Omnii™ XT10 Hand-Held Computer

User Manual

(Windows® Embedded CE 6.0)

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ISO 9001 Certified
Quality Management System

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1 INTRODUCTION

1.1 About the User Manual

This User Manual describes how to configure, operate, and maintain the Psion Teklogix Omnii™ XT10 Hand-Held Computer.

Chapter 1: Introduction

provides a basic overview of the hand-held.

Chapter 2: Basic Operation

describes preparing Omnii for operation, including setting up your wireless network.

Chapter 3: Getting To Know Your Omnii

describes Omnii features, including how to charge and maintain the battery, the keyboard features, the display, using the internal scanner, etc.

Chapter 4: Windows Embedded CE 6.0

describes the Microsoft® Windows® Embedded CE 6.0 desktop and how to use it, outlines the basics of moving around a Microsoft Windows Embedded CE 6.0 window, selecting and opening icons and files, and working with a dialog box. It also shows you how to change the appearance and actions of the desktop from Windows Classic Shell to the PsionVU Shell.

Chapter 5: Configuration

describes the Microsoft Windows Embedded CE 6.0 Control Panel and how to use it to configure Omnii, along with scanners/imagers, *Bluetooth*, and so on. This chapter also introduces you to the PsionVU program, which enables you to customize your computer settings, remove or add shortcuts to the desktop and Control Panel, and lock down access to various different components on the computer and the system tray icons for security. With PsionVU and PsionVU Shell you can greatly enhance your User Experience.

Chapter 6: Peripheral Devices & Accessories

describes the peripherals and accessories available for your Omnii computer.

Chapter 7: Specifications

lists the specifications for your Omnii computer, radio, scanners/imagers, and battery.

Appendix A: Port Pinouts

describes the Omnii pinouts.

Appendix B: Wireless Zero Config

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

Appendix C: Bar Code Settings
details your bar code options.

Appendix D: Teklogix Imagers Applet
describes in detail your imager's settings.

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 Overview of Omnii™ XT10 Hand-Held Computer

Omnii XT10 Hand-Held Computer is a modular, industrial hand-held computer, running the Microsoft Windows CE 6.0 operating system. A variety of options are available to suit material handling applications in warehouses, manufacturing facilities, ports, and yards, with a focus on real time wireless data transactions. Bar code input methodologies are supported by a variety of available scanners. Optimization for specific operational environments is also supported with a wide range of peripheral options and carrying accessories.

Note: Omnii Hand-Held Computer is a body worn device, and to maintain compliance with the FCC RF exposure guidelines, use a Psion Teklogix approved carrying case. Use of non-approved accessories may violate FCC RF exposure guidelines.

Note: For hand-held computer and accessories specifications, refer to "The Omnii XT10 Hand-Held Computer (Model No. 7545XV)" on page 195.

Platform

- Texas Instruments® OMAP3® Processor, 600 MHz
- Flash ROM: 512 MB.
- RAM 512 MB

Operating System

- Microsoft Windows Embedded CE 6.0

User Interface

- Colour Touch Display 9.4 cm (3.7 in.) diagonal
  - VGA/QVGA, 480 x 640 resolution
  - High visibility version: superior sunlight visibility
  - Extreme Duty version: withstands 1.2 joules impact
- Touchscreen
  - Passive stylus or finger operation; pan and flick gestures supported
  - Signature capture
- Keyboards
  - Large selection of both alpha and numeric formats. For a list of currently available keyboard configurations, consult your order sheet, or go to "Keyboard and Keypad Kits" on page 171.
- Audio
  - Beeper
  - Rear speaker (optional)
  - Integrated Microphone and PTT Speaker
  - Supports walkie-talkie style Push-to-Talk over PTT Speaker; VoIP supported over both standard Wi-Fi and PTT microphone/speaker.
- Vibration feedback available to indicate successful bar code scanning in noisy environments.

Wireless Communication

- Integrated 802.11b/g radio (CCX v4 certified)
- FIPS 140-2 support
- Internal Wi-Fi antenna
- Integrated *Bluetooth*® class II, V 2.0 + EDR
- Optional SIRF III GPS Receiver

Note: 802.11b/g and Bluetooth are available simultaneously.

The following figures illustrate the main features of Omnii XT10—for detailed views, please see "Features of Omnii XT10" on page 11.

Figure 1.1 Omnii XT10 Model with 59-Key Alpha ABC Keyboard

Figure 1.2 Bottom View (Docking Connector)

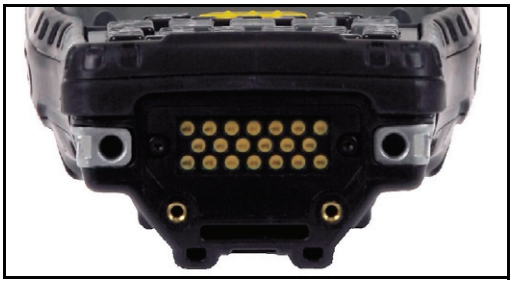
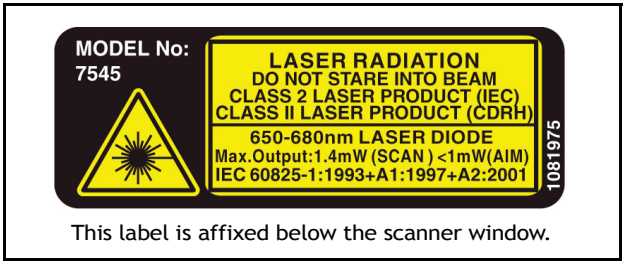


Figure 1.3 Top View (Scanner Window)

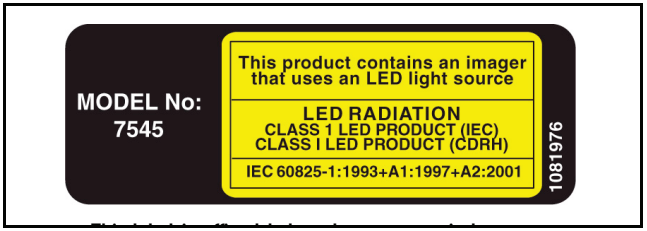
1.4 Regulatory Labels

Figure 1.4 Laser Warning Label



Warning: Using controls or adjustments or performing procedures other than those specified herein may result in hazardous radiation exposure.

Figure 1.5 LED Radiation Notice Label



BASIC OPERATION 2

2.1 Features of Omnii XT10

Figure 2.1 Front View of Omnii XT10 Model with Alphanumeric Keyboard

Figure 2.2 Side Views of Omnii XT10

Figure 2.3 Bottom View

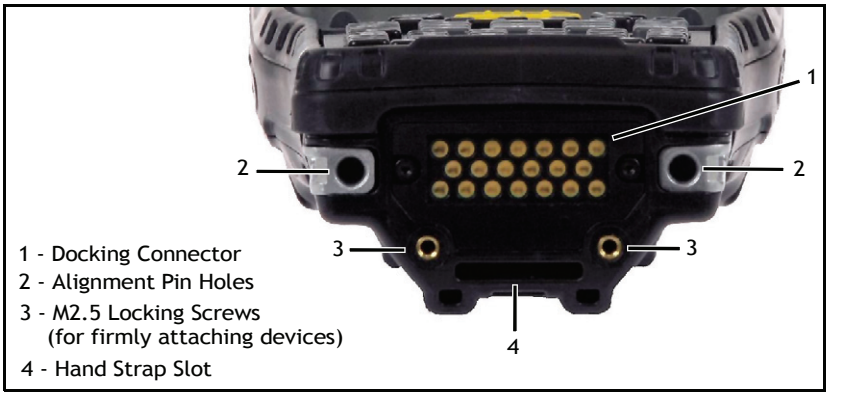
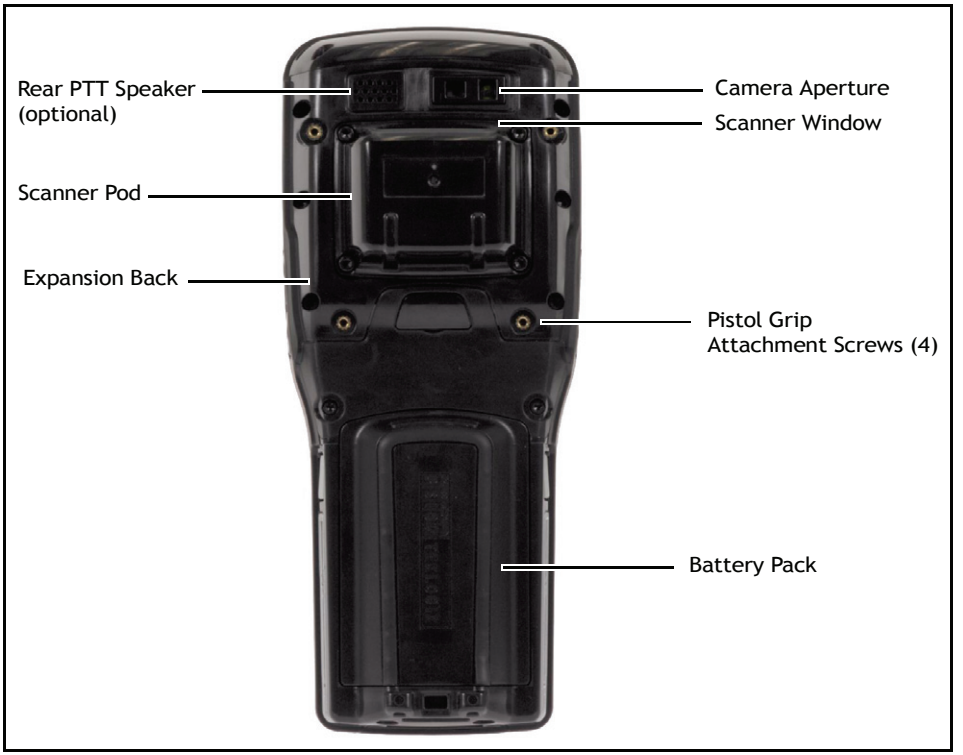


Figure 2.4 Top View

Figure 2.5 Back View



2.2 Preparing Omnii for Operation

2.2.1 The Battery

Omnii is powered by a Lithium-ion Smart Battery pack, 5000 mAh—Model No. ST3000.

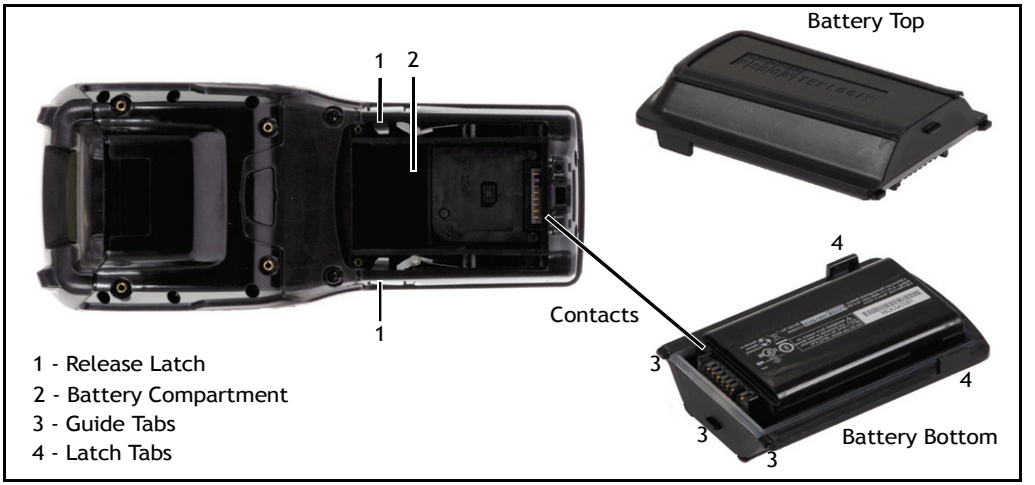
Important: Before charging the battery, it is critical that you review the battery safety guidelines in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191).

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 chargers and docking stations. For detailed information, see "Battery Details" on page 35.

2.2.2 Replacing the Battery Pack

Important: Always switch the unit off before changing the battery (see "Switching Omnii On and Off" on page 15). If you do not turn the hand-held off before removing the battery, it may be necessary to reboot the unit. Any active sessions may be lost.

Figure 2.6 Omnii Battery



Note: If you are using a docking station or an external power supply, you can insert an uncharged battery and use the device while the battery charges.

Assuming the default power saving parameters and battery reserve level have not been altered, a battery can be removed for up to 5 minutes without losing data. After 5 minutes the terminal may reboot.

Removing the Battery Pack

- If your unit is equipped with a hand or shoulder strap, unhook it from the base of the battery.
- Press the two latch buttons at the sides of the compartment simultaneously, and slide the battery out.

Installing the Battery Pack

- Slide the charged battery with the contoured plastic facing you into the unit with the contacts matching position and the guide tabs moving into the corresponding slots at the base of the compartment. Click both sides of the battery into place.
- If your computer is equipped with a hand or shoulder strap, re-attach the clip to the slot at the base of the battery.

Switch the unit on (see "Switching Omnii On and Off" on page 15).

2.3 Switching Omnii On and Off

Follow the instructions below for your Omnii.

Switching Omnii On

- Press and hold down the [ENTER/Power] key for at least one second.

When the unit is turned off, normally it automatically enters a power-saving, "suspend" state. When Omnii is switched on from the suspend state, operation resumes within a few seconds in the screen in which you were working prior to turning the computer off.

Important: If your Omnii fails to power up, consider the following troubleshooting options:

The battery may be overheated (>60C°), a non-Psion Teklogix battery may be installed, or the battery may have fallen below the configured Suspend Threshold. See "Suspend Threshold and Estimated Battery Backup" on page 110 for details.

To switch on the hand-held, you will need to replace the overheated battery.

However, if you supply AC power to Omnii with a battery that falls below the configured Suspend Threshold, the unit will switch on.

Switching Omnii Off

- To switch off Omnii, press the **[FN]** key and then press and release the **[ENTER/Power]** button. Omnii will automatically enter the *Suspend* state.

Important: Turning off the hand-held does not result in a complete shutdown; rather, the unit enters a power-saving, "suspend" state. When Omnii is turned on from suspend state, operation resumes within a few seconds.

Important: If the word 'FN' is displayed underlined in the taskbar area at the bottom of the screen, this key is locked "on" and Omnii will not switch off. Press the [FN] key twice followed by [ENTER/Power] to switch Omnii off.

However, if you've set the mode to "Lock" (see "Keyboard One Shot Modes" on page 95), Omnii can be turned off even when the [FN] key is locked 'on'.

2.4 Resetting Omnii

To perform a warm or cold reset, you can access the menu by going to *Start>Shutdown*. Alternatively you can use the keyboard shortcuts described below.

Note: If your Desktop is switched to the PsionVU Shell (refer to "The PsionVU Desktop Shell" on page 70), resetting the unit is done solely by use of the keyboard shortcuts.

Warm Reset

To execute a warm reset:

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

A warm reset closes open applications; any unsaved data are lost. Installed programs and saved data are preserved.

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

Cold Reset

To execute a cold reset:

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

Note: As part of the normal Windows Embedded CE cold boot process, the screen may go blank for a few seconds after the splash screen loading bar reaches the end. The desktop is displayed after a few moments.

Bootloader

Important: This reset returns Omnii to factory settings.

To implement the bootloader:

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

After the cold reset, the BooSt menu appears.

- Type '**1**' to "Run Main OS" (continue loading the Windows Embedded CE operating system).

Hard Reset

Important: This procedure is recommended as a last resort, when all other methods fail.

To execute a hard reset:

- Remove the battery.

- Using a coin, or other conductive item, connect pins 5 and 6 of the Omnii battery contacts for at least 6 seconds.

- Replace the battery and power Omnii on. The terminal will boot as if from a cold reset.

2.5 Attaching Carrying Accessories

Psion Teklogix recommends that a carrying accessory—a hand strap or shoulder strap—be installed on Omnii before use. For detailed information, please see “Carrying and Protective Accessories” on page 173.

2.6 Calibrating the Touchscreen

Note: The touchscreen function can be turned off (see “Touch” on page 122).

The Omnii touchscreen feature is factory-calibrated and ready-to-go; however, over time the touchscreen's operating parameters may change, and it may need to be recalibrated for correct operation. Refer to “Calibrating the Touchscreen” on page 44 for details.

2.7 Configuring Your Wireless Network

Omnii contains an integrated 802.11b/g radio module. The *Wi-Fi Config* application is used to configure the radio for one or more wireless network profiles. To configure the radio, follow the steps outlined under the following heading “Wireless Networking”.

To configure your *Bluetooth* settings, please go to “Bluetooth® Setup” on page 125.

To see the radio specifications, please go to “Wireless Radios” on page 199.

2.8 Wireless Networking

The *Wi-Fi Config* application is used to configure the Omnii 802.11b/g radio 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.

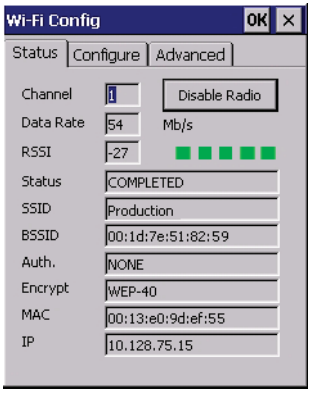
To launch the *Wi-Fi Config* application:

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

The *Wi-Fi Config* screen is displayed.

2.8.1 Wi-Fi Config: Status Tab

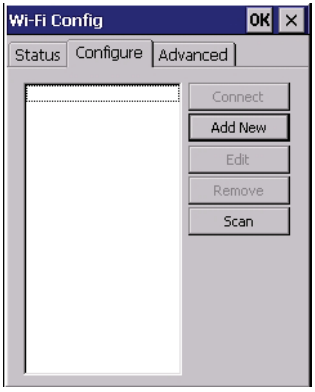
The *Status* tab displays information about the wireless network to which Omnii is configured to connect. When there are no network profiles configured, this tab is not populated.



Disable/Enable Radio: This button toggles between *Disable Radio* and *Enable Radio* depending on whether the radio is turned off or on.

2.8.2 Wi-Fi Config: Configure 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.

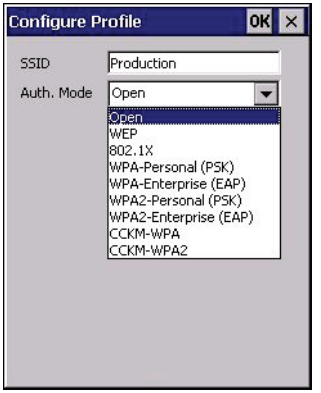
If you tap on the **Add New** button rather than the *Scan* button, you can create a network manually.

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.

- Enter the **SSID** (Service Set Identifier) for your network.

2.8.2.1 Authentication Mode

Omnii supports several classes of authentication—*Open*, *WEP*, *WPA/WPA2 (Personal PSK, Enterprise, CCKM-WPA, CCKM-WPA2)*, 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, Omnii will connect to wireless networks which do not use authentication or encryption.

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 Hexadecimal digit sequence that matches the active WEP key on the access point.

WPA & WPA2 Personal PSK (Pre-Shared Key)

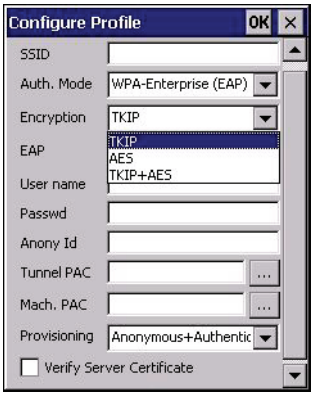
When PSK is selected, either *WPA Personal PSK* or *WPA2 Personal PSK*—a shared key must be configured on both the access point and the hand-held computer. One of the following can be chosen from the *Encryption* drop-down menu: *TKIP*, *AES* or *TKIP+AES*.

802.1X, WPA & WPA2 Enterprise, CCKM-WPA & CCKM-WPA2

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

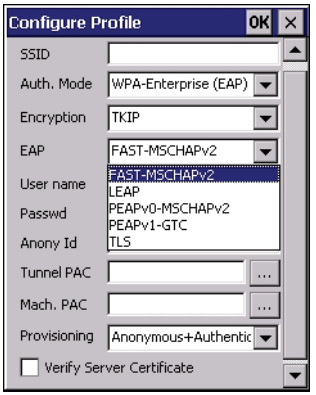
2.8.2.2 Encryption

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.



2.8.2.3 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.

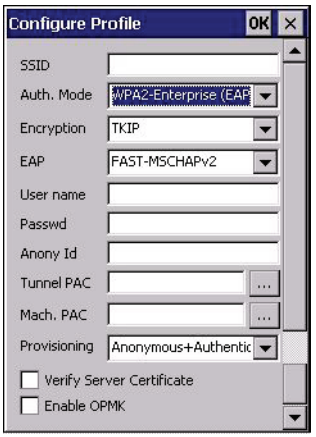
- **PEAPv0-MSCHAPv2:** Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. *MSCHAPv2* is used as the inner authentication method. This is appropriate for use against Windows Active Directory and domains.
- **PEAPv1-GTC:** PEAP authentication using GTC as the inner method 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.
- 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**.

2.8.2.4 Verify Server Certificate

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

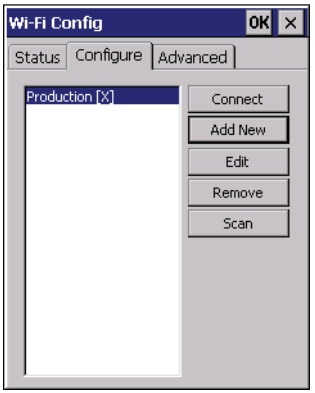
2.8.2.5 Enable OPMK

When used with compatible wireless infrastructure, Opportunistic Key Caching (OPMK) reduces the number of full authentications required when roaming. Only available with WPA2-Enterprise (EAP) authentication mode.



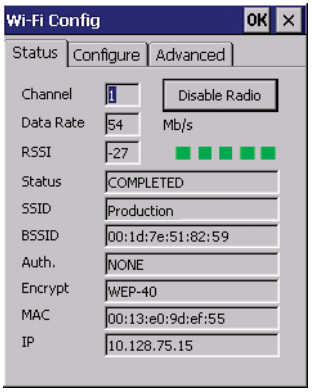
2.8.2.6 Connecting the Wireless Network

Your configured network is listed in the *Configure* tab. An *[X]* next to a network indicates that this is the network to which Omnii 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.



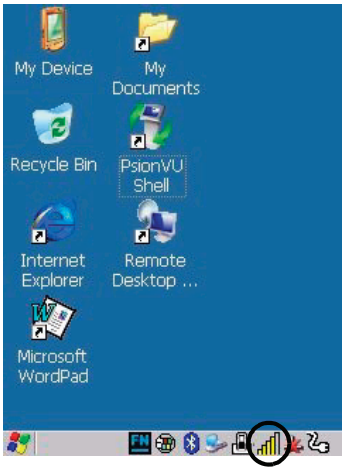
2.8.3 Configuring TCP/IP

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

2.8.3.1 IP Address

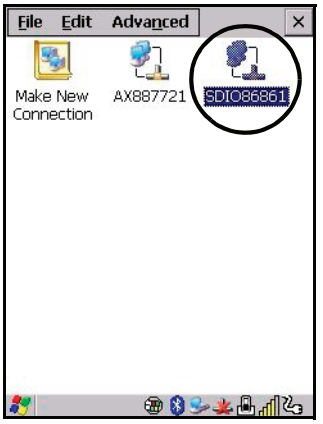
To assign an *IP address* for your Omnii:

- Tap on the **radio icon** in the 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*.



The *Wireless Statistics* screen is displayed.

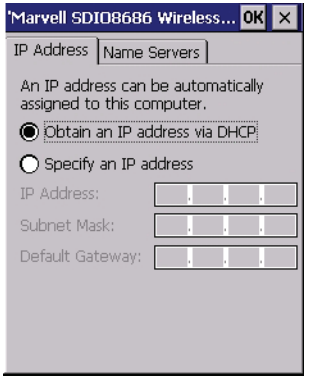
- Tap on the **IP Information** tab.

Figure 2.7 SDIO86861 IP Information Tab

Note: When DHCP is enabled, tapping the 'Renew' button forces Omnii to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your hand-held is dropped from the network.

To define a static IP address:

- Tap on the **Configure** button.

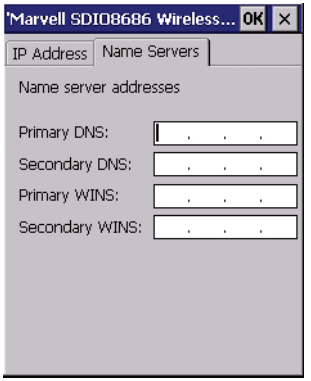


- Tap on the radio button next to **Specify an IP address** to select it.
- Type an **IP, Subnet Mask** and **Default Gateway** address in the appropriate fields. Press **[ENTER]** to save your information.

2.8.3.2 Name Server

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

- In the *SDIO86861 IP Information* tab (see Figure 2.7), tap on the **Configure** button.
- Tap on the **Name Servers** tab.



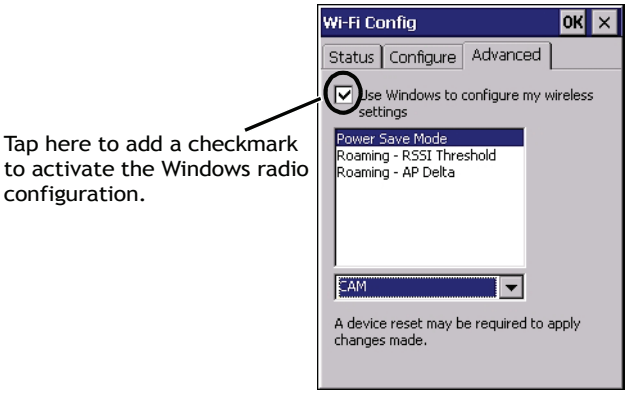
The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

2.8.4 Wi-Fi Config: Advanced Tab

Use Windows to configure my wireless settings

In the *Advanced* tab you can set Windows to configure the radio, using *Wireless Zero Config*.

- Tap on the checkbox to the left of **Use Windows to configure my wireless settings** to enable this option.



Power Save Mode

This allows you to set the 802.11 power saving mode of the radio to: *CAM* (continuous access—always on) (recommended); or *MAX_PSP* (maximum power saving mode).

Roaming - RSSI Threshold

This sets the RSSI threshold value, below which the radio will start scanning for new access points when roaming. Values range from *-55 to -90 dBm*.

Roaming - AP Delta

This sets how much greater (in dBm) the RSSI of a new access point must be than the RSSI of the currently associated access point in order for the hand-held to initiate a roam. Values range from *5 to 30 dBm*.

Concluding the Wi-Fi Configuration

If you've made changes in the Advanced menus, you will need to warm reset your Omnii.

- 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, if you checked the box next to **Use Windows to configure my wireless settings,** the *Wireless Zero Config* screen is displayed on the hand-held. Refer to Appendix B: “Wireless Zero Config” for details.

2.9 Checking the Scanner

If your Omnii 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 —for example, a 1D UPC bar code or 2D bar code. Press the **SCAN** key or pistol trigger, and check for a valid decode on the hand-held’s screen.

Performance is improved if you disable all unneeded bar codes in the *Bar Codes* screen. Review “Teklogix Scanners” on page 149 and Appendix C: “Bar Code Settings” for details about bar codes.

2.10 Data Transfer between Omnii and a PC

Data transfer options vary slightly depending on the type of operating system installed in your PC.

For Windows XP SP2 operating systems or earlier, Microsoft® ActiveSync® connectivity software can be used to connect your Omnii to PCs.

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

By using a Snap Module or Desktop Docking Station with your Omnii, you can connect to a PC with a cable and:

- View Omnii files from Windows Explorer.
- Drag and drop files between Omnii and the PC in the same way that you would between PC drives.
- Back up Omnii files to the PC, restore them from the PC to the hand-held again, etc.

2.10.1 Using Microsoft ActiveSync

Note: If you use a serial port to connect devices like Omnii to your desktop computer, the connection may not succeed because ActiveSync has trouble connecting at non-default baud rates.

To work around this problem, set the ActiveSync baud rate on the desktop to use the same baud rate as the device. You can set the baud rate by editing the registry on the desktop host computer, as detailed in the steps outlined at the following website:

http://support.microsoft.com/kb/324466

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

2.10.2 Using Windows Mobile Device Center

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

http://www.microsoft.com/windowsmobile/en-us/downloads/microsoft/device-center-download.mspx

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

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

GETTING TO KNOW YOUR OMNII 3

3.1 Battery Details

Omnii Hand-Held Computers operate by lithium-ion battery packs, Model No. ST3000.

Please see the following sections for detailed battery information:

- Installation: “Preparing Omnii for Operation” on page 14.
- Calibration and power settings: “Power Properties” on page 108.
- Chargers and docking stations: “Peripheral Devices & Accessories” on page 169.
- Specifications: “Lithium-ion Smart Battery 5000 mAh (ST3000)” on page 198.
- Contact pinout: page A-4 of Appendix A: Port Pinouts.

3.1.1 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 the quick reference guide entitled the Omnii Hand-Held Computer Regulatory & Warranty Guide, PN 8000191.

3.1.2 Battery Swap Time

Assuming the default power saving parameters and battery reserve level have not been altered, battery swap time is a minimum of 5 minutes—you will not lose data if the battery is replaced within this time frame.

To protect data, the safest place to store data is on a microSD memory card or externally to the device on a USB memory stick or on a PC. You can also save data in the “Flash Disk” partition of the file system.

Refer to “Suspend Threshold and Estimated Battery Backup” on page 110 for details about reserving battery power for data backup purposes.

The *Suspend Threshold* adjustment in the *Power Properties* tab allows you to determine the battery capacity at which Omnii 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*, Omnii shuts off with more energy left in the battery so RAM can be backed up for a longer period of time.

Important: If your Omnii fails to power up, consider the following troubleshooting options:

The battery may be overheated (>60C°), a non-Psion Teklogix battery may be installed, or the battery may have fallen below the configured Suspend Threshold. See "Suspend Threshold and Estimated Battery Backup" on page 110 for details.

To switch on the hand-held, you will need to replace the overheated battery.

However, if you supply AC power to Omnii with a battery that falls below the configured Suspend Threshold, the unit will switch on.

3.1.3 Charging the Battery

Batteries shipped from the factory are charged to approximately 40% of capacity. Lithium-ion battery packs must be fully charged before use. These batteries can be charged with a variety of chargers and docking stations. For detailed information on these accessories, please see Chapter 6: "Peripheral Devices & Accessories".

Normally it takes 3 to 4 hours to charge a battery. The Omnii intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

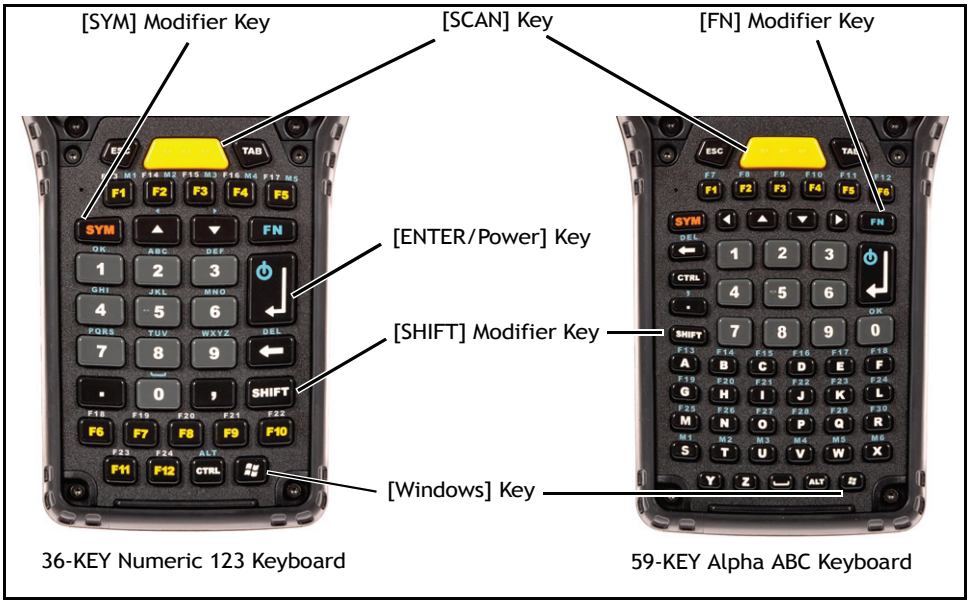
3.2 The Keyboard

Omnii offers a wide variety of Alpha and Numeric keyboard layouts. See "Keyboard and Keypad Kits" on page 171 for a list of available configurations. 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, those differences are described in the following sections.

Omnii is equipped with an [Enter/Power] key that allows you to switch the unit on and to shut down the unit to *Suspend* or *Standby* mode. For details refer to "Switching Omnii On and Off" on page 15.

There are a number of modifier keys that provide access to additional keys and system functions, as described in "Modifier Keys" on page 39.

Figure 3.1 Keyboard Layouts



3.2.1 Regular Keys

The [ENTER/Power] Key

The [ENTER/Power] key is used to execute the usual Enter keyboard functions as well as to power the unit on and off (for details refer to “Switching Omnii On and Off” on page 15).

The [SHIFT] Key

The [SHIFT] key is used to display uppercase alpha characters and to provide access to other symbols and functions on the numeric keyboards. Press the [SHIFT] key to turn the shift state 'on' (it will be represented by an up arrow in the taskbar), then press another key to access the shifted function of that key.

Press the [SHIFT] key twice to lock the shift state on (the up arrow in the taskbar will be underlined). Press [SHIFT] again to turn the shift state off.

To access CAPS LOCK mode, press [FN] + [SHIFT]. In this state, if you press a numeric key, the number is displayed rather than the normal shifted function of that key. Press [FN] + [SHIFT] again to turn the CAPS LOCK mode off.

The Arrow Keys

The [Arrow] keys are located near the top of the keyboard, and are represented on the keyboard as triangles pointing in different directions. The [Arrow] keys move the cursor around the screen in the direction of the arrow: up, down, left and right. The left arrow key should not be confused with the [BACKSPACE] key which is depicted as a left arrow. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [BACKSPACE/DEL] Key

The [BACKSPACE] key (represented on the keyboard as an arrow pointing left) moves the cursor one character to the left, erasing the previous key stroke.

The [DEL] key ([FN] +[BACKSPACE]) erases the character at the current cursor position.

The [CTRL] and [ALT] Key

The [CTRL] and [ALT] keys modify the function of the next key pressed and are application dependent. Pressing either key twice locks it 'on' (it appears underlined on the Taskbar). Pressing the key once again unlocks it.

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.

The [SPACE] Key

The [SPACE] key is represented on the keyboard by a long, low horizontal line contained by a small vertical line on each side. Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a checkbox.

The [SCAN] Key

Omnii is equipped with a single [SCAN] key on the keyboard and an extra [SCAN] button located on the left side of the unit. [SCAN] keys activate the scanner beam. For units that do not have internal scanners, these keys can be remapped to serve other functions.

3.2.2 Modifier Keys

The [SHIFT], [CTRL], [ALT], [FN] and [SYM] keys are modifier keys that change 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.

[SHIFT] and [FN]

The [SHIFT] and [FN] modifier keys provide access to additional keys and system functions. The functions related to these modifier keys are colour-coded in white and blue print respectively above the keyboard keys, dependant on your keyboard format.

[SYM]

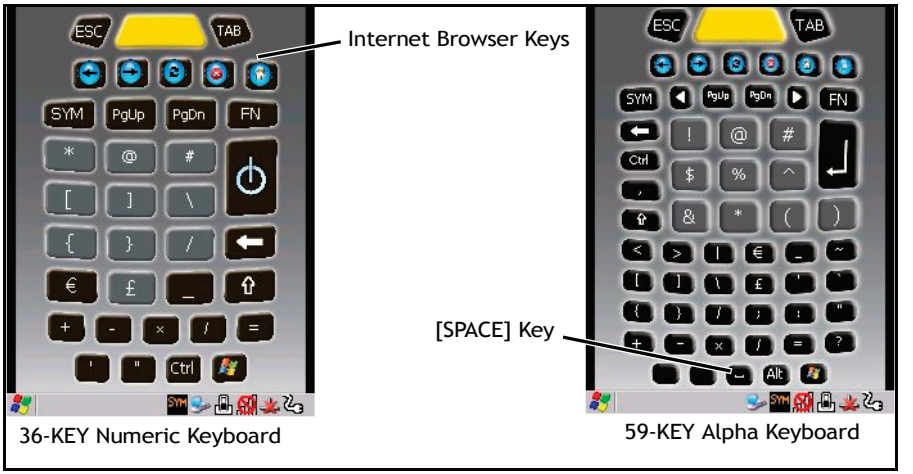
Note: When using the Mobile Devices SDK Developers' Guide (P/N 8100016), note that the [SYM] key is interchangeable with the [ORANGE] key.

The Symbol [SYM] modifier key is represented on the keyboard by the characters 'SYM' and provides access to commonly used symbolic characters. Pressing the key brings up the Symbol soft input panel (SIP) onscreen keyboard, with symbols mapped to each key. If you wish to adjust the settings for the pop-up screen (e.g. time of delay before screen appears, etc.), modify the file *softinputpanel.xml*, located in the Windows folder.

Note: Modifier keys are remapped in the Control Panel, and the Symbol SIP will automatically show and use the new mappings after the next reboot.

The onscreen keyboard corresponds to the specific keyboard on your Omnii—either numeric or alphanumeric.

Figure 3.2 Symbol Soft Input Panels



3.2.2.1 Activating Modifier Keys

When a modifier key is pressed, it is shown in the softkey bar at the bottom of the screen, making it easier to determine whether a modifier key is active. For example, if the [CTRL] key is pressed, **Ctrl** 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.

3.2.2.2 Locking Modifier Keys

When a modifier key is pressed twice, it is 'locked' on. A 'locked' modifier key is displayed in underlined letters in the taskbar. For example, pressing the [FN] key twice locks it on—it is displayed as an underlined blue 'FN' in the taskbar at the bottom of the computer screen. The same is true of the [SYM] key, which is shown as an underlined orange 'SYM' in the taskbar.

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 underline representation at the bottom of the screen is no longer displayed.

*Note: The locking function of the modifier keys can be changed so that pressing a key **once** will lock the key 'on'.*

If you disable the 'One Shot' function of the key, pressing it once will lock the key 'on'. Pressing the same key a second time will unlock or turn it 'off'. Refer to "Keyboard One Shot Modes" on page 95 for details.

3.2.3 Function Keys and Macro Keys

In addition to the standard keyboard functions (see "The Keyboard" on page 36), Omnii supports function keys and macro keys.

All function keys and macro keys can be custom defined for each application. The TekTerm application utilizes these keys (for detailed information, see the *TekTerm Software User Manual*, P/N 8000073).

3.2.3.1 Function Keys

Function keys perform special, custom-defined functions within an application. These keys are accessed by pressing one of the dedicated function keys on the keyboard, or through the appropriate [SHIFT] or [FN] key sequence, depending on the keyboard variant being used.

Alphanumeric Keyboard Function Keys

The Alphanumeric keyboards are equipped with up to thirty function keys, including those function keys that are colour-coded in blue print above the alpha keys or function keys (depending on your keyboard).

To access the blue function keys, press the [FN] key followed by the appropriate alpha or function key.

Function keys [F1] through [F24] can be used with the Windows Embedded CE operating system or another application. The additional function keys, [F25] through [F30] along with the macros, are not used as part of the Windows Embedded CE operating system.

Numeric Keyboard Function Keys

The Numeric keyboards are equipped with up to 24 function keys, including those function keys that are colour-coded in white print above the function keys. Function keys F25 through F30 can only be accessed by remapping another key to that function.

To access the white function keys, press the [SHIFT] key followed by the appropriate function key.

3.2.3.2 Macro Keys

Important: Refer to "Keyboard Macro Keys" on page 97 for details about creating macros.

Several of the Omnii keyboards are equipped with a series of macro keys that can be programmed to replace frequently used keystrokes, along with the function of executable keys like the [ENTER/Power] key, the [BACKSPACE] key, any function key and arrow key, etc.

59-Key Alphanumeric Keyboard Macro Keys

These keyboards have six macro keys: [M1] to [M6], located on the S to X keys (second-last row of keys).

To access a macro key, press the [FN] key followed by the macro key.

36-Key Numeric Keyboard Macro Keys

These keyboards are equipped with five macro keys: [M1] to [M5]. These keys are colour coded in blue print above function keys [F1] to [F5].

To access a macro key, press the [FN] key followed by the macro key.

3.2.4 Numeric Keyboards—Accessing Alpha Keys

On the Numeric Omnii keyboards, all alphabetic characters are printed on the unit plastic in blue typeface above the keys. Alpha characters are accessed by pressing the [FN] modifier key, then pressing another key on the keyboard.

The Alpha Modified Numeric 789 keyboard has each blue alphabetic character assigned as a single [FN]-shifted character on individual keys. An indicator in the left corner of the taskbar displays the currently selected character.

The Numeric 123 keyboards have telephone-style alphabetic keys, with the blue alphabetic characters located in groups of 3 or 4 above each of the numeric keys. To access characters on these keyboards, a few extra steps are needed, as described below.

Choosing a Single Alpha Character

Note: The following examples assume that the [FN] key is enabled as 'Lock' mode in the 'One Shot' screen (accessible through the Control Panel Keyboard icon). In 'Lock' mode, pressing the [FN] key once locks it 'on'. Refer to "Keyboard One Shot Modes" on page 95 for details.

The examples below illustrate how to access A, B and C, all of which are printed in blue characters above the numeric key [2]. The letters you choose appear in the softkey bar as you press the numeric key, providing a visual indicator of which letter will be displayed on the screen.

To choose the letter ‘a’:

- Press the [FN] key, and press the numeric key [2].
- Press the [FN] key again to unlock or turn it off.

To choose the letter ‘b’:

- Press the [FN] key, and press [2] twice.
- Press the [FN] key again to unlock or turn it off.

To choose the letter ‘c’:

- Press the [FN] key, and press [2] three times.
- Press the [FN] key again to unlock or turn it off.

Note: Keep in mind that there is a timeout of one second between key presses when sequencing through the alphabetic characters on a key. If you pause longer than one second between key presses, the alphabetic character that is displayed at that time will be entered.

Selecting Uppercase Letters

To display a single capital letter, press the [SHIFT] key first, then the letter you want.

To access CAPS LOCK mode, press [FN] + [SHIFT]. In this state, if you press a numeric key, the number is displayed rather than the normal shifted function of that key. Press [FN] + [SHIFT] again to turn the CAPS LOCK mode off.

3.2.5 The Keypad Backlight

The intensity of the keypad backlight and the conditions under which this backlight is activated can be configured using the Keyboard icon in the Windows Embedded CE *Control Panel*. The behaviour of the keypad backlight is tailored in the Keyboard Properties dialog box. Refer to “Keyboard Backlight” on page 95 for details about this option.

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

3.3 The Display

Omnii is equipped with display backlighting to improve character visibility in low light conditions. The backlight switches on when a key is pressed.

3.3.1 Adjusting the Display Backlight

The behaviour of the display backlight and the intensity of the backlight can be specified in the *Display Properties* dialog box in the *Control Panel*.

*Note: Refer to **"Backlight" on page 90** for details about the Display Properties dialog box.*

3.3.2 Calibrating the Touchscreen

If your Omnii 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.

- Select the **Calibration** tab, and then choose the **Recalibrate** button.

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

3.4 Indicators

Omnii uses LEDs (Light Emitting Diodes), onscreen messages, vibrations, and audio tones as indicators.

3.4.1 LEDs

Omnii is equipped with four coloured LEDs. This section outlines what these LEDs indicate.

Important: If an LED is illuminated in red, the operator should be cautious as this generally indicates an abnormal operating condition or active laser emission.

Figure 3.3 LED Status Indicators

3.4.1.1 Battery Charge Status LED

The far left LED is reserved for battery charge status. This indicator is active even when the hand-held is inserted in a docking station (and in suspend mode) so that the charge status of the battery can be detected easily.

Table 3.1 Battery Charge LED Behaviours

Charge LED Behaviour	Function
OFF	External power not detected.
Solid Green	Battery charging complete.
Flashing Green	Charge in progress.
Yellow	Cell temperature out of range for charge.
Solid Red	Unable to charge battery.

3.4.1.2 Operating System Status LED

The second LED indicates system notifications and operating system status. It is also available for user-loaded custom Windows Embedded CE applications.

Operating LED Behaviour	Function
OFF when unit is in Suspend or Shutdown.	Normal operating status.
Solid Yellow	The unit is powering on.
Fast Flashing Yellow	The unit is in Standby mode.
Flashing Yellow	This LED is controlled by the Sounds and Notifications Control Panel applet.

3.4.1.3 Radio Status LED

The third LED from the left indicates the status of the GPS radio in the Omnii XT10.

Radio Traffic LED Behaviour	Function
OFF	The GPS radio is disabled.
Slow Flashing Blue	The GPS radio is enabled and active.

3.4.1.4 Scanner Status LED

The fourth (far right) LED indicates scanner status.

Scan LED Behaviour	Function
OFF	The scanner is not in use.
Solid Red during scan	Scan in progress.
Solid Green after decode OFF when scan ended	Successful scan.
Flashing Red	Unsuccessful scan.

3.4.2 Onscreen Indicators

The taskbar at the bottom of the screen displays a variety of system status indicators, including the Input Panel button if you have chosen to show that option in the *Taskbar and Start Menu* settings.

Figure 3.4 Taskbar

The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in your Omnii, the radio signal icon is not displayed in the taskbar.

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 the [Windows] key to display the Start Menu, and then tap on the desired application.

Modifier Key Indicators

[SHIFT], [CTRL], [ALT], [FN] and [SYM] are modifier keys that have onscreen indicators to show when a key is active or locked. If a modifier key is pressed once to activate it, the key is displayed in the taskbar, for example, pressing the [FN] key once displays 'FN' in the taskbar. If a modifier key is pressed twice, it is 'locked on' and the onscreen indicator is displayed with underlined letters in the taskbar, for example, pressing [FN] twice displays 'FN' in the taskbar.

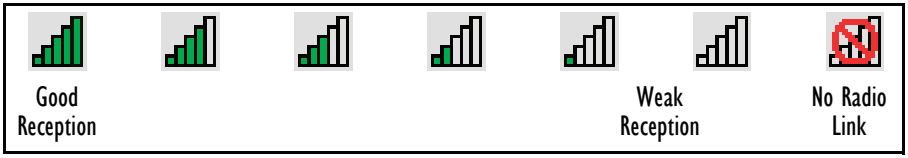
Power

The battery shaped icon displayed in the taskbar provides quick access to the charge state of the battery. Tapping on the icon once will show the percentage charge left in the battery. Tapping on the icon twice opens the *Power Properties* menus (see "Power Properties" on page 108), where you can set the low battery warnings levels, and time to enter Suspend.

If Omnii is using external AC power, an AC icon is displayed in the taskbar.

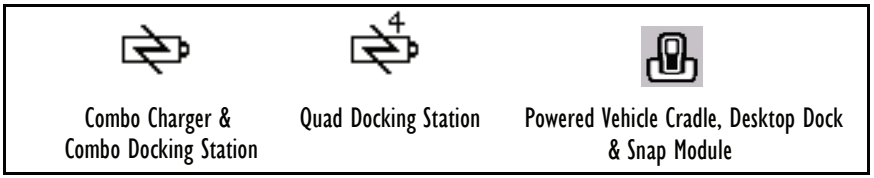
802.11 Radio Signal Quality

Increasing radio signal quality is represented by longer, filled bars within this icon.



Docking Device

When a hand-held is inserted in a docking station, charger or cradle, an associated icon appears in the taskbar.



Bluetooth Radio

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

Input Panel

You can tap the Input Panel icon to activate the soft keyboard application.

3.4.3 Audio Indicators

Omnii supports several audio options, including *Bluetooth*. The optional rear speaker can be used for system (Windows) sounds and *.wav* files. When a rear speaker is absent, those sounds are routed to the front receiver. The beeper provides a variety of sounds and can be configured to emit a sound 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. The volume rocker button is located on the left side of the hand-held. Information on configuring sounds is detailed in "Volume & Sounds Properties" on page 123.

3.4.4 Vibrations

You can set Omnii to vibrate when a successful or unsuccessful bar code scan is performed. See "Teklogix Scanners", page 149.

3.5 Monitoring the Network Connection

The radio signal icon in the taskbar indicates the strength of the communication link with an 802.11 access point.

To access the radio signal icon:

- Tap on the radio icon in the taskbar to display the wireless statistics dialog box.

To access the radio signal icon using the keyboard:

- Press the [Windows] key to display the *Start Menu*.
- Highlight **Shortcuts** and then choose **System Tray** from the sub-menu.
- Use the [LEFT] and [RIGHT] arrow keys to highlight the **radio signal** icon in the taskbar.
- Press [ENTER] to display the *Wireless Statistics* dialog box.

Note: Moving in and out of the radio coverage area can have varying effects on a network session. At times, you may need to renew your connection by logging in again.

3.6 Uploading Data in a Docking Station

The Desktop Docking Stations allow your hand-held to upload transaction data to a server computer when a radio link is not available. When Omnii is properly inserted in a docking station, a dock icon is displayed in the taskbar at the bottom of the unit screen. For detailed information, refer to “Desktop Docking Stations - Models ST4002 and ST4003” on page 180. Review the documentation provided with the user application installed in your Omnii before performing data uploads.

3.7 General Maintenance

3.7.1 Caring for the Touchscreen

The touchscreen is covered with 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. 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:

- mustard
- ketchup
- sodium hydroxide
- concentrated caustic solutions
- benzyl alcohol
- concentrated acids

If the touchscreen is used in harsh environments, consider applying a disposable screen protector (ST6112). These covers reduce the clarity of the display slightly but will dramatically extend the useful life of the touchscreen. When they become scratched and abraded, they are easily removed and replaced.

3.7.2 Cleaning Omnii

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

To prevent damage to the touchscreen, use only your finger or the stylus (pen) supplied with your Omnii.

- Use only mild detergent or soapy water to clean the hand-held unit.

- Avoid abrasive cleaners, solvents or strong chemicals for cleaning. Omnii has a plastic case that is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the keypad and touchscreen, use isopropyl alcohol.

WINDOWS EMBEDDED CE 6.0 4

4.1 Navigating in Windows Embedded CE and Applications

Graphic user interfaces like Windows Embedded CE 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 Embedded CE 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. In those applications that support it, you can also flick and pan your finger to scroll through screens.

4.1.1 Navigating Using a Touchscreen

Note: If the touchscreen is not registering your screen taps accurately, the touchscreen may need recalibration. Refer to "Calibrating the Touchscreen" on page 44.

Omnii comes equipped with a stylus—a pointing tool that looks like a pen. The stylus is used to select objects on the touchscreen. You can also use gestures with your fingers. You can use two gestures: pan and flick. Use left or right flicks to quickly move between tabs of a multi-tab control panel, or to scroll long lists of options. Use panning by touching and dragging a page that has scrollbars.

Note: To prevent damage to the touchscreen, use only a finger touch or the stylus (pen) supplied with your Omnii.

To choose an icon, open a file, launch an applet or open a folder:

- Double-tap on the appropriate icon.

4.1.2 Navigating Using the Keyboard

If you would like to use keyed input to choose icons and navigating dialog boxes, displaying the desktop you can refer to Table 4.1 for a description of the navigation keys.

Table 4.1 Keyboard Navigation

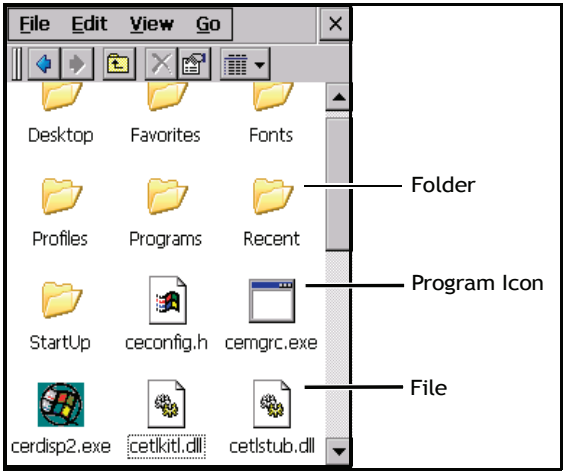
Operation	Key or Key Combination
Switch between active applications	[ALT] [TAB]
Open task manager	[ALT] [ESC]
Move the cursor	Arrow keys

Operation	Key or Key Combination
Open file, folder or icon	[ENTER]
Exit & Save	[ENTER]
Close/Exit & Do Not Save	[ESC]
Navigate Dialog Boxes	[TAB] To move cursor up [SHIFT] [TAB] To display the contents of the next 'tab' in a dialog box [CTRL] [TAB]
Select Radio Button/Press Button	[SPACE]
Go to Start Menu	[Windows]

Keep in mind that unlike a desktop computer, Omnii 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 "Working with Files, Folders, and Programs" on page 56 for additional details about keyboard navigation.

4.2 Working with Files, Folders, and Programs

Figure 4.1 Working with Windows Icons



- Double-tap on the appropriate icon—either a folder icon, a program icon or a file icon—to open or launch your selection.

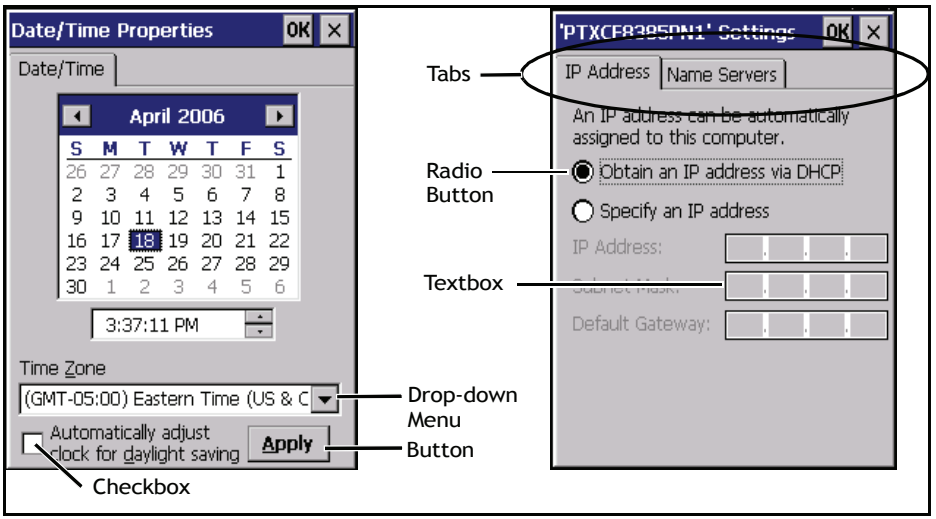
If you're using the keyboard:

- Use the arrow keys to highlight the icon you want to open or launch.
- Press [ENTER].

4.3 Using a Dialog Box

A dialog box (like the samples in Figure 4.2) appears when you need to make selections and enter further information. You can move between dialog items by tapping on them, or by pressing the arrow keys and the [TAB] key ([SHIFT] [TAB] moves the cursor backwards).

Figure 4.2 Dialog Boxes



Note: You can tap on an element in a dialog box to select or deselect it, display drop-down menu items, save your selections, and so on.

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 4.2 on page 57 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.

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.

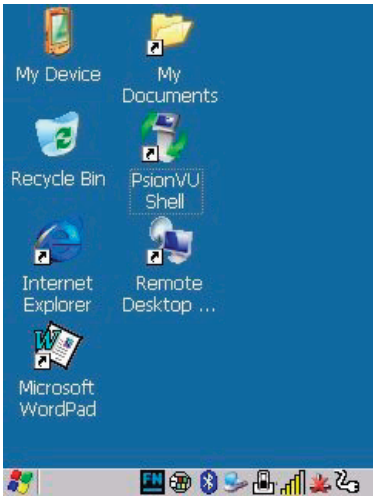
Note: A dialog box item that is displayed in grey text indicates that it is not currently available.

4.4 The Windows Classic Shell Startup Desktop

When Omnii boots up, the default startup desktop (Windows Classic 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 4.3 Omnii Windows Classic Shell 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.

Note: If the arrow keys do not highlight the desktop icons, the desktop may not be selected. Press [Windows] to display the Start Menu, and select Desktop. Now the desktop will be "in focus" and the arrow keys will highlight the icons.

4.4.1 The Desktop Icons

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 your Omnii. If you're not sure how to work with the files, folders and programs displayed, refer to "Working with Files, Folders, and Programs" on page 56.

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 Embedded CE 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

WordPad is a basic word processor used to create, edit, and print *.rtf*, *.doc*, and *.txt* files.

My Documents

The *My Documents* folder is a standard location for storing user-created files. The folder is located under the root of the hard drive on which Windows is installed.

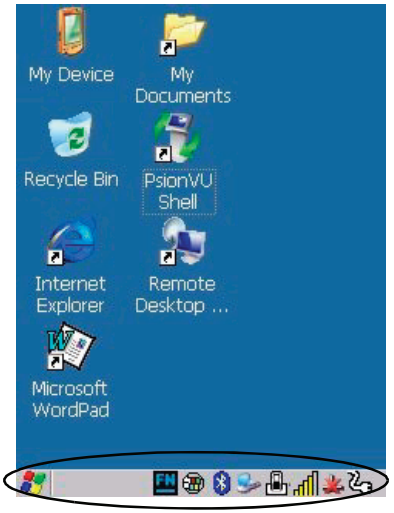
Remote Desktop Connection

Remote Desktop Connection is an Omnii application used to connect to a Windows Terminal Server so that you can run a "session" on the Server machine using the hand-held (Windows Embedded CE device). "Remote Desktop Connection" on page 81 provides a website with details about this option.

Shell Switch

The appearance and actions of the desktop can be changed by tapping on the **Shell Switch** icon, which activates the PsionVU shell. After switching to PsionVU, the desktop appearance will be very different. For detailed information, please go to "The PsionVU Desktop Shell" on page 70.

4.4.2 The Taskbar



Omnii 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 charger, cradle, docking station, or Snap Module, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit.

The taskbar also displays active modifier keys: [SHIFT], [ALT], [CTRL], [FN] and [SYM]. Keys that have been locked "on" are displayed with underlined 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 an underlined '<u>Ctrl</u>' in the taskbar. (For detailed information on modifier keys and keyboard options, see "The Keyboard" on page 36).

4.4.2.1 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 on an icon to display the icon's 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 [Windows] 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.
- Press [ENTER] to display the appropriate dialog box.

4.4.2.2 Customizing the Taskbar

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

- In the *Start Menu*, choose **Settings**, and then **Taskbar**.

If you're using the keyboard:

- Press [Windows] 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.

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

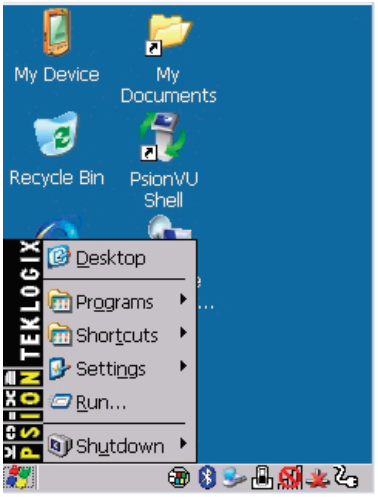
If you're using the keyboard:

- Highlight the options you want to activate, and press the [SPACE] key to select them. A check mark indicates active items.

4.4.3 The Start Menu

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*.



Note: Tap on the item in the menu with which you want to work.

If you're using the keyboard:

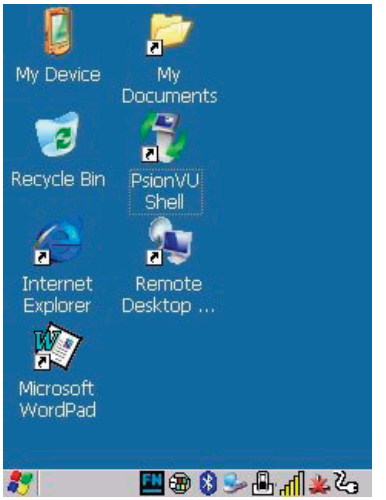
- Use the arrow keys to highlight a menu item, and press [ENTER], or

If the menu item has an underlined character:

- Type the underlined alpha character. For example, to display the *Run* dialog box, type the letter '**r**'.

4.4.3.1 The Desktop

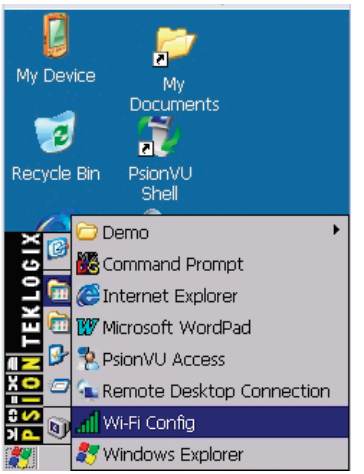
Choosing the *Desktop* option from the *Start Menu* displays the Omnii desktop.



4.4.3.2 Programs

- Choose **Programs** to display a sub-menu of options. The programs displayed will be those resident in the *Windows\Programs* folder of the computer.

Figure 4.4 Program Sub-Menu



This sub-menu allows you to choose *Command Prompt*, *Internet Explorer*, installed applications (e.g., Microsoft WordPad), *PsionVU Access, Remote Desktop Connection*, *Wi-Fi Config*, or *Windows Explorer*.

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 sound files. 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 the same as 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.

Internet Explorer

Omnii is equipped with Microsoft Internet Explorer for Windows Embedded CE. You can access the *Internet Options* icon through the *Start Menu* under *Settings>Control Panel* or by double-tapping on the desktop icon *My Device* and then, double-tapping on the *Control Panel* icon.

Microsoft WordPad

WordPad is a basic word processor used to create, edit, and print *.rtf*, *.doc*, and *.txt* files.

PsionVU Access

PsionVU Access allows you to change the appearance and actions of the desktop from the default Windows Classic Shell to the PsionVU shell.

Remote Desktop Connection

Remote Desktop Connection is an Omnii application used to connect to a Windows Terminal Server so that you can run a "session" on the Server machine using the hand-held (Windows Embedded CE device). "Remote Desktop Connection" on page 81 provides a website with details about this option.

Wi-Fi Config

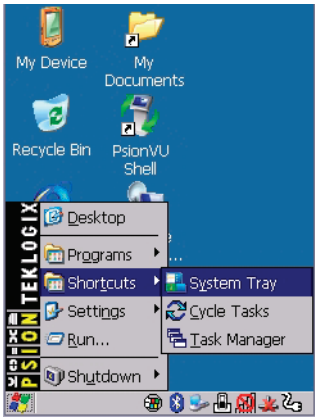
The *Wi-Fi Config* application is used to configure the Omnii 802.11b/g radio for one or more wireless network profiles.

Windows Explorer

The Windows Explorer installed on your Omnii is consistent with all Windows Embedded CE devices.

4.4.3.3 Shortcuts

Figure 4.5 Shortcuts Sub-Menu



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. These indicators are attached to dialog boxes that provide additional information.

- Choose **Shortcuts, System Tray**.

When *System Tray* is chosen, the taskbar icons become accessible. To display the dialog box attached to an icon:

- Use the arrow keys to highlight an icon, for example, the *Bluetooth* icon.
- Press [ENTER] to display the *Bluetooth* menus.

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

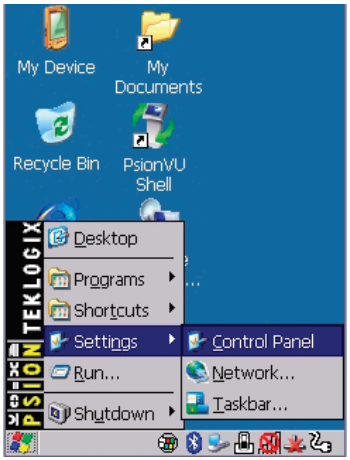
The *Task Manager* allows you to switch to another task or to end an active task. To display the task manager window:

- Tap on **Shortcuts, Task Manager**, or
- Press [ALT] [ESC].

4.4.3.4 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 your Omnii 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 the Omnii network interfaces or execute an existing configuration. Refer to “Configuring Your Wireless Network” on page 18 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 62 for additional details about this option.

4.4.3.5 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.

4.4.3.6 Shutdown

The *Shutdown* menu includes these options: *Suspend, Warm Reset* and *Cold Reset*.

Suspend

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

Warm Reset

The *Warm Reset* option resets the hand-held, leaving all saved files and registry settings intact. Any unsaved data is lost.

Cold Reset

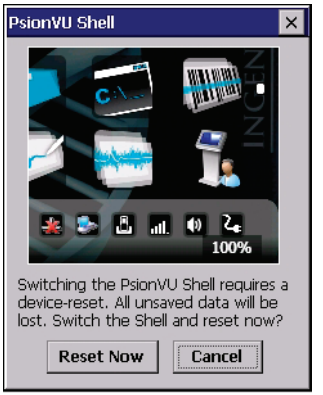
The *Cold Reset* option resets the hand-held (see page 17). Any files not stored in permanent memory are lost; however, the registry settings are saved.

4.5 The PsionVU Desktop Shell

The appearance and actions of the desktop can be changed by tapping on the **PsionVU Shell** icon on your desktop, which activates the PsionVU shell.

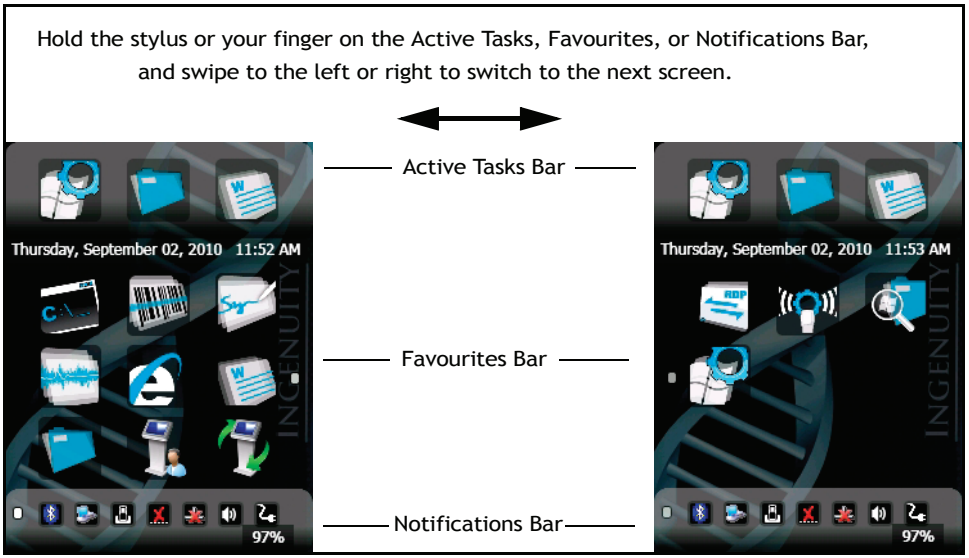
Note: Omnii will be reset if you choose to switch shells.

Figure 4.7 Switch to PsionVU Shell



After resetting the Omnii, the desktop appearance will be very different. The programs are accessed with finger (or stylus) taps and swipes. If there are more applications than shown on one screen, a white animated dot will be present on the side of the screen in the direction of the next set of icons. Swiping the screen to that direction will move the display to the next screen.

*Note: Although the Desktop appearance defaults to the "Ingenuity" theme, the theme is not changed using the **PsionVU Shell** icon. To change themes, open the **Shell Settings>Advanced** menu in **PsionVU Access** (see "Shell Settings" on page 115).*



A different program, *PsionVU Access*, enables you to customize your computer settings, remove or add shortcuts to the Favourites Bar and Control Panel, and limit access to various different components on the computer and the system tray icons for security. For details see "PsionVU Access" on page 112. To change your Desktop background, refer to "Shell Settings" on page 115.

Active Tasks Bar

Open applications are shown in the top bar—the most recently opened is the first icon on the left. Tapping once on a program icon will maximize the application. This feature replaces the Task Manager of the Windows Classic Shell.

Date/Time Bar

Tapping once on the date or time will open the *Date/Time Properties* settings to enable you to change your settings and time zone.

Favourites Bar

The *Favourites Bar* replaces the Windows Classic Shell's Desktop and Start Menu. These icons are the program shortcuts from your *Windows>Start Menu*. Tapping once will open the program. If you tap and hold on an icon, the application name is displayed.

Notifications Bar

This bar shows the run-time program notifications for *Battery*, *Volume*, *Wi-Fi*, *Phone* or *GPRS*, and other notifications for the programs you are running. This feature replaces the Taskbar of the Windows Classic Shell.

Desktop Minimized View

When an application is opened and maximized, the desktop view is minimized and the *Notifications Bar* is shown at the bottom of the screen. Tapping anywhere on the **Notifications Bar** (except on the SIP) will restore the PsionVU desktop.

Note: In order to use the SIP, turn on the automatic settings in ***Control Panel>Input Panel****.*

PsionVU Access

The *PsionVU Access program* allows you to open a different program, *PsionVU*, which enables you to customize your computer settings, remove or add shortcuts to the Favourites Bar and Control Panel, and limit access to various different components on the computer and the system tray icons for security. For details see "PsionVU Access" on page 112. To change your Desktop background, refer to "Shell Settings" on page 115.

To open *PsionVU*:

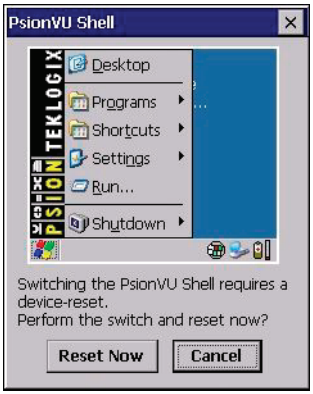
- Tap on the **PsionVU Access** icon in the *Favourites Bar*.

4.5.1 Restoring the Windows Classic Shell

The default Desktop appearance and actions can be restored by tapping on the **PsionVU Shell** icon in the *Favourites Bar*.

Note: Omnii will be reset if you choose to switch shells.

Figure 4.8 Shell Switch to Windows Classic Shell Desktop



4.5.2 Shutdown

Turning off Omnii places the hand-held into a power-saving *suspend* state. In this state, all radios remain on, but the display, keyboard backlight and processor are switched off. When Omnii is turned on from this state, operation resumes within a few seconds in the screen in which you were working prior to suspend.

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

Important: If the word 'FN' is displayed underlined in the taskbar area at the bottom of the screen, this key is locked "on" and Omnii will not switch off. Press the [FN] key twice followed by [ENTER/Power] to switch Omnii off.

However, if you've set the mode to "Lock" (see "Keyboard One Shot Modes" on page 95), Omnii can be turned off even when the [FN] key is locked 'on'.

Note: If your Desktop is switched to the Windows Classic Shell, the unit will display a shutdown options screen before turning off (see "Switching Omnii On and Off" on page 15).

Resetting Omnii

To perform a warm or cold reset, or boot to BooST, use the keyboard shortcuts described below.

Warm Reset

To execute a warm reset:

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

A warm reset closes open applications; any unsaved data are lost. Installed programs and saved data are preserved.

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

Cold Reset

To execute a cold reset:

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

Note: As part of the normal Windows Embedded CE cold boot process, the screen may go blank for a few seconds after the splash screen loading bar reaches the end. The desktop is displayed after a few moments.

Bootloader

Important: This reset returns Omnii to factory settings.

To implement the bootloader:

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

After the cold reset, the BooSt menu appears.

- Type '**1**' to "Run Main OS" (continue loading the Windows Embedded CE operating system).

Hard Reset

Important: This procedure is recommended as a last resort, when all other methods fail.

To execute a hard reset:

- Remove the battery.
- Using a coin, or other conductive item, connect pins 5 and 6 of the Omnii battery contacts for at least 6 seconds.

- Replace the battery and power Omnii on. The terminal will boot as if from a cold reset.

CONFIGURATION 5

5.1 Remote Desktop Connection

Remote Desktop Connection is an Omnii application used to connect to a Windows Terminal Server so that you can run a "session" on the Server machine, using Omnii (Windows Embedded 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. Locate the office closest to you at: *www.psionteklogix.com/service-and-support.htm*

5.2 The TekTerm Application

TekTerm is a powerful emulation application ideally suited for real time data transaction applications associated with mainframes and servers. Omnii 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*, P/N 8000073.

5.3 Pocket PC Compatibility

Omnii supports the AYGShell API set that allows Pocket PC-compatible applications to run on the hand-held. Windows Embedded CE includes application programming interface (API) compatibility support for the Microsoft Windows Powered Pocket PC 2002 shell in units running Windows Embedded CE.

The website listed below describes the APIs exposed through AYGShell and the application compatibility between Windows Powered Pocket PC 2002-based applications and Windows Embedded CE based devices:

http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dncenet/html/WINCENET_CEPCC_App.asp

5.4 The Control Panel

The Windows Embedded CE *Control Panel* provides a group of applications 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 57.

When Omnii boots up, the startup desktop (Windows Classic Shell) is displayed, and any applications stored in the Startup folder start up immediately.

To access the *Control Panel*:

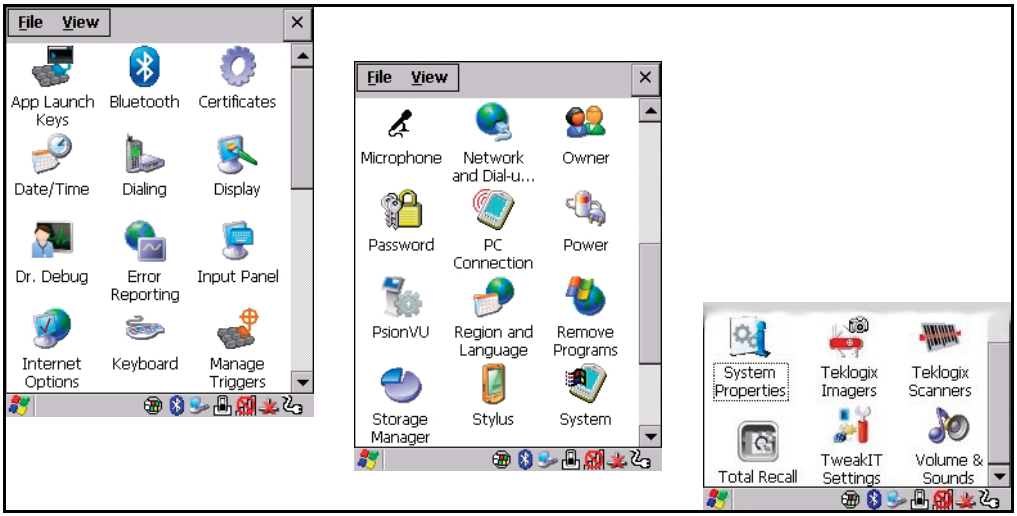
- Press [Windows] to display the *Start Menu*.
- Tap on **Settings**>**Control Panel**.

If you're using the keyboard:

- Press [Windows] 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 your Omnii.

Figure 5.1 Control Panel Icons



5.4.1 Control Panel Icons

The *Control Panel* provides a group of applications that allow you to customize and adjust settings on your Omnii. This section shows the related icons in the Control Panel and gives a brief description of each. "Control Panel Applications: Basic Setup" on page 86 describes the basic configuration for these applications.

App Launch Keys

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

Bluetooth

Opens the *Bluetooth* Manager which provides options for configuring various *Bluetooth* peripherals. It also provides the capability to use a *Bluetooth*-enabled cellular phone as a data modem to exchange information with other *Bluetooth* devices and provide network access.

Certificates

This program provides access to the Certificates Manager and Stores. The Certificates Manager displays the certificates in the Windows Certificates Store, and allows you to import, delete, and view these certificates. “Certificates” on page 88 directs you to the appropriate setup information.

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 display backlight and the appearance (colour scheme) on the unit desktop.

Dr. Debug

Provides both error diagnostic and troubleshooting tools.

Error Reporting

Allows you to enable or disable Microsoft error reporting prompts.

GPS Settings

Allows you to enable and configure GPS operation.

Input Panel

Provides the framework for a Microsoft 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.

Keyboard

Toggles character repeat on and off and specifies delay and rate for repeated characters. It also allows you to adjust the keyboard backlight threshold and intensity, and many other functions.

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.

Microphone

Enables you to adjust the gain for the specific microphones associated with your hand-held.

Network and Dial-up Connections

Displays network interfaces and allows new dial-up and VPN interfaces to be created. It also allows Windows configuration of the interface. Refer to “Configuring Your Wireless Network” on page 18 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.

PC Connection

Enables direct connection to a desktop computer (or through ActiveSync—see "Data Transfer between Omnii and a PC" on page 30). Selecting the *Change Connection* button allows you to change the type of direct connection 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 and specify a suspend threshold.

PsionVU

PsionVU enables you to customize your computer settings, remove or add shortcuts to the desktop and Control Panel, and lock down access to various different components on the computer and the system tray icons for security. With *PsionVU* and *PsionVU Shell* (see "The PsionVU Desktop Shell" on page 70) you can customize the entire look and feel of your User Experience.

Region and 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.

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 you to view information about the storage devices that are present, such as SD-MMC flash cards. For details, see page 144.

Stylus

Adjusts how Windows Embedded CE 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

You can display the system and memory properties, as well as create your device name. In the *Memory* tab, you can allocate memory between storage memory and program memory.

System Properties

Identifies the computer's software and hardware components, indicating which components are installed, their version or part numbers, and whether they are enabled or disabled.

Teklogix Imagers

The Teklogix Imagers applet is used to create, modify, delete, and activate imager settings. This icon is only present when the appropriate imager is installed. For detailed information, see Appendix D: "Teklogix Imagers Applet".

Teklogix Scanners

Provides scanner parameters and the bar code symbologies that the Omnii bar code scanner will successfully read.

Total Recall

Provides access to a backup\restore and deployment 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. You can also configure system (Windows) sounds and *.wav* files.

5.5 Control Panel Applications: Basic Setup

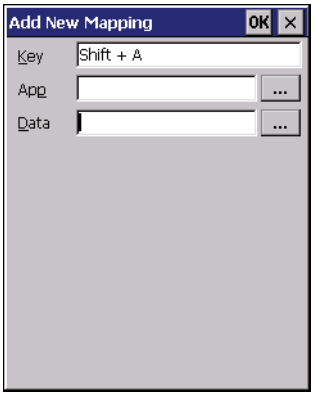
5.5.1 App Launch Keys

The *App Launch Keys* icon allows you to map a key to an application so that you can then launch the application from a single key-press.

- In the *Control Panel*, choose the **App Launch Keys** icon.

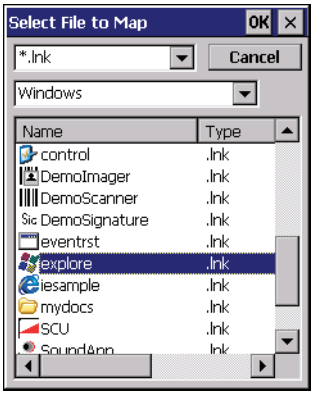
To assign an application key:

- Tap the **Add** button.



- Press the key you want to use to launch an application. (If an unsupported key is pressed, a message appears on this screen letting you know.)

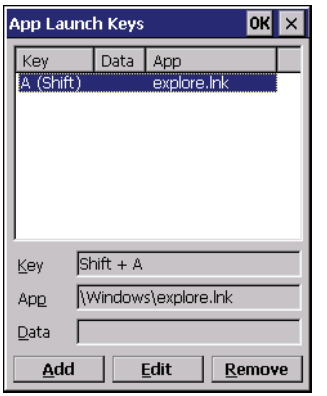
The cursor moves to the *App* field and a new screen is displayed where you can choose the application to which you want to assign the application key. If you need to, you can *Browse* through the information in your Omnii until you locate the application you want to launch.



- Once you've selected the file you want to map, tap on **OK**.

The cursor moves to the *Data* field. You can use this field if you need to need to define command line parameters for your application. If you don't want to assign any parameters, you can leave the *Data* field blank. If, for example, you want to assign an application launch key to launch the *WordPad* application, you can leave this field blank. If you want to assign an application launch key that will open a specific document in the *WordPad* application, you need to browse to and choose that document while the cursor is in the *Data* field.

- Tap on **OK**.



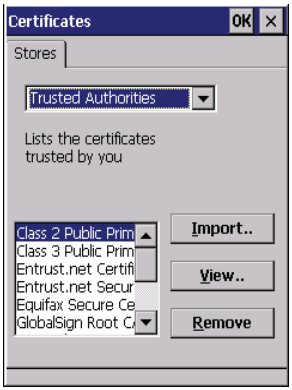
- If you need to Edit, Remove or Add another *App Launch Key*, you can do it from this final screen. Otherwise, tap on **OK** to save your *Application Launch Key*.
- To launch the application you chose, press the application key you assigned.

5.5.2 Certificates

This program provides access to the Certificate Manager and Stores. The Certificate Manager displays the certificates in the Windows Certificate Store, and allows you to import, delete, and view these certificates. Omnii checks that the certificate has been digitally signed by a certification authority that Omnii explicitly trusts. This option is used in conjunction with 802.1x authentication to enhance Omnii security.

- In the *Control Panel*, choose the **Certificates** icon.

Your Omnii has certificates preinstalled in the computer. *My Certificates* is the repository for the device's personal certificate store, *Other Authorities* is the repository for the intermediate certificate store, and *Trusted Authorities* is the repository for the Trusted Root certificate store.



You can import or remove certificates, and view certificate information for any listing, including names, dates, serial numbers, etc.

For a detailed description about Certificate setup for both the server and client-side devices (Omnii Hand-Held Computers), refer to the following website:

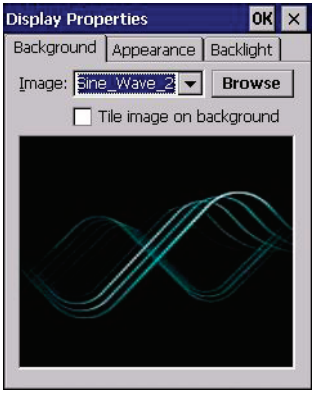
http://www.microsoft.com/windowsserver2003/techinfo/overview/security.mspx

5.5.3 Display Properties

- In the *Control Panel*, choose the **Display** icon.

5.5.3.1 Background

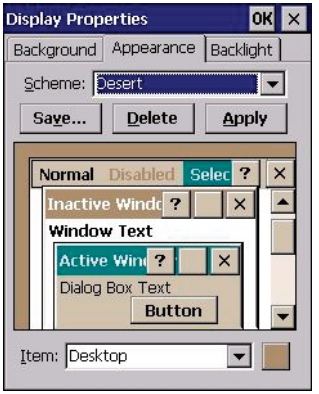
- In the *Display Properties* dialog box, open the **Background** tab.



This dialog box allows you to customize your background image.

5.5.3.2 Appearance

- In the *Display Properties* dialog box, open the **Appearance** tab.



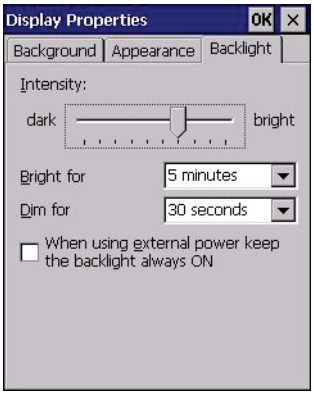
This dialog box allows you to customize the display colour scheme.

5.5.3.3 Backlight

The backlight is activated for a configurable amount of time. The *Display Properties* dialog box in the *Control Panel* allows you to specify the intensity of the backlight along with how long the backlight remains on when the unit is not in use (no key press, scanner trigger, etc.).

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.

Intensity

This parameter is used to adjust the light intensity of the Omnii backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the 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

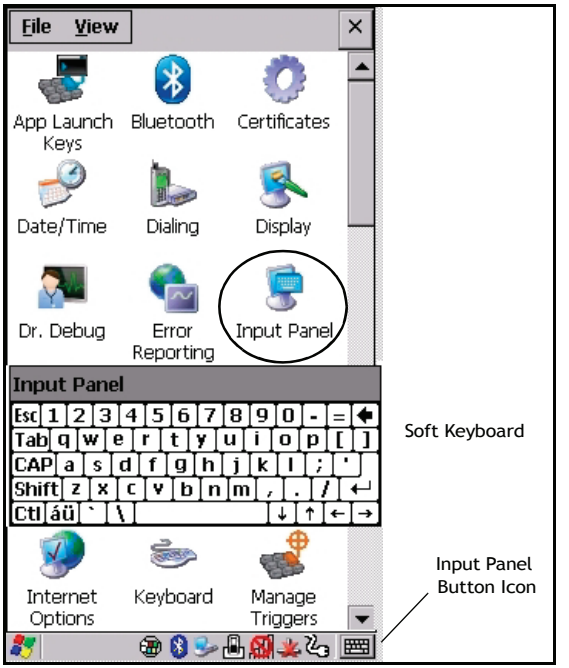
The value chosen from this drop-down menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) after expiration of the Bright For delay and as long as no user action takes place (such as a keypress or scan trigger). At the expiration of the Dim 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 Omnii is operating with external power (not battery power). If Omnii is drawing power from its battery, this option is ignored and the other parameters defined in *Display Properties* dialog box take effect.

5.5.4 Input Panel

Omnii is equipped with a Soft Input Panel (SIP). Shown below is the standard Microsoft SIP, accessed from the Control Panel.



Tapping on the *Input Panel* button displays a soft input panel (soft keyboard) that can be customized using the *Input Panel* dialog box.

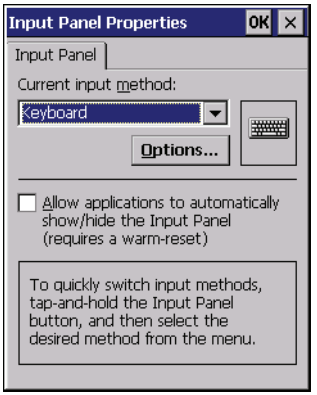
Important: ***If the Input Panel button icon is not visible in the taskbar, from the 'Start' menu, tap on Settings>Taskbar and Start Menu. Tap the checkbox next to 'Show Input Panel Button'. To remove this icon from the taskbar, tap in the checkbox to erase the check mark.***

The soft keyboard operates just like a standard keyboard except that rather than pressing a key, you tap on letters, numbers, modifier keys, etc. on the Omnii screen.

To customize the appearance and behaviour of the soft keyboard:

Tap on the **Input Panel** icon in the *Control Panel*.

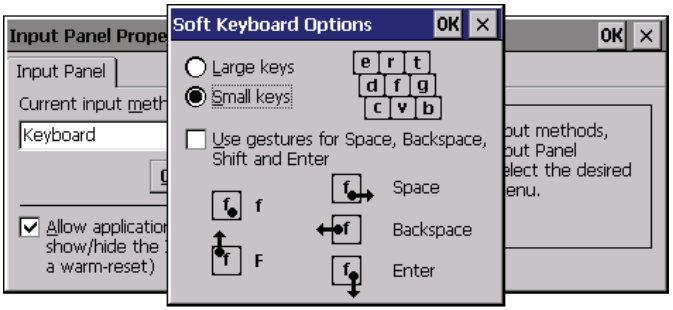
Figure 5.2 Input Panel Properties



- Tap on the **Options** button to change the appearance of your soft keyboard.

Note: You can also display this dialog box by double-tapping on the Input icon in the far-right corner of the taskbar.

Figure 5.3 Soft Keyboard Options



5.5.5 Keyboard Properties

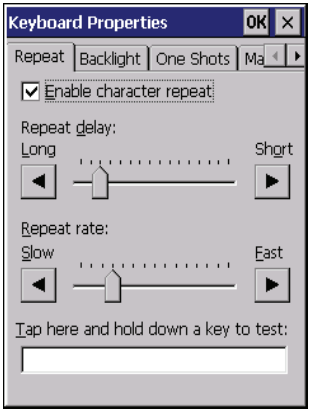
This icon displays the *Keyboard Properties* dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [FN] and [SYM] modifier keys. This dialog box also allows you to define macro keys and Unicode characters.

- In the *Control Panel*, choose the **Keyboard** icon.

5.5.5.1 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 in milliseconds 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.

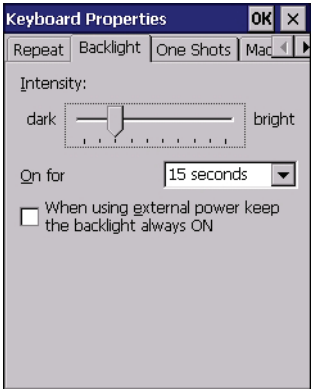
Repeat Rate

The value assigned for the *Repeat Rate* parameter determines how quickly the key you press repeats and is measured in characters per second (cps). 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.

5.5.5.2 Keyboard Backlight

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



Intensity

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

Note: The keypad backlight maximum brightness will decrease over time as it ages. Use mid-range intensity settings when possible to extend the backlight lifespan. When the backlight starts to dim, use this parameter to make it brighter.

ON For

The value chosen from this drop-down menu determines the duration of time that the keyboard backlight stays on after the last user action (keypress or scan trigger).

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

5.5.5.3 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 on your Omnii behave. For each modifier key—[ALT], [SHIFT], [CTRL], [FN], and [SYM]—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] key is locked 'on', the taskbar at the bottom of the screen displays it underlined. If this key is displayed without the underline in the taskbar, you'll know that the 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.

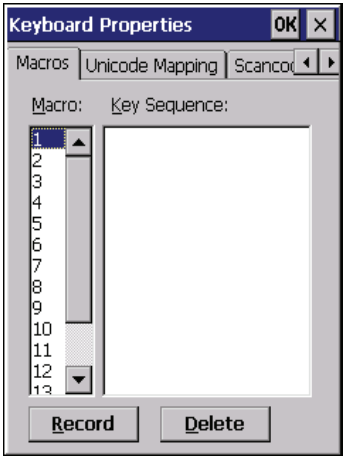
OneShot/Lock

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'.

5.5.5.4 Keyboard Macro Keys

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



A macro has 200 programmable characters (or "positions"). The macro keys can be programmed to replace frequently used keystrokes, along with the function of executable keys including [ENTER], [BACKSPACE] and [DEL] ([FN]-[BACKSPACE]), function keys and arrow keys.

Recording and Saving a Macro

You can program up to 6 macro keys, depending on your keyboard layout. You can also increase the number of virtual macro keys up to 15 using *Scancode Remapping* (for details, see "Scancode Remapping" on page 100).

- In the *Macro* menu highlight a macro key number, for example macro 1, to assign a macro to macro key [M1]. Choose the **Record** button.

A message screen is displayed instructing you to *Enter Key Strokes to Record*.

- Type the macro sequence you want to assign to the Macro key. 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, press the key sequence: [CTRL] [ALT] [ENTER], or choose the **Stop Recording** button.

A new screen called 'Verify Macro' displays the macro sequence you created. The *Save* button is highlighted.

- Press [ENTER] to save your macro, or highlight CANCEL and press [ENTER] to discard it.

Executing a Macro

To execute a macro:

- Press the macro key to which you've assigned the macro. For example, if you created a macro for *macro key 1*, press [M1] to execute the macro.

Deleting a Macro

To delete a macro:

- In the *Macros* tab, highlight the **macro number** you want to delete.
- Choose the **Delete** button.

5.5.5.5 Unicode Mapping

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

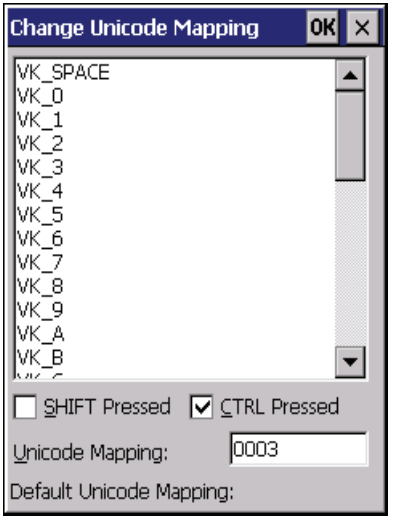
The *Unicode Mapping* tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. For example, the sample screen above shows "a (U+0061)" indicating that the character "a" is represented 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

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

- Choose the **Add/Change** button.



- 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.

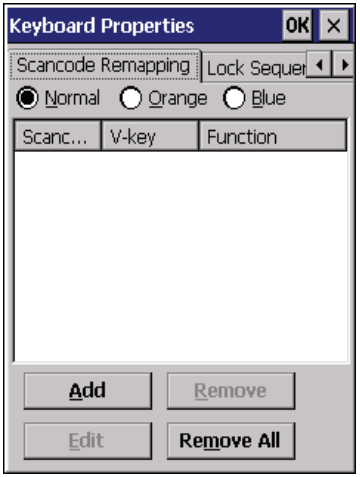
5.5.5.6 Scancode Remapping

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/Power] key, etc.), perform a function (e.g. turn the scanner on, change volume, etc.) or run a macro.

There are three different tables of scancode mappings: the *Normal* table, the *FN* table and the *SYM* table.

Note: When using the Mobile Devices SDK Developers' Guide (P/N 8100016), note that the [ORANGE] key is interchangeable with the [SYM] key. Similarly, in the context of the scancode mapping tables, 'Orange' is interchangeable with 'SYM'.

The *Normal* table defines unmodified key presses; the *FN* table defines key presses that occur when the [FN] modifier is on; the *SYM* table defines key presses that occur when the [SYM] 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.



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 labelled 'V-Key'. A virtual key that is 'Shifted' or 'Unshifted' is displayed in the third column labelled 'Function'.

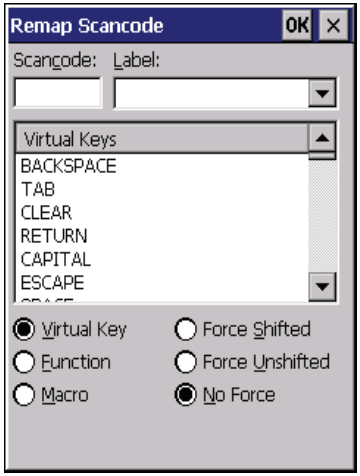
If the scancode is remapped to a function or a macro, the first and second columns remain blank while the third column contains the function name or macro key number (e.g., Macro 2).

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.



- 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 on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
- Tap on **OK** to save your changes.

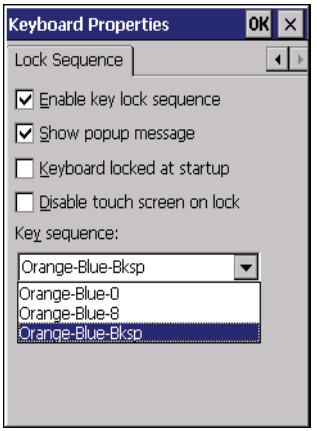
Removing a Remap

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**.

5.5.5.7 Lock Sequence

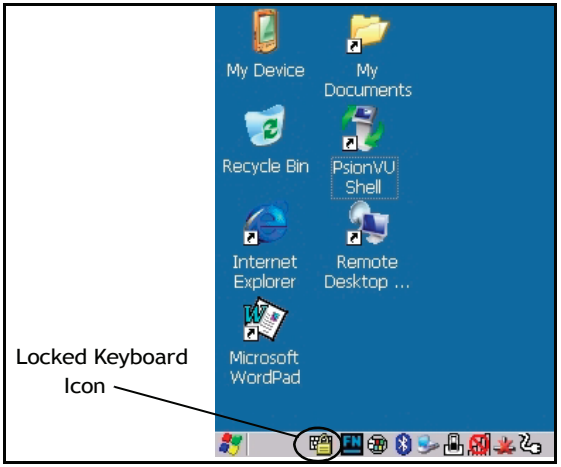
The *Lock Sequence* menu allows you to lock the Omnii keyboard to prevent keys from being pressed accidentally when, for example, the unit is inserted in a holster.



- 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* drop-down 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 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.



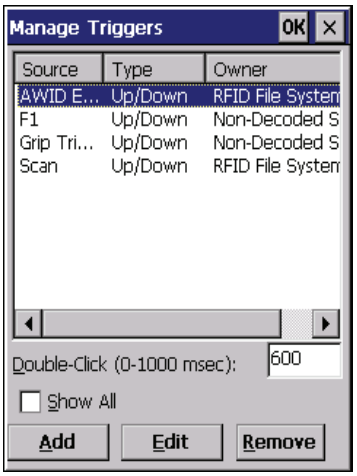
- Type the key sequence to unlock the keyboard.

5.5.6 Manage Triggers

Allows users to configure how bar code scanners and other devices such as RFID readers 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(s)—sometimes referred to as "trigger consumer(s)"—of the trigger source. Along with keyboard keys, the external trigger (scan button) is software-based. When the specified key is pressed, the owner (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 107.

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 page 106), so that you can add new trigger mappings.

Edit

Tapping this button brings up the *Edit Mapping* dialog (see page 106), so that you can edit existing trigger mappings.

Remove

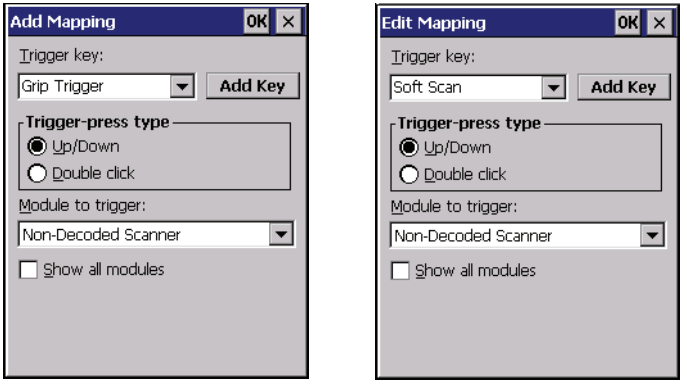
Tapping this button removes an existing mapping.

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 made will be discarded.

5.5.6.2 Add and Edit Trigger Mapping

These dialogs allow you to add and edit trigger mappings.



Trigger Key

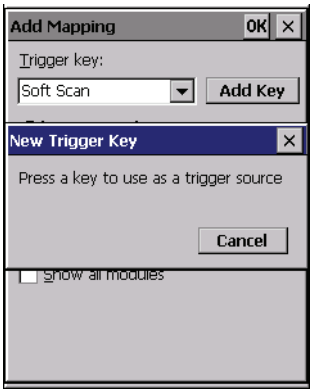
This drop-down list allows you to specify the source of the trigger events, such as the *Soft Scan*, *Left Scan*, etc., for the trigger module selected.

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 or RFID Readers.

It is also possible to map different sources to the same module (trigger consumer)—for example, two different trigger keys can be mapped to the RFID File System.

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.



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.

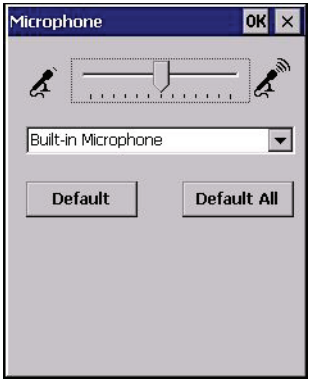
Show All Modules

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

5.5.7 Microphone

- In the *Control Panel*, choose the **Microphone** icon.

Use this dialog box to adjust the gain for the specific microphones associated with your hand-held.



- Tap on the drop-down menu, and choose the microphone for which you want to adjust the gain.
- Slide the microphone tab to the left to decrease the gain and to the right to increase the gain.

Tapping on the *Default* button sets the current microphone you've chosen to the default gain. Tapping on *Default All* sets *all* microphones listed to their default gain.

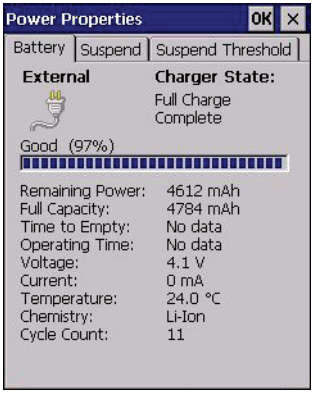
5.5.8 Power Properties

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

- In the *Control Panel*, choose the **Power** icon.

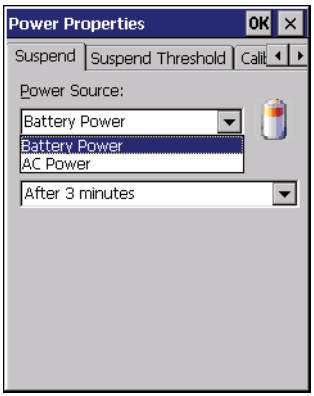
5.5.8.1 Battery Capacity

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



5.5.8.2 Power Saving Suspend

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



Power Source

This drop-down menu allows you to specify whether the unit is using *AC Power* or *Battery Power*.

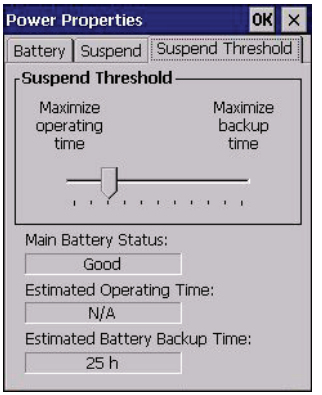
Suspend Timeout

Important: Psion Teklogix recommends setting the Suspend value to 3 minutes. To further reduce power consumption, carefully consider the duration of time that the display backlight is 'on' (see "Backlight" on page 90).

When Omnii 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 Omnii CPU enters a sleep state, and wireless communication is shut off. The state of the device (RAM contents) is preserved. Pressing [ENTER] wakes the system from suspend state.

5.5.8.3 Suspend Threshold and Estimated Battery Backup



The *Suspend Threshold* adjustment tells the system when to shut down when the battery drains. If you choose *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.

Important: ***Selecting Maximum backup time will reserve approximately 20% of the battery capacity for memory backup. Once the battery is drained, the system RAM memory is lost and the unit must cold boot.***

In most real-time transaction environments this is not a problem (it only takes a few seconds to cold boot). Batch transaction environments, where data is not saved to a non-volatile memory (such as an SD 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.

The Omnii Windows Embedded CE 6.0 environment does not store any critical data in RAM (such as the registry or file system).

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

The *Estimated Battery Backup* is the amount of battery power that has been reserved or set aside to protect data until a charged battery can be installed in the hand-held. When the battery capacity is depleted up to the *Estimated Battery Backup* reserve specified in the *Suspend Threshold* menu, Omnii shuts off automatically and uses the reserve power to preserve the data stored on the computer. Once Omnii shuts down, it cannot be switched on until a fresh battery is installed, or the unit is inserted in a docking station or cradle.

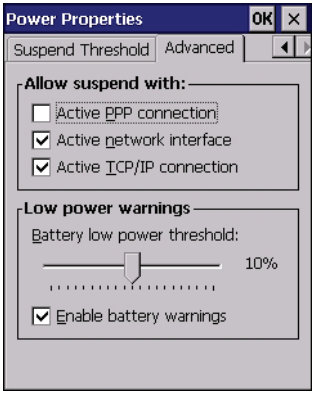
- Slide the **Suspend Threshold** button to the right to increase the battery capacity reserved for backup purposes. Data will be preserved to a maximum of 124 hours.
- Slide the **Suspend Threshold** button to the left to decrease the power reserved for backup purposes; this increases the Omnii operating time—the amount of time the unit will operate before shutting down—but reduces the power reserved for backup purposes to a minimum of 24 hours.

Internal super-capacitors will protect the data stored in the computer while the battery is swapped for a fully charged one.

Important: ***Once the battery is removed, the super-capacitors will preserve the data stored on Omnii for approximately 5 minutes. It is critical that you install a charged battery before this time elapses.***

5.5.8.4 Advanced

- In the *Power Properties* dialog box, open the **Advanced** tab.



Allow Suspend With:

This menu allows you to specify whether or not your unit will enter Suspend Mode 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 menu allows you to specify the remaining battery capacity at which a warning message is displayed on the Omnii screen, from 0% to 20%.

5.5.9 PsionVU Access

PsionVU Access enables you to customize your computer settings, remove or add shortcuts to the desktop and Control Panel, and limit access to various different components on the computer and the system tray icons for security.

*Note: The Desktop theme can be changed from the default Windows Classic Shell to the PsionVU Shell either in the **PsionVU Access** settings (see "Other Shell Themes" on page 117) or by tapping on the Desktop icon **PsionVU Shell** (see "The PsionVU Desktop Shell" on page 70).*

- In the *Control Panel*, choose the **PsionVU** icon.

Figure 5.4 PsionVU Settings

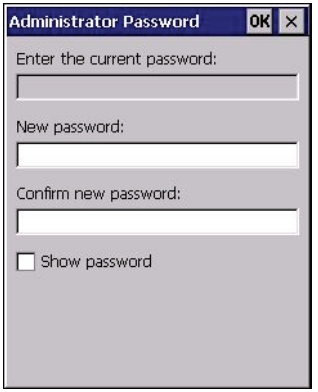
5.5.9.1 Administrator Password

By setting an Administrator Password, you can limit access to various different components on the computer and the system tray icons for security. The default security setting allows User access to all options, therefore restrictions and settings can be configured without setting a password.

Note: If a setting or restriction is configured without setting an Administrator password, the following message is displayed: "!Administrator password is currently not set." Once a password has been set, the message will disappear.

When an administrator password is set, the restricted options are accessed using a key combination. If a password has been set, the user would be prompted for the password.

The option *Show Password* changes the displayed password from hidden (***) to readable.

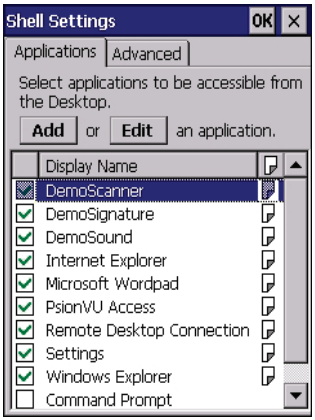


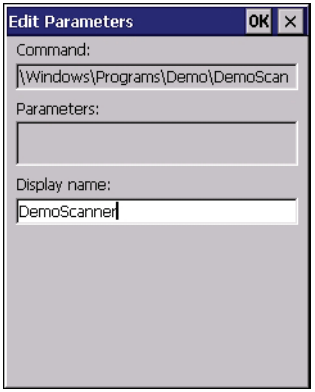
When exiting the *PsionVU* application, the *PsionVU Access* dialog will come up that enables you to change from you current Access setting to the other (Administrator or User). The computer must be reset following a change, and a confirmation will appear to enable you to continue or dismiss the change.

5.5.9.2 Shell Settings

The Shell Settings application has two menus: *Applications* and *Advanced*.

Applications





The *Applications* menu lists all the applications installed on the computer, alphabetically. The items checked in this view are shown on the Desktop.

The *Add* and *Edit* buttons allow you to search for and add an application to the list of items in the selection window. You can add a maximum of 18 applications, after which the *Add* option will be greyed out and the following message is displayed: "!Maximum 18 entries reached."

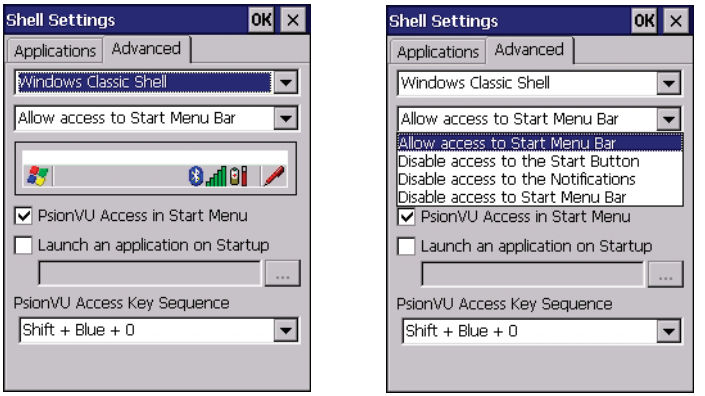
When you select an application and tap on *Edit*, you will see fields for *Command, Parameters*, and *Display Name*.

- **Command:** The *Command* field is prefilled with the path and name of the executable (*.exe*) or corresponding link (*.lnk*). If the selected file can't be found (e.g. external memory card has been removed, files have been deleted), a message will be displayed at the bottom of the screen: "These files cannot be found."
- **Parameters:** The *Parameters* option provides the option of adding extra parameters to the application (for *.exe* files only, not *.lnk*). For example, if the *Command* field is running "pword.exe" (Microsoft WordPad), the *Parameters* field could specify a document to open.
- **Display name:** This is an editable field which is prefilled with the name of the application.

Advanced

The *Applications* menu allows you to enable or disable some device functions.

Windows Classic Shell



The following options can be enabled or disabled in the Windows Classic Shell Desktop theme:

- **Start Menu Bar**: If disabled, access to both Start Menu and Notifications are disabled. The Notification tooltips will still display. Any changes made will occur after a device reset.
- **Start Button:** If disabled, access to the Start Button and Notifications are disabled. The Notification tooltips will still display.

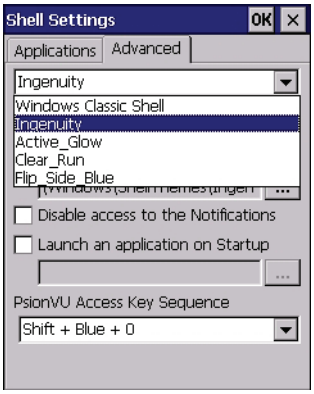
Note: If "Disable access to the Start Button" is selected, but the "PsionVU Access by Key Sequence" remains unchecked, you will see the following status-message "!A Key Sequence is required when the Start Button is disabled.", the checkbox will be auto-checked, and the focus will be set to the key-sequence selection.

- **Notifications:** If disabled, the Notifications tooltips will still display.
- **PsionVU Access in Start Menu:** When this box is checked, the *PsionVU Access* program will be shown in the *Start Menu>Programs* list.

The following item is not optional:

- **PsionVU Access Key Sequence:** Sets the key sequence to open *PsionVU Access*.

Other Shell Themes



The following options can be enabled or disabled in the PsionVU Shell Desktop themes (shown in the drop-down list as *Ingenuity*, *Active_Glow*, *Clear_Run*, and *Flip_Side_Blue*):

*Note: The Desktop theme can be changed from the default Windows Classic Shell to one of the PsionVU themes shown here—but by tapping on the Desktop icon **PsionVU Shell** (see "The PsionVU Desktop Shell" on page 70), the "Ingenuity" theme is automatically loaded. The computer must be reset in order for the shell to change.*

- **Use this picture as the background:** You can select a picture as the Desktop background.
- **Notifications:** If disabled, the Notifications tooltips will still display.
- **Launch an application Startup:** A window is displayed listing all of the installed and added applications. Any applications selected will startup after a reboot.

The following item is not optional:

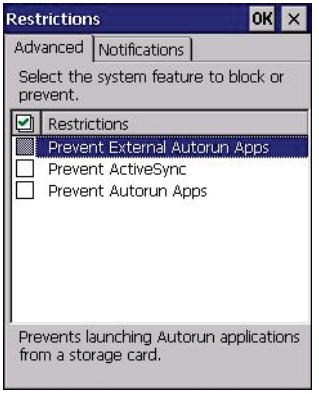
- **PsionVU Access Key Sequence:** Sets the key sequence to open *PsionVU Access*.

5.5.9.3 Restrictions

This section deals with items that are by default available to users but can be restricted by an administrator.

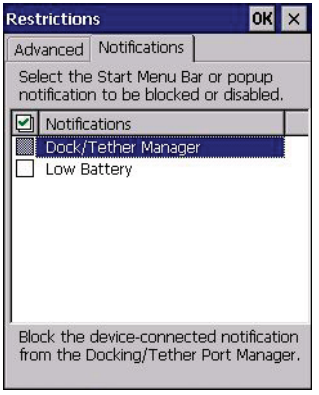
Advanced

The *Advanced* menu lists the system features you can restrict or block.



Notifications

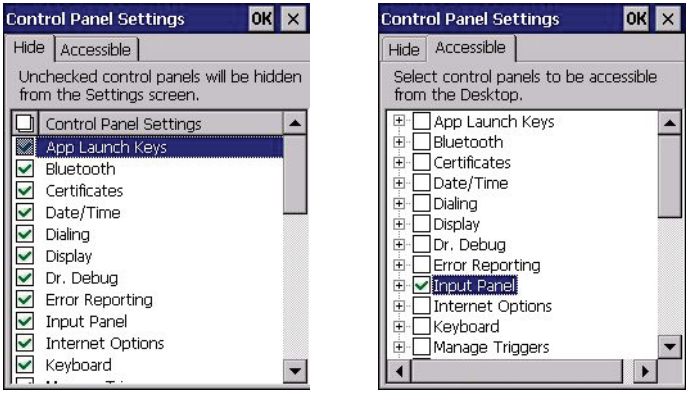
The *Notifications* menu allows you to block or disable notifications.



5.5.9.4 Control Panel Settings

In these menus you can set which applets and tabs you want to *Hide* in Control Panel, and which applets and tabs will be *Accessible* as a shortcut icon from the Desktop.

- You have the option of setting the entire applet or specific tabs within the applet as hidden or accessible. Any applet that can't be set is greyed out.



- You can add a maximum of 18 applications, after which the following message is displayed: "!Maximum 18 entries reached."

5.5.9.5 Import/Export to File

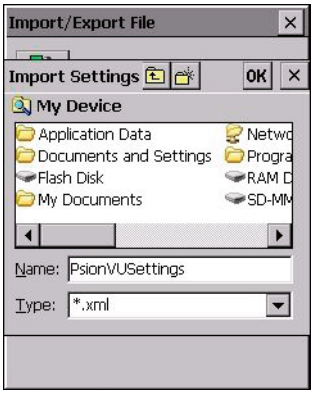
This option enables you to *Export* your settings file (*.xml*), and save it in the location of your choice. In addition, an Administrator has the option to *Import* these settings from one device to multiple devices *of the same operating system*.

Important: A copy of this file should also be saved in a central repository for all Psion Teklogix .xml files with a predefined name so that other Psion Teklogix utilities can locate it.

Tapping on the **Export** button will display a "Save As" Export Settings dialog, with the default name *PsionVU_Settings.xml*, which the Administrator can change even after it has been saved.

The *.xml* file contains all of the PsionVU configured settings, including the *Administrator Password*. When the file is imported to a device, the new password is applied immediately.

- Whether choosing to import or export files, the same file location options under *My Device* will be listed. Following the action, a message stating the success of the operation and the location of the file will be displayed.
- With the exception of the password, changes made to settings will take effect only after a warm reset. If further changes to the configuration are made, they will overwrite the changes caused by the import operation. After importing a file, a dialog will appear to enable you to reset now or later.



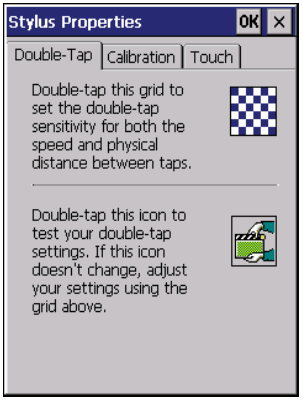
5.5.10 Stylus Properties

Note: Touchscreen calibration may not be enabled on your unit. If your screen appears to require recalibration, contact your supervisor.

- In the *Control Panel*, choose the **Stylus** icon.

5.5.10.1 Double-Tap

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



5.5.10.2 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 You will be prompted to save the calibration data.

Important: If you do not receive a prompt to save your data, there could be a problem with your touchscreen hardware. Contact your Psion Teklogix representative.

5.5.10.3 Touch

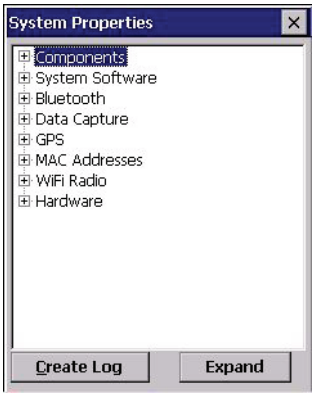
This tab allows you to disable the touchscreen.

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

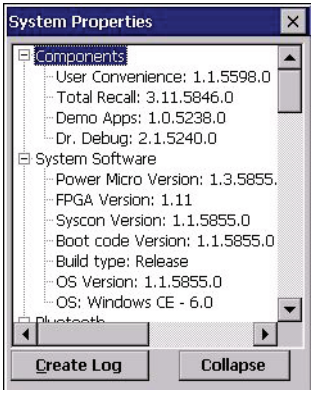
5.5.11 System Properties

This program identifies the computer's software and hardware components, indicating which components are installed, their identification, version or part numbers, and whether they are enabled or disabled.

- In the *Control Panel*, choose the **System Properties** icon.



- You can create a log (*SystemProperties.xml*) of your current components, which will be placed in the *My Devices* folder in Windows Explorer.



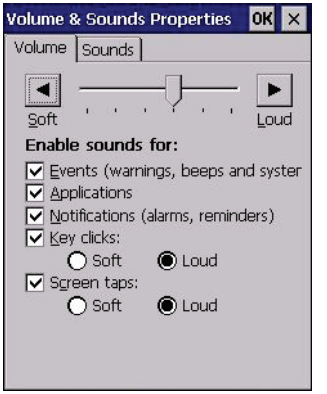
- Instead of expanding each section of items individually, you can also choose to open all the lists at once by choosing the *Expand* button, which will then change to a *Collapse* button to enable you to collapse all the sections as well.

5.5.12 Volume & Sounds Properties

Omnii supports several audio options, including *Bluetooth*. The beeper is used for the standard sounds: key clicks, screen taps, and scanning. The optional rear speaker can be used for system (Windows) sounds and *.wav* files. When a rear speaker is absent, those sounds are routed to the front receiver.

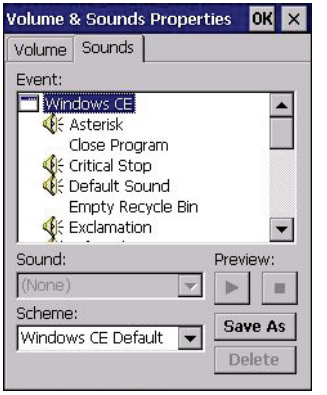
- In the *Control Panel*, choose the **Volume & Sounds** icon.

5.5.12.1 Volume Adjustments



- Slide the volume button to the left to lower the volume or to the right to increase the volume.
- Under the heading *Enable sounds for*, enable the conditions under which you want the hand-held to emit a sound.

5.5.12.2 Sound Adjustments



This dialog box allows you to assign sounds to identify particular actions. For example, you can choose the sound your hand-held will emit when you close a program and choose another sound for a failed scan, etc.

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 metre 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.*

- In the *Control Panel*, choose the ***Bluetooth*** icon to display the ***Bluetooth*** *Manager* screen.

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

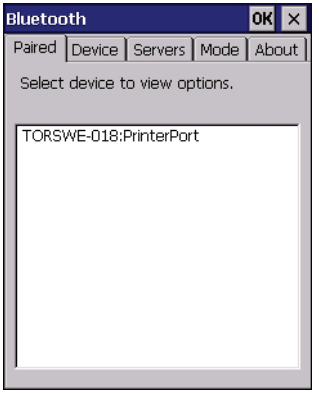
The *Bluetooth* radio is disabled by default. Before you begin the setup process:

- Tap on the **Mode** tab, and tap in the checkbox next to *Turn on **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.

5.6.1 Paired Tab

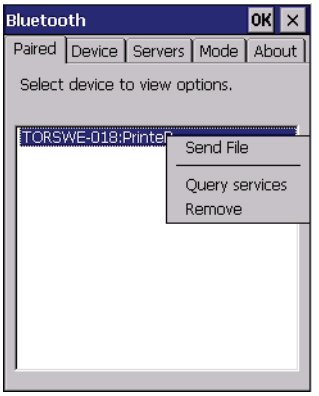
This tab lists all paired devices and their corresponding services. The format of the name is <Device Name>:<Service Name>. Additional information may appear in this screen such as the Port Numbers for Serial Profiles service.



To learn how to scan for devices to pair, review "Device Tab" on page 127.

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

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



The displayed menu depends on the type of the service chosen.

Query Services and Remove Commands

- *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:

- *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

In this tab, users can discover and display *Bluetooth* devices.

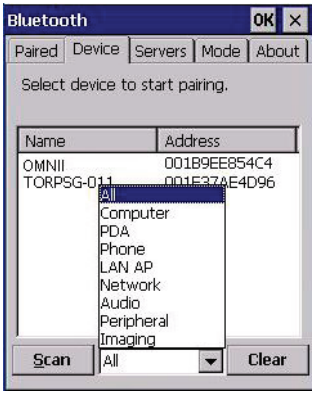
5.6.2.1 Discovering and Removing Devices

Scan discovers *Bluetooth* devices in range of Omnii 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 number of devices listed to a particular type of device, refer to "Filtering By Class of Device (COD)", next section.

5.6.2.2 Filtering By Class of Device (COD)



This menu allows you to filter the displayed devices by their COD. If, for example, you choose **Computer** from this menu, only the devices that have the matching *Computer* COD value will be displayed. 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.

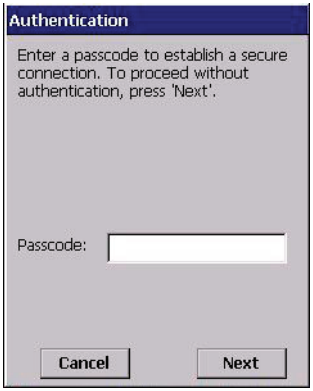
Delete removes this device from the list.

5.6.2.4 Pairing a Device

To pair devices:

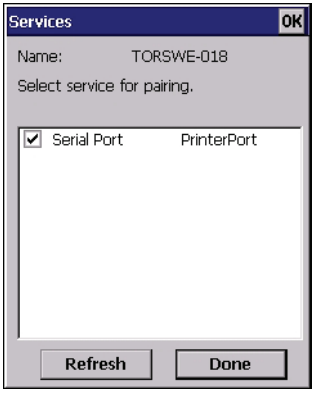
- Follow the manufacturer's instructions to place the remote device in pairing mode.
- Choose the **Devices** tab and **Scan** for devices in your area.
- When the scan is complete, tap on the **device** to which you want to pair.
- In the pop-up *Device* menu, tap on **Pair**.

An *Authentication* dialog box is displayed.



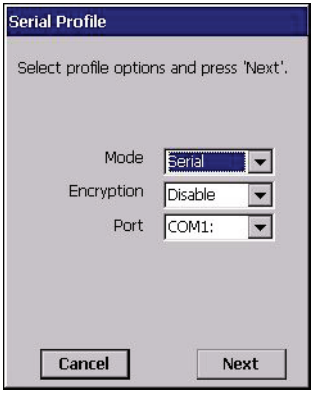
- If the remote device has authentication enabled, type the PIN in this dialog box.
- To proceed *without* authentication, tap on **Next**.

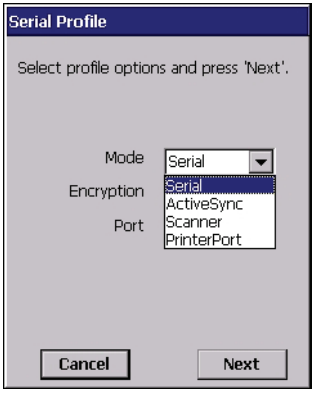
After entering the device *PIN*, the *Services* dialog appears with a list of services available for that device.



- 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 four different *Modes*: *Serial*, *ActiveSync, Scanner*, and *Printer Port*.

Serial is used for simple serial port communication.

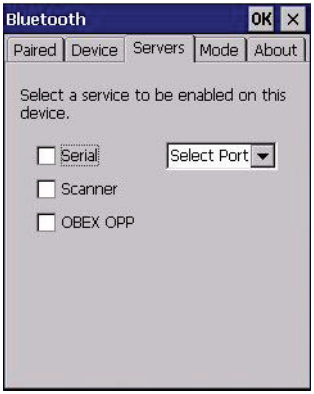
ActiveSync is for ActiveSync-over-*Bluetooth*.

Scanner is used to create a connection to a bar code scanner. A serial connection is created, then the *Scanner Services* is notified of the connection so that the incoming bar code scan will be forwarded to *Scanner Services* directly.

Printer Port must be chosen here if you want to communicate with a paired *Bluetooth* printer. For further details, see "Mode Tab" on page 132.

- 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 Omnii, the remote device is considered the '*Bluetooth* master' and the hand-held, the '*Bluetooth* slave'. In order for the remote device to connect to the hand-held, Omnii 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.

You can assign either a BSP or a COM prefix from the drop-down menu. BSP (*Bluetooth* Serial Port) was created by Microsoft to allow *Bluetooth* to have its own serial prefix in order to free up virtual COM prefixes as these are limited and are widely used.

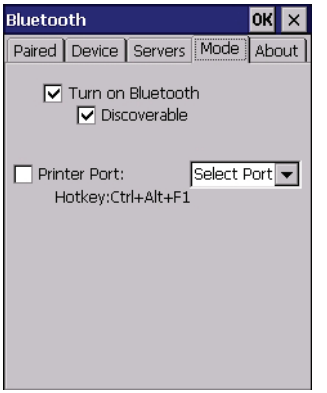
Note: Even after a Serial Port Profile server is created, an application must open the created port before a remote device can connect.

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 Omnii 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.

5.6.4 Mode Tab



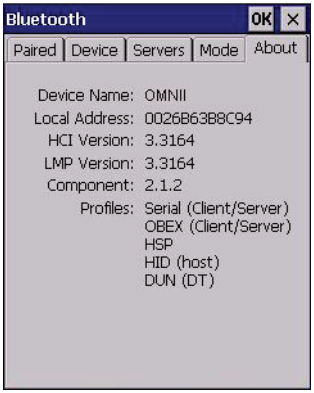
Turn on *Bluetooth* activates the *Bluetooth* radio.

Discoverable determines whether Omnii is visible or invisible to other devices.

Printer Port allows you to assign and enable a virtual outgoing COM port selected from the drop-down menu to communicate with a paired *Bluetooth* printer. Keep in mind that when a port is chosen, the printer must be on and connected to the chosen port for a remote device to be able to connect.

- Select a port within the *Printer Port* drop-down list, e.g. **BSP1:**
- Check the *Printer Port* check box.
- Open the *Device* tab and tap on **Scan**.
- Tap-and-hold each *Bluetooth* Printer device entry and then select **Pair**, key-in the Pass-code (if needed) and then tap **Done**. DO NOT select any services!
- Close the *Bluetooth* Manager.
- Select the *Bluetooth* device to print to—you will need to key-in (or programmatically raise) the following key sequence [CTRL] [ALT] [F1] .
- You can now select the *Bluetooth* device to which you wish to print.

5.6.5 About Tab



Device Name displays the broadcasted name of the hand-held. 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).

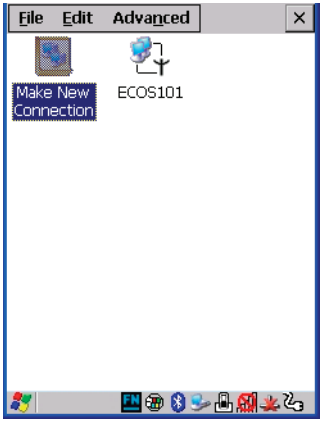
Profiles lists the supported profiles on this specific Omnii.

5.6.6 The Bluetooth GPRS WAN Connection

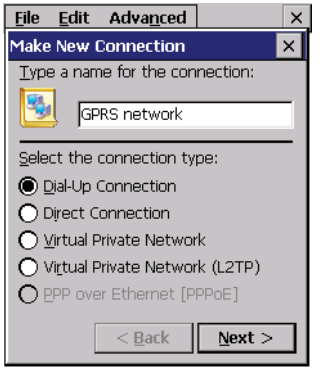
The following steps describe how to set up an Internet data connection using a GSM cellular telephone with Bluetooth. Omnii communicates via Bluetooth to the cell phone, which then accesses a WAN (Wide Area Network) and transfers data using GPRS.

1. Enable the *Dial-Up Networking service* in the cell phone.
2. Make the phone *discoverable*.
3. Pair the phone service with the Omnii Dial-Up Networking service using the *Bluetooth Manager*. (For instructions on pairing devices, refer to “Pairing a Device” on page 129.)
4. To set up the Internet parameters, choose the **Network And Dial-up Connections** icon from the *Control Panel*.

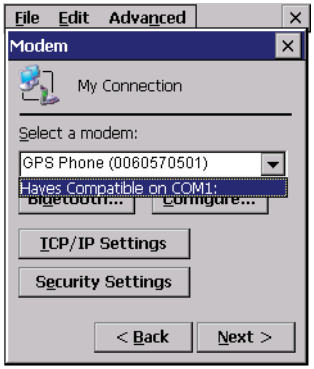
5. Tap on **Make New Connection**.



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

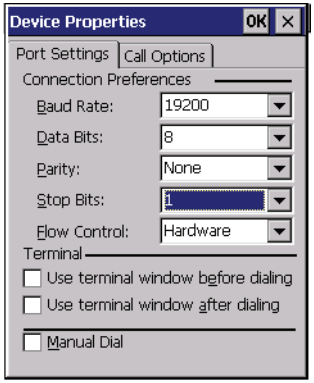


7. Choose the **Next** button to display the *Modem* dialog box.

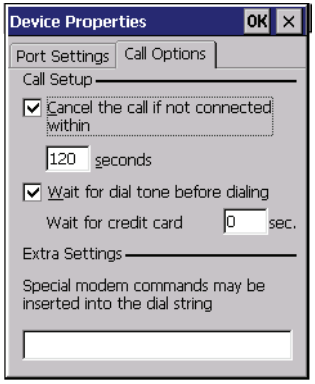


8. In the drop-down menu labelled *Select a modem*, choose the name of the modem with which you want to connect, and then choose the **Configure** button to display the *Device Properties* dialog box.

Omnii communicates via *Bluetooth* to your *Bluetooth* equipped cellular telephone and retrieves the parameters for the *Device Properties* dialog box. Omnii 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.

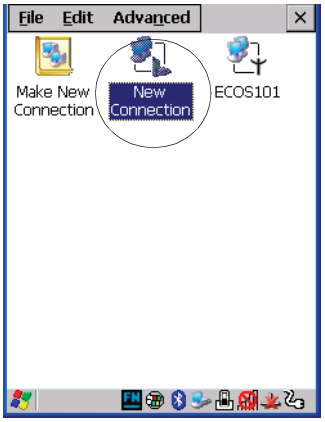
The phone number you enter is network carrier dependent. Once you've specified all the necessary information, choose the **Finish** button.

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, 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, *New Connection* is displayed. Tap on the **new** icon.

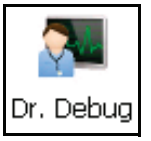


When you tap on your new connection, an onscreen message indicates the status of your connection: *connected*, *disconnected*, *error messages*, and so on.

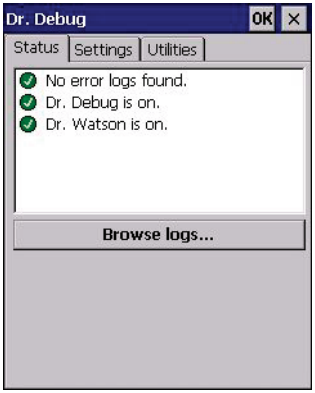
5.7 Dr. Debug

Dr. Debug is an error diagnostic and troubleshooting tool.

- Tap on **Start>Settings>Control Panel**. Tap on the **Dr. Debug** icon.

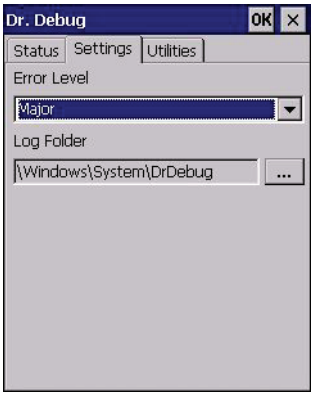


5.7.1 Status



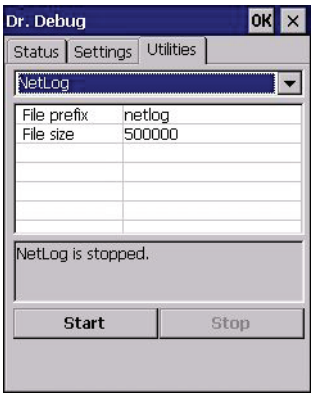
This tab indicates the status (on/off) of the debug engines. Tapping on **Browse logs** displays error logs for your review. The logs should be used as reference when working with Psion Teklogix Technical Support personnel.

5.7.2 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.

5.7.3 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.

5.8 Error Reporting

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

- Tap on **Start>Settings**>**Control Panel**>**Error Reporting** icon to access your options.

5.9 GPS (Global Positioning System) Settings

This applet allows you to define how the GPS module operates. You can determine when the GPS module is powered and operating, and choose from a set of GPS profiles built into the modem. You can also set up AGPS (Assisted Global Positioning System).

- Tap on **Start>Settings>Control Panel>GPS Settings** icon.

5.9.1 Power Tab

This tab allows you to dictate how the GPS module behaves. The *GPS Power* drop-down menu is used to control when the GPS is powered on and off.

- *Off* – the GPS module is left off, always.

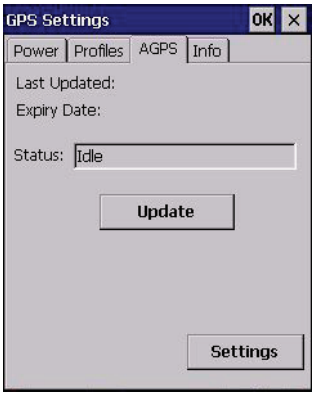
- *Always on* – the GPS module is powered on at all times regardless of the power state of the hand-held (suspend or standby).
- *On, and off in suspend* – the GPS module is powered on, but if Omnii is in suspend mode, the GPS module is turned off.

5.9.2 Profiles Tab

Tapping on the *GPS Profile Selection* drop-down menu allows you to choose an appropriate profile: *Default*, *Automotive* or *Pedestrian*.

- *Default* profile is a good general profile suitable for most uses.
- *Automotive* profile is designed for in-vehicle use, providing quick location updates as the vehicle moves. When the GPS module is set to this profile and the vehicle enters an area such as a tunnel where satellite coverage is interrupted, it *will* attempt to predict the vehicle position.
- *Pedestrian* profile is designed for those using the GPS module while walking. It takes into account the slower pace of the pedestrian when mapping the location of the user. When the GPS module is set to this profile and the operator moves into an area where satellite coverage is interrupted, the GPS module *will not* attempt to predict the operator's movement.

5.9.3 AGPS (Assisted Global Positioning System) Tab



To determine your location, a GPS module receives data from three or more GPS satellites in fixed orbit around the Earth. The GPS module triangulates your location based on the time it takes for signals to get to and from the satellites. This works well in fairly clear areas, outdoors for example. However, if you're attempting to triangulate your location in city centres where signals bounce off tall concrete buildings or from within a building, the GPS module will have greater difficulty calculating a fix.

AGPS reduces Time To First Fix (TTFF) and increases the likelihood of finding and keeping a fix in poor coverage areas such as indoor sites. AGPS downloads satellite ephemeris (orbital) data to Omnii periodically through Wi-Fi. The downloaded data is used by the GPS module to speed the process of getting a fix.

Update

- Click on the **Update** button to download *Extended Ephemeris (EE)* files from a secure host on the Internet using any interface that has an Internet connection. These files contain several days worth of ephemeris (orbital) data that can be used if the satellite's broadcast ephemeris is not available.

The *Status* field above the *Update* button displays the progress of the download, and once successfully downloaded, the *Status* field will read *Idle*.

Settings

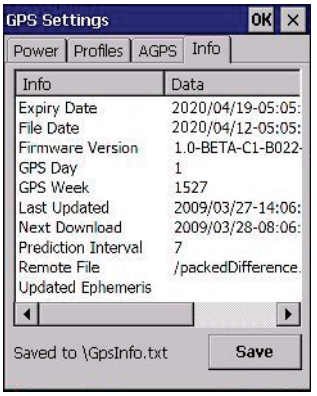
- Click on the **Settings** button to define the *AGPS server connection settings*.

The *AGPS server connection settings* drop-down menu allows you to choose from two settings: *Use default settings* and *Use custom settings*.

The *Use default settings* option is generally acceptable for most applications. Note that aside from the *Update* field in which you can choose how long the fix is stored in your Omnii, the field values cannot be edited.

The *Use custom settings* option is generally used to configure devices that will have access only to an *intranet* rather than the *Internet* and should only be altered with the assistance of qualified Psion Teklogix personnel. They will be able to help you configure your Psion Teklogix device(s) and web server to retrieve the ephemeris data.

5.9.4 Info Tab



This tab provides general information about the GPS module such as the firmware version, the date on which files were last updated, and so on. If GPS module support service is re-

quired, you may be asked to tap on the **Save** button in this tab and forward the information to Psion Teklogix support staff.

5.10 Storage Manager

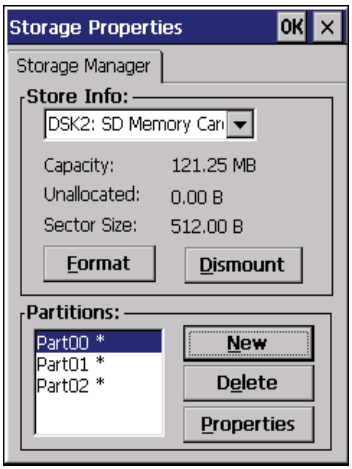
The Storage Manager allows you to view information about the storage devices that are present in Omnii, such as SD-MMC flash cards and Compact Flash cards.

5.10.1 Formatting a Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, similarly to 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. Select **Start> Settings>Control Panel**.
2. In Control Panel, double-click on the **Storage Manager** icon. The Storage Manager menu opens:



3. Select 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.

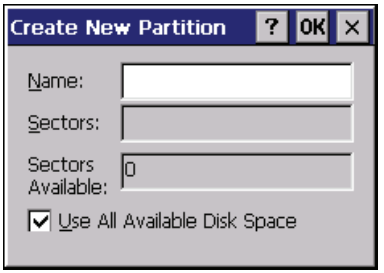
All partitions and information on the card will be erased during the formatting process.

5.10.2 Creating Partitions

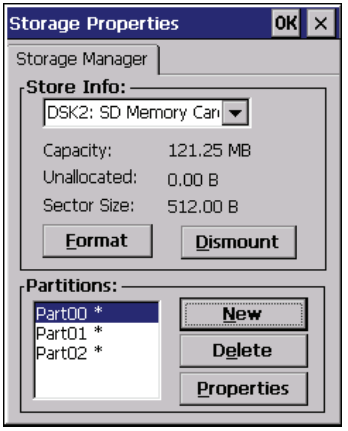
Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

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



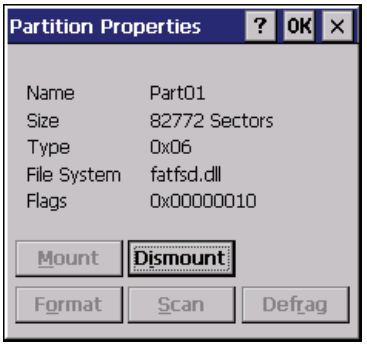
2. Type a name for the partition.
3. If more than one partition is desired, uncheck the *Use All Available Diskspace* checkbox, then specify the desired number of sectors to be used by the partition.
4. Press **OK**. The new partition appears in the *Partitions* list.



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.

5.10.3 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:

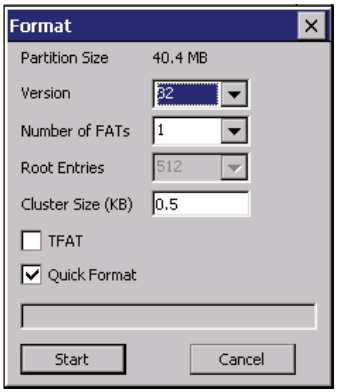
1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

To delete a partition:

1. Select the desired partition.
2. Tap the **Delete** button. A warning dialog appears.
3. 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:



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:

1. Choose the desired partition.
2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

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

5.11 Teklogix Imagers

The Teklogix Imagers applet is used to create, modify, delete, and activate imager settings. The principle uses of the applet are to decode bar codes and to capture images. A *Demonstration Application* is provided to demonstrate how the imager works. Refer to "Demo" on page 65 for details.

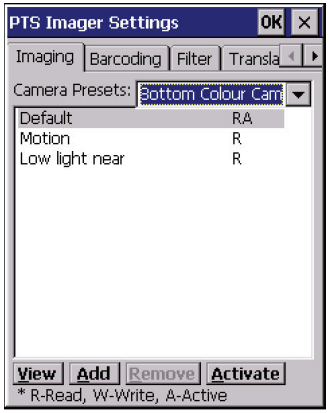
Refer to Appendix D: "Teklogix Imagers Applet" for configuration details.

To launch this applet:

- In the *Control Panel*, choose the **Teklogix Imagers** icon.

Note: This icon is only displayed when the appropriate imager is installed in your Omnii. If there is an imager installed but this icon is not present, additional software (ICS) may need to be installed.

To enable a newly-installed imager, Press and hold down the [FN] key and the [ENTER/Power] key simultaneously for a minimum of three seconds.



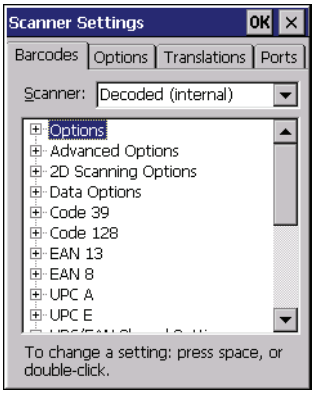
5.12 Teklogix Scanners

The *Teklogix Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor bar code scanner configuration 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.

Note: To enable a newly-installed scanner, press and hold down the [FN] key and the [ENTER/Power] key simultaneously for a minimum of three seconds.

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

5.12.1 Bar Codes Tab



5.12.1.1 Scanner

The drop-down menu to the right of the *Scanner* option allows you to choose configurations for one of the following scanner types, depending on what is installed in/on your hand-held: *Decoded* (internal), *Decoded* (Intermec ISCP), *Imager* and *Non-decoded*.

The symbologies listed in the *Barcodes* tab change to reflect the scanner you choose and the bar codes it supports. Always defer to your bar code scanner's programming manual when in doubt about the availability or settings for any parameter.

Note: Your Omnii comes preconfigured from the factory for internal scanner types. The type of scanner installed can be determined from the ***System*** *icon in the Control Panel, under the System Properties tab.*

Important: To improve the decode speed and performance, enable (set to 'on') only those codes that are required by the application.

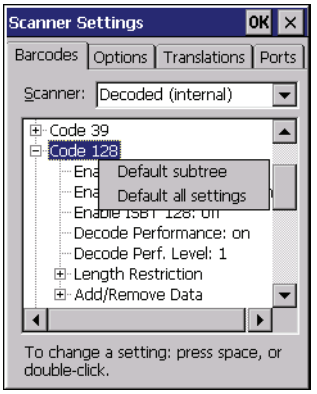
For information on configuring the bar code symbologies, see Appendix C: "Bar Code Settings".

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 these dialog boxes.

5.12.1.2 Restoring Default Settings

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.

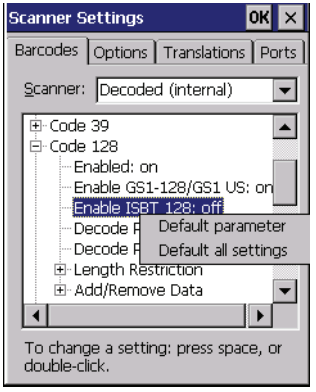
- Press and hold on a symbology (e.g., Code 128) to display a pop-up menu.



- 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:

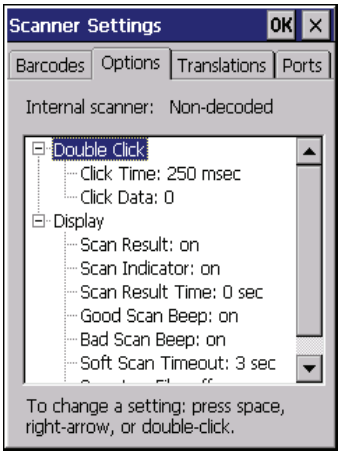
- Press and hold on the parameter you want to reset.



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

5.12.2 Options Tab

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



5.12.2.1 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 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 your Omnii 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.

Pressing the [ESC] key in this dialog box resets the data to zero.

5.12.2.2 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)

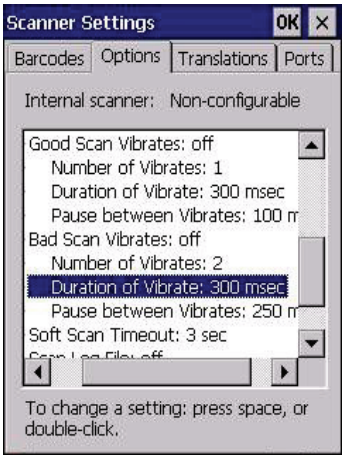
The value assigned to the *Scan Result Time* parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of 0 (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.

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 Omnii 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.

Good Scan Vibrates and Bad Scan Vibrates



These parameters determine whether or not Omnii creates a vibration 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. You can set the *Number* and *Duration* of vibrations, as well as the *Pause* between vibrations. The screen above shows the default settings.

Soft Scan Timeout

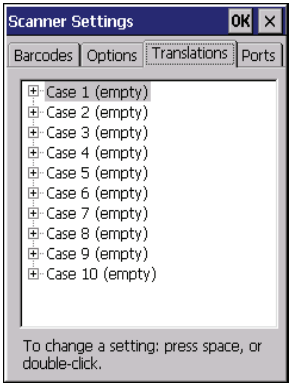
This parameter is used by the SDK "Scan" function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from *1* to *10 sec* (default is *3 sec*).

Scan Log File

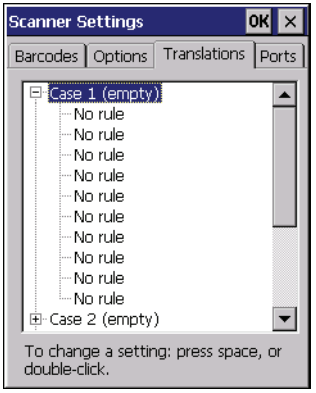
If this parameter is enabled, the input bar code and the modified/translated output bar code are logged in the file *\Flash Disk\ScanLog.txt*. Keep in mind that if *Scan Log File* is enabled, there is a slight performance reduction when performing multiple scans since the log file is written to persistent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

5.12.3 Translations Tab

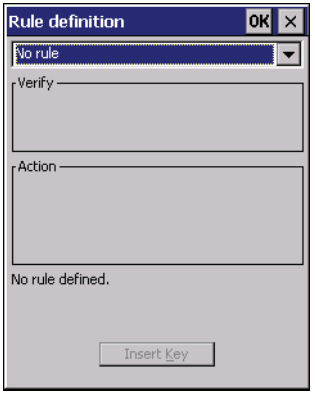
The *Translations* menu allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a bar code and a case will only be applied if all rules specified in the case are successful—if a rule within a case fails, the entire case fails.

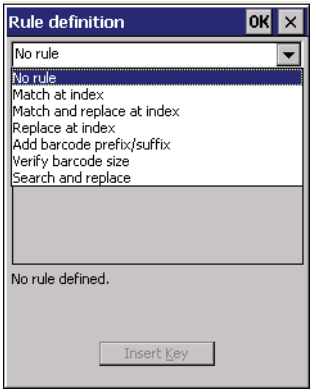


- In the *Translation* menu, tap on the **Case #** to create rules.

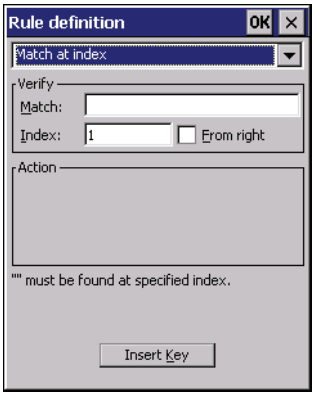


- Tap on the **No rule** drop-down menu to display the rules.





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



5.12.3.1 Case Rules

The case rules are defined as follows:

- *No rule*—ignored.
- *Search and replace*—replaces all instances of the match string. (Note that this rule cannot fail.)
- *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.

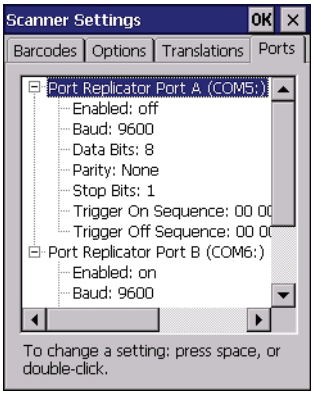
- *Verify barcode size*—verifies the bar code size. This rule should generally be assigned first, before creating subsequent rules.

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 154) when enabled. This is useful if a case fails, and you are trying to determine why a rule is failing.

5.12.4 Ports Tab

Figure 5.5 Console and Port Replicator Port Settings



While you cannot configure the scanner, you can configure communications with a serial decoded scanner using the options in this tab.

Use these settings to ensure that the communication ports on Omnii match the settings of the serial devices to which they are connected. If the settings do not match exactly, the devices may not function. Note that some devices can auto-detect serial port settings (such as baud rate), and in this case Omnii will dictate the settings. Baud rates often have a direct impact on performance—they should be set as high as possible while still ensuring reliable communication.

5.12.4.1 Port Replicator Port A (COM5) and Port B (COM6)

Port Replicator Port A (COM5) and Port B (COM6) are standard RS-232 DE-9 DTE ports on the Omnii port replicator module, available on certain cradle types.

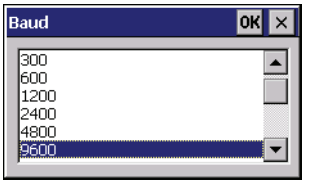
Enabled

This parameter must be set to ON in order for Omnii to recognize the device connected to the Port Replicator 9-pin (COM5).

Baud

Double-tapping on this parameter displays a pop-up window in which you can choose an appropriate rate of data transfer.

Figure 5.6 Port Baud Rates

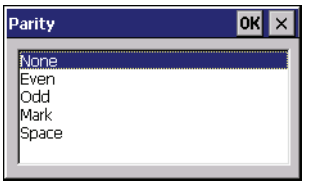


Data Bits

This parameter determines the number of data bits included in each asynchronous data byte. Most devices use 8-bit data bytes. Double-tapping on this option displays a pop-up window in which you can choose either 7 or 8 data bits.

Parity

This parameter determines the type of parity checking used on the data going through the port replicator port. Double-tapping on this option displays a pop-up window in which you can choose the appropriate parity.

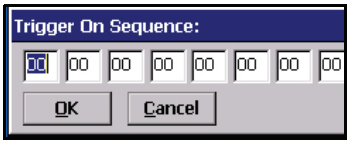


Stop Bits

This parameter specifies the number of stop bits—1, 1.5 or 2—used for asynchronous communication.

Trigger On Sequence And Trigger Off Sequence

If a SICK scanner connected to an Omnii port requires a serial stream of data bytes to trigger the scanner *on* and another to trigger the scanner *off*, the *Trigger On Sequence* and *Trigger Off Sequence* parameters allow you to define these serial streams.



Double-tapping on *Trigger On Sequence* or *Trigger Off Sequence* displays a screen with a hex array of 10 elements.

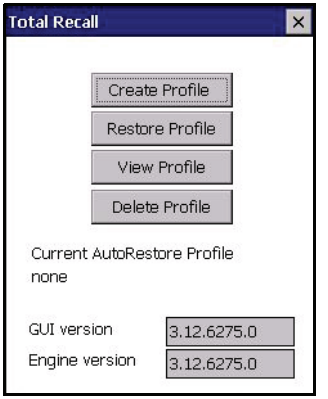
These parameters work in conjunction with *Manage Triggers* sending on and off data streams to the trigger module you assigned. For example, suppose you launch *Manage Triggers* and choose *Decoded Scanner* as the 'module to trigger'. Next, you assign a 'trigger key'—for this example, . (period). To define the serial stream of data bytes to control the *on* and *off* function of the 'trigger key', enter a hex value in the *Trigger On Sequence* and the *Trigger Off Sequence* fields. When you press the trigger key, the *Trigger On Sequence* is sent and when you release the trigger key, the *Trigger Off Sequence* is sent, turning the trigger key *on* and *off*.

5.13 Total Recall

Total Recall is a Psion Teklogix utility developed to maintain applications and settings during a cold boot, and clone settings to other devices. This utility is based on a backup and restore concept.

- In the *Control Panel*, choose the **Total Recall** icon.

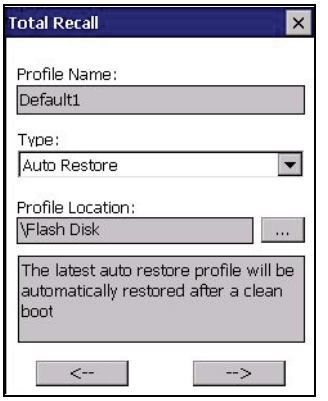
5.13.1 Creating a Backup Profile



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.

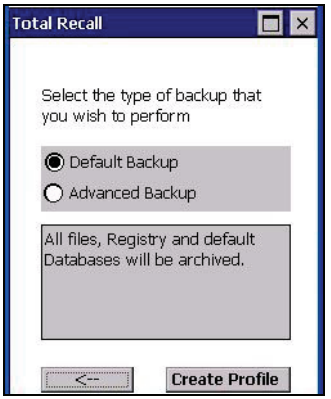
Important: ***Any profile not stored in persistent memory (flash disk, external usb drive) will be erased during a clean boot, therefore you should store profiles on a persistent drive.***

When performing an autorestore, the program only searches for profiles located in the root folder of persistent drives. If you store your profile anywhere else it will not be restored.

When there are multiple autorestore profiles found, only the latest is restored.

- 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.

Advanced Backup

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

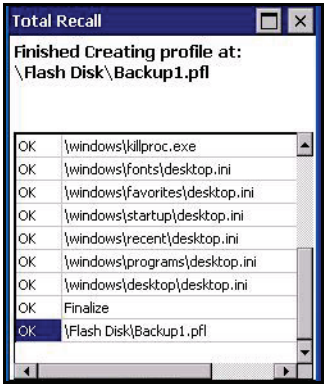
- Tap in the checkbox next to the option(s) listed here to tailor what you want included in the backup.

Creating a Profile

Once you've defined the type of profile you want to create:

- Tap on the **Create Profile** button.

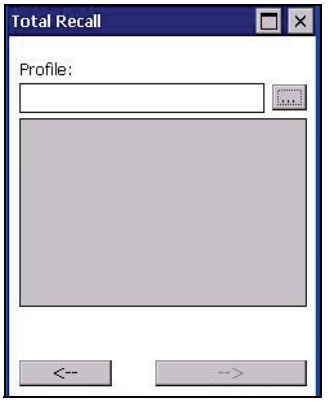
The options you chose to back up appear in your window as the backup progresses. When the backup is complete, the last item in the list indicates the location and name of the backup profile.



5.13.2 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.

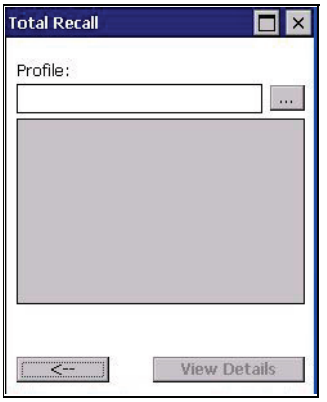


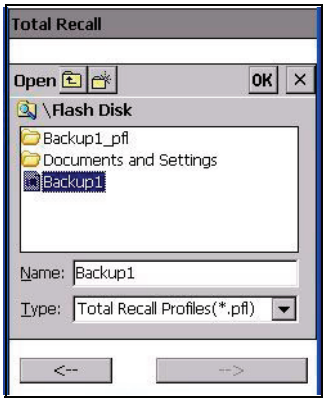
- Tap on **OK**.
- In the *Profile* restore screen, click on the (Next) button. [-->]
- Click on **Restore Profile** to restore the files to your Omnii.

5.13.3 Viewing a Profile

To view a profile:

- In the *Total Recall* home screen, tap on **View 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.

5.13.4 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.

5.14 TweakIT Settings

This utility allows you to 'tweak' or adjust *Advanced* system settings (interface, network, servers, driver, and radio), *User* settings (Internet Explorer settings, font size, and docking port message), and provides a *Registry Editor*.

5.14.1 Advanced

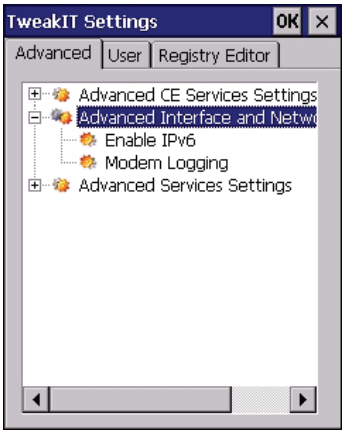
5.14.1.1 Advanced CE Services Settings

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.

5.14.1.2 Advanced Interface and Network Settings



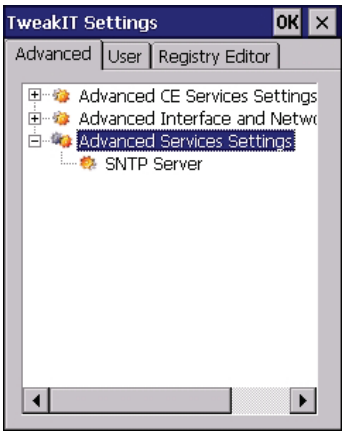
Enable IPv6

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

Modem Logging

When this option is enabled, Omnii 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.

5.14.1.3 Advanced Services Settings

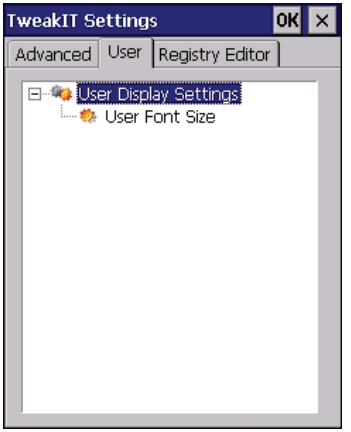


SNTP (Simple Network Time Protocol) Server

The *SNTP Server Name* typed in this dialog box is used to synchronize Omnii time with the server time. A warm reset must be performed once the server name as been entered.

5.14.2 User

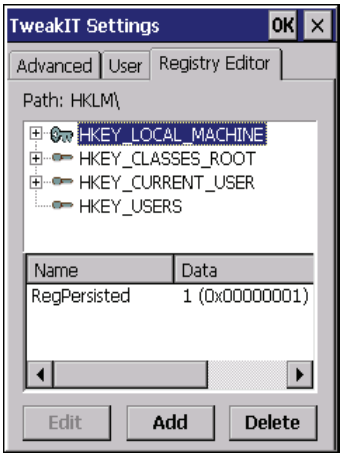
5.14.2.1 User Display Settings



User Font Size

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

5.14.3 Registry Editor



This option is reserved for senior administrators who have a strong understanding of registry keys and values.

Warning: Careless registry editing can cause irreversible damage to Omnii.

PERIPHERAL DEVICES & ACCESSORIES 6

6.1 Documents Available

Table 6.1 Document Part Numbers

Document	Part Number
Omnii XT10 Hand-Held Computer User Manual	8100190
ST4002 and ST4003 Desktop Docking Stations Quick Start Guide	8000203
ST3006 Omnii 6-Slot Battery Charger Quick Start Guide	8000204
Omnii Hand-Held Computer Keyboard and Keypad Installation Instructions	8000208
Imager Installation Instructions for Omnii	8000209
Omnii Hand-Held Computer Regulatory & Warranty Guide	8000191
TekTerm Software User Manual	8000073
Mobile Devices SDK Developers' Guide	8100016

6.2 Keyboard and Keypad Kits

Note: Check your order sheet for an up-to-date list of models.

Table 6.2 Keyboard and Keypad Model Numbers

Keyboard and Keypad Kits	Model Number	
Keyboard Bezel Removal Tool	ST5999	
	Keyboard	Keypad
Kbd Long, 59 Key, Alpha ABC, Numeric Telephony, 6 Fn	ST5000	ST5100
Kbd Long, 36 Key, Numeric Telephony, 12 Fn	ST5001	ST5101
Kbd Long, 36 Key, Alpha Modified, Numeric Calculator, 12 Fn	ST5002	ST5102

6.3 Pistol Grips

There are a number of pistol grips available to you depending on the type of scanner/imager installed in your hand-held. Refer to Table 6.3 for a list of pistol grip model numbers and the types of scanners/imagers with which they are compatible.

Table 6.3 Pistol Grip Model Numbers

Pistol Grip Description	Model Number
Standard Pod	ST6000
Integrated	ST6100
Accessory Auto Range	ST6400

Note: Prior to installation, make sure the trigger mechanism is securely snapped into the pistol grip body and that the trigger operates properly.

The pistol grip is attached to the back of Omnii using the four threaded inserts in the upper part of the Omnii casing (see Figure 6.1). Four M3x6 Phillips head screws are provided.

- Position the pistol grip so that it fits snugly over the back of the unit and the holes in the pistol grip are aligned with the threaded inserts on the back of the hand-held.
- Using a Phillips screwdriver, tighten the screws to a torque of 3 lbs-in (3kgf-cm) to secure the pistol grip in place.

Figure 6.1 Attaching the Pistol Grip

6.4 Carrying and Protective Accessories

Note: Omnii Hand-Held Computer is a body worn device, and to maintain compliance with the FCC RF exposure guidelines, use a Psion Teklogix approved carrying case. Use of non-approved accessories may violate FCC RF exposure guidelines.

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

Attaching Carrying Accessories

If your Omnii is not fitted with a hand strap, you can install it using the carrying accessory kit supplied. You'll need:

- A Phillips head screwdriver.

Important: Do not use adhesives such as Loctite to secure screws on carrying accessories. These chemicals may damage the plastic casing.

Table 6.4 Accessories Model Numbers

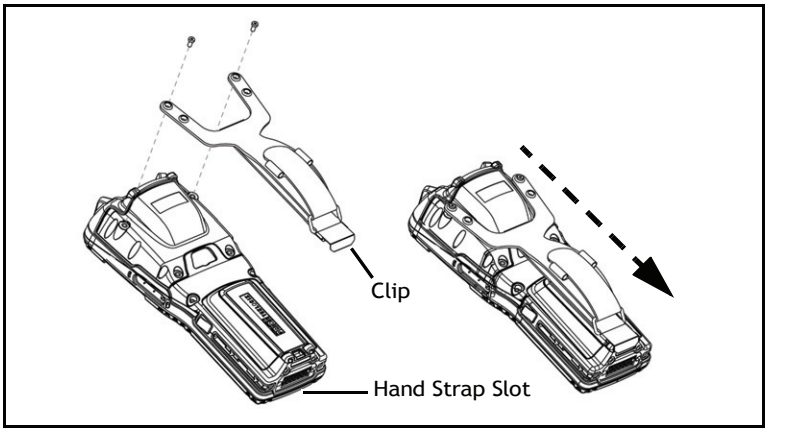
Accessory	Model Number
Wrist Strap	ST6040
Hand Strap	ST6025
Shoulder Strap	ST6030
Soft Shell Holster	ST6050
Hard Shell Holster	ST6055
Forklift Holster	ST6051
Carrying Case	ST6090
Pouch	ST6091
Screen Protector	ST6112

6.4.1 Attaching the Hand Strap - Model No. ST6025

- Attach the strap to the two threaded inserts located at the back of the hand-held near the top of the unit (see Figure 6.2), using the two Phillips head screws provided with this accessory.

- Stretch the handstrap toward the base of the hand-held, and hook the clip at the bottom of the handstrap into the slot near the base of the battery pack.

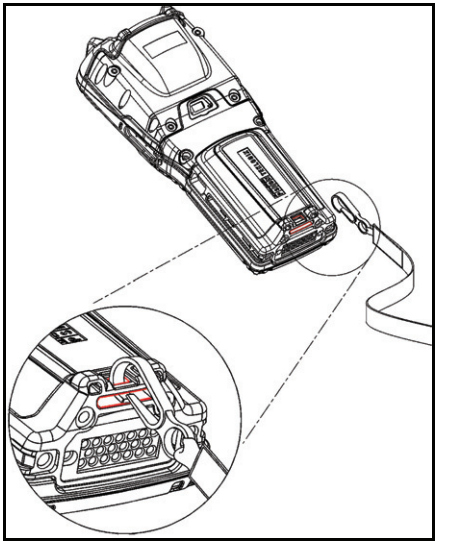
Figure 6.2 Attaching the Hand Strap



6.4.2 Attaching the Shoulder Strap - Model No. ST6030

- Attach the shoulder strap clip to the slot at the base of the hand-held (Figure 6.3).

Figure 6.3 Attaching the Shoulder Strap



6.4.3 Protective Carrying Case - Model No. ST6090

A carrying case is available for Omnii to shield the unit from damage. It is equipped with a soft plastic window to protect the unit display and keyboard. A variety of cases are available, depending on the type of end-cap attached to your unit.

6.4.4 Hard Shell Holster - Model No. ST6055

A hard shell holster can be used to hang Omnii with a pistol grip from your waist.

- Feed your belt through the top panel of the holster, and adjust the belt as needed.
- If using the leg tie-down strap, wrap it around your leg and snap the buckle closed. Adjust the tightness of the strap for security and comfort.
- Place Omnii into the holster with the grip extending back through the custom opening.

Figure 6.4 Hard Shell Holster

6.5 Chargers and Docking Stations: General Information

6.5.1 Important Charger Safety Instructions

Important: ***Before charging a battery with a desktop docking station, it is critical that you review the safety guidelines in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191).***

6.5.2 Charging the Battery

Omnii Hand-Held Computer operates with a lithium-ion battery pack, Model No. ST3000. Preparing the unit for operation requires that the battery pack be charged and installed in the hand-held.

Batteries shipped from the factory are charged to approximately 40% of capacity. Lithium-ion battery packs must be fully charged before use. These batteries can be charged with a variety of chargers and docking stations. Currently the following are available:

- The Snap Module is a mobile adaptor for Omnii. Three models are available—see “Snap Modules” on page 177.
- The AC Wall Adaptor operates as an AC power source and also charges the battery installed in the unit—see “AC Wall Adaptor - Model No. ST1050” on page 179.
- The Vehicle Power Outlet Adaptor powers Omnii and recharges the battery using power drawn from your vehicle’s automotive power outlet—see “Vehicle Power Outlet Adaptor - Model ST3113” on page 179.
- The Desktop Docking Stations operate as both chargers and docking stations. Operating as a charger, both the battery installed in Omnii and a spare battery can be charged. Priority is given to charging the hand-held's battery. See “Desktop Docking Stations - Models ST4002 and ST4003” on page 180.

Normally it takes 3 to 4 hours to charge a battery. The Omnii intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

Table 6.5 Omnii Internal Battery Charging Times

% Charge Completed	During Sleep Mode	While Operating
100%	4 hrs.	8 hrs.
75%	2.5 hrs.	6 hrs.

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

6.5.3 Installation—Chargers and Docking Stations

When installing a charger or docking station, consider the following guidelines.

- Keep chargers and docking stations away from excessive dirt, dust and contaminants.
- Chargers will not charge batteries outside an ambient temperature range of 0°C to 40°C (32°F to 104°F). It is recommended that the charger or 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 charger for possible damage.
- Install the IEC power cord and apply power.

6.5.4 Operator Controls

Omnii docking stations and chargers have no operator controls.

6.5.5 Power Consumption Considerations

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

6.6 Power Adaptor Options

The following adaptors can be ordered for your Omnii:

Adaptor Description	Model Number
AC Wall Adaptor	ST1050
Vehicle Power Outlet Adaptor	ST3113
Snap Module – Power/Charger Only	ST3101
Snap Module – USB Host/Client plus Power/Charger	ST4001
Snap Module – USB DE9M powered serial plus Charger	ST4005

6.6.1 Snap Modules

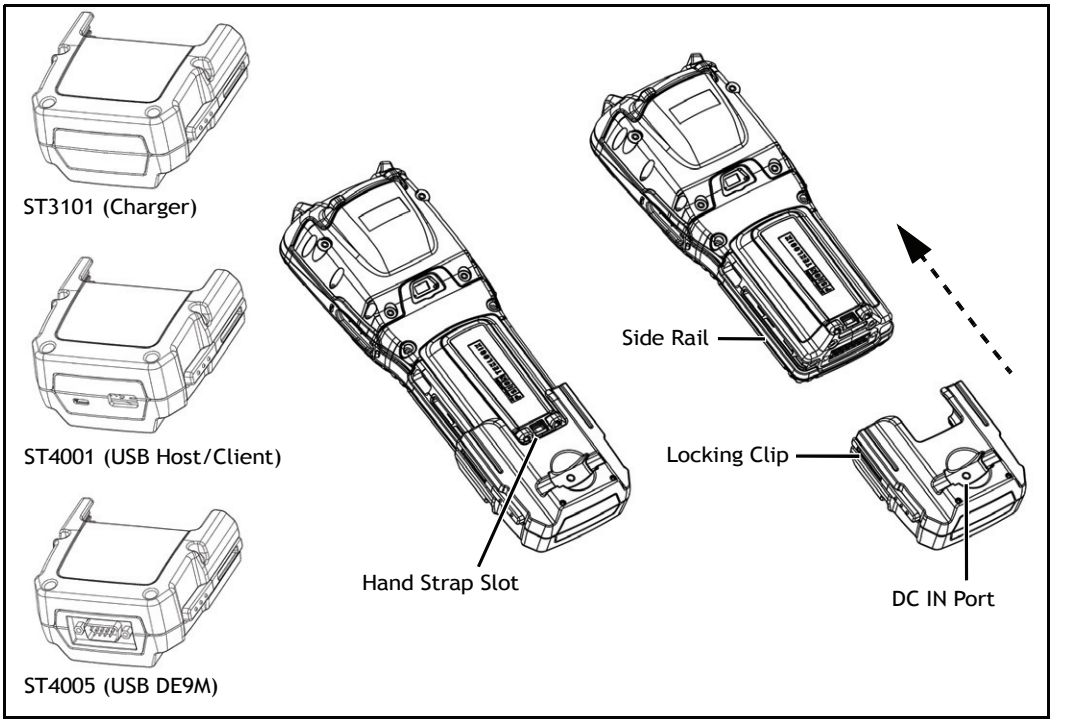
The Snap Module is a mobile power adaptor for Omnii. The Snap Module is compatible with the AC Wall Adaptor and the Vehicle Power Outlet Adaptor.

Three types of Snap Modules are available:

- Model No. ST3101 (Charger only variant): powers and charges the hand-held.
- Model No. ST4001 (USB Host/Client variant): powers and charges the hand-held. It provides communications via USB 1.1/2.0 Host and USB 2.0 Client connectors and provides a DC IN port. When attached to Omnii, it allows ActiveSync connectivity with your PC, connection to an AC wall adaptor (Model No. ST1050) or a Vehicle Power Outlet Adaptor (Model No. ST3113), and the use of a micro-USB to USB ‘A’ cable (Model No. PX3058).

- Model No. ST4005 (USB DE9M variant): through a powered DE9M serial connector it powers and charges the hand-held, and provides communications to tethered devices. The DE9M connector is capable of speeds up to 115,200 kbp.

Figure 6.5 Snap Module Models and Installation



To attach the adaptor to Omnii:

- Make sure that the adaptor connector and Omnii docking connector are free of dust or any other debris before connecting them.
- A slot in the side rail on each side of the hand-held accommodates the locking clips of the adaptor. To attach the adaptor, align it with the base of the hand-held and gently slide up until the locking clips snap into place (Refer to Figure 6.5).
- To remove the adaptor, press down on the base of the clip arms to release them from the Omnii side rails and slide the adaptor off.

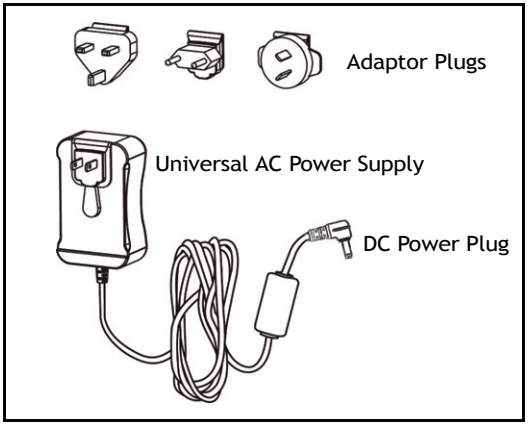
Note: If you are using a hand or shoulder strap, there is no need to remove it before installing the Snap Module, since the Omnii hand strap slot will still be accessible.

6.6.2 AC Wall Adaptor - Model No. ST1050

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

Adaptor plugs suitable for use in the following regions are shipped with the AC wall adaptor: United Kingdom, Australia, Europe and North America.

Figure 6.6 AC Wall Adaptor Plugs

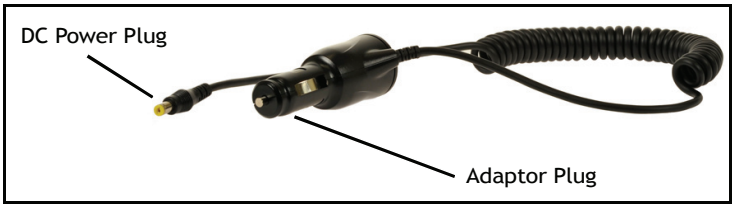


- Choose the adaptor plug that is suitable for use in your country. Slide the adaptor plug into the Universal AC power supply, snapping it into place. These two pieces, coupled together, are referred to as an AC wall adaptor.
- Insert the DC plug into the docking station or Snap Module jack.
- Plug the pronged end into an AC outlet.

6.6.3 Vehicle Power Outlet Adaptor - Model ST3113

The Vehicle Power Outlet 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 a Snap Module.

Figure 6.7 Vehicle Power Outlet Adaptor



- Attach the USB Adaptor to the base of the hand-held. Refer to "Snap Modules" on page 177 if you require further details.
- Insert the DC power plug on the Vehicle Power Outlet Adaptor into the DC IN port on the USB adaptor.
- Insert the Vehicle Power Outlet Adaptor plug into automotive power outlet in your vehicle.

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

6.7 Desktop Docking Stations - Models ST4002 and ST4003

Omnii can be inserted into two desktop docking stations which are designed to charge the battery installed in the hand-held along with a spare battery pack: Models ST4002 and ST4003.

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

The ST4002 and ST4003 desktop docking stations feature:

- Fast charging of the internal battery.
- Fast charging of the spare battery pack.
- A Host USB port to connect peripherals such as a printer, keyboard, etc.
- A Client USB port to connect the docking station to a PC.

Note: The ST4002 desktop dock can be upgraded to include the DE9M and RJ45 interfaces by using the ST4100 Xmod (Expansion Module).

The ST4003 desktop docking station additionally provides:

- A DE9M serial port (unpowered) and an RJ45 10Base-T Ethernet interface. Both these interfaces are compatible with the USB to Ethernet/serial drivers included in Omnii (see Figure 6.9 on page 182).

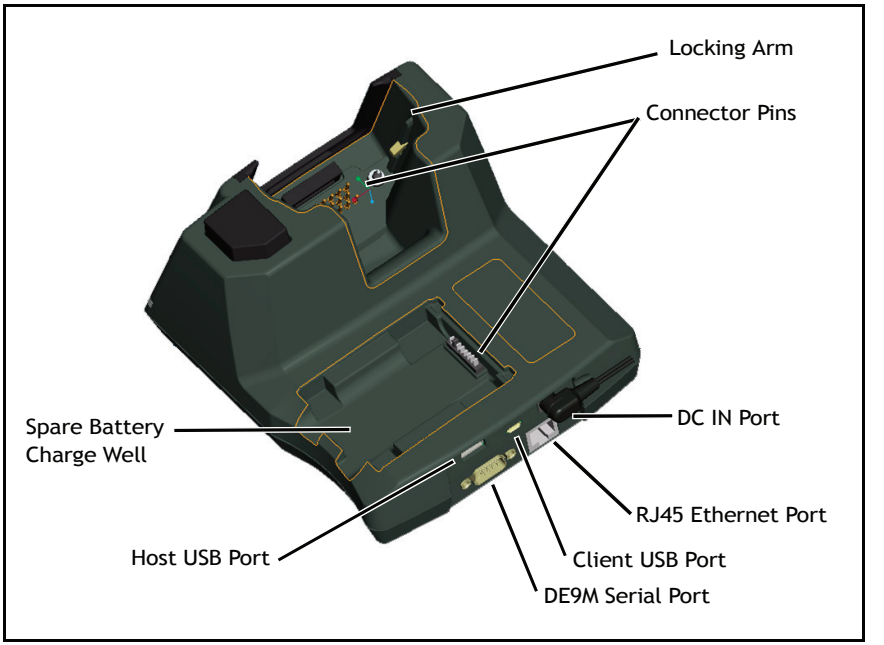
Figure 6.8 Desktop Docking Station - Models ST4002 and ST4003

Note: The desktop docking station is shipped with its own user manual (ST4002 and ST4003 Desktop Docking Stations Quick Start Guide, PN 8000203). It is critical that it be reviewed for additional information and updates.

The desktop docking station storage temperature is -30°C to +60°C (-22°F to 140°F). Operating temperature and humidity are: 5 - 95% non-condensing and 0°C to 40°C (32°F to 104°F).

The desktop docking station uses careful charge algorithms designed to maximize battery life while ensuring the shortest possible charge time. The charger supports proprietary Psion Teklogix Smart Batteries and handles a range of voltages and charge algorithms. See "Battery Details" on page 35 for more information regarding battery capacity, charge times and battery life. See "Charging the Spare Battery" on page 183 for spare battery charge information.

Figure 6.9 Back of ST4003 Desktop Docking Station



6.7.1 Charging a Battery Installed in Omnii

- Insert the DC power cable to the DC IN port on the desktop docking station. Plug the pronged end of the cable into an AC outlet.
- Slide the hand-held into the docking station, making certain that the hand-held is securely seated on the docking station connector pins and engages the locking arms of the docking station. When the Omnii is switched on, a message is displayed briefly on the screen indicating that the unit is properly installed in the station and the docking station icon is displayed in the taskbar. 

The LED on Omnii lights up indicating that the unit has external power and battery charging will begin. It is safe to leave the unit in the desktop docking station while it is not in use—the battery will not be overcharged.

6.7.2 Indicators

The front-mounted LED on the desktop docking station indicates the spare battery charge status. The LED on Omnii is active even when the hand-held is inserted in a docking station (and in suspend mode) so that the charge status of the battery can be detected easily.

Table 6.6 Docking Station Battery Charge LED Behaviour

Charge LED Behaviour	Function
OFF	No battery detected.
Solid Green	Battery charging complete.
Flashing Green	Charge in progress.
Flashing Yellow	Battery is not charging due to out-of-temperature conditions.
Solid Red	Unable to read battery or non Psion Teklogix battery.

6.7.3 Operation

6.7.3.1 Charging the Omnii Battery

The desktop docking station supplies DC power to enable the Omnii internal fast charger.

When installed in the dock, the Omnii battery charge LED will illuminate to indicate the unit has external power and can charge the internal battery. Omnii charge indication follows the same convention as the charger's spare battery indicator (Figure 6.8).

Note: Battery charging continues whether Omnii is switched on or off.

6.7.3.2 Charging the Spare Battery

Important: Do not store spare batteries in a charger for more than 72 hours. Doing so may damage the battery or reduce its charge capacity.

- Install the battery in the battery charge well (rear slot of the desktop docking station). Place the battery contacts down to mate with the connector, and pivot the battery into place in the battery charge well.
- The desktop docking station spare battery LED lights up immediately. During charge the LED will be flashing green.

- When the battery has finished charging, the LED turns solid green.
- The charge stops when the battery is fully charged and the LED remains green.

A full charge will take 3 to 4 hours for a 5000 mAh battery.

6.7.4 Cleaning the Desktop Docking Station

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

- Use only mild detergent or soapy water on a slightly damp cloth to clean the desktop docking station. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the label, use isopropyl alcohol.

6.7.5 Troubleshooting

The indicators, applications, and drivers required to use and monitor the desktop docking station as a dock (as opposed to a charger) are installed on Omnii—no applications are present on the docking station itself.

6.7.5.1 Docking station does not seem to power on.

- When first connected to the DC power supply, the charger LED should flash a sequence of red, yellow, and green.
- If not, the charger is defective and requires service.

6.7.5.2 Omnii charge indicator LED stays off.

When Omnii is docked into a powered desktop docking station and its charge indicator LED stays off, there could be a problem with the hand-held or with the docking station. Use a hand-held with a properly functioning charge indicator to isolate the problem.

6.7.5.3 Omnii charge indicator LED is red.

If the Omnii charge indicator is red when the hand-held is docked:

- Remove Omnii and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Omnii indicator still shows a fault, the hand-held requires service.

6.7.5.4 Spare battery LED is red with a battery installed.

- Try inserting a battery that is known to be working with another charger.
- If the charge slot LED continues to show red with the known working battery, the charger is defective and requires service.
- *Your Psion Teklogix battery and desktop docking station are carefully designed for safety and capacity performance in accordance with IEEE 1725. If the battery or charger are not Psion Teklogix approved products, or the safety mechanism is faulty, the spare charge slot LED or the Omnii LED will display red.*

6.7.5.5 Spare battery LED does not turn on when a battery is installed.

- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken?).
- Reinstall the battery and check that it is fully seated in the slot.
- Try inserting a battery that you know to be working into the charger slot.
- Disconnect and reconnect the DC adaptor, and check that the spare battery LED indicator flashes at power-up.
- If the charge slot fails to charge the known working battery, it is defective and requires service.

6.8 Battery Charger (6-Slot) - Model No. ST3006

The ST3006 is designed to charge up to six Omnii lithium-ion batteries at one time.

Important: Keep in mind when ordering a charger, you must also order an IEC-320 C13 power cord separately.

Figure 6.10 ST3006 Battery Charger

6.8.1 Installation

The charger can be wall mounted using the wall mount kit (MT2031) or it can be operated on a flat surface. Install the charger in an area that is free from excessive dirt, dust and contaminants. The ambient temperature must be in the range 5°C to 39°C (41°F to 102°F). The charger will not charge batteries outside of this temperature range. For maximum performance, it is recommended that the charger be operated at room temperature—a temperature range between 18°C to 25°C (64°F to 77°F).

The charger can consume up to 6 A at 120 VAC, 3A at 240 VAC. Check to ensure the mains circuit supplying the charger is adequate for this loading (especially if several chargers are being powered from the same circuit). After unpacking the unit:

- Visually check the charger for damage.
- Install the IEC power cord and apply power.

Important: Use IEC-320 C13 power cords approved by Psion Teklogix, with the ground pin connected to a proper earth-grounded receptacle. Check with a qualified electrician if you are uncertain of your receptacle grounding.

All charge indicators flash momentarily at powerup to indicate that the charger is ready for operation.

If you choose to wall mount the charger, detailed installation instructions are included in the *Omnii 6-Slot Battery Charger ST3006 Quick Start Guide (PN 8000204)* included with the charger kit. Be sure to locate the charger in an area where there is no risk of injury to persons walking in the vicinity.

6.8.2 Operator Controls

The gang charger does not have operator controls or a power switch. There is no dedicated indicator light to show that the charger is powered, but the charge slot LEDs will light.

6.8.3 Charge Indicators

Each battery charge slot is equipped with four LEDs to indicate the charge status of the battery. When the Omnii batteries are inserted in the charger, the colour and behaviour of the LEDs associated with the charge wells in use indicate the status of the charge.

Table 6.7 Charge Status Indicator LEDs

Charge LED Behaviour	Function
OFF	No battery detected.
Solid Green	Battery charging complete. Each LED represents 25% battery capacity.
Flashing Green	Charge in progress. Each LED represents 25% battery capacity.
Flashing Yellow	Battery is not charging due to out-of-temperature conditions.
Solid Red	Unable to read battery or non Psion Teklogix battery.

6.8.4 Charging Batteries

- Install the battery with the battery contacts facing the charger. Slide the battery between the guide rails until it lightly latches in place.

The 4-LED bar for the battery bay shows 25% charger per LED. A flashing green LED shows charging is under way. The LED directly below the slot in which a battery is inserted lights up immediately. If the battery temperature is outside 5°C to 39°C (41°F to 102°F), the LED flashes yellow until the temperature is acceptable. A fully discharged battery will normally take from 3 to 4 hours to charge. At full capacity, it turns solid green.

When the battery is fully charged, the charger stops applying power; the battery cannot be overcharged if left in the charger slot.

6.8.5 Troubleshooting

6.8.5.1 Improper Battery Storage

Storing batteries in the gang charger for extended periods (more than a week or two) is not recommended. Lithium-ion batteries lose capacity if they are maintained at full charge for long periods of time. See the battery handling recommendations in “The Battery” on page 14.

6.8.5.2 Power LED Does Not Light Up

- Remove all batteries, and unplug the charger.
- Connect another device to the mains outlet to ensure there is power.
- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

6.8.5.3 Indicator Does Not Light When Battery Installed

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

6.9 Scanners and Imagers

Important: It is critical that you review the "Laser Warnings" in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191) before using any of the scanners described in this chapter.

For detailed scanner specifications and decode zone tables, refer to "Internal Scanners and Imagers" on page 200.

Note: To enable a newly-installed imager or scanner, press and hold down the [FN] key and the [ENTER/Power] key simultaneously for a minimum of three seconds.

Omnii supports a wide range of scanner options to address a variety of user application requirements. Refer to the following sections for detailed information:

- Configuration: *"Teklogix Scanners" on page 149* and *"Manage Triggers" on page 104*.
- "Scanning Techniques" on page 189 outlines the mechanics of a successful scan.
- "Scanner Status LED" on page 189 details how to interpret whether or not a bar code has been successfully scanned.
- Bar Code Parameters: Appendix C: "Bar Code Settings".
- Imager Settings: Appendix D: "Teklogix Imagers Applet".
- "Troubleshooting" on page 190 provides some helpful suggestions should the scan fail.

Scanner types include:

- Long Range: reads large 1D bar codes (55 mil) at long distances (up to 3m).
- Standard Range/High Performance: reads damaged or low contrast regular 1D bar codes (5 - 55mil) at medium distances (up to 1m).
- Extended Range: reads regular 1D bar codes (5 - 55mil) at short to medium distances (1m), as well as large 1D bar codes (e.g. 55 mil) at long distances.

- Fuzzy Logic: reads damaged or low contrast regular 1D bar codes (5 - 55mil) at medium distances (up to 1m).
- PDF Raster Laser: reads 2D PDF bar codes or damaged or low contrast regular 1D bar codes (5 - 55mil) at medium distances (up to 1m).
- 1D Imager: reads regular 1D and PDF417 bar codes at short to medium distances.

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

- Hold the scanner at an angle. Do not hold it perpendicular to the bar code.
- Do not hold the scanner directly over the bar code. In this position, light can reflect back into the scanner's exit window and prevent a successful decode.
- Scan the entire bar code. If you are using a 1D or PDF 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.
- If you are using a 2D imaging scanner, make certain the red, oval shaped framing mark is centered within the bar code you want to scan.
- 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.

6.9.3 Scanner Status LED

The scanner LED (the far right LED) indicates whether or not your scan is successful. The LED behaves as follows:

- Scan In Progress: scan LED displays solid red colour.
- Successful Scan: scan LED displays solid green colour and turns off when the scan is ended.
- Unsuccessful scan: scan LED flashes red.

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 in the *Control Panel>Scanner Settings* menu.

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 in the *Control Panel>Scanner Settings* menu.

6.9.4 Troubleshooting

If the scanner is not working, investigate the following:

- Is the unit on?
- 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 proper range.
- 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 or fogging.

6.9.5 Operating One Dimensional (1D) Internal Laser Scanners

- Turn the hand-held on. Wait until the unit has booted up completely.

Important: ***If an aiming dot is available on the installed scanner, the dot will be enabled for a configurable time period (including off), after which normal scanning begins. Refer to "Dot Time (msec)" on page C-7 for details.***

Double-clicking the trigger will override the aiming delay and initiate an immediate scan. Note that the aiming dot is standard on long-range and high visibility internal scanners.

- 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.

6.9.6 Operating Internal Two Dimensional (2D) Imagers

An imager scanner takes a snap shot of a single bar code or multiple bar codes (at one time). It can find a bar code regardless of its orientation—that is, even a bar code printed at a 45 degree angle to the hand-held will be decoded successfully.

*Note: When scanning **multiple** bar codes, ensure that all of the desired bar codes are within the field of view of the scanner. It is possible that even when all bar codes are within the field of view, not all of them will be decoded. Only successfully decoded bar codes are passed to the application program. The application program then issues a warning, asking that you scan the missing bar codes.*

*When scanning a **single** bar code, ensure that only the desired bar code is within the field of view of the scanner.*

Because imager scanners generally have a shorter depth of field than laser scanners, some practise may be required to find the optimal distance from the types of bar codes being scanned. Although the imager includes illumination LEDs, ambient light will help the imager decode the bar codes, especially if the bar code is far from the hand-held.

Important: Keep in mind that the imager scanner is a camera, and the LED illumination is a flash. Glare can be an issue on reflective media such as plastic coated bar codes, just as glare is an issue for photographers. When pointing at a shiny surface, either shift the bar code to the side or top, or angle the bar code so that the glare reflects away from the imager scanner.

Most imagers take several 'snap shots' of the bar code in order to decode it. It is normal for the LEDs to flash two or three times. Hold the unit steady between flashes to improve decode performance.

- Turn the hand-held computer on. Wait until the unit has booted up completely.
- Aim at the bar code and press the scan key or the trigger. Hold the trigger until a successful or failed scan result is obtained.
- When the scan button or trigger is pressed, a red, oval shaped light (the framing marker) is displayed. Centre the framing marker in the field—either in the centre of the bar code you want to scan or in the centre of the area in which multiple bar codes are to be scanned.

The illumination LEDs will flash (typically several times) and a picture of the bar code(s) is taken.

6.10 *Bluetooth* Peripherals

It is possible to communicate with a variety of *Bluetooth* peripherals, including GSM/GPRS handsets, scanners, printers, and so on. The range of the *Bluetooth* radio in Omnii is limited to approximately 10 meters (32 ft.).

Psion Teklogix provides built-in support for:

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

Keep in mind that *Bluetooth* and IEEE 802.11g radios both operate in the 2.4GHz band. Although Omnii 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 802.11 network, Psion Teklogix recommends using *Bluetooth* peripherals that have low transaction rates (such as printers and scanners).

Bluetooth peripherals are configured by choosing the **Bluetooth** icon in the *Control Panel*. Refer to "Bluetooth® Setup" on page 125 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 associate with the Omnii host.

SPECIFICATIONS 7

7.1 The Omnii XT10 Hand-Held Computer (Model No. 7545XV)

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

7.1.1 Hardware

Physical Dimensions

- 100 mm width x 42 mm depth x 230 mm length (3.9 in x 1.6 in x 9 in).
- Keypad area: 75 mm width x 32 mm depth (2.9 in x 1.3 in).

Weight

- With battery pack, EV15 imager, and extreme duty display 760 g (26.8 oz.)

User Interface

Colour Touch Display:	9.4 cm (3.7 in.) diagonal. VGA/QVGA, 480 x 640 resolution. High visibility version: superior sunlight visibility. Extreme Duty version: withstands 1.2 joules impact.
Keyboards:	Backlit, high durability hard-capped keys. Large selection of both alpha and numeric formats. For a list of currently available keyboard configurations, consult your order sheet, or go to “Keyboard and Keypad Kits” on page 169.
Indicators And Controls:	Four multi-colour LEDs indicate the status of the battery, application, radio, and scanner.
Side Buttons:	Volume, Scan, Enter, Vertical Scroll.
Audio:	High volume beeper: 95 dBA Integrated Microphone/Speaker. Optional PTT Speaker. Walkie-talkie style Push-to-Talk: VoIP over Wi-Fi

Vibration:	You can set Omnii to vibrate as a result of a successful or unsuccessful bar code scan.

Power Management

- **Battery Pack**: lithium-ion 5000 mAh capacity with 8-hour life under normal operating conditions (for battery specifications, see "Lithium-ion Smart Battery 5000 mAh (ST3000)" on page 198).
- Advanced Smart Battery with gas gauge.
- 3 power source options: Runs off battery, AC power, or automotive power supplies.
- Backup power: >5 minutes.

Communication

Expansion Ports:	MicroSD slot for Flash expansion. Multiple Internal Multi-Function Expansion Interfaces with: - 3v3 TTL serial - USB host - GPIO

Environmental

Standard Operating Temperature:	-20°C to +50°C (-4°F to 122°F)
Storage Temperature:	-40°C to +60°C (-40°F to 140°F) Long exposure to temperatures below -40°C (-40°F) may damage the screen and main battery. Prolonged exposure to temperatures above +60°C (+140°F) will damage the main battery and temperatures above +70°C (+158°F) may damage the unit.
Rain And Dust Resistance:	IEC 60529, classification IP65.
Humidity:	5% - 95% RH non-condensing
Drop Durability:	1.7 m (5.6 ft.), 26 drops to polished concrete (while powered on and with accessories); multiple 2.0 m (6.5 ft.) drops to polished concrete.

ESD: +/- 8 kV contact, +/- 15 kV air discharge.

7.1.2 Software

Processor and Memory

- Texas Instruments® OMAP3® Processor 600 MHz
- RAM: 512 MB SDRAM standard.
- Flash ROM: 512 MB.

Operating System

- Microsoft Windows Embedded CE 6.0

Bundled Applications

- Internet Explorer 6
- Wordpad
- ActiveSync

7.1.3 Approvals

Safety:	IEC 60950-1
EMC:	FCC Part 15 Class B
	EN 55022
	EN 55024
	EN 301 489
Laser:	IEC 60825-1 Ed. 2.0, Class 1, Class 2
	FDA 21 CFR 1040.10
	1040.11 Class I, Class II
Bluetooth:	2.0
RF:	*Bluetooth* and 802.11b/g: EN300 328, Part 15.247
RoHS compliant:	EU Directive 2002/95/EC

7.2 Lithium-ion Smart Battery 5000 mAh (ST3000)

For safety instructions, please see "Lithium-ion Battery Safety Precautions" in the *Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3000
Chemistry	lithium-ion (Li-Ion)
Capacity	5000 mAh nominal at 1000 mA discharge 20°C to 3.0 V (min)
Voltage	3.7 V nominal (3.0 V min. to 4.2 V max.)
Cell Configuration	2 P1S (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-20°C to +50°C (-4°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122 ºF). Storage at elevated temperatures not recommended. 25°C (77 ºF)—recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 80% of nominal capacity based on 1C charge / 1C discharge rates (to 3.0 V) @ 25°C (77 ºF).

7.3 Wireless Radios

802.11b/g Radio

Parameter	Specification
Form Factor	Embedded surface mount module, 8.2 x 8.4 mm
Antenna Port	U.FL jack
Transmit Power	802.11b/g: 50 mW typical (+17 dBm)
Frequency Range	2.400 - 2.4835 GHz
Channels	1-11 FCC, 1-13 ETSI
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 Coexistence	Collaborative with *Bluetooth* radio.

Bluetooth Radio

Parameter	Specification
Form Factor	Embedded (920 kbps serial interface)
Bluetooth Version	Ver 2.0+EDR compliant - Adaptive Frequency Hopping (AFH) for better co-existence with 802.11 radio and Enhanced Data Rate (EDR) (up to 3 Mbps).
Antenna Type	Ceramic chip PIFA
Antenna Gain	1 dBi peak
Transmit Power	-3 dBm (0.5mW) minimum, +4 dBm (2.5 mW) max
Frequency Range	2.400–2.4835 GHz

Parameter	Specification
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 & 3 Mbps
802.11 Coexistence	Collaborative with 802.11 radio and adaptive frequency hopping.

7.4 Internal Scanners and Imagers

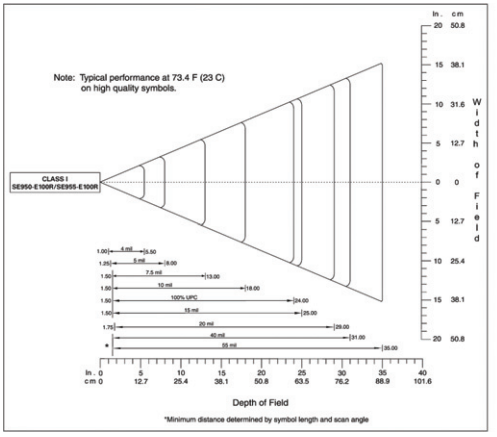
This section lists specifications for the following internal scanners:

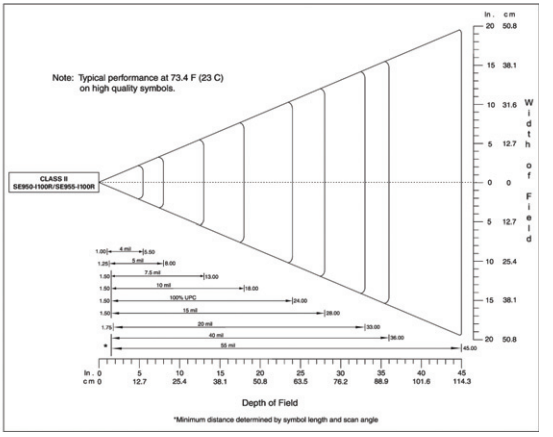
- SE955 Scanners (page 201).
- SE1223LR - Long Range (decoded) Scanner (page 202)
- SE1224HP - High Performance Scanner (page 203).
- SE1524ER - Extended Range Scanner (page 205).
- EV15 1D Standard Range Imager (page 207).
- 5080 Imager/Decoder (page 208).

7.4.1 SE955 Scanner

Parameter	SE955
Configuration	Decoded
Scan Rate	104 (± 12) scans/sec (bidirectional)
Scan Angle	47º± 3º default / 35º ± 3º reduced
Voltage	3.0-3.6 V± 10%; 5 V± 10%
Ambient Light:	10,000 ft. candles
Laser Safety	IEC 60825
Electrical Safety	UL 60950, EN/IEC 60950
EMI/RFI	FCC Part 15 Class B, EN 55024/CISPR 22, AS 3548, VCCI
Environmental	RoHS Compliant

7.4.1.1 SE955 Decode Zones





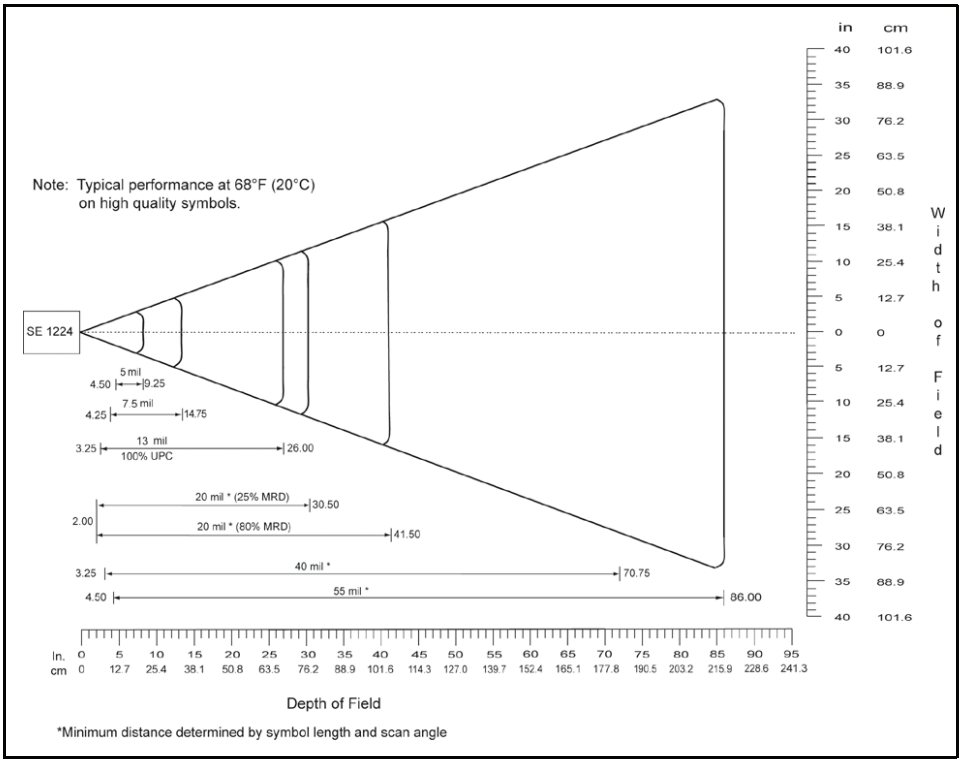
7.4.2 SE1223LR - Long Range (Decoded) Scanner

Parameter	SE1223LR
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bi-directional)
Scan Angle	23º ± 2º
Scan Patterns	Linear
Minimum Print Contrast	Minimum 40% absolute dark/light reflectance measured at 650 nm.
Symbologies Supported	UPC/EAN, Code 128, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI, UCC/EAN 128, TriOptic Code 39.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting, Serial Parameters, Beeper Tone.
Ambient Light	Artificial: 450 ft. candles (4,844 Lux). Sunlight: 8,000 ft. candles (86,112 Lux).
Power	Input Voltage: 5.0 VDC ± 10% Input Current: 115 mA typical Standby Current: 70 µA max.
Laser Classification	Intended for use in CDRH Class II and IEC Class 2 devices
Electrical Safety	UL, VDE, and CUL recognized component laser
Environmental	RoHS-compliant

7.4.3 SE1224HP - High Performance Scanner

Parameter	SE1224HP
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bi-directional)
Scan Angle/Field of View	42º (typical), 30º (narrow)
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies	UPC/EAN, Code 128, UCC/EAN 128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light	Artificial: 450 ft. candles (4844 Lux). Sunlight: 8000 ft. candles (86112 Lux).
Laser Output Power (peak)	1.35 mW

7.4.3.1 SE1224HP Decode Zones

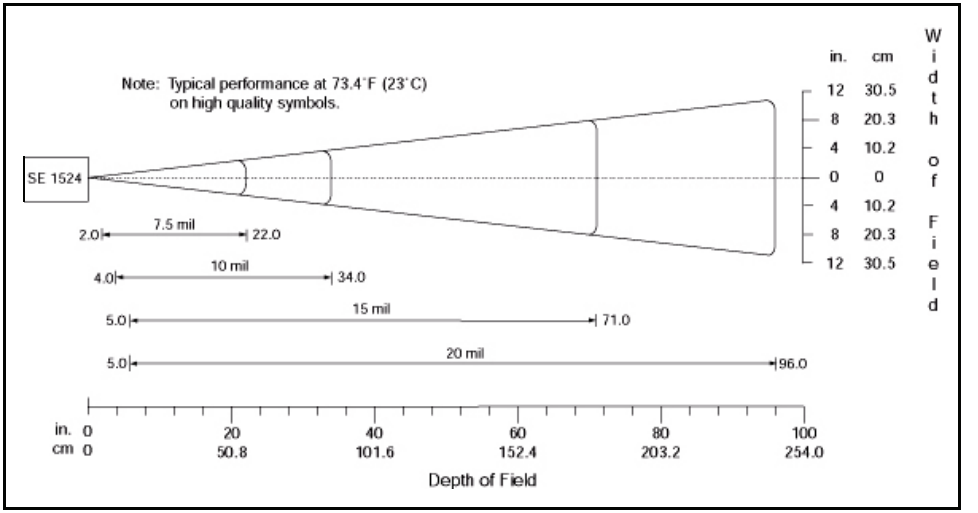


7.4.4 SE1524ER – Extended Range Scanner

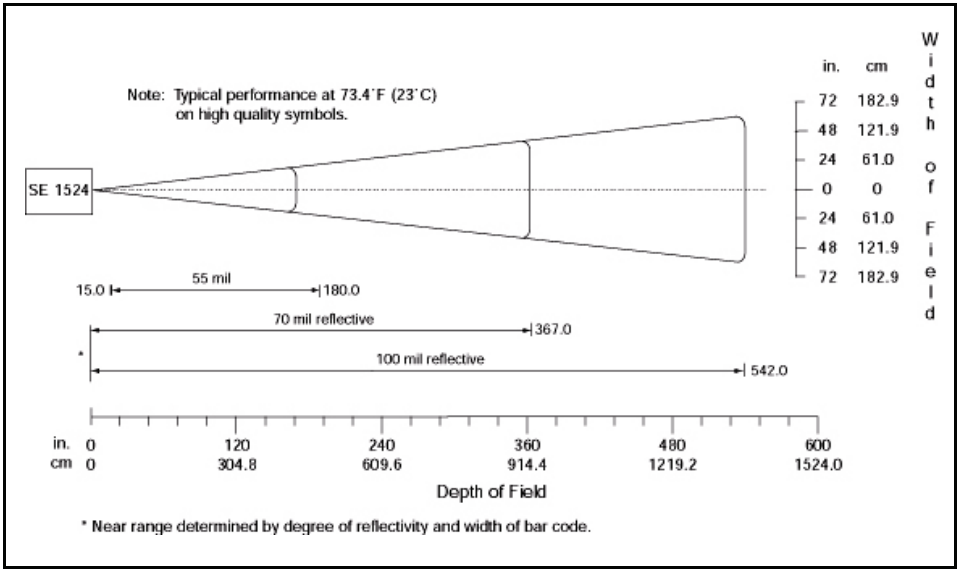
Parameter	Specification
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (±5) scans/sec (bi-directional).
Scan Angle/Field of View	13.5° ±0.7°
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies	UPC/EAN, Code 128, UCC.EAN128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light	Artificial: 450 ft. candles (4,844 Lux) Sunlight: 4,000 ft. candles (86,112 Lux).
Laser Output Power (peak)	1.26 mW

7.4.4.1 SE1524ER Decode Zones

SE1524ER Decode Zone A (Short Range, Small Codes)



SE1524ER Decode Zone B (Long Range, Large Codes)



7.4.5 EV15 Imager

Parameter	Specification
Light Source	617 nm highly visible LED
Scan Angle	40º
Minimum Print Contrast	Minimum 25%
Minimum X. Dimension	0.1 mm (4 mils)
Reading Distance	Up to 90 cm (35 in)
Symbologies	UPC (E&A), EAN, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, PDF417, Micro PDF417
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux

7.4.5.1 EV15 Imager Decode Zone

0 Lux to 100,000 Lux		
	Minimum Range	Maximum Range
Mil Size	Inches	Inches
5	2.5	7
10	3	14
UPC	2	14.5
20	2.5	22
40	3	35.5
High quality symbols in normal room light.		

7.4.6 5080 Imager/Decoder

Parameter	Specification
Focal Point - SR	7 inches (17.8 cm) from lens plate
Focal Point - SF	4.5 inches (11.4 cm) from lens plate
Image Sensor	752 x 480 CMOS sensor
Motion Tolerance	4 inches per second
Rotational Sensitivity	360°
Viewing Angle	±40°
Ambient Light	Total darkness to 100,000 lux (full sunlight)
Illumination LEDs	626 nm ± 30 nm
Aiming	LEDs: 526 nm ± 30 nm Laser: 650 nm ± 10 nm
Input Voltage - Imager	3.3 VDC ± 5% (23°C)
Input Voltage - 5080	3.0 VDC to 5.5 VDC (23°C)
Current Draw - Imager	Max. Operating Current: 100 mA; Standby Current: 100 µA
Current Draw - 5080	Average Current (Interlaced Mode): 510 mA; Standby Current: 120 µA ; Peak: 600 mA
Symbologies: 2 Dimensional	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, Reduced Space Symbology, Code 93, Codablock
Postal	Postnet (US), Planet Code, BPO 4 State, Canadian Post, Japanese Post, KIX (Netherlands) Post
OCR Fonts	OCR-A and OCR-B

7.4.6.1 5080 Working Range

Data is characterized at 23°C (73.4°F) and 0 lux ambient light.

Symbology	Size (mil)	Near	Far
SR			
Linear	8.3 (.020cm)	3.5 in. (8.9cm)	7.6 in. (19.3cm)
PDF417	10 (.025cm)	3.1 in. (7.9cm)	9 in. (22.9cm)
UPC	13 (.033cm)	2.1 in. (5.3cm)	13.2 in. (33.5cm)
Data Matrix	15 (.038cm)	2.3 in. (5.8cm)	10.2 in. (25.9cm)
QR	15 (.038cm)	3.1 in. (7.9cm)	8.8 in. (22.4cm)
MaxiCode	35 (.089cm)	2.0 in. (5.1cm)	13.0 in. (33cm)
SF			
PDF417	6.6 (.017cm)	2.8 in. (7.1cm)	6 in. (15.2cm)
Linear	7.5 (.019cm)	2.5 in. (6.4cm)	6.5 in. (16.5cm)
Data Matrix	12.5 (.021cm)	3.4 in. (8.6cm)	5.7 in. (14.5cm)
QR	8.3 (.021cm)	3.4 in. (8.6cm)	5.4 in. (13.7cm)
Linear	10 Linear	2.2 in. (5.6cm)	7.6 in. (19.3cm)
UPC	13 (.033cm)	2.0 in. (5.1cm)	8.9 in. (22.6cm)

7.5 Accessories

For details about the accessories available with Omnii, please refer to Chapter 6: “Peripheral Devices & Accessories”.

AC Wall Adaptor (Model No. ST1050)

12 VDC 2.5 A DC power supply.

Carrying Accessories

- Pistol grip.
- Carrying cases, either functional or non-functional.
- Hard and soft shell holsters.
- Hand and wrist straps.
- Forklift holster.

Communications with Power Supply

- **Desktop Docking Stations**
  - **ST4002 and ST4003:**
  - Fast charging of both internal battery and spare battery pack.
  - Host USB port.
  - Client USB port.
  - **ST4003:**
  - A DE9M serial port (unpowered) and an RJ45 10Base-T Ethernet interface. Both compatible with the Omnii USB to Ethernet/serial drivers.
- **Snap Modules**
  - **Model No. ST3101** (Charger only variant): powers and charges the hand-held.
  - **Model No. ST4001** (USB Host/Client variant): powers and charges the hand-held. It provides communications via USB 1.1/2.0 Host and USB 2.0 Client connectors and provides a DC IN port.
  - **Model No. ST4500** (USB DE9M variant): through a powered DE9M serial connector it powers and charges the hand-held, and provides communications to tethered devices. The DE9M connector is capable of speeds up to 115,200 kbp.

7.6 Camera (Optional)

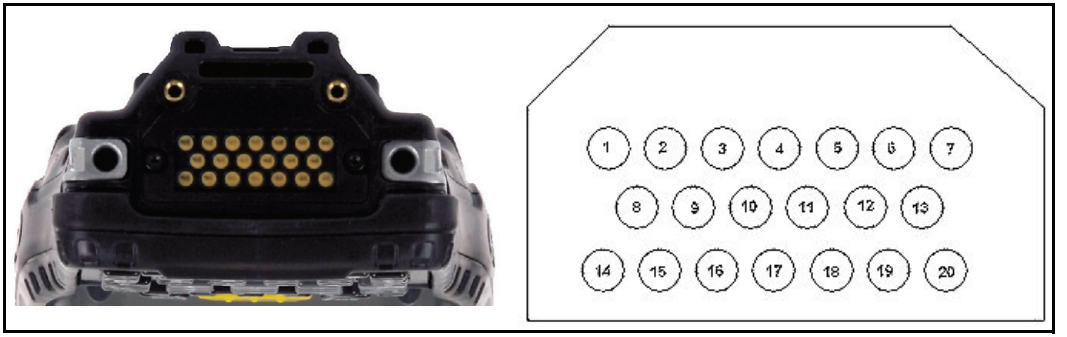
- Colour, 3 Megapixel autofocus, manual digital 4X zoom, 2xLED flash, video capable (optional with or without PTT speaker).

APPENDIX A

PORT PINOUTS

A.1 Docking Connector

The docking interface on the base of Omnii is custom-designed to dock with a device via an array of spring-mounted pins.



The following are the pin assignments of the interface.

Table A.1 Docking Connector Pinout

Pin #	Signal	Pin #	Signal
1	GROUND	11	USB_OTG_P
2	DC_IN	12	USB_OTG_M
3	DOCK_LOW_PWR	13	CHARGE_IN
4	GROUND	14	GROUND
5	USB_OTG_VBUS	15	DC_IN
6	CHARGE_IN	16	UART_RX
7	GROUND	17	GROUND
8	DC_IN	18	UART_TX
9	USBH_P	19	CHARGE_DATA
10	USBH_M	20	GROUND

A.2 Battery Contacts

Figure A.1 Battery Contact Pinout

Pin #	Signal Name	Description
1	BATT-RAW	Positive lead of battery.
-		Plastic Rip - provides mechanical polarity.
2	BATT-RAW	Positive lead of battery.
3	BATT-CLK	SMBus data clock.
4	BATT-ID	0 Ω to NEG.
5	BATT-DATA	SMBus bi-directional data line.
6	GND	Negative lead of battery.
7	GND	Negative lead of battery.

APPENDIX B

WIRELESS ZERO CONFIG

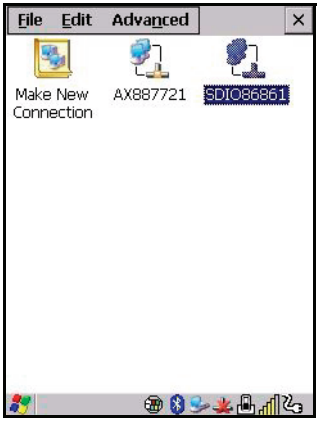
B.1 Wireless Information

Wireless Zero Config, the Windows native supplicant, can be used to configure the radio. To ensure that *Wireless Zero Config* is activated, refer to "Wi-Fi Config: Advanced Tab" on page 29.

- 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.2, this is labelled as *SDIO86861*

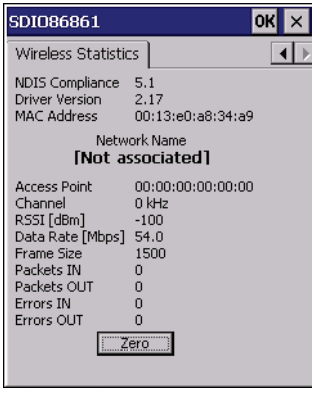
Figure B.2 802.11 Wireless LAN Settings Window



B.1.1 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.3 Wireless Statistics

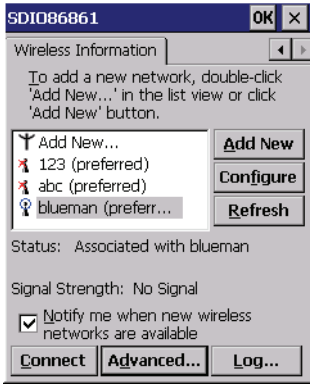


B.1.2 Wireless Information Tab

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.

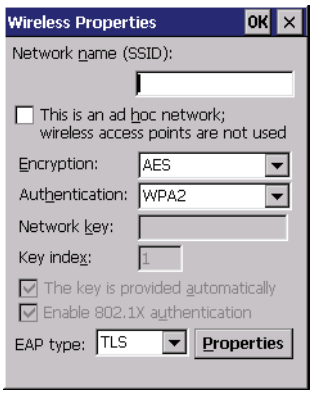
- **Configure** button: To change the settings in an existing network, highlight the network you want to modify, and tap on the Configure button to display the Wireless Properties dialog box.
- **Connect** button: To force connection to a specific, existing network, highlight the network to which you want Omnii to connect, and tap on the **Connect** button.

Figure B.4 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, Omnii attempts to connect to preferred networks. This behaviour can be changed by enabling *Automatically connect to non-preferred networks* in the *Advanced* dialog box (see Figure B.6).

- To add a new configuration, tap on the **Add New** button. A blank *Wireless Properties* dialog box is displayed.



Wireless Properties

- 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.

Important: Keep in mind that Omnii will only communicate with access points that are configured with the same SSID.

- **Ad Hoc And Infrastructure:** If you are using an *Infrastructure* network—one in which the hand-helds 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 the hand-helds 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 drop-down 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 symmetrical block cipher that can encrypt (encipher) and decrypt (decipher) information.

- **Authentication:** 802.11 supports several 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.

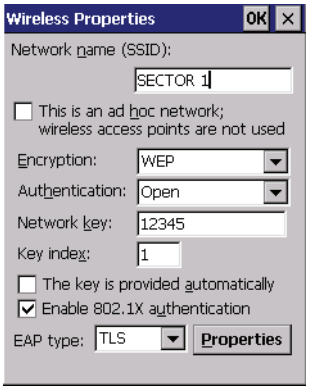
  Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

  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.5 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 drop-down menu next to the *EAP* option.

  To activate 802.1X, highlight **802.1x authentication**, and check the checkbox.

- **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*. “Certificates” on page 88 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 26 for details about assigning an IP address.

B.2.1 Name Server

Refer to "Name Server" on page 28 for details about this option.

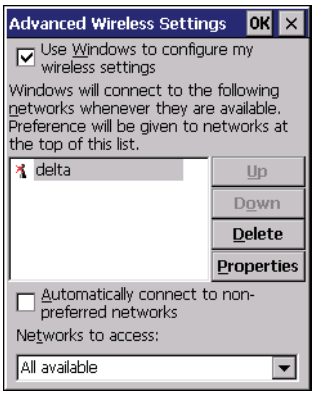
B.3 Advanced Features

To display the *Advanced Wireless Settings* dialog box:

- Tap on the **Advanced** button in the *Wireless Information* tab. (Refer to Figure B.4.)

This window lists the available preferred networks.

Figure B.6 Advanced Settings



B.3.1 Rearranging Preferred Networks

Omnii 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 **Up** or **Down** button.

B.3.2 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.3.3 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 Bar Code Settings

The *Teklogix Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor bar code scanner configurations and choose the bar codes your scanner will recognize.

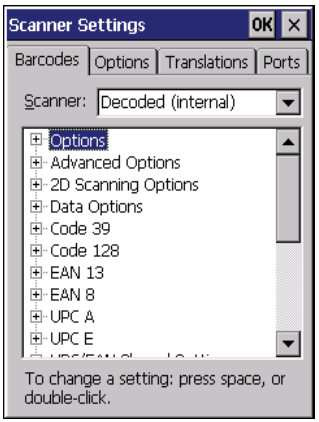
The parameters are preset with the default settings of the decoded scanner installed in the unit. For a listing of available scanners and their specifications, please refer to Chapter 7: "Specifications".

Note: To enable a newly-installed scanner, press and hold down the [FN] key and the [ENTER/Power] key simultaneously for a minimum of three seconds.

For information on configuring the Options, Translations, and Ports settings, see *"Teklogix Scanners" on page 149.*

C.1.1 Scanner Options

The drop-down menu to the right of the *Scanner* option allows you to choose configurations for one of the following scanner types, depending on what is installed in/on your hand-held: *Decoded* (internal), *Decoded* (Intermec ISCP), *Imager*, and *Non-decoded*.



The symbologies listed change to reflect the scanner you choose and the bar codes it supports. Always defer to your bar code scanner's programming manual when in doubt about the availability or settings for any parameter.

*Note: Your Omnii comes preconfigured from the factory for internal scanner types. The type of scanner installed can be determined from the **System** icon in the Control Panel, under the System Properties tab.*

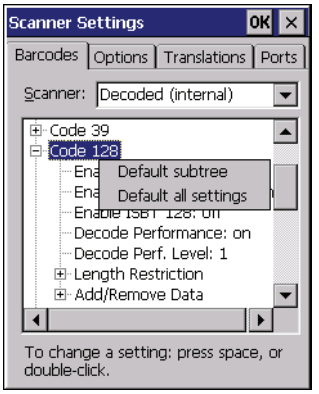
Important: To improve the decode speed and performance, enable (set to 'on') only those codes that are required by the application.

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 these dialog boxes.

C.1.2 Restoring Default Settings

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.

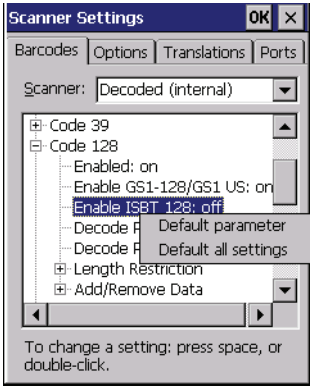
- Press and hold on a symbology (e.g., Code 128) to display a pop up a menu.



- 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.

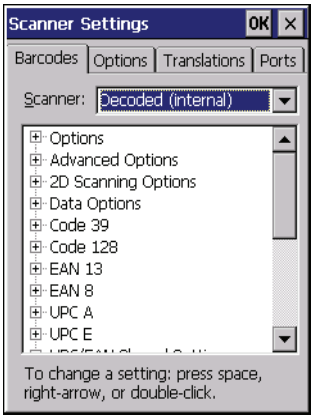
To reset a single parameter to its default setting:

- Press and hold on the parameter you want to reset.



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

C.2 Decoded (Internal) Scanners



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

C.2.1 Options

Note: Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.

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.

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.

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*. The value is measured in tenths of seconds.

C.2.2 Decoded (Internal) 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 you quickly trigger 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 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 flashing.

This is only used if the unit's *Trigger Mode* has been changed to *Continuous On*. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

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 Omnii is mounted in a fixed position; otherwise, 'Low Power Timeout' is not used.

Parameter Scanning

Setting this parameter to **on** enables decoding of parameter bar codes.

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:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

*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:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

*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.

Scan Angle

This option allows you to choose from two scan angles: *Normal Angle* or *Alternate Angle*. Choosing *Normal Angle* allows the normal operation for scanning long range and short range. Choosing *Alternate Angle* widens the beam to allow scanning of long bar codes at short range but at the cost of long range scanning.

C.2.3 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-Omni 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 these parameters displays dialog boxes in which you can enter a value from **1** to **15**.

C.2.4 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*.

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, dialog boxes are 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 uninterpreted data.

C.2.5 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.

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

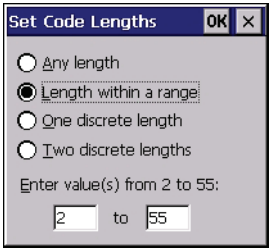
Note: "Convert to Code 32" must be enabled in order for this parameter to function.

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 these parameters displays dialog boxes 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 **2** 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.

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.

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.2.6 Code 128

Enabled

Set this parameter to **on** to enable "Code 128".

Enable GS1-128/GS1 US

Previously UPC/EAN and UCC, the GS1-128/GS1 US types of bar code include group separators and start codes.

Enable ISBT 128

To successfully scan this type of bar code, this option must be set to **on**.

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, allowing you to scan at an angle horizontal to the bar code. This is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security. There is a limitation that it can only be used with one fixed length.

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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.7 EAN 13

Enabled

Set this parameter to **on** to enable "EAN 13".

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.8 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-14 for details.

C.2.9 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 C-14 for details.

C.2.10 UPC E

Enabled UPC-E

Set this parameter to **on** to allow "UPC E" bar code scans.

Enabled 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,

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-14 for details.

C.2.11 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.

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 (set to **on**), 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 an omnidirectional engine only.

C.2.12 Code 93

Enabled

Set this parameter to **on** to enable "Code 93".

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 any bar code with a length that falls within a specified range (e.g. between **10** and **15** characters). The minimum and maximum values for the range are **4** and **55**, respectively.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.13 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 any bar code with a length

that falls within a specified range (e.g. between **10** and **15** characters). The minimum and maximum values for the range are **5** and **55**, respectively.

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-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.2.14 MSI Plessey

Enabled

Set this parameter to **on** to enable “MSI Plessey”.

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 any bar code with a length that falls within a specified range (e.g. between **10** and **15** characters). The minimum and maximum values for the range are **6** and **55**, respectively.

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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.15 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 any bar code with a length

that falls within a specified range (e.g. between **10** and **15** characters). The minimum and maximum values for the range are **4** and **14**, respectively.

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, an I 2 of 5 bar code is converted to EAN 13.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.16 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 any bar code with a length that falls within a specified range (e.g. between **10** and **15** characters). The minimum and maximum values for the range are **1** and **12**, respectively.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.17 RSS Code (Reduced Space Symbology)

Enable

Setting any of these parameters to **on** enables "2D RSS Code" scanning capability.

Enable RSS-14 (Reduced Space Symbology)

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

"RSS-Limited" is restricted, in that it can only encode 14 digit GTINs (global trade item number) that begin with either a *0* or a *1*. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

"RSS Expanded" uses the same application identifiers as UCC/EAN-128 codes but it can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. "RSS Expanded" code can be omni-directionally scanned.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.18 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 (see page C-42).

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 the parameters to **on**.

Enable TLC-39

This composite component integrates MicroPDF417 with the linear code. Setting this parameter to **on** enables this parameter.

C.2.19 PDF-417

Enabled

Setting this parameter to **on** enables PDF-417 two dimensional (2D) coding.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.2.20 Micro PDF-417

Enabled

Setting this parameter to **on** enables "2D 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.

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

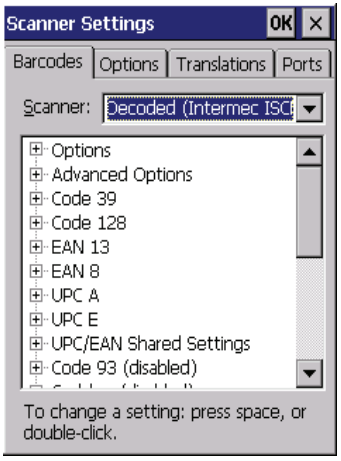
Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3 Decoded (Intermec ISCP)



- Tap on the **Scanner** drop-down menu, and choose **Decoded (Intermec ISCP).**

C.3.1 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.3.2 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 you quickly trigger on/off.

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 flashing.

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 unit 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.

Same Read Timeout

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.

C.3.3 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 you 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.4 Code 128

Enabled

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.

GS1-128 Identifier

"GS1-128 Identifier" allows the AIM ID "]C1" 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.

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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.5 EAN 13

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-14 for details.

C.3.6 EAN 8

Enabled

Set this parameter to **on** to enable "EAN 8".

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-14 for details.

C.3.7 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-14 for details.

C.3.8 UPC E Settings

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.

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-14 for details.

C.3.9 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.

Addendum Security

If you tap on "Addendum Security", a dialog box is displayed in which you can define the security level of add-on 2 or add-on 5 with a value from *0* to *100*. As security levels increase, the scanner decode speed decreases.

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.3.10 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.11 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.12 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.

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-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.3.13 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-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.3.14 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.15 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.16 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.17 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-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.18 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to **on** enables "RSS Code" scanning capability.

Enable RSS-14

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

'RSS-Limited" is restricted, in that it can only encode 14 digit GTINs (global trade item numbers) that begin with either 0 or 1. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

'RSS Expanded" uses the same application identifiers as UCC/EAN-128 codes but they can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. "RSS Expanded" code can be omni-directionally scanned.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.3.19 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 (see page C-42).

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.3.20 TLC-39

Enabled

This composite component integrates MicroPDF417 with the linear Code 39 symbol. Setting this parameter to **on** enables this parameter.

Linear Transmission Only

When *Linear Transmission Only* is enabled, only the linear 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-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.3.21 PDF-417

Enabled

Set this parameter to **on** to enable “2D PDF-417”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.3.22 Micro PDF-417

Enabled

Set this parameter to **on** to enable “2D 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:

]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-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.3.23 Codablock

Enable Codablock A

Set this parameter to **on** to enable “Codablock type A”.

Enable Codablock F

Set this parameter to **on** to enable “Codablock type F”.

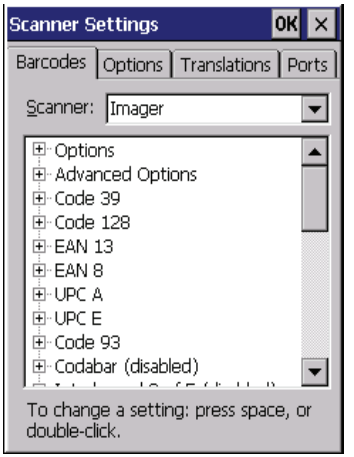
Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4 Imager



- Tap on the **Scanner** drop-down menu, and choose **Imager**.

C.4.1 Imager Options

TekImager Enabled

Setting this option to **on** enables the imager installed in your hand-held.

Continuous Scan Mode

Setting this parameter to **on** keeps image capture active and continuously decoding as long as the scanner button is pressed and held down.

Center Barcode Only

Note: This parameter must be disabled when reading Composite bar codes.

When more than one bar code is visible in a single snap shot, this parameter allows you to specify that only the centre image within the imager framing marker be read. When this parameter is set to **on**, the target dot is pointed at the centre image and only that image is returned.

Max Number Barcodes

Specifies the maximum number of bar codes the imager attempts to decode in an image. A maximum of 6 bar codes can be decoded at one time.

Barcodes Must Decode

This parameter specifies the minimum number of bar codes that the imager must decode in order to report success.

Note: This number must be less than the number of bar codes assigned to Max Number Barcodes. The driver validates and reassigns the value if necessary.

Window Width

"Window Width" determines the width of the captured image in pixels.

Note: The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use the Window Width value to horizontally center the image in the field of view.

Window Height

This parameter determines the height of the captured image in pixels.

Note: The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use Window Height value to vertically center the image in the field of view.

Dot Time (msec)

The value selected for "Dot Time (msec)" determines (in milliseconds) how long the targeting dot remains on before the scanner begins capturing images. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of between *0* and *3000*. A value of *0* disables the target dot.

C.4.2 Imager Advanced Options

Important: Do not adjust the advanced options without first consulting Psion Teklogix technical support.

Factory Defaults On Reboot

The value assigned to this parameter determines whether or not the driver will restore the factory defaults to the imager device on the next reboot.

Note: The driver will default the imager device on a 'clean' reset, regardless of the value of this parameter.

Min Scan Duration

This parameter defines the minimum amount of time in seconds that the imager will scan when the trigger is pressed and held down without successful decode.

Note: The actual scan duration when the trigger is pressed relies on the value assigned to "Captures Per HW Trigger", below.

Captures Per HW Trigger

The value assigned to this parameter determines the number of captures the imager device will take while the imager's internal hardware trigger is held down.

Note: This parameter, together with "Min Scan Duration", determines the actual scan duration. When the scan trigger is pressed and held down, the driver starts a timer based on the value of "Min Scan Duration" and also sends a command to emulate the hardware trigger. When completed, if the time has not yet expired, it will send another command to the imager device, forcing the imager to flash again using the value assigned to "Captures Per HW Trigger".

Auto Exposure

Important: This parameter value should only be changed by qualified Psion Teklogix personnel. It should be left at the default value: on.

Setting this parameter to **on** allows the imager to make automatic gain, integration and illumination adjustments based on ambient light before capturing the bar code. If the adjustment is insufficient, further adjustments are made automatically before another image is captured.

Fast Converge

*Note: "Auto Exposure" must be set to **on** in order for this parameter to function.*
Keep in mind that while this parameter can improve imager performance, "Fast Converge" increases battery power consumption.

Setting this parameter to **on** speeds the "Auto Exposure" process. It allows the imager to rapidly snap a number of bar code capture attempts while finding ideal values for gain, integration and illumination.

Max Gain, Max Integration and Max Illumination

Important: These parameter values should only be changed by qualified Psion Teklogix personnel.

These parameters represent internal values used by the 2D imager. The "Auto Exposure" parameter automatically adjusts the *Max Gain, Max Integration* and *Max Illumination* parameters to produce the best bar code read. Keep in mind that "Auto Exposure" must be set to **on** in order for these parameter values to be automatically adjusted.

Double-tapping on any of these parameters displays an associated dialog box in which an allowable range is displayed: *Max Gain – 357* to *7920*, *Max Integration – 0* to *65535*, *Max Illumination – 0* to *7*.

Decoder Timeout

The decoder is a set of algorithms that examine the image and attempt to find the bar codes, and then turn the pixels into data that the computer can use—this process takes time. "Decoder Timeout" limits the amount of time the decoder will spend attempting to decode an image, and forces it to stop and grab a new image, which will probably be easier to decode.

Note: When decoding multiple bar codes in one image, the value assigned to 'Decoder Timeout' should be increased to 200ms/extra bar code after the first.

Adaptive Windowing

"Adaptive Windowing" is an advanced technique used to speed up bar code recognition in certain applications. This parameter automatically reduces the size of the window to the user-programmed window size when it successfully decodes (which reduces decode time the next time it is used), but increases it to the full size window on a failed decode.

Note: This feature assumes that you have reached an understanding about how the device operates in your application, and that, after a learning period, operators will get used to using the imager in one particular way. It also assumes that a trained operator will usually only have near miss scenarios.

Constant Illumination

"Constant Illumination" is used to reduce the intrusiveness of the device's illumination on the observer. Instead of the illumination turning on and off every time the device attempts a decode (2-4 times per second), the illumination stays on from the time the trigger is pulled until a decode is successful. This feature is useful in low light environments, since it will also reduce the distraction that the illumination can have on nearby co-workers.

C.4.3 Code 39

Enabled

Set this parameter to **on** to enable "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.

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.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.4 Code 128

Enabled

Set this parameter to **on** to enable "Code 128.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.5 EAN 13

Enabled

Set this parameter to **on** to enable "EAN 13".

Addendum

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides three options: *Disabled, Optional* and *Required*. Depending on the value chosen for this parameter, an addendum is recognized or ignored.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When "Addendum" is set to *Disabled*, the scanner does not recognize an addendum. If this parameter is set to *Optional*, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required*, the scanner does not accept the main bar code without an addendum.

Note: Setting "Addendum" to 'Optional' reduces performance. It should only be chosen if at least some of the bar codes being read have addendums.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.6 EAN 8

Enabled

Set this parameter to **on** to enable "EAN 8".

Addendum

Refer to "Addendum" on page C-47.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.7 UPC A

Enabled

Set this parameter to **on** to enable "UPC A".

Addendum

Refer to “Addendum” on page C-47.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.8 UPC E

Enabled

Set this parameter to **on** to enable “UPC E”.

Addendum

Refer to “Addendum” on page C-47.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.9 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.10 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.11 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable "Interleaved 2 of 5".

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).

Include Check

If this parameter is enabled, the check digit is transmitted along with the I 2 of 5 symbol.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.12 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to *on* enables "RSS Code" scanning capability.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.13 Composite

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

Enabled

Set this parameter to **on** to enable "Composite" bar code scanner.

Important: To successfully read this type of bar code, the two types of symbologies included in the composite must be enabled. In addition, "Center Barcode Only" must be disabled (see page C-42).

C.4.14 PDF-417

Enabled

Setting this parameter to **on** enables PDF-417 two dimensional (2D) coding.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.15 Micro PDF-417

Enabled

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.16 2D Data Matrix

Enabled

Set this parameter to **on** to enable "2D Data Matrix".

Inverse Video Mode

Enabling this parameter allows the imager to read inverse bar codes—white symbols presented on a black background.

Rectangular

Enabling this parameter allows the imager to recognize rectangular (as opposed to square) symbols.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.17 2D QR Code

Enabled

Set this parameter to **on** to enable "2D QR Code".

Inverse Video Mode

Enabling this parameter allows the imager to read inverse bar codes—white symbols presented on a black background.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.18 2D Maxicode

Enabled

Set this parameter to **on** to enable "2D Maxicode".

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.19 2D Aztec

Enabled

Set this parameter to **on** to enable "Aztec".

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.20 Postal: PlaNET

Enabled

Set this parameter to **on** to enable "Postal: PlaNET".

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.21 Postal: PostNET

Enabled

Set this parameter to **on** to enable "Postal: PostNET".

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.4.22 Postal: Australian

Enabled

Set this parameter to **on** to enable "Postal: Australian".

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.23 Postal: Japanese

Enabled

Set this parameter to **on** to enable “Postal: Japanese”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.24 Postal: Korean

Enabled

Set this parameter to **on** to enable “Postal: Korean”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.25 Postal: Royal

Enabled

Set this parameter to **on** to enable “Postal: Royal”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.26 Postal: Kix

Enabled

Set this parameter to **on** to enable “Postal: Kix”.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.4.27 Postal: Canadian

Enabled

Set this parameter to **on** to enable “Postal: Canadian”.

Length Restriction

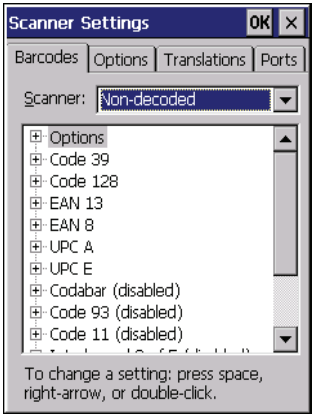
Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5 Non-Decoded Scanners

Figure C.1 Non-Decoded Scanner Options



- Tap on the **Scanner** drop-down menu, and choose *Non-decoded*.

All the available bar code symbologies for this type of scanner can be selected in this tab.

A 'plus' sign (+) to the left of the menu item indicates that a sub-menu of parameters is attached.

- Tap on the + sign to display the sub-menu.
- To change a parameter value, double-tap on the parameter. If you need to type a value, a dialog box is displayed in which you can type a new value. If you need to change a yes or no value, double-tapping on the parameter toggles between yes and no.

If you're using the keyboard:

- Highlight the bar code you want to work with, and press the [RIGHT] arrow key to display the sub-menu.
- Use the [UP] and [DOWN] arrow keys to highlight a parameter.
- To change a parameter value, press [SPACE] or the [RIGHT] arrow key. If a field requires text entry, a text box is displayed in which you can enter the appropriate value.

C.5.1 Options

- Tap on the + sign next to *Options* to display these parameters.

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 from 0 to 3000. A value of 0 (zero) disables the target dot.

Short Code

When enabled, this parameter allows scanning of short I 2 of 5 bar codes (2 characters). When disabled, these short bar codes are rejected.

Enabling "Short Code" may reduce the robustness of the decoding since the hand-held must decode more potential bar codes; it is therefore not recommended for general-purpose bar codes with 4 or more characters.

Verify

The value entered for this parameter determines the number of correct additional decodes required after the initial decode, prior to a bar code being accepted. Higher values significantly increase the time it takes to decode a bar code but also improve the reliability of the decoded bar code.

Security

This parameter controls the tolerance for decoding edge-to-edge bar codes (Code 93, Code 128, UPC/EAN). Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code. The default value of 30 is generally a good compromise setting.

C.5.2 Code 39

Enabled

Set this parameter to **on** to enable "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.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

AIAG Strip

If this parameter is enabled, the AIAG data identifier is removed from each decoded Code 39 label. The data identifier occurs in the first position next to the Code 39 start character. It can be a single alphabetic character or a series of numeric digits followed by an alphabetic character. This identifier defines the general category or specific use of the data contained in the rest of the bar code.

Note: If your unit is operating with the Psion Teklogix TESS application, this parameter should not be used in conjunction with the TESS AIAG feature. This is because the hand-held performs the strip function before it processes the data through the AIAG feature; if the prefix is stripped, the data is not identified as AIAG.

Error Accept

If the "Err Accept" and "AIAG Strip" parameters are enabled, all label data without an AIAG identifier character is accepted. If the "Err Accept" parameter is disabled and the "AIAG Strip" parameter is enabled, the label data is not accepted.

MOD Checks

This parameter allows you to choose the check digit calculated: *MOD 43 Check, MOD 10 Check* or *None*.

- Double-tap on **MOD Checks** to display your options.
- Tap on a check digit to highlight it, and tap on **OK**.

If you choose *None*, a check is not executed.

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.5.3 Code 128

Enabled

Set this parameter to **on** to enable "Code 128".

Include Sym

Setting "Include Sym" to **on** causes the group separator(s) and start code contained in this type of bar code to be displayed on the screen.

Note: This option is available only when 'EAN/UCC 128' is selected.

Variations

When using Code 128, you can choose the bar code variation the scanner will recognize. The options available are Standard, UCC 128 and EAN/UCC 128.

- Double-tap on **Variations** to display a dialog box listing your options.
- Tap on a variation to highlight it, and then tap on **OK**.

If you choose *None*, a check is not executed.

Standard

Enable *Standard* if "Code 128" is desired.

UCC 128

UCC 128 is a variation of "Code 128".

EAN/UCC 128

To successfully scan this type of bar code, "EAN/UCC 128" must be enabled. "EAN/UCC" bar codes include group separators and start codes.

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.5.4 EAN 13

Enabled

Set this parameter to **on** to enable "EAN 13".

Enable Bookland EAN

Setting this parameter to **on** allows your scanner to recognize Bookland EAN bar codes.

Include Country

If this parameter is enabled, the country code is included with the decoded bar code data.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Addendum

Important: Before "Addendum" can take effect, the "Short Code" parameter (see page C-55) must be enabled.

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides three options: Disabled, Optional and Required. Depending on the value chosen for this parameter, an addendum is recognized or ignored.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When "Addendum" is set to *Disabled* the scanner does not recognize an addendum. If this parameter is set to *Optional* the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required* the scanner does not accept the main bar code without an addendum.

Note: Setting Addendum to Optional will reduce performance. This value should only be used if some bar codes actually have addendums.

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.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.5.5 EAN 8

Enabled

Set this parameter to **on** to enable "EAN 8".

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

Addendum

Important: Before "Addendum" can take effect, the "Short Code" parameter (see page C-55) must be enabled.

See "Addendum" on page C-58.

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.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5.6 UPC A

Enabled

Set this parameter to **on** to enable “UPC A”.

Include Number Sys

If this parameter is enabled, the number system digit is included with the decoded bar code data.

Include Check

If this parameter is enabled, the check digit will be included with the decoded bar code data.

Addendum

Important: Before “Addendum” can take effect, the “Short Code” parameter (see page C-55) must be enabled.

Refer to “Addendum” on page C-58.

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.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5.7 UPC E

Enabled

Set this parameter to **on** to enable “UPC E”.

Convert to UPC-A

Setting this parameter to **on** results in a non-standard decoding that returns 12 digits from the 6 digit UPC E bar code.

Include Number Sys

If this parameter is enabled, the number system digit is included with the decoded bar code data.

Include Check

When enabled, the check digit is included with the decoded bar code data.

Addendum

Important: Before "Addendum" can take effect, the "Short Code" parameter (see page C-55) must be enabled.

Refer to "Addendum" on page C-58.

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.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.5.8 Codabar

Enabled

Set this parameter to **on** to enable "Codabar".

Strip Start/Stop Chars

Codabar uses the characters A, B, C, and D as start and stop characters. Thus, the first and last digits of a Codabar message must be A, B, C, or D, and the body of the message should not contain these characters. Setting this parameter to **on** strips the start and stop characters from this bar code.

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.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5.9 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”.

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.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5.10 Code 11

Enabled

Set this parameter to **on** to enable “Code 11”.

Include Check

If “Include Check” is enabled, the check digit is included with the decoded bar code data.

Check Digits

This parameter can be set to None, One Check Digit or Two Check Digits.

- Double-tap on this parameter to display a dialog box listing your options.

- Highlight the check digit you want to use, and tap on **OK**.

If this parameter set to *One Check Digit*, it is assumed that the last digit is a check digit.

If this parameter is set to *Two Check Digits*, it is assumed that the last two digits are check digits.

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.5.11 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable "Interleaved 2 of 5".

MOD 10 Check

If this parameter is enabled, the "MOD 10" check digit is calculated. This calculation is the same as the Code 39 MOD 10 check digit.

ITF Check

If this parameter is enabled, the ITF-14/16 MOD 10 check digit is calculated.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5.12 MSI Plessey

Enabled

Set this parameter to **on** to enable “MSI Plessey”.

One Check Digit

If this parameter is enabled, it is assumed that the last digit is a check digit.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

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.

Length Restriction

Refer to “Length Restriction” on page C-14 for details.

Add/Remove Data

Refer to “Add/Remove Data” on page C-14 for details.

C.5.13 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable “Discrete 2 of 5”.

MOD 10 Check

If this parameter is enabled, the MOD 10 check digit is calculated. This calculation is the same as the Code 39 MOD 10 check digit.

ITF Check

If this parameter is enabled, the ITF-14/16 MOD 10 check digit is calculated.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

C.5.14 IATA 2 of 5

Enabled

Set this parameter to **on** to enable "IATA 2 of 5".

MOD 10 Check

If this parameter is enabled, the MOD 10 check digit is calculated.

ITF Check

If this parameter is enabled, the ITF-14/16 MOD 10 check digit is calculated.

Include Check

If this parameter is enabled, the check digit is included with the decoded bar code data.

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.

Length Restriction

Refer to "Length Restriction" on page C-14 for details.

Add/Remove Data

Refer to "Add/Remove Data" on page C-14 for details.

APPENDIX D

TEKLOGIX IMAGERS APPLET

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. This imager services application is used for cameras and imagers to configure linear (1D), stacked linear, matrix (true 2D) and postal bar codes. A *Demonstration Application* is provided to demonstrate how the imager works. Refer to "Demo" on page 65 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.

Note: The Teklogix Imagers icon is only displayed when the appropriate imager is installed in your Omnii. If there is an imager installed but this icon is not present, additional software (ICS) may need to be installed.

To enable a newly-installed imager, press and hold down the [FN] key and the [ENTER/Power] key simultaneously for a minimum of three seconds.

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:

- 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-20.

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.

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.

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

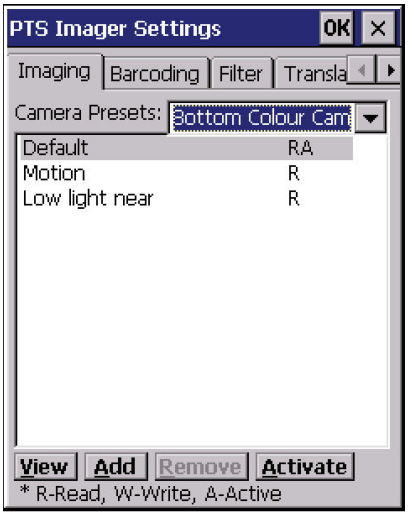
D.3.1 Configuring the Image Capture Presets

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.

The following screen is displayed.

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:

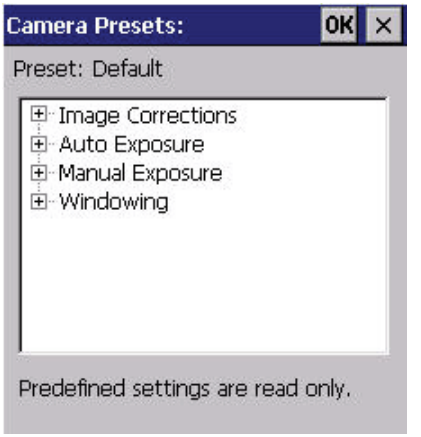
- Highlight the preset, and tap on the **Activate** button.

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.



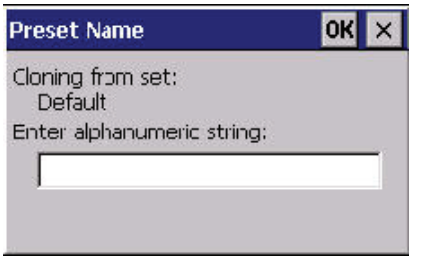
- Tap on the + sign to expand the lists so that you can view the parameter settings.

D.3.5 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.

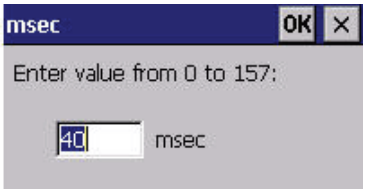
The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

D.3.6 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.

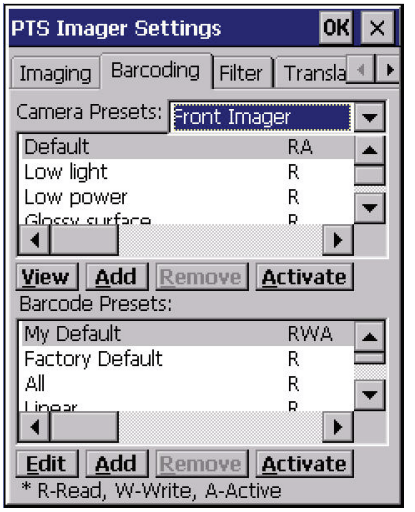
- Tap on **Yes** to remove the preset or **No** to cancel the operation.

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-6.
- 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*.

Note: The top portion of the window displays the bar code decoding camera presets.

The top port of the window displays the bar code decoding camera presets.

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 16, the active preset is *Default*. To set an active preset:

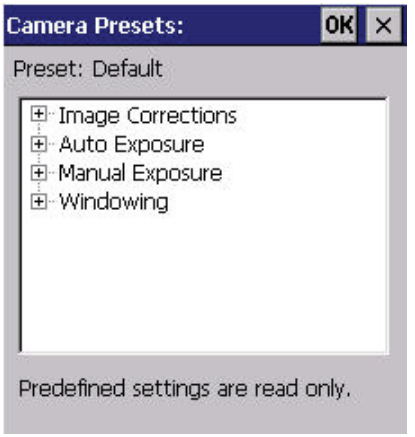
- Highlight the preset, and tap on the **Activate** button.

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.



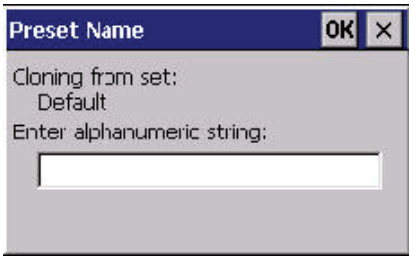
- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

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.



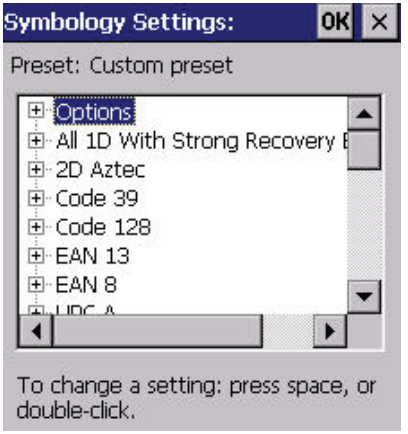
- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

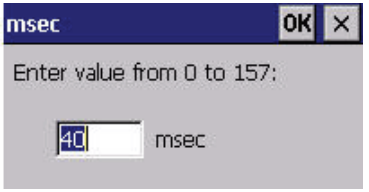
D.4.5 Modifying a Custom Preset

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.

- Tap on **OK** to exit to the preset list and save the changes.

D.4.6 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.

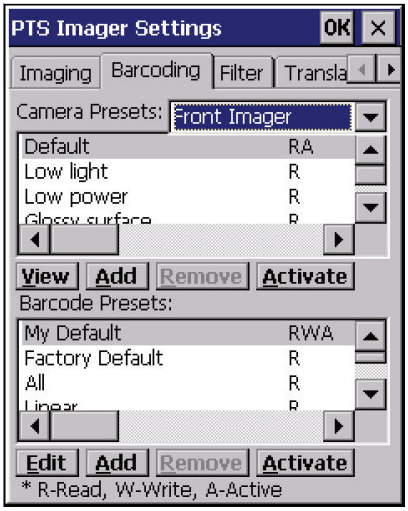
D.4.7 Configuring the Bar Code Decoding Symbologies

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 16, the active preset is *Default*. To set an active preset:

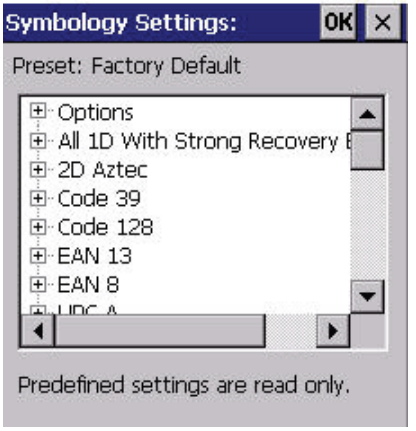
- Highlight the preset, and tap on the **Activate** button.

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.



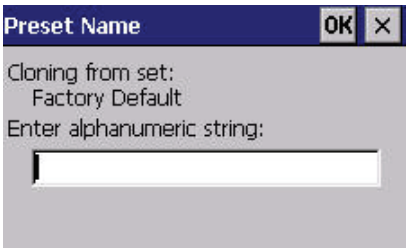
- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

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.



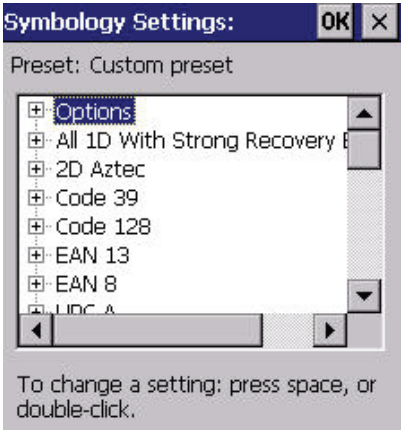
- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

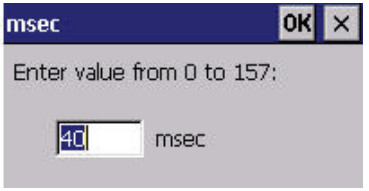
D.4.11 Modifying a Custom Preset

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:
  - 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.

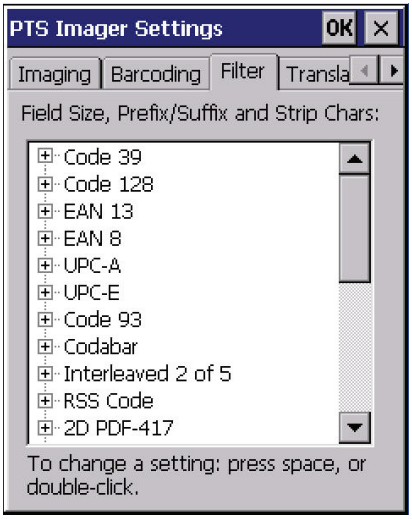
D.4.13.1 Symbology Settings

Note: For descriptions of the bar code symbologies, review "Bar Code Symbologies – Descriptions" on page D-25.

D.4.14 Filter Tab – Manipulating Bar Code Data

To configure rules for manipulating bar code data:

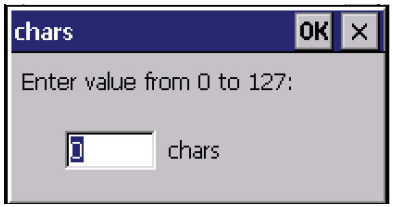
- Tap on **Start>Settings>Control Panel**.
- Tap on the **Teklogix Imagers** icon, and then tap on the **Filter** tab.



D.4.14.1 Modifying a Bar Code Setting

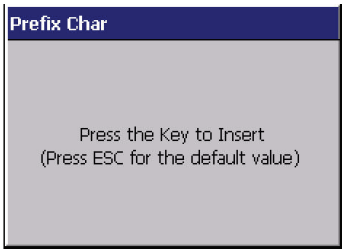
The rules for manipulating data from selected bar code symbologies can be modified. To change the settings for a symbology:

- 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.
  - 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 takes a single character:

- Highlight the parameter and then press the **[SPACE]** key, or double-click the parameter. The following screen is displayed:



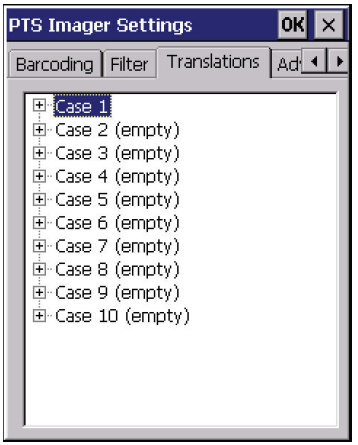
- When you've completed your edits, tap on **OK**.

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.



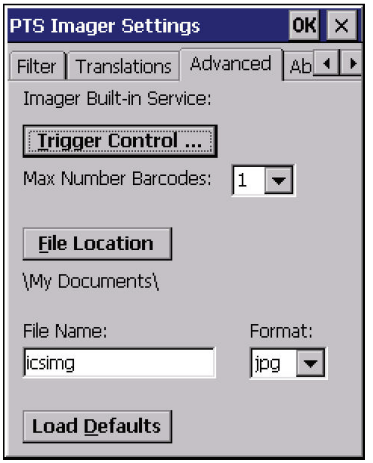
For instructions on adding, editing, and removing translation rules, refer to "Translations Tab" on page 154.

D.4.16 Advanced Tab

D.4.16.1 File Locations for Captured Images

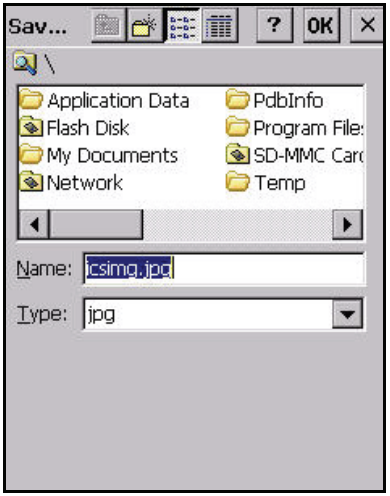
To configure the location for saved images, open the dialog box as follows:

- 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.



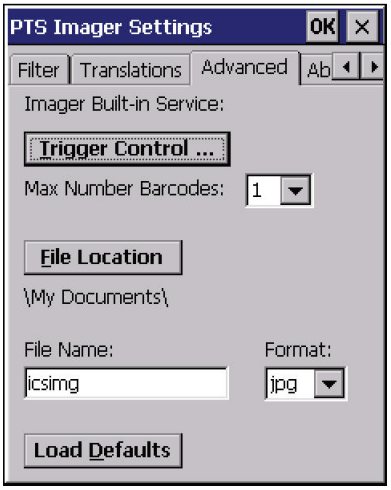
- Type the file **Name**, choose the **Folder** and file **Type**.
- Choose the **Location** in which your files will be saved.
- When you have completed all the changes, tap on the **Save** button.

D.4.16.2 Configuring Triggers

Viewing the Trigger Configuration

The trigger on Omnii 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 104.

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 barcode on captured image. The value assigned here is dependent on the type of bar code and quality of the image being capture. 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.

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.

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.

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.

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*.

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*.

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).

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

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

"PosiCode" 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.

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".

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*.

D.5.32 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.

D.5.33 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.

D.5.34 Postal: Australian

Enabled

Set this parameter to *on* to enable "Postal: Australian".

D.5.35 Postal: Canadian

Enabled

Set this parameter to *on* to enable "Postal: Canadian".

D.5.36 Postal: China

Enabled

Set this parameter to *on* to enable "Postal: China".

D.5.37 Postal: Japanese

Enabled

Set this parameter to *on* to enable "Postal: Japanese".

D.5.38 Postal: Kix

Enabled

Set this parameter to *on* to enable "Postal: Kix".

D.5.39 Postal: Korean

Enabled

Set this parameter to *on* to enable "Postal: Korean".

D.5.40 Postal: Royal

Enabled

Set this parameter to *on* to enable "Postal: Royal".

D.5.41 VeriCode®

Enabled

VeriCode is a 2D omni-directional symbol. To read this symbol, set this parameter to *on*.

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