



DGE-510T
Gigabit Ethernet Adapter
for PCI Bus
User's Guide

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RECYCLABLE

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FCC Certifications

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 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.

Shielded interface cables must be used in order to comply with emission limits.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

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.

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D-Link warrants each of its hardware products to be free from defects in workmanship and materials under normal use and service for a period commencing on the date of purchase from D-Link or its Authorized Reseller and extending for the length of time stipulated by the Authorized Reseller or D-Link Branch Office nearest to the place of purchase.

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1

Introduction

Thank you for choosing D-Link DGE-510T, the value leader among dual-speed adapters for PCI Bus personal computers. This introduction gives a general description of the newer networking technologies found on the DGE-510T.

The DGE-510T provides the bandwidth capability to support high-end servers and workstations. With Auto-negotiation, this card can run on three different speeds: 10/100Mbps, both half- and full-duplex, and 1000Mbps at full duplex. When running at 1000Mbps, it provides a network throughput of 2Gbps in full-duplex mode.

The card supports IEEE 802.1p Traffic Prioritization for time-sensitive and mission-critical traffic. With IEEE 802.1Q single VLAN support, it provides VLAN tables that can filter packets by recognized VLAN tags, strip VLAN tags when received, and insert VLAN tags when transmitted. VLANs can increase the efficiency of and provide extra security for your network.

The DGE-510T provides IEEE 802.3x Flow Control Enhancements, which are needed for a network adapter to function with a switch. In full-duplex mode, MAC implements the PAUSE control function. This means when a switch is connected in full-duplex mode and it senses that its buffer will overflow in the near future,

the switch will transmit one standard Ethernet packet that causes the DGE-510T to pause for a period, thus avoiding internal buffer overflow and packet loss.

The NIC enables simple, scalable network migration, providing the benefit of Gigabit Ethernet networking with the familiarity of Ethernet.

Features

Designed for versatility and performance, the DGE-510T Adapter provides the following:

- Operability in 32-bit, 33/66 MHz slot servers
- Universal Bus support, 3.3V and 5V
- IPV.4 checksum task off-loading for checksum generation and verification
- Compliance with IEEE 802.3ab 1000BASE-T Gigabit Ethernet standards, IEEE 802.3u Fast Ethernet standards, and IEEE 802.3 Ethernet standards
- Plug-and-Play installation
- Support for 802.1Q VLAN Capacity
- Jumbo frame support (NDIS and Linux drivers)
- Adaptive Inter Frame Spacing (IFS) capacity
- Auto-assignment of IRQ numbers and IO address
- Full-duplex Gigabit Ethernet interface that delivers 2Gbps aggregate bandwidth

- One built-in RJ-45 connector
- Support for Gigabit Ethernet over standard Category 5 and 5e UTP wiring for distances up to 100 meters
- Auto-negotiation to the highest available speed
- Four LED indicators:
Link/Activity, Full Duplex, 1000Mbps, 100Mbps
- Driver[†] support for:
 - √ Windows XP
 - √ Windows NT 4.0
 - √ Windows 98/98 SE
 - √ Windows ME
 - √ Windows 95/OSR2
 - √ Windows 2000
 - √ Linux Kernel v2.4
 - √ Novell Netware
4.X/5.X/6.X ODI3.31

[†] Check <http://www.dlink.com> for newest release of drivers.

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Installation

Unpack and Inspect

CAUTION: *Under ordinary circumstances, a DGE-510T card will not be affected by static charge as may be received through your body during handling of the unit. In special 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. In addition to a printed copy of this User's Guide, ascertain that you have:

- One DGE-510T 10/100/1000 PCI Adapter Card.
- DGE-510T User's Guide CD-ROM

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-510T card into the connector of any available PCI Bus Master expansion slot. Press the card firmly into the connector such that the card's contacts are fully seated in the 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-510T adapter.

NOTE: *Due to a fault in some Plug-and-Play BIOS programs, it happens occasionally that a newly installed adapter is assigned an Interrupt Number which is already assigned to another device. In such a case, the conflict of Interrupt Number will cause faults in the behavior of both devices. Then it is necessary to run the CMOS Setup utility, and manually assign a non-conflicting Interrupt Number.*

Connecting the Network Cable

1000BASE-T Gigabit Ethernet enables operation over the extensive installed base of legacy Category 5 cabling systems and, by default, the Category 5 cabling systems currently being installed.

It provides optimal full-duplex 1000Mb/s Ethernet service over Category 5e links as defined by ANSI/TIA/EIA-568-A-5. Topology rules for 1000BASE-T are the same as those used for 100BASE-T. Category 5 and 5e link lengths are limited to 100 meters.

Software Installation



The CD-ROM included with your DGE-510T is designed to make installation of necessary software a painless and trouble-free process. Simply click on the “Install Drivers” button, and an Installation Wizard will guide you through the process, no matter which operating system you’re running. The included Adobe Acrobat Reader, which is needed to read or print out your user manual, will also come in handy for many other applications.

Simply follow the directions in the Wizard, and your DGE-510T will be installed successfully in just a few minutes, allowing you to enjoy the many advantages of joining an Ethernet LAN.

Troubleshooting

If you experience any problems with the adapter, first: ascertain that the appropriate driver is loaded; that the proper grade of cable is employed for the network connection; and that the supporting hub is properly qualified for the application.

The DGE-510T Adapter features four LED indicators:

- **FDX** Steady green indicates the adapter is operating in full-duplex mode.
- **1000M** The LED indicator lights green when a 1000 Mbps device is connected to the adapter.
- **100M** The LED indicator lights green when a 100 Mbps device is connected to the adapter.
- **Link/Activity** Steady green indicates good linkage between the DGE-510T and its supporting server or switch. Flashing green indicates activity (transmitting or receiving) within the adapter.

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Specifications

Jumperless Hardware

LAN Chip Set:

- Gigabit Media Access controller: DL2001
- Physical interface: 88E 1000T

EMI Certifications:

- FCC Class B
- CE Class B
- BSMI Class B
- VCCI Class B
- C-Tick

Host interface: PCI Bus (Bus Master)

I/O base address assigned by Plug and Play system

Interrupt Number Assigned by Plug and Play system

Physical Dimensions: 166 mm (L) x 73 mm (H)

Environment:

- Storage: -25° to 55°C (-13° to 131° F)
- Operating: 0° to 50° C (32° to 122° F)
- Humidity: 5% to 90% non-condensing
- Power Consumption: 5.48W

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Registration Card

Print, type or use block letters.

Your name: _____
 Mr./Ms _____
 Organization: _____ Dept. _____
 Your title at organization: _____
 Telephone: _____ Fax: _____
 Organization's full address: _____
 Country: _____ Date of purchase
 (Month/Day/Year): _____

Product Model	Product Serial No.	* Product installed in type of computer (e.g., Compaq 486)	* Product installed Computer serial No.

(* Applies to adapters only)

Product was purchased from:

Reseller's name: _____
 Telephone: _____ Fax: _____
 Reseller's full address: _____

1. **Where and how will the product primarily be used?**
 Home Office Travel Company Business Home Business Personal
2. **How many employees work at installation site?**
 1 employee 2-9 10-49 50-99 100-499 500-999 1000 or more
3. **What network protocol(s) does your organization use ?**
 XNS/IPX TCP/IP DECnet Other _____
4. **What network operating system(s) does your organization use ?**
 D-Link LANsmart Novell NetWare NetWare Lite SCO Unix/Xenix
 PC NFS 3Com 3+Open Banyan Vines DECnet Pathwork
 Windows NT Windows NTAS Windows '95 Other _____
5. **What network management program does your organization use ?**
 D-View HP OpenView/Windows HP OpenView/Unix SunNet Manager Novell NMS
 NetView 6000 Other _____
6. **What network medium/media does your organization use ?**
 Fiber-optics Thick coax Ethernet Thin coax Ethernet
 10BASE-T UTP/STP 100BASE-TX 100BASE-T4 100VGAnyLAN Other _____
7. **What applications are used on your network?**
 Desktop publishing Spreadsheet Word processing CAD/CAM
 Database management Accounting Other _____
8. **What category best describes your company?**
 Aerospace Engineering Education Finance Hospital Legal Insurance/Real Estate
 Manufacturing Retail/Chainstore/Wholesale Government
 Transportation/Utilities/Communication VAR Systemhouse/company Other _____
9. **Would you recommend your D-Link product to a friend?**
 Yes No (why?) _____ I don't know yet
10. **Your comments on this product:**

