Attachment

User's Manual

10/100M PCI Fast Ethernet Network Adapter

User's Manual

Model:LCS-8038TX

FCC Statement

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

Warning! 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 when the equipment is operated in
a commercial environment. 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. Operation of this equipment in
a residential area is likely to cause harmful interference
in which case the user will be required to correct the
interference at his own expense

CE Marking Warning

In a domestic environment this product may cause
radio interference in which case the user may be
required to take adequate measures.

Document Version: 1.0

All Trademarks and trade name are the properties of
their respective owners.

1. Introduction

Congratulations on the purchase of your new N-Way 10/100M PCI Fast Ethernet adapter. This document describes the N-Way PCI Fast Ethernet adapter installation. N-Way 10/100BASE PCI Fast Ethernet adapter supports 10BASE -T and 100BASE-TX Fast Ethernet, and complies with the electrical and protocol requirements of the PCI Local Bus Specification, Revision 2.0 and 2.1.

1. 1 Features

The N-Way PCI Fast Ethernet adapter is a cost-effective, high- performance PCI to Fast Ethernet network interface card. It operates in 10BASE and 100BASE TX modes and integrates easily with Fast Ethernet hub/switch.

- Realtek 8139 PCI 10/100-Mb/s Ethernet LAN Controller
- IEEE 802.3 standards 10BASE-T and 100BASE-TX standards
- 32-bit bus mastering for high throughput and low CPU utilization
- Full-duplex operation at both 10 Mbps and 100 Mbps
- Auto-sensing interface to 10 and 100 Mbps networks
- Three status LED mounted on bracket for easy viewing and troubleshooting
- Single shield RJ-45 connector for use at either speed(Category 3,4 or 5 UTP cable for 10Mbp operation, and Category 5 UTP cable for 100 Mbps operation)
- Plug and Play Installation, "Jumperless" board fully software controlled
- Test program
- Network driver on the diskette for Windows 95, NT, NetWare
- FCC, CE certification

1.2 System Requirements

To use the adapter, you need the following components:

- A PCI-based PC
- A PCI master mode expansion slot that is compliar with the PCI local bus specifications, revisions 2.0 and 2.1
- A 3.5-inch, 1.44MB diskette drive
  The following cables:
  To operate at 10Mb/s, a Category 3 (or higher) UTP cable
  To operate at 100Mb/s, a Category 5 UTP cable

2. Installation

This section describes how to install the adapter. To be connected to a network, you must have the following:

1. Network adapter card installed to your computer.
2. Cabling (compatible with network topology)
3. Software for the adapter card containing both configuration and driver

2.1 Unpack and Inspect

Caution:
Under ordinary circumstances, this adapter card will not be affected by static charge as may be received through your body during handling of the unit. In special circumstances where you may carry an extraordinarily high static charge, it is good practice to reduce the charge by touching a ground before handling the adapter card.

Open the shipping carton and carefully remove all items. In addition to this User's guide, please check over these items:

- One N-Way PCI Fast Ethernet Adapter Card
- One 3.5" [Drivers and Utilities] diskette

Note:
Please contact the place of purchase if any of the listed items are missing.

2.2 Prepare Driver Files

After unpacking the adapter, insert the [Drivers and Utilities] diskette into your floppy driver. Before you inserting this adapter into your PC, you should prepare driver files for network operation system.

1. At your DOS prompt, type the following command, and press <Enter>. **a:\install.exe**
2. The opening screen of the installation screen will appear. The program's manus are listed at the top of the screen.

```
Easy Install Novell DOS Client
Easy Install NDIS2.0 DOS
Install Novell Server Driver
Install NDIS3.0 Driver for Win95
Install NDIS3.0 Driver for NT
Install NDIS2.0 Driver for WFW
Diagnose Program
Online Help Program
Quit
```

Driver Installation Program

3. Use <Up>、<Down> key to select one item for your operation system. A highlight bar indicates which item is selected.
4. Press <Return> key to begin extracting driver files to your hard disk driver.
5. Each chosen installation item will extract drivers file in its specific sub-directory as the following table.

Sub-directory name	Driver Files For OS
C:\MSCLIENT	NDIS 2.0 DOS
C:\NDIS3-95	Windows 95
C:\NDIS3-NT	NT 4.0/NT 3.51
C:\NDIS3WFW	Window For Workgroup 3.11
C:\NWCLIENT	Novell NetWare Client
C:\NOVSRV	Novell NetWare

6. Select <Diagnose Program> to do the diagnostics
7. Select <Online Help Program> to read the instructions for each network software installation.
8. Select <Quit> to return to DOS mode.

2.3 *Install The Adapter*

1. Turn off the computer and unplug its power cord.
2. Remove the computer's cover, in accordance to its manual.
3. Insert the contact edge of the adapter card into the connector of any available PCI Bus master expansion slot. Press the card firmly into the connector to PCI slot. Please make sure that the card's contacts are fully seated in the PCI slot.
4. Install the bracket screw that secures the card to the computer chassis.
5. Replace the computer's cover.
6. Connect the CAT3 or CAT5 UTP cable to the RJ45 network connector.
7. Remove [Drivers and Utilities] diskette from the PC disk drive.
8. Reconnect the computer's power cord, and switch computer power on.
9. If the BIOSs section of your computer's boot program is Plug and Play compliant, then at power-up the BIOS will configure any newly installed adapter automatically.

> **Note:**
> Due to a fault in some Plug-n-Play BIOS programs, it happens occasionally that a newly installed adapter is assigned an Interrupt Number which is already used by another device adapter. In such a case, the conflict of Interrupt Number will cause faults in the behavior of both devices. Then it is necessary to run the CMOS Setup utility, and manually assign a non-conflict Interrupt Number.

2.4 Connect Fast Ethernet

Category 5 UTP cable is required for Fast Ethernet operation. The maximum cable run between the adapter and the supporting hub is 300 ft. Make the network connection by plugging one end of the cable into the RJ-45 receptacle of the adapter, and the other end into a port of the hub.

15 ft max

100M Hub

Twisted Pair Cable
(300ft Max)
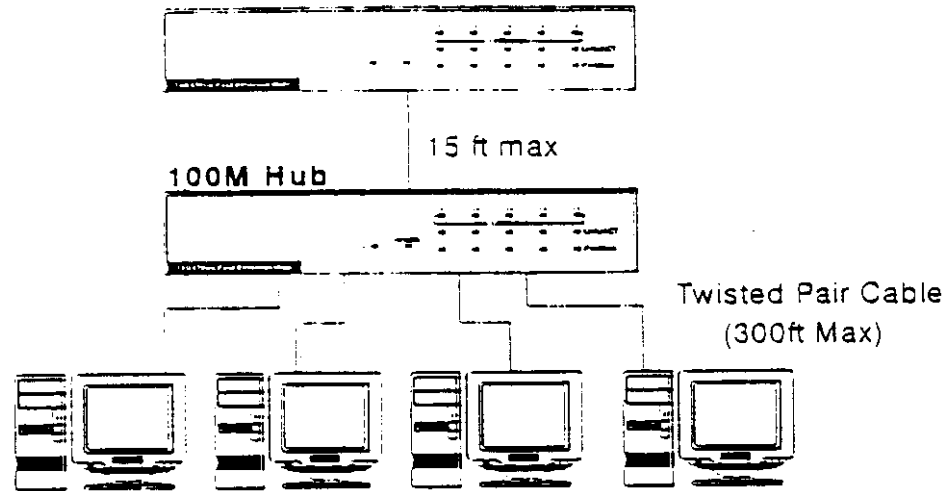
2.5 Connect 10Mbps Ethernet

Category 3, Category 4, and Category 5 UTP cable, as well as EIA/TIA 568 100 ohm STP cable, all qualify under Ethernet cabling rules. The maximum cable run between this adapter and the supporting hub is 300 ft. Make the network connection by plugging one end of the cable into the RJ-45 receptacle of this adapter, and the other end into a port of the hub

10M Hub

Twisted Pair Cable
(300ft Max)
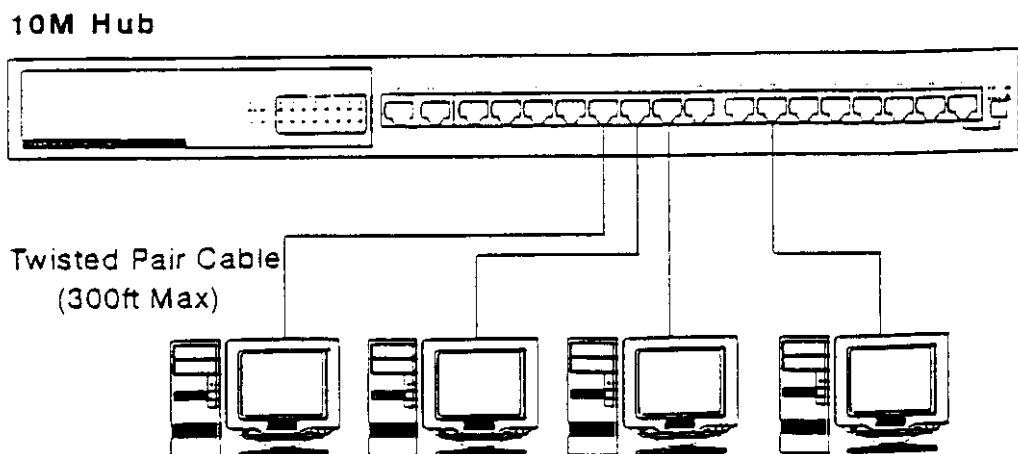
2.6 Drivers and Utilities Diskette

The [Drivers and Utilities] diskette contains the following network OS drivers

- Novell NetWare (client/server)
- NT 3.51, NT4.0
- Windows 95
- Client 32
- Microsoft Client (NDIS2.0 DOS)
- Window For Workgroup 3.11

2.7 Software Installation

Because many network environments in which the adapter may be installed, you can run "install.exe" for the help about the frequency of revisions in those network systems, and the instructions for each network software installation.

2.8 Installation for Windows 95

> **Note:**
> Before you install the driver for Windows 95. Please check your Windows 95 version from [System Properties]. Windows 95 OSR1 version code is : [4.00.950] or [4.00.950 A] , Windows 95 OSR2 version code is [4.00.950 B]. Please use appropriate driver according to your Windows 95 version.

When you add the adapter after installing Windows 95, the Add New Hardware Wizard takes you step by step through the process of installing the hardware.

1. Please refer to this guide section [2.2 Prepare driver files] procedures to extracting drivers files for Windows 95.
2. Please refer to this guide section [2.3 Install The Adapter] procedures to install this adapter into your computer.

2.⁴

Cε

op

an

co

RJ

a ‖

3. After Windows 95 reboot, the PCI Ethernet Controller will be found. Please press <Next> button.

4. Because the driver files are in sub-directory c:\NDIS3 95 instead of A floppy driver. Please press <Other Locations> button.

5. Please type the location that contains driver files and press <OK> button to finish installation procedure.

6. Please refer to the other Windows 95 books for installation clients of network operating system, services and protocols. The network client enables computer to communicate with a specific network operating system. Each network server type from Novell, Microsoft, Banyan, and others requires a client to be loaded to communicate with server from each of these vendors. The Services enable your computer to share your hard drive or printer with others on the network. The protocol defines how computers can find other computers and what rules they use to transfer data. The most popular protocols are IPX/SPX, TCP/IP, NetBEUI, and NetBIOS.

2.∶

Cε

wₑ

ur

bε

M

th

th

10

Tw

2.9 Test Program

This test program verifies configuration of the adapter as set by the installation procedure, and assists with isolation of any faults in operation. Test procedure are optional, and will only be useful in the unusual event that there is a fault, such as an interrupt number conflict among your computer's addon cards. If your installation provides normal operation, you do not need these test procedures. Select <Diagnose Program> from "Install.exe" allows you to do,

```
View Current Configuration
Set Up New Configuration
Run Diagnostics
Exit RSET1210
```

Choose <Set Up New Configuration> item allows you to set up the Network Speed, 10 or 100M, and Transmission Mode, Full or Half Duplex, and so on. Choose <Run Diagnostics> item to run the adapter test program. Adapter test program includes :
<EEPROM Test>, <Run Diagnostics on Board>, and <Run Diagnostics on Network>.

After choosing the <Run Diagnostics on Board> item, the screen will display like,

```
Node ID ----------------------------------- 00 E0 7D 00 00 0E
Network Speed -------------------------- 100Mbps
I/O Base ---------------------------------- E000 H
Interrupt ---------------------------------- 11
Full-Duplex ------------------------------- Disabled

                                Pass Count      Fail Count

A. I/O Register
B. 100 Mbps Loopback
C. 10 Mbps Loopback
D. Cable Connection
```

<Cable Connection> test reminds you that the connection link might be fail, either the cable is unplugged or the cable link fails.For the <Run Diagnostics on Network> test, it is necessary to reconnect your computer with its supporting hub or anothercomputer. This is a "Ping-Pong" test. This test cannot be full implemented unless a two computers on the LAN , in order to send or receive the test packets between computers.

> **Note:**
> Adapter testing program can not be used in Windows 95 DOS mode, or 4DOS. Do not load any device drivers , memory manager software, antivirus software. Adapter testing program only can work in "clear" DOS prompt.

1. At your DOS prompt, type the following command, and press <Enter>. *a:\install.exe*
2. The opening screen of the installation screen will appear. The program's manus are listed at the top of the screen.
3. Use <Up> ` <Down> key to select [Diagnose Program] item.
4. Press <Return> key
5. Wait the next screen, and select <Run Diagnostics> item

Appendix A

LEDs and Connectors

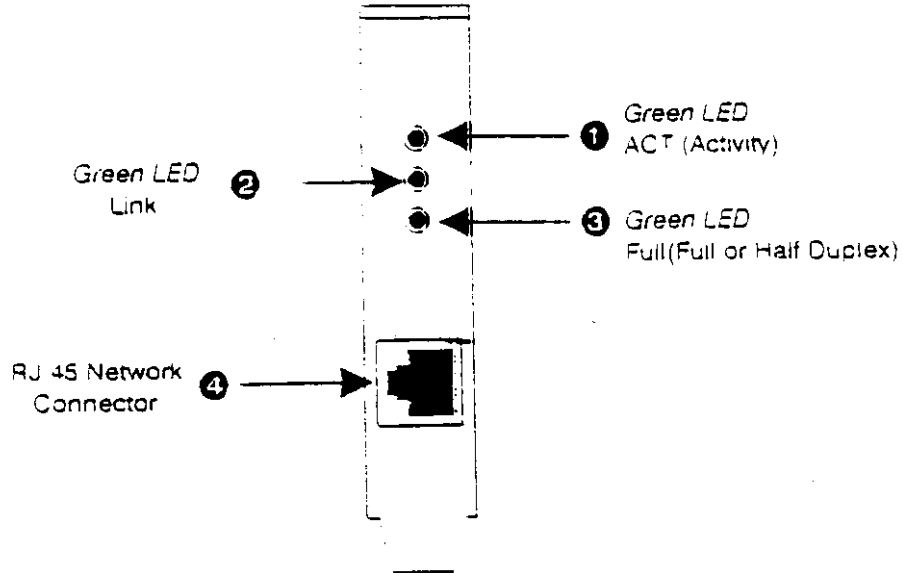This figure shows the LEDs and connectors for the adapter, and Table A describes the LED status.

Table A LED status descriptions

Reference	Component	Led Status	Description
ACT	Green Led	Blinking	Traffic is traversing the port, TX or RX
ACT	Green Led	Off	No Traffic
Link	Green Led	On	Network Connected
Link	Green Led	Off	Network Disconnected
Full	Green Led	On	Operating at Full duplex
Full	Green Led	Off	Operating at Half duplex