

Exhibit E - User's Manual

Installation Guide

10/100 Fast Ethernet PCI Adapter

GFC2206

ALFA INC.

The Federal Communications Commission Statement

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 instruction, 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 changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Model : GFC2206

FCC ID : L3G-ETH0012

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.

Made in : Taiwan R.O.C.

User's Manual

Thank you for purchasing our product!

This guide contains information to install and configure the 10/100 Fast Ethernet PCI Adapter for proper operation. The 10/100 Fast Ethernet PCI Adapter is a 32-bit 10/100 Mbps Ethernet network interface card for PCI local bus-compliant PCs. It supports bus mastering architecture and auto-negotiation which make it possible to use one common RJ-45 port and standard twisted-pair cabling for both 10 Mbps and 100 Mbps connection. Extensive driver support for commonly used network operating systems is also provided.

Package Contents

Carefully unpack the contents of the package and verify them against the checklist below.

10/100 Fast Ethernet PCI Adapter

10/100 Fast Ethernet PCI Adapter
Driver Diskette (included User's Manual)

Please inform your dealer immediately should there be any incorrect, missing or damaged parts.

If possible, retain the carton, including the original packing materials. Use them again to repack the product in case there is a need to return it for repair.

Back up your Driver Diskette and use the copy as the working diskette. Do this to protect the original from accidental damage.

Hardware Description

The 10/100 Fast Ethernet PCI Adapter has a RJ-45 connector and three LED indicators.

LED Indicators

The adapter provides LED indicators for monitoring network conditions. This section describes the function of each LED.

100BASE-TX Status Indicator (100)

Color : Green

Function : Network connection indicator for 100 Mbps port

This LED is used with 100BASE-TX only.

It lights up to indicate that the port is operating at 100 Mbps.

10BASE-T Status LED Indicator (10)

Color : Green

Function : Network connection indicator for 10Mbps port

This LED is used with 10Base-T only.

If lights up to indicate that the port is operating at 10Mbps.

Activity Indicator (ACT)

Color : Green

Function : Incoming and outgoing network traffic indicator

This LED lights up to indicate the presence of network packets passing through the connected port. The rate of flashing is proportional to the amount of traffic passing through this port.

Summary of LED Display

During normal network operation, the adapter's LEDs display the following indications:

Table 1.1 Summary of LED Indicators			
Media Type	LNK(Green)	100(Green)	ACT (Green)
100BASE-TX	on	on	flashing
10BASE-T	on	off	flashing

Hardware Installation

1. Power off the PCI Local bus PC and remove its cover.
Please refer to your computer's Installation Manual for instructions on how to remove the cover.
2. Select an available slot and plug in the adapter.
The adapter provides a 32-bit bus interface.
It plugs into any available PCI bus slot that supports Bus Master mode. Remove the bracket on the slot you've selected, then insert the adapter into the slot. Carefully push the adapter into the slot until all the edge connectors are firmly in place. Screw the adapter's face plate onto the opening in the back of the computer to secure the connection. Then replace the PC's cover.
3. Connect your adapter to the network.
Connect the adapter to the network using twisted-pair cabling with an RJ-45 connector.
4. Power on the PC.
After hardware installation has been completed, power on the computer.
5. Change your computer's BIOS setup to enable Bus Master mode and select an IRQ setting.
The setup procedure and the terminology used when referring to Bus Master mode and IRQ parameters may vary with your computer's BIOS. Some BIOS have Bus Master mode enabled for all the motherboard's PCI expansion slots, while others provide the option to turn this feature on or off. Refer to your computer's installation manual for more information. Please see the following section on Adapter Configuration for related information.
6. Install the software driver.
For related topics see the section on Software Drivers later in this chapter.

Adapter Configuration

The adapter is configured using the host PCI computer's BIOS setup program. This is done by changing the computer's BIOS setting to enable bus master

mode, and then setting up the IRQ. The procedure to implement this and the terminology used depend on the BIOS you are using.

Some BIOS have Bus Master mode enabled for all the motherboard's PCI expansion slots; others provide the option of turning this feature on or off. For example, if your computer uses the Phoenix BIOS, there is a "Device Select" field where you should input the slot number of the PCI slot where the adapter is installed, say "Slot 3 Device." Then for the fields that read as "Enable Device" and "Enable Master" you should change the settings to "Enabled." The same is true for the adapter's IRQ setting, which is mapped to the BIOS IRQ setup of the host PCI computer.

Finally, you need to set the Trigger/Routing field to select the Trigger method by which the IRQ is assigned or routed to the PCI slot. There are three types of settings to choose from:

- * Level/Auto - This is usually the default. Choosing this option leaves the assigned IRQ free for other use if the installed card does not use it.
- * Level/Forced - If you are not able get the PCI card to work properly, choose this option. This will assign the specified IRQ permanently to the card.
- * Edge/Auto - Some PCI boards support this option. Do not use it for this card.

Note : The PCI adapters can only function with the EMM386.exe memory manager program version 4.49 or later. You can verify its version number by entering EMM386 at the DOS Prompt.

Do not specify the "highscan" option with the EMM386.exe statement in your config.sys file or your system will hang.

If you run MEMMAKER and select Custom Setup, do not specify "Aggressively scan upper memory", or it will automatically insert the HIGHSCAN flag into the EMM386 command line. This parameter cannot be manually removed once it's installed, doing so will cause the extended memory manager to malfunction.

Specifications

System Configuration

Transmission Technique	: Baseband
Topology	: Star
Transmission Rate	: 10 Mbps and 100 Mbps (Auto-negotiation)
Full-Duplex Operation	: 10 Mbps and 100 Mbps
Media Type Supported	: Cat. 3, 4 and 5 UTP for 10BASE-T Cat. 5 UTP for 100BASE-TX
Hub-to-Workstation Distance	: 100m
Cable Connections	: One RJ-45 (socket) for
Standards Conformance	: IEEE 802.3 10BASE-T, and IEEE 802.3u 100BASE-TX
End-User Devices Supported	: PCI local bus-compliant PCs
Data Bus Width	: 32-bit
Bus Access	: Bus Master
I/O Address	: Automatically determined by
Interrupt	: INT A on PCI slot pin

Operating Environment

Power Consumption	: 100BASE-TX +5V/360mA (maximum) 10BASE-T
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+5V/350mA (maximum)
Temperature : 0C to 55C/32F to 131F
Humidity : 10% to 90% (Non-condensing)
Size : 123mm x 65mm

Hardware Certification
Certification : CE Mark
Emissions : FCC Class B, VCCI Class 2, CISPR22 Class B
Immunity : IEC 1000-4-2,3,4

Software Driver Support

NetWare ODI Drivers
Novell NetWare 3.12, 4.1, 4.11, NetWare LAN WorkPlace TCP/IP,
Novell LAN Analyzer for NetWare, IBM OS2 Warp Connect

Packet Drivers
FTP PC/TCP, NCSA TCP/IP

NDIS 2.0 Drivers
Microsoft LAN Manager V2.x, IBM LAN Server 4.0, IBM LAN Support,
DEC PATHWORKS V.50

NDIS 3.0 Drivers
Windows for Workgroups 3.11, Windows 95,
Windows NT 3.50,3.51,4.0

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Product Support

This release diskette can be used for the following Ethernet adapters:

Generic-PCI (GFC2206)

How to Config Your PCI adapter

1. Go to the PCI configuration item in BIOS setup.
2. For legacy computers please follow the following steps to configure the PCI slot:
 - a). You should know which slot your adapter is plugged in to.
Look for the physical location of the slot on your PCI motherboard.
 - b). Set to "Enable" the field that reads as "this device".
 - c). Set to "Master" the field that reads as "this item".

The GFC2206 PCI adapter MUST be installed in an expansion slot that supports "Bus Master". Refer to your system documentation to determine which slots support Bus Mastering.

- d). Some BIOS Setups allow you to select which interrupt line you can use. In our case, select "INT A" for the field that reads as "this item".
- e). Select an IRQ of your choice; make sure it does not conflict with existing IRQs in use.
- d). Select the "Trigger method" by which the IRQ is assigned or routed to the PCI slot. Choose the "level-trigger" option. Multiple GFC2206 PCI adapters can share the same PCI interrupt and all must use INTA with level-trigger mode.

- 3. Run the diagnostic program found in the driver diskette. If a problem arises during the installation, contact your dealer.

Conflict with Microsoft EMM386

The PCI adapters can only function with the EMM386.exe memory manager program version 4.49 or later. You can verify its version number by entering EMM386 at the DOS Prompt.

Do not specify the "highscan" option with the EMM386.exe statement in your config.sys file or your system will hang.

If you run MEMMAKER and select Custom Setup, do not specify "Aggressively scan upper memory", or it will automatically insert the HIGHSCAN flag into the EMM386 command line. This parameter cannot be manually removed once it's installed, doing so will cause the extended memory manager to malfunction.

Diskette Contents

Files and Subdirectories	Description
GFCPCI.INF	Installation information file for Windows 95 driver.
OEMSETNT.INF	Installation information file for Windows NT NDIS/3 driver.
OEMSETUP.INF	Installation information file for Windows For Workgroup 3.11 driver.
README.TXT	It includes instructions & troubleshooting Guide for adapter installation.
RELEASE.TXT	This file. Presents a summary of the contents of your Driver Diskette.
SET2206.EXE	This file can help you to test the GFC2206 card.
\DOS	Contains files Novell NetWare UNC installation and related files
\LANDRV32	Subdirectory for Novell NetWare Client 32 driver, Also includes text file for instructions to

install the driver.

\MSLANMAN.DOS Subdirectory for DOS NDIS drivers for Microsoft LAN Manager Versions 1.x and 2.x; the text file for instructions to install the driver is in the directory \NDIS. (Lanman.txt)

\NDIS Subdirectory containing programs and installation instructions for using the NDIS/2 driver under the following programs:

- * Microsoft Windows for Workgroups
- * Microsoft LAN Manager
- * IBM LAN Server
- * Banyan VINES
- * ARTISOFT LANTastic
- * Wollongong Pathway Access
- * DEC PATHWORKS
- * SUN PC-NFS

\NETWARE Subdirectory for Novell NetWare Drivers

 \ODI Subdirectory for Novell NetWare ODI driver

 \4.X Subdirectory for Novell NetWare ODI ver 4.x server driver. Also includes text file for instructions to install the driver.

 \3.12 Subdirectory for Novell NetWare Ver 3.12 driver. Also includes text file for instructions to install the driver.

\PKTDRV Subdirectory for FTP spec-compliant packet driver; also includes instructions to install the driver

\WFW311 Subdirectory for driver for Microsoft Windows for Workgroups.

\WIN95 Subdirectory for driver for Microsoft Windows 95 on x86 platform.

\WINNT Subdirectory for NDIS/3 driver for Windows NT 3.5, 3.51 or 4.0 on x86 platform. Also includes text file for instructions to install the driver.
