



ScanVue® 8000 Customer Interactive Kiosk User Manual



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STANDARDS CERTIFICATION

The ScanVue® product described in this manual has been fully tested and certified by an independent testing laboratory and is compliant with the following international standards.

- UL Standard 60950 (ITE) listed product.
- CSA standard C22.2 No. 950 recognized product.
- RF Emissions (Conducted):
FCC CFR Title 47 part 15 Subpart B, Class A
- RF Emissions (Radiated):
CISPR 22 called out in FCC CFR Title 47 part 15 Subpart B, Class A
- EN55022, 2010/AC: 2011 Class A
- EN55024: 2010
- EN61000-3-2: 2006 + A1: 2009 & A2: 2009
- EN61000-3-3: 2008

The internal Wireless LAN PCIe Minicard is certified by the manufacturer to be compliant with the following standards:

- EN60950-1: 2006 + A11: 2009, EN 50385: 2002, EN 301 489-17
- IEC 60950-1: 2001
- FCC part 15B & part 15C

CAUTIONS

Caution: Do NOT Display a Fixed Image for Extended Periods of Time as this may cause LCD image persistence producing pixel discoloration.



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Chapter 1—Introduction

Overview

This manual provides instructions for configuration and operation of the IEE ScanVue® 8000 Customer Interactive Kiosk with slideshow feature designed for product marketing. Included is a description of the basic functions and features of the hardware along with a description of how to physically install the unit in its intended location, set it up to operate on your specific network, configure your network, and interface the IEE ScanVue® 8000 Kiosk to a back office server through its Application Programming Interface (API).

The following chapters describe how to:

- Setup and install a local desktop or laptop PC with IEE Configuration programs, initialization file (scanvue.ini), demo graphic / text files and various support utilities.
- Create slideshow presentations using SVGA color graphic images and script files.
- Configure ScanVue® Kiosk using IEE configuration program **UnitConfig** or **Modeset**.

ScanVue® 8000 Kiosk Description

ScanVue® 8000 Customer Interactive Kiosk is a multi-function price verifier micro kiosk designed to scan, verify and display price information for bar coded products.

ScanVue® 8000 Kiosk can show continuous advertising of specials or promotions, display manufacturers “paid – for” advertising or provide other customer information. In addition to performing a service to the customer, the ScanVue® Kiosk can directly generate advertising revenue for the store. Special displayed advertising can be sequential graphic still images for presenting a slideshow, short video clips using graphic images or text messages to promote special or seasonal sales events, manufacturer’s co-op advertising, check gift card balances or provide other customer information.

ScanVue® 8000 Kiosk is a network-connected device which uses industry standard TCP/IP protocols for communication and interfaces to a store network server through an Application Programming Interface (API) that resides on the network server.

ScanVue® 8000 Kiosk requires GIF or PNG images in SVGA (800x600 pixel) resolution. Images can be edited with any good commercial image editing program such as CorelDraw or Adobe Photoshop.

The contemporary housing design merges well with almost any store décor and custom color combinations are available if the units are ordered in sufficient quantities. The electronics package is completely contained in a high impact ABS injection molded case.

ScanVue® Primary Functions

- **Item Barcode Scan:** Customer scans product UPC barcode. Product price and description information (Images or Text) are then returned by Host and displayed on the ScanVue®.
- **Slideshow Feature:** Idle stage where up to 150 sequential SVGA (800x600) .gif or .png images (downloaded from the Host by ScanVue®) are sequentially displayed repeatedly until item barcode scan. Slideshow resumes after a timeout. Short video clips (up to 8 seconds) in the form of sequential .gif or .png images are supported at fastest rate of 18 frames/sec.



ScanVue® 8000 Kiosk Operation

Scanvue® Initilization File Overview

A default initialization file **scanvue.ini** must be located in the shared **POS** directory on the network server. The **.ini** file controls the behavior of every unit linked to that server and references the slideshow **.sho** file that initiates the slideshow presentation. When started up, ScanVue® reads the **.ini** file in the shared directory. If the **.ini** file is not found, it will not receive instructions to initiate and run a slideshow presentation.

Changing a mode setting value using **UnitConfig** modifies the saved configuration. ScanVue® retains the new settings in non-volatile memory.

Refer to **Appendix C** for detailed information on how to modify the **scanvue.ini** initialization file.

Slideshow Overview

A slideshow is a graphics-based presentation that runs as directed by a slideshow file (**.sho**) modified by the user and located in **C:\POS\Shows** folder. This file contains script (instructions) listing graphic image files located in **C:\POS\Graphics** folder and referencing how these images are to be presented.

Slideshow files residing in the host server **Shows** folder and are 'pushed' to the displays by commands in the slideshow **.sho** file and stored in the ScanVue® volatile RAM memory. The slideshow presentation is then executed from within the ScanVue®.

Once ScanVue® units are installed and configured, any person familiar with a PC and able to write simple macros or script files will be able to create slideshows using Microsoft WordPad™ or a similar text editor. Image files can be obtained from various sources—downloaded from a website, scanned in from a digital scanner or transferred from a digital camera. Familiarity with a graphics editor program would be helpful in preparing the images for slideshow presentations.

Refer to **Appendix D** for detailed information on how to create a slideshow.

Network Activity

ScanVue® includes servers for FTP (port 21), ProductInfo (port 1283) and clients for FTP, SMB (Windows networking) and QFX (Quick File eXchange) file transfer protocols. FTP, SMB or QFX can be used to access the graphics files from the Network Server for ScanVue®'s slideshow. SMB is the default mode.

NOTE: When using FTP, the FTP server pushing the slideshow file to ScanVue® must be set to binary mode.

The ScanVue® requires a file server for storing graphics files and a ProductInfo server (host or back office computer) where the price/description database is maintained. These servers may (but do not have to be) the same physical computer. The file server must have the ScanVue® Initialization file (scanvue.ini) along with font, graphic and slideshow script file (.sho) located in its shared **POS** directory (if SMB-based) or the default directory for FTP or QFX. The file server can be a Windows or Linux system with any OS that runs TCP/IP.

ScanVue® sends the UPC number read from a bar coded item placed under the scanner to the Host or back office server API (ProductInfo) which uses this number as a key to find the item in the price/description database. After the item records are retrieved, the host application prepares the response and sends it back to ScanVue® where the information is accepted and displayed. The response can be a graphic image (.gif or .png) or text message.



ScanVue® 8000 Kiosk Models

ScanVue® 8000 Kiosk is available with a SVGA color graphics LCD display.

- The ScanVue® Kiosk model **8000-0000** is basic model with 10/100 BaseT Ethernet communication.
- The ScanVue® Kiosk model **8000-0100** has 11Mbps (IEEE 802.11b) Wi-Fi communication along with 10/100 BaseT Ethernet communication.

Model Number Scheme

Model #: XXXX-XXXX-XX

1st 4 Digits: Model 8000 Series XXXX-XXXX-XX

8000 LCD - 8" SVGA Display

2nd 4 Digits: ScanVue Configuration Options XXXX- 0 X 0 0-XX

Wi-Fi 0 = No 1 = Yes _____

Last Digit: Special Order: XXXX-XXXX-X X (OPTIONAL)

Printer Kit 2 _____
Custom Color X _____

Please call for custom color or special request requirements

ScanVue® Kiosk models are available with Power-Over-Ethernet (PoE) 10/100 BaseT communication or Ethernet with power input for 11-29 VDC power. A 12 VDC 2.5A (30W) Power Supply is available as an option.

Available Options

For supported device requirements, refer to **Interactive Device Support** section.

For power and communication requirements, refer to **Specifications** section.



Configuration

ScanVue® Kiosk Configuration Options

There are 2 ways to configure a ScanVue® Kiosk unit:

1. Commands sent across the network using the **UnitConfig** or **Modeset** programs. (ScanVue® must be able to communicate with the server on the network before configuration settings can be changed on the network).
2. Scan special purpose configuration barcodes. Refer to **Appendix B** for instructions.

UnitConfig the graphical, table oriented version of **modeset** provides the easiest way to change the configuration of a unit on the network (as opposed to scanning barcodes or sending **modeset** DOS commands. **UnitConfig** may be installed on a desktop or laptop computer for setting up ScanVue® units without a large network complicating it. You will need a network interface card (NIC) installed in your PC and configured properly to communicate with ScanVue®.

Configuration Info Screens

When ScanVue® boots up, two configuration status screens (**Fig. 1**) are sequentially displayed which show the current settings of the unit. Each screen is displayed for 10 seconds then the unit will load the slideshow from the server and start running. These screens can be displayed at any time by scanning 'Info Screen 1' and 'Info Screen 2' bar codes shown in **Appendix B** under **Support Barcodes**. Wireless RF configurations display brown text on a light green background and hardwired Ethernet units display yellow text on a blue background.

Refer to **Chapter 4** for detailed information on how to configure a ScanVue® 8000 Kiosk.



Figure 1—Configuration Info Screens 1 and 2



Installation Requirements

Installation

The installation of ScanVue® is a reasonably easy process for a person familiar with installing and maintaining local area networks (LAN's). It is assumed the installation will be done by a person having a sufficient level of technical expertise with LAN hardware and software to understand the content of this manual and complete the job with minimal outside help. A system or network administrator is capable of performing the installation with ease.

Setting Up a Wireless RF Link for ScanVue® Wi-Fi Models

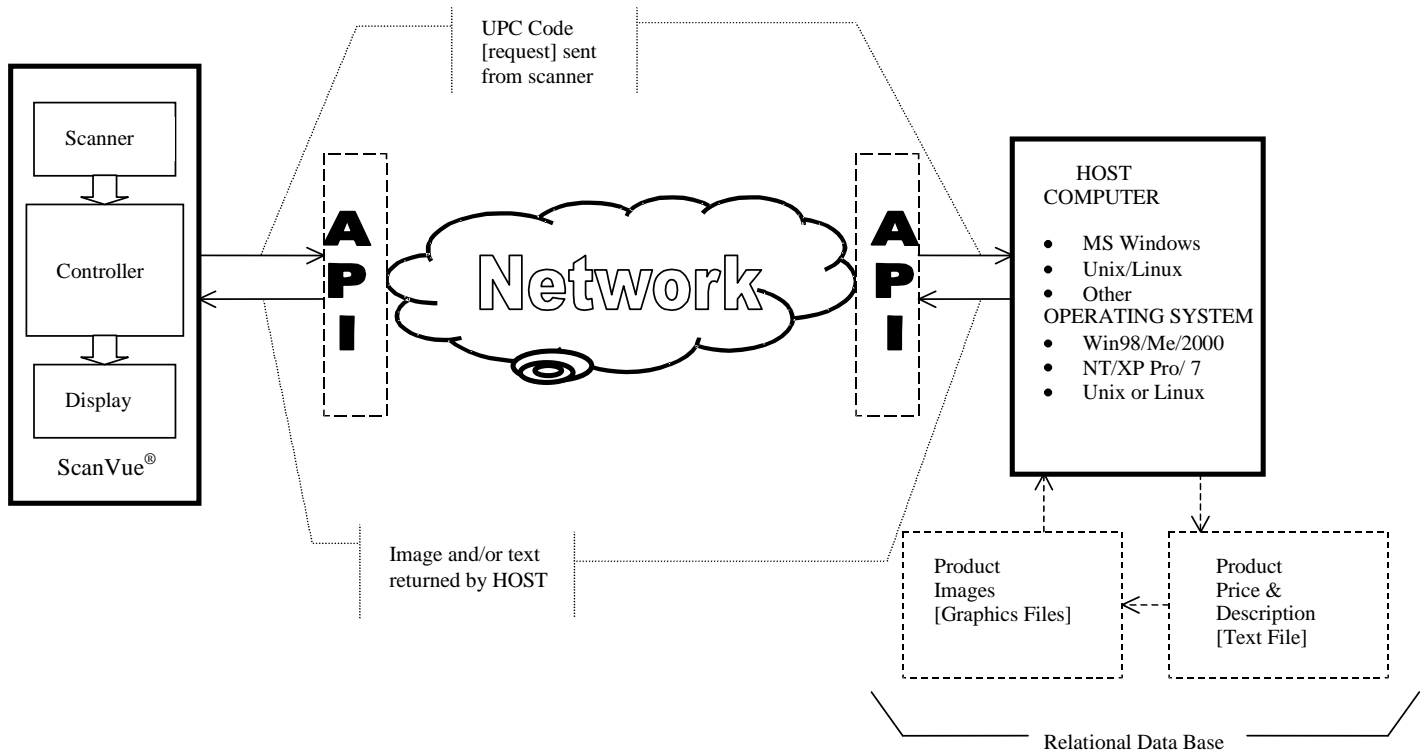
Installation of Wireless RF communication links requires special expertise and is part of your site network and as such the manufacturer of the wireless router or access point (and your network staff) should be the first line of technical support. Most of the manufacturers of wireless routers or access points have extensive technical documentation on performing RF site surveys and correct installation of the units on their web sites.

Before installing a new wireless RF data link, it is important to perform an RF site survey to characterize the immediate environment and ensure a reliable system is designed. The general pointers we indicate below will assist in the initial installation and diagnosis of a link problem. However, your first line of technical support is the specialized help available from your system installer or IT Support. The manufacturer of the wireless router may also provide support.

1. Unobstructed line-of-sight is best. If you can, arrange the ScanVue® units so there is an unobstructed line-of-sight to the access point. Under these ideal conditions and assuming no interference from other 2.4Ghz sources, you should get up to 150' distance. In a typical office or retail environment 30'-50' is more typical.
2. Mount the wireless router or access point as high as possible in the line-of-sight. This way the signals should travel above racks, shelving, customers, etc. The human body is 90% water and a good RF signal absorber—this is why cell phones often don't work well inside buildings and around crowds of other people.
3. Keep reflective surfaces like mirrors and polished stainless steel, and metal objects with sharp points to a minimum and away from the antenna as much as possible.
4. As the ScanVue® unit cannot easily be moved once installed, it is often more convenient to have a portable signal strength meter or an IEEE802.11b Wi-Fi module in a laptop computer during installs. The module driver will have a RSSI graph or will display the signal strength as a percentage depending on the module used.



Interfacing to the Host Network Server



This abstract system level diagram shows the relationship between the ScanVue®, the network and the host computer supporting SMB, FTP or QFX file transfer protocol. The API is shown at both ends for clarity. In practice the API that links the host network server to the ScanVue® resides on the host server.

Figure 2—Simplified ScanVue® System Diagram



Application Program Interface (API)

Overview

A generic bi-directional message passing protocol API called 'ProductInfo' has been created especially for retail store price-verifier applications. The ProductInfo application is required as an interface between ScanVue® 8000 Kiosk and the back office server that has the database containing item prices and descriptions. Implementations of ProductInfo directed at specific hardware platforms, the ScanVue® in this case, are a subset of the full protocol.

The application that links ScanVue® and the host / back office server's database must reside on the server. Any platform that runs TCP/IP as the network transport-protocol can be used as a server to support ProductInfo based applications. Hardware platforms include MS Windows, Unix or Linux. Supported Operating Systems include Windows 98, ME, 2000, NT, XP, 7, Unix, Linux and VAX. Known databases running on the OS can be Oracle, MySQL, Microsoft SQL Server and OpenVMS.

The ProductInfo Server application program is responsible for receiving a request from a ScanVue® after a barcode scan, retrieving the price and description from the database and returning that data to the unit that initiated the request. The development and maintenance of any host computer based application program required to access a product-information database is the sole responsibility of the end user or their system integrator. IEE provides a sample ProductInfo server API **Demoserv** included in the SDK. License free Demoserv "C" source code is included to assist the end user in writing applications on their host machine. Demoserv is written in ANSI "C" and can be integrated with any ANSI 'C' compiler.

Description

ScanVue® has an embedded protocol engine that uses TCP/IP to send the UPC barcode number from the ScanVue® to the host computer, and return the price and description information retrieved from the host computers' database by its resident application.

ProductInfo is a TCP based, bi-directional message-passing protocol that uses the same format when moving data in either direction. In normal operation, the client opens a connection for each request generated, usually a scanned barcode, and keeps it open until the server instructs the client to close it. The client can also wait for the server to open a socket thus allowing asynchronous operation.

The protocol also sends events marking a change of state (opening or closing) of any of the four optional front panel switches. These events may be used by the hosts resident application to control functions or modes within the application, for instance to change language displayed when a switch is pressed.

An abstract system level diagram showing the relationship between ScanVue®, the network and the host computer is shown in **Figure 2**. The API is shown at both ends of the network for clarity. In practice, the application to interface the host computer server to ScanVue® will reside on the host computer.

In the interest of robustness, both ends accept any message whether defined or not, invalid or unknown messages are simply discarded. **A maximum reasonable message length may be used as a means to detect implementation bugs that could result in loss of synchronization.** Such errors terminate the connection. If the client detects it, it may send an error token following re-establishment of the connection in order to log the error on the server. If the server is able to detect this condition, it can log it directly. When the server receives a product query from the ScanVue®, it must respond even if the message is just to terminate the connection. Following submitting a query, the client may choose to take an error action if it receives nothing from the server within a defined timeout period. The server can make capability queries and/or mode changes before, during, after, or in lieu of sending any response. **If the server wishes to space messages more widely than the client's default timeout, it must send a 'Set Mode' packet to change the timeout; this need only be done once per query, but must be done on each query.**



The client may send capability messages regardless of whether the **key name** is known to the server and the server may retain this information. When the server needs to know the value of one of these capabilities, it can consult this retained information. If it is not known, a capability query may be sent and the server may wait a moment for a reply to be received. This reply will asynchronously update the server's information, and the value should be found there by a subsequent lookup following the brief interval required for the client to respond to the query. If it remains undefined, it can be assumed that the client declined to respond, probably because that capability name is not known to it.

Mode settings allow the server to select between optional behaviors or parameters in the client. Theoretically, this can work both ways. If the server wants the client to adopt a certain mode setting, it sends the command and the client will respond appropriately. If not, an error report may be generated in response. Mode settings occupy a separate name-space from the capabilities table. A mode setting could be used to change the timeout value the client uses to decide that a socket connection has broken.

Error reports are used primarily as a debugging tool. The string starts with an error number, optionally followed by white-space and explanatory text. In the nominal case, messages consist of a length, followed by a token, possibly followed by more information as specified by the length and the token. In the trivial case, the message consists solely as a NUL-terminated text string; this is the case when each of the four bytes of length field is an ASCII printable character. When such a message is received by the server, it is interpreted as a product query; it optionally contains the client's identification and white-space preceding the product code. When received by the client, it is interpreted as a single, textual response to a query.

The (ProductInfo Server) is described in more detail in **Appendix F**.

Protocol Implementation Rules

1. Mode values changed during a query session are only retained during that session.
2. The host can make "permanent" changes to mode values for query sessions by connecting to the ProductInfo protocol port (Port 1283) of the client and setting the values. As long as that connection is maintained, the new values will be used in all further queries.
3. Whether a "permanent change" will survive a power cycle of the client is implementation dependent. Clients may provide special functions to record mode information in non-volatile storage.
4. Query sessions are best kept limited to information that is to be displayed immediately, so that further queries can be answered.
5. Mode values that start or end with whitespace must be sent enclosed in double quotes. These quotes are removed when the value is stored. Double quotes within the string are treated as part of the value.



Specifications

Display:

- SVGA (800x600 pixel) color graphics 8" Diagonal LCD display

Network Server Computer Requirements:

- MS Windows, Unix, Linux, VAX or any other platform that runs a TCP/IP network

Supported Operating Systems:

- Windows 98, ME, 2000, NT, XP, 7, Unix, Linux and Open VMS

Power Options:

- Wi-Fi and Ethernet Models: 11-29 VDC, 10 W typ. (24 VDC Nominal)
- PoE Hardwired Models: 48 VDC, 10 W typ. (IEEE 802.3af compliant)

Communication Options:

- 11Mbps (IEEE 802.11b) Wi-Fi *
- TCP/IP peer-to-peer Ethernet 10/100 Base-T
- Power-over-Ethernet (PoE)

Supported Interactive Devices:

- 4 front panel push button event switches

Input Device Options:

- An external RS232 serial port is available via an optional Y cable that supports a serial receipt printer or other serial device.
- 2 USB ports – (For any desired future use such as MSR, please contact Sales)

1D/2D Barcode Scanner:

- Supports any 1D and 2D bar codes including PDF417 codes. UPC and NCR prefix support.

ScanVue Software:

- Operating System: Embedded Linux

Slideshow Presentation:

- Image Format: GIF, PNG
- Image Resolution: SVGA (800x600)
- Maximum Number of Images: 150
- Fastest Frame Rate (Video Clip Support): 18 Frames per Second

Configuration Setup:

- On Line: UnitConfig, Off Line: Barcodes

Security:

- WEP*
- WPA - WPA-PSK, TKIP
- WPA2 - WPA-PSK, CCMP

Tools:

- SDK (software developers kit) includes ScanVue® configuration programs (UnitConfig and Modeset), Sample API program (Demoserv), sample code, font files, demo graphic images, demo text files and user manual

*NOTE: WEP (Wireless Equivalent Privacy) encryption continues to be supported by ScanVue®, however, the recommended solution to WEP security problems is to switch to WPA2 (Wi-Fi Protected Access).



Interactive Device Support

- **4 front panel push button switches**

(Standard installed device)

(TCP/IP network communication - A bank of 4 mechanical pushbutton event switches located on the front bezel)

- These switches have no pre-assigned functions, but when enabled and depressed send the switch number and time-close event to the host computer.
- When a button is pressed, its switch number token will be stuffed into the EVNT packet and transmitted to the host computer for further action by the server based application

- **Fujitsu model FP-1000 thermal 3" receipt printer kit**

(Contact IEE Sales for this option)

(Serial RS-232 communication - Requires optional Y cable – The printer is powered separately)

- Serial RS-232 Communication - ScanVue® receives pre-formatted data and control codes from a printer driver resident on the network host, which it passes, unmodified, through DIN 8 Connector (Serial RS-232) to the printer. Default Communication is 9600 BAUD, 8-bit, no Parity and 1 stop bit. 19200 BAUD is available setting.

- **Resistive touch screen**

(Contact IEE Sales for this option)

ScanVue® Accessories

- +12 VDC 2.5A (30W) Power Supply (IEE P/N 39055-01) with a standard 8 pin DIN male connector to power ScanVue® (Typically not included with ScanVue®). The input is universal 90-264VAC/50-60Hz and the power supply has global certifications.
- 48 VDC, 10 W typ. (IEEE 802.3af compliant) Power Over Ethernet (PoE) Injector (IEE P/N 90180-01) with dual RJ45 jacks (J2 Ethernet IN - J1 Power / Ethernet OUT to ScanVue®) - (Typically not included with ScanVue®). The input is 100-250VAC/47-63Hz.
- Printer interface cable for Fujitsu model FP-1000 or equivalent printer (IEE P/N 38578-01)
- Y cable for ScanVue® with Fujitsu model FP-1000 or equivalent printer (IEE P/N 70665-01)
- Y cable, RS232 Universal with DB9F connector (IEE P/N 38516-07)
- 6' DC power extender cable with DIN8F to DIN8M connectors (IEE P/N 37082-72)



Chapter 2—Getting Started

This Chapter describes how to set up and operate a factory default IEE ScanVue® 8000 Interactive Kiosk on your laptop or desktop PC (Host Server). Several programs are installed that let you demonstrate the capabilities of the ScanVue® 8000 Kiosk and make use of the tools and utilities provided in the SDK package downloaded from IEE's web site. These programs can be used as demonstration tools.

Part of the process is to change the network settings of your computer so that it can communicate with a factory default ScanVue® 8000 Kiosk. If you need to set your computer back to its original settings, note down all the original settings before you make the changes. If your computer is already setup to operate on a private company network, IEE recommends consulting with your IT group before performing this procedure.



Part 1 - SDK Installation

Hardware and Software Required

- Laptop (or desktop) computer with Windows 98/ Me / 2000 / NT / XP Pro / 7
- LAN system with TCP/IP network protocol.
- Router or switch for connecting ScanVue® 8000 Kiosk to network.
- Category 5 standard straight cable when using a router or switch (or a “crossover” network patch cable when connecting directly to Host Server)
- IEE ScanVue® 8000 Interactive Kiosk SDK

ScanVue® Documentation Access Instructions

Please follow link for available ScanVue® Interactive Kiosk documentation and Software Developers Kit (SDK) from IEE web site:

<http://ieeinc.com/downloads>

- 1) To download Software Developer's Kit for setting up a PC as ScanVue® Station Server with utilities, click on **SDK_8000.zip** and save to your choice directory.
- 2) Extract all files from **SDK_8000.zip**.
- 3) Refer to **SDK Contents** section for description of folders and their contents.

SDK Files and Software Installation

Before installing the ScanVue® programs, IEE highly recommends you install the latest updates or service packs to the operating system you are using.

- 1) Simply copy the entire **POS** folder and sub-folders into **C:** directory on your host system. **POS** folder must be shared per instructions in **Part 2** of this Chapter.
- 2) Refer to instructions described in **Part 2** of this Chapter to prepare the host server for communication with ScanVue.
- 3) Refer to instructions described in **Part 3** of this Chapter to perform sample slideshow and product database test.

With default **scanvue.ini** file installed into **C:\POS** folder along with sub-folders containing sample script (.sho) and image files, ScanVue® unit can then look for **scanvue.ini** file located in the shared **POS** share when it boots up and will not operate if it can't find it. The **.ini** file will be searched for in all lower case characters. This takes care of servers that are case sensitive (such as Unix).

For servers that are running other than Windows, sources are provided for the server software. There are also freely available drivers to allow any operating system to act as a Windows-type server.



SDK Contents

Documentation Folder

Contains Manual and support documentation

POS Folder

fonts

Folder containing sample font files that may be downloaded to the ScanVue® during boot up when specified in the **scanvue.ini** file (Ex: FontFile = fonts/Cantarell-Bold.ttf). Only one font at a time can reside in ScanVue®. A default FONT is used unless an alternate True Type Font (TTF) is declared in the **scanvue.ini** file.

NOTES:

- TTF Fonts replace GFT Font files previously used in older ScanVue models.

Shows

Folder containing sample slideshow script presentation “show” files (TestImages_8gif.sho) and (TestImages_8png.sho) specifying the order and duration slideshow (.gif) and (.png) images are to be displayed.

Graphics

Folder containing sample slideshow (.gif) and (.png) image folders.

Test 800

Folder within **Graphics** folder containing the .gif and .png images required for the sample slideshow located in the “**Shows**” folder.


Images

Folder containing the images used for the sample item barcodes used with the demo server.

ScanVue.ini

The ScanVue® initialization file that controls the behavior of every unit linked to a server and references the slideshow **.sho** file that initiates the slideshow presentation. Refer to **Appendix C** for file requirements.

UnitConfig

A GUI program identified by  logo used for setting up ScanVue® from the network. Written in VisualBasic, the .exe, VB sources and an OCX are provided. **Modeset** is the associated DOS program

modeset.exe

Command line utility for setting ScanVue modes instead of **UnitConfig**.

demoserv.exe

A sample ProductInfo query server application.

data.dat

The "database" of a few items used by sample ProductInfo query server API Demoserv.

data.dat.documented

Documentation and sample on how the data.dat file is organized.

Application Examples Folder

Modeset Examples

Contains DOS command line batch program examples using **Modeset** utility that can be used to configure a group of ScanVue units at one time.



Support Utilities Folder

qfxserv.exe	QFXserv.exe (Quick File Exchange Server) is a low-overhead, high-speed file server.
scanserv.ocx	ScanServ.ocx is a library you can use to create your own ProductInfo server in Visual Basic or other Microsoft languages.
scanserv.exe	A sample server written in VB, using scanserv.ocx.
nanoserve.exe	A very simple demonstration product query server.
heartbeat.exe	Utility that periodically checks a ScanVue unit and retrieves operational information.
probe.exe	A special version of heartbeat that gets the ScanVue's information just once.
sst.exe	Test program for sending text to a serial printer.

UnitConfig Driver Installation (Win7) Folder

Windows 7 UnitConfig Driver Installation.pdf

Driver registration procedure required for running UnitConfig and Modeset programs on Windows 7 (32 Bit and 64 Bit) OS.

(32 Bit OS Drivers):

richtxt32.ocx	Files required to be registered in Win7 (64Bit OS)
msflxgrd.ocx	to run the UnitConfig program.
comdlg32.ocx	Files registered are located in directory: c:\windows\system32\

(64 Bit OS Drivers):

richtxt32.ocx	Files required to be registered in Win7 (64Bit OS)
msflxgrd.ocx	to run the UnitConfig program.
comdlg32.ocx	Files registered are located in directory: c:\windows\syswow64\

Source Files Folder

Contains source code for demo servers and some utilities. The sample programs demonstrate communications with ScanVue® using the ProductInfo and QFX protocols and include ProductInfo and QFX servers. The VB sources and an OCX are provided for the Unit Configuration program so it may be embedded in the host application. All other programs are written in ANSI C and have been compiled and run without modification under NT, linux, UNIX, and VMS. QFX is a faster, lower overhead alternative to FTP and SMB and provides the added benefit of supporting graphic files in any format.



Part 2 - Local PC (Host Server) Network Setup

Introduction

ScanVue® 8000 Kiosk comes factory defaulted with IP address set for DHCP. This is for automatically obtaining IP addresses assigned from a network server when performing installations. The ScanVue® will default to 192.168.0.1 if you don't have a DHCP server installed on your network.

This section describes how to setup a local desktop or laptop PC (Host Server) to communicate with a factory default ScanVue® 8000 Kiosk. A router is expected to be installed on your network with DHCP server enabled. The Host Server must be set for Ethernet communication allowing for further configuration using IEE's configuration program **UnitConfig** or **Modeset**. See **Chapter 4** for ScanVue® Configuration.

This process is specific for Windows 7 OS, however, Windows OS (98/ NT, 2000, and XP) are also supported. Your computer will be configured as a network server with one client.

If you need to set your computer back to its original settings, note down all the original settings before you make the changes. If your computer is already setup to operate on a private company network, IEE recommends consulting with your IT group before performing this procedure.

(Note: If a ScanVue® is connected directly to a PC without a router or switch, a crossover cable must be used).

ScanVue® Factory default network settings:

IP Address:	(via DHCP)	Username:	GUEST
Sub-Net Mask:	255.255.0.0	Windows Serv:	SVSERVE
WINSserverIP:	10.0.10.13	password:	(Not Set)
Unit ID:	ScanVue	shareName:	POS



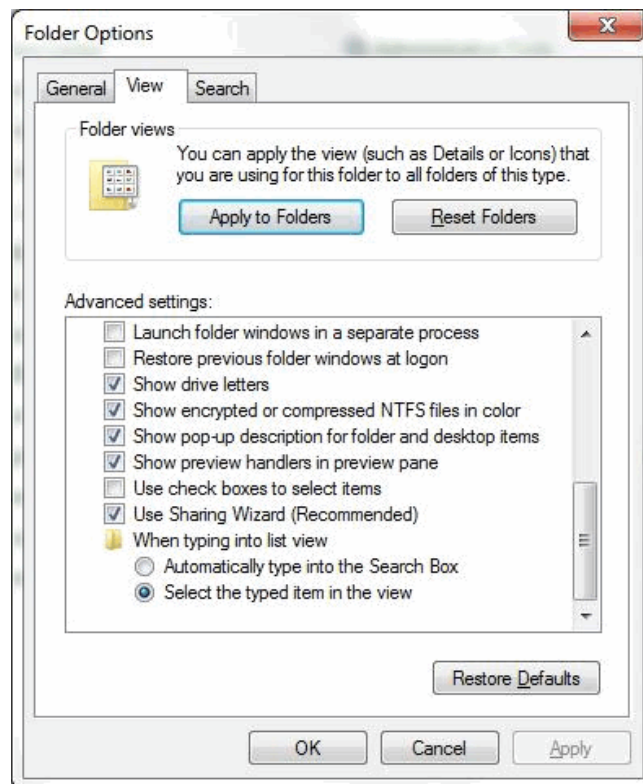
Network Setup Example Procedure (Windows 7)

1. Preliminary

- Disable your Windows 7 Firewall or Anti-Virus.

2. Set to Use Sharing Wizard

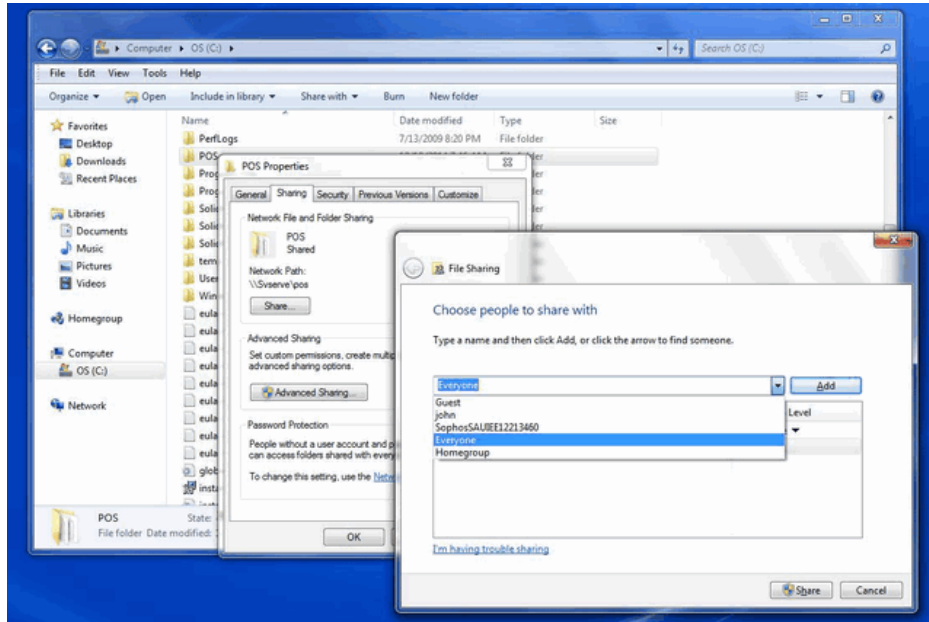
- Click **“Start”** then **“Control Panel”**.
- Click **Tools** on menu bar then click on **“Folder Options”**.
- Click the tab labeled **“View”**.
- Scroll to the bottom of the list to the check box labeled **“Use Sharing Wizard”** and check this box. (See below)
- Close **“Folder Options”** window.



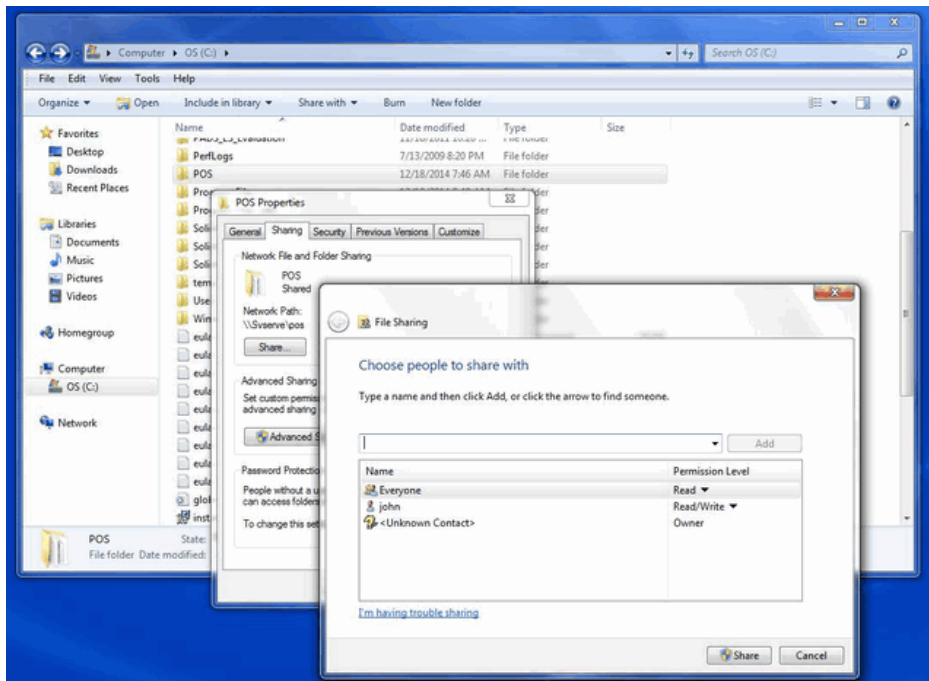


3. Share POS Folder

- In **C:** directory, right-click **POS** folder and select **Properties**, then click **Sharing** tab.
- Click **Share** button to enter **File Sharing** window.
- In **File Sharing** window, click ▼ on right side of entry window and select “**Everyone**” from list then click **[Add]** button (See below).

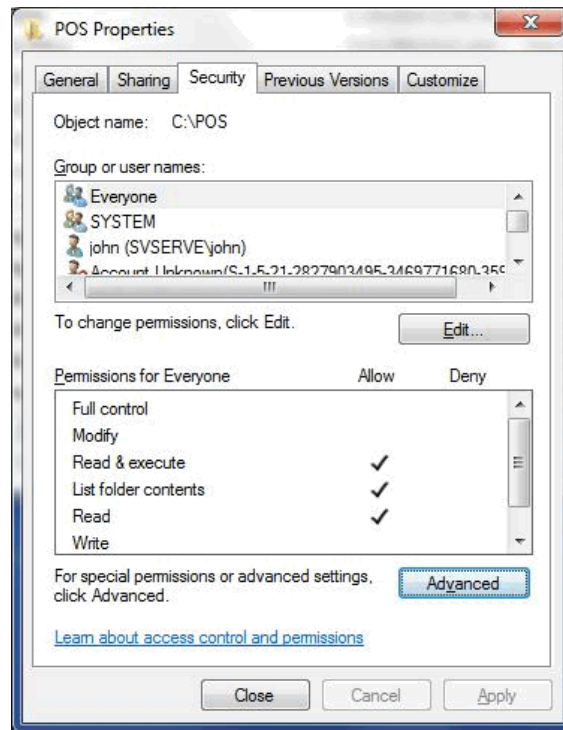


- **Everyone** should be shown with Read privileges.

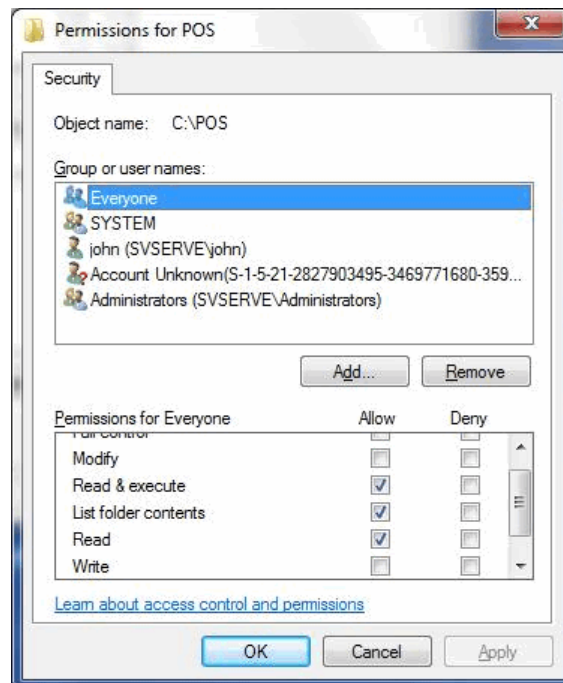




- Click **Security** tab and make sure **Everyone** is shared as shown below.



- Click **Edit** button to change **Permissions for POS** as shown below.

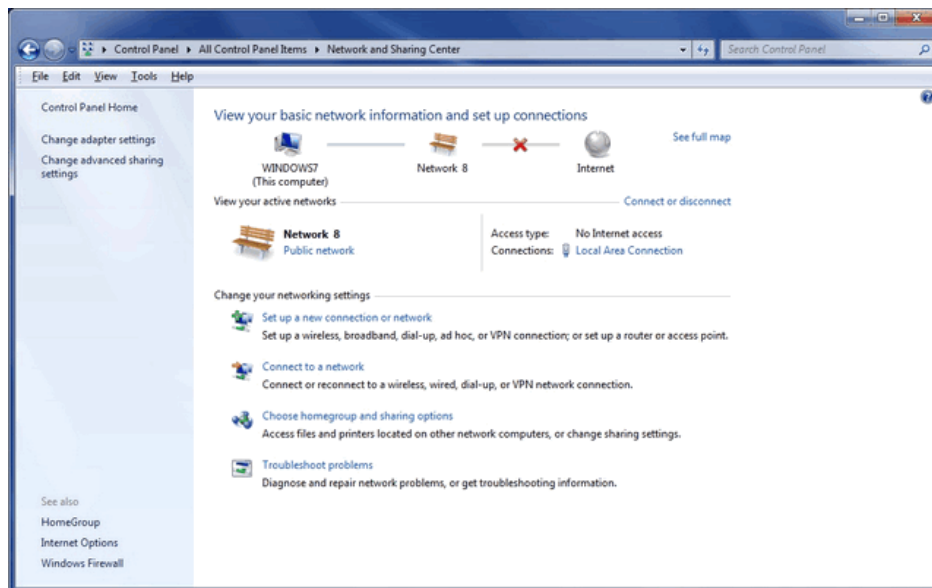


- Close **POS Properties**.

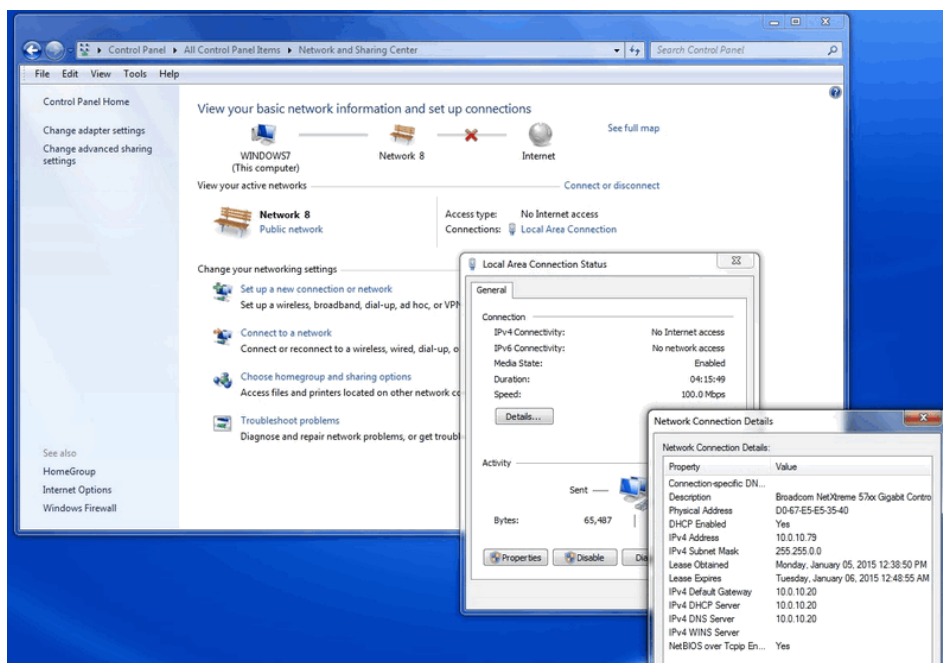


4. Network Security Settings

- Enter **Control Panel** ➔ **All Control Panel Items** ➔ **Network and Sharing Center**
- Under “View your active networks” section, click **“Local Area Connection”**.



- Verify network communication is established with status similar to the following example.
(Note: Host Server obtains IP address from router DHCP server referenced in example as IPv4 Address 10.0.10.79)

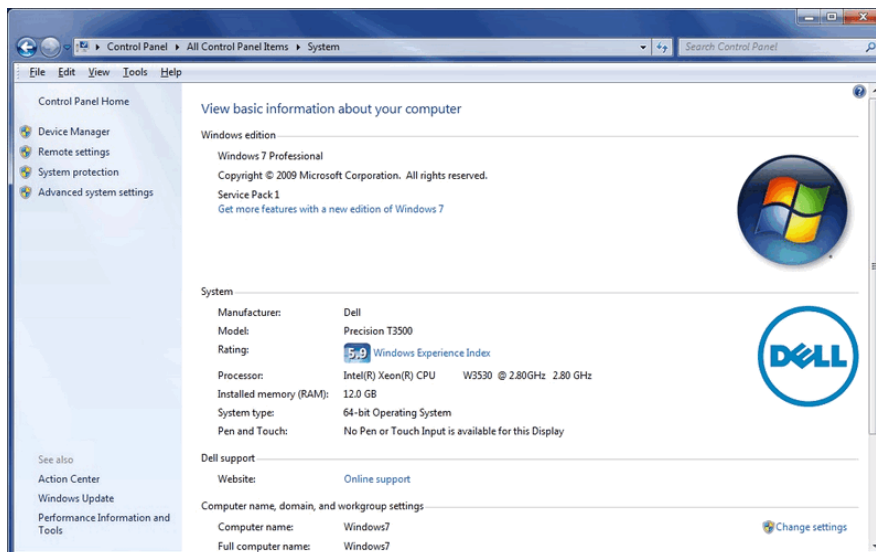


- Close **Network and Sharing Center** window.

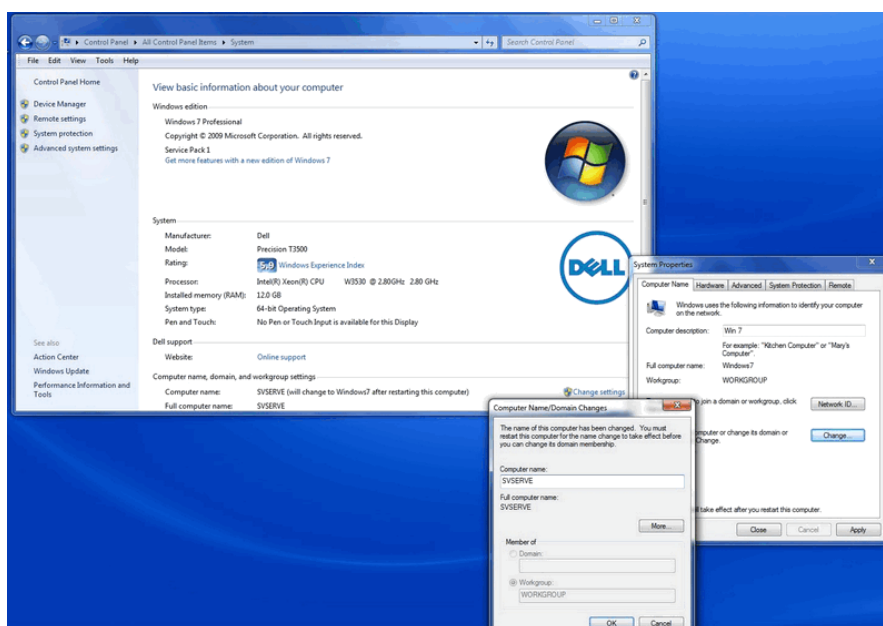


5. Change Computer Name

- Enter **Control Panel** ➔ **All Control Panel Items** ➔ **System** ➔ **Computer Name** tab.



- Double-click **Change settings**.
- In the **System Properties** window, click Change button to bring up **Computer name / Domain Changes** window.
- Enter **SVSERVE** in **Computer name** field.
Note: Workgroup must be selected with any description, provided it is 8 characters or less, no spaces.

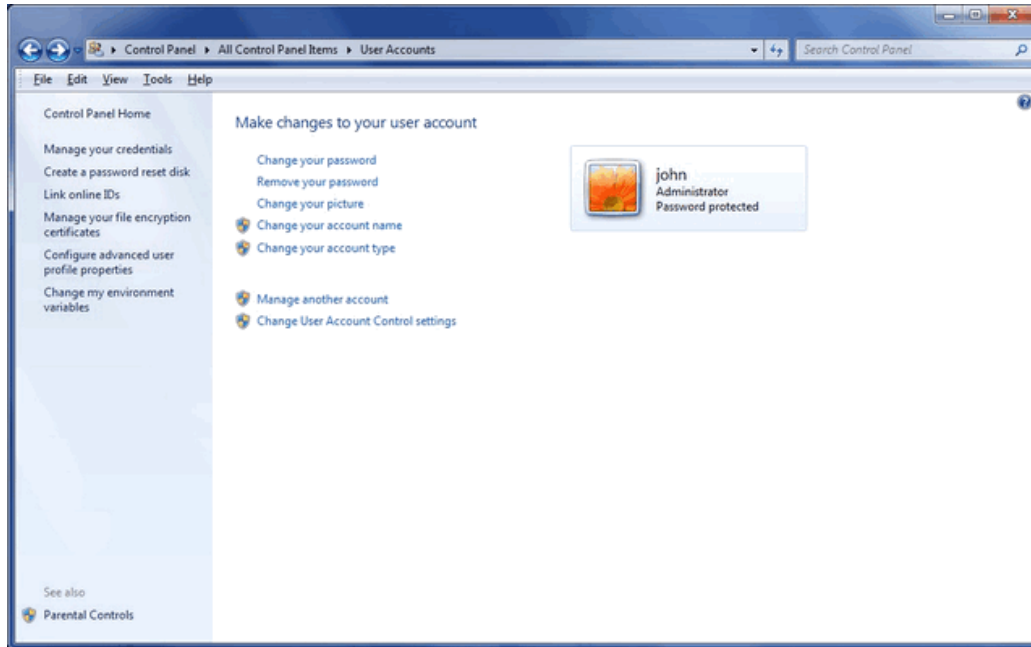


- Click **OK** button.
- Follow displayed instructions to restart computer.

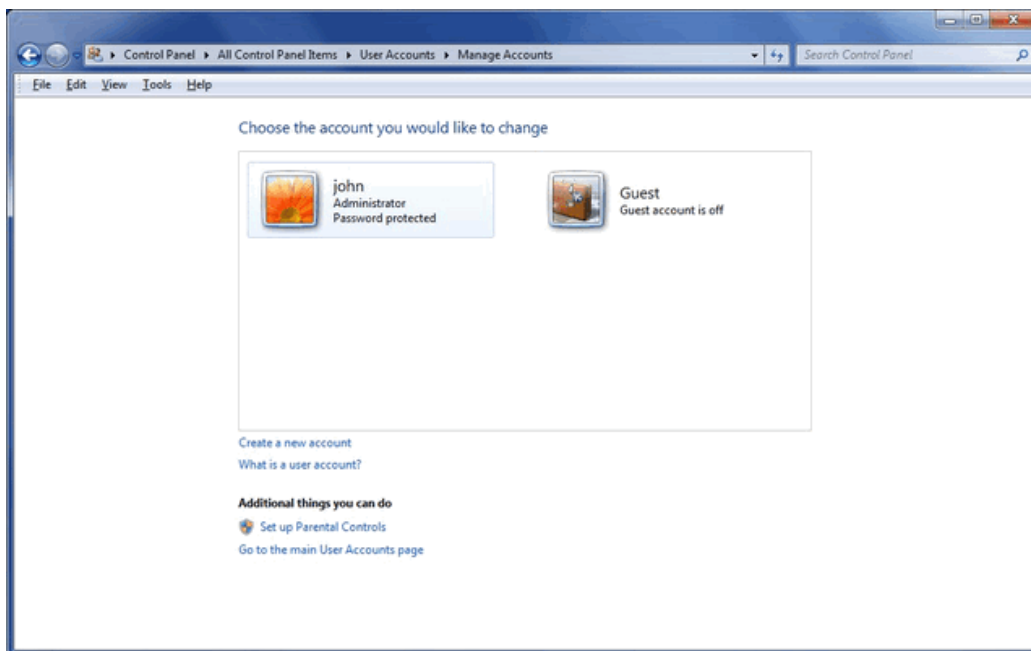


6. Enable User Guest Account

- Enter **Control Panel** ➔ **All Control Panel Items** ➔ **User Accounts** to display administrator account.



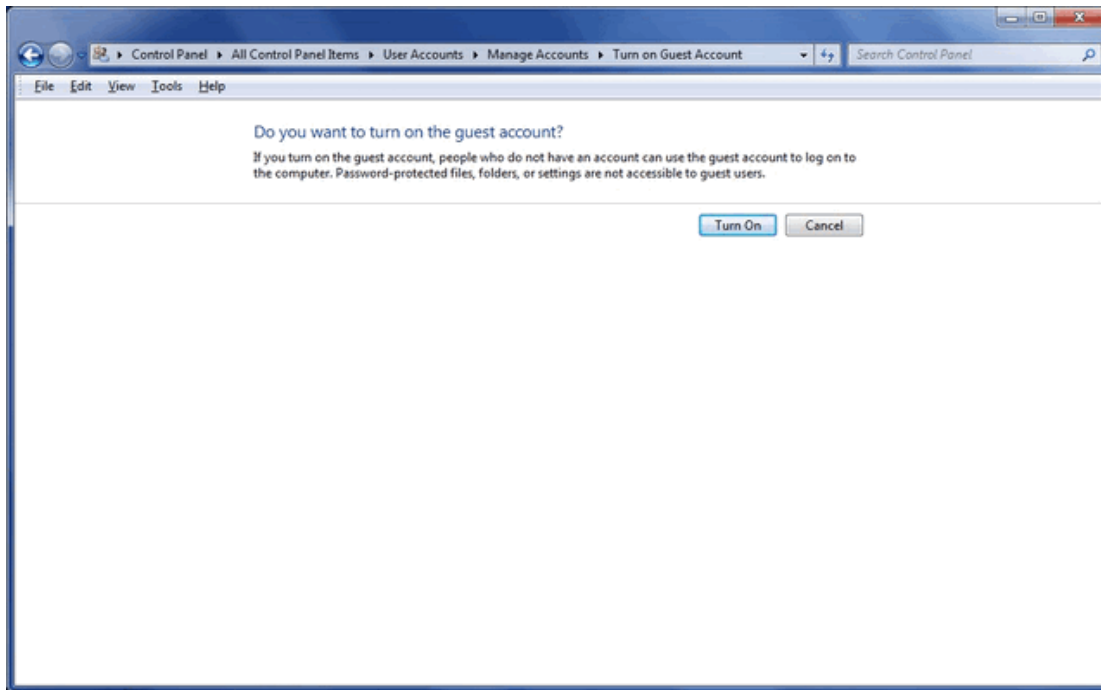
- Click on "**Manage another account**" to show Guest account.



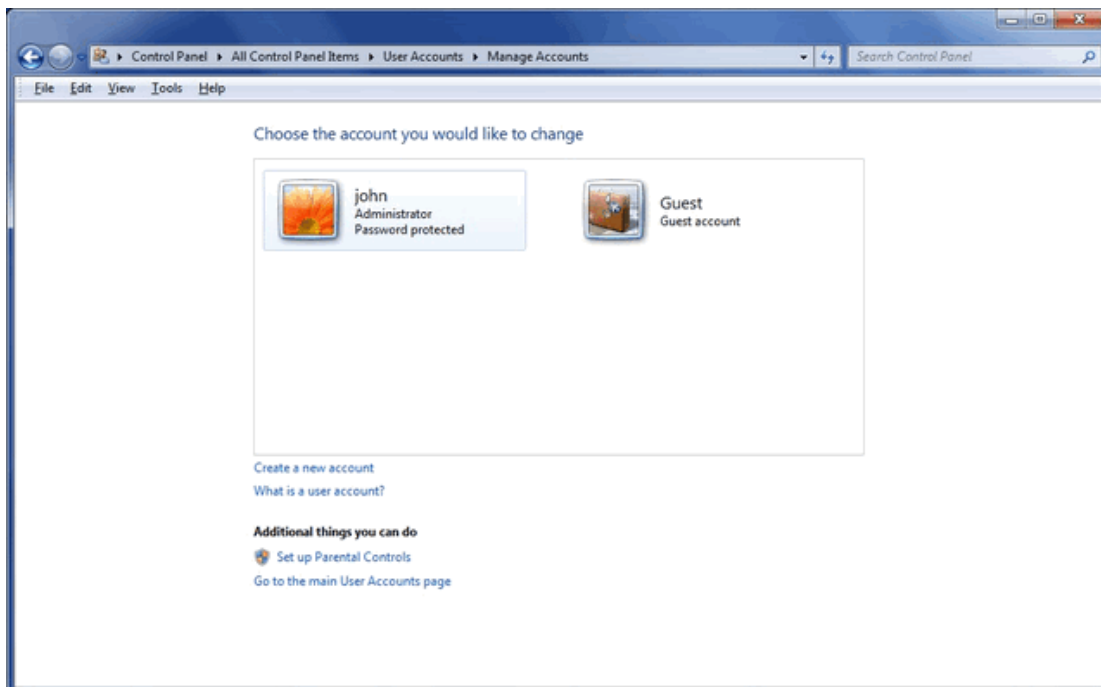
- If the **Guest** icon says **Guest account is off**, click the **Guest** icon to display the following window.



- Click **Turn On** button to enable Guest account.



- Guest account should then be indicated as follows:



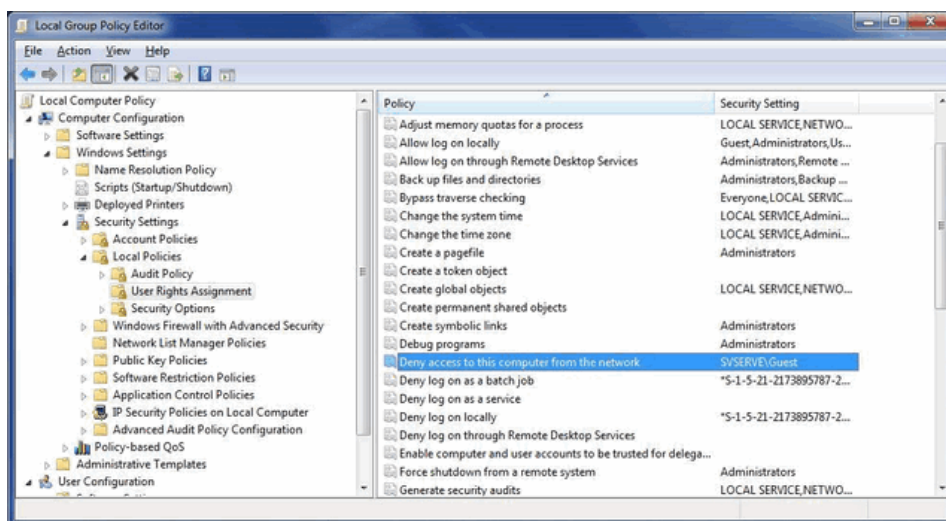
- Close the **Manage Accounts** window.



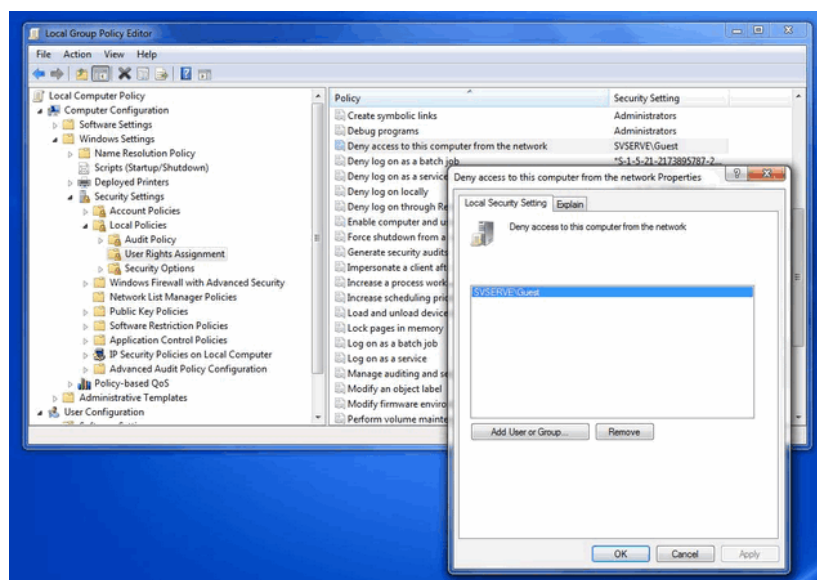
7. Allow ScanVue “Guest” Account on Host Server Network

For Windows 7, Guest account is denied access on the network by default. This process removes Guest as a denied account from network server security settings policy.

- Click “**Start**”
- In **Search programs and files** field, type and enter **GPEDIT.MSC**. The **Local Group Policy Editor** will open.
 - Enter **Computer Configuration ➔ Windows Settings ➔ Security Settings ➔ Local Policies ➔ User Rights Assignment**
 - Double-click on **Deny Access to the Computer from the Network**. (See window below)



- Guest account may be shown as indicated below:



- With **SVSERVER\Guest** highlighted, click **Remove** to remove **Guest** then click **OK**.
- Close **Local Group Policy Editor**. Network setup is completed.



Part 3 – Sample Slideshow / Product Database Test

Test Procedure

- 1) Connect ScanVue® to Host Server Network as described in **Chapter 3**.
- 2) Apply power—the ScanVue® unit will start its boot-up sequence.
- 3) A sample slideshow (TestImages_8gif.sho) cycling through test images should be loaded and displayed if Host Server has been set up as previously instructed.
- 4) Run sample ProductInfo server application (**Demoserv.exe**) located in **POS** folder and scan following sample barcodes to test ScanVue operation using sample product database text file (**data.dat**). The first 4 barcodes produce sample 320x240 size graphic images. The Font Set barcodes produce text messages.
- 5) Press all four pushbutton switches and verify graphic image response for each switch. This also uses (**data.dat**) database file.

TEST BARCODES

Phones (Scan 1 time)



Electronics (Scan 1 time)



Radios (Scan 3 times)



T-Shirts (Scan 1 time)



Font Set (Part 1)



Font Set (Part 2)





Chapter 3— ScanVue® Connections

Refer to **(Figure 3)** for ScanVue® rear connections.

Refer to **(Figure 4)** for Ethernet pin assignment.

Refer to **(Figure 5)** for +12Vdc power pin assignment.

Connections For (PoE Power / Communication)

PoE Hardwired connection requires only 1 cable:

- CAT-5 standard straight Ethernet cable 48 Vdc (IEEE 802.3af compliant)

Connections For (+12V Power / Ethernet Communication)

Ethernet only (non-PoE) connection requires 2 cables:

- +12 Vdc power to ScanVue® DIN8F connector.
- CAT-5 standard straight Ethernet cable to ScanVue® Ethernet Interface connector (or a “crossover” network patch cable when connecting directly to Host Server)

Connections For (+12V Power / Wi-Fi (802.11b/g) Communication)

Wi-Fi models require DIN8 power and hardwired Ethernet connection (required for network settings configuration):

- +12 Vdc power to ScanVue® DIN8F connector.
- CAT-5 standard straight Ethernet cable to ScanVue® Ethernet Interface connector (or a “crossover” network patch cable when connecting directly to Host Server)

Instructions

1. Connect ScanVue® per requirements indicated above.
2. Apply power—the ScanVue® unit will start its boot-up sequence.

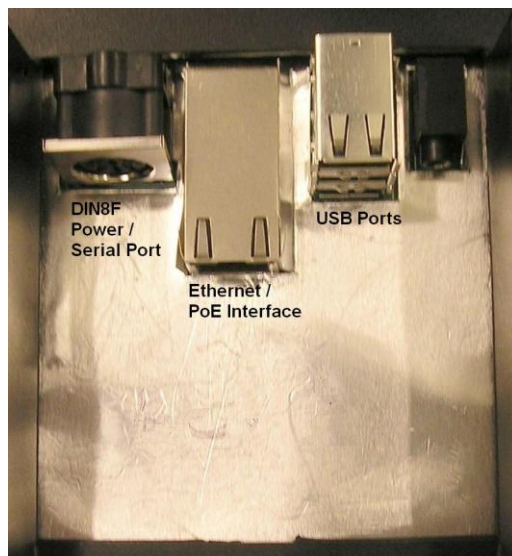


Figure 3—Connector Location—Rear of ScanVue®



Ethernet / PoE Connector (RJ45) Pin Assignments

The following table identifies the locations for the Ethernet port pins and PoE power pins (if used).

Ethernet RJ45 Pin Assignment

PIN. NO.	FUNCTION
1	TXD (+)
2	TXD (-)
3	RXD (+)
4	+ POWER
5	+ POWER
6	RXD (-)
7	- POWER
8	- POWER

8-Pin RJ45 Pinout

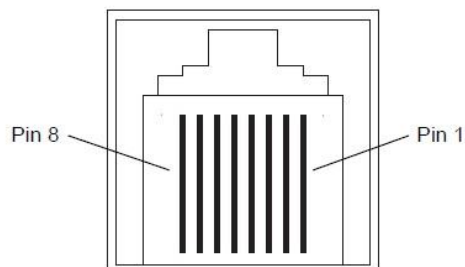


Figure 4—Ethernet / PoE Connector (RJ45) Pin Assignments

Power Connector (DIN8F) Pin Assignments

- The following table identifies the locations for the +12 Vdc Power pins.

Power DIN8F Assignment

PIN. NO.	FUNCTION
1	GND
2	POWER +12 VDC (2.5A)
3	INTERNAL CONNECTION
4	INTERNAL CONNECTION
5	INTERNAL CONNECTION
6	INTERNAL CONNECTION
7	POWER +12 VDC (2.5A)
8	GND

Power DIN8F Pinout

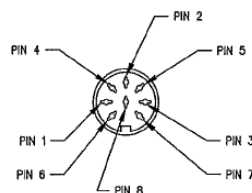


Figure 5—Power Connector (DIN8F) Pin Assignments



Mounting the ScanVue® 8000 Kiosk

Standard Wall Mount Installation

The ScanVue® 8000 Kiosk is VESA MIS-D (100 x 100 mm) standard mount supported (3.940" x 3.940") and can be mounted on any type of flat vertical surface using the four (4) threaded PEM P/N ITB-032 mounting holes located on the rear using # 10-32 fasteners. The closest metric fastener would be M5 x 0.8. Mounting hardware is not provided as the material used in the vertical wall can vary depending on the location chosen.





Chapter 4—ScanVue® Configuration

UnitConfig Program

Configuring ScanVue® units over the network requires a GUI program called **Unit Config** or **Modeset** program described below. **Unit Config** provides a simple graphical way to query and configure any ScanVue® unit using mode commands.

Changes can also be made off-line that will allow the unit to connect to the network using **Configuring with Barcodes** method (See **Appendix B**) without requiring the PC. Generally, configuration by special barcode is kept for those occasions when a devices network configuration is incompatible with the local network. Once the unit is network compatible the rest of the configuration can be done through **UnitConfig**.

Using UnitConfig



Start UnitConfig program. When UnitConfig program is first started, all program fields are blank.

Button / Field	Instruction
Unit IP Address: <input type="text"/>	Enter the IP address of the ScanVue® unit you wish to change in the Unit IP Address field
Read Modes	Click the Read Modes button. All the Modes and their Content (values) will be read from the subject unit and displayed as shown in Figure 6
Set Mode	To change a mode value; highlight the New Content field in the same row as the mode you want to change by clicking on it. Enter the new value in the field and click the Set Mode button. If the value is accepted, the field and the button will turn green. If it is not accepted, the field and button will turn red. The light color area at the bottom of the screen will display context sensitive help message for each mode as the mode is highlighted. For some modes, the values available are indicated in this area.
Commit	Now click the Commit button. This will commit the change to memory in the ScanVue® unit. Multiple changes can be made before committing them. If any of the changes are not accepted, the Set Mode button will turn red and those changes marked in red were not made.
Close	Clicking the Close button will blank all fields allowing a new IP address for another unit to be entered
TextReset	Clicking the TextReset button will apply changes made to text modes so they can be seen immediately. As with other modes, the changes are not permanently stored until the Commit button is clicked
SaveToFile	The SaveToFile button will save the setup to a text file where it can be stored and printed if necessary. This is usually done for troubleshooting or maintaining hard copy records of each unit's configuration
Restart Unit	The Restart Unit button will cause a 'soft boot' of the selected unit
Exit	The Exit button closes the UnitConfig program



UnitConfig 3.4

Unit IP Address: 10.0.30.134

Buttons: Set Mode, Commit, Refresh, Restart Unit, Exit, Read Modes, Close, TextReset, SaveToFile, Help

Mode	Content	New Content
Version	9.06	
DateTime	19700101001919	
BuildInfo	NoBr-20141006	
ProductName	ScanVue	
SerialNumber	999999	
UnitID	ScanVue	
UnitIP	(via DHCP)	
UnitMask	255.255.0.0	
GatewayIP	10.0.10.13	
Domain	(Not Set)	
DNS	10.0.10.13	
WindowsServ	SVSERVE	
ShareName	POS	
WINSserverIP	10.0.10.13	
ServerType	SMB	
FTPServerIP	10.0.10.13	
UserName	GUEST	
Password	(Not Set)	
SloppiHost	10.0.10.13	
AlternateSloppiH	(Not Set)	
SloppiPort	1283	
SloppiTimeout	750	

The IP address of the unit, in standard IP dotted notation.

Figure 6—Unit Configuration (UnitConfig) Screen

Configuration Notes

1. Set **DHCP** in **unitIP** to change to **(via DHCP)** for ScanVue® to obtain an IP Address from a network DHCP server.
2. Most modes can be set to factory default or (Not Set) value by entering double quote [""] or [–default–] as the value.
3. **Named Server Feature:** Product info server modes **SloppiIP** and **AlternateSloppiIP** in addition to the QFX demo server mode **QFXServer** may be entered as either a server IP address or as a server name. The name may be up to 12 characters long.



Modeset Program

Modeset (a DOS command line program associated with **UnitConfig**) may be used in place **UnitConfig** to query and set modes via a batch program file or directly from the DOS prompt.

Examples:

The following command sets ScanVue unit (IP address: 10.0.30.134) to values within **TEST01.INI** file, then commits change to memory and restarts ScanVue:

```
modeset -s -fTEST01.INI -c -r 10.0.30.134
```

The following command sets ScanVue to specific value (Wireless=TRUE):

```
modeset -iWireless=True 10.0.30.134
```

The following command instructs ScanVue to display a text message (top line only):

```
modeset -l"Display a message!" 10.0.30.134
```

Modeset command can also be used to batch program or text message a group of ScanVue units at one time. Refer to **Modeset Example** folder in the SDK.

Modeset command by itself lists all non-hidden modes and their values

ModeSet Options:

```
ModeSet [options] [IPAddress]
-v verbose operation
-s set modes according to modeset.ini
-c commit to permanent storage
-r restart unit when complete
-f specify an .ini file, e.g. -fNewModes.ini
-i set a single mode, e.g. -iUnitID=ScanVue5
-g get a single mode, e.g. -gUnitID
-l send literal text
IP address of unit obtained from modeset.ini if not specified.
```



ScanVue® Supported Modes

Note:

1. Mode names are NOT case sensitive.
2. Set **DHCP** in **unitIP** to change to (**via DHCP**) for ScanVue® to obtain an IP Address from a network DHCP server.
3. Most modes can be set to factory default or (Not Set) value by entering double quote [""] or [**-default-**] as the value.

Fixed Unit Identification

Configuration Mode	Description	Default
Version	Software version number; read-only	xx.xx
DateTime	Not available!	
BuildInfo	The date and time of the software release in the format YYYYMMDD; read-only.	YYYYMMDD
ProductName	Default "ScanVue"; read-only.	ScanVue
SerialNumber	Contains the unique serial number for the unit; read-only.	999999
QueryViaBrowser	IEE factory setup (Always FALSE for Non-Browser configuration) Note: This configuration setting is not available for ScanVue models containing software prior to version (11.01 - "ver. 1.008").	FALSE

User Configurable Unit Identification

Configuration Mode	Description	Default
UnitID	The host name of the unit, 19 characters maximum	ScanVue
UnitIP	The IP address of the unit, in standard IP dotted notation. Unit IP default is 192.168.0.1 with no connection and with no DHCP server available.	(via DHCP) or... 192.168.0.1
UnitMask	The network mask for the unit, in standard IP dotted notation. Unit Mask default is 255.255.0.0 with no connection and with no DHCP server available.	(via DHCP) or... 255.255.0.0
GatewayIP	The IP address of the gateway machine, in standard IP dotted notation. Required only if access to the various hosts must be routed on the LAN	10.0.10.13
UserName	The username ScanVue uses when logging into the file server	GUEST
Password	The password ScanVue uses when logging into the file server	(Not Set)
ServerType	Sets the file host as Windows networking ("SMB"), FTP ("FTP"), or QFX ("QFX")	SMB



Setup for Windows Networking (SMB)

Configuration Mode	Description	Default
Domain	Network domain is required when security is a concern	(Not Set)
DNS	Domain Name Server IP Address (if required to resolve network host names)	10.0.10.13
NetworkName	Name of the wireless network (ESSID). Identifies the network wireless router or access point for wireless units	INSTALL
WINSserverIP	The IP address of the WINS server, in standard IP dotted notation, if the file server is not on the local network	10.0.10.13
windowsServ	The host name of the Windows server or IP address of the WINS server	SVSERVE
ShareName	The name of the shared directory on the Windows server	POS

Setup for FTP, QFX, PRODUCTINFO (Demoserv)

Configuration Mode	Description	Default
FTPServerIP	The IP address of the FTP server in standard IP dotted notation	10.0.10.13
QFXPort	The IP port to use for QFX communications	1284
QFXHost	The IP address of the QFX server	10.0.10.13
QFXTimeout	The number of hundredths of a second to wait before timing out on QFX communications	750 (7.5 seconds)
SloppiHost	The IP address of the PRODUCTINFO server in standard IP dotted notation. Can also be a host name up to 12 characters long	10.0.10.13
AlternateSloppiHost	The IP address of the backup PRODUCTINFO server in standard IP dotted notation. Can also be a host name up to 12 characters long. If SloppiHost fails to respond to a scan request in 10 seconds, the host server will automatically switch to the AlternateSloppiHost server and remain there until either the unit reboots or the server is turned off	(Not Set)
SloppiPort	The IP port to use when sending product information requests and listening for connections	1283
sloppiTimeout	The maximum wait time, in hundredths of a second, for an initial response to a product information query, kept in non-volatile storage	750 (7.5 seconds)



Product Query Configuration

Configuration Mode	Description	Default
IgnoreAckNak	Sets ScanVue® to ignore ACK and NACK characters when received at the beginning of an expected packet	FALSE
IgnoreResponseChars	Sets ScanVue® to ignore the number of characters specified, from 0–255 at the beginning of the response packet to a query	0
QueryPadTo	Sets the number of text characters for a barcode query to at least the specified number of bytes by adding NUL bytes after the query string. Value is 0 to 64 - (Has no effect if value <= # bytes in barcode+3)	0
QueryPrefix	Up to 198 characters. If set, it is prefixed to all query requests	(Not Set)
SendError	Controls whether error messages are sent in response to unknown messages, mode set commands with improper parameters, etc	FALSE
SendResponse	Controls whether confirmation messages are returned after setting a mode's value	FALSE
sendUnitID	Controls whether the UnitID string is sent as part of product information requests	TRUE
TrivialComm	The protocol method used for product information queries	TRUE



Presentation Configuration

Configuration Mode	Description	Default
textHPos	The horizontal offset from the left edge where text starts (in pixels). Must be an integral multiple of four pixels. Space must be available on the right side of the line—characters cannot be pushed off the screen	0
textVPos	The vertical offset from the top edge where text starts (in pixels). Must be an integral multiple of four pixels	8
textForegnd	The color index for foreground text	35
textBackgnd	The color index for background text	180
TextDisplay	Default “EXCLUSIVE”;	EXCLUSIVE
MsgChecking	The string that is displayed by the ScanVue® when making a product information request. If /filename.gif is used instead of a string, the image filename.gif is displayed rather than the string message.	“ Checking... One moment please “
MsgUnavail	The string that is displayed by the ScanVue® when the product information server does not respond	“ Unavailable Please try later “
POSTimeout	The number of seconds that text or image will be displayed before it is cleared and the slide show restarted	30
ShowShortPoll	The delay, in seconds, before trying to read the INI file, if it has never succeeded	60
ShowLongPoll	The delay, in seconds, before checking for changes in the INI or slideshow file	300
TextTransparent	Not available!	FALSE



Wireless Encryption Configuration

Configuration Mode	Description	Default
WEPEncryption	WEP Encryption: Open40, Open128, Shared40, Shared128, None	None
WEPKey1	WEP Encryption Key 1: 10 or 26 hex digits	(Not Set)
WEPKey2	WEP Encryption Key 2: 10 or 26 hex digits	(Not Set)
WEPKey3	WEP Encryption Key 3: 10 or 26 hex digits	(Not Set)
WEPKey4	WEP Encryption Key 4: 10 or 26 hex digits	(Not Set)
WEPKeyIndex	Select the active WEP key, 1-4	1
UseWPA	WPA Enable: TRUE or FALSE	FALSE
wpaScanSsid	Scan for SSID (Usually set for TRUE)	TRUE
wpaKeyMgmt	WPA Key management: WPA-EAP, WPA-PSK, IEEE8021X, None	None
wpaPairwise	WPA Pairwise: CCMP, TKIP, None	None
wpaGroup	WPA Group: CCMP, TKIP, WEP104, WEP40, None	None
wpaEAP	WPA EAP: TTLS, PEAP, TLS, None	None
wpaPSKPassphrase	WPA PSK passphrase (password)	(Not Set)
wpaIdentity	WPA identity string	(Not Set)
wpaPassword	WPA SSH CA certificate path (ex: /etc/cert/ca.pem)	*****
wpaCACert	WPA SSH client certificate path (ex: /etc/cert/user.pem)	(Not Set)
wpaPrivateKey	WPA SSH private key path (ex: /etc/cert/user.prv)	(Not Set)
wpaPrivateKeyPasswd	WPA private key password	*****
wpaPhase1	WPA phase 1 string (ex: peaplabel=0)	(Not Set)
wpaPhase2	WPA phase 2 string (ex: auth=MSCHAPV2)	(Not Set)
wpaProto	WPA proto value: WPA2, WPA, None	None
wpaCACert2	WPA SSH CA certificate 2 path (ex: /etc/cert/ca2.pem)	(Not Set)
wpaClientCert2	WPA SSH client certificate 2 path (ex: /etc/cert/user.pem)	(Not Set)
wpaPrivateKey2	WPA SSH private key 2 path (ex: /etc/cert/user.prv)	(Not Set)
wpaPrivateKey2Passwd	WPA private key 2 password	*****



Miscellaneous Configuration

Configuration Mode	Description	Default												
EventEnd	An 8 character string of hex digits (32 bit mask) which enables ending events for a specific device as defined in the table below	00000000												
EventStart	<div>An 8 character string of hex digits (32 bit mask) which enables starting events for a specific device as defined in the table below</div> <table><tr><td>Mode</td><td>Value (mask setting)</td></tr><tr><td>Disable mask</td><td>00000000_h</td></tr><tr><td>Pushbutton 0 (leftmost)</td><td>00000001_h</td></tr><tr><td>Pushbutton 1 (2nd from left)</td><td>00000002_h</td></tr><tr><td>Pushbutton 2 (3rd from left)</td><td>00000004_h</td></tr><tr><td>Pushbutton 3 (rightmost)</td><td>00000008_h</td></tr></table> <div>Each button press generates message tokens with a similar message packet structure called EVENTS. Start event mask defines the beginning of a device activation. Full explanation of Event mask usage is in the Interactive Device Options section.</div>	Mode	Value (mask setting)	Disable mask	00000000 _h	Pushbutton 0 (leftmost)	00000001 _h	Pushbutton 1 (2 nd from left)	00000002 _h	Pushbutton 2 (3 rd from left)	00000004 _h	Pushbutton 3 (rightmost)	00000008 _h	00000000
Mode	Value (mask setting)													
Disable mask	00000000 _h													
Pushbutton 0 (leftmost)	00000001 _h													
Pushbutton 1 (2 nd from left)	00000002 _h													
Pushbutton 2 (3 rd from left)	00000004 _h													
Pushbutton 3 (rightmost)	00000008 _h													
WallPaperEvent	Not available!	00000000												
RegisterINI	ScanVue® will register itself with the ProductInfo host after successfully reading a new INI file	TRUE												
RegisterStart	ScanVue® will register with the ProductInfo host upon startup	TRUE												
DisplaySetup	Display the first information screen at startup (in seconds)	5												
DisplaySetup2	Display the second information screen at startup (in seconds)	5												
DisplayAll	Display passwords on the information screens	FALSE												
ShowLogo	Display IEE logo after info screens at startup	TRUE												



Configuration Mode	Description	Default						
Wireless	'TRUE' sets ScanVue® communications to wireless RF. 'FALSE' sets communications to 10baseT Ethernet	FALSE						
Port2Function	<p>Changes the function of the external RS232 port. Port parameters are fixed for each device (Value). The port passes data transparently in both directions. ScanVue® buffers all input characters until CR or LF received then sends entire string of characters to host. The port function can be changed with the UnitConfig utility.</p> <table><tr><th>Value</th><th>Function</th></tr><tr><td>OUTPUT</td><td>Printer - 9600 baud, 8 data, no parity, 1 stop (Output)</td></tr><tr><td>BIDIRECTIONAL</td><td>Printer - 19200 baud, 8 data, no parity, 1 stop (In/Out)</td></tr></table>	Value	Function	OUTPUT	Printer - 9600 baud, 8 data, no parity, 1 stop (Output)	BIDIRECTIONAL	Printer - 19200 baud, 8 data, no parity, 1 stop (In/Out)	SCANNER
Value	Function							
OUTPUT	Printer - 9600 baud, 8 data, no parity, 1 stop (Output)							
BIDIRECTIONAL	Printer - 19200 baud, 8 data, no parity, 1 stop (In/Out)							
Port3Function	<p>Changes the function of the second external RS232 port #3. <i>This physical port does not exist, but the settings are used for optional devices.</i> Port parameters are fixed for each device (Value). The port passes data transparently in both directions. ScanVue® buffers all input characters until CR or LF received then sends entire string of characters to host. The port function can be changed with the UnitConfig utility</p> <table><tr><th>Value</th><th>Function</th></tr><tr><td>NONE</td><td>Disabled</td></tr></table>	Value	Function	NONE	Disabled	(unknown)		
Value	Function							
NONE	Disabled							
BannerText	Not available!	(Not Set)						
KeepAliveTime	<p>When set to 0, the unit will operate in its normal mode: that is, it will close the socket on port 1283 when the transaction is complete. If any non-zero value is entered, the socket is kept open by “keep alives” sent at the frequency based on the value set in seconds.</p> <table><tr><th>Value</th><th>Function</th></tr><tr><td>0</td><td>Socket Normal Mode (Default)</td></tr><tr><td>1 or greater</td><td>Socket Open Mode The delay, in seconds, before trying to read the INI file, if it has never succeeded</td></tr></table>	Value	Function	0	Socket Normal Mode (Default)	1 or greater	Socket Open Mode The delay, in seconds, before trying to read the INI file, if it has never succeeded	0
Value	Function							
0	Socket Normal Mode (Default)							
1 or greater	Socket Open Mode The delay, in seconds, before trying to read the INI file, if it has never succeeded							



Wireless Network Setup

Each wireless RF router or access point has a network name (called an ESSID) that consists of up to 32 letters and numbers. ScanVue® 5000 is shipped from the factory configured with a factory set ESSID "NetworkName". Before communicating with the wireless router or access point, ScanVue® 5000 must have a matching case sensitive ESSID entered into its memory to replace the default name. With ScanVue® Price Verifier setup for default Ethernet (Hardwired) communication, ESSID is typically entered using UnitConfig. This name may also be entered through the ScanVue® barcode reader using a user created barcode. See **Appendix B** for creating configuration barcodes.

Connect the 802.11b Wi-Fi router to your configuring computer LAN card with the patch cable and configure it using the manufacturers' instructions.

The IP Address and Input Mask of the router must be in the range of your computer and ScanVue®. The ESSID of the router and ScanVue® must match (note: the ESSID is case sensitive). Default settings are: IP=10.0.10.13, Mask=255.255.0.0, ESSID=INSTALL

ScanVue® wireless encryption settings (**WEP**, **WPA** or **WPA2**) must match the router.

WEP Encryption Settings

ScanVue5® supports 2 different types of WEP (Wireless Equivalent Privacy) encryption in software versions 4.12 and later. WEP encryption is set by the WEPEncryption mode.

Mode Setting	Function
NONE	WEP encryption off
OPEN40	Open System 40-bit encryption
OPEN128	Open System 128-bit encryption

There are 4 unique encryption keys **WEPKey1** through **WEPKey4**. Each key contains 10 hex digits for 40-bit encryption or 26 hex digits for 128-bit encryption. Default value of the keys is a string of zero digits of the appropriate length.

The mode **WEPKeyIndex** determines which of the 4 keys is used. The default is **WEPKey1**. The selected key must match the type of encryption selected. For example; if **WEPEncryption** is set to **SHARED128** and **WEPKeyIndex** is set to **WEPkey2**, then **WEPkey2** must contain 26 hex digits (or 128 bits). **WEPkeyindex** and the encryption data can be set by barcode.

WPA and WPA2 Encryption Settings

ScanVue® supports Wi-Fi Protected Access WPA and WPA2 (802.11i). The UnitConfig program provides the user interface to setup various WPA mode(s) for ScanVue's radio. Example ScanVue® settings are shown in the table below. For additional security requirements, refer to **Wireless Encryption Configuration** table located in **ScanVue® Supported Modes** section.

WPA (TKIP)			WPA2 (AES)	
UseWPA	TRUE		UseWPA	TRUE
wpaScanSsid	TRUE		wpaScanSsid	TRUE
wpaKeyMgmt	WPA-PSK		wpaKeyMgmt	WPA-PSK
wpaPairwise	TKIP		wpaPairwise	CCMP
wpaGroup	TKIP		wpaGroup	CCMP

Figure 7— Example WPA / WPA 2 Encryption Settings



Chapter 5—Interactive Devices

ScanVue® standard interactive devices are: 4 Pushbutton Switches

ScanVue® optional interactive devices available are: Digital Touch screen and Serial Printer.

Internally Connected Devices

The ScanVue® Kiosk is a networked thin client and does not respond directly to any input from a local device. Activating any of the following internally connected devices causes the ScanVue® to transmit the raw input data to a host computer for further action by the server based application.

4 Pushbutton Switches (Standard)

These switches have no pre-assigned functions but when depressed can send switch number open and close events to the host computer. The user may utilize these switch events in the host software in any manner desired.

The buttons are strategically placed so the bottom edge of the display screen may be used for 'soft' legends allowing the application to navigate through multiple menu levels.

Each button press generates message tokens with a similar message packet structure called EVENTS. Start event masks define the beginning of a device activation. A pushbutton start mask defines when the button is pressed. The mode values are 8 digit hex masks (32 bit) which define the type of device initiating the event as well as the button position. Use **UnitConfig** to set the value (see Table 1). Start and end masks are both present in a transmitted packet but End is always disabled.

Mode (Description)	Value (Mask Setting)
Disable mask (factory default)	00000000 _h
Push button 0 (leftmost)	00000001 _h
Push button 0 (2 nd from left)	00000002 _h
Push button 0 (3 rd from left)	00000004 _h
Push button 0 (rightmost)	00000008 _h

Table 1— 4 Pushbutton Switch Mode Value Setting

Touch Screen (Optional)

NOTE: Touch screen communication is an available option.



Externally Connected Devices

Serial Receipt Printer (Optional)

ScanVue® provides support for the following or equivalent external serial receipt printer models:

Citizen model CBM-1000II

Fujitsu model FP-1000

Configuring the Serial Port

For serial printer communication, serial port 2 (Configuration Mode: **port2function**) must be set to **OUTPUT** or **BIDIRECTIONAL**. In **OUTPUT** or **BIDIRECTIONAL** mode, serial port 2 is a transparent RS232 data port. ScanVue® receives pre-formatted data and control codes from a printer driver resident on the network host, which it passes, unmodified, through serial port 2 to the printer. Any data returned from printers such as NCR model K590 Self Service Printer when in **BIDIRECTIONAL** mode will be passed up to the network host unmodified. Printer drivers are specific to the printer used and must be provided by the user.

In **OUTPUT** mode the port parameters are pre-configured for the co-located Communication is 9600 baud, 8 data bits, no parity, 1 stop bit.

In **BIDIRECTIONAL** mode the port parameters are pre-configured for printers requiring communication at 19200 baud, 8 data bits, no parity, 1 stop bit.

Use the UnitConfig program or modeset utility to change the serial port configuration mode setting **port2function** to **OUTPUT** or **BIDIRECTIONAL**. If you are using an MS Windows system, open a DOS box and change to the C:\POS directory where modeset utility is located and send the following 2 command lines.

```
C:\POS modeset -iPort2function=OUTPUT {BIDIRECTIONAL} <IP>
```

```
C:\POS modeset -c -r <IP>
```

where <IP> is the unit's IP address.

The printer port settings must be set to the same parameters to be able to communicate with it. If you want to alter the printer communication baud rate or change other parameters, a utility program (**PortSet**) may be used for modifying serial port settings.

Printer Cable Wiring

(See **Figure 8** for Serial Printer Wiring Diagram and **Figure 9** for ScanVue® power/serial connector pin assignment)

Optional IEE cables available for printer interfacing to ScanVue®:

- Serial interface cable (IEE P/N 38578-01) connects to the supported serial printer D-Sub 25 Pin Female serial connector)
- Y cable (IEE P/N 70665-01) breaks out the ScanVue® DIN8 connector serial port for printer interface
- Printer extension cable (IEE P/N 37082-XX) where XX specifies the cable length

Other manufacturers serial printers may require a different Y cable or port settings. Check with IEE Sales before attempting to connect a different printer.

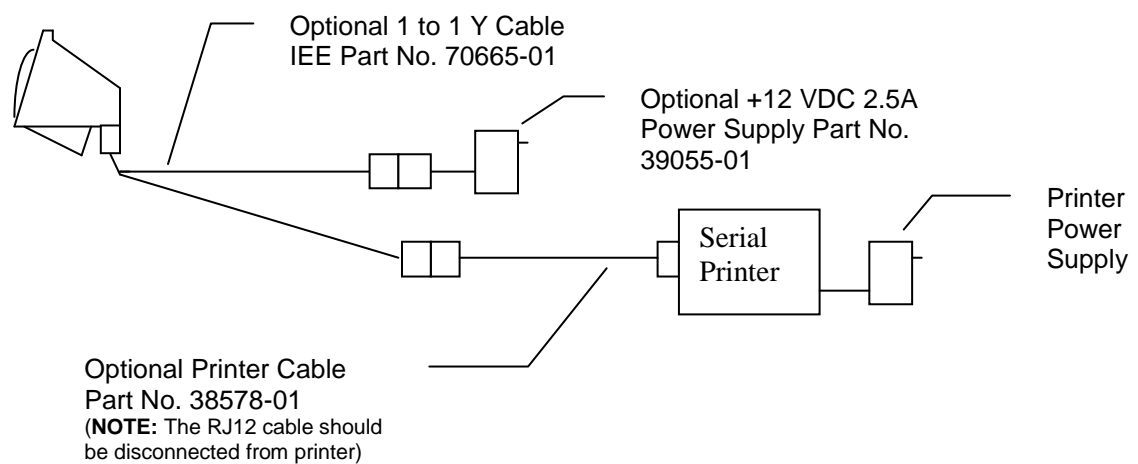


Sending Data to the Printer

The host server must use nominal-mode ProductInfo packets to send data to the printer. The packets required are **Data** type, **Special Text** sub-type. An example of a typical message is:

Byte Count	Value (Oh)	Meaning
0-3	00 00 00 13	Length of packet (19 bytes)
4-7	44 41 54 41	'DATA' Data type
8-11	53 50 45 43	'SPEC' Special Text sub-type
12-18	48 65 6C 6C 6F 21 0A	'Hello!<LF>' Text sent to printer

Serial Printer Wiring (Typical)



Serial Printer Wiring Diagram (with Extension Cable)

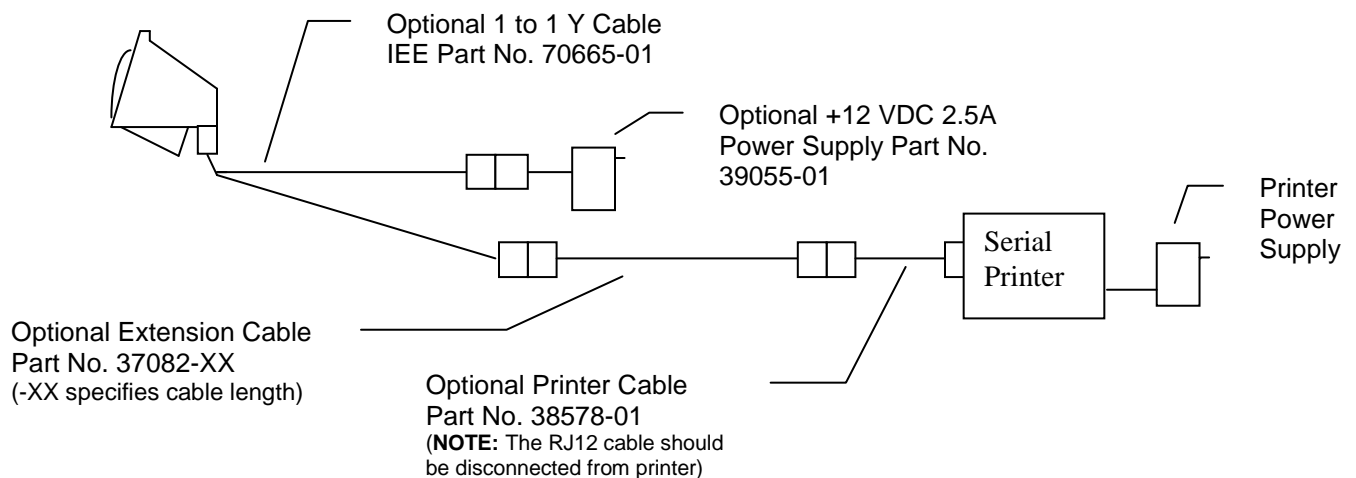


Figure 8—Wiring a Serial Printer



Power / Serial Interface Connector (DIN 8) Pin Assignments

ScanVue® (Power / Serial) DIN8F

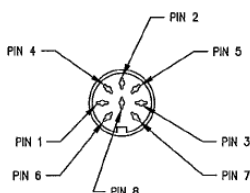
PIN. NO.	FUNCTION
1	GND
2	POWER +12 VDC (2.5A)
3	TXD (RS-232C)
4	DSR (RS-232C)
5	DTR (RS-232C)
6	RXD (RS-232C)
7	POWER +12 VDC (2.5A)
8	GND

Typical Supported Serial Printer
D-Sub 25 Pin (Female) Connector *

PIN NO.	FUNCTION
7	SIGNAL GROUND
3	RXD (RS-232C)
20	DTR (RS-232C)
6	DSR (RS-232C)
2	TXD (RS-232C)

* Citizen CBM-1000II, Fujitsu FP-1000
or equivalent printer

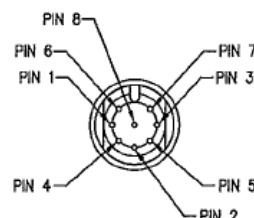
ScanVue® Power/Serial DIN8F Pinout



Serial Printer Cable 38578-01 DIN8M *

PIN. NO.	FUNCTION
1	SIGNAL GROUND
2	INTERNAL CONNECTION
3	RXD (RS-232C)
4	DTR (RS-232C)
5	DSR (RS-232C)
6	TXD (RS-232C)
7	INTERNAL CONNECTION
8	INTERNAL CONNECTION

Printer Cable DIN8M Pinout



* Optional for Citizen CBM-1000II,
Fujitsu FP-1000 or equivalent printer

Figure 9—Interface Connector Pin Assignments



Appendix A—Configuring ScanVue® for Input Devices

Data Bytes (Parameters)

Each transmitted event packet contains three 8 hex digit words. Pushbuttons do not set values in the data bytes.

Touchscreen Data Bytes (Parameters)

Each transmitted event packet contains three 8 hex digit words. Pressing the touch screen will cause the appropriate data to be stuffed into the parameter words as shown in the Table 2.

Mode (Description)	Value (Setting)
Touch Screen	
Parameter 0	00000010 _h
Parameter 1	scaled y co-ordinate (1-16)
Parameter 2	scaled x co-ordinate (1-12)

Table 2—Touchscreen Data Bytes (Parameters)

Structure of EVENT packet

1. EVENT packets report pushbutton and touch screen activations but each device type will send a separate EVENT packet.
2. Separate packets are sent for start events and end events (if used).
3. Pushbutton events do not generate data (only whether they are pressed or not pressed) and thus do not set the parameter values.
4. Pressing a push button transmits a (minimum) 33 byte message packet to the host computer.
5. Pressing the touch screen transmits a (minimum) 33 byte message packet to the host computer in the following general format.

[length+EVNT]+[24 data bytes]+[unit ID]+[0]

where length=4 bytes whose value is the number of bytes in the message including the length byte EVNT=4 byte character string token 24 data bytes consisting of:

32 bit mask of events started (4 bytes)

32 bit mask of events ended (4 bytes)

32 bit unsigned count of the number of 10 millisecond clock ticks since last event (4 bytes)

32 bit parameter 0 data word (4 bytes)

32 bit parameter 1 data word (4 bytes)

32 bit parameter 2 data word (4 bytes)

variable length character string containing unit ID (if mode enabled in UnitConfig)

0= message terminator containing 0 zero value (1 byte).



Examples (shown in hex form)

Touch screen start event packet for bottom right corner press (11,15)

[00000028 45564E54 00000010 00000000 000001F4 00000010 0000000B 0000000F 5343414E565545 00] h

length	EVNT	start mask	stop mask	tick count	touch	y co-ord	x co-ord	SCANVUE	terminator	
		for touch		500 mS		11	15			

Push button start event packet for button 2 (no unit ID)

[00000021 45564E54 00000004 00000000 00000000 00000000 00000000 00000000 00] h

length	EVNT	start mask	stop mask	tick count	not used	not used	not used	terminator		
		for button 2								

Pushbutton end event packet for button 2, 500mS button press, (no unit ID)

[00000021 45564E54 00000000 00000004 000001F4 00000000 00000000 00000000 00] h

length	EVNT	start mask	stop mask	tick count	not used	not used	not used	terminator		
			for button 2	500 mS						



Appendix B—Configuring with Barcodes

Barcode Scanner Settings

The default settings of the barcode reader are preset for capturing any 1D and 2D bar codes including PDF417 codes. Refer to **Scanner Prefix ID Bar Codes** sheet for UPC and NCR prefix enable / disable barcodes.

Configuring ScanVue®

ScanVue® can be configured for the network by scanning barcodes with its barcode scanner instead of sending the commands over the network.

Create barcode labels in Code128 containing the network information as shown in **Table 3**. A program such as '**B-Coder Lite**' or '**B-Coder Pro**' from Taltech or '**Avery Label Pro**' can create these for you.

On-line barcode generators can also be used such as:

www.barcodesinc.com/generator/index.php

www.nationwidebarcode.com/barcode-generator

Follow the step-by-step procedure outlined in the following pages to configure ScanVue® using barcodes:

1. Power up the ScanVue® unit. Wait until it finishes booting, the 2 blue info screens have been displayed and the IEE logo clears. If you have an RF unit, a red connection diagnostic screen may appear if the unit doesn't connect to your network. Either way, you are ready to reconfigure.
2. Scan the specific labels (listed in **Table 3**) required to change the configuration to your network's parameters. ScanVue® will display the raw code, then the setup name and entered value.
3. When all the setup labels have been scanned in and visually verified, scan the following Bar code **Save Settings and Reboot**. This causes the complete configuration setup to be written to ScanVue® non-volatile memory and reboots for the changes to take effect.

Save Settings and Reboot



4. If it is required that you need to change barcode scanner configuration for your application, please contact IEE for Barcode Scanner configuration support.



Mode/Setting	Barcode	Description	Default Setting
Unit ID	IDLSS.....S	A unique unit name, 19 characters maximum.	SCANVUE
Unit IP ^{1,4}	UIAAAAAAAA	IP Address. Each unit must have a unique address.	DHCP
Network Mask ^{1,4}	UMAAAAAAAA	IP Sub-net mask	255.255.0.0
Windows Server ²	WSLSS.....S	Host name of the file server, 83 characters max.	SVSERVE
Shared Directory ²	SDLSS.....S	Share name on the file server, 83 characters max.	POS
File Server IP ¹	SFAAAAAAAAA	IP Address of the FTP-based file server.	Not Set
Network User Name ²	WULSS.....S	Used to connect to the file server, 19 characters	GUEST
Network Password ²	WPLSS.....S	Used to connect to the file server, 31 characters	Not Set
Network Name ²	NNLSS.....S	ESS ID-network name for wireless networks	INSTALL
DNS IP ¹	DNAAAAAAAA	IP Address of DNS	Not Set
Gateway IP ¹	GWAAAAAAAA	IP Address for routed or segmented networks.	Not Set
WINS Server IP ¹	WWAAAAAAAA	Required for Windows networking.	Not Set
Domain/Workgroup ²	DWLSS.....S	Domain or workgroup name, 83 characters max.	IEE
Product Info IP ¹	DSAAAAAAAA	IP address of users ProductInfo server.	10.0.10.13
Product Info Port ³	DPnnnn	Port number for ProductInfo.	1283
Product Info Timeout ³	TONnnn	Duration (secs) product information is shown	30
Wireless RF ³	WN0001	Selects wireless RF mode	Wireless=T, otherwise=F
10baseT Ethernet ³	WN0000	Selects hard wired Ethernet	Hardwired=T, otherwise=F
Save Configuration	KQ0003	Save configuration in EEPROM.BIN file & reboot.	N/A
Factory defaults	IN123456789	Scan twice; restores factory default configuration	N/A
Reboot unit	IN987654321	Scan twice; reboot without saving config	N/A
Show config screen 1	IS0001	Displays 1 st config status screen	N/A
Show config screen 2	IS0002	Displays 2 nd config status screen	N/A
Show config screen 3	IS0003	Displays 3 rd config status screen	N/A

Table 3—Barcode Configuration Labels

Barcode Configuration Label Notes:

¹ IP addresses ('XXXXXXXX') are in hex notation. Each of the quads in the address becomes a pair of hex digits (e.g., 10.0.0.10 is encoded as 0A00000A).

² String values start with the count of characters ('L') followed by the characters of the string ('SSSSSS'). ScanVue® preserves the case of characters in strings even if it is not meaningful to the network or host. The length field is always 2 digits i.e., 3 must be 03.

³ Numerical values ('L' and 'NNNQ') are decimal. Numerical values must be followed by a non-digit character. Purely numerical parameters (e.g., Product Info Port) should be followed by an upper-case alpha character to prevent confusion caused by check-characters and stop codes.

⁵ Setting the Host name also sets SMB file-access mode. Setting the File Server IP also sets FTP file-access modes.

Command barcodes must be at least six characters long, including the two-character prefix but excluding the check character and any start and stop characters. Extra padding characters may be added to guarantee this. Padding characters should be upper case alpha characters and are ignored. Numerical values may be zero padded (e.g., '0001' instead of '1').

The following single and paired characters should NOT be used in barcodes: A, F, E0, FF, B1, B2, B3



Support Barcodes

INFO SCREEN BAR CODES

Info Screen 1



Info Screen 2



CONFIGURATION BAR CODES

Save Settings and Reboot



Unit IP (via DHCP)



Hardwired Network



Wireless



IEE DEFAULT BAR CODES

Factory Default Settings



Note: Scan Twice

Reboot Only



Note: Scan Twice



SCANNER PREFIX ID ENABLE BAR CODES

Enable UPC prefix IDs



CC003324

When enabled, the scanner will transmit a prefix before any UPC/EAN bar code.

The prefixes are as follows:

A (UPC-A),
E0 (UPC-E),
F (EAN-13), and
FF (EAN-8).

Enable NCR prefix IDs



CC003332

When enabled, the scanner will transmit a prefix before the following code types.

The prefixes are as follows:

A (UPC-A),
E0 (UPC-E),
FF (EAN-8),
F (EAN-13),
B1 (Code 39),
B2 (ITF) and
B3 (Code 128 & other codes).

Disable custom prefix IDs



CC003325



SCANNER UPC-A TO EAN-13 ENABLE CAR CODES



Unlock Settings



enable UPC-A to EAN-13



M10159_01

Save Settings



Lock Settings



Appendix C—ScanVue® Initialization File

Overview

A default initialization file **scanvue.ini** should have been placed into the shared POS directory on the network server. (Note: **realscan.ini** may also be used to support earlier installations). The ScanVue® unit must find the **.ini** file in the shared directory or it will not be able to establish a connection to the network.

The **ScanVue.ini** file controls the behavior of every unit linked to that server by defining the defaults for the display text size, colors and image file.

In addition, the **.ini** file provides a way for ScanVue® units to be grouped together and access different slideshows as a group. For example; in a multi department store, each department can be running different slideshows at the same time, each one showing promotions or teaser advertising tailored to that department's specific products. Slideshows can be changed as desired with specially created versions for holidays or sales events.

Rules for the ScanVue.ini File

1. The **.ini** file is a text file consisting of sections for specifying different parameters. Each section is marked in enclosing square brackets i.e. [Group].
2. Sections may be in any order. Initialization lines may be in any order within a section.
3. Lines that start with a single quote (') or pound sign (#) are comments. Blank lines and white space (except possibly in a value field) are ignored.
4. Initialization lines consist of a token, followed by zero or more blanks or tabs, followed by an equal sign, followed by zero or more blanks or tabs, followed by the initialization value for the token, i.e., TOKEN=Value
5. Tokens/Value pairs may be directed to an individual unit by preceding the token with the Unit ID enclosed in angle brackets i.e., <Tools1> Text_Rows = 4
6. Tokens/Value pairs may be directed to all units in a group by preceding the token with the Group name enclosed in angle brackets i.e., <Shoedep> Text_Fcolor = Green.
7. Group names may consist of alpha and numeric characters only.
8. Tokens and sections that are unrecognized are ignored. Default values are used when a token is not present.
9. Values are set in the order they appear in the file. If there are duplicate tokens in a section, the value used is the last one on the list except when a Unit ID is specified. If the Unit ID is specified, only that token/value pair will be used, regardless of the position within the section.
10. A font file must be specified (replaces the default font) if the text foreground and background colors are to be specified.



Initialization File (scanvue.ini) Sections & Commands

(Note: commands are not case sensitive)

[DISPLAY]	Configures the way text is shown on the display.
SlideshowFile	The path for the slideshow file. (Ex: shows/TestImages_8gif.sho)
FontFile	The path for the TTF file that contains the font file name. (Ex: FontFile = fonts/Cantarell-Bold.ttf) NOTES: <ul style="list-style-type: none">- For S/W version 9.03; (Ex: FontFile = Cantarell-Bold.ttf)- A default FONT is used if FontFile is not specified.- TTF Fonts replace GFT Font files previously used in older ScanVue models.
Text_Fcolor	Foreground color for displayed text (0-254) <ul style="list-style-type: none">- Refer to color chart (Text Colors by Index.pdf) to determine desired color command settings
Text_Bcolor	Background color for displayed text (0-254) <ul style="list-style-type: none">- Refer to color chart (Text Colors by Index.pdf) to determine desired color command settings
Msgchecking	A text string displayed when a barcode is scanned. The default string is Checking...Please wait . When the host returns the price and description, it overwrites this message.
MsgUnavail	A text string displayed when a barcode is scanned and the host cannot be reached. The default string is Unavailable...Please try later .
POSTmOut	The number of seconds that text will be displayed before it is cleared and the slide show restarted. Can only be used in the .ini file. Performs the same function as the POSTimeout mode (in UnitConfig or modeset).
[GROUP]	Assigns individual units to a group.
GroupName	The Token is the name of the group and the value is a list of one or more Unit ID's, separated by commas that belong to that group. The same group name can appear on more than one line, with more Unit ID's listed. Units may belong to more than one group.
[REDIRECT]	Allows specified unit to be redirected to another initialization file
UnitID	The Token is the unit's ID number, and the value is the UNC for the new initialization file. If ScanVue® recognizes its ID in the list of ID's, it uses the value to obtain the new .ini file. A list of which initialization files have been referenced in this process must be kept so that loops can be detected and terminated.



Example of Initialization File

Define which ScanVue® units are grouped together.
TextMsg group is set up for text use with specified font and colors

```
[GROUP]
ToolDept      =tools1, tools2, toolsentrance
Cosmetics     =cosmet1, cosmet2, makeup1
HouseWare     =kitchen, china, bridal, appliance
TextMsg       =tools1, tools2, cosmet1, kitchen
```

Set up the display characteristics

```
[DISPLAY]
Msgchecking   = Checking....Please Wait

<Tooldept>    SlideshowFile =shows/tools.sho
<HouseWare>   SlideshowFile =shows/housewares.sho
               SlideshowFile =shows/everybodyelse.sho
```

#Text colors: tool dept, brown over green; cosmetics dept, yellow over blue
#from color chart (Text Colors by Index.pdf)

```
<ToolDept>    Text_Fcolor   = 44
<ToolDept>    Text_Bcolor   = 18
<Cosmetics>   Text_Fcolor   = 35
<Cosmetics>   Text_Bcolor   = 180
```

Members of these groups are directed to a different .ini file

```
[REDIRECT]
<HouseWare>InitFile      =tools.ini
<TextMsg>   InitFile     =textonly.ini
```



Appendix D—Creating a Slideshow (.sho File)

Introduction

This section contains detailed instructions for creating a slideshow file simply using a text editor like Windows® Notepad to create the script necessary to run the graphics images (slides) in an 800x600 pixel non-interlaced GIF-89a format. Images can be edited with any good commercial image editing program such as CorelDraw or Adobe Photoshop.

A **slideshow** is a file (name.**sho**) located in the servers' shared **POS/shows** folder consisting of a script (list of references to graphics images) specifying the order and duration, images are to be displayed. Short video clips (up to 8 seconds) in the form of sequential **.gif** or **.png** images are supported at the fastest approximate rate of 20 frames/sec.

Slideshow **.sho** file images and scripts are loaded into ScanVue® RAM memory when **scanvue.ini** file (located in shared **POS** directory) is read during boot up or after specified timeout.

The slideshow **.sho** file contains three required sections as follows:

[SETUP] section contains slideshow Initialization settings.

[FILES] section of the **.sho** file contains a list of images reserved in memory to be presented in the slideshow.

[SHOW] section of the **.sho** file contains a presentation script that is interpreted by ScanVue® for controlling the slideshow image sequencing and image duration.

See next page for slideshow command requirements for each section.

Rules for the .sho File

1. The **.sho** file is a text file consisting of sections for specifying different parameters. Each section is marked in enclosing square brackets i.e. **[SETUP]**.
2. The slideshow file uses Token=Value pairs to define the sources of the image files.
3. Sections must be in specific order **[SETUP]**, **[FILES]** and **[SHOW]**.
4. Lines that start with a single quote (') or pound sign (#) are comments. Blank lines and white space (except possibly in a value field) are ignored.



Show File (.sho) Sections & Commands

[SETUP]	Slideshow Initialization settings
ROOT_DIR=	Required server directory where slideshow graphics images are stored Example: ROOT_DIR = graphics\Test_800
FRAME=	Slideshow image duration time used globally (Not Required) FRAME = Desired duration in milliseconds/10 Examples: For 1 second (1000mS) image duration, FRAME=100 For 100 millisecond image duration, FRAME=10 For 30 millisecond (fastest processing frame rate)*, FRAME=3 If FRAME command is not used, frame duration time shall be defined by SLIDE frame duration time (n2) or (Fn2) under [SHOW] section. <i>The fastest processing frame rate is approximately 30mS allowing for a presentation of sequenced images at a frame rate comparable to video.</i> <i>This may be achieved by any of three methods:</i> <ul style="list-style-type: none">- Set FRAME=3 (for 30mS duration) – Do not use SLIDE duration time (n2) below- Set SLIDE duration time (n2) below to 3 (for 30mS duration)- Remove both FRAME command and SLIDE frame duration time (n2) below
[FILES]	The list of graphics images (.GIF or PNG files) to be presented in the slideshow
SLIDE_n = or... % _n =	Where 'n' is slide (.GIF or PNG file) initially listed in sequence for potential use in the slideshow script represented under [SHOW] label. Examples: SLIDE001 = TestPattern.gif %002 = StandardColors.gif NOTE: Sequence numbers may or may not have leading 0's such as (1, 01 or 001)
[SHOW]	The presentation script for controlling the slideshow image sequencing and image duration
SLIDE_{n1}	Where 'n1' is the sequence number (in desired presentation sequence). Duration time shall be defined by FRAME command duration time. Example: %001 # Slide 1 display for duration = (FRAME)
SLIDE_{n1, n2} or... % _{n1, n2}	Where 'n1' is the sequence number (in desired presentation sequence) and 'n2' is Slideshow image duration time used independent of FRAME. n2 = Desired duration in milliseconds/10 (Refer to FRAME Examples)
SLIDE_{n1, Fn2} or... % _{n1, Fn2}	Where 'n1' is the sequence number (in desired presentation sequence) and 'n2' is multiplier applied to FRAME value Image duration time = (FRAME x n2) Example: %01, F5 # Slide 1 display for duration = (FRAMEx5) (F5 will multiply FRAME x 5; If FRAME=100, result is 5 second duration)



Slideshow Example

Specify the root directory for the graphic image files
[SETUP]

ROOT_DIR = Graphics/MyShow
FRAME=100 # 1000mS or 1 second (100 x10)

Here are the image files. These all 800x600 pixel GIF (or PNG) images
[FILES]

SLIDE1 = FrontYard.GIF
SLIDE2 = WalkWay.GIF
%3 = Porch.GIF
%4 = FrontDoor.GIF
%5 = EntryHall.GIF
%6 = CoatCloset.GIF
%7 = FamilyRoom.GIF
%8 = Backyard.GIF
%9 = Kitchen.GIF
%10 = DiningRoom.GIF

Here comes the slideshow
[SHOW]

SLIDE1, F10	# Slide 1 display for 10 secs (1 second x10)
SLIDE2, F5	# Slide 2 display for 5 secs
SLIDE3	# Slide 3 display for 1 sec (FRAME time)
SLIDE4, 30	# Slide 4 display for 300 milliseconds
SLIDE5, 3	# Slide 5 display for 30 milliseconds (Fastest frame rate)
SLIDE6, F2	
SLIDE7, F5	
SLIDE8, F5	
%009, F5	
%010, F10	Slide 10 displays for 10 secs

End – Slideshow will now start over



Appendix E—Text Message Support

Font Sets and ASCII Characters

ScanVue® 8000 Kiosk has a built-in default font supporting the character set shown in **Table 4**. The default font has the extended ASCII 256 character set and can be displayed 20 characters per line. Sample TTF fonts can be downloaded from the server **C:\POS\Fonts** folder when ScanVue® boots up by specifying it in the **scanvue.ini** file. Only one font at a time can reside in ScanVue®.

Free TTF fonts can be obtained from the following on-line web sites:

www.fontsquirrel.com/fonts

www.webpagepublicity.com/free-fonts.html

While ScanVue® can display characters outside of the usual ASCII range of 32–127, many libraries will not correctly handle those characters in normal text. Nominal mode transfers should be used to write text with the extended character set (128-255).

ASCII printable characters				Extended ASCII characters			
32		64	@	96	·	128	Ç
33	!	65	A	97	a	129	ü
34	"	66	B	98	b	130	é
35	#	67	C	99	c	131	â
36	\$	68	D	100	d	132	ä
37	%	69	E	101	e	133	à
38	&	70	F	102	f	134	å
39	'	71	G	103	g	135	ç
40	(	72	H	104	h	136	ê
41	)	73	I	105	i	137	ë
42	*	74	J	106	j	138	è
43	+	75	K	107	k	139	ï
44	,	76	L	108	l	140	í
45	-	77	M	109	m	141	ì
46	.	78	N	110	n	142	Ä
47	/	79	O	111	o	143	Å
48	0	80	P	112	p	144	É
49	1	81	Q	113	q	145	æ
50	2	82	R	114	r	146	Æ
51	3	83	S	115	s	147	ó
52	4	84	T	116	t	148	ö
53	5	85	U	117	u	149	ô
54	6	86	V	118	v	150	ù
55	7	87	W	119	w	151	û
56	8	88	X	120	x	152	ý
57	9	89	Y	121	y	153	Ö
58	:	90	Z	122	z	154	Ü
59	;	91	[	123	{	155	ø
60	<	92	\	124	|	156	£
61	=	93	]	125	}	157	Ø
62	>	94	^	126	~	158	×
63	?	95	_			159	f
						160	á
						161	í
						162	ó
						163	ú
						164	ñ
						165	Ñ
						166	ª
						167	º
						168	¿
						169	®
						170	¬
						171	½
						172	¼
						173	;
						174	«
						175	»
						176	
						177	
						178	
						179	
						180	
						181	À
						182	Á
						183	Â
						184	Ã
						185	Ä
						186	Å
						187	
						188	
						189	€
						190	¥
						191	
						192	Ł
						193	ł
						194	Ť
						195	ť
						196	—
						197	+
						198	ä
						199	Ä
						200	ℓ
						201	ŕ
						202	ŕ
						203	ŕ
						204	ŕ
						205	=
						206	÷
						207	□
						208	ø
						209	Ð
						210	É
						211	Ê
						212	Ë
						213	Ì
						214	Í
						215	Î
						216	Ï
						217	
						218	
						219	
						220	
						221	
						222	
						223	
						224	Ó
						225	Ô
						226	Õ
						227	Ö
						228	ö
						229	ő
						230	µ
						231	þ
						232	þ
						233	Ú
						234	Û
						235	Ü
						236	Ý
						237	Ÿ
						238	
						239	
						240	≡
						241	±
						242	—
						243	¼
						244	½
						245	¾
						246	÷
						247	°
						248	
						249	
						250	
						251	
						252	
						253	
						254	
						255	

Table 4—Default ASCII Character Set For TFT Display



Formatted Text Messages

Text messages are displayed starting at the top left display position and are formatted using linefeed / carriage return codes as follows: **\n\r** or **x0D\r0A**.

Example formatted message used in sample ProductInfo database file; data.dat.

```
444444A  Font Set (Part 1)\x0D\r0A!"#$%&'()*+,-./0123\n\r456789:<=>?@ABCDEFGH\n\rIJKLMNOPQRSTUVWXYZ
444444B  Font Set (Part 2)\x0D\r0A%&?[\]^_`{|}~abcdefg\n\rhijklmnopqrstuvwxyz
```



Appendix F—ProductInfo Protocol

ProductInfo Protocol Requirements

This section describes a bi-directional message passing protocol called 'Product Information Protocol' that was created especially for retail store price-verifier applications. The protocol is designed to be generic and is not tied to any specific retail hardware device. Any network topology or configuration capable of using or connecting to TCP/IP will be able to support ProductInfo based applications.

The IEE ScanVue® retail products use a sub-set of the ProductInfo protocol to meet their functionality requirements. The specific implementations for these products are covered in their respective user manual application programming interface (API) section.

Introduction

The ProductInfo Protocol provides a network-based messaging system whereby a client can obtain item price and description information about specific products from a database located on a back office server. This information can be in any form such as text or graphic images. The protocol will be submitted as an RFC for the Internet community.

Protocol Types

There are two forms of the protocol: trivial and nominal. The trivial version consists purely of <NUL> terminated text sent from the client to the host, or from the host to the client. From the client, it is a product query; from the host it is a text response. This may not support all the features of any particular device, so nominal mode must be used for advanced features.

The trivial and nominal cases can be distinguished by examination of the first byte; in trivial mode it will always be a printable ASCII character—in nominal it will be zero (unless you are sending individual packets in excess of 16MB). When a trivial-mode message is received by the server it is interpreted as a product query; it optionally contains the client's identification and white space preceding the product code. When received by the client, it is interpreted as a single, text response to a query. In either case, sessions are closed by the server.

In the nominal case, messages consist of a length, followed by a token, possibly followed by more information as specified by the length and the token.

Normal Socket Mode (Default)

The format is the same in both directions but the implementations at either end may or may not understand all the same tokens. In normal operation, the client opens a connection for each request, and keeps it open until the server instructs the client to close it. The client can also wait for the server to open a socket, to allow asynchronous operation. Either side may act as client, or server, or both.



Open Socket (Keep-Alive) Mode

The ScanVue® 8000 Kiosk is designed for a socket listener on the host server to open port 1283 from an inquiry from the ScanVue and close the port when the request is complete.

A special mode has been implemented that will send keep-alives to the socket at the frequency entered into UnitConfig. In this mode, the socket is kept open as long as the keep-alives are sent. Other processes can be run between the ScanVue® and the host that are unrelated to the price verification task.

To keep the socket open: enter any non zero integer (seconds) into the **KeepAliveTime** mode using UnitConfig.

Errors

In the interest of robustness, both ends will accept any message whether defined or not—invalid messages are discarded. A maximum reasonable message length may be used as a means to detect implementation bugs that could result in loss of synchronization; such errors terminate the connection. If the client detects a loss of synchronization it may send an error token following re-establishment of the connection in order to log the error on the server. If the server detects this condition, it can log it directly.

Following a query, the client may choose to take an error action if it receives nothing from the server within a defined timeout period.

Status Requests

The server can make capability queries and/or mode changes before, after, or in lieu of sending any response. The client may send capability messages regardless of whether the key name is known to the server; the server retains this information. When the server needs to know the value of one of these capabilities, it consults this retained information. If it is not known, a capability query may be sent and the server may wait a moment for a reply to be received. This reply will asynchronously update the server's information, and the value should be found there by a subsequent lookup following the brief interval required for the client to respond to the query. If it remains undefined, it can be assumed that the client declined to respond, most probably because that capability name is not known to it.



Client Mode Changes

The notion of a mode setting is to allow the server to select between optional behaviors or parameters in the client. If the server wants the client to adopt a certain mode setting, it sends the command. The client will do so, if applicable. If not, optionally, an error report may be generated in response. Mode values are set by using token–value pairs. Mode values can be queried by sending the mode name alone. Error reports are used primarily as a debugging tool. The string starts with an error number, optionally followed by white space and explanatory text.

Packet Types

Packet Types	
<u>Function</u>	<u>Token</u>
Terminate connection	TERM
Capability query	CAPQ
Capability response	CAPR
Mode Set/Query	MDSQ
Mode Response	MODR
Error report	ERR_
Product query	PROD
Data	DATA
Registration	RGST
Event	EVNT

Data Types	
<u>Function</u>	<u>Token</u>
No Operation	NOP_
Display Text	TEXT
Special Text ¹	SPEC
UNC	UNC_
URL	URL_
File	FILE

¹ The meaning of any Special Text is implementation–defined.



Nominal Mode Packets

General Every nominal-mode packet starts with a header containing the packet length and the token and may contain no other data. Packets are described below.

Terminate Connection: Requires only the length and the token.

Byte #	Length				Token			
	0	1	2	3	4	5	6	7
	0	0	0	8	T	E	R	M

Capability Query: The name of the capability to be queried is a string following the header. Capability names are case insensitive. The header for a SendUnitID capability query would be

Byte #	0	1	2	3	4	5	6	7
	0	0	0	19	C	A	P	Q

The query string "SENDUNITID" and a terminating <NUL> immediately follow the header.

Capability Response: If the capability being queried is known, a response is sent. The name of the capability and its value is a string in token/value format following the header. The header for a SendUnitID response might be:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	24	C	A	P	R

The response string "SENDUNITID=TRUE" and a terminating <NUL> immediately follow the header. There can be white space on either or both sides of the equals sign. The value starts with the first non-white space character. Values can be empty. If the capability query is a zero-length string, ScanVue® responds with a <CR><LF> separated list of all supported capabilities and their types. If the query is a single asterix (*), ScanVue® will respond with a <CR><LF> separated list of modes and their values.



Mode Set/Query:

The name of the mode and its value are in a token/value string following the header. If the mode name alone is in the string, it is a query. Mode names are case-insensitive. The header for a SendUnitID query would be:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	19	M	D	S	Q

The query string "SENDUNITID" and a terminating <NUL> immediately follow the header. To set SendUnitID, the string would be (e.g.) "SENDUNITID=ON", and byte 3 would be 22 instead of 19.

Mode Response:

If the mode being queried of set is known, a response is sent. The name of the mode and its value is a string in token/value format following the header. The header for a SendUnitID response might be:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	22	M	O	D	R

The response string "SENDUNITID=ON" and a terminating <NUL> immediately follow the header. There can be white space on either or both sides of the equals sign. If the mode query is a zero-length string, ScanVue will respond with a <CR><LF> separated list of all supported modes and their types in the form "MODENAME=TYPE,SIZE" where TYPE is BOOLEAN, NUMBER, or STRING, and SIZE is the number of bytes in the STRING and only appears for STRING. If the mode query is the single-character string "*", ScanVue will respond with a <CR><LF> separated list of all supported modes and their current values.

Error Report:

Error reports are primarily intended for debugging purposes. If enabled, error reports are sent if, for example, the host queries a capability that the client does not accept. Such error strings are in the format of a number possibly followed by white space and explanatory text. There is no assignment of numbers to specific errors, but the value zero should be reserved for non-error conditions. An "OK" error response could be:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	13	E	R	R	_

The response string "0 OK" and a terminating <NUL> immediately follow the header.



Product Query: The product query string immediately follows the header. The header for a request about product ABC would be:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	12	P	R	O	D

The query string “ABC” and a terminating <NUL> immediately follow the header. Mode settings can cause the client to send its unit ID and a <TAB> character before the product data, and/or add terminating <CR> and/or <LF> characters at the end of the query string.

Data: Data can be one of several types. The data-type token immediately follows the packet-type token, and the data follows after that. The header for a data packet to display the word “hi” would be:

Byte #	0	1	2	3	4	5	6	7	8	9	10	11
	0	0	0	15	D	A	T	A	T	E	X	T

The data string “hi” and a terminating <NUL> immediately follow the header.

Registration: Registration information consists of three sequential <NUL> terminated strings following the header. The first string is the unit ID, the second is the product-type identification, and the third is the IP address of the registering client. The header for a registration packet for “Entry”, product type “SCANVUE® 200102161901”, and IP address of “192.168.0.1” would be:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	79	R	G	S	T

Each registration string and its terminating <NUL> immediately follows the header or the previous registration string. When a client receives a registration packet, it should respond by sending its own registration.



Event:

A client can support up to 32 application specific events and can report the beginning and end of each event with a 100th second timer (which need not be supported). Events are mapped into a 32-bit word, in standard network order. Clients may allow the host to enable and disable individual events, or to select reports only for starting or ending events. The packet header for events from UnitID "Unit1" is:

Byte #	0	1	2	3	4	5	6	7
	0	0	0	26	E	V	N	T

Immediately following the header is: the 32-bit map of events that have started since the last report, the 32-bit map of events that have ended since the last report, a 32-bit timer value and a NUL terminated string that is the sending unit's UnitID. The bytes following the header if event zero started and event one ended at time 5 from UNIT1 would be:
0 0 0 1 0 0 0 2 0 0 0 5 85 78 73 84 49 0.

Client Requirements

Capabilities

The following capabilities must be supported by a client:

Capabilities	Description
Timeout	Changing the client's protocol timeout value is supported
SendUnitID	Sending the unit's ID can be enabled and disabled
TrivialComm	Controls the default communication method used for queries

Modes

The following modes must be supported:

Configuration Mode	Description	Default
Timeout	Hundredths of a second represented in a 32-bit value. This specifies the amount of time that a client will wait, after sending an initial query, before it terminates the connection to the server and displays an error message (if no other response has been received)	300 (3 seconds)
TrivialComm	Controls the communication method used for queries. The response to a trivial-mode query need not be in trivial-mode.	TRUE
SendUnitID	Controls the inclusion of the Unit ID in a trivial-mode query.	TRUE
SendError	Controls the sending of error reports	FALSE
SendResponse	Controls the sending of responses to mode set commands	FALSE



QFX Quick File Exchange Protocol

QFX Server (QFXserv.exe) is a very low overhead protocol that is a much simpler and faster alternative to FTP for moving files quickly across the network. There is no authentication. The QFX server allows only read access to files in and below its default directory; this is the extent of security.

QFX packets consist of a 4-byte (network order) packet length, a 4-character token, and possibly data. Packet length includes the 4-byte length field.

Tokens are:

INFO	File information request/response
SEND	File send request/response
DIFF	File timestamp comparison
ERRR	Error response

INFO exchange:

request:	[length][INFO][filespec <NUL>]
response:	[length][INFO][YYYYMMDDhhmmss size <NUL>] Four digits for year, two each for month (January is 01), day (01–31), hour (00–23), minute (00–59), and second (00–59), followed by a single space-character, and finally the size of the file, in bytes.
response:	[length][ERRR] Requested file does not exist or request is malformed. Explanatory message is optional, should be string consisting of number, whitespace, optional text.
request:	[length][SEND][filespec <NUL>]
response:	[length][SEND][file data]
response:	[length][ERRR] Requested file does not exist or request is malformed. Explanatory message is optional, should be string consisting of number, whitespace, optional text.
request:	[length][DIFF][filespec <NUL>][YYYYMMDDhhmmss<NUL>]
response:	[length][DIFF][Bool] Bool value is TRUE if the file's date/time are DIFFERENT than the provided timestamp and FALSE if it is the same.
response:	[length][ERRR] Requested file does not exist or request is malformed. Explanatory message is optional, should be string consisting of number, whitespace, optional text.

[filespec] uses UNIX style forward-slash directory notation. It is the responsibility of the server to convert the notation to the native method, and to guarantee that the path cannot extend outside of the default directory.

The directory '/' refers to the current directory; a leading '/' is ignored. The QFX server must guarantee the requested file is in or below its current directory.

Line-terminators are newline characters; carriage returns are optional.

The server is responsible to read text files and transmit them with appropriate line breaks. Specifically, this applies to VAX/VMS.



Appendix G— Communication Diagnostics

Diagnostic Screens and Messages

ScanVue® software has a built in diagnostic that will automatically attempt to determine and resolve network connectivity problems when the unit is powered up. By their very nature diagnostics are not completely fool proof, but they are powerful tools and many times can pinpoint problems exactly or provide a strong clue to the actual problem. The host must be able to ping the unit for the diagnostics to be meaningful.

Diagnostic screens have a bright red background, with text displayed in yellow on a blue background. The first line of the display will indicate the type of connection being attempted—Windows networking (SMB), FTP, or Quick File Exchange (QFX). The unit will display, at most, one diagnostic screen between restarts. If you have multiple problems they will show up one at a time.

The second line indicates the general class of error, **Internal**, **Connect**, or **Transfer**. The third line will name the specific error, and if a file name is involved, it will be displayed on the fourth line.

Internal Error

An **Internal** class error usually relates to a ScanVue® device failure and should never be seen. If the unit can be pinged it is working well enough to eliminate device failure as a cause of not connecting.

Transfer Error

Transfer class errors indicate problems with transferring data over the network after a connection has been established to the host. Again, the explanations provided are not necessarily the only possibilities.

Data Transfer	The unit is not able to send messages to the host even though it has a valid connection. This can be caused by broken server software or for some protocols, by firewalls between the unit and host.
File Unavailable	The requested file doesn't exist or security makes it unavailable. This diagnostic message may display even if everything else is working. It indicates a failure to get the .INI or the slideshow file. This message will display if the files are available but one of the graphics is not. This is generally a recoverable error. For the INI and slideshow files, the unit will get them when they show up; graphic files are bypassed.
No Attribute	This indicates that the Windows server has the file, but cannot provide its size or time stamp. This is a failure on the host or server.



Connect Error

A **Connect** error is the most likely type to occur. The explanations given may not be the only possible reason for the message.

Connect Fail	A general failure to connect to the host. If the host can ping the unit, getting this error should not be possible.
Connect Timeout	The initial connection was made but the host has not responded to further communication in timely manner.
Refused	The host is there and the unit can connect to it. The host may not have an appropriate server running, or security may otherwise refuse to allow the connection.
Logon	The user name and/or password are incorrect.
Protocol Fail	For Windows networking, the unit and the host could not find a mutually acceptable protocol level.
Share Unavailable	The directory requested does not exist, or is not shared, or protections prevent the unit from connecting to it.
Host Resolution	The specified host name cannot be resolved to an IP address. This can happen if the host name is incorrect or if the host is on another subnet and there is no WINS server available or the WINS server IP has not been set.
Transfer	This may be a transient error that will not re-occur if you power cycle the unit and try again. Normally you should never see this message, as it indicates a failure of software and/or hardware on the host, the network, or on the unit.
SMB Connect Refused	<p>This can occur in the following the following cases:</p> <ol style="list-style-type: none">1. The share POS directory is not accessible; either because the share does not exist, or user permissions are not set to allow access.2. The scanvue.ini file may not exist in the share.3. The share may exist but access may be denied because "Guest" account is disabled, or the account identified to access this share may not be applied to the permissions tabs (remember there is both a Sharing tab and a Security tab).4. The user account identified may not be set in the Unit Configuration of the ScanVue® unit, or the password for the account may not be set correctly.