D-Link ®

User Manual

Wireless N Nano USB Adapter

DWA-131

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• D-Link DWA-131 Wireless N Nano USB Adapter

• Manual and Warranty on CD

• D-Link Wireless Connection Manager on CD

• Quick Installation Guide

System Requirements

• A computer or laptop with an available USB 2.0 port

• Windows® 7, Windows Vista®, XP (Service Pack 3)

• CD-ROM Drive

• 300MHz processor and at least 64MB of RAM

• A 802.11n or 802.11g access point or wireless router

Introduction

The DWA-131 Wireless N Nano USB Adapter is a convenient wireless connectivity solution for desktop or notebook PCs. Instead of stringing Ethernet cables to your PC or dismantling your desktop computer case, the DWA-131 can enable 802.11n wireless connectivity by simply utilizing your desktop or notebook PC's USB port.

Powered by Wireless N technology, the DWA-131 provides a faster wireless connection and superior reception than 802.11g*. The DWA-131 is designed for use in bigger homes and for those that demand higher bandwidth networking. Maximize wireless performance by connecting this USB Adapter to a Wireless N router and stay connected from virtually anywhere in the home. This USB Adapter supports WPA and WPA2 encryption to prevent outside intrusion and protect your personal information from being exposed.

D-Link's Quick Setup Wizard guides you step-by-step through the installation process. You'll be able to configure this USB Adapter without having to call the teenager from down the street to help you. The D-Link Wireless Manager is included with this product to keep track of all your most frequently accessed networks.

Compact in size, robust in speed the DWA-131 Wireless N Nano USB Adapter is great for travel and a convenient solution for providing high performance wireless connectivity to your desktop or notebook PC. Enjoy the many benefits of wireless connectivity today!

* 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, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Features

- Compact size for placement anywhere

- Convenience of Plug & Play installation

- Fully 802.11g compatible

- 802.11n compliant

- Powered by the USB port; no external power source required

- USB 2.0 standard*

- You can securely connect to a wireless network using WPA/WPA2 (Wi-Fi Protected Access) providing you a much higher level of security for your data and communication than has previously been available.

- Position the DWA-131 almost anywhere in your workspace to achieve the best reception possible

- Supports Infrastructure networks via an access point

- User-friendly configuration and diagnostic utilities

* Using a USB 1.1 port will adversely affect throughput.

Hardware Overview

1	WPS Button	Press the WPS button to automatically connect to a WPS-enabled wireless router or access point and establish connectivity. Refer to page 20.
2	USB Connector	Used to connect the DWA-131 to your computer.

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.

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 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 manufacture'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® 7, Vista® and XP users may use the built-in wireless utility for all adapters.

To remove any old software:
Windows® 7 users: Click **Start** > **Control Panel** > **Programs and Features**.
Windows XP/Vista® users: Click **Start** > **Control Panel** > **Programs and Features**.

Disable Other Wireless 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).

From the desktop, right-click on the **My Computer** icon and select **Properties**.

Click the **Hardware** tab and then click **Device Manager**. Scroll down the list and click the **+** sign to the left of **Network Adapters**.
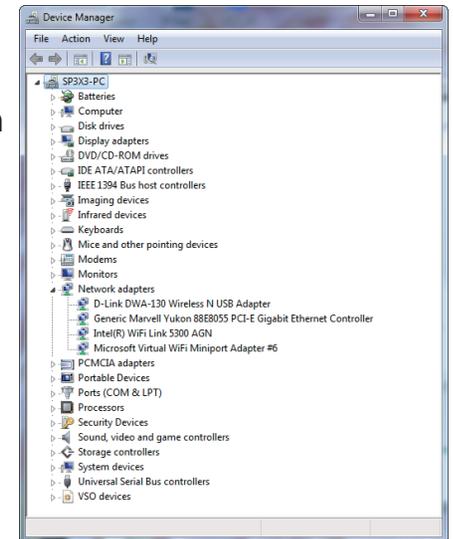
Right-click the adapter you would like to disable and select **Disable**.
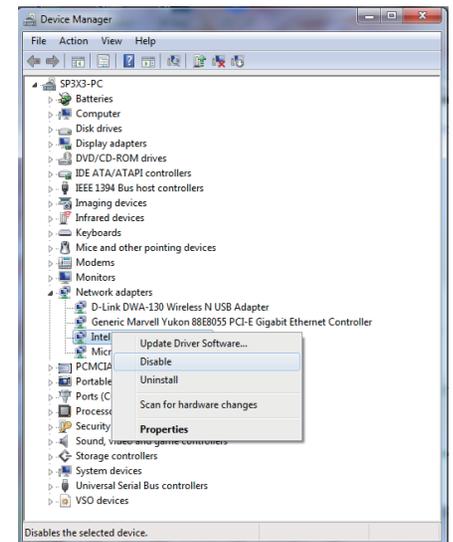
Click **Yes** to disable the adapter.
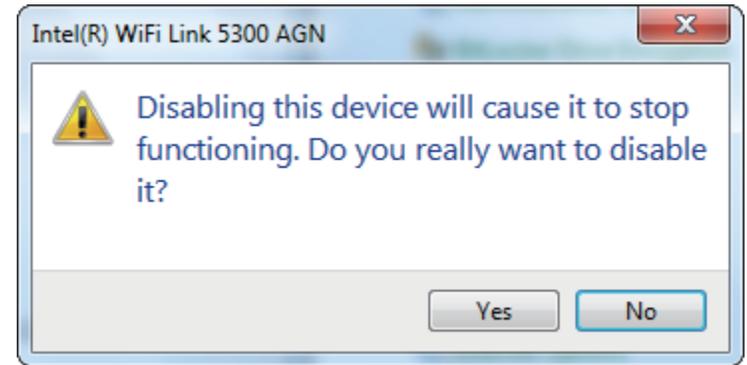
The adapter is now disabled. When disabled, a red X will be displayed.

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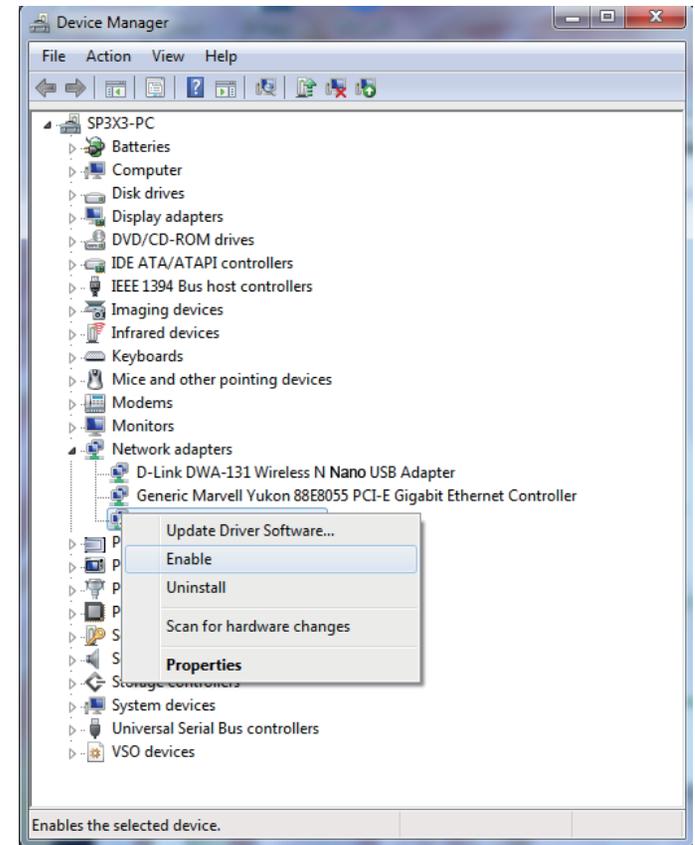
Wireless Installation Considerations

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 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 in not in use.

Adapter Installation

Warning: Do NOT install the DWA-131 Nano USB Adapter into your computer before installing the driver software from the D-Link CD.

Turn on the computer and Insert the D-Link DWA-131 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. Click **Next** to continue.
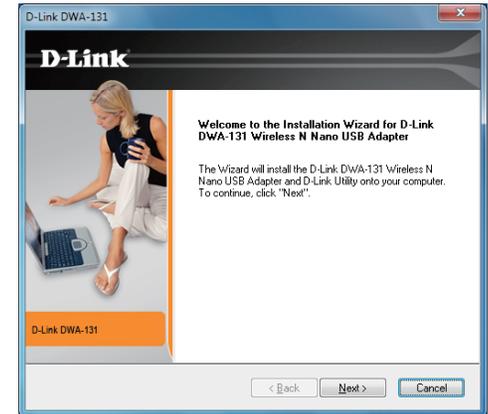
By default setup will install to the default location: *C:\Program Files\D-Link\DWA-131*, where C: represents the drive letter of your hard drive. To install to a different location click **Browse** and specify the location. Click **Next** to continue.

Insert the adapter into an available USB port on your computer. Click **Next** to continue.

If the *Found New Hardware Wizard* appears, click **Cancel**.

The Wireless Connection Wizard will now appear.

If you want to manually connect to a wireless network, refer to page 20. The following instructions will connect you to a wireless network using Wi-Fi Protected Setup (WPS). Click **Next** to continue.
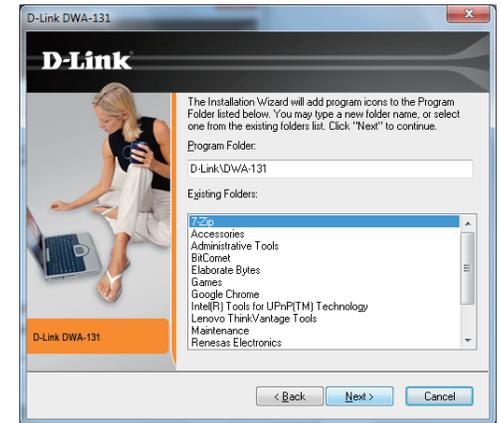
Wireless Connection Wizard

Connect to your network by selecting to Manually type your Network Name or using the Wifi protected Setup (WPS). Click **Next** to continue.
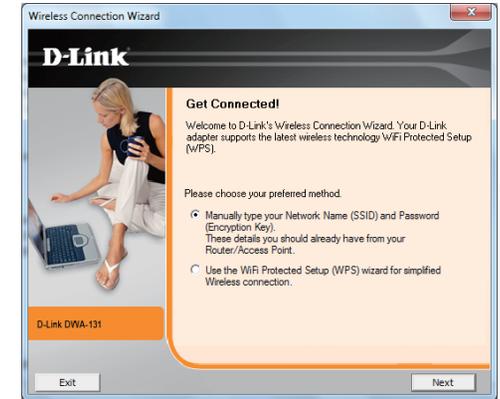
Enter the network name (SSID) manually. If you enter the SSID incorrectly, you will automatically be brought to the site survey page. Click **Scan** to display the site survey page. Click **Next** to continue.

Click the **Scan** button to display a list of wireless networks (site survey). Select the network name (SSID) and click **Next**.
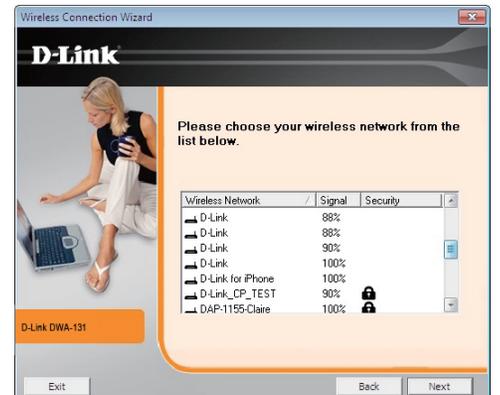
Click **Finish** to continue. If you are prompted to reboot your computer, select **Yes, I want to restart my computer now**.

Push Button Configuration (PBC)

Select "Use the WiFi Proctected Setup (WPS)" to initiate the configuration and click **Next.**

To connect to your network using the WPS push button configuration method, click the virtual button as shown in the screenshot.

Note: *You may also connect to your network by pressing the WPS button on the adapter and holding for two seconds until the wizard screen comes up. Then, press the WPS button on the router/access point to continue.*

Press the WPS button on your access point or wireless router within 2 minutes to establish connectivity.
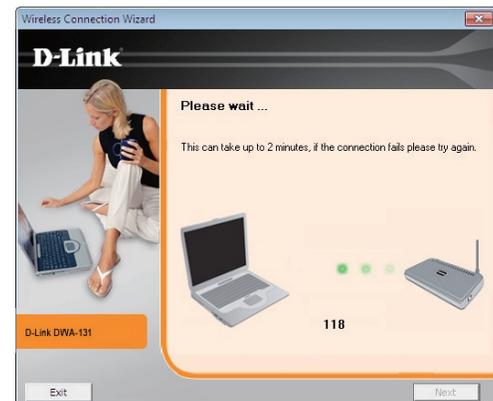
Click **Finish** to continue.

Configuration

This section will show you how to configure your new D-Link wireless adapter using the D-Link Utility as well as the Windows® XP Zero Configuration Utility and Vista WLAN Autoconfiguration.

D-Link Wireless Connection Manager

The D-Link DWA-131 uses the Wireless Connection Manager as the management software. The manager provides the user an easy interface to change any settings related to the wireless adapter. Clicking on the Wireless Connection Manager icon on the desktop will start the Configuration.

If you are using Windows® 7, Vista®, or XP, please skip to pages 29, 30 or 31 respectively.

Double-click the **Wireless Connection Manager** icon on your desktop.

Wireless Networks

The Wireless Networks (Site Survey) page will display all wireless networks that are available in your area. To connect to a network, simply highlight the wireless network (SSID) and click **Connect**.

SSID: The SSID (Service Set Identifier) is the name of the wireless network.

MAC: Displays the MAC address of the wireless device.

Signal: Displays the Link Quality of the wireless connection.

Security: If there is a "lock" icon, this means the wireless network is secure. You must know the encryption key/security settings to connect.

Channel: Displays the channel of the wireless network.

WPS Button: Connect to a wireless network using Wi-Fi Protected Setup. Refer to the next page.

Refresh Button: Rescans for available wireless networks in your area.

Connect Button: Highlight a wireless network and click the Connect button. If the network is secure, a pop-up window will appear. Enter the security information to connect (refer to the Wireless Security section for more information).

Activate Button: Select a wireless network profile from the drop-down menu and click Activate to connect. Allow up to 30 seconds to connect.

Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS) System is designed for easy setup of security-enabled Wi-Fi networks. It is recommended to have the access point or wireless router nearby during setup.

For more information on WPS, visit the Wi-Fi Alliance website at www.wi-fi.org.

"**Push Button Configuration**" (PBC) is a virtual button in the utility that connects you to other WPS-enabled devices. A connection can be established by clicking on the virtual button, then pushing the physical button on the access point or wireless router within 120 seconds. Refer to page 16.

"**Personal Identification Number**" (PIN) is a unique number generated randomly by the wireless adapter's utility. Entering this number in the utility of the WPS-enabled wireless router or access point connects you with the intended wireless network. Refer to the next page for more information.
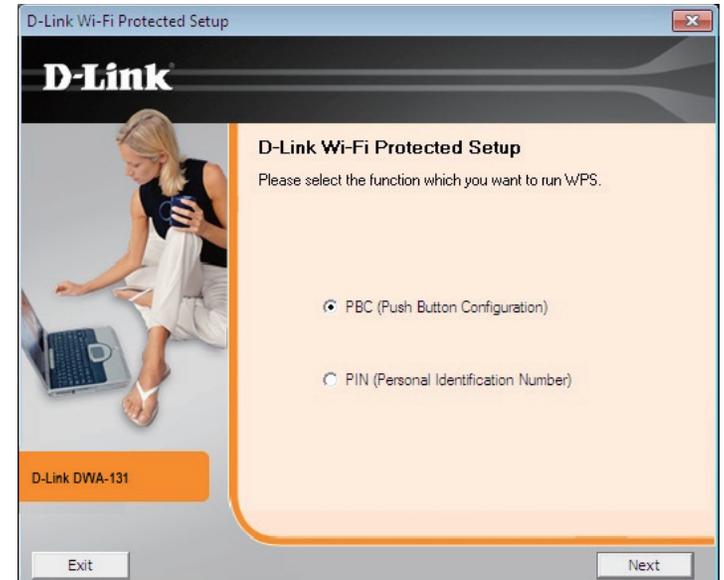
Push Button

1. To connect to your network, press the WPS button on the adapter and hold for two seconds until the wizard screen appears.

2. Press the WPS button located on your access point or router to continue. This screen will appear once you have successfully established connection with your network.

Personal Identification Number (PIN)

If you want to connect using the PBC method, refer to page 21. To use the PIN method, select PIN (Personal Identification Number) and click **Next**.
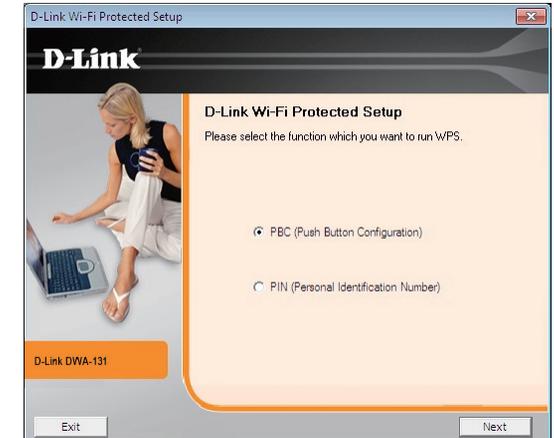
Make sure your access point or wireless router is close by. Write down the number on the screen. Enter this number in your access point or wireless router. Please refer to the manufacture's manual for instructions.

Once you click **Next**, you will have 2 minutes to enter this number in your access point or wireless router.
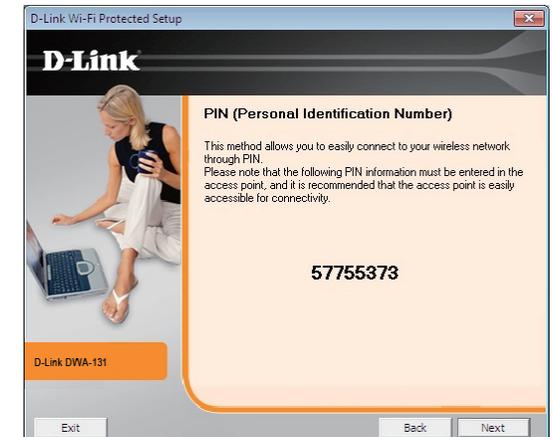
The adapter will try to establish connectivity to your access point or wireless router.

When this screen appears, you have successfully established connectivity. Click **Finish** to complete your setup.

My Wireless Networks

The My Wireless Networks page will allow you to create, edit, and delete wireless network profiles. Every time you connect to a network using the *Wireless Networks* page, a profile will automatically be created.

New Button: To create a new wireless network profile (refer to page 25).

Modify: To edit a current profile (refer to page 26).

Delete: To remove a profile.

Activate: To use a profile. Allow up to 30 seconds to connect to the wireless network.

Profile Details: The Profile Details section will display information about the wireless network such as the network name (SSID), network type (Infrastructure), and if the network is secured.
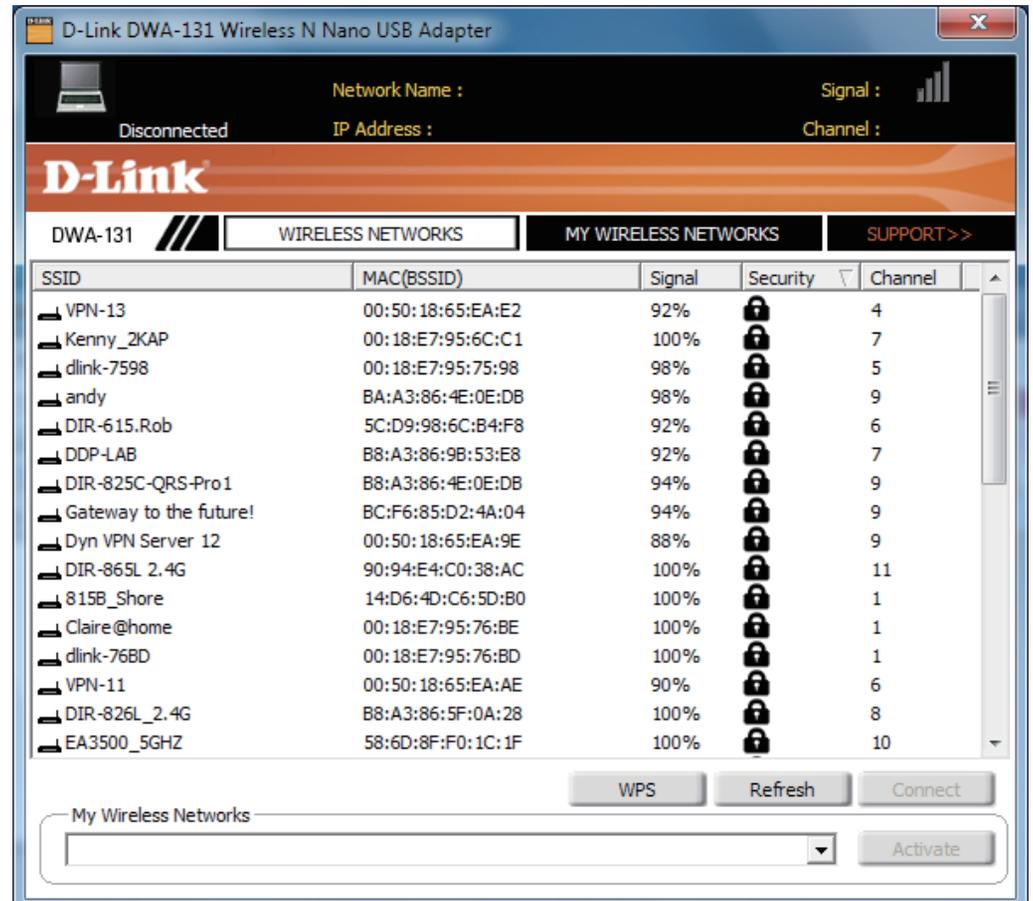
Add Profile

You may add a new network by clicking the **New** button from the *My Wireless Networks* page.

Profile Name: Enter a name for your profile (e.g. Home, Office, Coffee Shop).

SSID: Enter the SSID of the wireless network.

Network Type: Select the network type. If you are connecting to a wireless router or access point, select Infrastructure. (Ad-hoc mode is not supported)

Security Type: Select the type of security used. Please refer to the **Wireless Security** section for more information.

OK: Click **OK** to save your settings.

Modify Profile

You may edit an existing profile by selecting the profile and clicking the **Modify** button from the *My Wireless Networks* page.

Profile Name: Enter a name for your profile (e.g. Home, Office, Coffee Shop).

SSID: Displays the SSID of the network.

Network Type: Displays the network type.

Security Type: Select the type of security used. Please refer to the **Wireless Security** section for more information.

OK: Click **OK** to save your settings.

Support

If you need help, click the **Support** button. A panel will appear to the right of the utility which will display information about the utility.

About

The About screen gives you information about the Firmware and Utility Versions of the DWA-131.
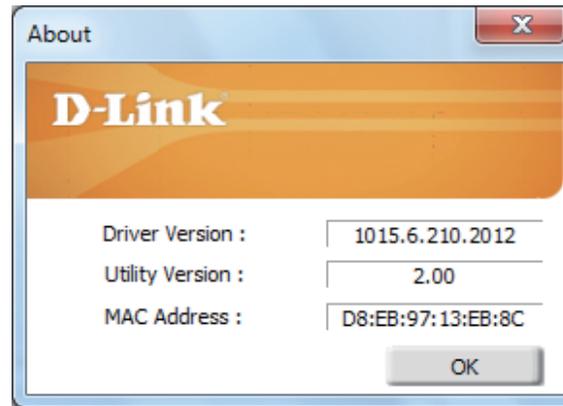
Connect to a Wireless Network
Using Windows® 7

Windows® 7 users may use the built-in wireless utility. If you are using another company's utility, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® 7 utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

       or

Left-click the wireless icon in your system tray (lower-right corner next to the time).

The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) 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.
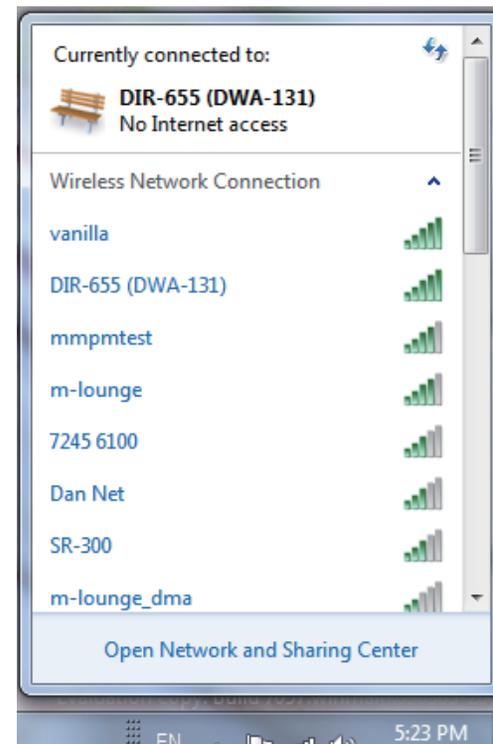
Connect to a Wireless Network
Using Windows Vista®

Windows Vista® users may use the built-in wireless utility. If you are using another company's utility, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows Vista® utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

<div align="center">or</div>

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **Connect to a network**.

The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button.

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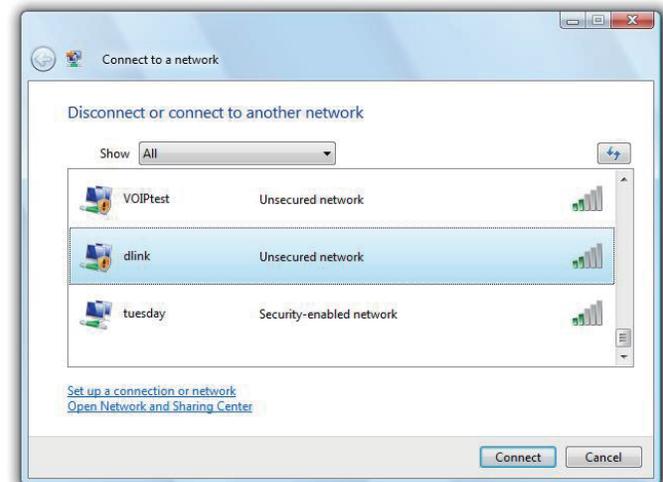
Connect to a Wireless Network
Using Windows® XP

Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

<div align="center">or</div>

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.

The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) 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.
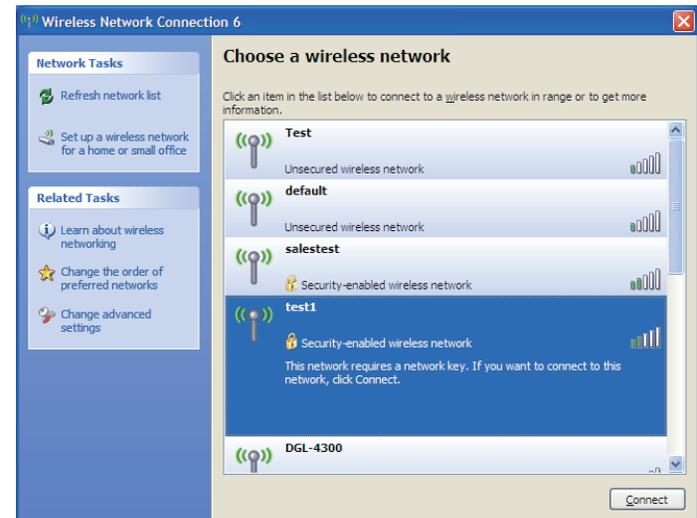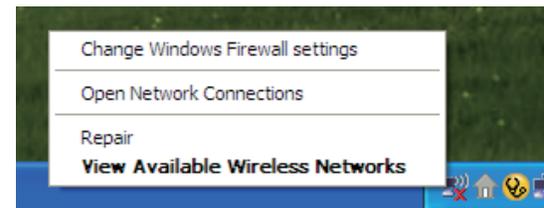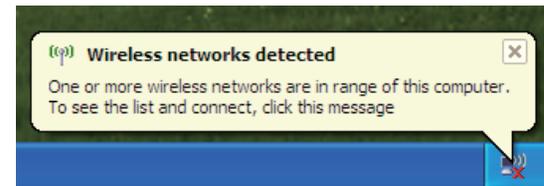
Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DWA-131 offers the following types of security:

  • WPA2 (Wi-Fi Protected Access 2)   • WPA2-PSK (Pre-Shared Key)
  • WPA (Wi-Fi Protected Access)   • WPA-PSK (Pre-Shared Key)

What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

  • Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard instead of TKIP.

  • User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

Configure WPA/WPA2 Passphrase
Using the D-Link Wireless Connection Manager

It is recommended to enable WPA-PSK on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WPA-PSK passphrase being used.

1. Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop.

2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**. If the network is using WPA-PSK, the screen (as shown to the bottom-right) will appear.

3. Enter the WPA-PSK passphrase exactly as it is on your wireless router or access point. Click the **Show text in the password field** box to see the passphrase. Unchecking it will hide it.

4. Click **OK** to connect to the network. Allow up to 30 seconds to connect.

If you would like to create a new network and enter the WPA-PSK settings, refer to the next page.
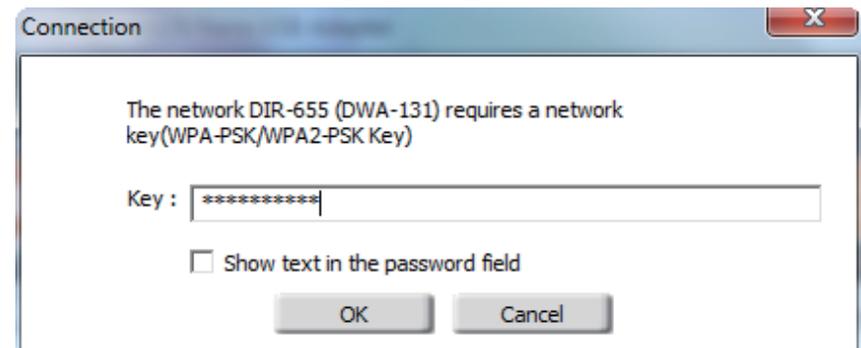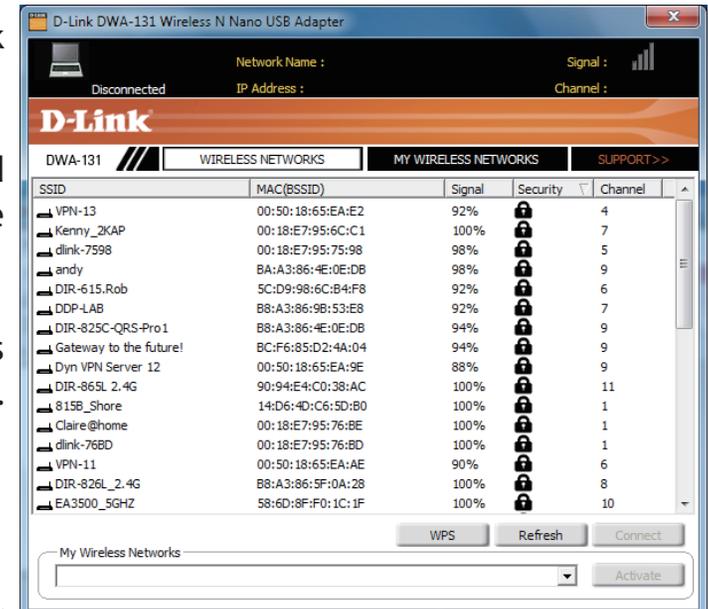
It is recommended to enable WPA-PSK on your wireless router or access point before configuring your wireless adapter. Make sure you enter the passphrase exactly the same on all wireless devices.

1. Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop. Click on **New** to create a new profile or highlight an existing profile and click **Modify**.

2. Select **WPA/WPA2-Personal** under *Set Security Option*.

3. Select **TKIP** or **AES**.

4. Enter the passphrase exactly as it is on your wireless router or access point.

5. Click **OK** to connect to the network. Allow up to 30 seconds to connect.
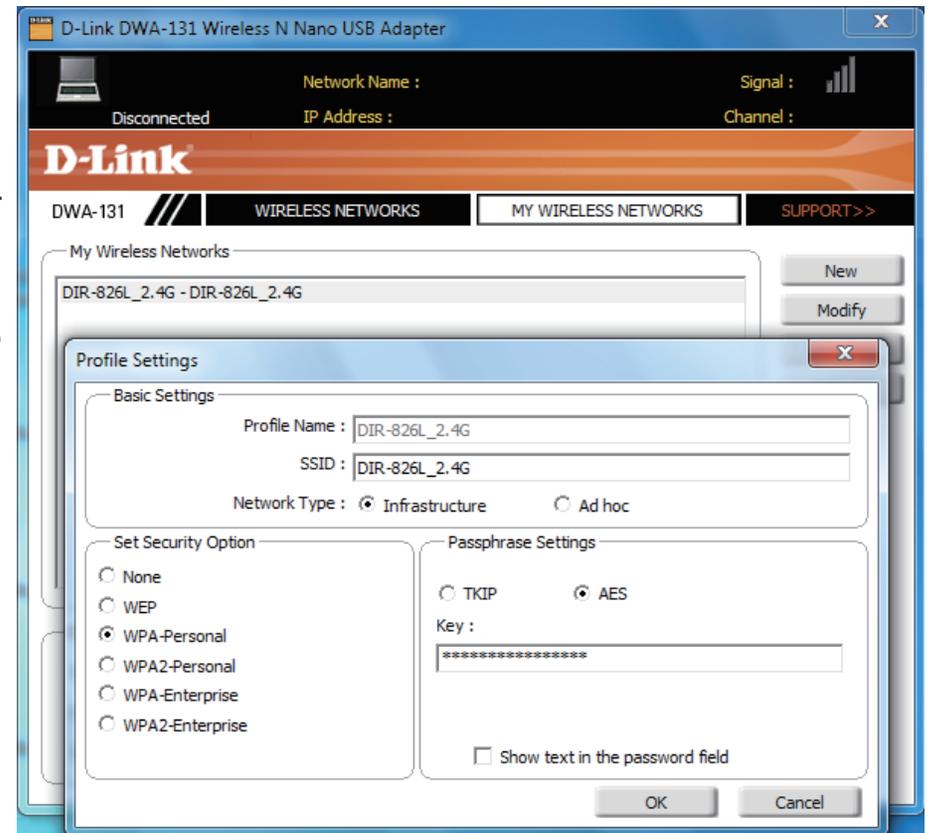
Configure WPA/WPA2 Passphrase
Using Windows® 7

It is recommended to enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

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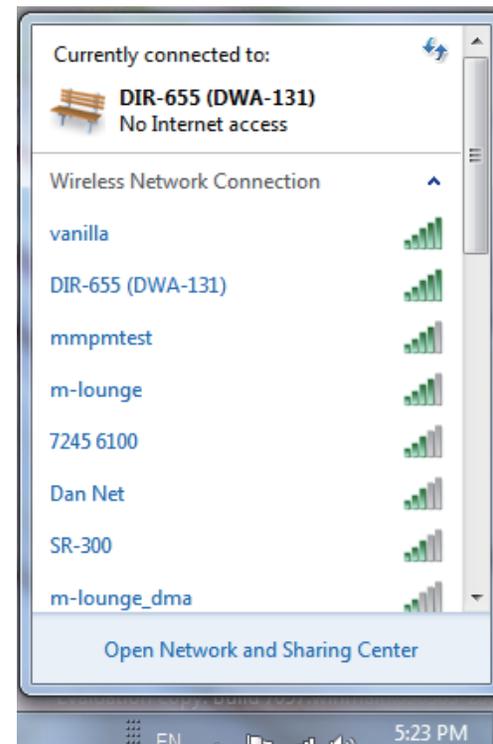
3. Highlight the wireless network (SSID) you would like to connect to and click the Connect button.

   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. The following window appears while your computer tries to connect to the router.
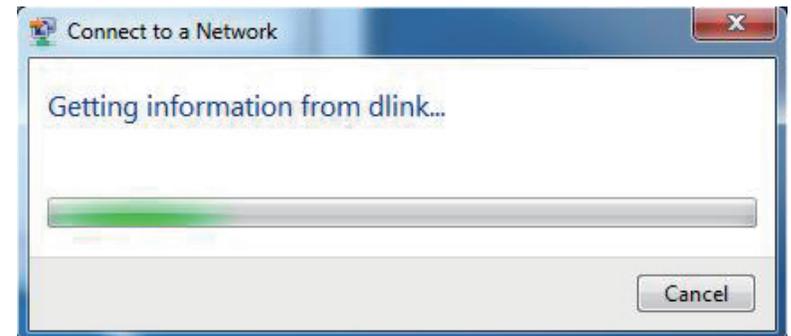
5. Enter the same security key or passphrase that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

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.

Configure WPA/WPA2 Passphrase
Using Windows® Vista

It is recommended to enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

1. Open the Windows Vista® 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**.
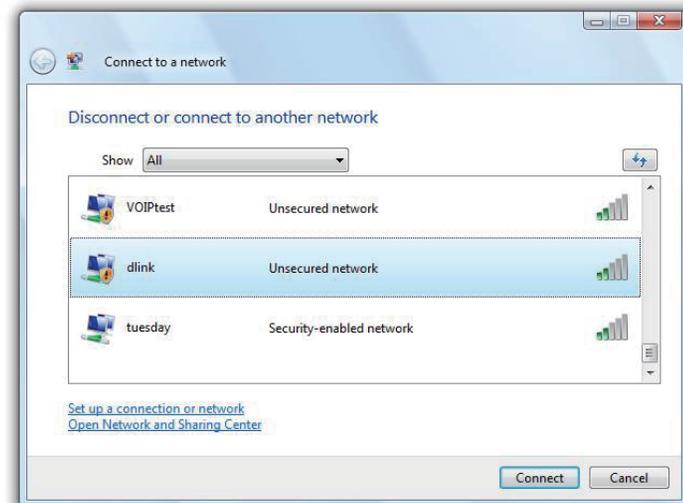
3. Enter the same security key or passphrase that is on your router and click **Connect**.

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.
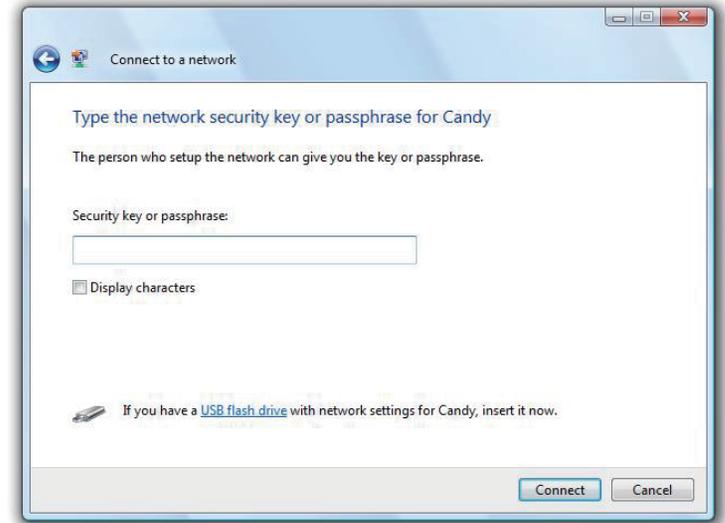
Configure WPA/WPA2 Passphrase
Using the Windows® XP Utility

It is recommended to enable WPA-PSK on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WPA-PSK key being used.

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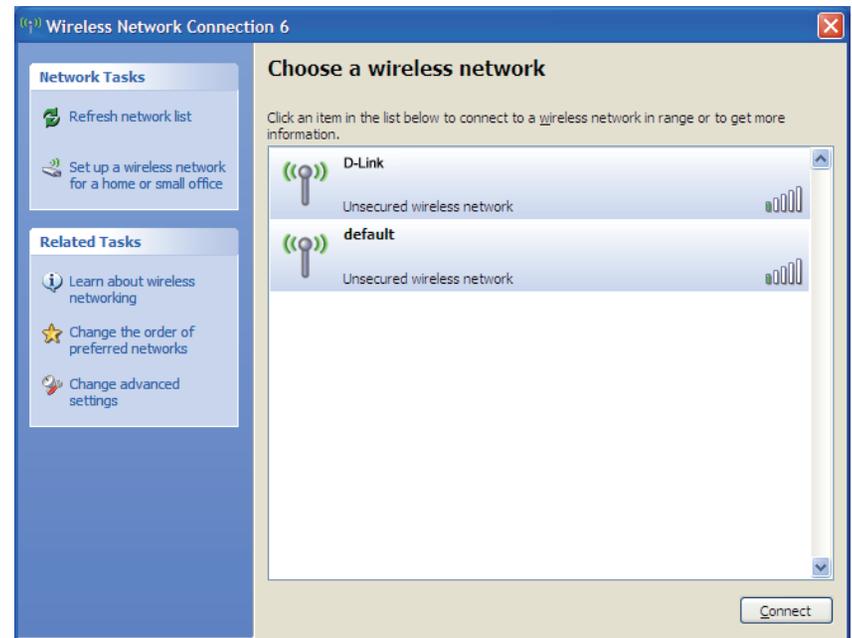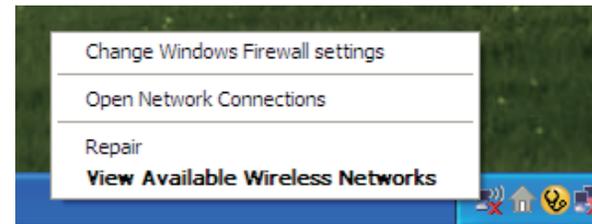
3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The WPA-PSK passphrase must be exactly the same as on the wireless router or access point.
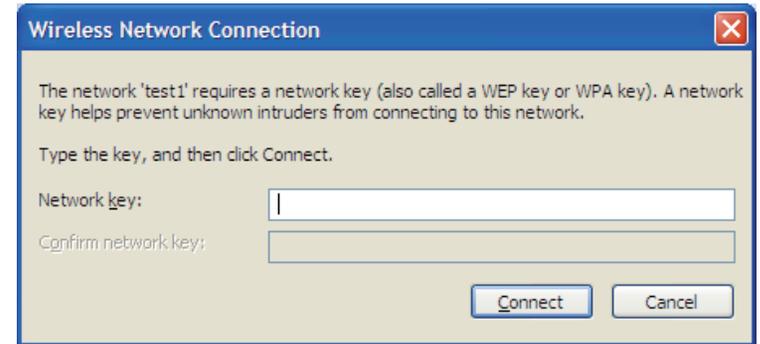
Configure WPA/WPA2-Enterprise
Using the D-Link Wireless Connection Manager

WPA and WPA2 are for advanced users who are familiar with using a RADIUS server and setting up certificates.

1. Open the Wireless Connection Manager by double-clicking on the D-Link icon on your desktop. Click on **New** to create a new profile or highlight an existing profile and click **Modify**.

2. Select **WPA/WPA2-Enterprise** under *Set Security Option* and then select **TKIP** or **AES**.

3. Click on **Advanced Config** to continue.

4. Next to *EAP Type*, select **EAP-TLS**. Extensible Authentication Protocols allow devices on the network to request authentication from the RADIUS server in the network. All the devices on the network must use the same EAP type when using a RADIUS server for authentication. Some RADIUS servers require that the Validate Server field be selected. Check this field if your RADIUS server requires validation.

5. Select a **User Certificate** from the drop-down menu.

6. Enter the login information required to authenticate.

7. Click **Add** to enter the IP address(es) of your RADIUS servers.

8. Click **OK** to save your settings.
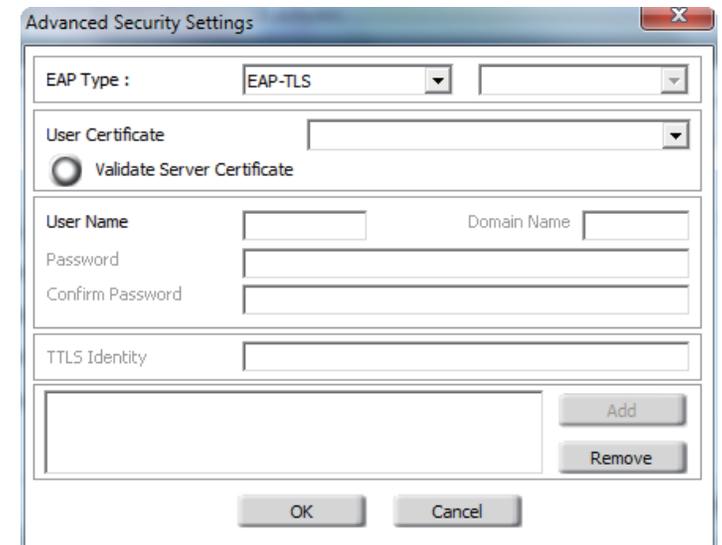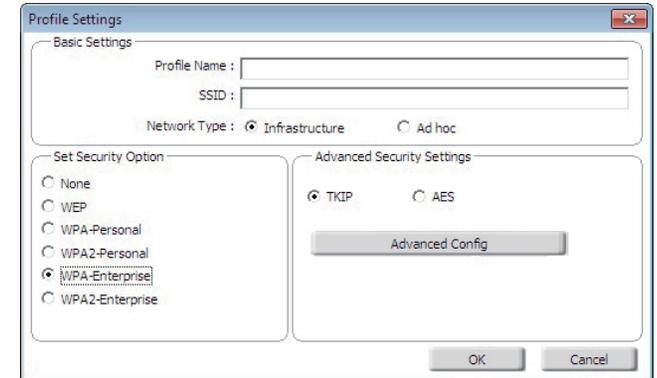
Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWA-131. Read the following descriptions if you are having problems. The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.

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

Go to **Start** > **My Computer** > **Properties.**

Select the **Hardware Tab.**
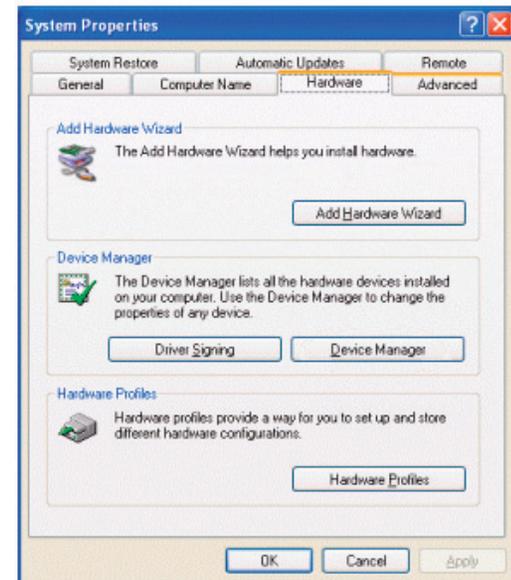
Click the **+** sign next to **Network Adapters.**

Right-click on **D-Link DWA-131 USB Adapter.**

Select **Properties** to check that the drivers are installed properly.
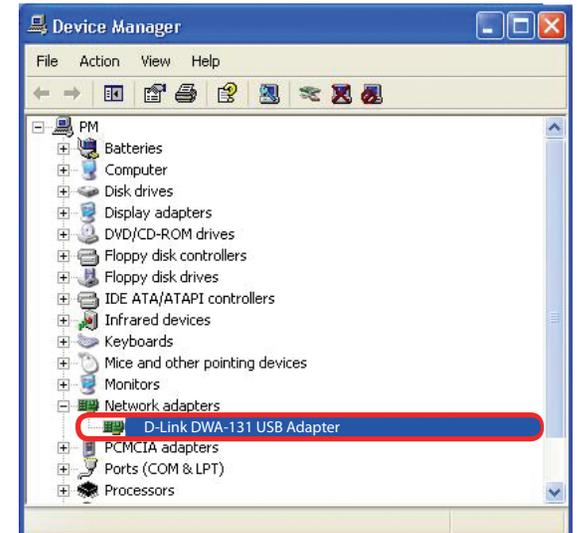
Look under **Device Status** to check that the device is working properly. Click **OK** to continue.
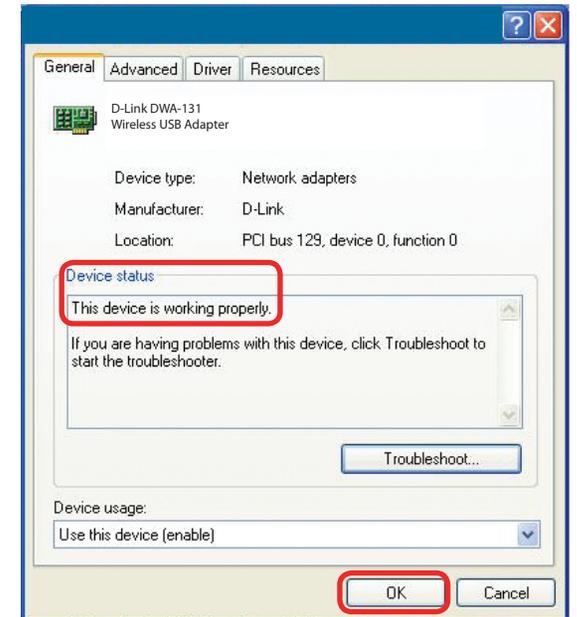
2. The computer does not recognize the DWA-131 Wireless USB Adapter.

Make sure that the DWA-131 Wireless USB Adapter is properly seated in the computer's USB 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-131 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. The **SSID** factory default setting for D-Link products is **default.** (Double-click on the WLAN icon in the taskbar. The **Link Info** screen will display the SSID setting.)

Check that the **Network Connection** for the wireless client is configured properly. Select **AP (Infrastructure)** when connecting to an access point. Double-click on the **WLAN icon** in the taskbar > click on **Configuration** to change the settings for the wireless adapter.

If **Security** is enabled, make sure that the correct encryption keys are entered on both the DWA-131 and the access point. Double-click on the **WLAN** icon in the taskbar > click **Encryption**. Check to see that the key selected is set to the same key as other devices on the network.

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 as seen in the picture, 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 as become so popular in recent years that almost everyone is using it, whether it's for home, office, 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 office
- Remotely access your office network from home
- Share 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 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 USB Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is 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, Nanowaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail 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. Unfortunately 802.11g/n products such as the DWA-131 do not support ad-hoc mode.

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 USB Adapters. All the adapters must be in Ad-Hoc mode to communicate.

* Not supported with the DWA-131.

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.

Windows® 7/Windows Vista® Users

- Click **Start** > **All Programs** > **Accessories** > **Command Prompt**. You may need administrative access to run this application.

- For all additional prompt windows inquiring of running the command prompt application, select **Yes**, **OK**, or **Continue**.

- 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

- **Windows® XP** - 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** 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.
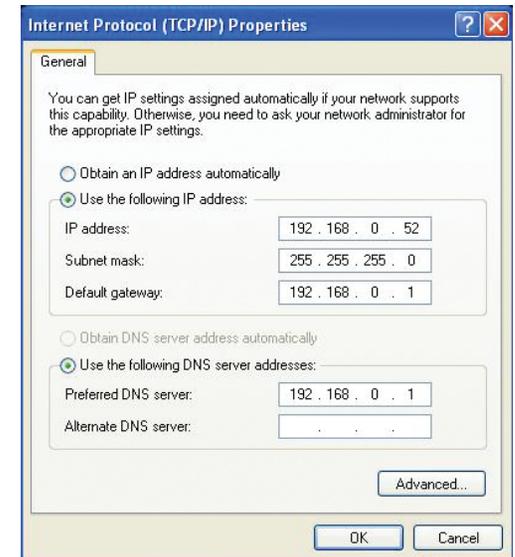
Windows® 7/Windows Vista® Users

- 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.

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- Click **OK** to save your settings.
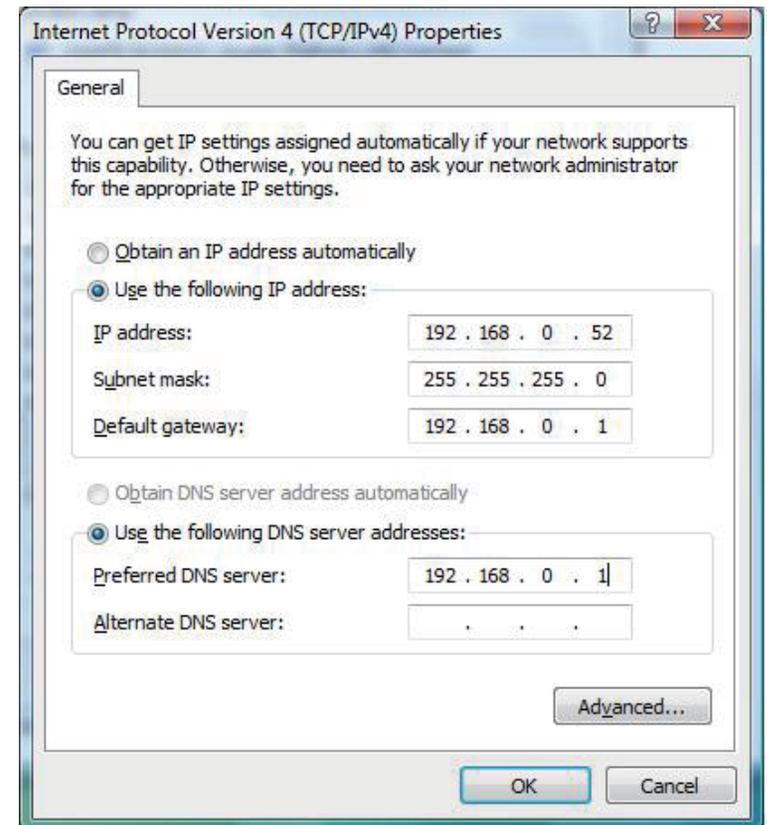
Technical Specifications

Standards
- IEEE 802.11n
- IEEE 802.11g

Bus Type
- USB 2.0 (1.1 compatible)

Security
- WPA/WPA2 - Wi-Fi Protected Access (TKIP, MIC, AES, IV Expansion, Shared Key Authentication)
- WPS (PIN and PBC)

Media Access Control
- CSMA/CA with ACK

Frequency Range
- 2.4GHz to 2.4835GHz

Modulation Technology
- Orthogonal Frequency

Division Multiplexing (OFDM)
- Complementary Code Keying (CCK)

Operating Voltage
- 5 VDC +/- 10%

Operating Temperature
- 32°F to 104°F (0°C to 40°C)

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

Dimensions
- 1.1" x 3.4" x 0.5"

Weight
- 0.06 lbs (27.22g)

Certifications
- FCC Class B
- IC
- CE, C-Tick and Wi-Fi

* 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.