Preface

This manual describes how to install and use the Fiber Ethernet Adapter. This Fiber Adapter allows options of different fiber connections, such as connector types and segment distance.

To get the most out of this manual, you should have an understanding of Ethernet networking concepts.

In this manual, you will find:

- Introduction on Fiber Adapter
- Product features
- LEDs functions
- Hardware installation
- Software installation
- Specifications

Table of Contents

PREFACE **1**

TABLE OF CONTENTS **2**

PRODUCT OVERVIEW **3**

FIBER ETHERNET ADAPTER 3
PACKAGE CONTENTS 3
PRODUCT FEATURES 4
Driver Support 5
Boot ROM Support 5
Software Support 5
LEDs 6

HARDWARE INSTALLATION **7**

INSTALLING FIBER ADAPTER INTO PCI SLOT 7
CONNECTING REMOTE WAKE-UP CABLE 9
CONNECTING TO YOUR NETWORK 10
Cabling Requirements 11

SOFTWARE INSTALLATION **12**

DIAGNOSTIC SOFTWARE 12
About Hardware's Configuration 13
Run Diagnostics 14
LOADING NETWORK DRIVERS 15
Quick List for Supported Network Drivers 16

SPECIFICATIONS **17**

ORDERING INFORMATION **18**

Product Overview

Fiber Ethernet Adapter

Figure 1: Adapters with SC (left) and ST (right) connectors, featuring two LEDs

Package Contents

When you unpack the product package, you shall find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

- ***Fiber Adapter***
- ***User's Manual***
- ***Software Diskette***

Product Features

- Provide a variety of fiber connections:
  SC, ST, MT-RJ or VF-45 connectors for multi-mode, and SC connector for single-mode
- Support 32-bit Bus Master operation
- PCI bus clock speed range from 16.75 to 40 MHz
- Support Wake-On-LAN (WOL) function and remote wake-up
- Support half-duplex or full-duplex operation for up to 200Mbps data transfer rate
- Compliant with PCI plug-and-play
- Compliant with IEEE 802.3u 100BASE-FX
- Compliant with PCI Specifications Revision 2.1
- Low CPU utilization
- Provide status LEDs

Driver Support

The Fiber Adapter supports a wide range of drivers for commonly used network operating systems:

- NDIS2 (DOS, OS/2, LANtastic, WFW3.1…)
- NDIS for Win95, 98, NT 3.51, 4.0, 5.0, WFW3.11
- NetWare ODI driver for DOS, OS/2, and NetWare 3.x, 4.x, 5.0 Server
- SCO Unix driver
- Linux driver

Boot ROM Support

- RPL Boot ROM for Novell NetWare, Microsoft NT

Software Support

- Setup/Diagnostic Program for DOS (*RSET8139.EXE*)

<Note>

i. Win2000 driver (RTL8139 A/B/C/8130 Series Adapter) is bundled with Windows 2000.

ii. *RSET8139.EXE* is a DOS only application. It may not run properly under the DOS prompt in Windows.

LEDs

① **LNK** Link

This LED comes on when a network connection is established successfully.

② **ACT** Activity

This LED flashes when the port is transmitting or receiving data.

LEDs	Status	Indication
LNK	Steady	A valid network connection established. LNK stands for LINK.
	Off	Disconnection.
ACT	Flashing	Transmitting or receiving data. ACT stands for ACTIVITY.
	Off	No activity.

Hardware Installation

Installing Fiber Adapter into PCI slot

Step 1: Turn off the power to the PC.

Step 2: Remove any metal decorations from your hands and wrists.

Step 3: Remove the cover from your PC.

Step 4: Locate an empty, non-shared bus mastering 32-bit PCI slot and remove the corresponding backplate. Save the screw for use in Step 6.

<Note>

i. Do not install the Fiber Adapter in a shared PCI slot. Avoid any PCI slot next to an ISA slot because this is often a shared slot and does not support bus mastering.

ii. If you are going to install the Remote Wake-Up cable, choose an available PCI slot most close to the 3-pin Remote Wake-Up connector on the PC motherboard.

iii. If you have problems in identifying a suitable slot, check your PC documentation or ask your system administrator for help.

Step 5: Carefully insert the Fiber Adapter into the chosen slot and press firmly with proper push to ensure it is fully seated in the slot.

Step 6: Secure the Fiber Adapter with the screw you saved in step 4.

<Note>

If you wish to use the Remote Wake-Up function, please complete the installation in next section "Connecting the Remote Wake-Up Cable" before proceeding to step 7.

Step 7: Replace the PC cover.

Step 8: Proceed to "Connecting to Your Network" section.

Figure 2: Installing Fiber Adapter into 32-bit PCI slot

<Note>

Always ensure the power is cut off before any installation to avoid electric shock and possible damage to the equipments.

Connecting Remote Wake-Up Cable

This is an optional function. Proceed with the installation only when your PC supports this Remote Wake-Up and you wish to make use of this function. For more information, please check the User's Guide for your Motherboard.

Step 1: Make sure the power to the PC is off.
Follow Step 1~3 in previous section.

Step 2: Check if the Fiber Adapter is properly installed in a PCI slot.

Step 3: Prepare a Remote Wake-Up cable. Connect the cable from Fiber Adapter to motherboard connector. Refer to Figure 3 below for details.

Step 4: Replace the PC cover then.

Step 5: Proceed to "Connecting to Your Network" Section.

Figure 3: Connecting Wake-Up cable

Connecting to Your Network

This section describes how to connect the Fiber Adapter to a 100 Mbps fiber-based Ethernet network, which contributes to its optimal performance.

<Note>

You must connect the Fiber Adapter to the network before installing the network driver.

Step 1: Remove the protective covers from the Fiber Adapter's connector.

Step 2: Prepare a network cable with corresponding connectors for the two end devices, one end to the Fiber Adapter and the other to a 100Mbps fiber port on the network hub or switch.

Step 3: Connect the network cable to the connector on the Fiber Adapter. This network cable consists of two individual cables: one for 'transmission (TX)', and the other for 'reception (RX)'. Refer to Figure 4 for details.

Step 4: Connect the other end of the network cable to a 100BASE-FX hub or a switch.

<Note>

i. Insert the cable that is connected to the transmit (TX) connector on the Fiber Adapter into the receive (RX) connector on the network hub or switch.

ii. Insert the cable that is connected to the receive (RX) connector on the Fiber Adapter into the transmit (TX) connector on the network hub or switch.

Step 5: When the cable is properly connected to two end devices, turn on the power to the PC.

Step 6: Check the LNK (Link) LED. The LED will come on when the Fiber Adapter is receiving a good link signal from the connected device, a hub or switch.

Step 7: Proceed to next section for installing the network driver.

Cabling Requirements

For cabling requirements and maximum segment distance when connecting the Fiber Adapter to your network, please refer to the Ordering Information on page 18.

Figure 4: Connecting to your network

Software Installation

Diagnostic Software

The program (*RSET8139.EXE*) provided in the software diskette is 1) to set up the Fiber Adapter's hardware configuration, and 2) for diagnostic purpose.

Step 1: Execute the program. **This program MUST be run under pure DOS.** Press <SPACE> to continue.

Step 2: The Main Menu is as shown below:

About Hardware's Configuration

Step 1: Choose "View Current Configuration" from the Main Menu and press <ENTER>.

Step 2: If you want to change the current configuration, choose "Set Up New Configuration" from the Main Menu and press <ENTER> to proceed.

Step 3: Choose "Media Type" and press <ENTER>. For the Fiber Adapter, you can only select [Auto Detect], [100 Full] or [100 Half] from the "Media Type" selection. The adapter will not function when selecting [10 Full] or [10 Half].

Step 4: If you have Boot ROM installed, choose "Boot ROM Size" and press <ENTER>. Select [Boot Enabled] or [Boot ROM Disabled].

Step 5: Same steps for "Flow Control", "Wake On LAN", "Link Change" and "LAN Wake Signal": Choose, select, <ENTER>, and <ESC> to exit.

Run Diagnostics

Step 1: Choose “Run Diagnostics” from the Main Menu. Press <ENTER>.

Step 2: Select a test or diagnostics, and press <ENTER> to run:

--> Run EEPROM Test

Check to see if EEPROM is working fine.

--> Run Diagnostics On Board

Check Pass/Fail Count on A) I/O Register B) Loopback Test

--> Run Diagnostics On Network

Check the Adapter’s ability to transmit/receive data on network.

E.g. Two PCs with the Fiber Adapters installed. Set one PC as ‘Initiator’ to send data, and the other as ‘Responder’ to receive data.

--> Run Power Management Test

Check Wake-On-LAN and remote wake-up function.

E.g. Two PCs with the Fiber Adapters installed. Set one PC as ‘Master’, and the other as ‘Target’. The ‘Master’ PC is to send magic packet or wake-up frame to remotely wake up the ‘Target’ PC when it is on power down mode.

Step 3: Press <ESC> to stop a running test or exit to the Main Menu.

<Note>

i. *RSET8139.EXE* is a DOS only application. It may not run properly under the DOS prompt in Windows.

ii. This program MUST run without any network driver installed to avoid any errors.

iii. Press <F1> for help. For driver updates or other useful programs, please go to www.realtek.com.tw/cn/driver/8139-driver.htm for downloads.

Loading Network Drivers

The Fiber Adapter is shipped with one software diskette enclosed. The following drivers are provided in the diskette:

- NDIS2 (DOS, OS/2, LANtastic, WFW3.1…)
- NDIS for Win95, 98, NT 3.51, 4.0, 5.0, WFW3.11
- NetWare ODI driver for DOS, OS/2, and NetWare 3.x, 4.x, 5.0 Server
- SCO Unix driver
- Linux driver

Below is a quick list showing the path for supported drivers and text files. Please refer to the text files for installation details.

Step 1: Find the suitable network driver for the platform that you are using. Carefully read the text file for that driver.

Step 2: Follow the step-by-step instruction in the text file to load the driver. For Windows 95, 98 or NT, it takes only a few clicks to complete the driver installation of the Fiber Adapter.

<Note>

i. Win2000 driver (RTL8139 A/B/C/8130 Series Adapter) is bundled with Windows 2000.

ii. The Fiber Adapter doesn't support 10BASE-FL standard, and therefore, if you select through the software to force the speed at 10Mbps, the Fiber Adapter will fail to function. That is, the Fiber Adapter can only work at 100Mbps speed.

Quick List for Supported Network Drivers

Network OS	Text File Path	Driver Path
Windows NT 3.51	\Winnt\Msnt.txt	\Nt351\RTL8139.SYS
Windows NT 4.0	\Winnt\Msnt.txt	\Winnt\RTL8139.SYS
Windows 95 NDIS3 OSR2	\W95osr2\Netrts.inf	\W95osr2\RTL8139.SYS
Windows 98 NDIS5	\Win98\Win98.txt	\Win98\RTL8139.SYS
Windows for Workgroups 3.1 NDIS2	\Ndis2\Ndis.txt \Ndis2\Wfw.txt	\Ndis2\Dos\RTSND.DOS
Microsoft Network Client 3.0	\Ndis2\Ndis.txt \Ndis2\Msclient.txt	\Ndis2\Dos\RTSND.DOS
LAN Manager 2.0	\Ndis2\Ndis.txt \Ndis2\Lanman.txt	\Ndis2\Dos\RTSND.DOS
Banyan VINES	\Ndis2\Ndis.txt \Ndis2\Banyan.txt	\Ndis2\Dos\RTSND.DOS
ARTISOFT LANtastic 5.0, 6.0	\Ndis2\Ndis.txt \Ndis2\Lantasti.txt	\Ndis2\Dos\RTSND.DOS
DEC PATHWORKS	\Ndis2\Ndis.txt \Ndis2\Pathwork.txt	\Ndis2\Dos\RTSND.DOS
Sun PC-NFS	\Ndis2\Ndis.txt \Ndis2\Pcnfs.txt	\Ndis2\Dos\RTSND.DOS
IBM LAN Server (DOS)	\Ndis2\Ndis.txt \Ndis2\Lansvr.txt	\Ndis2\Dos\RTSND.DOS
IBM LAN Server (OS/2)	\Ndis2\Ndis.txt \Ndis2\Lansvr.txt	\Ndis2\Os2\RTSND.OS2
Mac OS	\Macos\Install.txt	\Macos\RTL8139.SIT
Microsoft LAN Manager (DOS)	---	\Mslanman.dos\Drivers\Ethernet\ RTL8139\RTSND.DOS
Microsoft LAN Manager (OS/2)	---	\Mslanman.os2\Drivers\Ethernet\ RTL8139\RTSND.OS2
Netware Server 3.12, 4.10, 4.11, 5.0 Netware Client (DOS) Netware Client (OS/2)	\Netware\Readme.txt --- ---	\Netware\RTSSRV.LAN \Netware\Dosodi\RTSODI.COM \Netware\Os2odi\RTSOS2.SYS
Netware Client 32 for DOS & Microsoft Windows 3.x	\Netware\Readme.txt	\Netware\RTSSRV.LAN
Netware Client 32 for Microsoft Windows 95 OSR2	\Netware\Readme.txt	\Netware\RTSSRV.LAN
Linux	\Linux\Linux.txt	\Linux\RTL8139.c
SCO UnixWare 7.x	\Unixware.7\Install.txt	\Unixware.7\RTSPKG.TAR
SCO Unix 4.x	\Sco\Sco4.txt	\Sco\4.x\DRIVER.O
SCO Unix 5.x	\Sco\Sco5.txt	\Sco\5.x\8139.VOL

Specifications

Applicable Standards	IEEE 802.3u 100BASE-FX PCI Specifications Revision 2.1
Speed 100BASE-FX:	200Mbps full-duplex 100Mbps half-duplex
Performance	148,800pps for 100Mbps
Fiber Cable	62/125µm multi-mode fiber-optic cable, up to 2 km 10/125µm single-mode fiber-optic cable, up to 75 km
Wavelength	1300nm
LED Indicators	LNK (Link) /ACT (Activity)
Dimensions	136 mm × 89 mm
Net Weight	90g approx.
Power Consumption	5VDC, 500mA max.
Operating Temperature	0°C to 40° C (32°F to 104°F)
Storage Temperature	-25°C to 70°C (-13°F to 158°F)
Humidity	10%-90% non-condensing
Emissions	FCC part 15 Class B, CE Mark Class B, VCCI Class B

Ordering Information

Please indicate the desired connector type and connection distance when ordering.

Connector Type on Fiber Adapter	**Wavelength of 1300nm Fiber Optic required**	**Maximum Distance (* full-duplex)**
ST	Multi-mode, 62/125 µm	2 km
SC	Multi-mode, 62/125 µm	2 km
VF-45	Multi-mode, 62/125 µm	2 km
MT-RJ	Multi-mode, 62/125 µm	2 km
SC	Single-mode, 10/125 µm	15 km
SC	Single-mode, 10/125 µm	40 km
SC	Single-mode, 10/125 µm	75 km

<Note>

The maximum node-to-node network distance is in full-duplex operation.