



DFE-680TXD
Fast Ethernet PC card
for CardBus

User' s Guide

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Introduction

Thank you for choosing D-Link DFE-680TXD, the value leader among Ethernet / Fast Ethernet adapters for CardBus notebook PCs. This chapter provides a general description of DFE-680TXD features, with a summary of features at the end of the chapter. Installation instructions are given in Chapters 2 and 3.

General Description

The D-Link DFE-680TXD 10/100 Ethernet PC Card for CardBus notebook PCs is a credit-card sized Ethernet / Fast-Ethernet adapter for connecting a notebook PC to an IEEE 802.3 or 802.3u Ethernet network. The notebook PC must be equipped with CardBus (32 bit) extension bus and Type II or Type III PC Card slot (s).

NOTE: The terms "PC Card" and "CardBus" are used throughout this manual to refer to those objects as defined in the PCMCIA / PC Card standards published by Personal Computer Memory Card Industry Association (PCMCIA). The term "slot" is used in this manual is synonymous with "socket" where the standards use the latter term in reference to the physical receptacles of a host notebook computer, for insertion/connection of PC Cards. More information on the standards is available from PCMCIA's www server at <http://www.pc-card.com>.

The DFE-680TXD automatically detects the parameters of its Ethernet environment, and automatically negotiates and determines its own speed and duplex settings as required for maximum performance within the environment. (The autonegotiation function is effective only when the DFE-680TXD is connected to the network by a device (switch or hub) which also has autonegotiation functionality.)

Inside its compact case, the D-Link DFE-680TXD holds an Ethernet controller, network processing interface, a 68-pin PC Card Standard front-end plug, which connects to the notebook PC, and a direct port for connecting RJ-45. The DFE-680TXD requires no pre-installation setup -- simply insert its front end into the notebook PC's PC-Card slot.

The DFE-680TXD is supplied with an RJ-45 receptacle, which receives the network cable. The direct port features full LED display for linkage and activity states, and for the

speed and duplex ,and for transmitting and receiving data and carrier detection.

About Fast Ethernet

Fast Ethernet is a network technology specified by IEEE Standard 802.3u. It extends the traditional 10Mbps (10 megabit/sec) Ethernet technology to achieve 100Mbps (100 megabit/sec) transmission and reception. Because Fast Ethernet retains the traditional Ethernet CSMA/CD (Carrier Sense, Multiple Access, Collision Detect) protocol, it remains wholly compatible with 10Mbps Ethernet while providing a tenfold increase in network capacity.

The Fast Ethernet standard specifies three subtypes, corresponding to three media types:

- 100Base-TX (using two twisted pairs in EIA 568 Category 5 UTP or STP cable)
- 100Base-T4 (using four twisted pairs in a Category 3, Category 4, or Category 5 UTP cable)
- 100Base-FX (using two fiber-optic strands).

The DFE-680TXD provides full-duplex and half-duplex 100Base-TX operation (in Category 5 twisted-pair cable environments). It does not provide 100Base-T4 or 100Base-FX operation. To provide for traditional 10Mbps Ethernet operation in twisted-pair cable environments, the DFE-680TXD also offers 10Mbps Ethernet operation, in full-duplex and half-duplex modes. The DFE-680TXD's autonegotiation capability provides for automatic selection of the best operation mode.

About Autonegotiation

The basic idea of auto-negotiation can be understood by reflecting for a moment on the familiar process of making a dialup connection between two modems. You have probably heard some gravelly-sounding exchanges between your local modem and a modem at the other end of a telephone line. (These exchanges are ordinarily played out through a speaker in your local modem). As irritating as those few seconds of noise may be, they do let you know that your modem and the remote modem are on the job, preparing for your intended communication with the remote computer.

The preparatory work of the two modems during those few seconds before you see the “connect” message is to *negotiate* the best data communication scheme which is supported by both modems, and which is suitable for the quality of the telephone-line connection between them. The parameters to be settled between the two modems include

best baud rate, compression method, and error correction method. When the two modems have tested the phone-line quality and have switched to the combination of parameters which will provide the best data communication, then you are given the “ connect” message which signals the end of the inter-modem negotiation and the beginning of your intended communication with the remote computer.

Autonegotiation between devices within an Ethernet LAN is similar in concept, but much briefer. The two devices involved in the autonegotiation will be your DFE-680TXD and the switch or hub through which it is connected into the LAN. (Switches ordinarily provide for autonegotiation; traditional hubs do not.) The parameters to be negotiated between the DFE-680TXD and its supporting switch or hub include speed (100Mbps = Fast Ethernet, or 10Mbps = traditional Ethernet) and duplex mode (half-duplex or full-duplex).

Startup communication between the two devices occurs when both devices are operating, the cable connection between them is good, and the connected notebook PC's network software is loaded. As soon as those conditions are satisfied, the preparatory process of auto-negotiation between the DFE-680TXD and its supporting device begins and proceeds automatically.

If the supporting switch or hub has autonegotiation functionality, then it and the DFE-680TXD exchange a series of messages in which each device signals its capabilities and listens for corresponding information about the other. The auto-negotiation process requires only a few milliseconds, and the two devices select the best communication parameters supported by both devices.

If the supporting device does not have autonegotiation functionality, then its monotone (single capability) message will be recognized by the DFE-680TXD's autonegotiation facility, and the DFE-680TXD will simply switch to the one of its own capabilities which matches that of the supporting device.

Once the auto-negotiation is completed, then the line is ready, and it will provide an optimal data channel between the DFE-680TXD and the supporting device. The line will remain ready without further auto-negotiation action until the linkage is broken. Auto-negotiation then reoccurs at any time that the linkage is restored, again making the line ready for optimal data communications.

LED Indicators

The direct port features six LED indicators:

10/100 Indicator: Solid LED clearly indicates when you are connected to a Fast Ethernet Network.

Half/Full Indicator:

Steady green indicates Full-Duplex selected.

Dark indicates Half-Duplex selected.

Ln/Act Indicator:

Steady green indicates that there is good linkage to the network ("Linkage" state, quiescent). Flashing green indicates that the DFE-680TXD is transmitting or receiving ("Activity" state). In 10Mbps mode, flashing will be regular and periodic. In 100 Mbps mode, flashing may be irregular, with longer dark periods during heavy traffic activity.

Rx Indicator:

Solid and Flashing LED clearly indicates when you are receiving data.

Tx Indicator:

Solid and Flashing LED clearly indicates when you are transmitting data.

CD Indicator:

Solid LED clearly indicates carrier detection.

Summary of Features

Features of Model DFE-680TXD 10/100 Ethernet PC Card:

- 100Mbps and 10Mbps data rates in compliance with IEEE 802.3
- Ethernet standards 100Base-TX and 10Base-T
- Complies with PCMCIA V2.x, JEIDA V4.x, and 32-Bit
- CardBus Standards
- CardBus standard 68-pin front-end connector
- Full-Duplex capable in 10Mbps and 100Mbps modes.

- Autonegotiation per IEEE 802.3u specification
- No manual setup switches — fully automatic configuration
- Power consumption 2 watts (max.)
- Laser-welded stainless steel case
- Software support:

Diagnostic Program

NetWare DOS ODI

NetWare Lite

Personal NetWare

Windows 95 OSR2

Windows NT 3.51

Windows NT 4.0

Packet Driver for NCSA

Packet Driver for FTP PC/TCP

Packet Driver for IPX

Packet Driver for Winsock

Windows 98

Windows 98SE

Windows ME

Windows 2000

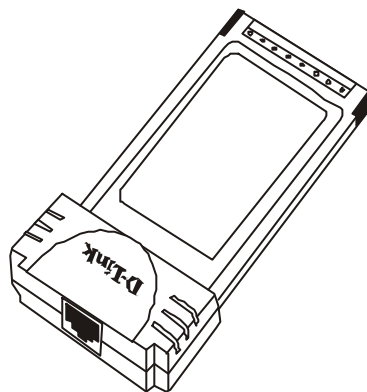
Hardware Installation

Unpack and Inspect

NOTE: Under ordinary circumstances, the DFE-680TXD 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 DFE-680TXD.

Open the shipping carton and carefully remove all items. You have:

- One DFE-680TXD 10/100 Ethernet PC Card
- One plastic storage bag for the DFE-680TXD
- One D-Link DFE-680TXD Software CD-ROM
- One Quick Installation Guide



**DFE-680TXD
10/100 Ethernet PC Card**

Figure 1

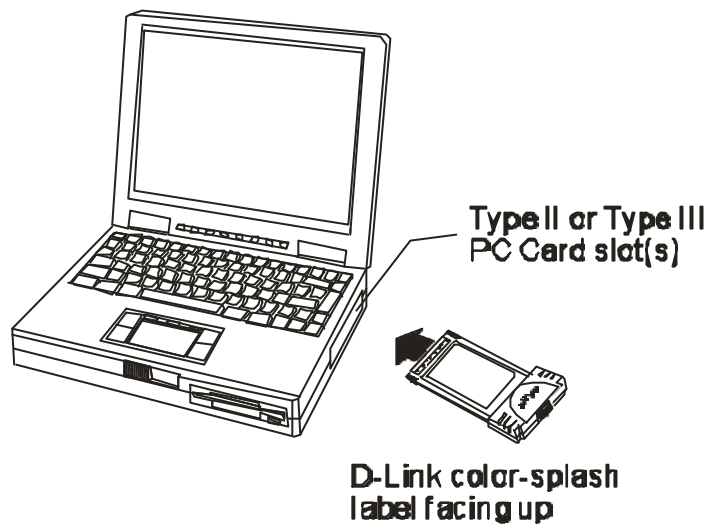
In the event that any item is missing, or if you find any mismatch or damage, promptly contact your dealer for an exchange.

Follow these four steps to install the DFE-680TXD:

Step 1: Insert the DFE-680TXD

Under the PC Card standard and the corresponding Japanese JEIDA standard, PC Cards may safely be "hot swapped" -- it is not necessary to switch the computer's power off before installing or removing the DFE-680TXD, or any other PC Card.

Find/select an open Type II or Type III PC Card slot on your notebook computer's side or rear panel. Hold the DFE-680TXD with the colorful D-Link splash label upward. Insert the front end of the PC Card into the CardBus slot, and slide the PC Card all the way into the slot until it reaches a firm stop.

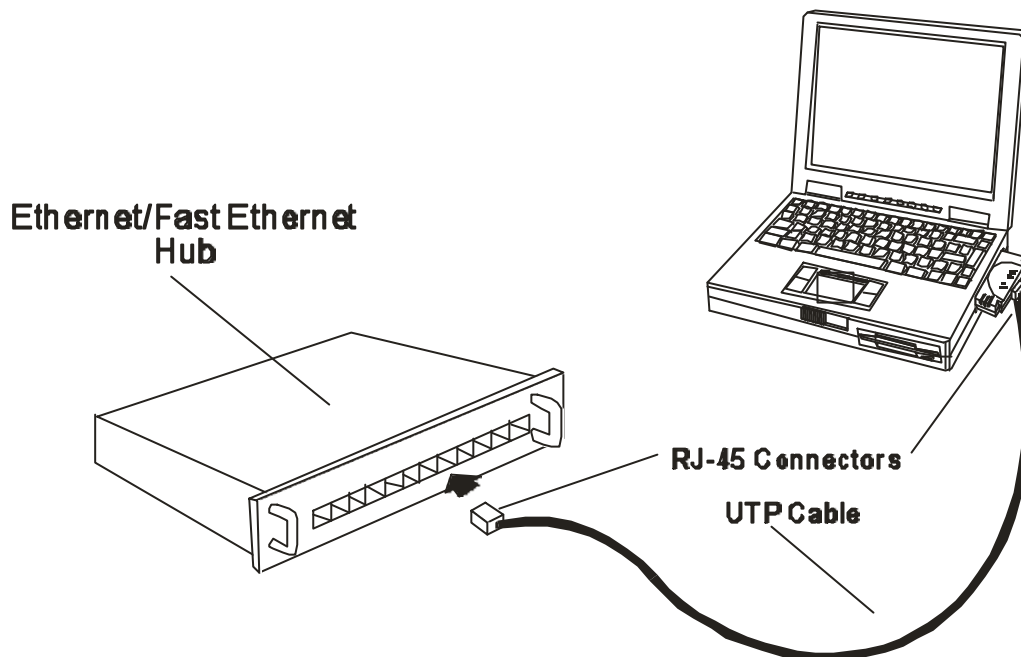


NOTE: Many notebook PCs feature a stacked pair of PC Card slots, logically (but not physically) designated as Slot 1 and Slot 2.

It is most usual for the lower one of the two slots in the stack to be designated Slot 1, but there are exceptions. In the subsequent procedure for DFE-680TXD software installation, it might be useful for you to know whether your DFE-680TXD is installed in Slot 1 or Slot 2. Under Windows 95, you can check by opening the Control Panel / PC Card display. Under DOS it is also possible to make a software check, but it is more difficult. If it develops that you need to make a trial-and-error determination or correction, then it is easy to do: just reinstall the DFE-680TXD in another slot.

Step 2: Connect to the Network Medium

Make the network connection by running a UTP cable from the supporting switch or hub to your direct port. Simply plug one end (RJ-45 plug) of the cable into an available port of the switch or hub, and plug the other end (RJ-45 plug) into the RJ-45 socket of your direct port coupler.



Step 3: Confirm Connection (Ln/Act Indicator)

When the notebook computer's power is ON, the DFE-680TXD is firmly seated in the slot connector, the direct port has a good cable connection to the supporting hub, and the supporting hub is power on and functioning properly, then the direct port's Ln/Act LED glows steady green ("Linkage" state).

If the Ln/Act LED remains dark without apparent cause, then the most likely fault is poor engagement of the 68-pin front-end plug. Review the following section titled "Remove the DFE-680TXD," then remove the DFE-680TXD from its slot. Repeat the procedures of the above Step 1, "Insert the DFE-680TXD," taking care to ensure that the DFE-680TXD is right side up and front-end first, and that it seats firmly in a suitable PC Card slot of your notebook. Repeat the procedures of Steps 2 as necessary get the Ln/Act LED confirmation.

NOTE: You might need to wait a few seconds following notebook power up, or following insertion of a PC Card, for the software processing to be completed. The

Ln/Act indicator will remain dark until the software processing is completed.

Connect the Network Cable

Category 5 UTP cable is good enough to qualify under both the Fast Ethernet cabling rules and the traditional Ethernet cabling rules. The maximum individual cable run between any station and its supporting hub or switch is 100m. The maximum individual cable run 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). But these cable runs may need to be shorter than the given individual maximum lengths, because their lengths are also restricted by the rule that the maximum *aggregated* cable run between any two stations is 205m.

Connecting for Fast Ethernet

Category 5 UTP cable is required for Fast Ethernet operation. The maximum length of cable between the DFE-680TXD and the supporting hub is 300 ft. 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 receptacle of the direct port, 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 traditional Ethernet cabling rules. The maximum cable run between the DFE-680TXD and the supporting hub is 300 ft. The cable must be “straight” (not a “crossover” cable) with RJ-45 plug at each end. Make the network connection by plugging one end of the cable into the RJ-45 receptacle of the direct port, and the other end into a port of the supporting hub.

Software Installation

Windows2000 driver install

Figure1- Insert **DFE-680TXD** into notebook, new hardware device should prompt. Select **Next**.

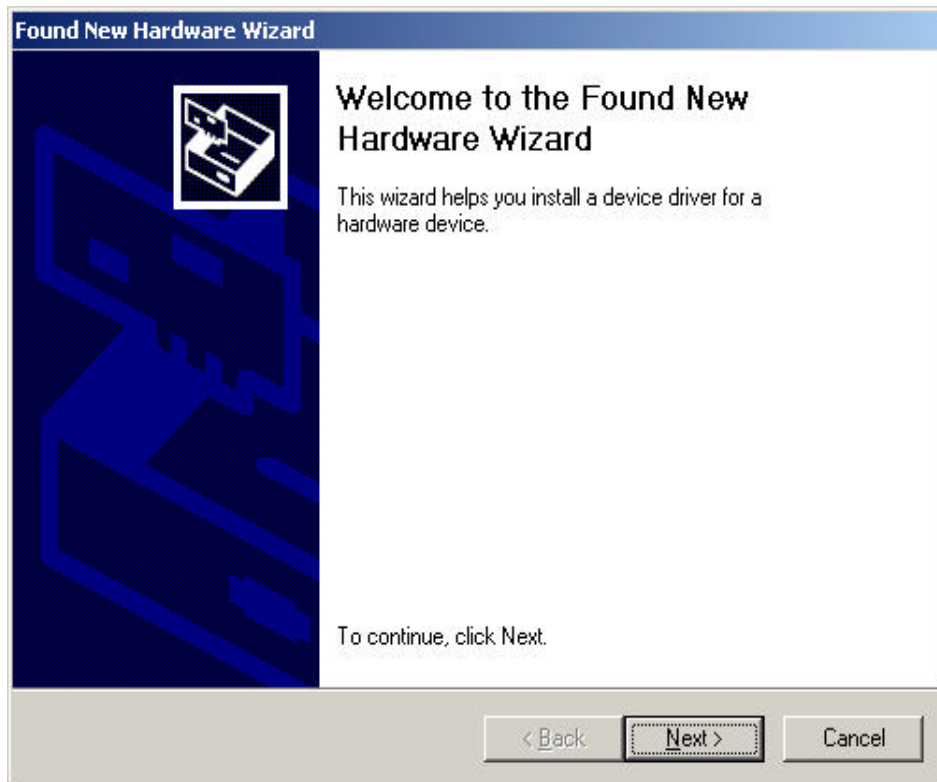


Figure2- Select **Next** to continue installation.

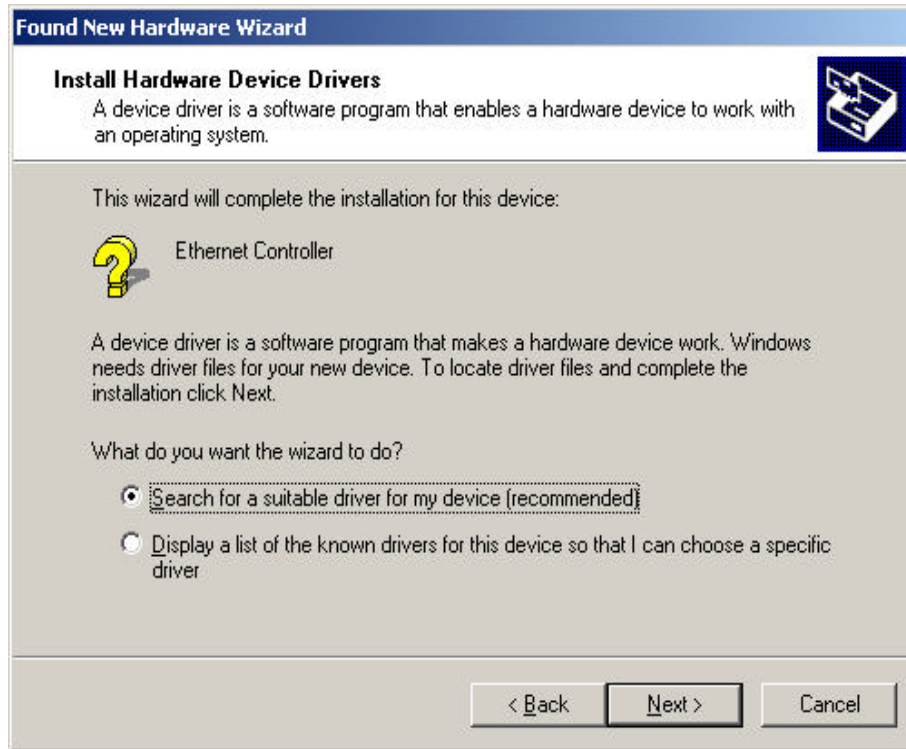


Figure3- Ensure that the **Specify location** box is checked and click **Next**

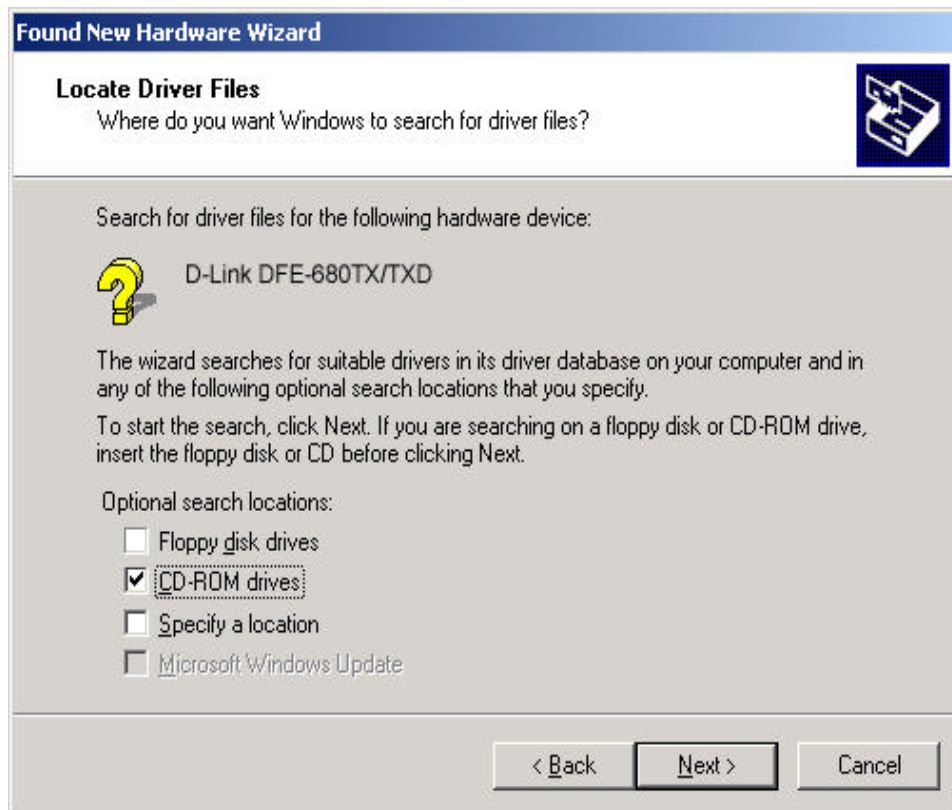


Figure4 Click **Next** to continue

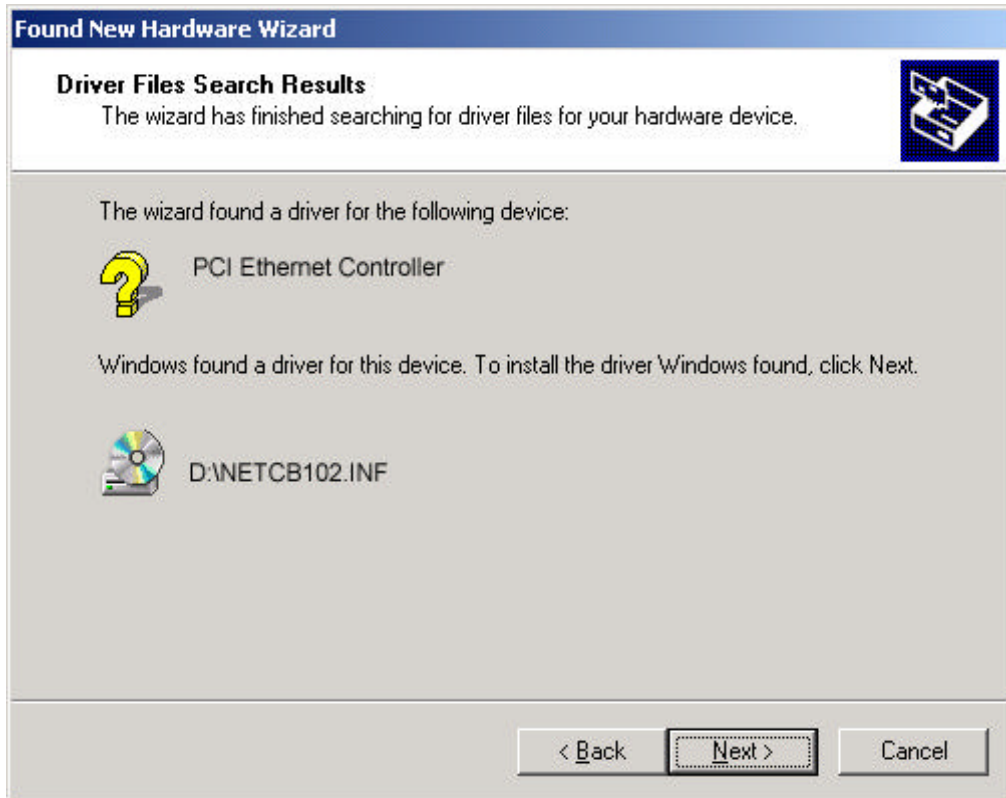


Figure5- The Digital Signature Not Found window appears. Click **Yes** to continue.

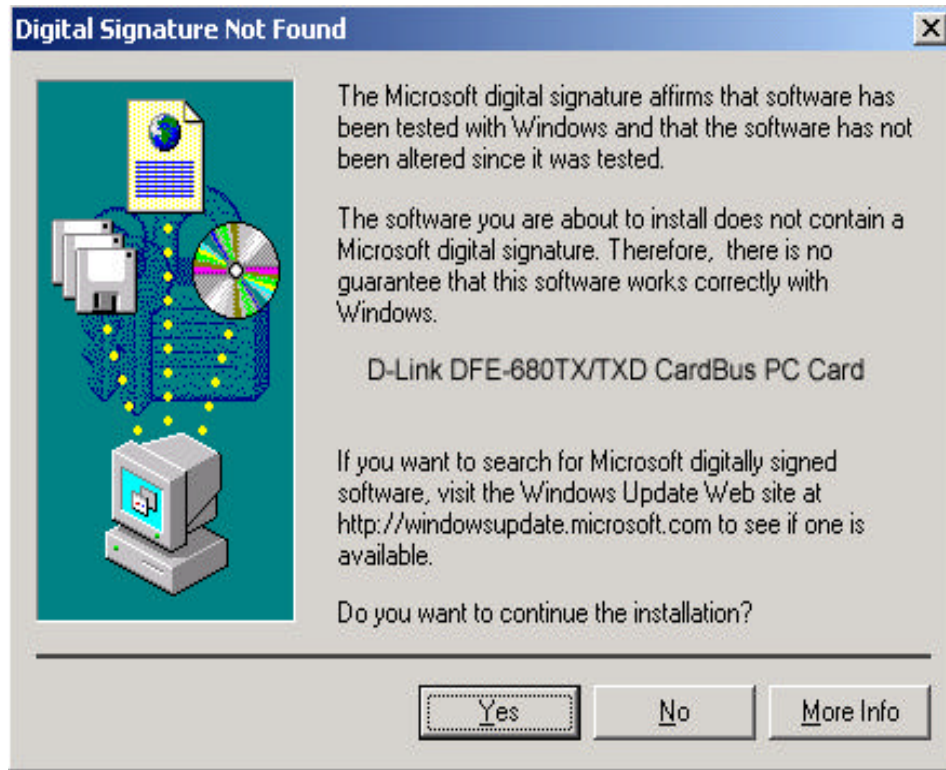
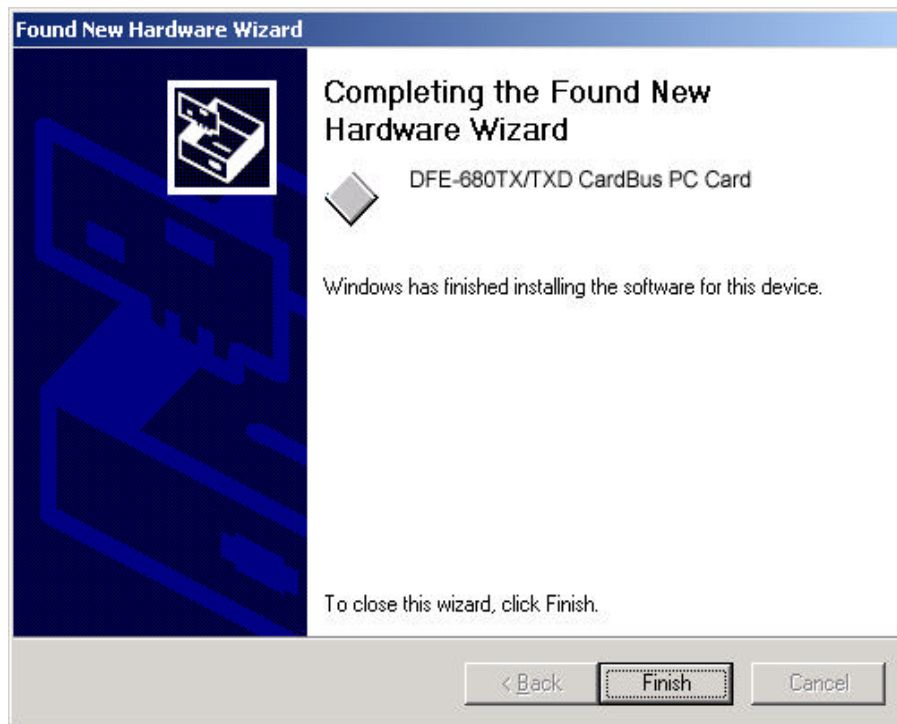


Figure6 Click **Finish** to complete the **DFE-680TXD** Ethernet Card installation.



Device Manager for proper installation for Win2000

Figure7- Click the **Start** button > **Settings** > **Control Panel** >Then Double Click the **System** icon and the **Systems Properties** should appear.

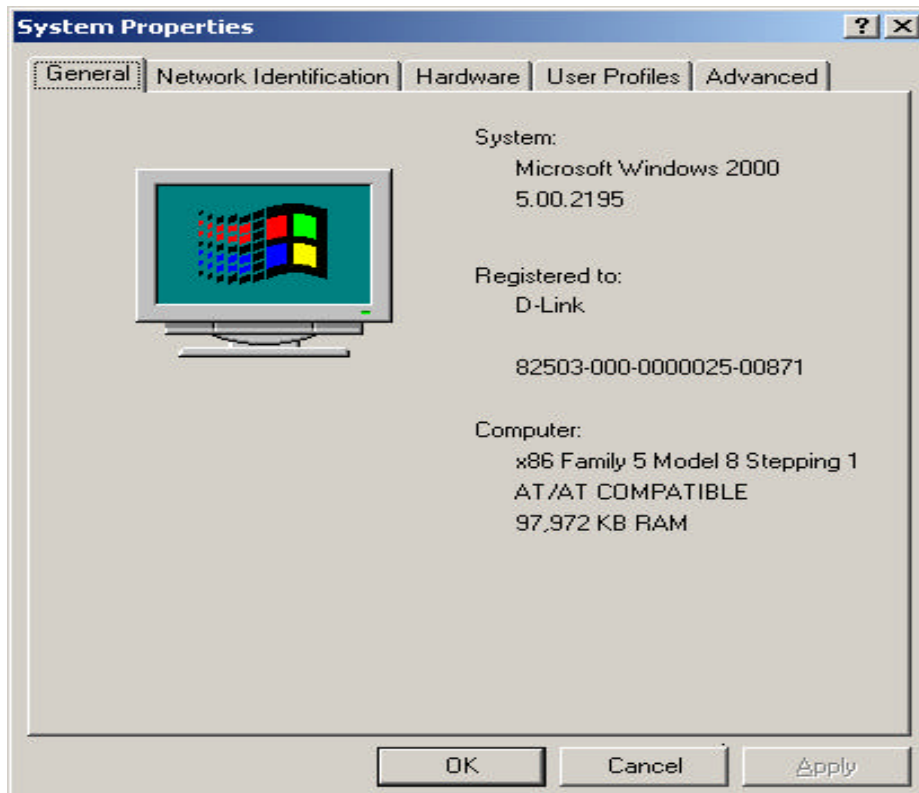


Figure8 Select **Hardware** and then click the **Device Manager** button

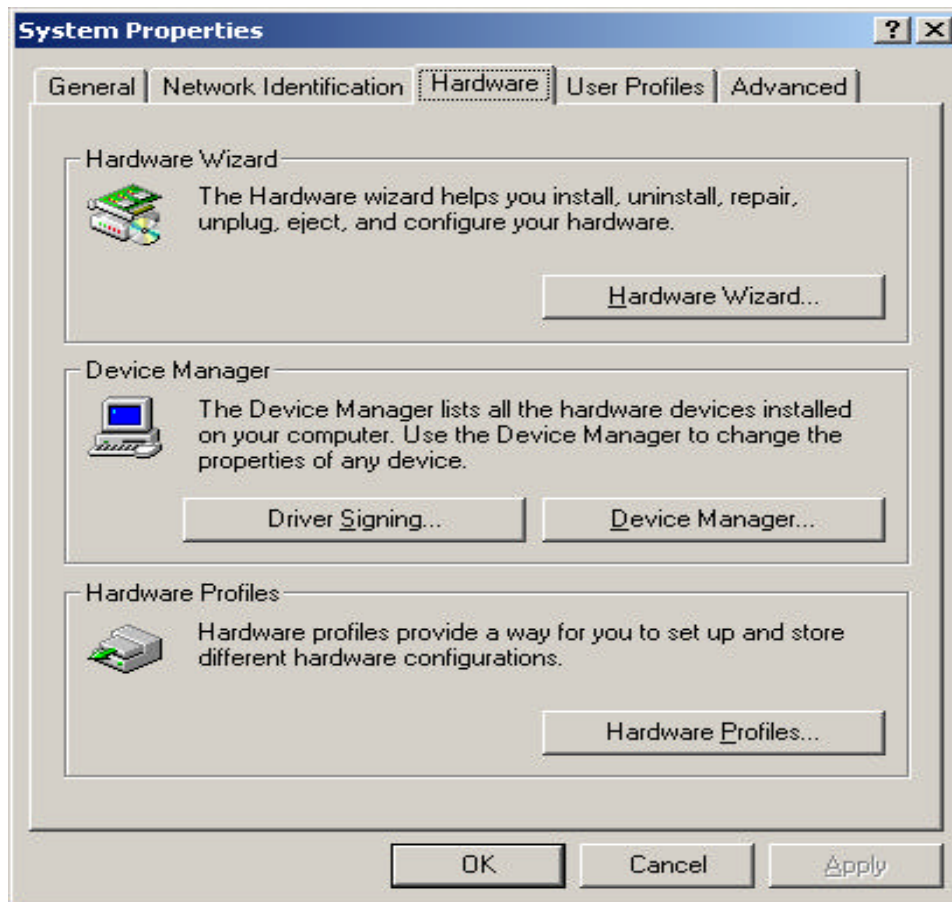
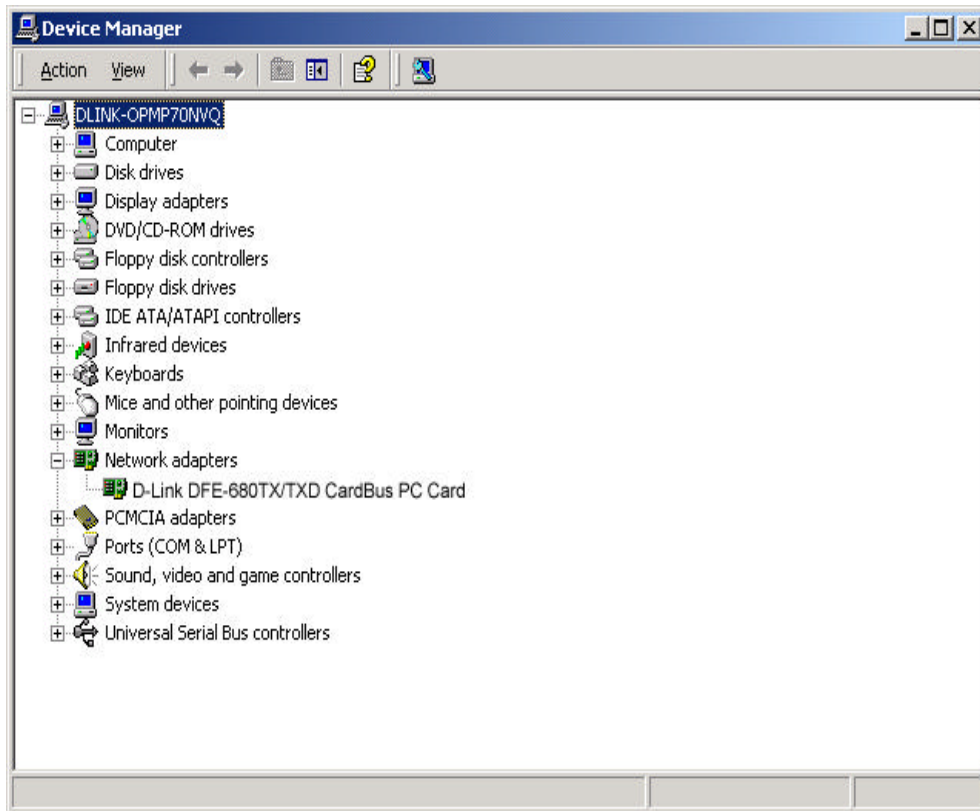


Figure9 The **Device Manager** menu. Double click on the **Network Adapters** and the

D-Link DFE-680TXD CardBus should appear showing proper installation.



Windows ME driver installation

Figure1- Insert the DFE-680TXD into available PCMCIA slot. Windows should detect Card. The **Add New Hardware** windows appears, select **Next**



Figure2- Enter CD-ROM drive letter or click on the Browse button and highlight the **CD-ROM** drive under **Drivers**. Then Click **Next** to continue the installation.

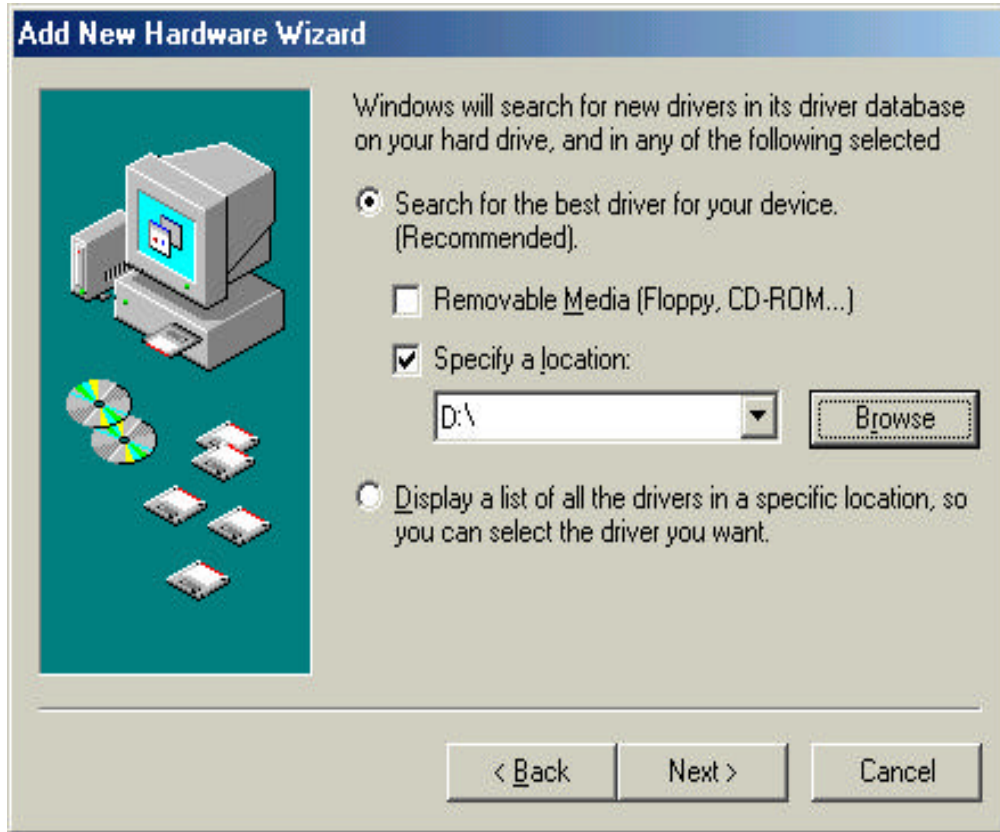


Figure3- A screen appears telling you that is has located the DFE-680TXD driver in the **CD-ROM** drive. Then click **Next**, Windows will copy files to the hard drive.



Figure4 Click **Finish** to complete driver installation.

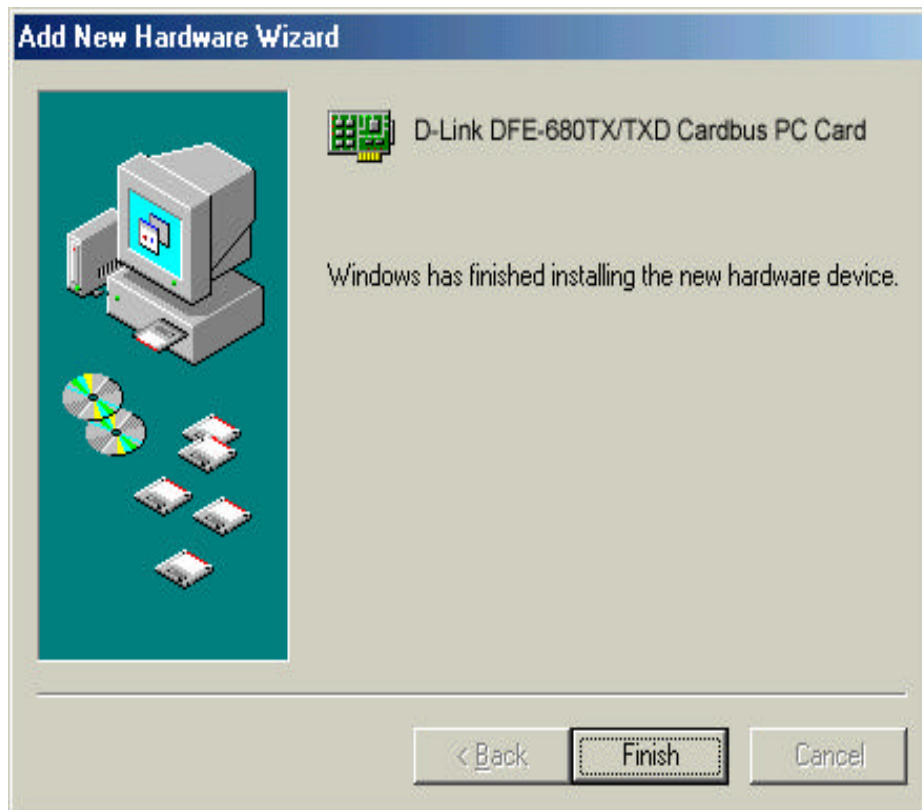
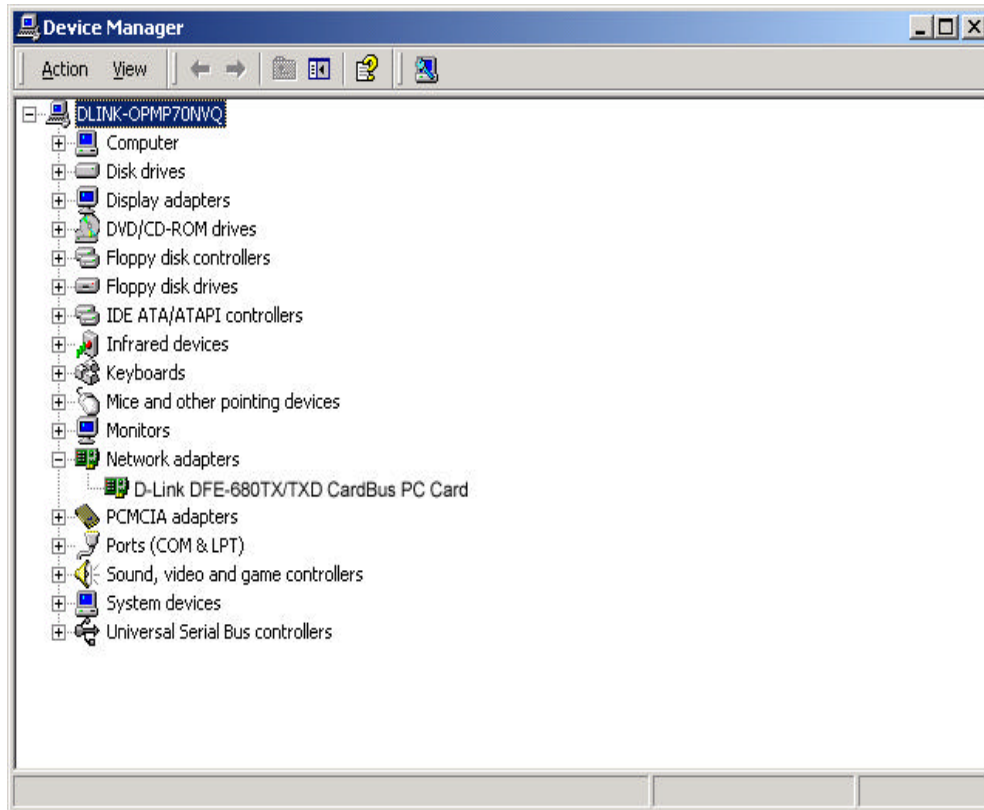


Figure5 Click the **start** button > **Settings** > **Control Panel** > Click the **System** button > **Device Manager** > Network Adapters. And D-Link DFE-680TXD CardBus should appear showing proper installation.



Windows 98 Driver install

Figure 1- Select Next.

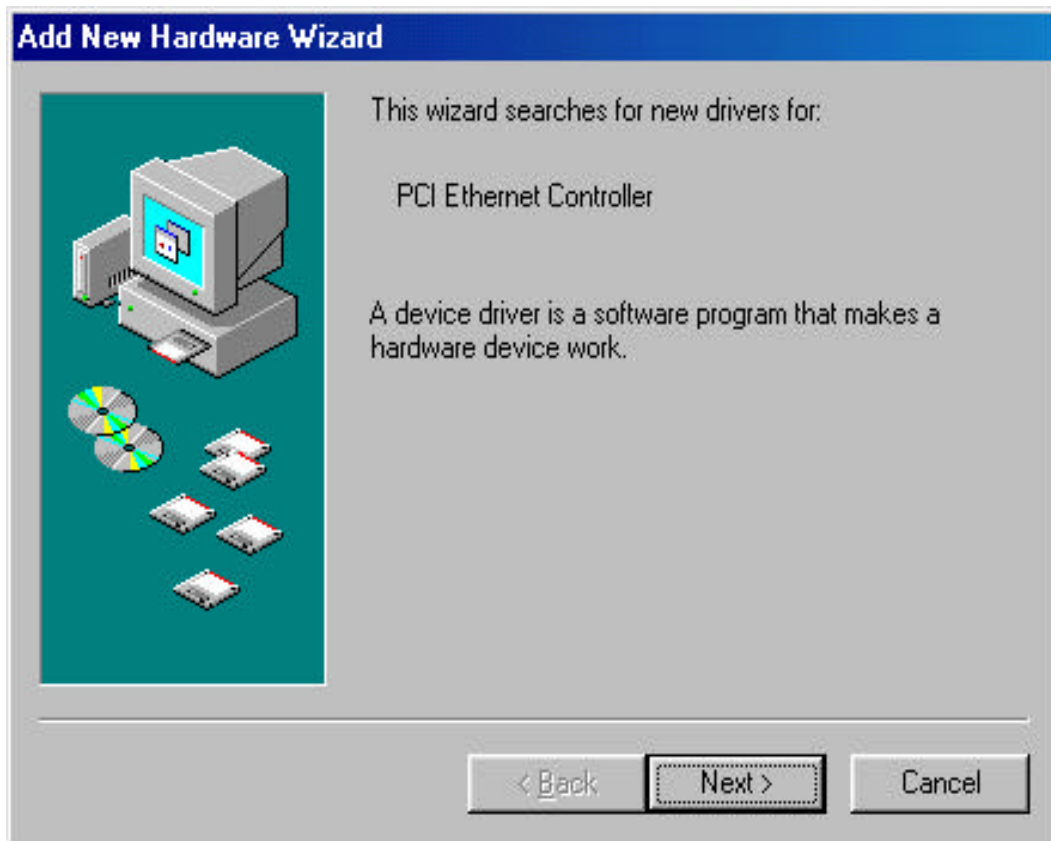


Figure2- Select Next

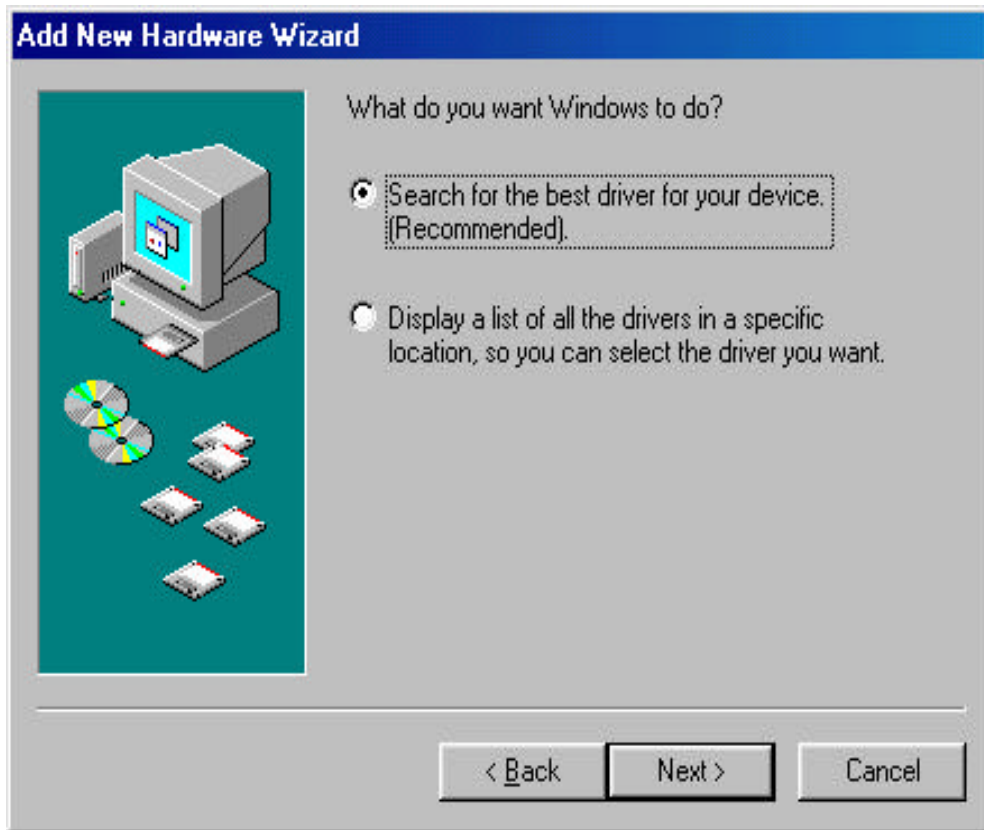


Figure3- Enter CD-ROM drive, or click on the Browse button and select CD-ROM drive.



Figure4 Driver file name, select **Next**.

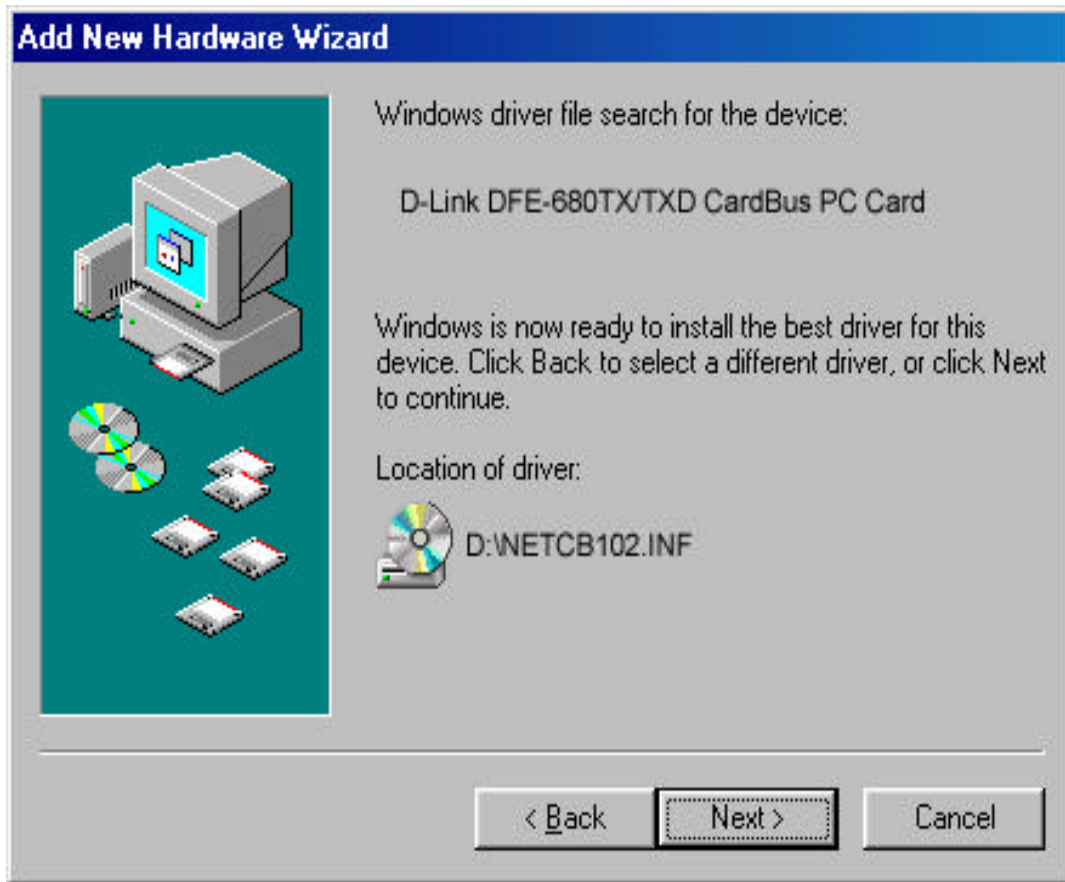


Figure5 Insert 98 CD-ROM then click on **OK** button.

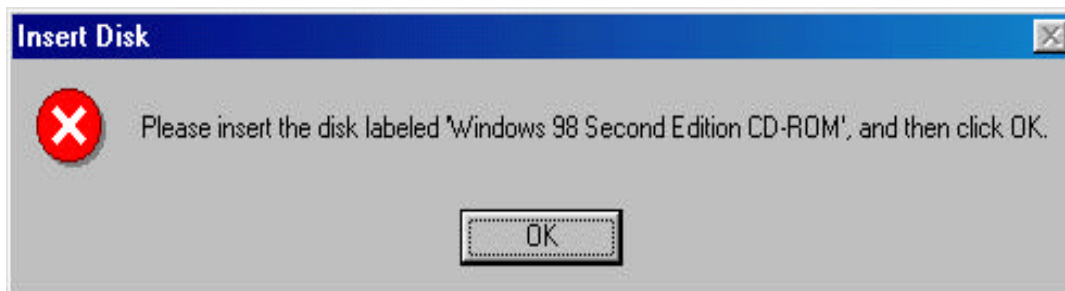


Figure 6 Enter CD-ROM drive, then type D:\ Win98 in the box.

(Some computers will have the Windows 98 files available in the C:\ Windows\ options\ cabs directory.)After typing in the location. **Click OK.**

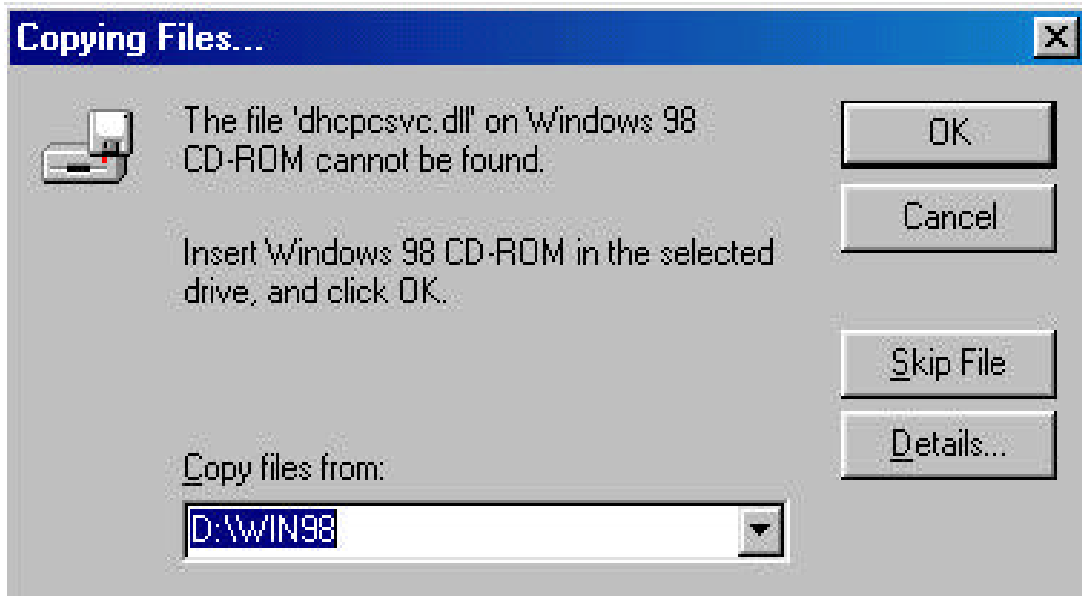


Figure7- Finish

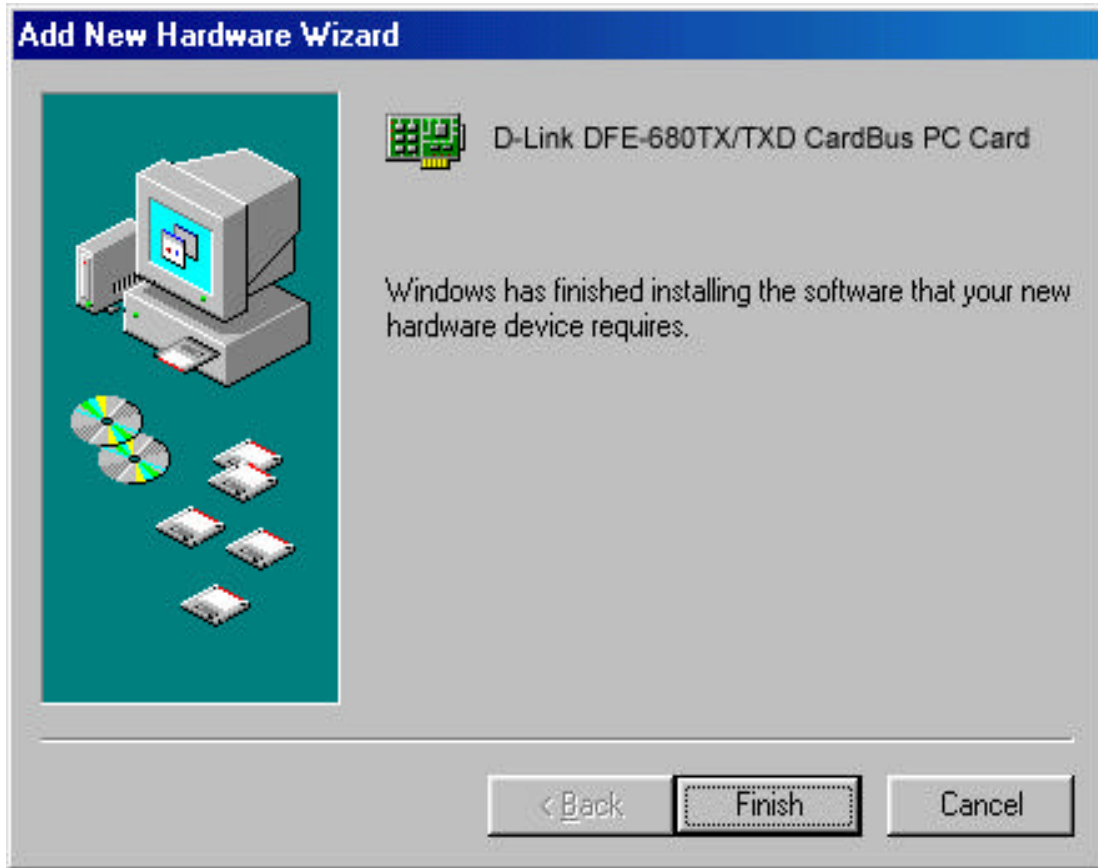
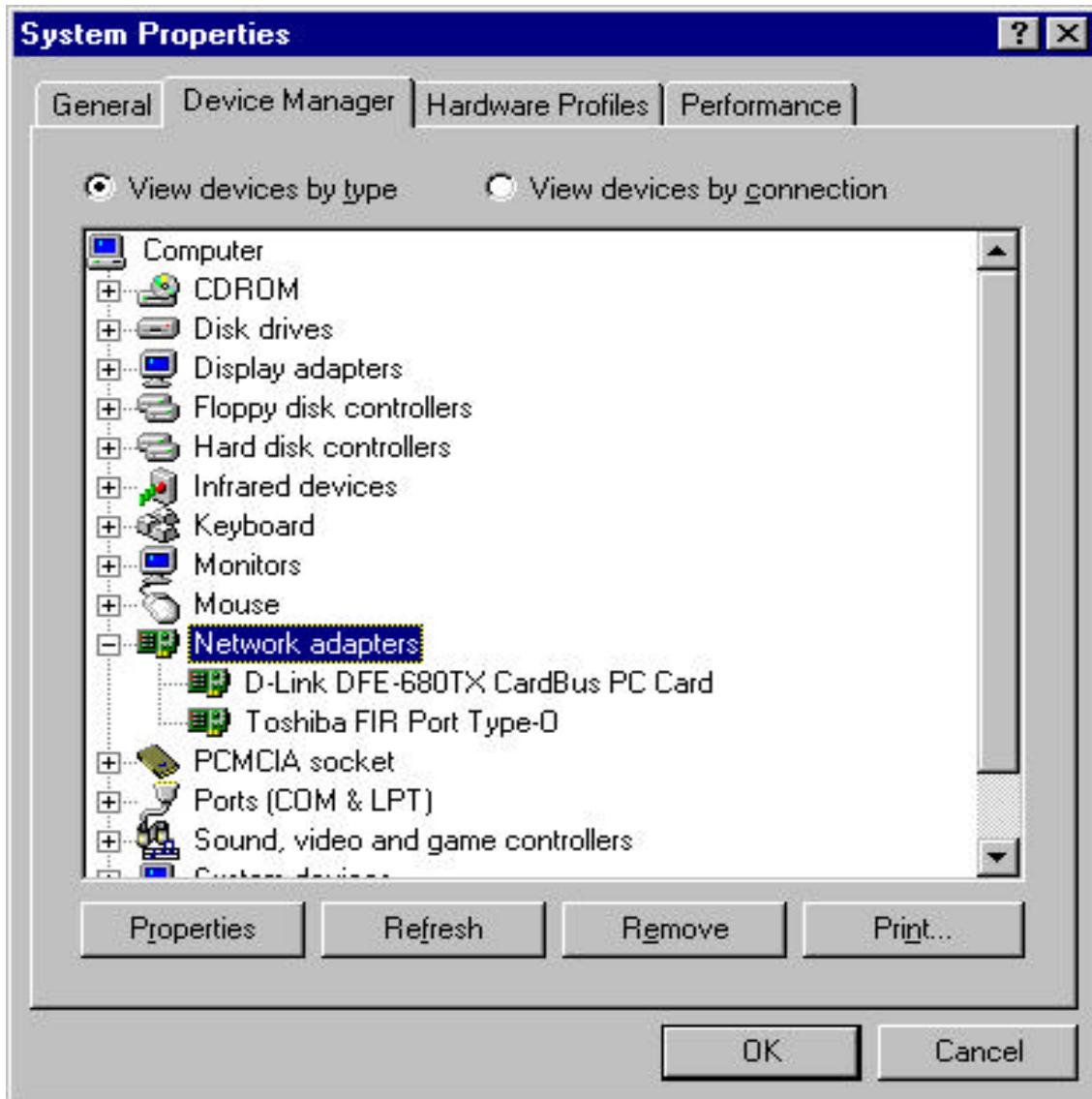


Figure8- Click the **Start** button > **Setting** > **Control Panel** > Click the **System** button > **Device Manager**> **Network Adapters** . Device Manager will display of proper installation of adapter.



Troubleshooting

Troubleshooting the Hardware Installation

If you experience any problems with the hardware installation, first ascertain that all network cable connections are firm, that the proper grade of cable is used for the network connection, and that the cable makeup is correct (straight — without un-needed crossovers in the connector wiring). Check that the supporting hub is power-on and operating normally, and that the hub is properly qualified (under 10Base-T and/or 100Base-TX standards).

Verify Each Computers Identification

If more than one computer on your network has the same “Computer name,” communications may be negatively affected. Also, each computer must have the same “Workgroup” name to communicate properly.

Verify Network Adapter Installation

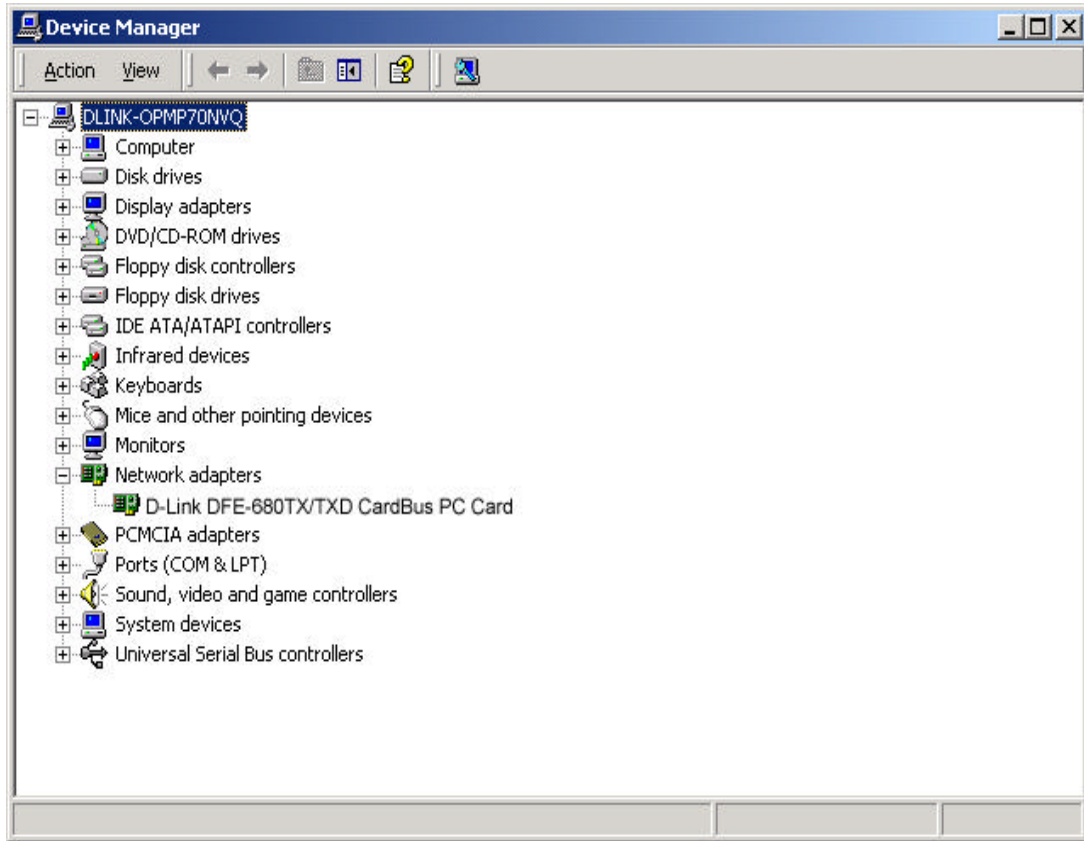
If your Network Adapter were not installed, including the Network System Software or Device drivers, your network will not function properly. Use these steps to verify that your Network Adapter are properly installed.

1. Double-Click the “System” icon in the Control Panel.
2. Click the “Device Manager” tab on top of the “System Properties” dialog box.
3. Double-Click “Network Adapters” if you do not see any items branching out. You should see “D-Link DFE-680TXD CardBus PC Card branching out after double-Clicking Network Adapters.”

If you do not see any items branching out after double-clicking “Network Adapters,” your Network Adapter has not been properly installed. Start at the beginning of the guide and follow these steps for this computer.

If you see symbols such as yellow exclamation point or red “X” over the icon adjacent to “D-Link DFE-680TX/TXD CardBus PC Card,” your card is not installed properly or may have a problem. Double-click the “ D-Link DFE-680TX/TXD CardBus PC Card

Adapter” read the explanation of the problem. This information will be helpful if you require technical support from D-Link.



Verify Cable Connections

Check to see that the computer(s) you are troubleshooting are properly connected. Each computer must be connected from its DFE-680TXD with a Category 5 cables. Examine the network cables and ensure that they have not been damaged by walking-on, rolling over chairs, or closed in doors. Additionally, make note of and alleviate any possible electromagnetic interference that may be effecting your network.

Your network cables can be plugged into any port on your hub except the “Uplink” port. The “Uplink” port is only used when connecting your hub to another hub or switch.

Understanding Indicators

Your DFE-680TXD has indicators or lights that can give you information about your network traffic and help you determine problems when troubleshooting.

Your DFE-680TXD has two indicators label “ACT” and “LINK” on their back panels. A steady green “LINK” light indicates a good connection with the hub. A flashing green “ACT” light indicates that the Network Adapter is sending or receiving data.

Diagnostics and Checking Communications

Included on the CD-ROM is a “DFE-680TXD PCMCIA Adapter Driver Program” is a diagnostic program that will help you determine if any faults exist in your DFE-680TXD Network Adapters or connection.

1. Restart your computer in MS-DOS mode. (Click “Start”, then “Shut Down..”, and finally select “Restart the computer in MS-DOS mode?”)
2. Insert the CD-Rom labeled “DFE-680TXD PCMCIA Ethernet Adapter Driver Program” into your CD-Rom D:\
3. Type D:\DIAG.EXE at the MS-DOS prompt and press “Enter” to start the D-Link PCMCIA Fast Ethernet Adapter Diagnostic Program.
4. Read the follow the instructions on the screen (Press F1 key anytime for additional help.)
5. “Adapter Basic Diagnostic” will determine if any problems exist with DFE-680TXD.
6. “Network Diagnostic” will determine if problems exist with your network or connections. To use “Network Diagnostic”, please run program on both computers in MS-DOS Mode.

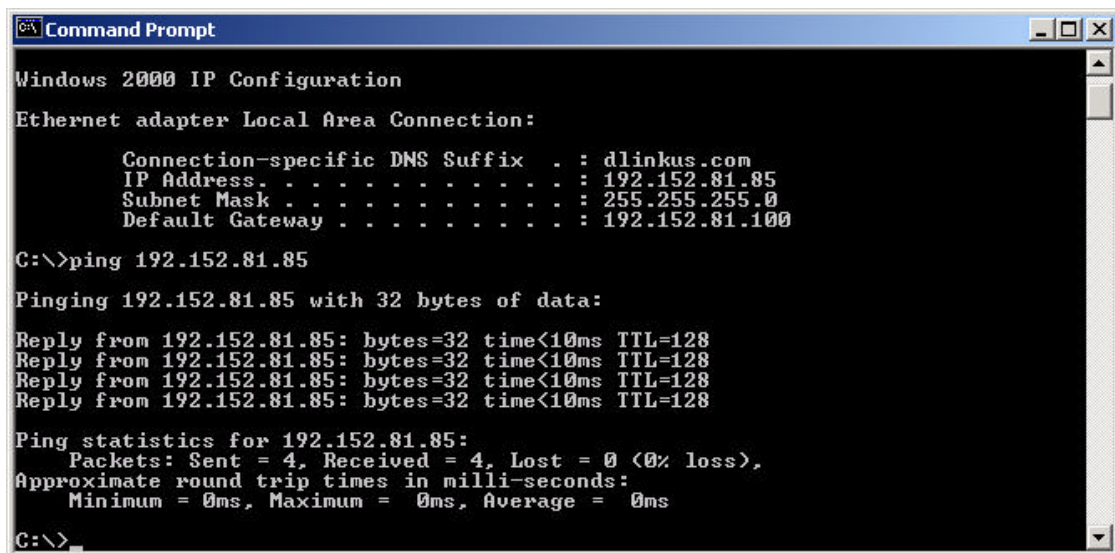
If you encounter any problems, please contact D-Link technical support.

Pinging your DFE-680TXD Card

Follow these steps to Ping a device:

Ping is the acronym for Packet Internet Groper (PING), a utility to determine if a specific IP address is accessible. It works by sending a packet to the specified address and waiting for a reply. Ping is primarily used to troubleshoot Internet connections. By sending out a ping, you are verifying that a specific computer is available. Since all computers on the network must have a unique IP address, getting a reply means that a computer is on the network and that can communicate. If you cannot ping another computer, then there is probably a problem with the hardware. Check the cabling and adapter installation. If you are unable to network, even when you receive a reply to your ping, it is probably a software configuration issue. Verify that all the settings are correct.

1. Start MS-DOS Prompt.



```
Command Prompt
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlinkus.com
    IP Address. . . . . : 192.152.81.85
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.152.81.100

C:\>ping 192.152.81.85

Pinging 192.152.81.85 with 32 bytes of data:

Reply from 192.152.81.85: bytes=32 time<10ms TTL=128
Reply from 192.152.81.85: bytes=32 time<10ms TTL=128
Reply from 192.152.81.85: bytes=32 time<10ms TTL=128
Reply from 192.152.81.85: bytes=32 time<10ms TTL=128

Ping statistics for 192.152.81.85:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

2. Type in following: ping:xxx.xxx.xx.xx, where xxx.xxx.xx.xx is the IP address to be pinged (i.e. 192.152.81.85). In this case, computer A is pinging its own IP address.

Specifications

Network Type:

Ethernet 100Base-TX

Ethernet IEEE 802.3u standard for 100Mbps baseband CSMA/CD local area network

Ethernet 10BASE-T

Ethernet IEEE 802.3 standard for 10Mbps baseband CSMA/CD

local area network

Jumperless Hardware

Autonegotiation functionality

Media interface: RJ-45

LAN Chip Set: ADMTEK AN985L

EMI Certifications:

FCC Class B

VCCI Class B

CE Certification

Host interface: CardBus

I/O base address assigned by Plug and Play system

Interrupt Number Assigned by Plug and Play system

Physical Dimensions: 120.0 × 54.0 × 3.0 mm

Environment:

Storage: -20° to 70°C, (-4° to 158° F)

Operating: 0° to 60° C, (32° to 140° F)

Humidity: 10% to 90% non-condensing

Power Consumption: 2.0W

PCB Construction: 2 layers

Device Drivers*

- Diagnostic Program
- NetWare Lite
- Personal NetWare
- NetWare DOS ODI
- Windows 95 OSR2
- Windows 98
- Windows 98 SE
- Windows ME
- Windows 2000
- Windows NT 3.51
- Windows NT 4.0
- Packet Driver for NCSA
- Packet Driver for IPX
- Packet Driver for Winsock
- Packet Driver for FTP PC/TCP

*Check <http://www.dlink.com> for newest

releases of drivers.

D-Link provides free technical support. North American customers can contact D-Link technical support through our web site, e-mail, or by phone. North American technical support is available Monday through Friday from 6:00 a.m. to 6:00 p.m. (PST).

Web: <http://www.dlink.com/tech/>

E-mail: tech@dlink.com

Phone: 949-788-0805 (option #4)

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.

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.

VCCI Warning

注意
この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づき第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

LIMITED WARRANTY

D-Link Systems, Inc. ("DLINK") provides this limited warranty for its product only to the person or entity who originally purchased the product from D-Link or its authorized reseller or distributor.

Limited Hardware Warranty: D-Link warrants that the hardware portion of the D-Link products described below ("Hardware") will be free from material defects in workmanship and materials from the date of original retail purchase of the Hardware, for the period set forth below applicable to the product type ("Warranty Period") if the Hardware is used and serviced in accordance with applicable documentation; provided that a completed Registration Card is returned to an Authorized D-Link Service Office within ninety (90) days after the date of original retail purchase of the Hardware. If a completed Registration Card is not received by an authorized D-Link Service Office within such ninety (90) period, then the Warranty Period shall be ninety (90) days from the date of purchase.

Product Type	Warranty Period
Product (excluding power supplies and fans), if purchased and delivered in the fifty (50) United States, or the District of Columbia ("USA")	As long as the original purchaser still owns the product
Product purchased or delivered outside the USA	One (1) Year
Power Supplies and Fans	One (1) Year
Spare parts and spare kits	Ninety (90) days

D-Link's sole obligation shall be to repair or replace the defective Hardware at no charge to the original owner. Such repair or replacement will be rendered by DLink at an Authorized DLink Service Office. The replacement Hardware need not be new or of an identical make, model or part; D-Link may in its discretion may 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. The Warranty Period shall extend for an additional ninety (90) days after any repaired or replaced Hardware is delivered. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the 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 DLink's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original delivery of the Software for a period of ninety (90) days ("Warranty Period"), if the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link's sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for 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. The Warranty Period shall extend for an additional ninety (90) days after any replacement Software is delivered. 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.

What You Must Do For Warranty Service:

Registration Card. The Registration Card provided at the back of this manual must be completed and returned to an Authorized D-Link Service Office for each D-Link product within ninety (90) days after the product is purchased and/or licensed. The addresses/telephone/fax list of the nearest Authorized D-Link Service Office is provided in the back of this manual. FAILURE TO PROPERLY COMPLETE AND TIMELY RETURN THE REGISTRATION CARD MAY AFFECT THE WARRANTY FOR THIS PRODUCT.

Submitting A Claim. Any claim under this limited warranty must be submitted in writing before the end of the Warranty Period to an Authorized D-Link Service Office. The claim must include a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same. The original product owner must obtain a Return Material Authorization (RMA) number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided. 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 packaged product shall be insured and shipped to D-Link, 53 Discovery Drive, Irvine CA 92618, with all shipping costs prepaid. 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:

This limited warranty provided by D-Link does not cover:

Products that 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; and

Any hardware, software, firmware or other products or services provided by anyone other than D-Link.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO NINETY (90) DAYS. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability: TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT.

GOVERNING LAW: This Limited Warranty shall be governed by the laws of the state of California.

Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This limited warranty provides specific legal rights and the product owner may also have other rights which vary from state to state.

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