



DGE-550T
Gigabit Ethernet Adapter
for PCI Bus
User's Guide

First Edition (March 2001)

6DGE550T..01

Printed in Taiwan



RECYCLABLE

Trademarks

Copyright ©2001 D-Link Corporation.

Contents subject to change without prior notice.

D-Link is a registered trademark of D-Link Corporation/D-Link Systems, Inc.

All other trademarks belong to their respective proprietors.

Copyright Statement

No part of this publication may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from D-Link Corporation/D-Link Systems Inc., as stipulated by the United States Copyright Act of 1976.

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.

Limited Warranty

Hardware:

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.

This Warranty applies on the condition that the product Registration Card is filled out and returned to a D-Link office within ninety (90) days of purchase. A list of D-Link offices is provided at the back of this manual, together with a copy of the Registration Card.

If the product proves defective within the applicable warranty period, D-Link will provide repair or replacement of the product. D-Link shall have the sole discretion whether to repair or replace, and replacement product may be new or reconditioned. Replacement product shall be of equivalent or better specifications, relative to the defective product, but need not be identical. Any product or part repaired by D-Link pursuant to this warranty shall have a warranty period of not less than 90 days, from date of such repair, irrespective of any earlier expiration of original warranty period. When D-Link provides replacement, then the defective product becomes the property of D-Link.

Warranty service may be obtained by contacting a D-Link office within the applicable warranty period, and requesting a Return Material Authorization (RMA) number. If a Registration Card for the product in question has not been returned to D-Link, then a proof of purchase (such as a copy of the dated purchase invoice) must be provided. If Purchaser's circumstances require special handling of warranty correction, then at the time of requesting RMA number, Purchaser may also propose special procedure as may be suitable to the case.

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. The package must be mailed or otherwise shipped to D-Link with all costs of mailing/shipping/insurance prepaid. D-Link shall never be responsible for any

software, firmware, information, or memory data of Purchaser contained in, stored on, or integrated with any product returned to D-Link pursuant to this warranty.

Any package returned to D-Link without an RMA number will be rejected and shipped back to Purchaser at Purchaser's expense, and D-Link reserves the right in such a case to levy a reasonable handling charge in addition mailing or shipping costs.

Software:

Warranty service for software products may be obtained by contacting a D-Link office within the applicable warranty period. A list of D-Link offices is provided at the back of this manual, together with a copy of the Registration Card. If a Registration Card for the product in question has not been returned to a D-Link office, then a proof of purchase (such as a copy of the dated purchase invoice) must be provided when requesting warranty service. The term "purchase" in this software warranty refers to the purchase transaction and resulting license to use such software.

D-Link warrants that its software products will perform in substantial conformance with the applicable product documentation provided by D-Link with such software product, for a period of ninety (90) days from the date of purchase from D-Link or its Authorized Reseller. D-Link warrants the magnetic media, on which D-Link provides its software product, against failure during the same warranty period. This warranty applies to purchased software, and to replacement software provided by D-Link pursuant to this warranty, but shall not apply to any update or replacement which may be provided for download via the Internet, or to any update which may otherwise be provided free of charge.

D-Link's sole obligation under this software warranty shall be to replace any defective software product with product which substantially conforms to D-Link's applicable product documentation. Purchaser assumes responsibility for the selection of appropriate application and system/platform software and associated reference materials. D-Link makes no warranty that its software products will work in combination with any hardware, or any application or system/platform software product provided by any third party, excepting only such products as are expressly represented, in D-Link's applicable product documentation as being compatible. D-Link's obligation under this warranty shall be a reasonable effort to provide compatibility, but D-Link shall have no obligation to provide compatibility when there is fault in the third-party hardware or software. D-Link makes no warranty that operation of its software products will be uninterrupted or absolutely error-free, and no warranty that all defects in the software product, within or without the scope of D-Link's applicable product documentation, will be corrected.

D-Link Offices for Registration and Warranty Service

The product's Registration Card, provided at the back of this manual, must be sent to a D-Link office. To obtain an RMA number for warranty service as to a hardware product, or to obtain warranty service as to a software product, contact the D-Link office nearest you. An address/telephone/fax/e-mail/Web site list of D-Link offices is provided in the back of this manual.

LIMITATION OF WARRANTIES

IF THE D-LINK PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, THE CUSTOMER'S SOLE REMEDY SHALL BE, AT D-LINK'S OPTION, REPAIR OR REPLACEMENT. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. D-LINK NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF D-LINK'S PRODUCTS.

D-LINK SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY THE CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLIGENCE, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO REPAIR, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING OR OTHER HAZARD.

LIMITATION OF LIABILITY

IN NO EVENT WILL D-LINK BE LIABLE FOR ANY DAMAGES, INCLUDING LOSS OF DATA, LOSS OF PROFITS, COST OF COVER OR OTHER INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES ARISING OUT THE INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE OR INTERRUPTION OF A D-LINK PRODUCT, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY. THIS LIMITATION WILL APPLY EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

IF YOU PURCHASED A D-LINK PRODUCT IN THE UNITED STATES, SOME STATES DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Table of Contents

INTRODUCTION.....	1
Features	2
INSTALLATION	4
Unpack and Inspect.....	4
Installing the Adapter	4
Connecting the Network Cable.....	5
Software Installation	6
TROUBLESHOOTING.....	7
SPECIFICATIONS	8

1

Introduction

Thank you for choosing D-Link DGE-550T, 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-550T.

The DGE-550T 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 multiple 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 and provide extra security of your network.

The DGE-550T provides IEEE802.3x 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-550T 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-550T Adapter provides the following:

- Operability in both 32-bit, 33 MHz and 64-bit, 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
- 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:
 - √ Redhat Linux 6.0/6.1
 - √ Linux OS Kernel v2.0/2.2
 - √ Windows NT 4.0
 - √ Windows 2000
 - √ Windows 98
 - √ Novell Netware 5.1 ODI3.0

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

2

Installation

Unpack and Inspect

CAUTION: *Under ordinary circumstances, a DGE-550T 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-550T 10/100/1000 PCI Adapter Card.
- DGE-550T Software CD-ROM
- DGE-550T User's Guide

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-550T 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-550T adapter.

NOTE: *Due to a fault in some Plug-n-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

With the wide variety of network architecture in mind, the instructions for driver[‡] software installation are given as README files on the DGE-550T Software CD-ROM. Review the file README in the root directory for an overview and full installation details; see the README and referenced instruction files in the subdirectory appropriate to your network operating system.

A brief overview of the installation details is as follows: As the DGE-550T is Plug-and-Play compliant, the driver software should be automatically detected and installed in PCs running Windows 95, 98, and 2000. After “New Hardware Found” dialog boxes for “PCI Ethernet Controller” and “D-Link DGE-550T Gigabit Ethernet Adapter” are displayed in rapid succession, a “Copying Files” window, and then an “Insert Disk” window appear. The final step is placing the DGE-550T Software CD-ROM in your CD-ROM drive and then making sure the correct location is selected. Once this is done the software installation should be complete.

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

3

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-550T Adapter features four LED indicators:

- **Link/Activity** Steady green indicates good linkage between the DGE-550T and its supporting server or switch. Flashing green indicates activity (transmitting or receiving) within the adapter.
- **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.

Specifications

Jumperless Hardware

LAN Chip Set:

- Gigabit Media Access controller: DL2000
- Physical interface: 88E1000

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: 6W

D-Link® Offices

AUSTRALIA

D-Link Australasia

Unit 16, 390 Eastern Valley Way, Roseville,
NSW 2069 Australia
TEL: 61-2-9417-7100 FAX: 61-2-9417-1077
TOLL FREE (Australia): 1800 177 100
TOLL FREE (New Zealand): 0800-900900
URL: www.dlink.com.au
E-MAIL: support@dlink.com.au & info@dlink.com.au

CANADA

D-Link Canada

2180 Winston Park Drive, Oakville, Ontario, L6H 5W1 Canada
TEL: 1-905-829-5033 FAX: 1-905-829-5095
BBS: 1-965-279-8732
TOLL FREE: 1-800-354-6522
URL: www.dlink.ca FTP: [ftp.dlinknet.com](ftp://ftp.dlinknet.com)
E-MAIL: techsup@dlink.ca

CHILE

D-Link South America

Isidora Goyechea 2934 of 702, Las Condes, Santiago, Chile
TEL : 56-2-232-3185 FAX: 56-2-232-0923 URL: www.dlink.cl
E-MAIL: ccasassu@dlink.cl & tsilva@dlink.cl

DENMARK

D-Link Denmark

Naverland 2, DK-2600 Glostrup, Copenhagen, Denmark
TEL:45-43-969040 FAX:45-43-424347
URL: www.dlink.dk E-MAIL: info@dlink.dk

EGYPT

D-Link Middle East

7 Assem Ebn Sabet Street, Heliopolis, Cairo, Egypt
TEL: 202-245-6176 FAX: 202-245-6192
URL: www.dlink-me.com
E-MAIL: support@dlink-me.com & fateen@dlink-me.com

FINLAND

D-Link Finland

Tulli-ja Pakkahuone, Katajanokanlaituri 5, Fin – 00160 Helsinki
TEL: 358-9-62291660 FAX: 358-9-62291661
URL: www.dlink-fi.com

FRANCE

D-Link France

Le Florilege #2, Allee de la Fresnerie,
78330 Fontenay le Fleury, France
TEL: 33-1-3023-8688 FAX: 33-1-3023-8689
URL: www.dlink-france.fr
E-MAIL: info@dlink-france.fr

GERMANY

D-Link Cent. Europe/D-Link Deutschland GmbH

Schwalbacher Strasse 74, 65760 Eschborn, Germany
TEL: 49-(0) 6196-7799-0 FAX: 49-(0) 6196-7799-300
URL: www.dlink.de
BBS: 49-(0) 6192-971199 (analog)
BBS: 49-(0) 6192-971198 (ISDN)
INFO: 00800-7250-0000 (toll free)
HELP: 00800-7250-4000 (toll free)
REPAIR: 00800-7250-8000 E-MAIL: info@dlink.de

INDIA	D-Link India Plot No.5, Kurla-Bandra Complex Rd., Off Cst Rd., Santacruz (E), Bombay, 400 098 India TEL: 91-22-652-6696 FAX: 91-22-652-8914 URL: www.dlink-india.com E-MAIL: service@dlink.india.com
ITALY	D-Link Mediterraneo Srl Via Nino Bonnet n. 6/b, 20154, Milano, Italy TEL: 39-02-2900-0676 FAX: 39-02-2900-1723 URL: www.dlink.it E-MAIL: info@dlink.it
JAPAN	D-Link Japan 10F, 8-8-15 Nishi-Gotanda, Shinagawa-ku, Tokyo 141, Japan TEL: 81-3-5434-9678 FAX: 81-3-5434-9868 URL: www.d-link.co.jp E-MAIL: kida@d-link.co.jp
RUSSIA	D-Link Russia Michurinski Prospekt 49, 117607 Moscow, Russia TEL: 7-095-737-3389 & 7-095-737-3492 FAX: 7-095-737-3390 URL: www.dlink.ru E-MAIL: vl@dlink.ru
SINGAPORE	D-Link International 1 International Business Park, #03-12 The Synergy, Singapore 609917 TEL: 65-774-6233 FAX: 65-774-6322 E-MAIL: info@dlink.com.sg URL: www.dlink-intl.com
S. AFRICA	D-Link South Africa Unit 2, Parkside 86 Oak Avenue, Highveld Technopark Centurion, Gauteng, South Africa TEL: 27 (0) 126652165 FAX: 27 (0) 126652186 URL: www.d-link.co.za E-MAIL: attie@d-link.co.za
SWEDEN	D-Link Sweden P. O. Box 15036, S-167 15 Bromma, Sweden TEL: 46-(0) 8564-61900 FAX: 46-(0) 8564-61901 E-MAIL: info@dlink.se URL: www.dlink.se
TAIWAN	D-Link Taiwan 2F, No. 119 Pao-Chung Rd, Hsin-Tien, Taipei, Taiwan TEL: 886-2-2910-2626 FAX: 886-2-2910-1515 URL: www.dlinktw.com.tw E-MAIL: dssqa@tsc.dlinktw.com.tw
U.K.	D-Link Europe 4 th Floor, Merit House, Edgware Road, Colindale, London NW9 5AB U.K. TEL: 44 (0) 20-8731-5555 FAX: 44 (0) 20-8731-5511 BBS: 44 (0) 181-235-5511 URL: www.dlink.co.uk E-MAIL: info@dlink.co.uk
U.S.A.	D-Link U.S.A. 53 Discovery Drive, Irvine, CA 92618, USA TEL: 1-949-788-0805 FAX: 1-949-753-7033 BBS: 1-949-455-1779 & 1-949-455-9616 INFO: 1-800-326-1688 URL: www.dlink.com E-MAIL: tech@dlink.com & support@dlink.com

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

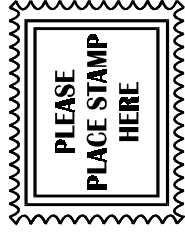
☐ Retail/Chainstore/Wholesale ☐ Government ☐ Transportation/Utilities/Communication ☐ VAR

☐ 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:



TO:

Three vertical lines for an address.

D-Link®