

ITherm™

ETHERNET II USERS GUIDE

ithaca[®]
a product of TRANSACT

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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

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General Description

The Wired Ethernet Adapter provides a fast and easiest way to network and share printers in your system. Ethernet provides a consistent common connection between printers and computers using standard protocols supported by Windows®, 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 shelf components.

This user's manual is intended to show you how to install, connect and configure your Wired Ethernet Adapter with the iTherm 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

- 10/100 Mbps Speed
- 10/100 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

Supported Protocols

- Port 9100 (RAW)
- Line Printer Daemon Protocol (LPR)
- Hypertext Transfer Protocol (for configuration)
- UDP for real time status
- SNMP RFC1213¹ for printer and network management

User Interface/Configuration

HTTP/Web Interface

- Status Page
- Configuration Page
 - IP Address / Subnet Mask
 - Auto-IP, DHCP, Static IP...

¹ A subset of the RFC1213 is supported that will allow basic printer status and network management to be performed.

- Printer Textual Name (User Defined)
- Printer Location String (User Defined)
- RAW protocol Port 9100
- UDP, Port 9110
- Adapter Firmware Update

Other

- Push Button for status print and Initial IP Address 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
- Remote firmware update

System Requirements

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

Locator –Windows® XP or 7

Electromagnetic Compatibility Requirements

The Wired Ethernet adapter shall meet all compatibility requirements specified for the iTherm.

Environmental

The Wired Ethernet adapter will match the environmental specifications for iTherm

Electrical Characteristics

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

10/100BaseT Ethernet specifications

- Maximum segment length: 100M (330 ft.)
- Topology: Star
- Cable type: UTP (CAT 5/5e or above)
- Connector type: RJ-45
- Transmission speed: 10 or 100 Mbps

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.

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.

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Main fax (607) 257-8922

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(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.

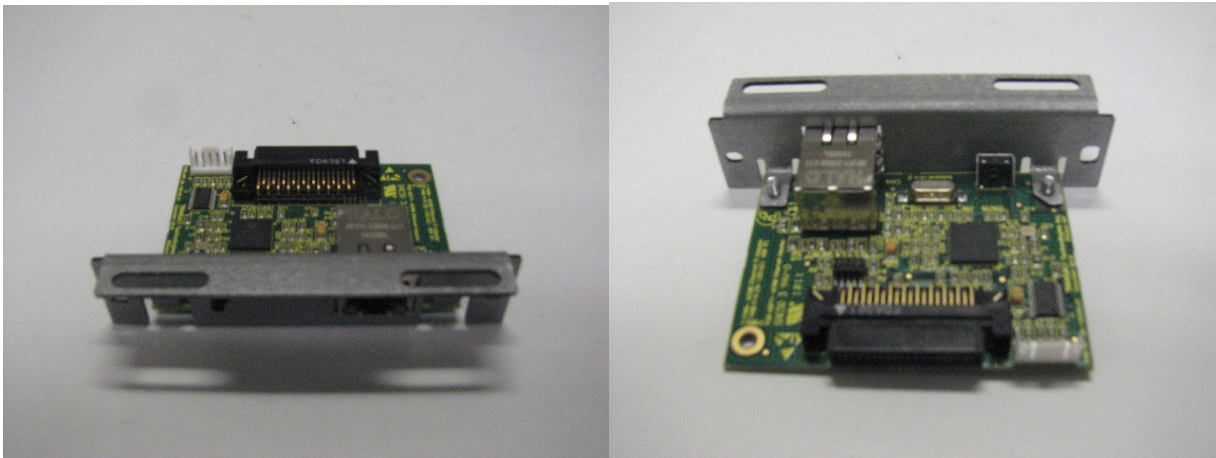
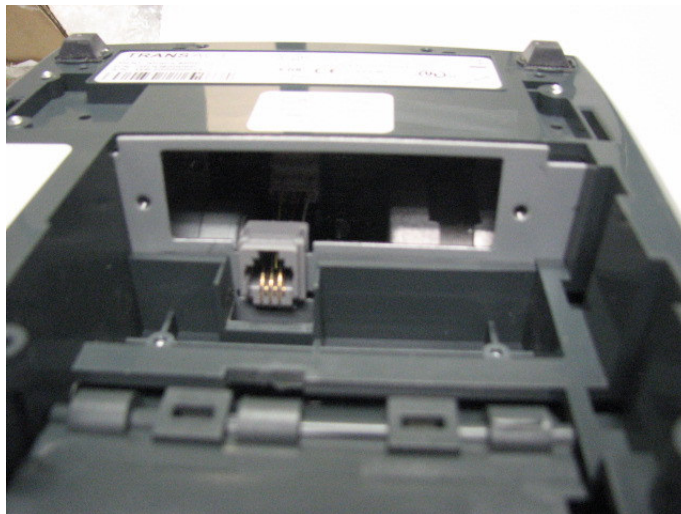
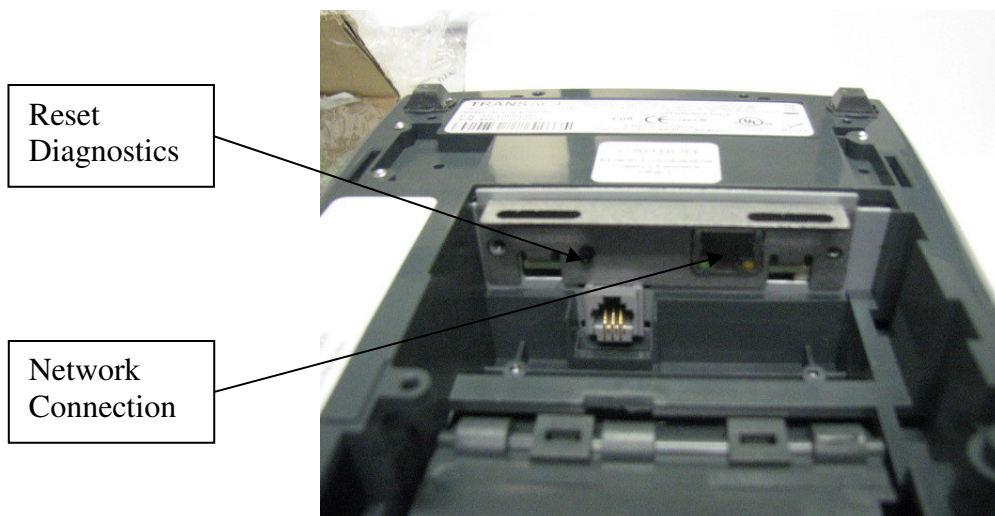
iTherm Installation

Figure 1 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 CAT5/5e or 6 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 defaults to DHCP with AUTO/IP as a backup. If no DHCP server is available. It can take several minutes for AUTO/IP to generate a suitable IP address. Pressing and releasing the diagnostics button will print the current status of the adapter. When a valid IP address is reported, that address may then be used to further configure the adapter. If the adapter is already configured for a static IP address, Pressing and holding the test button for at least 10 seconds will reset the adapter to factory defaults.

Configuration

The Wired Ethernet Adapter is ready to be configured once the IP address has been assigned. You may press and release the Diagnostics button and the printer will print the current status of the adapter as well as the assigned IP address. The IP address will be 0.0.0.0 until the IP address has been assigned². Your internet web browser may be used to configure the Ethernet Adapter.

TransAct Locator Program

TransAct provides a Windows™ 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 XP Vista and 7.

This program is provided by Stellaris which is owned by Texas Instruments.

Installation.

The program is available on the TransAct Web site www.transact-tech.com and does not need to be installed. Unzip it to any convenient directory and run it by clicking on Finder.exe.

² If AutoIP is being used, it can take several minutes for an IP address to be generated.

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 may be printed by pressing and releasing the button on the adapter.

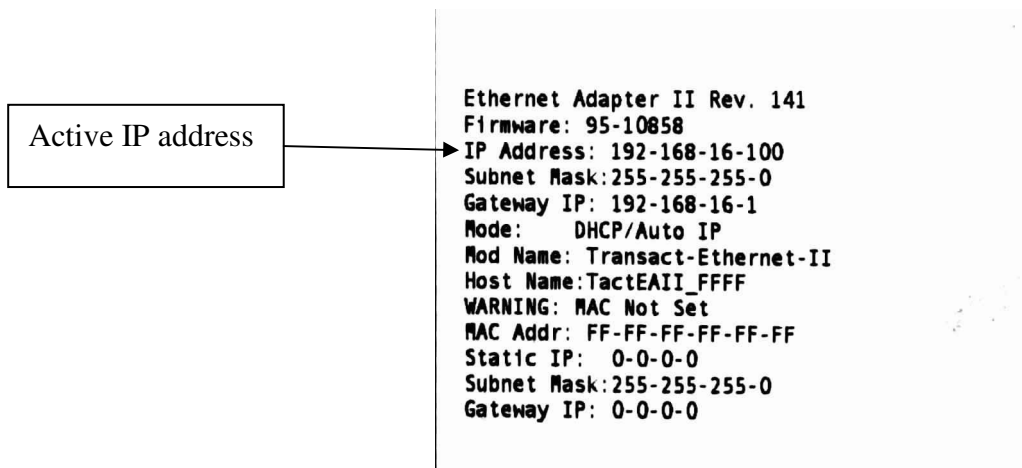


Figure 2 Printer Identification

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

Home	This page displays basic information that is helpful for network management.
Printer Port Settings	This page this page allows the RAW protocol port to be changed.
Miscellaneous Settings	This page allows the IP address settings, Host and Module Names, the UDP port and SNMP settings to be altered.
Firmware Update	Provides the means to update the firmware in the Wired Ethernet Adapter as it is made available from TransAct.

Home Page

This page displays basic information about the printer. It also allows navigation to the other pages.

TRANSACT Transact Ethernet Adapter II

Status & Configuration

Home

Printer Port Settings

Miscellaneous Settings

Firmware Update

Module Name:	Transact-Ethernet-II
Host Name:	TactEAll_FFFF
Firmware Revision:	141
IP Address:	192.168.16.100
MAC Address:	FF-FF-FF-FF-FF-FF

Current Print settings:

	Printer Port
RAW Protocol Port Number:	9100

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Figure 3 Home Page

Printer Port Settings

TRANSACT

Transact Ethernet Adapter II

Printer Port Settings	Firmware Revision: 141
	IP Address: 192.168.16.100
Miscellaneous Settings	MAC Address: FF-FF-FF-FF-FF-FF

Firmware Update

Settings:

NOTE: The printer port settings should not be changed unless you are directed to do so by TransAct Customer support. These settings are optimized for transact printers. To make the new settings apply each time the adapter is reset, ensure that "Make these the default settings" is checked before pressing the "Submit" button. If this control is not checked, the changes are applied but the existing defaults are used whenever the module is next reset.

	Current	Updated
RAW Protocol Port Number:	9100	<input style="width: 50px;" type="text"/>
Advanced Options:		
Primary Data Path:	Parallel	<input style="width: 50px;" type="text" value="Parallel"/>
Serial Baud Rate:	19200 bits/second	<input style="width: 50px;" type="text" value="19200"/> bits/second

Make these the default settings.

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Figure 4 Printer Port Settings

This page allows the RAW protocol port to be changed. The advanced options should not be altered unless you are requested to change them by Transact customer services.

NOTE: De sure to check the “Make these the default settings” box if you wish to make the new settings permanent.

Miscellaneous Settings Page

TRANSACT

Transact Ethernet Adapter II

Home

Printer Port Settings

Miscellaneous Settings

Firmware Update

Module Name:	Transact-Ethernet-II
Host Name:	TactEAll_FFFF
Firmware Revision:	141
IP Address:	192.168.16.100
MAC Address:	FF-FF-FF-FF-FF-FF

IP Address Selection

Address Type:	<input type="text" value="DHCP/AutoIP"/>
Static IP Address:	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>
Subnet Mask:	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>
Default Gateway:	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>
<input type="button" value="Update Settings"/>	

General Configuration Settings

Module Name:	<input type="text" value="Transact-Ethernet-II"/>
Host Name:	<input type="text" value="TactEAll_FFFF"/>
UDP Status port number:	<input type="text" value="5110"/>
<input type="button" value="Update Settings"/>	

SNMP Configuration Settings

Location:	<input type="text" value="TactEAll_FFFF"/>
SNMP Trap Destination IP Address:	<input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/>
<input type="button" value="Update Settings"/>	

Restore Factory Defaults

Restore all options to their factory default states:

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Figure 5 Miscellaneous Settings

IP Address setting

The Printer IP address may be obtained using DHCP with Auto IP as a backup or it may be statically set. If you chose DHCP, the IP address, Subnet, and Gateway will be determined by the DHCP server. If you select Static IP, you must specify an IP address, a subnet mask and a default gateway. Typically the subnet mask is 255,255,255,0 and the gateway may be left as 0,0,0,0 if you have no other information.

Updating the settings will typically make the adapter unreachable to the active web browser as the IP address will now be different. You should readdress the browser after this command.

Adapter Firmware Update Page

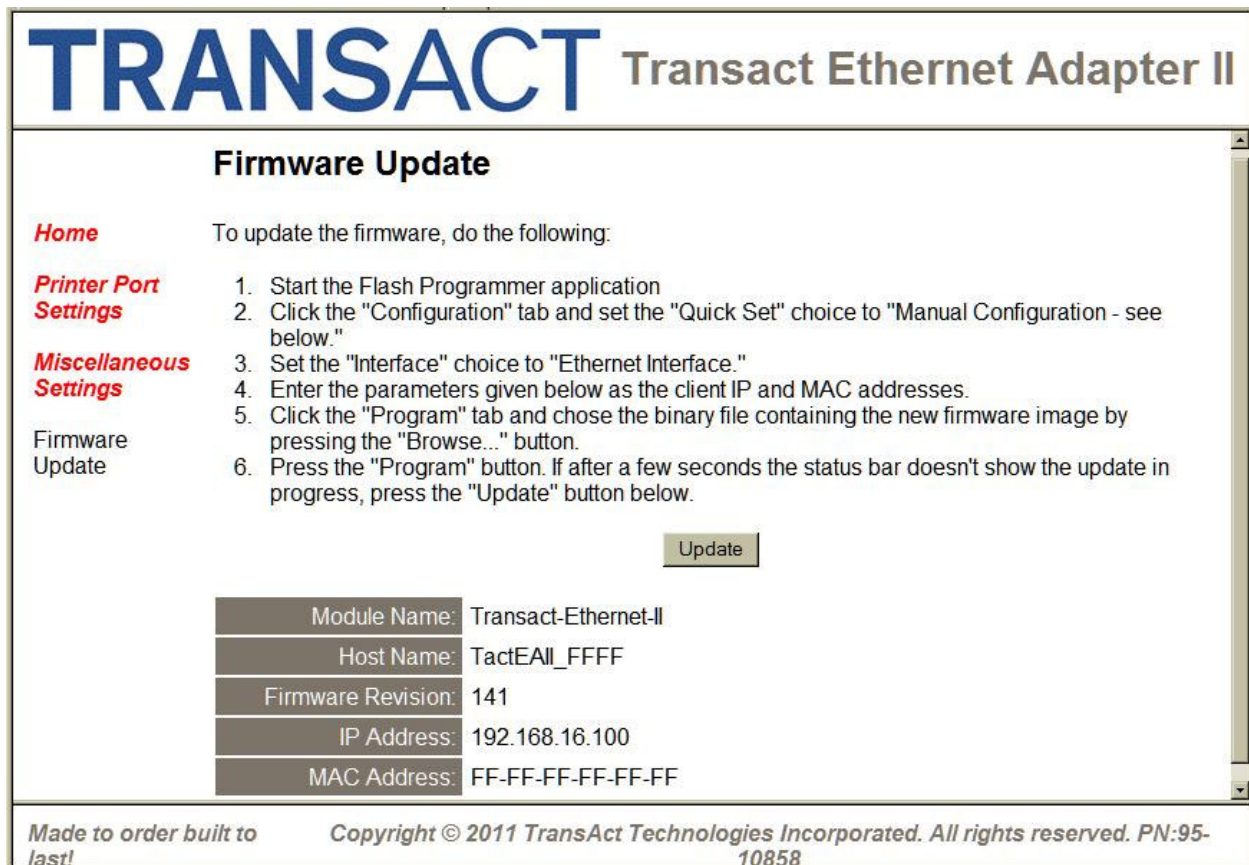


Figure 6 Adapter Firmware Update

The Adapter Firmware Upgrade Page provides information and means to upgrade the Wired Ethernet Adapter's firmware in the field.

Transact provides an update program provided by Texas Instruments that will allow the adapter firmware to be updated. Download and Install the program from the TransAct technical support web page and install it as you would any other program. When you start the program you will see the initial screen as shown below.

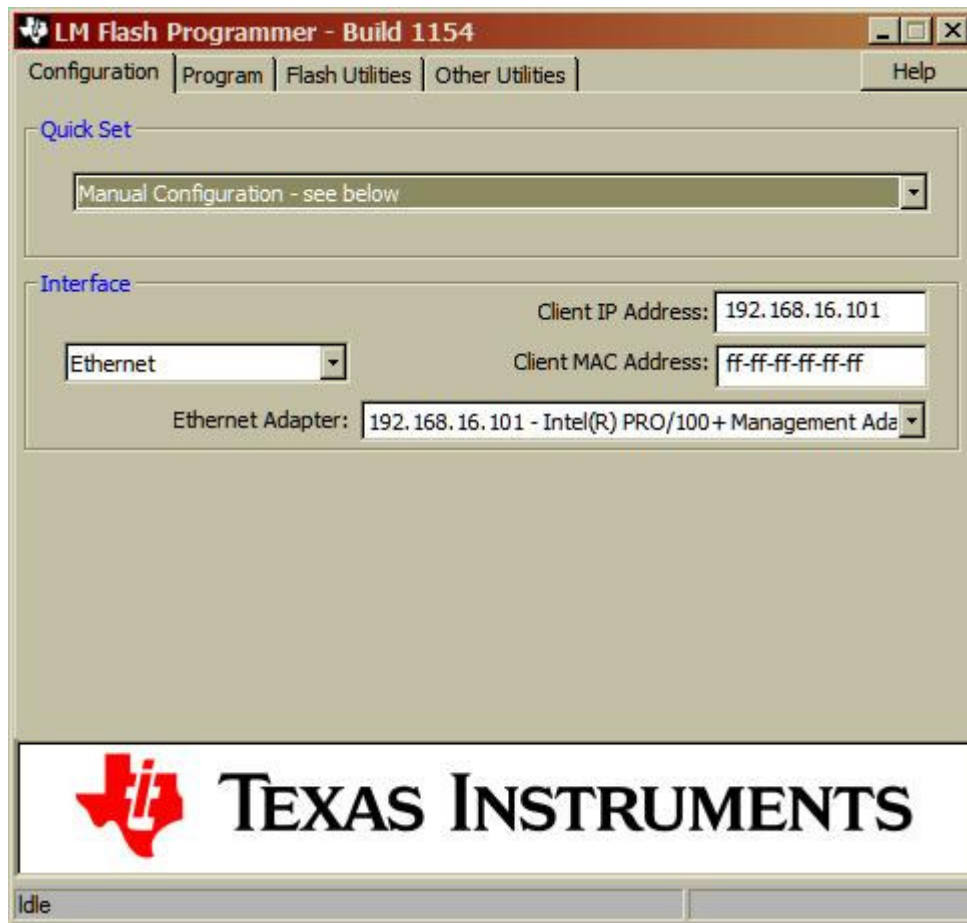


Figure 7 Firmware Update Configuration

Select Manual Configuration and Ethernet interfaces as shown. Fill in the IP and Mac Address of the adapter being updated. In some PC's there may be more than one Ethernet interface. Select the adapter that is connected to the same network as the printer.

Then switch to the Program screen as shown below.

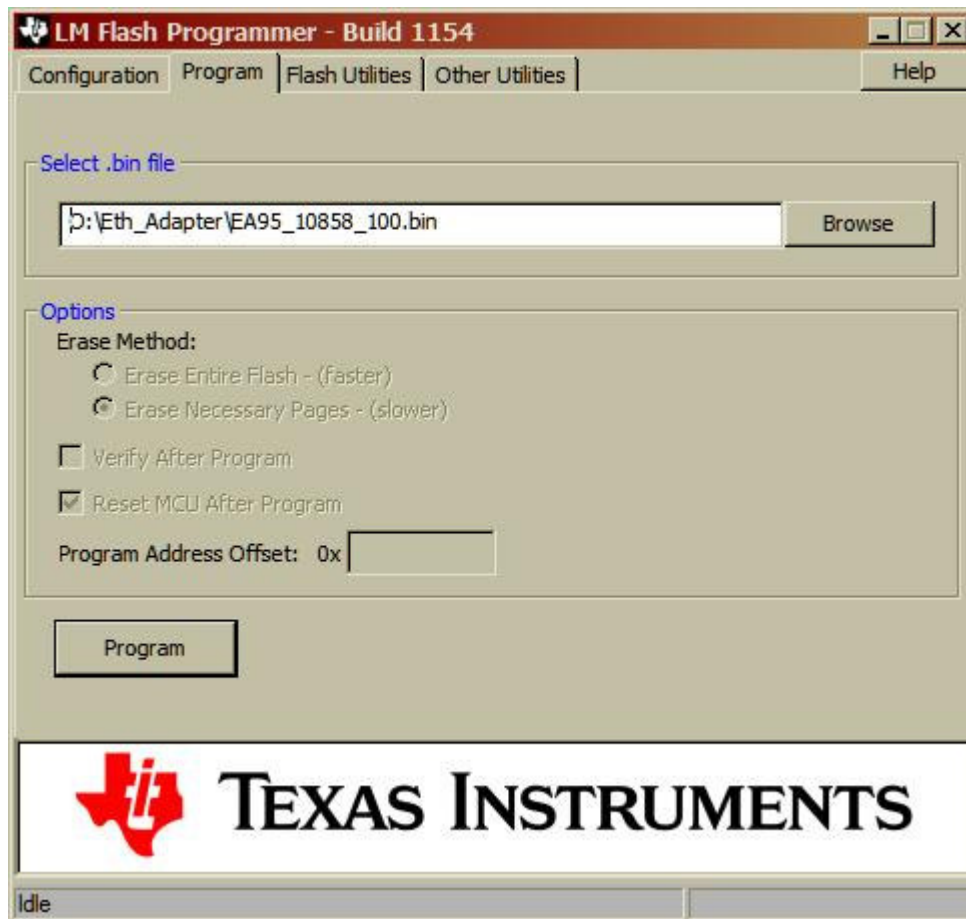


Figure 8 Firmware Update Select File

On this screen Browse to the firmware update file down loaded from Transact.

In most cases the Ethernet adapter will automatically enter update mode when the Program button is pressed. If the adapter does no enter Update mode, you can force it into update mode by pressing the Update button on the Adapters firmware update screen.

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 its 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.

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 10Mbps Ethernet running over twisted pair cable 100 meter Max..
- 100BaseT 100Mbps 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 10 refers to a 10 Mbit/s link. Cat 4 or 5 cables are required for 10BaseT.

100BaseT

100baseTX originally known as "Fast Ethernet" is similar to 10BaseT only operates at 100 Mbit/s. A distance of up to 100 meters between the connected devices is the recommended limit. Cat 5 or 6 cables are required for 100BaseT.

10/100BaseT

The TransAct Ethernet adapter is a 10/100BaseT device which indicates that it will detect and automatically switch between 10BaseT and 100BaseT connections.

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 its own Internet Protocol address typically referred to as the IP Address. IP Addresses are assigned either automatically or manually. The 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 (Not used in the Ethernet Adapter II at this time)
FTP	21	Used to send or retrieve data (Used during firmware update)
LPR	515	Used to send data to printers
Raw	9100	Used to send and receive data directly to a TCP/IP port
UDP	9110	Used for control and status information. NOTE: Port 9110 is not specifically assigned for any specific use by Internet Assigned Numbers Authority (IANA). If you have difficulty with 9110, any unused port may be used. 9105 – 9118 are currently unassigned.

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.

UDP Status Overview

The iTherm Ethernet Adapter II supports the UDP protocol to handle iTherm Ethernet Adapter II printer status without the TCP-IP interface being open.

When Activated the iTherm Ethernet Adapter II will report printer status as defined in table xx. In addition, how and when the status is reported can be controlled.

iTherm Ethernet Adapter II uses IP port 9110 to report status and control the UDP interface.

The iTherm Ethernet Adapter II supports 6 commands and 10 reports. Each command has an associated response report plus there are 4 additional printer status reports

The default iTherm Ethernet Adapter II IP port is 9110 however, this is configurable. At this time the UDP server in the iTherm Ethernet Adapter II is similar to the UPnP service in that it does not require an exact match for source or destination IP addresses. It will respond to IP broadcasts, local subnet broadcasts, and the iTherm Ethernet Adapter II's specific IP address. In addition the source port need not match the iTherm Ethernet Adapter II's, provided that it is directed to the Ethernet Adapters UDP IP port.

iTherm Ethernet Adapter II UDP Commands

The UDP commands are placed in the UDP Payload and are defined as follows:

SETIP: "IP Address"

Set the IP address to send reports to. This defaults to 255.255.255.255 which will broadcast the reports to everyone. It may be set to a net mask like 192.168.255.255 or to a specific IP address like 192.168.10.105.

SETIP Response:

```
TACTPRINTER: HOSTIP  
HOST: "Host Name String"  
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"
```

ACTIVATE

Start reporting printer status using the specified IP destination address.

ACTIVATE response:

```
TACTPRINTER: ACTIVATE  
HOST: "Host Name String"
```

³ The Status IP Port number may be changed using the HTML configuration service.

IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

STOP

Start reporting printer status using the specified IP destination address.

STOP response:

TACTPRINTER: STOP
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

NOTE: This does not actually stop the UDP server it just stops any automatic status responses.

PERIOD: "Repeat time in mS"

The iTherm Ethernet Adapter II defaults to reporting status on change. It can however be set to report status periodically. Using PERIOD: 500 would report status every 500 mS. Setting small will generate excessive network traffic. The value used will depend on the system requirements and the network being used. Values less than 1000 should be avoided.

PERIOD response:

TACTPRINTER: PERIOD
PERIOD: "Time in mS."
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

NOTE: Setting the period to 0 will reactivate report on change.

WDOG: "Timeout in mS"

The iTherm Ethernet Adapter II can be configured to generate an adapter reset after a period of time if the Watch Dog Timer setup is not repeated.

WDOG response:

TACTPRINTER: WDOG
TIMEOUT: "Time in mS."
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

NOTE: Setting the period to 0 will deactivate the watchdog.

REPORT

This will report the printer status immediately and without first being activated.

REPORT response

TACTPRINTER: REPORT
STATUS: C5 CB D0 status in hex
TICK: Status Period
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

INFO

This will report information about the iTherm Ethernet Adapter II, including Firmware ID and Rev.

INFO response:

TACTPRINTER: INFO
MAC: "Adapters MAC Address in hex"
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"
FIRMWARE: "Firmware ID"
REV: "Revision number"

iTherm Ethernet Adapter II Reports

The iTherm Ethernet Adapter II will report if the iTherm Ethernet Adapter II diagnostics button is pressed as follows:

Status Button report:

TACTPRINTER: BUTTON
MAC: "Adapters MAC Address in hex"
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"
FIRMWARE: "Firmware ID"
REV: "Revision number"

Printer Status change report:

TACTPRINTER: CHANGE
STATUS: status in hex
TICK: Status Period
HOST: "Host Name String"
IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

NOTE: If Periodic status is set, this status will not be returned.

Printer periodic status report:

TACTPRINTER: CURRENT
 STATUS: status in hex
 TICK: Status Period
 HOST: "Host Name String"
 IPADR: "Adapters IP Address xxx.xxx.xxx.xxx"

Status

The status is a hexadecimal string that represents the current printer status. The bit pattern is as follows:

Status	Bit	1	0
Busy	0x08	Printer is Busy	Printer is Ready
Fault	0x04	Printer is in a fault state	Printer is OK
Paper Error	0x02	Printer has no paper	Printer has paper
Selected	0x01	Printer is on line	Printer is off line

Status and Period Tick

The status tick is incremented every time the printer updates the status. The Period tick is updated every time the status is sent out on a period tick.

Watchdog

The Watch dog defaults off. When set, it must be serviced by repeating the WDOG command before the time out specified in the command. If the Timeout is allowed to expire, the adapter will reset and the Watch dog will again default off.

Definitions

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

AutoIP –AutoIP is a module that enables dynamic IPv4 addresses to be assigned to a device on startup. AutoIP is a server-less method of choosing an IP address. A device configured with AUTOIP will get an address with a 169.254/16 prefix (that is, 169.254.xxx.xxx).

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. Most Category 5 cables are unshielded, relying on the twisted pair design and differential signaling for noise rejection. Category 5 has been superseded by the Category 5e specification.

CAT6– Is an abbreviation for an Ethernet cable adhering to the Category 6 cable standard. Compared with Cat 5 and Cat 5e, Cat 6 features more stringent specifications for crosstalk and system noise. The cable standard provides performance of up to 250 MHz and is suitable for 10BASE-T, 100BASE-T connections.

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 - In computer networking, a port is construct serving as a communications endpoint. It is used by the transport protocols of the Internet Protocol, such as TCP and UDP. A specific port is identified by its number, commonly known as the port number, the IP address with which it is associated.

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.

UDP (User Datagram Protocol) - UDP uses a simple transmission model without implicit handshaking dialogues for providing reliability, ordering, or data integrity.

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.