon PT 2000 or TopGun portable data-collection terminal. This manual contains complete information about using and programming your portable.

The manual contains the following sections:

- Chapter 1, "About the PT 2000 and TopGun," provides a complete overview of the portables, including descriptions of the keypad, the display screen, and optional accessories. Read this chapter before using your portable.
- Chapter 2, "Using the PT 2000 or TopGun with PALPRO," contains complete information about operating the portable, connecting it to your host computer or terminal, and uploading data to the host. Read this chapter before using your portable.
- Chapter 3, "Programming the PT 2000 or TopGun," explains how to customize your portable's settings. Read this chapter if the default settings do not meet your needs.

- Chapter 4, "Transferring Data Using Percon Utilities," provides information about software programs that you can use to transfer data between your portable and a DOS computer, an IBM 3151 terminal, a UNIX workstation, or a Macintosh computer. Read this chapter when you need to upload your collected data.
- Appendix A, "Programming Parameters," contains I.D. numbers, acceptable settings, and defaults for all programming parameters for TopGun and the PT 2000. Refer to this chapter when you need to change settings in your portable.
- Appendix B, "Full Keyboard Support," includes tables listing Code 39, ASCII, and mnemonic values to use in programming the portables. Refer to this chapter when creating bar codes for programming your portable.
- Appendix C, "The TopGun Module," provides information about the TopGun module. Refer to this chapter if you received the TopGun module separate from the PT 2000 or if you want to change the direction of the laser.
- Appendix D, "The PT Dock," explains how to set up and use the optional dock for the PT 2000 or TopGun. Refer to this chapter before using the dock for the first time or when connecting it to your computer.
- Appendix E, "Batteries," provides information about using alkaline or nickel-cadmium batteries and about the lithium backup battery installed in the portable. Refer to this chapter when replacing one type of battery with another in your portable.
- Appendix F, "Connector Configurations," identifies pin assignments for the connectors on the PT 2000. Refer to this chapter when you need to order cables or make your own.
- Appendix G, "Warranty and Customer Support," tells how you can get technical assistance. Refer to this chapter when you need help.

- ❑ Appendix H, "Bar Codes for Programming TopGun and the PT 2000," contains bar codes that you can scan to set selected programming parameters. Use this chapter to change settings in your portable.
- ❑ An index helps you quickly find the information you need in this user's guide.

Getting Started Quickly

Your Percon portable comes with an application named PALPRO loaded in memory. PALPRO includes three useful data-collection programs that allow you to begin using the PT 2000 or TopGun without any additional programming.

Follow the steps below if you want to begin using your portable with PALPRO immediately. Page references tell you where to find more information.

1. Fill out and return the registration card enclosed with the unit. If you purchased TopGun, be sure to include *both* serial numbers on the registration card.
2. If you want to replace the installed alkaline batteries with a nickel-cadmium battery pack, see appendix E.
3. If you are using a PT 2000, attach your bar code scanner or magnetic stripe reader by pushing its plug into the jack at the top of the PT 2000. Be sure the plug is firmly in place.
4. Turn the portable on by pressing the green I/O button.
5. Press the ENTER key twice to accept the current date and time, or if necessary, change the date and time settings. (See page 13.)
6. Enter a password. (See page 13.)
7. Press any function key to display the PALPRO Options menu.

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

8. To use the portable as a keyboard wedge, connect it to your computer or terminal following the instructions on page 14. Then select F3 from the PALPRO Options menu. (See page 16.)

   If you are not using the portable as a keyboard wedge, press the F2 key to display the list of available applications, and select the application you want to use. (See pages 17–24.)

Your PT 2000 or TopGun is now ready to begin collecting data. You can enter data with the TopGun module or another bar code scanner, a magnetic stripe reader, or the keypad.

For information about uploading collected data from the portable to a computer, see "Uploading Data to the Host Computer," starting on page 26.

CHAPTER

About the PT 2000 and TopGun

The PT 2000

FIGURE 1-1
The PT 2000

The Percon PT 2000 is a rugged, handheld, portable data-collection terminal that enables you to take bar code scanning technology with you anywhere. It incorporates many of the latest advances in scanning technology.

The PT 2000 accepts input from any of the following devices:

- ❑ The TopGun module (see page 3)
- ❑ Wands (visible light and infrared)
- ❑ Handheld charge-coupled device (CCD) scanners
- ❑ 5-volt handheld laser scanners
- ❑ I.D. badge readers
- ❑ Magnetic stripe readers (one track)

The PT 2000 automatically recognizes and discriminates among the following bar code symbologies:

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

The PT 2000 verifies acceptance of input by sounding a beep. You can change the beeper's volume, pitch, and duration to suit your work environment or your personal preferences.

The PT 2000's liquid crystal display (LCD) provides easy readability. Its keypad provides full alphanumeric input capabilities and includes four programmable function keys. The PT 2000 features a built-in PC interface, and so you can use it as a keyboard "wedge" for those applications requiring fixed-station scanning.

The PT 2000 comes with an application called PALPRO installed in it. PALPRO adds power to the PT 2000 by turning it into three "virtual" portables, with three useful programs coexisting in memory:

- ***ASSETPRO***, for tracking assets at various locations.
- ***INVPRO***, for inventory control. You can customize it to collect item-and-quantity information or item-only data.
- ***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.

Please contact your Percon dealer for more information about PAL or PPG.

PALPRO is part of the Percon Portable Applications Library (PAL). With PAL, you can customize your PT 2000 for specific purposes without using a programming application. You can also use Percon Program Generator™, or PPG™, to create additional custom programs for your PT 2000.

TopGun

FIGURE 1-2 TopGun

TopGun is an integrated unit consisting of a laser module mounted on a PT 2000. The TopGun module is also available separately as an add-on for the PT 2000 (see figure 1-3). The module attaches to the 9-pin connector at the top of the PT 2000 and can be adapted for right- or left-handed use. The module has two triggers, allowing you to scan using either the index finger or thumb.

You can use TopGun to scan bar code labels on flat, curved, or irregular surfaces at distances ranging from one inch to two feet. The TopGun laser module operates like other handheld lasers—just aim and press the trigger. Light-emitting diodes (LEDs) on the module indicate laser activation and good reads. An audible tone also indicates good reads. Collected data is stored in the PT 2000.

For complete information about the TopGun module, see appendix C.

FIGURE 1-3 The TopGun module

The Keypad

The keypads on the PT 2000 and TopGun have three types of keys: data keys, function keys, and action keys (see figure 1-4). Each key produces a beep when you press it.

FIGURE 1-4
The PT 2000 keypad (the TopGun keypad is identical)

Data Keys

Data keys let you enter letters, numbers, and several other characters. There are 26 of these keys. Each key can be used in two modes: normal and alpha. You use the Alpha key to switch between the modes (see the description of the Alpha key below).

Function Keys

There are four function keys, F1 through F4, at the top of the keypad. Alpha mode changes these keys to F5 through F8. Actions assigned to the function keys are determined by the active program.

Other Keys

There are four action keys: I/O, Alpha, BKSP, and ENTER.

If the portable does not come on when you press the I/O key to activate it, replace the alkaline batteries or recharge the battery pack (see appendix E).

I/O Press this key to turn the portable on and off. When you turn the unit on, the portable beeps and returns to the same place you were when it last shut off. The portable does not beep when you press the I/O key to turn the unit off. The Alpha key has no effect on the I/O key.

ALPHA Press the Alpha key to toggle between normal and alpha modes. In normal mode, a press of a key either inserts the nonletter character printed on or above the key or performs an action (for example, clearing the entry or scrolling through the display). In alpha mode, a press of a key inserts the letter printed on it.

The following example uses two keys to illustrate the difference between alpha mode and normal mode:

Key	Result of Keypress	
	Normal Mode	Alpha Mode
	%	H
	8	P

When you press the Alpha key to enter alpha mode, a caret (^) appears at the cursor position in the display screen. The portable remains in alpha mode until you press a function key or press the Alpha key again.

BKSP This is the backspace key. Press it to move the cursor one place to the left and delete the character there.

ENTER Press this key to enter the current data string and move to the next programming command.

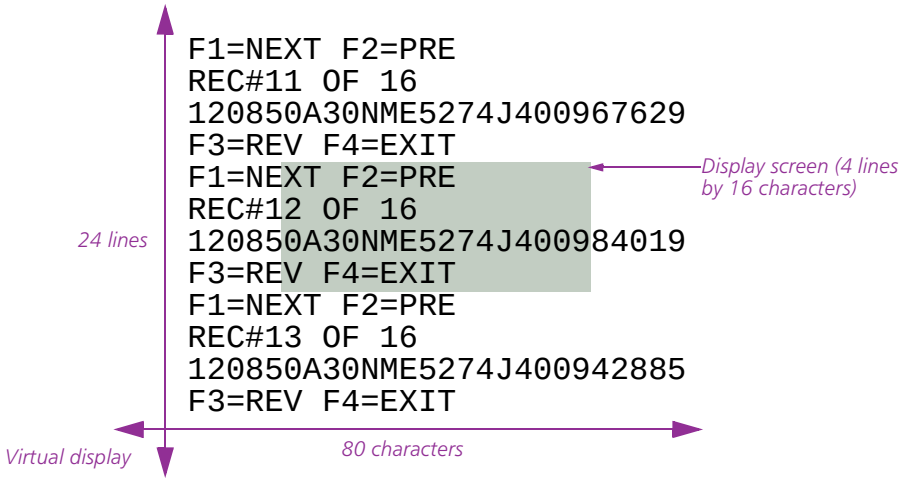
The Display Screen

The portable's display screen can show 4 lines of text with up to 16 characters on each line. However, the unit can actually hold up to 24 lines of data with up to 80 characters on a line. You can scroll the display to view data that doesn't currently appear.

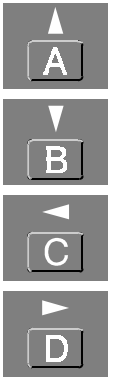
The Virtual Display

The portable's display screen is like a window to a larger display area, called the *virtual display* (see figure 1-5). Data longer than 16 characters is placed in the virtual display as you enter or read information. Information automatically carries over (or "wraps") to the next line if there are more than 80 characters in a line.

FIGURE 1-5 Virtual display vs. actual display



When the portable is in normal mode, you can scroll text through the display screen by pressing the A, B, C, and D keys on the keypad. When using these keys, imagine that the text in the virtual display remains in place and that the display screen is moving. The symbol printed above each key indicates the direction in which the display screen moves over the virtual display when you press that key.



Moves the display screen up one line

Moves the display screen down one line

Moves the display screen left eight characters

Moves the display screen right eight characters

The virtual display continues to maintain the latest 24 lines of data once all lines of the virtual display are full. The oldest data is "pushed off the top" as new data is added at the bottom.

Pressing any available key other than A, B, C, or D while scrolling returns the display screen to its original position over the text, and the selected key is executed. (Available keys depend on the mode you were in before you began scrolling.)

Displaying Information about the Portable

You can display information about your portable when you scroll the display screen past the last character on a current line. Press the D key until the version number is displayed. The display screen will list the system version number, the amount of random-access memory installed, and the bar code symbologies that can be read (see figure 1-6).

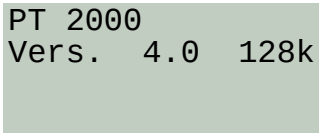


FIGURE 1-6 Display screen showing version number

The Beeper

The portable provides audible feedback to indicate when a bar code has been scanned successfully and to acknowledge when a key is pressed. The default setting provides one beep to indicate a good scan or key entry. Another beep sequence warns you about possible problems. The pitch, number, volume, and length of beeps are all programmable.

The Auto-Off Feature

The Auto-Off feature lets the PT 2000 or TopGun conserve power by partially shutting down when not in use. Pressing the I/O key returns the portable to full power. You can set the time between the last activity in the portable and Auto-Off from 1 through 99 minutes. The default is 10 minutes. A setting of 00 disables Auto-Off.

The PT Dock

The Percon PT Dock™ (see figure 1-7) is specially designed for use with the PT 2000 and TopGun. The dock provides a connection between the PT 2000 or TopGun and your computer without sacrificing the convenience of portability. Instead of attaching a cable each time you want to transmit data to or from the portable, you simply place the unit in the dock. When you want to use the PT 2000 or TopGun for data collection again, you just remove it from the dock. You can also use the PT Dock to recharge the portable's rechargeable NiCad battery pack and backup lithium battery.

For more information about the PT Dock, see appendix D.

FIGURE 1-7
The PT 2000 in the PT Dock

CHAPTER 2

Using the PT 2000 or TopGun with PALPRO

NOTE *This chapter describes how to use the portable with its original Percon programming (PALPRO). If your portable has been customized, it may operate differently. Check with your systems administrator for revised operating instructions.*

You can use your PT 2000 or TopGun as a keyboard wedge to enter data directly into an application one item at a time. When away from your computer, you can collect all your data records and upload them to your host computer later. The number of data records you can collect before uploading them depends on how much random-access memory (RAM) your portable has.

Getting Started

NOTE *If you received a nickel-cadmium battery pack with your portable, see appendix E for information on installing it.*

Unless it has been customized, your PT 2000 or TopGun has three alkaline batteries installed and is programmed for simple data collection. All you have to do to begin using the portable is attach your input device to it (PT 2000 only; see page 12) and turn it on.

Attaching an Input Device to the PT 2000

Your PT 2000 can be used with most industry-standard input devices equipped with a 9-pin squeeze connector.

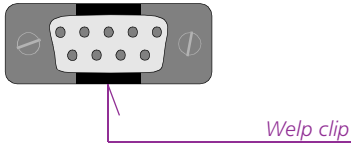
Bar Code Scanner

Attach your bar code scanner by pushing its connector into the connector at the top of the PT 2000. Be sure the scanner connector is firmly in place. Refer to the input device's operating manual for instructions on its use.

Magnetic Stripe Reader

To attach a magnetic stripe reader (MSR), you first need to remove the black plastic "welp" clip from the connector on the top of the PT 2000 (see figure 2-1). Using a flat-blade screwdriver, remove the two screws securing the clip, and pull the clip off the connector. Then push the MSR's connector into the PT 2000's connector. Be sure the MSR connector is firmly in place.

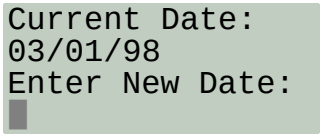
FIGURE 2-1 The input connector on the PT 2000



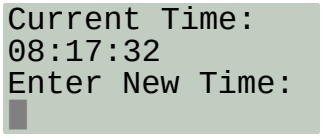
Turning On the Portable

Turn the PT 2000 or TopGun on by pressing the green I/O button. The display screen will display the information that was displayed when it was turned off.

Setting the Time and Date



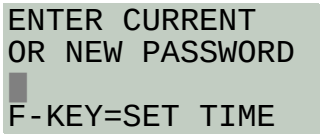
If you are turning the portable on for the first time, the first display screen will show the date loaded in memory. If the displayed date is correct, press the ENTER key. If the date is wrong, enter the correct date. Use two digits each for the month, for the day, and for the year (e.g., 022098). When you press the ENTER key, the program will automatically format the entry (e.g., 2/20/98).



The next display screen will show the time loaded in the portable's memory. If the displayed time is correct, press the ENTER key. If the time is wrong, enter the correct time. Use two digits each for the hour, for the minute, and for the seconds (e.g., 133000). If the portable's system clock is set for 12-hour format, type A for A.M. or P for P.M. after the number (e.g., 013000P).

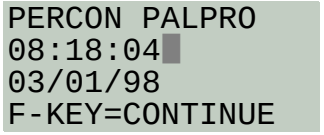
You can return to the date and time prompts from other display screens and menus (such as the password prompt screen shown below). You can also change the date and time formats (see page 41).

Setting a Password



Password security lets a manager or supervisor customize a portable and then hand it off to a worker. A password can contain up to 128 characters and can use any characters available on the portable. Without the password, the worker cannot switch applications or make changes to an application's title or prompts. The password prompt screen appears after you enter the date and time.

If you forget the password, you will have to reset the portable and start over with a new password.



After the password is entered, the screen shown at the left is displayed. When you press a function key (any of the blue keys at the top of the keypad), the display changes to the PALPRO Options menu. The portable is now ready to collect data.

Collecting Data

Once you have completed setting up the PT 2000 or TopGun (see the preceding section), the PALPRO Options menu appears on the display screen. The menu lets you choose whether to use a PALPRO application or to use the portable as a keyboard wedge.

Using the Portable as a Keyboard Wedge

With the PT 2000 or TopGun attached to your computer or IBM 3151 terminal as a keyboard wedge, you can enter data from a bar code label or magnetic stripe directly into your computer application. You can also enter data by using the keypad on the portable.

Installing the Keyboard Wedge

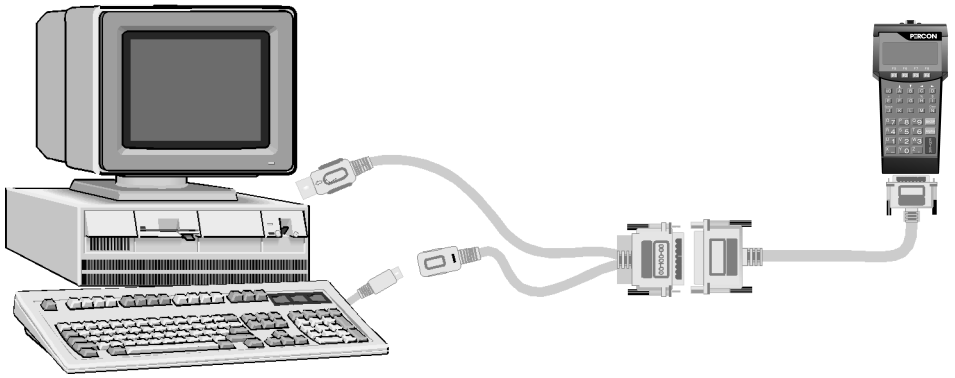
You will need two cables to install the portable as a keyboard wedge:

- ❑ Percon cable number 00-884-20
- ❑ And one of the following Percon cables:
  - 00-001-00 (for ATs and compatible PCs)
  - 00-061-00 (for computers with PS/2-style connectors)
  - 00-065-00 (for IBM 3151 terminals)

To connect your PT 2000 or TopGun as a keyboard wedge, complete the following steps:

1. Plug the 15-pin connector of the 00-884-20 cable into the cable connector on the bottom of the portable.
2. Attach the other end of the 00-884-20 cable to the 25-pin connector of the keyboard wedge cable (see figure 2-2).

FIGURE 2-2
Keyboard wedge installation for PCs



3. ***PC:*** Attach the small male plug of the Percon cable to the keyboard jack on your computer (see figure 2-2).
   Terminal: Insert the keyboard cable plug into the modular jack on the Percon cable connector.
4. ***PC:*** Attach the keyboard cable to the small female jack on the Percon cable (see figure 2-2).
   Terminal: Insert the modular plug of the Percon cable into the keyboard input jack on your terminal.
5. Scan the appropriate bar code below:

   ❑ AT or PS/2 models 30-286, 50, 50Z, 60, 70, 80, 90, 95 (U.S. keyboard)

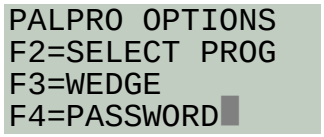
   $+$-D2C011EE

   ❑ IBM 3151 terminal

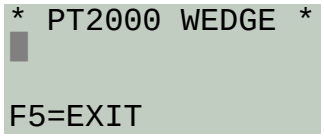
   $+$-D2C015EE

Using the Keyboard Wedge

To use your PT 2000 or TopGun as a keyboard wedge, complete the setup and installation procedures described in this chapter. Then complete the following steps:



1. From the PALPRO Options menu, select F3.
2. Open your computer application and place the cursor where you want to enter data.
3. Use a bar code scanner (the TopGun module or another device attached to the PT 2000), a magnetic stripe reader, or the keypad to enter data.



When you scan a bar code or run a magnetic stripe card through the reader, the data is entered at the cursor position in your application. If you are using the keypad to enter the data, the data is displayed in the second line of the display screen. When you press the ENTER key, the data is sent to your computer as if you typed it on your computer keyboard.

4. When you are done collecting data, select the F5 key (Alpha+F1) to exit.

Using PALPRO

```
PALPRO OPTIONS
F2=SELECT PROG
F3=WEDGE
F4=PASSWORD
```

PALPRO combines three Portable Applications Library applications into a single, convenient program (see page 2). With PALPRO installed in your Percon portable, you can switch from one application to another without having to install each application when you want to use it.

Selecting a PALPRO Application

Complete the following steps to select a PALPRO application:

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

1. With the PALPRO Options menu displayed, press the F2 key.
2. Press F1 to use ASSETPRO, F2 to use INVPRO, or F3 to use TRACKPRO.

If you select INVPRO, the next screen will ask you to select one or two prompts (see page 20 for information). Make your selection before going on to the next step.

```
CHANGE PROMPTS?

F3=YES
F4=NO
```

3. To change the application's title or prompts, select F3. Otherwise, select F4.

For information about changing titles and prompts, see below.

When you are finished changing prompts (or if you selected F4 in step 3), the selected application's menu will appear on the portable's display screen. For information about using the individual applications, see pages 19–24.

If you selected TRACKPRO, you will be given the option of adding a date/time stamp before getting to the application menu. (See page 22.)

Changing Program Titles and Prompts

```
CHANGE PROMPTS?

F3=YES
F4=NO
```

PALPRO allows you to change the title that appears on the menu for each application. You can also change the prompts for each application. You are given the opportunity to change titles or prompts after you select an application. To use the application's current title and prompts, select F4 at the prompt shown at the left. To change the title or prompts, complete the following steps:

```
ENTER APPL TITLE
```

1. Press the F3 key at the prompt.
2. Enter a name for the application (for example, FIXED ASSETS). The name you enter will appear at the top of the application menu for the current application.

```
ENTER PROMPT 1
```

3. Enter the text that you want to use for the first prompt (for example, BUILDING I.D.).

```
ENTER PROMPT 2
```

4. Enter the text that you want to use for the second prompt (for example, ASSET NO.).

Switching to Another PALPRO Application

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

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

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

You enter F5 on the keypad by pressing the Alpha key and then the F1 key.

```
ENTER PASSWORD

F-KEY=EXIT
```

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.
3. If you enter the correct password, the original PALPRO screen appears. Press any function key to display the PALPRO Options menu.
4. Follow the steps in "Selecting a PALPRO Application" on page 17.

USING ASSETPRO

Use ASSETPRO to track assets (furniture, phones, computers, electronic equipment, etc.) at various locations (example, departments, rooms, floors, buildings, etc.). ASSETPRO lets you enter an identification code for a location, collect all the asset I.D.s at the location, and then enter an identification code for a different location.

To use ASSETPRO, follow these steps:

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

1. From the application menu, select F2.

```
LOCATION ID

F3=REV F4=EXIT
```

2. The first prompt appears on the screen. Enter the identification code for the location (for example, WH3E). You can scan a bar code for the location or use the keypad to enter the location I.D. (If you use a scanner, the code is entered automatically; if you use the keypad, you must press the ENTER key.)

```
ITEM ID

WH3E
F3=REV F4=EXIT
```

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

```
ITEM ID

WH3E,004322
F3=REV F4=EXIT
```

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

4. When you finish collecting asset I.D.s for the location, press the F4 key to return to the first prompt.

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

5. Repeat steps 2 through 4 until you have collected I.D.s for the assets at every location. Then press the F4 key to return to the application menu.

The portable 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 location, and the second field is the equipment identification number. The example at the left is part of a data file uploaded from a portable that used ASSETPRO to collect data.

USING INVPRO

Use this application to track inventory. INVPRO gives you a choice of one prompt or two. Using one prompt lets you scan or enter an I.D. number or description for each item. Use two prompts to scan or enter an item I.D. and the quantity of that item (how many are in stock).

To use INVPRO, follow these steps:

```
USE 2 PROMPTS?

F3=YES
F4=NO
```

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

```
CHANGE PROMPTS?

F3=YES
F4=NO
```

2. Press the F3 key to change the title or prompts that will appear on the application's display screens. (See page 17 for information on changing the prompts.) To use the current title and prompts, press the F4 key.

   The application menu appears next on the display screen. Continue with the instructions for one prompt or two prompts, depending on your selection in step 1.

```
INV MGMT
F2=COLLECT
F3=FILE OPTIONS
F5=EXIT
```

One Prompt

```
ITEM ID
_

F3=REV F4=EXIT
```

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

3. Select F2 from the application menu. A prompt appears on the screen. Scan the bar code for an inventory item, or use the keypad to enter the item's I.D. number or description. (If you use a scanner, the code is entered automatically; if you use the keypad, you must press the ENTER key.)

   The item I.D. number appears on the third line of the screen, and the portable is ready to accept another item I.D.

4. Repeat step 3 until you have collected I.D.s for all items. Then press the F4 key to return to the application menu.

```
40-000-00
40-002-00
40-006-00
40-010-00
00-000-17
00-000-19
```

The portable 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 the I.D. for a single item. The example at the left is part of a data file uploaded from a portable that used INVPRO with one prompt to collect data.

Two Prompts

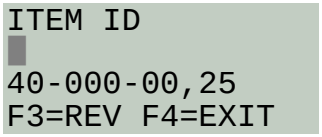
```
ITEM ID
_

F3=REV F4=EXIT
```

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

3. Select F2 from the application menu. The first prompt appears on the screen. Scan the bar code for an inventory item, or use the keypad to enter the item's I.D. number or description. (If you use a scanner, the code is entered automatically; if you use the keypad, you must press the ENTER key.)

4. The second prompt now appears on the first line of the screen, and the item I.D. appears on the third line. Enter the number of individual units of the item in inventory.



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 portable is ready to accept another item I.D.

5. When you are done collecting inventory data, press the F4 key to return to the application menu.

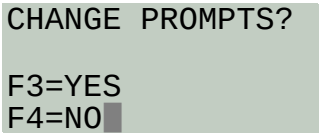
```
40-000-00,25
40-006-00,12
00-000-19,56
00-000-02,30
40-002-00,47
00-000-17,16
```

The portable 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 I.D., and the second field is the number of units of that item. The example at the left is part of a data file uploaded from a portable that used INVPRO with two prompts to collect data.

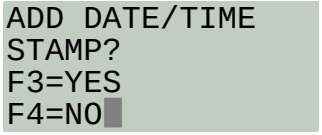
USING TRACKPRO

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

To use TRACKPRO, follow these steps:



1. At the first screen that appears after you select the application, press the F3 key to change the title or prompts that will appear on the application's display screens. (See page 17 for information on changing the prompts.) To use the current title and prompts, press the F4 key.



2. At the next prompt, select F3 if you want use the date/time stamp. Otherwise, select F4.

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

3. From the application menu, select F2.

```
F1=CHECK IN
F2=CHECK OUT

F4=EXIT
```

4. Press the F1 key to record an item being checked in, or press F2 to record an item being checked out.

```
LOCATION ID

IN :
F3=REV F4=EXIT
```

5. Enter the identification code for the location (for example, MAIN). You can scan a bar code for the location or use the keypad to enter the I.D. code. (If you use a scanner, the code is entered automatically; if you use the keypad, you must press the ENTER key.)

```
ITEM ID

IN :MAIN
F3=REV F4=EXIT
```

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

```
ITEM ID

IN :MAIN,P203
F3=REV F4=EXIT
```

The location I.D. and item I.D. appear on the third line of the screen, separated by a comma. The ITEM ID prompt remains on the screen, and the portable is ready to accept another I.D. for an item at the current location.

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 I.D. on the third line. (You may need to scroll the display to see the entire line.)

7. When you finish collecting asset I.D.s for the location, press the F4 key to return to the LOCATION ID prompt.

8. Repeat steps 5 through 7 until you have collected I.D.s for the assets at every location. Then press the F4 key again to return to the menu shown at step 4.

9. 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.

The portable stores check-in data in one ASCII text file and check-out data in another file. When you upload one of the files 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 location I.D., and the second field is the item I.D. If you used the date/time stamp, each line also includes the check-in or check-out date and time. The list below is part of a check-out file uploaded from a portable that used TRACKPRO with the date/time stamp.

```
MAIN,P203,03/01/98,10:27:18
MAIN,814223-001,03/01/98,10:27:45
MAIN,00-929-00,03/01/98,11:04:51
MAIN,P0009222,03/01/98,11:22:02
WHS,00-680-00,03/01/98,11:40:53
WHS,004322,03/01/98,11:40:57
WHS,16-000-00,03/01/98,11:41:11
WHS,A0039242,03/01/98,11:41:15
```

Reviewing the Collected Data

Before you upload your collected data, you can review it and delete incorrect records or records you don't need.

From any screen that offers REV as an option, select F3 to display the data-review screen (see figure 2-3). 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.

```
ITEM ID
[ ]

F3=REV F4=EXIT
```

FIGURE 2-3 Data-review screens

```
F1=NEXT F2=PRE
REC#65 OF 65
27-000-00
F3=DEL F4=EXIT
```

Item-only data

```
F1=NEXT F2=PRE
REC#65 OF 65
27-000-00,15
F3=DEL F4=EXIT
```

Item-and-quantity data

NOTE *When used as a keyboard wedge, the portable does not store any data.*

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. Press the F1 key to move to the next record. (If the currently displayed record is the last one, the portable will briefly display END OF FILE on the second line.) Press the F2 key to move to the previous record. (If the currently displayed record is the first one, the portable will briefly display START OF FILE on the second line.)

The bottom 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 question ARE YOU SURE? will appear on the first line of the screen. To delete the record, press F3 again; if you don't want to delete it, press F4.

When you are done reviewing the data records, press F4 once to return to the data-collection screen or twice to return to the data menu.

Uploading Data to the Host Computer

If you are using the PT Dock, see appendix D for information about connecting it to your computer.

The PT 2000 and TopGun store data records in files in random-access memory (RAM). Once you have finished collecting data in a file, you can transmit (upload) that file from the portable to your host computer. The number of records you can collect before uploading them depends on how much RAM your portable has.

The portable can be connected to your host computer in either a serial configuration or a keyboard wedge configuration. The serial configuration requires a communications program to transfer data to and from the portable. With this configuration, you can use an external 9-volt power adapter (available from your Percon dealer). With the keyboard wedge configuration, power is drawn from the host computer.

Serial Configuration

The serial configuration uses Percon cable number 00-884-19 (25 pin) or 00-884-28 (9 pin). Attach the cable by completing the following steps:

1. One of the connectors on the cable has the cable number on it. Plug that connector into the cable input jack on the bottom of the portable.
2. Attach the other end of the cable (with the connector labeled COMPUTER) to an available serial port on your computer.
3. If you want to use a 9-volt power adapter, attach the small, round plug of the adapter to the round power input jack on the cable connector labeled COMPUTER. Plug the other end into an outlet or power strip.

Use only a power adapter supplied by your Percon dealer. Using another adapter can damage the portable.

The portable is set at the factory with the following parameter settings for serial communications. For explanations of these parameters, see "Serial Parameters," beginning on page 42. To change the parameter settings, use the bar codes on pages 115–117.

Parameter	Default Setting
Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Enable Xon/Xoff	Off
Linefeed	None
Protocol	ACK/NAK
Timeout	1 second

```
INV MGMT
F2=COLLECT
F3=FILE OPTIONS
F5=EXIT
```

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

```
*SEND FILE*
F2=SERIAL
F3=WEDGE
F4=EXIT
```

To upload data to the computer, complete the following steps:

1. Prepare the computer to receive data by using one of the software programs described in chapter 4.
2. From the program menu on the PT 2000 or TopGun (such as the one from INVPRO shown next to step 1 above), select F3 to display the File Options menu.
3. Select F2 to display the Send File menu.
4. Select F2 to upload the data through the serial connection.

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

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

```
*SEND FILE*
F2=SERIAL
F3=WEDGE
F4=EXIT
```

Keyboard Wedge Configuration

To upload data from your portable installed as a keyboard wedge, complete the following steps:

1. Connect the portable to the computer as described on pages 14–15.
2. Open your computer application and place the cursor where you want to enter the data.
3. From the program menu on the PT 2000 or TopGun (such as the one from ASSETPRO shown at the top left), select F3 to display the File Options menu.
4. Select F2 to display the Send File menu.
5. Select F3 to upload the data through the keyboard wedge connection.

Removing Collected Data from Memory

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

After uploading a file from the PT 2000 or TopGun to your computer, you can erase the file from the portable's memory. To do so, complete the following steps:

1. From the program menu on the PT 2000 or TopGun (such as the one from TRACKPRO shown at the left), select F3 to display the File Options menu.

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

2. Select F3 to display the Erase File menu.

```
*ERASE FILE*

F3=ERASE
F4=EXIT
```

3. Press the F3 key to erase the file.

Turning Off the Portable

Turn the PT 2000 or TopGun off by pressing the green I/O button. This will turn off the screen display, but it will not clear any information in the portable's random-access memory (RAM).

The portable is programmed to shut itself off automatically if you do not use it for ten minutes. You can change the "auto-off" time by scanning the appropriate bar code on page 111.

Resetting the Portable

To reset the PT 2000 or TopGun, remove the battery pack, alkaline batteries, or external power supply. Then press and hold down the Alpha and ENTER keys while reinserting the batteries or reconnecting the power supply. The portable will prompt you to enter the current date and time.

Resetting the PT 2000 or TopGun is similar to pressing Ctrl+Alt+Delete on a PC. All data stored in the portable's memory will be cleared.

You can also reset the PT 2000 by scanning the following bar code:

Care and Cleaning

With normal use, your PT 2000 or TopGun should require no maintenance. If it gets dirty, wipe it with a damp cloth. Do not immerse the portable in liquid. Do not use any abrasive cleaners on the display screen.

CHAPTER 3

Programming the PT 2000 or TopGun

TopGun and the PT 2000 are configured with certain default parameter settings before they are shipped from the factory. These settings will work for many applications. You can change the settings by scanning the bar codes provided in this chapter and in appendix H or by creating bar codes for specific settings. You can also download new programs to the portable from DOS or Windows.

TopGun and the PT 2000 recognize the following commands at all times:

(slash, plus sign)
Sets the portable to alpha mode

(slash, minus sign)
Sets the portable to normal mode

(minus sign, minus sign)
Has the same effect as the Clear key

(minus sign, plus sign)
Has the same effect as the BKSP (backspace) key

(slash, period)
Prepares the portable to accept a program

(period, minus)
Sounds a low beep on the portable

(period, plus sign)
Sounds a high beep on the portable

(plus sign, period)
Clears all memory and resets the portable

Allows the data to be retrieved if the application program has stopped execution and is giving the PROGRAM FAILED message. To use it, connect the portable to your computer and start your communications program. Then scan the bar code label. The data will be transmitted one file at a time.

You can enter these commands with bar codes or through your computer's serial port. If you have Percon Program Generator (PPG), you can also embed these codes in a PPG program. For information about using PPG to program the portable, see the *Percon Program Generator User Manual.*

Using Programming Utilities

NOTE *For complete information about PAL, including installation instructions, see the* Portable Applications Library (PAL) User's Guide.

Your Percon portable comes with a collection of applications and utilities on a disk. This collection is called the Portable Applications Library, or PAL. Two of the utilities, PDPROG and PERCPROG, enable you to program your portable from DOS or Windows.

Both programming utilities check the version number of the portable's operating system. If it is different from the PAL version, it installs the operating system along with the application.

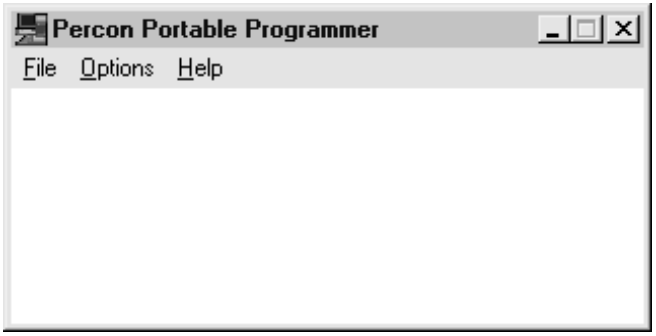
PERCPROG

PERCPROG is the utility used to program a Percon portable through Windows. When you select one of the "Install" icons in the Percon PAL program group, you invoke the PERCPROG utility, which automatically programs the portable with the selected application.

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

1. Connect the portable to the computer (see pages 26–28).
2. Double-click on the Portable Programmer icon in the Percon PAL program group. The Percon Portable Programmer window will open (see figure 3-1).

FIGURE 3-1
The Percon Portable Programmer (PERCPROG) main window

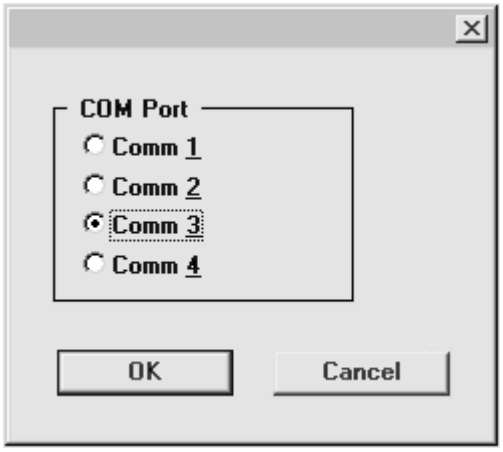


NOTE

The figures in this chapter show the utilities in Windows 95. If you are using a different version of Windows, the utility windows will look slightly different.

3. From the menu, select Options⇨Settings. The Communications Settings window will open (see figure 3-2).

FIGURE 3-2
The Communications Settings window

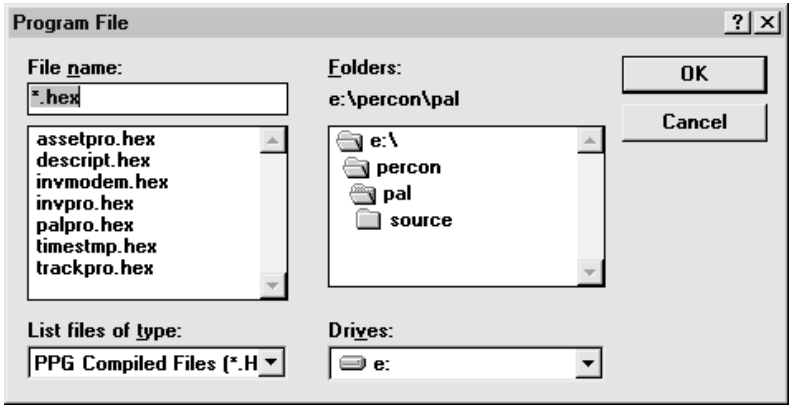


4. Select the serial port that you want to use. Then select OK.

After you change the serial port setting, PERCPROG will keep the new setting until you change it again. At this point, you can use the icons in the Percon PAL program group (Windows 3.1) or the Start Menu (Windows 95) to install an application.

5. From the Percon Portable Programmer menu, select File⇨Open. The Program File window will open (see figure 3-3).

FIGURE 3-3 The Program File window



6. Select the application that you want to install in the portable, and select OK.

   The message "Programming the portable" will appear in the programmer window. Additional messages and the percentage of completion will be displayed as the programming progresses. When programming is completed, the message "Portable successfully programmed" will appear in the window, and the name of the program file will be displayed in the window's title bar.

7. Select File⇨Exit to close the Percon Portable Programmer window.

PDPROG

PDPROG is the utility used to program a Percon portable through DOS.

Using PDPROG involves entering commands on the DOS command line. The command line syntax is as follows:

```
pdprog filename[.hex] [-¦/][port]
```

where

filename = the name of the file for the application you want to install in the portable (The file has a .hex extension. You do not need to include it in the command line.)

port = 1¦2¦3¦4 to specify the serial port (the default is COM2)

The port setting is optional and can be entered either before or after the file name. If you use it, you must precede it with a hyphen (-) or a slash (/).

For example, you would use the command `pdprog descript -1` to transfer the description program to a portable over the COM1 serial port.

Using Predefined Defaults

TopGun and the PT 2000 have the following three sets of parameter defaults:

- ***Predefined Default 0 (D0)*** turns every on/off parameter off and sets all minimum and maximum lengths to zero.
- ***Predefined Default 1 (D1)*** turns every on/off parameter on, sets all minimum lengths as low as possible, and sets all maximum lengths as high as possible.
- ***Predefined Default 2 (D2)*** is the default set that was installed in the portable at the factory. This default set will work for most applications.

NOTE *To restore the default settings for serial communications, scan the bar code on page 49.*

You can reset your portable to a predefined default set by scanning one of the following bar codes:

D0

D1

D2

Using Bar Codes

To program TopGun or the PT 2000, you can scan Code 39 bar codes that contain the parameters and settings you want to make. Appendix H provides several programming bar codes that you can use. You can also make your own bar codes using any bar code printing software that supports Code 39.

Guidelines for Creating Programming Bar Codes

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

- ❑ Create your programming bar codes using the standard Code 39 character set, *not* the extended (full ASCII) Code 39 character set. (You must read the bar codes in extended Code 39 mode, however.)
- ❑ 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 and an asterisk. The portable 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.

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

Like all Code 39 bar codes, this one starts and ends with an asterisk (*). $+$- starts programming mode. 00 is the I.D. 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 portable. After making the settings in the first bar code (which must begin with *$+$-), the portable waits for additional programming bar code entry if the first bar code does not include EE*. Scanning the following two bar codes provides the same result as scanning the single one on page 38:

You cannot split commands between two or more bar codes. That is, you cannot have a parameter I.D. number at the end of one bar code and its setting or string at the beginning of the next.

General Programming Parameters

Table 3-1 describes some of the general parameters for programming the PT 2000 or TopGun. For descriptions of serial parameters, see table 3-2. For a complete list of parameters and defaults, see appendix A.

TABLE 3-1 Selected Programming Parameters

I.D. #	Parameter	Description
05	Code 39 full ASCII	Supports the Code 39 extended ASCII character set (see appendix B). For example, a character string encoded in Code 39 as +A is transmitted as a lowercase *a*. This allows every key of the keyboard to be encoded in a Code 39 bar code.
06	Code 39 accumulate	Treats multiple bar codes as a single bar code, provided that all bar codes except the last begin with a space. The last code must *not* begin with a space. Up to 128 characters (not including preamble, postamble, and symbology identifiers) can be accumulated before transmission.
0B	I 2 of 5 enable checksum	Enables use of checksums in Interleaved 2 of 5 bar codes. This parameter should be set to On whenever you plan to read I 2 of 5 bar codes.
33, 36	UPC conversion	Converts UPC-A bar codes to EAN-13 (I.D. #33), and converts UPC-E bar codes to UPC-A (I.D. #36).
3B–3E	UPC/EAN/JAN extensions	Reads two-digit (I.D. #3C) and five-digit (I.D. #3D) extensions if the portable is programmed to allow them (I.D. #3B). Doesn't read UPC, EAN, or JAN bar codes if the portable is programmed to *require* extensions (I.D. #3E) and no extensions are present.

Setting the Time and Date

TIME Turn parameter I.D. #D8 on to set the portable's real-time clock display to 24-hour (military-style) format. For example, the time 1:30 p.m. and 15 seconds would be displayed as 13:30:15. When this parameter is set to Off, the time is displayed in 12-hour format (for example, 01:30:15 PM).

The default time display is 24-hour format. You can use the following bar codes to change the format:

12-Hour Format

24-Hour Format

To set the time on the portable's clock, first scan the following bar code:

NOTE *When you are done setting the date and time formats, press any function key to return to your program.*

Then use the portable's keyboard to enter the time in the current format.

DATE Turn parameter I.D. #D9 on to set the portable'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. You can use the following bar codes to change the format:

U.S. Format

International Format

To set the date in the portable, first scan the following bar code:

Then use the portable's keyboard to enter the date in the current format.

Serial Parameters

You can use bar codes to set parameters for using the PT 2000 or TopGun as a serial device. Table 3-2 describes the serial parameters; bar codes for setting them begin on page 115. (For a complete listing of parameters and defaults, see appendix A.)

This section also includes a table of Code 39 and ASCII equivalents for serial characters (see page 44). Use the Code 39 equivalents when creating bar codes for programming.

TABLE 3-2 Serial Parameters

I.D. #	Parameter	Description
C1	Baud rate	Determines the communication speed. The setting you use for the portable 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 handshaking	Used for software data-flow control. With this option enabled, the portable 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 portable transmits an Xon character.

Xmodem Protocol

The PT 2000 and TopGun support 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 your portable to use the Xmodem protocol:

Code 39 and ASCII Equivalents for Serial Characters

Table 3-3 provides Code 39 and ASCII equivalents for serial characters. For Code 39, ASCII, and mnemonic equivalents of keyboard keys, see appendix B.

TABLE 3-3 Code 39 and ASCII Equivalents for Serial Characters

Character	Code 39	ASCII Value	Character	Code 39	ASCII Value	Character	Code 39	ASCII Value
NUL	%U	80	VT	$K	0B	SYN	$V	16
SOH	$A	01	FF	$L	0C	ETB	$W	17
STX	$B	02	CR	$M	0D	CAN	$X	18
ETX	$C	03	SO	$N	0E	EM	$Y	19
EOT	$D	04	SI	$O	0F	SUB	$Z	1A
ENQ	$E	05	DLE	$P	10	ESC	%A	1B
ACK	$F	06	DC1	$Q	11	FS	%B	1C
BEL	$G	07	DC2	$R	12	GS	%C	1D
BS	$H	08	DC3	$S	13	RS	%D	1E
HT	$I	09	DC4	$T	14	US	%E	1F
LF	$J	0A	NAK	$U	15	Terminate string: //		

CHAPTER 4

Transferring Data Using Percon Utilities

After you've scanned a series of bar codes or input other data into the PT 2000 or TopGun, you can use a data-transfer utility to upload the information to your host computer.

Both the PT 2000 and TopGun come with Percon's Portable Applications Library (PAL) on a disk. PAL includes two programs that you can use to transfer data between your portable and your computer:

- ***PTFER*** is a Windows application. (See pages 46–51.)
- ***PDTFER*** is a DOS program that you run by issuing commands on the DOS command line. (See pages 51–52.)

Also available from Percon are two utilities for transferring data to and from Macintosh or UNIX computers:

- ***MACTFER*** is a Macintosh program you can use to communicate with a Macintosh. (See pages 52–53.)
- ***updtfer*** is a UNIX program you can use to communicate with a UNIX workstation. (See pages 53–54.)

NOTE *If you do not know how to launch Windows applications, select menu options, or use dialog boxes, refer to your Microsoft Windows documentation.*

NOTE *You can get all the utilities free from Percon. (See the contact information on the copyright page of this user's guide.)*

Once you've collected data with your portable, you can use one of these programs to transfer the data to an ASCII file on your computer.

Using the Portable File Transfer Program for Windows (PTFER)

Getting Started

To prepare for a data transfer between your computer and the PT 2000 or TopGun, complete the following steps:

1. If the utility software is not already installed on your computer, install it following the instructions included with the diskette packaged with the portable.
2. In Windows, click on the Portable File Transfer (PTFER) icon in the Percon program group. A blank PTFER window opens, as shown in figure 4-1.

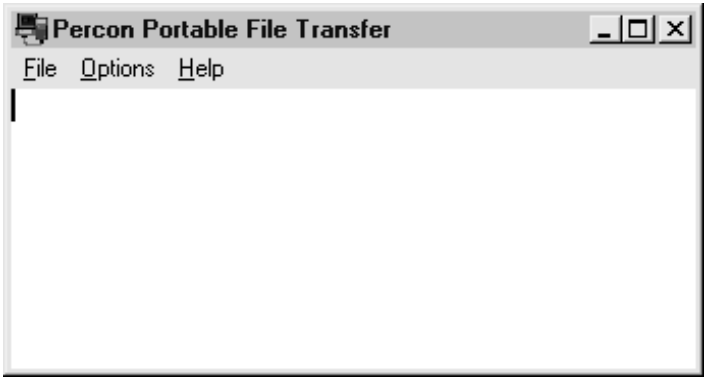


FIGURE 4-1
The Percon Portable File Transfer window

NOTE *The figures in this chapter show the utilities in Windows 95. If you are using a different version of Windows, the utility windows will look slightly different.*

These are also the default settings for the PT 2000 and TopGun.

By default, PTFER uses the following communications settings:

- ❑ Port: COM2
- ❑ Baud rate: 9600
- ❑ Stop bits: 1
- ❑ Data bits: 8
- ❑ Parity: None
- ❑ Protocol: ACK/NAK

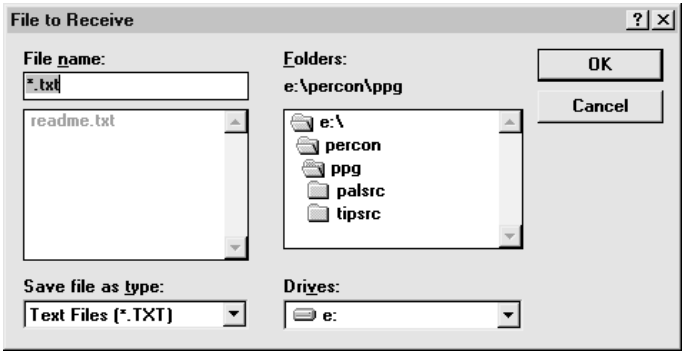
If you need to switch to a different port or make other changes to the defaults, see "Changing Settings," on page 49.

3. Select Options⇨Connect (or click on the Connect button in the Communications Settings dialog box) to connect with the selected port. The message "Communications port opened" appears in the window. You can now transfer files between your computer and the portable.

Uploading a File

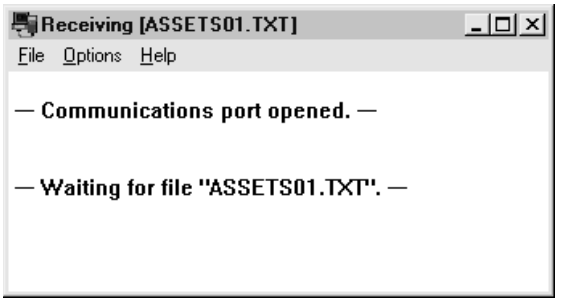
To upload a file from the PT 2000 or TopGun to the PC, select File⇨Receive and use the File to Receive dialog box (see figure 4-2) to specify the name and location of the file you want to store the data in.

FIGURE 4-2 The File to Receive dialog box



PTFER displays a message saying that it is expecting the file (see figure 4-3). You can then make the appropriate selections on the portable to upload the data into the specified file on your computer (see pages 26–28).

FIGURE 4-3
The PTFER window during an upload



NOTE *If you don't see the success message, you may need to select a different port.*

When the file has been successfully transferred, a message appears in the PTFER window.

Downloading a File

To send a file from the PC to the PT 2000 or TopGun, first prepare the portable to receive a file. (See the information about the DESCRIPT application in the *Portable Applications Library [PAL] User's Guide*.) Then select File⇨Send from the PTFER menu, and specify the name and location of the file in the File to Transmit dialog box. (Except for the title bar, the File to Transmit dialog box is identical to the File to Receive dialog box, shown in figure 4-2.)

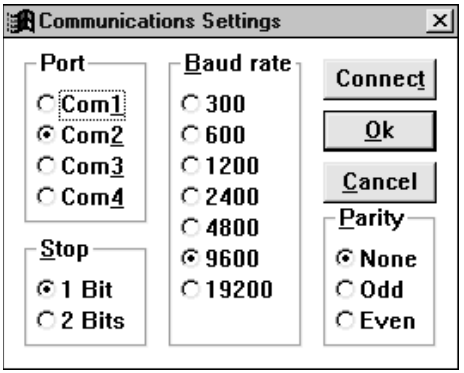
When the file has been successfully transferred, a message appears in the PTFER window.

Changing Settings

By default, PTFER uses your computer's COM2 port for communicating with the portable. If your COM2 port is already in use by a modem, mouse, or other device, you'll need to specify a different port. You can also alter the communications settings for the port, if you wish.

To use a different port or to alter port settings, select Options⇨Settings from the PTFER menu. The Communications Settings dialog box appears (see figure 4-4).

FIGURE 4-4 The Communications Settings dialog box



When a connection has been made to the serial port, the Settings option is dimmed on the menu and cannot be selected. Select Options⇨Connect again to disconnect the application, and then select Options⇨Settings again.

If you are not sure what settings you need, it's best to leave them alone. If you changed any of these settings in the PT 2000 or TopGun and you want to restore the factory defaults, scan the following bar code:

To use a different COM port, select it in the Port options group. You can also switch baud rate, the number of stop bits, and the type of parity. (The settings you use should match the settings used in the PT 2000 or TopGun.)

When you're done, you can click on the Connect button to connect to the port, or select Ok and then use the Connect command in the menu to make the connection.

Setting Command Line Options

You can change settings for the Portable File Transfer program *before* starting the program by entering options for the command that starts it. Type the options using the following syntax:

```
ptfer filename [-¦/][Pn][Bn][Dn][action]
```

where

filename = the name of the file you want to transfer (include the extension)
Pn = the number of the COM port to be used (1, 2, 3, or 4; the default setting is P2)
Bn = the baud rate to use (the default setting is B9600)
Dn = the timeout period, in seconds (the default is 30 seconds on receive and 1 second on transmit)
action = A to receive data and append it to the existing file
C to connect automatically when transmitting or receiving
E to echo the display to the screen
H to display onscreen help
M to maximize the PTFER window
N to minimize the PTFER window
0*n n n* to set the size and position of the PTFER window
R to receive data from the portable and replace the existing file contents
S to display the line count in the title bar
T to transfer data to the portable (the default)
X to exit automatically after data is transmitted or received

The port, baud rate, timeout, and action parameters are optional. If you use one or more parameters, you must precede them with a hyphen (-) or a slash (/). You can enter parameters either before or after the file name.

In Windows 3.x, the command is in the Command Line *input box in the application's* Program Item Properties *window in the Program Manager.*

In Windows 95, you must first create a shortcut to the application. (Your Desktop is a good place to put the shortcut.) You can then find the command in the Target *input box on the* Properties *tab of the shortcut's* Properties *window.*

For example, the command `ptfer link.txt /P1` would send the file named LINK.TXT over COM1 to the portable (the default action, `T`, is assumed). The command `ptfer -3r data.txt` would upload data from the portable over COM3 into a file named DATA.TXT.

The port, baud rate, and position and size settings are saved to and restored from the initialization file.

Using PDTFER

Instead of using the PTFER application in Windows, you can transfer files to and from the PT 2000 or TopGun using commands on the DOS command line.

The command line syntax for transferring files with PDTFER is as follows:

`pdtfer` *`filename`* `[-¦/][`*`port`*`][B`*`n`*`][D`*`n`*`][`*`action`*`]`

where

Files must be transferred to or from the current DOS directory.

`filename` = the name of the file you want to transfer (include the extension)

`port` = the number of the COM port to use (`1`, `2`, `3`, or `4`; the default setting is `2`)

`B`*`n`* = the baud rate to use (the default setting is `B9600`)

`D`*`n`* = the timeout period, in seconds (the default is 30 seconds on receive and 1 second on transmit)

`action` = `A` to receive data and append it to the existing file
`E` to echo the display to the screen
`H` to display onscreen help
`R` to receive data from the portable and replace the existing file contents
`T` to transfer data to the portable (the default)

The port, baud rate, timeout, and action parameters are optional. If you use one or more parameters, you must precede them with a hyphen (`-`) or a slash (`/`). You can enter parameters either before or after the file name.

For example, the command `pdtfer link.txt /1` would send the file named LINK.TXT over COM1 to the portable (the default action, `T`, is assumed). The command `pdtfer -3r data.txt` would upload data from the portable over COM3 into a file named DATA.TXT.

Using MACTFER

You can use the MACTFER program to transfer data between a PT 2000 or TopGun and a Macintosh computer. You will need two cables to connect the portable to your computer. (Contact your Percon dealer to order the program and the cables.)

To transfer data using the MACTFER program, complete the following steps:

1. Copy the MACTFER.EXE file from the supplied floppy disk to your Macintosh hard drive.
2. Scan the following bar code to make sure the portable's serial communications parameters are set to the defaults:

3. Connect the 25-pin connector of the serial cable (Percon part #00-884-19) to the 25-pin connector on the Macintosh cable (Percon part #00-884-25).
4. Connect the other end of the serial cable to the cable input jack on the bottom of the portable.
5. Plug the mini-DIN end of the Macintosh cable into the Macintosh modem port. The modem port is marked with the following icon: 
6. Start the MACTFER program on the Macintosh. An untitled window appears for displaying received or transferred data.

If you are using the PT Dock, connect the serial cable to the input connector on the back of the dock. (See appendix D for more information.)

7. To upload a file from the portable to the Macintosh, select File⇨Receive and use the Receive File dialog box to specify the name and location of the file you want to store the data in. You can then select options on the portable to upload the data into the specified Macintosh file.

NOTE *You can copy received data to other applications using the* Edit⇨Copy *command.*

8. To send a file to the portable, select File⇨Send and specify the name and location of the file in the Send File dialog box. To accept the transferred file, the portable must be programmed to accept serial input and store it in a file or register. Depending on the program, you may need to select some options on the portable first.

Using updtfer

NOTE *Contact your Percon dealer to order the updtfer program.*

You can use the updtfer program to transfer data between a PT 2000 or TopGun and a UNIX computer. The updtfer program transmits and receives data to or from the portable using Percon's ACK/NAK protocol.

To install the program, use the UNIX `tar` command to copy the updtfer file from the supplied floppy disk to your hard drive.

Use the following command syntax to transfer files with updtfer:

```
updtfer device filename -options
```

where

device = the serial port device name, such as /dev/tty1a
filename = the name of the file you want to transfer
options = one or more transfer options, preceded by a hyphen (-)

You can use any of the following options:

- `t` transmits data in the given file to the portable. The portable should be properly connected to the specified serial port and ready to receive data.
- `r` receives data from the portable and stores it in the given file. When receiving data from the portable, you should start updtfer before invoking the transfer on the portable.
- `a` appends the given file with data received from the portable.
- `d` displays debugging information on the screen during transfer.
- `s` performs the transfer "silently" (without displaying received data on the screen).
- `h` displays help on program usage and options.

For example, `updtfer /dev/tty2a readin.dat -r` would receive data from a portable connected to a serial port named /dev/tty2a and place data in a file named READIN.DAT.

The updtfer program has the following settings. The portable's communications settings must match.

- ❑ Baud rate: 9600
- ❑ Stop bits: 1
- ❑ Data bits: 8
- ❑ Parity: None
- ❑ Flow control: ACK/NAK; no XON/XOFF

The updtfer program returns an exit status of 0 if the transfer is successful. If the transfer is unsuccessful, it returns a nonzero status, such as 1.

APPENDIX A

Programming Parameters

NOTE *For information about programming, see chapter 3.*

This appendix provides information about all programmable settings for the PT 2000 and TopGun.

Tables A-1 lists programming I.D. numbers for predefined defaults (see page 37).

Table A-2 lists save-and-exit settings.

Table A-3 provides the following information:

NOTE *For explanations of some general programming parameters, see page 40. For explanations of serial parameters, see page 42.*

- **Code Parameter** is the "human" name for programming options.
- **I.D. #** is the "portable" name for programming options. For example, if you wanted to set a Code 39 minimum label length, you would enter 01 when programming the portable. Programming I.D. numbers given in this appendix can be used with all programming methods.
- **Type** tells what kind of setting to use for each code parameter:
  - **On/Off** is a toggle. 1 turns the parameter on, and 0 turns it off.
  - **Value** requires a two-character entry (e.g., 02 for two beeps after each good read, or 05 for a length of five).

- **String** uses one or more ASCII characters, followed by // to indicate the end of the string.
- **Immediate** takes effect as soon as the I.D. number is entered.

- **Acceptable Input** gives the settings or range of settings that you can use for each code parameter.
- **Predefined Defaults** tells how the parameter is set when you select predefined default D0, D1, or D2 (see page 37).

Table A-4, beginning on page 61, lists parameter settings for serial communications.

TABLE A-1
Predefined Defaults

Setting	I.D. #	Type
Predefined default set 0	D0	Immediate
Predefined default set 1	D1	Immediate
Predefined default set 2	D2	Immediate
Predefined serial defaults	C8	Immediate

TABLE A-2
Save-and-Exit Settings

Setting	I.D. #	Type
Save and exit	EE	Immediate
Exit only, no save	EF	Immediate

TABLE A-3
General Programming Parameters

Code Parameter	I.D. #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
Code 39			*Enter 1 for On and 0 for Off.*			
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
Interleaved 2 of 5			*Enter 1 for On and 0 for Off.*			
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

table continues

Code Parameter	I.D. #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
Codabar			*Enter 1 for On and 0 for Off.*			
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
Code 93			*Enter 1 for On and 0 for Off.*			
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
Universal Product Code-A (UPC-A)			*Enter 1 for On and 0 for Off.*			
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
Universal Product Code-E (UPC-E)			*Enter 1 for On and 0 for Off.*			
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

table continues

Code Parameter	I.D. #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
European Article Numbering (EAN)/ Japan Article Numbering (JAN)			*Enter 1 for On and 0 for Off.*			
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
UPC, EAN, JAN Extensions			*Enter 1 for On and 0 for Off.*			
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
Code 128			*Enter 1 for On and 0 for Off.*			
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
Other Controls			*Enter 1 for On and 0 for Off.*			
Enable manual reset	B0	On/Off	On *or* Off	On	On	On
Auto-Off	B2	Value	00–99 *(minutes)*	00	60	10
Intercharacter delay (keyboard wedge only)	B3	Value	00–99 *(milliseconds)*	00	06	00

table continues

Code Parameter	I.D. #	Type	Acceptable Input	Predefined Defaults		
				D0	D1	D2
Other Controls *(continued)*			*Enter 1 for On and 0 for Off.*			
Add code ID*	B5	On/Off	On *or* Off	Off	On	Off
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
Beeper volume	BC	Value	00 = Off 01 *(low)* – 07 *(high)* 08 = One level higher 09 = One level lower	07	07	07
Error tone	BD	Value	00 *(low)* – 07 *(high)*	03	03	03
Time format	D8	On/Off	On = 24-hour Off = 12-hour	On	On	On
Date format	D9	On/Off	On = International Off = U.S.	Off	Off	Off
Keyboard click	DD	On/Off	On *or* Off	On	On	On
Laser delay	DE	Value	00–99 *(10-millisecond units)*	01	01	01

**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

TABLE A-4
Serial Programming Parameters

Code Parameter	I.D. #	Type	Acceptable Input	Predefined Default (C8)
			Enter 1 for On and 0 for Off.	
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 *or* 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

table continues

Code Parameter	I.D. #	Type	Acceptable Input	Predefined Default (C8)
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

Full Keyboard Support

Almost every key on your keyboard—including nonprinting keys, such as PgDn and Ctrl—can be programmed into your PT 2000 or TopGun. The tables in this appendix list Code 39 equivalents for programming all keyboard keys.

Use the Code 39 values to create bar codes to include lowercase or nonalphanumeric characters in a bar code. For example, to include an exclamation mark (!) in a bar code, you would encode it as /A (slash capital *a*).

Full ASCII mode for Code 39 must be enabled in the portable.

Some keys act immediately when read into the portable. For example, the portable transmits the page-down command to the computer as soon as it reads a bar code containing the characters %U$Z.

Other keys are not quite so simple. For example, the Ctrl key has to be "turned on and off." When you type Ctrl+C, for instance, you hold the Ctrl key down while you press C, and then you release the Ctrl key. Three signals are sent to the host device:

Ctrl key on (down) C Ctrl key off (up)

To include the Ctrl+C keystroke combination in a bar code, you would encode RCS. This is the way you need to think when encoding Ctrl, Alt, Shift, and other keys requiring a key to be held down while another is pressed.

Including a function key in a bar code can present a problem if your portable is programmed to follow every bar code transmission with an autoterminator character. You can eliminate the autoterminator in a bar code by including the "zap" character, $Z, in any bar code that you do *not* want followed by the autoterminator. For example, you would encode %UAZ to send function key F1 with no autoterminator after it.

Table B-1 lists the Code 39 and ASCII equivalents for keys that are common to many keyboards. Table B-2 lists equivalents for additional keys found on IBM PC and compatible keyboards.

TABLE B-1
Common Keyboard Keys

Key	Code 39	ASCII Value	Key	Code 39	ASCII Value	Key	Code 39	ASCII Value
SP	*space*	20	A	A	41	a	+A	61
!	/A	21	B	B	42	b	+B	62
"	/B	22	C	C	43	c	+C	63
#	/C	23	D	D	44	d	+D	64
$	/D	24	E	E	45	e	+E	65
%	/E	25	F	F	46	f	+F	66
&	/F	26	G	G	47	g	+G	67
'	/G	27	H	H	48	h	+H	68
(	/H	28	I	I	49	i	+I	69
)	/I	29	J	J	4A	j	+J	6A
*	/J	2A	K	K	4B	k	+K	6B
+	/K	2B	L	L	4C	l	+L	6C
,	/L	2C	M	M	4D	m	+M	6D
-	- *or* /M	2D	N	N	4E	n	+N	6E
.	. *or* /N	2E	O	O	4F	o	+O	6F
/	/O	2F	P	P	50	p	+P	70

table continues

Key	Code 39	ASCII Value	Key	Code 39	ASCII Value	Key	Code 39	ASCII Value
0	0 *or* /P	30	Q	Q	51	q	+Q	71
1	1 *or* /Q	31	R	R	52	r	+R	72
2	2 *or* /R	32	S	S	53	s	+S	73
3	3 *or* /S	33	T	T	54	t	+T	74
4	4 *or* /T	34	U	U	55	u	+U	75
5	5 *or* /U	35	V	V	56	v	+V	76
6	6 *or* /V	36	W	W	57	w	+W	77
7	7 *or* /W	37	X	X	58	x	+X	78
8	8 *or* /X	38	Y	Y	59	y	+Y	79
9	9 *or* /Y	39	Z	Z	5A	z	+Z	7A
:	/Z	3A	@	%V	40	`	%W	60
;	%F	3B	[	%K	5B	{	%P	61
<	%G	3C	\	%L	5C	|	%Q	7C
=	%H	3D	]	%M	5D	}	%R	7D
>	%I	3E	^	%N	5E	~	%S	7E
?	%J	3F	_	%O	5F	Del	%T	7F
*Zap**	$Z	1A						

**Not an actual key; see information about the "zap" character on page 64*

TABLE B-2
IBM (or Compatible) PC Keyboard Keys

Key	Code 39	ASCII Value	Key	Code 39	ASCII Value
F1	%U$A	8001	¦	%U%A	801B
F2	%U$B	8002	Ø	%U%B	801C
F3	%U$C	8003	¨	%U%C	801D

table continues

Key	Code 39	ASCII Value	Key	Code 39	ASCII Value
F4	%U$D	8004	Æ	%U%D	801E
F5	%U$E	8005	Caps Lock	$C	03
F6	%U$F	8006	Num Lock	$D	04
F7	%U$G	8007	Scroll Lock	$E	05
F8	%U$H	8008	Backspace	$H	08
F9	%U$I	8009	Horizontal Tab	$I	09
F10	%U$J	800A	Vertical Tab	$K	0B
F11	%U$K	800B	Enter	$M	0D
F12	%U$L	800C	Alt Off	$N	0E
Insert	%U$U	8015	Alt On	$O	0F
Home	%U$V	8016	Ctrl Off	$R	12
Page Up	%U$W	8017	Ctrl On	$S	13
Delete	%U$X	8018	Shift Off	$V	16
End	%U$Y	8019	Shift On	$W	17
Page Down	%U$Z	801A	Esc	%A	1B
Numeric Keypad					
Enter	%U%E	801F	3	%U3	8033
*	%U/J	802A	4	%U4	8034
+	%U/K	802B	5	%U5	8035
-	%U-	802D	6	%U6	8036
/	%U/O	802F	7	%U7	8037
0	%U0	8030	8	%U8	8038
1	%U1	8031	9	%U9	8039
2	%U2	8032			

The TopGun Module

Attaching the TopGun Module to the PT 2000

NOTE

If your PT 2000 is missing the hand strap and screws, contact your dealer to order replacements. Ask for the PT 2000 strap kit (Percon part number 00-994-00).

If you purchased a TopGun module and a PT 2000 separately, complete the following steps to combine them:

1. Pull the hook on the elastic hand strap out of the holder near the base of the PT 2000 (see figure C-1).
2. Remove the two screws that attach the other end of the hand strap to the PT 2000 (see figure C-1).
3. Place the TopGun module on the top of the PT 2000 and gently press it onto the 9-pin connector (see figure C-2).

FIGURE C-1 The back of the PT 2000

FIGURE C-2 Attaching the TopGun module

4. Place the flat metal plate at the top end of the elastic hand strap over the indentation on the back of the TopGun module and insert the screws (see figure C-3).

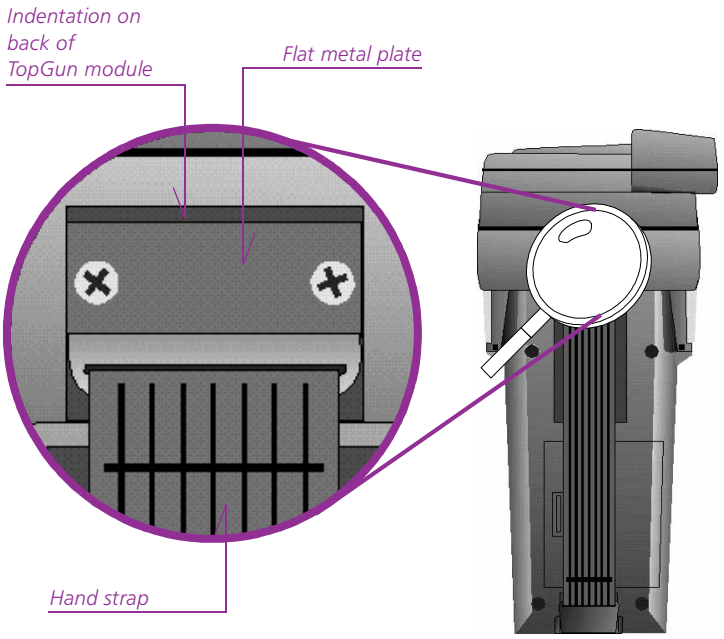


FIGURE C-3 Replacing the hand strap (magnified view)

5. Tighten the screws until the metal plate is secure.
6. Replace the hand-strap hook into its holder.

Changing TopGun to a Left-Handed Model

TopGun comes assembled for right-handed use. However, if you prefer to hold the unit in your left hand, you can easily change the assembly. Refer to figure C-4, and complete the following steps:

1. Remove the two screws from the top of the TopGun module.
2. Gently lift the top to separate it from the rest of the module. (Be careful not to break the ribbon cable inside the module.)
3. Turn the top around so that the laser is pointing in the opposite direction.
4. Replace the top of the module.
5. Insert and tighten the two screws. (Do not over-tighten them.)

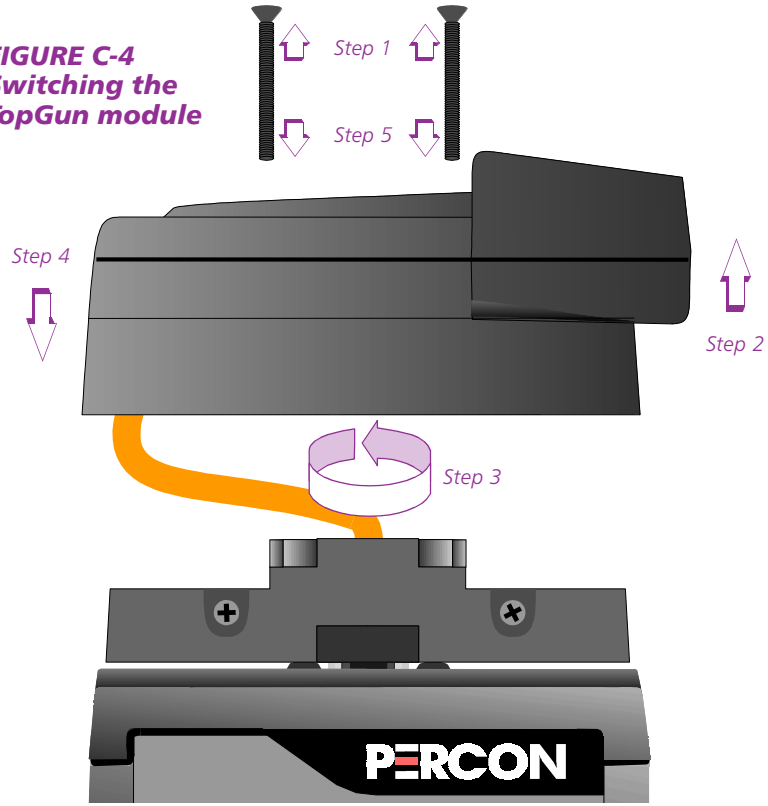
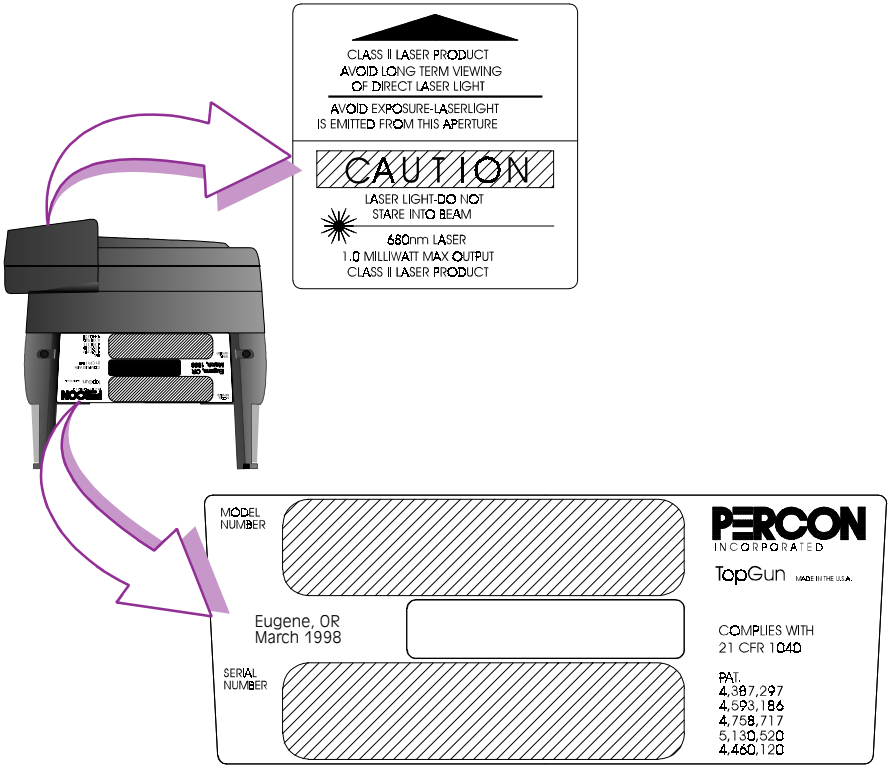


FIGURE C-4 Switching the TopGun module

Laser Specifications and Labeling

- Laser classification: CDRH Class II
- Light source: 680-nm laser diode
- Minimum element width: 6.0 mils
- Depth of field: 2 to 24 inches (55-mil labels)
- Operating temperature: -4° to 109°F (-20° to 43°C)

FIGURE C-5
Product labeling for the TopGun module



APPENDIX D

The PT Dock

About the PT Dock

The Percon PT Dock is specially designed for use with the PT 2000 or TopGun. The dock provides a connection between the portable and your computer without sacrificing the convenience of portability. Instead of attaching a cable each time you want to transmit data to or from the portable, you simply place the unit into the dock. When you want to use the portable for data collection again, you just remove it from the dock.

The PT Dock comes with the following accessories:

- ❑ An adapter for the base of the PT 2000 or TopGun, and two screws
- ❑ Rubber pads and Velcro™ strips for the bottom of the dock

Cables and a power adapter for the PT Dock are available separately from your Percon dealer.

Setting Up the PT Dock

Attaching the PT Dock Adapter to the Portable

Before using the PT Dock for the first time, you must connect the adapter to the base of the PT 2000 or TopGun (see figure D-1). Complete the following steps:

1. Align the pins on the PT Dock adapter with the holes in the connector on the base of the PT 2000 or TopGun. Be sure the orientation of the adapter matches the orientation of the base, as shown in figure D-2.
2. Gently press the PT Dock adapter into the base of the PT 2000 or TopGun. Then use the two provided screws to secure the adapter to the portable.

NOTE *Be careful not to overtighten the screws.*

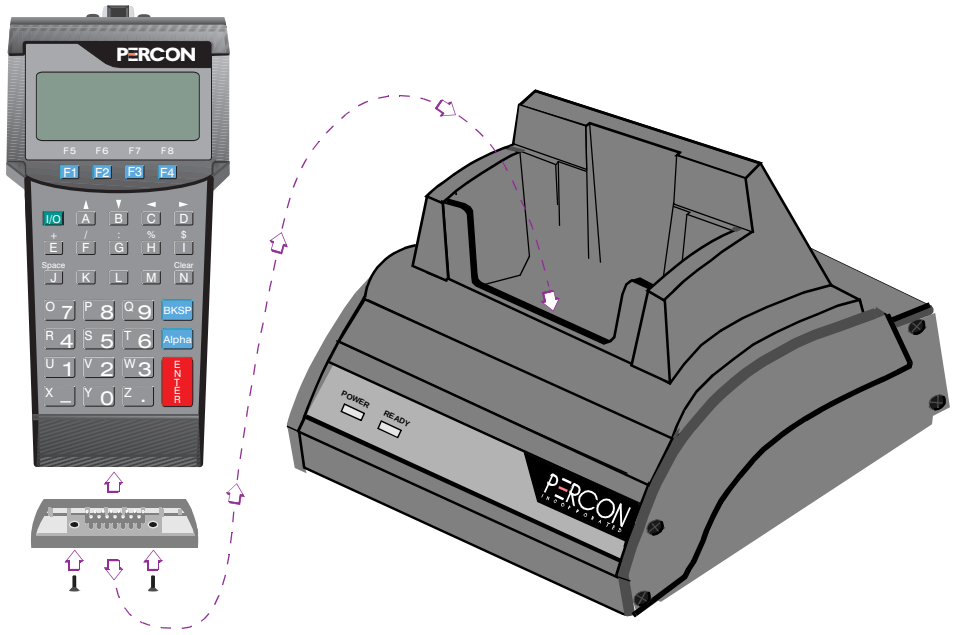
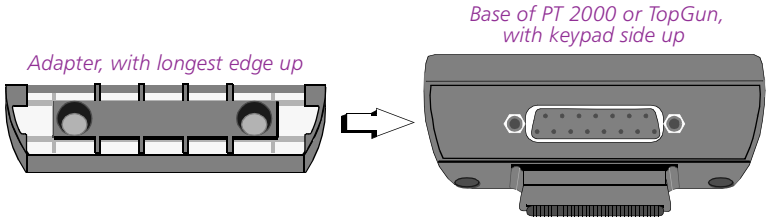


FIGURE D-1 The PT 2000, PT Dock, and adapter

FIGURE D-2 Attaching the adapter



Attaching the PT Dock to Your Computer

You can set up the dock as either a serial device or a keyboard wedge. The cable that you use with the PT Dock depends on your computer type and the setup you wish to use (serial or keyboard wedge). The following table lists the Percon part numbers for the cables that work with the PT Dock:

NOTE *You cannot connect a PT Dock to a computer using an off-the-shelf RS-232 cable. You must use a Percon cable that is manufactured specifically for the PT Dock.*

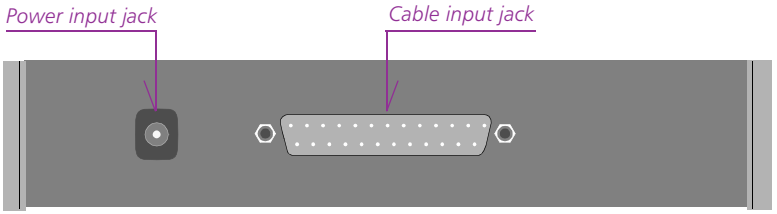
Serial Cables	
Cable Number	**Type**
00-874-04	25-pin
00-874-05	9-pin
00-874-06	25-pin with hardware handshake
00-874-07	9-pin with hardware handshake
00-874-17	Macintosh
00-884-27	Modem
Keyboard Wedge Cables	
Cable Number	**Type**
00-001-00	AT
00-061-00	PS/2-style connector

NOTE *You do not need a power adapter to run the PT Dock. The power adapter is used only to recharge the batteries in the portable. However, if you do not use it, the LED indicators on the PT Dock will not light up.*

SERIAL CONFIGURATION

1. Be sure the power to your computer is turned off.
2. One plug on the serial cable is labeled with the cable number (for example, 00-874-04). Attach that plug to the cable input jack on the back of the PT Dock (see figure D-3).
3. Attach the other end of the cable to an available serial port on your computer.
4. If you ordered the optional power adapter, attach it to the power input jack on the back of the PT Dock. (For more information about the power adapter, see page 78).
5. Turn on the computer.

FIGURE D-3
Back of the PT Dock

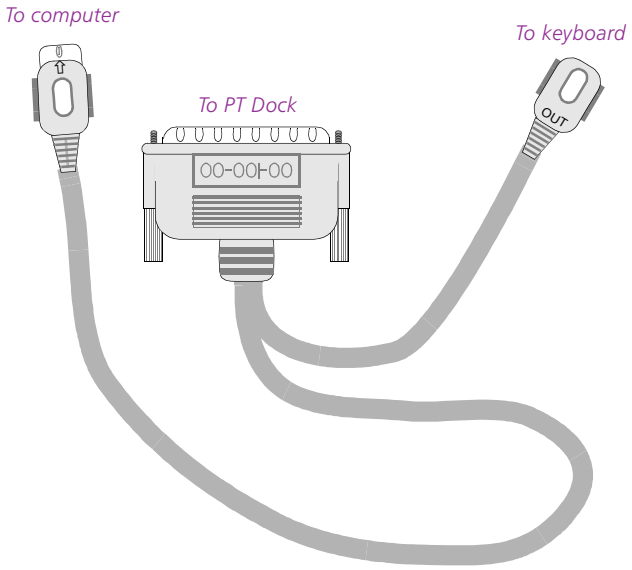


NOTE *For pin assignments for the cable connector, see page 89.*

KEYBOARD WEDGE CONFIGURATION

1. Be sure the power to your computer is turned off.
2. Plug the 25-pin connector of the cable into the cable input jack on the back of the PT Dock (see figure D-3).
3. Attach the small male plug of the Percon cable to the keyboard jack on your computer (see figure D-4).

FIGURE D-4
Keyboard wedge cable 00-001-00



4. Attach the keyboard cable to the small female jack on the Percon cable (see figure D-4).
5. Turn on the computer. The green light-emitting diode (LED) labeled POWER on the front panel of the PT Dock should light up.

About the Power Adapter

If you are using the PT Dock with a serial cable, you can use a 9-volt power adapter to recharge the batteries in the PT 2000 or TopGun. Power adapters are available from your Percon dealer. (For the keyboard wedge configuration, power is supplied by your computer.)

NOTE *Use only a 9-volt power adapter supplied by Percon. Using another adapter can damage the unit.*

Attach the small, round plug of the power adapter to the power input jack on the back of the PT Dock (see figure D-3). Plug the other end into a 110-volt outlet or power strip. The green light-emitting diode (LED) labeled POWER on the front panel of the PT Dock should light up.

Using the PT Dock

Set up the PT Dock as described in the preceding section. Place the PT 2000 or TopGun into the dock, with the keypad facing out. If you are using a power adapter or the keyboard wedge configuration, the green LED labeled READY on the front panel of the PT Dock should light up. (If the READY light does not come on, make sure the POWER light is on and the portable is fully inserted into the dock. If it still doesn't work, make sure the PT Dock adapter is securely attached to the portable and that the contacts in the dock are clean.)

While the PT 2000 or TopGun is in the PT Dock, you can download programs or data to it or upload data from it just as if it were connected directly to your computer. You can even leave the PT 2000 in the dock while you use an attached bar code reader.

Recharging the Portable's Batteries

To recharge the batteries, you must use the keyboard wedge connection or the power adapter.

If you are using a nickel-cadmium (NiCad) battery pack in the portable, you can use the PT Dock to recharge it. Simply leave the battery pack in the portable when you place it in the dock. The battery pack and the backup battery will be recharged while the READY light is on. (Make sure switch 2 in the portable's battery compartment is in the correct position; see page 82.)

Maintenance

With normal use, the PT Dock should require no maintenance. If you need to clean the contacts in the dock or on the adapter, simply wipe them with a damp cloth after removing the power supply (adapter or keyboard wedge cable) from the unit. Wait for the contacts to dry before using the PT Dock again.

APPENDIX E

Batteries

The PT 2000 and TopGun run on two types of batteries. The main batteries supply operating power for the PT 2000 unit and for the TopGun module or another input device. The internal lithium battery provides backup power to maintain the random-access memory and real-time clock when the main batteries are removed.

The portable can use two different types of main batteries: individual alkaline cells or a rechargeable nickel-cadmium (NiCad) battery pack.

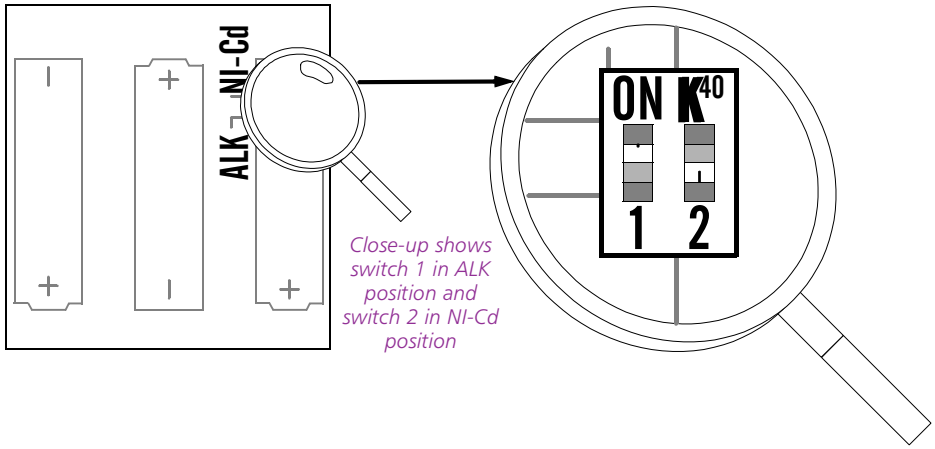
Alkaline Batteries

Your Percon PT 2000 or TopGun comes with three alkaline batteries installed. To replace the alkaline batteries, complete the following steps:

1. Detach the elastic hand strap on the back of the portable by pulling its hook out of its holder near the base (see figure C-1 on page 68).
2. Press on the arrow symbol on the battery-compartment cover and push the cover in the direction indicated by the arrow.
3. Pull the end of the plastic ribbon sticking out of the battery compartment toward the batteries until they pop out.

4. The inside of the battery compartment contains two switches that must be set correctly for the type of batteries you are using. A diagram inside the compartment indicates switch positions for alkaline ("ALK") and nickel-cadmium ("NI-Cd") batteries (see figure E-1). Make sure switch 2 is in the "ALK" position. If it is not, use a pen or a small screwdriver to slide the switch to that position. (This prevents the unit from trying to charge the alkaline batteries, which may cause them to leak, damage the unit, and void the warranty.) Switch 1 may be in either position.

FIGURE E-1
Base of the battery compartment



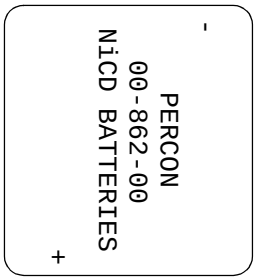
5. Lay the plastic ribbon along the bottom of the battery compartment with the end sticking out of the compartment.
6. Insert the batteries in the positions indicated by the diagram inside the compartment.
7. Replace the battery-compartment cover by sliding it into place. (Be sure the plastic ribbon is tucked underneath the cover.)
8. Replace the hand-strap hook into its holder.

NiCad Battery Pack

The battery pack for the PT 2000 and TopGun (Percon part #00-862-00) contains three rechargeable AA NiCad batteries. To install the NiCad battery pack, complete the following steps:

1. Detach the elastic hand strap on the back of the portable by pulling its hook out of its holder near the base (see figure C-1 on page 68).
2. Press on the arrow symbol on the battery-compartment cover and push the cover in the direction indicated by the arrow.
3. Pull the end of the plastic ribbon sticking out of the battery compartment toward the batteries until they pop out.
4. The inside of the battery compartment contains two switches that must be set correctly for the type of batteries you are using. A diagram inside the compartment indicates switch positions for alkaline (“ALK”) and nickel-cadmium (“NI-Cd”) batteries (see figure E-1). Make sure switch 2 is in the “NI-Cd” position. If it is not, use a pen or a small screwdriver to slide the switch to that position. Switch 1 may be in either position.
5. Lay the plastic ribbon along the bottom of the battery compartment with the end hanging out of the compartment.
6. Find the positive (+) and negative (-) symbols on the battery pack’s label (see figure E-2). With the label facing you, tilt the negative end of the pack into the upper end of the battery compartment, and then gently press the positive end until it is fully inserted into the battery compartment.

FIGURE E-2
Battery pack label



7. Replace the battery-compartment cover by sliding it into place. (Be sure the plastic ribbon is tucked underneath the cover.)
8. Replace the hand-strap hook into its holder.

WARNING

Do not short-circuit a battery—damage to the battery can result. Do not incinerate, crush, or puncture batteries. The electrolyte contained in NiCad batteries is composed of caustic materials that are harmful to the eyes and skin. Dispose of batteries in compliance with all applicable regulations for your location.

Recharging the NiCad Battery Pack

If the portable will not turn on or if the message LOW BATTERY appears on the display, your battery pack needs recharging. To recharge the NiCad battery pack, you need a cable (Percon part #884-19) and an external 9-volt power adapter (available from your Percon dealer). A full charge takes about eight hours.

To recharge the NiCad battery pack, complete the following steps:

1. If the portable is on, turn it off.
2. One of the connectors on the cable has the cable number on it. Plug that connector into the cable input jack on the bottom of the portable.

Use only a power adapter supplied by your Percon dealer. Using another adapter can damage the portable.

3. Attach the small, round plug of the 9-volt power adapter to the round power input jack on the cable connector labeled COMPUTER. Plug the other end into an outlet or power strip.

You can also use the PT Dock to recharge the NiCad batteries. Simply leave the batteries in the PT 2000 or TopGun when you place it in the dock. The batteries will be recharged while the READY light is on. (Make sure switch 2 in the portable's battery compartment is in the "NI-Cd" position; see figure E-1.)

It is best to charge the battery pack at or slightly below room temperature. Always charge the battery within the temperature range of 50°–85°F (10°–30°C).

Storing the NiCad Battery Pack

The battery pack can be stored indefinitely, regardless of its charge state. Store it between -22° and 122°F (-30° to 50°C). Stored batteries lose about ten percent of their charge per month when they are kept at room temperature. Batteries stored at higher temperatures discharge at a faster rate.

Lithium Backup Battery

The portable contains a lithium battery as a backup to save collected data and system information, including the clock setting. Under most circumstances, a fully charged backup battery will keep information for at least 10 days if the main batteries completely discharge or are removed. This gives you plenty of time to recharge the battery pack without risk of losing data.

The backup battery is recharged whenever a charged battery pack is installed as well as when the power supply is connected.

Low Battery Indication

NiCad Battery Pack or Alkaline Batteries

The portable indicates when the battery pack or alkaline batteries are low by flashing LOW BATTERY on the display. About 20 minutes of use remain before the main batteries reach their automatic low-power shutdown point.

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

Backup Battery

When the lithium backup battery is low, LOW BACKUP flashes on the display. This also occurs immediately after the battery pack is inserted if the portable has been stored for a long time without charging. The backup battery begins recharging as soon as a charged battery pack is inserted. The LOW BACKUP message should disappear after 10 minutes, although it takes up to an hour to recharge a completely discharged backup battery.

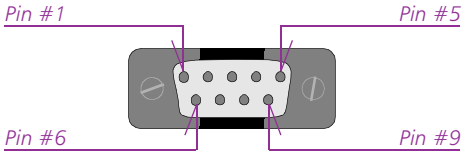
You may lose stored data if you remove the battery pack while the LOW BACKUP message is flashing on the display. Charge the battery pack inside the portable.

If the LOW BACKUP message does not disappear or occurs other than at initial use after prolonged storage, then the backup battery is no longer properly accepting a charge from the battery pack or adapter. Contact your Percon dealer.

You can also use the PT Dock to recharge the lithium backup battery in the portable. The battery will be recharged while the READY light is on. (Make sure the switch in the portable's battery compartment is in the correct position for the type of batteries you are using.)

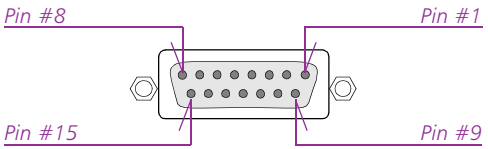
Connector Configurations

Bar Code and Magnetic Stripe Reader Connector



Pin #	Description
1	Laser sync in
2	Bar code data in
3	Good-read out
4	Mag stripe information in
5	Laser trigger in
6	Laser-scan enable out
7	Ground
8	Ground
9	+5V

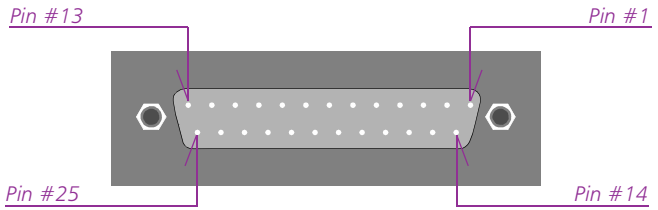
Interface Cable Connector



Pin #	Description
1	Shield
2	Transmit data out
3	Receive data in
4	Hardware handshake out*
5	Hardware handshake in
6	Not used
7	Ground
8	Cable detect
9	+5V in
10	+9V in
11	485+
12	485-
13	Wedge clock
14	Wedge data
15	Wedge keyboard enable

**Must be connected to CTS or hardware handshake out on your computer.*

PT Dock



Pin #	Description	Usage	Pin #	Description	Usage
1	No connection		14	Ground	
2	No connection	Reserved	15	No connection	
3	No connection	Reserved	16	No connection	
4	485-	Reserved	17	No connection	
5	485+	Reserved	18	No connection	
6	No connection		19	Serial handshake out	Controls received data
7	Keyboard interface		20	Serial data in	Received data to dock
8	Keyboard interface		21	Serial data out	Transmitted data from dock
9	No connection		22	No connection	
10	No connection		23	+5V	+5 volts in to dock
11	Serial handshake in	Controls transmitted data	24	No connection	
12	Keyboard interface		25	Ground	
13	Keyboard interface				

Warranty and Customer Support

Warranty

The PT 2000 and TopGun are warranted by Percon against defects in materials and workmanship for one (1) year from the date of shipment by Percon. During its warranty period, we will repair or, at our option, replace at no charge any Percon product that proves to be defective, provided you return the product, shipping prepaid, to Percon. (For information on returning the product, see "Return Information" on page 92.)

This warranty does not apply if the product has been damaged by accident or misuse or as the result of service or modification by other than Percon authorized personnel.

No other express warranty is given. The replacement of a product is your exclusive remedy. Any other implied warranty of merchantability or fitness is limited to the duration of this written warranty. Some states, provinces, and countries don't allow limitations on how long an implied warranty lasts, and so the above limitation may not apply to you.

In no event shall Percon be liable for consequential damages. Some states, provinces, and countries do not allow the exclusion or limitation of incidental or consequential damages, and so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state, province to province, or country to country.

Products are sold on the basis of specifications applicable at the time of manufacture. Percon shall have no obligation to modify or update products once sold.

Return Information

If you have a problem with a Percon product, contact your Percon dealer first. Your dealer may tell you to return the product to Percon. If so, contact Percon's Customer Service department at 541-344-1189 for instructions and a return-authorization (R/A) number. You pay shipping to us; we pay return shipping. Percon will repair or replace the product and pay to ship it back to you via FedEx Economy or an equivalent manner at an equivalent price. If you wish, you may pay for a shipping upgrade.

Please be prepared to provide the following information when you call for an R/A number:

- ❑ "Ship to" company, address, contact person, and telephone number
- ❑ "Bill to" company, address, contact person, and telephone number (if different)
- ❑ Model and serial number of product
- ❑ Description of problem (as complete as possible)

Ship the product *prepaid* to:

R/A Number: _____
Percon Repair Department
1720 Willow Creek Circle, Suite 530
Eugene, OR 97402-9171 USA

When returning the product, please include any information you can provide about the exact nature of the problem. This may speed the diagnostic and repair process. Also include a copy of the original invoice. It will help resolve any questions about warranty coverage.

If you are not using the original shipping container when returning a Percon product, please be sure that there is at least four inches of packing material between each side of the unit and its shipping container. For your own protection, we recommend you insure any equipment being sent to Percon.

Make a note of your R/A number and product serial number in your records for future reference.

Customer Service and Technical Support

If you have a question or problem that you are unable to resolve by reading the manual, *and if you have sent in your product-registration card,* you can get free technical assistance from Percon's Customer Service department. To contact Customer Service, call 541-344-1189 between 7 A.M. and 5 P.M. Pacific time, Monday through Friday.

If you prefer to correspond by letter, fax the Customer Service department at 541-344-1399 or write to

Percon, Inc.
Customer Service Dept.
1720 Willow Creek Circle, Suite 530
Eugene, OR 97402-9171 USA

APPENDIX H

Bar Codes for Programming TopGun and the PT 2000

This chapter provides bar codes for common setup parameters for programming the Percon PT 2000 and TopGun. Factory default settings (D2) are underlined.

Alphabetical List of Contents

Predefined Defaults

DO

D1

D2

Serial defaults

Code 39

ENABLE

On

Off

MINIMUM LENGTH

00

10

20

30

40

50

60

MAXIMUM LENGTH

10

20

30

40

50

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

6

10

20

30

40

50

60

MAXIMUM LENGTH

10

20

30

40

50

60

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

2

4

6

8

10

12

14

16

18

20

ENABLE CHECKSUM

On

Off

SEND CHECKSUM

On

Off

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

On

Off

Codabar

ENABLE

On

Off

MINIMUM LENGTH

04

10

20

30

40

50

60

MAXIMUM LENGTH

10

20

30

40

50

60

SEND STOP/START

On

Off

CONVERT CODABAR TO CLSI

On

Off

Code 93

ENABLE

On

Off

MINIMUM LENGTH

2

10

20

30

40

50

MAXIMUM LENGTH

2

10

20

30

40

50

UPC-A

ENABLE UPC-A

On

Off

SEND SYSTEM DIGIT

On

Off

SEND CHECK DIGIT

On

Off

CONVERT UPC-A TO EAN-13

On

Off

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 

Off 

SEND CHECK DIGIT

On 

Off 

UPC/EAN/JAN Extensions

ALLOW 2-DIGIT EXTENSIONS

On

Off

ALLOW 5-DIGIT EXTENSIONS

On

Off

REQUIRE EXTENSIONS

On

Off

Code 128

ENABLE

On

Off

MINIMUM LENGTH

2

10

20

30

40

50

60

MAXIMUM LENGTH

10

20

30

40

50

60

ENABLE UCC128

On

Off

Other Controls

ENABLE MANUAL RESET

On

Off

AUTO-OFF *(in minutes)*

Off

5

10

30

60

90

INTERCHARACTER DELAY *(in milliseconds)*

0

10

25

50

75

99

ADD CODE ID

On

Off

GOOD-READ TONE

Low

Medium Low

Medium High

High

GOOD-READ BEEPS

1

2

3

4

GOOD-READ TONE DURATION *(in seconds)*

0.07

0.14

0.22

0.45

BEEPER VOLUME

Increase

Decrease

Off

Low

High

ERROR TONE

Low

Medium

High

KEYBOARD CLICK

On

Off

Clock and Calendar

SET TIME

SET DATE

CLOCK 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

600

1200

2400

4800

9600

19,200

38,400

76,800

DATA BITS

7

8

PARITY

None

Even

Odd

STOP BITS

1

2

ENABLE XON/OFF

On

Off

LINEFEED

None

Add LF

Strip LF

PROTOCOL

EOR only

Xmodem

CR with checksum and ACK/NAK response

TIMEOUT *(in 100-millisecond units)*

0

50

10

75

25

99

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