NEO Hand-Held Computer
(Model No. PX750)

May 16, 2010  Part No. 8100157.B

ISO 9001 Certified
Quality Management System
This user manual supports Model Numbers:
- PX750BT
- PX750BT8
- FCC ID: GM3PX750BT and GM3PX750BT8
Return-To-Factory Warranty

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1.1 About This Manual

This manual describes how to configure, operate and maintain NEO, a light-weight, versatile hand-held computer.

Chapter 1: Introduction

provides a basic overview of NEO.

Chapter 2: Basic Checkout

describes the steps required to get NEO ready for operation, including setting up the 802.11b/g radio.

Chapter 3: Getting To Know NEO

describes NEO features and outlines how to charge and maintain the battery. This chapter also provides a description of the keyboards, how to navigate in Microsoft Windows CE 5.0, and so on.

Chapter 4: Working With Windows CE 5.0

describes the Microsoft Windows CE 5.0 desktop and how to use it. This chapter also outlines the basics of moving around a Windows CE 5.0 window, selecting and opening icons, files, folders and working with a Windows dialog box.

Chapter 5: Configuration

describes the Windows CE 5.0 Control Panel and how to use it to configure NEO.

Chapter 6: Peripheral Devices & Accessories

describes the peripherals and accessories available for NEO.

Chapter 7: Specifications

lists hand-held, radio, scanner and battery specifications.

Appendix A: Pinouts

describes NEO pinouts.

Appendix B: Wireless Zero Config

outlines the steps used to configure your radio using Windows Zero Config.

Appendix C: Bar Code Settings

describes symbologies available with the Teklogix Scanners applet.

Appendix D: Teklogix Imagers Applet

explains how to use the Teklogix Imagers applet.
1.2 Text Conventions

Note: Notes highlight additional helpful information.

Important: These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.

Warning: These statements provide critical information that may prevent physical injury, equipment damage or data loss.

1.3 NEO Hand-Held Computer Features

Important: For all safety, regulatory and warranty information, refer to the “NEO Hand-Held Computer Regulatory & Warranty Guide”, PN 8000175.

NEO is a compact, ruggedized hand-held computer running the Microsoft Windows CE 5.0 operating system. It is intended for use in commercial and light industrial applications. NEO can be ordered with or without a radio. Without a Wi-Fi radio, it operates as a batch or unconnected computer. With a Wi-Fi radio installed, NEO operates as a connected computer, delivering real time wireless data transactions. A number of 1D bar code input methodologies are supported by the scanner and imager available with this hand-held computer. Optimization for specific operational environments is supported with a wide range of peripheral options and carrying accessories.

The unique tilted screen design on this hand-held computer makes the display content readily visible. This means that the operator can scan a bar code and view the results on the display in one movement – no need to manually tilt the unit to view the results after each scan. In addition, the tilted screen in conjunction with the protective rib at the base of the keyboard allows the unit to be placed facedown safely with no danger of an accidental key press.

Note: For complete NEO hand-held computer specifications, refer to “Specifications” on page 167.
Chapter 1: Introduction

NEO Hand-Held Computer Features

Figure 1.1 NEO Hand-Held Computer - Numeric & Alpha-Numeric

Model Variants

Connected NEO Standard Features:

- 2.7 inch Colour Touchscreen
- Windows® CE 5.0 Professional
- microSD slot
- 3300 mAh Battery
- Discrete VoIP (Push-To-Talk)
- WiFi and Bluetooth Radios


Chapter 1: Introduction

NEO Hand-Held Computer Features

Additional Connected Options:

• 1D Imager
• 1D Laser Scanner
• 2D Imager
• Keyboard Variants: 48-Key Alpha-Numeric or 26-Key Numeric

Batch NEO Standard Features:

• 2.7 inch Colour Touchscreen
• Windows® CE 5.0 Core
• microSD Slot
• 3300 mAh Battery

Additional Batch Options:

• Bluetooth Radio
• Bluetooth Radio and 1D Imager
• Bluetooth Radio and 1D Laser Scanner
• Bluetooth Radio and 2D Imager
• Keyboard Variants: 48-Key Alpha-Numeric or 26-Key Numeric

Platform

• Processor: PXA270 Processor @ 624 or 312 MHz
• Memory:
  - On-board RAM: 128 MB
  - On-board ROM: 128 MB Flash

Operating System

• Microsoft® Windows® CE 5.0 Core
• Microsoft® Windows® CE 5.0 Professional

Programming Environment

• HTML, XML
• Mobile Devices SDK
  - HTML, XML
  - CE.NET SDK:
  - Java™
Chapter 1: Introduction

NEO Hand-Held Computer Features

- Visual Studio® 2008
- Standard protocol APIs – Windows® sockets (WinCE)

**Wireless Communications**
- On-board IEEE 802.11b/g (CCX Certified)
- On-board Bluetooth radio (10 metre range)

**Application Software**
- Internet Explorer® 6 for CE
- Wordpad
- ActiveSync
- Open TekTerm
- ANSI
- TESS terminal emulations
- IBM 3270, IBM 5250, HP 2392
- MCC
- Naurtech
- Stay-Linked
- PTX Connect
- MCL

**Bar Code Applications**
- 1D Standard Laser Scanner Option – SE955
- 1D Standard Imager Option – EV15
- 2D Imager Option – HHP 5000

**Internal Expansion Slots**
- One microSD slot

**Expansion Port**
- Battery Output Power
- USB Signalling
- Scanner Trigger Input
Chapter 1: Introduction

NEO Hand-Held Computer Features

Docking Port
• RS-232
• USB
• DC Input

Power Management
• 3.7 V @ 3300 mAh lithium-ion rechargeable battery
• 10 hour battery operation at 5 scans, transmit and receive per minute
• Built-in gas gauge and performance monitor
• System backup (up to 10 minutes) during battery swap
• 3 day real time clock backup
• Adjustable battery allocation between system backup and runtime

Accessories
• Desktop charger
• Quad charger
• Pistol grip
• Holster
• Hand Strap
• Shoulder Strap
• Additional miscellaneous adaptors and cables (a complete list of accessories is available at www.psionteklogix.com)
## BASIC CHECKOUT

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2.1 Preparing NEO for Operation

2.1.1 The Battery
NEO is powered with a 3300 mAh lithium-ion battery, Model No. WA3006.

⚠️ Warning: Before charging the battery, it is critical that you review the safety guidelines in the ‘NEO Hand-Held Computer (Model No. PX750) Regulatory & Warranty Guide’, PN 8000175.

2.1.1.1 Charging the Main Battery
Battery packs shipped from the factory are charged to approximately 40% and must be fully charged prior to use. Batteries can be charged using a variety of docking stations along with a NEO internal charger. When using the internal charger, a suitable power source is required. All docking stations are described in Chapter 6: “Peripheral Devices & Accessories” beginning on page 155.

Note: In order to maintain the NEO real time clock for three days, a battery must be charged for at least two hours while installed in the hand-held; however, if you are charging a spare battery (not installed in the hand-held), the real time clock three day backup cannot be maintained until a charged battery is installed in the hand-held computer for at least two hours.

2.1.2 Backup Battery Power
A super capacitor provides a minimum of 10 minutes of suspend mode backup power to NEO to protect data while you swap in a new battery; all unnecessary draws on power such as the display and CPU are shut down to preserve power.

⚠️ Important: When you initially power up the hand-held, leave the battery in the unit for a minimum of 2 minutes to allow the super capacitor to reach full capacity.

2.2 Switching NEO On and Off

2.2.1 Installing the Battery and Switching the Unit On
• Push the release latch at the base of the battery cover to unlatch it. Remove the battery cover.
• Insert a charged battery into the unit, making certain that the connectors on the battery are aligned with those in the NEO’s battery compartment.
Chapter 2: Basic Checkout
Switching the Unit Off (Suspend)

- Replace the battery cover, and snap it into place.

Note: If you are using a docking station or an external power supply, you can insert an uncharged battery and switch NEO on.

To switch NEO on:
- Press and hold down the [ENTER] key for at least one second.
- When the LED flashes green, release the [ENTER] button.

The desktop screen is displayed.

Note: If the unit was already in use – the unit may be off (suspend state) – pressing [ENTER] ‘wakes’ the unit from this state. The screen in which you were working prior to the suspend state is displayed.

2.2.2 Switching the Unit Off (Suspend)

- Press the [FN/BLUE] key, and then press [ENTER].

2.3 Calibrating the Touchscreen

Note: Keep in mind that the touchscreen function can be turned off (see “Touch” on page 97).

The touchscreen is factory-calibrated and ready-to-go; however, over time the touchscreen operating parameters may change, and may need to be recalibrated for correct operation. Refer to “Calibrating the Touchscreen” on page 36 for details.

2.4 Wireless Networking

NEO contains an integrated 802.11b/g radio module. The Wi-Fi Config application is used to configure NEO for one or more wireless network profiles. A network profile contains settings for SSID (Service Set Identifier) and security options.

Note: In most situations, the configuration of your 802.11 radio will require parameter setting and access keys from a network administrator.
To launch the Wi-Fi Config application:

- Tap on Start>Programs>Wi-Fi Config.

The Wi-Fi Config screen is displayed.

2.4.1 Status Tab

The Status tab displays information about the wireless network to which NEO is configured to connect. When there are no network profiles configured, this tab is not populated.

Disable/Enable Radio: This button toggles between Disable Radio and Enable Radio depending on whether the radio is turned off or on.
2.4.2 Wi-Fi Config Tab

- To configure the radio for a wireless network, tap on the Configure tab.

**Connect:** Used to connect to an already existing wireless network configuration.

**Add New:** Used to create a new wireless network configuration.

**Edit:** Used to change values in an already existing wireless network configuration.

**Remove:** Used to delete a wireless network configuration.

**Scan:** Used to detect and list available wireless networks. You can highlight a network in the list, and tap on Add New to activate the network.

There are two methods available when configuring a radio network – you can either scan for an existing network or manually create a network. If you tap on the Scan button, a list of networks detected by the radio is displayed. Highlighting one of the listed networks and tapping on the Add New button creates a new profile that is completed based on the security capabilities detected by the radio. You may need to add additional information, depending on your network requirements.

If you tap on the Add New button rather than the Scan button, you can create a network manually.

**Important:** The steps below describe how to manually create a network. Keep in mind that this is intended only as an example and may vary from your own network requirements. If, for example, you are using a different type of security for your network, the fields you complete may not match those described here.
2.4.2.1 Authentication Modes

NEO supports four classes of authentication – Open, WEP, WPA PSK and 802.1x with EAP. Tapping on the Auth. Mode menu displays your authentication options.

Note: Each Auth. Mode has a unique Configure Profile screen attached to it with fields appropriate to the authorization mode you’ve chosen.

Open Authentication

Open authentication does not provide security. When this option is chosen, NEO will connect to wireless networks which do not use authentication or encryption.

• Enter the SSID (Service Set Identifier) for your network.
**WEP (Wired Equivalent Privacy)**

WEP provides static security to prevent others from accidentally accessing your network. If you choose this option, you can specify the type of WEP authentication – *Open* or *Shared*, the WEP security key length – *64 bit* or *128 bit* and the key type – *ASCII* or *Hex*. WEP Key fields are also provided where you can specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimial digit sequence that matches the active WEP key on the access point.

**WPA & WPA2 Personal PSK (Pre-Shared Key)**

When PSK is selected, either *WPA Personal PSK* or *WPA2 Personal PSK* – a shared key must be configured on both the access point and the hand-held computer. One of the following can be chosen from the *Encryption* dropdown menu: *TKIP, AES* or *TKIP+AES*.

**802.1X, WPA & WPA2 Enterprise and CCKM**

These authentication modes use *802.1X* and with *EAP* authentication. When *802.1X* is selected, NEO uses *WEP* encryption with automatic (as opposed to static) keying. For the others, the user may choose *TKIP, AES* or *TKIP+AES* encryption.

### 2.4.2.2 EAP

This menu allows you to choose the *EAP* (Extensible Authentication Protocol) type used for 802.1x authentication to an access point.

The following EAP types are supported by *Wi-Fi Config*:

- **TLS**: Provides strong security via the use of client certificates for user authentication.
• **PEAPv0-MSCHAPv2**: Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. *MSCHAPv2* is used as the inner authentication method. This is appropriate for use against Windows Active Directory and domains.

• **PEAP-GTC**: PEAP authentication using GTC as the inner method which utilizes one time passwords (OTPs) for authentication against OTP data bases such as SecureID.

• **LEAP**: Is an authentication method for use with Cisco WLAN access points. LEAP does not require the use of server or client certificates. LEAP supports Windows Active Directory and domains but requires the use of strong passwords to avoid vulnerability to off-line dictionary attacks.

• **FAST-MSCHAPv2**: Is a successor to LEAP and does not require strong passwords to protect against off-line dictionary attacks. Like LEAP, EAP-FAST does not require the use of server or client certificates and supports Windows Active Directory and domains.

**Server Certificate Verification**

When the *Verify Server Certificate* box is checked, NEO will verify the certificate provided by the authentication server during the authentication process. This requires that an appropriate certificate be manually installed on NEO for the verification.

### 2.4.2.3 Encryption

The *Encryption* menu allows you to choose the type of encryption that will be used to protect transmitted data. Choose an *Encryption* method valid for your network from the drop-down menu. Only the *Encryption* options that are compatible with the type of *Auth. Mode* you’ve chosen will be listed. In fact, in some cases, this menu will not be available at all.
Chapter 2: Basic Checkout

Wi-Fi Config Tab

- Complete the fields in the Configure Profile screen. If you’re uncertain about some of the options, your system administrator will be able to provide the correct information for your wireless network.
- Once you’ve completed the necessary fields, tap on OK.

2.4.2.4 Connecting the Wireless Network

Your configured network is listed in the Configure tab. An \([X]\) next to a network indicates that this is the network to which NEO will connect.

- Tap on the Connect button to activate your network.

The Status tab is displayed. The Status field displays ASSOCIATING while the 802.11b/g radio attempts to connect to the network. Once the association is complete, the Status tab is populated with the appropriate information about your network.
2.4.3 Configuring TCP/IP

If your network is not using a DHCP server, you will need to assign an IP address.

2.4.3.1 IP Address

To assign an IP address for NEO:

- Tap on the radio icon in the taskbar,

[Image of taskbar]

or

Tap on Start>Settings>Network and Dial-up Connections. Tap on the radio icon for which you want to assign an IP address – in the sample screen below, the icon is labelled SDIO86861.

[Image of network and dial-up connections settings]

The Wireless Statistics screen is displayed.
To define a static IP address:

- Tap on the **Configure** button.

  - Tap the stylus on the radio button next to Specify an IP address to select it.
  - Type an IP, Subnet Mask and Default Gateway address in the appropriate fields. Press [ENTER] to save your information.
2.4.3.2 Name Server

*Note: If DHCP is enabled, name server addresses are assigned automatically.*

- In the SDIO86861 IP Information tab (see Figure 2.1 on page 20), tap on the **Configure** button.
- Tap on the **Name Servers** tab.

![Image of Name Servers tab]

The DNS and WINS fields in the **Name Servers** tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.####.####.####.
2.4.4 Advanced Tab

If you prefer to use *Wireless Zero Config*, the Windows native supplicant, to configure the radio:

- Tap on the **Advanced** tab, and tap on the checkbox to the left of **Use Windows to configure my wireless settings** to add a check mark and activate this option.

- You’ll need to reset NEO. Choose **Start>Shutdown>Warm Reset**.
- A dialog box is displayed letting you know that you will lose all unsaved data. Tap on **OK**.

Once the reset is complete, the *Wireless Zero Config* screen is displayed on NEO. Refer to Appendix B: “Wireless Zero Config” for details.
2.5 Checking the Scanner

If your hand-held is equipped with an internal scanner, you can test it to ensure that it is operating properly. Point the scanner window at a bar code that your scanner was designed to decode. Press the SCAN key or the pistol trigger, and check for a valid decode on the hand-held screen.

Performance is improved if you disable all unneeded bar codes in the Bar Codes screen. Review “Teklogix Scanner Settings” on page 135 or details about bar codes.

2.6 Data Transfer Between the PC and the Hand-Held

Data transfer options vary slightly depending on the type of operating system installed in your PC. Microsoft® ActiveSync® is PC connectivity software that can be used to connect your hand-held to PCs running this software. ActiveSync works only with the Windows XP SP2 operating system or earlier.

If the Microsoft Vista or Windows 7 operating system is installed in your PC, ActiveSync is not required to transfer data between NEO and your PC.

By connecting NEO to a PC with a cable, you can:

- View NEO files from Windows Explorer.
- Drag and drop files between NEO and the PC in the same way that you would between PC drives.
- Back up NEO files to the PC, then restore them from the PC to the hand-held again, if needed, and so on.

2.6.1 Using Microsoft ActiveSync®

If you are using Windows XP or earlier, your data transfers require Active Sync. To install ActiveSync, follow the step-by-step instructions provided with the program’s setup wizard. Refer to the following website for details:

http://www.microsoft.com/windowsmobile/activesync/activesync45.mspx
2.6.2 Using Windows Mobile Device Center

If you are running Windows Vista or Windows 7, your data transfers do not require Active-Sync. Instead, you will need to download Windows Mobile Device Center. Refer to the instructions at the following website:


To transfer data between your PC and your hand-held:

- Tap on Start>Computer to display the drives. NEO will be visible here.
- Open drives, files and folders as you would on your PC.

2.7 Resetting NEO

2.7.1 Performing A Warm Reset

When you perform a warm reset, the operating system restarts without clearing the object store memory where the file system resides. Registry settings, installed programs and any data files are preserved. Any open applications are closed and any unsaved data are lost.

To execute a warm reset:

- Press and hold down the [FN/BLUE] key and the [ENTER] key simultaneously for a minimum of six seconds.

Note: You do not need to reset NEO after configuring the radio.

2.7.2 Performing A Cold Reset

Note: Cold reset is only listed in the Shutdown menu if the security level of the hand-held is set to Supervisor or Teklogix.

A cold reset clears the object store memory and restarts the operating system. Registry settings are maintained, but any data and applications that are not stored in the Flash file system – called Flash Disk on NEO – or on a microSD card are lost. This should be used as a last resort if NEO cannot be reset using any other method.

To execute a cold reset and launch the Windows CE 5.0 operating system (bypassing the boot menu):

- Press and hold down the [FN/BLUE] [FN/ORANGE] and [ENTER] keys simultaneously for a minimum of six seconds.
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3.1 Features of NEO

Figure 3.1 Front View

- Protective Rib
- Microphone
- LED (Light Emitting Diode)
- Receiver
3.2 The Battery

The hand-held operates with a lithium-ion battery, Model No. WA3006. Preparing the unit for operation requires that a battery pack be charged and installed in NEO.

3.2.1 Battery Safety

**Important:** Before attempting to install, use or charge the battery pack, it is critical that you review and follow the important safety guidelines in NEO Hand-Held Computer Regulatory & Warranty Guide, PN 8000175.
3.2.2 Removing the Battery Pack

Important: To protect against data loss, NEO is equipped with a sensor; this sensor detects when the battery door is opened and automatically places the handheld computer into suspend mode so that you can safely remove the battery.

For details about unlatching the battery cover, review “Installing the Battery and Switching the Unit On” on page 11.

3.2.2.1 Battery Swap Time

Assuming the default power saving parameters and battery reserve level have not been altered, battery swap time is 10 minutes – you will not lose data if the battery is replaced within this time frame.

The Suspend Threshold adjustment in the Power Properties tab allows you to determine the battery capacity at which the hand-held will be shut down. If left at the default value, Maximum Operating Time, the unit will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose Maximum Backup Time, the hand-held shuts off with more energy left in the battery so RAM can be backed up for a longer period of time.

Refer to “Suspend Threshold” on page 94 for details about reserving battery power for data backup purposes.

3.2.3 Charging the Battery

Batteries shipped from the factory are charged to approximately 40% of capacity. They must be fully charged prior to use.

3.2.3.1 Charging Options

Important: FOR DETAILED INFORMATION about charging options, refer to Chapter 6: “Peripheral Devices & Accessories”.

Lithium-ion batteries must be charged before use. These batteries can be charged with a variety of adaptors and docking stations. These include:

• AC Wall Adaptor (Model No. PX3012) – operates as an AC power source and when used in conjunction with PX3001 or PX3054, also charges the battery installed in the unit.
Chapter 3: Getting To Know NEO

Switching the Hand-Held On and Off

- Cigarette Lighter Adaptor (Model No. PX3056) when used with a USB/DC Power Adaptor (Model No. PX3054).
- Desktop Docking Station (Model # PX3001) – operates as both a charger and a docking station. Operating as a charger, both the battery installed in the hand-held and a spare battery can be charged simultaneously.
- Desktop Docking Station with Integrated V.92 Analog Modem (Model No. PX3008) – integrates docking and analog modem functionality. Operating as a charger, both the battery installed in the hand-held and a spare battery can be charged simultaneously. Operating as a modem, this dock provides USB connectivity and data connections over a PSTN line.
- Quad Docking Station – (Model # PX3004) can charge the battery of up to four NEOs inserted in the docking station.

The charge time required to make NEO ready for use varies depending on the type of docking station used. A hand-held inserted in a docking station requires 3 hours to charge the battery to 75% capacity. NEO is equipped with an intelligent charging system that protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

Note: The specified battery charge times are based on the hand-held in suspend mode. Additional peripherals and other power consumption features will alter the specified charge time.

Note: Refer to “Monitoring the Battery and Maximizing Run Time” on page 41 for additional information about the battery.

Important: To avoid damaging the battery, the charge process will not begin until the battery temperature is between 0°C to 45°C (32°F to 113°F).

3.3 Switching the Hand-Held On and Off

- To switch the unit on, press and hold down the [ENTER] key for at least one second.
- When the LED flashes green, release the [ENTER] key.

The startup screen is displayed.

Note: If NEO is in suspend state, pressing [ENTER] 'wakes' the unit from this state. The screen in which you were working before the computer entered suspend state is displayed.
Switching Off NEO (Suspend)

Important: Keep in mind that turning off NEO does not result in a complete reboot; rather, the unit enters a power-saving, “suspend” state. When the unit is turned on from suspend state, operation resumes within a few seconds.

- To switch the unit off, press [FN/BLUE] [ENTER].

3.4 The Keyboard

Two keyboard options are available:
- 48-key alpha-numeric keyboard
- 26-key numeric keyboard

These keyboard options are available for both variants of NEO – connected hand-holds equipped with 802.11b/g radios and batch (unconnected) hand-holds not equipped with 802.11b/g radios.

Most of the keys on these keyboards operate much like a desktop computer. Where a key or key function is not consistent with the PC keyboard, the differences are noted.

The [FN/BLUE] and [FN/ORANGE] modifier keys provide access to additional keys and system functions. These functions are colour coded in orange and blue print on the keyboard keys.

3.4.1 Modifier Keys

The [SHIFT], [CTRL], [ALT], [FN/BLUE] and [FN/ORANGE] keys are modifier keys. Pressing a modifier key changes the function of the next key pressed.

The [SHIFT], [CTRL] and [ALT] keys operate much like a desktop keyboard except that they are not chorded (two keys held down simultaneously). The modifier key must be pressed first followed by the key whose function you want modified.

3.4.1.1 Activating Modifier Keys

When a modifier key is pressed once, it is displayed in lowercase letters in the taskbar at the bottom of the hand-held screen. For example, if the [CTRL] key is pressed, ctrl key is displayed at the bottom of the unit screen. Once the next key is pressed, the modifier key becomes inactive and disappears from the taskbar.

Keep in mind, however, that the ‘One Shot’ function allows you to determine how many key presses will lock a modifier key ‘on’ – one press or two. Refer to “Keyboard One Shot Modes” on page 83 for details.
Chapter 3: Getting To Know NEO

The Keys

3.4.1.2 Locking Modifier Keys
When a modifier key is pressed twice, it is ‘locked’ on. A ‘locked’ modifier key is displayed in uppercase letters in the taskbar. For example, pressing the [CTRL] key twice locks it on—it is displayed as CTRL KEY in the taskbar at the bottom of the computer screen.

The locked modifier key will remain active until it is pressed a third time to unlock or turn it off. Once a modifier key is unlocked, the uppercase representation at the bottom of the screen is no longer displayed.

3.4.2 The Keys

The [SHIFT] Key
The [SHIFT] key provides access to uppercase alpha characters, and on numeric hand-holds, it also provides access to the symbols displayed in white print on the keys.

To lock the keyboard into uppercase, CAPS-lock, press [FN/BLUE] followed by [SHIFT]. A CAPS-lock icon – a blue capital letter A within a white box – appears in the taskbar. To unlock or turn off CAPS-lock, press [FN/BLUE] [SHIFT] again. Refer to “Keyboard One Shot Modes” on page 83 if you need to adjust the behaviour of this key.

The Arrow Keys
The Arrow keys move the cursor around the screen in the direction of the arrow: up, down, left and right. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [SPACE] Key
Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a checkbox.

The [<—/DEL] Key
This key allows access to both the backspace and the delete function. The backspace function represented by an arrow [<—] (sometimes referred to as destructive backspace) moves the cursor one character to the left, erasing the incorrectly entered key stroke.

The delete function ([FN/BLUE] [<—/DEL]) erases the character at the cursor position.

The [CTRL] And [ALT] Key
The [CTRL] and [ALT] keys modify the function of the next key pressed and are application-dependent.
Chapter 3: Getting To Know NEO
Function Keys and Macro Keys

The [TAB] Key
Typically, the [TAB] key moves the cursor to the next field to the right or downward.

The [ESC] Key
Generally, this key is used as a keyboard shortcut to close the current menu, dialog box or activity and return to the previous one.

The Windows [START] Key
This key displays the Start menu.

The [SCAN] Key
All units are equipped with a yellow [SCAN] key. For units that do not have internal scanners, this key can be re-mapped to another function.

Volume Keys - [UP ARROW] and [DOWN ARROW]
The volume keys are located on the [UP ARROW] and [DOWN ARROW]. The [UP ARROW] key – the increase volume key – is labelled with a plus symbol. The [DOWN ARROW] key – the decrease volume key – is labelled with a minus symbol. Press the [FN/BLUE] key followed by the [UP ARROW] and/or [DOWN ARROW] keys to adjust the volume.

Backlight Keys - [LEFT ARROW] and [RIGHT ARROW]
The backlight keys are located on the [LEFT ARROW] and [RIGHT ARROW] keys. The [LEFT ARROW] key – the decrease backlight key – is labelled with a minus symbol. The [RIGHT ARROW] key – the increase backlight key – is labelled with a plus symbol. Press the [FN/BLUE] key followed by the [LEFT ARROW] and [RIGHT ARROW] keys to adjust the backlight.

3.4.3 Function Keys and Macro Keys
In addition to the standard keyboard functions, NEO supports Function keys and Macro keys. All Function and Macro keys can be custom defined for each application.

3.4.3.1 Function Keys
The hand-held keyboard is equipped with a total of 10 function keys colour coded in blue print on the numeric keys; these keys are accessed by executing a key combination, [FN/BLUE] followed by the appropriate numeric key.
Chapter 3: Getting To Know NEO

48-Key Alpha-Numeric Keyboard: Accessing Keys

Note: The [TAB], [ALT], [CTRL] and [ESC] keys have [F1] through [F4] printed on them; these are only labels and are provided so that the operator can create direct-press function keys using the keyboard remapping feature. Refer to “Scancode Remapping” on page 84 for details about mapping keys.

For example, to access function key [F7]:

• Press the [FN/BLUE] key followed by the [7] key – the numeric key to which function key [F7] is mapped.
• To access function key [F8], press [FN/BLUE] [8], and so on.

3.4.3.2 The Macro Keys

While macro keys are not physically stamped on the keyboard, up to 15 macro functions can be added using the Scancode Remapping function. Refer to “Scancode Remapping” on page 87 for details about mapping keys. Refer to “Keyboard Macro Keys” on page 84 for details about programming characters in a Macro key.

3.4.4 48-Key Alpha-Numeric Keyboard: Accessing Keys

The alpha and numeric keys on an alpha-numeric keyboard are directly accessible from the keyboard – no key combination is required.

3.4.5 26-Key Keyboard: Accessing Alpha Keys

On numeric 26-key keyboards, numeric keys are directly accessible, and all alpha characters are printed on the keys in orange characters. An indicator in the left corner of the taskbar displays the currently selected character. To access an alpha character, first press the [FN/ORANGE] key and then press the numeric key above which the alpha character you want to type is printed.

Choosing a Single Alpha Character

The examples below illustrate how to access, A, B, and C, all of which are printed in orange characters above the numeric key [2].

Important: The letters you choose appear in the taskbar, providing a visual indicator of which letter will be displayed on the screen.

To choose the letter a:

• Press the [FN/ORANGE] key, and press the numeric key [2].
Chapter 3: Getting To Know NEO

26-Key Keyboard: Accessing Alpha Keys

To choose the second letter in the sequence – in this example, the letter b:

- Lock the [FN/ORANGE] key ‘on’. ‘ORG KEY is displayed in upper-case characters in the taskbar to indicate that this key is locked ‘on’.
- Press numeric key [2] twice to display the letter b.

To choose the third letter in the sequence – in this example, the letter c:

- Lock the [FN/ORANGE] key ‘on’.
- Press numeric key [2] three times to display the letter c.

Note: Keep in mind that there is a timeout if you pause for one second between key presses when selecting the second, third or fourth letters on a key. For example, suppose you want to type the letter ‘c’ – you’d need to press the [2] key three times. With the [FN/ORANGE] key locked ‘on’, if you press [2] twice and then pause between key presses for 1 second, the letter ‘b’ will be selected automatically.

Creating Uppercase Letters

To display a capital letter:

- Press the [FN/ORANGE] key and then the [SHIFT] key before typing the alpha character.

Note: If you want to use uppercase characters at all times, press [FN/BLUE] [SHIFT]. An icon of an uppercase ‘A’ is displayed in the taskbar indicating that all letters will be displayed as uppercase characters.

Choosing Multiple Alpha Characters

- Lock the [FN/ORANGE] key ‘on’.

Each time you press a numeric key from [2] through [9], an alpha character will be displayed on the screen. Remember that you can refer to the softkey bar for a visual indication of which alpha key will be displayed on the screen.

Important: Once you have finished typing alpha characters, remember to turn off or unlock the [FN/ORANGE] key.
Chapter 3: Getting To Know NEO

The Keyboard Backlight

3.4.6 The Keyboard Backlight

The intensity of the keyboard backlight and the conditions under which this backlight is activated can be configured using the Keyboard icon in the Windows CE 5.0 Control Panel. The behaviour of the keyboard backlight is tailored in the Keyboard Properties dialog box. Refer to “Keyboard Backlight” on page 82 for details about this option.

Note: Keep in mind that this option may be restricted to supervisory use only.

3.5 The Display

NEO hand-holds are equipped with display backlighting. The backlight switches on when a key is pressed or the screen is tapped.

3.5.1 Adjusting the Display Backlight

The Display Properties dialog box in the Control Panel allows you to determine the behaviour of the display backlight and its intensity. Refer to “Display Backlight” on page 78 for details about the Display Properties dialog box.

Note that you can also adjust the backlight directly from the keyboard by pressing the [FN/BLUE] key followed and the [LEFT ARROW] and [RIGHT ARROW] arrow keys to increase or decrease the backlight intensity.

3.5.2 Calibrating the Touchscreen

If NEO touchscreen has never been calibrated, or if you find that the stylus pointer is not accurate when you tap on an item, use the Stylus Properties dialog box in the Control Panel to recalibrate the screen.

• In the Control Panel, choose the Stylus icon to display the Stylus Properties window.
Choose the **Calibration** tab, and then tap on the **Recalibrate** button.

Follow the directions on the calibration screen to calibrate the screen.

### 3.6 NEO Hand-Held Indicators

NEO uses an LED (Light Emitting Diode), onscreen messages and audio tones to indicate the various conditions of the hand-held, the batteries, the scans and so on.

#### 3.6.1 LED Indicator

A tri-coloured LED – yellow, green or red – is located on the upper-left side of the unit, above the screen.
Keep in mind that the application running on NEO can dictate how the LED operates. Review the documentation provided with your application to determine LED behaviour. The scanner also overrides LED behaviour. The table below describes what the various LED colours indicate when a scan is activated—a scanner button is pressed or the scanner trigger is pulled.

### Table 3.1 NEO Scanner LED Behaviour

<table>
<thead>
<tr>
<th>LED Behaviour</th>
<th>Scan Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Red</td>
<td>Indicates the scanner is firing.</td>
</tr>
<tr>
<td>Blinking Red</td>
<td>Unsuccessful decode.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>Successful decode.</td>
</tr>
</tbody>
</table>

**Note:** During the first two minutes of a battery charge, the LED remains solid yellow while the hand-held computer status is assessed.

If the unit is attached to an external power supply, the hand-held LED reflects the battery charge status.

### Table 3.2 NEO Charge LED Behaviour

<table>
<thead>
<tr>
<th>LED Behaviour</th>
<th>Charge Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Yellow</td>
<td>Battery charged to less than 75% capacity.</td>
</tr>
<tr>
<td>Flashing Green</td>
<td>Battery charged to between 75% and 95% of capacity.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>Fully charged.</td>
</tr>
<tr>
<td>Flashing Yellow</td>
<td>Temperature outside charge range (0°C to 45°C).</td>
</tr>
<tr>
<td>Solid Red</td>
<td>Battery is not charging. Battery fault warning.</td>
</tr>
</tbody>
</table>

### 3.6.2 Audio Indicators

The audio receiver provides a variety of sounds when a key is pressed, a keyboard character is rejected, scan input is accepted or rejected, an operator’s entry does not match in a match field or the battery is low. To specify how you want NEO to respond under various conditions, refer to “Volume and Sound Properties” on page 91.
The volume keys are located above the [UP ARROW] and [DOWN ARROW] keys. The increase volume key is labelled with a plus symbol + and the decrease volume key is labelled with a minus symbol −.

3.6.2.1 Adjusting the Receiver Volume

- Lock the [FN/BLUE] key ‘on’ and then, press [UP ARROW] – the increase volume key or [DOWN ARROW] – the decrease volume key until the volume meets your requirements.
- Remember to press the [FN/BLUE] key again to turn it ‘off’.

3.6.3 Onscreen Indicators

The taskbar at the bottom of the screen displays a variety of system status indicators.

Figure 3.5 Taskbar

Note: This sample screen is present on units running ‘Windows CE 5.0 Professional; the desktop screen for a ‘Batch’ NEO running ‘Windows CE 5.0 Core’ differs slightly from the sample screen above; in the ‘Core’ version, the icons for Internet Explorer, Wordpad and Remote Desktop are not visible.

The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in NEO, the radio signal icon is not displayed in the taskbar.
Chapter 3: Getting To Know NEO

Onscreen Indicators

Windows® Start Button
If you are using the touchscreen, you can either tap the Windows icon at the bottom left of the screen, or press [FN/BLUE] [.](period) to display the Start Menu, and then tap on the desired application.

Modifier Key Indicators

[SHIFT], [CTRL], [ALT], [FN/BLUE] and [FN/ORANGE] are modifier keys that when pressed, are displayed in the taskbar to indicate that they are active. If a modifier key is locked ‘on’, it is displayed in uppercase characters. For example, if the [FN/BLUE] key is locked on, it is displayed as BLUE KEY in the taskbar. A locked modifier key remains active until it is pressed again to unlock or turn it off.

If a modifier key has been pressed but is not locked on, it is displayed in the taskbar in lowercase characters – for example, blue key. It will remain active only until the next key is pressed at which point, the modifier key is turned off.

Note: The locking function of the modifier keys can be set up so that pressing one of these keys once will lock the key ‘on’. They can also be set up so that they must be pressed twice to be locked ‘on’. Refer to “Keyboard One Shot Modes” on page 83 for details.

Battery Gauge

The battery shaped icon displayed in the taskbar provides a visual indication of the remaining battery power. The icon acts as a meter that is either full, at three-quarter level, half, quarter level or empty.

When the battery level is low – approximately 15 minutes from empty – a warning window pops up. When the battery power is completely depleted, a final warning window indicates that NEO will be powered down.

If NEO is using external AC power, an AC icon is displayed in the taskbar.
3.7 Monitoring the Battery and Maximizing Run Time

The battery charge icon is displayed in the taskbar when the hand-held battery is being charged.

**802.11 Radio Signal Quality**
Increasing radio signal quality is represented by longer, filled bars within this icon.

- Good Reception
- Weak Reception
- No Radio Link

**Docking Device**
When a hand-held is inserted in a docking station, an associated icon appears in the taskbar.

**Bluetooth Radio**
This icon displayed in the taskbar represents the installed Bluetooth radio.

**Security Level**
Security levels can be set to limit user access. In addition, applications can be restricted to prevent inadvertent changes.

As lithium-ion batteries age, their capacity decreases gradually, and they are generally considered depleted after approximately 2 years of use (less than 60% of original capacity remaining). Keep in mind however that heavy usage or operating the unit at temperature extremes will shorten the battery life.
Chapter 3: Getting To Know NEO

Storing Batteries

Lithium-ion batteries do not require conditioning cycles and the NEO battery system does not require user interaction to maintain peak performance.

To determine the remaining charge in the battery, you can tap on the Power icon in the Control Panel to display a dialog box that provides detailed information about the battery status of the main battery installed in your unit. You can also tap on the Power icon in the taskbar to display the battery status.

To maximize the run time of your batteries, consider the following:

- The hand-held is ‘event’ driven – that is, when the unit is not in use, it reverts to sleep mode (even when it appears to be running), saving battery power. Events include a key press, touchscreen taps and scan triggers. Power consumption is reduced if you avoid unnecessary events, and allow the unit to sleep as much as possible.
- To view the status of the main battery installed in your unit, tap on the Power icon in the Control Panel to a dialog box that provides information about the battery status of the main battery installed in your unit.
- When the hand-held is switched off, it goes into a low-power, suspend state but continues to draw a small amount of power from the battery. This should not be an issue unless the unit is left in suspend state for more than a week – for long-term storage, the battery should be removed from the unit.
- Reduce display brightness.
- Turn off the keyboard backlight if not required.

3.7.1 Storing Batteries

Long term battery storage is not recommended. If storage is necessary:

- Always try to use a ‘first-in first-out’ approach to minimize storage time.
- Lithium-ion batteries age much faster at elevated temperatures. Store batteries at temperatures between 0 °C and 20 °C (32 °F and 68 °F).
- Always charge batteries to at least 40 to 60% before storing them. Batteries can be damaged by an over-discharge phenomenon that occurs when an empty battery is stored for a long period of time such that the cell voltage drops below a lower limit.
- To minimize storage degradation, recharge stored batteries to 40 to 60% every 4 or 6 months to prevent over-discharge damage.
- A ‘never used’ lithium-ion battery that has been stored for 3 years may have limited or no useful life remaining once put into service. Think of batteries as perishable goods.
Chapter 3: Getting To Know NEO

Uploading Data in a Docking Station

3.8 Uploading Data in a Docking Station

⚠️ Important: Review the documentation provided with the user application installed in NEO before performing data uploads.

The desktop docking station and quad docking station are typically used to upload transaction data to a server computer when a radio link is not available.

Note: Refer to “Desktop Docking Station – PX3001” on page 156 for more details.

The desktop docking station can complete batch uploads to a Client USB connected PC or server. An optional 10/100 Base-T Ethernet connection can be used via the USB to Ethernet cable (Model No. PX3052).

Unlike the desktop docking station, the quad docking station supports only TCP/IP connections to a PC or server through a 10/100 Base-T Ethernet connection.

When NEO is properly inserted in a docking station, a dock icon is displayed in the navigation bar at the top of the screen. The unit also detects the presence of the Ethernet network.

3.9 Bluetooth Radio

Note: Integrated Bluetooth Class 2 radios are standard on ‘connected’ NEOs – that is, units equipped with 802.11 radios. On ‘batch’ (unconnected) units, Bluetooth is an optional feature.

The Bluetooth radio enables short range data communication between devices. In addition, it provides the capability to use a Bluetooth-enabled cellular phone as a data modem, exchanging information with other Bluetooth devices and providing network access. You can also pair your hand-set with a Bluetooth headset. Refer to “Bluetooth Setup” on page 102 for setup details.

3.9.1 Pairing a Bluetooth Headset or Other Bluetooth Device

Note: If the Bluetooth radio is not already enabled, tap on the Start>Settings>Control Panel. Tap on the Power icon and then, the Built-in Devices tab. Add a checkmark next to Enable Bluetooth.

To pair a device:

• Follow the manufacturer’s instructions to place the remote device in pairing mode.
Choose the **Devices** tab and **Scan** for devices in your area.

When the scan is complete, tap on the **device** to which you want to pair.

In the pop-up **Device** menu, tap on **Pair**.

An **Authentication** dialog box is displayed.

If the remote device has authentication enabled, type the PIN in this dialog box.

To proceed *without* authentication, tap on **Next**.

*Note: If a remote device has authentication enabled and you’ve skipped the authentication process, a pop-up screen will ask if you want to allow the remote device to connect to NEO. Tap on **Yes** and type the PIN. When authentication is complete, tap on **Done**.*
After entering the device PIN, the Services dialog appears with a list of services available for that device.

- Click in the checkbox to the left of the service to activate it.
- Click on Done.

Services that require more information present a configuration dialog box. Serial Profile is an example.

This dialog box offers a number of additional options such as enabling Encryption and selecting three different modes: Serial, ActiveSync and Scanner

- Serial is used for simple serial port communication.
- ActiveSync is for ActiveSync-over-Bluetooth.
Chapter 3: Getting To Know NEO

The microSD Card

- **Scanner** is used to create a seamless connection between the incoming Bluetooth bar code and NEO.

Once you’ve completed the information:
- Tap on **Next** and then in the **Services** screen, click on **Done**.

3.10 The microSD Card

A microSD card slot is available in the battery compartment. microSD cards provide additional, non-volatile memory to your hand-held.

3.10.1 Inserting the Card

- Switch off NEO.
- Remove the battery cover and the battery.
- Gently slide the SD door down and then flip it forward.
- Slide the microSD card onto the guides on the SD door – position the card with the connector pads at the bottom so that when the door is closed, they make contact with the connectors in the unit.
• Carefully flip the SD door down, and slide it upward to lock it in place. Do not force it.

3.11 General Maintenance

3.11.1 Caring For The Touchscreen

The top of the touchscreen is a thin, flexible polyester plastic sheet with a conductive coating on the inside. The polyester can be permanently damaged by harsh chemicals and is susceptible to abrasions and scratches. NEO is equipped with a stylus that is designed to safely select items on the touchscreen. Use only the stylus on the touchscreen; using sharp objects on the touchscreen can scratch or cut the plastic, or crack the internal conductive coating.

The chemicals listed below must not come into contact with the touchscreen:

• sodium hydroxide,
• concentrated caustic solutions,
• benzyl alcohol, and
• concentrated acids.

Note: An optional protective cover (PN 1081366) is available to help protect the touchscreen. Follow the installation instructions shipped with the cover.
Chapter 3: Getting To Know NEO

Cleaning NEO

3.11.2 Cleaning NEO

Important: Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the exterior of the unit clean.

- Use only mild detergent or soapy water to clean the hand-held unit.
- Avoid abrasive cleaners, solvents or strong chemicals. The plastic case is susceptible to harsh chemicals; it is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the keyboard and touchscreen, use isopropyl alcohol.
- When using a dampened cloth to clean NEO, make certain that the battery cover is in place to protect the battery compartment from moisture.
# WORKING WITH WINDOWS CE 5.0

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4.1 Navigating in Windows CE 5.0

Graphic user interfaces like Windows CE 5.0 for portable devices and desktop Windows (2000, XP, etc.) utilize ‘point and click’ navigation. An equivalent keyboard shortcut is also available for every ‘point and click’ action.

Windows CE 5.0 supports the same ‘point and click’ user interface and keyboard shortcuts as desktop Windows with one difference – the ‘point and click’ action is accomplished using a touchscreen rather than a mouse. Actions can be performed using any combination of keyboard shortcuts or touchscreen tapping.

4.1.1 Navigating Using a Touchscreen and Stylus

NEO is equipped with a stylus – a pointing tool that looks like a pen. The stylus is used to select objects on the touchscreen.

To choose an icon, open a file, launch an applet, or open a folder:
• Double-tap the stylus on the appropriate icon.

4.1.2 Navigating Using the Keyboard

If the touchscreen has been disabled, you can use the keyboard to choose icons, navigate dialog boxes, display the desktop, and so on. If your unit has already been fully configured and your application is launched at startup, you’ll have little need for keyboard navigation, but you can refer to Table 4.1 for a description of the navigation keys.

Table 4.1  Keyboard Navigation

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key or Key Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch between active applications</td>
<td>[ALT] [TAB]</td>
</tr>
<tr>
<td>Open task manager</td>
<td>[ALT] [ESC]</td>
</tr>
</tbody>
</table>
Keep in mind that unlike a desktop computer, NEO does not support key chording (pressing two keys at the same time). You must press one key followed by the next in sequence. Refer to Section 4.2: “Working with Files, Folders and Programs” for additional details about keyboard navigation.

### 4.2 Working with Files, Folders and Programs

Figure 4.1 Working with Windows Icons

<table>
<thead>
<tr>
<th>Operation</th>
<th>Key or Key Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move the cursor</td>
<td>Arrow keys</td>
</tr>
<tr>
<td>Open file, folder or icon</td>
<td>[ENTER]</td>
</tr>
<tr>
<td>Exit &amp; Save</td>
<td>[ENTER]</td>
</tr>
<tr>
<td>Close/Exit &amp; Do Not Save</td>
<td>[ESC]</td>
</tr>
<tr>
<td>Navigate Dialog Boxes</td>
<td>[TAB]</td>
</tr>
<tr>
<td>To move cursor up: [SHIFT] [TAB]</td>
<td></td>
</tr>
<tr>
<td>To display the contents of the next ‘tab’ in a dialog box: [CTRL] [TAB]</td>
<td></td>
</tr>
<tr>
<td>Select/Deselect Radio Button &amp; Press Button</td>
<td>[SPACE]</td>
</tr>
<tr>
<td>Go to Start Menu</td>
<td>[FN/BLUE][.] or [CTRL][ESC]</td>
</tr>
</tbody>
</table>
• Double-tap on the appropriate icon – either a folder icon, a program icon or a file icon – to open or launch your selection.

If you’re using the keyboard:
• Use the arrow keys to highlight the icon you want to open or launch.
• Press [ENTER].

4.3 The Startup Desktop
When NEO boots up, the startup desktop (shell) is displayed. Any applications stored in the Startup folder start up immediately.

*Note: The startup folder is located in \Windows\StartUp and \Flash Disk\StartUp.*

Figure 4.2 NEO Startup Desktop

To access desktop icons:
• Double-tap on the icon to open a window or, in the case of an application icon, launch an application.

On the keyboard:
• Use the arrow keys to highlight the icon, and press [ENTER] to launch the highlighted icon.
4.3.1 The Desktop Icons

Note: NEOs equipped with the Windows CE 5.0 Core OS do not include Internet Explorer, Wordpad or Remote Desktop.

The icons displayed in the startup desktop operate in much the same way as those displayed on any standard PC desktop that is running Windows.

**My Device**

Choosing this icon displays the contents of NEO computer. If you’re not sure how to access the files, folders and programs displayed, refer to “Working with Files, Folders and Programs” on page 52.

**Recycle Bin**

This option temporarily stores items that were deleted, allowing you to either permanently delete or restore these items.

**Internet Explorer**

Choosing this icon launches Internet Explorer – a standard Windows CE 5.0 version. Keep in mind that your supervisor will need to set up access using the Internet Options and the Network and Dial-up Connections icons in the Control Panel.

**Microsoft WordPad**

Microsoft WordPad is a basic word processor used to create, edit, view and print text documents.

**Remote Desktop Connection**

This option allows NEO to communicate with a remote desktop PC. “Remote Connect” on page 73 provides a website with step-by-step instructions.
4.3.2 The Taskbar

NEO is equipped with a taskbar at the bottom of the screen. It displays icons through which you can view the battery capacity and radio signal quality of your unit. If the hand-held is attached to a docking station or adaptor, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit and the security level assigned to NEO.

The taskbar also displays active modifier keys: [SHIFT], [ALT], [CTRL], [FN/BLUE] and [FN/ORANGE]. Keys that have been locked “on” are displayed in uppercase letters. For example, if you have set the [CTRL] key Lock to “on” in the Keyboard menu and you press the key, it is displayed as CTRL KEY in the taskbar. (For detailed information on modifier keys and keyboard options, see “The Keyboard” on page 31).

4.3.2.1 Using the Taskbar

A tooltip is displayed as each taskbar icon is highlighted. The tooltip provides the status of each icon.

If you’re using the touchscreen:
- Tap and hold the stylus on an icon to display the associated tooltip. Double-tap the icon to open the Control Panel dialog box associated with the icon. For example, double-tap the battery icon to display a dialog box listing the current battery capacity information.

On the keyboard:
- Press [FN/BLUE] [. ] (period) to display the Start Menu.
- Press the [DOWN] arrow key to highlight Shortcuts in the Start Menu, and then press the [RIGHT] arrow key to display the sub-menu.
Chapter 4: Working With Windows CE 5.0

The Taskbar

• Choose System Tray in the sub-menu.
• Use the arrow keys to highlight the icon in the taskbar about which you’d like more information.
• Press [ENTER] to display the appropriate dialog box.

4.3.2.2 Customizing the Taskbar

To customize the taskbar so that it displays only those icons you require:

• In the Start Menu, choose Settings>Taskbar.

If you’re using the keyboard:

• Press [FN/BLUE] [.] to display the Start Menu.
• Highlight the Settings option, highlight Taskbar in the sub-menu, and press [ENTER].

The Taskbar and Start Menu dialog box is displayed.

Taskbar General Tab

• Tap the stylus on the items you want to activate or deactivate. The check mark indicates active items.

If you’re using the keyboard:

• Highlight the options you want to activate, and press the [SPACE] key to select them. The check mark indicates active items.
Taskbar Advanced Tab

- Tap on the **Clear** button to empty the *Documents* folder.
- To display *Control Panel* applets in menu form rather than in a window, tap in the checkbox next to *Expand Control Panel*.

Taskbar Security Tab

If you check *Disable hot keys*, the *Application from Start menu* field becomes enabled. Use this field to enter the name of the application you want to run when the user presses the *Menu* hot key: [FN/BLUE] [0].

If you have disabled hot keys, hidden the *Start Menu* and have no application configured, the *Menu* hot key brings up the *Security* dialog box to allow authorized users to access the hand-held configuration. Keep in mind that this dialog box is also displayed if an invalid application is entered in the *Application from Start Menu* field.
4.4 The Start Menu

Note: Some of the Start Menu items may be disabled based on the current NEO security settings.

The Start Menu lists the operations you can access and work with. It is available from the startup desktop or from within any application.

To display the menu:

- Tap on the Start Menu icon in the lower-left corner of the taskbar. Tap on the item with which you want to work.

If you’re using the keyboard:

- Press [FN/BLUE] [.] (period).
- Use the arrow keys to highlight a menu item, and press [ENTER].

![Start Menu]

Note: If a ‘Start Menu’ item has an underlined character, you can type the underlined alpha character to display the associated dialog box– for example, displaying the ‘Start Menu’ and then typing the letter ‘s’ displays the ‘Security’ dialog box.
4.4.1 The Desktop

Choosing Desktop in the Start Menu displays NEO desktop.

![NEO desktop](image)

4.4.2 Security Settings

Choosing the Security option from the Start Menu displays a dialog box in which you can define the access level for NEO: Supervisor or User.

Figure 4.3  Security Levels

![Security Levels](image)

Assigning the Supervisor Security Level

The security level is represented by an icon in the shape of a lock in the taskbar. The security levels define the options accessible to the operator in the Start Menu and the taskbar. By default, the security level is set to User, restricting access to only the most basic Start Menu items.

To allow access to all the Start Menu and taskbar options:

- In the Security Level dialog box, tap on the radio button next to Supervisor.
In the Password field, type the Supervisor level password. The default password is 123456.

Tap on OK. You can now access all menu items in the Start Menu along with the icons in the taskbar.

Changing a Password

Note: Keep in mind that this is the same password as that assigned through the Password control panel applet. Refer to “Control Panel Icons” on page 74.

To assign a password:

- Choose a security level, and enter the existing password in the Password field.
- Tap on the Set Password button.

A dialog box labelled Password Properties is displayed.

- Type the new password in the Password: text box (all keyboard characters are valid).
- In the Confirm Password: text box, retype the new password.

Configuring Security

Choosing the Configure button displays the Configure Security dialog box.

This dialog box allows you to determine which security levels will have an associated icon displayed in the taskbar. By default, a security icon is not displayed for user-level security.

Note: It is recommended that you enable ‘Allow Teklogix Security Level’ so that authorized Psion Teklogix service personnel can access your unit should it require maintenance.
4.4.3 Programs

- Choose Start>Programs to display a sub-menu of options.

Figure 4.4  Programs Sub-Menu

Note: The sample Program menu above is for NEOs equipped with the Windows CE 5.0 Professional OS. NEOs equipped with the Windows CE 5.0 Core OS have a more limited Program menu that includes only ActiveSync, Demo, Command Prompt and Windows Explorer.

ActiveSync®

This option allows you to connect to another device using ActiveSync.

Demo

This folder contains the Demo Scanner, Demo Signature and Demo Sound applications. Demo Scanner can be used to test how the hand-held reads and writes bar codes. Demo Signature allows you to capture a signature written on the screen with your stylus and save it to a file. Demo Sound allows you to record and playback. The ‘Sample Rate’ and the ‘Bits Per Sample’ are the rates at which the sound will be recorded. Sounds recorded at the higher sample rate or bits per sample will be higher quality sound but will require more file storage space. Lower sample rates and/or bits per sample produces a smaller file, but the sound quality suffers. The record and play buttons operate in the same as on any recording device. The X icon deletes the sound and the diskette icon allows you to save your sound.

Command Prompt

Command Prompt is used to access the DOS command prompt. At the prompt, you can type DOS commands such as dir to display all the directories in the drive.
Chapter 4: Working With Windows CE 5.0

Shortcuts

Internet Explorer
NEO is equipped with Microsoft Internet Explorer for Windows CE 5.0. You can access the Internet Options icon through the Start Menu under Settings>Control Panel or by double-tapping on the desktop Internet Explorer icon.

Microsoft WordPad
The Microsoft WordPad is a basic word processor used to create, edit, view and print text documents.

Remote Connect
Remote Connect is a NEO application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine using NEO (Windows CE 5.0 device). “Remote Connect” on page 73 provides a website with details about this option.

Windows Explorer
The Windows Explorer installed on NEO is consistent with all Windows CE 5.0 devices. You can access this option from the Start Menu under Programs> Windows Explorer.

4.4.4 Shortcuts

System Tray
If your touchscreen is not enabled, you can use the System Tray option to access the icons in the taskbar at the bottom of the screen. The taskbar displays indicators such as a radio signal icon and the security level. These indicators are attached to dialog boxes that provide additional information.

• Choose Start>Shortcuts>System Tray.
Using the icons in the taskbar, you can either display the Control Panel dialog box associated with an icon, or you can view a “tooltip”. A tooltip provides the status of each icon.

- Tap and hold the stylus on an icon to display the icon’s tooltip. Double-tap on the icon to open the Control Panel dialog box associated with the icon.

On the keyboard:
- Press [FN/BLUE] [. ] to display the Start Menu.
- Choose Shortcuts from the Start Menu, and then press the [RIGHT] arrow key to display the sub-menu.
- Choose System Tray in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you’d like more information. As each icon is highlighted, a tooltip is displayed.
- To display the associated Control Panel dialog box, press [ENTER].

Cycle Tasks
When Cycle Tasks is selected (and the Task Manager is not open), you can cycle through active applications.

To cycle through your active applications:
- Choose Shortcuts>Cycle Tasks, or
Press [ALT] [TAB].

Task Manager
The Task Manager allows you to switch to another task or to end an active task. To display the task manager window:
- Tap on Shortcuts>Task Manager, or
Press [ALT] [ESC].
Chapter 4: Working With Windows CE 5.0

Settings

Figure 4.5 Task Manager

4.4.5 Settings

The Settings sub-menu includes the following settings: Control Panel, Network and Dial-up Connections, and Taskbar and Start Menu.

Figure 4.6 Settings Sub-Menu

Control Panel

The Control Panel contains applets used to configure hardware, the operating system and the shell. If NEO is running with the Psion Teklogix TekTerm application or another application, additional configuration applets may appear in the Control Panel.
Network and Dial-Up Connections
The Network and Dial-up Connections window allows you to configure NEO radio or execute an existing configuration. Refer to “Configuring The 802.11b/g Radio” on page 12 for radio setup details.

Taskbar and Start Menu
The Taskbar and Start Menu option displays a dialog box in which you can customize the taskbar, choosing which options will be displayed. Refer to “Customizing the Taskbar” on page 56 for additional details about this option.

4.4.6 Run
Choosing the Run option from the Start Menu displays a dialog box in which you can enter the name of the program, folder or document you want to open or launch.

Figure 4.7 Run Dialog Box

4.4.7 Shutdown
The Shutdown menu includes these options: Suspend, Warm Reset and Cold Reset.
Chapter 4: Working With Windows CE 5.0

Using a Dialog Box

Figure 4.8 Shutdown Sub-Menu

Suspend
The Suspend option suspends NEO immediately. This is equivalent to turning the hand-held off.

Warm Reset
A Warm Reset preserves installed drivers and applications along with data that are saved in the object store (Windows CE default file system).

Cold Reset
A Cold Reset preserves data and applications that are saved in the Flash file system, called Flash Disk on NEO or on a microSD card. This should be used as a last resort if NEO cannot be reset using any other method.

4.5 Using a Dialog Box
A dialog box (like the samples in Figure 4.9 on page 67) appears when you need to make selections and enter further information. You can move between dialog items by tapping on them with your stylus, or by pressing the arrow keys and the [TAB] key ([SHIFT] [TAB] moves the cursor backwards).

Note: This menu varies slightly depending on the security level chosen. When NEO is set to User level, the Shutdown option is replaced by Suspend. A sub-menu is not available.
Dialog boxes contain one or more of the following elements:

**Tab:** A tab separates different elements of a dialog box. Press the [TAB] key until a tab in the dialog box is highlighted. To display adjoining tabs, press the [RIGHT] or [LEFT] arrow key. To display the information in the next tab from anywhere in the window, press [CTRL] [TAB].

**Textbox:** A textbox requires that you type information. Press the [TAB] key to highlight the textbox and then type the appropriate information.

**Drop-down:** This type of menu is identified by up and down arrows next to the drop-down menu to indicate that additional options are available. Press the [TAB] key to highlight the menu, and use the arrow keys on your keyboard to cycle through the options.

**Checkbox:** This box allows you to select or deselect an option. To select or deselect a checkbox, press the [TAB] key to highlight the checkbox, and press the [SPACE] key to select or deselect it.

**Radio buttons:** These buttons allow you to choose from a number of options. For example, in the sample screen in Figure 4.9 on page 67 you can choose to *Obtain an IP address via DHCP* or *Specify an IP address*. Press the [TAB] key to highlight a radio button option, and then select a radio button by pressing the arrow keys to highlight the appropriate option.

---

*Note: You can use the stylus to tap on an element in a dialog box to select or deselect it, display drop-down menus, save your selections, and so on.*
Chapter 4: Working With Windows CE 5.0

Using a Dialog Box

**Buttons:** This type of button allows you to *Save, Delete* and so on the options you’ve chosen in a dialog box. Use the [TAB] key to highlight the button you want to use. Press the [ENTER] key to activate it.

**Saving Your Choices:** Once you’ve made all your changes, press the [ENTER] key to save your changes and exit the window.

*Note: A dialog box item that is displayed in grey text indicates that it is not currently available.*
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5.1 Remote Connect

Remote Desktop Connection is a Windows application that allows you to connect to a computer across the Internet using NEO (Windows CE device). Refer to the following website for step-by-step information about setting up this connection:

http://www.microsoft.com/windowsxp/using/mobility/getstarted/remoteintro.mspx

or contact Psion Teklogix support services. (Refer to the NEO Regulatory & Warranty Guide, PN 8000175, or locate the office closest to you at www.psionteklogix.com)

5.2 The TekTerm Application

TekTerm is a powerful emulation application ideally suited for real time data transaction applications associated with mainframes and servers. NEO includes unique features that support TekTerm – a Psion Teklogix application that has the ability to maintain multiple simultaneous sessions with a variety of host computers. For detailed information, please refer to the TekTerm Software User Manual, PN 8000073.

5.3 The Control Panel

The Windows CE 5.0 Control Panel provides a group of icons through which you can set a variety of system-wide properties, such as mouse sensitivity, network configuration and the desktop color scheme.

Note: If you are uncertain how to move around a dialog box and make selections, review “Using a Dialog Box” on page 66.

When NEO boots up, the startup desktop (shell) is displayed, and any applications stored in the Startup folder start up immediately.

To access the Control Panel:

• Tap on Start>Settings>Control Panel.

If you’re using the keyboard:

• Press [FN/BLUE] [.] to display the Start Menu.

• Highlight Settings in Start Menu, and press the [RIGHT] arrow key to highlight the Control Panel.

• Press the [ENTER] key.

The Control Panel folder contains icons used in the setup of NEO.
5.4 Control Panel Icons

The Control Panel provides a group of icons that allow you to customize and adjust settings on NEO.

**App Launch Keys**

By mapping keys to applications using this program, you can then launch those applications from a single key-press.

**Bluetooth Devices**

Provides the tools to manage device pairing and configuration.

**Certificates**

A public key is transmitted as part of a certificate. The certificate assigned through this icon is used to ensure that the submitted public key is, in fact, the public key that belongs to the submitter. The client checks that the certificate has been digitally signed by a certification authority that the client explicitly trusts. “Certificate Assignment” on page 102 directs you to the appropriate setup information.
Chapter 5: Configuration
Control Panel Icons

Date/Time
Allows you to set the current Month, Date, Time and Time Zone on your unit.

Dialing
Specifies dialing settings, including area code, country code, dial type and the code to disable call waiting. You can store multiple patterns – for example, ‘Work’, ‘Home’, and so on using this dialog box.

Display
Changes the appearance (window colour scheme) on the unit desktop.

Dr. Debug
Provides error diagnostic tools.

Error Reporting
Enables or disables Microsoft error reporting prompts.

Input Panel
Provides the framework for a Soft Input Panel (SIP) should you need to design your own SIP, or change some soft keyboard options.

Internet Options
Provides options to configure your Internet browser. You can determine items such as the default and search page that the browser applies when connecting to the Internet, the cache size, the Internet connection options, and the security level that is applied when browsing.

IPv6 Support
Refers to a new Internet Protocol specification (version 6) that has been published to use 128-bit IP addresses (replacing version 4).

Keyboard
Toggles character repeat on and off and specifies delay and rate for repeated characters. This applet also allows you to adjust the keyboard backlight threshold and intensity, define One-Shot Mode, remap keys using Scancode Remap and program Macro Keys.

Manage Triggers
Allows multiple-scanner trigger management, including the ability to configure each of the trigger buttons. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.
Chapter 5: Configuration

Control Panel Icons

**Network And Dial-up Connections**
Displays a network window from which NEO 802.11g radio can be configured and an existing configuration can be executed. Refer to “Configuring The 802.11b/g Radio” on page 12 for details.

**Owner**
Provides fields in which you can specify owner information. A *Notes* tab allows additional information to be entered and displayed when the unit is powered up. *Network ID* tab information is used to access network resources. (This information should be provided by your System Administrator.)

**Password**
Allows you to assign a password to restrict access to elements of the unit. Once assigned, password access cannot be circumvented so it is important that you write down your password and keep it in a safe place. Refer to “Security Settings” on page 59 for details.

**PC Connection**
Enables direct connections to a desktop computer. Selecting the *Change Connection* button allows you to change the type of direct connect to your PC.

**Power**
Displays battery pack power status. (Alternately, battery status can be accessed through the taskbar.) Additional tabs allow you to determine suspend states, specify a suspend threshold and, when seated in either the Combo Dock or Quad Dock, determine whether or not a battery that requires it can be recalibrated. This dialog box also allows you to activate card slots and built-in devices. (Refer to “Devices” on page 96 for details.)

**RDC Licenses**
The Terminal Services license server stores all license tokens that have been installed for a group of terminal servers and tracks licenses issued. The Remote Desktop Licenses (RDC) application displays license ‘tokens’ for devices that connect to a Terminal Server. Note that this option is not available for units equipped with Windows CE 5.0 Core.

**Region & Language**
Allows you to specify the local language that is to be displayed on the hand-held screen along with the format of numbers, currency, time and date for your region.
Chapter 5: Configuration

Control Panel Icons

Remove Programs
Lists the programs that can be removed from your unit. To remove a program, select it and then click on the **Remove** button.

Storage Manager
Allows the user to view information about the storage devices that are present, such as SD-MMC flash cards. For details, see page 121.

Stylus
Adjusts how Windows CE 5.0 recognizes your double-tap (as slow or rapid successive taps). In the *Calibration* tab, you can recalibrate your touchscreen by tapping on the **Recalibrate** button and following the directions on the screen.

System
Displays system and memory properties. In the *Memory* tab, you can allocate memory between storage memory and program memory.

Teklogix Imagers
Used to create, modify, delete and activate imager settings. The principal uses of the applet are to decode bar codes and to capture images.

Teklogix Scanners
Provides scanner parameters and the bar code symbologies that NEO scanner will successfully read.

Total Recall
Provides access to a backup and restore utility to maintain applications and settings over cold reboots.

TweakIT Settings
Allows you to change Advanced System Settings (interface, network, and servers), User System Settings (display font size), and provides the Registry Editor.

Volume & Sounds
Allows you to adjust the volume of the sound emitted to indicate events like warnings, key clicks and screen taps.
Chapter 5: Configuration
Basic Setup

5.5 Basic Setup

5.5.1 Display Properties

- In the Control Panel, choose the Display icon.

5.5.1.1 Display Backlight

The backlight is activated for a configurable amount of time when NEO is in use (key press, scanner trigger, or data received from the host). The Display Properties dialog box in the Control Panel allows you to specify the intensity of the backlight along with how long the display will maintain the specified intensity.

Note: Keep in mind that this option may be restricted to supervisory use only.

- In the Display Properties dialog box, open the Backlight tab.

Note: Backlight changes take effect immediately. You do not need to reset the unit.
To maximize battery run time, keep the display backlight brightness and active durations as low as possible.
Chapter 5: Configuration
Display Properties

Intensity
This parameter is used to adjust the light intensity of the backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the intensity. You can also adjust the backlight directly from the keyboard by pressing [FN/BLUE] followed by the [LEFT] or [RIGHT] arrow keys to increase or decrease the backlight intensity.

Bright For
The value chosen from this drop-down menu determines the duration of time that the backlight stays on at the configured intensity after the last user action (keypress, scan trigger).

Dim For
The value chosen from this drop-down menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) after expiration of the Bright For delay and as long as no user action takes place (such as a keypress or scan trigger). At the expiration of the Dim For duration, the display backlight shuts off.

External Power Checkbox
When you select the checkbox next to When using external power keep the backlight always ON, the backlight remains on at the configured intensity when NEO is operating with external power (not battery power). If NEO is drawing power from its battery, this option is ignored and the other parameters defined in Display Properties dialog box are used.

5.5.1.2 Display Appearance
- In the Display Properties dialog box, open the Appearance tab.
Chapter 5: Configuration

Keyboard Properties

This dialog box allows you to customize the display colour scheme.

5.5.2 Keyboard Properties

This icon displays the *Keyboard Properties* dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [FN/BLUE] and [FN/ORANGE] modifier keys. This dialog box also allows you to define macro keys and Unicode characters.

• In the *Start Menu*, choose *Settings>*Control Panel>*Keyboard icon*.

5.5.2.1 Key Repeat

*Note: These settings apply when a key is held down continuously.*

• In the *Keyboard Properties* dialog box, open the *Repeat* tab.

**Repeat Delay**

The value assigned for this parameter determines the delay between repeat characters. Sliding the *Repeat Delay* bar to the left increases the delay between key repeats, and sliding the bar to the right shortens the repeat delay time.
Repeat Rate
The value assigned for the Repeat Rate parameter determines how quickly the key you press repeats. Sliding the bar to the left slows the repeat rate, and sliding the bar to the right increases the repeat rate.

Note: Use the field at the bottom of this dialog box to test the repeat delay and rate settings you’ve chosen.

5.5.2.2 Sequence

This tab determines the allowable pause between alpha key presses on a numeric keyboard. For example, suppose you want to type the letter ‘c’ – you would need to press the [2] key three times. With the [ORANGE] key locked ‘on’, if you press [2] twice and then pause between key presses for 1 second, the letter ‘b’ will be selected automatically. Moving the Sequence slider to the right increases the pause time between alpha key presses.
5.5.2.3 **Keyboard Backlight**

- In the *Keyboard Properties* dialog box, open the **Backlight** tab.

  ![Keyboard Properties dialog box](image)

**Intensity**

This parameter is used to adjust the light intensity of the keyboard backlight. Sliding the bar to the left darkens the keyboard backlight intensity, and sliding it to the right lightens the intensity.

**ON For**

The value chosen from this drop-down menu determines the duration of time that the keyboard backlight stays on when a unit is not in use.

*Note:* Tapping in the checkbox next to ‘*When using external power, keep the backlight always ON*’ forces the keyboard backlight to remain on when the unit is operating with external power.

*Note:* To maximize battery run time, keep the backlight intensity at the lowest possible setting.
5.5.2.4 Keyboard One Shot Modes

- In the Keyboard Properties dialog box, open the One Shots tab.

The options in this tab allow you to determine how modifier keys will behave on NEO. For each modifier key – [ALT], [SHIFT], [CTRL], [FN/ORANGE] and [FN/BLUE] – you have the following options in the drop-down menu: Lock, OneShot, and OneShot/Lock.

Note: Keep in mind that checking the taskbar lets you know whether or not these keys are locked on. For example, if the [FN/ORANGE] key is locked ‘on’, the taskbar at the bottom of the screen displays it in uppercase characters, ORANGE KEY. If this key is displayed in lowercase characters in the taskbar, you’ll know that the orange key is not locked. It will become inactive following a key press.

Important: Once you’ve assigned a One Shot mode to a modifier key, you need to tap on the OK button at the top of the tab to activate your selection.

Lock
If you choose Lock from the drop-down menu, pressing a modifier key once locks it ‘on’ until you press the modifier key a second time to unlock or turn it off.

OneShot
If you choose OneShot, the modifier key remains active only until the next key is pressed.
OneShot/Lock

OneShot/Lock allows you to combine these functions. When you choose this option and you press the modifier key once, it remains active only until the next key is pressed.

If you press the modifier key twice, it is locked ‘on’, remaining active until the modifier key is pressed a third time to turn it ‘off’.

5.5.2.5 Keyboard Macro Keys

The Macro tab is used to define up to 15 macros. Macros can be created to replace frequently used keystrokes, along with the function of executable keys including [ENTER], [BKSP] and [DEL] ([FN/BLUE]-[BKSP]), function keys and arrow keys. Each macro can have up to 200 programmable characters (or “positions”).

Important: Macro keys are not physically stamped on this hand-held; ‘Scancode Remapping’ must be used to remap keyboard keys into macro keys so that you can execute the macros created here. Refer to “Scancode Remapping” on page 87 for details about mapping keys.

To create a macro:

• In the Keyboard Properties dialog box, open the Macros tab.

Recording And Saving A Macro

• In the Macro: menu highlight a macro key number, for example macro 1. Tap on the Record button.
A message screen is displayed instructing you to *Enter Key Strokes to Record*.

![Keyboard Properties](image)

- Type the macro sequence you want to create. You can type text and numbers, and you can program the function of special keys into a macro.
- When you’ve finished recording your macro sequence, tap on the **Stop Recording** button, or press the key sequence: `CTRL [ALT] [ENTER]`.

A new screen called *Verify Macro* displays the macro sequence you created.
- Tap on the **Save** button to save your macro, or **Cancel** to discard it.
- Tap on **OK** to save your macro key assignment.

**Executing A Macro**

To execute a macro:
- Remember that you need to remap a keyboard key to act as a macro key using *Scancode Mapping*. Press the **mapped macro key(s)** to execute the macro.

**Deleting A Macro**

To delete a macro:
- In the *Macros* tab, highlight the **macro number** you want to delete.
- Tap on the **Delete** button.
5.5.2.6 Unicode Mapping

- In the **Keyboard Properties** dialog box, open the **Unicode Mapping** tab.

![Keyboard Properties dialog box]

The **Unicode Mapping** tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. For example, the sample screen above shows “a (U+0061)” indicating that the character “a” is represented by the Unicode value “0061”, and so on. Keep in mind that Unicode configurations are represented as hexadecimal rather than decimal values.

All user-defined Unicode mappings are listed in the **Unicode Mapping** tab in order of virtual key value, and then by order of the shift state. If a Unicode mapping is not listed, the Unicode mapping is mapped to the default Unicode value.

**Adding and Changing Unicode Values**

![Warning icon]

*Important: Changes to Unicode mappings are not saved until you exit the Keyboard Properties dialog box.*

- Choose the **Add/Change** button
Figure 5.2 Adding And Changing Unicode Values

- Highlight a value in the Unicode mapping list. In the sample screen above, a value will be assigned to virtual key 0 (VK 0).
- Position the cursor in the Unicode Mapping field, and type a Unicode value for the highlighted key.

Note: To add a shifted state, [SHIFT] and/or [CTRL], press [TAB] to position the cursor in the checkbox next to ‘SHIFT Pressed’ and/or ‘CTRL Pressed’. Press [SPACE] to select the shift state you want to assign.

Removing Unicode Values
- In the Unicode Mapping tab, highlight the item you want to delete, and choose the Remove button.

5.5.2.7 Scancode Remapping

A scancode is a number that is associated with a physical key on a keyboard. Every key has a unique scancode that is mapped to a virtual key, a function or a macro. Scancode Remapping allows you to change the functionality of any key on the keyboard. A key can be remapped to send a virtual key (e.g. VK_F represents the ‘F’ key; VK_RETURN represents the [ENTER] key, etc.), perform a function (e.g. turn the scanner on, change volume/contrast, etc.) or run a macro.

There are three different tables of scancode mappings: the Normal table, the Blue table and the Orange table. The Normal table defines unmodified key presses; the Blue table defines
key presses that occur when the [FN/BLUE] modifier is on; the *Orange* table defines key
presses that occur when the [FN/ORANGE] modifier is on. The default mappings of these
scancodes can be overwritten for each of these three tables using the *Scancode Remapping*
tab accessed from the *Keyboard Properties* dialog box.

![Keyboard Properties dialog box]

The first column in the *Scancode Remapping* tab displays the scancodes in hexadecimal. If
the scancode is remapped to a virtual key, that virtual key is displayed in the next column la-
belled ‘V-Key’. A virtual key that is ‘Shifted’ or ‘Unshifted’ is displayed in the third column
labelled ‘Function’.

If the scancode is remapped to a function or a macro, the first and second columns remain
blank while the third column contains the function name or macro key number
(e.g., Macro 2).

**Adding a Remap**

To add a new remapping:

- Choose the **Add** button at the bottom of the dialog box.
The **Remap Scancode** dialog box is displayed.

![Remap Scancode Dialog Box](image)

- Type the scan code in hexadecimal in the field labelled *Scancode*

*Note: The Label field displays the default function of the scancode you are remapping.*

**Virtual Key, Function and Macro**

The radio buttons at the bottom of the dialog box allow you to define to what the scan code will be remapped: **Virtual Key, Function or Macro**.

When **Virtual Key** is selected, you can choose to force [SHIFT] to be on or off when the virtual key is sent. If **No Force** is selected, the shift state is dependent on whether the shift state is on or off at the time the virtual key is sent.

When **Function** is selected, a list of valid functions appears in the dialog box.

When **Macro** is selected, the macro keys available on your unit are listed in the dialog box.

- Choose **Virtual Key, Function or Macro**.
- Choose a function from the **Function** list in the dialog box, and tap on **OK**.

**Editing a Scancode Remap**

To edit a scancode:

- In the **Scancode Remapping** tab, tap the stylus on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
- Tap on **OK** to save your changes.
Chapter 5: Configuration

Keyboard Properties

Removing a Remap

To delete a remap:

- In the Scancode Remapping tab, highlight the scancode you want to delete, and tap on the Remove button.
- Tap on OK.

5.5.2.8 Lock Sequence

The Lock Sequence tab allows you to lock the keyboard to prevent keys from being pressed accidentally when, for example, the unit is inserted in a holster.

- To lock the keyboard, tap in the checkbox next to Enable key lock sequence.
- Tap in the checkbox next to Keyboard locked at startup.
- In the Key sequence dropdown menu, choose the key sequence you will need to type to unlock the keyboard.

Note: It is useful to leave the ‘Show popup message’ enabled (default) so that anyone attempting to use the hand-held keyboard will see the key sequence they will need to enter to unlock the keyboard displayed on the screen.
A locked keyboard icon is displayed in the softkey bar when the keyboard is locked.

- Type the key sequence to unlock the keyboard.

5.5.3 Volume and Sound Properties

- In the Control Panel, choose the Volume & Sounds icon.

5.5.3.1 Volume Adjustments
Slide the volume button to the left to lower the receiver and beeper volume or to the right to increase the receiver and beeper volume.

Under the heading *Enable sounds for*, enable the conditions under which you want NEO to play a sound.

Keep in mind that adjusting this slider modifies the beeper and the receiver volume.

*Note: You can also adjust volume directly from the keyboard. Refer to “Audio Indicators” on page 38 for details.*

### 5.5.3.2 Sound Adjustments

This dialogue box allows you to assign sounds to identify a particular actions. For example, you can choose the sound your hand-held will emit when you close a program.

### 5.5.4 Power Properties

This icon displays a *Power Properties* dialog box that indicates the battery capacity and allows you to manage battery use.

- In the *Control Panel*, choose the **Power** icon.
5.5.4.1 Battery Capacity

- In the Power Properties dialog box, open the Battery tab to view battery details.

5.5.4.2 Power Saving Suspend

- In the Power Properties dialog box, open the Suspend tab.

Power Source

This dialog box allows you to specify the suspend time for either AC Power or Battery Power.
Suspend Timeout

**Important:** Psion Teklogix recommends setting the Suspend value to 10 minutes. To further reduce power consumption, carefully consider the duration of time that the display and the keyboard backlight are ‘on’ (see “Display Backlight” on page 78 and “Keyboard Backlight” on page 82).

When NEO is idle – not receiving any user input (a key touch, a scan and so on) or system activity (serial data, an activity initiated by an application and so on) – the hand-held uses the value assigned in the Suspend Timeout field to determine when the unit will go to sleep (appear to be off).

When the time in the Suspend Timeout field elapses without any activity, the unit enters suspend state. In suspend state, the hand-held CPU enters a sleep state, and the radio is shut off. The state of the device (RAM contents) is preserved. Pressing [ENTER] wakes the system from suspend state. When NEO is in suspend state, the network connection will not be broken immediately. If the connection is dropped, you must re-establish the network connection.

### 5.5.4.3 Suspend Threshold

The Suspend Threshold lets you determine when NEO will shut down. If the slider is left at the default value, Maximum Operating Time, the hand-held will run until the battery is completely empty; the RAM is only backed up for a short period of time. If you choose Maximum Backup Time, the hand-held will shut off with more energy left in the battery so RAM can be backed up for a longer period of time.
5.5.4.4 Advanced

**Important:** Selecting ‘Maximum backup time’ reserves approximately 20% of the battery capacity for memory backup. Once the battery is drained, the system RAM memory is lost and the unit must reboot.

In most real-time transaction environments, this is not a problem (it only takes a few seconds to boot). However, batch transaction environments, where data is not saved to non-volatile memory (a microSD FLASH card), may need to pay particular attention to this parameter. Psion Teklogix does not recommend the storage of any valuable data in system RAM.

NEO’s Windows CE 5.0 environment does not store any critical data in RAM (such as the registry or file system).

If the user's application does not save data to RAM, Psion Teklogix recommends keeping the Suspend Threshold setting as low as possible to maximize battery run time.

Allow Suspend With:

This tab allows you to specify whether or not your unit will enter Suspend state while it is operating with an active PPP connection, network interface or active TCP/IP connection.

**Low Power Warnings**

The sliding scale at the bottom of this tab allows you to specify the remaining battery capacity at which a warning message is displayed on the screen, from 0% to 20%.
5.5.4.5 Devices

This tab controls power to the SDIO slot. A checkmark in the checkbox next to SDIO indicates this option is enabled. If you make a change, tap on Apply to save your change.

5.5.4.6 Built-in Devices

The Built-In Devices tab allows you to enable (provide power) or disable (terminate power) to the device(s) installed in your unit. Keep in mind that the content of this screen varies depending on the devices installed. Tapping on OK activates your selections.

5.5.5 Stylus Properties

- In the Control Panel, choose the Stylus icon.
5.5.5.1 Double-Tap

- In the *Double-Tap* tab, follow the directions to tailor the sensitivity of the stylus when you tap on the touchscreen.

5.5.5.2 Calibration

Touchscreens rarely require recalibration. However, if your touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, follow the directions below.

- Choose the *Calibration* tab, and then tap on the *Recalibrate* button.

- Follow the directions in the *Calibration* tab to recalibrate the screen.

5.5.5.3 Touch

This tab allows you to disable the touchscreen.

- Choose the *Touch* tab. Tap the checkbox next to *Disable the touch panel*.

To enable a disabled touchscreen:

- Press the following keys – [TAB] [SPACE] [ENTER].
Chapter 5: Configuration
Manage Triggers

- The **Touch** tab is displayed. Press the `[SPACE]` key to uncheck the box and enable touchscreen operations.

*Note: Refer to “Navigating Using the Keyboard” on page 51 for details about navigating without a touchscreen.*

### 5.5.6 Manage Triggers

This option allows you to configure how bar code scanners and other devices are triggered. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

- In the **Control Panel**, choose the Manage **Triggers** icon.

- In the **Manage Triggers** screen you’ll see a list of trigger mappings.

#### 5.5.6.1 Trigger Mappings

A ‘trigger mapping’ is an association between a particular key on the keyboard and a driver or application (the module). Along with keyboard keys, trigger sources can also be grip triggers, external hardware triggers or software-based. When the specified key is pressed, the trigger consumer (for example, a decoded scanner) is sent a message.
Important: It is not possible to have two or more identical mappings – for example [F1] cannot be mapped to the Non-Decoded Scanner twice – even if the trigger type is different.

A keyboard key that is used as a trigger source will no longer generate key data or perform its normal function. For example, if the space button is used as a trigger source, it will not be able to send space characters to applications.

Double-Click
When a key is pressed and released, then pressed again within the configured time (between 0 to 1000 milliseconds), a double-click occurs. See also “Trigger-Press Type” on page 101.

Show All Modules
By default, the trigger mapping list only shows active mappings. Mappings for drivers or applications that are not currently active are not normally displayed. By checking this checkbox, all mappings, both active and inactive, are displayed.

Add
Tapping this button brings up the Add Mapping dialog (see “Add and Edit Trigger Mapping” on page 100), so that you can add new trigger mappings.

Edit
Tapping this button brings up the Edit Mapping dialog (see “Add and Edit Trigger Mapping” on page 100), so that you can edit existing trigger mappings.

Remove
Tapping this button removes an existing mapping.

OK
The OK button in the top right of the Manage Triggers screen saves all changes made. If the cancel button X is tapped instead, or the [ESC] key is pressed, all changes will be discarded.
5.5.6.2 Add and Edit Trigger Mapping

These dialogs allow the user to add and edit trigger mappings.

**Trigger Key**

This drop-down list allows you to specify the source of the trigger events, such as the Expansion port trigger, Soft Scan and Scan for the trigger module selected.

*Note:* It is possible to map the same source to different modules (trigger consumers) – for example, to both the Imager and Non-Decoded Scanner. If so, both devices/operations will occur simultaneously. This is not recommended in most cases, especially with devices such as Imagers.

*It is also possible to map different sources to the same module (trigger consumer).*
Add Key

Only existing trigger sources are shown in the Source combo-box. To add a new source to this list, tap on the Add Key button. A dialog will pop up and allow you to select the keyboard key to use as a trigger source.

![Add Key dialog](image)

Trigger-Press Type

You can enable either an Up/Down or Double Click response to a trigger press. Normally, when a trigger (keyboard key, etc.) is pressed and released, a “trigger down” event is sent to the “owner”– that is, the application receiving the trigger press information – followed by a “trigger up”. If Double Click is chosen in this menu, when the trigger is pressed, released, and then pressed again, a “double-click” event will have occurred. If a mapping with the type Up/Down has also been configured for the same source, it will only receive the first set of trigger events.

Module Trigger

This identifies the driver or application receiving the trigger presses.

Show All Modules

By default, inactive owners are not shown. By checking this checkbox, all owners, both active and inactive, are displayed.
5.5.7 Certificate Assignment

- In the Control Panel, choose the Certificate icon.

This option is used in conjunction with 802.1x authentication to enhance NEO security.

For a detailed description about Certificate setup for both the server and client-side devices (NEO hand-helds), refer to the following website:

http://www.microsoft.com/windowsserver2003/techinfo/overview/security.mspx

Note: When importing certificates, NEO only recognizes .cer files.

5.6 Bluetooth Setup

Bluetooth is a global standard for wireless connectivity for digital devices and is intended for Personal Area Networks (PAN). The technology is based on a short-range radio link that operates in the ISM band at 2.4 GHz. When two Bluetooth-equipped devices come within a 10 meter range of each other, they can establish a connection. Because Bluetooth utilizes a radio-based link, it does not require a line-of-sight connection in order to communicate.

Note: The Bluetooth radio uses an internal antenna.

The Bluetooth radio is disabled by default. Before you begin the setup process:

- Under Settings>Control Panel, tap on the Power icon.
• Tap on the **Built-in Devices** tab, and tap in the checkbox next to *Enable Bluetooth*. Tap on **OK**.

When the radio is enabled, a *Bluetooth* icon appears the taskbar at the bottom of the screen. It is ready for setup.

• Tap on **Settings>Control Panel>Bluetooth** icon.

The *Bluetooth Manager* allows users to search, pair and connect to other *Bluetooth* devices within their personal area network.

### 5.6.1 Paired Tab

This tab lists all paired devices and their corresponding services. The format of the name is `<Device Name>:<Service Name>`. Additional information may appear in this screen such as the Port Numbers for Serial Profiles service.

To learn how to scan for devices that will appear in this tab, review “Device Tab” on page 105.

*Note: If a service is actively paired and connected, the device and its services are displayed in bold typeface in this list.*


Chapter 5: Configuration
Paired Tab

- Tap and hold down the stylus on an item in the *Paired* tab to display an associated pop-up menu.

This is a service-dependent menu – that is, it varies slightly depending on the service chosen in the *Servers* tab. Refer to “Servers Tab” on page 109 for more details.

**Query Services and Remove Commands**

*Note: The *Query Services* and *Remove* commands are available in all service-dependent menus, regardless of the type of service chosen.*

- *Query Services* displays a *Services* dialog box where a pairing service is chosen.
- *Remove* unpairs the highlighted service and deletes the entry from the tab.

**OBEX OPP (Object Exchange-Object Push Profile) Commands**

The *OPP* defines two roles – a *Push Server* and a *Push Client*. *Push Server* is the device that provides an object exchange server. *Push Client* is the device that pushes and pulls objects to and from the *Push Server*.

*OBEX OPP* contains the following unique menu option:

- *Send File* displays an *Open File* dialog box where the file to be sent can be selected. When the transmission begins, another dialog box tracks the progress of the file transmission.

**HSP/HFP (Headset Profile/Hands-Free Profile) Service Commands**

The *HSP* (*Headset Profile*) allows users to connect their device to *Bluetooth* enabled headsets and other audio devices.

*HSP/HFP services* provide the following unique menu options:
Chapter 5: Configuration

Device Tab

- **Connect Audio** establishes an audio connection to the Bluetooth headset.
- **Disconnect Audio** disconnects the audio connection from the Bluetooth headset.
- **Volume Control** displays a dialog box where the headset and microphone volume can be adjusted.

5.6.2 Device Tab

![Bluetooth Device Tab](image)

This tab discovers and displays Bluetooth devices.

5.6.2.1 Discovering and Removing Devices

**Scan** discovers Bluetooth devices in range of NEO and lists them in this tab. Any existing devices previously discovered and listed will also be displayed.

**Clear** removes all Bluetooth devices listed except those with currently paired and connected services.

*Note: To limit the scope of the scan to a particular type of device, refer to “Filtering By Class of Device (COD)” on page 106.*
5.6.2.2 Filtering By Class of Device (COD)

This menu allows you to limit the scope of the scan to a particular type of device. If, for example, you choose Computer from this menu, only computers within range of NEO are listed in the Device tab. Choosing All lists all detected devices.

5.6.2.3 Device Pop-up Menu

The Device pop-up menu allows you to pair a device, update a device name or delete a device from the list.

Pair begins the pairing process by inquiring the services and profiles of the discovered device. An authentication dialog box is displayed the first time a Bluetooth device is paired.
Refresh Name repeats the device name inquiry, updating the name. This command is useful if a device is listed without a name (unknown), or if a device name has been changed remotely.

Delete removes this device from the list.

5.6.2.4 Pairing a Device

To pair devices:

- Follow the manufacturer’s instructions to place the remote device in pairing mode.
- Choose the Devices tab and Scan for devices in your area.
- When the scan is complete, tap on the device to which you want to pair.
- In the pop-up Device menu, tap on Pair.

An Authentication dialog box is displayed.

- If the remote device has authentication enabled, type the PIN in this dialog box.
- To proceed without authentication, tap on Next.

Note: If a remote device has authentication enabled and you’ve skipped the authentication process, a pop-up screen will ask if you want to allow the remote device to connect to NEO. Tap on Yes and type the PIN. When authentication is complete, tap on Done.
Chapter 5: Configuration

Device Tab

After entering the device PIN, the Services dialog appears with a list of services available for that device.

- Tap in the checkbox to the left of the service to activate it.
- Tap on Done.

Services that require more information present a configuration dialog box. Serial Profile is an example.

This dialog box offers a number of additional options such as enabling Encryption and selecting three different modes: Serial, ActiveSync and Scanner.

- Serial is used for simple serial port communication.
- ActiveSync is for ActiveSync-over-Bluetooth.
Chapter 5: Configuration

Servers Tab

• **Scanner** is used to create a seamless connection between the incoming Bluetooth bar code and NEO.

Once you’ve completed the information:
• Tap on **Next** and then in the **Services** screen, click on **Done**.

### 5.6.3 Servers Tab

When a remote Bluetooth device initiates a Bluetooth connection to NEO, the remote device is considered the ‘Bluetooth master’ and the hand-held, the ‘Bluetooth slave’. In order for the remote device to connect to NEO, it must offer a service in the form of a server. The **Servers** tab allows these services to be enabled and configured. There are three server services available: **Serial**, **Scanner** and **OBEX OPP**.

**Serial** server enables the Serial Port Profile server; a Serial Port can be selected from the drop-down menu. Keep in mind that when a port is chosen, an application must be open (connected) to the chosen port for a remote device to be able to connect.

**Scanner** server enables a Serial Port Profile server and then relays it to the Scanner Service (SCS). This is used for Bluetooth bar code scanners that operate in client mode. SCS opens the server port and handles the scanner input.

**OBEX OPP** server enables the Object Push Profile server. A warm reset must be performed on NEO after a change is made to this option. The OPP Server allows other Bluetooth devices to send files to this device.
• Tap on the checkbox to activate the server – the associated port name is displayed beside the server name.
5.6.4 Mode Tab

The Discoverable option determines whether NEO is visible to other devices. Device Scan Duration can controls the duration in which NEO scans for other devices. The higher the value assigned, the greater the scan duration.

5.6.5 About Tab

Device Name displays the NEO name that is broadcast. The name can be changed in the System Properties applet – Start>Settings>Control Panel>System icon>Device Name tab. Local Address displays the MAC address (BD_Addr) of the Bluetooth chip. HCI Version & LMP Version display the version of the chip firmware. Component indicates the version of the Psion Teklogix Bluetooth Subsystem (the manager, drivers, etc).
Profiles lists the supported profiles on this specific NEO.

5.6.6 Bluetooth GPRS WAN Connection

The following steps describe how to set up an internet data connection using a GSM cellular telephone with Bluetooth. NEO communicates via Bluetooth to the cell phone, which then accesses a WAN (Wide Area Network) and transfers data using GPRS.

1. Enable the Dial-Up Networking service in the cell phone.
2. Make the phone discoverable.
3. Pair the phone service with the NEO Dial-Up Networking service using the Bluetooth Manager (for instructions on pairing devices, see “Pairing a Device” on page 107).
4. To set up the internet parameters on the NEO, choose the Network And Dial-up Connections icon from the Control Panel.

5. Choose the Make New Connection icon.
6. In the *Make New Connection* dialog box, choose **Dial-Up Connection**. Enter a name for your GPRS network connection.

7. Choose the **Next** button to display the *Modem* dialog box.

8. In the drop-down menu labelled *Select a modem*, choose the name of the modem with which you want to connect, and then choose the **Configure** button to display the *Device Properties* dialog box.

   NEO communicates via *Bluetooth* to your *Bluetooth*-equipped cellular telephone and retrieves the parameters for the *Device Properties* dialog box. NEO then disconnects.
9. Under the *Call Options* tab, turn off **Cancel the call if not connected within**, and press [ENTER] to save your changes.

10. In the *Modem* dialog box, choose the **Next** button to display the *Phone Number* dialog box.
The phone number you enter is network carrier dependent. Once you’ve specified all the necessary information, choose the **Finish** button.

11. In the **Control Panel**, choose the **Dialing** icon.

12. The values in the *Dialing Properties* dialog box need to be edited according to your network carrier specifications.

Once you’ve edited this dialog box to reflect your network carrier requirements, press [ENTER] to save your changes.

13. At this point, you’ll need to return to the **Control Panel**, and choose the **Network and Dial-up Connections** icon.
14. In the network connection window, the new network configuration, in this case \textit{lg cx245} is displayed. Tap on the \textbf{new} icon.

When you tap on your new connection, an onscreen message indicates the status of your connection: connected, disconnected, error messages, and so on.

5.7 Total Recall

\textit{Total Recall} is a Psion Teklogix utility developed to maintain applications and settings during a cold boot. This utility is based on a backup and restore concept.

- In the \textit{Control Panel}, choose the \textbf{Total Recall} icon.
5.7.1 Creating a Backup Profile

In the start up screen, you can choose from four options: Create Profile, Restore Profile, View Profile and Delete Profile.

- Tap on the Create Profile button to begin the process.

Profile Information

This dialog box displays the default profile name, the type of restore – AutoRestore or ManualRestore, and the possible storage destination for the profile file.

- To change the Profile Name (optional), tap on the [...] button to the right of the Profile Location field.

- In the Name field, type a new name. (You may need to move the onscreen keyboard down to make the Name field visible.)
• Tap on OK to save the new profile name.
• Next, choose the profile Type you want to create:
  - ManualRestore – creates a backup that is manually restored by the operator.
  - AutoRestore – creates a profile that automatically restores itself following a cold reset or a clean reset.
• Finally, if you want to choose another location for your backup file (optional), tap on the [...] button to the right of the Profile Location field.
• Navigate to the new location, and tap on OK to save it.
• Tap on the [→] (Next) button.

Defining the Type of Backup

**Default Backup**

Default Backup is selected so that all installed or copied files, database entries, and the Registry are saved. Choose Advanced Backup if you want to tailor your backup.
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Creating a Backup Profile

Advanced Backup
Choosing Advanced Backup allows you to define what you would like to include in your backup profile.

Creating a Profile
Once you’ve defined the type of profile you want to create:

- Tap on the Create Profile button.

The options you chose to back up appear in your window as the backup progresses. When the backup is complete, the last item in the list indicates the location and name of the backup profile.
5.7.2 Restoring a Profile

To manually restore a profile:

- In the Total Recall home screen, tap on Restore Profile.
- Tap on the [...] button to the right of the Profile field and locate your backup file.
- Tap on OK.
- In the Profile restore screen, click on the (Next) button.
- Click on Restore Profile to restore the files to your hand-held.

5.7.3 Viewing a Profile

To view a profile:

- In the Total Recall home screen, tap on View Profile.
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Deleting a Profile

- Tap on the [...] button to the right of the Profile field, and locate your backup file.

- Tap on OK.

- Tap on View Details to review your backup files.

5.7.4 Deleting a Profile
- In the Total Recall home screen, tap on Delete Profile.
- In the next screen, locate your backup file, and tap on OK.
A warning pop-up screen appears asking if you’re certain that you want to delete this file.
- Tap on Yes to delete the file.
5.8 The Storage Manager

The Storage Manager allows the user to view information about the microSD card present in NEO.

5.8.1 Formatting a Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, much like those on a hard drive. Memory-card devices are normally ‘mounted’ (made available to the system) automatically when they are inserted. They must be dismounted before they can be formatted.

To format an entire memory card:

1. Choose **Start > Settings > Control Panel**.

2. In **Control Panel**, double-click on the **Storage Manager** icon. The **Storage Manager** menu opens:

3. Choose the memory card from the drop-down list.

4. Press the **Dismount** button to dismount the memory card. All partitions on the card will be dismounted.

5. Press the **Format** button to format the memory card.

All partitions and information on the card will be erased during the formatting process.
5.8.2 Creating Partitions

Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

1. Tap the New button next to the Partitions list box. The Create New Partition dialog box appears:

   ![Create New Partition dialog](image.png)

2. Type a name for the partition.

3. If more than one partition is desired, uncheck the Use All Available Disk Space checkbox, then specify the desired number of sectors to be used by the partition:

   - Name:
   - Sectors:
   - Sectors Available:
   - [ ] Use All Available Disk Space

Note: The sector size of the card is given on the left-hand side of the Storage Properties dialog.

4. Tap OK. The new partition appears in the Partitions list at the bottom of the
   Partitions list. The new partition is automatically mounted. This is indicated by an asterisk (*) next to its name in the partition list. Any unallocated space on the card is indicated at the left, and additional partitions can be created in it.
5.8.3 Partition Management

Partitions can be individually dismounted, mounted, deleted, or formatted as well. These and additional tasks are available from the Partition Properties dialog:

To dismount a partition:
- Choose the desired partition.
- Tap the Properties button. The Partition Properties dialog appears.
- Tap the Dismount button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

To delete a partition:
- Select the desired partition.
- Tap the Delete button. A warning dialog appears.
- Tap the OK button. The partition is deleted.

To format a partition:
1. Choose the desired partition.
2. Tap the Properties button. The Partition Properties dialog appears.
3. Tap the Dismount button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.
4. Tap the **Format** button. The **Format** dialog appears:

![Format dialog](image)

5. Choose your format options. These options include:
   - Version of file system (FAT-16, for devices holding up to 4 GB; or FAT-32, for devices containing up to 32 GB).
   - Number of FATs (File-Allocation Tables).
   - Number of entries allowed in the root directory.
   - Cluster size (.5 KB to 64 KB).

There are also two checkboxes, which govern:
   - Whether to use the transaction-safe FAT file system (TFAT). This file system keeps multiple copies of the file-allocation table, changing one while maintaining another as a backup.
   - Whether to perform a quick format. Quick formatting removes all reference to data in the partition without erasing the actual partition. The partition will be treated as empty, and new data will overwrite it.

6. Tap **Start**. The partition is formatted.

To mount a partition:
   - Choose the desired partition.
   - Tap the **Properties** button. The **Partition Properties** dialog appears.
   - Tap the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.
Chapter 5: Configuration

IPv6 Support

The Partition Properties dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.

5.9 IPv6 Support

The IPv6 Support icon in the Control Panel allows you to activate IPv6 network support on your unit if your network setup requires this. This internet protocol specification (version 6) supports 128-bit IP addresses, replacing version 4.

- Choose the IPv6 Support icon to display the associated dialog box.

- Choose the checkbox next to Enable IPv6 Network Support to enable this internet protocol.

5.10 TweakIT

This utility allows you to ‘tweak’ or adjust Advanced system settings (interface, network and servers), User settings (font size and docking port message), and provides a Registry Editor.
5.10.1 Advanced

5.10.1.1 CE Services Settings

**FTP Server**

This option is enabled by default to allow file transfers. Keep in mind that data transfer in either direction is restricted to the Temp folder – that is, data are always loaded from the FTP Server to the Temp folder and from the Temp folder to the FTP Server.

If this option is disabled, a warm reset must be performed to accept the change.
5.10.1.2 Interface and Network Settings

Enable IPv6
This option allows you to enabled Internet Protocol specification, version 6, that has been published to use 128-bit IP address (replacing version 4).

Modem Logging
When this option is enabled, NEO logs AT commands (e.g., dial-out information, password string, etc.) that the administrator can monitor for debugging purposes. Modem commands are stored in: \MdmLog.txt.
5.10.1.3 Services Settings

SNTP (Simple Network Time Protocol) Server
The SNTP Server Name typed in this dialog box is used to synchronize NEO time with server time. A warm reset must be performed once the server name has been entered.

5.10.1.4 Radio Features

AP Density
This option allows you to determine the signal strength at which the NEO’s radio will begin searching for a new Access Point (AP): High, Medium or Low. If, for example, this option is set to High, the radio will begin searching for a new Access Point while still at a fairly strong
signal strength. Setting AP Density to Low will cause the radio to wait until the signal strength is significantly low before attempting to connect to another Access Point.

Depending on your site configuration – for example, the shelving, the Access Point coverage, etc. – a higher setting may improve throughput, increase and maintain signal strength, and reduce missed transmissions.

**Radio Power Management**

When this option is enabled, access points that support it will use Radio Power Management guidelines to control the client (NEO) radio. Access points determine how often the NEO radio enters sleep mode when no activity is detected to reduce power consumption on the client side. Another benefit is that when Radio Power Management is enabled, even when no activity is detected, the access point does not disassociate the NEO (client).

### 5.10.2 User

#### 5.10.2.1 Internet Explorer Settings

This option allows you to customize how your Internet Explorer is displayed and how the tabbing functions.

![Internet Explorer Settings](image)

These Internet Explorer options are designed to make it easier to view and navigate web pages displayed on NEO.

**Directional Tabbing, Fit-to-Screen and Focus Rectangle**

When Directional Tabbing is enabled, arrow keys can be used to navigate to various links, text boxes and so on around the page rather than limiting you to the [TAB] key. Fit-to-Screen reformats the web page on the NEO screen into a single column, eliminating the
need for horizontal scrolling. Enabling *Focus Rectangle* adds a yellow rectangle around the cursor to make it clearly visible on the screen.

### 5.10.2.2 User Display Settings

#### User Font Size

This option allows you to adjust the size of the font used the NEO display: *Large*, *Normal* or *Small*.

### 5.10.2.3 User System Settings

#### Docking Port Message

Checking this box blocks the message that normally pops up on the display when NEO is docked.
5.10.3 Registry Editor

This option is reserved for senior administrators who have a strong understanding of registry keys and values. Careless registry editing can cause irreversible damage to NEO.

5.11 Error Reporting

Error Reporting allows you to enable or disable Microsoft error reporting prompts.

- Tap on Start>Settings>Control Panel. Tap on the Error Reporting icon.

5.12 Dr. Debug

Dr. Debug is an error diagnostic tool.

- Tap on Start>Settings. Tap on Control Panel followed by the Dr. Debug icon.
Chapter 5: Configuration

Status

5.12.1 Status

This tab indicates the status (on/off) of the tools. Tapping on *Browse logs* displays error logs for your review.

5.12.2 Settings

- Choose an **Error Level** from the drop down menu.
- To change the location where debug information will be stored, tap on the button to the right of the *Log Folder* option.
5.12.3 Utilities

The Utilities tab is used to log network traffic. When you tap on the Start button, debug data is collected so that, if necessary, it can be forwarded to a Psion Teklogix technician for evaluation.

5.13 Teklogix Imagers Settings

The Teklogix Imagers applet is used to create, modify, delete and activate imager settings. The principal uses of the applet are to decode bar codes and to capture images.

Note: This icon is only displayed when the appropriate imager is installed in your handheld computer.
• To launch this applet, tap on Start>Settings>Control Panel, and then tap on the Teklogix Imagers icon.

> Important: Refer to Appendix E: “Teklogix Imagers Applet” for details about this applet.

5.13.1 Imager Demo Applet

An Imager demo applet is also provided to illustrate how the imager works.

• To launch the demo applet, tap on Start>Programs, and then tap on the Imager icon.
5.14 Teklogix Scanner Settings

The Teklogix Scanners icon in the Control Panel provides dialog boxes in which you can tailor bar code options and choose the bar codes your scanner will recognize. The parameters are preset with the default settings of the decoded scanner installed in the unit. **Not all options apply to all scanners.**

For a listing of available scanners and their specifications, please refer to Chapter 7: “Specifications”.

5.14.1 Bar Codes Tab

The drop-down menu to the right of the Scanner: option allows you to choose from one of the following scanner types used with your hand-held: Decoded (internal) and Decoded (ISCP). If an HHP 5000 imager is installed in your unit, refer to Appendix D: “Teklogix Imagers Applet” for details about setting up your imager.

The symbologies listed change to reflect the scanner you choose and the bar codes it supports.

Note: Refer to Appendix C: “Bar Code Settings” for details about the symbols for each scanner type.

5.14.1.1 Scanner Menu

The drop-down menu to the right of the Scanner: option allows you to choose from one of the following scanner types used with your hand-held: Decoded (internal) and Decoded (ISCP). If an HHP 5000 imager is installed in your unit, refer to Appendix D: “Teklogix Imagers Applet” for details about setting up your imager.

The symbologies listed change to reflect the scanner you choose and the bar codes it supports.
Chapter 5: Configuration
Bar Codes Tab

Important: To improve the decode speed and performance, enable only those codes that are required by the application.

Keep in mind that some bar code types are only available when an internal imaging scanner is installed. All internal scanners can be configured using the Barcode dialog boxes.

5.14.1.2 Restoring Default Settings

Note: The pop-up menu function described in this section is only available on units with the Windows CE Professional operating system.

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters or all scanner parameters. To display a pop-up menu, you need to press and hold the stylus on a menu item. (This equivalent to a right-click on a PC.)

• Press and hold the stylus on a symbology (e.g., Code 128) to display a pop-up a menu.

![Scanner Settings](image)

• Choose Default subtree to reset only the parameters in the symbology you selected, or choose Default all settings to reset all scanner parameters to default settings.

To reset a single parameter to its default setting:

Important: To improve the decode speed and performance, enable only those codes that are required by the application.
• Press and hold the stylus on the parameter you want to reset.

• Choose **Default parameter** to reset the parameter to the default setting.

5.14.2 Options Tab

This tab allows you to tailor the double-click parameters and the display options associated with your scanner.

5.14.2.1 Double Click Parameters

**Click Time (msec)**

This parameter controls the maximum gap time (in milliseconds) for a double-click. If the time between the first and second clicks of the scanner trigger is within this time, it is con-
A double-click is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the “Click Data” parameter. When a value is not assigned for the “Click Data”, double-clicking the scanner trigger overrides the target dot delay set in the “Dot Time” parameter and initiates a normal scan sweep. If a value is assigned for the “Click Data” parameter, double-clicking the scanner trigger inserts the “Click Data” value rather than initiating a scan.

**Click Data**

This parameter determines which character is sent to the application installed in NEO following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the keypress is displayed.

### 5.14.2.2 Display Parameters

**Scan Result**

When this parameter is enabled, the type of bar code and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

**Scan Indicator**

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

**Scan Result Time (sec)**

The value assigned to the “Scan Result Time (sec)” parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of “0” (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.

*Note: To remove the scan result from the screen before the “Result Time” has expired, point the scanner away from the bar code and press the trigger.*

**Good Scan Beep And Bad Scan Beep**

These parameters determine whether or not the NEO emits an audible scanner ‘beep’ when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either on to enable the beeper or off to disable it.
Soft Scan Timeout
This parameter is used by the SDK “Scan” function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from 1 to 10 sec. (default is 3 sec.).

Scan Log File
If this parameter is enabled, the input bar code and the modified/translated output bar code are logged in the file \Flash Disk\ScanLog.txt. Keep in mind that if the “Scan Log File” is enabled, there is a slight performance effect when performing multiple scans since the log file is written to persistent storage.

5.14.2.3 Data Handling
This option allows you to choose the code page NEO will use to display scanned data – Default Local ASCII or ISO-8859-1 Latin 1.

Codepage:
Tapping on this option displays a window in which you can define the code page NEO will use.

If you choose Default Local ASCII, the code page of the local OS is used. For example, if the local OS uses double-byte Chinese characters, choosing this option will filter data through the local ASCII of that OS and display it accurately, in this example, using double-byte characters.

If you choose ISO-8859-1 Latin 1, data will be displayed according to the character mapping of this Latin 1 code page, ignoring the local OS code page.
5.14.3 Translations Tab

The Translations tab allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a bar code and a case will only be applied if all rules specified in the case are successful – if a rule within a case fails, the entire case fails.

- In the Translation tab, tap on the Case # to create rules.
• Tap on the **No rule** drop-down menu to display the rules.

When you choose a rule, an associated screen is displayed in which you can define the rule.

5.14.3.1 Case Rules

The case rules are defined as follows:

- **No rule** – ignored.
- **Match at index** – matches the match string at a specified index.
- **Match and replace at index** – matches the match string at a specified index and replaces/changes it.
- **Replace at index** – replaces/changes unspecified data in a given range.
- **Add barcode prefix/suffix** – adds a global prefix or suffix.
Chapter 5: Configuration
Translations Tab

- **Verify barcode size** – verifies the bar code size. This rule should generally be assigned first, before creating subsequent rules.
- **Search and replace** – replaces all instances of the match string. (Note that this rule cannot fail.)

*Note: Keep in mind that the effects of previously applied rules must be taken into account when creating subsequent rules. For example, if the bar code size is important, it should be checked before any rules that might change the size are applied.*

Translation information about the status of each case/rule is displayed in the scan log file (see “Scan Log File” on page 139) when enabled. This is useful if a case fails, and you are trying to determine why a rule is failing.
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6.1 Carrying Accessories

There are a variety of carrying accessories to help the operator work safely and comfortably with NEO.

Table 6.1 Carrying Accessories

<table>
<thead>
<tr>
<th>Carrying Accessory</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand Strap</td>
<td>PX3024</td>
</tr>
<tr>
<td>Wrist Strap (with stitched stylus holder)</td>
<td>PX3028</td>
</tr>
<tr>
<td>Carrying Holster (compatible with pistol grip)</td>
<td>PX3020</td>
</tr>
<tr>
<td>Carrying Case (leather with protective key cover and clip)</td>
<td>PX3029</td>
</tr>
<tr>
<td>Shoulder Strap</td>
<td>PX3022</td>
</tr>
<tr>
<td>Belt Kit including Belt Clip, Adaptor Plate and screws</td>
<td>PX3025</td>
</tr>
<tr>
<td>Pistol Grip</td>
<td>PX3030</td>
</tr>
</tbody>
</table>

Important: Carrying accessory screws have adhesive pre-applied to them. Do not add adhesives to secure screws on carrying accessories; these chemicals may damage the plastic casing.
6.1.1 Attaching The Hand Strap

The hand strap provides a secure means for operators to carry NEO.

Figure 6.1 The Hand Strap

- Thread the lanyard attached to the quick release buckle through one of the accessory attachment points — the eyelets on the either side of the base of the unit. You may find Figure 6.2 useful as a reference.

Figure 6.2 Attaching the Quick Release Buckle

- Guide the quick release buckle through the lanyard loop to secure it to the unit.
• To attach the hand strap, align the eyelet at the top of the hand strap with the threaded insert near the corner of the hand-held, and secure it in place using the M2x6 screw included with the hand strap.

Figure 6.3 Attaching the Hand Strap

• Snap the hand-strap buckle into the lanyard quick release buckle.
Chapter 6: Peripheral Devices & Accessories

Belt Clip Installation

- Pull up the velcro clasp to adjust the hand strap to fit your hand as required.

Note: In addition to the hand strap, the lanyard with quick release buckle is also used to attach the wrist strap (shipped with the hand-held) and the optional shoulder strap to NEO.

6.1.2 Belt Clip Installation

Figure 6.4 Belt Clip Installation Kit

- Position the belt clip adaptor plate so that the thicker, folded end aligns with the angled scanner section on the back of NEO as illustrated in Figure 6.5.
• To attach the belt clip adaptor plate to NEO, thread the screws through the eyelets into the metal inserts on NEO.

Figure 6.5 Aligning the Belt Clip Adaptor Plate for Installation

Figure 6.6 Attaching The Adaptor Plate

• With the adaptor plate attached to NEO, join the plastic belt clip (included in your kit) to the adaptor plate.
Chapter 6: Peripheral Devices & Accessories

The Expansion Port

6.1.3 The Expansion Port

NEO is equipped with an expansion port so that customised modules (e.g., RFID) can be easily added to your hand-held computer as they are required.

Important: Do not remove the expansion port cover unless an expansion module is being installed.

6.1.4 The Pistol Grip With Stylus

The pistol grip has been designed to easily attach to NEO without tools or screws. For added convenience, the pistol grip is equipped with a stylus inserted in the handle.

- Remove the expansion port cover on the back of NEO. Store the cover in the underside of the pistol grip – you’ll see an indent in the shape of the port cover in the pistol plastic.
- Position the pistol grip over the slots moulded into the back of NEO, and snap it into place – no screws required.
To release the pistol grip:

- Press the thumb latch release, and lift the pistol grip out.

Note: To maintain proper operation, ensure that the expansion port and the pistol grip contacts are dry and free of debris. If necessary, use a soft cloth moistened with alcohol to clean the contacts.

6.2 The Battery

Important: Carefully review the “NEO Hand-Held Computer Regulatory & Warranty Guide”, PN 8000175, before handling a battery.

NEO operates on a 3300 mAh lithium-ion battery pack, Model No. WA3006.

Note: Review Chapter 7: “Specifications” for detailed information.
Chapter 6: Peripheral Devices & Accessories
Adaptor/Cable Options

6.3 Adaptor/Cable Options
The following are adaptors that can be ordered for NEO:

Table 6.2 Adaptor/Cable Model Numbers And Descriptions

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Adaptor/Cable Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PX3052</td>
<td>Cable/Dongle – Micro-USB to Ethernet</td>
</tr>
<tr>
<td>PX3053</td>
<td>Cable – Micro-USB to USB ‘A’ Receptacle</td>
</tr>
<tr>
<td>PX3058</td>
<td>Cable – Micro-USB to USB ‘A’</td>
</tr>
<tr>
<td>PX3050</td>
<td>Adaptor – Hand-Held to RS-232 Connector</td>
</tr>
<tr>
<td>PX3054</td>
<td>Adaptor – Hand-held to Micro-USB with DC Jack</td>
</tr>
<tr>
<td>PX3056</td>
<td>Adaptor – Cigarette Lighter</td>
</tr>
</tbody>
</table>

6.3.1 RS-232 Adaptor - Model No. PX3050
This adaptor is equipped with an RS-232 port via a standard non-powered DB9 connector. Carrying devices such as the wrist strap can still be used when the adaptor is attached to the hand-held.

To attach the adaptor to NEO:
• Make certain that the adaptor connector and NEO docking port are free of dust or any other debris before connecting them.
• A slot on the side of the adaptor is provided to accommodate the carrying strap. Thread the carrying strap through the slot on the adaptor. (Refer to Figure 6.8 on page 153.)
Figure 6.8 Threading Wrist Strap Through Adaptor

- Thread Carrying Strap through slot in Adaptor
- Slot to accommodate Carrying Strap
• Align the docking port on the base of NEO with the adaptor, and gently snap the adaptor into place.

6.3.2 Micro-USB Adaptor - Model No. PX3054

This adaptor is equipped with a micro-USB port along with a DC IN socket. When attached to NEO, the adaptor allows you to connect an AC wall adaptor (Model No. PX3012) or an automotive power adaptor (Model No. PX3056) to the hand-held. The micro-USB port allows you to utilize the micro-USB to Ethernet cable (Model No. PX3052) and the micro-
USB to USB ‘A’ (Model No. PX3058 & PX3053). Carrying devices such as the wrist strap can still be used when the adaptor is attached to the hand-held.

To attach this adaptor:
- Make certain that the adaptor connector and NEO docking port are free of dust or any other debris before connecting them.
- A slot on the side of the adaptor is provided to accommodate the wrist strap. Thread the wrist strap through the slot on the adaptor. (See Figure 6.8 on page 153 for details.)
- Align the docking port on the base of NEO with the adaptor, and gently snap the adaptor into place.

6.4 Charging Options
Psion Teklogix offers a variety of charging options for NEO. These include:
- AC Adaptor – Model No. PX3012 with PX3054
- Cigarette Lighter Adaptor – Model No. PX3056 with PX3054
- Desktop Docking Station – Model No. PX3001
- Desktop Docking Station with Integrated V.92 Analog Modem – Model No. PX3008
- Quad Docking Station – Model No. PX3004 PC and PX3004 NPC
- Battery Chargers for charging batteries only:
  - Quad Battery Charger – Model No. WA3004
  - Single Battery Charger – Model No. WA3001
6.4.1 Installation - Docking Stations

When installing a docking station, consider the following guidelines.

- Keep docking stations away from excessive dirt, dust and contaminants.
- Docking stations will not charge batteries outside an ambient temperature range of 0 °C to 45 °C (32 °F to 113 °F). It is recommended that the docking station be operated at room temperature – between 18 °C and 25 °C (64 °F to 77 °F) for maximum performance.

After unpacking your unit:

- Visually inspect the docking station for possible damage.
- Install the IEC power cord and apply power.

6.4.2 Power Consumption Considerations

Check to ensure the mains circuit supplying docking stations is adequate for the load, especially if several docking stations are being powered from the same circuit.

- Quad docking station – can consume up to 3A @ 120V AC or 1.5A @ 240V AC.

6.4.3 Operator Controls

NEO docking stations have no operator controls or power switches.

6.5 Desktop Docking Station - PX3001

Figure 6.9 Desktop Docking Station
Chapter 6: Peripheral Devices & Accessories
Desktop Docking Station Setup

Note: The desktop docking station is shipped with its own user manual. It is critical that it be reviewed for additional information and updates.

The desktop docking station is designed to charge the battery installed in NEO along with a spare battery pack. It is equipped with a micro-USB port.

Figure 6.10 Back of Desktop Docking Station

6.5.1 Desktop Docking Station Setup
Refer to instruction sheet PN 1081333 for a checklist of startup steps. You can find this instruction sheet on Teknet. Go to www.psionteklogix.com. Tap on Teknet and enter your user name and password. If you’re not already a member, you will be asked to register free of charge.

6.5.2 Charging A Battery Installed In NEO

Important: This docking station can only be used to charge Psion Teklogix approved lithium-ion batteries.

Important: Before charging a battery, it is critical that you review the “NEO Hand-Held Computer Regulatory & Warranty Guide, PN 8000175.
Chapter 6: Peripheral Devices & Accessories

Charging a Spare Battery

To charge a spare battery:

- Insert the battery in the spare battery charge well at the back of the docking station, aligning the contacts on the battery with the contacts in the spare battery charge well.

Note: To maintain the NEO real time clock for three days, a battery must be charged for at least two hours while installed in the hand-held; however, if you are charging a spare battery (not installed in the hand-held), the real time clock three day backup cannot be maintained until a charged battery is installed in the hand-held computer for at least two hours.

6.5.4 Battery Charge Duration

When NEO is inserted in the desktop docking station, 3 hours is required to charge the battery to 75% capacity.

Note: The specified battery charge times are based on NEO default settings – i.e., display brightness 50%, keyboard backlight off, 802.11b/g radio on and 23° C temperature. Additional peripherals and other power consumption features will also alter the specified charge time.

The desktop docking station stops applying power to the battery when it is fully charged—there is no risk of overcharge if the battery remains in the charge well.
6.5.5 Docking Station Charger LED Indicators

The desktop docking station is equipped with a single tri-coloured LED indicator in the lower-right corner of the front panel that indicates various charge states of the spare battery installed in the docking station.

*Note: During the first two minutes of a battery charge, the LED remains solid yellow while the hand-held computer status is assessed and the super capacitor is charged.*

<table>
<thead>
<tr>
<th>LED Behaviour</th>
<th>Charge Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No battery detected in the slot.</td>
</tr>
<tr>
<td>Solid Yellow</td>
<td>Battery charged to less than 75% of capacity.</td>
</tr>
<tr>
<td>Flashing Green</td>
<td>Battery charged to between 75% and 95% of capacity.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>Charge complete.</td>
</tr>
<tr>
<td>Flashing Yellow</td>
<td>Battery is not charging. The battery temperature is outside of the charge range of 0º C to 45º C.</td>
</tr>
<tr>
<td>Solid Red</td>
<td>Battery is not charging. Battery fault.</td>
</tr>
</tbody>
</table>

*Note: Battery charging continues whether the hand-held is switched on or off.*

6.5.6 Troubleshooting the Charging Operation of The Dock

6.5.6.1 Indicator Solid Red

If the indicator is solid red:
- Remove the battery and disconnect the mains power cable.
- Wait at least 20 seconds, and then plug the cable in again.

If the charge well LED remains solid red, the battery may be defective or there is a power supply problem.

6.5.6.2 NEO Power LED Does Not Light Up

- Ensure NEO is fully seated in the dock.
- Verify that there is power from the mains outlet.
- Remove the power cable from the docking station, and check it for damage.
Reconnect the power cable to the outlet.

### 6.5.6.3 Indicator Does Not Light When Battery Installed

- Reinstall the battery, and check that it is fully seated in the charge well.
- Remove the battery, and clean the contacts on the battery and the charge well.
- Inspect the charge well contacts for damage (are they bent, flattened, twisted or broken).
- Try inserting a battery that you know to be working in the charge well.
- Reconnect the power cable, and check that the charge well indicator flashes at powerup.

### 6.5.7 Linking NEO to a PC

The desktop docking station can be connected to a PC so that you can exchange files or install applications. A USB cable is included with your docking station.

**Note:** For information about data transfer with the Windows XP operating system and ActiveSync or with the Vista operating system, refer to “Data Transfer Between The PC And The Hand-Held” on page 19.

To link NEO to a PC:

- Insert the hand-held in the desktop docking station.
- Insert the micro-USB connector into the docking station connector. Attach the other end of the cable into a USB port on the PC.

### 6.5.8 Linking NEO to an Ethernet Network

A micro-USB Ethernet adaptor cable – model number PX3052 – is used to connect NEO to an Ethernet network through a desktop docking station.

- Insert the micro-USB connector on the adaptor cable into the micro-USB port on the back of the desktop docking station.
- Connect your network Ethernet cable to the Ethernet port on the adaptor cable.

#### 6.5.8.1 Network Access

The hand-held unit automatically detects insertion into the desktop dock and loads the appropriate drivers to communicate with the micro-USB Ethernet converters.

**Network Addressing**

The host application uses standard TCP/IP protocol to name, locate and communicate with a specific NEO on the network.
If a link is established between NEO and a host, the application on the host and on the hand-held must have a recovery mechanism in the event that NEO is removed from the dock, interrupting the link.

6.5.9 Troubleshooting USB Operations

- Ensure that the unit is fully seated in the dock. A dock icon should be visible in the task bar.
- Ensure the USB cabling is connected properly.
- Ensure NEO and docking station contacts are not contaminated.

6.6 AC Wall Adaptor—Model No. PX3012

The AC wall adaptor available for your docking station allows you to operate your hand-held using AC power while charging the battery inserted in the unit.

Adaptor plugs suitable for use in various countries are shipped with the AC wall adaptor.

- Choose the adaptor plug that is suitable for use in your country. Slide the adaptor plug into the Universal AC power supply, snapping it into place. These two pieces, coupled together, are referred to as an AC wall adaptor.
- Insert the DC power plug into the DC IN socket at the back of the charger.
- Plug the pronged end into an AC outlet.

6.7 Cigarette Lighter Adaptor—Model PX3056

The cigarette lighter adaptor allows you to power your hand-held and recharge your battery using power drawn from your vehicle’s automotive power outlet when used in conjunction with the DC/USB Adaptor, Model No. PX3054.
Chapter 6: Peripheral Devices & Accessories
Quad Docking Station - PX3004 PC & PX3004 NPC

Figure 6.11 Automotive Power Adaptor

- Attach the micro-USB adaptor, model number PX3054, to the base of NEO. Refer to “Micro-USB Adaptor – Model No. PX3054” on page 154 if you require further details. The desktop docking station is also equipped with a DC IN socket to which you can connect the automotive adaptor.
- Insert the DC power plug on the automotive adaptor into the DC IN socket on the Micro-USB adaptor or desktop docking station.
- Insert the automotive power adaptor plug into automotive power outlet in your vehicle.

Note: Battery charging continues whether the hand-held is switched on or off.

6.8 Quad Docking Station - PX3004 PC & PX3004 NPC

Note: The quad docking station is shipped with a user manual. It is critical that this manual be reviewed for additional information and updates.
Chapter 6: Peripheral Devices & Accessories

Quad Docking Station Setup

The quad docking station permits each of four docked NEOs to communicate with a 10/100 BaseT Ethernet network. It also provides sufficient power to operate the hand-holds and charge their batteries.

⚠️ **Important**: The Ethernet connection on the quad docking station is designed for indoor use only!

### 6.8.1 Quad Docking Station Setup

Refer to instruction sheet PN 1081342 for a checklist of startup steps. You can find this instruction sheet on Teknet. Go to [www.psionteklogix.com](http://www.psionteklogix.com). Tap on Teknet and enter your **user name** and **password**. If you’re not already a member, you will be asked to register free of charge.

### 6.8.2 Quad Docking Station Indicators

The quad dock is equipped with a power indicator LED and RJ45 link and traffic indicator LEDs. When a valid link is established, a green LED is illuminated next to the RJ45 connector.

### 6.8.3 Inserting NEO in the Quad Docking Station

- Slide NEO into the cradle portion of the quad dock until lightly latched. The LED on the hand-held unit lights up to show it has external power and may start charging the battery.

Interaction with NEO while in the quad dock is a function of the user application software used to communicate with the host network.

### 6.8.4 Network Access

The quad docking station has one 10/100 Ethernet port. You can insert up to four hand-held units. The hand-holds are connected to an internal USB hub. The hand-held unit automatically detects insertion into a quad docking station and loads the appropriate drivers to communicate with the USB/Ethernet converters.

#### 6.8.4.1 Network Addressing

Although the USB converters have fixed Ethernet MAC addresses, there is generally no correlation between these addresses and a specific hand-held. The host application uses standard TCP/IP protocol to name, locate and communicate with a specific NEO on the network.
If a link is established between NEO and a host, the application on the host and on the handheld must have a recovery mechanism in the event that NEO is removed from the dock and the link is interrupted.

### 6.8.5 Battery Charging - LED Behaviour
Charge status is displayed on the hand-held LED. Refer to Table 6.3 on page 159 for detailed LED charge behaviour. When inserted in the quad dock, NEO requires 3 hours to charge the battery to 75% capacity. Charge durations are independent of the number of NEOs docked.

*Note: The specified battery charge times are based on NEO being powered off. Additional peripherals and other power consumption features will also alter the specified charge time.*

### 6.8.6 Troubleshooting
The indicators, applications and drivers required to use and monitor the docking station are installed on NEO – no indicators or applications are present on the docking station itself.

#### 6.8.6.1 Network Link Unsuccessful
If a network link fails, the application must take appropriate action.

#### 6.8.6.2 NEO LED Does Not Light When Docked
- Check that the quad docking station has power: Is the Power LED on the docking station illuminated?
- Try inserting NEO in another well in the quad dock.
- Check for dirt or contamination on the docking contacts at the bottom of NEO. Wipe the contacts with a damp cloth if necessary.
- Check the connector pins inside the dock cradle for dirt. Gently wipe with a soft cloth if they appear to be dirty or discoloured.
- Check that the contacts are not bent or damaged.
- Remove and reinsert NEO in the cradle.
- Make certain that the battery installed in NEO is not defective.

### 6.9 Scanners and Imagers
NEO supports 1D laser scanner (SE955), 2D imager (HHP 5000) and 1D imager (EV15) options to address a variety of user application requirements. The scanner installed in your
unit can be configured using the Scanner Settings dialog box in the Control Panel (see “Teklogix Scanner Settings” on page 135 and Appendix C, “Bar Code Settings,”) and the Manage Triggers application (see page 98).

If a 2D imager is installed in your unit, the imager can be configured using the Teklogix Imager applet. For details, refer to “Imager Demo Applet” on page 134 and Appendix D: “Teklogix Imagers Applet”.

**Important:** It is critical that you review the “NEO Hand-Held Computer Regulatory & Warranty Guide, PN 8000175, before proceeding.

### 6.9.1 Basic Scanner Operations

- Turn the hand-held on. Wait until the unit has booted up completely.
- Aim at the bar code and press the scan key or the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

### 6.9.2 Scanning Techniques

- NEO’s unique ergonomic design allows you to hold the hand-held at a comfortable angle while scanning.
- Ensure that the scanner beam is not perpendicular to the bar code. Light reflected directly back into the scanner’s exit window may prevent a successful decode.
- Scan the entire bar code. If you are using a 1D laser scanner, make certain that the scan beam crosses every bar and space on the bar code, including the margins on either end of the symbol.
- When using imaging scanners, do not move the scanner while decoding the bar code. Movement blurs the image.
- Hold the scanner farther away for larger bar codes.
- Hold the scanner closer for bar codes with bars that are close together.

A bar code icon appears on the screen during a scan. While the scanner beam is active, the onscreen message states: SCANNING. If you want to turn off the onscreen message, disable Scan Indication in the Options tab of the Scanner Settings menu in the Control Panel.

When the scan is successful, the bar code data is displayed on the screen until the scan button (or pistol trigger) is released, but only if Scan Result is turned on in the Options tab of the Scanner Settings menu in the Control Panel.
6.9.3 Troubleshooting

If the scanner is not working, investigate the following:

- Check that the bar code symbology being scanned is enabled for the hand-held you are using. Check any other parameters that affect the scanning procedure or the bar code.
- Check the bar code to make sure it is not damaged. Try scanning a different bar code to verify that the problem is not with the bar code.
- Check that the bar code is within the specified decode zone. Refer to “Scanner/Imager Specifications” on page 173 for details.
- Does the hand-held display the warning without scanning? This suggests a hardware problem in the hand-held.
- Is the laser beam scanning across the bar code?
- Once the scan beam has stopped, check the scanner window for dirt, fogging or damage.

6.10 Bluetooth Peripherals

NEOs equipped with Bluetooth radios make it possible to communicate with a variety of Bluetooth peripherals, including GSM/GPRS handsets, scanners, printers, and so on. The range of the Bluetooth radio is limited to approximately 10 meters.

Psion Teklogix provides built-in support for the Bluetooth peripherals listed below.

- GSM/GPRS universal handset.
- Bluetooth printer.
- Bluetooth headset.

Keep in mind that Bluetooth and IEEE 802.11b/g radios both operate in the 2.4GHz band. Although NEO includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the hand-held at the same time, they cannot transmit simultaneously – this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11g network, Psion Teklogix recommends using Bluetooth peripherals that have low transaction rates (such as printers and scanners).

Refer to “Bluetooth Setup” on page 102 for information about setting up your Bluetooth devices for communication. In addition, review the manual shipped with your Bluetooth device to determine the method used to pair with the NEO host.
SPECIFICATIONS

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7.1 NEO Hand-Held Specifications

Note: Performance specifications are nominal & subject to change without notice.

7.1.1 Hardware

Physical Dimensions
- 168 mm x 64 mm x 34 mm (6.6 in. x 2.5 in. x 1.3 in.)

Weight (with battery pack)
- 275 g (0.6 lbs.)

User Interface

Colour Touchscreen Display:
- 6.86 cm (2.7 in.) diagonal in QVGA portrait mode
- Sunlight readable transmissive with touchscreen
- Colour 240 x 320 graphic TFT
- Passive stylus or finger operation
- LED backlit keyboard

Keyboard:
- 48-key Alpha Numeric
- 26-key Numeric
- Ergonomically enhanced for ambidextrous, one-hand operation

Indicators & Controls:
- Tri-coloured LED indicates battery charge and scan status

Audio:
- Built-in microphone and receiver on all Connected hand-holds
- 85db internal beeper
- Bluetooth (on equipped models)

Internal Expansion Slot
- One microSD memory card slot – user accessible.

Expansion Port
- Battery Power
Chapter 7: Specifications

Software

• USB signalling

Docking Port
• RS-232
• USB
• DC Input

Environmental Specifications
• Drop Test: 1.2 m (4 ft.) - 26 drops to polished concrete
• Rain/Dust: IP54, IEC 529
• Operating Temperature: -10 °C to +50 °C (14 °F to 122 °F)
• Storage Temperature: -20 °C to +60 °C (-4 °F to 140 °F)
• Relative Humidity: 5% to 95% RH non-condensing
• Storage Temperature: -20 °C to +60 °C (13 °F to 140 °F)
• Shock and Vibration: Random vibration 1 m2/s3 @ 5 to 200 Hz, 0.5 m2/s3 @ 200-500 with duration of 100 min/axis, 3 axes and shock of 150 m/s2 @ 11ms and 300 m/s2 @ 6ms.
• ESD: ± 8kVdc air discharge, ± 4kVdc contacts

7.1.2 Software

Platform
• PXA270 Processor @ 624 or 312 MHz
• Memory:
  - On-board RAM: 128 MB SDRAM
  - On-board ROM: 128 MB Flash

Operating System
• Microsoft® Windows® CE 5.0 Professional (connected variant)
• Microsoft® Windows® CE 5.0 Core (batch variant)

Programming Environment
• HTML, XML.
• Mobile Devices SDK:
  - CE .NET SDK
7.1.3 Wireless Communication

- On-board IEEE 802.11b/g (CCX Certified)
- On-board Bluetooth radio

7.1.4 Bar Code Applications

- Optional 1D EV15 imager module.
- Optional 1D SE955 laser scanner module
- Optional 2D HHP 5000 imager module

7.2 NEO Radio Specifications

7.2.1 802.11b/g Radio

**Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM)**

- Form factor: Embedded surface mount module, 8.2 x 8.4 mm
- Antenna port: U.FL jack
Chapter 7: Specifications
Bluetooth Radio

- Antenna Type: PCB slot antenna
- Antenna Gain: 2dBi peak
- Transmit Power: 802.11b/g: 50 mW typical (+17 dBm)
- Frequency Range: 2.400 - 2.4835 GHz
- Channels: This radio supports 802.11d. The radio will associate with any 802.11d compliant AP, regardless of what channel is in use.
- RX Sensitivity:
  - -86 dBm typ @ 11 Mbps
  - -82 dBm @ 6 Mbps, -69 dBm @ 54 Mbps
- Data Rates:
  - 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
  - 802.11b: 1, 2, 5.5, 11 Mbps
- EVM
  - 802.11b: -28 dB typ (16%)
  - 802.11g: -29 dB typ (13%)
- Bluetooth Co-existence: 2-line hardware handshake with Bluetooth radio

7.2.2 Bluetooth Radio

- Form Factor: Embedded (920 kbps serial interface)
- Bluetooth Version: Version 2.0 compliant – features Adaptive Frequency Hopping (AFH) for better co-existence with 802.11 radio and Enhanced Data Rate (EDR) for up to 3 Mbps data rate
- Antenna Type: Ceramic chip PIFA
- Antenna Gain: 1 dBi peak
- Transmit Power: -3 dBm (0.5 mW) minimum, +4 dBm (2.5 mW) max
- Frequency Range: 2.400-2.4835 GHz
- RX Sensitivity (BER<0.1%): -80 dBm max
- Data Rate:
  - V1.2 = 732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric
  - V2.0 = 2 & 3Mbps
- 802.11 Co-existence: 2-line hardware handshake with 802.11 radio
Chapter 7: Specifications

Scanner/Imager Specifications

7.3 Scanner/Imager Specifications

7.3.1 SE 955HP Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scan Angle</td>
<td>47° ± 3° default / 35° ± 3° reduced</td>
</tr>
<tr>
<td>Scan Rate</td>
<td>104 (± 12) scans/sec (bi-directional)</td>
</tr>
<tr>
<td>Scan Pattern</td>
<td>Linear</td>
</tr>
<tr>
<td>Wavelength</td>
<td>650nm</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>3.0-5.5 VDC ± 10%</td>
</tr>
<tr>
<td>Input Current</td>
<td>65 mA typical</td>
</tr>
<tr>
<td>Standby Current</td>
<td>8 µA max</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20° to 60° C</td>
</tr>
<tr>
<td></td>
<td>-4° to 140°F</td>
</tr>
<tr>
<td>Print Contrast</td>
<td>Minimum 25% absolute dark/light reflectance measured at 650 nm</td>
</tr>
<tr>
<td>Dimensions</td>
<td>1.21 cm H x 2.16 cm W x 1.55 cm (max)</td>
</tr>
<tr>
<td></td>
<td>0.47 in. H x 0.85 in. W x 0.61 in. D (max)</td>
</tr>
<tr>
<td>Symbologies</td>
<td>UPC/EAN, Code 128, Code 39, Code 93, 12 of 5, Discrete 2 of 5, Codabar, MSI Plessey</td>
</tr>
</tbody>
</table>

7.3.1.1 SE 955HP Decode Zone

<table>
<thead>
<tr>
<th>Decode Zone Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 mil</td>
</tr>
<tr>
<td>5 mil</td>
</tr>
<tr>
<td>7.5 mil</td>
</tr>
<tr>
<td>10 mil</td>
</tr>
<tr>
<td>UPC 100%</td>
</tr>
<tr>
<td>15 mil</td>
</tr>
<tr>
<td>20 mil</td>
</tr>
<tr>
<td>40 mil</td>
</tr>
<tr>
<td>55 mil</td>
</tr>
</tbody>
</table>

* dependent on width of bar code
Chapter 7: Specifications
EV15 Imager Specifications

7.3.2 EV15 Imager Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Source</td>
<td>617nm Highly Visible LED</td>
</tr>
<tr>
<td>Scan Angle</td>
<td>40º</td>
</tr>
<tr>
<td>Minimum Print Contrast</td>
<td>Minimum 25%</td>
</tr>
<tr>
<td>Min x. Dimension</td>
<td>0.1 mm (4 mils)</td>
</tr>
<tr>
<td>Reading Distance</td>
<td>Up to 90cm (35 in)</td>
</tr>
<tr>
<td>Ambient Light</td>
<td>Works in any lighting conditions, from 0 to 100,000 lux</td>
</tr>
<tr>
<td>Shock</td>
<td>2000G, 0.7ms, half sinus, 3 axes</td>
</tr>
<tr>
<td>Vibration</td>
<td>50G r.m.s</td>
</tr>
</tbody>
</table>

7.3.2.1 EV15 Imager Decode Zone

<table>
<thead>
<tr>
<th>Mil Size</th>
<th>Minimum Range</th>
<th>Maximum Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2.5</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>UPC</td>
<td>2</td>
<td>14.5</td>
</tr>
<tr>
<td>20</td>
<td>2.5</td>
<td>22</td>
</tr>
<tr>
<td>40</td>
<td>3</td>
<td>35.5</td>
</tr>
</tbody>
</table>

High quality symbols in normal room light.

7.3.3 HHP 5000 Imager Performance

<table>
<thead>
<tr>
<th>Specification</th>
<th>HHP 5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Sensor</td>
<td>752H x 480 CMOS sensor</td>
</tr>
</tbody>
</table>
### 7.3.3.1 HHP 5000 Decode Zone

#### Performance Focal Point

<table>
<thead>
<tr>
<th>SR</th>
<th>7 inches (17.8 cm) from lens plate</th>
</tr>
</thead>
</table>

**Chapter 7: Specifications**

**HHP 5000 Imager Performance**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motion Tolerance</td>
<td>4 in. (10.2 cm) per second</td>
</tr>
<tr>
<td>Rotational Sensitivity</td>
<td>360°</td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>±40°</td>
</tr>
<tr>
<td>Ambient light</td>
<td>Total darkness to 100,000 lux (full sunlight)</td>
</tr>
<tr>
<td>Illumination LEDs</td>
<td>626 nm ±30 nm</td>
</tr>
</tbody>
</table>
| Aiming | LEDs: 526 nm ±30 nm  
Laser: 650 nm ±10 nm |
| Symbologies supported | 2D: PDF417, MicroPDF417, MaxiCode, Data Matrix, QR Code, Aztec, Aztec Mesa, Code 49, UCC Composite  
Linear: Code 39, Code 128, Codabar, UPC, EAN, Interleaved 2 of 5, RSS, Code 93, Codablock  
Postal: Postnet (US), Planet Code, BPO 4 State, Canadian Post, Japanese Post, KIX (Netherlands) Post |
| Size | 1.78 cm Depth x 2.79 cm Width (without mounting tabs) x 1.21 cm Height  
0.7 in. Depth x 1.1 in. Width (without mounting tabs) x 0.475 in. Height |
| Weight | 5.9 grams (.21 ounces) |
| Operational Input Voltage | Imager: 3.3 VDC ±5% (23°C)  
Illumination + Aimer 5300: 3.0 VDC to 5.5 VDC (23°C) |
| Operating Temperature | -30° to +50°C (-34° to 122°F) |
| Storage Temperature | -40° to +70°C (-40° to 158°F) |
| Humidity | up to 95% RH, non-condensing at 122° F (50°C) |
| Shock | 18 shocks of 3,500 G for 0.5 msec at 23°C (73° F) |
## Chapter 7: Specifications
### HHP 5000 Imager Performance

<table>
<thead>
<tr>
<th>SR Working Range</th>
<th>8.3 mil Linear (.02 cm)</th>
<th>10 mil PDF417 (.025 cm)</th>
<th>13 mil UPC (.033 cm)</th>
<th>15 mil Data Matrix (.038 cm)</th>
<th>15 mil QR (.038 cm)</th>
<th>35 mil Maxi-code (.089 cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near</td>
<td>3.5 in. (8.9 cm)</td>
<td>3.1 in. (7.9 cm)</td>
<td>2.1 in. (5.3 cm)</td>
<td>2.3 in. (5.8 cm)</td>
<td>2.1 in. (7.9 cm)</td>
<td>2.0 in. (5.1 cm)</td>
</tr>
<tr>
<td>Far</td>
<td>7.6 in. (19.3 cm)</td>
<td>9 in. (22.9 cm)</td>
<td>13.2 in. (33.5 cm)</td>
<td>10.2 in. (25.9 cm)</td>
<td>8.8 in. (22.4 cm)</td>
<td>13.0 in. (33 cm)</td>
</tr>
</tbody>
</table>
### APPENDIX A

## PINOUTS

### A.1 Docking Connector Pinout

<table>
<thead>
<tr>
<th>PIN #</th>
<th>Signal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DGND</td>
<td>Ground</td>
</tr>
<tr>
<td>2, 3, 4</td>
<td>VDD_EXT_POWER</td>
<td>Power Input (6 VDC, 2.8 A)</td>
</tr>
<tr>
<td>5</td>
<td>BATT_OUT</td>
<td>Not Connected</td>
</tr>
<tr>
<td>6</td>
<td>AUDIO_N</td>
<td>Not Connected</td>
</tr>
<tr>
<td>7</td>
<td>AUDIO_P</td>
<td>Not Connected</td>
</tr>
<tr>
<td>8</td>
<td>VBUS_5V</td>
<td>USB Vbus (5 V @ 500 mA)</td>
</tr>
<tr>
<td>9</td>
<td>DOCK_ID</td>
<td>Dock Identifier</td>
</tr>
<tr>
<td>10</td>
<td>USB_DOCK_D-</td>
<td>USB Data Negative</td>
</tr>
<tr>
<td>11</td>
<td>USB_DOCK_D+</td>
<td>USB Data Positive</td>
</tr>
<tr>
<td>12</td>
<td>USB_DOCK_ID</td>
<td>USB Identifier</td>
</tr>
<tr>
<td>13</td>
<td>DGND</td>
<td>Ground</td>
</tr>
<tr>
<td>14</td>
<td>TXD</td>
<td>RS-232 Transmit Console Data</td>
</tr>
<tr>
<td>15</td>
<td>RXD</td>
<td>RS-232 Receive Console Data</td>
</tr>
<tr>
<td>16</td>
<td>DGND</td>
<td>Ground</td>
</tr>
</tbody>
</table>
Appendix A: Pinouts

Battery Connector

A.2 Battery Connector

<table>
<thead>
<tr>
<th>PIN #</th>
<th>Signal Name</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B-</td>
<td>Battery Negative</td>
</tr>
<tr>
<td>2</td>
<td>DQ</td>
<td>Bi-directional data (DS2762)</td>
</tr>
<tr>
<td>3</td>
<td>TH (GND)</td>
<td>Ground</td>
</tr>
<tr>
<td>4</td>
<td>B+</td>
<td>Battery Positive</td>
</tr>
<tr>
<td>5</td>
<td>PS</td>
<td>Power Switch Sensor</td>
</tr>
<tr>
<td>-</td>
<td>POLARITY TAB</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>B-</td>
<td>Battery Negative</td>
</tr>
</tbody>
</table>

A.3 Expansion Port Pinout

<table>
<thead>
<tr>
<th>PIN #</th>
<th>Signal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 5, 13, 14, 15, 16</td>
<td>DGND</td>
<td>Power Ground</td>
</tr>
<tr>
<td>3</td>
<td>USB-</td>
<td>USB Device port negative data</td>
</tr>
<tr>
<td>4</td>
<td>USB+</td>
<td>USB Device port positive data</td>
</tr>
<tr>
<td>6</td>
<td>EXP--TRIG</td>
<td>Pistol Grip Trigger signal</td>
</tr>
<tr>
<td>7</td>
<td>EXP--DETECT</td>
<td>Detection of installed device</td>
</tr>
<tr>
<td>8, 9, 10, 11, 12</td>
<td>SW_VSYS_PWR</td>
<td>Power Output (2.7-4.2VDC, 1A peak, 500mAh nominal) switched</td>
</tr>
</tbody>
</table>
Wireless Zero Config

B.1 Wireless Information

Wireless Zero Config is the native Windows supplicant. To activate Wireless Zero Config, refer to “Advanced Tab” on page 22.

- Tap on Start>Settings>Network and Dial-up Connections.

- Choose the radio icon representing the radio you want to set up – in the sample screen in Figure B.1, this is labelled as SDIO86861.
Appendix B: Wireless Zero Config

Wireless Information

Figure B.1 802.11 Wireless LAN Settings Window

• **Wireless Statistics Tab**: When you choose the Wireless LAN icon, an *802.11 Wireless LAN Settings* window is displayed. This tab lists your radio statistics. Choosing the *Zero* button resets the statistics of the last four items – Packets IN, Packets OUT, IN errors and OUT errors.

Figure B.2 Wireless Statistics

• **Wireless Information Tab**: This tab displays existing networks to which you can connect, and it allows you to add a new network or modify the settings for an existing network.
Appendix B: Wireless Zero Config

Wireless Information

Figure B.3 Wireless Information Tab

This tab lists available networks – any access points that are broadcasting an SSID, and it lists preferred networks – networks that you have configured. Since access points are generally secure, they will most likely not be listed here. By default, NEO attempts to connect to preferred networks. This behavior can be changed by enabling *Automatically connect to non-preferred networks* in the Advanced dialog box (see Figure B.5).

- To add a new configuration, tap on the **Add New** button. A blank **Wireless Properties** dialog box is displayed.
- **Wireless Properties Tab:** Type the appropriate SSID (Service Set Identifier) in the **Network name (SSID):** dialog box. The **Network name** field can contain a maximum of 32 characters. The name assigned here is listed as a preferred network.
Appendix B: Wireless Zero Config

Wireless Information

- **Ad Hoc And Infrastructure:** If you are using an *Infrastructure* network – one in which NEOs must pass data through an access point – leave the checkbox next to *This is an ad hoc network* blank.

  If you are using an *Ad Hoc* network – a network in which NEOs pass data directly to other Ad Hoc devices without an access point – add a checkmark in the checkbox next to *This is an ad hoc network* to enable Ad Hoc.

- **Encryption:** *WEP* (Wired-Equivalent Privacy) encryption prevents others from accidentally accessing your network. If you are not using encryption, you can choose *Disabled* from the dropdown encryption menu. Otherwise, leave this field as is.

  *AES* (Advanced Encryption Standard) is a standard for protecting data through encryption. AES supports key sizes of 128 bits, 192 bits and 256 bits and will serve as a replacement for the Data Encryption Standard (DES), which has a key size of 56 bits. In addition to the increased security that comes with larger key sizes, the AES algorithm is a symmetric block cipher that can encrypt (encipher) and decrypt (decipher) information.

- **Authentication:** 802.11 supports four subtypes of network authentication services: *Open*, *Shared*, *WPA*, and *WPA-PSK*. Under *Open* authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then sends back a frame that indicates whether it recognizes the identity of the sending station.

---

Important: Keep in mind that NEO will only communicate with access points that are configured with the same SSID.
Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

Under *WPA* and *WPA-PSK* authentication, the use of 802.1x authentication is required. For wireless networks *without* a Remote Authentication Dial-In User Service (RADIUS) infrastructure, WPA supports the use of a preshared key. For wireless networks *with* a RADIUS infrastructure, Extensible Authentication Protocol (EAP) and RADIUS is supported.

- **Network Key**: This text box is used to specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

To assign a *Network key*, highlight *The key is provided automatically*, and *uncheck* the checkbox to disable this option.

*Figure B.4 Network Key and Key Index*

- **Key Index**: This field is used to identify the WEP key. Enter a value from 1 to 4.

- **Enable 802.1x authentication**: 802.1X is the IEEE standard that offers additional security for local area networks. It provides authentication for user devices attached to an Ethernet network, whether wired or wireless. A security protocol packet such as TLS or MD5 encapsulated in an *EAP* is used in conjunction with the 802.1X standard to authenticate users at the MAC layer. Available EAPs are listed in the dropdown menu next to the *EAP* option.

To activate 802.1X, highlight **802.1x authentication**, and check the checkbox.
Appendix B: Wireless Zero Config
Assigning an IP Address

- **EAP Type (Extensible Authentication Protocol):** This drop-down menu lists the EAP types available on your system. The items in this drop-down menu will vary depending on your network setup. Keep in mind also that some authentication protocols require that you select a Certificate. By selecting the Properties button, you will be able to select a Certificate. “Certificate Assignment” on page 102 provides a website that outlines how to create certificates for your network.

- **Saving and exiting the radio setup:** Once you’ve completed the configuration, press [ENTER], or tap on OK. The connection you created will be listed in the Wireless Information tab as a preferred network. The radio will search for the SSID and compare the WEP and authentication information you specified. If there is a match between the hand-held settings and the access point settings, the hand-held will communicate on the network through the access point.

B.2 Assigning an IP Address
If your network is not using a DHCP server, you will need to assign an IP address. Refer to “IP Address” on page 19 for details about assigning an IP address.

B.2.1 Name Server
Refer to “Name Server” on page 21 for details about this option.

B.2.2 Advanced Features
To display the Advanced Wireless Settings dialog box:

- Tap on the Advanced button in the Wireless Information tab. (Refer to Figure B.3.)

This window lists the available preferred networks.
B.2.2.1 Rearranging Preferred Networks

NEO attempts to connect with the networks listed in this dialog box in sequence, beginning at the top of the list. If you need to rearrange this list of networks – move networks up and down in the list:

- Tap in the Networks List, and highlight the network that you want to move up or down in the list.
- To move the highlighted item in the list upward or downward, tap on the Down or Up button.

B.2.2.2 Deleting a Preferred Network

To delete a network from this list:

- In the preferred networks list, highlight the network you want to remove.
- Tap on the Delete button.

B.2.2.3 Changing Network Properties

To change the properties of an existing preferred network:

- Highlight the network that you want to modify.
- Tap on the Properties button.
- Make any necessary changes in the Wireless Properties dialog box, and press [ENTER] to save the changes.
APPENDIX C

BAR CODE SETTINGS

C.1 Decoded (Internal) Scanners

- Tap on the Scanner drop-down menu, and choose Decoded (internal).

C.1.1 Options

Dot Time (msec)
The value selected for Dot Time (msec) determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of 0 msec, 200 msec or 400 msec. A value of 0 (zero) disables the target dot.

Laser On Time
The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed. Double-tapping on this parameter displays a dialog box in which you can enter a value between 5 and 99, measured in tenths of seconds.
Appendix C: Bar Code Settings
Decoded (Internal) - Advanced Options

C.1.2 Decoded (Internal) - Advanced Options

Scan Mode
When you double-tap on this parameter, a dialog box is displayed in which you can choose a scanning mode: Scan beam only, Aim with Scan: 1 trigger pull, Aim with Scan: 2 trigger pulls, Aim with Scan on trigger release, and Continuous Scan Mode.

Aim Duration
This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 30 (0 to 3 sec.). A value of 0 (zero) disables the aiming dot.

Minimum Cancel Time
The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Power Mode
This parameter is a power-saving option. Tapping on it displays a screen listing two power mode options: Continuous Power and Low Power.

In Continuous Power mode, the scanner is always on, waiting for a trigger pull or a serial communication.

In Low Power mode, the scanner is in a standby state, drawing minimal power until a trigger pull or serial communication wakes it. Keep in mind that while this option is more suitable for battery powered applications, there will be a slight delay while the scanner powers up to scan a bar code.

Low Power Timeout
To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned – a successful decode restores normal blinking.

This is only used if the unit’s Trigger Mode has been changed to Continuous On and the unit is in a fixed mount; otherwise, this parameter is not used.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of 30 sec., 1 min., 2 min., or 3 min.
Parameter Scanning

Setting this parameter to on allows the scanner to respond to programming bar codes that can be found in the scanner manual. Scanning these is an alternative way to reprogram some of the scanner features.

**Important:** Psion Teklogix strongly recommends that this parameter only be enabled by personnel with a very strong understanding the scanner and how it operates. Scanning the wrong parameter code can result in an inoperable unit; if this occurs, the unit will need to be shipped to a depot for repair.

Linear Security Level

This parameter allows you to select the security level appropriate for your bar code quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of bar code quality. As security levels increase, the scanner’s decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from 1 to 4.

*Linear security level 1* specifies that the following code types must be successfully read twice before being decoded:

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codabar</td>
<td>All</td>
</tr>
<tr>
<td>MSI Plessey</td>
<td>4 or less</td>
</tr>
<tr>
<td>D 5 of 5</td>
<td>8 or less</td>
</tr>
<tr>
<td>I 2 of 5</td>
<td>8 or less</td>
</tr>
</tbody>
</table>

*Linear security level 2* specifies that all types of codes must be successfully read twice before being decoded.

*Linear security level 3* specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSI Plessey</td>
<td>4 or less</td>
</tr>
<tr>
<td>D 2 of 5</td>
<td>8 or less</td>
</tr>
<tr>
<td>I 2 of 5</td>
<td>8 or less</td>
</tr>
</tbody>
</table>
Appendix C: Bar Code Settings

Decoded (Internal) 2D Scanning Options

**Linear security level 4** requires that all code types be successfully read three times before being decoded.

**Bi-Direction Redundancy**

*Note: This parameter is only valid if a "Linear Security Level" is enabled.*

When this parameter is enabled, a bar code must be successfully scanned in both directions (forward and reverse) before being decoded.

C.1.3 Decoded (Internal) 2D Scanning Options

**Scanning Mode**

When you double-tap on this parameter, a dialog box is displayed in which you can choose one of the following scanning modes: **Smart Raster, Always Raster, Programmable Raster, Slab Pattern, Cyclone Pattern** or **Semi-Omnni Pattern.**

**Raster Height And Raster Expand Rate**

These parameters determine the laser pattern’s height and rate of expansion.

*Note: These parameters are only used when either Programmable Raster or Always Raster is assigned to the “2D Scanning Mode” parameter. “2D Raster Height” and “2D Raster Expand Rate” are intended for very specific applications and are usually not required for normal scanning purposes.*

Double-tapping on this parameter displays a dialog box in which you can enter a value from 1 to 15.

C.1.4 Decoded (Internal) Data Options

**Transmit Code ID Char**

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: **None, AIM, or Symbol.**
Appendix C: Bar Code Settings

**Code 39**

### Scan Data Format

This parameter allows you to change the scan data transmission format. Double-tapping on *Scan Data Format* displays the following options from which you can choose a data format: `data` (as-is), `data [S1]`, `data [S2]`, `data [S1][S2]`, `[P] data`, `[P] data [S1]`, `[P] data [S2]`, and `[P] data [S1][S2].`

### Prefix [P], Suffix [S1] And Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing. When you double-tap on these parameters, a dialog box is displayed in which you can enter a value from 0 to 255.

### Delete Char Set ECIs

Setting this parameter to **on** enables the scanner to delete any escape sequences representing Character Set ECIs – Extended Channel Interpretations (also known as GLIs) – from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 bar codes containing Character Set ECIs, even when the ECI Protocol is disabled.

### ECI Decoder

Setting this parameter to **on** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **off** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the data that was not interpreted.

### C.1.5 Code 39

#### Enabled

Setting this parameter to **on** enables Code 39.

#### Enable Trioptic Code 39

*Note: “Trioptic Code 39” and “Full ASCII” should not be enabled simultaneously. The scanner does not automatically discriminate between these two symbologies.*

Trioptic Code 39 symbols always contain six characters. Setting this parameter to **on** allows this type of symbology to be recognized.
Appendix C: Bar Code Settings

**Code 39**

**Convert To Code 32**

*Note: “Code 39” must be enabled in order for this parameter to function.*

Setting this parameter to **on** allows the scanner to convert the bar code from *Code 39* to *Code 32*.

**Code 32 Prefix**

*Note: “Convert to Code 32” must be enabled in order for this parameter to function.*

When this parameter is enabled, the prefix character *A* is added to all *Code 32* bar codes.

**Set Length L1 And Set Length L2**

Lengths for *Code 39* can be set for **Any length**, **Length within a range**, **One discrete length** or **Two discrete lengths**. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be decoded by your scanner.

Choosing **One discrete length** allows you to decode only those codes containing a selected length. Choosing **Two discrete lengths** allows you to decode only those codes containing two selected lengths. **Length within a range** allows you to decode a code type within a specified range from 1 to 55.

**Check Digit Verification**

When this parameter is enabled, the integrity of a *Code 39* symbol is checked to ensure that it complies with specified algorithms.

*Note: Only those “Code 39” symbols that include a Mod 43 check digit are decoded when this parameter is enabled.*
Appendix C: Bar Code Settings

Code 39

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Full ASCII
If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Decode Performance
If this parameter is enabled, one of three decode levels can be chosen in the Decode Performance Level parameter.

Decode Perf. Level
This parameter provides three levels of decode performance or “aggressiveness” for Code 39 symbols. Increasing the performance level reduces the amount of required bar code orientation – this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between 1 and 3.

Length Restriction
The parameters in this sub-menu allow you to define the length of the bar codes that will be decoded using either the Field Size parameter or the Minimum Size and Maximum Size parameters (see below). The order of operation to either match the Field Size or determine if the length falls between the Minimum Size and Maximum Size is as follows:

- Strip the leading and trailing characters.
- Add the prefix and suffix characters.
- Count the number of characters remaining to either match the field size or determine if the length falls between the minimum and maximum size.

Field Size
When a value is assigned for this parameter, only bar codes that match the field size exactly can be transmitted. If a value is assigned to this parameter, a Minimum Size and Maximum Size value is not required.
Appendix C: Bar Code Settings

Code 128

**Minimum Size And Maximum Size**
When a value is assigned to these parameters, only bar code lengths that fall between the minimum and maximum value can be decoded. If values are assigned to these parameters, a Field Size value is not required.

**Add/Remove Data**

**Prefix Char**
This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

**Suffix Char**
This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

**Strip Leading**
This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.

*Note: For Code 39 bar codes, the “AIAG Strip” is performed before the “Strip Leading”.*

**Strip Trailing**
The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

C.1.6 Code 128

**Enabled**
Set this parameter to on to enable Code 128.

**Enable GS1-128/GS1 US**
Previously named UPC/EAN and UCC, these types of bar codes include group separators and start codes.

**Enable ISBT 128**
To successfully scan this variation, Enable ISBT 128 must be set to on.
Appendix C: Bar Code Settings

EAN 13

Decode Performance
If this parameter is set to **on**, one of three decode levels assigned to the *Decode Performance Level* parameter can be selected.

**Decode Perf. Level**
This parameter provides three levels of decode performance or “aggressiveness” for Code 128 symbols. Increasing the performance level reduces the amount of required bar code orientation – this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between 1 and 3.

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

C.1.7  **EAN 13**

**Enabled**
Set this parameter to **on** to enable *EAN 13*.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

C.1.8  **EAN 8**

**Enabled**
Set this parameter to **on** to enable *EAN 8*.

**EAN-8 Zero Extend**
When this parameter is enabled, five leading zeros are added to decoded EAN-8 symbols, making them compatible in format to EAN-13 symbols. Disabling this parameter returns EAN-8 symbols to their normal format.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.
Appendix C: Bar Code Settings

**UPC A**

**C.1.9 UPC A**

*Enabled*

Set this parameter to **on** to enable *UPC A*.

*UPC-A Check Digit*

If you enable this parameter, the check digit is included with the decoded bar code data.

*UPC-A Preamble*

When you double-tap on this parameter, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-A symbols transmitted to the host device:

- **System Char** – system character transmitted with the data,
- **Country Code and System Char** – both the country code ("0" for USA) and system character are transmitted with the data, or
- **None** – no preamble is transmitted. The lead-in characters are considered part of the symbol.

*Add/Remove Data*

Refer to “Add/Remove Data” on page 8 for details.

**C.1.10 UPC E**

*Enable UPC-E*

Set this parameter to **on** to allow *UPC E* bar code scans.

*Enable UPC-E1*

Set this parameter to **on** to allow *UPC-E1* (zero suppressed) bar code scans.

*UPC-E and UPC-E1 Check Digit*

If you enable one or both of these parameters, a check digit is included with the decoded bar code data.

*UPC-E and UPC-E1 Preamble*

When you double-tap on one of these parameters, a dialog box is displayed where you can choose one of three options for lead-in characters for *UPC-E* and *UPC-E1* symbols transmitted to the host device:

- **System Char** – system character transmitted with the data,
Appendix C: Bar Code Settings
UPC/EAN Shared Settings

Country code and System Char – both the country code (“0” for USA) and system character are transmitted with the data, or
None – no preamble is transmitted. The lead-in characters are considered part of the symbol.

Conv. UPC-E to UPC-A
This parameter converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Conv. UPC-E1 to UPC-A
This parameter converts UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.1.11 UPC/EAN Shared Settings
The parameters you set here are a shared across all available UPC and EAN bar codes.

Enable Bookland EAN
Setting this parameter to on allows your scanner to recognize Bookland EAN bar codes.

Supplementals
Supplementals are additionally appended characters (2 or 5).
Double-tapping this parameter displays a list of options. If Ignore is chosen, UPC/EAN is decoded and the supplemental characters are ignored. If Decode is chosen, UPC/EAN symbols are decoded with supplementals. Autodiscriminate works in conjunction with the Supp. Redundancy parameter.

Supp. Redundancy
With Autodiscriminate selected in the Supplementals parameter, Supp. Redundancy adjusts the number of times a symbol without supplementals is decoded before transmission.
When you double-tap on this parameter, a dialog is displayed in which you can enter a value between 2 and 20. A value of 5 or above is recommended when Autodiscriminate is selected and you are decoding a mix of UPC/EAN symbols with and without supplementals.
Appendix C: Bar Code Settings

Code 93

Security Level
This parameter controls the tolerance for decoding edge-to-edge UPC/EAN bar codes. Double-tapping on this parameter displays a dialog box in which you can choose a level from 0 to 3. Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code.

Linear Decode
*Linear Decode* applies to code types containing two adjacent blocks (e.g., UPC-A, EAN-8, EAN-13). When enabled, a bar code is transmitted only when both the left and right blocks are successfully decoded within one laser scan. This option should be enabled when bar codes are in proximity to each other.

2D UPC Half Block Stitching
Setting this parameter to *on* enables *UPC Half Block Stitching* for the omnidirectional scanner engine only.

C.1.12 Code 93

Enabled
Set this parameter to *on* to enable “Code 93”, or *off* to disable it.

Set Length L1 and Set Length L2
Lengths for *Code 93* can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those bar codes of a specified length. Choosing *Two discrete lengths* allows you to specify two lengths of bar codes that may be decoded. *Length within a range* allows you to decode a code type within a specified range from 4 to 55.

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.
C.1.13 Codabar

Enabled
Set this parameter to on to enable “Codabar”.

Set Length L1 And Set Length L2

Lengths for “Codabar” can be set for Any length, Length within a range, One discrete length or Two discrete lengths. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled Set Code Lengths where you can define the code length that will be recognized by your scanner.

Choosing One discrete length allows you to decode only those bar codes of a specified length. Choosing Two discrete lengths allows you to specify two lengths of bar codes that may be decoded. Length within a range allows you to decode a code type within a specified range from 5 to 55.

CLSI Editing

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.

Note: Symbol length does not include start and stop characters.

NOTIS Editing

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.

Length Restriction

Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-8 for details.

C.1.14 MSI Plessey

Enabled
Set this parameter to on to enable MSI Plessey.
Appendix C: Bar Code Settings

MSI Plessey

Set Length L1 and Set Length L2

Set Length L1 And Set Length L2

Lengths for MSI Plessey can be set for Any length, Length within a range, One discrete length or Two discrete lengths. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled Set Code Lengths where you can define the code length that will be recognized by your scanner.

Choosing One discrete length allows you to decode only those bar codes of a specified length. Choosing Two discrete lengths allows you to specify two lengths of bar codes that may be decoded. Length within a range allows you to decode a code type within a specified range from 6 to 55.

Check Digits

Double-tapping on this parameter displays a dialog box in which you can choose One or Two check digit(s).

If this parameter is set to One, it is assumed that the last digit is a check digit. If “Check Digits” is set to Two, it is assumed that the last two digits are check digits.

Note: If Two check digits is selected, an MSI Plessey “Check Digit Algorithm” must also be selected. See below for details.

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Check Digit Algorithm

When the Two MSI Plessey check digits option is selected, an additional verification is required to ensure integrity. Double-tapping on this parameter displays a dialog box in which you can choose the algorithm to be used: MOD 10/MOD 11 or MOD 10/MOD 10.

Length Restriction

Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-8 for details.
C.1.15 Interleaved 2 of 5

Enabled
Set this parameter to on to enable “Interleaved 2 of 5”.

Set Length L1 and Set Length L2
Lengths for “Interleaved 2 of 5” can be set for Any length, Length within a range, One discrete length or Two discrete lengths. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled Set Code Lengths where you can define the code length that will be recognized by your scanner.

Choosing One discrete length allows you to decode only those bar codes of a specified length. Choosing Two discrete lengths allows you to specify two lengths of bar codes that may be decoded. Length within a range allows you to decode a code type within a specified range from 4 to 14.

Check Digit Verification
When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm – either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit
If this parameter is enabled, the check digit is included with the bar code data.

Convert to EAN 13
If this parameter is enabled, the I 2 of 5 bar code is converted to EAN 13.

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.1.16 GS1 DataBar

All GS1 DataBar bar codes encode a GTIN-12 or GTIN-13 in a 14-digit data structure. In order to make the GTIN-12 or GTIN-13 a 14-digit data structure, a leading zero or zeros is filled to the left of the GTIN.
Enable GS1 DataBar Omni, Expanded & Limited

GS1 DataBar Omni and GS1 DataBar Expanded have omnidirectional scanning capability. GS1 DataBar Limited can only be scanned by a linear hand-held scanning device. They cannot be scanned by omnidirectional scanners. Each of these options can be turned on or off depending on the scanner installed in your hand-held.

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.1.17  Discrete 2 of 5

Enabled
Set this parameter to on to enable “Discrete 2 of 5”.

Set Length L1 and Set Length L2
Lengths for “Discrete 2 of 5” can be set for Any length, Length within a range, One discrete length or Two discrete lengths. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled Set Code Lengths where you can define the code length that will be recognized by your scanner.

Choosing One discrete length allows you to decode only those bar codes of a specified length. Choosing Two discrete lengths allows you to specify two lengths of bar codes that may be decoded. Length within a range allows you to decode a code type within a specified range from 1 to 12.

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.
C.1.18 Composite

**Important:** To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled. In addition, “Center Bar Code Only” must be disabled.

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

The options available for this parameter represent multi-level components of a composite symbol.

**Enable CC-C and Enable CC-AB**
To activate these components, set these parameters to on.

**Enable TLC-39**
This composite component integrates MicroPDF417 with the linear code. Setting this parameter to on enables this parameter.

C.1.19 PDF-417

**Enable**
Setting this parameter to on enables PDF-417 two dimensional (2D) coding.

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

C.1.20 Micro PDF-417

**Enable**
Setting this parameter to ‘on’ enables Micro PDF-417 bar code scanning. Micro PDF-417 is a multi-row symbology that is useful for applications requiring greater area efficiency but lower data capacity than PDF-417.
Appendix C: Bar Code Settings

Decoded (ISCP)

**Code 128 Emulation**

When this parameter is enabled, the scanner transmits data from certain *Micro PDF-417* symbols as if it was encoded in *Code 128* symbols.

If *Code 128 Emulation* is **enabled**, the following *Micro PDF-417* symbols are transmitted with one of the following prefixes:

- C1 - if the first codeword is 903-907, 912, 914, 915
- C2 - if the first codeword is 908 or 909
- C0 - if the first codeword is 910 or 911

If *Code 128 Emulation* is set to **off**, the *Micro PDF-417* symbols are transmitted with one of the following prefixes:

- L3 - if the first codeword is 903-907, 912, 914, 915
- L4 - if the first codeword is 908 or 909
- L5 - if the first codeword is 910 or 911

**Length Restriction**

Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**

Refer to “Add/Remove Data” on page C-8 for details.

### C.2 Decoded (ISCP)

- Tap on the **Scanner** drop-down menu, and choose **Decoded (ISCP)**.
C.2.1 Decoded (ISCP) - Options

Laser On Time
The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.
Double-tapping on this parameter displays a dialog box in which you can enter a value between 1 and 10 seconds.

C.2.2 Decoded (ISCP) - Advanced Options

Continuous Scan Mode
Setting this parameter to on keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time
The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout
To extend laser life, you can select the length of time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned – a successful decode restores normal blinking.
When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of 30 sec, 1 min, 2 min, or 3 min.

Note: This parameter is only used if the Trigger Mode has been set to Continuous On and the hand-held is mounted in a fixed position; otherwise, ‘Low Power Timeout’ is not used.

Parameter Scanning
Setting this parameter to Enabled allows decoding of parameter bar codes.

Same Read Validate
The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from 0 to 10 times.
Appendix C: Bar Code Settings

Code 39

Same Read Timeout
This option prevents the same bar code from being read more than once. The value assigned determines after what time period the scanner will timeout, from 0 to 2550 msec.

Diff Read Timeout
Prevents unwanted reading of other bar codes on the same label. The value assigned determines after what time period the scanner will timeout, from 0 to 2550 msec.

Add AIM ID Prefix
The AIM ID (Association for Automatic Identification and Mobility) is an international bar code identifier. When this parameter is enabled, the AIM ID is inserted at the beginning of the decoded bar code.

Aim Duration
This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 2550 milliseconds. A value of 0 (zero) disables the aiming dot.

C.2.3 Code 39

Enable
Setting this parameter to on enables Code 39.

Full ASCII
If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Reading Range
Determines the reading distance from which a bar code can be successfully scanned. The default setting, Extended, allows for increased reading distance.

Start/Stop Transmit
Setting this parameter to on enables the transmission of start and stop characters, which are usually not transmitted. Code 39 can start and end with either a * or a $ character (see also the next parameter).
Accepted Start Char
This parameter allows the user the option of using one of the two start/stop characters or both ($ char, * char, $ and * char).

Check Digit Verification
Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: Disabled, MOD 43 Check, French CIP, or Italian CIP.

Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.
Italian CIP (Italian pharmaceutical) is also known as Code 32. It is transmitted as a standard Code 39 if checksum is not validated.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.4 Code 128

Enable
Setting this parameter to on enables Code 128.

GS1-128
GS1-128 is the GS1 implementation of the Code 128 barcode specification. The former correct name was UCC/EAN-128.
Appendix C: Bar Code Settings

Code 128

GS1-128 Identifier

*GS1-128 Identifier* allows the AIM ID "-' for EAN 128 to be transmitted or removed. By default, this identifier is transmitted if EAN 128 is enabled.

GTIN Compliant

*GTIN* (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.

⚠️ Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.

FNC1 Conversion

*FNC1 Conversion* allows the FNC1 character to be converted to another character for applications that cannot use the default <GS> Group Separator or hex (1d).

Double-tapping on this option displays a dialog box listing the allowable range: 0 to 255.

Enable ISBT 128

To successfully scan this type of bar code (International Society of Blood Transfusion), this option must be set to **on**. If you enable this type of bar code, Code 128/EAN 128 is deactivated to avoid any confusion.

ISBT Concat Transmit

The codes are not concatenated by default. You need to choose one of the options provided for this parameter to send concatenated code. Choosing **Only Concatenated Codes** transmits only concatenated codes – single codes will not be transmitted. Choosing **Concatenated or Single** transmits single codes or concatenated codes. If only one code of a pair is read, that code will be transmitted as a single code. If both codes in a pair are detected, they will be concatenated provided that *ISBT Concat Any Pair* (see below) is enabled.

ISBT Concat Any Pair

Enabling this parameter causes all code pairs that can be, to be concatenated even if they do not comply with Section 4.1 of the “ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components” (June 2000, Version 1.2.1).

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, **Extended**, allows for increased reading distance.
Appendix C: Bar Code Settings

EAN 13 Settings

Check Digit Verification
The available options for this parameter are Disabled or French CIP. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Minimum Length
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.5 EAN 13 Settings

Enabled
Set this parameter to on to enable EAN 13.

ISBN Conversion
When this parameter (International Standard Book Number) is enabled, the first 3 characters (‘978’) are ignored and the checksum (0.9, ‘X’) is calculated on the remaining characters.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.6 EAN 8

Enabled
Set this parameter to on to enable EAN 8.
Appendix C: Bar Code Settings

**UPC A**

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Convert to EAN 13
If this parameter is enabled, an EAN 8 bar code is converted to EAN 13.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

**C.2.7 UPC A**

Enabled
Set this parameter to **on** to enable **UPC A** bar code scanning recognition.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System
If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert to EAN 13
If this parameter is enabled, a UPC A bar code is converted to EAN 13.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

**C.2.8 UPC E**

Enabled
Set this parameter to **on** to enable “UPC E”.

Enable UPC-E1
Set this parameter to **on** to allow **UPC-E1** (zero suppressed) bar code scans.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.
Appendix C: Bar Code Settings

UPC/EAN Shared Settings

Transmit Number System
If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert to UPC-A
This parameter converts UPC E (zero suppressed) decoded data to UPC A format before transmission. After conversion, data follows UPC A format and is affected by UPC A programming selections (e.g. Check Digit).

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.9 UPC/EAN Shared Settings

The setting assigned to the Addendum parameter associated with this option is shared across all UPC and EAN bar codes.

Addendum
An addendum is a separate bar code, supplementary to the main bar code. This parameter provides two options: Not Required but Transmitted if Read or Required and Transmitted.
- Double-tap on Addendum to display a dialog box listing your options.
- Highlight an item, and tap on OK.

When Addendum is set to Not Required but Transmitted if Read, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to Required and Transmitted, the scanner does not accept the main bar code without an addendum.

Addendum Add-on 2 and Addendum Add-on 5
Enabling these parameters sets the length of the addendum bar code to either 2 or 5 characters.

GTIN Compliant
GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.

Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.
Reading Range
This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, Extended, allows for increased reading distance.

C.2.10 Code 93

Enabled
Set this parameter to on to enable Code 93.

Minimum Length
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.11 Codabar

Enabled
Set this parameter to on to enable Codabar.

Start/Stop Transmit
Codabar can use the following sets of characters as start and stop characters:
a, b, c, d
A, B, C, D
a, b, c, d, /, t, n, *, e
DC1, DC2, DC3, DC4
Thus, when a set is chosen, the first and last digits of a Codabar message must be one of those characters and the body of the message should not contain these characters. Setting this parameter to Not Transmitted strips the start and stop characters from this bar code.

CLSI Library System
When enabled, spaces are inserted after characters 1, 5, 10 in the 14-character label (used in the USA by libraries using the CLSI system).
Check Digit Verification
When enabled, this parameter checks the integrity of a symbol to ensure it complies with a specified algorithm – either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, and Set Length L3
Lengths for Codabar can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).
Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode
You can choose to set L1 as Minimum Length or L1, L2, L3 as Fixed Length.

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.12 MSI Plessey

Enabled
Set this parameter to on to enable MSI.

Enable Plessy
Set this parameter to on to enable Plessy.

Check Digit Verification
The available options for this parameter are MOD 10 Check and Double MOD 10 Check. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.
Appendix C: Bar Code Settings

Code 11

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Plessy Transmit Check Digit
If the check digit is to be transmitted with the Plessy data, this parameter must be enabled.

Minimum Length
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Plessy Minimum Length
Minimum lengths for the Plessy bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.13 Code 11

Enabled
Set this parameter to on to enable Code 11.

Check Digit Verification
The available options for this parameter are MOD 10 Check and Double MOD 10 Check. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).
Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.14 Interleaved 2 of 5

Enabled
Set this parameter to on to enable Interleaved 2 of 5.

Reading Range
This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, Extended, allows for increased reading distance.

Check Digit Verification
The available options for this parameter are Disabled, MOD 10 Check and French CIP. Check Digit Verification uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, and Set Length L3
Lengths for Interleaved 2 of 5 can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).
Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode
You can chose to set L1 as Minimum Length or L1, L2, L3 as Fixed Length.

Length Restriction
Refer to “Length Restriction” on page C-7 for details.
Appendix C: Bar Code Settings

Matrix 2 of 5

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.15 Matrix 2 of 5

Enabled
Set this parameter to on to enable Matrix 2 of 5.

Minimum Length
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Length Restriction
Refer to “Length Restriction” on page C-7 for details.

Add/Remove Data
Refer to “Add/Remove Data” on page C-8 for details.

C.2.16 Discrete 2 of 5

Enabled
Set this parameter to on to enable Discrete 2 of 5.

Standard 2 of 5 Format
This parameter allows you to choose a standard format – either Identicon (6 start/stop bars) or Computer Identics (4 start/stop bars).

Check Digit Verification
The available options for this parameter are Disabled and MOD 10 Check. Check Digit Verification uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit
If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, and Set Length L3
Lengths for Discrete 2 of 5 can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).
Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

**Length Mode**
You can chose to set L1 as **Minimum Length** or L1, L2, L3 as **Fixed Length**.

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

### C.2.17 Telepen

**Enabled**
Set this parameter to on to enable Telepen.

**Format**
This parameter allows you to set the bar code character format to either ASCII or Numeric.

**Minimum Length**
Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

### C.2.18 GS1 DataBar

All GS1 DataBar bar codes encode a GTIN-12 or GTIN-13 in a 14-digit data structure. In order to make the GTIN-12 or GTIN-13 a 14-digit data structure, a leading zero or zeros is filled to the left of the GTIN.

**Enable GS1 DataBar Omni, Expanded & Limited**

*GS1 DataBar Omni* and *GS1 DataBar Expanded* have omnidirectional scanning capability. *GS1 DataBar Limited* can only be scanned by a linear hand-held scanning device. They
cannot be scanned by omnidirectional scanners. Each of these options can be turned on or off depending on the scanner installed in your hand-held.

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

### C.2.19 Composite

> **Important:** To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled. In addition, “Center Bar Code Only” must be disabled.

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners. The options available for this parameter represent multi-level components of a composite symbol.

**Enable CC-C and Enable CC-AB**
To activate these components, set these parameters to on.

**Linear Transmission Only**
When Linear Transmission Only is enabled, only the linear code portion of the composite bar code is transmitted when scanned.

**UPC-EAN Composite Message**
This option allows you to choose how UPC-EAN shared bar codes are transmitted: Always Linked, Never Linked or Auto-discriminate.

### C.2.20 TLC-39

**Enable**
Setting this parameter to on enables TLC-39 scanning capability.
**Linear Transmission Only**
When *Linear Transmission Only* is enabled, only the linear code portion of the composite bar code is transmitted when scanned.

**Security Level**
This parameter is used to differentiate between TLC-39 and standard Code 39. Tapping on *Security Level* displays a dialog box in which you can assign a value from 0 to 100. The higher the value assigned, the lower the decode rate.

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

### C.2.21 PDF-417

**Enabled**
Set this parameter to **on** to enable PDF-417.

**Length Restriction**
Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**
Refer to “Add/Remove Data” on page C-8 for details.

### C.2.22 Micro PDF-417

**Enabled**
Set this parameter to **on** to enable Micro PDF-417.

**Code 128 Emulation**
When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If *Code 128 Emulation* is **enabled**, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

- JC1 if the first codeword is 903-907, 912, 914, 915
- JC2 if the first codeword is 908 or 909
Appendix C: Bar Code Settings

Codablock

/C0 if the first codeword is 910 or 911

If *Code 128 Emulation* is set to **off**, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

/L3 if the first codeword is 903-907, 912, 914, 915
/L4 if the first codeword is 908 or 909
/L5 if the first codeword is 910 or 911

**Length Restriction**

Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**

Refer to “Add/Remove Data” on page C-8 for details.

**C.2.23 Codablock**

*Codablock* is a stacked variant to the standard bar codes Code 39 and Code 128.

**Enable Codablock A**

*Codablock A* is based on the structure of the Code 39. In 2 to 22 lines, 2 to 61 characters (max 1340 characters) are encoded. Set this parameter to **on** to enable this option.

**Enable Codablock F**

*Codablock F* is a stacked bar code symbology based on Code 128. In 2 to 44 lines each, 4 to 62 characters (max 2725) are encoded. Set this parameter to **on** enable this option.

**Length Restriction**

Refer to “Length Restriction” on page C-7 for details.

**Add/Remove Data**

Refer to “Add/Remove Data” on page C-8 for details.
The Teklogix Imagers applet is used to create, modify, delete, and activate imager settings. The principal uses of the application are to decode bar codes and to capture images. A Demonstration Application is provided to demonstrate how the imager works. Refer to “Imager Demo Applet” on page 134 for details.

D.1 Required Applets

In order to configure imaging, the Manage Triggers applet must be present in the Control Panel, along with the Teklogix Imagers applet.

D.2 Presets

There are two methods that can be used to configure an imager using the Teklogix Imagers applet:

- Use a predefined preset.
- Create a custom preset based on a predefined preset.

Important: It is strongly recommended that a predefined preset is used whenever possible. Each predefined preset contains a coherent group of settings that are known to work together in the intended environment. In almost all situations, at least one of the predefined presets results in a satisfactory outcome.

A preset is a group of exposure and image correction settings. Each preset configures the imager for a specific purpose such as bar code decoding or image capture. Presets also allow easier and faster configuration of the imager after power-on or resume from suspend.

The predefined presets are generic and satisfy most user requirements. A custom preset can be created for a specific user application, such as: include only specified bar codes, read only a specified number of bar codes or for reading unusual media.

Every preset belongs to a preset type. The following preset types are available:
Appendix D: Teklogix Imagers Applet

Predefined Presets

- Imaging for photo capture.
- Imaging for bar code decoding.
- Symbology selection.

At any time, only one preset of each type can be designated as the user-selected active preset.

D.2.1 Predefined Presets

Predefined presets are built into the imaging software and cannot be changed. The predefined presets allow you to use the imager to perform specified tasks without having to understand and set numerous variables. In almost all cases these predefined presets are sufficient.

D.2.2 Bar Code Predefined Presets

These presets encompass the majority of the most popular bar codes and their subtypes. The bar code decoding symbology predefined presets define which bar codes can be decoded. The bar code decoding camera predefined presets determine how the bar code images are captured.

D.2.2.1 Bar Code Decoding Symbology Predefined Presets

The following presets select groups of similar bar codes for decoding.

Note: It is recommended that the default preset be used whenever possible.

Factory Default
This preset enables the decoding of frequently used bar codes.

My Default
This preset uses the Symbology Settings menu to define the preset. For details about the Symbology Settings menu, refer to “Bar Coding Tab – Configuring Symbologies” on page D-15.

All
This preset enables the decoding of all bar codes that the imager can decode.

Linear
This preset enables the decoding of all the 1D symbologies that the imager can decode.
Appendix D: Teklogix Imagers Applet
Bar Code Decoding Camera Predefined Presets

Linear and PDF417
This preset enables the decoding of all the 1D and PDF symbologies that the imager can decode.

Matrix
This preset enables the decoding of all 2D symbologies that the imager can decode.

Postal
This preset enables the decoding of all the postal symbologies that the imager can decode.

D.2.3 Bar Code Decoding Camera Predefined Presets
The following presets enable successful bar code image capture in almost all conditions.

Note: It is recommended that the default preset be used whenever possible.

Default
This preset works in a wide range of conditions. It is optimized for a normal office lighting (about 300 Lux).

Low light
This preset is designed for very dark conditions such as inside a warehouse where the lights are kept low, or inside an unlit truck. This preset increases either the exposure time or the gain.

Low power
This preset minimizes the use of the flash so as to conserve the battery power on the hand-held.

Glossy surface
This preset minimizes the use of the flash so as to reduce reflection. This preset is used to read bar codes that are behind glass, or inside the plastic window of an envelope.

D.2.4 Image Capture Predefined Presets
The following presets enable successful image capture in almost all conditions.

Note: It is recommended that the default preset be used whenever possible.
Appendix D: Teklogix Imagers Applet

Using the Teklogix Imagers Applet

Default
This preset works in a wide range of conditions. It is optimized for a normal office lighting (about 300 Lux).

Motion
This preset uses a shorter exposure time so as to freeze motion.

Low light near
This preset is designed for dark conditions, it uses a longer exposure time and includes the flash.

D.3 Using the Teklogix Imagers Applet

D.3.1 Configuring the Image Capture Presets
To configure the image capture presets, open the dialog box as follows:

• Tap on Start>Settings>Control Panel.
• Tap on the Teklogix Imagers icon, and if it’s not already selected, tap on the Imaging tab.

Figure D.1 Imaging Tab
This window lists all the presets, both predefined and custom. Presets are identified as follows:

- Predefined presets are marked as ‘R’ read-only.
- Custom presets are marked as ‘RW’ read and write.
- One preset – either predefined or custom – is marked as ‘A’ active.

### D.3.2 Selecting a Camera

To select a camera:

- Tap on the **Camera Presets** drop-down menu to view the camera options.
- Choose a **camera** – specifically, *Front Imager* which is located at the top of the unit.

### D.3.3 Setting the Active Preset

An active preset has an *A* to the right. To set an active preset:

- Highlight the preset, and tap on the **Activate** button.

### D.3.4 Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and tap on the **View** button.

The associated preset window is displayed.

- Tap on the + sign to expand the lists so that you can view the parameter settings.
Creating a Custom Preset

A new custom preset is created by modifying a preset – either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the Add button.

A screen like the sample below is displayed.

- Type the name of the new preset in the dialog box.
- Tap on OK to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write (RW).

Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and tap on the Edit button.
• Tap on the + symbols to expand the lists so that you can view the parameter settings.
• Scroll through the parameter list until you reach the parameter that you want to change.
• For a parameter that can take a range of values:
  - Highlight the parameter, and then press the [SPACE] key or double-click on the parameter.
  - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.
  - Type a value in the field provided.
• For a parameter that toggles between two values such as on or off and enabled or disabled:
  - Highlight the parameter and then press the [SPACE] key, or double-click on the parameter. Either method toggles between the two available values.
• When you’ve completed your edits, tap on OK.
The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

### D.3.7 Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button. A window is displayed warning you that you are about to remove a preset.
- Tap on **Yes** to remove the preset or **No** to cancel the operation.

### D.4 Configuring the Bar Code Decoding Camera Presets

To configure the bar code decoding camera presets:

- Tap on **Start>Settings>Control Panel>Teklogix Imagers**.
- Tap on the **Barcoding** tab.

Figure D.2  Bar Code Presets

This window lists all the presets, both predefined and the custom. Presets are identified as follows:

- Predefined presets are marked as read-only. For a description, review “Predefined Presets” on page D-2.
- Predefined presets are marked as ‘R’ **read-only**.
D.4.1 Selecting a Camera

To select a camera:
- Tap on the Camera Presets drop-down menu to view the camera options.
- Choose a camera – specifically, Front Imager which is located at the top of the unit.

D.4.2 Setting the Active Preset

An active preset has an *A* to the right; in Figure D.3 on page 12, the active preset is Default. To set an active preset:
- Highlight the preset, and tap on the Activate button.

D.4.3 Viewing a Preset

To view the parameter settings in a preset:
- Highlight a preset, and tap on the View button.

The associated preset window is displayed.

Note: The top portion of the window displays the bar code decoding camera presets.
Appendix D: Teklogix Imagers Applet

Creating a Custom Preset

D.4.4 Creating a Custom Preset

A new custom preset is created by modifying a preset – either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the Add button.

A screen like the sample following is displayed.

- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

- Type the name of the new preset in the dialog box.
- Tap on OK to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

D.4.5 Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and tap on the Edit button.
• Tap on the + symbols to expand the lists and view the parameter settings.
• Scroll through the parameter list until you reach the parameter that you want to change.
• For a parameter that can take a range of values:
  - Highlight the parameter, and then press the [SPACE] key or double-click the parameter.
  - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.
    - Type a value in the field provided.
• For a parameter that toggles between two values such as on or off and enabled or disabled:
  - Highlight the parameter and then press the [SPACE] key, or double-click on the parameter. Either method toggles between the two available values.
• When you’ve completed your edits, tap on OK.
The parameter list is displayed; the new value for the changed parameter is shown.
Appendix D: Teklogix Imagers Applet
Removing a Custom Preset

D.4.6 Removing a Custom Preset

- Tap on **OK** to exit to the preset list and save the changes.

D.4.7 Configuring the Bar Code Decoding Symbologies

To configure the bar code decoding camera presets:
- Tap on **Start>Settings>Control Panel>Teklogix Imagers**.

- Tap on the **Barcoding** tab.

Figure D.3 Viewing Bar Code Decoding Symbologies
D.4.8 Setting the Active Preset

An active preset has an A to the right; in Figure D.3 on page 12, the active preset is Default. To set an active preset:

- Highlight the preset, and tap on the Activate button.

D.4.9 Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and tap on the View button.

The associated preset window is displayed.

- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

D.4.10 Creating a Custom Preset

A new custom preset is created by modifying a preset – either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the Add button.

A screen like the sample following is displayed.
Appendix D: Teklogix Imagers Applet
Modifying a Custom Preset

D.4.11 Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

• Highlight the custom preset, and tap on the Edit button.

• Tap on the + symbols to expand the lists and view the parameter settings.
• Scroll through the parameter list until you reach the parameter that you want to change.
• For a parameter that can take a range of values:

• Type the name of the new preset in the dialog box.
• Tap on OK to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.
Removing a Custom Preset

- Highlight the parameter, and then press the [SPACE] key or double-click the parameter.

- An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.

- Type a value in the field provided.

  - For a parameter that toggles between two values such as on or off and enabled or disabled:

    - Highlight the parameter and then press the [SPACE] key, or double-click on the parameter. Either method toggles between the two available values.

    - When you’ve completed your edits, tap on OK.

  The parameter list is displayed; the new value for the changed parameter is shown.

  - Tap on OK to exit to the preset list and save the changes.

D.4.12 Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the Remove button. A window is displayed warning you that you are about to remove a preset.

- Tap on Yes to remove the preset or No to cancel the operation.

D.4.13 Bar Coding Tab – Configuring Symbologies

To view the Symbology Settings options:

- Tap on the Barcoding tab, tap on All and then double-tap the View button.

To edit a default preset, you must first activate it:

- Tap on My Default, and tap on the Activate button – an A appears to the right of My Default.

Once the preset is activated, you can enable or disable the bar codes the imager will read.

- Highlight My Default in the Barcoding tab.

- Double-tap on the Edit button.
None of the other bar code decoding predefined presets are changed.

D.4.13.1 Symbology Settings


D.4.14 Filter Tab - Manipulating Bar Code Data

To configure rules for manipulating bar code data:

- Tap on Start>Settings>Control Panel.
- Tap on the Teklogix Imagers icon, and then tap on the Filter tab.

D.4.14.1 Modifying a Bar Code Setting

The rules for manipulating data from selected bar code symbologies can be modified. To change the settings for a symbology:

- Tap on the + symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a range of values:
  - Highlight the parameter, and then press the [SPACE] key or double-click the parameter.
Appendix D: Teklogix Imagers Applet
Translation Tab - Configuring Rules

- An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.

![Dialog Box Example]

- Type a value in the field provided.
- For a parameter that takes a single character:
  - Highlight the parameter and then press the [SPACE] key, or double-click the parameter. The following screen is displayed:

![Single Character Parameter Example]

- When you’ve completed your edits, tap on OK.

D.4.15 Translation Tab - Configuring Rules

Translation rules enable the automatic processing of bar code data. Up to 10 cases can be defined, each consisting of up to 10 sequential rules.

Note: Changes made to the translations configuration using the Teklogix Scanner Control Panel program are synchronized with changes made here. Changes made in either place affect both translation tables.

- Tap on Start>Settings>Control Panel.
- Tap on the Teklogix Imagers icon, and then tap on the Translations tab.
For instructions on adding, editing, and removing translation rules, refer to “Translations Tab” on page 140.

D.4.16 Advanced Tab

D.4.16.1 File Locations for Captured Images

To configure the location for saved images, open the dialog box as follows:

- Tap on **Start**>**Settings**>**Control Panel**.
- Tap on the **Teklogix Imagers** icon, and then tap on the **Advanced** tab.
To define the location where imager files will be stored:

- Tap on the **File Location** button.

- Type the file **Name**, choose the **Folder** and file **Type**.
- Choose the **Location** in which your files will be saved.
- When you have completed all the changes, tap on the **Save** button.
Appendix D: Teklogix Imagers Applet
Bar Code Symbologies - Descriptions

D.4.16.2 Configuring Triggers

Viewing the Trigger Configuration

The trigger on NEO is configured using the Manage Triggers applet. The Teklogix Imagers applet provides a shortcut to the Manage Triggers applet.

• In the Advanced tab, tap on the Trigger Control button.
• To view all the triggers and the hardware devices that are configured to use them, tap in the checkbox next to Show all modules.

Adding, Editing and Removing Triggers

For instruction about adding, editing and removing triggers, refer to “Manage Triggers” on page 98.

D.5 Bar Code Symbologies - Descriptions

To view all symbologies available for the imager:

• Tap on the Barcoding tab, and tap on All.

Note: Remember that if you want to edit the symbologies, the preset you want to change must be active. Highlight the preset you want to edit, and tap on the Activate button – an A is added at the far right of the preset. With the activated preset highlighted, double-tap on the Edit button.
D.5.1 Options

Auto Retry On Failed Decode Enabled
Setting this parameter to on allows the imager to repeat the image capture attempt if the initial attempt fails. The number of retries is dependent on the value assigned in the next parameter, Max Number of Auto Retry. If this parameter is set to off, the imager will only attempt the image capture once.

Max Number of Auto Retry
The value assigned for this parameter governs the number of times the imager will attempt to capture a bar code if the first attempt fails to a maximum of 99 times.

Decoder Timeout
This parameter determines the maximum time that the decoder will spend searching for a bar code on a captured image. The value assigned here is dependent on the type of bar code and quality of the image being captured. For example, the value may need to be increased to compensate for larger bar codes with more data encoded or for poor quality images. On the other hand, the value can be decreased for smaller, good quality images. The allowable value ranges from 200 to 500 msec.

Single Target Mode Enabled
When this parameter is enabled, the decoder assumes that a single bar code exists in the image and that it is located in the centre of the image.

Add AIM ID Prefix
The AIM ID (Association for Automatic Identification and Mobility) is an international bar code identifier. When this parameter is enabled, the AIM ID is inserted at the beginning of the decoded bar code.

D.5.2 Code 39

Enabled
Setting this parameter to on makes “Code 39” readable to the imager.

Full ASCII
If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.
Appendix D: Teklogix Imagers Applet

Trioptic Code

Start/Stop Strip
“Code 39” has start/stop patterns that can be output as ASCII characters in the output data. When Start/Stop Strip is enabled, start/stop characters are not output.

Check Char
When this parameter is enabled, before data is output, the “Code 39” symbol integrity is verified based on a parity character that must be present in the code. If the parity character is not part of the code, the code is not output. Keep in mind the parity character may not be part of your output setup; in this case, this parameter should be turned off.

Check Char Strip
If this parameter is set to on, check characters – if present – are not output.

Concatenation
When Concatenation is set to on, all decoded “Code 39” symbols with a SPACE as the first data character are concatenated to the internal buffer. Data from the last “Code 39” symbol without a SPACE is added to the buffer as well, and the entire buffer will be output.

Pharmaceutical
This is a numeric (0-9) fixed length barcode used by Italian pharmacies. It is also referred to as Code 32 Pharmacode and is a form of Code 39.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays screens in which you can set the minimum and maximum allowable code lengths – 0 to 48.

D.5.3 Trioptic Code

Note: “Trioptic Code” and “Full ASCII” should not be enabled simultaneously. The scanner does not automatically discriminate between these two symbologies.

Enable
Trioptic Code symbols always contain six characters. Setting this parameter to on allows this type of symbology to be recognized.
D.5.4 Code 128

Enabled
Set this parameter to on to enable “Code 128”.

ISBT Concatenation
These codes are not concatenated by default. You need to set this parameter to on to send concatenated code.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays screens in which you can set the minimum and maximum allowable code lengths – 0 to 80.

D.5.5 EAN 13

Enabled
Set this parameter to on to enable “EAN 13”.

Check Digit Strip
If you enable this parameter, a check digit is stripped from the decoded bar code data.

Supplements 2 and Supplements 5
Supplements are additions to EAN/UPC codes. These addendums can be 2 or 5 characters in length. Usually, data from an addendum is a suffix to the main symbol output data.

Mandatory Enabled
When this parameter is set to on, the imager does not accept the main bar code without a supplement.

Supplements Separator
A Supplements Separator is a space that is added between the EAN 13 bar code and the Supplement code/Addenda.

ISBN Translate
When this parameter (International Standard Book Number) is enabled, the first 3 characters (‘978’) are ignored and the checksum (0.9, ‘X’) is calculated on the remaining characters.
Appendix D: Teklogix Imagers Applet

EAN 8

D.5.6 EAN 8

Enabled
Set this parameter to *on* to enable “EAN 8”.

Check Digit Strip
If you enable this parameter, a check digit is stripped from the decoded bar code data.

Supplements 2 and Supplements 5
*Supplements* are additions to EAN/UPC codes. These addendums can be 2 or 5 characters in length. Usually, data from an addendum is a suffix to the main symbol output data.

Mandatory Enabled
When this parameter is set to *on*, the imager does not accept the main bar code without a supplement.

Supplements Separator
*Supplements Separator* is a space that is added between the EAN 8 bar code and the Supplement code/Addenda.

D.5.7 UPC-A

Enabled
Set this parameter to *on* to enable “UPC-A”.

Check Digit Strip
If you enable this parameter, a check digit, if present, is stripped from the decoded bar code data.

Number System
If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Supplements 2 and Supplements 5
*Supplements* are additions to EAN/UPC codes. These addendums can be 2 or 5 characters in length. Usually, data from an addendum is a suffix to the main symbol output data.
Appendix D: Teklogix Imagers Applet

UPC-E Settings

Mandatory Enabled
When this parameter is set to on, the imager does not accept the main bar code without a supplement.

Supplements Separator
Supplements Separator is a space that is added between the UPC-A bar code and the Supplement code/Addenda.

D.5.8 UPC-E Settings

Enabled
Set this parameter to on to enable “UPC E”.

Enabled UPC-E1
Set this parameter to on to allow “UPC-E1” (zero suppressed) bar code scans.

Expand
This parameter expands the UPC-E code to a 12 digit UPC-A format.

Check Digit Strip
If you enable this parameter, a check digit is stripped from the decoded bar code data.

Number System
If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Supplements 2 and Supplements 5
Supplements are additions to EAN/UPC codes. These addendums can be 2 or 5 characters in length. Usually, data from an addendum is a suffix to the main symbol output data.

Mandatory Enabled
When this parameter is set to on, the imager does not accept the main bar code without a supplement.

Supplements Separator
Supplements Separator is a space that is added between the UPC-E bar code and the Supplement code/Addenda.
Appendix D: Teklogix Imagers Applet
UPC/EAN Shared Settings

D.5.9 UPC/EAN Shared Settings

Extended Coupon Code
This parameter specifies whether or not the imager will read only UPC-A/EAN-13 bar codes that have addenda.

Note: The 2 or 5 digit addenda must be turned on/off, depending on the desired behavior.

D.5.10 Code 93

Enabled
Set this parameter to on to enable “Code 93”.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 0 to 80.

D.5.11 Codabar

Enabled
Set this parameter to on to enable “Codabar”.

Start/Stop Strip
Codabar can use the following sets of characters as start and stop characters:
a, b, c, d
A, B, C, D
a, b, c, d, /, t, n, *, e
DC1, DC2, DC3, DC4
Setting this parameter to on strips the start and stop characters from this bar code.

Check Char
When this parameter is enabled, before data is output, the “Codabar” symbol integrity is verified based on a parity character that must be present in the code. If the parity character is not part of the code, the code is not output. Keep in mind the parity character may not be part of your output setup; in this case, this parameter should be turned off.
Appendix D: Teklogix Imagers Applet

MSI Plessey

Check Char Strip
If you enable this parameter, a check character is stripped from the decoded bar code data.

Concatenation
“Codabar” supports symbol concatenation. When Concatenation is set to on, Codabar uses a ‘D’ stop character to indicate that data from that symbol should be concatenated with data from the adjacent symbol with a ‘D’ start character.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 2 to 60.

D.5.12 MSI Plessey

Enabled
Set this parameter to on to enable MSI.

Enable Plessey
Set this parameter to on to enable Plessey.

Check Char
When this parameter is set to on, the integrity of a “MSI Plessey” symbol is checked to ensure that it complies with specified algorithms.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 4 to 48.

Plessey Minimum and Plessey Maximum Length
These parameters apply to Plessey bar codes. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 4 to 48.
Appendix D: Teklogix Imagers Applet

Code 11

D.5.13 Code 11

Enabled
Set this parameter to on to enable “Code 11”.

Check Digits
Double-tapping on this parameter displays a dialog box in which you can choose One Check Digit or Two check digits.
If this parameter is set to One Check Digit, it is assumed that the last digit is a check digit. If it is set to Two Check Digits, it is assumed that the last two digits are check digits.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 80.

D.5.14 Interleaved 2 of 5

Enabled
Set this parameter to on to enable “Interleaved 2 of 5”.

Check Char
When this parameter is set to on, the integrity of a “Interleaved 2 of 5” symbol is checked to ensure that it complies with specified algorithms.

Check Char Strip
If you enable this parameter, a check character is stripped from the decoded bar code data.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 2 to 80.

D.5.15 Matrix 2 of 5

Enabled
Set this parameter to on to enable “Matrix 2 of 5”.


**Minimum and Maximum Length**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 80.

**D.5.16 IATA 2 of 5**

Enabled

Set this parameter to *on* to enable “IATA 2 of 5”.

**Minimum and Maximum Length**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 48.

**D.5.17 Discrete 2 of 5**

Enabled

Set this parameter to *on* to enable “Discrete 2 of 5”.

**Minimum and Maximum Length**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 48.

**D.5.18 Telepen**

Enabled

Set this parameter to *on* to enable “Telepen”.

**Enable AIM Output**

If you set *Enable AIM Output* to *on*, the imager reads symbols with start/stop pattern 1 and decodes them as standard full ASCII (start/stop pattern 1). If you set this parameter to *off*, the imager reads symbols with start/stop pattern 1 and decodes them as compressed numeric with optional full ASCII (start/stop pattern 2).
Appendix D: Teklogix Imagers Applet

**GS1 DataBar**

**Minimum and Maximum Length**
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 60.

**D.5.19 GS1 DataBar**

Set this parameter to **on** to enable the imager to read “GS1 Databar” symbols.

**Minimum and Maximum Length**
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 4 to 74.

**D.5.20 Posi Code (Reduced Space Symbology)**

**Enable**

Setting this parameter to **on** enables “Posi Code” scanning capability.

**Enable Limited A and Enable Limited B**

“Posi Code” is a “position” based symbology. A position based symbology de-couples the widths of the bars from their positions. The centers of the bars are specified to be laid out on a grid of equally spaced parallel lines. The distance between these grid lines is called the G-dimension and is analogous to the X-dimension of conventional bar codes.

There are two variations of this code: *Posi Code A*, and *Posi Code B*.

**Minimum and Maximum Length**
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 2 to 80.

**D.5.21 Composite**

**Enabled**

Set this parameter to **on** to enable “Composite” bar codes.
Important: To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled.

D.5.22  TLC-39

This composite component integrates MicroPDF417 with the linear code.

Enabled

Setting this parameter to on enables this parameter.

D.5.23  2D PDF-417

Enabled

Set this parameter to on to enable “2D PDF-417”.

Minimum and Maximum Length

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 2750.

D.5.24  2D Micro PDF-417

Enabled

Set this parameter to on to enable “2D Micro PDF-417”.

Minimum and Maximum Length

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 366.

D.5.25  Code 16K

The “Code 16K” bar code is a multiple-row bar code that can encode the full ASCII character set below ASCII 128. It uses existing UPC and Code 128 character set patterns. Up to 77 full ASCII characters or 154 numeric characters can be encoded into 2 to 16 rows. Each row is divided by a separator bar. The top and bottom of the symbol also have separator bars that extend to the ends of the minimum quiet zones.
Appendix D: Teklogix Imagers Applet

Code 49

**Enabled**

Set this parameter to *on* to enable “Code 16K”.

**Minimum and Maximum Length**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 160.

D.5.26 Code 49

The “Code 49” bar code is a multiple-row bar code that can encode the full ASCII character set below ASCII 128. Up to 49 alphanumeric characters or 81 numeric characters can be encoded into two to eight rows. Each row is divided by a separator bar. The top and bottom of the symbol also have separator bars that extend to the ends of the minimum quiet zones.

**Enabled**

Set this parameter to *on* to enable “Code 49”.

**Minimum and Maximum Length**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 81.

D.5.27 Codablock

**Enable**

Set this parameter to *on* to enable “Codablock”.

**Minimum and Maximum Length**

The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 2048.

D.5.28 2D Data Matrix

**Enable**

Set this parameter to *on* to enable “2D Data Matrix”.

---

Appendix D: Teklogix Imagers Applet

2D QR Code

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 1500.

D.5.29 2D QR Code

Enabled
Set this parameter to on to enable “2D QR Code”.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 3500.

D.5.30 2D Maxicode

Enabled
Set this parameter to on to enable “2D Maxicode”.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 150.

D.5.31 2D Aztec

Enabled
Set this parameter to on to enable “2D Aztec”.

Aztec Runes
Aztec Runes, the smallest type of Aztec Code symbol, has the ability to encode a very short license plate message.

Minimum and Maximum Length
The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s). Double-tapping on these parameters displays a screen in which you can set the minimum and maximum allowable code lengths – 1 to 3750.
### Appendix D: Teklogix Imagers Applet

#### Postal: PlaNET

**Enabled**
Set this parameter to *on* to enable “Postal: PlaNET”.

**Check Digit Strip**
If you enable this parameter, a check digit is stripped from the decoded bar code data.

#### Postal: PostNET

**Enabled**
Set this parameter to *on* to enable “Postal: PostNET”.

**Check Digit Strip**
If you enable this parameter, a check digit is stripped from the decoded bar code data.

#### Postal: Australian

**Enabled**
Set this parameter to *on* to enable “Postal: Australian”.

#### Postal: Canadian

**Enabled**
Set this parameter to *on* to enable “Postal: Canadian”.

#### Postal: China

**Enabled**
Set this parameter to *on* to enable “Postal: China”.

#### Postal: Japanese

**Enabled**
Set this parameter to *on* to enable “Postal: Japanese”.

**Appendix D: Teklogix Imagers Applet**

**Postal: Kix**

**Enabled**

Set this parameter to *on* to enable “Postal: Kix”.

**Postal: Korean**

**Enabled**

Set this parameter to *on* to enable “Postal: Korean”.

**Postal: Royal**

**Enabled**

Set this parameter to *on* to enable “Postal: Royal”.

**VeriCode®**

**Enabled**

VeriCode is a 2D omni-directional symbol. To read this symbol, set this parameter to *on*. 
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