D-Link®

DFE-530TX PCI Fast Ethernet Adapter User's Guide

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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.

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.

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

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Warranty Period

For warranty in your region, please check with your local D-Link office and authorized agents as warranty periods may vary from region to region.

The warranty for power supplies and power adapters is one year.

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 addresses/telephone/fax list of D-Link offices is provided in the back of this manual.

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Table of Contents

FAST ETHERNET	1
Auto-Negotiation	1
Features	
UNPACKING AND INSPECTION	
INSTALLING THE ADAPTER	
CONNECTING THE NETWORK CABLE	
Connecting for Fast Ethernet (100Mbps)	2
Connecting for 10Mbps Ethernet	
Using a Crossover Cable	
SOFTWARE INSTALLATION	

Introduction

Thank you for choosing the D-Link DFE-530TX, the value leader among Fast Ethernet adapters for the PCI Bus. This introduction gives a general description of the newer networking technologies found on the DFE-530TX.

Fast Ethernet

Fast Ethernet is a network technology specified by IEEE Standard 802.3u. It extends the traditional 10Mbps Ethernet technology to achieve 100Mbps transmission and reception, while retaining the same CSMA/CD Ethernet protocol. Thus while Fast Ethernet provides a tenfold increase in network capacity, it is wholly compatible with traditional 10Mbps Ethernet network facilities

Auto-Negotiation

Auto-negotiation is an IEEE 802.3-specified procedure for negotiating the highest data flow capability between the device (in this case, our Adapter) and its link partner (some other device). The data flow information to be negotiated consists of the data speed (10Mbps or 100Mbps) and data transfer (half-duplex or full-duplex communication). The physical process of auto-negotiation requires only a few milliseconds to choose the fastest communications capability between the two devices.

Features

Designed for versatility and performance, the DFE-530TX Adapter provides the following features:

- 32-bit PCI Bus Master memory access for high throughput.
- PCI clock speed up to 33Mhz, independent of network clock.
- ACPI 1.1 power management compliant.
- Complies with IEEE 802.3 100Base-TX and 10Base-T Ethernet standards.
- Plug and Play installation.
- RJ-45 connector for network cable connection.
- 100Mbps Fast Ethernet or 10Mbps Ethernet data transfer, selected via auto-negotiation.
- Full-duplex or half-duplex operation, selected by auto-negotiation.
- 32-bit intelligent Ethernet controller.
- Built-in FIFO buffers reduce overhead of memory transfers.
- Two LED indicators.
- Drivers for all leading network operating systems.

2

Installation

Installation of a DFE-530TX Adapter requires hardware installation first, then software installation.

Unpacking and Inspection

CAUTION:

Under ordinary circumstances, the DFE-530TX 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 this User's Guide, ascertain that you have:

- One DFE-530TX Ethernet Adapter Card.
- DFE-530TX Software CD.

Installing the Adapter

- 1. Shut down the computer, unplug its power cord, and remove the chassis cover.
- 2. If your order does not include the Boot ROM option, go ahead to Step 3. If your order includes the Boot ROM option, then install the Boot ROM Chip by plugging the chip into the Boot ROM Socket on the DFE-530TX card. The notched end of the Boot ROM Chip must be aligned with the notched end of the Boot ROM Socket (opposite alignment will cause destruction of the Boot ROM Chip).
- 3. Firmly insert the contact edge of the DFE-530TX card into any available PCI Bus expansion slot.
- 4. Install the bracket screw to secure the card to the computer chassis.
- 5. Replace the computer cover.
- 6. Reconnect the computer power cord, and switch computer power on. If the BIOS section of your computer boot program is Plug and Play compliant, then at power-up the BIOS will automatically configure any newly installed DFE-530TX 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

Category 5 UTP cable qualifies for both, the Fast Ethernet and Ethernet, cabling rules. The maximum length of any single cable run between any station and its supporting hub is 100 meters. The maximum length of a cable joining two hubs is 10m in general, but is 100m when both hubs qualify as Ethernet Class 2 Repeaters (all D-Link Ethernet hubs do qualify). However, these cable runs may need to be shorter than the given individual maximum lengths, because their lengths are globally restricted by the rule that the maximum aggregated cable run between any two stations is 205m.

Connecting for Fast Ethernet (100Mbps)

Category 5 UTP cable is required for Fast Ethernet operation. The maximum cable run between the DFE-530TX and the supporting hub is 100m. The cable must be *straight* (not a *crossover* cable), with an RJ-45

plug at each end. Make the network connection by plugging one end of the cable into the RJ-45 jack of the DFE-530TX, and the other end into a port of the supporting hub.

Connecting for 10Mbps Ethernet

Category 3, Category 4, and Category 5 UTP cable, as well as EIA/TIA-568 100-ohm STP cable, all qualify under Ethernet cabling rules. The maximum cable run between the DFE-530TX and the supporting hub is 100 meters. The cable must be *straight* (not a *crossover* cable) with RJ-45 connector at each end. Make the network connection by plugging one end of the cable into the RJ-45 jack of the DFE-530TX, and the other end into a port of the supporting hub.

Using a Crossover Cable

A crossover cable can be used to connect the Server Card directly to the workstations, without the use of a switch. In this configuration, it is recommended that the line speed be overridden by selecting either 10Mbps or 100Mbps in the driver configuration, rather than let the Server Card use auto-negotiation.

Software Installation

On account of the great variety of network environments for which the DFE-530TX may be used, and revisions of those network systems, the instructions for software installation are given as README files on the DFE-530TX Software CD. Review the root directory README for overview information, and for full installation details, see the README and referenced instruction files in the sub-directory appropriate to your network operating system.

A

Troubleshooting

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

- 1. Ascertain that the adapter card is fully and firmly seated in the slot connector.
- 2. Check the length and rating of connecting cables.
- 3. Ascertain that the adapter PCI slot is not deactivated at the BIOS level. The CMOS Setup utility in PCI computers ordinarily provides the option to activate or deactivate PCI slots.
- 4. Replace the adapter in question with a verified adapter and run the diagnostic test again.
- 5. Install the questioned adapter in another PCI computer and run the tests again.
- 6. Remove all other PCI adapters from the computer and run the tests again. If the verification/diagnostic run is then normal, then there is probably an interrupt number conflict that will have to be resolved manually by a CMOS Setup utility run after you have reinstalled all of the expansion cards.

The DFE-530TX Adapter features two LED indicators to assist in the resolving of network diagnostics:

• LINK/ACT Indicator

A steady *green* LED indicates that the card is receiving power and there is a good link between the DFE-530TX and the device it is connected to. The LED will flash when the adapter is sending or receiving data.

• Speed Indicator

This LED shows steady *green* (ON) when operating at 100Mbps. It is *dark* (OFF) when connected at 10Mbps.

Specifications

Network Type:

Fast Ethernet 100BASE-TX IEEE 802.3u standard for 100Mbps baseband CSMA/CD local area network

Ethernet 10BASE-T

IEEE 802.3 standard for 10Mbps baseband CSMA/CD local area network

Jumperless Hardware

Auto-negotiation functionality

Media interface: RJ-45 EMI Compatibility:

FCC Class B/VCCI Class B/CE Class B

C-Tick/BSMI Class B

Host interface: PCI 2.2 Bus (Bus Master)

I/O & IRQ base address: Assigned by Plug and Play system

Physical Dimensions: 120.17 mm x 50.02 mm

Environment:

Storage: -25° to 55°C, (-13° to 131° F) Operating: 0° to 40° C, (32° to 104° F) Humidity: 10% to 90% non-condensing

Power Consumption: 0.8W max

PCB Layer: 2 layers Software drivers† for:

> √ Microsoft Windows 95/95 OSR2/ 98/98 SE/2000/Me/XP

> √ Microsoft Windows NT 3.51 & 4.0

√ Novell Netware Client for DOS

 $\sqrt{\text{Novell Netware Server 3.x, 4.x, 5.x,}}$ 6.x

 \sqrt{NCSA}

√ PCNFS

√ IBM LAN Support Program v1.3x

√ MSCLIENT

√ Microsoft Windows for Workgroups 3.11

√ Linux

√ Novell NetWare Client 32 for DOS

√ FTP PC/TCP

√ PDIPX

√ Winsock

√ LANTASTI

[†] Check http://www.dlink.com for drivers not listed and latest release of drivers.

D-Link Offices

Australia D-Link Australasia

1 Giffnock Avenue, North Ryde, NSW 2113, Sydney, Australia

TEL: 61-2-8899-1800 FAX: 61-2-8899-1868 TOLL FREE (Australia): 1800-177100

TOLL FREE (New Zealand): 0800-900900

URL: www.dlink.com.au E-MAIL: support@dlink.com.au & info@dlink.com.au

Level 1, 434 St. Kilda Road, Melbourne, Victoria 3004 Australia TEL: 61-3-9281-3232 FAX: 61-3-9281-3229 MOBILE: 0412-660-064

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 E-MAIL: techsup@dlink.ca

Chile D-Link South America

Isidora Goyenechea 2934 Of. 702, Las Condes Fono, 2323185, Santiago, Chile, S. A.

TEL: 56-2-232-3185 FAX: 56-2-232-0923 URL: www.dlink.cl

E-MAIL: ccasassu@dlink.cl & tsilva@dlink.cl

China D-Link China

15th Floor, Science & Technology Tower, No.11, Baishiqiao Road, Haidan District, 100081 Beijing, China

TEL: 86-10-68467106 FAX: 86-10-68467110 URL: www.dlink.com.cn

E-MAIL: liweii@digitalchina.com.cn

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: 20-2-635-6176 FAX: 20-2-635-6192 URL: www.dlink-me.com

E-MAIL: support@dlink-me.com & fateen@dlink-me.com

Finland D-Link Finland

Pakkalankuja 7A, FIN-0150 VANTAA, Finland

TEL: 358-9-2707-5080 FAX: 358-9-2702-5081 URL: www.dlink-fi.com

France D-Link France

Le Florilege, No. 2, Allea 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 Central Europe/D-Link Deutschland GmbH

Schwalbacher Strasse 74, D-65760 Eschborn, Germany

TEL: 49-6196-77990 FAX: 49-6196-7799300 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, Bandra-Kurla Complex Rd., Off Cst Rd., Santacruz (East), Mumbai, 400 098 India

TEL: 91-022-652-6696/6578/6623 FAX: 91-022-652-8914/8476

URL: www.dlink-india.com, www.dlink.co.in & tushars@dlink-india.com E-MAIL: service@dlink.india.com

Italy D-Link Mediterraneo Srl/D-Link Italia

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 Nishigotahda, Shinagawa, 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

Netherlands D-Link Benelux

Fellenoord 1305611 ZB, Eindhoven, the Netherlands

TEL: 31-40-2668713 FAX: 31-40-2668666 URL: www.d-link-benelux.nl

Norway D-Link Norway

Waldemar Thranesgate 77, 0175 Oslo, Norway

TEL: 47-22-991890 FAX: 47-22-207039 URL: www.dlink.no

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

South Africa D-Link South Africa

Unit 2, Parkside, 86 Oak Avenue, Highveld Technopark,

Centurion, Gauteng, South Africa

TEL: 27 (0) 12-665-2165 FAX: 27 (0) 12-665-2186 URL: www.d-link.co.za

E-MAIL: attie@d-link.co.za

Spain D-Link Iberia

C/Sabino De Arana, 56 Bajos, 08028 Barcelona, Spain

TEL: 34 93 4090770 FAX: 34 93 4910795 URL: www.dlinkiberia.es

E-MAIL: info@dlinkiberia.es

Sweden D-Link Sweden

P. O. Box 15036, S-167 15 Bromma, Sweden

TEL: 46-(0) 8-564-61900 FAX: 46-(0) 8-564-61901 E-MAIL: info@dlink.se

URL: www.dlink.se

Taiwan D-Link Taiwan

2F, No. 233-2 Pao-chiao Rd, Hsin-tien, Taipei, Taiwan

TEL: 886-2-2916-1600 FAX: 886-2-2914-6299 URL: www.dlink.com.tw

E-MAIL: dssqa@tsc.dlinktw.com.tw

Turkey D-Link Middle East

Deniz Bilgisayar, Buyukdere Cad. Naci Kasim Sk., No. 5 Mecidiyekoy, Istanbul, Turkey TEL: 90-212-213-3400 FAX: 90-212-213-3420 E-MAIL: smorovati@dlink-me.com

U.A.E. D-Link Middle East

CHS Aptec (Dubai), P.O. Box 33550 Dubai U.A.E.

TEL: 971-4-366-885 FAX: 971-4-355-941 E-MAIL: Wxavier@dlink-me.com

U.K. D-Link Europe

4th Floor, Merit House, Edgware Road, Colindale, London NW9 5AB United Kingdom 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:_____Your title at organization: _ Dept. _ Telephone Fax Organization's full address: Country: Date of purchase (Month/Day/Year): Product Product * Product installed in type of * Product installed Computer serial Model Serial No. computer (e.g., Compaq 486) (* Applies to adapters only) Product was purchased from: Reseller's name: 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? Harrospace □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?) 10. Your comments on this product:

