



Falcon® 4400 Series *with Windows Mobile®*



26-Key model



Falcon 4420
48-Key model



52-Key Numbers Up model

Product Reference Guide



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Preface: About this Guide

How to Use this Manual

This Product Reference Guide contains comprehensive basic user instructions for the Falcon 4400 Series color mobile computer with Windows Mobile®. The manual discusses software, batteries, dock, serial cables, data transfer, as well as advanced user information such as bar code configuration and parameters.

Refer to the *Falcon 4400 with Windows Mobile® Quick Reference Guide (QRG)* for other information such as a description of the Falcon's features, setup and reset procedures, and troubleshooting.

This section of the manual provides an overview of the manual's contents and organization.

Document Overview

This document contains the following material:

- This Preface provides an overview of the contents for each chapter, and describes document style conventions.
- Chapter 1, Batteries and Power, discusses checking battery power, power conservation, battery installation, battery charging with a dock or battery charger, battery storage, battery disposal, and resetting the mobile computer.
- Chapter 2, Configuration Settings, describes how to adjust the device's settings, such as date and time, display backlight/contrast, volume/sounds, scanner, and power.
- Chapter 3, Software Programs, covers installing, selecting, using, and removing applications, entering data, and using the on-screen keyboard with pre-installed programs such as Outlook, Pocket MSN, and Word Mobile.

- Appendix A, Accessories, describes Accessories like docks, battery chargers, holsters, and soft cases that are available for the Falcon.
- Appendix B, Falcon® Desktop Utility (FDU) allows PSC Windows administrators to configure Windows® Mobile Falcons to control individual user access.
- Appendix C, SNMP Interface, describes SNMP (Simple Network Management Protocol) concepts, MIB (Management Information Base) files, and provides additional resources.
- Appendix D, Cable and Connector Configurations contains information on standard interface cables for use in interconnecting the Dock to power and/or peripheral devices.
- Appendix E, Programming Parameters, provides the programmable settings for the Falcon.
- Appendix F, Programming Bar Codes, provides bar codes for common setup parameters for programming the Falcon.
- Appendix G, SDK Installation, gives instructions for installation and setup of SDK software.
- Appendix H, Glossary, is a glossary of terms used in this manual that you may not be familiar with that are specific to Windows® Mobile and the portable data terminal.

Registering Your PSC Product

PSC values your feedback. Please take a few moments and complete the Product Registration Utility, or go to the form located on the PSC website (www.psc.com). Registering your products ensures that you will be informed of the latest product news, technical specifications, software updates and other future developments from PSC.

Document Conventions

Formatting conventions are used throughout this guide to provide a consistent method for representing screen shots, command entries, and keyboard characters. This guide also provides special conventions for notes and cautions, information of high interest to the user.



NOTES contain information necessary for properly diagnosing, repairing and operating the terminal.



CAUTION

The **CAUTION** symbol advises you of actions that could damage equipment or property.



WARNING

A **WARNING** symbol calls attention to actions that could result in personal injury.

Keystrokes. Filenames, paths, field selections from a drop-down list, and data or keystrokes entered by the user are shown in **monospaced** typeface.

Windows Controls. Windows controls including prompts, dialog boxes, fields, drop-down lists, checkboxes and radio-buttons are printed in **bold** typeface.

Portable Keys

Keys on the Falcon are bracketed by “less than” (<) and “greater than” (>) symbols to distinguish them from keys on the PC.

<F1> — <F19> Keys. The Function keys, such as **<F1>**, refer only to keys on the Falcon.

<ENTER> Key. In order to differentiate the **<ENTER>** key on the portable keypad from the **Enter** key on the PC’s keyboard, portable keys are formatted in ALL CAPS: **<ENTER>**.

Stylus Actions

Stylus actions apply to the Falcon only; most PCs use a mouse or trackball as an input device.

Tap or Select. Tap the display screen once with the stylus to activate a specific button or an application, or to select an item from a drop-down list or box.

Tap and Hold. Tap and hold the stylus to view and select items from a list or drop-down box.

Refer to the *Falcon 4400 with Windows Mobile® Quick Reference Guide (QRG)* for more information on using a stylus with the Falcon.

Mouse Actions

Applies to the software installation portions of this document using a PC; the Falcon comes equipped with a stylus. Refer to [Stylus Actions on page vii](#), or see the *QRG* for more information.

Click or Select. Press and immediately release the left mouse button without moving the mouse. Clicking is used to select specific buttons on various forms and tables.

Double-Click. Click the left mouse button twice in rapid succession. Used to initiate an application.

Right Click. Press and hold the right mouse button without moving the mouse.

Select. Click and release the left mouse button to choose an item or items from a drop-down list or box.

Chapter 1

Batteries and Power

Overview

This section contains the following topics:

- Suspend Mode, p. 1-1
- Battery Warnings and Cautions, p. 1-2
- Battery Disposal, p. 1-4.

Suspend Mode

The Falcon will go into a suspend or sleep mode when it is idle for a period of time. This duration can be customized using the on-screen **Power** control panel (refer to Advanced Tab, p. 2-20). Suspend mode works and looks just like you have turned the unit off. Press **<POWER>** to suspend (put to sleep) the Falcon. Press **<POWER>** again for the Falcon to resume its previous state.

Use the **Power** control panel to set the idle duration and the initiation of suspend mode. These features save battery power when the Falcon is not in use. Refer to Advanced Tab, p. 2-20 for more information.

Suspending

The following conditions will put the unit into suspend (sleep) mode:

1. When the unit is on, press **<POWER>** for 0.5 seconds to initiate suspend mode.
2. When the sleep timer expires, indicating that there has been no use for a specified period of time.
3. A discharged battery pack.

Resuming

Use one of the following methods to resume (wake up the Falcon):

- Press <POWER> to resume (wake up).
- Put the Falcon into a dock.
- Press the **Scan Trigger** to wake up the unit (handled version only).

When a battery pack is fully discharged while the unit is in suspend mode, the Falcon remains in the suspended mode until the battery pack is charged or external power is supplied via the dock or a power cable.

Battery Warnings and Cautions



Do not discharge the battery using any device except for the Falcon. When the battery is used in devices other than the Falcon, it may damage the battery or reduce its life expectancy. If the device causes an abnormal current to flow, it may cause the battery to become hot, explode or ignite and cause serious injury.

WARNING Lithium-ion battery packs may get hot, explode or ignite and cause serious injury if exposed to abusive conditions. Be sure to follow the safety warnings listed below:

- Do not place the battery pack in fire or heat.
- Do not connect the positive terminal and negative terminal of the battery pack to each other with any metal object (such as wire).
- Do not carry or store the battery pack together with metal objects.
- Do not pierce the battery pack with nails, strike it with a hammer, step on it or otherwise subject it to strong impacts or shocks.
- Do not solder directly onto the battery pack.
- Do not expose the battery pack to liquids, or allow the battery to get wet.

In the event the battery pack leaks and the fluid gets into your eye, do not rub the eye. Rinse well with water and immediately seek medical care. If left untreated, the battery fluid could cause damage to the eye.

**CAUTION**

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

If you remove the battery pack or it becomes completely discharged, there is a 30 minute window in which to insert a charged battery pack before the backup battery fails. If your backup battery completely discharges, the contents of the RAM memory will be lost. If your back-up battery is less than fully charged, there is a proportionally smaller window of time available.

Use only the authorized power supplies, battery pack, chargers, and docks supplied by your PSC reseller. The use of any other power supplies can damage the Falcon and void your warranty. Refer to Appendix A for the correct "Power Supplies" and Accessories.

Do not disassemble or modify the battery. The battery contains safety and protection devices, which, if damaged, may cause the battery to generate heat, explode or ignite.

Do not place the battery in or near fire, on stoves or other high temperature locations. Do not place the battery in direct sunlight, or use or store the battery inside non-ventilated areas such as cars in hot weather. Doing so may cause the battery to generate heat, explode or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.

Do not place the battery in microwave ovens, high-pressure containers or on induction cookware.

Immediately discontinue use of the battery if, while using, charging or storing the battery, the battery emits an unusual smell, feels hot, changes color or shape, or appears abnormal in any other way.



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

Battery Disposal

If you must dispose of a battery pack, please follow the CAUTIONS below:



CAUTION

Use only a battery pack supplied by a PSC reseller for this device. The use of other battery supplies can damage the Falcon and void your warranty. Contact your reseller for the correct power supplies; view your options under Battery Pack, p. A-2 or the PSC price book at www.psc.com.



CAUTION

When the battery pack is worn out, insulate the battery pack terminals with adhesive tape or similar materials before disposal.



Recycle Lithium-Ion Batteries.



Do not throw Lithium-Ion Batteries in the trash

Please reference your local regulations for any further guidelines about battery disposal.

Chapter 2

Configuration Settings

Overview

This section describes how to access and configure customized PSC settings and configuration screens. For information about Microsoft configuration items, reference the help system on your device.

Access the items on the Settings screen to configure the Falcon. These include date and time, display backlight, volume/sounds, scanner, and power.


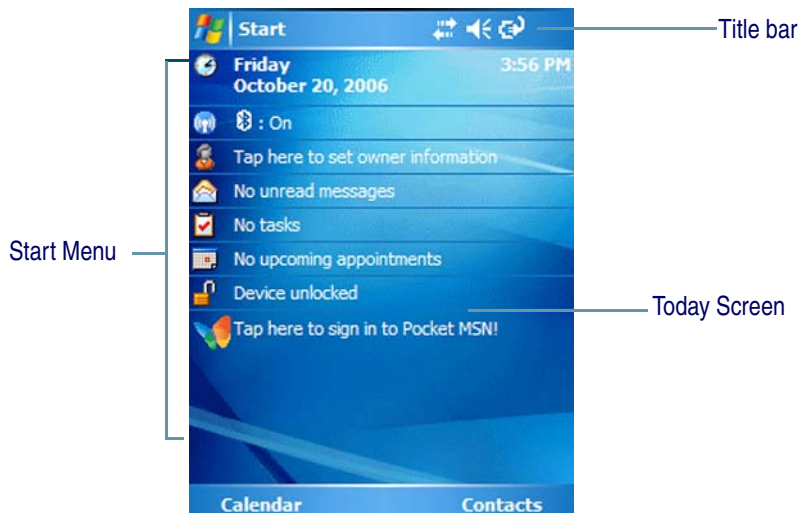

The first screen you see on your Falcon after powerup is the Today screen. Tap the  (Start) icon to access the Start Menu. See the *Falcon 4400 with Windows Mobile Quick Reference Guide (QRG)* for more information about navigating the Falcon's menus and screens.

Figure 2-1. Windows Mobile Today screen



Settings

Access the **Settings** screen from  (**Start**), then tap the desired icon to open the control panel for that item. The icons available on your screen may vary, depending on your initial configuration.

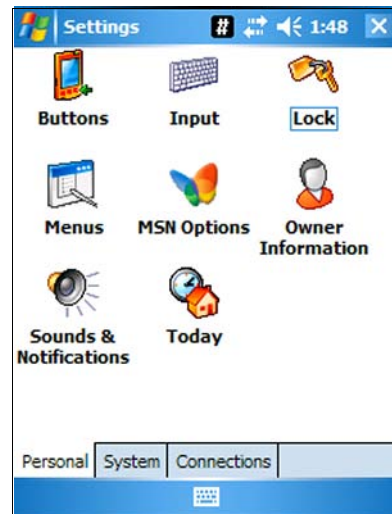
There are three types of **Settings**:

- **Personal Settings** on this page
- **System Settings** on page 2-3
- **Connections** on page 2-21

This manual describes customized PSC settings and configuration screens. For information about Microsoft configuration items, reference the help system on your device.

Personal Settings

This manual describes customized PSC settings and configuration screens. For information about configuration of Personal Settings, reference the Microsoft help system on your device.



System Settings

PSC System Settings are discussed in this section. For information on Microsoft settings, see the help system on your device.

PSC System Settings

Backlight, [p. 2-4](#)

Decoding, [p. 2-5](#)

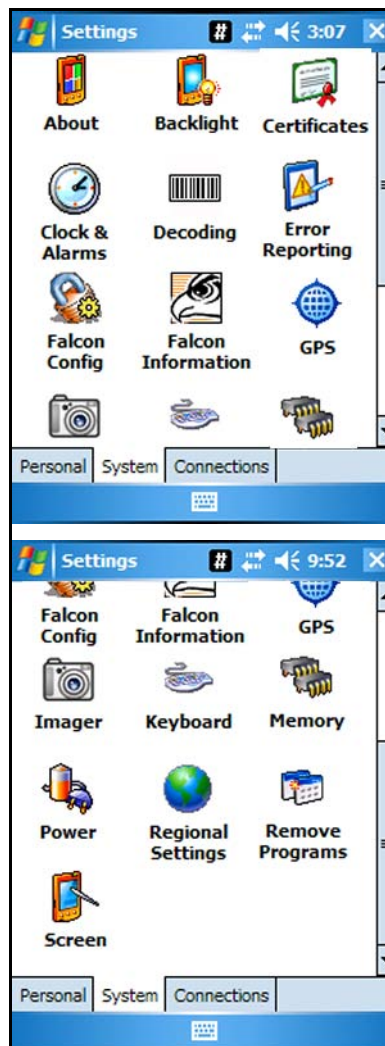
Falcon Config, [p. 2-12](#)

Falcon Information, [p. 2-12](#)

Imager, [p. 2-13](#)

Keyboard, [p. 2-18](#)

Power, [p. 2-20](#)



Backlight



Increasing backlight brightness can cause the battery pack to discharge at a faster rate. The battery discharge rate decreases with a decrease in backlight usage.

Change the **Backlight** settings by completing the following steps:




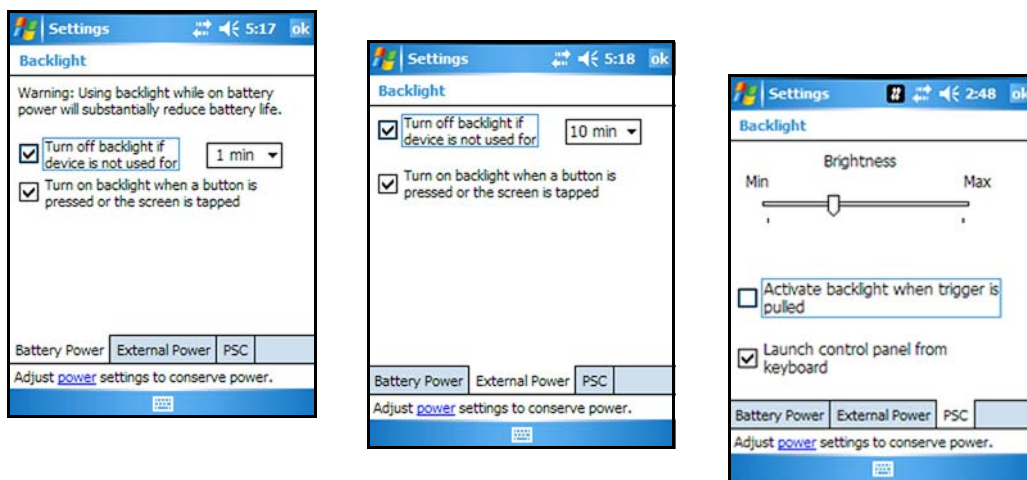

1. Tap  > **Settings** > **System** and tap the Backlight icon.
Some Falcon keypads also provide keyboard shortcuts to launch the **Backlight** control panel:
 - On the 26-key model press: **<Fn>+<Backlight>** ().
 - On the 48-key model press: **<Fn>+<Backlight>** ().
 - On the 52-key model press: **<Fn>+<. >**.
2. You can specify different settings for use when the device is running on Battery Power or External Power.
 - Specify the amount of time the backlight stays on when device is not in use.
 - Set the backlight to turn on automatically when any key is pressed or the touchscreen is tapped, either while on battery or external power.
3. Additionally, the **PSC** tab provides several other options:
 - Adjust the **Brightness** slider by tapping it with the stylus. You can also use the navigation keys on the Falcon keypad to move the slider.
 - Turn on the backlight when the trigger is pulled.
 - Launch the **Backlight** control panel from the keyboard. See above for key sequences.

Figure 2-2. Backlight Settings

Using Auto-on while running from battery power will cause the battery pack to discharge at a faster rate. The battery discharge rate decreases with a decrease in backlight usage.

4. Exit and save your modifications by tapping **OK**, or press **<ENTER>** on the keypad.

Decoding

You can configure the Falcon's decoding options by tapping  **> Settings > System > Decoding**. Decoder configuration can also be accomplished for large numbers of terminals using **FMU** (Falcon Management Utility).

There are two sections in the **Decoding** control panel, each containing additional pages. There are six General Configuration pages and multiple Bar Code symbology pages.



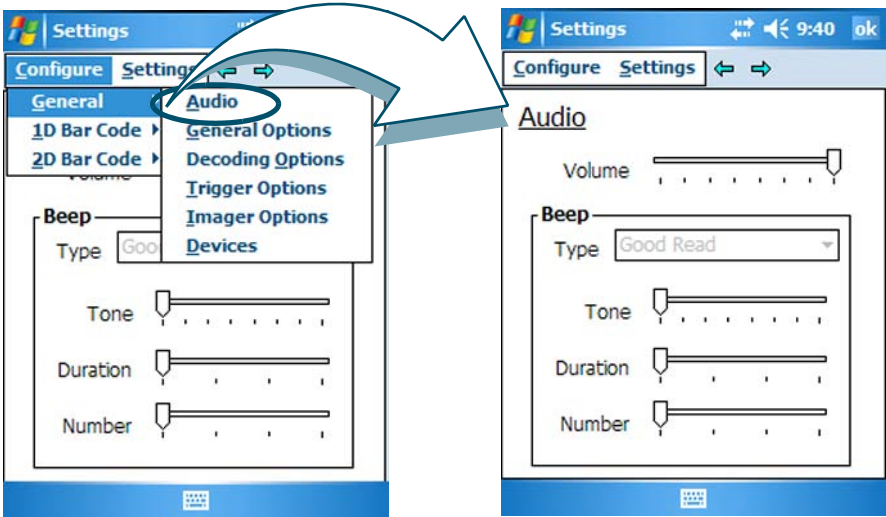
Other decoding parameters are described in **Programming Parameters**, starting on page E-1; bar code settings are provided in **Programming Bar Codes**, starting on page F-1.

Configuration Control Panels

Select the desired configuration from the following options shown in Figure 2-3, and the other Decoding Properties figures on the following pages.

Use the drop-down menus or tap the left and right arrow keys to navigate the different pages of the **Configure** utility.

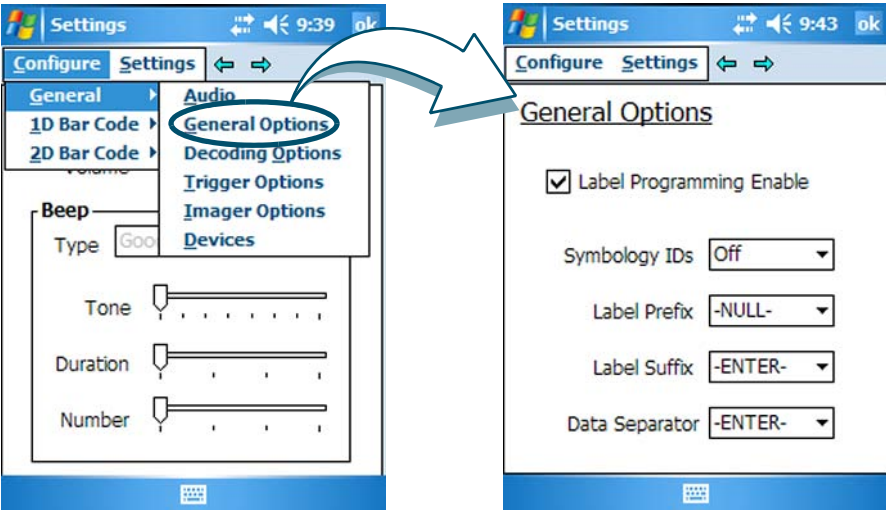
Figure 2-3. Decoding Properties: Audio



Select **Configure > General** from the menu to view other configuration options.

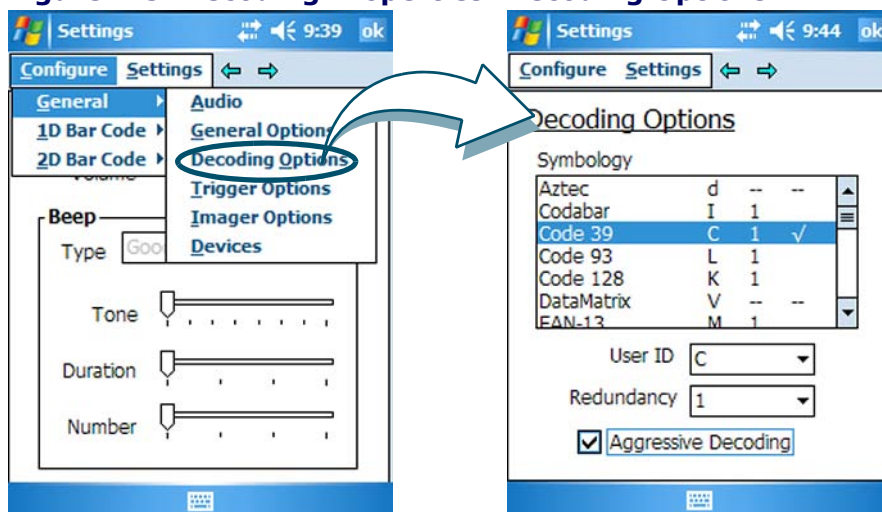
- **Audio:** Sets volume, tone, duration, and number of various types of beeps.

Figure 2-4. Decoding Properties: General Options



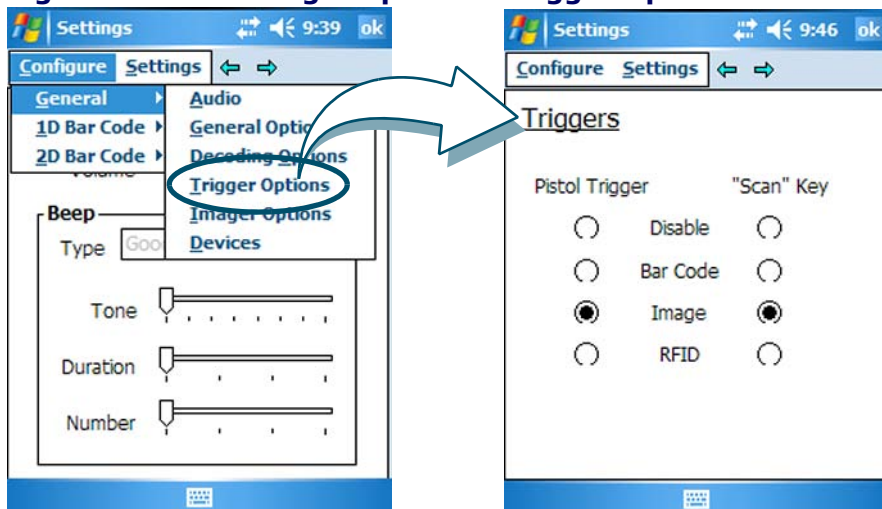
Select **Configure > General** from the menu to view other configuration options.

- **General Options:** Select from Label Programming Enable, Symbology IDs, Label Prefix, Label Suffix, and Data Separator.

Figure 2-5. Decoding Properties: Decoding Options

Select **Configure > General** from the menu to view other configuration options

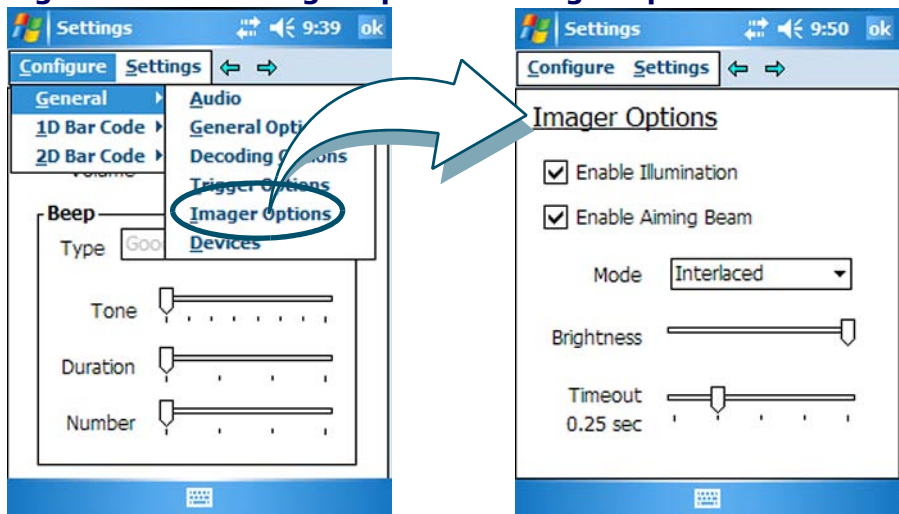
- **Decoding Options:** Set the **User ID** character associated with a symbology, the **Redundancy** and select **Aggressive Decoding** when available.

Figure 2-6. Decoding Properties: Trigger Options

Select **Configure > General** from the menu to view other configuration options

- **Trigger Options:** Select to enable or disable **Pistol Trigger** or **Scan Key** for Bar Code, Image, or RFID (if installed). Select the desired radio buttons to define the button functions. Available items will vary according to the model.

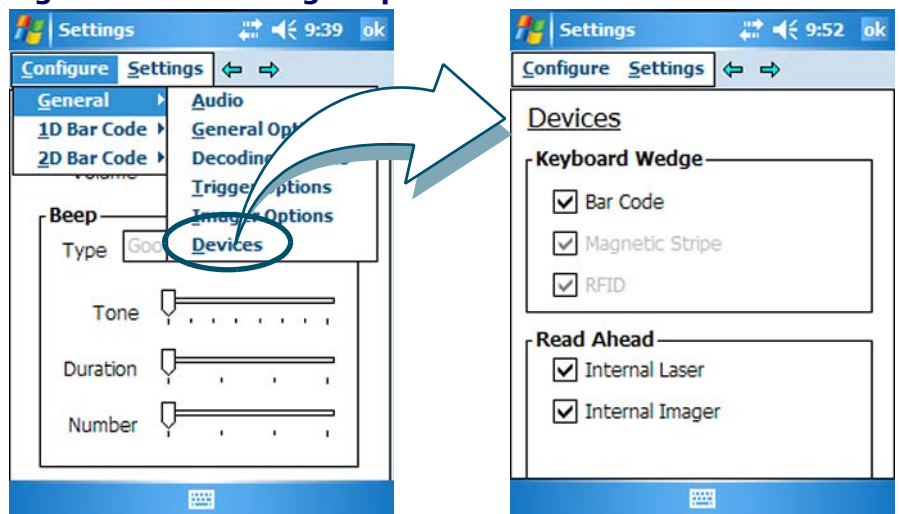
Figure 2-7. Decoding Properties: Imager Options



Select **Configure > General** from the menu to view other configuration options.

- **Imager Options:** (Models with Imaging module only). **Enable/Disable Illumination** and the **Aiming Beam** for Imaging Mode lets you select between Concurrent (the aiming beam and the illumination beam turn on at once); and Interlaced (the aimer beam and illumination alternate being on). Set Imager **Brightness** and **Timeout** properties using the sliders.

Figure 2-8. Decoding Properties: Devices



Select **Configure > General** from the menu to view other configuration options.

- **Devices:** Enable the keyboard wedge for Bar Code scanner, Magnetic Stripe reader, RFID (if installed), and Read-Ahead options for attached devices.

Bar Code Symbology Pages

Use the drop-down menus from **Configure > 1D Bar Code** or **2D Bar Code**, or tap the left and right arrow keys to navigate the different pages of the bar code symbology pages. Each bar code symbology opens to its own page, as shown in Figure 2-10 on page 2-10.

Figure 2-9. Available 1D Bar Code Symbologies

Settings

Configure

General

1D Bar Code

2D Bar Code

☒ Bar Code

☒ Magnetic

☒ RFID

Read Ahead

☒ Internal

☒ Internal

Codabar

Code 39

Code 93

Code 128

EAN-13

EAN-8

Interleaved 2/5

Matrix 2/5

MSI

Pharmacode 39

RSS-14

RSS Limited

RSS Expanded

Standard 2/5

Trioptic

Codabar	Pharmacode 39
Code 39	RSS-14
Code 93	RSS-Limited
Code 128	RSS-Expanded
EAN-13	Standard 2/5
EAN-8	Trioptic
Interleaved 2/5	UPC-A
Matrix 2/5	UPC-E
MSI	UPC/EAN Extensions

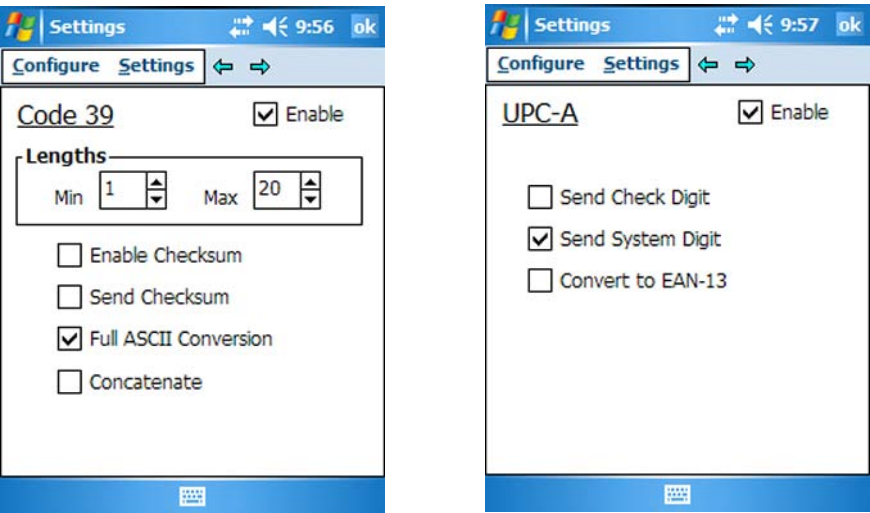
See [Appendix F](#) for details on parameters available for each symbology.

Refer to the sample symbology control panels in [Figure 2-10](#) for examples of the types of fields and options you can modify.



Other decoding parameters are described in **Programming Parameters**, starting on page E-1; bar code settings are provided in **Programming Bar Codes**, starting on page F-1.

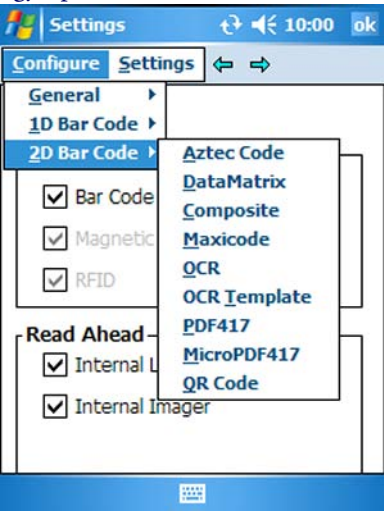
Figure 2-10. Common Symbolologies: Code 39 and UPC-A



- **Code 39:** Select Enable, Min/Max Lengths, Enable Checksum, Send Checksum, Full ASCII Conversion, and Concatenate.
- **UPC-A:** Select Enable, Send Check Digit, Send System Digit, and Convert to EAN-13.

2D Bar Code Symbolologies

If you have the 2D Imager module installed, the following additional symbology options are also available:



Aztec Code	OCR Template
Data Matrix	PDF417
Composite	MicroPDF417
MaxiCode	QR Code
OCR	

See [Appendix F](#) for details on parameters available for each symbology.

Refer to [Figure 2-10](#) for an example of the types of fields and options you can modify.



Other decoding parameters are described in [Programming Parameters](#), starting on [page E-1](#); bar code settings are provided in [Programming Bar Codes](#), starting on [page F-1](#).

OCR

The OCR page gives you the following options:

- Specify a font by selecting from the drop-down menu.
- Select the desired Check Digit from the drop-down menu.

See "OCR Configuration" starting on [page E-37](#) for more information.

OCR Template

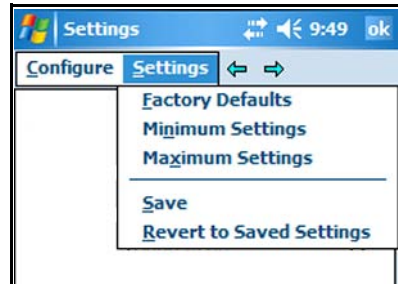
The Falcon provides limited support for OCR templates. An OCR template lets you specify the format of an OCR string that can be read by the Falcon. The imager will only decode OCR strings that match the specified template.

For detailed information on creating OCR templates, see the section entitled "OCR Templates" starting on [page E-37](#).

Decoding Settings


Select from the Decoding Properties **Settings** menu to restore previous configurations and/or other available default settings. Choose from:

- Factory Defaults
- Minimum Settings
- Maximum Settings
- Save (New Settings)
- Revert to Saved Settings



The settings are saved when you tap **OK**.


Falcon Config

Tap  > **Settings** > **System** > **Falcon Config** to access configuration utilities such as the Falcon Management Utility (FMU) and Falcon Desktop Utility (FDU) settings. See Falcon® Desktop Utility, starting on [page B-1](#), for complete information on FDU.

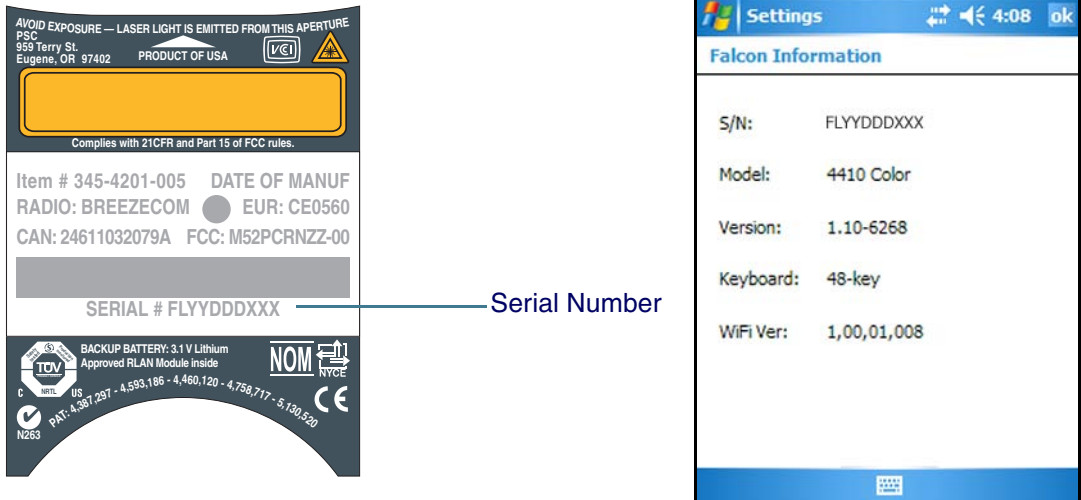
Falcon Management Utility (FMU)

The Falcon Management Utility (FMU) is the easiest method to use to configure multiple Falcons, especially if you have an enterprise-wide deployment. A copy of FMU is shipped with all Falcon Windows Mobile units. For complete information on FMU, refer to the *FMU User's Guide* on the product CD included with your Falcon.

Falcon Information


Tap  > **Settings** > **System** > **Falcon Information** to view the device serial number, model number, firmware version, and keyboard type.

The serial number is also displayed on the safety label on the scanning pod.

Figure 2-11. Serial Number Locations

Imager

Imaging Overview

If your Falcon has the Imager module installed, the Imaging Control Panel icon will be available on your Settings screen. Tap  > **Settings** > **System** > **Imager**.

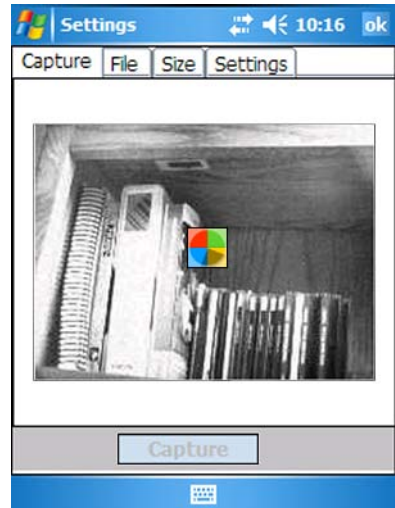
See Sample Imager Settings, p. 2-17, to view sample settings for different conditions.

Image Capture

The **Capture** page provides you with configuration options for previewing and capturing an image with the Falcon.

Capture an image as follows:

1. Aim the Falcon toward the image you want to capture. The screen will display a preview of the image, making use of the current settings (to change the settings, see Image Settings, p. 2-17).
2. Tap the **Capture** button (refer to Figure 2-12A) or press and hold the trigger.

Figure 2-12. Image Capture Settings**A****B**

3. An hourglass will appear, indicating the image capture process has begun (see Figure 2-12B). Continue to hold the Falcon steady until you hear the capture sound, signifying that the image capture is complete.
4. A **File Save** message showing the image file name will appear, unless that option has been previously deselected in the **File** settings (in that case, the file will automatically save without prompting). See Image File, p. 2-15, to change settings.
5. Tap **Yes** to save the image, or **No** to discard it.



Image File

1. Specify where you want images to be saved in the **File Folder** field. If you do not select a folder, images will be saved to the default folder “\Images.” Use the ... button to browse to a different folder.
2. Use **File Format** to select the image format you want. You can choose between the following graphics formats:
 - TIFF (1-bit monochrome)
 - TIFF (8-bit grayscale)
 - JPEG (8-bit grayscale)
 - BMP (1-bit monochrome)
 - BMP (8-bit grayscale)
3. Check **Confirm before Saving File** to automatically get a **File Save** message when saving images (see Figure 2-12B). If unchecked, the file will automatically save to the default file folder without prompting.
4. Check **Exit after Image Capture** to cause the Imaging Control Panel to close automatically after saving the image to a file.
5. **Enable Long Range Filter** enhances pictures taken from very long distances (greater than 10 feet or 3 meters).
6. **Enable Aimer Illumination** turns on the aiming LEDs to provide more light for an image capture.

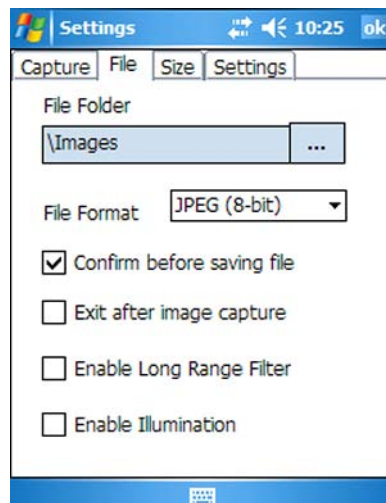


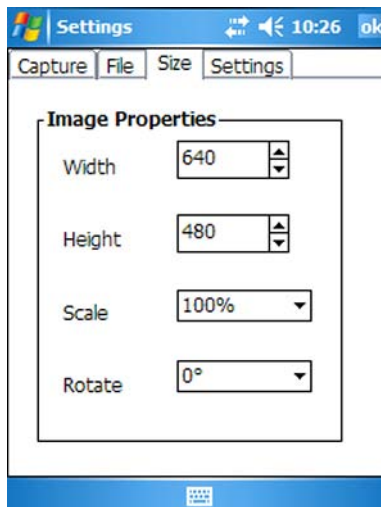
Image Size

On the **Size** tab, modify the image property settings.

1. Tap the **Width** and **Height** controls to adjust the image, or enter a value using the on-screen keyboard or the Falcon's keypad.
 - Width can be as much as 640 pixels.
 - Height can be as much as 480 pixels.

Reducing the height and width results in cropping of the image to the center.

2. Use **Scale** to scale the image. Scaling changes the x,y dimensions of the image. For example, scaling a 640 x 480 image to 50% results in an image size of 320 x 240. See Imaging Controls, p. E-32, for further information.

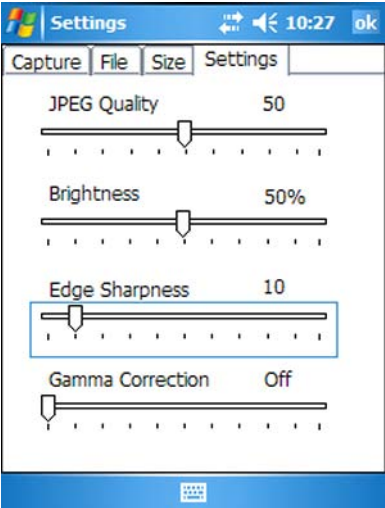


Reducing the scale of an image results in reduced image size, which decreases the time needed to capture an image.

3. **Rotate** lets you to change the orientation of the image, in 90° increments.

Image Settings

- 1. **JPEG Quality** sets the desired quality when the JPEG image format is selected. Selecting a higher quality results in a higher quality image, but a larger file.
- 2. **Brightness** provides you with options for the brightness level the imager will use when taking images.
- 3. **Edge Sharpness** specifies how much the imager will attempt to sharpen edges in images it takes. Selecting the highest position on the slider gives the sharpest edges, but also increases noise in the image.
- 4. **Gamma Correction** measures the brightness of midtone values produced by the image. You can brighten or darken an image using gamma correction. A higher gamma correction yields an overall brighter image. The lower the setting, the darker the image. Move the slider to change the amount of correction the imager applies when taking images.



Sample Imager Settings

To obtain the best possible results, you can modify the settings to suit specific conditions or purposes. Table 2-1 shows samples of recommended settings for common usages. These settings are suggested only, you will need to take into account your particular environment and conditions to determine optimal settings for your specific situation.

Table 2-1. Sample Imager Settings


Condition	Item	Recommended Setting
Distance >10 ft (3 m)	Long Range filter	On
	Illumination	Off

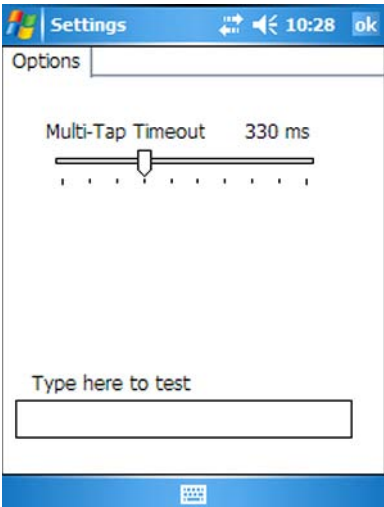
Condition	Item	Recommended Setting
Low light	Illumination	On
	Brightness	100%
	Gamma Correction	20
Printed Text	Illumination	On
	Sharpness	100%
	File format	8-bit
Signature	Illumination	On
	Sharpness	100%
	File format	1-bit

Keyboard

Depending upon which keypad your Falcon has, you will see a different keyboard control panel as shown below.

26-Key Keypad

1. Tap  > **Settings** > **System** > **Keyboard** to open the **Keyboard** control panel.
2. Adjust the slider for **Multi-Tap Timeout** according to your personal preferences.
3. Use the box provided to test the timeout delay.
4. Tap **OK** to exit the **Keyboard** control panel.



48, 52, 5250 and 52-Key Numbers Up Keypads

The control panel for the 48, 52, 5250 and 52-key Numbers Up (NU) keypads has some additional options and an additional tab for key mapping.


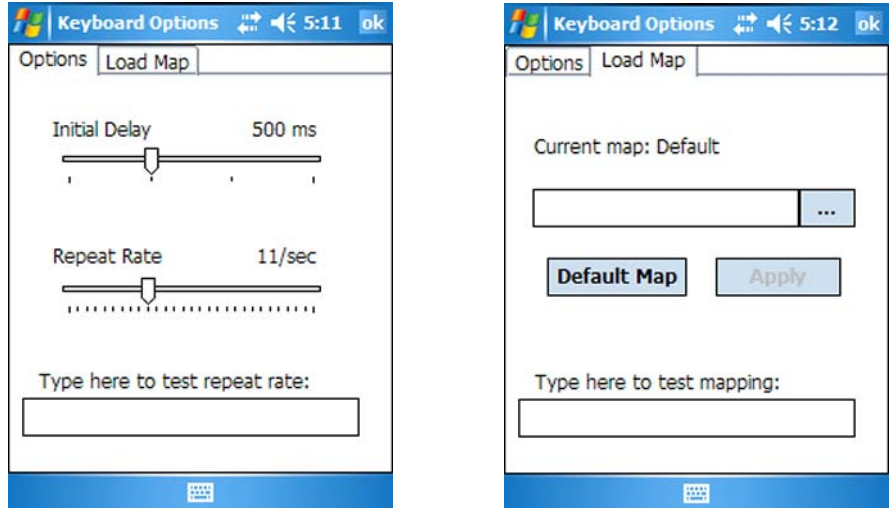
1. Tap  > **Settings** > **System** > **Keyboard** to open the Keyboard control panel.
2. On the **Options** tab, adjust the slider for **Initial Delay**. This configures the time to hold down a key before it repeats.

Figure 2-13. 48, 52, 5250 and 52-Key Control Panels




3. You can also adjust the slider for **Repeat Rate**. This configures how fast the keys repeat.
4. Use the box provided to test the selected repeat rate setting.
5. On the **Load Map** tab, browse to or type in the path and keyboard map file name, or change to the **Default Map**.

For Example, type "**\\Windows\\kbd52_5250.kmf**" for the 52 keypad 5250 Terminal Emulation.

6. Use the box provided to test the test the current keyboard mapping.

Tap **OK** to save your changes and exit the **Keyboard** control panel.

Power

Tap  > **Settings** > **System** > **Power** to adjust power management settings. Use this control panel to check the charge on the battery or to change the **Power** settings.

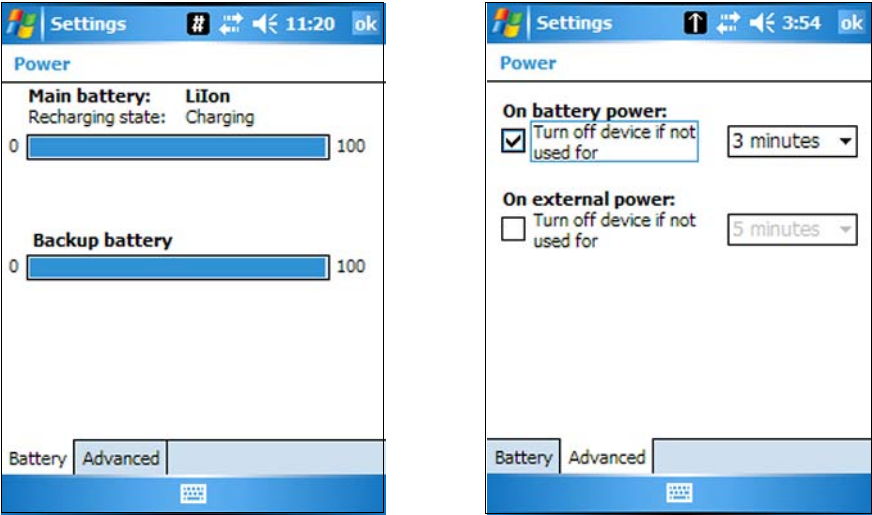
Battery Tab

The **Battery** tab provides power indicators for **Main battery** and **Backup battery** as shown in Figure 2-14. Save your settings by tapping **OK**, or press <ENTER> on the keypad.

Advanced Tab

You can determine the idle duration and suspend mode initiation to save battery power using the **Advanced** tab, as shown in Figure 2-14. Save your settings by tapping **OK**, or press <ENTER> on the keypad.

Figure 2-14. Power Tabs



Connections

In the Connections screen you can view or change Internet, intranet and network settings. See the help system on your device for more information.



Bluetooth® Device Properties



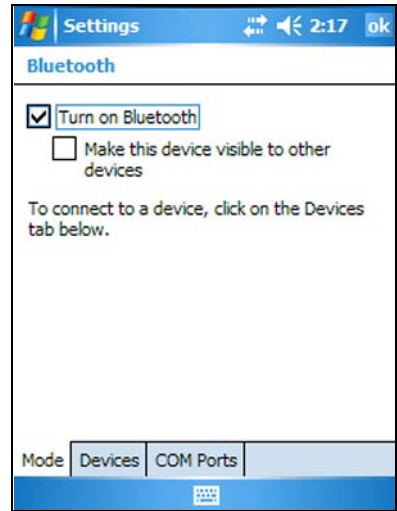
The Bluetooth Device Properties icon will only be visible if Bluetooth hardware has been installed on the unit.

This control allows you to enable and disable your device's Bluetooth interface. It allows selecting a Bluetooth device to connect with and allows for assignment of COM ports.

Tap  > **Settings** > **System** and select **Bluetooth Device Properties** to open the **Bluetooth** control panel.

Mode tab

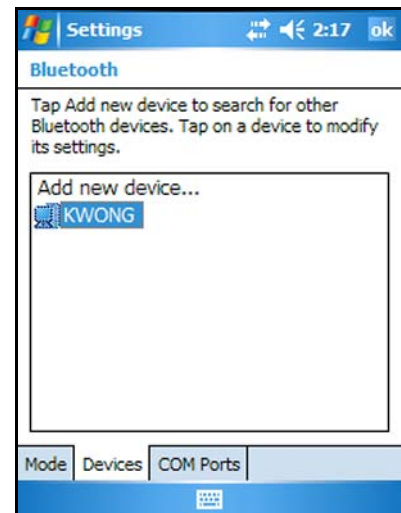
1. Select the checkbox for **Turn on Bluetooth** to enable Bluetooth on the device.
2. Select “Make this device visible to other devices” to allow other devices to discover and view this device.



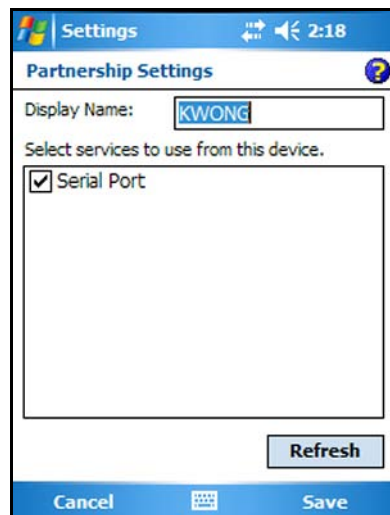
Devices tab

1. Select the **Devices** tab to display available devices.

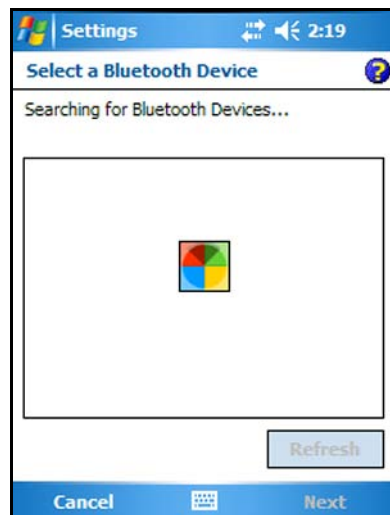
If there are devices that you have previously connected to, they will already be listed.



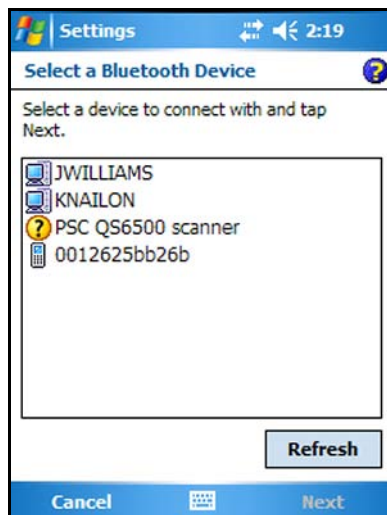
2. Tap a device to display and modify the settings. Tap **Save** to keep the modifications.



3. To search for new devices, tap on **Add new device**. The Falcon will search for Bluetooth Devices within range.



4. Once scanning is complete, available Bluetooth Device Profiles will be displayed.



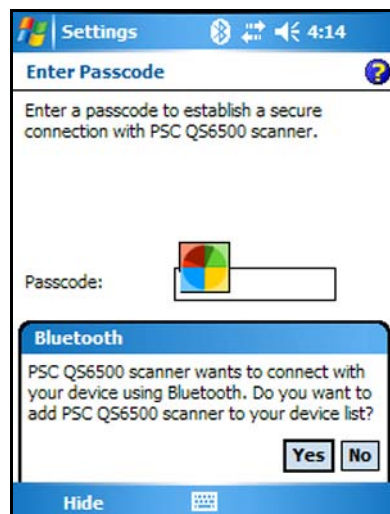
5. Select a device to connect, and tap **Next**.



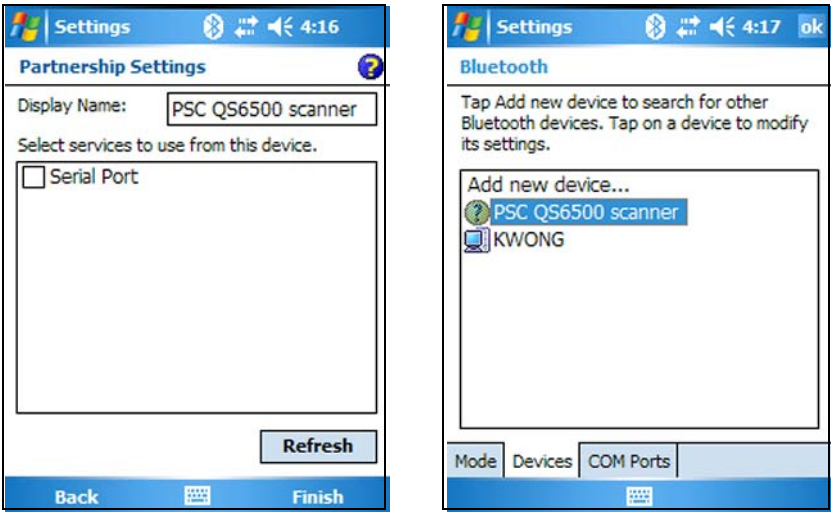
6. Enter a password, if needed to connect to the device.



7. Click **Yes** or **No** to whether you want to add the selected device to your device list.



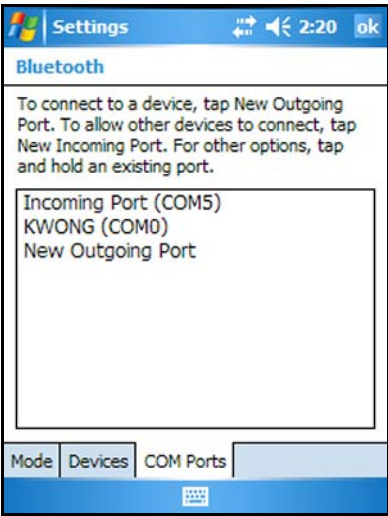
8. The settings will be displayed. Click **Finish** to close the dialog.



The screen will display the settings for the selected device.

COM Ports tab

Tap the **COM Ports** tab to create a new outgoing or incoming port. Tap and hold an existing port to view or edit settings.



Chapter 3

Software Programs

Overview

"Programs" starting on page [3-1](#)


"Installing Programs" starting on page [3-2](#)

Firmware Update Utility:

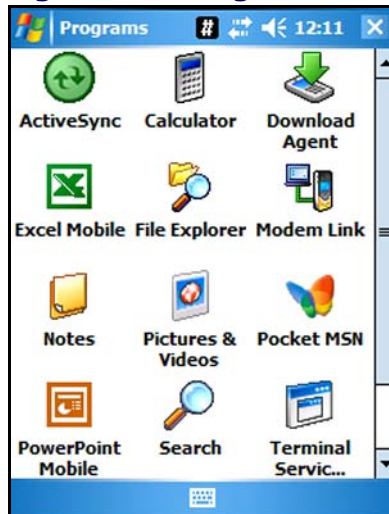
- Retrieving a Firmware Image Update, p. [3-3](#).
- Installing FUU on the Host PC, p. [3-4](#).
- Updating the Falcon Firmware, p. [3-4](#).

"AutoStart" starting on page [3-6](#)

Programs

The Falcon comes with a number of factory-installed programs. To open them, tap  > **Programs** to open the Programs screen, then tap the icon for the program you wish to open. The programs available to you may vary, depending on your initial configuration.

See the Microsoft help on your device for further information about Microsoft programs.

Figure 3-1. Programs screen

Installing Programs

In order to install a program, your Falcon must be connected to a PC. See the *Falcon 4400 QRG* for instructions on getting connected. Then, follow the installation instructions for the program you want to install. Once the software is installed on your desktop computer, the installer will transfer the software to your Falcon.

Installing Programs with FMU

You can quickly install programs on multiple Falcons using the Falcon Management Utility (FMU). For more information, refer to the *FMU User's Guide* on your Product CD.

Firmware Update Utility

The Falcon is equipped with a field-upgradeable firmware mechanism. Firmware updates for the Falcon can be found on the PSC website (www.psc.com). After you have downloaded the desired update to your PC, there are several ways you can update the firmware on the Falcon.

- Use the Falcon Management Utility (FMU) if you have multiple Falcons to update. Refer to the *FMU User's Guide* for more information.
- If FMU is not available or you have only a few Falcons to update, use the Firmware Update Utility (FUU), described below, to install or update the firmware using an ActiveSync connection. Refer to the help system on your device for more information.

The following sections provide procedures for the retrieval and installation of the most current firmware image onto a Falcon.

Retrieving a Firmware Image Update

The following instructions use Internet Explorer to retrieve the most current firmware image.

1. Launch Internet Explorer on your PC and go to www.psc.com.
2. Navigate to the **Downloads** section of the website.
3. Select the product (Falcon 44xx), desired language, and software updates.
4. Click **Go** to view a list of all available software for the Falcon.
5. Select the firmware file desired, then click **Save** and browse to the location where you want to save it.
6. Click **OK** to start copying the files to your local machine (or local network location).

Installing FUU on the Host PC

The Firmware Update Utility (FUU) provides administrators with a field upgrade mechanism. You must have Microsoft® ActiveSync already loaded and running on the host PC to use FUU. Refer to the help system on your device for more information about ActiveSync.



Prior to installing FUU, you must remove any previous versions of FUU installed on the host PC.

Install PSC's Falcon® Firmware Update Utility on your PC by completing the following steps:

1. Insert the CD ROM shipped with your Falcon and click on the link to **Firmware Update Utility**.

OR

Go to the PSC website at www.psc.com and download the most current version of the Firmware Update Utility. Unzip the file, then double-click to run **FUU_Setup.exe**.

2. Follow the instructions on the screen to complete the installation of FUU.

Updating the Falcon Firmware

After copying the update package (*.fpk file) to the host PC (see Retrieving a Firmware Image Update, p. 3-3) and installing **FUU** (Installing FUU on the Host PC, p. 3-4), you can upgrade the firmware on your Falcon.

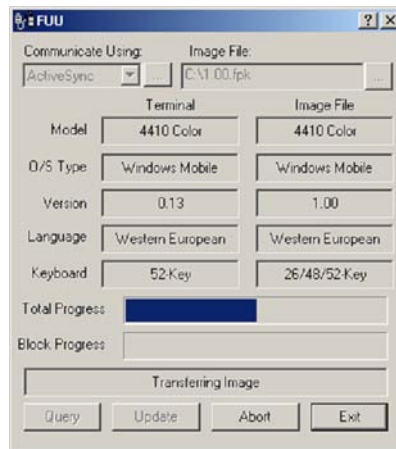


The following steps require that you have already established an ActiveSync connection between the host computer and the Falcon. For information on establishing an ActiveSync connection with the Falcon, refer to the help system on your device.

1. On the PC, click **Start > All Programs > Firmware Update Utility**.
2. Verify that ActiveSync is selected from the **Communicate Using** drop-down list.
3. Browse (...) to the location where you saved the firmware file for your terminal.



4. Select the current *.fpk file and click the **Open** button.
5. Verify that the Falcon is turned on. Insert the device into a powered dock connected to the host computer.
6. Click the **Update Terminal** button on the **FUU** utility on the host PC.



7. **FUU** will compare the selected firmware image with the firmware already loaded on the Falcon; if the images are different, **FUU** will proceed to update the firmware image on your Falcon.



Please be patient and do not remove the Falcon from the Dock until the procedure is complete. The firmware image of the Falcon can take as long as:

- 3 minutes to download using a USB connection.
- 22 minutes to download using a serial connection with 115K baud rate.
- 130 minutes to download using a serial connection with 19.2K baud rate.

8. After the firmware of your Falcon has been updated, the Falcon will prompt you for input. Follow the on-screen instructions.

AutoStart

The AutoStart program allows you to create a list of applications (with optional command line arguments) to run automatically at startup.

AutoStart launches each time the Falcon is rebooted with a Warm or Cold Reset. AutoStart will then run the **Autostart.ini** (reference [Table 1](#) for the location), executing each line with the specified command line arguments. It will take into account any AutoStart options at the beginning of the line.

Table 1. Autostart.ini Location

Product	Operating System	Location
F4400	Windows CE	\FlashFX Disk
	Windows Mobile	\Windows\Autostart



Installing CAB files with AutoStart is not recommended with Windows Mobile because memory is persistent through Cold Reset.

Autostart.ini



Autoexec.ini, which uses **AutoCE** on some older models, has been deprecated. These files should be renamed to **Autostart.ini** and reformatted as described in "AutoStart" on page 3-6.

The **Autostart.ini** is a text file that AutoStart will run upon startup of the Falcon. This file should be placed in the AutoStart folder. AutoStart will run the **Autostart.ini** file on each reboot of the device.

Line Formatting

Each line of the **Autostart.ini** can consist of Autostart options, an executable, and any command line arguments.

< Autostart option(s)> <full path to executable>
<command line arguments>

Sample:

- \windows\pword.exe \file.doc

Table 2 breaks down the sample `Autostart.ini` line.

Table 2. Autostart.ini line formatting

Autostart option(s)	Full path to executable	Command line arguments
-	\windows\pword.exe	\file.doc

Spaces must be placed between each component of the line in the `Autostart.ini`.

If the executable path is in a folder that contains spaces in the name, quotes are required to distinguish what the actual executable name is. The following is an example of this:

"\Program Files\PSC\ScannerApp.exe" /run (valid)

\Program Files\PSC\ScannerApp.exe /run (invalid)

The second line is an invalid line because there is no way to distinguish the executable from the argument.

AutoStart Options

Table 3 shows options you can use when writing a line in the `Autostart.ini` file.

Table 3. Options for Autostart.ini

Description	Character	Comments
Comment: This line will not be executed.	\# OR \ \ (space)	This may only be used as the first character of the line. If the comment option is specified in the options elsewhere, it is ignored.
Do not wait on line completion: This will cause the line to execute and immediately move onto the next line.	_	None.

Description	Character	Comments
Query: Request user confirmation when running the executable.	'?'	This will halt parsing the Autostart.ini until the confirmation is answered. <i>This is intended for debugging the Autostart.ini file.</i>
Execute only on Cold Reset	['!'	None.

Cold Reset Only: This will cause the line to execute only after a Cold Reset.



An empty line will be treated as a comment line.

Combining Options

Autostart options can be combined together as shown in the following sample:

?- \Windows\Pword.exe

This line would:

- Request confirmation before executing the line. The next line would not be processed before the confirmation is answered.
- Run the next line without waiting on the current line to complete execution.

Query Option

The query option is intended for use when debugging the **autostart.ini**. When a line with this option is executed, the following dialog will appear with the specified executable and command line arguments. The populated fields shown in the AutoStart Execute Query are described in Table 4 on page 3-9.

AutoStart Execute Query

AutoStart Execute Query

(1)Execute the following:

Exe:(Pword.exe)

Args:("\My Documents\file.doc")

Yes

No

Cancel

Table 4. AutoStart Query options

Field	Description
Line Number	This is the line number in the script being executed.
Exe	The executable as parsed by AutoStart.
Args	The argument as parsed by AutoStart.



The fields may be broken up into multiple lines (as shown in the example) due to limited space in the dialog.

Parentheses are used to surround the given field and make it very clear what the value of the field is.

Table 5 describes the results of each choice:

Table 5. AutoStart Query actions

Button	Action
Yes	The current line will execute.
No	The current line will not execute. AutoStart will continue parsing the Autostart.ini.
Cancel	The current line will not execute and AutoStart will discontinue parsing the Autostart.ini.

Autostart.ini Samples

Table 6 on page 3-10 is a collection of sample Autostart.ini lines.

Table 6. Sample Autostart.ini lines

Line	Description
? \windows\wceload.exe "\My Documents\FDU.cab"	This will confirm the execution of \Windows\wceload.exe with specified argument "\My Documents\FDU.cab"
\Program Files\App.exe	(invalid) This will execute \Program with the argument Files\App.exe.
\Program Files\App.exe /run	(invalid) This will execute \Program with the argument Files\App.exe /run.
"\Program Files\App.exe" /run	This will execute the program \Program Files\App.exe with the argument /run.
?- \Windows\Pword.exe	This will confirm the execution of \Windows\Pword.exe. If the execution is confirmed, AutoStart will immediately process the next line.
!"\Program Files\App.exe" /run	This will execute the program \Program Files\App.exe with the argument /run ONLY after a Cold Reset.

Appendix A

Accessories

Overview

This appendix covers the following topics:

- "Power Supplies" on page [A-2](#).
 - "Battery Pack" on page [A-2](#).
 - "Single-Slot Dock" on page [A-2](#).
 - "Four-Slot Dock" on page [A-3](#).
 - "Battery Charger" on page [A-3](#).
 - "Serial Charging Cable" on page [A-4](#).
 - "USB Cable" on page [A-3](#).
 - "Printer Cable" on page [A-4](#).
 - "Serial Printer Adapter" on page [A-4](#)
- "Holsters and Softcases" starting on page [A-6](#).
 - "Holsters" starting on page [A-6](#).
 - "Softcases" starting on page [A-7](#).
- "Installing the Handle or Handstrap" starting on page [A-8](#).
 - "Installing a Handle on the Falcon 4410" on page [A-9](#).
 - "Installing the Handstrap on the Falcon 4420" on page [A-8](#).
- "Tethered Stylus" on page [A-11](#).



Contact your PSC reseller for accessories and supplies for the Falcon; you can see the options in this appendix, or in the PSC price book at www.psc.com.

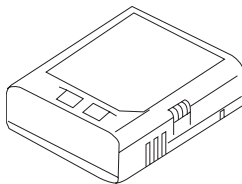
Power Supplies



Use only the correct battery chargers and docks with this Windows Mobile Falcon. The technology used for these models is incompatible with other PSC Falcon chargers and docks.

Battery Pack

Figure A-1. Battery Pack



Single-Slot Dock

Figure A-2. Single-Slot Dock



Four-Slot Dock

Figure A-3. Four-Slot Dock



Battery Charger

Figure A-4. Four-Slot Battery Charger



USB Cable

See "Cable & Connector Configurations" on page [D-1](#).

Serial Charging Cable

See "Cable & Connector Configurations" on page [D-1](#).

Printer Cable

See "Cable & Connector Configurations" on page [D-1](#).

Serial Printer Adapter

The Serial Printer Adapter attaches to the bottom of a Falcon unit and allows you to print directly to a printer.

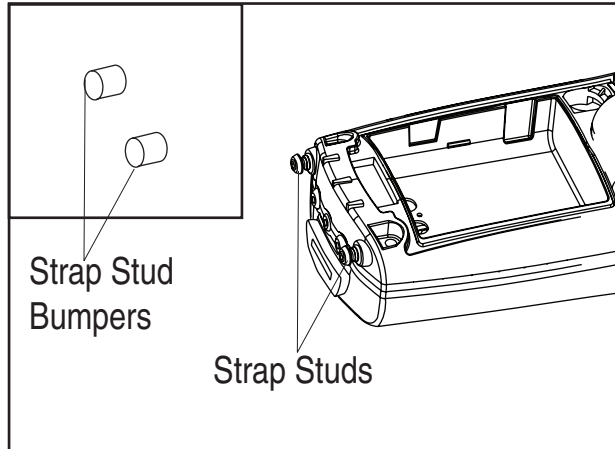
Figure A-5. Serial Printer Adapter



To attach the printer adapter to a Falcon, you must remove the strap studs, as well as the optional strap stud bumpers, if present. Use the procedure that follows.

Removing Strap Studs/Bumpers

Figure A-6. Strap Studs



1. Loosen and pull off the strap stud bumpers (if present). If necessary, pry off using a screwdriver.
2. Use a 5/64" Allen wrench (included with the printer adapter) to loosen and remove each Strap Stud.

Once you have removed the strap studs, attach the adapter to the Falcon by tightening the thumbscrews on the adapter.

Figure A-7. Attaching the Serial Printer Adapter



Holsters and Softcases

A holster and a softcase are available that will work with both the Falcon 4410 and the handled Falcon 4420 models.

Holsters

Figure A-8. Three Holster Views



- Quick release swivel belt mount (clip on both sides for left or right mount)
- Heavy duty nylon

Softcases

Figure A-9. Softcase for Handled Falcon 4420



- Belt clip option
- Stylus holder
- Open cover
- Heavy duty nylon
- Scanner window

Installing the Handle or Handstrap

The Falcon 4420 comes from the factory with the handle installed. The Falcon 4410 comes with a handstrap. These can be exchanged with a change-out kit. The handle is removable and can be replaced with a handstrap. When you replace the handle with the handstrap, you lose the ability to press the trigger on the handle and must use the **<Scan>** key on the Falcon keypad instead.



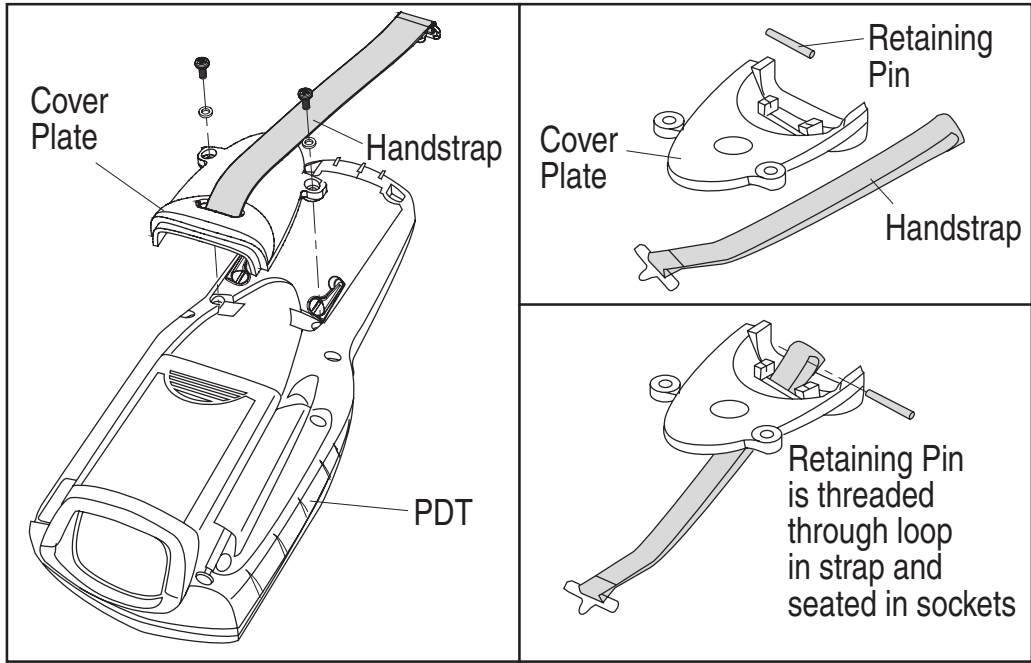
The **<Scan>** key is not available on models with the 48-key keypad.

To remove the handle and replace it with the handstrap refer to the following sections. Reverse the same directions to replace the handstrap with the handle.

Installing the Handstrap on the Falcon 4420

Install a handstrap on the Falcon 4420 by completing the following steps:

1. Remove the handle as shown in [Figure A-11](#) by removing the screws located just above the battery cover's latch dials.
2. Insert the top tab of the handstrap cover into the slot at the top of the handle recess. (refer to [Figure A-10](#))

Figure A-10. Removing/Replacing a Handstrap

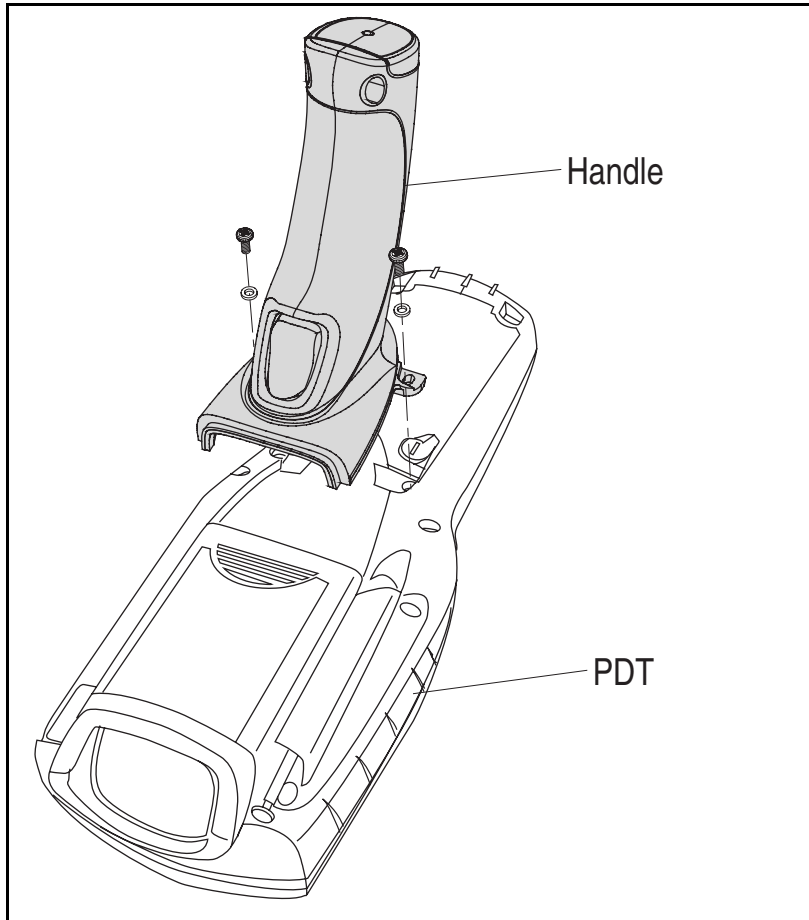
3. Replace the screws located just above the battery cover's latch dials.
4. Connect the handstrap hook onto one of the strap studs at the base of the Falcon.
5. The process is complete upon successful test of the scanning function.

Installing a Handle on the Falcon 4410

Install the handle on the Falcon 4410 by completing the following steps:

1. Remove the handstrap as shown in [Figure A-10](#) by removing the screws located just above the battery cover's latch dials.

Figure A-11. Removing/Replacing the Handle



2. Insert the top tab of the handle into the slot at the top of the handle recess (refer to [Figure A-11](#)).
3. Replace the screws located just above the battery cover's latch dials.
4. The process is complete upon successful test of the trigger function.

Tethered Stylus

An optional Tethered Stylus is available for use on any of the Falcon 4400 series models. The Tether attaches the stylus to the Falcon unit, preventing the stylus from accidentally being lost or misplaced.



Installing a Tethered Stylus

If your Falcon did not come with a Tethered Stylus, it can be easily installed.

Install a Tethered Stylus on the Falcon 44xx as follows:

1. Turn the Falcon face-down. Ensure that power is OFF.
2. Using a Phillips screwdriver, remove the 6 mm screw at the bottom of the Stylus holder.
3. Use the longer 16 mm screw included with the Tethered Stylus kit to attach the Tethered Stylus to the Falcon.



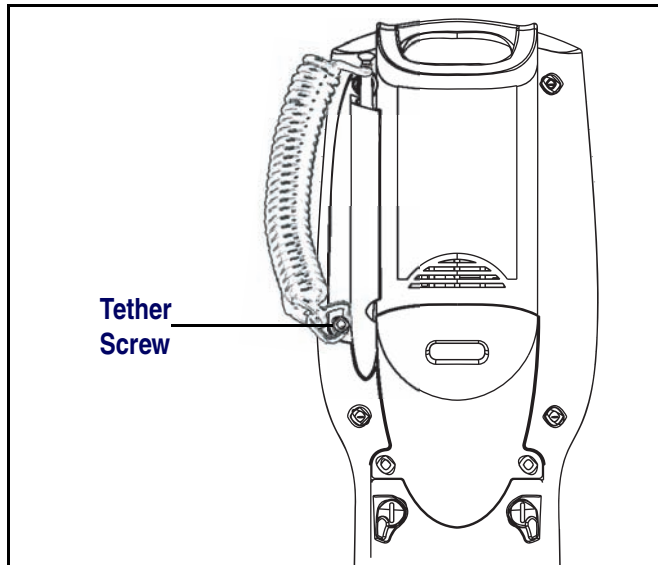
CAUTION

Do not use the 16mm long screw that came with the Tethered Stylus without the Tether. Damage to internal components could occur if the screw is used without the Tether, since the screw is longer than the standard 6 mm screw used without the Tether.

4. Slide the other end of the Tether through the Stylus.

This completes installation of the Tethered Stylus.

Figure A-12. Installing/Removing a Tethered Stylus



Removing a Tethered Stylus

If you want to remove the Tether from your Falcon 44xx, complete the following steps:

1. Turn the Falcon face down. Ensure that power is OFF.
2. Using a Phillips screwdriver, remove the 16 mm screw at the bottom of the Stylus holder that attaches the Tether to the PDT.
3. Use the shorter 6 mm screw included with your Falcon to reattach the Stylus Holder to the Falcon.



CAUTION

Do not use the 16 mm long screw that came with the Tethered Stylus without the Tether. Damage to internal components could occur if the screw is used without the Tether, since the screw is longer than the standard 6 mm screw used without the Tether.

Removal of the Tethered Stylus is complete.

Appendix B

Falcon® Desktop Utility

Overview

Falcon® Desktop Utility (FDU) allows PSC Falcon® Windows® administrators to configure Falcon Windows® Mobile Falcons to control individual user access. This includes:

- Prevent users from changing Falcon OS settings.
- Define keys to access specific functionality/programs.
- Restrict which applications can be executed on the terminal.
- Internet Explorer access restriction, configuration and customized recovery mechanisms.

This section covers the following information:

- "Falcon Desktop Utility" on page [B-2](#)
 - "Administrative Options (Admin Tab)" on page [B-5](#).
 - "Setting Hot Keys" on page [B-9](#).
 - "Internet Explorer Configuration" on page [B-12](#)
 - "Modifying Windows Controls" on page [B-13](#)
 - "Add Application" on page [B-15](#)

Falcon Desktop Utility

Getting Started

Before you begin, your Falcon must be connected to your PC. See the *Falcon 4400 QRG* for information on how to connect your Falcon.

After you are connected, you must install FDU.

Installation

The installer for FDU will automatically launch the Application Manager associated with ActiveSync if the "Install FDU via ActiveSync when finished" checkbox was checked during the installation. Follow the on-screen instructions to complete the installation.

Using the CAB file (other methods)



Terminal file system access is required. To copy the file to the device we recommend using the Falcon Management Utility or ActiveSync.

FDU can be installed to remote Falcons using FMU by transferring the **FDU_WM.cab** file from the directory at **c:\Program Files\PSC\Falcon Desktop Utility** to anywhere on a Falcon running Windows Mobile, then manually launching that CAB file.

Installation on docked Falcons via ActiveSync



ActiveSync 4.0 must be installed and connected to your Falcon before beginning this installation.

1. Place your Falcon in the Dock and ensure that it is connected to your PC via ActiveSync.
2. Click the **FDU** link on the Product CD to launch the installer.
3. Click **Next**.
4. Read and agree to the End User License Agreement and the Microsoft Addendum to the EULA by clicking "I Agree to the Terms Specified in the License Agreement", then click **Next**.

5. Specify the destination folder for this installation, or accept the default and click **Next**.
6. Specify the group name or use the default, then click **Next**, then **Next** again to install the files on your PC.
7. Check the “Install FDU via ActiveSync when finished” checkbox, then click **Finish**.

ActiveSync will launch automatically and display a dialog directing to you to follow instructions on your Falcon to finish the installation.

8. On your Falcon, verify that the installation succeeds, then tap **Restart**.
9. On your PC, click **OK** to verify that you have followed the instructions on your Falcon.

Once FDU has been installed in ActiveSync, you can install FDU on additional docked Falcons as follows:

1. Place the Falcon in the Dock and connect to ActiveSync.
2. Select **Add/Remove Programs** from the **Tools** menu in the ActiveSync window.
3. Check the **Falcon Desktop Utility** checkbox in the list, then click **OK**.
4. On your Falcon, verify that the installation succeeds, then tap **Restart**.
5. On your PC, click **OK** to verify that you have followed the instructions on your Falcon.

Installation on wireless Falcons via FMU



FMU is required to support wireless installation. You must have already installed FMU on your server. Please see the FMU User's Guide on your Product CD for information on installing and using FMU.

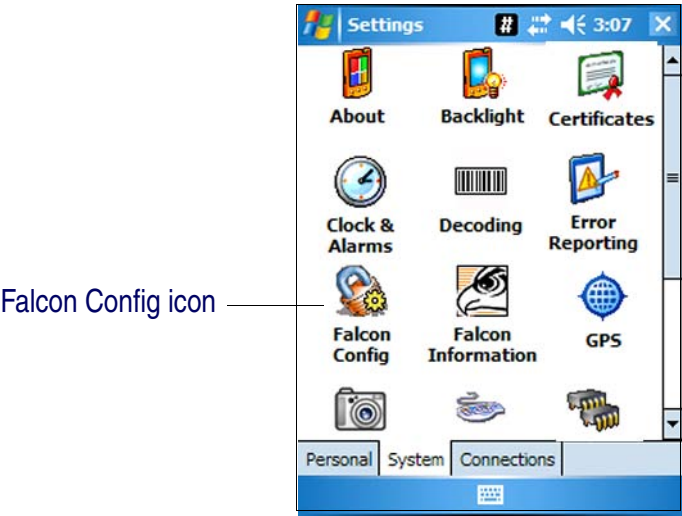
1. Click the **FDU** link on the Product CD to launch the installer.
2. Click **Next**.
3. Read and agree to the End User License Agreement and the Microsoft Addendum to the EULA by clicking “I Agree to the Terms Specified in the License Agreement”, then click **Next**.
4. Specify the destination folder for this installation, or accept the default and click **Next**.

- 5. Specify the group name or use the default, then click **Next**, then **Next** again to install the files on your PC.
- 6. Ensure the “Install FDU via ActiveSync when finished” checkbox is not checked, then click **Finish**.
- 7. In FMU, create a package for the **FDU_WM.cab** file, add this file to the package, and specify any convenient installation path on your Falcon.
- 8. Add this new package to your group.
- 9. Update your Falcon or group of Falcons to transfer the **FDU_WM.cab** file to your Falcon..
- 10. On each Falcon, tap the **FDU_WM.cab** file icon to run the installer.
- 11. When prompted, tap **Restart** to finish installation.

Using FDU

Open the **FDU** by tapping  > **Settings** > **System** > **Falcon Config**.

Figure B-1. Accessing FDU



This option is available from all screens:

Table B-1. Option Available on all Screens

Command	Description
OK	Tap the OK button to apply the settings and modifications you have made in the FDU tabs. OK saves every modification.

FMU

Access the FMU (Falcon Management Utility) from the FMU tab.

Figure B-2. FMU Client Tab Fields



The screenshot shows the 'Falcon Configuration' window with the 'FMU' tab selected. The window has a title bar with standard Windows controls and an 'ok' button. The main content area includes a checkbox for 'Enable FMU Client'. Below this is a 'Server Properties' section with a border. Inside this section are three fields: 'Connection' (a dropdown menu showing 'Network'), 'Discovery' (a dropdown menu showing 'Manual'), and 'IP Address' (a text box containing '0.0.0.0'). Outside the 'Server Properties' section are two more fields: 'Group Name' (a text box) and 'Update Time' (a dropdown menu showing 'None'). At the bottom of the window is a tab bar with six tabs: 'FMU', 'Admin', 'HKeys', 'IE', 'Win', and 'AppSelect'. The 'FMU' tab is currently active and highlighted.

See the *FMU User's Guide* (included on your PSC Product CD) for complete information about setting up and using FMU.

Administrative Options (Admin Tab)

Tap  > **Settings** > **System** > **Falcon Config** to open the Administrative Options control panel.

Figure B-3. Setting a Password/Admin Tab Fields

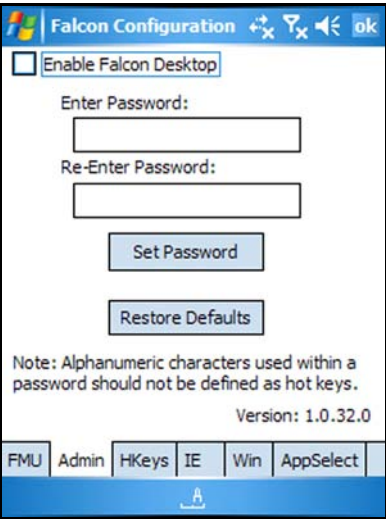


Table B-2. Setting a Password/ Admin Tab Fields

Command	Description
Enable Falcon Desktop	Tap this checkbox to activate the FDU functions such as Hot Key assignments, IE Restrictions, Windows Settings, and the authorized application menu.
Enter Password	Enter a password in the text box. This allows the user to specify a password when this utility is launched. By default there is no password. A password can consist of all standard keyboard characters.
Re-Enter Password	Carefully re-enter the password in the second text box.
Set Password	Tap the Set Password button to enable the password.
Restore Defaults	Tap the Restore Defaults button to reset the default values of all the functions on all the tabs. After you select this option, you will receive a prompt to verify this selection.



Alphanumeric characters used within a password should not be defined as Hot Keys.

Setting a Password

Set a password as follows:

1. Enter a password in the field. This allows the user to specify a password when this utility is launched. By default there is no password set.



Be sure to record the Password for future reference.

2. Re-enter the password in the second field.
3. Tap **Set Password** to enable the password.
4. Tap **OK** close **Set Password Confirmation**.



You must tap **Set Password** prior to exiting **FDU** in order to store and activate your new password. It is not necessary to select **Enable Falcon Desktop**.



If you tap **Restore Defaults** all custom settings will be removed and restored to the factory default settings, except a previously set password.

CAUTION

Changing a Password

Change to a new password by completing the steps below:

1. Enter a new value in the **Enter Password** field.
2. Re-enter the new value in the **Re-enter Password** field.
3. Tap **Set Password**.

Removing a Password

Remove a password by completing the steps below:

1. Enter blanks in both **Password** fields.
2. Tap **Set Password**.

Password Request Dialog Box

Once the password is set, the next time you open the **Falcon Desktop Utility**, the **FDU Password** dialog box opens.

This dialog box will only open if a password was defined.

Figure B-4. Setting a Password



Table B-3. Setting a Password

Command	Description
Enter Password	Enter your password using the keypad, or using the stylus on the soft input panel (SIP) in the text box.
OK	Tap the OK button to accept the password.
X	Select/tap the X button to cancel the specified Hot Key.

Complete the **Falcon Config Admin** dialog:

1. Enter your password using either the keypad on the unit, or using the stylus on the on-screen keyboard.
If you enter an incorrect password, the system will prompt you to input the correct one.
2. Tap **OK** to verify the password.

Setting Hot Keys

You can use the **Hot Keys (HKeys)** tab to associate specific keys, such as <F1>-<F10>, with specific applications. You can also create new **Hot Key** combinations (see "Adding a New Hot Key" on page B-10). Select the **HKeys** tab to access these options.



New and Delete options for Hot Keys are only available on the Falcon 4400 Series units.

For example, you could set <F2> to launch a sample application like:
`\Windows\pword.exe`.

Figure B-5. Hot Keys Tab

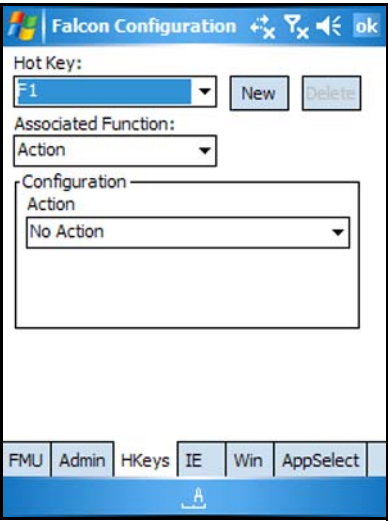


Table B-4. Hot Keys Tab

Command	Description
Hot Key	This drop-down list displays the available function keys to define. Select the desired one from the list.
New	Tap to specify a new Hot Key, not on the Hot Key list. This opens a new dialog, shown on page B-10.
Delete	Tap to delete the selected Hot Key . You can only delete the Hot Keys you have added. You cannot delete <F1> -<F10>.
Associated Function	This drop-down list displays the available functions. Select either Application or Action .

Command	Description
Action	Specify an action to associate with a Hot Key . This list includes: Toggle Taskbar, FDU Admin, and Application Switcher. This option is only available when Action is selected in the Associated Function drop-down list.

The **<F6>** is the key initially assigned to FDU Admin. If you wish to assign this key to a different function, you must first select an unassigned Hot Key and assign it to the Action - FDU Admin. You can then go back and reassign the **FKey** to something else.

Table B-5. Falcon Models/Hot Keys Available

Falcon 4400 Series		
26-key models	48-key models	52-key models
Alpha-numeric	Alt + Alpha-numeric	Alt + Alpha-numeric
F1-F19	Alt + F1-F10	Alt + F1-F20
	F1-F10	F1-F20
	Alpha-numeric	Alpha-numeric



The administrator is responsible for verifying that these keys don’t override existing functions. To prevent FDU Hot Keys from overriding existing application keys, select “No Action” in the Action combo box.

Adding a New Hot Key

When you select **New** on the **HKeys** tab, this opens the **Add New Hot Key** dialog box.

Complete the following steps to define a new **Hot Key**:

1. Enter the key combination to define a new Hot Key in the **Enter Key** textbox.
2. The **Note** displays important information indicating Hot Keys that should not be used.

Figure B-6. Add a New Hot Key Dialog

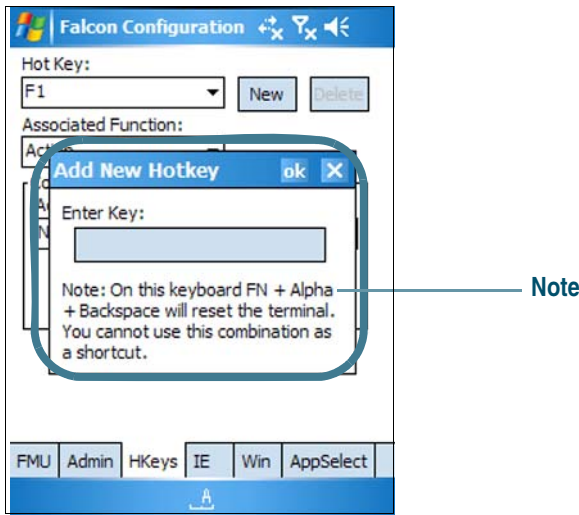


Table B-6. Adding a New Hot Key Dialog

Command	Description
Enter Key	Enter the desired key combination in this text box to define a Hot Key.
OK	Tap the OK button to add the specified Hot Key.
X	Tap the X button to cancel the specified Hot Key.



You cannot add a **Hot Key** that is already defined. If you attempt to do so, you will receive an error message.

3. Tap **OK** to save the **New Hot Key**. If you tap **X**, the key will not be saved.



CAUTION

It is possible for the keyboard wedge to activate assigned Hot Keys using alpha-numeric characters. Bar codes containing characters associated with assigned Hot Keys will trigger the action or application assigned to that Hot Key.

Internet Explorer Configuration

Tap the **IE** (Internet Explorer) tab to access the **IE Configuration** option. Use the **IE Error Redirection** option to provide customized recovery from common **IE** errors. When an error occurs, the browser can redirect access to a specified error page with instructions on how to recover from the problem.

Figure B-7. IE Configuration Tab / IE Window Features

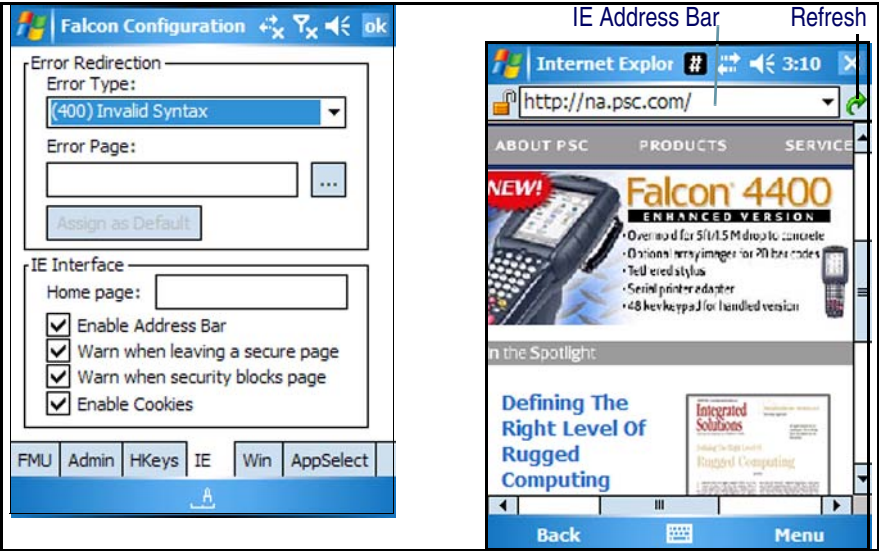



Table B-7. IE Tab Fields

Command	Description
Error Type	The Error Types drop-down list displays available IE Error Types : (400) Invalid Syntax, (403) Request Forbidden, (404) Object Not Found, (406) No Response Format, (410) Page Doesn't Exist, (500) Internal Server Error, (501) Server Can't Do That, Generic Error, Server Is Busy, Couldn't Find Server, URL Syntax Error, Request Cancelled, Not Available Offline
Error Page	Enter a URL for a website or html file with the specified error.
Browse Button	Tap  to browse for files.
Assign as Default	Tap to set a specified error page as the default. A confirmation dialog opens to ask if the default error page applies to all errors.
Home Page	Enter a URL to set for IE home page.

Command	Description
Enable Address Bar	Enable/disable visibility of the IE address bar.
Warn when leaving a secure page	Check to receive a security warning when you leave a secure web page.
Warn when security blocks page	Check to receive a warning when security blocks a web page.
Enable cookies	Select whether to allow cookies to be saved on your device.

Modifying Windows Controls

Tap the **Win** (Windows Controls) tab to access the **Windows Controls** option. Use Windows controls to allow or restrict access to Windows system functions.

You can disable normal Windows functions such as the taskbar, leaving nothing but a blank workspace. This allows applications to be run on the full screen and prevents users from accidental or unauthorized use of the taskbar, Internet Explorer, and any other resident applications.

Figure B-8.

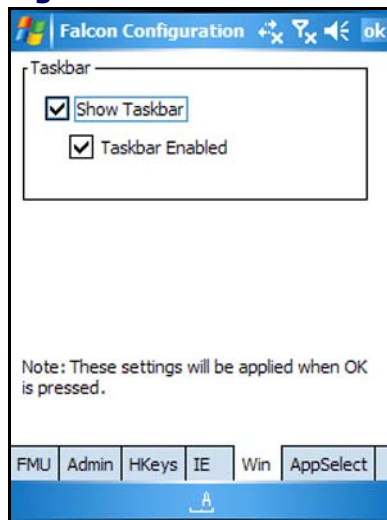


Table B-8. Win Tab Fields

Command	Description
Show Taskbar	Tap Show Taskbar to specify that the taskbar is shown or hidden.
Taskbar Enabled	Tap Taskbar Enabled to specify whether the taskbar is accessible. This option is only available when the Show Taskbar is checked.

Application Selector Setup

Use the **Application Selector** (AppSelect tab) function to edit, add, or delete applications for the application selector.

Figure B-9. AppSelect Tab

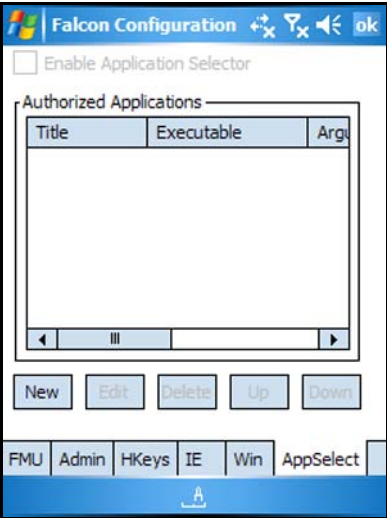


Table B-9. AppSelect Tab Fields

Command	Description
Enable Application Selector	Tap Enable Application Selector to enable/disable the application selector. When this is enabled, the Application Selector replaces the desktop and allows only authorized use of applications.
Authorized Applications	This is a list of applications that the user may access.
New	Tap New to create a new application entry.

Command	Description
Edit	Tap Edit to edit the selected entry.
Delete	Tap Delete to delete the selected entry.
Up/Down	Tap Up/Down to move an entry up or down in the listview.

Add Application

Add Application opens when you tap either **New** or **Edit**.

From **Add Application**, the administrator can configure and add or change a new application entry in the list.

Applications with **Run Application at Startup** enabled will start automatically when the **Application Selector** starts up.

Figure B-10. Add Application

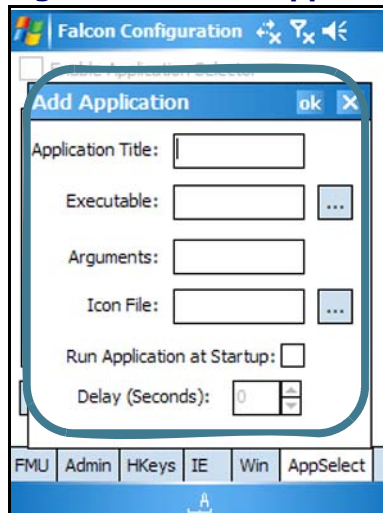




Table B-10. Add Application Fields

Command	Description
Application Title	Enter the name of the application in this textbox in the way you wish it to appear for the user.
Executable	Displays the path for the executable file which you want to run.
Browse Button	Tap  to browse for the desired executable file.

Command	Description
Arguments	Enter any command line arguments to be used when an application is executed.
Icon File	Displays the path/link to the desired icon file.
Browse Button	Tap  to browse for the desired icon file.
Run Application at Startup	Tap to force this application to auto start when the Application Selector starts up. Applications will be started in the order listed in the authorized application list.
Delay	Enter a delay duration in seconds in the combo box. This option delays auto start of application(s) to allow drivers to load prior to starting applications

Application Selector

The administrator can choose whether the user has access to the Today screen or not. The Application Selector can replace the Today screen and limit the user to the specified list of applications.

Figure B-11. Application Selector



The user taps the desired application to open it.

The administrator can customize this list as shown in "Application Selector Setup" on page [B-14](#).

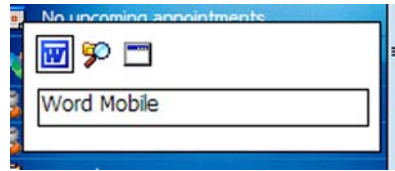
Application Switcher User Interface

The application switcher provides the same functionality as the standard Windows[®] Alt+Tab function. This allows the user to cycle through the various open applications.



The **<Esc>** key can be used to close the Application Switcher.

The application switcher is activated via an assigned **Action** key specified in the **Hot Key** tab. (Refer to "Setting Hot Keys" on page B-9.) When the assigned **Hot Key** is pressed, the dialog shown to the right will be displayed.



Press the **Hot Key** assigned to open the application switcher. Press the assigned **Hot Key** to cycle through the running applications when the dialog is open. Press **Enter** to switch to the selected application or **<Esc>** to close the application switcher.

NOTES

Appendix C

SNMP Interface

Overview

SNMP

SNMP (Simple Network Management Protocol) is the standard protocol for managing devices on a network. The Falcon Management Utility (FMU) makes use of SNMP to send and receive configuration information to the PSC terminals. Since the networked terminals are constantly running SNMP, this allows FMU to interface with the terminal at any time, without requiring user intervention on the terminal.

With SNMP running on the terminal, other SNMP based network management tools such as HP Openview[®] and CastleRock SNMPpc[®] may also be used to interface with the terminals. To support this capability, PSC has released the Management Information Base (MIB) for the PSC Windows-based terminals. The MIB is used by the management tools to allow them to better support the configuration values provided on the terminals, such as scanner controls and terminal type information.



The MIB is available at www.psc.com.

For more information on SNMP, go to: <http://www.microsoft.com>

SNMP Concepts

Simple Network Management Protocol (SNMP) is a standardized protocol for network management services using a client/server model. The network management program (client) issues queries and commands to the remote device (agent/server). The protocol itself defines a number of variable types and structures, and the rules for using them for data transfer. Using these variable types and rules, there are a number of standard variables that are supported by all SNMP agents. These standards include network addressing (IP address, subnet mask, etc.), and network statistics (total packets, bad packets, etc.).

FMU uses Simple Network Management Protocol (SNMP) to perform many of its functions. When the Terminal Configuration or Terminal Report function is selected, SNMP is used to query the Terminal for its current Configuration settings, as well as current status information such as battery status and memory usage. In the same function, SNMP is used to update Terminal Configuration settings when directed to. SNMP is also used by the FMU Servers to perform the automated Group Configuration update. The Server issues SNMP queries to discover the current Terminal Configuration, then uses SNMP commands to update any Configuration settings that need it.

MIB Files

A Management Information Base (MIB) is a file that defines a set of SNMP variables, their types and usage. There are a number of standard MIBs available, depending on the information being managed.

PSC MIBs

Beyond the standard values, SNMP allows manufacturers to define their own private MIBs. For example, PSC has been assigned an MIB by the Internet Assigned Numbers Authority that allows PSC to define SNMP values relating specifically to devices that we manufacture. Within the PSC MIB, several categories of values have been defined including scanner Configurations, Terminal power Configurations and Terminal network parameters.

The format of an MIB follows rules laid out in the appropriate standards, allowing the manufacturers of network management tools such as HP OpenView and CastleRock SNMPc to make use of the MIBs developed by manufacturers. So by following the procedures used by the management tool, the MIB can be processed by the tool allowing the proper display of SNMP values retrieved from the agent.

For example, if the PSC MIB is loaded into OpenView, the administrator can then view all of the values defined by PSC using the names assigned by PSC, as well as a brief explanation of what each value represents. This will also allow the administrator to update most values, and provides range checking information for the tool to take advantage of. The current PSC MIB can be found on the PSC website at www.psc.com in the Downloads area.

Additional Resources

Additional information on SNMP can be found at the following websites:

www.snmplink.org

www.snmpworld.com

www.simpleweb.com

NOTES

Appendix D

Cable & Connector Configurations

Introduction

The following pages contain information about standard interface cables for use in interconnecting the Dock to power and/or peripheral devices.

General Specifications

Wire Requirements

- Cable length should not exceed 15 feet.
- Wire gauge = Standard for RJ-45 connectors (28-26 AWG).

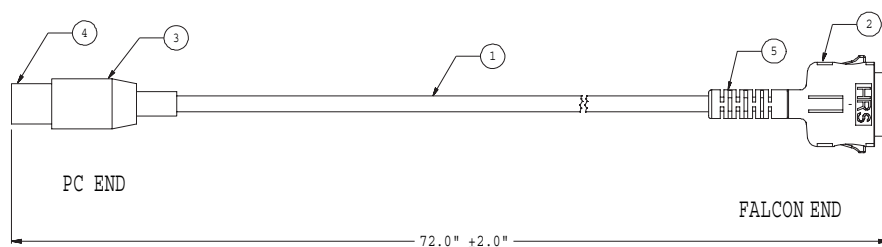
Supply Voltage

Current power supply voltage = 12V, 2.5 amp.

USB Cable

Figure D-1 on page [D-1](#) illustrates the connector configuration of the USB cable for the Falcon.

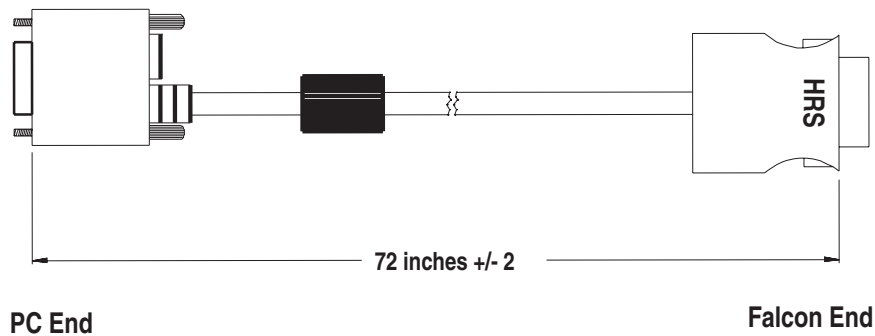
Figure D-1. USB Connector Configurations



Serial Cable

Figure D-2 illustrates the connector configuration of the Serial cable for the Falcon.

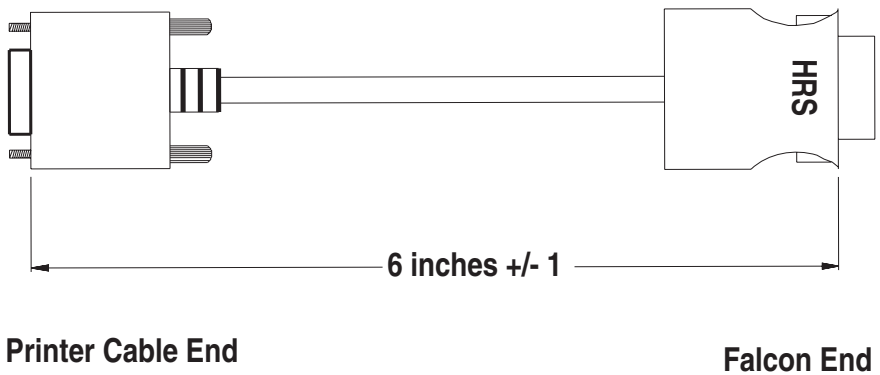
Figure D-2. Serial Connector Configurations



Printer Cable

Figure D-3 illustrates the connector configuration of the Printer cable for the Falcon.

Figure D-3. Printer Connector Configurations



Appendix E

Programming Parameters

Overview

This section contains information about programmable settings for the Falcon 4400 Windows Mobile Falcon. Use the Falcon Management Utility (FMU), the Scanner Control Panel applet, the Imaging or OCR Control Panel applets, or the bar codes provided in [Appendix F](#) to program the Falcon.

Table E-2 starting on page [E-3](#) provides the following information:

- **Code Parameter** is the “human” name for the programming option.
- **I.D. #** is the “decoder” name for the programming option. For example, to set a Code 39 minimum label length, use I.D. **0120**. Programming I.D. numbers given in this appendix can be used with all programming methods.
- **Type** tells what kind of setting to use for each code parameter.
- **On/Off** is a toggle. **1** turns the parameter on, and **0** turns it off.
- **Acceptable Input** gives the settings or range of settings for each code parameter.
- **Defaults** indicates how the parameter is set when the predefined default **FF39**, **FF3A**, or **FF3B** is selected.
 - **Minimum (FF39)** turns every on/off parameter off and sets all minimum and Maximum Label Lengths to the lowest values.
 - **Maximum (FF3A)** turns every on/off parameter on, sets all Minimum Label Lengths to the lowest values, and sets all Maximum Label Lengths to the highest values. Use this default for troubleshooting; it provides the best settings for reading an unknown bar code symbology and can identify the symbology of scanned bar codes.
 - **Factory (FF3B)** is the factory setting installed on the Falcon. This default set will work for most applications. To reset the Falcon to the original defaults, scan the **Factory** bar code on page [F-3](#).

- **Scanner Type** shows, with a checkmark, which modules support the specified parameter.

Programming Codes Without Parameters

The following table describes the functions of special bar codes that take no parameters:

Table E-1. Programming Codes Without Parameters

Code Parameter	I.D. #	Function
Defaults Minimum	FF39	Turns every On/Off parameter off and sets all minimum and Maximum Label Lengths to the lowest values.
Defaults Maximum	FF3A	Turns every On/Off parameter on and sets all minimum and Maximum Label Lengths to the highest values. This default set is normally used only for troubleshooting. It gives the best chance of reading an unknown bar code symbology and also identifies the symbology of each bar code scanned.
Defaults Factory	FF3B	This is the default parameter settings that was installed at the factory. This default set will work for most applications.
Defaults Registry	FF3C	This restores all parameter settings to the values that exist in the registry. This is useful for restoring parameters to a known working set of values which have been saved using code parameter FF3E .
Exit and Restore	FF3D	Stops a label programming sequence and restores all parameter settings to the values that exist in the registry.
Exit and Save	FF3E	Stops a label programming sequence. The last valid parameter settings are left intact.
Exit and Commit	FF3F	Stops a label programming sequence and writes all parameter settings into the registry. This can be used to save a customized set of parameter settings for restoring later via parameter FF3C .

Bar Code Parameters

The following table lists the standard customer programmable settings for the Falcon.

Table E-2. Programmable Standard Bar Code Settings

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Codabar			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Codabar symbology.	0 3 0 0	On or Off	Off	On	On	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 3 0 1	On or Off	Off	On	Off	✓	
Enable Checksum	Requires the use of checksum characters to verify a bar code.	0 3 0 2	On or Off	Off	Off	Off	✓	✓
Send Checksum	Instructs the terminal to include the checksum in the label transmission	0 3 0 3	On or Off	Off	Off	Off	✓	✓
Concatenate	Allows the decoder to retain and join together a series of specially formatted labels, and then send a single transmission of the entire result.	0 3 0 4	On or Off	Off	Off	Off		✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Send Start/ Stop	Instructs the decoder to transmit the decoded start and stop characters of Codabar labels. The start and stop characters will both be translated as A, B, C, or D.	0305	On or Off	Off	On	Off	✓	✓
Convert to CLSI	Restricts the Codabar decoder to only read labels that conforms to CLSI specifications. Label length must be 14, and the data is split into fields of 1, 4, 5, and 4 characters separated by spaces.	0306	On or Off	Off	Off	Off	✓	
Allow Wide Intercharacter Gaps	Allows wide gaps to appear between characters in a label.	0307	On or Off	Off	On	On	✓	
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0320	01 - 50	01	01	04	✓	✓
Maximum Label Length	This feature specifies the maximum allowable length of a Codabar label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0321	01 - 50	01	50	20	✓	✓
Read Verification	Sets the number of times a label must be read before it is transmitted.	0322	01 - 04	01	02	01	✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 3 2 3	Any single ASCII character (00 = Off)	'I'	'I'	'I'	✓	✓
Code 39 Enter 1 for On and 0 for Off.								
Enable	Enables/disables the Code 39 symbology.	0 1 0 0	On or Off	Off	On	On	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 1 0 1	On or Off	Off	On	Off	✓	
Enable Checksum	Requires the use of checksum characters to verify a bar code.	0 1 0 2	On or Off	Off	Off	Off	✓	✓
Send Checksum	Instructs the terminal to include the checksum in the label transmission.	0 1 0 3	On or Off	Off	Off	Off	✓	✓
Full ASCII Mode	Supports the entire ASCII character set by replacing various encoded ASCII characters with their corresponding ASCII equivalents.	0 1 0 5	On or Off	Off	On	On	✓	✓

Code Parameter/ Description		I. D. #	Accep- table Input	Defaults			Scanner Type	
				Min	Max	Fac- tory	Laser/ Linear Imager	2D Imag er
Concate- nate	Allows the decoder to retain and join together a series of specially formatted labels, and then send a single transmission of the entire result.	0 1 0 4	On or Off	Off	Off	Off		✓
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0 1 2 0	01 - 50	01	01	01	✓	✓
Maximum Label Length	This feature specifies the maximum allowable length of a Code 39 label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 1 2 1	01 - 50	01	50	20	✓	✓
Read Veri- fication	Sets the number of times a label must be read before it is transmit- ted.	0 1 2 2	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 1 2 3	Any single ASCII charac- ter (00 = Off)	'C'	'C'	'C'	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Code 93			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Code 93 symbology.	0400	On or Off	Off	On	Off	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0401	On or Off	Off	On	Off	✓	
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0420	01 - 50	01	01	02	✓	✓
Maximum Label Length	This feature specifies the maximum allowable length of a Code 93 label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0421	01 - 50	01	50	20	✓	✓
Read Verification	Sets the number of times a label must be read before it is transmitted.	0422	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0423	Any single ASCII character (00 = Off)	'L'	'L'	'L'	✓	✓

Code Parameter/ Description			I. D. #	Accep- table Input	Defaults			Scanner Type	
					Min	Max	Fac- tory	Laser/ Linear Imager	2D Imag er
Code 128			Enter 1 for On and 0 for Off.						
Enable	Enables/disables the Code 128 symbology.	0 4 0 8	On or Off	Off	On	On	✓	✓	
Enable Aggres- sive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 4 0 9	On or Off	Off	On	Off	✓		
Enable UCC/EAN-128	Instructs the decoder to recognize UCC-128 versions of Code 128 labels and process them differently by changing the Code ID, and replacing each occurrence of the FNC1 character with GS (ASCII 29) characters.	0 4 0 C	On or Off	Off	On	Off	✓	✓	
ISBT Con- catenation	Instructs the decoder to concate- nate Code 128 labels conforming to the ISBT 128 standard.	0 4 0 E	On or Off	Off	Off		✓	✓	
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0 4 2 4	01 - 50	01	01	02	✓	✓	
Maximum Label Length	This feature specifies the maximum allowable length of a Code 128 label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 4 2 5	01 - 50	01	50	20	✓	✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Read Verification	Sets the number of times a label must be read before it is transmitted.	0426	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0427	Any single ASCII character (00 = Off)	'K'	'K'	'K'	✓	✓
European Article Numbering-13 (EAN-13)			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the EAN-13 symbology.	0510	On or Off	Off	On	On	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0511	On or Off	Off	On	Off	✓	
Send Check Digit	Includes a check digit in the label which is transmitted.	0512	On or Off	Off	On	Off	✓	✓
Send System Digit	This instructs the decoder to include the system digit in the label transmission. For UPC-E, the system digit is zero.	0513	On or Off	Off	On	On	✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
Convert EAN-13 to ISBN	This instructs the decoder to identify ISBN labels and append the check digit (per ISBN guidelines) to the end of the label.	0 5 1 4	On or Off	Off	Off	Off	✓	
Convert EAN-13 to ISSN	This instructs the decoder to identify ISSN labels and append the check digit (per ISSN guidelines) to the end of the label.	0 5 1 5	On or Off	Off	Off	Off	✓	
Enable EAN 4-Digit Price/Weight Check Digit	Requires the use of a 4-digit price/weight check digit to verify a bar code.	0 5 1 6	On or Off	Off	Off	Off	✓	
Enable EAN 5-Digit Price/Weight Check Digit	Requires the use of a 4-digit price/weight check digit to verify a bar code.	0 5 1 7	On or Off	Off	Off	Off	✓	
Read Verification	Sets the number of times a label must be read before it is transmitted.	0 5 2 4	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 5 2 5	Any single ASCII character (00 = Off)	'M'	'M'	'M'	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
European Article Numbering-8 (EAN-8)			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the EAN-8 symbology.	0518	On or Off	Off	On	On	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0519	On or Off	Off	On	Off	✓	
Send Check Digit	Instructs the terminal to include the check digit in the label transmission.	051A	On or Off	Off	On	Off	✓	✓
Convert EAN-8 to EAN-13	Instructs the decoder to expand EAN-8 labels to their EAN-13 equivalents. Any EAN-13 parameters will then apply to the result.	051B	On or Off	Off	On	Off	✓	
Read Verification	Sets the number of times a label must be read before it is transmitted.	0526	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0527	Any single ASCII character (00 = Off)	'G'	'G'	'G'	✓	✓



Code Parameter/ Description		I. D. #	Accep- table Input	Defaults			Scanner Type	
				Min	Max	Fac- tory	Laser/ Linear Imager	2D Imag er
Interleaved 2 of 5			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Interleaved 2 of 5 symbology.	0 2 1 0	On or Off	Off	On	On	✓	✓
Enable Aggres- sive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 2 1 1	On or Off	Off	On	Off	✓	
Enable Checksum	Requires the use of checksum characters to verify a bar code.	0 2 1 2	On or Off	Off	Off	Off	✓	✓
Send Checksum	Instructs the terminal to include the checksum in the label transmission.	0 2 1 3	On or Off	Off	Off	Off	✓	✓
Enable Case Code	Restricts Interleaved 2 of 5 label lengths to only 6 and 14 data char-acters. Enabling this parameter overrides the minimum and maxi-mum length values.	0 2 1 4	On or Off	Off	Off	Off	✓	
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0 2 2 8	02 - 50	02	02	06	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Maximum Label Length	This feature specifies the maximum allowable length of a Interleaved 2 of 5 label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0229	02 - 50	02	50	10	✓	✓
Read Verification	Sets the number of times a label must be read before it is transmitted.	022A	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	022B	Any single ASCII character (00 = Off)	'B'	'B'	'B'	✓	✓
Matrix 2 of 5			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Matrix 2 of 5 symbology.	0208	On or Off	Off	On	Off	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0209	On or Off	Off	On	Off	✓	
Enable Checksum	Requires the use of checksum characters to verify a bar code.	020A	On or Off	Off	Off	Off	✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
Send Checksum	Instructs the terminal to include the checksum in the label transmission.	0 2 0 B	On or Off	Off	Off	Off	✓	
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0 2 2 4	01 - 50	01	01	06	✓	✓
Maximum Label Length	This feature specifies the maximum allowable length of a Matrix 2 of 5 label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 2 2 5	01 - 50	01	50	10	✓	✓
Read Verification	Sets the number of times a label must be read before it is transmitted.	0 2 2 6	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 2 2 7	Any single ASCII character (00 = Off)	'D'	'D'	'D'	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
MSI				Enter 1 for On and 0 for Off.				
Enable	Enables/disables the MSI symbol- ogy.	0 6 0 8	On or Off	Off	On	Off	✓	✓
Enable Aggres- sive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 6 0 9	On or Off	Off	On	Off	✓	
Require 2 Check Digits	An MSI label must contain 2 check digits.	0 6 0 A	On or Off	Off	Off	Off	✓	
Send Check Dig- its	This instructs the decoder to include any enabled check digit(s) in the label which is transmitted.	0 6 0 B	On or Off	Off	On	Off	✓	✓
2nd Check Digit Mod 11	Instructs the decoder to interpret any second MSI check digit as modulo 11 instead of modulo 10.	0 6 0 C	On or Off	Off	Off	Off	✓	
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	0 6 2 4	01 - 15	01	01	04	✓	✓
Maximum Label Length	This feature specifies the maximum allowable length of an MSI label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 6 2 5	01 - 15	01	15	10	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
Read Verification	Sets the number of times a label must be read before it is transmitted.	0 6 2 6	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 6 2 7	Any single ASCII character (00 = Off)	'H'	'H'	'H'	✓	✓
Pharmacode 39 (Code 32)			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Pharmacode 39 (Code 32) symbology.	0 1 1 0	On or Off	Off	On	Off	✓	✓
Send Checksum	Instructs the terminal to include the checksum in the label transmission.	0 1 1 2	On or Off	Off	Off	Off	✓	
Send Start/ Stop	Instructs terminals to prefix a Pharmacode 39 label with an "A" prior to transmission.	0 1 1 3	On or Off	Off	On	Off	✓	
User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 1 2 7	Any single ASCII character (00 = Off)	'Y'	'Y'	'Y'	✓	✓

Code Parameter/ Description			I. D. #	Acceptable Input	Defaults			Scanner Type	
					Min	Max	Factory	Laser/ Linear Imager	2D Imager
RSS-14				Enter 1 for On and 0 for Off.					
RSS-14 Enable	Enables/disables the RSS-14 symbology.	0800	On or Off	Off	On	On		✓	
RSS-14 to UCC-EAN 128	Instructs the decoder to transmit the label data as one or more UCC-128 labels. The transmission will use the UCC-128 AIM identifier.	0804	On or Off	Off	On	Off		✓	
	If RSS-14, RSS-Expanded, RSS-Limited, or RSS-Composite symbologies are enabled for UCC-EAN 128, then that setting is also enabled for all other RSS symbologies.								
NOTE: For the 2D Imager, RSS-Expanded User Code ID is used for RSS-14									
RSS Limited				Enter 1 for On and 0 for Off.					
RSS Limited Enable	Enables/disables the RSS Limited symbology.	0808	On or Off	Off	On	On		✓	
RSS Limited to UCC-EAN 128	Instructs the decoder to transmit the label data as one or more UCC-128 labels. The transmission will use the UCC-128 AIM identifier.	080C	On or Off	Off	On	Off		✓	
	If RSS-14, RSS-Expanded, RSS-Limited, or RSS-Composite symbologies are enabled for UCC-EAN 128, then that setting is also enabled for all other RSS symbologies.								
NOTE: For the 2D Imager, RSS-Expanded User Code ID is used for RSS-Limited									

Code Parameter/ Description			I. D. #	Accep- table Input	Defaults			Scanner Type	
					Min	Max	Fac- tory	Laser/ Linear Imager	2D Imag er
RSS Expanded				Enter 1 for On and 0 for Off.					
RSS Expanded Enable	Enables/disables the RSS Expanded symbology.	0 8 1 0	On or Off	Off	On	On		✓	
RSS Expanded to UCC- EAN 128	Instructs the decoder to transmit the label data as one or more UCC- 128 labels. The transmission will use the UCC-128 AIM identifier.	0 8 0 4	On or Off	Off	On	Off		✓	
RSS Expanded Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0 8 2 4	1 - 74	1	74	1		✓	
RSS Expanded Maximum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 8 2 5	1 - 74	1	74	74		✓	
RSS Expanded User Code ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 8 2 7	Any single ASCII charac- ter (00 = Off)	‘R’	‘R’	‘R’		✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Standard 2 of 5			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Standard 2 of 5 symbology.	02000	On or Off	Off	On	Off	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	02001	On or Off	Off	On	Off	✓	
Enable Checksum	Requires the use of checksum characters to verify a bar code	02002	On or Off	Off	Off	Off	✓	
Send Checksum	Instructs the terminal to include the checksum in the label transmission.	02003	On or Off	Off	Off	Off	✓	
Use 2-bar Start/Stop	Allows the terminal to recognize labels that are printed using only two bars for start/stop characters.	02004	On or Off	Off	Off	Off	✓	✓
Minimum Label Length	Set the minimum label length to be less than or equal to maximum label length.	02200	01 - 50	01	01	06	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
Maximum Label Length	This feature specifies the maximum allowable length of a Standard 2 of 5 label. The length includes check and data characters. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 2 2 1	01 - 50	01	50	10	✓	✓
Read Verification	Sets the number of times a label must be read before it is transmitted.	0 2 2 2	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. <u>ASCII</u> code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 2 2 3	Any single ASCII character (00 = Off)	'F'	'F'	'F'	✓	✓
Trioptic			Enter 1 for On and 0 for Off.					
Enable	Enables/disables the Trioptic symbology.	0 1 0 8	On or Off	Off	On	Off	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 1 0 9	On or Off	Off	On	Off	✓	
Read Verification	Sets the number of times a label must be read before it is transmitted.	0 1 2 4	01 - 04	01	02	01	✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology	0 1 2 5	Any single ASCII character (00 = Off)	'X'	'X'	'X'	✓	✓
Universal Product Code-A (UPC-A)		Enter 1 for On and 0 for Off.						
Enable	Enables/disables the UPC-A symbology.	0 5 0 0	On or Off	Off	On	On	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 5 0 1	On or Off	Off	On	Off	✓	
Send Check Digit	Includes check digit in the label which is transmitted.	0 5 0 2	On or Off	Off	On	Off	✓	✓
Send System Digit	Includes the system digit in the label transmission. For UPC-A, the system digit is always zero.	0 5 0 3	On or Off	Off	On	On	✓	✓
Convert UPC-A to EAN-13	Instructs the decoder to expand UPC-A labels to their EAN-13 equivalents. Any EAN-13 parameters will then apply to the result.	0 5 0 4	On or Off	Off	On	Off	✓	

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
Read Veri- fication	Sets the number of times a label must be read before it is transmitted.	0 5 2 0	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 5 2 1	Any single ASCII character (00 = Off)	'A'	'A'	'A'	✓	✓
Universal Product Code-E (UPC-E)			Enter 1 for On and 0 for Off.					
Enable System Digit 0	Enables/disables UPC-E labels with a system digit of zero.	0 5 0 8	On or Off	Off	On	On	✓	✓
Enable Aggressive Decoding	Enables more aggressive decoding algorithms to be used in order to scan hard to read labels.	0 5 0 9	On or Off	Off	On	Off	✓	
Send Check Digit	Includes the check digit in the label which is transmitted.	0 5 0 A	On or Off	Off	On	Off	✓	✓
Send System Digit	This instructs the decoder to include the system digit in the label transmission. For UPC-E, the system digit is zero.	0 5 0 B	On or Off	Off	On	Off	✓	✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imag er
Convert UPC-E to UPC-A	Instructs the decoder to expand UPC-E labels to their UPC-A equivalents. Any UPC-A parameters will then apply to the result.	050C	On or Off	Off	On	Off	✓	✓
Read Verification	Sets the number of times a label must be read before it is transmitted.	0522	01 - 04	01	02	01	✓	
User ID	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0523	Any single ASCII character (00 = Off)	'E'	'E'	'E'	✓	✓
UPC/EAN Extensions			Enter 1 for On and 0 for Off.					
Enable 2-Digit Extensions	Requires a 2 digit extension (supplemental label) to be verified for a successful decode of a label.	051C	On or Off	Off	On	On	✓	✓
Enable 5-Digit Extensions	Requires a 5 digit extension (supplemental label) to be verified for a successful decode of a label.	051D	On or Off	Off	On	On	✓	✓
Enable Code 128 Extensions	Enables/disables Code 128 extensions.	051E	On or Off	Off	On	On		✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Require Extensions	Instructs the decoder to require any enabled UPC/EAN extensions (supplemental labels) to be with a label in order for a scan to be successful.	051F	On or Off	Off	Off	Off	✓	✓
Read Verification	Sets the number of times an extension (supplemental label) must be read before it is included in the transmission of the base UPC/EAN label.	0528	01 - 04	01	01	01	✓	

Table E-3. Programmable 2D Symbolologies

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Aztec Code			Enter 1 for On and 0 for Off.					
Aztec Code Enable	Enables/disables the Aztec symbology.	0B18	On or Off	Off	On	On		✓
Enable Aztec Runes	Enables/disables Aztec runes, which are the smallest type of Aztec Code symbol with the ability to encode a very short message.	0B1A	On or Off	Off	On	Off		✓
Aztec Code Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0B2C	1 - 3750	1	3750	1		✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Aztec Code Maximum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 B 2 D	1 - 3750	1	3750	3750		✓
Aztec Code User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 B 2 F	Any single ASCII character (00 = Off)	'd'	'd'	'd'		✓
DataMatrix			Enter 1 for On and 0 for Off.					
Datamatrix Enable	Enables/disables the Datamatrix symbology.	0 B 0 0	On or Off	Off	On	On		✓
Datamatrix Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0 B 2 0	1 - 1500	1	1500	1		✓
Datamatrix Maximum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 B 2 1	1 - 1500	1	1500	1500		✓

Code Parameter/ Description		I. D. #	Accept able Input	Defaults			Scanner Type	
				Min	Max	Fac-tory	Laser/ Linear Imager	2D Imag er
Datama-trix User Code ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 B 2 3	Any sin-gle ASCII character (00 = Off)	‘V’	‘V’	‘V’		✓
Composite			Enter 1 for On and 0 for Off.					
Compos-ite Enable	Enables/disables the Composite symbology.	0 A 1 0	On or Off	Off	On	Off		✓
Compos-ite to UCC/EAN-128	Instructs the decoder to transmit the label data as one or more UCC-128 labels. The transmission will use the UCC-128 AIM identifier.	0 A 1 4	On or Off	Off	Off	Off		✓
Compos-ite Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0 A 2 8	1 - 2435	1	2435	1		✓
Compos-ite Maxi-mum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 A 2 9	1 - 2435	1	2435	2435		✓

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
Composite User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 A 2 B	Any single ASCII character (00 = Off)	'b'	'b'	'b'		
NOTE: For the 2D Imager, RSS-Expanded User Code ID is used for Composite								
Maxicode			Enter 1 for On and 0 for Off.					
Maxicode Enable	Enables/disables the Maxicode symbology.	0 B 0 8	On or Off	Off	On	On		✓
Minimum Label Length	Set the minimum bar code label length to be less than or equal to maximum label length.	0 B 2 4	1 - 138	1	138	1		✓
Maxicode Maximum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 B 2 5	1 - 138	1	138	138		✓
Maxicode User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 B 2 7	Any single ASCII character (00 = Off)	'W'	'W'	'W'		✓

Code Parameter/ Description		I. D. #	Accept able Input	Defaults			Scanner Type	
				Min	Max	Fac- tory	Laser/ Linear Imager	2D Imag er
OCR	Also see "OCR Configuration" on page E-37		Enter 1 for On and 0 for Off.					
OCR Font	Selects which OCR font (if any) the decoder will be allowed to read with an imager	0 C 2 2	0 (None), 1 (OCR-A), 2 (OCR-B), 3 (U.S. Currency), 4 (MICR E 13 B)	0	0	0		✓
OCR Enable Mod 36 Check Digit	Enables use of an OCR Mod 36 check digit in a template.	0 C 0 2	On or Off	Off	On	Off		✓
OCR Check Digit Mod 36	Specifies check digit type: 0 Mod 10, 1 Mod 32	0 C 0 3	0 or 1	Off	Off	Off		✓
OCR User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 C 2 1	Any single ASCII character (00 = Off)	'e'	'e'	'e'		✓
PDF 417			Enter 1 for On and 0 for Off.					

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults			Scanner Type	
				Min	Max	Factory	Laser/ Linear Imager	2D Imager
PDF-417 Enable	Enables/disables the PDF 417 symbology.	0 A 0 0	On or Off	Off	On	On		✓
PDF-417 Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0 A 2 0	1 - 2710	1	2710	1		✓
PDF-417 Maximum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 A 2 1	1 - 2710	1	2710	2710		✓
PDF-417 User Code ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 A 2 3	Any single ASCII character (00 = Off)	'S'	'S'	'S'		✓
MicroPDF 417			Enter 1 for On and 0 for Off.					
MicroPDF-417 Enable	Enables/disables the MicroPDF 417 symbology.	0 A 0 8	On or Off	Off	On	Off		✓
MicroPDF-417 Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0 A 2 4	1 - 366	1	366	1		✓

Code Parameter/ Description		I. D. #	Accept able Input	Defaults			Scanner Type	
				Min	Max	Fac-tory	Laser/ Linear Imager	2D Imag er
MicroPDF-417 Maxi-mum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 A 2 5	1 - 366	1	366	366		✓
MicroPDF-417 User Code ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 A 2 7	Any single ASCII character (00 = Off)	'a'	'a'	'a'		✓
QR Code			Enter 1 for On and 0 for Off.					
QR Code Enable	Enables/disables QR Code symbology.	0 B 1 0	On or Off	Off	On	Off		✓
QR Code Minimum	Set the minimum bar code label length to be less than or equal to maximum label length.	0 B 2 8	1 - 3500	1	3500	1		✓
QR Code Maximum	This feature specifies the maximum allowable length of a label. The length includes check and data characters, if applicable. Maximum Label Length should be greater than or equal to Minimum Label Length.	0 B 2 9	1 - 3500	1	3500	3500		✓

Code Parameter/ Description		I. D. #	Accept able Input	Defaults			Scanner Type	
				Min	Max	Fac- tory	Laser/ Linear Imager	2D Imag er
QR Code User ID	Specifies the symbology identifier (if any) that is sent when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) is used to indicate that an identifier is not to be sent for the symbology.	0 B 2 B	Any single ASCII character (00 = Off)	'c'	'c'	'c'		✓

Table E-4. Imaging Controls

Code Parameter/ Description		I. D. #	Accep- table Input	Defaults		
				Min	Max	Factory
Imaging Controls			Enter 1 for On and 0 for Off.			
Imager Illu- minate Enable	Instructs the PDT to illuminate the scanning area (independent of any targeting beam) when using an imager.	0 0 0 8	On or Off	On	On	On
Imager Aim Mode	Toggles between two different operating modes for the targeting beam: Concurrent (Off): The targeting beam is turned on at the same time as an enabled illumination beam. Interlaced (On): Toggles the aimer and illu- mination beam.	0 0 0 9	On or Off	On	On	On
Imager Aim Enable	Instructs the PDT to make use of a target- ing beam when an imager is installed	0 0 0 A	On or Off	On	On	On
Image LED Enable	Instructs the imager to use LED illumination when taking images.	0 C 0 8	On or Off	Off	Off	Off
Image LR Fil- ter Enable	Instructs the imager to use a filter that improves the quality of images taken at longer distances.	0 C 0 9	On or Off	Off	Off	Off
Imaging Width	Specifies the width of images taken with an imager	0 C 2 3	1 to 640 (in pix- els)	640	640	640
Imaging Height	Specifies the height of images taken with an imager.	0 C 2 4	1 to 480 (in pix- els)	480	480	480

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults		
				Min	Max	Factory
Imaging Rotation	Specifies how much the imager will rotate images it takes.	0 C 2 5	0 to 3 (0 to 270 degrees in 90 degree increments)	0	0	0
Imaging Scale	Specifies how much the imager is to scale images it takes. It is the percentage of the original image that is used to create the final image. Scales the x,y dimensions of the image.	0 C 2 6	0 = 100% 1 = 50% (1/4 size) 2 = 33% (1/9 size) 3 = 25% (1/16 size)	0	0	0
Imaging Format	Specifies the storage format an imager will use when taking images. 0 (TIFF monochrome) 1 (TIFF 8 bit grayscale) 2 (JPEG 8 bit grayscale) 3 (BMP monochrome) 4 (BMP 8 bit grayscale)	0 C 2 7	0 to 4	2	2	2
Imaging Brightness	Specifies the brightness level an imager will use when taking images	0 C 2 8	0 to 99 (low to high)	50	50	50
Imaging Edge Sharpness	Specifies how much (if at all) an imager will attempt to sharpen edges in images it takes.	0 C 2 9	0 (off), 1 to 99 (dull to sharp)	0	0	0

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults		
				Min	Max	Factory
JPEG Imaging Quality	Specifies the level of quality an imager will use when taking images. Lower levels result in images which have greater levels of lost detail, but have smaller storage requirements and transmit faster.	0 C 2 A	0 to 99 (lower to higher)	50	99	99
Imaging Gamma Correction	Specifies the amount of correction the imager applies when taking images. Gamma correction attempts to match the way the imager responds to light levels to that of the human eye.	0 C 2 B	0 (none), 1 to 99 (less to more)	0	0	0

Table E-5. Other Controls

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults		
				Min	Max	Factory
Other Controls			Enter 1 for On and 0 for Off.			
Enable Label Programming	Enables/disables the ability to perform label programming.	F F 0 0	On or Off	On	On	On
Beeper Volume	Adjusts the beeper volume.	F F 2 0	00 = Off 00 - 09 (01 = Lowest; 07 = Highest; 08 = Higher; 09 = Lower)	07	07	07
Long Range Trigger Mode	Selects the Long Range Trigger mode.	0 0 0 0	On = Release Scan Off = Spot Timeout	Off	Off	Off

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults		
				Min	Max	Factory
Spotting Beam Enable	Enables/disables the Spotting Beam	0 0 0 1	On or Off	On	On	On
Spotting Beam Timeout	Sets the duration of the spotting beam before it automatically turns off.	0 0 2 3	00 = 0.25 sec. 01 = 0.5 sec. 02 = 1.0 sec. 03 = 1.5 sec. 04 = 2.0 sec.	01	01	01
Release Scan Timeout	Sets the duration of the scan before it turns off.	0 0 2 4	1-10	02	02	02
Number of Good-Read Beeps	Determines the number of beeps for a good read indicator.	0 0 2 0	01 - 04	01	01	01
Good-Read Beep Tone	Adjusts the pitch of the beeper frequency.	0 0 2 1	00 - 07 (00 = Lowest; 07 = Highest)	00	00	00
Good-Read Beep Duration	Determines the duration of a good read beep.	0 0 2 2	00 = 0.07 sec. 01 = 0.13 sec. 02 = 0.18 sec. 03 = 0.36 sec.	00	00	00
Send Symbol- ogy Identifiers	Specifies the symbology identifier (if any) that is sent by the decoder when parameter Send Code ID (Index 0025) is set to 3. ASCII code zero (null) used to indicate an identifier not to be sent for the symbology.	0 0 2 5	00 = Off 01 = PSC IDs* 02 = AIM IDs 03 = User IDs	00	01	00

Code Parameter/ Description		I. D. #	Acceptable Input	Defaults		
				Min	Max	Factory
Label Prefix	Indicates a label prefix.	0026	Any single ASCII character (00 = Off)	None	None	None
Label Suffix	Indicates a label suffix.	0027	Any single ASCII character (00 = Off)	CR	CR	CR

Table E-6. PSC Label IDs

PSC Label IDs		
UPC-A = A	Code 128 = K	Trioptic = X
UPC-E = E	I 2 of 5 = B	Pharmacode 39 = Y
EAN-8 = G	S 2 of 5 = F	RSS-14 = P
EAN 13 = M	M 2 of 5 = D	RSS Limited = Q
Code 39 = C	Code 93 = L	RSS Expanded = R
Codabar = I	MSI = H	

OCR Configuration

The Falcon provides limited support for OCR configuration. OCR configuration is performed with a combination of PDT parameters and registry settings. For purposes of configuration, OCR is considered one symbology. Only one font can be active at a time.

OCR Data Output

OCR data is outputted to the system as though it were bar code data. Characters of the OCR fonts are outputted as printed. Only A-Z, 0-9 are supported.

The maximum number of OCR rows is three. The maximum number of characters per row is 16. This means that the overall maximum number of OCR characters is 48 characters.

Check digits are not outputted with OCR data. See "OCR Check Characters" starting on page [E-42](#) for more information.

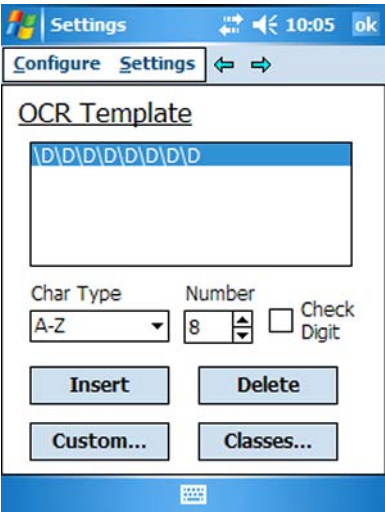
OCR Templates

You can specify a null-terminated string that defines the length and content of OCR strings that can be read. This string can be used to specify a single template or multiple templates that are concatenated together. You can also stipulate two template variables that specify a configurable class of characters.

By default, a single template is defined that allows for any 8-digit OCR string to be read.

The list box displays templates, with each list item displayed as a one-line string.

- Use the Char Type spin box to select allowable characters.
- Use the Number to set length.
- Select/deselect the Check Digit checkbox.
- Tap the “Add” button to add a new list item that conforms to the three controls above this button.
- Tap “Delete” to remove the selected item from the list box.
- Tap “Custom” to add a template that does not match a standard. See Table E-7 on page E-39.



Printable template characters (0x20 – 0x7E) are represented by themselves, and template control characters are printed according to template characters shown in Table E-7 on page E-39.



Template separator characters are not printed; templates are displayed as separate list items.

Building a Single Template

A template allows you to specify the format of an OCR string that can be read. The imager will only decode OCR strings that match a specified template. This template can be made up of any combination of characters that are specified in Table E-7. The “Character” column shows what is entered into Custom to make a custom template. The one exception is the check digit character (0x03). See "OCR Check Characters" starting on page E-42 for more information about OCR check digit.

Table E-7. Template Characters

Character	Hex	Description
\A or \a	0x01	Represents any letter or number (A-Z, 0-9)
\C or \c	0x03	Represents a check digit
\D or \d	0x04	Represents any digit (0-9)
\E or \e	0x05	Represents any font character (A-Z, 0-9)
\G or \g	0x06	Custom character class 1 variable
CTL-H	0x07	Custom character class 2 variable
\R or \r	0x0A	Represents start of new template
\L or \l	0x0C	Represents any upper case character (A-Z)
\N or \n	0x0D	Represents the start of a new row
SP to '7E'	0x20 to 0x7E	These characters represent themselves

Template examples can be found in [Table E-8](#). Template characters are shown in hexadecimal format with spaces used as character delineators. The sample column shows an example of an OCR string that matches the template format.

Table E-8. Single Template Examples

Template (HEX)	Sample	Description
04 04 04 04 04 04 04 04	24 351332	A string of any 8 digits.
04 04 04 41 42 43 04 04 04	552ABC523	A string starting with any 3 digits, followed by "ABC", ending with any 3 digits
05 05 05 20 05 04 04 04	AA2 A142	A string starting with any 3 digits, followed by a space, followed by any character, and ending with any 3 digits.
04 04 04 04 04 04 04 03	121212122	A string of any 8 digits with check digit.

Multiple Rows

A single template can specify up to three rows. The \N character is used to delineate the start of a new row. [Table E-9](#) gives some examples of multiple row templates.

Table E-9. Multiple Row Template Examples

Template (HEX)	Sample	Description
04 04 04 04 04 04 04 04 0D 0C 0C 0C 0C 0C 0C 0C 0C 0C	55223311 ABCDEFGH	A string with one row of 8 digits and one row of 8 upper case letters
41 05 05 05 05 0D 42 05 04 0D 43 04 04 04 04	A1B 4 B23 C2345	A string with one row starting with an “A” and ending with any 4 characters, one row starting with a “B” and ending with 2 digits, and one row starting with a “C” and ending with 4 digits.
41 0D 42 0D 43	A B C	A string with three rows, the first being “A”, the second being “B”, and the last being “C”.

Multiple Templates

Multiple templates can be created by concatenating templates together. The \R character is used to concatenate templates. When this character is present it signifies that the next characters specify a new template. Logically the \R character is an OR statement meaning that if an OCR string matches any of the specified templates it will be read. Any number of templates can be concatenated as long as the total number of template characters is no greater than 128. [Table E-10](#) shows some examples of multiple templates.

Table E-10. Multiple Template Examples

Template (HEX)	Sample	Description
04 04 04 04 0C 0C 04 04 0A 04 04 04 04 04 04 04 04	24 351332 or 24 35C032	A string starting with any 4 digits, followed by any 2 upper case letters, ending with 2 digits. OR A string of any 8 digits.
05 05 0A 05 05 05 05 0A 05 05 05 05 05 05	BC or A24 or H34232	A string of any 2 characters. OR A string of any 4 characters. OR A string of any 6 characters.
04 04 04 04 03 0D 04 04 04 04 03 0D 04 04 04 04 03 0A 05 05 05 05 0D 04 04 04 04	12331 43355 23145 or E51C 5345	A string with 3 rows with each row having any 4 digits and a check character. OR Two strings, the first having any 4 characters, and the second having any 4 digits.

Custom Character Classes

A custom character class (CCC) is a string of up to 50 printable characters that is associated with a template variable. When a template variable is specified in a template only characters in the associated CCC string will be allowed in the specified character position. The variable \G is associated with custom character class 1 (CCC1) and the variable \H is associated with custom character class 2 (CCC2). [Table E-11](#) gives some examples of how CCCs are used. The CCC strings must specify at least one character for the associated variable to be used in a template.

Table E-11. Custom Character Class Examples

Template (HEX)	CCC1	CCC2	Sample	Description
06 06 06 06 06 06	AB	N/A	ABAABB	A string of 6 characters where each character is either “A” or “B”.
06 06 06 07 07 07	AB	CDE12	BAALED	A string starting with 3 characters that can be any combination of “A” and “B”, and ending with 3 characters that can be any combination of “C”, “B”, “E”, “1”, or “2”.
06 06 06 07 07 07	AB	NULL	N/A	Error, CCC2 not defined.
07 4D 06 04 05	BDA1	12	2MD1C	A string starting with “1” or “2”, followed by “M”, followed by either “B”, “D”, “A”, or “1”, followed by any character.

OCR Check Characters

OCR can be configured to use either a Modulo 10 or Modulo 36 check digits using the PDT parameters. A check digit is used to verify the contents of a bar code by calculating the total of the data. By default, OCR is configured to use Modulo 10 check digits. This setting is global to all check digits. The following must be true for the placement of a check digit to be considered valid:

- The check digit must be put at the end of a row.
- There can be no more than 1 check character in a row.
- Rows with check digits can only have the characters 0-9 and A-Z.

Modulo 10 Check Digit

Modulo 10 allows you to set a check digit for the numbers 0 through 9, with values corresponding to the numbers.

The general formula for calculating a Modulo 10 check digit is as follows:

$$(d_n + \dots + d_3 + d_2 + d_1 + d_0) \text{ modulo } 10 = 0$$

Modulo 10 Example

1212121212

$$(1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 + 1 + 2 + x) \text{ modulo } 10 = 0$$

$$(15 + x) \text{ modulo } 10 = 0$$

$$(15 + 5) \text{ modulo } 10 = 0$$

x = 5, so the check digit would be 5.

The final string including the check digit would be 12121212125.

Modulo 36

Modulo 36 allows you to set a check digit for the characters 0 - 9 and A -Z. The numbers correspond to the values just as in Modulo 10 and the values for alphabetic characters start at 10 for A and end with Z at 35, as shown in [Table E-12](#).

Table E-12. Modulo 36 character values

A	B	C	D	E	F	G	H	I
10	11	12	13	14	15	16	17	18
J	K	L	M	N	O	P	Q	R
19	20	21	22	23	24	25	26	27
S	T	U	V	W	X	Y	Z	
28	29	30	31	32	33	34	35	

The general formula for calculating a Modulo 36 check digit is as follows:

$$(d_n + \dots + d_3 + d_2 + d_1 + d_0) \text{ modulo } 36 = 0$$

Modulo 36 Example

ABCD123

A **B** **C** **D** **1** **2** **3**
(10 + 11 + 12 + 13 + 1 + 2 + 3 + x) modulo 36 = 0

(52 + x) modulo 36 = 0

(52 + 20) modulo 36 = 0

x = 20, so using the value from Table E-12, the check digit would be K. The final string including the check digit would be ABCD123K.

Table E-13. ASCII/Hex Conversion Table

ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex
NUL	00	SP	20	@	40		60
SOH	01	!	21	A	41	a	61
STX	02	"	22	B	42	b	62
ETX	03	#	23	C	43	c	63
EOT	04	\$	24	D	44	d	64
ENQ	05	%	25	E	45	e	65
ACK	06	&	26	F	46	f	66
BEL	07	&	26	G	47	g	67
BS	08	(	28	H	48	h	68
HT	09	)	29	I	49	i	69
LF	0A	*	2A	J	4A	j	6A
VT	0B	+	2B	K	4B	k	6B
FF	0C	,	2C	L	4C	l	6C
CR	0D	-	2D	M	4D	m	6D
SO	0E	.	2E	N	4E	n	6E
SI	0F	/	2F	O	4F	o	6F
DLE	10	0	30	P	50	p	70
DC1	11	1	31	Q	51	q	71
DC2	12	2	32	R	52	r	72
DC3	13	3	33	S	53	s	73
DC4	14	4	34	T	54	t	74
NAK	15	5	35	U	55	u	75
SYN	16	6	36	V	56	v	76

ASCII	Hex	ASCII	Hex	ASCII	Hex	ASCII	Hex
ETB	17	7	37	W	57	w	77
CAN	18	8	38	X	58	x	78
EM	19	9	39	Y	59	y	79
SUB	1A	:	3A	Z	5A	z	7A
ESC	1B	;	3B	[	5B	{	7B
FS	1C	<	3C	\	5C	|	7C
GS	1D	=	3D	]	5D	}	7D
RS	1E	>	3E	^	5E	~	7E
US	1F	?	3F	_	5F	DEL	7F

NOTES

Appendix F

Programming Bar Codes

Overview

This appendix provides bar codes for common setup parameters for programming the Falcon 44xx. Factory default settings are underlined.

To make settings that are not provided in the chapter, you can design custom bar codes or use the Falcon Management Utility (FMU) to program the Falcon. Refer to Configuration Settings, on page [2-1](#).

1D Symbolologies

Symbolologies and bar code setup parameters included in this appendix are:

- "Predefined Defaults" on page [F-3](#).
- "Codabar" starting on page [F-3](#).
- "Code 39" starting on page [F-5](#).
- "Code 93" starting on page [F-8](#).
- "Code 128" on page [F-10](#).
- "EAN-13" starting on page [F-12](#).
- "EAN-8" on page [F-14](#).
- "Interleaved 2 of 5" on page [F-15](#)
- "Matrix 2 of 5" on page [F-17](#)
- "MSI" starting on page [F-19](#).
- "Pharmacode 39 (Code 32)" on page [F-21](#).
- "RSS-14" on page [F-21](#).
- "RSS Limited" on page [F-22](#).
- "RSS Expanded" on page [F-22](#).
- "Standard 2 of 5" starting on page [F-24](#).
- "Trioptic" on page [F-26](#).
- "UPC-A" starting on page [F-26](#).

- "UPC-E" on page [F-28](#).
- "UPC/EAN Extensions" on page [F-29](#).

2D Symbolgies

- "Aztec Code" starting on page [F-30](#).
- "DataMatrix" starting on page [F-32](#).
- "Composite" starting on page [F-34](#).
- "Maxicode" starting on page [F-36](#).
- "OCR" on page [F-38](#).
- "PDF-417" starting on page [F-39](#).
- "MicroPDF-417" starting on page [F-41](#).
- "QR Code" starting on page [F-43](#).
- "Other Controls" starting on page [F-45](#).



Depending on which Falcon model you have, some programming parameters may not be available on your unit. Refer to Table E-2 on page [E-3](#) and Table E-3 on page [E-24](#) for specific details on which parameters are applicable.

Predefined Defaults

Minimum



* / / F F 3 9 F F 3 F *

Registry



* / / F F 3 C F F 3 F *

Maximum



* / / F F 3 A F F 3 F *

Restore From Registry



* / / F F 3 D *

Factory



* / / F F 3 B F F 3 F *

Save To Registry



* / / F F 3 F *

Codabar

ENABLE

O
n



* / / 0 3 0 0 1 F F 3 E *

O
f
f



* / / 0 3 0 0 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

O
n



* / / 0 3 0 1 1 F F 3 E *

O
f
f



* / / 0 3 0 1 0 F F 3 E *

ENABLE CHECKSUM

O
n



* / / 0 3 0 2 1 F F 3 E *

O
f
f



* / / 0 3 0 2 0 F F 3 E *

SEND CHECKSUM

O
n



* / / 0 3 0 3 1 F F 3 E *

O
f
f



* / / 0 3 0 3 0 F F 3 E *

CONCATENATE

Q
n 
* / / 0 3 0 4 1 F F 3 E *

Q
f
f 
* / / 0 3 0 4 0 F F 3 E *

SEND START/STOP

Q
n 
* / / 0 3 0 5 1 F F 3 E *

Q
f
f 
* / / 0 3 0 5 0 F F 3 E *

CONVERT TO CLSI

Q
n 
* / / 0 3 0 6 1 F F 3 E *

Q
f
f 
* / / 0 3 0 6 0 F F 3 E *

ALLOW WIDE INTERCHARACTER GAPS

Q
n 
* / / 0 3 0 7 1 F F 3 E *

Q
f
f 
* / / 0 3 0 7 0 F F 3 E *

MINIMUM LENGTH

1
0 
* / / 0 3 2 0 0 1 F F 3 E *

3
0 
* / / 0 3 2 0 3 0 F F 3 E *

4
0 
* / / 0 3 2 0 0 4 F F 3 E *

4
0 
* / / 0 3 2 0 4 0 F F 3 E *

1
0 
* / / 0 3 2 0 1 0 F F 3 E *

5
0 
* / / 0 3 2 0 5 0 F F 3 E *

2
0 
* / / 0 3 2 0 2 0 F F 3 E *

MAXIMUM LENGTH

1



* / / 0 3 2 1 0 1 F F 3 E *

30



* / / 0 3 2 1 3 0 F F 3 E *

10



* / / 0 3 2 1 1 0 F F 3 E *

40



* / / 0 3 2 1 4 0 F F 3 E *

20



* / / 0 3 2 1 2 0 F F 3 E *

50



* / / 0 3 2 1 5 0 F F 3 E *

READ VERIFICATION

1



* / / 0 3 2 2 0 1 F F 3 E *

3



* / / 0 3 2 2 0 3 F F 3 E *

2



* / / 0 3 2 2 0 2 F F 3 E *

4



* / / 0 3 2 2 0 4 F F 3 E *

Code 39

ENABLE

0
n



* / / 0 1 0 0 1 F F 3 E *

0
f
f



* / / 0 1 0 0 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

0
n



* / / 0 1 0 1 1 F F 3 E *

0
f
f



* / / 0 1 0 1 0 F F 3 E *

ENABLE CHECKSUM

On 
* / / 0 1 0 2 1 F F 3 E *

Off 
* / / 0 1 0 2 0 F F 3 E *

SEND CHECKSUM

On 
* / / 0 1 0 3 1 F F 3 E *

Off 
* / / 0 1 0 3 0 F F 3 E *

FULL ASCII MODE

On 
* / / 0 1 0 5 1 F F 3 E *

Off 
* / / 0 1 0 5 0 F F 3 E *

CONCATENATE

On 
* / / 0 1 0 4 1 F F 3 E *

Off 
* / / 0 1 0 4 0 F F 3 E *

MINIMUM LENGTH

1 
* / / 0 1 2 0 0 1 F F 3 E *

3 
* / / 0 1 2 0 3 0 F F 3 E *

10 
* / / 0 1 2 0 1 0 F F 3 E *

40 
* / / 0 1 2 0 4 0 F F 3 E *

20 
* / / 0 1 2 0 2 0 F F 3 E *

50 
* / / 0 1 2 0 5 0 F F 3 E *

MAXIMUM LENGTH

1	 * / / 0 1 2 1 0 1 F F 3 E *	3	 * / / 0 1 2 1 3 0 F F 3 E *
1	 * / / 0 1 2 1 1 0 F F 3 E *	4	 * / / 0 1 2 1 4 0 F F 3 E *
2	 * / / 0 1 2 1 2 0 F F 3 E *	5	 * / / 0 1 2 1 5 0 F F 3 E *

READ VERIFICATION

1	 * / / 0 1 2 2 0 1 F F 3 E *	3	 * / / 0 1 2 2 0 3 F F 3 E *
2	 * / / 0 1 2 2 0 2 F F 3 E *	4	 * / / 0 1 2 2 0 4 F F 3 E *

Code 93

ENABLE



ENABLE AGGRESSIVE DECODING



MINIMUM LENGTH



MAXIMUM LENGTH



2
0



5
0



READ VERIFICATION

1



3



2



4



Code 128

ENABLE

O

n


* / / 0 4 0 8 1 F F 3 E *

O

f

f


* / / 0 4 0 8 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

O

n


* / / 0 4 0 9 1 F F 3 E *

O

f

f


* / / 0 4 0 9 0 F F 3 E *

ENABLE UCC/EAN-128

O

n


* / / 0 4 0 C 1 F F 3 E *

O

f

f


* / / 0 4 0 C 0 F F 3 E *

ISBT CONCATENATION

O

n


* / / 0 4 0 E 1 F F 3 E *

O

f

f


* / / 0 4 0 E 0 F F 3 E *

MINIMUM LENGTH

1


* / / 0 4 2 4 0 1 F F 3 E *

3

0


* / / 0 4 2 4 3 0 F F 3 E *

2


* / / 0 4 2 4 0 2 F F 3 E *

4

0


* / / 0 4 2 4 4 0 F F 3 E *

1

0


* / / 0 4 2 4 1 0 F F 3 E *

5

0


* / / 0 4 2 4 5 0 F F 3 E *



MAXIMUM LENGTH



READ VERIFICATION



EAN-13

ENABLE

0

n

*

/

/

0

5

1

0

1

F

F

3

E

*

0

f

f

*

/

/

0

5

1

0

0

F

F

3

E

*

ENABLE AGGRESSIVE DECODING

0

n

*

/

/

0

5

1

1

1

F

F

3

E

*

0

f

f

*

/

/

0

5

1

1

0

F

F

3

E

*

SEND CHECK DIGIT

0

n

*

/

/

0

5

1

2

1

F

F

3

E

*

0

f

f

*

/

/

0

5

1

2

0

F

F

3

E

*

SEND SYSTEM DIGIT

0

n

*

/

/

0

5

1

3

1

F

F

3

E

*

0

f

f

*

/

/

0

5

1

3

0

F

F

3

E

*

CONVERT EAN-13 TO ISBN

0

n

*

/

/

0

5

1

4

1

F

F

3

E

*

0

f

f

*

/

/

0

5

1

4

0

F

F

3

E

*

CONVERT EAN-13 TO ISSN

0

n

*

/

/

0

5

1

5

1

F

F

3

E

*

0

f

f

*

/

/

0

5

1

5

0

F

F

3

E

*

ENABLE EAN 4-DIGIT PRICE/WEIGHT CHECK DIGIT



ENABLE EAN 5-DIGIT PRICE/WEIGHT CHECK DIGIT



READ VERIFICATION



EAN-8

ENABLE

0

n

* / / 0 5 1 8 1 F F 3 E *

0

f

* / / 0 5 1 8 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

0

n

* / / 0 5 1 9 1 F F 3 E *

0

f

* / / 0 5 1 9 0 F F 3 E *

SEND CHECK DIGIT

0

n

* / / 0 5 1 A 1 F F 3 E *

0

f

* / / 0 5 1 A 0 F F 3 E *

CONVERT EAN-8 TO EAN-13

0

n

* / / 0 5 1 B 1 F F 3 E *

0

f

* / / 0 5 1 B 0 F F 3 E *

READ VERIFICATION

1

* / / 0 5 2 6 0 1 F F 3 E *

3

* / / 0 5 2 6 0 3 F F 3 E *

2

* / / 0 5 2 6 0 2 F F 3 E *

4

* / / 0 5 2 6 0 4 F F 3 E *

Interleaved 2 of 5

ENABLE



ENABLE AGGRESSIVE DECODING



ENABLE CHECKSUM



SEND CHECKSUM




ENABLE CASE CODE




MINIMUM LENGTH



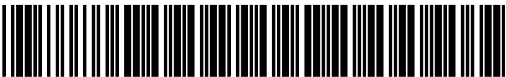
10


* / / 0 2 2 8 1 0 F F 3 E *

50


* / / 0 2 2 8 5 0 F F 3 E *

20


* / / 0 2 2 8 2 0 F F 3 E *

MAXIMUM LENGTH

2


* / / 0 2 2 9 0 2 F F 3 E *

30


* / / 0 2 2 9 3 0 F F 3 E *

10


* / / 0 2 2 9 1 0 F F 3 E *

40


* / / 0 2 2 9 4 0 F F 3 E *

20


* / / 0 2 2 9 2 0 F F 3 E *

50


* / / 0 2 2 9 5 0 F F 3 E *

READ VERIFICATION

1


* / / 0 2 2 A 0 1 F F 3 E *

3


* / / 0 2 2 A 0 3 F F 3 E *

2


* / / 0 2 2 A 0 2 F F 3 E *

4


* / / 0 2 2 A 0 4 F F 3 E *

Matrix 2 of 5

ENABLE

On

* / / 0 2 0 8 1 F F 3 E *

Off

* / / 0 2 0 8 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

On

* / / 0 2 0 9 0 F F 3 E *

Off

* / / 0 2 0 9 1 F F 3 E *

ENABLE CHECKSUM

On

* / / 0 2 0 A 1 F F 3 E *

Off

* / / 0 2 0 A 0 F F 3 E *

SEND CHECKSUM

On

* / / 0 2 0 B 1 F F 3 E *

Off

* / / 0 2 0 B 0 F F 3 E *

MINIMUM LENGTH

1

* / / 0 2 2 4 0 1 F F 3 E *

30

* / / 0 2 2 4 3 0 F F 3 E *

6

* / / 0 2 2 4 0 6 F F 3 E *

40

* / / 0 2 2 4 4 0 F F 3 E *

10

* / / 0 2 2 4 1 0 F F 3 E *

50

* / / 0 2 2 4 5 0 F F 3 E *

20

* / / 0 2 2 4 2 0 F F 3 E *

MAXIMUM LENGTH



READ VERIFICATION



MSI

ENABLE



ENABLE AGGRESSIVE DECODING



REQUIRE 2 CHECK DIGITS



SEND CHECK DIGITS



2ND CHECK DIGIT MOD 11



MINIMUM LENGTH



7



* / / 0 6 2 4 0 7 F F 3 E *

15



* / / 0 6 2 4 1 5 F F 3 E *

MAXIMUM LENGTH

1



* / / 0 6 2 5 0 1 F F 3 E *

1

0



* / / 0 6 2 5 1 0 F F 3 E *

4



* / / 0 6 2 5 0 4 F F 3 E *

1

2



* / / 0 6 2 5 1 2 F F 3 E *

7



* / / 0 6 2 5 0 7 F F 3 E *

1

5



* / / 0 6 2 5 1 5 F F 3 E *

READ VERIFICATION

1



* / / 0 6 2 6 0 1 F F 3 E *

3



* / / 0 6 2 6 0 3 F F 3 E *

2



* / / 0 6 2 6 0 2 F F 3 E *

4



* / / 0 6 2 6 0 4 F F 3 E *

Pharmacode 39 (Code 32)

ENABLE

On


* / / 0 1 1 0 1 F F 3 E *

Off


* / / 0 1 1 0 0 F F 3 E *

SEND CHECKSUM

On


* / / 0 1 1 2 1 F F 3 E *

Off


* / / 0 1 1 2 0 F F 3 E *

SEND START/STOP

On


* / / 0 1 1 3 1 F F 3 E *

Off


* / / 0 1 1 3 0 F F 3 E *

RSS-14

ENABLE

On


* / / 0 8 0 0 1 F F 3 E *

Off


* / / 0 8 0 0 0 F F 3 E *

ENABLE RSS-14 to UCC-128

On


* / / 0 8 0 4 1 F F 3 E *

Off


* / / 0 8 0 4 0 F F 3 E *

RSS Limited

ENABLE

O

n



* / / 0 8 0 8 1 F F 3 E *

O

f

f



* / / 0 8 0 8 0 F F 3 E *

ENABLE RSS Limited to UCC-128

O

n



* / / 0 8 0 C 1 F F 3 E *

O

f

f



* / / 0 8 0 C 0 F F 3 E *

RSS Expanded

ENABLE

O

n



* / / 0 8 1 0 1 F F 3 E *

O

f

f



* / / 0 8 1 0 0 F F 3 E *

ENABLE RSS Expanded to UCC-128

O

n



* / / 0 8 1 4 1 F F 3 E *

O

f

f



* / / 0 8 1 4 0 F F 3 E *

MINIMUM LENGTH

1



* / / 0 8 2 4 0 1 F F 3 E *

4

5



* / / 0 8 2 4 4 5 F F 3 E *

1

5



* / / 0 8 2 4 1 5 F F 3 E *

6

0



* / / 0 8 2 4 6 0 F F 3 E *



MAXIMUM LENGTH



Standard 2 of 5

ENABLE



ENABLE AGGRESSIVE DECODING



ENABLE CHECKSUM



SEND CHECKSUM



USE 2-BAR START/STOP



MINIMUM LENGTH





MAXIMUM LENGTH



READ VERIFICATION



Trioptic

ENABLE

On


*/ / 0 1 0 8 1 F F 3 E *

Off


*/ / 0 1 0 8 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

On


*/ / 0 1 0 9 1 F F 3 E *

Off


*/ / 0 1 0 9 0 F F 3 E *

READ VERIFICATION

1


*/ / 0 1 2 4 0 1 F F 3 E *

3


*/ / 0 1 2 4 0 3 F F 3 E *

2


*/ / 0 1 2 4 0 2 F F 3 E *

4


*/ / 0 1 2 4 0 4 F F 3 E *

UPC-A

ENABLE

On


*/ / 0 5 0 0 1 F F 3 E *

Off


*/ / 0 5 0 0 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

On


*/ / 0 5 0 1 1 F F 3 E *

Off


*/ / 0 5 0 1 0 F F 3 E *

SEND CHECK DIGIT**SEND SYSTEM DIGIT****CONVERT UPC-A TO EAN-13****READ VERIFICATION**

UPC-E

ENABLE SYSTEM DIGIT 0

0

n


* / / 0 5 0 8 1 F F 3 E *

0

f


* / / 0 5 0 8 0 F F 3 E *

ENABLE AGGRESSIVE DECODING

0

n


* / / 0 5 0 9 1 F F 3 E *

0

f


* / / 0 5 0 9 0 F F 3 E *

SEND CHECK DIGIT

0

n


* / / 0 5 0 A 1 F F 3 E *

0

f


* / / 0 5 0 A 0 F F 3 E *

SEND SYSTEM DIGIT

0

n


* / / 0 5 0 B 1 F F 3 E *

0

f


* / / 0 5 0 B 0 F F 3 E *

CONVERT UPC-E TO UPC-A

0

n


* / / 0 5 0 C 1 F F 3 E *


0

f



* / / 0 5 0 C 0 F F 3 E *

READ VERIFICATION

1


* / / 0 5 2 2 0 1 F F 3 E *

3


* / / 0 5 2 2 0 3 F F 3 E *

2


* / / 0 5 2 2 0 2 F F 3 E *

4


* / / 0 5 2 2 0 4 F F 3 E *

F-28

Falcon® 4400 Series with Windows Mobile®

UPC/EAN Extensions

ENABLE 2-DIGIT EXTENSIONS

O
n


* / / 0 5 1 C 1 F F 3 E *

O
f
f


* / / 0 5 1 C 0 F F 3 E *

ENABLE 5-DIGIT EXTENSIONS

O
n


* / / 0 5 1 D 1 F F 3 E *

O
f
f
f


* / / 0 5 1 D 0 F F 3 E *

ENABLE CODE 128 EXTENSIONS

O
n


* / / 0 5 1 E 1 F F 3 E *

O
f
f


* / / 0 5 1 E 0 F F 3 E *

REQUIRE EXTENSIONS

O
n


* / / 0 5 1 F 1 F F 3 E *

O
f
f


* / / 0 5 1 F 0 F F 3 E *

READ VERIFICATION

1


* / / 0 5 2 8 0 1 F F 3 E *

3


* / / 0 5 2 8 0 3 F F 3 E *

2


* / / 0 5 2 8 0 2 F F 3 E *

4


* / / 0 5 2 8 0 4 F F 3 E *

Aztec Code

O
n

Offf



On

O
f
f

1



750



1500



2250



3000



3750

**MAXIMUM LENGTH**

1



750



1500



2250



3000

3750

DataMatrix

ENABLE

On



* / / 0 B 0 0 1 F F 3 E *

Off



* / / 0 B 0 0 0 F F 3 E *

MINIMUM LENGTH


1


* / / 0 B 2 0 0 1 F F 3 E *


300


* / / 0 B 2 0 3 0 0 F F 3 E *


600


* / / 0 B 2 0 6 0 0 F F 3 E *


900


* / / 0 B 2 0 9 0 0 F F 3 E *

1200


* / / 0 B 2 0 1 2 0 0 F F 3 E *

1500


* / / 0 B 2 0 1 5 0 0 F F 3 E *

MAXIMUM LENGTH

Composite

ENABLE

On



* / / 0 A 1 0 1 F F 3 E *

Off



* / / 0 A 1 0 0 F F 3 E *

MINIMUM LENGTH


1


* / / 0 A 2 8 0 1 F F 3 E *


500


* / / 0 A 2 8 5 0 0 F F 3 E *


1000


* / / 0 A 2 8 1 0 0 0 F F 3 E *


1500


* / / 0 A 2 8 1 5 0 0 F F 3 E *

2000


* / / 0 A 2 8 2 0 0 0 F F 3 E *

2435


* / / 0 A 2 8 2 4 3 5 F F 3 E *

MAXIMUM LENGTH



Maxicode

ENABLE

O

n

O

f

MINIMUM LENGTH

1

25

50

75

100

138

MAXIMUM LENGTH

1



25



50



75



100



138



OCR

ENABLE

On



* / / 0 C 2 2 1 F F 3 E *

Off



* / / 0 C 2 2 0 F F 3 E *

OCR FONT

OCR-A



OCR-B



MICR



US Currency



ENABLE OCR CHECK DIGIT

On



Off



ENABLE MOD 36 CHECK DIGIT

On



Off



PDF-417

ENABLE

O
n



O
f
f



MINIMUM LENGTH

1



500



1000



1500



2000



2710



MAXIMUM LENGTH

1



* / / 0 A 2 1 0 1 F F 3 E *

500



* / / 0 A 2 1 5 0 0 F F 3 E *

1000



* / / 0 A 2 1 1 0 0 0 F F 3 E *

1500



* / / 0 A 2 1 1 5 0 0 F F 3 E *

2000



* / / 0 A 2 1 2 0 0 0 F F 3 E *

2710



* / / 0 A 2 1 2 7 1 0 F F 3 E *

MicroPDF-417

ENABLE

On



* / / 0 A 0 8 1 F F 3 E *

Off



* / / 0 A 0 8 0 F F 3 E *

MINIMUM LENGTH


1


* / / 0 A 2 4 0 1 F F 3 E *


70


* / / 0 A 2 4 7 0 F F 3 E *


150


* / / 0 A 2 4 1 5 0 F F 3 E *


230


* / / 0 A 2 4 2 3 0 F F 3 E *

300


* / / 0 A 2 4 3 0 0 F F 3 E *

366


* / / 0 A 2 4 3 6 6 F F 3 E *

MAXIMUM LENGTH

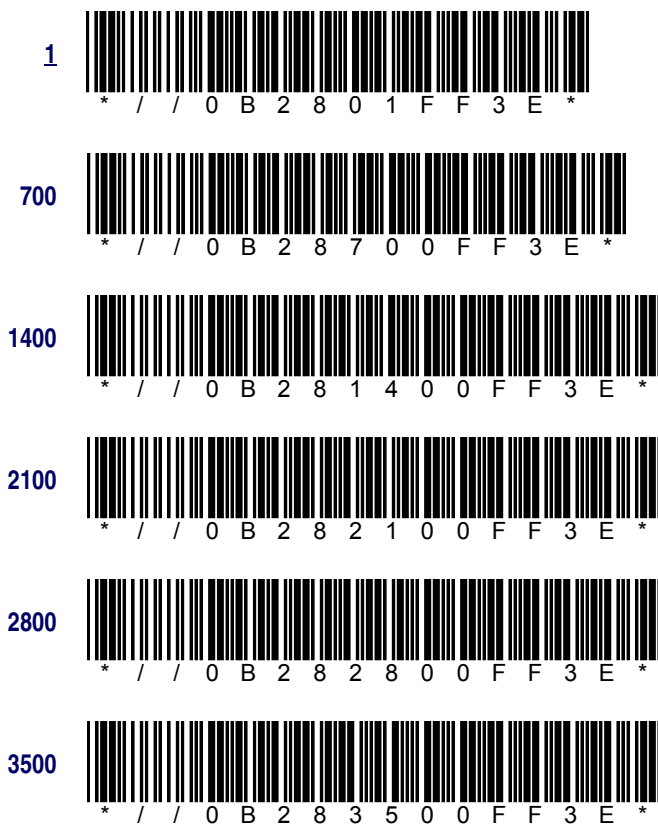


QR Code

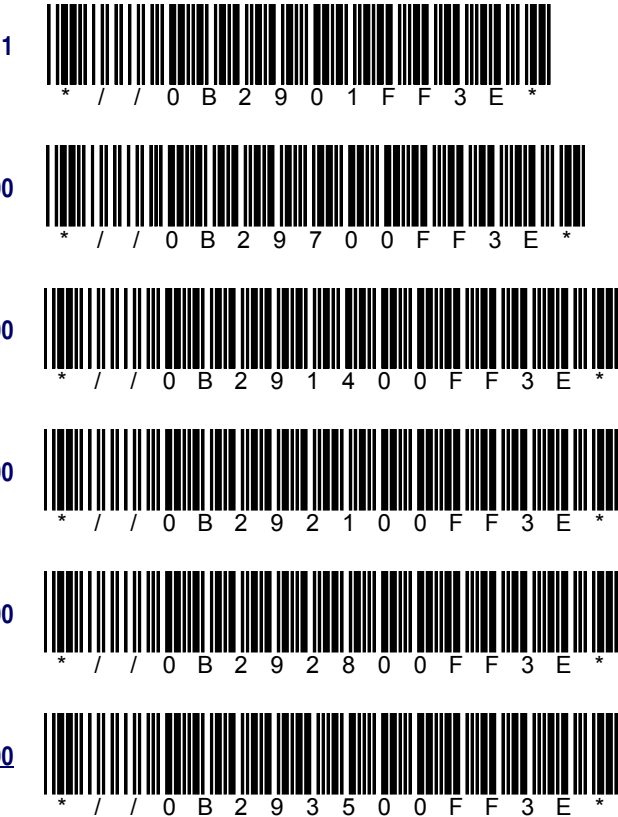
ENABLE



MINIMUM LENGTH



MAXIMUM LENGTH



Imager Labels

ILLUMINATION ENABLE



AIM MODE



AIM ENABLE



LED ENABLE



Other Controls

BEEPER VOLUME



Medium



Highest



Higher
(Increases the current
value one increment
higher)



Lower
(Decreases the current
value one increment lower)



NUMBER OF GOOD-READ BEEPS

1



2



3



4



GOOD-READ BEEP TONE**Lowest****Medium****Highest****GOOD-READ BEEP DURATION (IN SECONDS)****0.07****0.13****0.18****0.36**

Long Range Trigger Mode

Spot Timeout



Release Scan



Spotting Beam Enable

On



Off



Spotting Beam Timeout

0.25



0.5



1.0



1.5



2.0

**Release Scan Timeout (IN SECONDS)**

1



2



3



5



10

**SEND SYMBOLOGY IDENTIFIERS**Off

PSC IDs



AIM IDs



User IDs



LABEL PREFIX

(CR)



(TAB)



None



LABEL SUFFIX

(CR)



(TAB)



None



Appendix G

SDK Installation

About the Software Development Kit (SDK):

Microsoft provides most of the SDK functionality required to support Windows Mobile 5.0. Visit their Windows Mobile site to find documentation and download the Windows Mobile 5.0 Developer Evaluation Kit.

<http://msdn.microsoft.com/mobility/windowsmobile>

Select **Downloads** and locate the Windows Mobile 5.0 SDK for Pocket PC. Follow the instructions to obtain the most recent version.

To use the additional PSC SDK functionality, run the Falcon Windows Mobile SDK installer from the link on your Falcon 4400 Product CD. This will add the decoder and unit support files required to interface with the additional PSC functions.

A **START** menu group is added for support of the SDK named “**Falcon SDK for Windows Mobile.**” It contains a shortcut called “**Help**” that will open the help file.

The files loaded are:

dcd_api.h, decoder.lib, decoder.exp
unit_api.h, unitapi.lib, unitapi.exp

1. In your project, add the appropriate lib files to the list of import libraries.
2. In each source file which makes calls to the decoding API, or unit API, include the appropriate header file.

We also provide C++ sample code to demonstrate the use of these SDK functions.

See **UnitAPITest** and **DCDtest**, these are complete Visual Studio 2005 Beta 2 projects ready to run.

New Functions

Two new functions have been added to this SDK:

1. Get the current PSC defined OS ID

```
int cdecl UnitGetOSType( void );
```

These defined values are located in `unit_api.h`

```
/** Operating System IDs */  
#define OS_WINCE_NET0x00// Windows CE 4.2 or 5.0  
#define OS_WIN_MOBILE0x01// Windows Mobile
```

2. Get the current PSC defined language type

```
int cdecl UnitGetLanguage( void );
```

These defined values are located in `unit_api.h`



```
// Translated language IDs: image that has been trans-  
lated into a specific language  
  
#define LANG_ENGLISH_T    0x20 // World Wide English  
#define LANG_CHN_SMPL_T   0x21 // Simplified Chinese  
#define LANG_CHN_TRAD_T   0x22 // Traditional Chinese  
#define LANG_FRENCH_T     0x23 // French  
#define LANG_GERMAN_T     0x24 // German  
#define LANG_ITALIAN_T    0x25 // Italian  
#define LANG_SPANISH_T    0x26 // Spanish
```


Appendix H


Glossary

Many definitions for this Glossary were taken directly from the Microsoft Developer's Network website at <http://msdn.microsoft.com/library/default.asp>.

1D bar code	A traditional linear bar code. The code itself contains no information about the item to which it is assigned but represents a string of identifying numbers or letters.
2D bar code	Two-dimensional (2D) bar codes permit the encoding of information about an item in addition to an identifying code. Two axes, or directions, are used for recording and reading the codes and the bar size is reduced, increasing the space available for data.
active notification	The state of a user notification from the time the user is notified until the user handles the event.
active window	The window in which a user is currently working or directing input. An active window is typically on top and is distinguished by the color of its title bar.
ActiveSync	Microsoft Windows Communication application that synchronizes a Windows CE .NET or Windows Mobile device with a Microsoft Windows-based host PC. ActiveSync can use RS-232, USB, and Wireless networks.
ASCII	American Standard Code for Information Interchange; a code for information exchange between computers made by different companies; a string of 7 binary digits represents each character; used in most microcomputers. Any member of the standard code for representing characters by binary numbers. Refer to Table E-13 on page E-44 .
Batch units	Batch Falcon units are synchronized and updated using Microsoft ActiveSync software and a dock for communication with the host PC.
Bluetooth	A specification for short-range radio links between mobile computers, mobile phones, digital cameras, and other portable devices.
calibration	See Touchscreen calibration .
checksum	A number used to verify the contents of a data file. This number is generated by calculating the contents of the data. If the calculated checksum is different from the expected checksum, the data has errors in it.
CLSI	CLSI, Inc., developer of the "LIBS 100 scanning and decoding system". The " Convert to CLSI " parameter refers to formatting a Codabar barcode label in the manner defined by CLSI, Inc.

Concatenate	Arranges (strings of characters) into a connected list.
control	A standardized part of the window that can be manipulated to perform an action or display information. The most common controls are buttons to select options and scroll bars that for moving through a document or positioning text in a window.
context sensitive help	Tap  > Help to open a help dialog about the specific windows application you are using. Context sensitive help can tell where you are in a program and can provide assistance with the specific problems you might be having.
control panel	Control Panels are several different applets that allow you to configure the Falcon to meet your specific requirements. There are control panels for scanning, keyboard, display, etc. Access the control panels by tapping  > Settings .
device manager	A tool to track all loaded device drivers and their interfaces. It issues notification of the appearance, disappearance of device interfaces, loads and tracks drivers by reading and writing registry values, and unloads drivers when their devices are no longer needed.
device partnership	A registry key on a device that a desktop computer uses to identify the device when it is connected. The key defines values for synchronization, file conversions, and backup and restore information, which enable multiple devices to connect to the same desktop computer. A device partnership is created the first time you connect a device to a host PC.
direction key	A large navigation button on the Falcon keypad with 4 arrows: pointing up, down, left, and right that allows you to move the cursor or highlighted text entry during menu selection. Press and release one edge of the key to move the display screen one line or one character in the direction of the arrow.
embedded	Broadly, software code or commands built into a device, as opposed to software that is added. In a narrower sense, code that is typically stored in ROM and dedicated to either controlling a device or providing a specific functionality.
FAST	Part of PSC's Falcon Management Utility (FMU) application for the Falcon that updates the operating system and applications automatically from a server using the wireless network system.
firmware	Operating System on the Falcon.
Falcon Desktop Utility (FDU)	Falcon Desktop Utility (FDU) allows PSC administrators to configure Falcon WindowsCE .NET and Windows Mobile Falcons to control individual user access.
Falcon Management Utility (FMU)	A PSC Windows-based management application for managing the configuration settings and updating the operating system and applications automatically from a server using the wireless network system on the Falcon.
Firmware Update Utility (FUU)	A PSC Windows-based field upgradeable firmware mechanism. Use the Firmware Update Utility (FUU), described starting on page 3-3, to install or update the firmware using an ActiveSync connection.

GPS	Global Positioning System. Windows Mobile-based Falcons can be set up to work with a GPS system.
host PC system	PC using the Microsoft Windows operating system and Falcon Management Utility (FMU) and/or ActiveSync .
input panel	Refer to on-screen keyboard .
ISBN	International Standard Book Number. A unique number assigned to each book to allow ease of ordering from any source: local bookstore, online book dealers, or directly from the publisher. The ISBN number is usually printed on the back cover of a book, near the bar-code but can also appear within the book.
ISSN	International Standard Serial Number. An ISSN consists of eight digits comprising two groups of four digits each, separated by a hyphen. The eighth digit is a check digit used as a computer validity check; it consists of a number between 0 and 9 or an uppercase X (for the arabic numeral 10).
MIB (Management Information Base)	A Management Information Base (MIB) is a file that defines a set of SNMP (Simple Network Management Protocol) variables, their types and usage. There are a number of standard MIBs available, depending on the information being managed. The MIB is used by the management tools to allow them to better support the configuration values provided on the terminals, such as scanner controls and terminal type information.
mounted file system	A file system located on a removable medium, such as a PC Card storage device. The operating system loads, or mounts, the file system when the medium is inserted into the device. It unloads, or unmounts, the file system when the medium is removed or when the user issues a command to do so.
Network ID	Here used to mean that you should configure the Windows user settings, such as the user name, password, and domain name. Microsoft's definition includes some wireless network IDs as equivalent to SSIDs.
non-persistent state	A non-persistent state affects only the next keypress. FN state is a non-persistent state.
on-screen keyboard	Tap the Keyboard icon in the soft key bar to open the on-screen keyboard. Use this virtual QWERTY keyboard like you would a computer's keypad to enter alphanumeric and symbols in the current application.
portable data assistant (PDA)	A handheld Windows Mobile-based computer that can be synchronized with a host PC to share files and data. Sometimes contains an infrared device to beam information to another unit.
portable data terminal (PDT)	An industrial strength handheld computer with a keypad, direction keys, and a bar code scanner used in inventory, retail, and warehouse activities to collect data and upload it to a host PC.

persistent state	A state which is maintained after releasing a key. Alpha mode is a persistent mode. Also called a “sticky” state. A persistent state must be turned off by pressing the key again.
PRG	Product Reference Guide.
program memory	Memory that is used for stack and heap storage for both system and nonsystem applications. Nonsystem applications are taken from storage memory, uncompressed, and loaded into program memory for execution.
RF card	A small card shaped device installed in a Falcon that allows wireless connection and communication with a network.
QRG	Quick Reference Guide.
RAM (random access memory)	You can add applications and data files to RAM. RAM is not persistent and will be cleared when you remove or replace the battery.
ROM (read only memory)	The operating system and applications are pre-installed on ROM and cannot be removed or modified. These applications are persistent.
RTC	Real Time Clock on the PC or mobile computer.
shortcut menu	A menu that is displayed for a selected object. The menu contains commands that are contextually relevant to the selection.
SNMP (Simple Network Management Protocol)	SNMP is the standard protocol for managing devices on a network. Simple Network Management Protocol (SNMP) is a standardized protocol for network management services using a client/server model. The network management program (client) issues queries and commands to the remote device
soft key bar	A bar at the bottom of the screen that can contain buttons, combo boxes, and menu bars. Windows Mobile–based applications have a soft key bar rather than a separate menubar and toolbar to efficiently use available screen space.
splash screen	An initial screen displayed by software, usually containing a logo, version information, author credits, or a copyright notice.
start button	Tap the Start button () to open the Start menu. The Start menu contains a list of the resident applications, and provides access to Programs, Settings, Help and other functions.
status bar	An area that displays state information for the content in the window, typically placed at the bottom of a window.
status icons	A graphic representation of the status of a feature or function.
strap studs	The Falcon 4410 comes with a handstrap that connects to the strap studs.

stylus	<p>The Falcon's equivalent of a PC's mouse. Use on a touch-sensitive display. Only a plastic tipped stylus should be used on a touch-sensitive display.</p> <p>Use to navigate the touchscreen display, select characters in the on-screen keyboard, select applications, and select tabs, fields and text within applications and dialogs.</p>
suspend mode	<p>The Falcon will go into a suspend or sleep mode when it is idle for a period of time. Suspend mode works and looks just like you have turned the unit off. Press <POWER> to suspend (put to sleep) the Falcon. Press <POWER> again for the Falcon to resume its previous state.</p>
Symbology	<p>A symbology is a protocol for arranging the bars and spaces that make up a particular kind of bar code. A bar code is made up of numbers, letters, and computer-recognized characters that can be represented in a combination of bars and spaces. There is not one standard bar code; there are currently over 400 barcode symbologies that serve different uses, industries, or geographic needs.</p>
keyboard Indicators	<p>The Keyboard Indicators are located at the top of the display in the Title bar and contain status icons and symbols indicating open features and active applets.</p>
Title bar	<p>The bar at the top of the screen on a Window Mobile device which displays the Start icon, the current program, connection status, volume and time/date information.</p>
Today screen	<p>The initial screen visible at startup, the Today screen contains configurable links and shortcuts to common programs and tasks.</p>
Touchscreen calibration	<p>You may need to calibrate the touch screen. One way to know that the touch screen needs to be calibrated is that you will notice that when you attempt to select one item with the stylus, another item is erroneously selected.</p>
touchscreen display	<p>A graphical computer interface display screen that allows the user to enter and select items with a stylus.</p>
Tracert	<p>Trace Route. A utility/command to determine TCP/IP packet routing.</p>
Uniform Resource Locator (URL)	<p>The address of a resource on the Internet. URL syntax is in the form <i>protocol://host/localinfo</i>, where <i>protocol</i> specifies the means of returning the object, such as HTTP or FTP. <i>Host</i> specifies the remote location where the object resides and <i>localinfo</i> is a string, often a file name, passed to the protocol handler at the remote location. <i>Also called</i> a Uniform Resource Identifier.</p>
USB	<p>Universal Serial Bus is a protocol for connecting PCs with peripheral devices, including PDTs, PDAs, Falcon mobile computers, cameras, printers, mice, scanners, etc.</p>
Web Server	<p>The web server can perform several different actions, including generating a web page containing statistics relating to performance of the mobile computer and creating an interface for interaction with the terminal to configure system behavior.</p>
XPING	<p>XPing is a protocol that sends a message to another computer and waits for acknowledgment, often used to check if another computer on a network is reachable.</p>

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