

User Manual

Gigabit Desktop PCI Adapter

DGE-530T

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
5.00	22 Aug, 2016	• Initial release for D2 version

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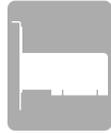
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The purpose of this product is to create a constant network connection for your devices. As such, it does not have a standby mode or use a power management mode. If you wish to power down this product, please simply unplug it from the power outlet.

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Package Contents



DGE-530T Gigabit Desktop PCI Adapter



Installation CD



Standard and Low Profile Brackets



Quick Installation Guide

If any of the above items are missing, please contact your reseller.

System Requirements

PC Hardware Requirements

- An open PCI bus master slot (32-bit, operating at 33 MHz)
- 32 MB of System Memory
- 150 MHz processor or faster
- The latest BIOS for your computer
- One of the following types of twisted-pair network cabling:
 - 4 – pair Category 5 or better for 1000 Mbps
 - Category 5 or better for 100 Mbps
 - Category 3, 5 or better for 10 Mbps
- CD-ROM Drive

Introduction

The D-Link DGE-530T Gigabit Desktop PCI Adapter is a 10/100/1000 Mbps copper Gigabit PCI card for servers and workstations. Current systems running at 10 Mbps and 100 Mbps can be upgraded to Gigabit Ethernet, eliminating network bottlenecks and increasing performance.

Cost-Effective, Scalable Migration

As an inexpensive alternative solution to fiber-optic, this card allows you to instantly upgrade to Gigabit without requiring you to install new fiber cables. Gigabit Ethernet uses your existing CAT-5 cabling to provide you with 10/100/1000 Mbps network speeds.

Advanced Features and Security

The DGE-530T supports SNMP for remote troubleshooting and management, ACPI for lower power consumption, and WoL for remote wake-on-LAN. These features help to lower total cost of ownership while adding convenience and versatility. The card also features on-board screening of VLAN Tagged Ethernet frames, allowing you to assign multiple subnets to each server and isolate devices within each VLAN from the rest of the network for better traffic control and security. It also supports 802.1p Priority Tagging to allow you to prioritize traffic for optimized performance. The DGE-530T features embedded flow control and independent FIFO, providing a means to protect against possible data loss during transmission on the network. With the Cable Diagnostic feature, the card will automatically detect whether you have a bad cable, making it easier to troubleshoot your network.

Features

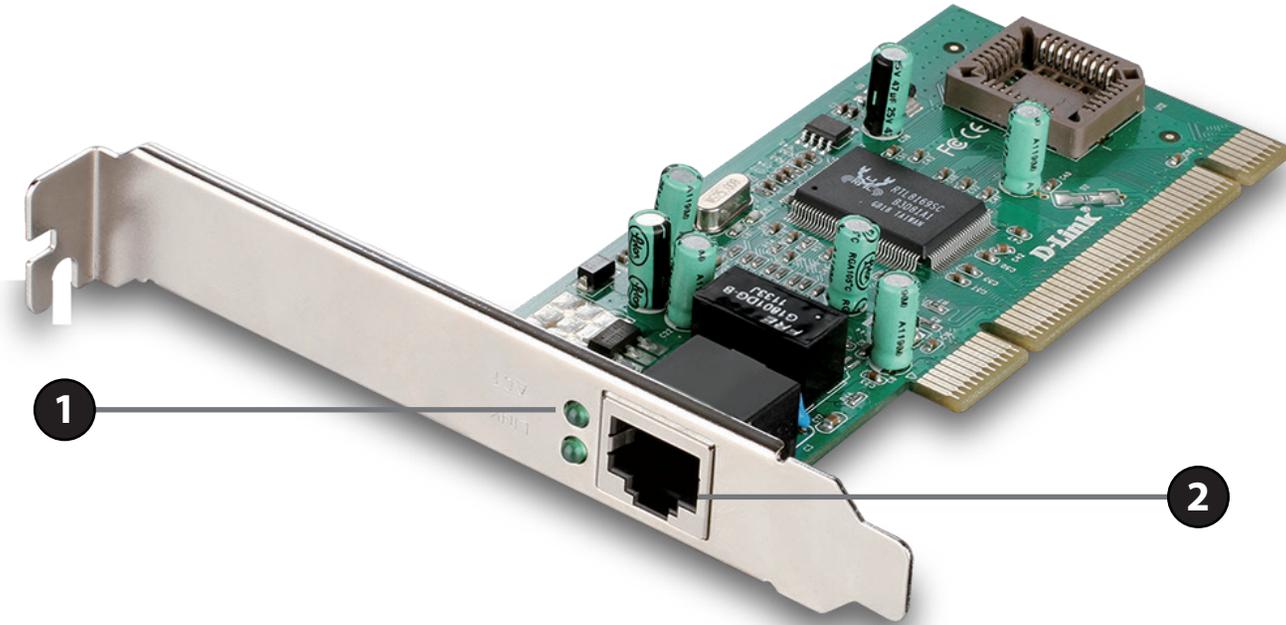
Designed for versatility and performance, the DGE-530T Network Adapter provides the following:

- Operability in 32-bit, 33 MHz slot servers and workstations
- Universal Bus support 3.3 V/5 V
- Compliance with IEEE 802.3ab 1000BASE-T Gigabit Ethernet standards, IEEE 802.3u Fast Ethernet standards.
- Plug-and-Play installation
- Wake-on-LAN
- Full-duplex Gigabit Ethernet interface that delivers 2 Gbps aggregate bandwidth
- Half and full-duplex speeds at 10 Mbps, half and full-duplex at 100 Mbps, and full-duplex operation at 1000 Mbps
- Full-duplex double network throughput
- TCP/IP checksum generation and verification
- 802.3x flow control
- 802.1Q VLAN
- 802.1p Priority Tags
- Cable Diagnostic feature
- ACPI 2.0
- One built-in RJ-45 connector
- Auto-negotiation to the highest available speed
- Two LED indicators: Link and Activity
- Low profile bracket included
- Jumbo Frame up to 7K in size

Driver Support for:

- Microsoft Windows 10 x86/x64
- Microsoft Windows 8.1 x86/x64
- Microsoft Windows 8 x86/x64
- Microsoft Windows 7 x86/x64
- Microsoft Windows Vista x86/x64
- Microsoft Windows XP x86/x64
- Microsoft Server 2012
- Microsoft Server 2008
- Microsoft Server 2003
- Microsoft Server 2000
- Linux kernel 3.16/2.6.x/2.4.x
- Free BSD 8.x/7.x
- NDIS2 for DOS
- Novell client for DOS
- Novell client for server 6.x/5.x
- MAC OS 10.6/10.5/10.4

Hardware Overview



1	Link and Activity LEDs	These LEDs will light up if there are active links or network activity.
2	Ethernet Port	Connects to a router, modem, or other network device via an Ethernet cable.

Installation

Unpack and Inspect

CAUTION: Under ordinary circumstances, a DGE-530T card will not be affected by a static charge that may be received through your body during handling of the unit. In special circumstances, the user may carry an extraordinarily high static charge and 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. Ensure that the following items are included:

- One DGE-530T Gigabit Desktop PCI Adapter
- Standard and low profile brackets
- DGE-530T Drivers and Manual on CD-ROM
- Quick Installation Guide

If any of these items are missing or damaged, please contact your local reseller for replacement.

Hardware Installation

1. Shut down the computer, unplug its power cord, and remove the chassis cover.

Important: Opening the case of your computer may compromise the warranty of your computer. Consult the computer manufacturer before opening the case to ensure that you adhere to warranty guidelines. In some cases, you may need to have the DGE-530T installed by your computer manufacturer.

2. Insert the contact edge of the DGE-530T 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 the computer 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-530T adapter.

Note: Due to a fault in some Plug-and-Play BIOS programs, occasionally a newly installed adapter is assigned an Interrupt Number which has already been assigned to another device. In such a case, the conflict of the Interrupt Number will cause faults in the behavior of both devices. Therefore, the user must 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 installed base of legacy CAT5 cabling systems as well as the CAT5 cabling systems currently being installed.

It provides optimal full-duplex 1000 Mb/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.

Driver Installation

Step 1

If the CD Autorun function does not automatically start on your computer, go to **Start > Run**. In the run command box type "**D:\autorun.exe**" (where **D:** represents the drive letter of your CD-ROM drive).

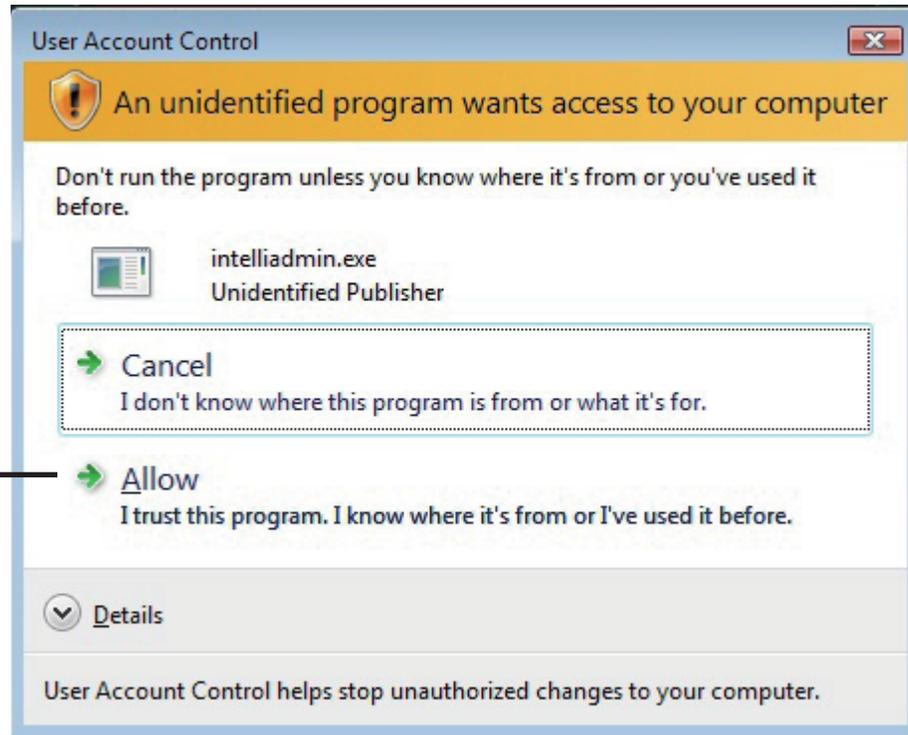
Drivers for non-Windows operating systems are located on the D-Link CD.

When the autorun screen appears, click **Install Drivers** (this will launch the Network Utility program and install the drivers). An Installation Wizard will guide you through the process, no matter which operating you're running. Your DGE-530T will be installed successfully in just a few moments, allowing you to enjoy the many advantages of an Ethernet LAN.



Uninstalling the Adapter

When uninstalling the DGE-530T in Windows® 10, 8, 8.1, 7, Vista®, XP, and Server 2012, 2008, 2003, 2000, the following pop-up warning message may be displayed indicating an unidentified program wants to access your computer:



Click **Allow** to continue with the uninstall procedure.

Advanced Features

Wake On LAN

This Wake-on-LAN function can wake up the system from the sleeping mode to the fully powered mode over the network immediately and automatically. Once the system is awake, it can be directed to run management utilities. This function increases end-user productivity by avoiding disruptions during working hours.

QoS

The QoS function allows the DGE-530T to transmit and receive tagged frames, such as 802.1p priority tagged frames and 802.1Q VLAN tagged frames. In order for QoS to function on the DGE-530T, it must be connected to a switch that supports and is configured for QoS. These priority tagged frames will let real-time programs optimally utilize the network bandwidth. High priority packets will be processed before low priority packets.

Note: *To implement QoS on the DGE-530T, it must be connected to a switch or other device that supports and is configured for 802.1p QoS.*

Jumbo Frames

Jumbo frames are Ethernet frames that are larger than 1518 bytes. Jumbo frames may be used to reduce server CPU utilization and improve wire efficiency.

By implementing extra data in fewer packets, jumbo frames can increase throughput and decrease CPU utilization. However, additional latency may be introduced.

End-to-end network hardware must support this capability or these packets will be dropped.

Consult your network administrator or switch manual for more information concerning configuring and understanding jumbo frames.

- Supported protocols are limited to IP (TCP, UDP).
- Jumbo frames require compatible switch connections that forward jumbo frames. Contact your switch vendor or manual for additional information.
- There is no benefit to configure jumbo frames if standard size Ethernet frames (64 to 1518 bytes) are used.
- Jumbo frames may be simultaneously used with VLANs.

Note: *Jumbo frames settings on a switch must be set to 8 bytes or larger than the adapter settings for Windows® operating systems, and at least 22 bytes larger for all other operating systems.*

IEEE 802.1p Priority Tagging

With the growing number of network applications, local area networks (LANs) must deliver data for a wide variety of applications. email, file transfers, database queries, voice over IP (VoIP), video-conferencing, and multimedia must all be delivered to the end-users. Some of the traffic, such as video-conferencing, is of a higher priority with a slight delay of packets resulting in noticeable degeneration of video and audio quality. Other traffic, such as email, will not be noticeably affected by tiny delays. The large number of programs that run over today's networks serves to impede the ability to deliver time-critical data. Even if bandwidth is not usually a problem on your network, during peak hour bursts in network traffic can result in the delay of time-critical traffic.

IEEE 802.1p defines seven levels of prioritization for Ethernet packets. High priority packets will be sent through a network using 802.1p-compliant switches first. Lower priority packets will be transferred whenever bandwidth is available. When properly setup, this ensures that time-critical data arrives on time and is not affected by other traffic.

IEEE 802.1Q VLANs

The IEEE 802.1Q VLAN can help improve network performance and security by segmenting the network into VLANs. IEEE 802.1Q VLANs can limit broadcast and node-to-node (unicast) traffic to a single VLAN. This limits the effects of broadcast storms and provides additional security for your network.

For VLANs to function, the computer in which this NIC is installed must be using Windows® 2000, XP, 2003 or later as its operating system.

Networking Basics

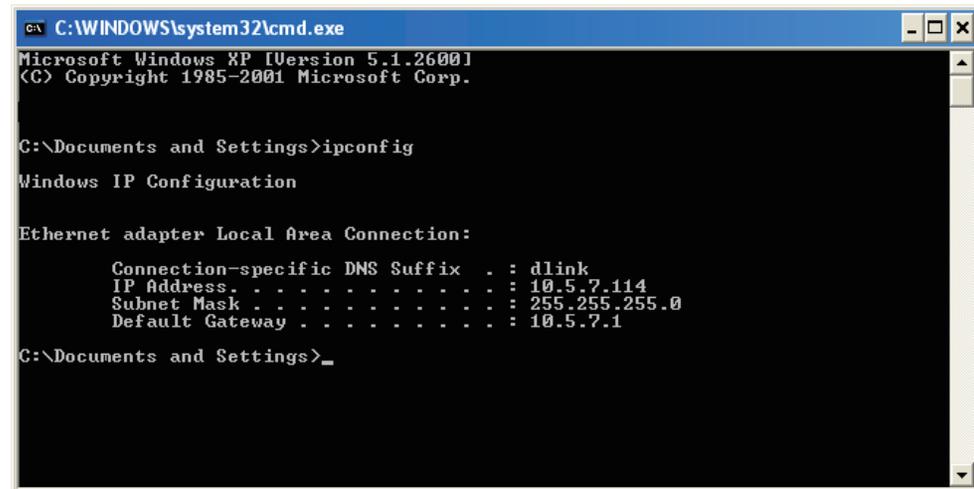
Check your IP address

After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e router) automatically. To verify your IP address, please see the following steps below.

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address . . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

C:\Documents and Settings>_
```

Technical Specifications

Host interface

- 32-bit PCI Bus (Bus Master)

EMC And Safety Certifications

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

I/O base address assigned by Plug and Play system

Interrupt Number Assigned by Plug and Play system

Dimensions

- 120 mm x 58 mm (4.72 x 2.28 inches)

Operating Temperature

- 0° to 40° C (32° to 104° F)

Storage Temperature

- -25° to 55°C (-13° to 131° F)

Humidity

- 5% to 90% non-condensing