

# FALCON™

*DOS Portable Data Terminals*

## USER'S GUIDE



**PSC**



# **FALCON<sup>TM</sup>**

*DOS Portable Data Terminals*

## **USER'S GUIDE**

## **Falcon DOS Portable Terminals User's Guide ©PSC 2001**

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# Preface: About this Guide

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## Overview

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This book provides information about Falcon DOS portable data terminals for first-time users. The focus of this manual is:

- Basic use of the Falcon
- Entering data from the Falcon keypad
- Viewport panning and contrast
- Use of a laser to scan bar codes
- The Falcon Dock
- The Falcon 4-Slot Dock
- The Falcon Vehicle Mount Dock

For additional information about Falcon DOS portable data terminals, including instructions on transferring files from a Falcon to a PC, refer to the *Falcon DOS Portable Data Terminals Advanced User's Guide*.

---

# Style Conventions

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## Document Conventions

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

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

### Cautions



*Cautions* appear when there is information for the user that is strongly recommended. They are identified by the exclamation mark in a triangle and ***bold italics text***. This text appears in ***gold bold italics text*** if the user is viewing the manual in electronic PDF form on their computer.

### Warnings



*Warnings* appear when there is something of extreme importance for the user to be know prior to proceeding. They are identified by the exclamation mark in a triangle and ***bold italics text***. This text appears in ***red bold italics text*** if the user is viewing the manual in electronic PDF form on their computer.

## Keys and Keystroke Conventions

Portable keys and keystroke conventions are used throughout this manual to identify the difference between a key on the portable and keystrokes input by the user. Brackets such as: “<**Scan**>” indicate a key on the Falcon Portable. Data or keystrokes entered by the user are printed in a **monospaced typeface**.

## Portable Model Conventions

Please refer to [Chapter 1](#) for a chart and descriptions of the various Falcon models as they are referred to in this guide.



# 1

# Introduction to Falcon Portables

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## Overview

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This chapter provides an introduction to Falcon DOS portable data terminals. It provides the following information:

- Falcon model numbers
- Product labels
- Product safety information
- Falcon accessories

## Falcon Model Numbers

---

Falcon DOS portable data terminals are handheld computers designed for data collection. The product title, “**Falcon**” refers to any or all of the DOS portable models identified in [Table 1-1 on page 3](#).

Where information in this manual applies only to specific models, those models are clearly identified by the model icon as shown in the first column of [Table 1-1](#).

The Falcon DOS portable line includes 8-line and 16-line models. Both the 8-line and the 16-line Falcon models are available in batch and wireless (radio frequency, or RF) configurations. Wireless models provide instant communication of data between the unit and a host computer.

Table 1-1:

Falcon Portable Models					
Model	Model Number	8-Line Display	16-Line Display	Batch Portable	RF Portable
<b>31X</b>	310	◆		◆	
	315	◆			◆
<b>32X</b>	320		◆	◆	
	325		◆		◆
<b>33X</b>	330		◆	◆	
	335		◆		◆
<b>34X</b>	340		◆	◆	
	345		◆		◆

**31X** The **31X** icon refers to both the Falcon **310** and the Falcon **315**. As [Table 1-1](#) notes, the Falcon **310** is a batch portable model and the Falcon **315** is a RF portable model. On the cover of this manual, the Falcon **31X** is represented by the Falcon **315**, in the lower left corner, with an 8-line display screen.

**32X** The **32X** icon refers to both the Falcon **320** and the Falcon **325**. As [Table 1-1](#) notes, the Falcon **320** is a batch portable model and the Falcon **325** is a RF portable model. The Falcon **32X** has many features in common with the Falcon **31X**. These models are often grouped together throughout this manual. On the cover of this manual, the Falcon **32X** is represented by the Falcon **325**, second from the upper left, with a 16-line display screen.

**33X** The **33X** icon refers to both the Falcon **330** and the Falcon **335**. As [Table 1-1 on page 3](#) notes, the Falcon **330** is a batch portable model and the Falcon **335** is a RF portable model. The Falcon **33X** model has many features in common with the Falcon **32X** model. On the cover of this manual, the Falcon **330** portable is the smaller, ergonomic model shown in the upper right corner of the grouping.

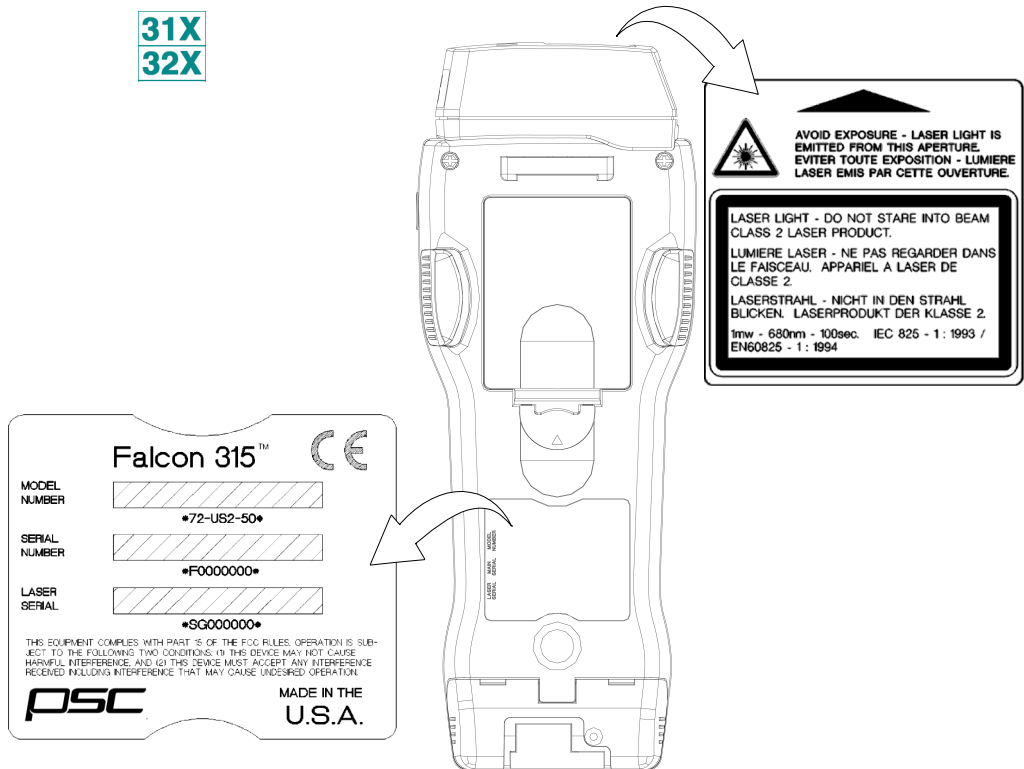
**34X** The **34X** icon refers to both the Falcon **340** and the Falcon **345**. As [Table 1-1 on page 3](#) notes, the Falcon **340** is a batch portable model and the Falcon **345** is a RF portable model. The Falcon **34X** introduces the pistol grip. This model operates in every other way identically to the Falcon **33X**. On the cover of this manual, the Falcon **340** portable is the one with the pistol grip, shown in the lower right corner of the grouping.



# Product Labeling and Safety Information

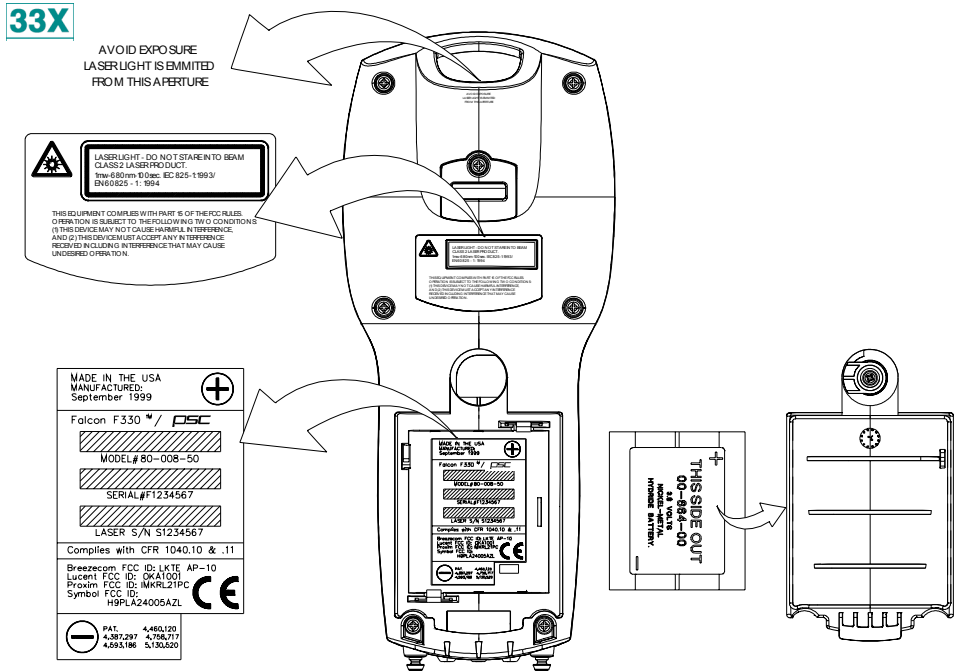
## Falcon Model 31X and 32X

Figure 1-1: Back View of a Falcon Model 310 and Labels



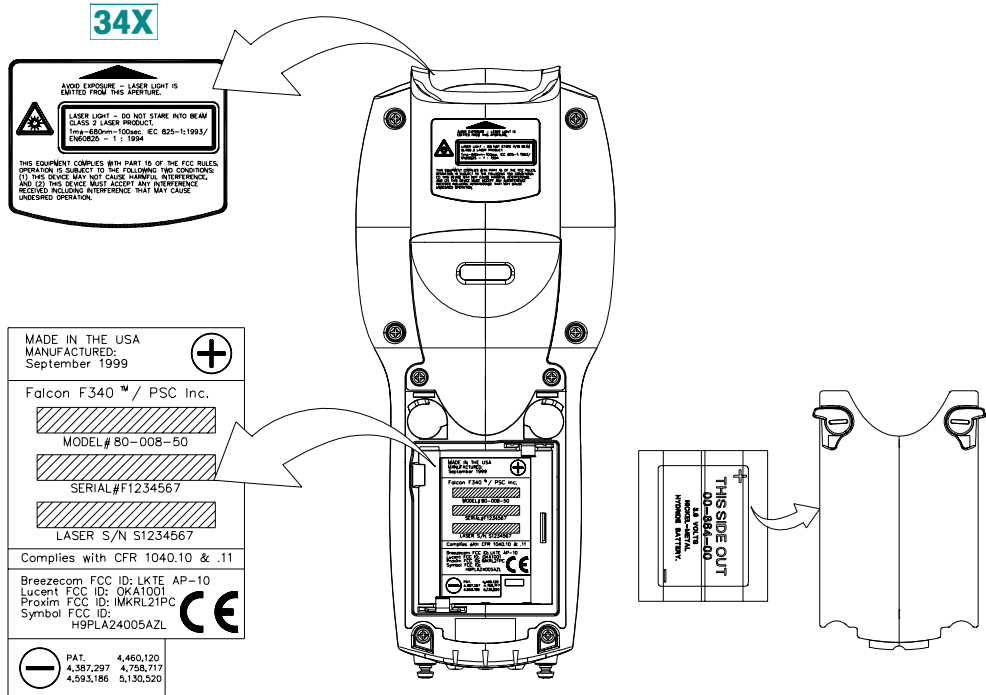
# Falcon Model 33X

Figure 1-2: Back View of a Falcon Model 330 and Labels



## Falcon Model 34X

Figure 1-3: Back View of a Falcon Model 340, shown with Pistol Grip Replacement Cover and Labels



## Advisory Statement



**Caution:** Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous visible or invisible laser light exposure.

## Radio Frequency Interference

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Optional Accessories

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### Integrated Laser Scanners

Some Falcon models contain integrated laser scanners, which provide high-performance bar code reading capabilities. Models without integrated lasers accept input from most industry-standard bar code readers.

### Falcon Dock

**31X**  
**32X**

The Falcon Dock is the docking station for **31X** and **32X** batch Falcon models. The primary uses for the dock are:

- Recharging the Falcon's NiCD or NiMH battery pack.
- Providing a connection for serial communications between the Falcon and the host computer.

Refer to [Chapter 6, on page 61](#) for more information about Falcon Docks.

**33X**  
**34X**

The dock for Falcon models **33X** and **34X** uses a dual IR/hardware interface to provide nearly transparent full duplex serial communications between the Falcon and the host computer.

For more information on serial communications in the Falcon **33X** and **34X**, refer to the *Falcon DOS Portable Terminals Advanced User's Guide*.

## Falcon 4-Slot Dock

**31X**  
**32X**

The Falcon 4-Slot Dock provides battery recharging and serial communications for up to four Falcon **31X** and **32X** batch portables at a time.

Refer to [Chapter 7, on page 67](#) for more information about the Falcon 4-Slot Dock.

## Vehicle Mount Powered Dock

**31X**  
**32X**

The Vehicle Mount Powered Dock is designed for road vehicles such as step vans or semi tractors and forklifts using the optional mounting bracket. The mounting configuration is flexible to respond to the variety of vehicle configurations and personal driver preferences. The Vehicle Mount Powered Dock functions with Falcon models **32X** with or without an integrated laser. Falcon models **31X** without an integrated laser will also work on the Vehicle Mount Powered Dock.

Refer to [Chapter 8, on page 75](#) for more information about the Falcon Vehicle Mount Dock.

## Portable Battery Charger

When not using a Falcon Dock or a Falcon 4-Slot Dock, the optional portable battery charger can be used to recharge the Falcon's batteries. Rechargeable batteries that have lost all power can be fully recharged in about 2 hours.

Talk to a PSC representative to order a portable battery charger for the Falcon.

# 2

## Falcon Basics

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## Turning the Falcon On and Off


---

Press the <Power> key to turn the unit on or off.

**31X**  
**32X**

- The <Power> key () for Falcon models **31x** and **32x** is located at the top left of the keypad matrix.

**33X**  
**34X**

- The <Power> key () for Falcon models **33x** and **34x** is located at the bottom left of the keypad matrix.

## First-Time Use

The first time the Falcon is turned on, this message may appear:

```
Initial power-up or  
critical data loss.  
Drive D formatted.  
Press any key...
```

The message appears with normal operation and does not indicate a problem. Press the <ENTER> key to continue booting up.



*Note: This message will also appear when new or recharged batteries are placed in the unit after the backup battery has been drained.*

## “Please Wait” Messages

The Falcon performs the operations specified by the type of PC card installed.

- During these operations, the unit displays a message in reverse video indicating that it is powering on or off.
- When turning the unit on, wait until the message disappears before using the unit.
- When turning the unit off, to replace the batteries, wait until the message disappears before removing the batteries.



# Power Supplies

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*Note: Use only PSC power supplies approved for the Falcon DOS Portable Data Terminal*

Refer to [page 64](#) for more information on the Falcon Power Adaptor.

# Batteries

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## Electrical Rating

NiCD or NiMH batteries = 3.6 VDC /1600mAh or three AA alkaline.



## Battery Disposal

NiCD, NiMH, and Li batteries are recyclable so they can be disposed through a recycling center.

## Replacement Batteries

Falcon batteries are available in rechargeable, easy-to-replace nickel cadmium (NiCD) or nickel metal-hydride (NiMH) battery packs.

**31X**

- Falcon models **31x** use three standard AA alkaline batteries, NiCD battery packs, or NiMH battery packs.

**32X**

- For Falcon models **32x**, only NiMH battery packs are recommended.

**33X**  
**34X**

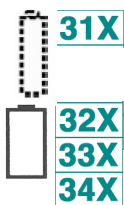
- For Falcon models **33x** and **34x** models, only NiMH battery packs are recommended. Individual alkaline batteries are not compatible with these models.

The Falcon also has a built-in lithium backup battery that temporarily saves data when the replaceable batteries lose their charge. The lithium backup battery is not accessible by the user.



A battery icon, shown at the left, is displayed at the top right corner of the viewport when the Falcon models **32x**, **33x**, and **34x** are running with a charged battery.

## Low-Battery Warning



When the batteries have lost most of their charge, an empty battery icon appears at the top right corner of the Falcon screen. Refer to the icons on the left for the specific icon for each model.

- The Falcon also can be programmed to emit a beep at intervals when the battery is low.
- The backup battery will protect all data in memory while the other batteries are out of the unit.

After recharging or replacing the batteries and turning the Falcon back on, the unit will return to the application operating when it was turned off.

## Auto-Shutoff

The Falcon has an automatic-shutoff feature that helps conserve battery life while not in use.

- When a specified amount of time has passed since a key or a trigger has been pressed, the Falcon turns itself off.
- All data in memory is maintained.
- Press the power button to turn the unit back on.

## Replacing the Batteries

When the empty-battery icon appears or the warning beep is heard, turn off the Falcon and recharge or replace the batteries as soon as possible.

Replaceable batteries are located in a compartment in the back of the Falcon. Refer to [Figure 2-1: on page 16](#), [Figure 2-2: on page 18](#), and [Figure 2-3: on page 20](#) for diagrams of the different Falcon models.



**Warning:** *Turn the Falcon portable off before changing the batteries. Removing batteries while the unit is turned on can result in the loss of stored data.*

### Falcon models 31x and 32x

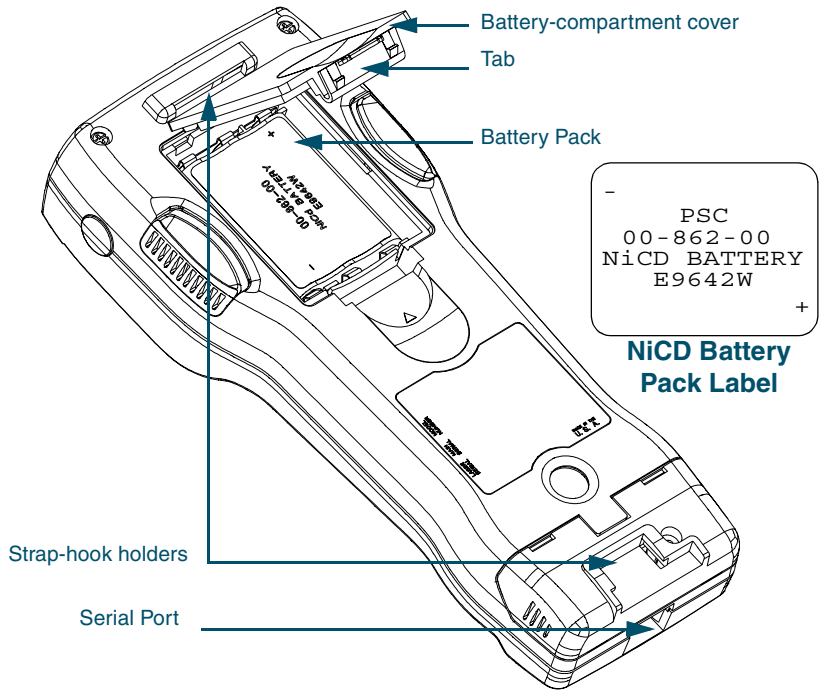
**31X**  
**32X**

To replace the batteries for Falcon models **31x** and **32x**, complete the following steps:

1. Turn the Falcon off.
2. Detach the elastic hand-strap on the back of the Falcon by pulling its hook out of the holder near the base.
3. Firmly press the tab on the battery-compartment cover up until the cover is released from the body of the unit.
  - A symbol on the body indicates the direction in which to press the tab.

Figure 2-1: Back View of Falcon Models 31x and 32x

**31X**  
**32X**



4. Pull the end of the exposed plastic ribbon in the battery compartment until the batteries pop out.
5. Lay the plastic ribbon along the bottom of the battery compartment with the end sticking out.
6. Find the **positive (+)** and **negative (-)** symbols on the **NiCD or NiMH Battery Pack's** label.
  - For **Alkaline Batteries**, insert in the positions indicated by the diagram inside the compartment. Skip steps **7– 8**.
7. With the label side out, tilt the **positive** end of the pack into the upper end of the battery compartment.

8. Firmly press the **negative** end until it is fully inserted into the battery compartment.
9. Place the plastic ribbon underneath the battery-compartment cover.
10. Replace the battery-compartment cover by sliding it into place.
11. Replace the hand-strap hook in its holder.



*Note: The Falcon 32X will not function unless the battery-compartment cover is in place and securely latched.*

### Falcon models 33x

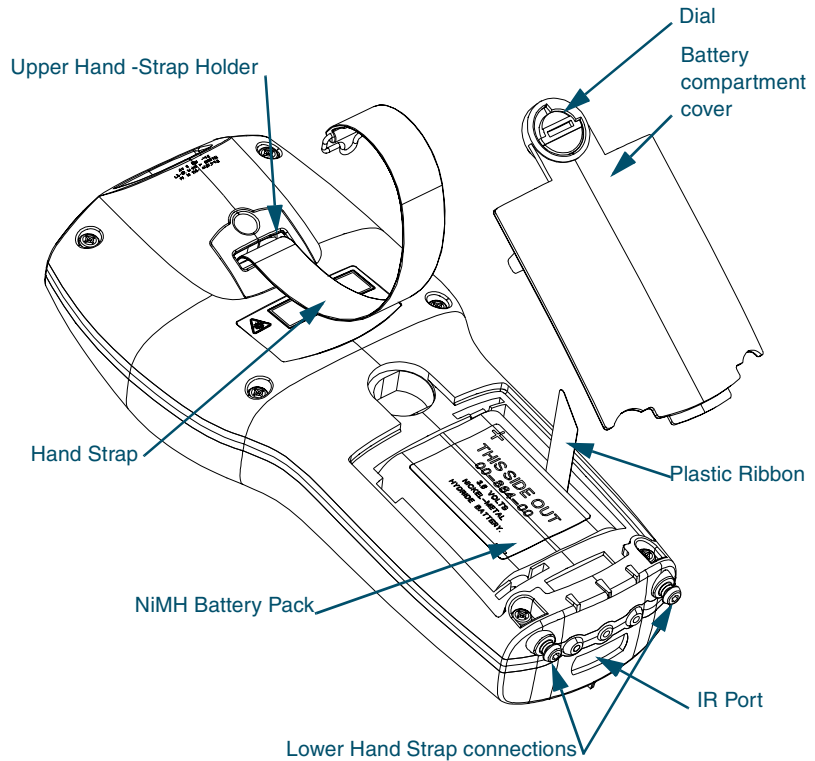
#### **33X**

To replace the batteries for Falcon models **33x**, complete the following steps:

1. Turn the Falcon off.
2. Detach the elastic hand strap on the back of the Falcon by releasing its hook from the hand-strap connector at the base of the unit.
3. Turn the dial counter-clockwise to release the battery compartment cover.
4. Pull the end of the exposed plastic ribbon in the battery compartment until the batteries pop out.
5. Lay the plastic ribbon along the bottom of the battery compartment with the end sticking out.
6. Find the positive (+) and negative (-) symbols on the **NiMH Battery Pack's** label.
7. With the label side out, tilt the positive end of the pack into the upper end of the battery compartment.

Figure 2-2: Back View of Falcon model 33x

**33X**



8. Firmly press the negative end until it is fully inserted into the battery compartment.
9. Place the plastic ribbon underneath the battery-compartment cover.
10. Replace the battery-compartment cover by inserting the bottom tab into the slot and rotating the cover latch in a clockwise direction.
11. Replace the hand-strap hook on the connector at the base of the unit.



*Note: The Falcon 33X will not function unless the battery-compartment cover is in place and securely latched.*



*Warning: The battery pack should not be replaced in a dirty or harsh environment. When the battery compartment cover is off, dust or moisture can potentially cause damage. Falcon models 33x and 34x will not function unless the battery-compartment cover is in place and securely latched.*

## Falcon models 34x

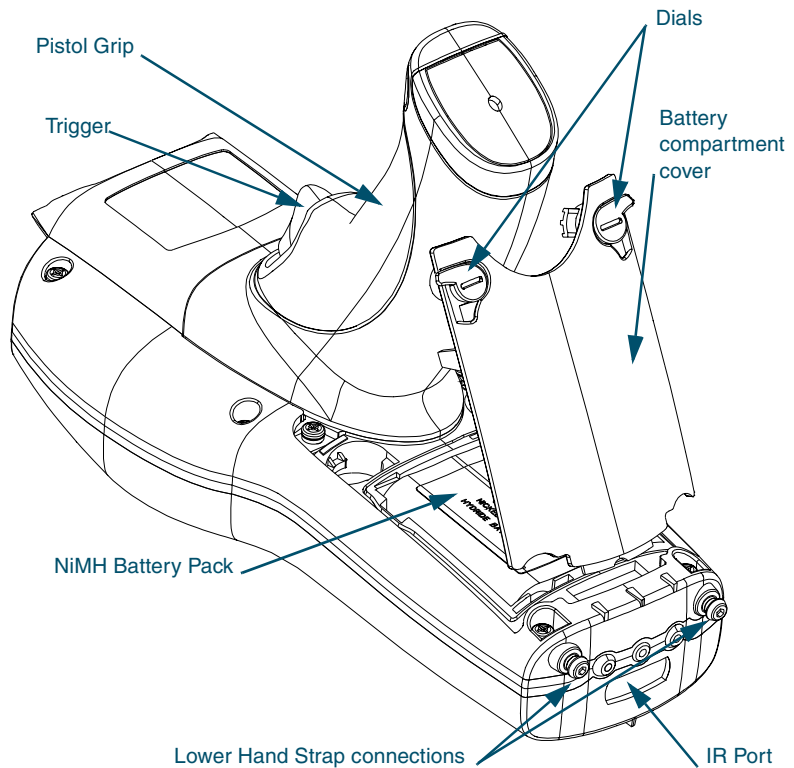
### 34X

To replace the batteries for Falcon model 34x, complete the following steps:

1. Turn the Falcon off.
2. If using the hand-strap rather than the pistol grip, detach the elastic hand-strap by releasing its hook from the hand-strap connector at the base of the unit.
3. Turn the cover latch dials to release the battery compartment cover. Refer to [Figure 2-4: on page 22](#) for the location of the dials.
  - Using the lever, turn the left dial clockwise.
  - Using the lever, turn the right dial counter-clockwise.
4. Pull the end of the exposed plastic ribbon in the battery compartment until the batteries pop out.
5. Lay the plastic ribbon along the bottom of the battery compartment with the end sticking out.
6. Find the positive (+) and negative (-) symbols on the **NiMH Battery Pack's** label.

Figure 2-3: Back View of Falcon model 34x

**34X**



7. With the label side out, tilt the positive end of the pack into the upper end of the battery compartment.
8. Firmly press the negative end until it is fully inserted into the battery compartment.
9. Place the plastic ribbon underneath the battery-compartment cover.
10. Replace the battery-compartment cover by inserting the bottom tab into the slot.



11. Rotate the latch dial levers on the battery compartment cover towards the base of the unit. Refer to [Figure 2-4: on page 22](#).
  - Using the lever, turn the left dial counter-clockwise.
  - Using the lever, turn the right dial clockwise.
12. If using the hand-strap rather than the pistol grip, replace the hand-strap hook on the connector at the base of the unit.



***Note: The Falcon 34X will not function unless the battery-compartment cover is in place and securely latched.***

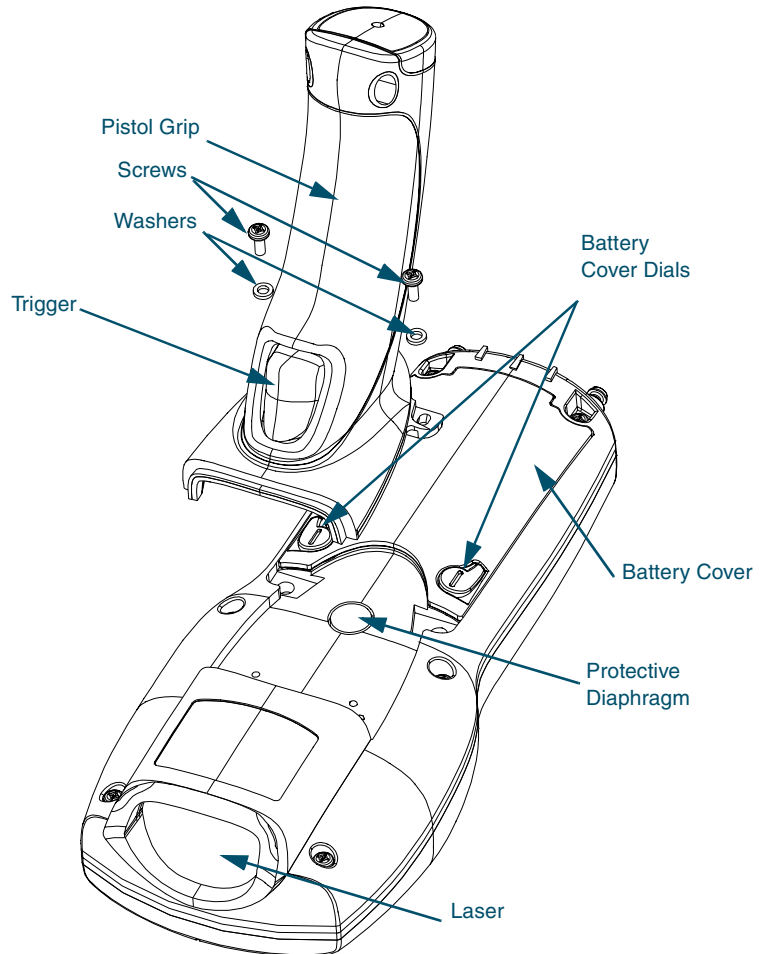
## Removing the Pistol Grip

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The pistol grip on the Falcon 34X is removable.

Figure 2-4: Removing the Pistol Grip on a Falcon Model 34x

**34X**



**34X** To remove the pistol grip on the Falcon 34x (refer to [Figure 2-4: on page 22](#)) complete the following steps:

1. Turn the Falcon off.
2. Remove the screws located just above the battery cover's latch dials.
3. Grasp the pistol grip and lift the grip out of its seat on the Falcon.

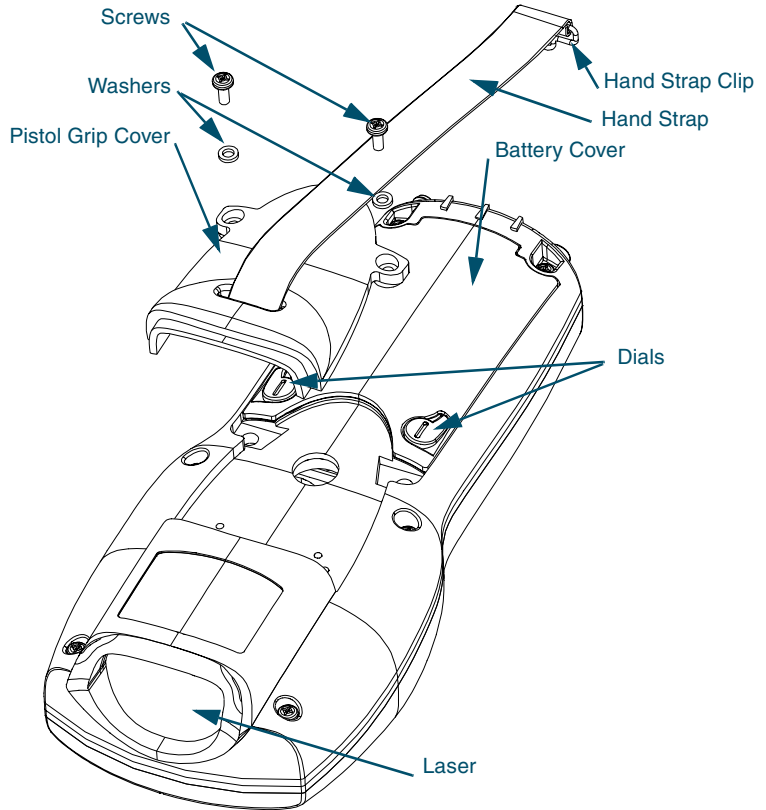
## Replacing the Pistol Grip with the Hand-Strap

**34X** To replace the pistol grip on the Falcon 34x with its hand-strap (refer to [Figure 2-5: on page 24](#)) complete the following steps:

1. Insert the top tab of the hand-strap cover into the slot at the top of the pistol grip recess.
2. Replace the screws located just above the battery cover's latch dials.
3. Connect the hand-strap hook onto its connector at the base of the Falcon unit.

Figure 2-5: Replacing the Pistol Grip with a Hand-Strap

**34X**



## The Serial Port

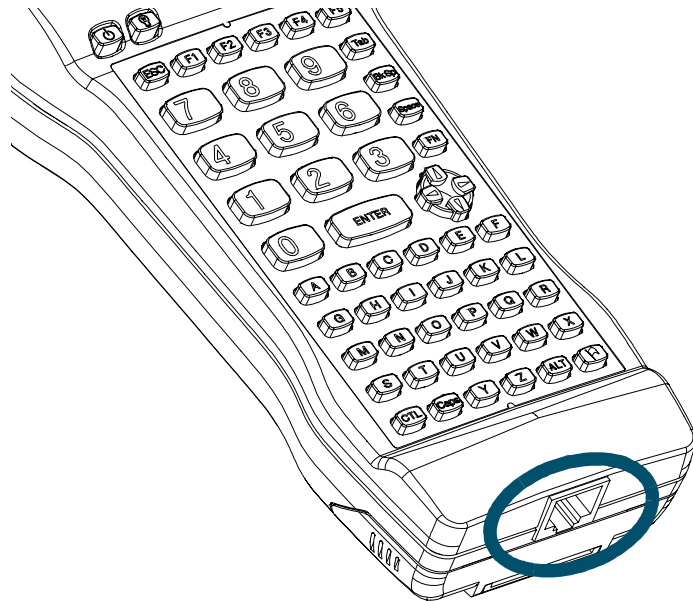
**31X**  
**32X**

The Falcon models **31X** and **32X** have a port for serial communications with a PC. The port is located at the base of the Falcon unit (refer to [Figure 2-6](#)). Designated as COM1, it is a 10-pin telephone-style jack providing a standard RS-232 connection.

When the Falcon is connected with a serial cable, the port allows communications with a host computer or any serial device, such as a printer or modem. The serial port also provides a connection for communications and battery recharging in the Falcon Dock and Falcon 4-Slot Dock.

Figure 2-6: The Serial Port on the Falcon 31X and 32X

**31X**  
**32X**



## The Falcon Applications

---

When shipped from the factory, every Falcon unit is programmed with several applications collectively known as PAL2. If the Falcon has been customized, it may be programmed with other (or additional) applications.

For information on using PAL2, see the *Falcon Portable Applications Library User's Guide*. When using another application, contact the system administrator for instructions.

# 3

## Falcon Keypad

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# Overview

Used individually or in combination, the keys of the Falcon keypad provide equivalents to almost all the keys found on a standard keyboard. Diagrams of the Falcon keypads are shown in [Figure 3-1 on page 29](#), [Figure 3-2 on page 30](#), and [Figure 3-3 on page 31](#).

**31X**

- Falcon **31X** models have 41 keys.

**32X**

- Falcon **32X** models have 57 keys.

**33X**

**34X**

- Falcon **33X** and **34X** models have 38 keys.

The keys in [Table 3-1](#) appear on a standard IBM compatible computer keyboard but are not used on any of the Falcon models:

Table 3-1:

Model	Standard Keyboard Keys not on the Falcon		
<b>31X</b> <b>32X</b> <b>33X</b> <b>34X</b>	<F11>	<Left Shift> *	<Num Lock>
	<F1>	<Right Shift> *	<Scroll Lock>
	Right <Alt>	<Caps Lock> *	<Pause/Break>
	Right <Ctrl>	Numeric keypad keys	<Print Screen/ SysReq>
* The Falcon's <Caps> key provides the functions of these keys.			
<b>32X</b>	<Home>	<Pg Up>	
	<End>	<Pg Down>	
<b>33X</b> <b>34X</b>	Right bracket < [ >	Left bracket < ] >	



Figure 3-1: The Keypad for Falcon 31X Models

**31X**

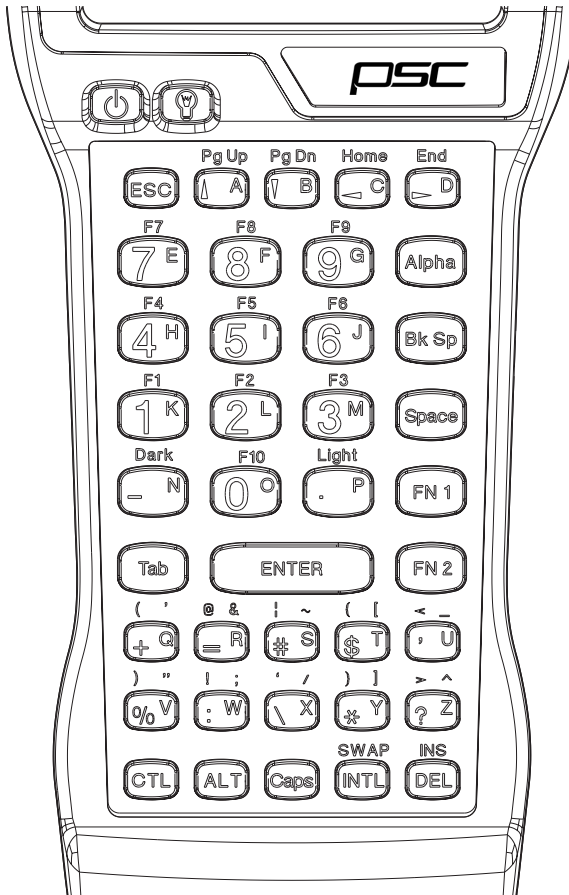


Figure 3-2: The Keypad for Falcon 32X Models

**32X**

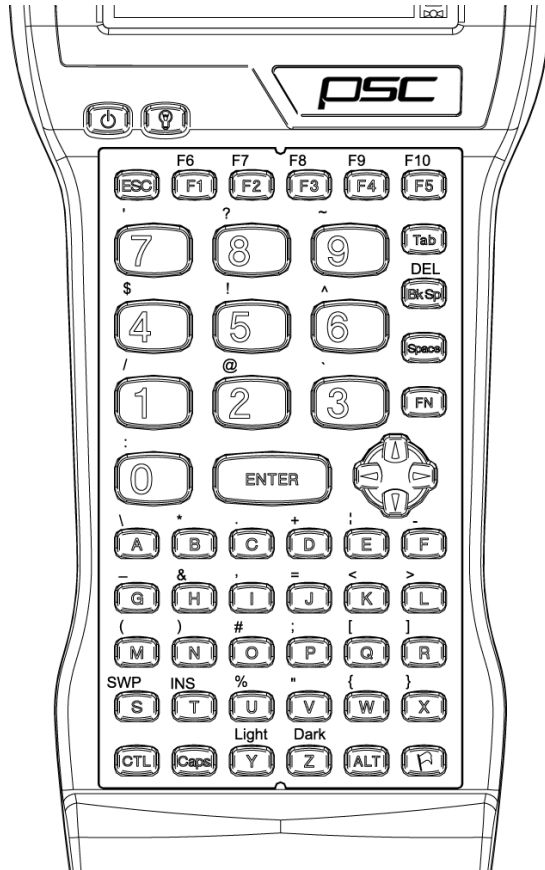
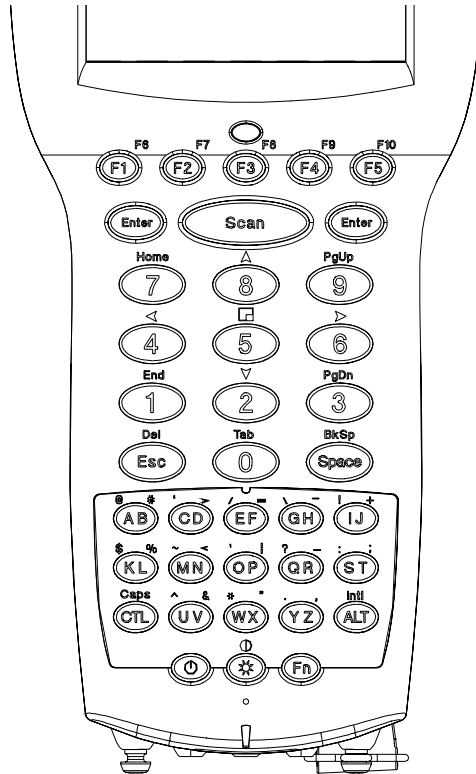


Figure 3-3: The Keypad for Falcon 33X and 34X Models

**33X**  
**34X**



Falcons have some keys that are not found on a PC keyboard. These keys are shown in [Table 3-2](#). Page numbers indicate where to find more information about the keys.

**Table 3-2:**






Falcon Keys Not Found on a Standard Keyboard		
Models	Key	Default Use
<b>31X</b>	<Alpha>	Toggles the Falcon between Alpha mode and Normal mode ( <a href="#">page 36</a> ).
	<Caps>	When pressed and released, toggles Caps mode on and off; when held down, acts equivalently to the <Shift> key on a standard computer keyboard ( <a href="#">page 36</a> ).
	<Dark>	Darkens the background of the viewport ( <a href="#">50</a> ).
	<FN 1>	Outputs the blue symbol or activates the function (<F1> –<F10>) above the next key pressed ( <a href="#">page 36</a> ).
	<FN 2>	Outputs the black symbol above the next key pressed ( <a href="#">page 36</a> ).
	<INTL>	Outputs an international character generated by the combination of the next two key presses ( <a href="#">page 42</a> ).
	<Lamp> 	Turns the backlight on and off in the viewport ( <a href="#">page 51</a> ).
	<Light >	Lightens the background of the viewport ( <a href="#">page 50</a> ).
	<Power> 	Turns the Falcon on and off ( <a href="#">page 12</a> ).
	<Swap>	Switches the assigned actions of the right and left laser triggers ( <a href="#">page 55</a> ).
	Left laser trigger	Operates the Falcon laser or an attached bar code reader; can be reprogrammed as a keypad key ( <a href="#">page 55</a> )*.
	Right laser trigger	Same as the <Alpha> key; can be reprogrammed as a laser trigger or a keypad key ( <a href="#">page 55</a> )*.

Table 3-2:

Falcon Keys Not Found on a Standard Keyboard		
Models	Key	Default Use
32X	<Caps>	When pressed and released, toggles Caps mode on and off; when held down, acts equivalently to the <Shift> key on a standard computer keyboard ( <a href="#">page 36</a> ).
	<FN>	Outputs the symbol or activates the function (<F6> – <F10>) above the next key pressed ( <a href="#">page 36</a> ).
	<Dark>	Darkens the background of the viewport ( <a href="#">page 50</a> ).
	<Int'l> 	Outputs an international character generated by the combination of the next two key presses ( <a href="#">page 42</a> ).
	<Lamp> 	Turns the backlight on and off in the viewport ( <a href="#">page 51</a> ).
	<Light>	Lightens the background of the viewport ( <a href="#">page 50</a> ).
	<Power> 	Turns the Falcon on and off ( <a href="#">page 12</a> ).
	<SWP> (Swap)	Switches the assigned actions of the right and left laser triggers ( <a href="#">page 55</a> ).
	Left laser trigger	Operates the Falcon laser or an attached bar code reader; can be reprogrammed as a keypad key ( <a href="#">page 55</a> )*.
Right laser trigger	Same as the <FN> key; can be reprogrammed as a laser trigger or a keypad key ( <a href="#">page 55</a> )*.	

**Table 3-2: Falcon Keys Not Found on a Standard Keyboard**

Models	Key	Default Use
<b>33X</b> <b>34X</b>	<Caps>	When pressed and released, toggles Caps mode on and off; when held down, acts equivalently to the <Shift> key on a standard computer keyboard ( <a href="#">page 37</a> ).
	<Contrast> (☾)	Activated by pressing <Fn-Lamp>; <left> and <down> <arrow> keys will decrease contrast; <right> and <up> <arrow> keys will increase contrast of the display.
	<FN>	Outputs the symbol or activates the function (<F6> – <F10>) above the next key pressed ( <a href="#">page 37</a> ).
	<INTL>	Outputs an international character generated by the combination of the next two keypress ( <a href="#">page 43</a> ).
	<Lamp> (☀)	Turns the backlight on and off in the viewport ( <a href="#">page 51</a> ).
	Left <Enter> key	Operates as the standard <Enter> or <Return> key; either the Left or Right <Enter> keys can be reprogrammed to be one of a set of other keypad keys ( <a href="#">page 40</a> )*.
	<power> (⏻)	Turns the Falcon on and off ( <a href="#">page 12</a> ).
	Right <Enter> key	Operates as the standard <Enter> or <Return> key; either the Left or Right <Enter> keys can be reprogrammed to be one of a set of other keypad key ( <a href="#">page 40</a> )*.
	<Scan>	Operates the Falcon laser ( <a href="#">page 55</a> )*.
Viewport Panning Mode	<Fn-5> toggles the viewport panning mode on or off; the arrow keys can be used to effect panning (keys <b>2,4,6,</b> and <b>8</b> ); use the panning toggle key (key <b>5</b> ) to exit panning mode and return the screen to cursor mode.	

*\*For information about reprogramming triggers, left, and right <Enter> keys as keypad keys, see the Falcon DOS Portable Data Terminals **Advanced User's Guide**.*

# Input Modes

The current input mode determines key functions on the Falcon. The input modes are described in [Table 3-3](#).

**Table 3-3:**

Keypad Input Modes		
Model	Input Mode	Result of Keypress
<b>31X</b>	<b>Type 1—Remains in effect after each keypress until discontinued by user.</b>	
	Normal	Outputs the white number or symbol on the key, or performs an action (e.g., moves left).
	Alpha	Outputs the yellow letter on the key (lowercase unless used with Caps mode).
	<Caps> (used with Alpha mode)	Outputs the uppercase yellow letter on the key.
	<b>Type 2—Affects only a single keypress or combination of key presses.</b>	
	Function 1	Outputs the blue symbol or function above the key.
	Function 2	Outputs the black symbol above the key.
	Control	Outputs the control meaning for alphanumeric or function keys.
	Alternate	Outputs the alternate meaning for alphanumeric or function keys.
	International	Outputs a character from the international character set ( <a href="#">page 41</a> ).

**Table 3-3:**

Keypad Input Modes		
Model	Input Mode	Result of Keypress
<b>32X</b> <b>33X</b> <b>34X</b>	<b>Type 1—Remains in effect after each keypress until discontinued by user.</b>	
	Normal	Outputs the letter (lowercase), number, or function on the key.
	Caps	Outputs the uppercase letter on the key.
	<b>Type 2—Affects only a single keypress or combination of key presses.</b>	
	Function ( <b>Fn</b> )*	Outputs the symbol or function above the key.
	Control ( <b>Ctrl</b> )	Outputs the control meaning for alphanumeric or function keys.
	Alternate ( <b>Alt</b> )	Outputs the alternate meaning for alphanumeric or function keys.
	International ( <b>Intl</b> )	Outputs a character from the international character set ( <a href="#">page 41</a> ).



## Working with Input Modes

**31X** The color coding of the keys and characters on the Falcon **31X** reflects input mode functions.

- The **yellow <Alpha>** key works with the **yellow** letters on the other keys.
- The **blue <FN 1>** key works with the functions (<F1> – <F10>) and the **blue** characters printed above some of the keys.
- The **black <FN 2>** key works with the **black** characters or operations printed above some of the keys.

For most applications, the letters and numbers are all that are needed.

- Input letters by pressing the **<Alpha>** key (to turn on Alpha mode) and pressing the keys for the letters.
- Press the **<Caps>** key with the **<Alpha>** key for uppercase letters.
- Press the **<Alpha>** key again to return to the normal mode.
- In normal mode, numbers and punctuation characters can be selected by pressing the appropriate key.

A type-1 mode can be temporarily overridden without actually changing the mode. For example, when entering numbers in Normal mode, to type a letter:

- Hold down the **<Alpha>** key while pressing the key for that letter.
- Release the **<Alpha>** key; the Falcon will still be in Normal mode.
- Use the **<Caps>** key the same way to enter an uppercase letter without changing to Caps mode.

*Note: Because they have more keys, Falcon 32x models have fewer possible outputs from a single key and are easier for a beginner to use.*



## Double Action Key Mode

---

**33X**  
**34X**

There are two additional modes of operation, which affect how alpha keys and the punctuation characters above the alpha keys are accessed. The Falcon **33X** and **34X** models have only 38 keys.

- Thirteen of these keys are used for alpha keys (the letters **A-Z**).
- Each key has two letters on the key itself, and two punctuation characters above the key.
- Accessing the alpha character printed on the left side of the key (the “first” letter) is done as normal.
- Accessing the alpha character printed on the right side of the key (the “second” letter) depends upon the mode of operation.

### Alpha Characters—Double Strike Mode

#### Left character

- Press the **<Alpha>** key once and release. After a predetermined time-out (the default is 330ms), the character will be displayed.

#### Right character

- Quickly press the **<Alpha>** key twice. The second key press must occur before the predetermined time-out (the default is 330ms).

This mode is called the *double strike* mode, because it requires two rapid presses on a key to access the second (the right-most) character.

## Alpha Characters—Press and Wait Mode

### Left character

- Press an **<Alpha>** key once and release

### Right character

- Press the **<Alpha>** key and hold for a predetermined time-out (the default is 330ms).

This mode is called *press and wait* mode, because it requires pressing the key and holding it down for a certain amount of time to access the second (right-most) character.

The mode and time-out (for either mode) can be changed via the Falcon configuration driver, the Run-Time Library or by bar code scanning.

The second character can be accessed in this way regardless of other types of input modes the Falcon models **33X** and **34X** is in. This includes **<Fn>**, **<Ctrl>**, and **<Alt>** key entries. To get the punctuation symbol above the **<B>** character:













- Press the **<Fn>** key
- Perform the action to select the second (right-most) character for the key the **<B>** is on (this depends upon the **<Double Action>** key mode of operation).

The exception to the above rule is during International key entry. See the section on International key entry for more details.

## Cursors and Icons

The shape of the Falcon’s cursor in the viewport is a key to the current input mode. Icons located along the right side of the viewport indicate the current input mode. Refer to [Table 3-4](#) for the various input modes and the corresponding icons.

Table 3-4:

Cursors, Icons and Input Modes		
Cursor	Icon	Input Mode
<b>31X</b>	<b>32X</b> <b>33X</b> <b>34X</b>	
—	None	Normal
	N/A	Alpha
		Caps
N/A		Function
	N/A	Function 1
	N/A	Function 2
		Control
		Alternate
		International



During operations that require use of a disk drive, a disk icon appears on the right side of the viewport. This indicates that the unit is busy. Wait until the icon disappears before continuing to use the unit. The icons are shown at the left.

## International Characters

**31X**  
**32X**

The international character set contains letters and symbols commonly used in Western European languages. Enter international characters by using the following key sequence:

### Intl accent letter

- The **accent** is a character from the **Accent or Letter** column of [Table 3-5 on page 44](#)
- The **letter** is a character from the **Letter** column in the same row.



*Note: The Intl key (  ) is orange with a white flag on Falcon models 32X only.*

**31X**  
**32X**

To lessen the number of keystrokes required to enter an International key, the keypad of the Falcon **33X** and **34X** are designed according to the following guidelines:

- The **<Intl>** key is a combination of keystrokes (**<Fn>** – **<Alt>**).
- All accent characters are the first (left-most) character on a key. The **<Double Action>** key method is never used to access an accent characters.
- The format for entering an International key sequence remains the same.

[Table 3-5: on page 44](#) describes the key sequences for all International characters:

Table 3-5:

International Character Key Combinations			
Model(s)	International Characters	Accent or Letter	Letter
<b>31X</b>	á, é, í, ó, ú, É	' ( <i>apostrophe</i> )	a, e, i, o, u, E
	à, è, ì, ò, ù	`	a, e, i, o, u
	â, ê, î, ô, û	^	a, e, i, o, u
	ä, ë, ï, ö, ü, ÿ, Ä, Ö, Ü	:	a, e, i, o, u, y, A, O, U
	á, Å	@	a, A
	ç or Ç	None	c or C
	ñ or Ñ	None	n or N
	ñ or Ñ	~	n or N
	ß	s	s
	æ	a	e
	Æ	A	E
	¿	?	?
	¡	!	!
	£	<b>FN 1 + \$</b>	None
	¥	<b>FN 2 + \$</b>	None
ç or Ç	, ( <i>comma</i> )	c or C	

Table 3-5:

International Character Key Combinations			
Model(s)	International Characters	Accent or Letter	Letter
32X	á, é, í, ó, ú, É	' ( <i>apostrophe</i> )	a, e, i, o, u, E
	ç or Ç	' ( <i>apostrophe</i> )	c or C
	à, è, ì, ò, ù	`	a, e, i, o, u
	â, ê, î, ô, û	^	a, e, i, o, u
	ä, ë, ï, ö, ü, ÿ, Ä, Ö, Ü	:	a, e, i, o, u, y, A, O, U
	â, Â	@	None
	ç or Ç	None	c or C
	ñ or Ñ	None	n or N
	ñ or Ñ	~	None
	ß	s	None
	¿	?	None
	¡	!	!
	¢, £, ¥	\$	c, l, y
	æ or Æ	!	e or E

Table 3-5:

International Character Key Combinations			
Model(s)	International Characters	Accent or Letter	Letter
<b>33X</b> <b>34X</b>	á, é, í, ó, ú, É	' ( <i>apostrophe</i> )	a, e, i, o, u, E
	ç or Ç	' ( <i>apostrophe</i> )	c or C
	à, è, ì, ò, ù	`	a, e, i, o, u
	â, ê, î, ô, û	^	a, e, i, o, u
	ä, ë, ï, ö, ü, ÿ, Ä, Ö, Ü	:	a, e, i, o, u, y, A, O, U
	ß	s	s
	å, Å	@	None
	ñ or Ñ	~	m, n, M, or N
	¿	?	None
	¡	!	!
	¢, £, ¥	\$	c, k, l, y
	æ or Æ	!	e or E

## Repeating Keystrokes

**32X** The keypad for the Falcon **32X** models features support for repeating keystrokes:

- Press and hold the key to repeat a keystroke.
- After a brief pause, the keystroke will be automatically repeated until the key is released.

This feature can be particularly useful with such keys as **<BkSp>** and the cursor keys.



# 4

# Falcon Viewport

## CHAPTER CONTENTS

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Moving the Viewport Display .....	45
Adjusting the Contrast .....	48
Using the Backlight .....	49

## Overview

---

The Falcon's viewport is a backlit liquid crystal display with:

**31X**

- 21 characters in 8 rows on the Falcon **31X**.

**32X**

- 20 characters in 16 rows on Falcons **32X**, **33X**, and **34X**.

**33X**

**34X**

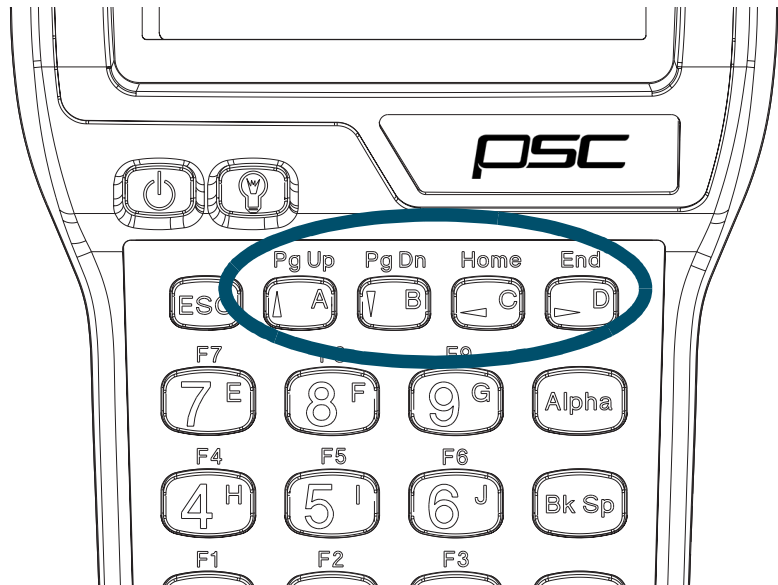
When entering more than the maximum number of characters, the text in the viewport will scroll to the left to display the additional characters in the line.

## Moving the Viewport Display

The viewport display can be moved to the left or right by half screens to view long lines of text.

Figure 4-1: Location of the Cursor Keys on the Falcon 31X

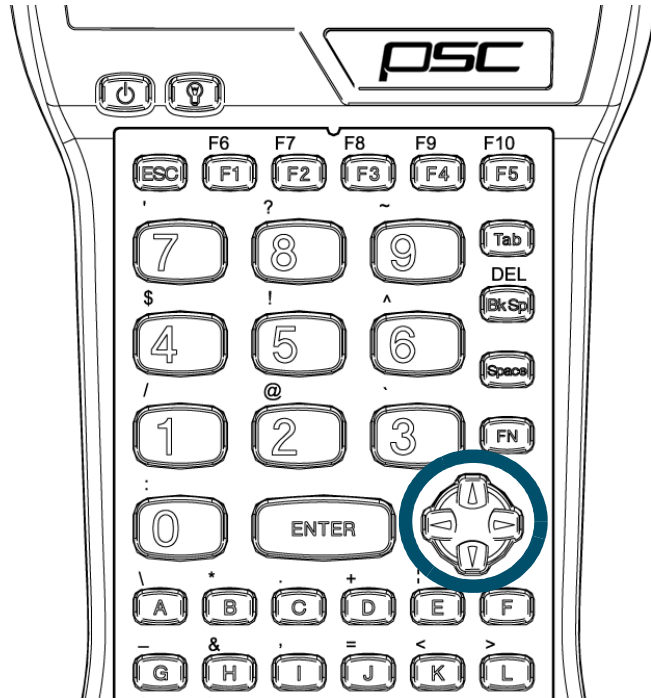
**31X**



1. To initiate panning mode, press and hold the **<FN 1>** key.
2. Use the cursor keys (refer to [Figure 4-1](#)) to move the display up, down, to the left, or to the right.
3. Release the **<FN 1>** key to make the current cursor position visible.
  - Or, press and release the **<FN 1>** key to move the viewport several times in one or more directions.
4. When finished, press and release the **<FN 1>** key again to return to the current cursor position.

Figure 4-2: Location of the Cursor Keys on the Falcon 32X

**32X**




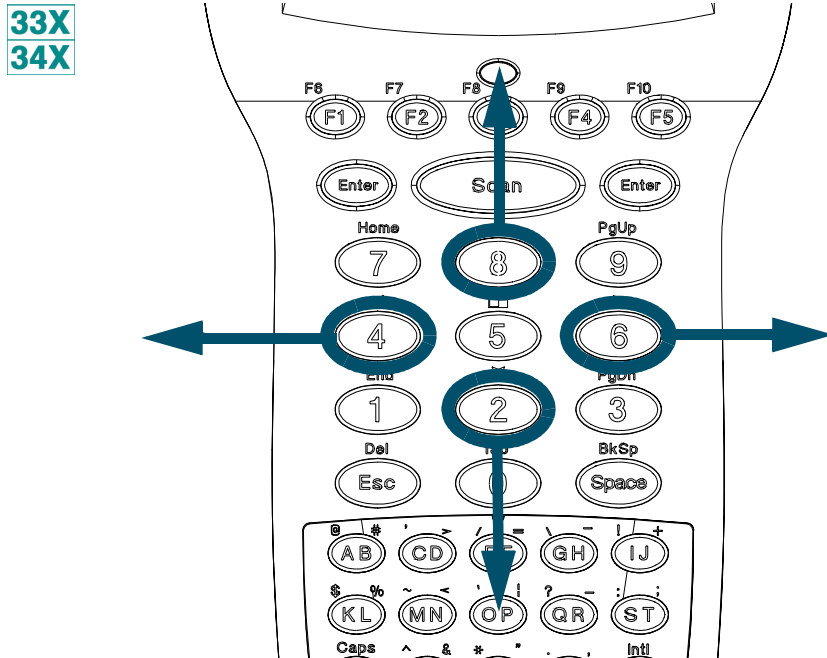

1. To initiate panning mode, press and hold the <FN> key>
2. Use the cursor keys (Refer to [Figure 4-2](#)) to move the display up, down, to the left, or to the right.
3. The viewport panning icon (  ) is displayed along the right side of the display.
4. Release the <FN> key, to make the current cursor position visible.
  - Or, press and release the <FN> key and then move the viewport several times in one or more directions.
5. When finished, press and release the <FN> key again to return to the current cursor position.

Figure 4-3: Location of the Cursor Keys on the Falcon 33X and 34X



1. To initiate panning mode, press **<FN>+<5>** keys simultaneously. This action toggles the viewport panning mode on or off.
2. When viewport panning is initiated, the panning icon (  ) is displayed along the right side of the LCD.
3. Use the arrow keys (refer to [Figure 4-3](#)) to move the display up, down, to the left, or to the right while in panning mode.
4. To exit panning mode, press the **Panning toggle** key (above the **<5>** key). Upon exit, the screen snaps back to the cursor. No character is displayed in this case.



*Note: It is not necessary to press <Fn> to activate the **Panning Toggle** key in order to exit the panning mode. If any other key is pressed (besides the <arrow> key or the <5> key), the Falcon exits panning mode, snaps back to the cursor, and displays the pressed character (if applicable).*



*Note: There is a difference in the way the Falcon 32X models and the Falcon 33X and 34X function when exiting panning mode. On the Falcons 33X and 34X, when the <FN>+<5> keys are pressed, panning mode is still active, but the <FN> state is not. Pressing the <A> alpha key to exit panning mode results in the letter “A” being displayed in the viewport.*

## Adjusting the Contrast

---

When working in dim or bright light, the contrast between the text and the background can be adjusted in the viewport.

### 31X

To adjust the contrast for the Falcon **31X**:

- Press and release the <FN 2> key
- Use the <Light> and <Dark> keys to adjust the contrast.
- When finished, press and release the <FN 2> key again.

### 32X

To adjust the contrast for the Falcon **32X**:

- Press and release the <FN> key.
- Use the <Light> and <Dark> keys to adjust the contrast.
- When finished, press and release the <FN> key again.

**33X**  
**34X**

To adjust the contrast for Falcons **33X** and **34X**:

1. Press the **<Fn>+<Lamp>** keys simultaneously to enter the contrast adjust mode. Two dots to the right of the **Fn** Icon on the right-hand side of the display toggle back and forth to indicate the contrast mode is active.
2. The **<left–** and **<down arrow>** keys decrease the contrast
3. The **<right–** and **<up arrow>** keys increase the contrast.
4. When finished, press and release the **<Lamp>** key again.


## Using the Backlight

---

Use the backlight improve viewport visibility in dim light.


**31X**  
**32X**

To use the backlight on Falcon **31X** and **32X** models:

- Press the **<Lamp>** (  ) key, located on the left side of the unit, just below the viewport, to turn the backlight on or off.

**33X**  
**34X**

To use the backlight on Falcon **33X** and **34X** models:

- Press the **<Lamp>** (  ) key, located in the middle of the bottom row of the keypad matrix, to turn the backlight on or off.

To save battery power, the backlight shuts off automatically if no key is pressed within a certain amount of time. The backlight will turn on again when any keypad key is pressed.





# 5

## Using a Laser with the Falcon

### CHAPTER CONTENTS

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## Overview

---

Some models of the Falcon come with a built-in high-performance laser scanner. To use this scanner, point the laser window at a bar code and press the trigger that activates the laser. A red light-emitting diode (LED) on the scanner module indicates when the Falcon is scanning, and a green LED indicates when a scan is successful.

**31X**  
**32X**  
**34X**

Some Falcon models are equipped with a long-range scanner. Refer to [page 58](#) for information on using a long-range scanner on the Falcon.

**33X**  
**34X**

The Falcon **33X** and **34X** have a built-in front shooting laser.

1. To use the laser, aim the top of the unit at a barcode.
  - The laser is not aimed straight from the unit, but angles down at approximately a 15 degree angle. This allows scanning barcodes with a more natural hand position.
2. Press the **<Scan>** key.
3. A red LED directly below the LCD (above the **<F3>** key) indicates when the Falcon is scanning.
4. This LED switches to green when a scan is successful.

## Laser Triggers

---

**31X**  
**32X** The left trigger (as seen from the front of the unit) is the default setting to operate the Falcon laser or another bar code reader attached to the Falcon, and the right trigger toggles the Falcon in and out of Alpha mode (models **31X**) or Function mode (models **32X**). The operation of these triggers can be switched. This will allow use of the right trigger as the laser trigger and the left trigger as the mode toggle.

**31X** To swap the trigger operations in the Falcon **31X**:

- Press the **<FN 2>** key, and then press the **<SWAP>** key
- Repeat to return to the default settings.

**32X** To swap the trigger operations in the Falcon **32X**:

- Press the **<FN>** key, and then press the **<SWP>** key
- Repeat to return to the default settings.

**33X**  
**34X** The Falcon **33X** and **34X** have only one **Laser <Scan>** key. It is the large elliptical key in the center of the top row on the keypad matrix. This key cannot be reprogrammed.

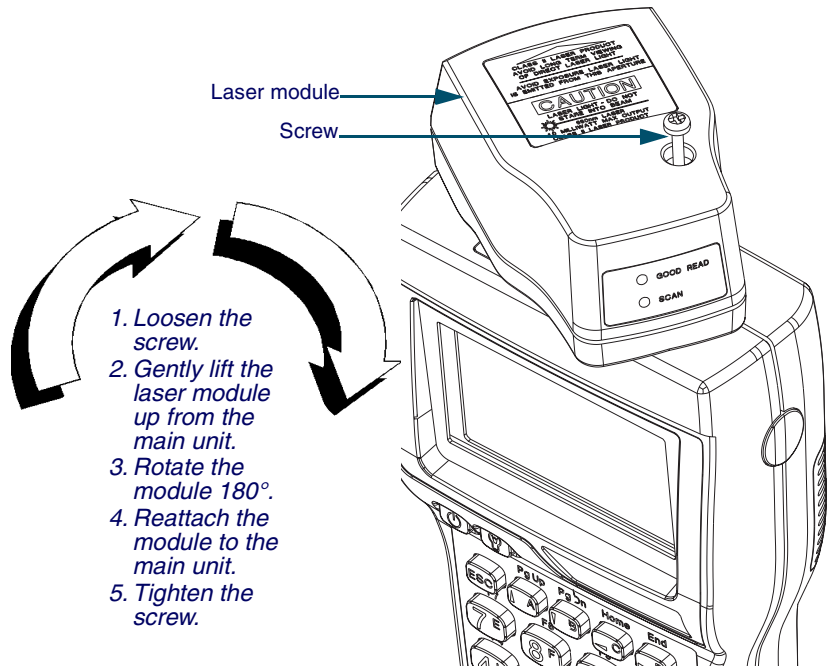
## The Laser Module

**31X**  
**32X**

Normally, the laser window faces the left side of the Falcon for easy right-handed scanning. To hold the Falcon in the left hand while scanning, the laser module can be rotated.

Figure 5-1: Rotating the Laser Module on the Falcon 31X and 32X

**31X**  
**32X**



**31X**  
**32X**

To rotate the laser module, complete the following steps:

1. Loosen the screw that secures the module to the main part of the Falcon (refer to [Figure 5-1](#)).
  - Do not try to remove the screw.

2. Gently lift the laser module away from the top of the main part of the Falcon.
  - The module will not completely separate from the rest of the Falcon. Do not try to force the units apart.
3. Swivel the module around until the laser window faces the opposite direction.
  - The module can rotate in only one direction. Do not force it the other way.
4. Press the laser module back into the main part of the Falcon, and tighten the screw.



*Note: To swap the operations of the laser triggers after changing the laser module's orientation refer to [page 55](#).*

## Using the Long-Range Laser

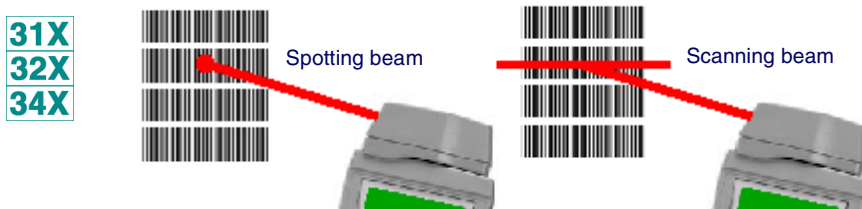
---

**31X**  
**32X**  
**34X**

The Falcon's optional long-range integrated laser uses a spotting beam to scan bar code labels from a distance.

For the Falcon to read the bar code with it's scanning beam, aim the spotting beam at the center of the bar code.

Figure 5-1: Long-Range Laser Operation in the Falcon 31X, 32X and 34X



The long-range laser may be operated in either of two trigger modes.

### Spot Beam Time-out Mode

**Spot Beam Time-out** is the default mode of operation:

1. Press and hold the laser trigger for the laser to emit a spotting beam.
2. Aim this beam at the center of the bar code.
3. After a short time-out period, the laser switches to a full scanning beam and reads the bar code.
  - The default time-out period is one-half second.

## Release Scan Mode

**Release Scan** mode provides greater control over the spotting beam:

1. Press and hold the laser trigger for the laser to emit a spotting beam.
  - The spotting beam stays on for up to 5 seconds until the trigger is released in **Release Scan** mode.
2. The laser switches to a full scanning beam and reads the bar code.
3. Turn off the full scanning beam by pressing and releasing the trigger.

To prevent accidental scanning, both modes require that the laser trigger is held down to activate the spotting beam.

## Attaching a Bar Code Reader

---

**31X**  
**32X**

If a Falcon **31X** or **32X** does not have an integrated laser scanner, a bar code reader can be attached to the connector at the top. The reader's cable must have a standard nine-pin squeeze connector at the end.

To attach a bar code reader:

- Match the orientation of the holes on the squeeze connector with the pins on the Falcon's connector.
- Push the squeeze connector onto the Falcon's connector until it is firmly in place. Refer to [Figure 5-2](#).

Figure 5-2: Attaching a PSC SnapShot to a Falcon 31x or 32x

**31X**  
**32X**



To disconnect the bar code reader from the Falcon:

1. Press the sides of the squeeze connector
2. Pull it away from the Falcon's connector.



**Note:** *The internal laser is the only option for scanning with Falcons 33X and 34X. Due to industrial sealing of these models and environmental issues, no external port is available for external lasers, even if the Falcon 33X or 34X is ordered without an internal laser.*



# 6

## The Falcon Dock

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## Overview

---

The Falcon Dock acts as a docking station for the Falcon and has two primary functions:

- Recharges the Falcon's NiCD or NiMH battery pack
- Provides a connection for serial communications between the Falcon and the host computer or another serial device, such as a printer or modem

Figure 6-1: The Falcon Dock



### Electrical Ratings

**Input:** 120 VAC 60HZ 12W

**Output:** 9VDC 500ma

**Input:** 230 VAC 50 Hz 4.5 VA

**Output:** 9 VDC 500 ma

## Cables

A cable and a power adapter for the Falcon Dock are available separately. To make cables, see the *Falcon DOS Portable Terminals Advanced User's Guide* for pin assignments.

---

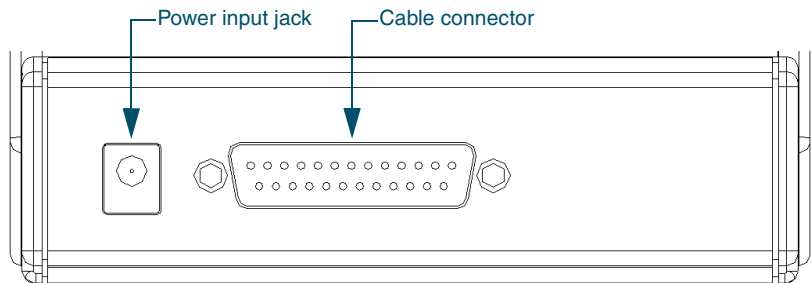
# Attaching the Falcon Dock to the Computer

---

Complete the following steps:

1. Attach the 25-pin end of the cable to the cable connector on the back of the Falcon Dock (refer to [Figure 6-2](#)).
2. Attach the other end of the cable to a serial port on the selected computer.
3. If the optional power adapter was ordered, attach it to the Falcon Dock (see the next section).

Figure 6-2: Back Panel of the Falcon Dock



## The Power Adapter

---



*Note: Use only PSC power supplies approved for the Falcon DOS Portable Data Terminal*



*Warning: If alkaline batteries are being used in the Falcon, do not connect a power adapter to the dock. Attempting to recharge alkaline batteries may cause battery leakage. Use only a 9-volt power adapter supplied by a PSC dealer. Using another adapter can damage the dock.*

**31X**  
**32X**  
**33X**  
**34X**

A 9-volt power adapter can be used with the Falcon Dock to recharge the NiCD or NiMH batteries in the Falcon. Power adapters are available from a PSC dealer or reseller.

1. Attach the small, round plug of the power adapter to the power input jack on the back of the Falcon Dock (refer to [Figure 6-2](#)).
2. Plug the other end into an outlet or power strip.
3. The red light-emitting diode (LED) labeled POWER on the front panel of the Falcon Dock should light up.

**31X**  
**32X**

The power adapter is used only to recharge the batteries in the Falcon 31X or 32X.

- The **Ready** light indicates that the Falcon is properly inserted in the dock.
- The **Ready** light appears red when charging and green when fully charged.



*Note: The LED indicators on the Falcon Dock will not light up if the power adaptor is not used. Serial communications will operate normally even though the indicator LEDs will remain dark without the adapter.*

**33X**  
**34X**

In the Falcon **33X** and **34X**, the dock's power must be on for serial communication to occur.

## Using the Falcon Dock

---

**31X**  
**32X**  
**33X**  
**34X**

Set up the Falcon Dock as described in the preceding sections. Refer to [Chapter 9](#) for information on trouble-shooting with the Falcon Dock.

1. Place the Falcon into the dock, with the keypad facing the front.
2. If a power adapter is being used, the green LED labeled **Ready** on the front panel of the Falcon Dock lights up.

While the Falcon is in its dock:

- Programs can be downloaded into the Falcon or data returned from it just as if it were connected directly to the computer.
- The Falcon can be left in the dock while using an attached bar code reader.
- The Falcon Dock can be used to recharge either nickel-cadmium (NiCD) or nickel metal hydride (NiMH) battery packs.

Leave the battery pack in the Falcon when placing it in the dock. The battery pack and the lithium backup battery will be recharged while the **Ready** light is on.

Charging time is 8 to 15 hours, depending on the type of battery pack and the current charging level.



***Note: Communications between Falcon models 33X and 34X and the host are exactly the same as a Falcon 32X dock or a hardwire connection with the following exceptions:***

- ***The Falcon 33X and 34X use IR for data transmission. The dock will not propagate other RS-232 control signals (such as RTS and CTS).***
- ***These signals are loopbacked on the dock (CTS <-> RTS, etc.). Applications that expect these signals will need to be modified.***
- ***Even though the Falcon 33X and 34X are IR, the dock allows full duplex communications between the Falcon and host.***

# 7

## The Falcon Four-Slot Dock

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## About the Falcon 4-Slot Dock

---

**31X**  
**32X**

This chapter describes how to set up and use the Falcon 4-Slot Dock. The Falcon 4-Slot Dock is specially designed for use with Falcon **31X** and **32X** DOS portable terminals only. For more information, refer to the *Falcon DOS Portable Terminals Advanced User's Guide*.

Use the Falcon 4-Slot Dock to:

- Provide a connection for serial communications between one to four Falcons and a host computer.
- Recharge the Falcon's nickel cadmium (NiCD) or nickel metal-hydride (NiMH) battery pack.

A dock network can be used by connecting two or more 4-Slot Docks to each other and connecting just one dock to the host. A Falcon in any slot on any dock in the network can exchange data with the host. While a slot is busy, all other slots in the network must wait for that one to become free.

### Electrical Rating

**Input:** 100-125 VAC 47-63 Hz      **Output:** 7.5 VDC 2A



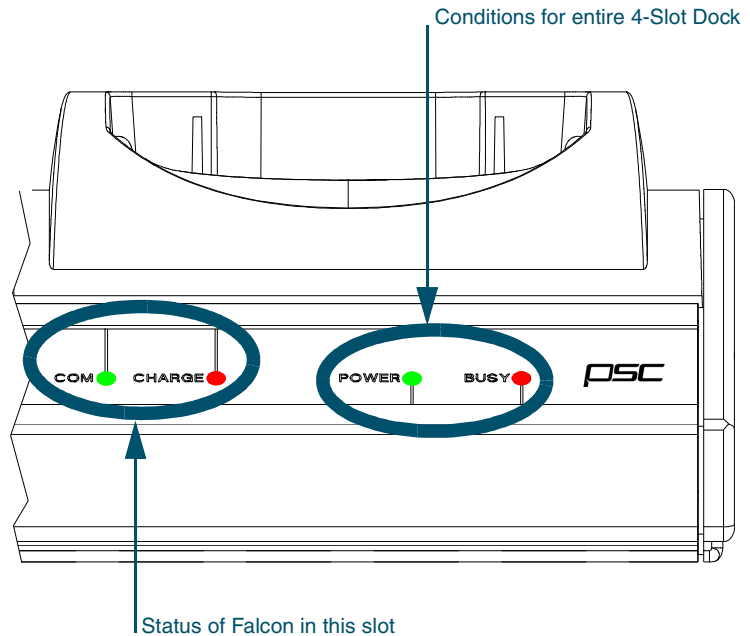
## Front Panel

The Falcon 4-Slot Dock has several light-emitting diodes (LEDs).

[Figure 7-1](#) shows the placement of the four types of LEDs.

- Two LEDs per slot show the status for each slot.
- Two unique LEDs show the status for the entire 4-Slot Dock.

Figure 7-1: Status LEDs on the Falcon 4-Slot Dock



## Status of Entire Unit

The front panel of the 4-Slot Dock has two LEDs on the right side of the unit that indicate conditions for the entire 4-Slot Dock unit. (refer to [Figure 7-1](#))

- **POWER:** Green indicates that the dock is receiving electricity through the power adapter.
- **BUSY:** Red indicates that another 4-Slot Dock in the network is communicating with the host.

## Status of individual Slots

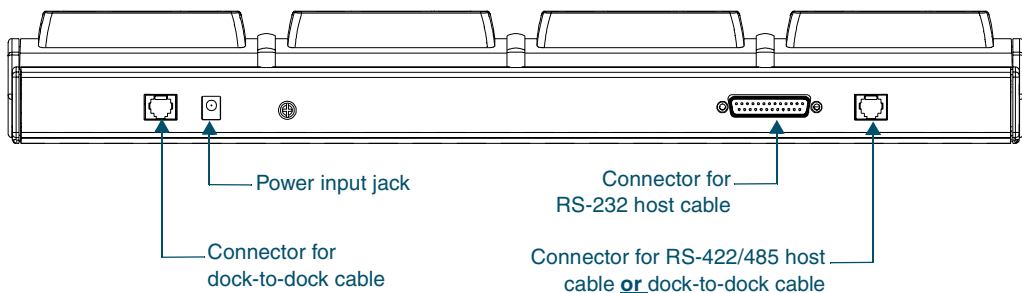
Two LEDs on the left front of each individual slot (refer to [Figure 7-1](#)) show the status of the Falcon portable in that slot.

- **COM:** Green indicates that the Falcon has control of the communications line to the host.
- **CHARGE:** Red indicates that the Falcon's batteries are being charged. Green indicates that the batteries are fully charged.

## Back Panel

The back panel of the 4-Slot Dock has cable jacks for connections to the host computer and other 4-Slot Docks (refer to [Figure 7-2](#)). The power input jack is also located there. (For information about connecting docks, refer to [Figure 7-3: on page 74](#).

Figure 7-2: The Back Panel on the Falcon 4-Slot Dock



---

# Installation

---

## Power Adapter

Use one of the following:

- **US:** US style 110VAC plug (PSC part number 00-850-00)
- **International:** 100–250VAC 47–63Hz input with IEC320 (part number 00-851-00; includes power cord)

## Cables

To connect the 4-Slot Dock to a host computer, use one of the following:

- **RS-232 cable** (PSC part number 00-884-32)
- **RS-422/485 cable** (custom-built for the application)

To form a network of multiple 4-Slot Docks, connect the docks to each other with either of the following PSC cables:

- **2-foot cable** (PSC part number 00-884-36)
- **10-foot cable** (PSC part number 00-884-37)



**Note:** *Refer to the Falcon DOS Portable Terminals Advanced User's Guide for pin assignments.*

## Connecting the Dock to the Host

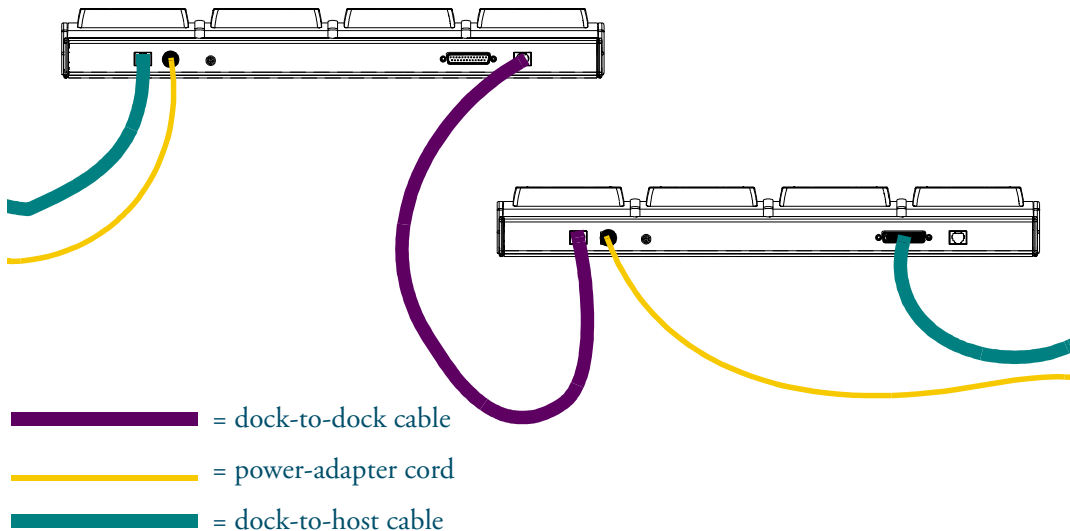
To connect the Falcon 4-Slot Dock to a computer, complete the following steps:

1. Plug one end of the serial cable into the appropriate connector on the back of the 4-Slot Dock.
2. Attach the other end of the cable to an available serial port on the computer.
3. Attach the power adapter cord to the power input jack on the back of the dock.
  - If using the international power adapter, plug one end of the power cord into the power adapter.
4. Plug the power cord into an outlet or power strip (preferably one that has surge protection).
  - The **Power** LED on the front panel of the dock lights up.

## Creating a Dock Network

[Figure 7-3](#) shows the back of two docks in a network.

Figure 7-3: Network Connections for Falcon 4-Slot Docks



1. The dock on the left is connected to a third dock (which may be connected to another dock).
2. The dock on the right is connected to the host computer with an RS-232 cable.
  - To use an RS-422/485 connection to the host, use the telephone-style jack at the far right. The RS-232 connector would not be used.
3. Each 4-Slot Dock unit in the network must be connected to a separate power supply.

## Using the 4-Slot Dock

---

### Charging a Falcon's Batteries

To charge the rechargeable batteries in a Falcon, place the Falcon into any slot of a 4-Slot Dock that is connected to a power supply. The dock does not need to be connected to a computer.



**Caution:** *Only Falcons equipped with rechargeable NiCD or NiMH batteries should be used with the Falcon 4-Slot Dock. Using Alkaline batteries can cause battery leakage and possible damage to the Falcon.*

### Transferring Data

To transfer programs or data files between a Falcon and a computer through a 4-Slot Dock, a PSC's XFER utility can be used, the Falcon Configuration Utility, or any standard serial-transfer program.



**Note:** *For information about using XFER or the Falcon Configuration Utility, see the Falcon DOS Portable Terminals Advanced User's Guide.*

# 8

# The Falcon Vehicle Mount Powered Dock

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## Overview

---

### **31X** **32X**

The Vehicle Mount Powered Dock is designed for road vehicles such as step vans or semi tractors and forklifts using the optional mounting bracket. The mounting configuration is flexible to respond to the variety of vehicle configurations and personal driver preferences.

### **31X**

- The Falcon **31X** without an integrated laser functions in the Vehicle Mount Powered Dock.

### **32X**

- The Vehicle Mount Powered Dock also functions with the Falcon **32X** with or without an integrated laser.

PSC offers a standard mounting bracket that provides vibration isolation (recommended for forklifts), however a custom bracket or off-the-shelf cell phone mounting equipment can also be used.



*Note: There is also a Vehicle Mount Dock (without power) available for the Falcon 31X and 32X. (PSC part number 00-445-00)*

### **31X** **32X**

The vehicle-mounted dock holds the Falcon **31X** and **32X** as specified above. The powered docking station has two primary uses:

1. Recharge the NiMH battery pack(s) and lithium backup batteries.
2. Provide a connection for serial communications between the Falcon and the host computer or another serial device, such as a printer or modem.



*Caution: If the Falcon contains Alkaline or non-rechargeable batteries, do not connect the power supply to the dock.*



## Power Supply

---

AC Power supplies are available that meet either 110V - 120V or 200V - 240V. The Vehicle Mount Powered Dock requires a DC power source within the range of 11 V to 16.5 V.

## Fuse Replacement

The unit uses a 250V, 1.5A (fast blow), high current interrupting rated fuse that is externally accessible and user replaceable. Should it need replacement, replace with same size, rating and type of fuse (such as Bussman AGC-1 1/2).

## Vehicle 12VDC Connection

The dock is designed for use with any automotive DC power source within the range of 11 V to 16.5 V.



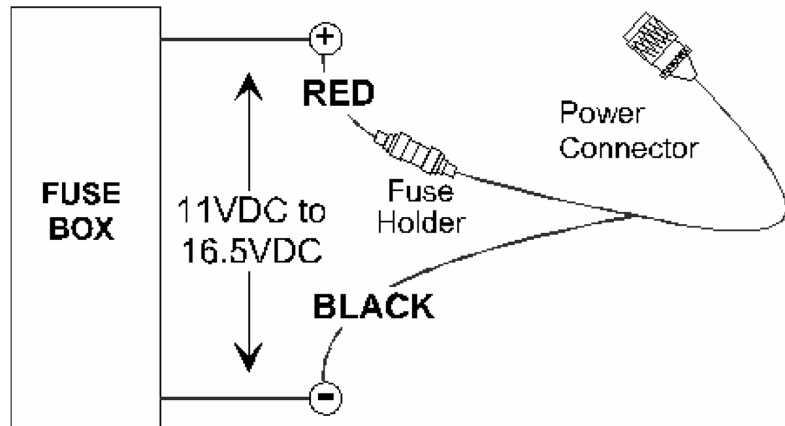
**Caution:** *Connect the vehicle cable to an unswitched outlet on the vehicle's fuse box to reduce the chance of interference from the vehicle's charging system.*



**Caution:** *Correct electrical polarity and grounding is required for safe and proper installation. Only connect to a negative ground DC supply circuit. This is not for installation to positive ground circuits.*

Figure 8-1: Proper Connection of the Vehicle Cable

RED (to Positive terminal on vehicle's electrical system)



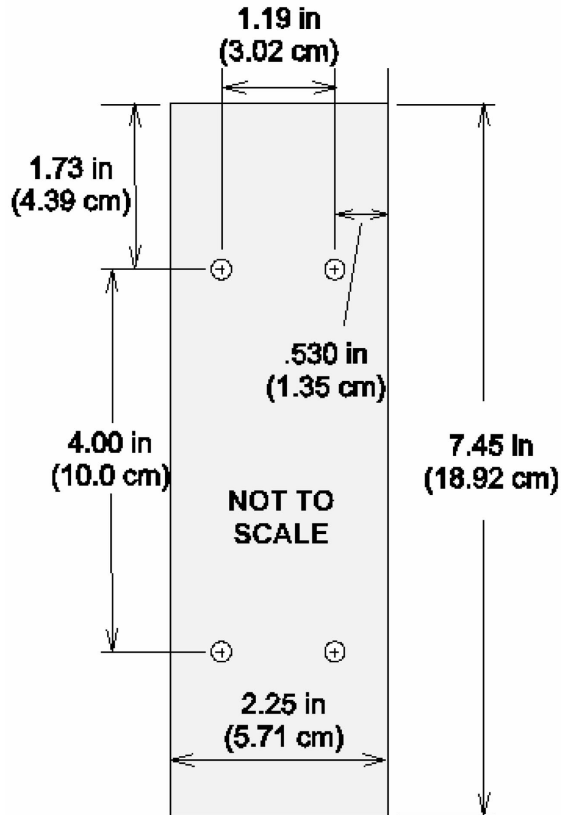
When the dock is connected to an unswitched outlet on the fuse box the Falcon battery will always receive a charge from the vehicle battery. If the unit is left turned on for extended periods of time, the Falcon could drain the vehicle battery.



***Note: If the dock is connected to a switched outlet on the fuse box, the Falcon battery will only charge when the vehicle is on. This eliminates the problem of draining the vehicle battery.***

# Installation

Figure 8-2: Powered Dock Bracket Mounting Pattern



*Note: PSC recommends the Falcon be inserted in the dock only after the dock is securely mounted to a vehicle.*

## Mounting Bracket

Complete the following instructions for the PSC Powered Dock Mounting bracket:

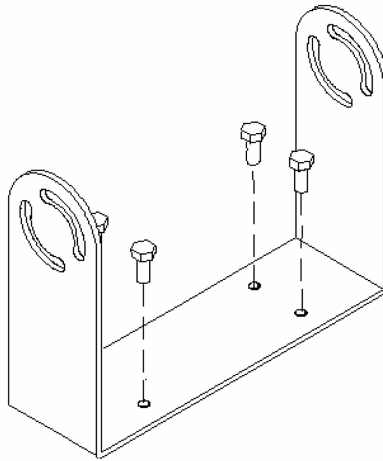
1. Assemble the mounting bracket.
2. Install the mounting bracket on a stable, flat surface. Use the Powered Dock mounting bracket or an equivalent mounting assembly.
3. Insert the Falcon in the dock bracket assembly.
4. Connect the power source to the dock.
5. The Dock Power LED illuminates.
6. Turn the Falcon on.

[Figure 8-2:](#) shows the mounting pattern for a standard mount. Refer to [Figure 8-5:](#) for the mounting pattern if using a custom mount.

## Bottom Mounting Bracket

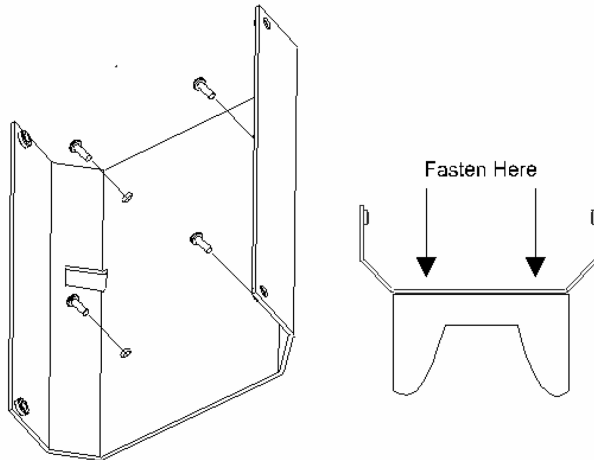
1. Install the Bottom Mounting Bracket portion of the mounting assembly to the vehicle using  $\frac{1}{4}$ " (6.35mm) maximum diameter fasteners. Refer to [Figure 8-3](#).

Figure 8-3: Bottom Mounting Bracket.



2. Fasten the back plate assembly to the dock using the through holes in the back plate and the threaded holes in the back of the dock. Four #8-32 fasteners are provided with the mounting kit. Refer to [Figure 8-4](#).

Figure 8-4: Fasten Back plate Assembly to dock

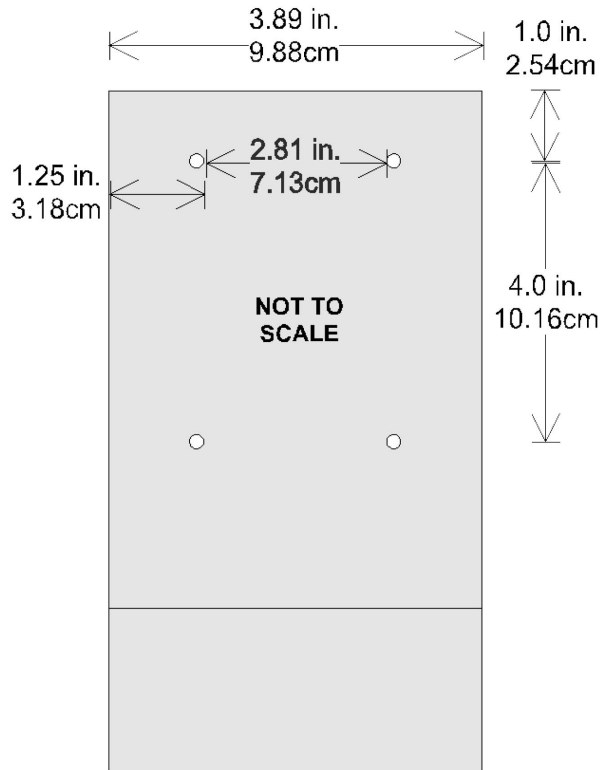


3. The dock is ready for cabling.

## Custom Mounting Brackets

When using a non-Falcon mounting bracket, use the dimensions in [Figure 8-5](#): when placing the custom bracket on the dock.

Figure 8-5: Back View of Dock before Mounting Custom Bracket



## Using the Vehicle Mount Powered Dock

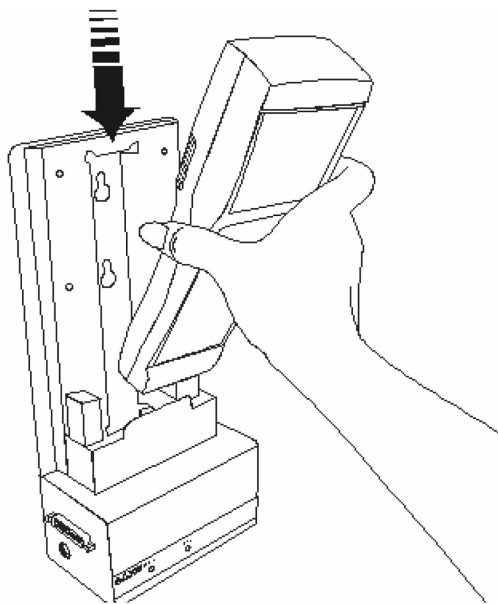
---

1. Place the Falcon in the dock with the keypad facing out, towards the indicators.



*Note: The Power LED on the dock is illuminated when the dock is receiving DC power. Batteries in the Falcon will not charge unless the Power LED is on.*

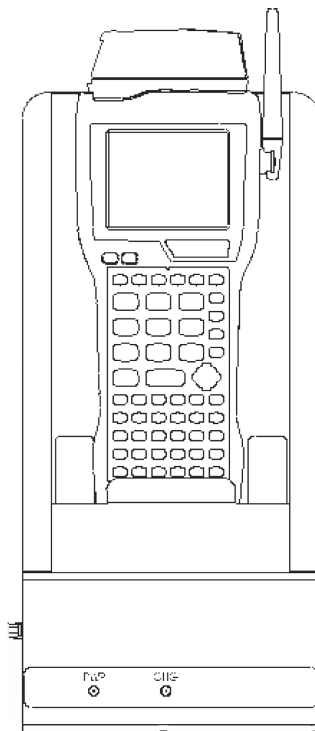
Figure 8-6: Insert the Falcon in Vehicle Mount Powered Dock



2. Push the Falcon down into the well and release. The hand-strap hook connects with the upper tab, securing the Falcon in the dock. Refer to [Figure 8-6](#).



Figure 8-7: Falcon Dock Installed in the Vehicle Mounting Bracket



3. The dock begins charging the batteries when the Falcon is inserted into the dock. The Falcon can begin communicating with another serial device, such as a printer or modem.
4. Please refer to the *Falcon Advanced User's Guide* for instructions on sending data to and from a printer or modem.

Table 8-1: Indicators and Functions

Indicators and Functions	
Indicator	Function
PWR (Power)	Green when receiving power from a vehicle battery.
CHG (Charge)	Green when charging the main and backup batteries in the Falcon.



# 9

# Troubleshooting, Care and Technical Support

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# Troubleshooting

---

## Bar Codes

### Bar code won't scan

- Check the quality of the bar code. Labels which are faded or scratched are less likely to scan.
- Verify that the unit is configured to read the type of bar code being scanned. Scan the D1 (see page <xref-T>page 140 in the Falcon Advanced User's Guide) parameter and try again.
- When an attached scanning device isn't functioning correctly, verify it is not broken by using another device.

### Bar code won't scan with laser

- Vary the scanning angle and distance. Avoid aiming the laser beam perpendicular to the bar code label or at extreme angles.
- Verify that the laser beam is intersecting the entire bar code label.

### Bar code won't scan with wand

- Ensure that the wand is passing over the entire bar code label. Holding the wand like a pencil in front of the left side of the label, use a swift sweeping motion to move the wand towards the other end of the label.

## Batteries

### Unit won't turn on

- Replace with a fully charged battery.
- Close the battery door securely.

### Data is lost

- Turn the unit off and wait for the “Powering Down” screen to disappear before replacing batteries.
- Never leave the unit for an extended period of time without a main battery pack.

### Unit turns off unexpectedly and won't turn on

- The battery is likely too weak to continue operating the unit. Replace the main battery pack with a fully charged battery and then turn the unit on.

## Dock

### The Ready light does not come on

- Make sure the **Power** light is on.
- Make sure the Falcon is fully inserted into the dock, with the keypad facing out.

### The Ready light still does not come on

- Make sure the Falcon Dock adapter is securely attached to the Falcon.
- Make sure the contacts in the dock are clean. (If a power adapter is not being used, the light will not come on.)

## Serial Communications

### Data transfer doesn't succeed

- Do communications parameters agree (COM port, baud rate, transfer protocol)?
- Is the cable designed for use with the Falcon (PSC-specific RJ cable) or the dock (25-pin null modem cable)?
- Is there disk drive space available on the receiver for the file being sent? If not, delete unnecessary files.

## Care and Cleaning

---

With normal use, the Falcon DOS portable terminal, the Falcon Dock, and the Falcon 4-Slot Dock require no maintenance. If a unit gets dirty, wipe it with a damp cloth.



**Caution:** *Do not immerse either the Falcon or the docks in liquid.*



**Caution:** *Do not use abrasive cleaners on the display screen.*

# Technical Support

---

## **PSC Website Technical Support**

The most comprehensive source for technical support and information for PSC products is the PSC website, at [www.pscnet.com](http://www.pscnet.com). The site offers answers to frequently asked questions (FAQs), software updates, patches, demos, product documentation, and instructions for returning products for repair. Select [Contact PSC](#) from the Search Menu.

## **Reseller Technical support**

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

## **E-Mail Technical Support**

If the solution to a technical support question is not available through the PSC website or a local reseller, contact PSC technical support directly via E-mail at [TechSupport@pscnet.com](mailto:TechSupport@pscnet.com).

## **Telephone Technical Support**

For those without E-mail access, please call (541) 344-1189.





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**window** *refer to viewport*

**DECLARATION OF CONFORMITY**



**PSC Inc. hereby declares that the equipment specified below  
has been tested and found compliant to the following directives and standards –**

**Directives:** EMC 89/336/EEC  
Low Voltage 73/23/EEC  
R&TTE 1999/5/EC

**Standards:** EN55022-A:1994/1998 EN50082-1:1998  
EN55024:1998 ETS 300 328

**Equipment Type:** Portable Data Terminal Equipment

**Product:** Falcon Family Models 3XX and 4-Slot Dock

A handwritten signature in black ink, appearing to read 'Charles Vanlue'.

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