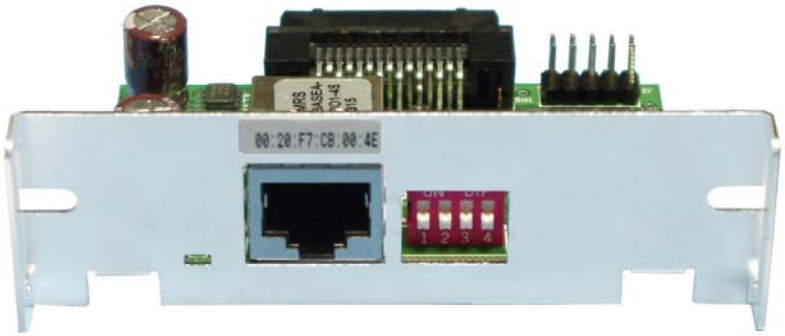
ETHERNET IV
PRODUCT GUIDE

010620A / 020415C



Documentation Version D

CyberData Number	Description	Revision Level	Date
010620	Procurement Number	A	12/05/02
020415	BOM Number	C	07/24/03
760430C	PROG,ETHERNET IV,DONGLE LOAD	V1.02	01/12/04
760431C	PROG,ETHERNET IV,TFTP LOAD	V1.02	01/12/04
990414	PCB Number	A	1/23/03

Appendices Revisions

Appendix	Description	Revision Level	Date
A	Ethernet IV Printer Compatibility Matrix	Rev: E	04/05/05
B	Epson Host Applications	Rev: 6	04/17/03
C	Epson Ethernet Interface Utility	Rev: B	07/30/03
D	Epson Ethernet IV Connect-it™ Module Installation	Rev: C	08/30/04

TABLE OF CONTENTS

1. GENERAL DESCRIPTION

1.1 Product Description

This specification describes the Ethernet Ver. IV Module for the EPSON printers.

1.2 Product Design

The E4 product is the latest generation of Ethernet products for the EPSON line of printers. The E4 was designed to replace the function limited E3 and the higher priced E2 modules all a cost objective that meets the same delivered price as the E3 module.

1.3 Compatability Overview

The E4 module was designed for a Retail POS specific environment. Compatibility with Retail applications interfaces include:

OPOS
JPOS
EPSON TM Flash Logo (TMFLOGO)
EPSON Tool Kit
EPSON APD
Port 9100

Supported protocols include:

IP
ARP
ICMP
UDP
TCP
HTTP
DHCP CLIENT
TFTP (download)
ARP-PING

1.4 Features

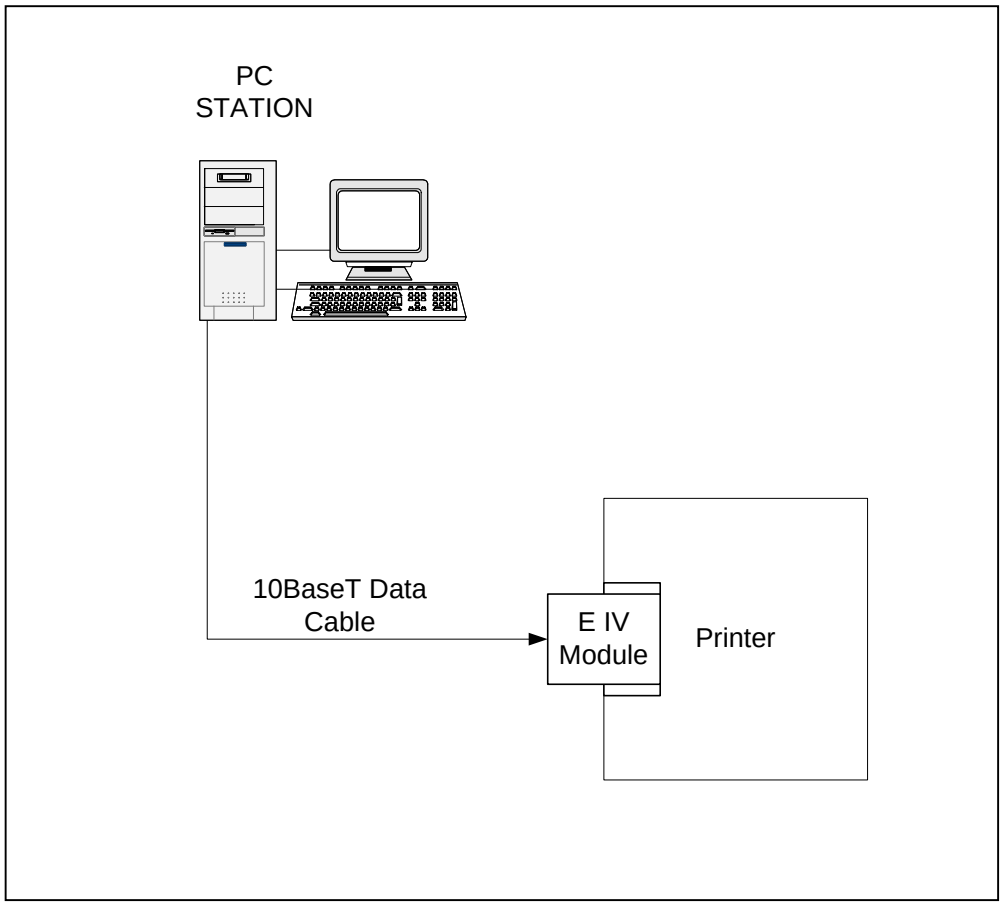
- 10 Base-T Ethernet Communications
- Field Programmable
- Low cost
- Standard UIB size module
- High speed Sync I/F
- Discovery and configuration utility (EEIUtil4)
- Offline report generation
- Diagnostic Status LED
- Web based configuration

1.5 Device Identification

Product name: Ethernet IV (E4)
Board Identification: 990414A
Part Number: 010620A / 020415C

2. FUNCTIONAL DESCRIPTION

Figure – 1 - Printer with module connected to PC system



2.1 Network Interface (J3)

TABLE – 3 – ETHERNET Interface 10base-T

PIN	DESCRIPTION
1	Transmit Positive side Differential
2	Transmit Negative side Differential
3	Receive Positive side Differential
6	Receive Negative side Differential
4,5,7,8	No Connection

2.2 LED Indicator

When the module comes up it will initially blink at a rapid rate – After that, there are 5 modes of blinking:

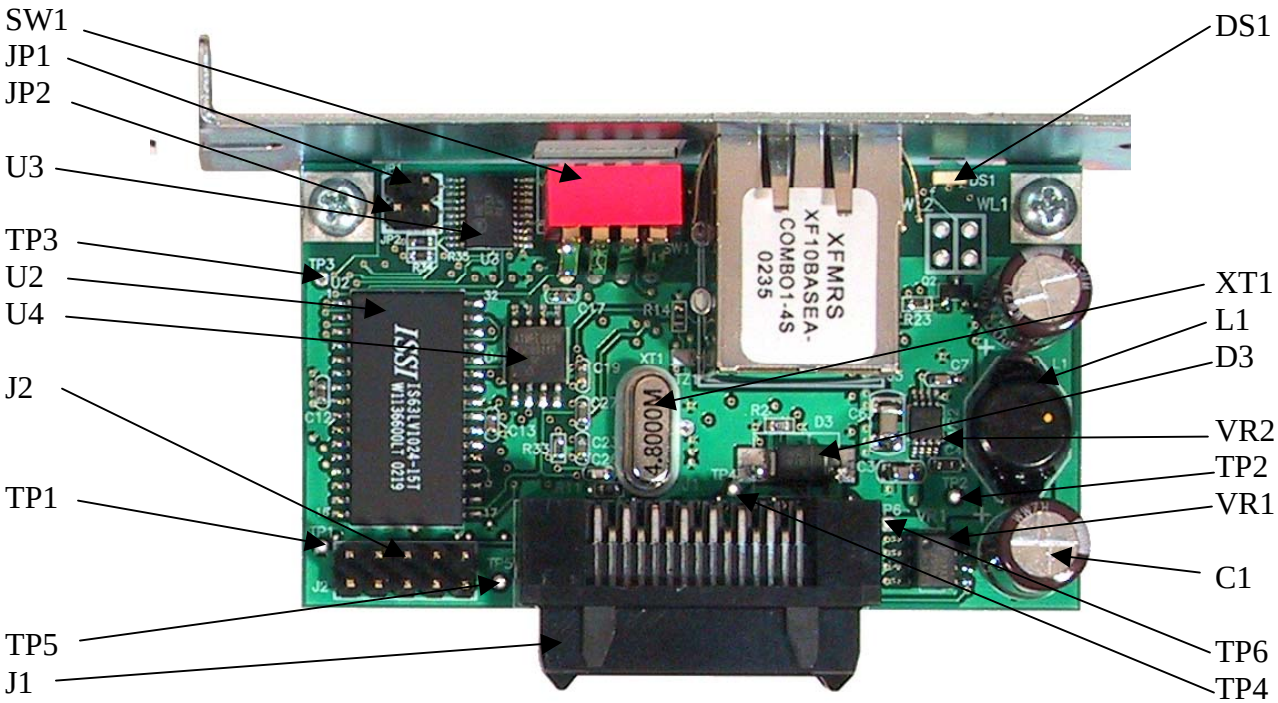
1. 3 Blinks per second means there is no Ethernet Cable connected.
2. 20 Blinks per second on module initialization unless 10base-T connection.
3. Solid ON means that there IS a LINK 10base-T (but no data).
4. 50ms blink for data.
5. Solid OFF means the unit is NOT functioning.

2.3 Dip Switch Settings

The E4 has 4 user accessible dipswitches (SW1) on the front panel of the module.
These switches allow different functions depending on the position of the switch.

DSW1	ON – Prints configuration report on power up	OFF – Normal
DSW2	ON – Not Defined	OFF – Not defined
DSW3	ON – Not Defined	OFF – Not defined
DSW4	ON – Change device settings (IP Address, Gateway, Subnet mask, DHCP enable/disable, Device name, Print port) via web interface, ARP/PING, or configuration protocol or any future methods.	OFF – Lock settings

Figure – 3 – Component Locations



2.4 Junper Settings

The E4 has 2 on-board jumpers as shown in Figure 3.

JP1	ON – Reconfigure to factory default settings	OFF – Normal
JP2	ON – Not Defined	OFF – Not Defined

2.4.1.1.1 Using JP1 to Return to Default Settings

JP1-ON forces the module to use the factory default settings for configuration. All settings are returned to their default values. The unique, factory assigned Ethernet Address and Serial Number are maintained.
To use JP1, turn the power off to the printer. Remove the E4 module from the printer. Install the jumper across JP1. Install the module back into the printer. Power on the printer. Wait for the printer to initialize (printer feeds paper once), then power down the printer again.
Remove the E4 module from the printer and remove the jumper from JP1.
Re-install the E4 back into the printer and power back up.
The E4 is now running with default settings and can be configured using the various utilities provided.

2.5 Operating Environment

2.5.1 Host Operating Systems

- Microsoft Windows 95, Windows 98, and Windows 2000
  Windows NT, Windows XP, Linux (via raw TCP sockets, no driver or utilities available)

2.5.2 Supported Printers

The Ethernet IV module will operate in the following Epson POS printers:

- See Appendix A for specific printer support

Note: Only Sync I/F printers are supported

2.6 Printing Functionality

2.6.1 Epson Host Applications

- The Ethernet IV module is designed to support and enhance communications with host printing processes developed under the following Epson Application Development environments:

OPOS
OLE for Retail POS provides an open device driver architecture that allows Point-of-Sale hardware to be easily integrated into POS systems based on the Microsoft Windows environment.
The goals include:

- Define an architecture for Win32-based POS device access.
- Define a set of POS device interfaces sufficient to support a range of POS solutions.

The OPOS architecture is based on the following constructs:

- Device Class
  A device class is a category of POS devices that share a consistent set of properties, methods, and events. Examples are Cash Drawer and POS Printer.
- Control Object (CO)
  A Control Object exposes a set of properties, methods, and events to an application for its device class. This allows the CO to be developed independently of the SO's for the same class – including development by different companies.
- Service Object (SO)
  A Service Object is called by a Control Object to implement the OPOS-prescribed functionality for a specific device. It exposes a set of methods that are called by a CO.

ESC/POS

A POS printer command system consisting of Epson proprietary commands. Compatible with all types of Epson POS printers and displays, ESC/POS is designed to reduce the processing load on the host computer in POS environments. It comprises a set of highly functional and efficient commands fully realizing the potential of Epson printers.

APD

The Epson Advanced Printer Drivers allow Windows applications to talk to Epson TM POS printers.

Custom Applications

Any custom application can use the Ethernet V, without JPOS, OPOS, or APDs as long as it has a working TCP/IP stack and can make use of the Epson ESC/POS commands.

Note: see Appendix B for Version level support of Host system drivers

2.6.2 Basic Communications Protocols

The Ethernet IV module supports the following industry standard underlying communication mechanisms:

- IP Internet Protocol provides end-to-end network connectivity
- ARP Address Resolution Protocol provides media access control address resolution
- ICMP Internet Control Message Protocol provides error and control reporting
- UDP User Datagram Protocol provides connection-less service
- TCP Transmission Control Protocol provides connection-oriented service

2.6.3 Printing Communications Protocols

The Ethernet IV module receives print data on a user configurable TCP port number:

- TCP Port 9100 raw data and ESC/POS information is transferred by direct streaming socket communication. This type of connection is used to transfer all POS receipt text and printer control data. TCP provides a reliable mechanism ensuring that all print data is received. The Ethernet IV module allows one active TCP Port 9100 connection at a time. Subsequent connection attempts to port 9100 are denied at the transport protocol level until the active connection is

closed. A configurable parameter is provided to allow receipt of this type of connection on an alternate port number.

2.6.4 Configuration and Control Protocols

The Ethernet IV module supports the following communications protocols for its configuration and control applications:

- HTTP Hyper-Text Transfer Protocol provides connectivity for web-page formatted communication
- Discovery Network discovery protocol – The Discovery Protocol for Ethernet IV is available upon request.
- TFTP Trivial File Transfer Protocol provides the communication mechanism for upgrading the Ethernet IV firmware

2.6.5 Address Assignment Protocols

The Ethernet IV supports the following protocols for IP address and network parameter assignment:

- DHCP

  Dynamic Host Configuration Protocol is a method to automatically obtain an IP Address, subnet mask, gateway and other TCP/IP related parameters on system restart. In order to use this method successfully, a DHCP compliant server must be properly configured somewhere on the network. Using DHCP excludes the use of manual IP Address assignment options.

- ARP / Ping Method for setting IP Address

  ARP / Ping provides a proprietary mechanism for changing an Ethernet IV IP Address. This method is useful for initially configuring a device or recovering an incorrectly configured device. Sending the module a special ICMP echo request command changes the Ethernet IV IP Address. This mechanism is able to correct the configuration of modules that are configured incorrectly, with addressing that does not match their current network. This functionality may be enabled or disabled by dipswitch setting on the module.

2.7 Module Configuration

2.7.1 Remote Configuration

The Ethernet IV provides two mechanisms for module configuration.

- EEIUtil4
  EEIUtil4 is a Windows based utility program used for test, firmware upgrade, and parameter configuration.

- Epson printer Web interface configuration
  The interface's Web configuration supports Ethernet IV module configuration via standard Internet browser.

2.7.1.1 EEIUtil4 (Epson Ethernet Interface Utility)

See Appendix C for EEIUtil4 instructions

2.7.1.1.1 Operating Environment

EEIUtil4 runs with the following versions of Windows:

- Windows 98/NT/2000/XP

When using OS later then Windows 98, user should be set up with administrator privileges.

2.7.1.1.2 Functionality

EEIUtil4 provides the following functionality:

- Discovery of Printers.
  All CyberData Ethernet IV connect-it modules are discovered via the Network discovery protocol. Discovered printers are conveniently displayed in the EEIUtil4 discovery window. Any of the displayed printers may be easily selected for configuration, test, or upgrade.
- Printer general information display.
  By clicking on a discovered printer and then clicking on the configure button, a dialog box appears with all important module configuration parameters.
- Printer Test.
  A test button is provided to easily initiate status report generation to any of the discovered printers.
- Programming of ROM image for firmware upgrade
- Module firmware can be easily upgraded over the network via TFTP. Ethernet IV firmware is programmed and stored into the module's internal flash memory.
- IP Address modification/

2.7.1.2 Printer Setup Web Configuration

2.7.1.2.1 Operating Environment

The Epson Printer Setup Web Configuration interfaces with the following Internet browsers:

- Microsoft Internet Explorer 5.0 or greater
- Netscape Navigator 7.0 or greater

2.7.1.2.2 Functionality

The Epson Printer Setup Web Configuration provides the following functionality: (The configurable module parameters are password protected)

- ❖ Network Settings Configuration page
  - Protocol Enable/Disable
    - ❑ DHCP
  - Manual IP Address settings
    - ❑ IP Address
    - ❑ Netmask
    - ❑ Gateway
  - Application Settings Enable/Disable
    - ❑ Port 9100 printing
    - ❑ Alternate port printing

- ❖ Printer Status page
  - Test of printer/module functionality by initiating status report generation

2.8 Module Status

The Ethernet IV module passes most control and maintenance information transparently between the printer and the application. A subset of status information is maintained and reported by the Ethernet IV module.

On printer power-up, the module solicits the printer for basic information and enables ASB (Auto Status Back) functionality. This instructs the printer to transmit status information when the status changes. The module maintains these statuses and others. These statuses can be queried by the printing application or configuration utilities. Statuses can be obtained by ESC/POS, and SNMP.

2.8.1 SNMP

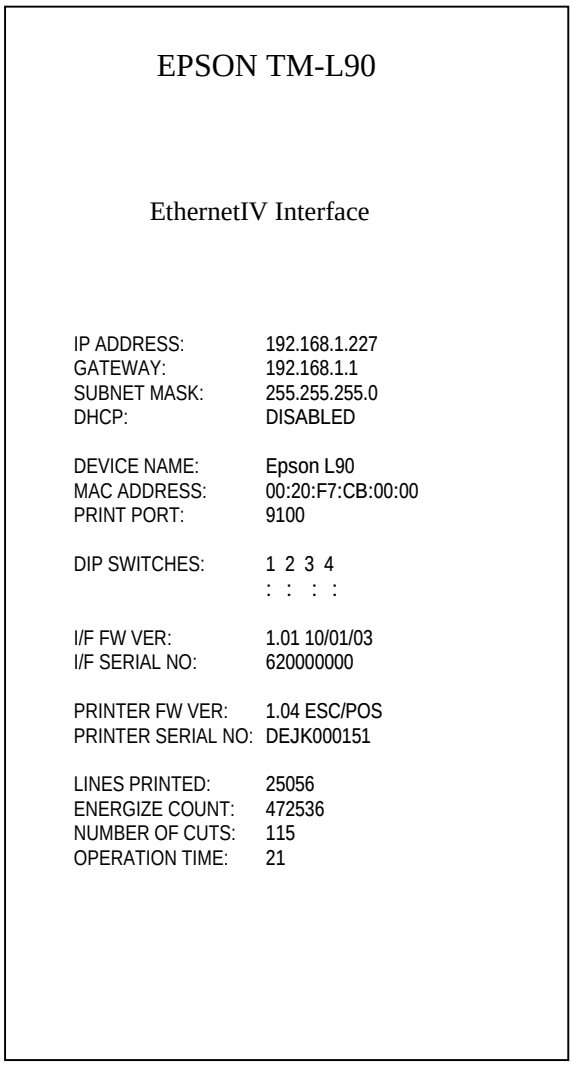
A subset of printer-managed objects is accessible via SNMP. This information provides operational information required to increase networking efficiency, status monitoring, error recovery, and EPSON printing performance.
The EIV provides support for agent operations as defined in RFC1157 (A Simple Network Management Protocol), encoding of information as defined in RFC1155 (Structure and Identification of Management Information for TCP/IP-based Internets), and a MIB compiler.
Note: The document " SNMP support for CyberData Ethernet Modules" is available upon request.

2.8.2 Configuration Report

There are four ways to generate a configuration report. This can be used to test the printer operational status and to obtain important module and printer parameters.

- DIP Switch 1
  Set DIP switch 1 on the Ethernet IV module to ON.
  A configuration report will be automatically generated during module firmware initialization. This report is generated each time on power-up as long as dip 1 is ON.
- EEIUTIL4 Test.
  Click the TEST button in the program screen to initiate a configuration report.
- Cover Open
  Open the printer cover, press the FEED button, and then close the printer cover. For this option, the printer must have a cover sensor (TM-U200 series does not).
- Web Page
  Click the printer status button on the web page.

Figure – 4 – Status Report



EPSON TM-L90

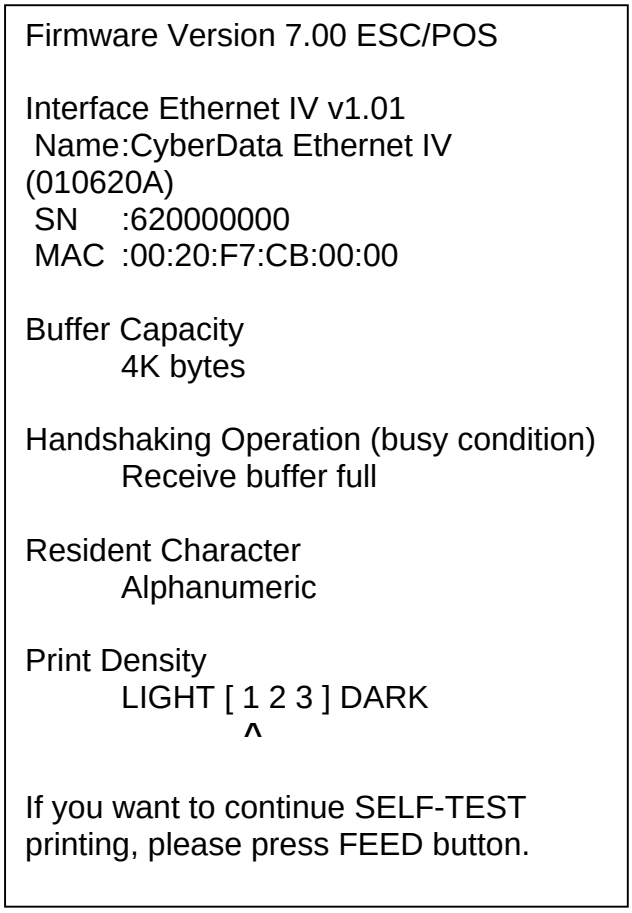
EthernetIV Interface

IP ADDRESS:	192.168.1.227
GATEWAY:	192.168.1.1
SUBNET MASK:	255.255.255.0
DHCP:	DISABLED
DEVICE NAME:	Epson L90
MAC ADDRESS:	00:20:F7:CB:00:00
PRINT PORT:	9100
DIP SWITCHES:	1 2 3 4 : : : :
I/F FW VER:	1.01 10/01/03
I/F SERIAL NO:	620000000
PRINTER FW VER:	1.04 ESC/POS
PRINTER SERIAL NO:	DEJK000151
LINES PRINTED:	25056
ENERGIZE COUNT:	472536
NUMBER OF CUTS:	115
OPERATION TIME:	21

2.8.3 Epson Self-Test

By holding down the “FEED” button while powering on the printer, the Epson printer prints a printer self test. This provides more detailed printer information and – on select printers – also provides some basic module information.

Figure – 5 – Epson Self-Test



3. PRINTER INTEGRATION AND OPERATION

3.1 Printer setup.

Note: See appendix D for Specific Printer configuration information

3.2 Programming the Flash Memory

Firmware updates can be uploaded by use of EEIUtil4

3.3 Serial Number and Mac Address Pprogramming

The product serial number and MAC address is programmed during the manufacturing process by use of a special utility. This is an “at time of manufacturing” feature only.

4. REQUIREMENTS

4.1 Maximum Ratings

The following ratings shall not be exceeded:

Storage temperature	-40° C to +60° C
Operating temperature	0° C to +50° C
Relative Humidity	20% to 80% without condensation
Maximum supply voltage	5.5 VDC (Vcc to Vss)
	30.0 VDC Printer Supply Voltage

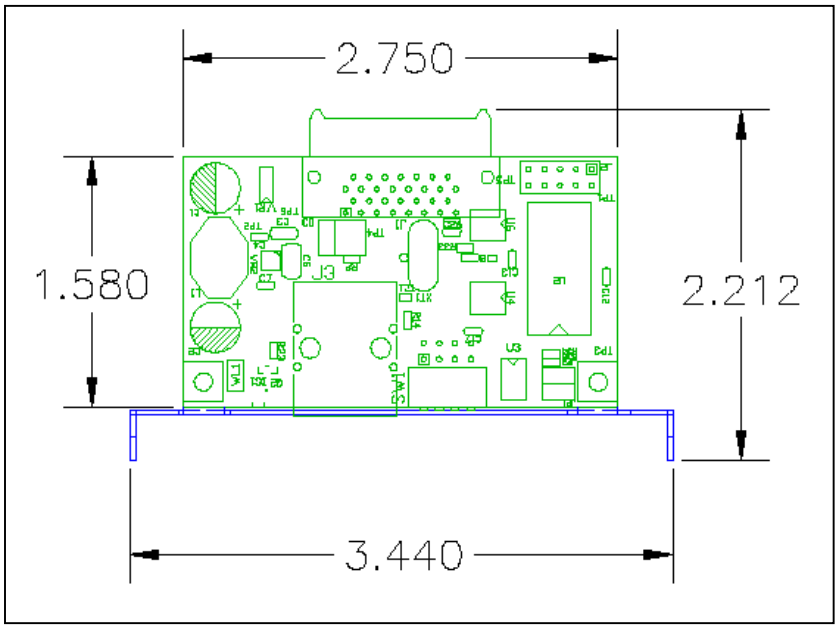
4.2 Electrical

4.2.1 DC Characteristics

+5 volts as supplied by the Epson Printer to use less than 100ma.

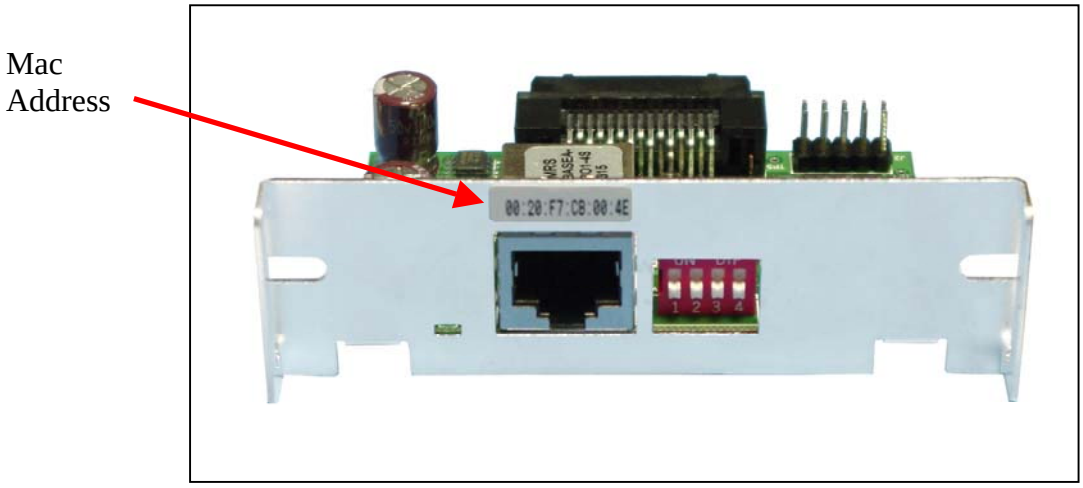
4.3 Mechanical

4.3.1 Approximate Dimensions

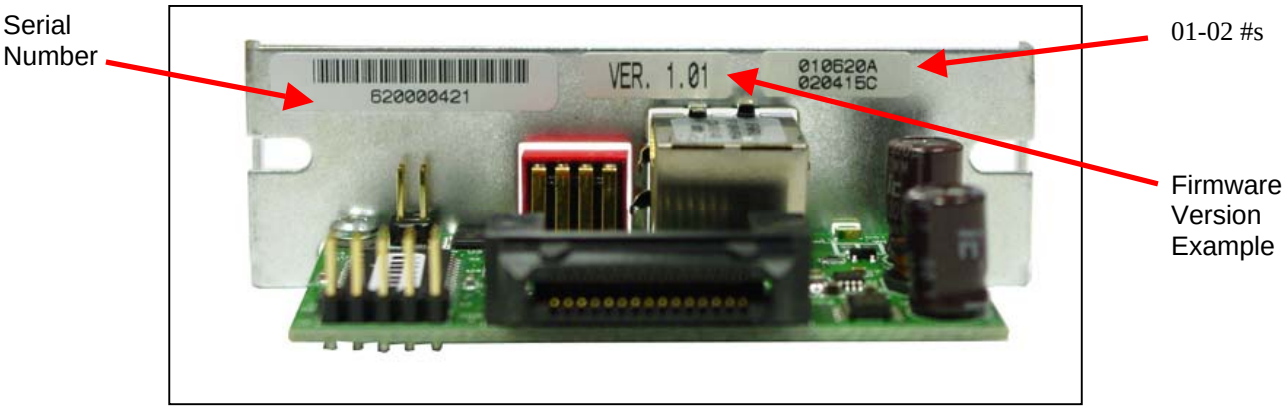


4.3.2 Marking

The Ethernet IV module will have the Mac address label located on the front Panel.



The Ethernet IV module will have the 01-02 assembly numbers, The Serial Number and firmware version number located on the back of the Panel.



4.4 Environmental

4.4.1 Operating Conditions

Temperature: 5° C to 55° C
Relative Humidity: 10% to 90%

4.4.2 Storage Conditions

Temperature Range: -10° C to 50° C (14° F to 120° F)
Temperature Change: 15° C (27° F) per hour
Humidity Range: 10% to 90% R.H.

4.5 Regulatory

4.5.1 Safety

Ul 60950 (Recognized Component) IEC/EN 60950

4.5.2 Emissions

FCC Class A – EN55022

4.5.3 Immunity

EN55024

5. Appendices

5.1 Ethernet IV Printer Compatibility Matrix

Ethernet IV Printer Compatibility Matrix

Part Number: 010620A
Firmware Version: 0.20T
Hardware Version: 990414A

Printer Information			OPOS Information							APD Information				
Printer Type	Model	BIOS Revision	OPOS Version	Device Type	Rcpt Health Check	Slip Health Check	MICR Health Check	Tscan Check	Capabilities	Version	Device	Windows Test Print	Port 9100 Direct	Notes
TM-T88III	M129C	7.00 ESC/POS	2.30E UPOS 1.7	TM-T88IIIE	Pass	N/A	N/A	N/A	Pass	2.09E	TM-T88III Receipt	Pass	Pass	*4
TM-U200B	M119B	1.27 ESC/POS	2.30E UPOS 1.7	TM-U200BE	Pass	N/A	N/A	N/A	Pass	2.09E	TM-U210B Receipt	Pass	Pass	*1 *2
TM-T90	M165A	1.06 ESC/POS	2.30E UPOS 1.7	TM-T90E	Pass	N/A	N/A	N/A	Pass	2.09E	TM-T90 Receipt	Pass	Pass	*4
TM-L90	M165B	1.04 ESC/POS	2.30E UPOS 1.7	TM-L90E	Pass	N/A	N/A	N/A	Pass	2.09E	TM-L90 Receipt	Pass	Pass	*4
TM-U220	M188B	3.03 ESC/POS	2.30E UPOS 1.7	TM-U220BE	Pass	N/A	N/A	N/A	Pass	2.09E	TM-U220B Receipt	Pass	Pass	*2, *3
TM-U230		1.02 ESC/POS	2.30E SP3	TM-U230E	Pass	N/A	N/A	N/A	Pass	2.09E	TM-U230 Receipt	Pass	Pass	
TM-H6000II (781)	M147E	7.01 ESC/POS	2.30E UPOS 1.7	TM-H6000IIE	Pass	Pass	Pass	Pass	Pass	2.09E	TM-H6000II Receipt	Pass	Pass	
TM-H6000II (781)	M147E	7.01 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-H6000II Slip	Pass	Pass	
TM-H6000II (781)	M147E	7.01 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-H6000II Endorse	Pass	Pass	
TM-U325	M133A	1.03 ESC/POS	2.30E UPOS 1.7	TM-U325E	Pass	Pass	N/A	N/A	Pass	2.09E	TM-U325 Receipt	Pass	Pass	*6
TM-U325	M133A	1.03 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-U325 Validation	Pass	Pass	
TM-U675	M146A	1.30 ESC/POS	2.30E UPOS 1.7	TM-U675E	Pass	Pass	N/A	N/A	Pass	2.09E	TM-U675 Receipt	Pass	Pass	*5
TM-U675	M146A	1.30 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-U675 Slip	Pass	Pass	
TM-U675	M146A	1.30 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-U675 Validation	Pass	Pass	
TM-J7100	M184A	1.01 ESC/POS	2.30E UPOS 1.7	TM-J7100E	Pass	Pass	Pass	N/A	N/A	2.09E	TM-J7100 Receipt	Pass	Pass	*4
TM-J7100	M184A	1.01 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-J7100 Slip	Pass	Pass	
TM-J7100	M184A	1.01 ESC/POS	-	-	-	-	-	-	-	2.09E	TM-J7100 Endorse	Pass	Pass	

*1 APD not available for this model
***2 Capabilities not available: Toolkit was used to print receipt from template**
***3 Capabilities run as model U200**
***4 Capabilities run as T88II**
***5 Capabilities not available; instead form validation tests were performed from toolkit**
*6 Capabilities not available; instead batch report and validation self test run from toolkit

Other Compatible Programs

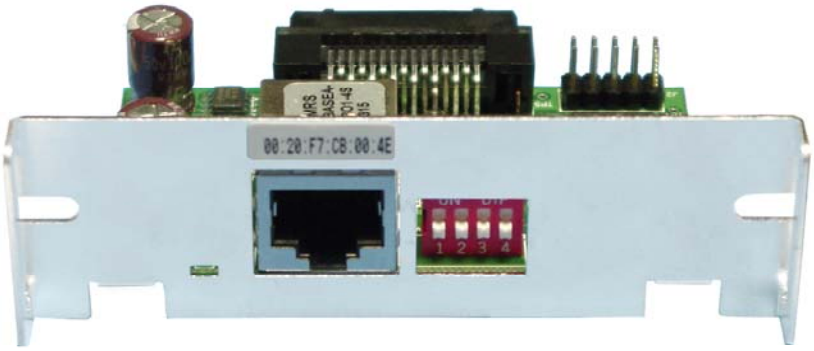
Program Name	Version	Caveats
TMNet WinConfig	1.00	"Firmware update" function not supported. Configuring a module with invalid IP settings from off-network, requires participating routers to permit IP broadcast address 255.255.255.255
TMFlashWriter for Windows	2.00	Fully Compatible
TM Flash Logo	2.0.1	Fully Compatible

5.2 Ethernet IV Host Applications

Application	Version	Status	
Epson Toolkit	Version Unknown	See Appendix A	
OPOS	2.2.0E SP3	See Appendix A	
JPOS	All	Not Tested	
ADV. Printer Drivers	2.09E	See Appendix A	

ETHERNET IV UTILITY PROGRAM

July 2003



reference only

5.3 Utility Program – EEIUTIL4

The Ethernet Interface Utility 4 Program (EEIUtil4) is a multipurpose program designed to make interfacing, testing and configuring the Epson Ethernet IV module in a simple one step procedure.

5.3.1 Features

1) Discovers Ethernet IV modules on your network even if there are multiple network adapters.
2) Will find even improperly configured Ethernet IV modules, and let you fix the IP setting for your network.
3) Select highlighted device and click "Configure"
4) Has a simple test procedure.
5) Can be used to reprogram a Ethernet IV modules (future version)
6) Easy to use Windows interface.

5.3.2 Printers Supported

See appendix A

5.3.3 Start Up

1) Run the Utility Program by either double clicking on the EEIUTIL4.EXE program, or selecting it from the RUN – Browse Dialog box.

2) Click "Scan" to discover Ethernet IV modules on the network

3) If (when) the list fills in with discovered modules and the "Configure Selected" button becomes available, click the "Configure Selected" button to configure the module.

reference only

5.3.4 Screen Description

Figure 2A & 2B & 2C & 2D are examples of an initial screen view. This views may vary, depending on how many modules are on the same network as the device.

Figure – 2A – Initial Screen for the EEIUTIL (EEICP)

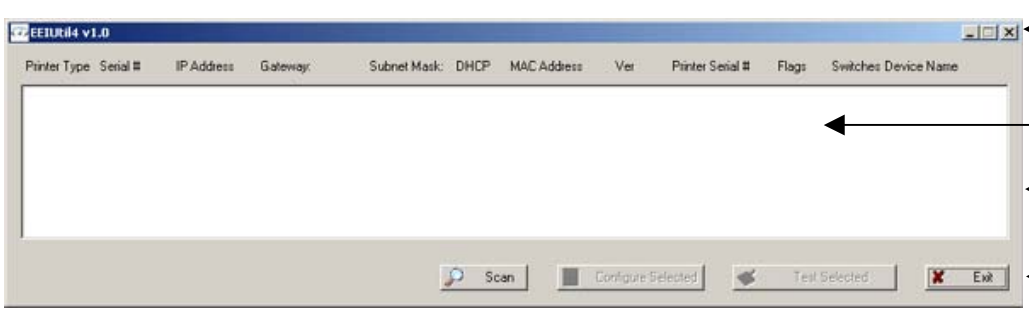


Figure – 2b – Initial Screen for the EEIUTIL (EEICP)

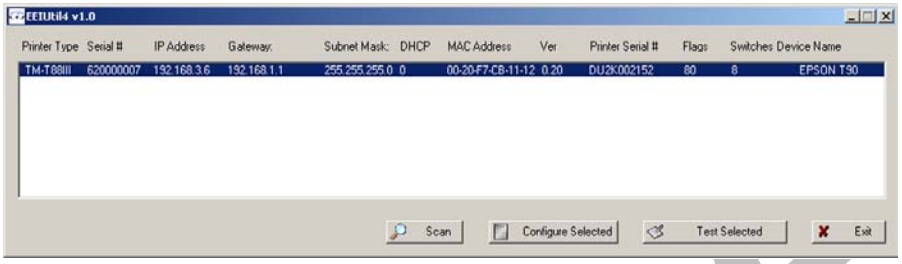
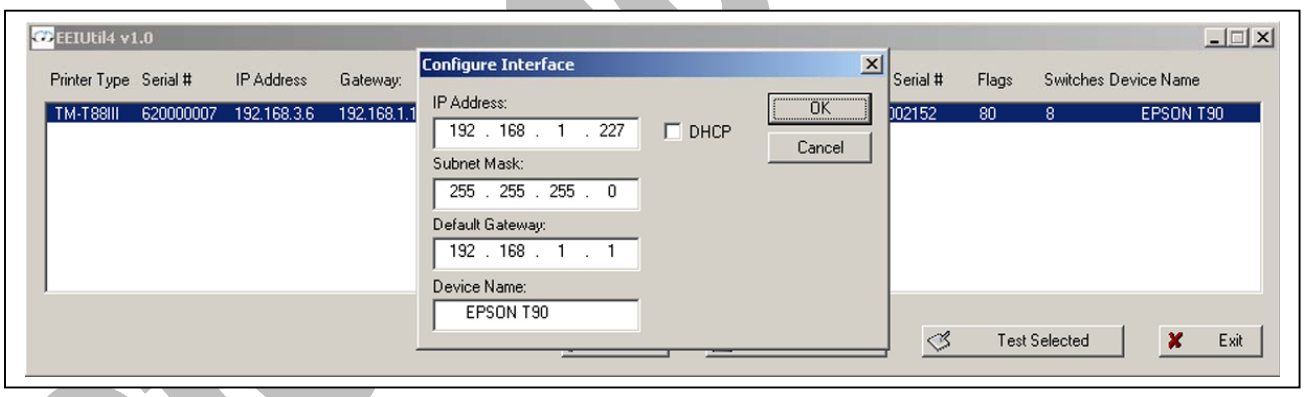
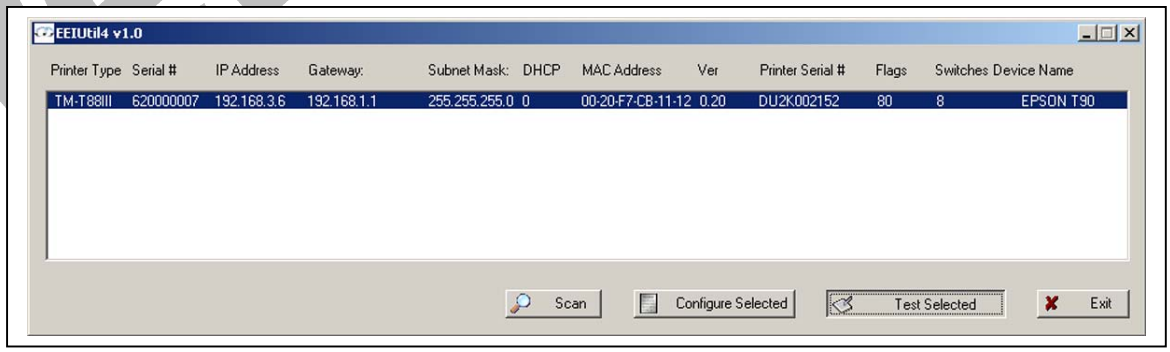


Figure – 2c – Initial Screen for the EEIUTIL (EEICP)



Window for Configure selected button



reference only

5.3.5 Device Listing Area

To select a device click on it in the device list area

The Test, and Configure buttons control the selected device. A programming button will be available in a future version,

5.3.5.1 Exit Button

When you are finished with the EEIUtil4, click the Exit Button to terminate the program and return to Windows.

5.3.5.2 Test Button

The Test button causes a configuration report to be printed on the selected device.

5.3.5.3 Configure Button

The Configure button brings up a dialog box allowing the user to change the selected module's settings. After the device has been configured, EEIUtil4 will allow some time for the module to reconfigure itself and will then rescan the network to find the reconfigured device as well as any other Ethernet IV modules.

5.3.5.4 Program Button

Not available now. Will be available on future version.

reference only

5.4 Module Installation

The Ethernet IV Module works with the following EPSON printers: TM-T88III, TM-U200B/D, TM-90, TM-L90, TM-U230, TM-U220, TM-H6000II, TM-U325, TM-U675, and TM-J7100. OPOS 2.20E SP3 compatibility is verified with TM-T88III, TM-U200B, TM-T90/L90, TM-U230, TM-H6000II, TM-U325, TM-U675 and the TM-J series.

DIP SWITCH AND MEMORY SWITCH SETTINGS FOR – THESE MUST BE SET CORRECTLY. EPSON PRINTERS:

TM-T90, TM-L90

Switch Bank 1		
All	Various	Off
Memory Switch 1		
1-1	Transmit Power On Information	On
1-2	Receive Buffer Size	Off
1-3	Condition for BUSY	On
1-4	Data processing for receive error	Off
1-5	Automatic line feed	Off
1-6	Pin #31 reset	On
1-7	Pin #6 reset	On
1-8	Pin #25 reset	On
Memory Switch 2		
2-1	Reserved	On
2-2	Autocutter	User
All others	Reserved	Off
Memory Switch 8		
8-8	Printer cover open recovery	On
All others		Off

TM-T88III

Switch Bank 1		
All	Various	Off
Switch Bank 2		
2-1	Condition for BUSY	On
2-2	Reserved	Off
2-3	Print density	User
2-4	Print density	User
2-5	Busy release	Off
2-6	Reserved	Off
2-7	Reserved	Off
2-8	Pin #31 reset	On

J7100

Switch Bank 1		
All	Various	Off
Memory Switch 1		
1-1	Transmit Power On Information	On
1-2	Receive Buffer Size	Off
1-3	Condition for BUSY	On
1-4	Data processing for receive error	Off
1-5	Automatic line feed	Off
1-6	DM-D connection	User
1-7	Pin #6 reset	On
1-8	Pin #25 reset	On
Memory Switch 2		
2-1	Reserved	On
2-2	Autocutter	User
All others	Reserved	Off
Memory Switch 8		
8-8	Printer cover open recovery	On
All others		Off

TM-U200B/D

Switch Bank 1		
1-8	Condition for BUSY	On
All others	Various	Off
Switch Bank 2		
2-1	Characters per line	User
2-2	Autocutter	User
2-3	Reserved	Off
2-4	Pin #31 reset	On
2-5	Reserved	Off
2-6	Reserved	Off
2-7	Reserved	Off
2-8	Reserved	Off

TM-U325D

Switch Bank 1		
All	Various	Off
Switch Bank 2		
2-1	Condition for BUSY	On
2-2	Reserved	Off
2-3	Characters per line	User
2-4	Reserved	Off
2-5	Reserved	Off
2-6	Reserved	Off
2-7	Reserved	Off
2-8	Pin #31 reset	On

reference only

TM-U675

Switch Bank 1		
All	Various	Off
Switch Bank 2		
2-1	Condition for BUSY	On
2-2	Reserved	Off
2-3	Characters per line	User
2-4	TM-U375 print width	User
2-5	Reserved	Off
2-6	Reserved	Off
2-7	Reserved	Off
2-8	Pin #31 reset	On

TM-H6000II

Switch Bank 1		
All	Various	Off
Switch Bank 2		
2-1	Condition for BUSY	On
2-2	Reserved	Off
2-3	Print density	User
2-4	Print density	User
2-5	Reserved	Off
2-6	Reserved	Off
2-7	Reserved	Off
2-8	Pin #31 reset	On

TM-U220B (US)

Switch Bank 1		
1-8	Condition for BUSY	On
All others	Various	Off
Switch Bank 2		
2-4	Pin #31 reset	On
All others	Various	Off

TM-U220B (STD)

Switch Bank 1		
1-8	Condition for BUSY	On
All others	Various	Off
Switch Bank 2		
2-8	Pin #31 reset	On
All others	Various	Off

TM-U230B/D

Switch Bank 1		
1-2	Condition for BUSY	On
All others	Various	Off
Switch Bank 2		
2-1	Characters per line	User
2-2	Autocutter	User
2-3	Reserved	Off
2-4	Pin #31 reset	On
2-5	Paper out blink patter	User
2-6	Reserved	Off
2-7	Reserved	Off
2-8	Internal buzzer	User

Installation Steps

1. Disconnect power and connected other cables from the EPSON printer, and remove the printer DIPswitch cover plate.
2. Remove the existing interface board from the printer by unscrewing 2 screws.
3. Properly align and push the new module into the printer. Fasten the two mounting screws through the faceplate of the new interface.
4. Set DIPswitches as necessary; then attach the access cover.
5. Connect the power cable to the printer and apply power.
6. Run a configuration report. This shows that the printer, module, and firmware are all installed and operating correctly and shows how the communication parameters are set.

Running a Configuration Report

There are three different ways to generate a configuration report with the Ethernet-IV. The first is to have SW-1 (on the EEI-IV) on when the printer is powered on. The second is to click on the 'Test' button in the eeiutil.exe program. The third is to open the cover, press feed and then close the cover quickly.

Configuring the Interface

Each EEI module has a 'Base' Ethernet Address programmed into the Serial EPROM. A unique Ethernet Address and Serial Number are programmed into the EEPROM at the factory, and cannot be changed. Labels with both the Ethernet address and serial number are affixed to the module. These numbers are important when configuring the EEI - It is advisable to make a note of these values in a secure place.

Configuration of this module should only be attempted by a qualified network administrator.

Configuration

Use the supplied printer discovery program, EEI Configuration Program **(ver. 1.3 or greater)**. Insert the floppy disk into the drive and run **x:\eeiutil.exe** (where x is the drive letter of your 3.5" floppy drive). The program will discover all Epson Ethernet printers on your network and allow you to test and reconfigure them.

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