



# User Manual

## Wireless N 150 PCI Express Desktop Adapter

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# Package Contents



D-Link DWA-525 Wireless N 150 PCI Express Desktop Adapter

## System Requirements

- Windows® 8, 7, Vista®, or XP (32/64-bit)
- An 802.11n, 802.11g, wireless network
- 300MHz processor and at least 64MB of RAM
- A desktop computer with an available PCI Express slot

# Introduction

The DWA-525 Wireless N 150 PCI Express Desktop Adapter is a convenient wireless connectivity solution for desktop PCs. Instead of stringing Ethernet cables to your PC or dismantling your desktop computer case, the DWA-525 can enable 802.11n wireless connectivity by simply utilizing your desktop.

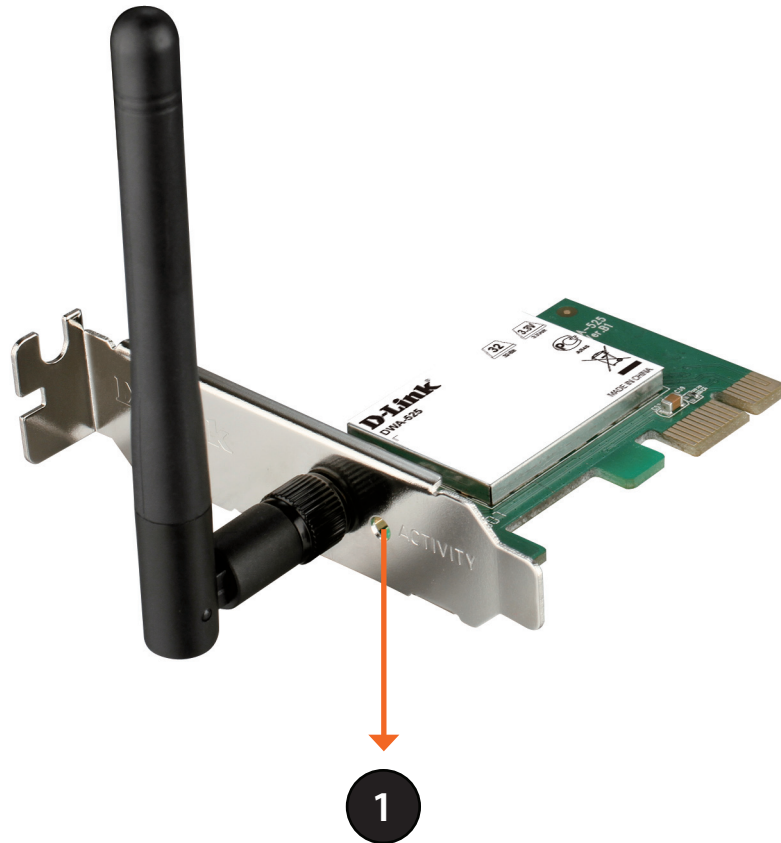
Powered by Wireless N 150 technology, the DWA-525 provides a faster wireless connection and superior reception than 802.11g\*. The DWA-525 is designed for use in bigger homes and for those that demand higher bandwidth networking. Maximize wireless performance by connecting this PCIe Adapter to a Wireless N™ router and stay connected from virtually anywhere in the home. This PCIe Adapter supports WPA and WPA2 encryption to prevent outside intrusion and protect your personal information from being exposed. This PCIe Adapter supports WPA™ and WPA2™ encryption to prevent outside intrusion and protect your personal information from being exposed.

\* Maximum wireless signal rate derived from IEEE Standard 802.11g and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lowers actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

# Features

- **Faster Wireless Networking\*** - Enable wireless connectivity on your Desktop PC computer with the DWA-525. With the performance of D-Link's Wireless N 150 line of wireless products, the DWA-525 delivers a more reliable wireless connection. Perform multiple network tasks at once with the speed provided by this Wireless Adapter.
- **Compatible with 802.11b and 802.11g Devices** - Fully compatible with the IEEE 802.11b and 802.11g standards, the DWA-525 can connect with existing 802.11b or 802.11g compliant routers, access points and cards. That means you can still communicate with colleagues and friends while you have the ability to link to even more wireless networks.
- **Better Security with WPA/WPA2 and WPS** - With the DWA-525 in your Desktop PC you can securely connect to a wireless network using WPA/WPA2 (Wi-Fi Protected Access) for wireless authentication, as well as WPS (Wi-Fi Protected Setup) providing you a much higher level and an easier way of security for your data and communication than has previously been available.

# Hardware Overview



1	LED	A solid light indicates that wireless is ready. This LED blinks during wireless data transmission.
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# Installation

This section will walk you through the installation process. If you have a built-in wireless adapter, please disable it in device manager before installing your D-Link adapter. Also, if you have previously installed another wireless adapter, please make sure any software is uninstalled.

**Note:** Do NOT install the PCI adapter into your computer before installing the drivers.

## Getting Started

Before installing your new D-Link wireless adapter, please verify the following:

- Remove any previous installations of wireless adapters.
- Disable any built-in wireless and Ethernet adapters.
- Verify the settings such as the SSID and security settings of the network(s) you want to connect to.

## Remove Existing Installations

If you've installed a different manufacturer's adapter or a different model D-Link adapter, make sure the software is uninstalled before installing the new software. Some utilities may cause a conflict with the new software. If you plan to use multiple adapters at different times, make sure the utilities are not set to load when your computer boots up. Windows® users may use the built-in wireless utility for all adapters.

To remove any old software:

Windows® 8 users: Press **Windows Key + Q** > **Control Panel** > **Uninstall Programs**.

Windows® 7 users: Click **Start** > **Control Panel** > **Uninstall Programs**.

Windows Vista® users: Click **Start** > **Control Panel** > **Add or Remove Programs**.

Windows® XP users: Click **Start** > **Control Panel** > **Add or Remove Programs**.

# Disable Other Adapters

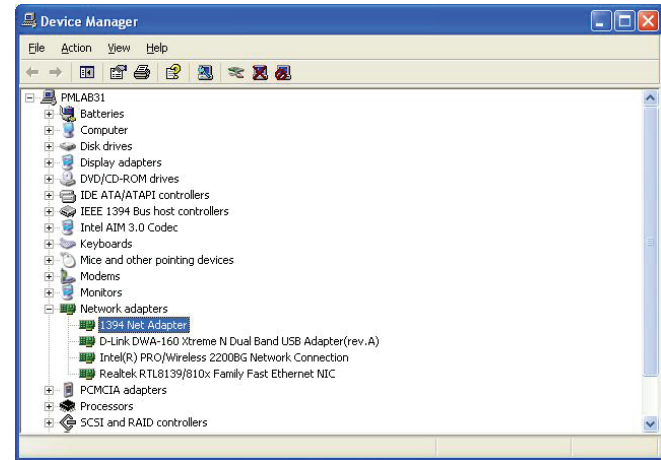
Most newer laptops may include a built-in wireless adapter. To prevent any conflicts with the D-Link wireless adapter, it is recommended to disable the wireless adapter (as well as any unused Ethernet adapters).

Windows XP - Go to **Start > My Computer > Properties > Hardware > Device Manager**.

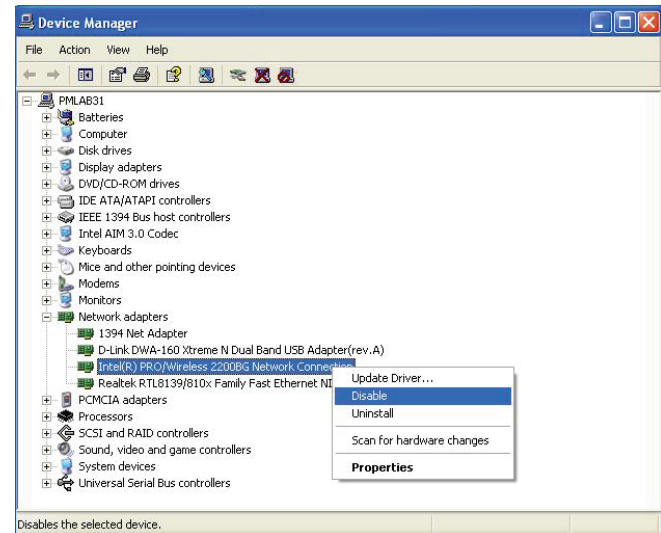
Windows Vista/7 - Go to **Start > Device Manager**.

Windows 8 - Press the **Windows key** and **X** together and then click **Device Manager**.

Click the **Hardware** tab and then click **Device Manager**. Scroll down the list and click the **+** sign to the left of **Network Adapters**.

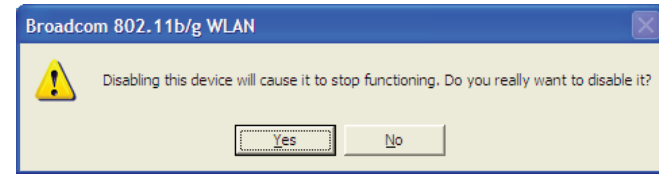


Right-click the adapter you would like to disable and select **Disable**.



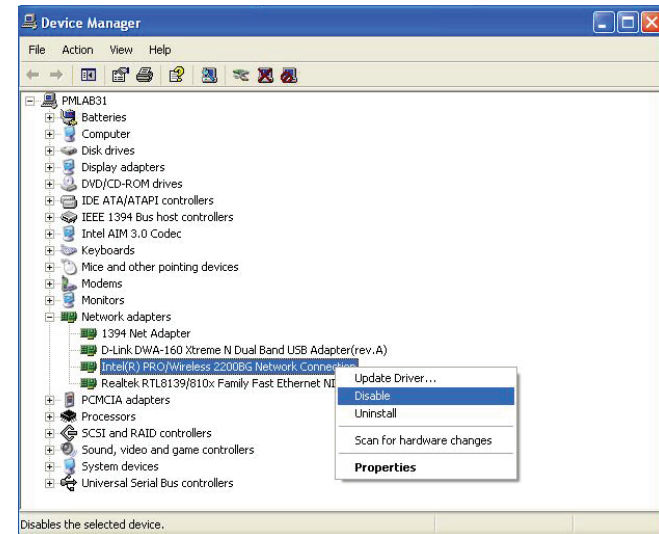


Click **Yes** to disable the adapter.



When the adapter is disabled, a down arrow or a grayed icon will be displayed.

Disabling the adapter will not remove the drivers. If you would like to use the adapter, simply right-click it and select **Enable**.



# Wireless Installation Considerations

The D-Link wireless adapter lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the D-Link adapter and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
3. Building materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.
5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

# Adapter Installation

**Note: Do NOT install the DWA-525 Desktop Adapter into your computer before installing the driver software from the D-Link CD.**

Turn on the computer and insert the D-Link DWA-525 Driver CD in the CD-ROM drive.

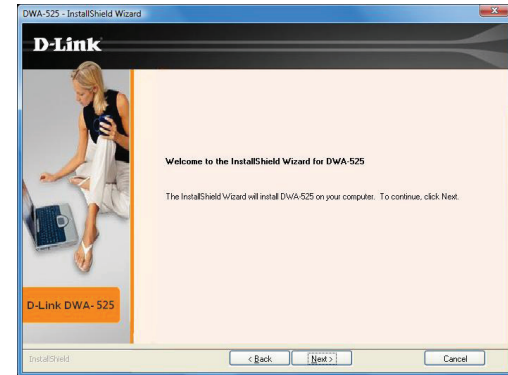
If the CD Autorun function does not automatically start on your computer, go to **Start > Run**. In the run box type "**D:\autorun.exe**" (where **D:** represents the drive letter of your CD-ROM drive).

When the autorun screen appears, click **Install**.

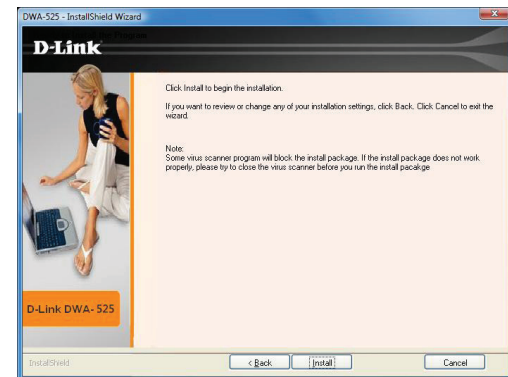


The *InstallShield Wizard* window will appear.

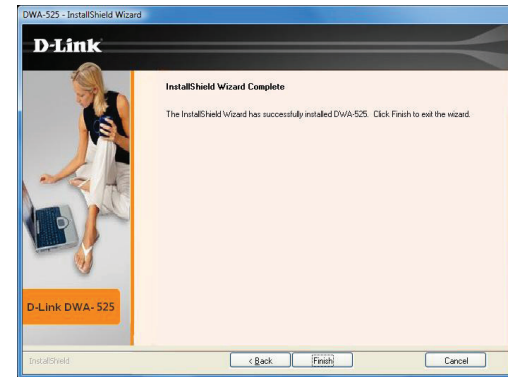
Once the Welcome screen appears, click **Next** to continue.



Click **Install** to continue.



Your DWA-525 adapter is now installed.

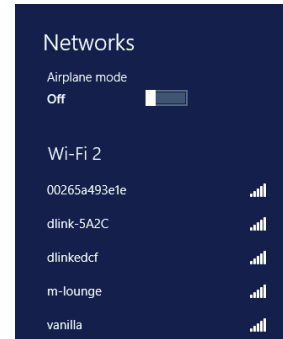


# Connect to a Wireless Network

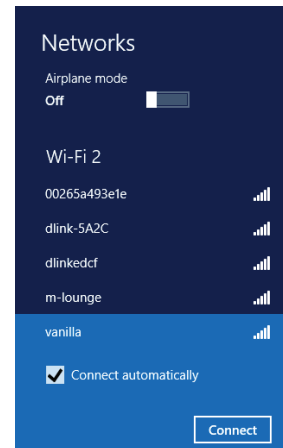
## Windows® 8

1. Click on the wireless computer icon in your system tray (lower-right corner next to the time).

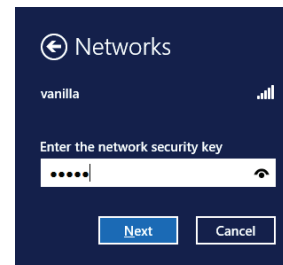
2. A list of available wireless networks will appear.



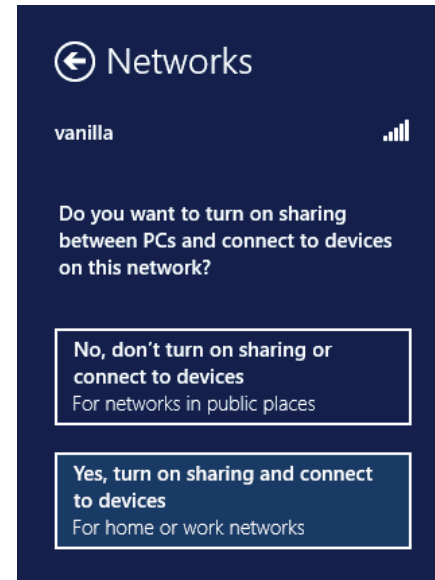
3. Click the wireless network (SSID) you want to connect to and then click **Connect**.



4. If the network is secure/encrypted, enter the Wi-Fi password (security key) and click **Next**.



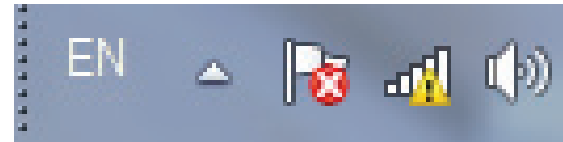
5. Click either to enable or disable file sharing.
6. You will now be connected to your wireless network.



If you get a good signal but cannot access the Internet, confirm the encryption by reviewing the profile or check the TCP/IP settings for your wireless adapter. Refer to the *Networking Basics* section in this manual for more information.

# Windows® 7

1. Click on the wireless icon in your system tray (lower-right corner).



2. The utility will display any available wireless networks in your area.





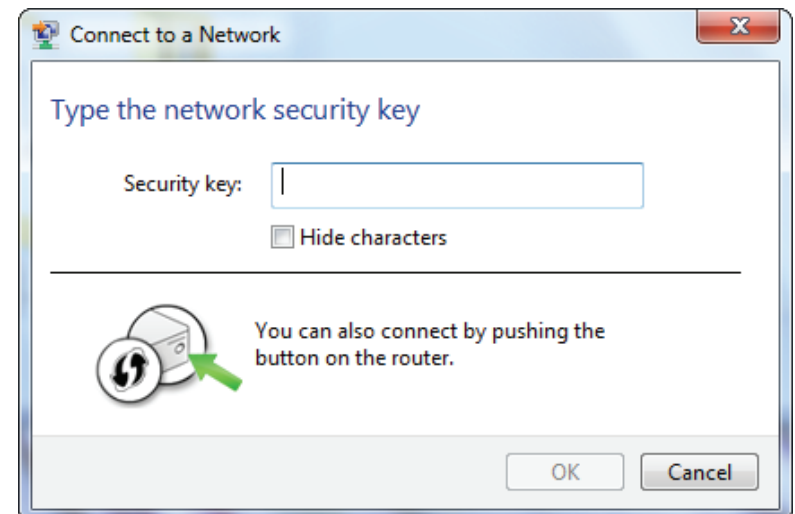
3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to the *Networking Basics* section in this manual for more information.



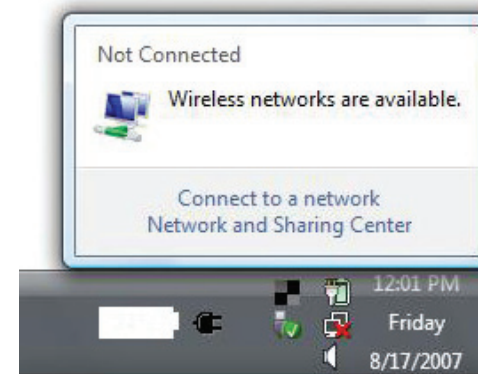
4. Enter the same security key or passphrase that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

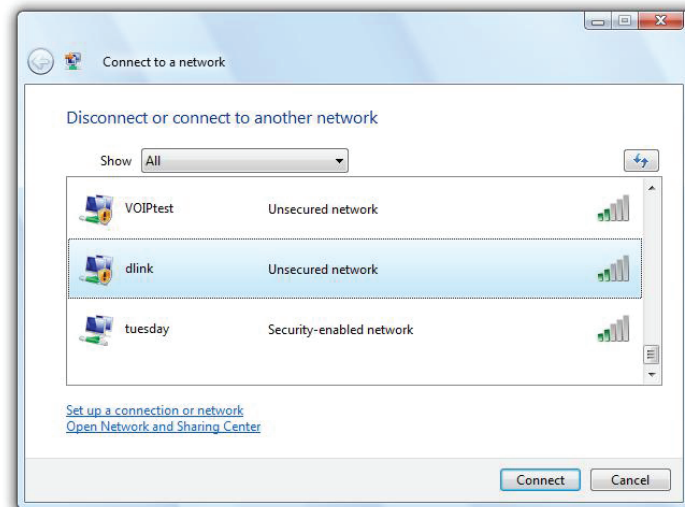


# Windows Vista®

1. Open the Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower right corner of screen). Select **Connect to a network**.



2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



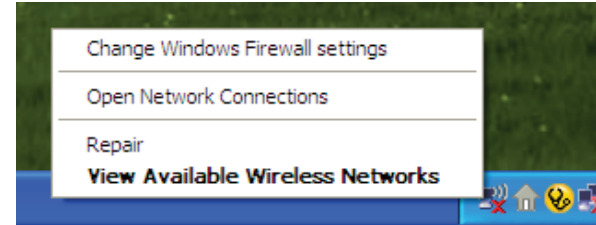
3. Enter the same security key or passphrase that is on your router and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

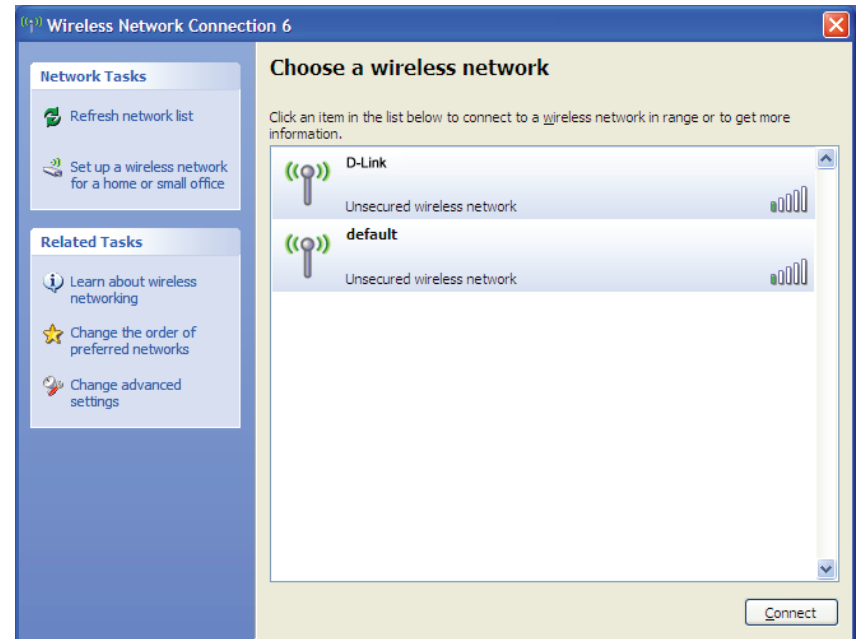


# Windows® XP

1. Open the Windows XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.

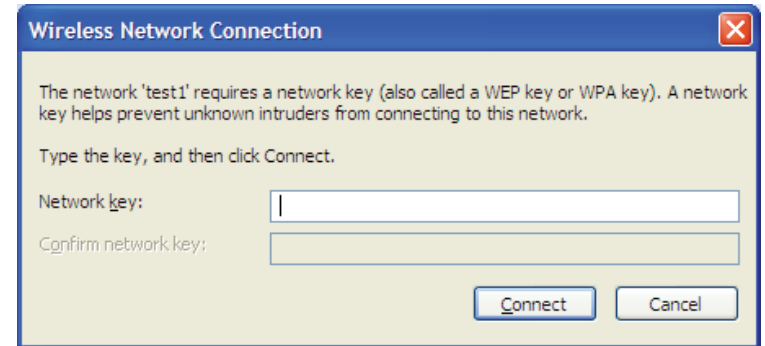


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The *Wireless Network Connection* box will appear. Enter the WPA/WPA2-Personal passphrase and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA/WPA2-Personal settings are correct. The WPA/WPA2-Personal passphrase must be exactly the same as on the wireless router or access point.



# Troubleshooting

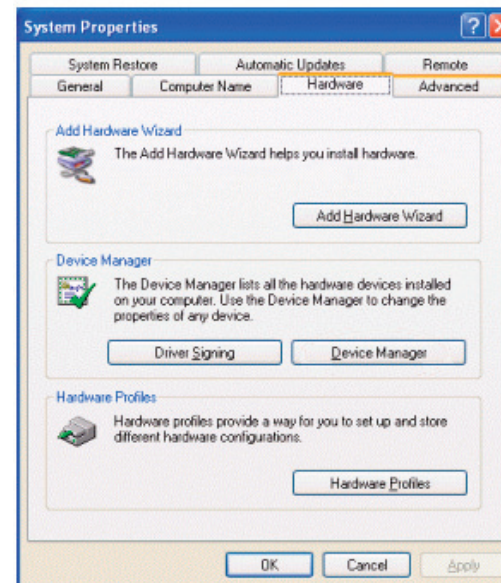
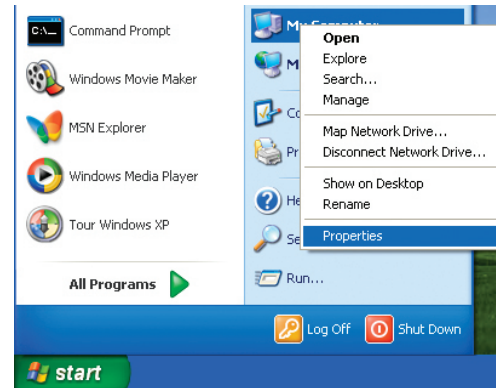
This chapter provides solutions to problems that can occur during the installation and operation of the DWA-525. Read the following descriptions if you are having problems.

## 1. How do I know if my adapter is installed properly?

Windows XP - Go to **Start > My Computer > Properties > Hardware > Device Manager**.

Windows Vista/7 - Go to **Start > Device Manager**.

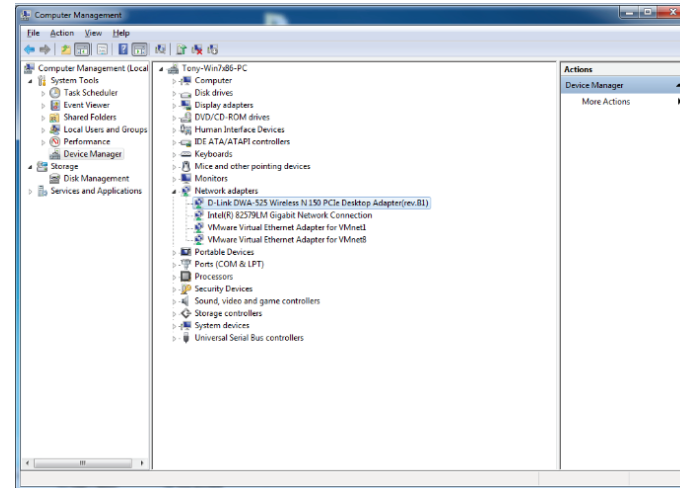
Windows 8 - Press the **Windows key** and **X** together and then click **Device Manager**.



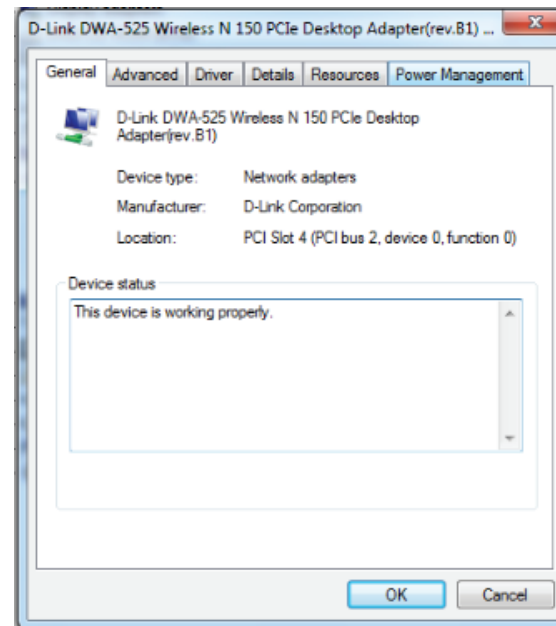
Click the + sign next to **Network Adapters**.

Right-click on **D-Link DWA-525 Wireless N 150 PCI Express Desktop Adapter**.

Select **Properties** to check that the drivers are installed properly.



Look under *Device Status* to check that the device is working properly. Click **OK** to continue.



## 2. The computer does not recognize the DWA-525 Wireless Adapter.

Make sure that the DWA-525 Wireless Adapter is properly seated in the computer's PCIe port.

If Windows® does not detect the hardware upon insertion of the adapter, make sure to completely remove drivers that were previously loaded.

## 3. The computer with the DWA-525 installed is unable to connect to the wireless network and/or the Internet.

- Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection.
- Check that the LED indicators on the wireless router are functioning properly. If not, check that the AC power and Ethernet cables are firmly connected.
- Check that the IP Address, subnet mask, gateway, and DNS settings are correctly entered for the network
- In **Infrastructure** mode, make sure the same **Service Set Identifier (SSID)** is specified on the settings for the wireless clients and access points. By default, the SSID factory setting for D-Link products is blank. (Double-click on the WLAN icon in the taskbar. The *Link Info* screen will display the SSID setting.)



# Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

## **What is Wireless?**

Wireless or Wi-Fi® technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

## **Why D-Link Wireless?**

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

## **How does wireless work?**

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

## **Wireless Local Area Network (WLAN)**

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

## **Wireless Personal Area Network (WPAN)**

Bluetooth® is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

## Who uses wireless?

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, or business, D-Link has a wireless solution for it.

### Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

### Small Office and Home Office

- Stay on top of everything at home as you would at the office
- Remotely access your office network from home
- Share an Internet connection and printer with multiple computers
- No need to dedicate office space

### **Where is wireless used?**

Wireless technology is expanding everywhere not just at home or the office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link PCIe Adapter with your laptop, you can access the hotspot to connect to the Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless networks are easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

### **Tips**

Here are a few things to keep in mind, when you install a wireless network.

#### **Centralize your router or Access Point**

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

#### **Eliminate Interference**

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This can significantly reduce any interference that the appliances might cause since they operate on the same frequency.

#### **Security**

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on WPA™/WPA2™ security features on the router. Refer to the product manual for detailed information on how to set it up.

# Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless PCIe Adapters. All the adapters must be in Ad-Hoc mode to communicate.

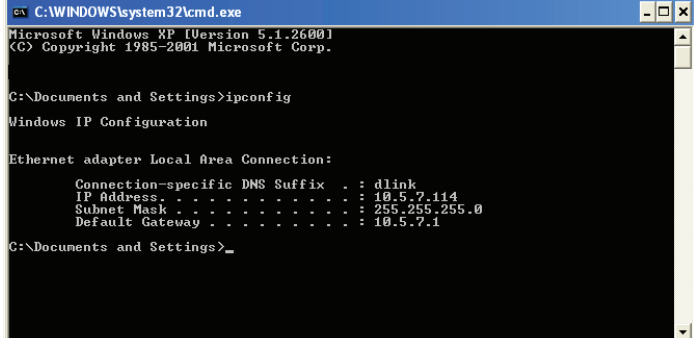
# Networking Basics

## Check your IP address

After you install your new D-Link wireless adapter and have established a wireless connection, 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 follow the steps below.

### Windows® XP Users

- Click on **Start > Run**. In the run box type **cmd** and click **OK**.
- At the prompt, type **ipconfig** and press **Enter**.
- This will display the IP address, subnet mask, and the default gateway of your adapter.



```
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

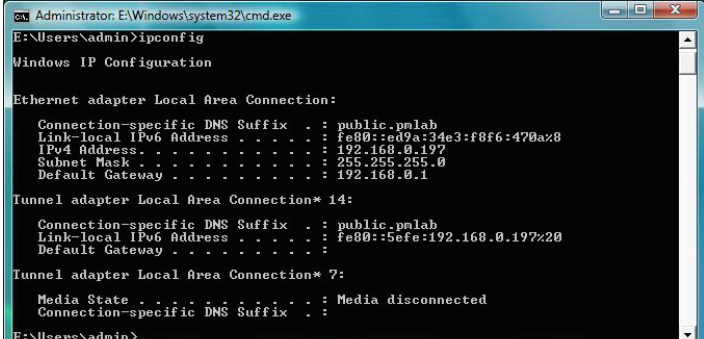
Ethernet adapter Local Area Connection:

    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>_
```

### Windows® 7/Vista® Users

- Click **Start**, type **cmd** in the search box and then click **OK**.
- At the prompt, type **ipconfig** and press **Enter**.
- This will display the IP address, subnet mask, and default gateway of your adapter.



```
Administrator: E:\Windows\system32\cmd.exe
E:\Users\admin>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : public.pmlab
    Link-local IPv6 Address . . . . . : fe80::ed9a:34e3:f8f6:470ax8
    IPv4 Address. . . . .              : 192.168.0.197
    Subnet Mask . . . . .              : 255.255.255.0
    Default Gateway . . . . .          : 192.168.0.1

Tunnel adapter Local Area Connection* 14:

    Connection-specific DNS Suffix  . : public.pmlab
    Link-local IPv6 Address . . . . . : fe80::5efe:192.168.0.197%20
    Default Gateway . . . . .          :

Tunnel adapter Local Area Connection* 7:

    Media State . . . . .               : Media disconnected
    Connection-specific DNS Suffix  . :

E:\Users\admin>
```

### Windows® 8 Users

- Press the **Windows key** and **R** together. Type **cmd** in the box and click **OK**.
- At the prompt, type **ipconfig** and press **Enter**.
- This will display the IP address, subnet mask, and 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.

# Statically Assign an IP Address

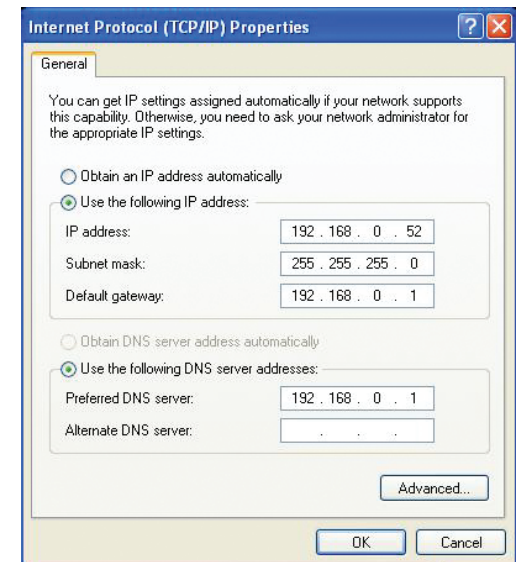
If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

## Windows® XP Users

- Click on **Start > Control Panel**. Make sure you are in Classic View. Double-click on the Network Connections icon.
- Right-click on the **Local Area Connection** which represents your D-Link wireless network adapter (or other adapter) which will be connected to your router.
- Highlight **Internet Protocol (TCP/IP)** and click **Properties**.
- Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or LAN IP address on your router.

**Example:** If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network.

- Set **Default Gateway** the same as the LAN IP address of your router or gateway.
- Set **Primary DNS** as the LAN IP address of your router or gateway.
- The **Secondary DNS** is optional (you may enter a DNS server from your ISP).
- Click **OK** to save your settings.



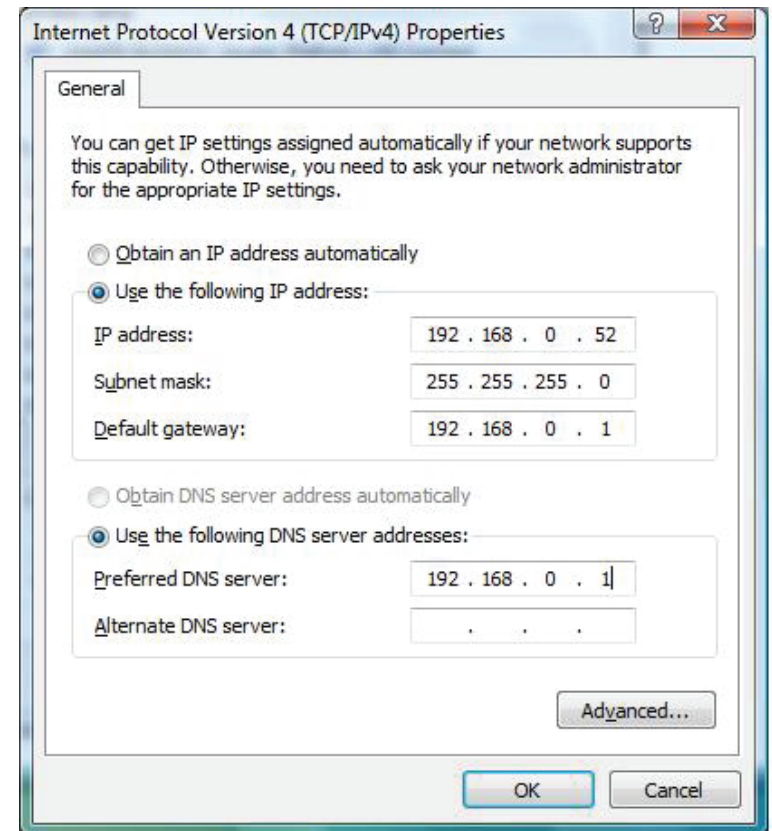
## Windows® 7/ Vista® Users

- Click on **Start > Control Panel** (make sure you are in Classic View). Double-click on the **Network and Sharing Center** icon. If you are using Windows Vista, click on **Manage network connections** along the left panel in the window. For Windows® 7, click on **Change adapter settings**.
- Right-click on the **Local Area Connection** which represents your D-Link wireless network adapter which will be connected to your network.
- Highlight **Internet Protocol Version 4 (TCP /IPv4)** and click **Properties**.

- Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or LAN IP address on your router or network.

**Example:** If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network.

- Set **Default Gateway** the same as the LAN IP address of your router or gateway.
- Set **Primary DNS** the same as the LAN IP address of your router or gateway.
- The **Secondary DNS** is optional (you may enter a DNS server from your ISP).
- Click **OK** to save your settings.



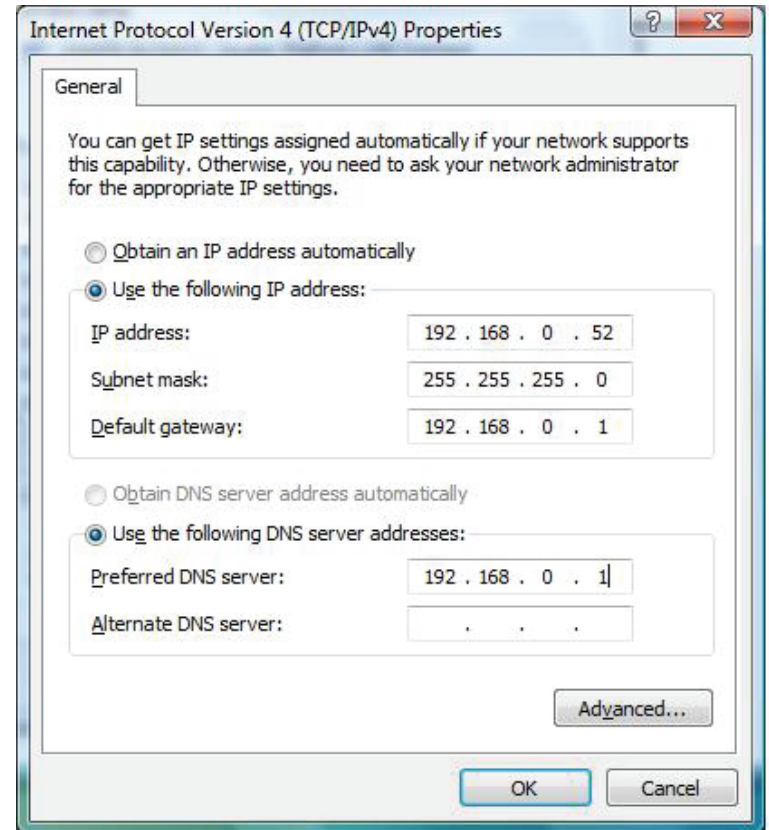


## Windows® 8 Users

- Press the **Windows** key and then type **IP**. Click **Settings** on the right side and then click **View Network Connections**.
- Right-click on the adapter which represents your D-Link wireless network adapter.
- Highlight **Internet Protocol Version 4 (TCP /IPv4)** and click **Properties**.
- Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or LAN IP address on your router or network.

**Example:** If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network.

- Set **Default Gateway** the same as the LAN IP address of your router or gateway.
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- Click **OK** to save your settings.



# Technical Specifications

## Standards

- IEEE 802.11n
- IEEE 802.11g

## Security

- WPA™/WPA2™ - Wi-Fi Protected Access

## Frequency Range

- 2.4GHz to 2.483GHz

## External Antenna Type

- Dipole with detachable reverse SMA connector

## Operating Temperature

- 32°F to 104°F ( 0°C to 40°C)

## Operating Humidity

- 10% to 90% maximum (non-condensing)

## Dimensions

- Device:65x40x1.6mm

## Weight

- Standard Bracket: 40.5g
- Short Bracket: 35.5g

*\* Maximum wireless signal rate derived from IEEE Standard 802.11n and 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.*