



Installation Guide
1000Base-X Gigabit Ethernet
PCI Adapter with SFP Support

KG-500F Rev.B series

DOC.210202-KG-500FB-K

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FC Warning

This equipment has been tested and found to comply with the limits for 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 residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual 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. Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

CISPR 22 Class B

This device complies with EMC directive of the European Community and meets or exceeds the following technical standard: EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This device complies with CISPR 22 Class B.

CE NOTICE

Marking by the symbol  indicates compliance of this equipment to the EMC directive of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards:

EN55022/CISPR 22 ClassB

EN55024 - EN61000-3-2, EN61000-3-3, EN61000-4 series

Introduction

The 1000BASE-X Gigabit Ethernet PCI Adapter is a 32-bit LAN adapter for use in personal computers with PCI computer bus slots. This adapter features a mini-GBIC fiber connector (SFP) for a 1000 Mbps IEEE 802.3z Ethernet network connection over optical fiber cable. The series provides different fiber transceiver types supporting short, middle, and long reach applications.

Adapter Features

- Supports 32-bit 33/66MHz PCI of Rev.2.1/2.2/2.3 specification
- IEEE 802.3z 1000Base-SX/LX compliant
- Provides Tx 8K / Rx 64KB RAM buffer
- Supports full duplex operation up to 2000Mbps data rate over fiber
- Supports IEEE802.3x flow control
- Plug-and-Play installation
- Provides LED indicators for easy diagnostic
- Provides SFP to support variety of fiber transceivers
- Complete driver support for most operating systems
- Supports 802.1Q VLAN tagging
- Supports jumbo frames
- Supports drivers for Windows XP/ Linux systems and plug-and-play installation for Windows server 2008/Windows 7/ Windows 8/Fedora 13.

Specifications

Standards	IEEE 802.3z 1000Base-SX/LX
Network Port	SFP for 1000Mbps mini-GBIC fiber transceiver
Host Interface	32-bit 33/66Mhz PCI Rev.2.1/2.2/2.3
LEDs	SFP status, Link status, Optical status
Network Cables	50/125 multimode fiber up to 500m 62.5/125 multimode fiber up to 220m 9/125 single mode fiber
Transfer Rate	Gigabit Ethernet: 2000Mbps (Full-duplex)
Driver Support	Windows XP, Windows Vista, Windows 7, Windows 8, Windows Server 2008, Linux
Power	Consumption PCI 3.3V/400mA max.
Dimension	130 x 65 mm
Environment	Operation Temperature: 0°C ~50°C Storage Temperature: -20°C ~85°C
Relative Humidity	5%~95%non-condensing
Laser Eye Safe	IEC 60825-1 Class 1/CDRH Class I
Approval	FCC Class B,CE CISPR22 Class B

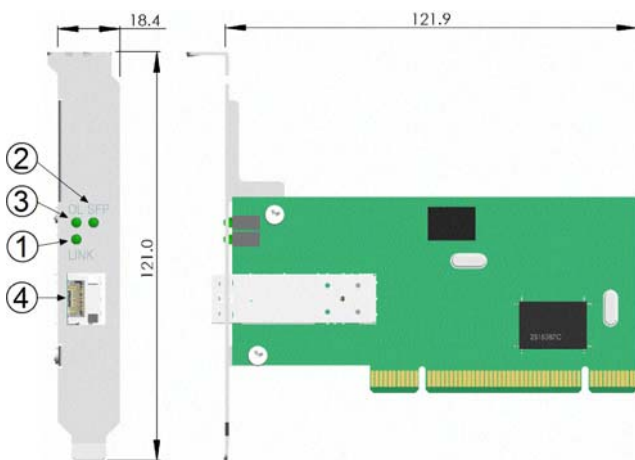
Model Definitions

Model	PCI	Connector	Fiber Cable Support
500-SX	Standard	LC	62.5/125 MMF up to 200m 50/125 MMF up to 500m
500-LX	Standard	LC	MMF up to 550m SMF up to 10km
500-LX20	Standard	LC	SMF up to 20km
500/LP-SX	Low-profile*	LC	62.5/125 MMF up to 200m 50/125 MMF up to 500m
500/LP-LX	Low-profile	LC	MMF up to 550m SMF up to 10km
500/LP-LX20	Low-profile	LC	SMF up to 20km

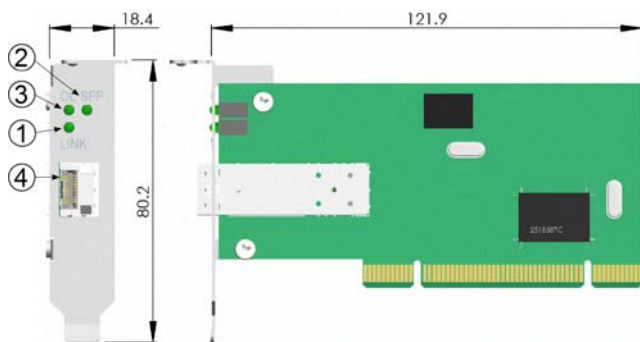
* Low-profile: mounted with PCI low-profile bracket

Board Components

The figures show the major components on the adapters with PCI standard bracket and PCI low-profile bracket.



Adapter with PCI standard bracket



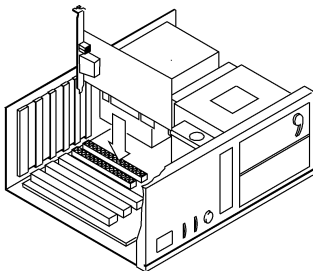
Adapter with PCI low-profile bracket

No. Components	Description
1 LINK LED	This LED lights when the fiber connection is established.
2 SFP LED	This LED lights when a mini-GBIC transceiver module is installed in the SFP slot.
3 OL LED	This LED lights when optical signal is presented in the transceiver.
4 SFP Slot	This slot supports mounting a mini-GBIC fiber transceiver.

Installing the Adapter

Before installing the adapter, you need the following:

- A computer system that is compliant with the PCI specifications version 2.1 or later.
- An available PCI bus master slot in the computer
- The adapter driver diskettes (or CD supplied with the adapter)
- Fiber cables



Inserting the Adapter into the PCI Slot

To install the adapter in your computer, follow these steps:

1. Turn off the power to the computer.
2. Remove the computer's cover.
3. Unscrew and remove the slot cover from the PCI bus slot.
4. Insert the adapter into the slot and secure the screw.
5. Replace the computer cover and reconnect all previously connected cables.

Installing Mini-GBIC Transceiver

A typical mini-GBIC SFP transceiver is shown as follows:



To install a fiber transceiver into the SFP slot, the steps are:

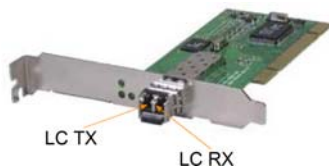
1. Insert the fiber transceiver into the mini-GBIC SFP port.
Normally, a bail is provided for every SFP transceiver. Hold the bail and make insertion.
2. Until the fiber transceiver is seated securely in the slot, place the bail in lock position.



The mini-GBIC SFP slot supports hot-plug installation even when the computer is powered and operating.

Connecting to the Network

The rear bracket of the PCI adapter contains two fiber connectors.



The TX connector is used for transmission and the RX is used for reception. When connecting to a device using fiber cable, make sure the TX connector of the adapter is connected to the RX connector of the device and RX connector is connected to the TX connector of the device.

In order to have a reliable communication between two ends, the speed and duplex configuration of the adapter's fiber port and the device at the remote end must be same. Configure the driver of the adapter as follows: Auto, 1000Mbps, Full-duplex.

Network Driver Installation

After making the connection to the network, you must install the adapter network driver in order to connect the network adapter to your network operating system.

The adapter driver media contains the latest versions of the network drivers available when the adapter is shipped from the factory. A file, \README.TXT, located in the associated product directory contains a list of the supported driver software and the directory structures for the supported operating environments. Please refer to this file first before installing any network driver for the adapter.

Installation for Windows Systems

For adapter installation on Windows server 2008, Windows 7 and Fedora 13, the systems will detect and configure the drivers for the adapter automatically with no need for extra driver setup. The adapter is detected as :

Win Server 2008	RTL PCI GbE Family Controller
Windows 7	RTL PCI GbE Family Controller
Fedora 13	Realtek RTL8169 Family Gigabit Ethernet NIC

Using the Associated Drivers in the driver CD

After driver setup, the adapter is identified as :

Realtek RTL8169/8110 Family Gigabit Ethernet NIC

Link Speed/Duplex Mode options : Auto-negotiation

Installation for other Systems

Refer to \README.TXT first in the driver CD for the driver installation on other operating systems. The file contains driver information for most of the popular operating systems.

LED Indicators

The adapter has three LEDs. The interpretations of the LEDs are:

LINK LED indicates an active 1000Mbps connection is established.

- On : Good link between the adapter and a remote device
- Off : No connection between adapter and a remote device
- Blink: Link on and traffic activities

SFP LED indicates installation status of mini-GBIC transceiver

- On : A mini-GBIC SFP transceiver is installed in the SFP slot.
- Off : No transceiver is installed.

OL LED indicates optical signal status

- On : Optical signal is detected.
- Off : No optical signal is detected.

If you experience any problems, first make sure that the appropriate driver is loaded, the proper cable is connected to the connector, and the connected device complies with 1000BASE-X standard. Then recheck the LED.