Falcon 625 Vehicle-Mount Terminal
User’s Guide

All rights reserved. No part of this work may be reproduced, transmitted, or stored in any form or by any means without prior written consent, except by a reviewer, who may quote brief passages in a review, or as provided for in the Copyright Act of 1976.

Falcon® is a registered trademark of PSC, Inc.

Datalight® is a registered trademark of Datalight, Inc., and ROM-DOS™ is a trademark of Datalight, Inc.


The information in this book was provided by LXE® Inc., an EMS Technologies Company. Copyright of the original material is owned by LXE Inc.


Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. Where these designations appear here and the authors were aware of a trademark claim, the designations have been printed with a trademark (™) symbol.

The information contained in this document is subject to change without notice.
Contents

Back Mounting Bracket ........................................................... 12
Bottom Mounting Bracket ...................................................... 12
Torque Measurements .............................................................. 15
Installation Procedure .............................................................. 16
Connect Cable Ties ................................................................. 16
Attach Bottom Mounting Bracket to Vehicle ........................... 18
Attach Falcon 625 to Back Mounting Bracket ......................... 20
Attach Falcon 625 to Bottom Mounting Bracket ..................... 20
Connect Antenna ................................................................. 22
Connect Serial Bar Code Scanner ............................................ 23
Connect Serial Printer or PC ................................................... 25
Connect Power Cable .............................................................. 26
Fuse Replacement ...................................................................... 31

Chapter 3: Using the Falcon 625 ............................................... 33
Turning the Falcon 625 On and Off .......................................... 34
Rebooting the Falcon 625 ......................................................... 35
Configuring the Falcon 625 ...................................................... 35
  Default Settings .................................................................... 35
  CMOS Setup ........................................................................ 36
  BCWEDGE Setup ............................................................... 37
The Keyboard .............................................................................. 38
  Secondary Keys (2nd) LED .................................................... 38
  Hidden Keys ...................................................................... 39
  Numeric Keys .................................................................. 41
The Display ................................................................................ 41
  Adjusting the Brightness ...................................................... 41
  Adjusting the Contrast ......................................................... 42
  Panning the Display .......................................................... 42
  Cleaning the Display .......................................................... 44
  Adjusting the Speaker Volume .............................................. 44
Suspend Mode ............................................................................ 45
Video Timeout Mode ................................................................. 46
About this Guide

Style Conventions

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* indicate recommendations or important information for the user to know before proceeding. They can also indicate where certain actions could cause damage to the unit. 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* indicate a danger of injury to the user. 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*. 
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.
Warnings

Changes or modifications to this device not expressly approved by PSC could void the user’s authority to operate this equipment.

Shielded cables must be used with this unit to ensure compliance with the FCC Class B limits.

The long-term characteristics or the possible physiological effects of radio frequency electromagnetic fields have not been investigated by UL.

This product contains a 4.8V nominal NiCd battery. Because there is a danger of explosion if the battery is incorrectly replaced, it should be replaced only by an approved field service center.

The Falcon 625 vehicle-mount terminal is designed specifically for use with 2.4GHz Type II PCMCIA radios. Substitution of other PCMCIA radios will void the FCC, Industry Canada, and other international radio certifications for the Falcon 625 and is strictly prohibited.

Substitution of antennas is not permitted unless authorized by PSC. Use of unauthorized antennas will void the FCC emissions certification of the Falcon 625.

Approvals

<table>
<thead>
<tr>
<th>EMI / EMC Standards:</th>
<th>Transceiver:</th>
</tr>
</thead>
<tbody>
<tr>
<td>FCC Part 15 Subpart B</td>
<td>FCC Part 15, Subpart C</td>
</tr>
<tr>
<td>EN 55022: 1994</td>
<td>ETSI 300 328</td>
</tr>
<tr>
<td>EN 50082-1: 1997</td>
<td>IC-RSS 210</td>
</tr>
<tr>
<td>EN 61000-4-2: 1997</td>
<td>Safety Standards:</td>
</tr>
<tr>
<td>EN 61000-4-3: 1997</td>
<td>EN 60950-1: 1992 + Amendments A1..A4</td>
</tr>
<tr>
<td>EN 61000-4-4: 1997</td>
<td>UL 1950</td>
</tr>
<tr>
<td>EN 61000-4-5</td>
<td>CSA C22.2 No. 950</td>
</tr>
<tr>
<td>EN 61000-4-6</td>
<td></td>
</tr>
<tr>
<td>EN 61000-4-8</td>
<td></td>
</tr>
</tbody>
</table>
Technical Support

**PSC Website Support**

The PSC website ([www.psc.com](http://www.psc.com)) is the complete source for technical support and information for PSC products. The site offers the PSC TekForum, product support, product registration, warranty information, product manuals, product tech notes, software updates, demos, and instructions for returning products for repair.

**PSC Website TekForum**

Search for information on the TekForum by clicking on the Support link on the PSC home page. Browse the TekForum to find answers to your questions about common technical issues. Register with TekForum to submit a question to the PSC Technical Support Staff.

**Reseller Technical Support**

An excellent source for technical assistance and information is an authorized PSC reseller. A reseller is acquainted with specific types of businesses, application software, and computer systems and can provide individualized assistance.

**Telephone Technical Support**

If you do not have internet or email access, you may contact PSC technical support at (541) 349-8281.
About the Falcon 625

The Falcon 625 is a tablet-style DOS computer. Rugged and portable, it is designed to be mounted in a vehicle. The Falcon 625 uses a spread-spectrum 2.4GHz PCMCIA radio for wireless data communications from a fork-lift truck or any properly configured vehicle. It is designed to run applications such as PowerNet TN.

This chapter provides an overview of the physical features of the Falcon 625.
The Falcon 625 has the following features:

- An Intel 486SX processor running at 25MHz.
- Eight megabytes of flash memory.
- Four megabytes of dynamic RAM (DRAM).
- One Type II/III PCMCIA interfaces.
- Two RS-232 serial connectors.
Quick Start

- An easy-to-read 640×200–pixel electroluminescent display with backlight.
- A built-in keyboard, either QWERTY or ABCD.
- Panning capability.
- A low-temperature option.
- Tough construction for rough, all-weather environments; environmentally sealed to IP66.
- A spread-spectrum radio contained on a Type II 2.4GHz PCMCIA card.

Quick Start

This section’s instructions are based on the assumption that a new system is already configured and requires only installation of accessories (e.g., an antenna or an external bar code scanner) and a power source.

This user’s guide covers installation and operation of the Falcon 625:

1. Install the mounting bracket on a vehicle.
2. Secure the Falcon 625 in the mounting bracket assembly.
3. Connect the vehicle’s power source to the Falcon 625 power cable.
4. Connect the power cable to the Falcon 625.
5. Attach accessories (e.g., scanner and antenna) to the Falcon 625.
6. Turn the Falcon 625 on.
External Connectors

Most external connectors for the Falcon 625 are located on the bottom of the unit (refer to Figure 1-2).

Figure 1-2: The Falcon 625 External Connectors

COM1 connects to a serial bar code scanner cable. (Refer to “Connect Serial Bar Code Scanner” on page 23 for information on connecting a scanner.)

COM2 connects to a serial printer or PC. (Refer to “Connect Serial Printer or PC” on page 25 for information on connecting a printer or PC.)

The antenna connector is located on the top of the unit. (Refer to “Connect Antenna” on page 22 for information on connecting the antenna.)

Note: The pointing-device and keyboard ports are not supported.
Two keyboards are available for the Falcon 625: a QWERTY-style keyboard and an ABCD-style keyboard (refer to Figure 1-4). Each keyboard features a 60-key keypad with individual backlighting for each key. Each keyboard has all the functions of a full 101-key keyboard, including a numeric keyboard pad.

Figure 1-3: The QWERTY Keyboard

Figure 1-4: The ABCD Keyboard
Keyboard LEDs

The Falcon 625 keyboard has three LED indicators (refer to Figure 1-5).

**Figure 1-5: Keyboard LEDs**

- **Caps Lock LED**
  This LED indicates the state of the keyboard Caps Lock mode. If Caps Lock is enabled, this LED is lit green. When Caps Lock is off, the LED is dark.

  To toggle Caps Lock mode on and off, press the 2ND key and then the F1 key. Or, set Caps Lock mode using the CMOS Setup program (refer to Table 3-1 on page 36).

- **Secondary Mode (2nd) LED**
  The Falcon 625 keyboard is equipped with several secondary keys, identified by the superscripted text found on the keys.
When the 2nd state is enabled by a press of the 2ND key (refer to Figure 3-3 on page 39), the yellow 2nd LED is lit, and the 2nd state remains enabled until another key has been pressed.

**Note:** Refer to “Secondary Keys (2nd) LED” on page 38 for information on using the secondary keys.

**Status LED**

The Status LED is lit green when the unit is powered on and the display is off.

The Status LED is dark when power is disconnected (or the power is on and the display is on).

Toggle suspend mode on and off by pressing the 2ND key and F3.

**Note:** Refer to “Suspend Mode” on page 45 for more information on using the suspend mode.

**Control Keys**

The Falcon 625 has several control keys (refer to Figure 1-6 on page 8). One key controls the keyboard backlight, two keys control the speaker volume, two keys control the display contrast, and two keys control the display brightness.

**Note:** Refer to “The Display” beginning on page 41 for information on using the control keys.
About the Falcon 625

Figure 1-6: The Control Keys

Power Supply

Vehicle power input for the Falcon 625 is 12V to 80V DC and is accepted without the need to perform any manual adjustments within the Falcon 625. (Refer to “Vehicle 12-80VDC Direct Connection” on page 27.)

If 12V to 80V DC power is not available, an optional universal AC power supply can be used. (Refer to “External Power Supply” on page 26.)

Power input is fused for protection, and the fuse is externally accessible. (Refer to “Fuse Replacement” on page 31.)
The Falcon 625 has an internal 50mAh Nickel Cadmium (NiCd) backup battery installed to provide power to the unit for a short amount of time when the primary power has been depleted, removed or has failed. The backup battery also maintains time, date, and CMOS setup information when power is off.

_Caution: This battery is not user-serviceable. It should be changed only by authorized service personnel._
Installing the Falcon 625

This chapter describes how to mount the Falcon 625 on a vehicle and provide power to it.

Note: Bolts, washers, and tools required for installation are not supplied by PSC.

CHAPTER CONTENTS

Components ..............................................................12
Back Mounting Bracket ............................................12
Bottom Mounting Bracket .......................................12
Torque Measurements ..............................................15
Installation Procedure ..............................................16
Connect Cable Ties ....................................................16
Attach Bottom Mounting Bracket to Vehicle ..........18
Attach Falcon 625 to Back Mounting Bracket ..........20
Attach Falcon 625 to Bottom Mounting Bracket ....20
Connect Antenna .....................................................22
Connect Serial Bar Code Scanner ............................23
Connect Serial Printer or PC .................................23
Connect Power Cable ..............................................26
Fuse Replacement ..................................................31
Components

Back Mounting Bracket

The back mounting bracket (refer to Figure 2-7) attaches to the Falcon 625.

Figure 2-7: The Back Mounting Bracket

- One back mounting bracket
- Six 8-32×7/16 pan head screws (connect to the back of the Falcon 625)
- Six 8-32×3/8 flat screw (connect to the side of the Falcon 625)

Bottom Mounting Bracket

The bottom mounting bracket (refer to Figure 2-8 on page 13) is mounted to the vehicle and is connected to the back mounting bracket and Falcon 625 assembly.
Figure 2-8: The Bottom Mounting Bracket

- One bottom mounting bracket
- Six ¼ flat washers
- Six ¼ lock washers
- Six ¼-20 bolts

Dimensions for the mounting edge of the bottom mounting bracket are shown in Figure 2-9 on page 14. Suggested mounting positions are shown in Figure 2-10 on page 14. The viewing angle is 45° to both sides of the bottom mounting bracket.
Figure 2-9: Bottom Mounting Bracket Dimensions

Note: The bottom mounting bracket is 0.179 in (4.5 mm) thick. Drawing is not to scale.

Figure 2-10: Suggested Mounting Positions
Torque Measurements

A torquing tool capable of torquing to 50 in/lb (5.64±.56 N/m) is required for this operation. Torque the pan head screws to 16.0±1 in/lb (1.8±0.11 N/m) when attaching the back mounting bracket to the Falcon 625. Torque the ¼-20 bolts to 50.0±5 in/lb (5.64±0.56 N/m) when assembling the bottom mounting bracket to the back mounting bracket. (Refer to Figure 2-11.)

Figure 2-11: Torque Measurements

![Torque Measurements Diagram]
Installation Procedure

Connect Cable Ties

1. Turn the Falcon 625 off and place it face down on a stable surface.

2. Position the hole in a cable tie over a screw hole on the back of the Falcon 625 (refer to Figure 2-12).

Figure 2-12: Cable Ties and Push Mounts
3. Insert a pan head screw into the screw hole and fasten it securely.

4. Place the power or COM port cable on top of the cable tie, lift up the pointed end of the tie, and slide it through the narrow opening at the top of the cable tie, keeping the serrated sides together.

5. Slide the tail of the tie closed until the cable is snug.

6. Repeat steps 2 through 5 for each cable.

7. Slide the pointed end of a cable tie through the top opening in a push mount.

8. Snap the push mount through one of the holes indicated in Figure 2-14 on page 18.

9. Place the power or COM port cable over the tie, lift up the pointed end of the tie, and slide it through the narrow opening at the top of the cable tie, keeping the serrated sides together.

10. Slide the tail of the cable tie closed until the cable is snug.

11. Repeat steps 7 through 10 for each cable.
Attach Bottom Mounting Bracket to Vehicle

1. Position the bracket to allow access to the switches and ports on the bottom of the Falcon 625.

2. Attach the bottom mounting bracket to the vehicle mounting surface using six \( \frac{1}{4} \) bolts (not included) or equivalent fasteners (refer to Figure 2-15 on page 19).
Figure 2-15: Connecting the Bottom Bracket to the Vehicle

Note: Refer to Figure 2-9 on page 14 and Figure 2-10 on page 14 for dimensions of the bottom mounting bracket and suggested mounting positions. Mount the bracket to the most rigid surface available on the vehicle.
Attach Falcon 625 to Back Mounting Bracket

1. Turn the Falcon 625 off, and place it face down on a stable surface.

2. Position the back mounting bracket on the Falcon 625, matching the screw holes in the bracket to the screw holes on the back of the Falcon 625.

3. Insert a pan head screw into each of six holes. Torque the screws to 16±1 in/lb (1.8±0.11 N/m).

Figure 2-16: The Falcon 625 Attached to the Back Bracket

Attach Falcon 625 to Bottom Mounting Bracket

1. Insert the mounting bolts (washer first, then the lock washer) through the curved apertures in the bottom mounting bracket and into the screw holes in the side bracket (refer to Figure 2-17 on page 21). Hand-tighten each bolt.
Caution: Do not torque bolts until all bolts are in place and viewing angle is adjusted.

2. Loosen the hex bolts on both sides to adjust the viewing angle of the mounted Falcon 625.

3. Torque the hex bolts to 50±5 in/lb (5.64±0.56 N/m).

Note: Test the torque on the bolts frequently during operation and retighten them if they become loose.
4. Connect all cables to the Falcon 625.

Figure 2-18: The Falcon 625 in the Vehicle Bracket

Connect Antenna

A Falcon 625 equipped with a radio requires an external antenna.

Place the antenna base over the antenna pin (refer to Figure 2-19 on page 23). Push the base down and twist it clockwise until the antenna is secure.
Adjust the antenna angle to improve RF communications with the computer network.

**Caution:** Use of unauthorized antennas will void the FCC emissions certification of the Falcon 625.

**Connect Serial Bar Code Scanner**

Connect a decoding scanner to the Falcon 625 for bar code input. For the scanner to function properly with the Falcon 625, use a cable supplied by PSC.

**Caution:** Use of a shielded cable is required to maintain FCC and CISPR22 emissions compliance.
1. Turn the Falcon 625 off before attaching the scanner cable.

2. Seat the connector firmly over the pins on COM port 1 (refer to Figure 2-20) and turn the thumbscrews in a clockwise direction. (Do not overtighten the screws.)

Figure 2-20: Connecting the Serial Scanner Cable

3. Turn the Falcon 625 on.

Refer to the documentation received with the bar code scanner for complete instructions.

Caution: If the scanner does not work, check the setting for COM1 in CMOS Setup (refer to “CMOS Setup” on page 36) and BCWEDGE Setup (refer to “BCWEDGE Setup” on page 37). The COM1 port should be set to 5Volts in the CMOS setup.
Connect Serial Printer or PC

To connect a printer or PC to the Falcon 625, use a cable supplied by PSC or a standard null modem cable with a nine-pin D-shell female connector.

1. Turn the Falcon 625 off before attaching the serial cable.

2. Seat the connector firmly over the pins on COM port 2 (refer to Figure 2-20) and turn the thumbscrews in a clockwise direction.

Caution: Do not overtighten the screws.
3. Turn the Falcon 625 on.

Refer to the documentation received with the printer or PC for complete instructions.

Caution: If the printer or PC does not work, check the setting for COM2 in CMOS Setup (refer to “CMOS Setup” on page 36). The port should be set to Ring Indicator.

Connect Power Cable

External Power Supply

The optional external power supply (refer to Figure 2-23 on page 27) may be connected to either a 120V, 60Hz supply or, outside North America, to a 230V, 50Hz supply, using the appropriate detachable cordset. In all cases, connect to a properly grounded source of supply provided with maximum 15-amp overcurrent protection (10-amp for 230V circuits).
Figure 2-23: External Power Connector

1. Turn the Falcon 625 off.
2. Connect the detachable cordset to the external power supply (IEC 320 connector).
3. Plug the cordset into an appropriate grounded electrical supply receptacle (AC mains).
4. Connect the power plug to the Falcon 625 (refer to “Power Plug” on page 30).

**Vehicle 12-80VDC Direct Connection**

For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. This fused circuit requires a 5-amp maximum time delay (slow blow) high interrupting rating fuse. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery’s positive (+) terminal.

**Caution:** Installation should be performed by trained service personnel only. There is a risk of ignition or explosion, as explosive gas mixtures may be vented from the battery. Work only in a well-ventilated area. Avoid creating arcs and sparks at battery terminals.
1. Turn the Falcon 625 off.

2. While observing the fuse requirements specified above, connect the power cable as close as possible to the actual battery terminals of the vehicle. Connect it to an unswitched terminal in the vehicle fuse panel, after providing proper fusing.

Caution: For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.

3. Route the cable the shortest way possible. The input cable from the connection to the battery is rated for a maximum temperature of 221°F (105°C). When routing this cable, protect it from physical damage and from surfaces that might exceed this temperature.

Caution: Always route the power cables so that they do not interfere with safe operation and maintenance of the vehicle. Do not expose the cables to chemicals or oil that may cause the wiring insulation to deteriorate. If the vehicle is equipped with a panel containing silicon controller rectifiers (SCRs), avoid routing the power cables near the panel.
4. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized “crimp”-type electrical terminals are an accepted method of termination. Select electrical connectors sized for use with 18AWG (1mm²) conductors.

Figure 2-25: Connecting the Power Cable to the Vehicle

Table 2-1: Wiring Color Codes for DC Input Power Cabling

<table>
<thead>
<tr>
<th>Vehicle Supply</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>+12 - 80VDC (DC +)</td>
<td>Red with White Stripe</td>
</tr>
<tr>
<td>Return (DC -)</td>
<td>Red with Black Stripe</td>
</tr>
<tr>
<td>Vehicle Chassis (GND)</td>
<td>Green</td>
</tr>
</tbody>
</table>

Caution: Correct electrical polarity is required for safe and proper installation. Connecting the cable to the Falcon 625 with the polarity reversed will cause the Falcon 625’s fuse to be blown. Refer to Table 2-1 for additional wire color-coding specifics.

5. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one-foot intervals, taking care not to overtighten or pinch conductors or penetrate the outer cable jacket.

6. Connect the power plug to the Falcon 625 (refer to Figure 2-26 on page 30).
Power Plug

1. Turn the Falcon 625 off before attaching the power plug.
2. Insert the power plug into the power connector on the bottom of the Falcon 625 (refer to Figure 2-26).

Figure 2-26: Connecting the Power Cable to the Falcon 625

Note: Both the plug and the jack are keyed and cannot be connected incorrectly.

3. Twist the nut of the power plug clockwise until it is tight.
4. Turn the Falcon 625 on.
Fuse Replacement

The Falcon 625 uses a 125V, 5A time delay (slow blow), high current interrupting rating fuse that is externally accessible and user replaceable. Should the fuse need replacement, replace it with the same size, rating, and type of fuse, a Bussman type GMC-5 (5x20mm).

1. Turn the Falcon 625 off and disconnect the power cable.
2. While holding the Falcon 625 over a level surface, use a flathead screwdriver to push the fuse cover in and twist it one quarter turn counterclockwise (refer to Figure 2-27).

![Figure 2-27: Replacing the Fuse](image)

3. Pull the fuse holder out and remove the fuse.
4. Place a new fuse in the holder, push the holder into the Falcon 625, and twist it clockwise one quarter turn.
5. Reconnect the power cable to the Falcon 625.
Using the Falcon 625

This chapter explains how to turn on, turn off, reboot, and configure the Falcon 625; how to access all the functions of a 101-key keyboard; how to adjust the contrast and brightness levels of the display; and how to pan the display. It also tells how to turn the backlight on and off and how to adjust the speaker volume. Information about suspend and video timeout modes is also included.

CHAPTER CONTENTS

- Turning the Falcon 625 On and Off .........................34
- Rebooting the Falcon 625.........................................35
- Configuring the Falcon 625......................................35
  - Default Settings ..........................................................35
  - CMOS Setup ................................................................36
  - BCWEDGE Setup..........................................................37
- The Keyboard ...........................................................38
  - Secondary Keys (2nd) LED...........................................38
  - Hidden Keys ..............................................................39
  - Numeric Keys .............................................................41
- The Display ..............................................................41
  - Adjusting the Brightness .............................................41
  - Adjusting the Contrast ..................................................42
  - Panning the Display .....................................................42
  - Cleaning the Display ....................................................44
- Adjusting the Speaker Volume ..............................44
- Suspend Mode ..........................................................45
- Video Timeout Mode ..................................................46
Turning the Falcon 625 On and Off

Caution: Always turn the computer off before connecting or disconnecting the power source.

Connect the Falcon 625 to vehicle power or to an AC adapter (refer to “Connect Power Cable” on page 26).

The power (on/off) switch is located on the bottom of the Falcon 625 (refer to Figure 3-1). The Status LED, located on the front of the Falcon 625 (refer to Figure 1-5 on page 6), is lit when the power is on and the display is off.

Figure 3-1: The Falcon 625 Power (On/Off) Switch

When the system is turned off, the contents of RAM are lost. Save any needed data and close any running programs before turning the system off.

Caution: Turning off the Falcon 625 during a write-to-disk function may result in corruption of the flash drive.
Rebooting the Falcon 625

When the system is rebooted, the contents of RAM are lost. Save any needed data and close any running programs before rebooting.

To reboot the Falcon 625 without turning the computer off, press **CTRL+ALT+DEL**.

*Caution: Rebooting the Falcon 625 during a write-to-disk function may result in corruption of data on the hard drive.*

Configuring the Falcon 625

Default Settings

When the Falcon 625 is turned on or rebooted, the following feature settings are restored from flash memory. Some of the settings can be configured using CMOS Setup.
Using the Falcon 625

Table 3-1: CMOS Setup Settings

<table>
<thead>
<tr>
<th>Feature</th>
<th>Default</th>
<th>Configurable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keypad Backlight</td>
<td>Timed</td>
<td>Yes</td>
</tr>
<tr>
<td>Keypad Backlight Timer</td>
<td>1 min.</td>
<td>Yes</td>
</tr>
<tr>
<td>Display Timer</td>
<td>1 min.</td>
<td>Yes</td>
</tr>
<tr>
<td>Suspend Timer</td>
<td>0 min.</td>
<td>Yes</td>
</tr>
<tr>
<td>Off Timer</td>
<td>1 min.</td>
<td>Yes</td>
</tr>
<tr>
<td>Caps Lock Mode</td>
<td>Off</td>
<td>Yes</td>
</tr>
<tr>
<td>Num Lock Mode</td>
<td>On</td>
<td>Yes</td>
</tr>
<tr>
<td>Keypad Repeat Delay</td>
<td>.5 sec.</td>
<td>Yes</td>
</tr>
<tr>
<td>Keypad Repeat Rate</td>
<td>10 char/sec</td>
<td>Yes</td>
</tr>
<tr>
<td>COM1</td>
<td>5 Volts</td>
<td>Yes</td>
</tr>
<tr>
<td>COM2</td>
<td>Ring Indicator</td>
<td>Yes</td>
</tr>
</tbody>
</table>

CMOS Setup

Use CMOS Setup to change the configurable settings listed above, along with some other settings.

Accessing CMOS Setup

To access the CMOS Setup program:

1. Reboot the Falcon 625.
2. Press the F2 key while the computer is booting up.

When exiting CMOS Setup, the computer will continue the bootup process with the new settings.

Caution: Only experienced system administrators should set CMOS Setup options. Entering incorrect values in CMOS Setup can cause the Falcon 625 to cease operating or to operate erratically.

Using CMOS Setup

The CMOS Setup program opens to the Main menu (refer to Figure 3-2 on page 37). To move between the Main, Advanced, and Exit menus, use the LeftArrow and RightArrow keys.
Figure 3-2: The CMOS Setup Main Menu

- Each menu contains a list of parameters.
- The currently highlighted parameter is selected.
- Use the UpArrow and DownArrow keys to move through the list.
- Use the RightArrow and LeftArrow keys to move through menus.
- To change the setting for a parameter or field, select the current setting.
- Press the spacebar or +/ to move through the available settings.
- Values must be entered into the System Time and System Date fields.
- When done changing CMOS settings, go to the Exit menu.
- To save changes and exit, select Save and Exit and press Enter.
- To restore the default settings, select Load Defaults and press Enter.
- To exit CMOS Setup without saving changes, select Exit Without Save and press Enter.

**BCWEDGE Setup**

BCWEDGE is a DOS based utility which comes installed on the terminal. Its purpose is to redirect scanner input from COM1 or COM2 to the keyboard buffer. The default setup for BCWEDGE is COM1 at 9600 baud with data = 8, parity = NONE, and stop = 1. This works for most configurations and scanners.
If the scanner is not attached to COM1 or does not communicate at these default settings, modify the **BCWEDGE** command in the **AUTOEXEC . BAT** file to match the attached scanner. Refer to the scanner’s documentation to determine the communication settings.

**BCWEDGE Parameters Command line:**  
BCWEDGE c=# b=baud  
s=dps

**Default:**  
BCWEDGE c=1 b=9600 s=8N1

---

**The Keyboard**

**Secondary Keys (2nd) LED**

The Falcon 625 keyboard is equipped with several **secondary** keys, identified by the superscripted text found on the keys. The secondary keys are accessed by pressing the **2nd** key (refer to **Figure 3-3**) and then pressing the desired superscripted key.
When the 2nd state is enabled by a press of the 2nd key, the yellow 2nd LED will be lit, and the 2nd state will remain enabled until another key has been pressed.

To leave the 2nd state without pressing a secondary key, press the 2nd key again.

Examples:

- Press 2nd and F10 to toggle the keyboard backlight on and off.
- Press 2nd and F1 to turn Caps Lock on and off.
- Press 2ND and F2 to initiate the DOS Break command.

Hidden Keys

The Falcon 625 keyboard supports all the functions of a 101-key keyboard. However, because the keyboards have only 60 keys, not all functions are visible on the keyboard. Therefore the Falcon 625 keyboards support what are called hidden keys.

On standard keyboards, many keys can be found in the alphanumeric section as well as on the numeric keypad. However these keys send
Using the Falcon 625

distinctly different codes when the keys are pressed. The default codes for the Falcon 625 keyboard correspond to the numeric keypad on standard keyboards. To duplicate the code sent when an alphanumeric key is pressed, the hidden keystroke must be used. Table 3-2 lists the hidden keys supported by the Falcon 625.

Table 3-2: Hidden Key Keystrokes

<table>
<thead>
<tr>
<th>Hidden Key</th>
<th>Keystroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>F11</td>
<td>2ND + SHIFT + F1</td>
</tr>
<tr>
<td>F12</td>
<td>2ND + SHIFT + F2</td>
</tr>
<tr>
<td>Pause</td>
<td>2ND + SHIFT + F3</td>
</tr>
<tr>
<td>Scroll Lock</td>
<td>2ND + SHIFT + F4</td>
</tr>
<tr>
<td>Right Shift</td>
<td>2ND + SHIFT + F7</td>
</tr>
<tr>
<td>Right Alt</td>
<td>2ND + SHIFT + F8</td>
</tr>
<tr>
<td>Right Control</td>
<td>2ND + SHIFT + F9</td>
</tr>
<tr>
<td>1 (alphanumeric)</td>
<td>2ND + SHIFT + 1</td>
</tr>
<tr>
<td>2 (alphanumeric)</td>
<td>2ND + SHIFT + 2</td>
</tr>
<tr>
<td>3 (alphanumeric)</td>
<td>2ND + SHIFT + 3</td>
</tr>
<tr>
<td>4 (alphanumeric)</td>
<td>2ND + SHIFT + 4</td>
</tr>
<tr>
<td>5 (alphanumeric)</td>
<td>2ND + SHIFT + 5</td>
</tr>
<tr>
<td>6 (alphanumeric)</td>
<td>2ND + SHIFT + 6</td>
</tr>
<tr>
<td>7 (alphanumeric)</td>
<td>2ND + SHIFT + 7</td>
</tr>
<tr>
<td>8 (alphanumeric)</td>
<td>2ND + SHIFT + 8</td>
</tr>
<tr>
<td>9 (alphanumeric)</td>
<td>2ND + SHIFT + 9</td>
</tr>
<tr>
<td>0 (alphanumeric)</td>
<td>2ND + SHIFT + 0</td>
</tr>
<tr>
<td>+ (alphanumeric)</td>
<td>2ND + CTRL + 9</td>
</tr>
<tr>
<td>- (alphanumeric)</td>
<td>2ND + CTRL + 8</td>
</tr>
<tr>
<td>* (alphanumeric)</td>
<td>2ND + CTRL + 1</td>
</tr>
<tr>
<td>/ (alphanumeric)</td>
<td>2ND + CTRL + 7</td>
</tr>
<tr>
<td>ENTER (numeric)</td>
<td>2ND + ENTER</td>
</tr>
</tbody>
</table>
The Display

Numeric Keys

The Falcon 625 keyboard does not have a Num Lock indicator key, however NumLock is always on.

Note: Although NumLock can be turned on or off via the computer’s CMOS Setup Program, the Falcon 625 ignores the Off setting.

The Display

Adjusting the Brightness

To adjust the display brightness, first press the 2ND key to place the Falcon 625 in Secondary mode. Then use the brightness keys to control the electroluminescent display in the following ways:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Brightness-Up" /></td>
<td>Press and hold this key to increase the brightness of the display.</td>
</tr>
<tr>
<td><img src="image" alt="Brightness-Down" /></td>
<td>Press and hold this key to decrease the brightness of the display.</td>
</tr>
</tbody>
</table>
Adjusting the Contrast

The Falcon 625 has no contrast adjustments because it is equipped with an Electroluminescent Display. The contrast adjustment keys have no function.

Panning the Display

This section describes panning in a DOS window. Pan the Falcon 625 display up and down to view the entire virtual screen.

To move the screen display up, press the 2nd key, then press the Ctrl key, and then press the UpArrow key. To move the screen display down, press the 2nd key, then press the Ctrl key, and then press the DownArrow key.

The default screen display begins at line 1 and displays 12 lines (refer to Figure 3-4).

Figure 3-4: Panning, Upper Display Window

The first pan-down command moves the pointer to line 8 and displays 10 lines (lines 8 through 18; refer to Figure 3-5).
The second pan-down command moves the pointer to line 15 and displays 10 lines (lines 15 through 25; refer to Figure 3-6).

**Figure 3-6: Panning, Lower Display Window**

<table>
<thead>
<tr>
<th>CUST. ORDER #</th>
<th>QUANTITY</th>
<th>SHIP DATE</th>
<th>PROJECTED INVENTORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>152876</td>
<td>23</td>
<td>09/17</td>
<td>393</td>
</tr>
<tr>
<td>153390</td>
<td>45</td>
<td>09/23</td>
<td>348</td>
</tr>
<tr>
<td>158723</td>
<td>122</td>
<td>10/07</td>
<td>226</td>
</tr>
<tr>
<td>153316</td>
<td>76</td>
<td>10/08</td>
<td>150</td>
</tr>
<tr>
<td>159736</td>
<td>55</td>
<td>10/22</td>
<td>95</td>
</tr>
<tr>
<td>160345</td>
<td>47</td>
<td>10/25</td>
<td>48</td>
</tr>
</tbody>
</table>
At this point, pan-up commands move the pointer to line 15, then to line 8, and then to line 1. A pan-up command at line 1 does not wrap the display.

**Cleaning the Display**

When the display becomes soiled or smudged, clean it with a damp soft cloth. Do not use paper or cleaning fluids, as they may damage the display surface.

**Adjusting the Speaker Volume**

*Note: For the location of the speaker-volume control keys, refer to Figure 1-6 on page 8.*

To adjust the speaker volume, first press the 2nd key to place the Falcon 625 in **Secondary** mode. Then use the speaker-volume keys to control the speaker volume in the following way:

<table>
<thead>
<tr>
<th>Key Combination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>▲</td>
<td>Press and hold this key to raise the speaker volume.</td>
</tr>
<tr>
<td>▼</td>
<td>Press and hold this key to lower the speaker volume.</td>
</tr>
</tbody>
</table>
Suspend Mode

The Falcon 625 has a **Status** LED indicator, located on the front of the unit (refer to **Figure 1-5 on page 6**). It is lit green when the unit is powered on and the display is off.

The **Status** LED is lit green when the Falcon 625 is in suspend mode. Suspend mode is the lowest power-consumption state possible that retains the system's status. When the Falcon 625 is in suspend mode, the display, keyboard backlights and RS-232 ports are turned off. The beeper is active.

Place the Falcon 625 in suspend mode at any time by pressing the **2nd** key and then the **F3** key. The Falcon 625 will remain in suspend mode until:

- The **2ND, F3** key sequence is repeated.
- Vehicle power is removed from the Falcon 625.
- The Falcon 625 is turned off using the power switch.

When the Falcon 625 is in suspend mode and the **2ND, F3** key sequence is repeated:

- The display and keyboard backlights and the RS-232 ports are turned on.
- The **Status** LED light is turned off.
- The keypress and COM port buffers are emptied.

Turning the Falcon 625 off when it is in suspend mode causes all unsaved work (e.g., TE forms and bar code reads) to be discarded.

Turning the Falcon 625 back on after a suspend state turns off suspend mode.
**Video Timeout Mode**

The video timer is set using the CMOS Setup program (refer to Table 3-1 on page 36). When the video timer times out with no keyboard input, access to video memory, or COM port activity, the screen display turns off. The **Status** LED on the keyboard is lit steadily (i.e., not flashing) during video timeout state.

Any keyboard input or COM port activity will bring the Falcon 625 out of video timeout mode, and the video timer will begin the countdown again. Pressing the **2ND** key has no effect when the Falcon 625 is in video timeout mode. A **Shift**, **Ctrl**, or **Alt** keypress will wake the Falcon 625. The keypress buffer is emptied when the Falcon 625 returns from video timeout mode. Host messages that update the display also will wake the system from video timeout mode.
INDEX

2ND key  3-39
2nd state  1-6, 3-38 to 3-39
   LED for  1-6
625  see Falcon 625

A

ABCD keyboard  1-5
antenna connector  1-4
antenna, connecting  2-22

B

back mounting bracket  2-12, 2-20
backlight  1-7
bar code scanner, connecting  2-23 to 2-25
battery
   backup  1-9
BCWEDGE setup  3-37 to 3-38
bottom mounting bracket  2-12, 2-18, 2-20
brackets, mounting
   back  2-12, 2-20
   bottom  2-12, 2-18, 2-20
brightness (display)  1-7, 3-41

C

cable ties  2-16
Caps Lock  1-6
cleaning the display screen  3-44
CMOS setup  3-36 to 3-37
color codes, wiring  2-29
COM ports  1-4
configuration, default  3-35
connectors
   antenna  1-4
   bar code scanner  1-4
   PC  1-4
   power  1-4
   printer  1-4
contrast (display)  1-7, 3-42
control keys  1-7
   brightness  3-41
   contrast  3-42
   location of  1-7
   speaker volume  3-44

D

default settings  3-35
Index

display
  brightness 1-7, 3-41
  cleaning 3-44
  contrast 1-7, 3-42
  panning 3-42 to 3-44
DRAM 1-2

F

Falcon 625
  connecting antenna 2-22
  connecting bar code scanner 2-23 to 2-25
  connecting PC 2-25 to 2-26
  connecting power 2-26 to 2-30
  connecting printer 2-25 to 2-26
  default configuration 3-35
  features 1-2 to 1-3
  installation 2-11 to 2-30
  quick start 1-3
  rebooting 3-35
FCC information 1-vii
  features 1-2 to 1-3
  flash memory 1-2
  fuse 1-4
  replacing 2-31

K

keyboards 1-5 to 1-8
  ABCD 1-5
  control keys 1-7
  LEDs 1-6 to 1-7
  QWERTY 1-5

L

LED
  status 1-7
  LEDs on keyboards 1-6 to 1-7

M

measurement, torque 2-15
memory 1-2
mounting brackets
  back 2-12, 2-20
  bottom 2-12, 2-18, 2-20

N

Num Lock 3-41
numeric keys 3-41

O

on/off switch 3-34

H

hidden keys 3-39

I

installation 2-11 to 2-30
Index

P
- panning the display 3-42 to 3-44
- PC, connecting 2-25 to 2-26
- ports, serial 1-4
  - see also connectors
- power
  - connector 1-4
  - supply 1-8
  - switch 1-4, 3-34
  - vehicle 1-8
- power, connecting 2-26 to 2-30
  - external 2-26 to 2-27
  - vehicle 2-27 to 2-30
- printer, connecting 2-25 to 2-26
- processor 1-2
- secondary keys 1-6, 3-38
- secondary state 1-6, 3-38 to 3-39
- serial connectors 1-4
  - see also connectors
- setup, BCWEDGE 3-37 to 3-38
- setup, CMOS 3-36 to 3-37
- speaker volume 1-7, 3-44
- Status LED 1-7
- suspend mode 3-45

Q
- quick start 1-3
- QWERTY keyboard 1-5

R
- RAM 1-2
- rebooting 3-35
- RS-232 connectors 1-4
  - see also connectors

S
- scanner, connecting 2-23 to 2-25
- scrolling the display 3-42 to 3-44
- secondary keys 1-6, 3-38
- secondary state 1-6, 3-38 to 3-39
- serial connectors 1-4
  - see also connectors
- setup, BCWEDGE 3-37 to 3-38
- setup, CMOS 3-36 to 3-37
- speaker volume 1-7, 3-44
- Status LED 1-7
- suspend mode 3-45

T
- ties, cable 2-16
- timeout, video 3-46
- torque measurement 2-15

V
- vehicle power 1-8, 2-27 to 2-30
- video timeout 3-46
- volume, speaker 1-7, 3-44

W
- wiring color codes 2-29
DECLARATION OF CONFORMITY

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

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

**STANDARDS**

**Equipment:**
- EN60950:2000

**Radios:**
- EN 301.489.1/17:2000, EN 60950:1992+A4

**Equipment Type:** Vehicle Mount Data Terminal Equipment

**Product:** Falcon® Family Models 625 and 665

Brad West  
Vice President  
Quality and Process Management  
PSC, Inc.  
959 Terry Street  
Eugene, OR 97402  
U.S.A.

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