Exhibit E - User's Manual

Product Specification

for

EN1207B-TX 4

Version : 1.00

1998/4/4

Product Name : Cheetah PCI Adapter

Model Number : EN1207B-TX4

Prepared By	Weyden Wang	*Date*	04/04/1998
Reviewed By	Baushg Lee	*Date*	04/05/1998
Approved By		*Date*	

The Federal Communications Commission Statement

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changs or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Table of Contents

Change History

Revision	Date	Description
1. Version 1.00 :	4/4/1998	Initial Version

1. Product Description

0. Introduction

- *EN1207-TX 4* is 32-bit PCI-BUS Fast Ethernet Adapter, media support 100BASE-TX & 10 BASE-T.
- It is a Fast Ethernet Adapter with High Performance, High Reliability, Low Chip Count, and Low Power Consumption.

1. Functional Description

Accton ***EN1207-TX 4 PCI Adapter*** is a 10/100 Mbps Ethernet adapter which brings you the high performance capability for a network interface based on the advanced PCI local bus platform and supports 32-bit data transfer with bus master architecture. The adapter conforms to IEEE802.3u 100BASE-TX, IEEE802.3 10BASE-T standard, and meets PCI local Bus revision 2.1 specification . It supports 10 Mbps and 100 Mbps dual speed Ethernet operation with a single RJ-45 connector. The 10/100bps speed were auto-sensed by auto-negotiation technology which conforms to IEEE802.3u standard. Three LEDs are provided for indication of ***Link***, ***100M***, ***Activity*** respectively. Finally, extensive drivers for commonly used network operation system such as Novell Netware, Microsoft Window NT, IBM LAN Server and SCO Unix are supported.

2. Architecture

- DEC 21143-PD + LevelOne ST10040 chip solution support PCI spec. 2.1.
- 93C46 EEPROM stored Ethernet address, Subsystem/Vendor ID and medium configuration.
- YCL transformer filter isolated Ethernet network from internal circuit and reduced EMI emission

3. Key Technology

- Best power consumption
- 10 BASE-T and 100BASE-TX compatible
- 10/100Mbps full duplex operation
- 32 Bit Data Transfer By burst mode Bus Master
- Provide the PCI power and auxiliary power management

4. Selling Point

- Very Compact board without on board memory
- Auto-negotiation between the 10/100 Mbps operation
- 10/100Mbps full duplex operation
- Support Wake-On-LAN function
- Compliance with *ACPI Spec. 1.0.*
- Compliance with *Network Device Class Power Management Spec. 1.0.*
- Compliance with *PCI Bus Power Management Interface Spec. 1.0.*
- Microsoft *PC97/PC98* compatible.
- Extensive driver support

2. Features

Specifications:

Standard Conformance	:	IEEE802.3u 100BASE-TX & IEEE802.3 10BASE-T
Host Interface	:	PCI Bus compliant to PCI spec. 2.1
Ethernet Data Rate	:	10 and 100 Mbps (Auto-negotiation)
Media Connection	:	Single RJ45 for 100 BASE-TX & 10 BASE-T
I/O address	:	Auto selection
Interrupt	:	Automatically decided by PCI BIOS
LEDs	:	Three LEDs for ***Link***, ***100M***, ***Activity***
Driver support	:	**Netware ODI/MSL Driver** Novell NetWare 4.1 4.11 **NDIS 2.0 DOS/OS2 Driver** Microsoft LAN Manager 2.x, IBM LAN Server4.0, **NDIS 3.0/4.0/5.0 Drivers** Windows 95, 98, NT 4.0, 5.0 **UNIX Drivers** SCO Unix LLI/MDI driver

Temperature	:	0℃ - 55℃ (Standard Operating)
Humidity	:	10% - 90% (Non-condensing)
EMI Regulation	:	FCC Class B CISPR Class B VCCI Class 2 CE Mark

2.2 Features

- 10/100 Mbps dual speed Auto negotiation
- Support WOL (WAKE-ON-LAN)
- Support ACPI (Advance Configuration Power Interface)
- Meets PCI Local BUS Specification Rev. 2.1.
- Support Power Manager Function
- Automatic I/O Address and IRQ setup
- Single RJ-45 connector for 10/100 Mbps operation
- Provides full-duplex Ethernet operation for both 10BASE-T and 100BASE-TX
- 32 Bit data transfer with bus master for PCI interface
- Three diagnostic LEDs for LINK, 100M, Activity
- Low power consumption and sleep mode
- Conforms to IEEE802.3u 100 BASE-TX and IEEE802.3 10BASE-T Ethernet specification
- SMT manufacturing and strict quality assurance test to assure high performance and reliability
- Automatic polarity detection and correction for UTP
- Extensive driver support

3. Hardware Specification

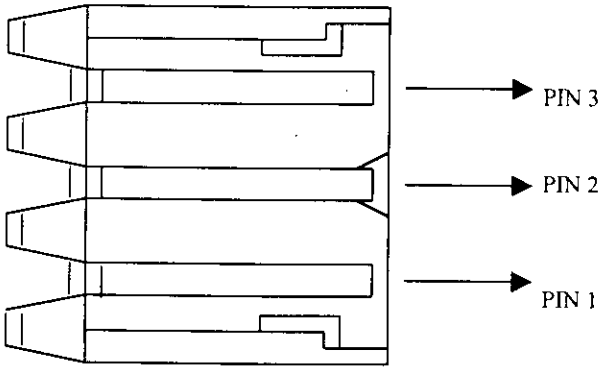
3.1 PC System			Yes[✓] or No[x]
a.Bus	PCI Bus	Spec. Rev [2.1]	✓
b.Data Transfer	☑ Bus Master		✓
c. CPU	☑286 ,☑386___,☑486___,☑586		✓
d. System Bus Clock	[25 to 33] MHz		✓
e. PCI Signal Define :	PRSNT1# ☑GND ☐PULL-UP PRSNT2# ☑GND ☐PULL-UP M66EN ☑GND ☐PULL-UP		

3.2 Configuration			Yes[✓] or No[x]
a.RAM Size	[ ] KB		
b.RAM Address	[to]H		
c.LanI/O address	Auto Configure By BIOS	[ ]Selections	✓
d.Interrupt	Auto Configure By BIOS		✓
e.ROM Size	[16, 32, 64 ,128]KB		✓
f.ROM Address	[to]H	[ ]Selections	✓
g.ROM Type	EPROM/EEPROM/Flash ROM		✓

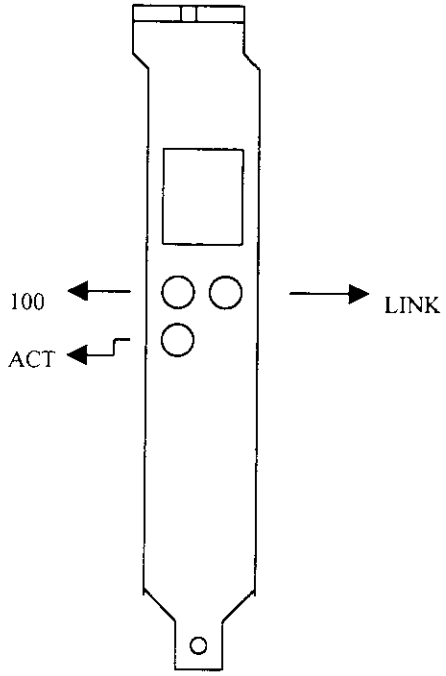
3.3 Network Conformity			Yes[✓] or No[x]
a.Standard	IEEE802.3	10Base-[T]	✓
	IEEE802.3u	100Base-TX	✓
b.Interface	RJ-45 for UTP	[Category : 3,4,5]	✓
	BNC for thin coax	RG58	X
c.Data Tran.Rate	☐4, ☑10,☐16, ☐20, ☑ 100	Mbps	✓
d.MediaSelection	☑Auto		
e.LAN Controller	Vendor[DIGITAL]	☐16-bit, ☑32-bit	P/N#: 21143-PD

c		
3.4 *Power Requirement*	PCI Power : Type 5V/350mA Max 5V/400mA Voltage tolerance : +5V±5% Auxiliary Power : 5V/330mA	
a. Power Req at Operating	PCI Power : 5V/ 330mA ~ 400mA Auxiliary Power : not used	
b. Power Req at idle	PCI Power : 5V/ 310mA Auxiliary Power : not used	
c. Power Req at sleep mode	PCI Power : not used Auxiliary Power : 5V/300mA	
3.5 Environment		

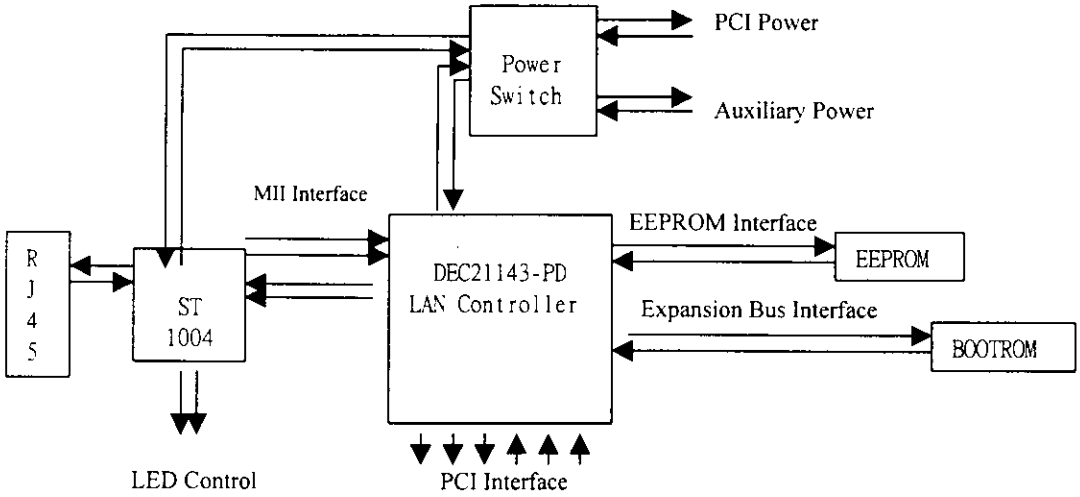
a. Temperature	[0 to 55] °C	Operating	
b. Humidity	[10 to 90] %	Operating	
3.6 Magic packet connector			
a. Pin Assignment	Pin 1 : auxiliary power 5V Pin 2 : auxiliary ground Pin 3 : wake on pin		



3.7 Diagnostic LEDS	
LEDs Indecator	Color ☑ Green ☐ Ywllow ☐ Red Description ☑LINK ☑100 ☑☐ACT



3.8 Block Diagram



4. Software Specification

4.1 Network Device Drivers Support

The software supports are listed in the following table.

Driver/Program	EN1207B-TX 4
NetWare	
*DOS ODI **	☺
OS2 ODI	☺
*ODI Server **	☺
SFTIII MSL	☺
NetWare Universal Client(VLM)	☺
NDIS	
*NDIS2 (DOS,OS2)**	☺
NDIS3(WFW311)	☺
NDIS3/4/5(WIN95,98,NT 3.51, 4.0, 5.0)	☺
Unix	
SCO LLI/MDI	☺

4.2 Network Operating Systems Support

(For reference only)

Network Operating System/Protocol	Driver Support
NetWare 4.1 & 4.11	DOS/OS2 ODI, 32-bit ODI, MSL
Microsoft Windows 95/98/NT	NDIS3/4/5
IBM LAN Server 2.x,3.x, 4.x	NDIS2/OS2
IBM TCP/IP for DOS and OS/2	NDIS2/OS2
SCO Unix	LLI/MDI Driver

4.3 Magic Packet format

00 00 E8 12 20 01 (FF FF FF FF FF FF) ➔Destination Address or broad.cast
00 00 E8 12 20 XX ➔Sourse Address
00 00 ➔Packet Type or Lenght
FF FF FF FF FF FF ➔Synchronize
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01 > Destination address repeated at last 16 times
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01
00 00 E8 12 20 01

5. Product Content

1 Product Content		Yes[✓] or No[x]
	PCBA	✓
	T-Connector	
	Manual	✓
	Diskette * 1 (1.44MB)	✓
	Power Adapter Module	
	Media Module or Cable (for PCMCIA)	
	Warranty Card	✓
	Slim RedBox	

5.1 Packaging Specification

The detailed packaging specification is shown as below:

2 PCBA		Yes[✓] or No[x]
a. Layers	☑4-layers, ☐ 6-layers, ☐ 2-layers ____	✓
b. Dimensions	122.91(L) x 101.60(W) [mm] 4.839 (L)x 4 (W) [inch]	
c. Connector to media	☑ RJ-45, ☐ BNC,	✓
d. Connector to host	☐DB-___ ,☑ PCI Bus,☐PCMCIA-68 ☐	✓
e. Connector to power	☐ RJ-01, ☐ ____ _____.	
f. Indicator (LEDs)	☑Green for [Link,100M, Activity] ☐Yellow for[ ]	
3 T-Connector		
4 Manual		
a. Form	☐ Booklet, ☑ Sheet fold, ☐ ____ ____.	✓

5 Diskette		Yes[✓]
a. Type	☑ 3.5" / [☑ 1.44MB] x [1]Q'ty	✓
b. Drivers & Utility	☐ 1step ☐ Install.bat ☑ Release.doc ☑ Directory for ☐ AccView/Station ☐ BootROM ☑ Netware ☑ NDIS DOS/OS2 ☑ Packet Driver ☑ NT ☑ Windows 95/98 ☑ Unix ☐ PCNFS _____	✓
6 Power Adapter Module		No [X]
a. Dimensions	(L) x (W) x (D)	
b. Separate Power Cable	☐ AC, ☐ DC , ☐ SPC ,☐ _____	
c. Certification	☐ UL, ☐ FCC , ☐ _____	
7 Media Module		
a. Type	☑ T/P, ☐ T/P+BNC	✓
8 Warranty Card		Yes
9 Labels		
a. Certification		
b. Identification	☑ Product Label ☑Printed, ☐Sticker ☑ Bar Code ☐Printed, ☑Sticker ☐ _____ ☐Printed, ☐Sticker ☐ _____ ☐Printed, ☐Sticker ☐ _____ ☐Printed, ☐Sticker ☑ Label on Diskette ☑Printed, ☐Stick	on ☑ Box, ☐PC on ☐ Box, ☑PC on ☐ Box, ☐PC on ☐ Box, ☐PC on ☐ Box, ☐PC on diskette

6 Certification Requirements

6.1 Network Operation System Certification

The list shows the requirements of certification for network operation system compatibility.

Network Software	Items	Yes[✓] or No[x]
a. Novell	Hardware	
	Drivers ☑ ODI	✓
b. Microsoft	Hardware	
	Driver	✓
c. DEC PATHWORKS	Hardware	
	Driver	
d. ArtiSoft - Lantastic	Hardware	
	Driver	
e. IBM LAN Server	Driver	
f. Banyan VINES	Driver	
g. Packet Driver		
h. NS - RST		

6.2 Hardware Certification

The list shows the requirements for hardware certification.

Items	Standard/Spec./Criteria	Yes[✓] or No[x]
A. EMC		
1. EMI : *a.* FCC Part 15	☑Class B , ☐Class A	✓
2. EMS: a. Radiation Susceptibility	(IEC801.3):3V/M	✓
b. Conduction Susceptibility	(IEC801.6):3V	✓
c. Lightning Surge	Data Line (IEC 801.5) : 2KV Power Line (IEEE 587) : 1.5KV	✓ ✓
d. Transient	(IEC 801.4) : 1KV	✓
e. ESD	(IEC 801.2) : 15KV	✓