Preface

This manual describes how to install and use the PCI Express Gigabit Ethernet Adapter. This PCI Express Gigabit Ethernet 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 PCI Express Gigabit Ethernet Adapter
- Product features
- LEDs functions
- Hardware installation
- Software installation
- Specifications

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Product Overview

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.

√ √ PCI Express Gigabit Ethernet Adapter User's Manual Software Driver

Product Features

- Provides
 - One 1000Base-SX/LX/BX port or
 - One SFP slot
- Fiber connections:
 - SC or SFP connector for multi-mode and single-mode
 - Compliant with IEEE 802.3z 1000Base-SX/LX
- PCI Express 1.1 compliant
- Supports Microsoft NDIS5 Checksum Offload (IP, TCP, UDP) and Large Send Offload
- Supports Preboot Execution Environment (PXE) 2.1
- Supports IEEE802.1Q VLAN Tagging
- Supports IEEE802.1p Layer 2 Priority Encoding
- RFC 1157 SNMP v1 compliant
- Supports PCI Message Signaled Interrupt (MSI)
- Supports Alert Standard Format (ASF) 2.0
- Supports Plug-and-Play
- Supports Jumbo Frame up to 9K
- IEEE 802.3x full duplex flow control
- Two LEDs: LNK (link) (Green), ACT (activity) (Yellow)
- 0°C to 45°C (32°F to 113°F) operating temperature range
- Low-profile version is also available

<Note>

PCI Express Gigabit Ethernet Adapter should be set to auto negotiation mode and other PCI Express Gigabit Ethernet Adapter should be set to 1000Mbps full duplex mode when two PCI Express Gigabit Ethernet Adapters are connected to each other via fiber connectors. Please change jumper settings of JP2 on PCI Express Gigabit Ethernet Adapter to set auto negotiation mode or 1000Mbps full duplex mode for PCI Express Gigabit Ethernet Adapter.

Auto negotiation (default setting): Change jumper cab to position 2 and 3 of JP2.

1000Mbps full duplex: Change jumper cab to position 1 and 2 of JP2.

Driver Support

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

- Mirosoft Windows 2000, XP (32/64-bit), 2003, Vista (32/64-bit), 7, 8
- FreeBSD 7.x, 8.0
- Linux driver for kernel 2.4.x, 2.6.x (Support x86, x64)
- MacOS 10.4, 10.5, 10.6 and 10.7 on Intel-based Mac computer

LEDs

- LNK Link
- ACT Activity

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

Hardware Installation

Installing Ethernet Adapter into PCI Express Slot

Step 1: Pull out the PC's power cord from AC power outlet.

<Note> The PC's power cord must be pulled out from AC power outlet, rather than just power off the PC before installing or removing Ethernet Adapter.

- Step 2: Remove any metal decorations from your hands and wrists.
- Step 3: Remove the cover from your PC.
- Step 4: Locate an empty bus mastering PCI Express slot and remove the corresponding backplate. Save the screw for use in Step 6.
- Step 5: Carefully insert the PCI Express Gigabit Ethernet Adapter into the chosen slot and press firmly with proper push to ensure it is fully seated in the slot.
- Step 6: Secure the PCI Express Gigabit Ethernet Adapter with the screw you saved in step 4.
- Step 7: Replace the PC cover.
- Step 8: Proceed to "Connecting to Your Network" section.

Connecting to Your Network

PCI Express Fiber Gigabit Ethernet Adapter

This section describes how to connect the PCI Express Fiber Gigabit Ethernet Adapter to a 1000 Mbps fiber-based Ethernet network, which contributes to its optimal performance.

<Note> You must connect the PCI Express Fiber Gigabit Ethernet Adapter to the network before installing the network driver.

- Step 1: Remove the protective covers from the PCI Express Fiber Gigabit Ethernet Adapter's connector.
- Step 2: Prepare a network cable with corresponding connectors for the two end devices, one end to the PCI Express Fiber Gigabit Ethernet Adapter and the other to a 1000Mbps fiber port on the network switch.
- Step 3: Connect the network cable to the connector on the PCI Express Fiber Gigabit Ethernet Adapter. This network cable consists of two individual cables: one for 'transmission (TX)', and the other for 'reception (RX)'.
- Step 4: Connect the other end of the network cable to a 1000BASE-SX/LX switch.

<Note>

- i. Insert the cable that is connected to the transmit (TX) connector on the PCI Express Fiber Gigabit Ethernet Adapter into the receive (RX) connector on the network switch.
- ii. Insert the cable that is connected to the receive (RX) connector on the PCI Express Fiber Gigabit Ethernet Adapter into the transmit (TX) connector on the network 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 PCI Express Fiber Gigabit Ethernet Adapter is receiving a good link signal from the connected device, a switch.
- Step 7: Proceed to next section for installing the network driver.

Cabling Requirements

For connector type, cabling requirements, and maximum segment distance when connecting the PCI Express Gigabit Ethernet Adapter to your network, please refer to the following table.

Speed	Connector	Port Speed Half/Full Duplex	Cable	Max. Distance
1000Base-SX	SC, LC	2000 Mbps	MMF (62.5µm)	220 m 2 km
1000Base-SX	SC, LC	2000 Mbps	MMF (50µm)	550 m
1000Base-LX	SC, LC	2000 Mbps	SMF (9, 10µm)	10, 20, 50 km
1000Base-BX	SC, LC	2000 Mbps	SMF (9, 10µm)	20, 40 km

<Note>

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

Driver Installation for MAC

- 1. Turn on the computer after plugging PCI Express Gigabit Ethernet Adapter to PCI Express slot
- 2. Insert driver CD into CD-ROM drive. Specify the driver location and click the driver to continue.



3. Select a Destination: Select the disk where you want to install the software. And then click "Continue" to continue.



User's Manual

4. Installer is trying to install new software. Type your password to allow this. Click "Install Software" to begin the installation.

	Installer is your passw	trying to install new software. Type ord to allow this.
	Name:	administrator
	Password:	
2)		Cancel Install Softwa

5. Click "Continue Installation" to continue the installation. And you must restart your computer when this software finishes installing.

000	🥪 Install dstroot	-
0 Introduct 0 Destinati	When this software finishes installing, you must restart your computer. Are you sure you want to install the software now?	ş
🖯 Installati	Cancel Continue Installation of	
Installation	V	
atunianian balanta	Change Install Locati	ion
1	Co Bash	la et e ll
	Go Back	install

6. The installation was completed successfully. Click "Restart" to restart your computer and finish installing the software.



Driver Installation

1. Turn on the computer after plugging PCI Express Gigabit Ethernet Adapter to PCI Express slot. The "Found New Hardware Wizard" window pop up.



2. Select "Install from a list or specific location (Advanced)" and click "Next" to continue.



3. Select "Search for the best driver in these locations." and then select "Include this location in the search:". Click "Browse" to specify the driver location and click "Next" to continue.

Found New Hardware Wizard			
Please choose your search and installation options.			
Search for the best driver in these locations.			
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.			
Search removable media (floppy, CD-ROM)			
Include this location in the search:			
D:\GE3100\WinXP Browse			
O Don't search. I will choose the driver to install.			
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.			
< Back Next > Cancel			

4. Select "Yes, connect and search for the software on the internet" and click "Next" to continue.

Found New Hardware Wizard			
The wizard could not find the software on your computer for			
P Ethernet Controller			
It is recommended that you connect to the Internet so that the wizard can search online and look for the appropriate software.			
Yes, connect and search for the software on the Internet			
No, do not connect to the Internet now			
If you know another place where the software might be located, click Back and select the Advanced option.			
< Back Next > Cancel			

5. Click "Finish" to complete the driver installation.



Driver Installation for Windows 8

- 1. Turn on the computer after plugging PCI Express Gigabit Ethernet Adapter to PCI Express slot
- 2. Insert driver CD into CD-ROM drive. Specify the driver location and double click "setup.exe" to continue.

F Home Share	View				
	Computer + Local Disk (D:) + Win8		~	C Search Win8	1
Favorites	Name	Date modified	Туре	Size	
E Desktop	FAQ	8/3/2012 2:10 PM	File folder		
la Downloads	L ICON	8/3/2012 2:10 PM	File folder		
Sk Recent places	QUICK INSTALL GUIDE	8/3/2012 2:10 PM	File folder		
	README	8/3/2012 2:10 PM	File folder		
Libraries	L TOOL	8/3/2012 2:10 PM	File folder		
Documents	UTILIZE DUAL MAC GUIDE	8/3/2012 2:10 PM	File folder		
A Music	MIN8	8/3/2012 2:10 PM	File folder		
S. Pictures	Setup.dll	4/19/2012 12:56 A.	Application extens	318 KB	
Nideos	AutoInst	5/14/2012 10:30 PM	Application	87 KB	
	data1	4/19/2012 12:56 A_	Cabinet File	3,476 KB	
Homegroup	data1.hdr	4/19/2012 12:56 A.	HDR File	35 KB	
	data2	4/19/2012 12:56 A.	Cabinet File	1 KB	
Computer	EnglangID	11/3/2011 4:47 PM	Text Document	1 KB	
Local Disk (C:)	InstCtrl	2/16/2011 5:11 PM	Text Document	1 KB	
op Local Disk (D:)	InstOpt	2/16/2011 S:11 PM	Text Document	1.68	
ige Local Disk (E)	ISSetup.dll	4/19/2012 12:56 A.	Application extens	550 KB	
] layout.bin	4/19/2012 12:56 A.	BIN File	1 KB	
	Setup	4/19/2012 12:56 A.	Application	391 KB	
Network Network	setup	4/19/2012 12:56 A	Configuration setti.	1 KB	
	setup.inx	4/19/2012 12:56 A.	INX File	265 KB	
	🗋 setup.isn	4/19/2012 12:56 A.,	ISN File	41 KB	
	🗋 setup.iss	2/16/2011 5:11 PM	ISS File	1 KB	
	setupctri	2/16/2011 5:11 PM	Text Document	1.68	
	Silent_Install	2/16/2011 5:11 PM	Windows Batch File	1 KB	
	Silent_Uninstall	2/16/2011 5:11 PM	Windows Batch File	1 KB	
	uninstall.iss	2/16/2011 5:11 PM	ISS File	1 KB	

3. Welcome to the InstallShield Wizard for Realtek Ethernet Controller Driver. The InstallShield Wizard will install Realtek Ethernet Controller Driver on your computer. And then click "Next" to continue.



4. Ready to Install the Program. The wizard is ready to begin installation. Click "Install" to begin the installation.

ALL DOCUMENTS	Realtek Ethernet Controller Driver	X
Ready to Install the Program The wizard is ready to begin installation		
I		
	<gack cancel<="" install="" th=""><th>1</th></gack>	1

5. InstallShield Wizard Complete. The InstallShield Wizard has successfully installed Realtek Ethernet Controller Driver. Click "Finish" to exit the wizard.



Specifications

Applicable	1000Base-SX/LX/BX:
Standards	IEEE802.3z 1000Base-SX/LX
Speed	1000Base-SX/LX/BX:
	2000Mbps full-duplex
Performance	1,488,100pps for 1000Mbps
Cable	50 or 62/125µm multi-mode fiber-optic
	cable, up to 2 km, wavelength 850nm
	9 or 10/125µm single-mode fiber-optic
	cable, up to 50 km, wavelength 1310nm
	9 or 10/125µm single-mode fiber-optic
	cable, up to 40 km, wavelength
	1310/1550nm
LED Indicators	LNK (Link) (Green)
	ACT (Activity) (Yellow)
Dimensions	117.6mm (D) x 117.5mm (W)
	(4.7" (D) x 4.7" (W))
	Low Profile:
	117.6mm (D) x 80mm (W)
	(4.7" (D) x 3.2" (W))
Net Weight	80g (0.18lb.) approx.
Power	3.3VDC, 970mA, 3.2W Max.
Consumption	
Operating	0°C to 45°C (32°F to 113°F)
Temperature	
Storage	-20°C to 70°C (-4°F to 158°F)
Temperature	
Humidity	5%-95% non-condensing
Emissions	FCC Part 15, Class B
	CE, VCCI Class B