

Gigabit Ethernet 1000BASE-SX(LC) PCI-Express X4 Adapter User Manual

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Important Information

Please read the information below before installing the D-Link Gigabit Ethernet 1000BASE-SX(LC) PCI-Express X4 Adapter on your system.

What's New

The latest generation PCI (Peripheral Component Interconnect) bus architecture called PCI Express, uses a 2.5-GHz serial Input/Output structure for higher bandwidth and better scalability than its previous architectures. The DGE-560SX 1000BASE-SX (LC) PCI-Express x4 supports up to 2 Gbps total bidirectional throughput. The faster serial-bus architecture provides bidirectional dedicated Input/Output with 2.5-GHz clocking, compared to 133-MHz parallel bus of the previous generation PCI-Expanded (PCI-X).

System Hardware Requirements

Before installing the DGE-560SX, check to be sure your system meets the following minimum requirements:

- Available PCI-Express (x4 or higher) card slot
- 64 MB of System Memory
- 150 MHz or faster processor
- The most recent BIOS version for your system
- In addition to these system requirements, the optical network interface requires a 850nm LC Fiber Optical connector

Hardware Driver Compatability

To ensure optimal performance, it is recommended that you download the latest hardware drivers for all your particular adapters from the manufacturer's web site.

It is recommended that you install the latest Service Packs and/or Hot Fixes from Microsoft prior to installing D-Link PCI-Express Card Software. Refer to the Release Notes for the latest list of Service Packs and/or Hot Fixes that are required.

Operating Systems Supported:

- Microsoft Windows 2000
- Microsoft Windows 2000 Server
- Microsoft Windows Server 2003
- Microsoft Windows Server 2003 x64
- Microsoft Windows XP
- Microsoft Windows XP x64
- Microsoft Windows Vista x86
- Microsoft Windows Vista x64
- Linux for Kernel 2.4.x
- Linux for Kernel 2.6.x

Introduction

The DGE-560SX 1000BASE-SX (LC) PCI-Express x4 network adapter card is ideal for optical Gigabit Ethernet to desktop PC networking. The card is capable of supporting total bidirectional bandwidth of up to 2 Gbps and can be installed on a desktop PC or server.

Notable features of the DGE-560SX include VLAN tagging, LED display for linkage and activity, Flow Control and 802.1p Priority support.

Summary of Features

Designed for versatility and performance, the DGE-560SX provides the following:

- Compliant with IEEE 802.3z specification for 1000Base-SX Ethernet standards
- Support PCI-E 1.0a interface with 2.5GHz signaling
- 9K bytes Jumbo frame support
- Support IEEE 802.1p (QoS)
- Support IEEE 802.1q VLAN
- With D-Link Network Control Program for advanced feature setting
- Simple Network Management Protocol (SNMP) Support
- Compliant to IEEE 802.3x for flow control and full-duplex operation
- Promiscuous Mode
- Support Full-duplex operation
- Link/Act LED
- Transmission distance range:
 - 75 meter in 62.5/125 micron-meter multi-mode fiber cable
 - 550 meter in 50/125 micron-meter multi-mode fiber cable

Driver Support for:

- Microsoft Windows 2000
- Microsoft Windows 2000 Server
- Microsoft Windows Server 2003
- Microsoft Windows Server 2003 x64
- Microsoft Windows XP
- Microsoft Windows XP x64
- Microsoft Windows Vista x86
- Microsoft Windows Vista x64
- Linux for Kernel 2.4.x
- Linux for Kernel 2.6.x

LED Indicators

The DGE-560SX Adapter features one LED indicators:

- Act (Activity) Flashing green indicates activity (transmitting or receiving) within the adapter.
- Link Steady green indicates good linkage between the DGE-560SX and its supporting server or switch.

Installation

Follow the instructions in this section to install the adapter.

Unpack and Inspect



Caution: Under ordinary circumstances, a DGE-560SX card will not be affected by static charge. In some 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. Make sure you have the following items:

- One DGE-560SX 1000BASE-SX(LC) PCI-E x4 Adapter Card
- CD-ROM containing system drivers, and Quick Installation Guide

Software Installation

To install the driver, insert the CD-ROM in the CD-ROM drive of the system with the installed adapter. Click the Install link and follow the instructions that appear to install the driver.

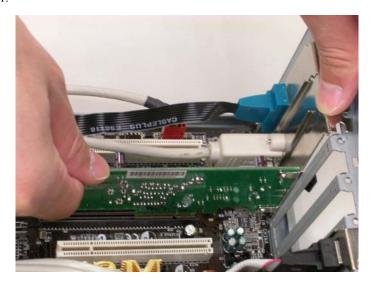


Connecting the Network Cable

The DGE-560SX 1000Base-SX Gigabit Ethernet network adapter card enables operation over 850nm 62.5/125 fiber optic cable up to 75 meters and 850nm 50/125 fiber optic cable up to 550 meters. The network adapter card connects to fiber optic cabling equipped with an LC Fiber Optical connector.

Installing the Adapter

- 1. Shut down the computer, unplug its power cord, and remove the chassis cover.
- 2. Insert the contact edge of the DGE-560SX card into the connector of an available PCI-Express (x4 or higher) Bus expansion slot. Press the card firmly into the connector such that the card's contacts are fully seated in the PCI connector.



- 3. Install the bracket screw that secures the card to the computer chassis.
- 4. Replace the computer's chassis cover.
- 5. Reconnect the computer's power cord, and switch computer power on. If the BIOS section of your computer's boot program is Plug-and-Play compliant, then at power-up the BIOS will automatically configure any newly installed DGE-560SX adapter.

D-Link Network Control Program

To install the D-Link Network Control Program, insert the CD-ROM in the system CD-ROM drive and click the Install link. Follow the instructions that appear to install the program.

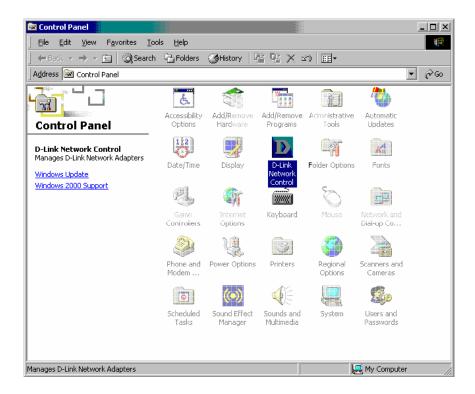
The D-Link Network Control Program is included with the DGE-560SX. This program is used to monitor the adapter and create VLAN information including VLAN Identifier and name for the system in which it is installed.

To launch the D-Link Network Control program, double-click the D-Link Network Control icon in the Control Panel folder.



NOTE: D-Link Network Control Program can be installed and used on Windows 2000, Windows XP, Windows Server 2003.

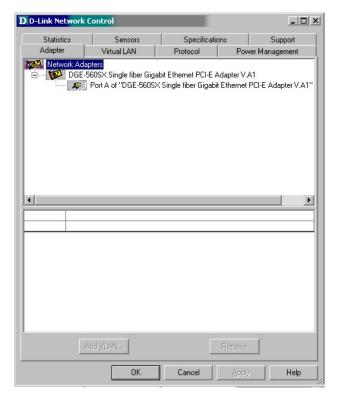
CPA don't support Vista.



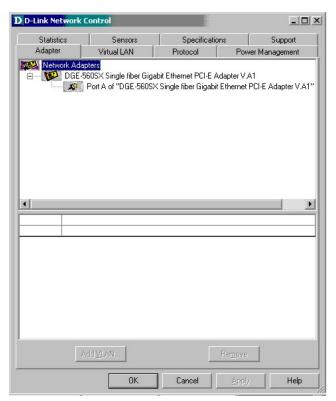
The Network Control menu lists adapters installed on the system. For systems with multiple adapters installed, select the DGE-560SX from the list and click **OK**. Click the menu tab for the menu you want to view.



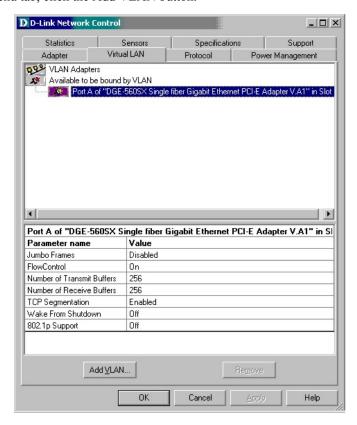
NOTE: The Power Management and Sensors functions are not currently supported on the adapter.



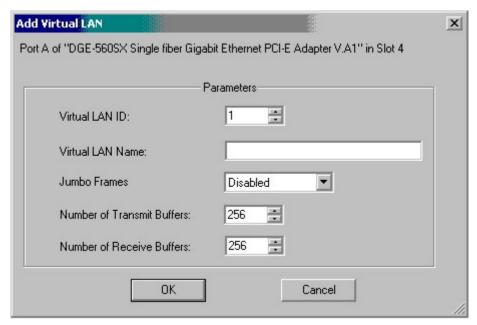
To add VLAN ID, click the Virtual LAN menu tab.



In the Virtual LAN menu tab, click the Add VLAN button.

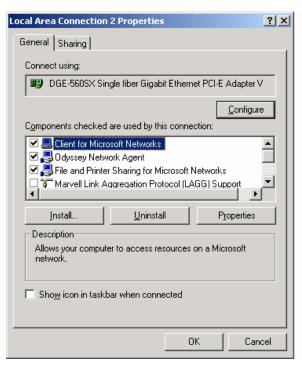


In the Add Virtual LAN pop-up menu, select the **Virtual LAN ID** (VID) number used for the system. A **Virtual LAN Name** can also be created but is optional. The Add Virtual LAN menu is also used to configure Jumbo Frames, Transmit Buffers, and Receive Buffers.

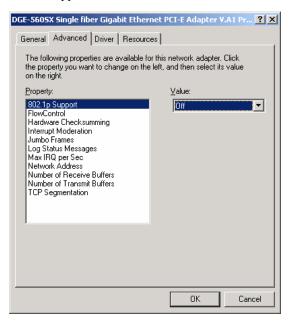


Advanced Adapter Configuration

The DGE-560SX supports advanced features including the SNMP agent described in the separate **SNMP Agent Manual**, and support for 802.1p priority. To enable or disable 802.1p support on the adapter, go to the **Properties** menu (right-click on **Local Area Connection** icon in **Network Connections**) and click the **Configure** button:



Click the Advanced tab in the men that appears:



Use the Advanced configuration menus to configure 802.1p, select **802.1p Support** from the **Property** list and choose *On* to enable or *Off* to disable from the **Value** pull-down menu.

Other advanced configuration features that can be changed or enabled include Flow Control, Jumbo Frames, Log Status Messages, Transmit and Receive buffers, and others.

Technical Specifications

Specifications	
Network Media	 62.5 / 125 micron-meter multi-mode fiber cable 50 / 125 micron-meter multi-mode fiber cable
Connector	850nm, LC Fiber Optical connector
Controller	Marvell 88E8061
Bus Architecture	PCI Express 1.0a interface with 2.5GHz signaling
Memory	96Kb
Diagnostic LEDs	Activity/Link (blinking green = activity)
Network Data Transfer	Gigabit Ethernet: 2000Mbps (Full-duplex)
Dimensions	115 mm (L) x 60 mm (H)
Management	VLAN support, D-Link Network Control Program, SNMP Agent

Specifications	
Compliance	• IEEE 802.3ab/802.3z 1000BASE-SX Gigabit Ethernet
	• IEEE 802.3x Flow-Control
	IEEE 802.1p Quality of Service
	• IEEE 802.1q/802.3ac VLAN/VLAN Tagging
	PCI Express 1.0a specification
Protocol	CSMA/CD
Driver Support	Microsoft Windows 2000
	Microsoft Windows 2000 Server
	Microsoft Windows Server 2003
	Microsoft Windows Server 2003 x64
	Microsoft Windows XP
	Microsoft Windows XP x64
	Microsoft Windows Vista x86
	Microsoft Windows Vista x64
	• Linux for Kernel 2.4.x
	• Linux for Kernel 2.6.x
Power Consumption	10W
Temperature	• Operating: 0~50°C (32~122°F)
	• Storage: -20~70°C (-4~158°F)
Humidity	Operating: 30%~80% non-condensing
	• Storage: 10%~95% non-condensing
EMI Certification	• FCC Class B
	CE Mark Class B
	• VCCI Class B
	• C-Tick



Limited Warranty (USA Only)

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- · Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link product described below ("Hardware") will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below ("Warranty Period"), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

• The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the
 customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a
 Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at
 https://rma.dlink.com/.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package
 to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package.
 Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product
 and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to **D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708**. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: The Limited Warranty provided herein by D-Link does not cover: Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

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CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC 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 instructions, may cause harmful interference to radio communication. 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.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Product Registration

Register your D-Link product online at http://support.dlink.com/register/

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

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