SOAR WITH
FALCON.

Falcon®
DOS Portable Data Terminals

User's Guide

psc™

Disclaimer

Patents

CONTENTS

PSC Falcon® Datalight® DOS End User License Agreement

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This End User Software License Agreement ("Agreement") is a legally binding agreement governing the licensing of the Software and Documentation by PSC Inc. and its wholly owned subsidiaries and affiliates ("PSC") to the entity or person who has purchased or otherwise acquired a PSC Product ("End User"). For purposes of this Agreement, any software that is associated with a separate end-user license agreement is licensed to you under the terms of that license agreement. PSC and End User hereby agree as follows:

1. Definitions.

1.1 "Documentation" means materials such as user's guides, program reference guides, quick reference guides, manuals, or similar materials associated with or related to the PSC Product, whether in printed, "online", or other form.

1.2 "Proprietary Information" means: (a) source code, object code, software, documentation, and any related internal design, system design, data base design, algorithms, technology, technical data or information, implementation techniques, and trade secrets related to the Software, (b) any other trade secrets marked appropriately or identified as proprietary or confidential, and (c) any information that End User, under the circumstances, should recognize as confidential. Proprietary Information does not include any information that the receiving party can establish was (1) in the public domain, (2) already in the receiving party's possession or rightfully known prior to receipt, (3) rightfully learned from a third party not in violation of any other's proprietary rights, or (4) independently developed without access to Proprietary Information.

1.3 "PSC Product" means PSC's Falcon® Datalight® DOS Products, including all preloaded Software in or provided in connection with the PSC Product and all Documentation related to such product, which has been purchased or otherwise acquired by End User, whether obtained directly or indirectly from PSC.

1.4 "Software" means any software or computer programs of PSC or its third party licensors in machine readable form which is either preloaded in or provided in connection with the PSC Product, whether obtained directly or indirectly from PSC, including any related update or upgrade such as enhancements or modifications.

2. Scope Of License Granted.

2.1 PSC grants to End User a non-exclusive, non-transferable, perpetual license to use the Software, solely on a PSC Product, in machine-readable form only, solely for End User's internal business purposes. This Agreement does not convey ownership of the Software to End User. Title to the Software shall be and remain with PSC or the third party from whom PSC has obtained a licensed right. As used in this Agreement, the term "purchase" or its equivalents when applied to the Software shall mean "acquire under license."

2.2 End User shall not copy, modify, decompile, disassemble, reverse engineer, or otherwise reproduce or remanufacture the Software, whether modified or unmodified, nor sell, assign, sublicense, distribute, lend, rent, give, or otherwise transfer the Software to any other person or organization, for purposes other than as expressly provided in this Agreement, or to the extent specifically allowed under foreign law solely for the purposes of interoperability, without PSC's prior written consent.

3. Transfers, Support.

3.1 Any copying, installing, reproduction, remanufacture, reverse engineering, electronic transfer, or other use of the Software on other than a PSC Product will be a material breach of this Agreement.

3.2 End User shall not sell, assign, sublicense, distribute, lend, rent, give, or otherwise transfer a PSC Product containing Software to any third party unless such third party agrees with PSC in writing to be bound by the terms and conditions of this Agreement. Any such transfer of a PSC Product absent such agreement shall be null and void.

3.3 End User may obtain support for Software from PSC at PSC's standard support fees and under PSC's standard support terms and conditions in effect at the time the support is requested.

4. Intellectual Property.

End User acknowledges that the Software constitutes valuable trade secrets of PSC or PSC's third party licensors and that the Software is protected by intellectual property laws and treaties. The license set forth in this Agreement does not transfer to End User any ownership of PSC's or its third party licensors' copyrights, patents, trademarks, service marks, trade secrets, or other intellectual property rights and End User shall have no right to commence any legal actions to obtain such rights. End User shall not remove, modify, or take any other action that would obscure any copyright, trademark, patent marking, or other intellectual property notices contained in or on the PSC Product.

5. Proprietary Information.

5.1 End User acknowledges that Proprietary Information is the confidential, proprietary, and trade secret property of PSC and PSC's third party licensors and End User acquires no right or interest in any Proprietary Information.

5.2 End User shall not disclose, provide, or otherwise make available the Proprietary Information of PSC or its third party licensors to any person other than End User's authorized employees or agents who are under confidentiality agreement, and End User shall not use the Proprietary Information other than in conjunction with use of the PSC Product exclusively for End User's internal business purposes. End User shall take steps to protect the Proprietary Information no less securely than if it were End User's own intellectual property.

5.3 The provisions of this Proprietary Information Section shall survive and continue for five (5) years after the termination of this Agreement.

6. Limited Warranty.

6.1 PSC warrants that, under normal use and operation, the PSC Product will conform substantially to the applicable Documentation for the period specified in the Documentation. During this period, for all reproducible nonconformities for which PSC has been given written notice, PSC will use commercially reasonable efforts to remedy nonconformities verified by PSC. End User agrees to supply PSC with all reasonably requested information and assistance necessary to help PSC in remedying such nonconformities. For all defects reported to PSC within the warranty period, PSC's liability is limited to providing End User with one copy of corrections or responding to End User's problem reports according to PSC's standard assistance practices. PSC does not warrant that the product will meet End User's requirements or that use of the product will be uninterrupted or error free, or that PSC's remedial efforts will correct any nonconformance. This limited warranty does not cover any product that has been subjected to damage or abuse, whether intentionally, accidentally, or by neglect, or to unauthorized repair or unauthorized installation, and shall be void if End User modifies the product, uses the product in any manner other than as established in the Documentation, or if End User breaches any of the provisions of this Agreement.

6.2 EXCEPT AS PROVIDED IN THIS AGREEMENT, THE PSC PRODUCT IS PROVIDED "AS IS" AND PSC MAKES NO WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, WRITTEN OR ORAL, WITH RESPECT TO THE PRODUCT, AND SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

7. Infringement.

7.1 PSC will defend End User against any claim in a lawsuit that the PSC Product furnished hereunder infringes a United States patent or copyright of a third party and PSC will pay any damages finally awarded against End User by a court of competent jurisdiction that are attributable to such claim or will pay End User's part of any settlement that is attributable to such claim, provided, that 1) End User notifies PSC promptly in writing of the claim, 2) PSC controls the defense or settlement of the claim, and 3) End User cooperates fully with PSC in such defense or settlement. All notices of a claim should be sent to PSC Inc., 959 Terry Street, Eugene, OR 97402.

7.2 In the defense or settlement of any such claim, PSC may, at its option, 1) procure for End User the right to continue using the PSC Product, 2) modify the PSC Product so that it becomes non-infringing, 3) replace the PSC Product with an equivalent product not subject to such claim, or 4) provide End User an opportunity to return the PSC Product and receive a refund of the purchase price paid, less a reasonable allowance for use.

7.3 PSC shall have no liability to End User for claims of infringement based upon 1) the use of any PSC Product in combination with any product which PSC has not either furnished or authorized for use with such PSC Product 2) the use of any PSC Product designed, manufactured, or modified to the specifications of End User, or 3) End User's modification of the PSC Product without written authorization from PSC.

7.4 THE FOREGOING STATES PSC'S COMPLETE AND ENTIRE OBLIGATION CONCERNING CLAIMS OF PATENT, COPYRIGHT, OR OTHER INTELLECTUAL PROPERTY INFRINGEMENT, CANCELS AND SUPERCEDES ANY PRIOR AGREEMENTS, WHETHER ORAL OR WRITTEN, BETWEEN THE PARTIES CONCERNING SUCH CLAIMS, AND WILL NOT BE MODIFIED OR AMENDED BY ANY PAST, CONTEMPORANEOUS, OR FUTURE AGREEMENTS OR DEALINGS BETWEEN

THE PARTIES, WHETHER ORAL OR WRITTEN, EXCEPT AS SET FORTH IN A FUTURE WRITING SIGNED BY BOTH PAR-
TIES.

8. Limitation Of Liability.

EXCEPT AS PROVIDED IN SECTION 7, PSC SHALL NOT BE LIABLE FOR ANY CLAIMS AGAINST END USER BY ANY
OTHER PARTY. IN NO EVENT SHALL PSC'S LIABILITY FOR DAMAGES, IF ANY, WHETHER BASED UPON CONTRACT,
TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, STRICT LIABILITY, WARRANTY, OR ANY OTHER BASIS,
EXCEED THE PRICE OR FEE PAID BY END USER FOR THE PSC PRODUCT. UNDER NO CIRCUMSTANCES SHALL PSC
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SERVICE, OR FOR ANY OTHER SPECIAL, CONSEQUENTIAL, CONTINGENT, INDIRECT, INCIDENTAL, PUNITIVE, EXEM-
PLARY, OR OTHER SIMILAR DAMAGES, EVEN IF PSC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

9. Government Restricted Rights; International Use.

9.1 Use, duplication, or disclosure of the Software by the U.S. Government is subject to the restrictions for computer software
developed at private expense as set forth in the U.S. Federal Acquisition Regulations at FAR 52.227-14(g), or 52.227-19 or in the
Rights in Technical Data and Computer Software clause at DFARS 252.227-7013(c)(1)(ii), whichever is applicable.

9.2 If End User is using the PSC Product outside of the United States, End User must comply with the applicable local laws of the
country in which the PSC Product is used, with U.S. export control laws, and with the English language version of this Agree-
ment. The provisions of the "United Nations Convention on International Sale of Goods" shall not apply to this Agreement.

10. Termination.

10.1 Either party may terminate this Agreement or any license granted under this Agreement at any time upon written notice if
the other party breaches any provision of this Agreement.

10.2 Upon termination of this Agreement, End User immediately shall cease using any non-preloaded software and shall return
to PSC or destroy all non-preloaded software covered by this Agreement, and shall furnish PSC with a certificate of compliance
with this provision signed by an officer or authorized representative of End User. For preloaded software, End User agrees to
sign a waiver prepared by PSC concerning further use of the preloaded Software. End User's resumed or continued use of the
preloaded Software after termination shall constitute End User's agreement to be bound by the terms and conditions of this
Agreement for such use.

11. General Provisions.

11.1 Entire Agreement; Amendment. This document contains the entire agreement between the parties relating to the licensing
of the Software and supersedes all prior or contemporaneous agreements, written or oral, between the parties concerning the
licensing of the Software. This Agreement may not be changed, amended, or modified except by written document signed by
PSC.

11.2 Notice. All notices required or authorized under this Agreement shall be given in writing, and shall be effective when
received, with evidence of receipt. Notices to PSC shall be sent to the attention of the General Counsel, PSC Inc., 959 Terry
Street, Eugene, OR 97402, or such other address as may be specified by PSC in writing.

11.3 Waiver. A party's failure to enforce any of the terms and conditions of this Agreement shall not prevent the party's later
enforcement of such terms and conditions.

11.4 Governing Law; Venue: This Agreement and the rights of the parties hereunder shall be governed by and construed in
accordance with the laws of the State of Oregon U.S.A, without regard to the rules governing conflicts of law. The state or federal
courts of the State of Oregon located in either Multnomah or Lane counties shall have exclusive jurisdiction over all matters
regarding this Agreement, except that PSC shall have the right, at its absolute discretion, to initiate proceedings in the courts of
any other state, country, or territory in which End User resides, or in which any of End User's assets are located.

11.5 Attorneys' Fees. In the event an action is brought to enforce the terms and conditions of this Agreement, the prevailing party
shall be entitled to reasonable attorneys' fees, both at trial and on appeal.

- END -

Warranty

Falcon products are guaranteed against defects in materials and workmanship for the period specified at the time of sale. This warranty shall apply to Falcon Portable Data Terminals (PDT's), Base Stations for the Falcon and Chargers for the Falcon. Cables, mounts and other accessory items are specifically warranted for a period of 90 days from product purchase. Customer must notify PSC of the claimed defect before the expiration of the Warranty period and obtain from PSC a return authorization number for return of the product to designated PSC service center. If PSC determines Customer's claim is valid, PSC will repair or replace product without additional charge for parts and labor. Customer shall be responsible for packaging and shipping the product to the designated PSC service center, with shipping charges prepaid. PSC shall pay for the return of the product to Customer if the shipment is to a location within the country in which the PSC service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations.

Warranty is subject to the limitations and exclusions set forth in the paragraphs that follow.

WARRANTY SET FORTH ABOVE IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS.

Exclusions

Warranty coverage shall not apply to any claimed defect, failure or damage which PSC determines was caused by: abuse, neglect, improper use of product; failure to provide product maintenance, including but not limited to cleaning of the display in accordance with product reference guide; installation or service of product by other than PSC representatives; use of product with any other instrument, equipment or apparatus; modification or alteration of product or units with Warranty Void labels that have been tampered with. External cables and replacement of upper window/cartridge due to scratching, stains or other degradation will not be covered under the Warranty. External power supplies returned for service must be accompanied by the original product for performance of service.

Returned products that PSC inc. has determined are not covered by Warranty, will be charged PSC Inc. standard repair rates then in effect for repair of product. Replacement of display due to scratching, stains or other degradation will not be covered under Warranty. If a product is determined to be not repairable customer will be notified and product may be returned to customer at their request. A minimum repair fee may be charged.

Limitation of Liability

PSC's REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCT AS SET FORTH ABOVE IS THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY ON ACCOUNT OF CLAIMS OF BREACH OF WARRANTY OR PRODUCT DEFECT. UNDER NO CIRCUMSTANCES WILL PSC BE LIABLE TO CUSTOMER OR ANY THIRD PARTY FOR ANY LOST PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL IN-DIRECT, SPECIAL OR CONTINGENT DAMAGES REGARDLESS OF WHETHER PSC HAD ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

Assignment

Customer may not assign or otherwise transfer its rights or obligations under Warranty except to a purchaser or transferee of product. No attempted assignment or transfer in violation of this provision shall be valid or binding upon PSC.

Risk of Loss

Customer shall bear risk of loss or damage for product in transit to PSC. PSC shall assume risk of loss or damage for product in PSC's possession or product being returned to Customer by PSC, except such loss or damage as may be caused by the negligence of Customer, its agents or employees. In the absence of specific written instructions for the return of product to Customer, PSC will select the carrier, but PSC shall not thereby assume any liability in connection with the return shipment.

Falcon Model 31X and 32X

Figure 1. Back View of a Falcon Model 31x and Labels

31X
32X

AVOID EXPOSURE - LASER LIGHT IS
EMITTED FROM THIS APERTURE.
EVITER TOUTE EXPOSITION - LUMIERE
LASER EMIS PAR CETTE OUVERTURE.

LASER LIGHT - DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT.

LUMIERE LASER - NE PAS REGARDER DANS
LE FAISCEAU. APPAREIL A LASER DE
CLASSE 2.

LASERSTRAHL - NICHT IN DEN STRAHL
BLICKEN. LASERPRODUKT DER KLASSE 2.

1mw - 680nm - 100sec.   IEC 825 - 1 : 1993 /
EN60825 - 1 : 1994

Falcon 315™   CE

MODEL
NUMBER
•72-US2-50•

SERIAL
NUMBER
•F0000000•

LASER
SERIAL
•SG000000•

THIS EQUIPMENT COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUB-
JECT 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.

psc   MADE IN THE
U.S.A.

Falcon Model 33X

Figure 2. Back View of a Falcon Model 33x and Labels

NOTE These illustrations are for illustrative purposes only. View the actual labels on the product itself for applicable model and safety specifications.

Some units come with Linear Imagers and some come with Laser Scanners. The Laser Safety Caution shown to the left will only appear and apply to those devices equipped with Laser Scanners.

33X

AVOID EXPOSURE
LASER LIGHT IS EMITTED
FROM THIS APERTURE

LASER LIGHT - DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT.
1mw-680nm-100sec. IEC 825-1:1993/
EN 60825 - 1: 1994

THIS EQUIPMENT 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.

PSC

MADE IN THE USA
MANUFACTURED:
September 1999

Falcon F330 ™ / Percon Inc.

MODEL# 80-008-50

SERIAL #F1234567

LASER S/N S1234567

Complies with CFR 1040.10 & .11

Breezecom FCC ID: LKTE AP-10
Lucent FCC ID: OKA1001
Proxim FCC ID: IMKRL21PC
Symbol FCC ID:
H9PLA24005AZL

PAT.   4,460,120
4,387,297   4,758,717
4,593,186   5,130,520
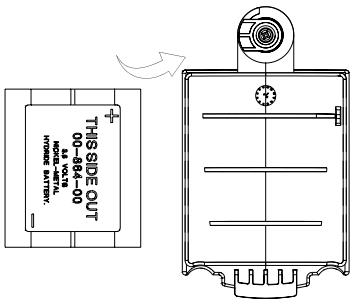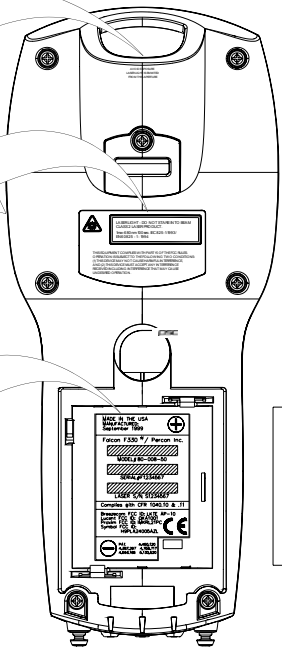
THIS SIDE OUT
00-884-00
4.8 VOLTS
NICKEL METAL
HYDRIDE BATTERY.

Falcon Model 34X

Figure 3. Back View of a Falcon Model 33x/34x

These illustrations are for illustrative purposes only. View the actual labels on the product itself for applicable model and safety specifications.
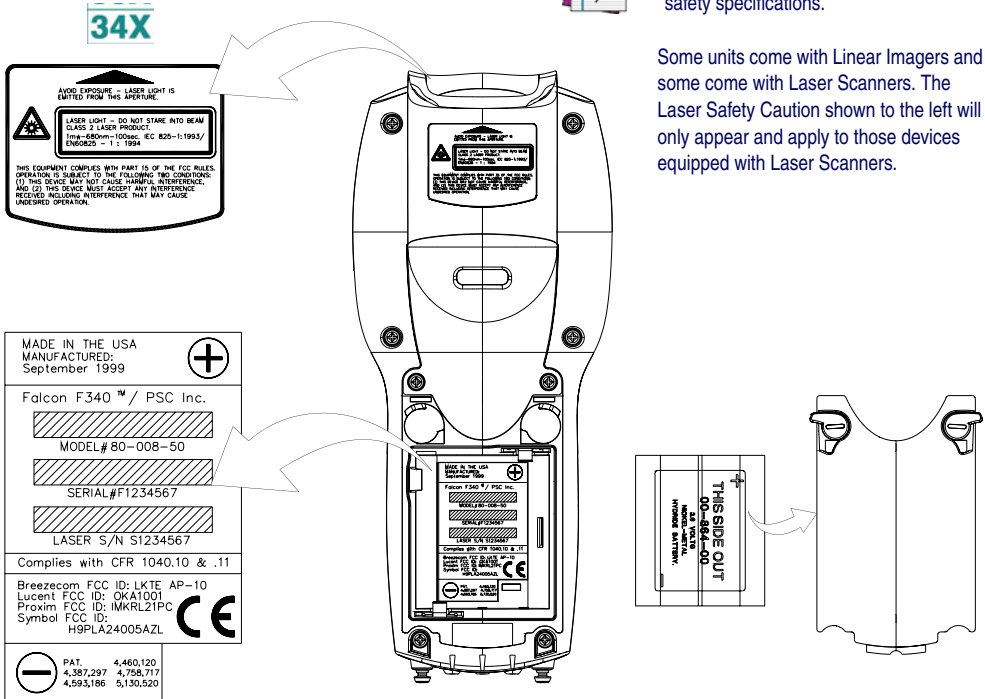
Some units come with Linear Imagers and some come with Laser Scanners. The Laser Safety Caution shown to the left will only appear and apply to those devices equipped with Laser Scanners.

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.

Regulatory Statements

Radio Frequency Interference

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

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

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.

Canadian Compliance Statement

This Class A Digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la Classe A est confirme à la norme NMB-003 du Canada.

International Caution Statements for CLASS 1[1], 2[2], 3R[3], II[4], and IIA[5] Laser Devices

English

PSC scanners are certified in the U.S. to conform to the requirements of DHHS/CDRH 21CFR Subchapter J and to the requirements of IEC/EN 60825-1:1998-2001.

Class 1, 2, 3R, Class II, and IIA products are not considered to be hazardous. The scanner contains internally a Visible Laser Diode (VLD) whose emissions do not exceed the maximum limits as set forth in the above regulations. The scanner is designed so that there is no human access to harmful laser light during normal operation, user maintenance or during prescribed service operations.

CAUTION
If the scan pattern is a single dot when depressing the trigger, discontinue operation and return the scanner to PSC.

CAUTION
Do not attempt to open or otherwise service any components in the optics cavity. Opening or servicing any part of the optics cavity by unauthorized personnel may violate laser safety regulations. The optics system is a factory only repair item.

CAUTION
Use of optical systems with the scanner will increase eye hazard. Optical instruments include binoculars, microscopes and magnifying glasses. This does not include eye glasses worn by the user.

French

Ce scanneurs du PSC sont certifié conforme à la norme DHHS/CDRH 21CFR sous-chapitre J et à la norme IEC/EN 60825-1:1998-2001.

Les produits de class 1, 2, 3R, class II, et de IIA ne sont pas considérés dangereux. Le scanneur contient une diode laser visible (VLD) dont les émissions ne dépassent pas les limites prescrites dans les normes précitées. Le scanneur est conçu de façon à ce qu'il ne soit pas possible d'accéder à la lumière laser pendant l'utilisation normale, l'entretien par l'utilisateur et les fonctions de maintenance prescrites.

ATTENTION
Si, quand la fonction de balayage est lancée, le diagramme de balayage est constitué d'un seul point, cesser d'utiliser le scanneur et le retourner à PSC.

ATTENTION
Ne pas essayer d'ouvrir ou de réparer les composants de la cavité optique. L'ouverture de la cavité optique ou la réparation de ses composants par une personne non qualifiée peut entraîner le non-respect des règles de sécurité relatives au laser. Le système optique ne peut être réparé qu'en usine.

ATTENTION
L'utilisation d'instruments optiques avec le scanneur augmente le danger pour les yeux. Les instruments optiques comprennent les jumelles, les microscopes et les verres grossissants. Ils ne comprennent pas les lunettes portées par l'utilisateur.

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1. Class 1 applies to IEC/EN STD (Europe).
2. Class 2 applies to IEC/EN STD (Europe).
3. Class 3R applies to the Falcon 4410/4420 using ALR (Advanced Long Range) Laser, only.
4. Class II applies to CDRH STD (US/Canada).
5. Class IIA applies to CDRH STD (US/Canada).

German

Dieser Scanner ist den in den Vereinigten Staaten geltenden Vorschriften des DHHS/CDRH 21 CFR Subchapter J und den Vorschriften der IEC/EN 60825-1:1998-2001 entsprechend bescheinigt.

Produkte der Klasse 1, 2, 3R, Klasse II oder der IIA sind als ungefährlich eingestuft. Im Inneren des Scanners befindet sich eine VLD (Visible Laser Diode), deren Ausstrahlung die in den oben genannten Vorschriften angeführten Höchstgrenzen nicht überschreitet. Die Konstruktion des Scanners garantiert, daß bei normalem Betrieb, bei Wartung durch den Benutzer oder im Laufe planmäßiger Wartungsarbeiten kein Zugang zu schädlichem Laserlicht besteht.

VORSICHT:
Sollte das Abtastbild bei gedrücktem Auslöser aus einem einzigen Punkt bestehen, muß der Betrieb eingestellt und der Scanner an PSC zurückgesendet werden.

VORSICHT:
Unter keinen Umständen darf versucht werden, die Komponenten im Optikhohlraum zu öffnen oder auf irgendwelche andere Weise zu warten. Das Öffnen bzw. Warten der Komponenten im Optikhohlraum durch unbefugtes Personal verstößt gegen die Laser-Sicherheitsbestimmungen. Das Optiksystem darf nur werkseitig repariert werden.

VORSICHT:
Die Verwendung von Optiksystemen mit diesem Scanner erhöht die Gefahr einer Augenbeschädigung. Zu optischen Instrumenten gehören unter anderem Ferngläser, Mikroskope und Vergrößerungsgläser, nicht aber die von Benutzern getragenen Brillen.

Italian

È stato certificato che questo scanner si conforma ai requisiti della sezione J della normativa DHHS/CDRH 21CFR, e anche ai requisiti di IEC/EN 60825-1:1998-2001.

I prodotti di Classe 1, 2, 3R, Classe II, o IIA non sono considerati pericolosi. Lo scanner contiene al suo interno un Visible Laser Diode (VLD), diodo laser visibile, le cui emissioni non eccedono i limiti stabiliti dalle normative sunnominate. Lo scanner è progettato in modo che non ci sia alcun accesso alla luce dannosa del laser nel corso di uso normale, di manutenzione da parte dell'utente o durante la manutenzione periodica stabilita.

ATTENZIONE
Se, quando si preme l'azionamento, il pattern di scansione è un punto singolo, interrompere l'operazione e riportare lo scanner a PSC .

ATTENZIONE
Non tentare di accedere allo scomparto contenete i componenti ottici o di farne la manutenzione. L'apertura dello scomparto, o la manutenzione di qualsiasi parte ottica da parte di personale non autorizzato, potrebbe violare le norme della sicurezza. Il sistema ottico può essere riparato solamente alla fabbrica.

ATTENZIONE
L'uso di strumenti ottici assieme allo scanner può aumentare il pericolo di danno agli occhi. Tali strumenti ottici includono cannocchiali, microscopi e lenti di ingrandimento. Essi non includono gli occhiali indossati dall'utente.

Danish

Denne scanner opfylder de amerikanske krav stillet i "DHHS/CDRH 21CFR Subchapter J" og opfylder også de krav, der stilles i IEC/EN 60825-1:1998-2001.

Klasse 1, 2, 3R, klasse II eller klasse IIA produkter anses for at være sikre. Scanneren indeholder en Visible Laser Diode (VLD), der ikke overskrider maksimumgrænserne, som beskrevet i ovenstående reglement. Scanneren er konstrueret, så der ikke er nogen menneskelig kontakt medskadelige niveauer af laserbestråling under normal brug, normal vedligeholdelse eller under foreskrevet servicering.

ADVARSEL
Hvis scanningmønsteret er et enkelt punkt, når triggeren indtrykkes, skal betjening ophøre og scanneren returneres til PSC.

ADVARSEL
Forsøg ikke at åbne eller reparere komponenter i det optiske hulrum. Uautoriseret åbning eller reparation af komponenter i det optiske hulrum kan være en overtrædelse af lasersikkerhedsregulativer. Det optiske system må udelukkende repareres as PSC.

ADVARSEL
Anvendelse af optiske systemer med scanneren øger risikoen for øjenskader. Optiske instruments omfatter kikkerter, mikroskoper og lupper. Det omfatter ikke anvendelse af almindelige briller.

Dutch

Deze scanner is in de V.S. goedgekeurd en voldoet aan de vereisten van DHHS/CDRH 21CFR Subchapter J een aan de vereisten van IEC/EN 60825-1:1998-2001.

Producten van klasse 1 ,2, 3R, klasse II en IIA worden niet geacht gevaarlijk te zijn.

De scanner bevat een inwendige Visible Laser Diode (VLD) waarvan de emissies de maximumgrenzen van bovenstaande reglementen niet overschrijden.

De scanner is zo ontworpen dat men bij normaal gebruik, onderhoud of tijdens het uitvoeren van de voorgeschreven onderhoudswerkzaamheden niet aan schadelijke niveaus wordt blootgesteld.

WAARSCHUWING
Als het scanpatroon bij het overhalen van de trekker een enkele stip is, stop dan onmiddellijk en stuur de scanner terug naar PSC.

WAARSCHUWING
Probeer niet om onderdelen in de opticaruimte te openen of er onderhoud aan uit te voeren. Het openen of onderhouden van delen in de opticaruimte door onbevoegd personeel kan een inbreuk vormen op de laserveiligheidsreglementen. Het opticasysteem mag alleen in de fabriek worden gerepareerd.

WAARSCHUWING
Het gebruik van optische systemen samen met de scanner vergroot het risico voor de ogen. Optische instrumenten zijn onder andere binoculairs, microscopen en vergrootglazen, maar niet de bril die de gebruiker draagt.

Swedish

Denna scanner uppfyller de amerikanska kraven DHHS/CDRH 21CFR Subchapter J samt kraven i IEC/EN 60825-1:1998-2001.

Produkter i Klass 1, 2, 3R, Klass II och IIA anses ej farliga. Scannern är utrustad med en intern, synlig laserdiod (Visible Laser Diode - VLD) vars emission inte överstiger max. värdena i ova stående säkerhetsföreskrifter. Scannern har konstruerats så att personer vid normal användning, bruksunderhåll och föreskriven service inte utsätts för skadlig laserstrålning.

VAR FÖRSIKTIG
Om scanningsmönstret är en enda punkt när du trycker på avtryckaren, ska du avbryta användningen och ta scannerna tillbaka till PSC.

VAR FÖRSIKTIG
Försök inte öppna eller reparera komponenter i den optiska kamaren. Om icke auktoriserad personal öppnar eller reparerar delar i den optiska kammaren, kan detta strida mot säkerhetsföreskrifterna för laserutrustning. Det optiska systemet får endast repareras på fabriken.

VAR FÖRSIKTIG
Användning av optiska system med scannern ökar risken för ögoskada. Optiska instrument inkluderar kikare, mikroskop och förstoingsglas, men inte användarens glasögon.

Finnish

Tämä tutkain on hyväksytty Yhdysvalloissa vastaamaan DHHS/CDRH 21CFR Subchapter J luokka 60825-1:1998-2001 IEC/EN-vaatimuksia.

Luokka 1, 2, 3R, Luokka II tai IIAtuotteiden ei katsota olevan vaarallisia. Tutkain sisältää sisäisen näkyvän laserdiodin (Visible Laser Diode (VLD), jonka päästöt eivät ylitä yllä olevien säädösten asettamia maksimirajoja. Tutkain on suunniteltu siten, etteivät ihmiset altistu vaaralliselle lasersäteilylle normaalikäytön, käyttäjän suorittaman huollon tai ohjeiden mukaisten huoltotoimen-piteiden aikana.

VAROITUS
Jos skannauskuva on yksittäinen piste laukaisinta painettaessa, keskeytä käyttö ja palauta tutkain PSC:lle.

VAROITUS
Älä yritä avata tai muuten huoltaa mitään rakenneosia optisessa osassa. Valtuuttamattoman henkilöstön suorittaman optisen osan avauksen tai huoltotoimen voidaan katsoa olevan rikkomus lasersuojaohjeita vastaan. Optisen järjestelmän saa korjata ain-oastaan tehtaalla.

VAROITUS
Mikäli optisia järjestelmiä käytetään tutkainmen kanssa, silmille aiheutuva vaara lisääntyy. Optiset kojeet käsittävät kiikarit, mik-roskoopit ja suurennuslasit. Käyttäjän silmälasit eivät kuulu tähän ryhmään.

Norwegian

Denne skanneren er godkjent i USA i samsvar med retningslinjene for DHHS/CDRH 21CFR, avsnitt J, og til IEC/EN 60825-1:1998-2001.

Produkter i klasse 1 2, 3R, klasse II eller IIA ansees ikke som helsefarlige. Skanneren inneholder en innvendig, synlig laserdiode (VLD, Visible Laser Diode), som ikke overskrider maksimalgrensene som er fastsatt i retningslinjene ovenfor. Skanneren er kon-struert, slik at personer ikke utsettes for farlige doser med laserstråler ved normal drift, brukers vedlikehold eller ved foreskrevet service.

OBS!
Hvis skanningsmønsteret består av én enkel prikk når utløseren trykkes inn, skal driften stanses, og skanneren settes tilbake til PSC.

OBS!
Prøv ikke å åpne eller på noen måte utføre service på noen av delene i det optiske kammeret. Ved å åpne eller utføre service på noen av delene i det optiske kammeret av uautorisert personell, kan krenke forskriftene for lasersikkerhet. Optikksystemet skal bare repareres på fabrikken.

OBS!
Bruk av optiske systemer med skanneren kan innebære høyere fare for øynene. Optiske instrumenter innbefatter, kikkerter, mik-roskop og forstørrelsesglass. Dette omfatter ikke briller som brukeren har
på seg.

Portuguese

Este scanner foi certificado nos EUA para atender os requisitos do subcapítulo J do DHHS/CDRH 21 CFR e os requisitos do IEC/EN 60825-1:1998-2001.

Os produtos da Classe 1, 2, 3R, Classe II ou IIA não são considerados perigosos. O scanner contém internamente um Diodo de Laser Visível (VLD - Visible Laser Diode) cujas emissões não ultrapassam os limites definidos nos regulamentos mencionados acima. O scanner foi projetado de maneira que não exista acesso humano à luz de laser nociva durante a operação normal, manutenção pelo usuário ou durante as operações recomendadas de serviço.

CUIDADO
Se ao pressionar o gatilho a luz do laser for um único ponto, interrompa a operação e devolva o scanner à PSC.

CUIDADO
Não tente abrir ou consertar qualquer componente da cavidade óptica. A abertura ou manutenção de qualquer peça da cav-idade óptica por pessoal não autorizado pode infringir os regulamentos de segurança do laser. O sistema óptico só deve ser reparado na fábrica.

CUIDADO
O uso de instrumentos ópticos com o scanner aumenta o risco para a visão. Incluem-se entre os instrumentos ópticos os binóculos, microscópios e lentes de aumento. Não se incluem os óculos usados pelo usuário.

Spanish

Este escáner está certificado en los EE.UU. porque reúne los requisitos DHHS/CDRH 21CFR Sección J y los requisitos de IEC/EN 60825-1:1998-2001.

Los productos de Clase 1, 2, 3R, Clase II, o IIA no se consideran como peligrosos. El escáner tiene en su interior un Diodo Láser Visible (VLD) cuyas emisiones no exceden los límites máximos fijados en los reglamentos mencionados anteriormente. El escáner está diseñado de modo que las personas no tengan acceso a la luz láser peligrosa durante la operación normal, el mantenimiento por parte del usuario o durante las operaciones de servicio prescritas.

PRECAUCIÓN
Si al oprimir el interruptor, el patrón de exploración es un solo punto, discontinúe el uso y devuelva el escáner a PSC.

PRECAUCIÓN
No intente abrir o de ninguna manera dar servicio a ninguno de los componentes del receptáculo óptico. Abrir o dar servicio a las piezas del receptáculo óptico por parte del personal no autorizado podría ser una violación a los reglamentos de seguridad. El sistema óptico se puede reparar en la fábrica solamente.

PRECAUCIÓN
El uso de sistemas ópticos con el escáner aumentará el riesgo de daños oculares. Los instrumentos ópticos incluyen binoculares, microscopios y lupas. Esto no incluye los lentes recetados usados por el usuario.

Chinese

本扫描器在美国获得认证，符合 DHHS/CDRH 21CFR J 分章和 ICE 825-1:1993 规定的要求。

I 级和 II 级激光产品均属于对人类无危害的产品。扫描器内有一个可见激光二极管 (VLD)，它发出的辐射低于上述条例规定的最高限度。本扫描器经特别设计，在正常使用情况下，包括用户自行保养或进行规定的维修，人体均不会接触到有害的激光辐射。

注意：
如果按了扫描引发钮后，扫描图形为单个圆点，请停止使用扫描器并将其返送回 PSC 公司（只适用于 QS6000 型扫描器）。

注意：
请勿打开激光或检修激光发生器内的任何部件。未经授权的人员打开或修理激光发生器内部件可能违反激光安全条例。光学系统只可送交工厂修理。

注意：
使用扫描器时不得用其他光学仪器，否则会增加对眼睛的危害。这些光学仪器包括望远镜、显微镜和放大镜。但是，操作人员佩戴的眼镜不属于此范围。

Japanese

本スキャナ は米国においてDHHS/CDRH 21CFR の J項にある製品規格
準拠品であり、 IEC 825-1:1993の 製品規格に準拠する製品である
ことが認定されています。

Class I 及び Class II 製品は『危険』とはみなされていません。
本 スキャナ内部には上記規格に定める最大値　超えない放射光量
を持つ可視光レーザ ダイオード(VLD) が使用されています。本 ス
キャナ は通常の運用、ユーザによる保守、所定の修理作業において
有害なレーザ光が人体に影響を及ぼすことがないように設計されて
います。

注意:
トリガーを押さえているときにスキャンのパターンがシングルの場
合は、操作を止めて、スキャナをPSC (QS6000 スキャナのみに適応)
に戻して下さい。

注意:
所定の許可を得た人以外は本スキャナの光学部キャビティーを開け
たり、その部品に手を触れたりしないで下さい。レーザ安全基準に
違反することになります。又工学部は工場でのみしか修理すること
は出来ません。

注意:
光学機器を使用してスキャナ内部を覗くと、目に悪い影響を与える
ことがあります。光学機器には双眼鏡、顕微鏡、拡大鏡等が含まれ
ますが、使用者のかけている眼鏡はこれには該当しません。

Preface

Overview

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 Powered 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***.

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 .

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 .

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.

31X The **31X** icon refers to both the Falcon 310 and the Falcon **315**. As notes, the Falcon **310** is a batch portable model and the Falcon **315** is an 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.

Table 1: Falcon Portable Models

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

32X The **32X** icon refers to both the Falcon **320** and the Falcon **325**. As Table 1 on page xxi notes, the Falcon **320** is a batch portable model and the Falcon **325** is an RF portable model. The Falcon **32X** has many features in common with the Falcon **33X**. 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 on page xxi notes, the Falcon **330** is a batch portable model and the Falcon **335** is an 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 on page xxi notes, the Falcon **340** is a batch portable model and the Falcon **345** is an 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.

Style Conventions

Document Conventions

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

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

CAUTION

Cautions appear when there is information that could potentially cause the system to operate incorrectly.

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`.

1

Falcon Basics

Turning the Falcon On and Off

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

31X
32X

33X
34X

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

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

First-Time Use

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

Figure 4. Start-up message

```
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

Only PSC power supplies, batteries, chargers, and docks should be used with Falcon PDTs. The use of other power supplies, batteries, chargers, and docks will void the warranty of any and all related units and batteries.

Refer to for more information on the Falcon Power Adaptor.

Batteries

PSC recommends annual replacement of rechargeable battery packs to ensure maximum performance.

Electrical Rating

NiCD or NiMH batteries = 3.6 VDC /1600mAh or 2000mAh.

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.

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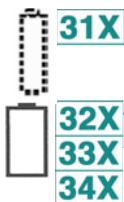
When the batteries have lost most of their charge, an empty battery icon appears at the top right corner of the Falcon screen. Refer to the icons on the left for the specific icon for each model.

- 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.

Replacement Batteries

CAUTION

Replace the Falcon's NiCD or NiMH battery pack only with a NiCD or NiMH battery pack supplied by a PSC reseller.

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.

32X
33X
34X

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.

Battery Disposal

CAUTION

Recycle NiCD or NiMH Batteries.

Do not throw NiCD or NiMH in the trash.

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 5 on page 6, Figure 6 on page 7, and Figure 7 on page 9 for diagrams of the different Falcon models.

CAUTION

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.
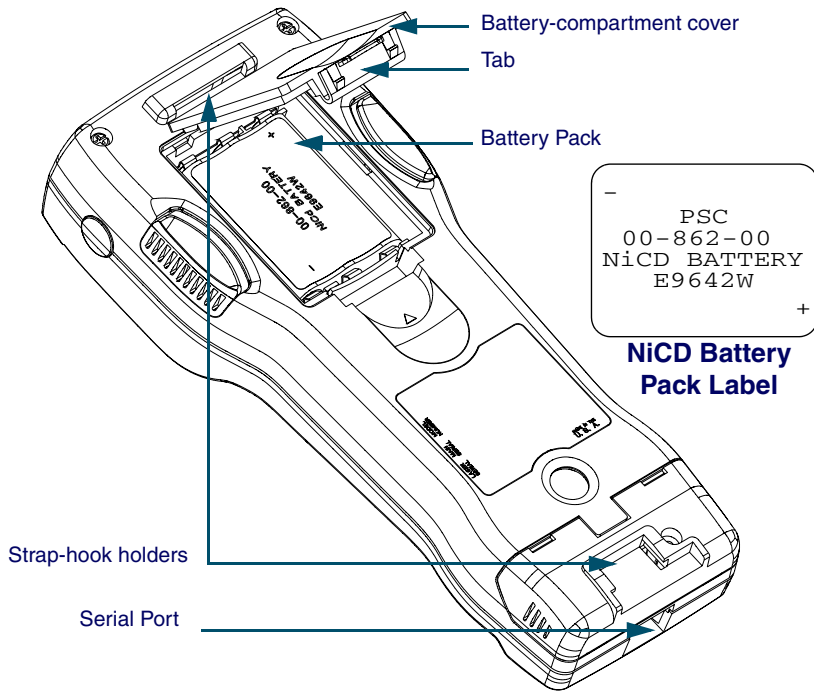
Falcon Models 31x and 32x

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.
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.

Figure 5. Back View of Falcon Models 31x and 32x

NiCD Battery
Pank Label

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.

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

Falcon Models 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.

Figure 6. Back View of Falcon Model 33x
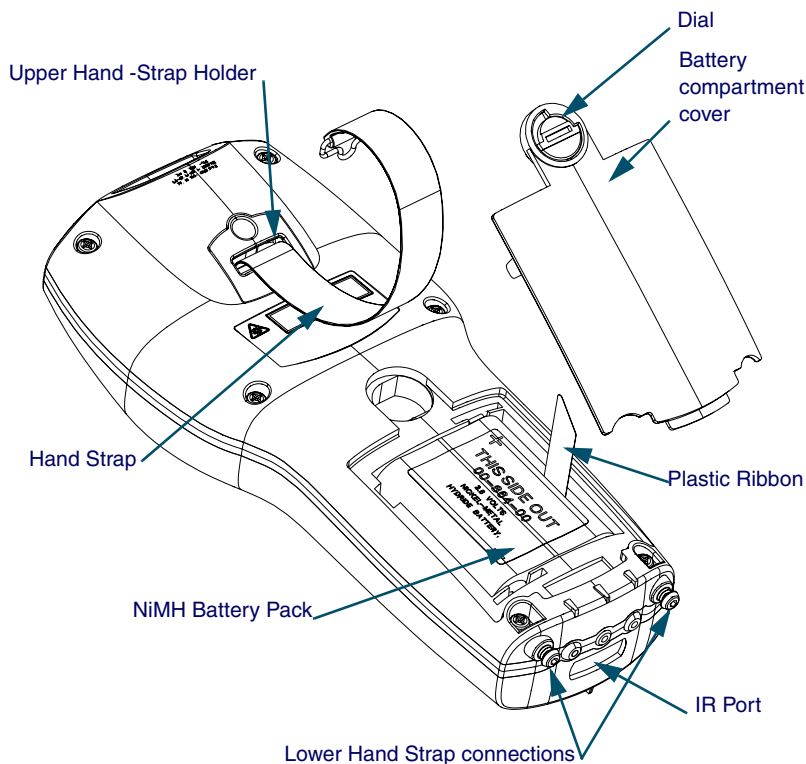
5. Lay the plastic ribbon along the bottom of the battery compartment with the end sticking out.

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.

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.

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

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 8 on page 10 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.

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.

Figure 7. Back View of Falcon Model 34x

34X

Pistol Grip

Trigger

Dials

Battery
compartment
cover

NiMH Battery Pack

Lower Hand Strap connections

IR Port
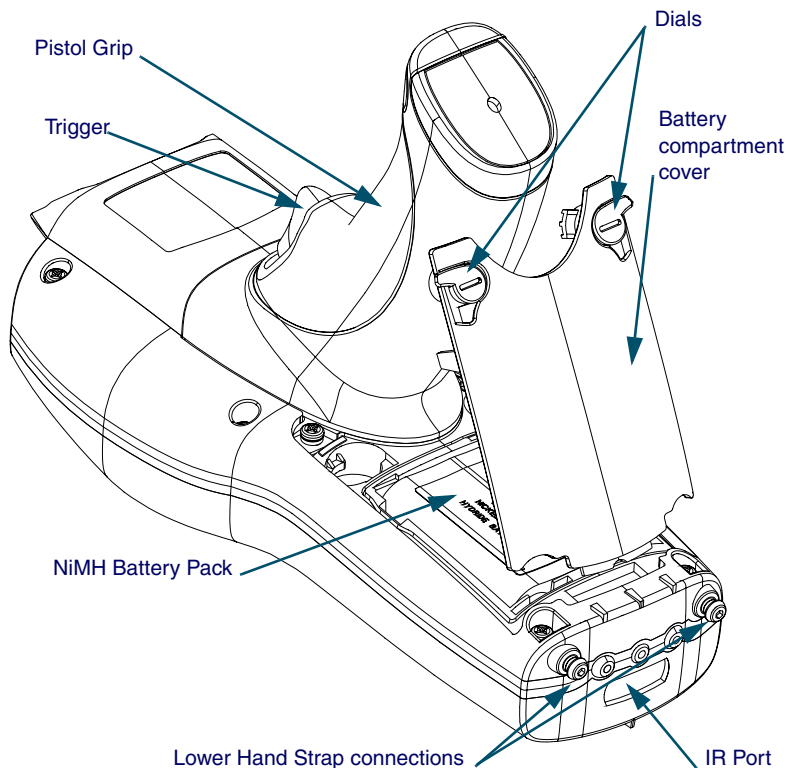
10. Replace the battery-compartment cover by inserting the bottom tab into the slot.

11. Rotate the latch dial levers on the battery compartment cover towards the base of the unit. Refer to Figure 8 on page 10.
    - 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

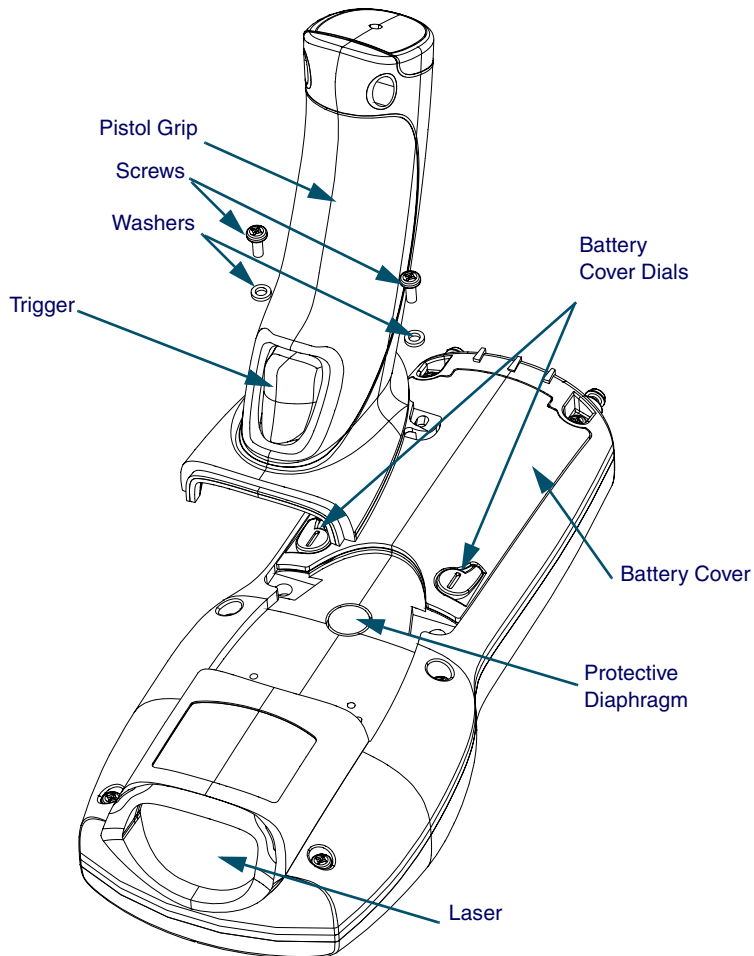The pistol grip on the Falcon **34X** is removable.

34X To remove the pistol grip on the Falcon **34X** (refer to Figure 8 on page) 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.

Figure 8. Removing the Pistol Grip on a Falcon Model 34x

34X

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 9 on page 11) 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.

Figure 9. Replacing the Pistol Grip with a Hand-Strap

34X
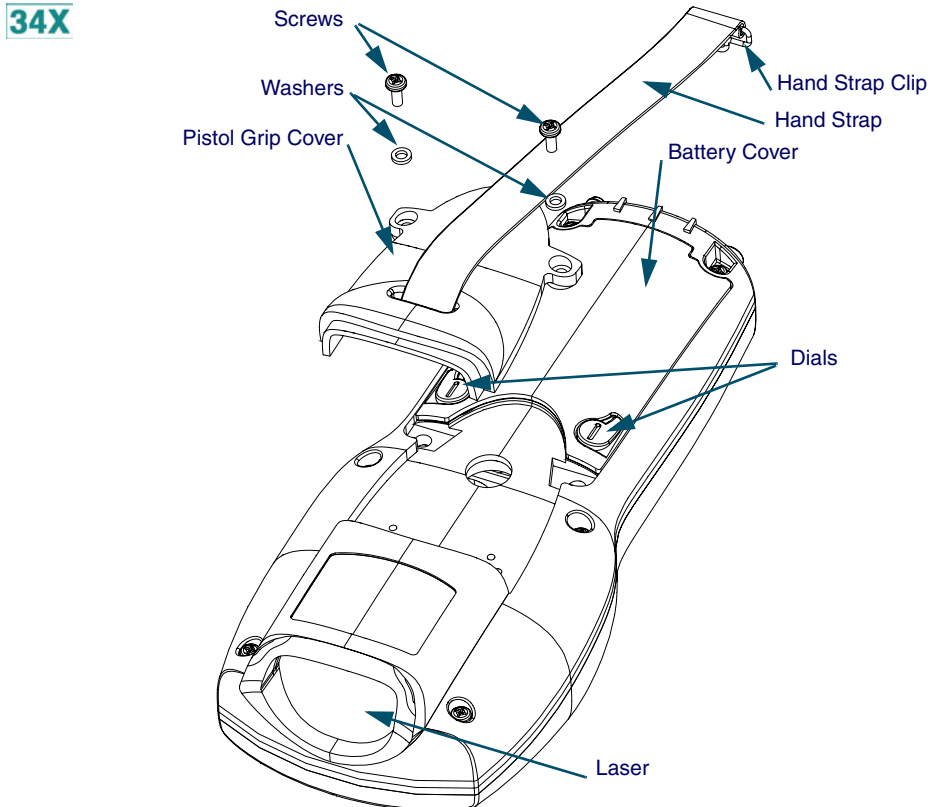
2. Replace the screws located just above the battery cover's latch dials.

3. Connect the hand-strap hook onto its connector at the base of the Falcon unit.

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 10). 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 10. The Serial Port on the Falcon 31X and 32X

**31X
32X**
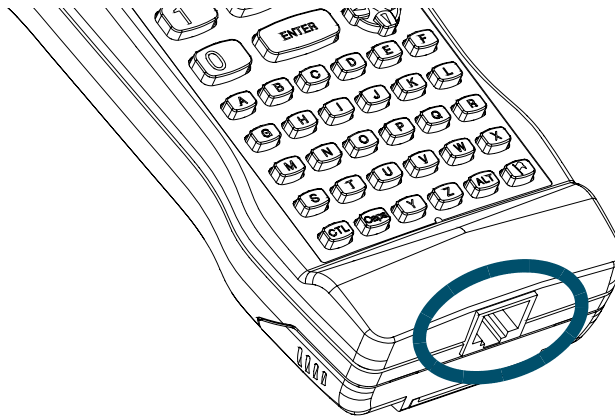
The Falcon Applications

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.

2

Falcon Keypads

Overview

Used individually or in combination, the keys of most Falcon keypads provide equivalents to almost all the keys found on a standard keyboard.

> **The 25-key keypads of the Falcon 33x and 34x are used primarily for numeric entry and do not have the same keyboard equivalents as other Falcon models.**

For your convenience, this chapter is organized by Falcon keypad type, rather than by features and functions.

Refer to Table 2 to determine the location of the information and diagrams specific to the Falcon keypad you have. Go to the section that applies to your Falcon unit.

Table 2: Falcon Models and Keypads

Falcon Model	Number of Keys	Keypad Features/Functions	Keypad Diagram
31X	41 keys	Falcon 31x 41-Key Keypad on page 15	Figure 11 on page 15
32X	57 keys	Falcon 32x 57-Key Keypad on page 19	Figure 12 on page 19
33X 34X	25 keys	Falcon 33x/34x 25-Key Keypad on page 22	Figure 13 on page 23
33X 34X	38 keys	Falcon 33x/34x 38-Key Keypad on page 27	Figure 14 on page 27
34X	48 keys	Falcon 34x 48-Key Keypad on page 32	Figure 15 on page 32

Falcon 31x 41-Key Keypad

The Falcon **31x** is an 8-line portable data terminal with 41 keys.

Figure 11. The Keypad for Falcon 31X Models
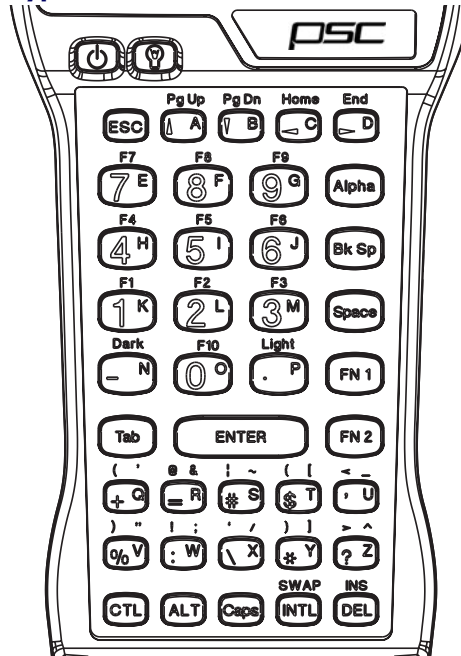
Comparing Falcon 31x 41-Key Keypad and PC Keyboard

The keys in Table 3 appear on a standard PC computer keyboard but are not used on the Falcon **31x**:

Table 3: Standard Keyboard Keys not on the Falcon 31x

Standard Keyboard Keys not on the Falcon 31x			
<F11>	Left <Shift>*	<Num Lock>	<F12>
<Scroll Lock>	<Caps Lock>*	<Pause/Break>	Right <Ctrl>
Right <Shift>*	Right <Alt>	<Print Screen>/<SysReq>	Grey Numeric Number Keys
* The Falcon's **<Caps>** key provides the functions of these keys.			

The Falcon **31x** has some keys that are not found on a PC keyboard. These keys are shown in Table 4. Page numbers indicate where to find more information about the keys.

Table 4: Falcon 31X Keys Not Found on a Standard Keyboard

Key	Default Use
\<Alpha\>	Toggles the Falcon between Alpha mode and Normal mode *(page 25)*.
\<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 *(page 17)*.
\<Dark\>	Darkens the background of the viewport *(page 41)*.
\<FN 1\>	Outputs the blue symbol or activates the function (**\<F1\>** –**\<F10\>**) above the next key pressed *(page 16)*.
\<FN 2\>	Outputs the black symbol above the next key pressed *(page 16)*.
\<INTL\>	Outputs an international character generated by the combination of the next two key presses *(page 18)*.
\<Lamp\> (💡)	Turns the backlight on and off in the viewport *(page 42)*.
\<Light \>	Lightens the background of the viewport *(page 41)*.
\<Power\> (⏻)	Turns the Falcon on and off *(page 2)*.
\<Swap\>	Switches the assigned actions of the right and left laser triggers *(page 49)*.
Left laser trigger	Operates the Falcon laser or an attached bar code reader (can be reprogrammed as a keypad key, *page 49*)*.
Right laser trigger	Same as the **\<Alpha\>** key (can be reprogrammed as a laser trigger or a keypad key, *page 49*)*.
* For information about reprogramming triggers, refer to the *Falcon DOS Portable Data Terminal Advanced User's Guide.*	

Input Modes

During operations that require use of a disk drive, a disk icon (shown at left) 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 current input mode determines key functions on the Falcon **31x**. The shape of the cursor on the Falcon **31x** in the viewport indicates the current input mode.Input modes and corresponding cursors are described in .

Table 5: Input Modes, Key Sequences and Cursors

Input Mode/ Key Sequence	Cursor	Result of Keypress
Type 1—Remains in effect after each keypress until discontinued by user.		
Normal	—	Outputs the white number or symbol on the key, or performs an action (e.g., moves left).
<Alpha>	*a*	Outputs the yellow letter on the key (lowercase unless used with Caps mode).
<Caps> (Alpha Mode)	*A*	Outputs the uppercase yellow letter on the key.
Type 2—Affects only a single keypress or combination of key presses.		
Function 1	↖	Outputs the blue symbol or function above the key.
Function 2	↗	Outputs the black symbol above the key.
Control <CTL>	C	Outputs the control meaning for alphanumeric or function keys.
Alternate <ALT>	A	Outputs the alternate meaning for alphanumeric or function keys.
International <INTL>	I	Outputs a character from the international character set (*page 18*).

Working with Input Modes

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 while in **Alpha** mode 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 **31x** will still be in **Normal** mode.

- Use the **<Caps>** key the same way to enter an uppercase letter without changing to **Caps** mode.

International Characters

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 .

- The **letter** is a character from the **Letter** column in the same row.

Table 6: Falcon 31X International Character Keys

Accent or Letter	Letter	International Characters
' *(apostrophe)*	a, e, i, o, u, E	á, é, í, ó, ú, É
`	a, e, i, o, u	à, è, ì, ò, ù
^	a, e, i, o, u	â, ê, î, ô, û
:	a, e, i, o, u, y, A, O, U	ä, ë, ï, ö, ü, ÿ, Ä, Ö, Ü
@	a, A	å, Å
None	c *or* C	ç *or* Ç
None	n *or* N	ñ *or* Ñ
~	n *or* N	ñ *or* Ñ
s	s	ß
a	e	æ
A	E	Æ

?	?	¿
!	!	¡
FN 1 + $	None	£
FN 2 + $	None	¥
, *(comma)*	c *or* C	ç *or* Ç

Falcon 32x 57-Key Keypad

The Falcon **32x** is a 16-line portable data terminal with 57 keys.

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

Figure 12. The Keypad for Falcon 32X Models
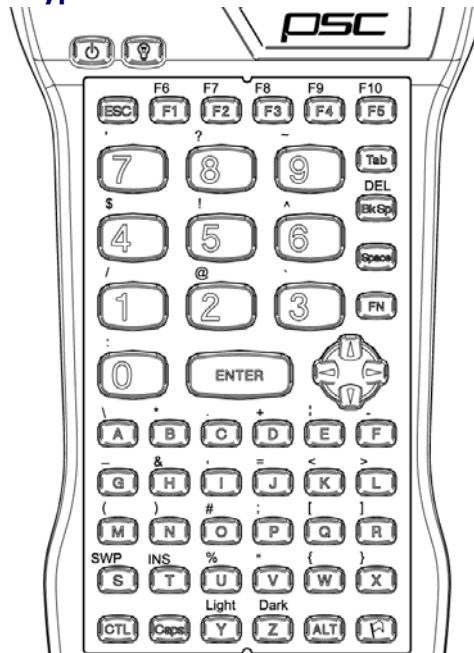
Comparing Falcon 32x 57-Key Keypad with PC Keyboard

The keys in Table 7 appear on a standard PC computer keyboard but are not used on the Falcon **32x**:

Table 7: Standard PC Keyboard Keys not on the Falcon 32x

Standard PC Keyboard Keys not on the Falcon 32x			
<Home>	<Pg Up>	<End>	<Pg Down>
<F11>	Left <Shift>*	<Num Lock>	<F12>
<Scroll Lock>	<Caps Lock>*	<Pause/Break>	Right <Ctrl>
Right <Shift>*	Right <Alt>	<Print Screen>/<SysReq>	Grey Numeric Number Keys
* The Falcon's <Caps> key provides the functions of these keys.			

The Falcon **32x** has some keys that are not found on a PC keyboard. These keys are shown in Table 8. Page numbers indicate where to find more information about the keys.

Table 8: Falcon 32X Keys Not on a Standard Keyboard

Key	Default Use
<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 *(page 21)*.
<FN>	Outputs the symbol or activates the function (**<F6>** –**<F10>**) above the next key pressed *(page 21)*.
<Dark>	Darkens the background of the viewport *(page 41)*.
<INTL> ( )	Outputs an international character generated by the combination of the next two key presses *(page 31)*.
<Lamp> ( )	Turns the backlight on and off in the viewport *(page 42)*.
<Light>	Lightens the background of the viewport (page 41).
<Power> ( )	Turns the Falcon on and off *(page 2)*.
<SWP> (Swap)	Switches the assigned actions of the right and left laser triggers *(page 49)*.
Left laser trigger	Operates the Falcon laser or an attached bar code reader; can be reprogrammed as a keypad key *(page 49)**.
Right laser trigger	Same as the **<FN>** key; can be reprogrammed as a laser trigger or a keypad key *(page 49)**.
Viewport Panning Mode ( )	Use **<FN>** to toggle the viewport panning mode on or off.
* For information about reprogramming triggers, refer to the *Falcon DOS Portable Data Terminal Advanced User's Guide.*	

Input Modes

During operations that require use of a disk drive, a disk icon (shown at left) 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 current input mode determines key functions on the Falcon **32x**. The input modes and corresponding icons are described in Table 9. Icons located along the right side of the viewport indicate the current input mode.

Table 9: Falcon 32x Keypad Icons and Input Modes

Input Mode/Key Sequence	Icon	Result of Keypress
Type 1—Remains in effect after each keypress until discontinued by user.		
Normal	N/A	Outputs letter (lowercase), number, or function on the key.
<Caps>	🔒	Outputs uppercase letter on the key.
Type 2—Affects only a single keypress or combination of key presses.		
Function <FN>	FN	Outputs the symbol or function above the key.
Control <CTL>	CTL	Outputs the control meaning for alphanumeric.
Alternate <ALT>	ALT	Outputs the alternate meaning for alphanumeric or function keys.
International <INTL>		Outputs a character from the international character set *(page 22)*.
Viewport Panning		Puts the unit into viewport panning mode.

International Characters

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 10.
- The **letter** is a character from the **Letter** column in the same row.

Table 10: Falcon 32x International Character Keys

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

Repeating Keystrokes

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.

Falcon 33x/34x 25-Key Keypad

The Falcon **33x** and **34x** are available as a 16-line portable data terminal with 25 keys, shown in . The 25-key keypads models of the Falcon **33x** and **34x** are used primarily for numeric entry and do not have the same keyboard equivalents as other Falcon models.

Figure 13. Falcon 33X/34X 25-Key Keypad
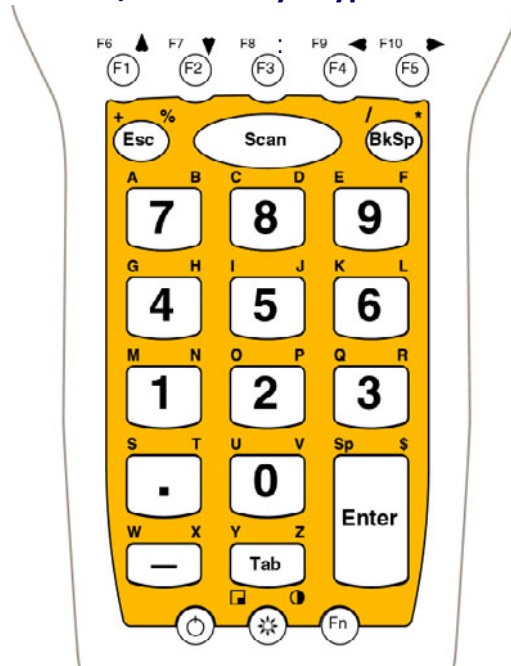
Comparing Falcon 25-Key Keypads with PC Keyboards

The keys in Table 11 appear on a standard PC computer keyboard but are not used on the Falcon **33x** and **34x** 25-key keypad:

Table 11: Standard Keys not found on a Falcon 25-key keypad

Standard Keyboard Keys not on a 25-key Falcon 33x/34x			
<F11>	<F12>	<Num Lock>	Numeric Number Keys
<Scroll Lock>	<Pause/Break>	Right <Ctrl>	Question Mark <?>
Right <Shift>	Left <Shift>	<Caps Lock>	Right Brace <{>
Backslash <\>	<Insert>	Underscore <_>	Right parenthesis <(>
<End>	<Pg Down>	<Delete>	Number Sign <#>
Tilde <~>	Grave <`>	Comma <,>	Left parenthesis <)>
At Sign <@>	Caret <^>	Ampersand <&>	Less Than Sign <<>
<Pg Up>	Right <Alt>	Equal Sign <=>	Exclamation Point <!>
<Home>	Left Brace <}>	Right bracket <[>	Greater Than Sign <>>
	Left Bracket <]>	Vertical Line <l>	

The Falcon **33x** and **34x** 25-key units have some keys that are not found on a PC keyboard. These keys are shown in Table 12. Page numbers indicate where to find more information about the keys.

Table 12: Falcon 25-key Unique Keys

Key	Default Use
<Contrast>	Activated by pressing **<Fn>** then double tapping or holding down (depending on double action configuration) **<Lamp>; <left> and <down> <arrow>** keys will decrease contrast; **<right> and <up> <arrow>** keys will increase contrast of the display.
<Fn>	Toggles the unit from Numeric to Alpha mode. It stays in that mode until **<FN>** is pressed again.
<Lamp>	Turns the backlight on and off in the viewport.
<Power>	Turns the Falcon on and off.
<Scan>	Operates the Falcon laser.
Viewport Panning Mode	**<Fn>+<Lamp>** toggles the viewport mode on or off; the arrow keys can then be used to effect panning (**<F1>,<F2>,<F4>**, and **<F5>**); use the panning toggle key (**<Lamp>**) to exit panning mode and return the screen to cursor mode.

Icons and Input Modes

 During operations that require use of a disk drive, a disk icon (shown at left) 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 current input mode determines key functions on the Falcon **32x**. The input modes and the corresponding icons are described in Table 13. Icons located along the right side of the viewport indicate the current input mode.

Table 13: 25-key Input Modes, Key Sequences and Icons

Input Mode/Key Sequence	Icon	Result of Keypress
Type 1—Remains in effect after each keypress until discontinued by user.		
Normal	N/A	Outputs letter (lowercase), number, or function on the key.
Alpha <Fn>	A.z	Outputs letters above keys.
Type 2—Affects only a single keypress or combination of key presses.		
Function <Fn>	FN	Outputs the symbol or function above the key.
Viewport Panning	▣	Puts the unit into viewport panning mode.

Double Action Key Mode

There are two additional modes of operation which affect how alphabetic and punctuation characters above the keys are accessed with Falcon 25-key units.

- Thirteen of these keys are used for alpha characters (**A-Z**).
- Each key has a character on the key, and two characters above the key.
- Use the **<Fn>** key with Double-Action typing to access the characters above the keys.
- Access the characters above the keys depends upon the **double action** key mode (**Double Strike** or **Press and Wait**).

Using the <Fn> (Alpha) Key

To access the second character above a key:

- Press the **<Fn>** key
- Use the **Double-Action** mode to type the second character.

Double-Action mode is used only in the **<Fn>** (Alpha) state.

Double Strike Mode

Left character. Press the numeric key below the appropriate alpha or punctuations symbol once and release. After a time-out (the default is 330 ms), the left alpha or punctuation symbol is displayed.

Right character. Quickly press the numeric key below the appropriate alpha or punctuation symbol key twice. The second key press must occur before the time-out (default = 330 ms).

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.

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 (default = 330 ms).

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 using the Falcon configuration utility or by scanning the bar codes in the *Falcon Advanced User's Guide*.

Falcon 33x/34x 38-Key Keypad

The Falcon **33x** and **34x** is also available as a 16-line portable data terminal with 38 keys.

Figure 14. Falcon 33X/34X 38-Key Keypad
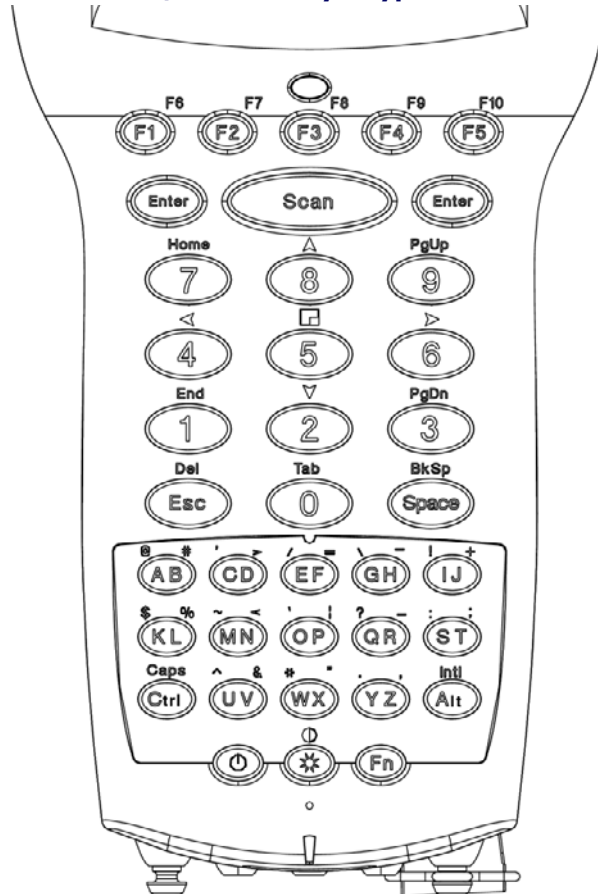
Comparing Falcon 38-Key Keypads with PC Keyboards

The keys in Table 14 appear on a standard IBM compatible computer keyboard but are not used on the Falcon **33x** and **34x** 38-key keypad:

Table 14: Standard Keys not found on a 38-key Falcon

Standard Keys not found on a 38-key Falcon			
<F11>	Left <Shift>*	<Num Lock>	<F12>
<Scroll Lock>	<Caps Lock>*	<Pause/Break>	Right <Ctrl>
Right <Shift>*	Right <Alt>	<Print Screen>/<Sys-Req>	Grey Numeric Number Keys
Right bracket < [>	Left bracket <] >	Right Brace <{>	Left Brace <}>
* The Falcon's **<Caps>** key provides the functions of these keys.			

The Falcon 38-key **33x** and **34x** have some keys that are not found on a PC keyboard. These keys are shown in Table 15. Page numbers indicate where to find more information about the keys.

Table 15: Falcon 33X/34X 38-Key Keypad Unique Keys

Key	Default Use
<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 *(page 30)*.
<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 *(page 25)*.
<INTL>	Outputs an international character generated by the combination of the next two keypress *(page 31)*.
<Lamp> (☀)	Turns the backlight on and off in the viewport *(page 42)*.
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.
<Power> (⏻)	Turns the Falcon on and off *(page 2)*.
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.

Key	Default Use
\<Scan\>	Operates the Falcon laser *(page 49)**.
Viewport Panning Mode	**\<Fn\>+\<5\>** toggles the viewport panning mode on or off; the arrow keys can be used to effect panning (keys **\<2\>**, **\<4\>**, **\<6\>**, and **\<8\>**); use the panning toggle key (key **\<5\>**) to exit paning mode and return the screen to cursor mode.
* For information about reprogramming triggers, refer to the *Falcon DOS Portable Data Terminal Advanced User's Guide.*	

Icons and Input Modes

During operations that require use of a disk drive, a disk icon (shown at left) 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 current input mode determines key functions on the Falcon **33x**. The input modes and the corresponding icons are described in Table 16. Icons located along the right side of the viewport indicate the current input mode.

Table 16: 38-Key Sequences, Input Modes, and Icons

Input Mode/Key Sequence	Icons	Result of Keypress
Type 1—Remains in effect after each keypress until discontinued by user.		
Normal	N/A	Outputs letter (lowercase), number, or function on the key.
\<Caps\>	🔒	Outputs uppercase letter on the key.
Type 2—Affects only a single keypress or combination of key presses.		
Function \<Fn\>	FN	Outputs the symbol or function above the key.
Control \<Ctrl\>	CTL	Outputs the control meaning for alphanumeric.
Alternate \<Alt\>	ALT	Outputs the alternate meaning for alphanumeric or function keys.
International \<Intl\>	🖐	Outputs a character from the international character set *(page 31)*.
Viewport Panning	▢	Puts the unit into viewport panning mode.

Double Action Key Mode

There are two additional modes of operation, which affect how alpha keys and the punctuation characters above the alpha keys are accessed in Falcon models **33X** and **34X** with 38-key keypads.

- Thirteen of these key 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 double action key (double press or press and wait).

- The function key **<Fn>** is used to enter alpha mode. In this mode double action typing can then be used to get the symbols above the keys.

Double Strike Mode

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

Right character. Quickly press the **<Alpha>** key twice. The second key press must occur before the predetermined time-out (default = 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.

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 (default = 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.

International Characters

To lessen the number of keystrokes required to enter an **International** key, the 38-key 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 17 describes the key sequences for all International characters:

Table 17: International Character Key Combinations

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

Falcon 34x 48-Key Keypad

The Falcon **34X** only is also available as a 16-line portable data terminal with 48 keys.

Figure 15. Falcon 34X 48-Key Keypad
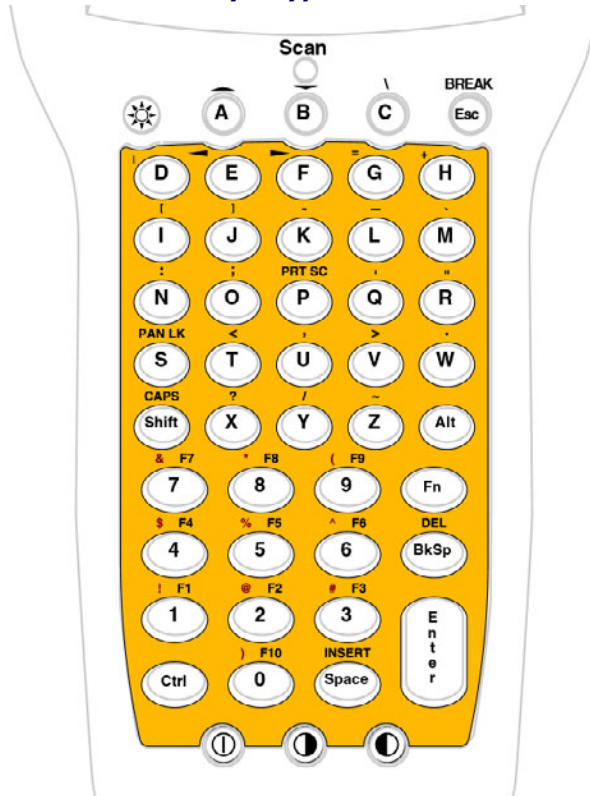
Comparing Falcon 48-Key Keypads with PC Keyboards

The keys in Table 18 appear on a standard IBM compatible computer keyboard but are not used on any of the Falcon **33x** and **34X** 48-key units:

Table 18: Standard Keys not found on a 48-key Falcon

Standard Keys not found on a Falcon 48-key keypad			
<F11>	Left <Shift>*	<Num Lock>	<Scroll Lock>
<F12>	<Caps Lock>*	<Pause/Break>	Right <Ctrl>
<Tab>	Left Brace <}>	Right Brace <{>	<Pg Down>
<End>	Right <Alt>	<Print Screen>/<Sys-Req>	Grey Numeric Number Keys
<Home>	<Pg Up>		
* The Falcon's **<Caps>** key provides the functions of these keys. On the 48-key **34X** keyboard the **<Shift>** key also provides these functions. ** The 48-key keyboard has a **<BREAK>** key that performs a **<Ctrl><Break>** *** The 48-key keyboard has a <**PRT SCR**> key that performs a print screen.			

The Falcon 48-key **33x** and **34x** have some keys that are not found on a PC keyboard. These keys are shown in Table 19.

Table 19: Falcon 34X 48-Key Keypad Unique Keys

Key	Default Use
<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.
<Contrast Up>	Increased contrast in the viewport.
<Contrast Down>	Decreases contrast in the viewport.
<Fn>	Ouputs the symbol or activates the function (**<F1>-<F10>**) keys above the number keys.
<Shift>	Acts like a shift on a conventional keyboard. Used to access symbol characters over the number keys
<Break>	Performs a **<Ctrl>-<Break>** when pressed.
<PrtScr>	Prints screen to parallel port.
<Lamp>	Turns the backlight on and off in the viewport.
<Power>	Turns the Falcon on and off.
<PAN LK>	**<Fn>+<S>** toggles the viewport mode on or off; the arrow keys can then be used to effect panning (keys **<F1>**, **<F2>**, **<F4>**, and **<F5>**); use the panning toggle key (**<S>**) to exit paning mode and return the screen to cursor mode.

Icons and Input Modes

During operations that require use of a disk drive, a disk icon (shown at left) 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 current input mode determines key functions on the Falcon **33x**. The input modes and the corresponding icons are described in Table 20. Icons located along the right side of the viewport indicate the current input mode.

Table 20: Falcon 34x Keypad Input Modes

Input Mode/Key Sequence	Icon	Result of Keypress
Type 1—Remains in effect after each keypress until discontinued by user.		
Normal	N/A	Outputs letter (lowercase), number, or function on the key.
<Caps>	A..Z	Outputs uppercase letter on the key.
Type 2—Affects only a single keypress or combination of key presses.		
Function <Fn>	FN	Outputs the symbol or function above the key.
Control <Ctrl>	CTL	Outputs the control meaning for alphanumeric.
Alternate <Alt>	ALT	Outputs the alternate meaning for alphanumeric or function keys.
Shift <Shift>	A..Z	Outputs the uppercase letter on the key and symbol characters above the numeric keys.
Viewport Panning	▣	Puts the unit into viewport panning mode.

Repeating Keystrokes

The 48-key keypad for the Falcon **33x** and **34X** model 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 is useful with such keys as **<BkSp>** and the cursor keys.

3

Falcon Viewport

Overview

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

31X

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

32X
33X
34X

- 20 characters in 16 rows on Falcons **32X**, **33X**, and **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.
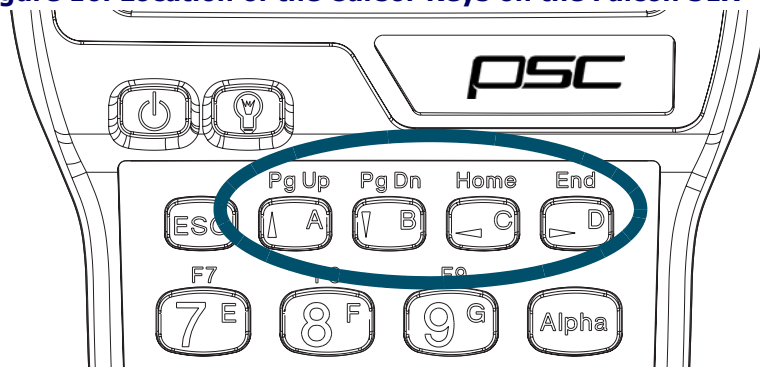
Moving the Viewport Display

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

Falcon 31X

Figure 16. 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 <u>Figure 16</u>) 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.

Falcon 32X

**Figure 17. Location of the Cursor Keys on the Falcon 32X**

1. To initiate panning mode, press and hold the **<FN> key>**

2. Use the cursor keys (Refer to) 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.

Falcon 33X and 34X

38-Key Keypad
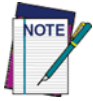
33X
34X

Figure 18. Falcon 33x/34x Cursor Key Locations (38-Key)
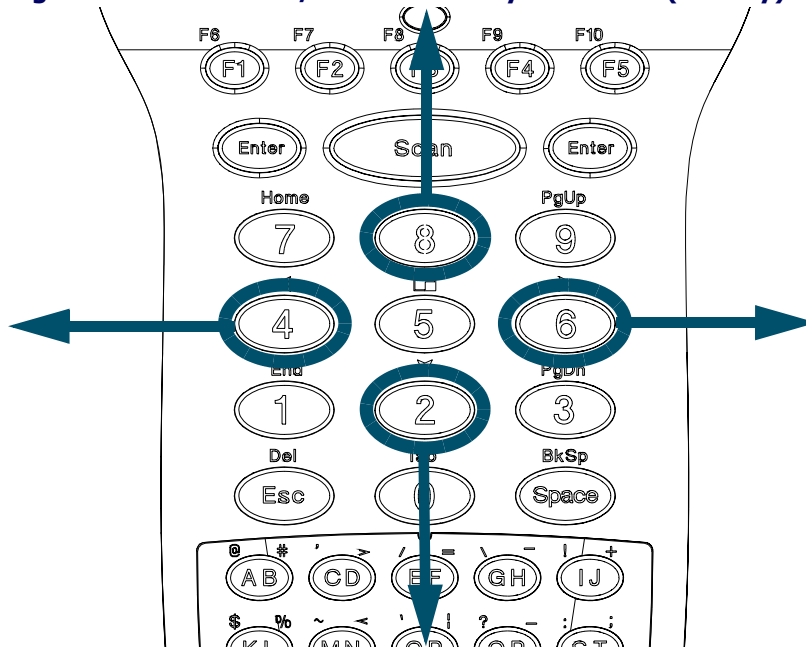
1. To initiate panning mode, press **<FN>+<5>** keys simultaneously. This action toggles the viewport panning mode on or off.

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 18) 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.
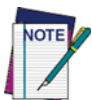
> **NOTE**
>
> **It is not necessary to press <Fn> to activate the Panning Toggle key in order to exit the panning mode. If any other key is pressed (besides the <arrow> key or the <5> key), the Falcon exits panning mode, snaps back to the cursor, and displays the pressed character (if applicable).**

> **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.**

25-Key Keypad

33X
34X

Figure 19. Falcon 33x/34x Cursor Key Locations (25-Key)
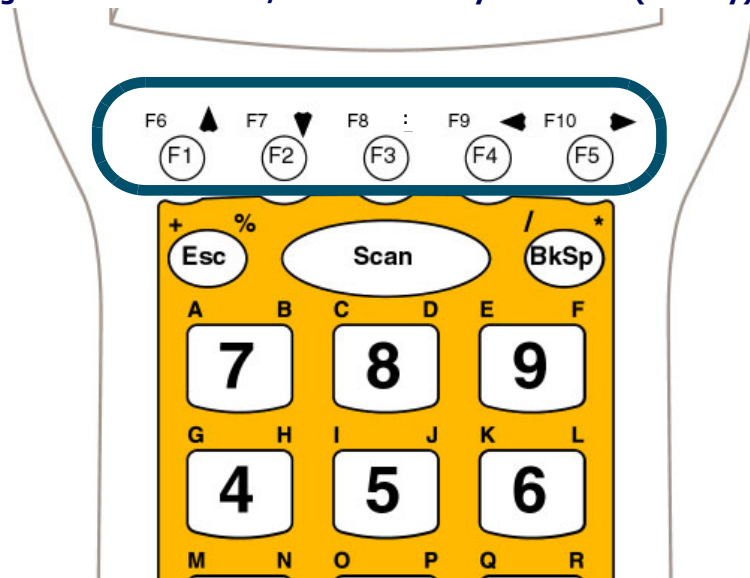
1. To initiate panning mode, type **<LAMP>** while in Alpha mode. This action toggles the viewport panning mode on or off.

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 19) to move the display up, down, to the left, or to the right while in panning mode.

4. To exit panning mode, press the **<LAMP>** key. Upon exit, the screen snaps back to the cursor. No character is displayed in this case.
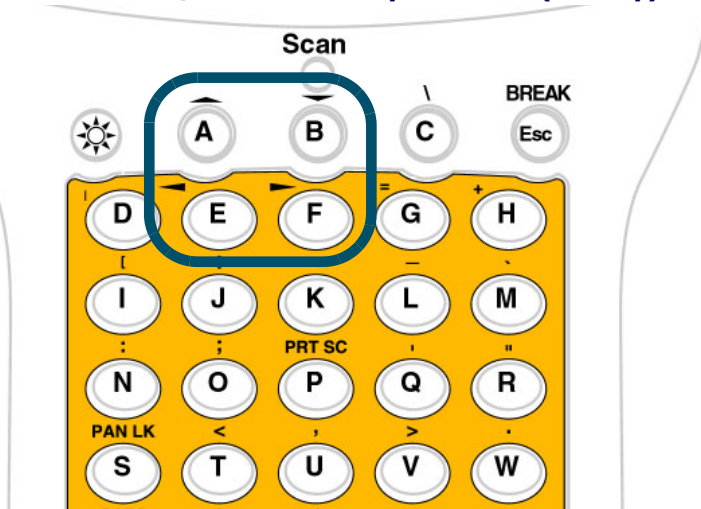
It is not necessary to press **<Fn>** to activate the **Panning Toggle** key in order to exit the panning mode. If any other key is pressed (besides the **<arrow>** key or the **<Lamp>** key), the Falcon exits panning mode, snaps back to the cursor, and displays the pressed character (if applicable).

48-Key Keypad

33X
34X

Figure 20. Falcon 33x/34x Cursor Key Locations(48-Key)

1. To initiate panning mode, press **<FN>+<PAN LK>** 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 20) to move the display up, down, to the left, or to the right while in panning mode.

4. To exit panning mode, press the **<PAN LK>** key. Upon exit, the screen snaps back to the cursor. No character is displayed.

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 **<PAN LK>** key), the Falcon exits panning mode, snaps back to the cursor, and displays the pressed character (if applicable).

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**:

25-Key Keypad

1. Adjustment is performed by a double action on the **<LAMP>** key when the unit is in Alpha 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 arrow>** and **<down arrow>** keys decrease the contrast

3. The **<right arrow>** and **<up arrow>** keys increase the contrast.

4. When finished, press and release the **<Lamp>** key again.

38-Key Keypad

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 arrow>** and **<down arrow>** keys decrease the contrast

3. The **<right arrow>** and **<up arrow>** keys increase the contrast.

4. When finished, press and release the **<Lamp>** key again.

48-Key Keypad

Press the **Light** and/or **Dark** key to adjust contrast.

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 to turn the backlight on or off. On the 25- and 38-key keypad the **<Lamp>** key is located in the middle of the bottom row of the keypad matrix. On the 48-key keypad the lamp is in the upper left corner of the keypad.

On the 25-key keypad, the <Lamp> key is only accessible when the Falcon is in Normal mode (NOT in Alpha mode).

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.

4

Falcon Accessories

Integrated Scanners

Some Falcon models contain either an integrated laser scanner or a linear imager, which provides the ability to read bar codes. Models without scanners 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 <cross-ref>The Falcon Dock, on page -55 for more information about Falcon Docks.

33X
34X

The dock for Falcon models **33X** and **34X** uses a dual IR/hardwire 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 <cross-ref>Falcon Four-Slot Dock, on page -61 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 <cross-ref>The Falcon Vehicle Mount Powered Dock, on page -69 for more information about the Falcon Vehicle Mount Powered 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 less than 3 hours.

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

NOTES

5

Using a Scanner

Overview

Some models of the Falcon come with a built-in high-performance scanner. To use this scanner, point the scanning window at a bar code and press the trigger that activates the scanner. 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 for information on using a long-range scanner on the Falcon.

33X
34X

The Falcon **33X** and **34X** have either an internal front position laser scanner or a linear imager.

NOTE

On the Falcon 34X 48-key keypad, there is no <Scan> key. Use the trigger.

Scanning Bar Codes

WARNING

Some Falcons are equipped with laser scanners that scan using laser light. Never look directly into the laser light or shine the laser light into the eyes.

NOTE

Remove the protective plastic film from the scan window of units equiped with laser scanners or the scanner will be unable to read the bar code.

To use the scanning function, complete the following steps:

1. If you have not already done so, remove the protective plastic film before using devices equipped with a laser scanner.

2. Aim the scanning beam at the center of the bar code.
   - Position the device close to bar code when scanning small bar codes.
   - Position it at a distance when scanning larger bar codes.
   - The scanner is disabled after you release the key or after five (5) seconds.

3. Press the **<Scan>** key. The scanner scans as long as you hold the key or for five (5) seconds.

4. Upon reading a bar code, the device beeps and the green LED indicator comes on until the trigger is released or after five (5) seconds. The green LED and the beep tone indicate a good read.

Figure 21. Scan Beam Positions

Correct Scanning Positions

Ideal positioning   A bit high, will read correctly   A bit angled, will read correctly

Incorrect Scanning Positions

Positioned too far to the right. Will not read entire bar code.

Too angled;   cannot read the entire   bar code.

Bar code will not read. The scanner should be positioned perpendicular to the bar code bars.

If the bar code scan failed, adjust the reading angle or distance. Make sure that the scan beam scans across all bars of the bar code. Refer to Figure 21**.**

5. The bar code data is entered in the current application. Once a bar code is read successfully, the scanner turns off automatically.

Triggers

31X
32X
The left trigger (as seen from the front of the unit) is the default setting to operate the Falcon scanner 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 allows use of the right trigger as the scanner 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 **<Scan>** key. It is the large elliptical key in the center of the top row on the keypad matrix. This key cannot be reprogrammed. This key is not present on a 48-key keypad.
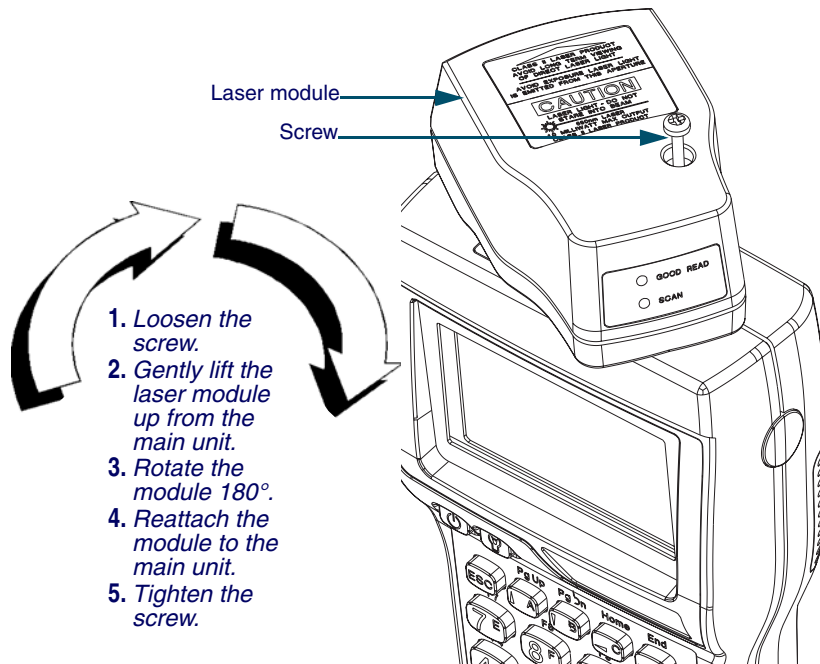
The Laser Module

31X
32X Normally, the scan window faces the left side of the Falcon for easy right-handed scanning. Rotate the laser module to hold the Falcon in the left hand while scanning.

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 22).

    - **Do not try to remove the screw.**

Figure 22. Falcon 31x/32x Rotating the Laser Module

31X
32X

Laser module

Screw

1. *Loosen the screw.*
2. *Gently lift the laser module up from the main unit.*
3. *Rotate the module 180°.*
4. *Reattach the module to the main unit.*
5. *Tighten the screw.*

6. Gently lift the scan 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.

7. Swivel the module around until the scan window faces the opposite direction.

- The module can rotate in only one direction. Do not force it the other way.

8. Press the scan module back into the main part of the Falcon, and tighten the screw.

> **NOTE**
>
> **To swap the operations of the scan triggers after changing the scan module's orientation refer to page 49.**

Using the Long-Range Laser

31X
32X
34X

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

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

Figure 23. Falcon 31x/32x/34x Long-Range Laser Operation

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

Spot Beam Timeout Mode

Spot Beam Timeout is the default mode of operation:

1. Press and hold the scan trigger for the scanner to emit a spotting beam.

2. Aim this beam at the center of the bar code.

3. After a short timeout period, the scanner switches to a full scanning beam and reads the bar code.

   • The default timeout period is one-half second.

Release Scan Mode

Release Scan mode provides greater control over the spotting beam:

1. Press and hold the trigger for the scanner 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 scanner 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 scannertrigger is held down to activate the spotting beam.

Linear Imager

A Linear Imager is one option for the scan engine. Functionally, it is used in the same manner that you use a Falcon with a laser scanner.

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 24.

Figure 24. Attaching a PSC Snapshot to a Falcon 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.

The internal laser scanner or linear imager are the only options for scanning with Falcons 33X and 34X. Due to industrial sealing of these models and environmental issues, no external port is available for external scanners, even if the Falcon 33X or 34X is ordered without an internal scanner.

NOTES

6

The Falcon Dock

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 25. 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 26).

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 26. Back Panel of the Falcon Dock

Power input jack   Cable connector

The Power Adapter

NOTE
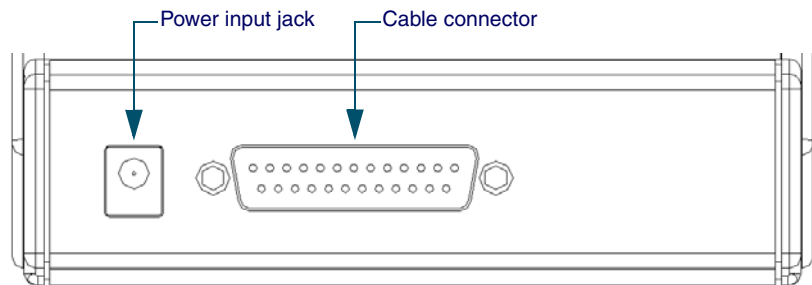
Use only PSC power supplies approved for the Falcon DOS Portable Data Terminal

CAUTION

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 26).

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.

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 troubleshooting problems 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.

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.

NOTES

7

Falcon Four-Slot Dock

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). 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 27. Status LEDs on the Falcon 4-Slot Dock

Conditions for entire 4-Slot Dock

Status of Falcon in this slot
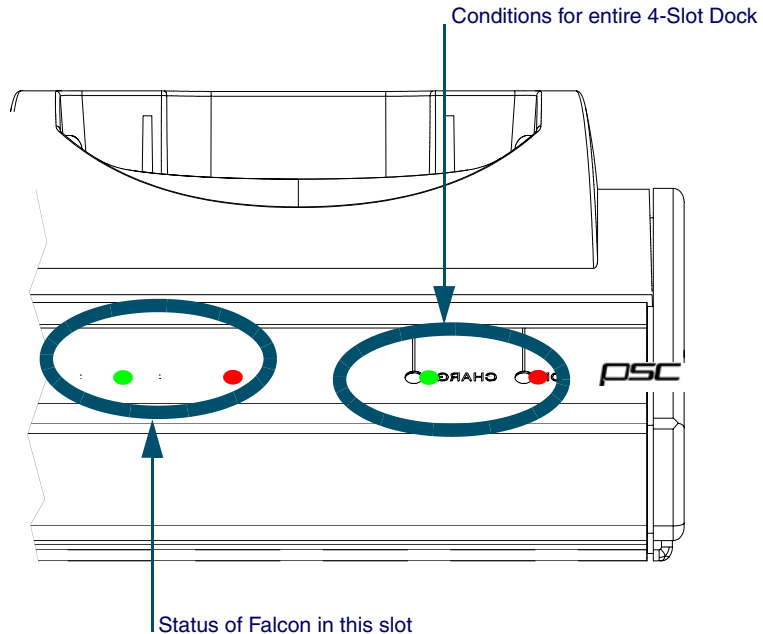
Status of Entire Unit

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 27)

- **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 27) 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 28). The power input jack is also located there. (For information about connecting docks, refer to <cross-ref>Figure 29 on page 66.

Figure 28. The Back Panel on the Falcon 4-Slot Dock

Power input jack

Connector for RS-232 host cable

Connector for dock-to-dock cable

Connector for RS-422/485 host cable **or** dock-to-dock cable

Falcon® DOS Portable Terminals
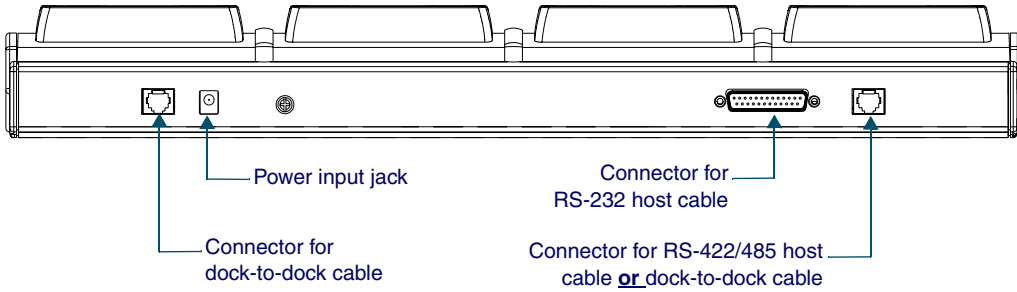
Installation

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 cabl**e (PSC part number 00-884-37)

> **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

shows the back of two docks in a network.

Figure 29. Network Connections for Falcon 4-Slot Docks

_____ = dock-to-dock cable

_____ = power-adapter cord

_____ = dock-to-host cable
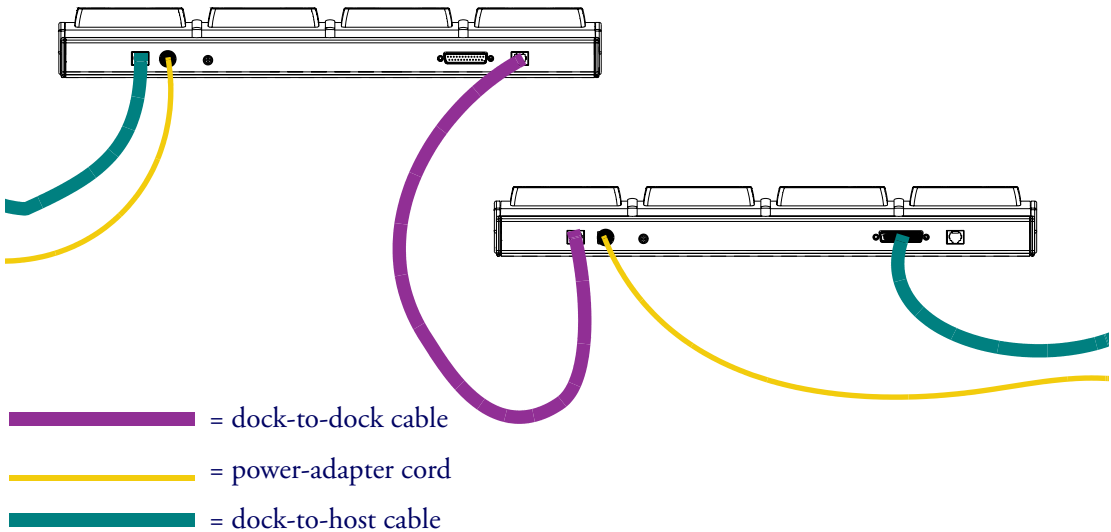
1. The dock on the left is connected to a third dock (which may be connected to another dock).

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.

NOTES

8

The Falcon Vehicle Mount Powered Dock

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.

CAUTIONS

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.

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 30. Proper Connection of the Vehicle Cable

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

FUSE BOX

11VDC to 16.5VDC

RED

Fuse Holder

Power Connector

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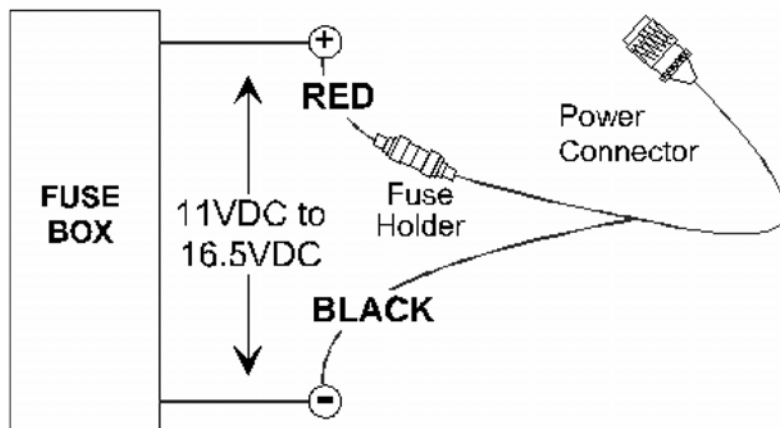
When the dock is connected to an unswitched outlet on the fuse box the Falcon battery will always receive a charge from the vehicle battery. If the unit is left turned on for extended periods of time, the Falcon could drain the vehicle battery.

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 31. . Powered Dock Bracket Mounting Pattern
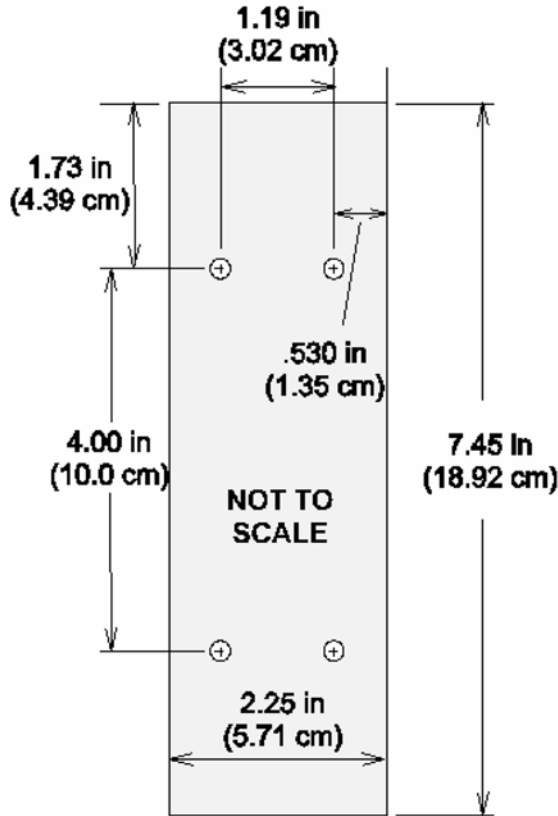
NOTE — **PSC recommends the Falcon be inserted in the dock only after the dock is securely mounted to a vehicle.**

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 31 shows the mounting pattern for a standard mount. Refer to Figure 34 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 ¼" (6.35mm) maximum diameter fasteners. Refer to Figure 32.

Figure 32. Bottom Mounting Bracket
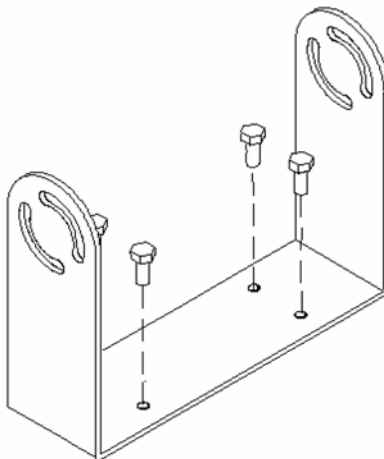
2. Fasten the back plate assembly to the dock using the through holes in the back plate and the threaded holes in the back of the dock. Four #8-32 fasteners are provided with the mounting kit. Refer to Figure 33.

Figure 33. Fasten Back Plate Assembly to dock
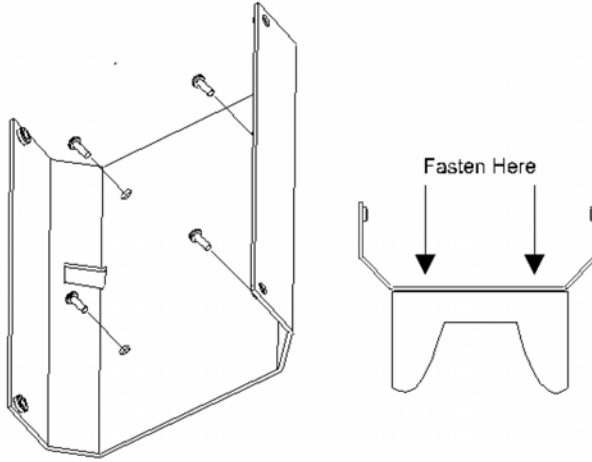
3. The dock is ready for cabling.

Custom Mounting Brackets

When using a non-Falcon mounting bracket, use the dimensions in when placing the custom bracket on the dock.

Figure 34. Back View of Dock before Mounting Custom Bracket
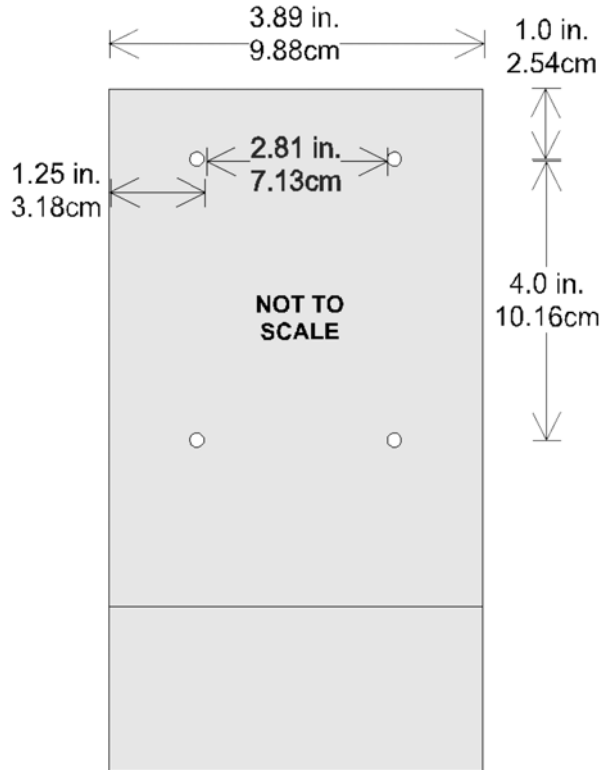
Using the Vehicle Mount Powered Dock

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 35. Insert the Falcon in Vehicle Mount Powered Dock .
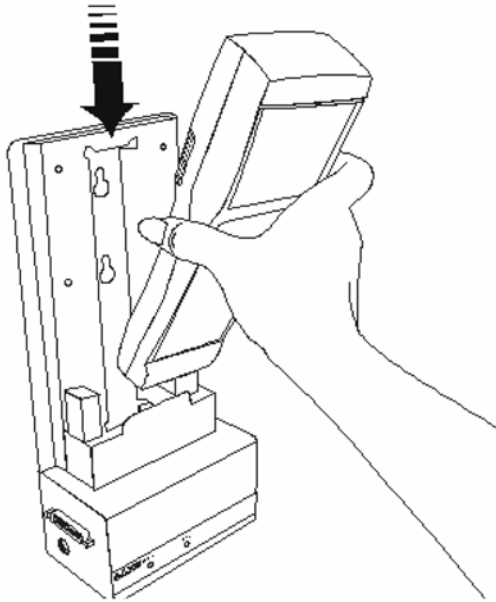
2. Push the Falcon down into the well and release. The hand-strap hook connects with the upper tab, securing the Falcon in the dock. Refer to Figure 35.

Figure 36. Falcon Dock Installed in the Vehicle Mounting Bracket
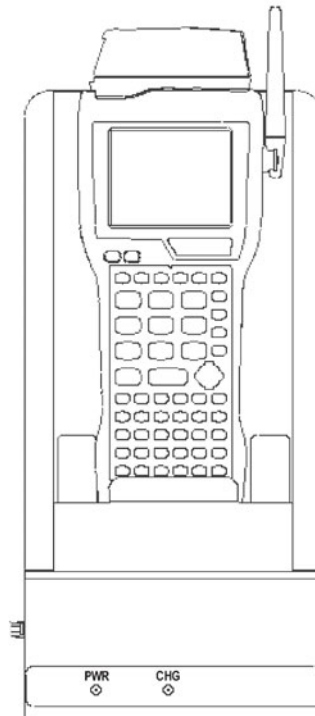
3. The dock begins charging the batteries when the Falcon is inserted into the dock. The Falcon can begin communicating with another serial device, such as a printer or modem.

4. Please refer to the *Falcon Advanced User's Guide* for instructions on sending data to and from a printer or modem.

Table 21: 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.

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Maintenance, Troubleshooting, and Technical Support

Maintaining the PDT

With normal use, the PDT, Dock, 4-Slot Dock and battery chargers require no maintenance. For trouble-free service, observe the following tips when using the Falcon:

- To prolong its life and avoid problems, keep the Falcon clean. Use a clean, soft cloth dampened with a mild, dilute cleanser.

- If you need to clean the display, clean it with a lens cloth or other soft cloth dampened with a mild, dilute cleaning solution.

Do not immerse the PDT, docks, or battery chargers in liquid.

Do not use abrasive paper/cloth or abrasive/corrosive cleaners to clean the unit.

CAUTION

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 parameter and try again. (Refer to Predefined Defaults in Appendix C of the **Falcon DOS Portable Data Terminals Advanced User's Guide** for the D1 parameter.)

- 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.)

RF Connectivity Troubleshooting

Gather facts:
- Falcon type
- AP & RF card brand (ensure latest version of firmware installed)
- Host type
- Software type
- Software version (ensure latest version is installed)
- Frequency and duration of issue

START

Does the Falcon respond to a PING command from a PC?

NO →

Does the Falcon display an error during the boot process?

YES →

Potential Problems:
- Are the correct drivers are installed?
- Is the RF card securely installed?

YES

Potential Problems:
- Ping Falcon from host or use tracert to determine the location of the breakdown in communication.

(*For more information on the Ping command, go to the command prompt on the PC and type C:/PING. For more* information on the tracert command, go to the command prompt on the PC and type C:/tracert.)

NO

Does the Falcon associate with the AP?

NO →

Potential Problems:
- Security Issue – Check SSID, WEP, LEAP settings
- Range Issue

YES

Can you ping the Falcon from the AP?

YES ←

NO →

Potential Problems:
- IP Address Issue
- XPING the AP from the Falcon

Does the Falcon connect to the host?

NO →

Can you ping the host from a PC on same subnet?

NO →

Potential Problems:
- Host unavailable

YES

RF connectivity obtained. See your software manual for further information or contact PSC technical support.

YES

Potential Problems:
- IP address issue (duplicate address on Falcon). Turn off the Falcon and attempt PING again
- Run Tracert command to determine location of breakdown of connectivity.

(For more information on the tracert command, go to the command prompt on the PC and type C:/tracert. *For more information on the Ping command, go to the command prompt on the PC and type C:/PING.*)

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.

Technical Support

PSC Website Support

PSC's website (www.pscnet.com) is the complete source for technical support and information for PSC products. The site offers PSC's new TekForum, product support, product registration, warranty information, product FAQs (frequently asked questions), product manuals, product tech notes, software updates, patches, demos, and instructions for returning products for repair.

PSC Website TekForum

Search for information on the TekForum by clicking on the **Support** link at the top of PSC's home page. Browse the TekForum at PSC's website to find answers to your questions about common technical issues. Register with Tek-Forum to submit a question to the PSC Technical Support Staff and receive a solution to your question posted on TekForum within 48 hours.

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, contact PSC technical support at the phone number located on the back of this manual.

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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:	**EN 55022-A:1994/1998**
	EN 50082-1:1998
	EN 55024:1998
	ETS 300 328
	EN 60950:2000
	EN 60825-1:2001
Equipment Type:	**Portable Data Terminal Equipment**
Product:	**Falcon Family Models 3XX and 4-Slot Dock**

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