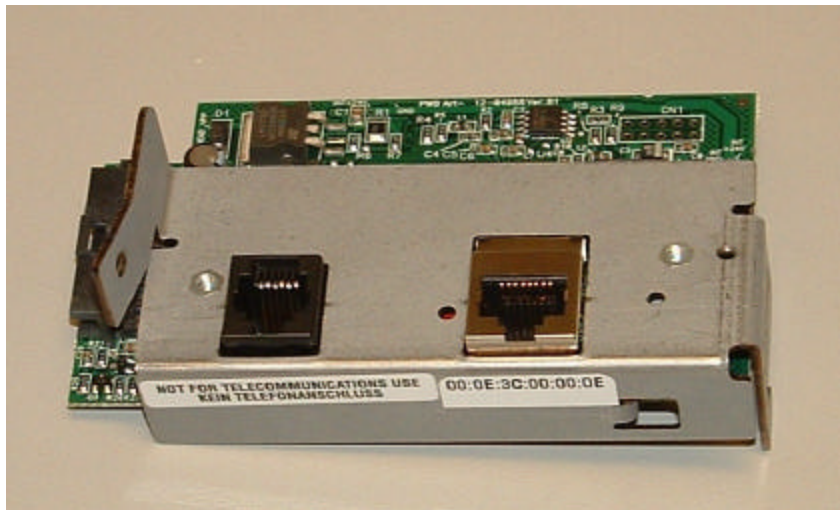# ITherm™/POSjet™/BANKjet™

ETHERNET USERS GUIDE

Change Log

Rev A   **Initial Release**

Rev B   **Rewritten in many places for clarity.**

Rev C   **Minor Edits for clarity.**

Disclaimer

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Federal Communications Commission Radio Frequency Interference Statement

TransAct Printers and Wired Ethernet Adapters comply with the limits for a Class A computing device in accordance with the specifications in Part 15 of FCC rules. These regulations are designed to minimize radio frequency interference during installation; however, there is no guarantee that radio or television interference will not occur during any particular installation. Interference can be determined by turning the equipment off and on while the radio or television is on. If the printer causes interference to radio or television reception, try to correct the interference by one or more of the following measures:

1. Reorient the radio or television receiving antenna

2. Relocate the printer with respect to the receiver

3. Plug the printer and receiver into different circuits

If necessary, the user should consult their dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: *How to Identify and Resolve Radio/TV Interference Problems.* This booklet is available from the US Government Printing Office, Washington, DC 20402. Ask for stock number 004-000-00345-4.

Canadian Department of Communications Radio Interference Statement

TransAct Printers do not exceed Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Regulatory Compliance

FCC Class A

ULc

CE Mark

UL 1950

TUV

Table of Contents

Table of Figures

General Description

There are two basic Wired Ethernet Adapters covered by this users guide. One is for the iTherm 280 Thermal printer and the other is for the POSjet and BANKjet product families. Both adapters are powered by the printer and provide the same basic functionality.

These Wired Ethernet Adapters provide fast and easiest way to network, share and printers to your system. Ethernet provides a consistent common connection between printers and computers using standard protocols supported by Windows® 95, 98, Me, NT, 2000, XP, as well as many other platforms. Ethernet, being the most common networking medium, and thus allows printers to be easily added, moved and removed with inexpensive common cabling and off the self components.

This users manual is intended to show you how to install, connect and configure your Wired Ethernet Adapters with the iTherm, POSjet and BANKjet printers. Installation is easy and similar to serial port, parallel port and USB adapters. However, with Ethernet, connecting an additional printer is a easy as plugging it in to the Ethernet hub, no special ports required.

Setup is easy too. A web style interface and a special locator program are provided to make configuration simple from any PC with a web browser.

Standard Features

Print Server Features Standard Ethernet Connection

- 10 Mbps Speed
- 10 Base T RJ45 network connection
- Network Traffic LED indicator
- Configured through networked PC Web Browser
- Works with Virtually All Major Operating Systems
- Integrated into the Printer
- Large RAM Buffer for fast continuous printing
- 512K Flash Memory for Future Upgrades

Supported Protocols

- Line Printer Daemon Protocol (LPR)
- Port 9100 (RAW)
- The TFTP Protocol (Revision 2)
- Telnet COM Port
- Hypertext Transfer Protocol (for configuration)

User Interface/Configuration

HTTP/Web Interface
- Login Page

- Configuration Page
    - o IP Address / Subnet Mask
    - o Auto-IP, DHCP, Static IP…
    - o Printer Textual Name (User Defined)
    - o Printer Location String (User Defined)
    - o Protocols Enabled/Disabled, Port
    - o LPR, Port 9100, Telnet
- Adapter Firmware Update

Other

- Push Button for Initial IP Address reset and adapter reset.
- Self-Diagnostics
- Firmware Upgrade via TFTP and HTTP

Advanced Features

Host Name

The Host Name, provided on the Printer Identification Page, is provided to the DHCP server when DHCP is enabled. With this a decent DHCP-server, that is connected with the Domain Name Server (DNS), as can be configured in Linux, allows programs access it using the device name for it's IP address.

Support Utilities

- Locator
- Windows COM Port Virtualization

System Requirements

Printing – Any operating system that supports printing via RAW, LPR or Telnet connections over TCP/IP. This includes, but is not limited to, Windows®, DOS, Linux, Unix and MAC OS.

Virtual COM Port – Windows® 2000, Windows® XP

Locator – Windows® 2000, Windows® XP

Electromagnetic Compatibility Requirements

The Wired Ethernet adapter shall meet all compatibility requirements specified for the PJ1000, PJ1500, BANKjet and the iTherm.

Environmental

The Wired Ethernet adapter will match the environmental specifications for the PJ1000, PJ1500 and the iTherm

Electrical Characteristics

The TransAct Ethernet adapter conforms to the IEEE 802.3, 10BaseT Ethernet interface standards

10BaseT Ethernet specifications

- Maximum segment length: 100m (330 ft.)
- Topology: Star
- Cable type: UTP (CAT 3 or above)
- Connector type: RJ-45
- Transmission speed: 10 Mbps

Cash Drawer Drivers

The POSjet and BANKjet adapters provide the cash drawer interface for the printer. This adapter is fixed to the Ithaca configuration and cable adapter must be used for STAR and Epson cash drawers. The iTherm 280 provides a cash drawer interface that is not part of the interface adapter. Refer to the iTherm Programmers guide for configuration information.

Where Can You Find More Information?

Our Internet Support and Sales Services

Web address : www.TransAct-tech.com

TransAct Technologies Incorporated maintains an Internet web site with content devoted to supporting our products. Within the Support Services section you can find documentation for TransAct Printers, including a current copies of the Programmer's Guides.

TransAct Product Support

After entering TransAct's web site, you will be brought to the "Welcome to TransAct" page. On this page you will find the Ithaca® Brand listed at the top right.

Click the Ithaca® logo; locate the category "Support Services" on the next page.

Click on the "iTherm™ 280" sub-section on the lower half of the Ithaca® page.

Windows 95/98/Me Print Driver with Documentation   **Part No. 100-9167**

Windows NT 4.0 2K and XP Print Driver with Documentation   **Part No. 100-9170**

OPOS Drivers with Documentation   **Part No. 100-9732**

Internet Support

TransAct Technologies Incorporated maintains an Internet web site. The address is http://www.TransAct-tech.com The technical support page contains support information for our printers. The iTherm™ 280 Printer support pages offer the latest information. The pages

include the current version of this manual; program examples; test procedures; programming instructions; and supported print drivers.

Contacting TransAct's Ithaca Facility

Contact TransAct's Ithaca facility for information about the iTherm™ 280 Printer and how it works with your system. For information on International distribution, visit our web site at www.TransAct-tech.com. Contact the TransAct's Sales and Technical Support Departments at the following address and telephone or fax numbers.

Technical Support

Receive technical support, order documentation, request additional information, or send in a printer for service.

Sales

Order supplies, receive more product information, or order product brochures.

TransAct Technologies Incorporated
Ithaca Facility
20 Bomax Drive
Ithaca, NY 14850 USA

Telephone	(877) 7ithaca or (607) 257-8901
Main fax	(607) 257-8922
Sales fax	(607) 257-3868
Technical Support fax	(607) 257-3911
Web site:	http://www.TransAct-tech.com

Installation

If the Wired Ethernet Adapter came installed in the printer, skip directly to Printer Connection.

POSjet and BANKjet adapter Installation

The POSjet and BANKjet adapters require that the power supply be removed before the adapter can be removed.   Follow the following sequence to replace the current adapter with the Wired Ethernet adapter.
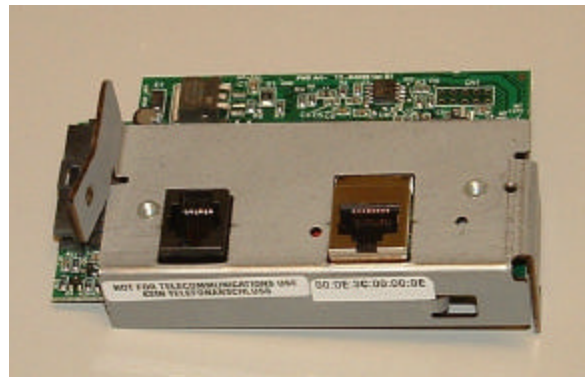
Figure 1 POSjet and BANKjet Ethernet adapter

1. Disconnect all cables from the printer.
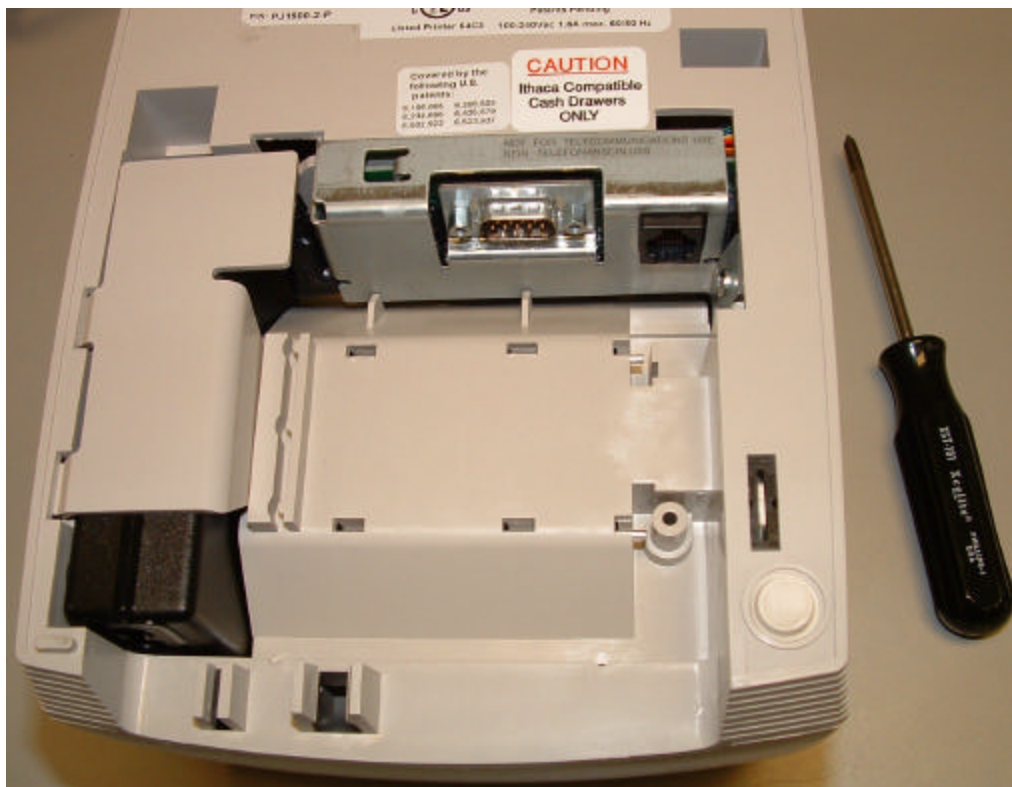
2. Remove the power supply-retaining clip.

3. Remove the power Supply
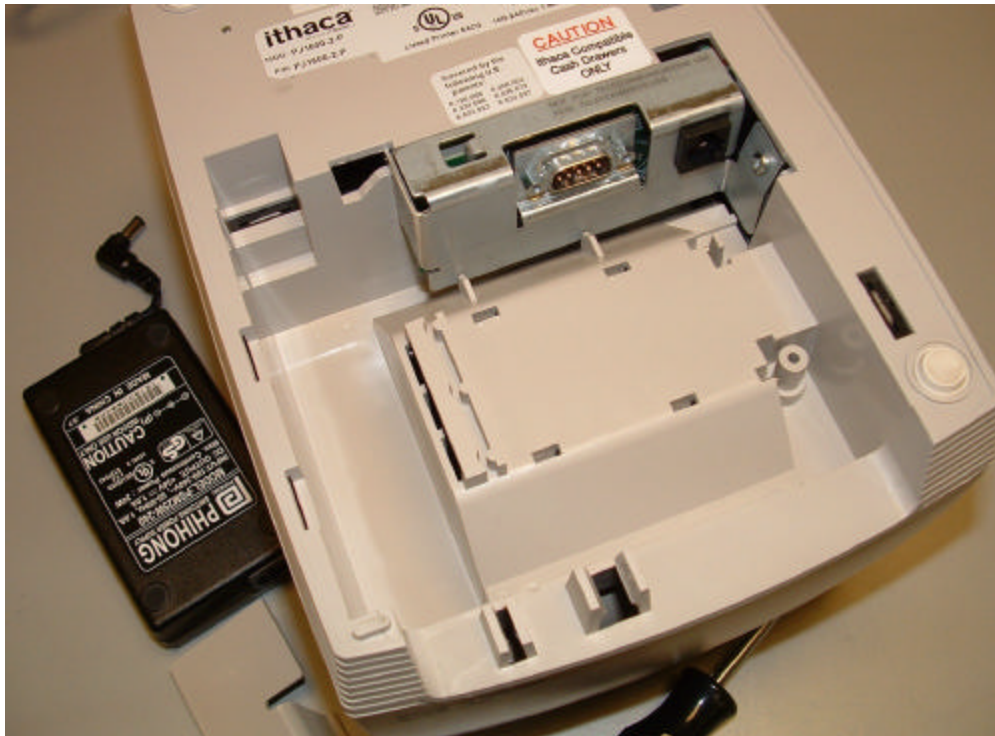
4. Unscrew the adapter interface from the printer side frame.

5. Slid the adapter sideways and then up and out of the printer.
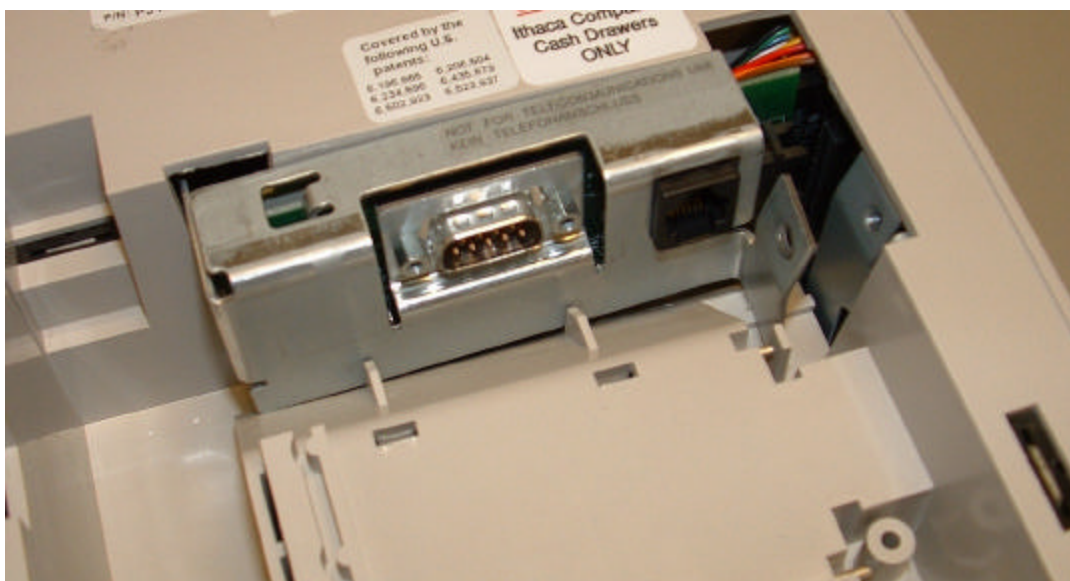
6. Install the Ethernet Adapter by carefully placing the adapter into slot and then sliding is sideways until it is fully seated. (Do not force it.)

7. Reinstall the retaining screw

8. Connect and install the power supply.

9. Snap the retaining clip back over the power supply.
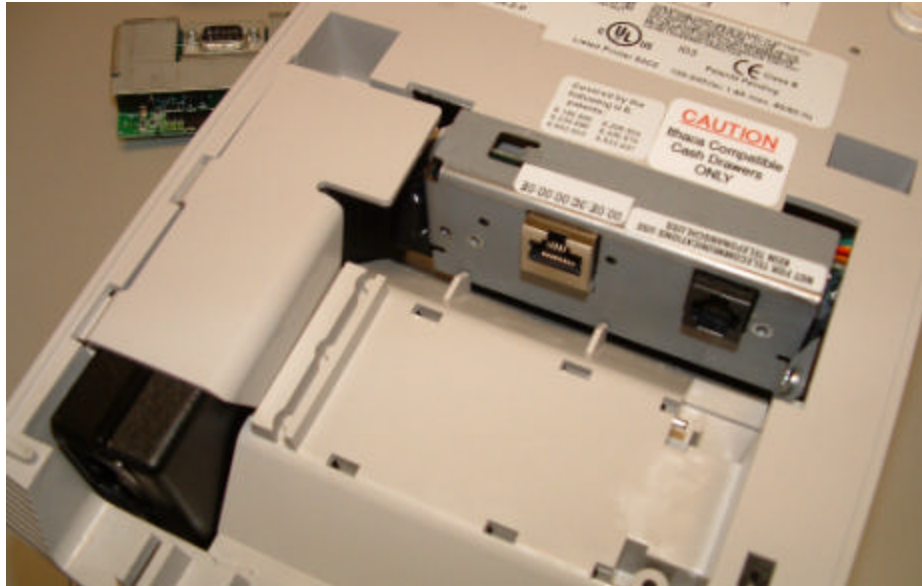
10. If the Cash Drawer label does not indicate that the printer is equipped with an Ithaca Compatible interface, remove the label and install an Ithaca Compatible label as shown above.

11. Reconnect the power, and install the Ethernet cable.

iTherm Installation

Figure 2 iTherm Ethernet Adapter

1. Disconnect all wires and cables from the iTherm.

2. Remove the two retaining screws and remove the current adapter.

3. Take care that the cash drawer connector does not get out of position. If required, reposition it as shown in the above picture.

4. Carefully insert the new adapter and make sure it is seated correctly. Do not force it.

5. Reinstall the retaining screws.

6. Reconnect the power and the cash drawer connections if required

Ethernet Connection

Connecting the printer to the network is simple.

- Using a standard CAT5 Ethernet cable, connect one end to the RJ45 connector on the Wired Ethernet Adapter. Connect the other end to an open Ethernet port in your Ethernet hub, switch or router.

- Connect power to the printer and turn it on.

The printer should then print its IP address, which will be used to configure the Wired Ethernet Adapters.

Note: If the printer does not print the IP address within two minutes, press the recessed button on the Wired Ethernet Adapter for five (5) seconds and then release. This will reset the Wired Ethernet Adapter, not the printer, back to its factory defaults. The IP address should then be printed.

Configuration

The Wired Ethernet Adapter is ready to be configured once the printer prints the IP address. The TransAct Locator program or your internet web browser may be used to configure the Ethernet Adapter.

TransAct Locator Program

TransAct provides a Windows^{TM} program to allow TransAct Ethernet devices to be located and configured on a local subnet.

The Locator program allows the system administrator to find all TransAct Wired Ethernet Adapters on the local network regardless of the IP addresses assigned to each adapter. The Locator program is a Microsoft Windows program it will run on Windows 98II, XP and 2000.

Installation.

The program is available on the TransAct Web site www.transact-tech.com and is downloaded as a compressed install. The locator program consists of two files. Locator.exe and UbicomUCP.dll. These files must exist in a single directory and be run from that directory. Run the install file, from any convent directory and Locator.exe and the required dll will be placed in that directory.

Using Locator
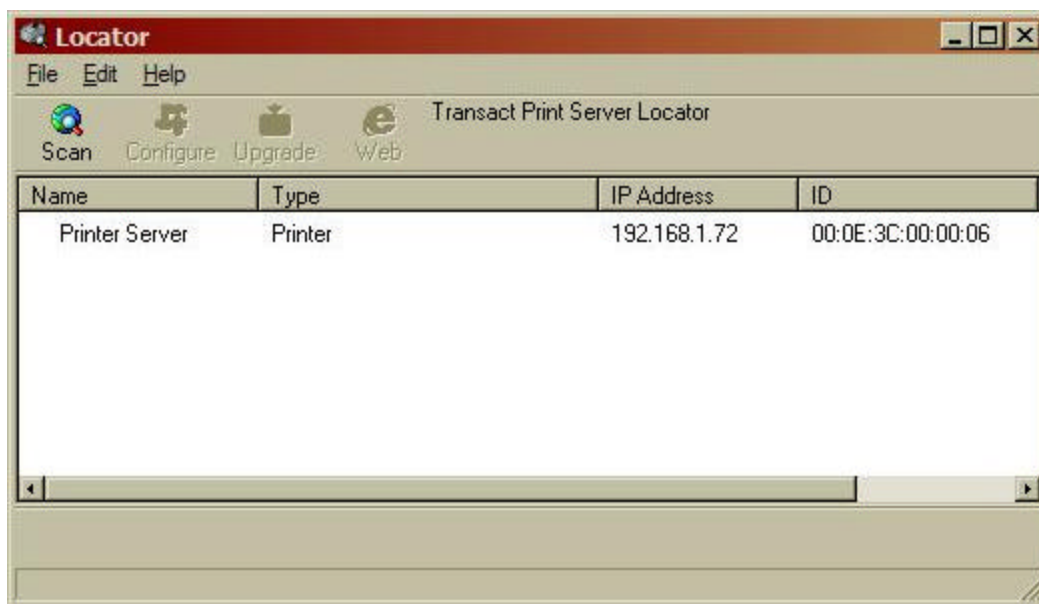
Figure 3 Locator Scan

Locator will scan the local subnet and locate any TransAct printers connected to the network.

When all printers are found, you may select a printer by clicking on any printer in the list.
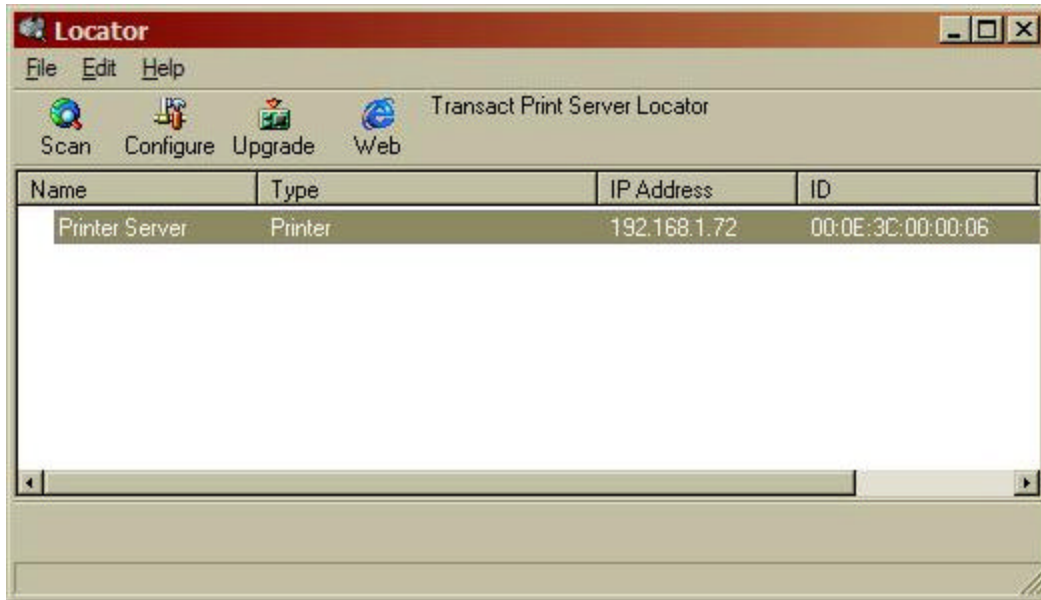
Figure 4 Locator Device Selection

Once selected the Adapter can be configured, upgraded, or you can activate your web browser to configure the printer.

To configure the printer directly form the Locator program, click the Configure button. NOTE: the locator program bypasses the printer security features. This program should only be made available during setup and installation.
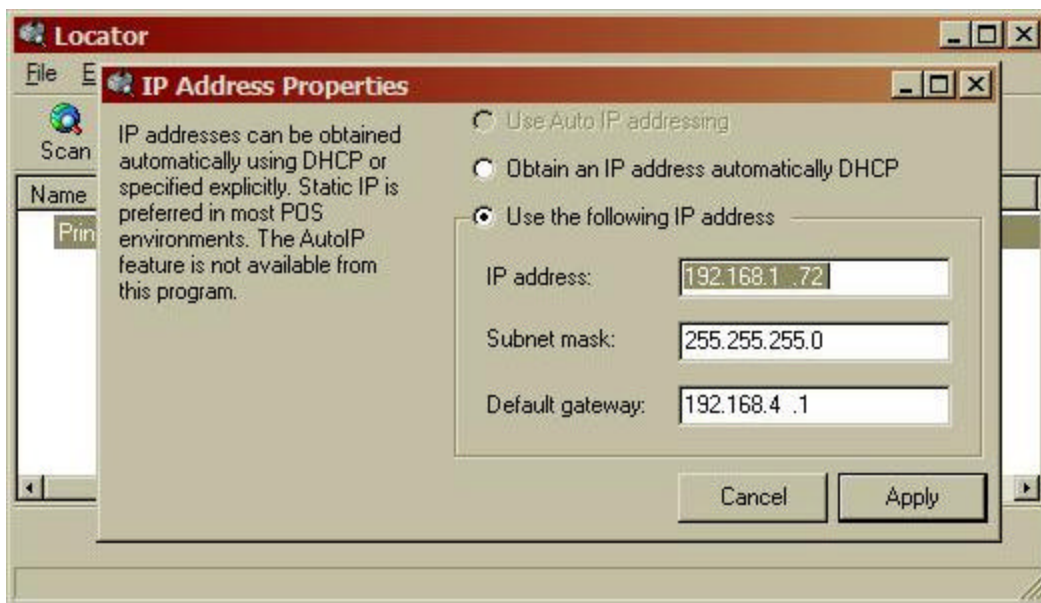
Figure 5 Locator Configuration

To update the firmware in the adapter, select Update.
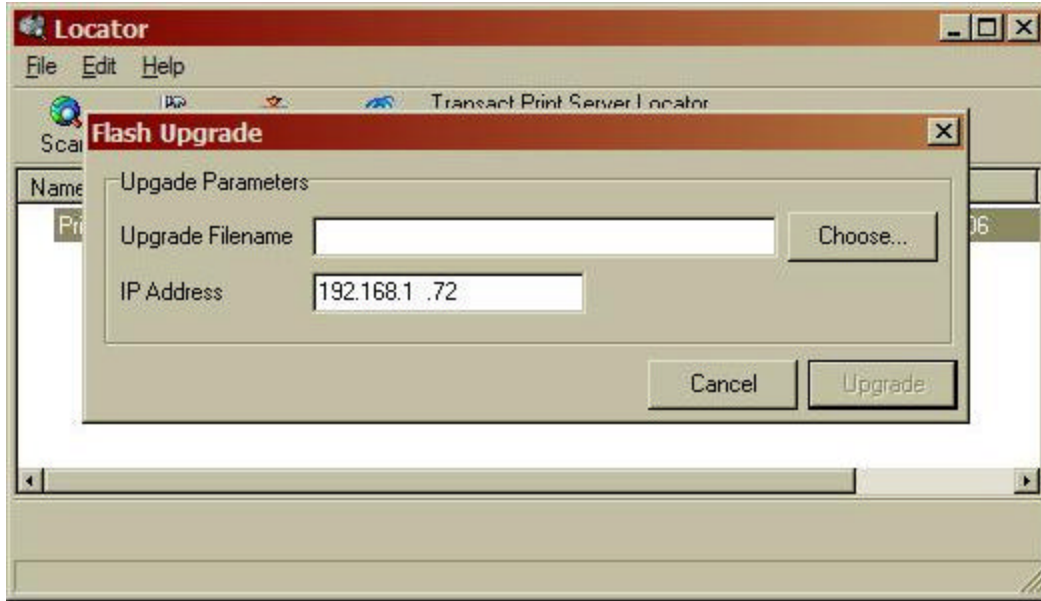
Figure 6 Adapter firmware upgrade

Browse your system for the upgrade 100-05059-xxx.bin file and select Upgrade.

Using a Web Browser

Using a web browser enter the IP address of the printer in the browser's Address box. The Printers IP address will be printed at power up b the printer.
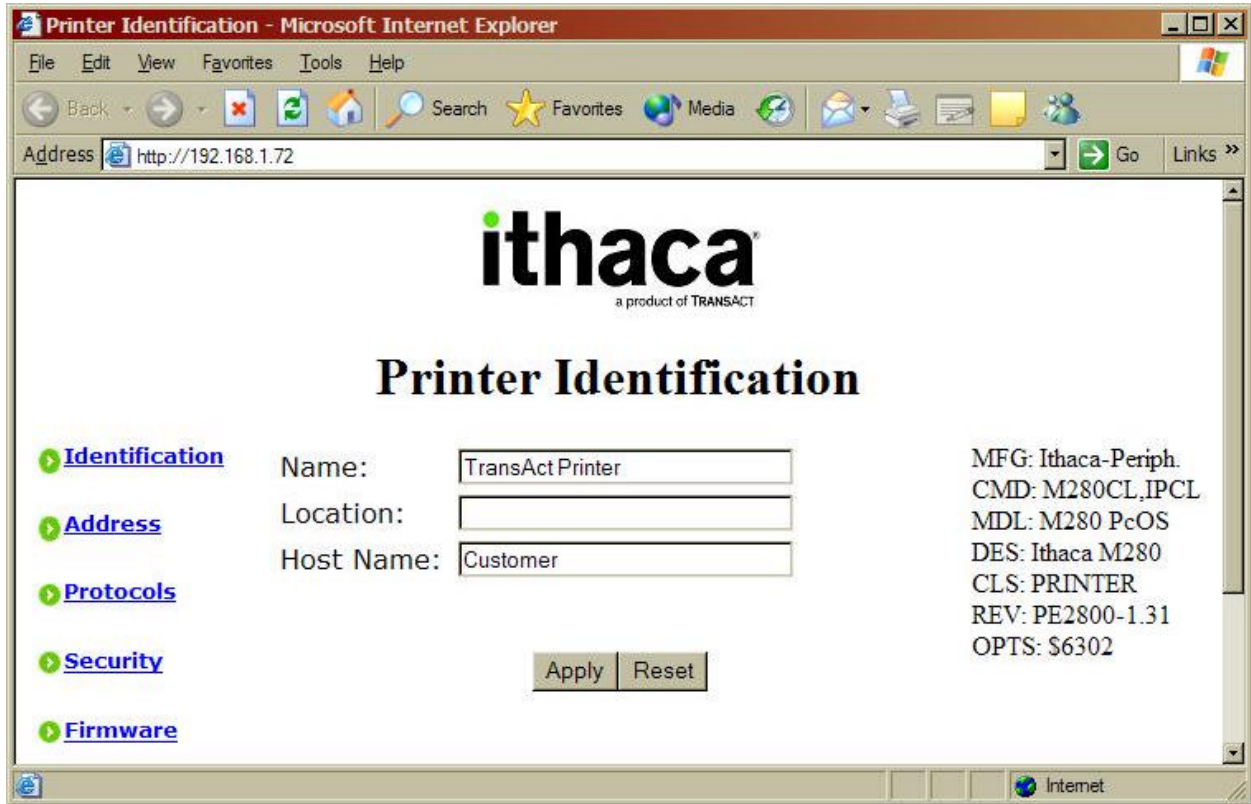
Figure 7 Printer Identification

The following web pages are available to configure the Wired Ethernet Adapter:

Identification	This page maintains names associate with the printer and helpful for network management.
Address	This page defines the printer's address on the network.
Protocols	This page defines which standard protocols the adapter will use to communication with the network computers.
Security	This pages provides a means to protect the Wired Ethernet Adapter's configuration from inadvertent change.
Firmware	Provides the means to update the firmware in the Wired Ethernet Adapter as it is made available from TransAct.

Printer Identification Page

The Printer Identification page provides means to give the printer a name meaningful to it's application and position in the network. The Name and Location information will be retained by the Wired Ethernet Adapter solely for to support the system manager in identifying and locating resources. The Host Name is provided to the DHCP server, if AutoIP or DHCP is enabled on the Printer Address Page, to provide automatic name identification of the printer on some networks. See Advanced Features for more information.

When you are satisfied with the values entered, press the Apply button to save the values.

Printer Address Page
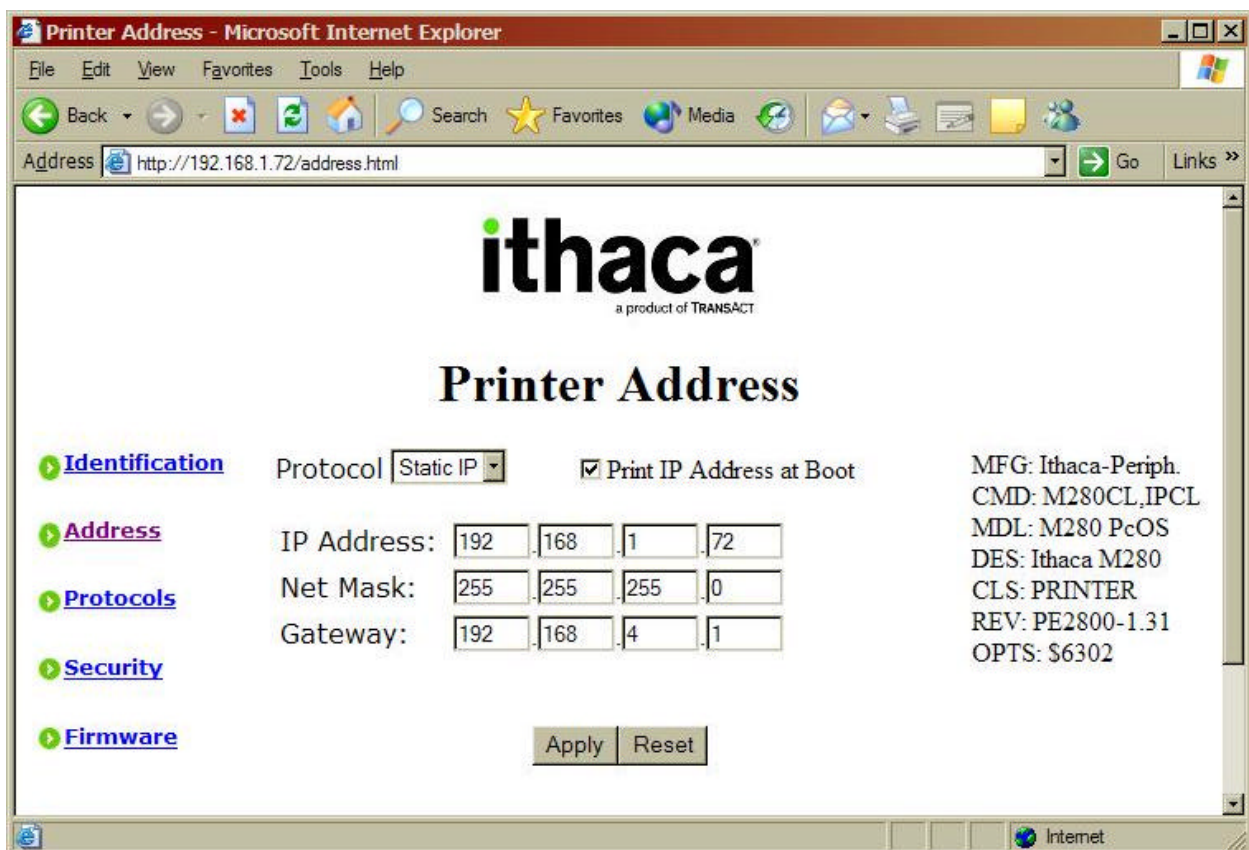
Figure 8 Printer Address

The Printer Address page provides for the proper addressing of the printer on the network. By default the Wired Ethernet Adapter automatically obtains an address from a DHCP server or makes up a random address consistent with the current network. It then prints this address on the printer so that the printer may be accessed. However, because the address assigned to the printer may change every time that the printer is rebooted, it is usually best to assign a fixed IP address to the printer, known as a Static IP address. The Static IP address must be selected consistent

with the rest of the network. It must be unique and within the same subnet as the remainder of the network.

When you are satisfied with the values entered, press the Apply button to save the values.

Printer Protocols Page
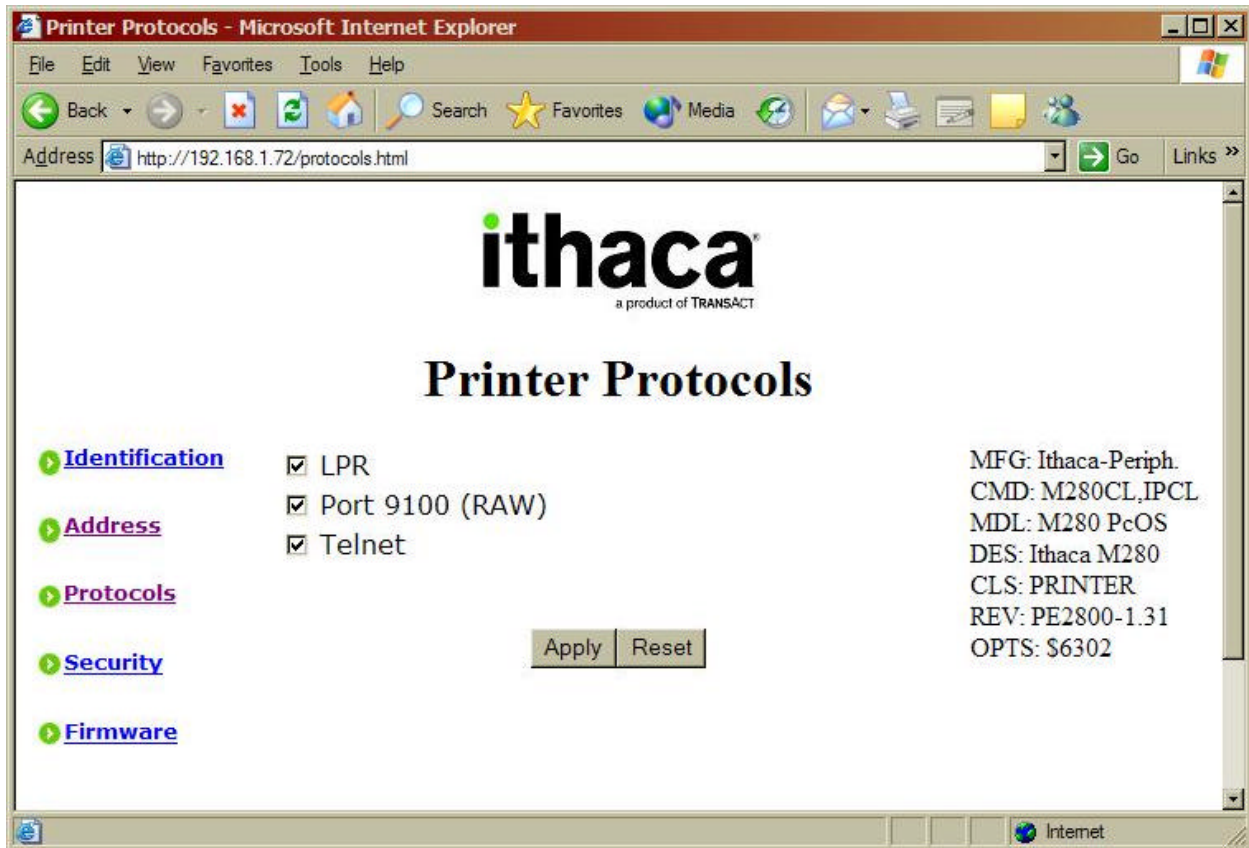
Figure 9 Printer Protocols

The Printer Protocol page enables or disables the protocols the Wired Ethernet Adapter will accept. Three protocols are supported, Line Printer Protocol (LPR), Port 9100 (RAW) and Telnet. In most cases, leaving all protocols enabled is best.

When you are satisfied with the values entered, press the Apply button to save the values.

Printer Security Page
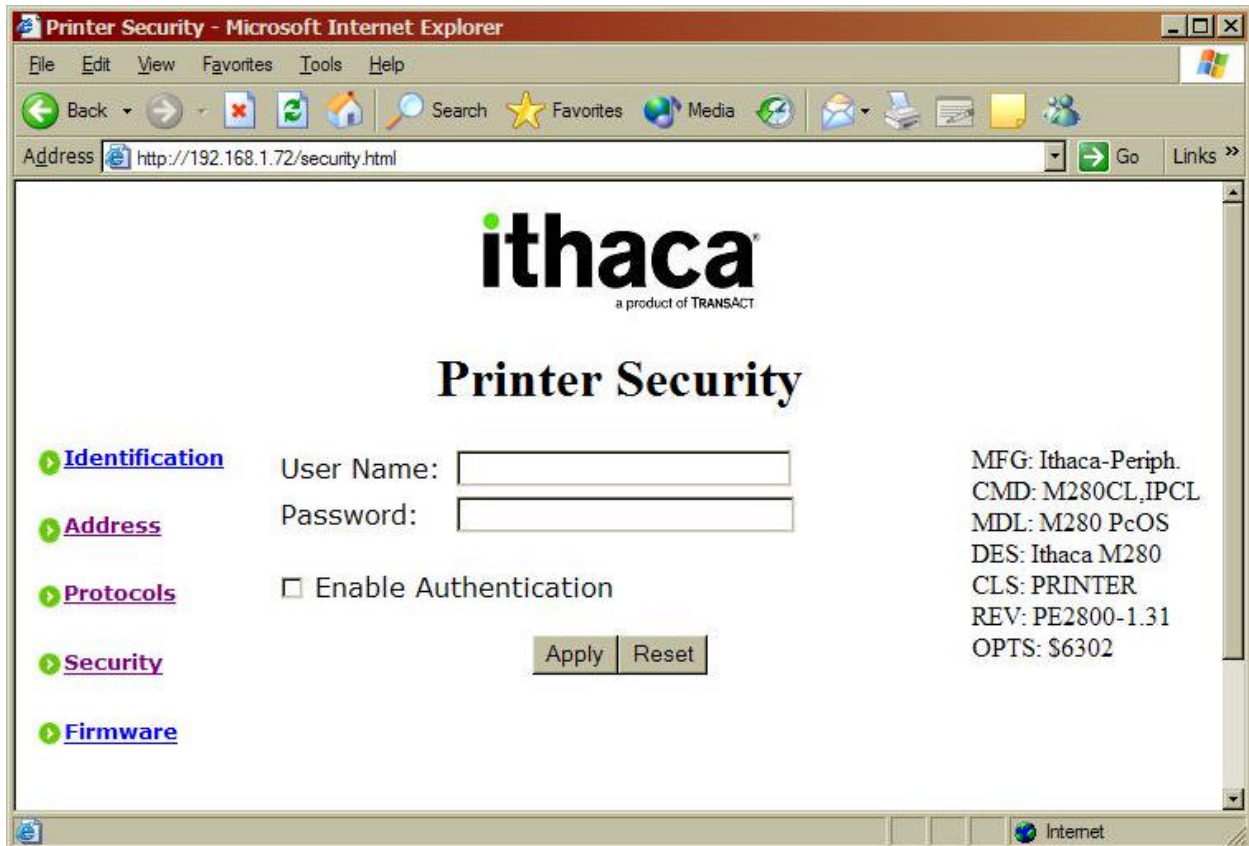
Figure 10 Printer Security

The Printer Security page allows the configuration of the Wired Ethernet Adapter to be protected from accidental change by a password. By default, a user name and password are not necessary to modify the Wired Ethernet Adapter configuration. However, it is recommended that upon completion of the configuration that a username and password be assigned to the adapter to minimize the possibility of an unauthorized person changing the configuration.

When the username and password have been enabled, users will be prompted to supply the username and password before allowing access to the configuration pages.

The Enable Authentication box must be checked in order for the username and password to take effect.

When you are satisfied with the values entered, press the Apply button to save the values. These values will take effect immediately and if authentication has been enabled, further access to the configuration web pages will require correct entry of the username and password.

NOTE: This security will be bypassed by the locator program.

Adapter Firmware Update Page

Figure 11 Adapter Firmware Update

The Adapter Firmware Upgrade Page provides a means to upgrade the Wired Ethernet Adapter's firmware in the field.　For details about upgrading the Wired Ethernet Adapter's firmware, see the documentation accompanying upgrades provided by TransAct.

Note: The current adapter firmware and Revision is shown at the bottom of the display.　Do not update the firmware unless you are having some problem and are asked to upgrade the adapter by TransAct Customer service.

The Reset Button

The reset button provides three functions.

1. Resetting the print server.
2. Printing the print server configuration.
3. Resetting the print server configuration to the default.

Briefly pressing and releasing the reset button for less than 1 second will reset the print server. This will clear all pending print in the buffers and restart the adapter.

Briefly pressing the reset button for about 1 second, releasing it for about 1 second and then pressing and holding it will reset the adapter and force it to print it's configuration.

Pressing and holding the reset button for about 5 seconds, will reset the adapters configuration to factory defaults.

Installing Windows™ Printer Drivers

Printer Driver Installation Instructions for XP

NOTE: (Note Windows 2000 is similar but not identical)

1. Insert the "Windows XP, 2000 printer driver" floppy disk into your diskette drive.
2. Click on "**Start**" menu -> "**Settings**" -> "**Printers**".
3. Double Click on "**Add Printer**" Icon.
4. Select Next then select "Local printer attached to this computer" then Click Next
5. Select Create a new port and then select Standard TCP/IP Port in the window and click Next
6. Select next
7. Enter the IP address of the printer, and optional a printer name then click Next
8. Select Next to the defaults.
9. Select Finish.

   You now have to install the TransAct Driver

10. If you have the driver already loaded on the system select it any you are done. If not select have disk.
11. Select A:\ or where ever the driver is located.
12. Follow the instructions and you are done.

It may be necessary to change the IP address being used by the adapter.

1. Select Start->Settings->Printers
2. Open the Printer
3. Select Printer->Properties

4. Select the Ports tab
5. Press the Configure
6. Edit the port address as required.
7. Select either RAW or LPR.
8. If LPR is selected, Byte Counting is not recommended.
9. In general LPR should be avoided as it is not compatible with some of the enhanced driver features.
10. If RAW is selected, use port 9100.

To Install the Virtual COM drivers

1. Run VSerialInstall.exe.
2. Answer the questions. You must accept the license agreement to use this program.
3. Click through the two driver signing messages
4. The following configuration screen will be presented:
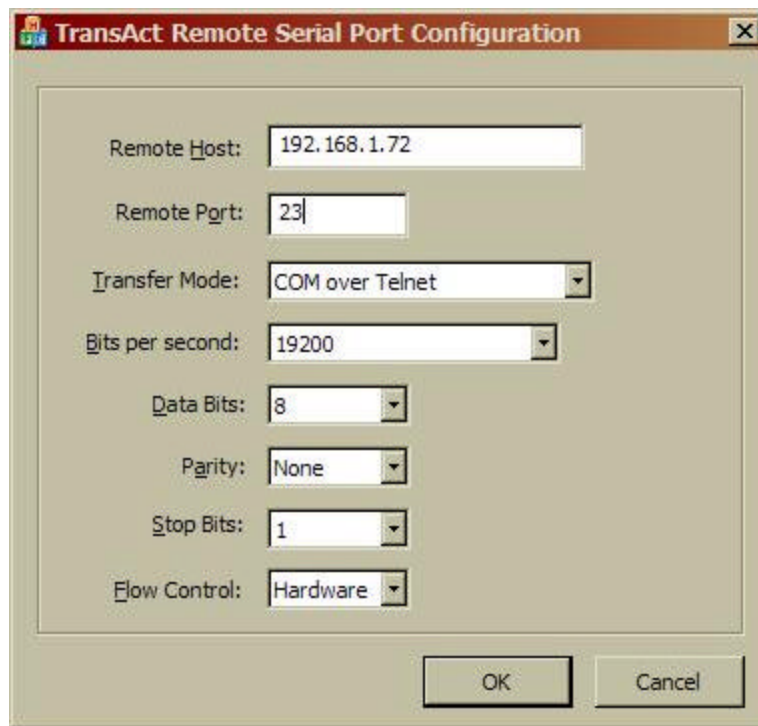
5. Enter the correct IP address of the Wired Ethernet Adapter.
6. None of the Serial port options need be changed. They are not used.
7. It is recommended to reboot your system at this time.

Changing the configuration.

A quick configuration is provided by clicking Start -> Programs -> TransAct -> Configure Remote Serial Port

This will display the current configuration and allow it to be altered. If you want to change the COM port being used, you must use the configuration screen on the control panel.
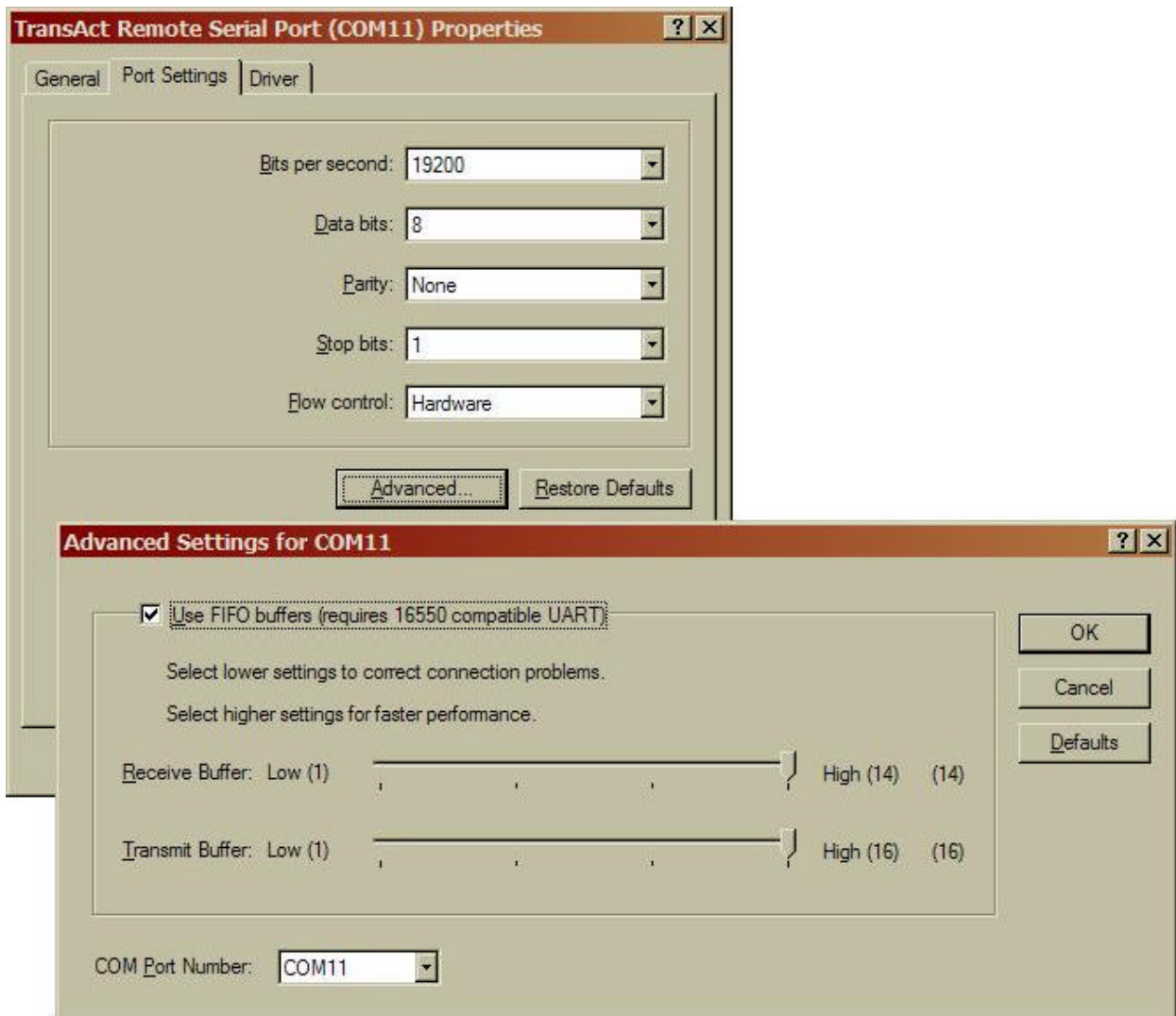
Under the system hardware settings, select "Ports (COM & LPT)"

Select the TransAct Remote Serial port.

Under the "Port Setting" tab, select Advanced button, you may select any unused COM port.

NOTE: If you change the communications port, you will have to re-boot your computer for it to be fully effective. Some devices and drivers only enumerate the communications ports at boot up.

Network Basics

The IEEE (Institute of Electrical and Electronic Engineers) project 802 decided to use Ethernet version 2 as the basis for its new CSMA/CD network standard. By enhancing the DEC, Intel and Xerox Ethernet 2 design, they produced the IEEE 802.3 specification, which is now the standard format for Ethernet based systems.

The name 10Base indicates a signaling speed of 10 million bits per second with a base band signaling scheme.

- 10BaseT 10Mbs Ethernet running over twisted pair cable 100 meter Max..
- 100BaseT 100Mbs Ethernet running over twisted pair cable 100 meter Max.

Other 802.x standards

The IEEE committee are also responsible for other 802 networking specifications:

- **802.1**, this group produced an overview of the work of the project and defined the LAN reference model.
- **802.2**, this describes the logical link control services used in all IEEE specified LANs.
- **802.3**, describes Ethernet based networks.
- **802.3z**, describes the Gigabit Ethernet format.
- **802.4**, describes networks using a token-passing bus.
- **802.5**, describes networks using a token-passing ring.
- **802.6**, specifications for a metropolitan area network.
- **802.7**, this group advised other working groups on issues relating to broadband transmission.
- **802.8**, this group are the technical advisory group for FDDI and fibre optic.
- **802.9**, this group explores integrated data and voice networks.
- **802.11**, group for wireless Ethernet

10BaseT

10baseT is also sometimes known as twisted pair. A distance of up to 30 meters between the connected devices is the recommended limit.   The TransAct Ethernet adapter is a 10BaseT device.

TCP/IP Basics, the TCP/IP protocol

TCP/IP Introduction

TCP/IP or Transmission Control Protocol/Internet Protocol is the network protocol used for the internet and many local area networks.

Each device is given it's own Internet Protocol address typically referred to as the IP Address. IP Addresses are assigned either automatically or manually. This IP address is unique to the device and cannot be used by any other device else inside the local network.

A typical IP address might look something like this: 192.168.1.80

IP Addresses

IP address consist of 4, 8 bit digits. Being an 8 bit value they may have values from 0 to 255. For convenience the addresses are written as 4 numbers separated by periods. For example "192.168.1.80".   A local network or Subnet will typically have the first 3 numbers the same. For example two devices on a local network might have 192.168.1.80 and 192.168.1.81 respectively. The first number in the group IE the 192 can have additional meaning, however, local networks are typically assigned value of 192.

Subnet Masks

 Typically a subnet mask will look like this: 255.255.255.0.   Each bit is a subnet mask is used to determine if the IP address is in the subnet. If a bit is set in the subnet mask the IP. This effectively defines how many devices can be in the subnet. In this case 255 because the last 8 bit value is not masked and all possible values will be recognized as being part of the subnet.

Gateway addresses

One feature TCP/IP is that it is routable. That means that you can use a router or gateway to expand a local network into multiple networks.

The router allows the two networks to talk to each other. If a user wants to pass information from network A to network B, the router will pass the information back and forth.

The Gateway address is the IP address of the router that is interconnecting the local subnet to the remainder of the network.

Protocols in the TCP/IP suite

Inside the TCP/IP protocol are additional standards that allow different types of devices to interact. For example for file transfers, FTP or File Transfer Protocol is used. It has an additional identification called the Port.

The following table identifies various protocols within the TCP/IP suite and the ports that they use.

Protocol	Port	Description
DHCP	67	Used for automatic TCP/IP allocation
HTTP	80	Used on Internet WWW servers
TELNET	23	Used for terminal type access
FTP	21	Used to send or retrieve data
LPR	515	Used to send data to printers
Raw	9100	Used to send and receive data directly to a TCP/IP port

Automatic IP address allocation

It is possible to have the local network setup and have one device on the network assign an IP address automatically. The TransAct print server supports DHCP (Dynamic Host Configuration Protocol) for automatic IP address assignment. This requires that there be a DHCP server in the local network to perform the assignment. This assignment process may have some disadvantages in a POS network. It is difficult to assure that a given device is always assigned the same address. For this reason, static IP addresses are generally manually assigned to devices.

Manual IP address allocation

Rather than allow DHCP to assign an IP address it is possible to assign an address manually. If the IP address is assigned manually, it must follow the requirements of the rest of the network to operate correctly.

The TransAct Ethernet adapter is easily configured to use manual address assignments. In the POS environment, it is important to make sure that print data be sent to the correct printer. By using manual IP address assignments, you can assure that the print data will always be sent to the correct printer.

TransAct Ethernet Adapter

The TransAct 10BaseT Ethernet adapter allows the user to communicate to the printer in two ways. Raw data to Port 9100, LPR or port 515 or through TELNET port 23. The one you use will largely depend on the application and how the interaction is to occur.

A word of caution on the use of LPR. LPR is a protocol within itself. Typically LPR is used by a windows printer driver and supports the protocol in a way that is largely hidden from the application. If you elect to use LPR you should not try to intermix LPR and any other protocol. The TransAct Windows driver, supports enhanced features such as cash drawer status and enhanced printer monitoring. These enhanced features use RAW data transfers. For that reason, the TransAct print server should be used in RAW mode whenever possible.

The adapter supports. DHCP or static IP addressing. To make initial network setup easier, the adapter will initially be configured to Auto IP. Auto IP attempts to DHCP or a Name server to obtain an IP address assignment. If that fails, the network is monitored and an address consistent with the active network is temporarily assigned and allow final configuration. (Note: Auto IP should not be left active because the printers address may change and could conflict with inactive devices in your network.) Turn off the Auto IP feature by setting DHCP or Static IP using the Locator program or from the Address web page.

Definitions

Adapter - This is a device that adds network functionality to your Printer.

AutoIP – This is a means to automatically assign a temporary IP address to the printer long enough to allow a static IP address to be assign.

Browser - A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web.

CAT5– Is an abbreviation for an Ethernet cable adhering to the Category 5 cable standard.

DNS (Domain Name System) - The capability of having a website, FTP, or e-mail server-with a dynamic IP address-use a fixed domain name.

Default Gateway - A device that forwards Internet traffic from your local area network.

DHCP (Dynamic Host Configuration Protocol) - A protocol that lets one device on a local network, known as a DHCP server, assign temporary IP addresses to the other network devices, typically computers.

Download - To receive a file transmitted over a network.

Driver – A driver is typically a low level program specifically targeted to a specific hardware adapter or feature.

Dynamic IP Address - A temporary IP address assigned by a DHCP server.

Ethernet - An IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

Firmware – Firmware is name associated with software that is present in a system that is firm or not subject to change. For example the BIOS in a computer is referred to as firmware.

FTP (File Transfer Protocol) - A standard protocol for sending files between computers over a TCP/IP network and the Internet.

Gateway - A system that interconnects networks.

HTTP (HyperText Transport Protocol) - The communications protocol used to connect to servers on the World Wide Web.

Hub – A device used to expand or extend the network

IEEE (The Institute of Electrical and Electronics Engineers) - An independent institute that develops networking standards.

IP (Internet Protocol) - A protocol used to send data over a network.

IP Address - The address used to identify a computer or device on a network.

LAN (Local Area Network) - The computers and networking products that make up the network in your home or office.

Locator - A Windows 2000 and XP utility that displays the IP address for a particular networking device.

MAC (Media Access Control) Address - The unique address that a manufacturer assigns to each networking device.

Mbps (Megabits Per Second) - One million bits per second; a unit of measurement for data transmission.

Network - A series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

Packet - A unit of data sent over a network.

Ping - (Packet INternet Groper) - An Internet utility used to determine whether a particular IP address is online.

Port 9100 – Port 9100 is the port ID used to communicate RAW data to and from the printer.

RAW - A term used to refer to data with no standardized embedded protocol.

RJ-45 (Registered Jack-45) - An Ethernet connector that holds up to eight wires.

SNMP (Simple Network Management Protocol) - A widely used network monitoring and control protocol.

Static IP Address - A fixed address assigned to a computer or device that is connected to a network.

Subnet Mask - An address code that determines the size of the network.

Switch – A device used to expand a network. It is similar to a hub, however it tries to enhance network performance by directing network traffic in a more efficient manor.

TCP/IP (Transmission Control Protocol/Internet Protocol) - A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

Telnet - A user command and TCP/IP protocol used for accessing remote PCs.

TFTP (Trivial File Transfer Protocol) - A version of the TCP/IP FTP protocol that uses UDP and has no directory or password capability.

Topology - The physical layout of a network.

Upgrade - To replace existing software or firmware with a newer version.

Upload - To transmit a file over a network.

URL (Uniform Resource Locator) - The address of a file located on the Internet.

WAN (Wide Area Network) - The Internet.