



User Manual

Wireless N Nano USB Adapter

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Product Overview

Package Contents

- 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® 8, Windows® 7
- CD-ROM Drive
- 300 MHz processor and at least 64MB of RAM
- A 802.11n, 802.11b 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 SoftAP feature allows the DWA-131 to act as an access point, allowing you to share your Internet connection wirelessly with other devices, or extend the coverage of an existing network.

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!

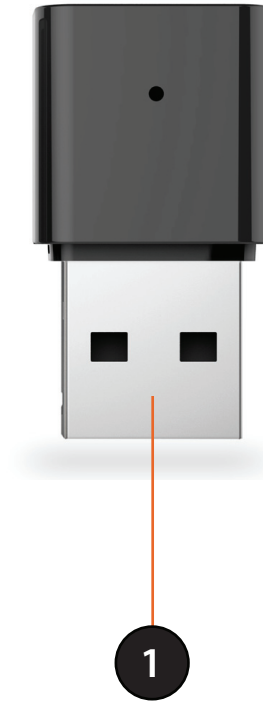
* Maximum wireless signal rate derived from IEEE Standard 802.11g and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. 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	USB Connector	Used to connect the DWA-131 to your computer.
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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.

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

To remove any old software:

Windows® 7/8 users: Click **Start** > **Control Panel** > **Programs and Features**.

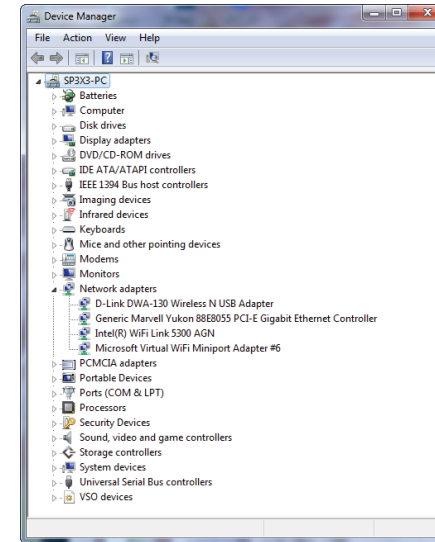
Windows XP/Vista® users: Click **Start** > **Control Panel** > **Programs and Features**.

Disable Other Wireless Adapters

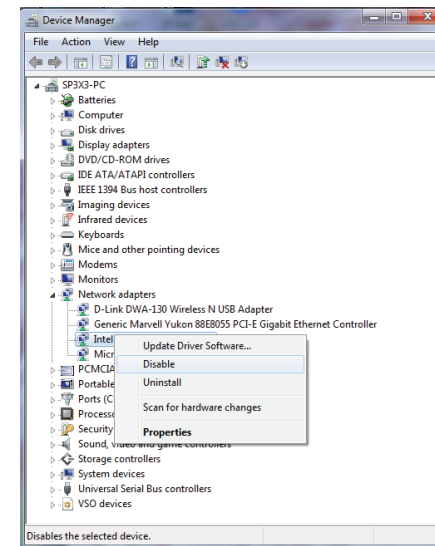
Most newer laptops may include a built-in wireless adapter. To prevent any conflicts with the D-Link wireless adapter, it is recommended to disable the wireless adapter (as well as any unused Ethernet adapters).

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

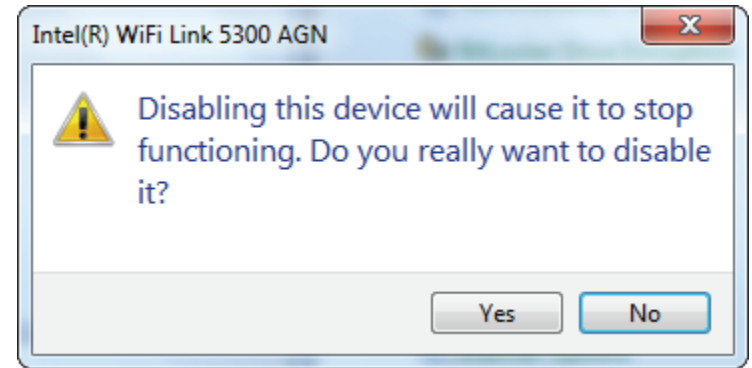
Click the **Hardware** tab and then click **Device Manager**. Scroll down the list and click the + sign to the left of **Network Adapters**.



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

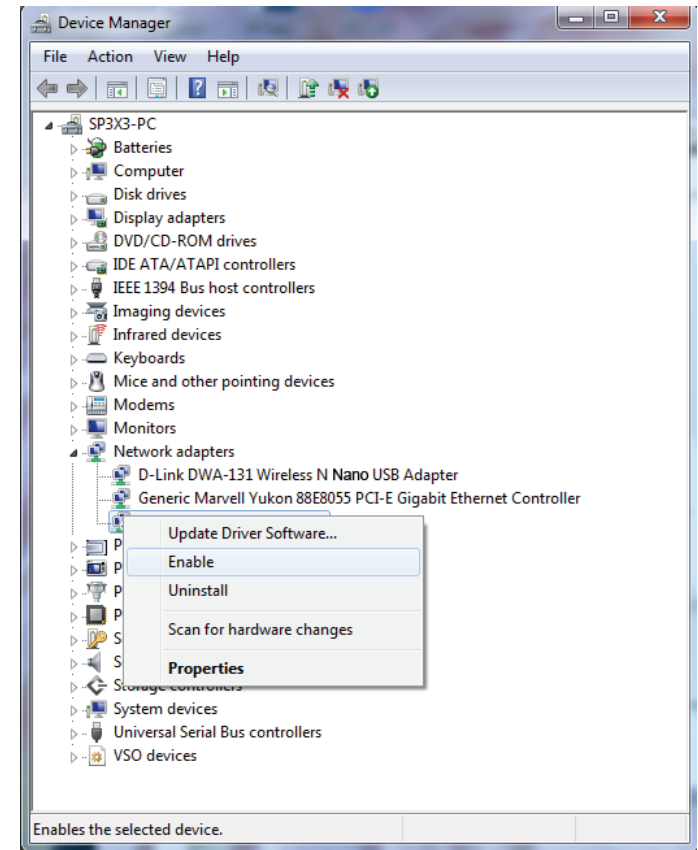


Click **Yes** to disable the adapter.



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.** 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 2.4 GHz 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 2.4 GHz 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.

Driver Installation

Before using the DWA-131 Wireless N Nano USB Adapter, you must first install a device driver from the included D-Link CD.

Warning: Do NOT connect the DWA-131 Wireless N Nano USB Adapter to the your computer's USB port before installing the driver software from the D-Link CD.

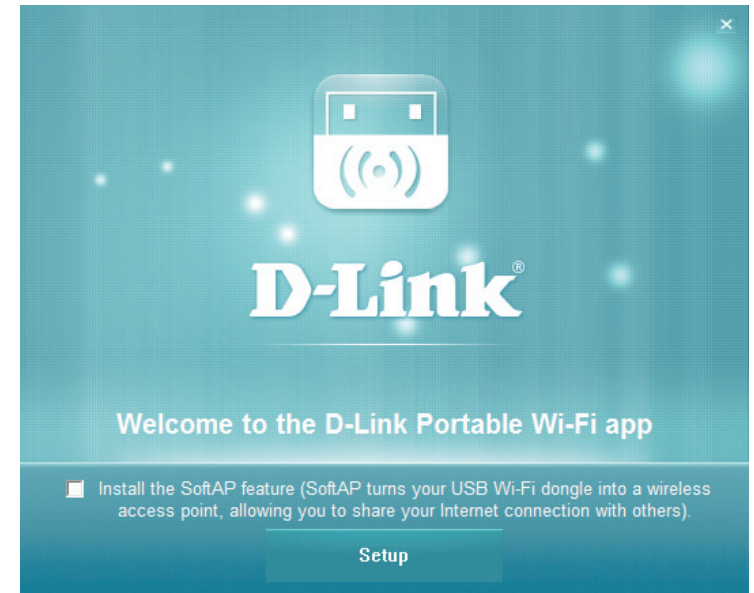
Turn on the computer and Insert the D-Link DWA-131 Driver CD in the CD-ROM drive.

Note: 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).

Once the D-Link Portable WiFi installation screen appears, you have two options. If you wish to use the DWA-131 as a client device to connect to a wireless router or access point, click **Setup**.

If you wish to use DWA-131 as a wireless access point so that you can share your Internet connection with others, check the **Install the SoftAP feature** box. Next, click **Setup**. This will install both the standard driver and the SoftAP feature, allowing you to toggle between them at will.

One you click **Setup**, the software will begin installing.

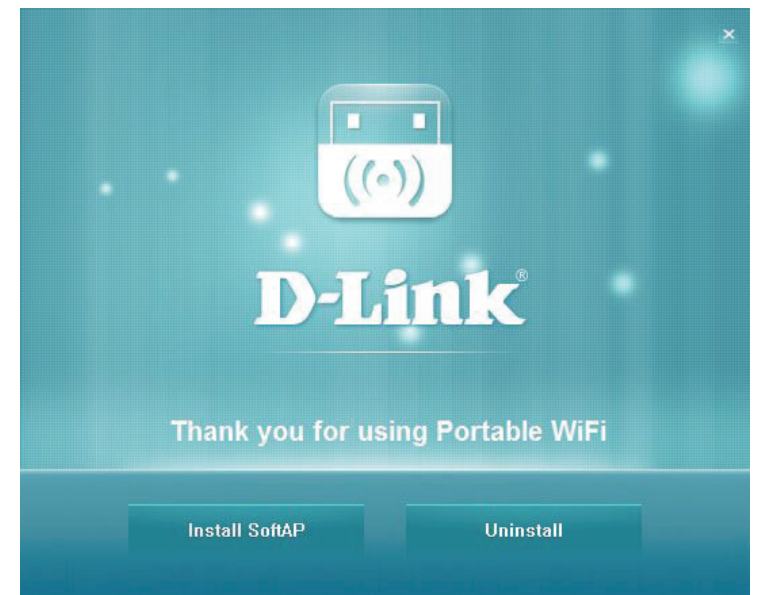


When the installation finishes, click **Complete**.

The DWA-131 driver is now installed. You may now insert the DWA-131 into your computer's USB port, and connect to a wireless network using your computer's operating system.

See **Connecting to a Wireless Network** on page 16 for information about how to connect to your network using your DWA-131.

If you chose to install the driver *without* the SoftAP feature but now wish to install the SoftAP feature, re-run the installation software and select **Install SoftAP**.



Using SoftAP

The DWA-131's **SoftAP** feature allows you to use the device as an access point. This means that wireless clients can connect to the computer the DWA-131 is plugged into, and share its Internet connection.

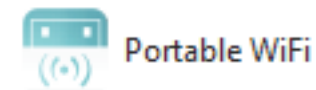
Note: *Using the SoftAP feature will temporarily disable the DWA-131's wireless client functionality.*

Note: *The SoftAP feature supports a maximum of six wireless clients.*

To begin, ensure that you have installed the SoftAP feature (see **Installation** on page 7 for instructions how to do this).

Run the **Portable WiFi** application on your computer. On Windows, this can be found in the **Start** menu.

The interface for the SoftAP feature appears in the lower-right of the screen. If the DWA-131 is not already connected to the USB port of your computer, then you will be prompted to do so.



Once the DWA-131 is connected, clients can connect to your network. The **SSID** of the access point will be displayed, along with the **MAC** address, security level, **Station Count**, and network **Traffic**.

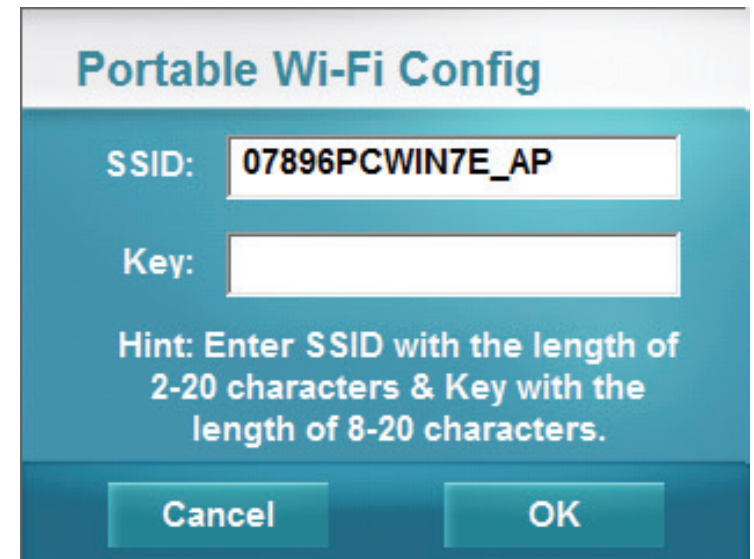
To change the **SSID** and the security key, click **Config**.

The current **SSID** will be displayed, and can be edited. Wireless clients will need to select this SSID when connecting to your network, so it is recommended that you choose one that they can easily identify.

Under **Key**, enter a network security key of 8-20 characters. Wireless clients attempting to connect to your network will need to enter this key for the connection to be successfully established.

Alternatively, leave the field blank if you do not want to secure your wireless access point. This is not recommended, as it will allow any other devices in range of the DWA-131 to connect to your network.

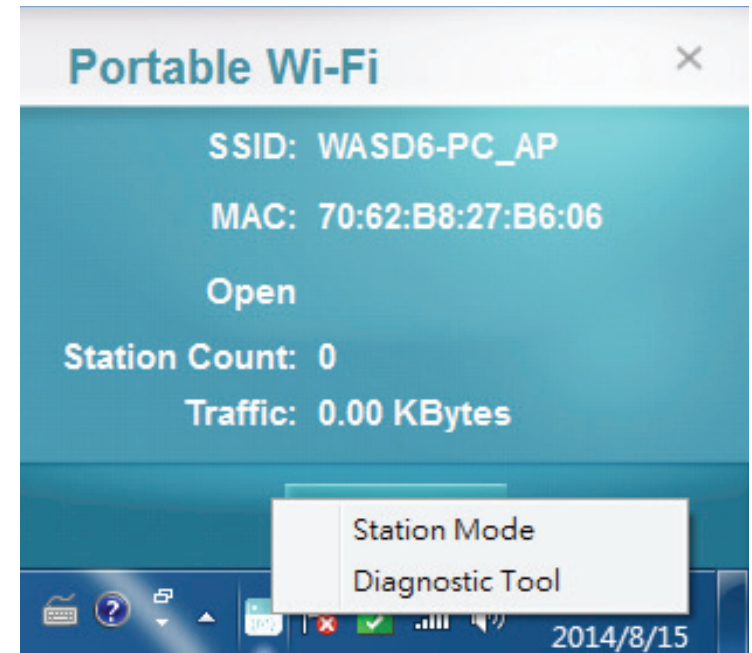
Click **OK** to save these settings, or **Cancel** to revert to their previous values.



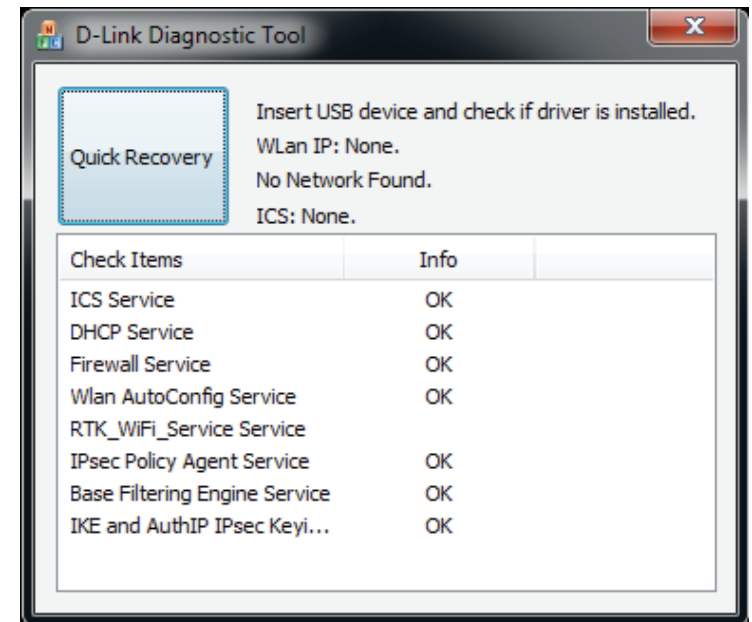
To turn off SoftAP mode and switch the DWA-131 back to the wireless client mode, right-click on the Portable WiFi icon and select **Station Mode**. This will exit the Portable WiFi app and restore your previous network connection using the DWA-131 as a client (if you had configured it to connect automatically).

The SoftAP feature also includes a handy Diagnostic Tool to detect errors in the DWA-131's access point functionality.

To run the Diagnostic Tool, right-click on the Portable WiFi icon and select **Diagnostic Tool**.



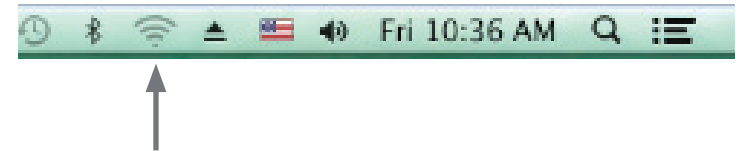
The D-Link Diagnostic Tool will detect errors in each service, and notify you in order to help you troubleshoot the problem. It will also display your current network connection and the access point's IP address.



Connecting to a Wireless Network Using Mac OS

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 (Wi-Fi password) being used.

To quickly access your Wi-Fi information and settings, click the Wi-Fi icon on the menu bar.



Clicking on this icon will display a list of all wireless networks within range of your computer. Select the desired network by clicking on the network name.

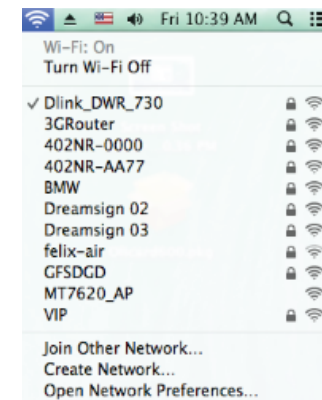


You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click **Join**.

Note: To avoid having to enter your network security key each time you connect, check **Remember this network**.



Once the connection is successfully established, you will see a check by the name of your wireless network.



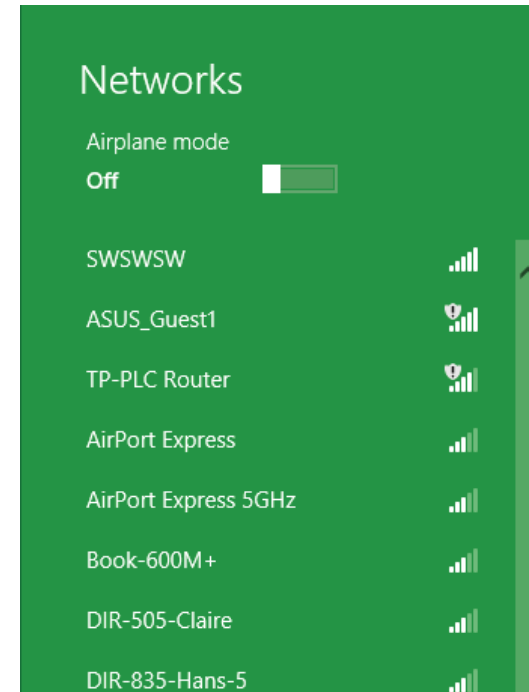
Using Windows 8

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 (Wi-Fi password) being used.

To join an existing network, locate the wireless network icon in the taskbar, next to the time display.

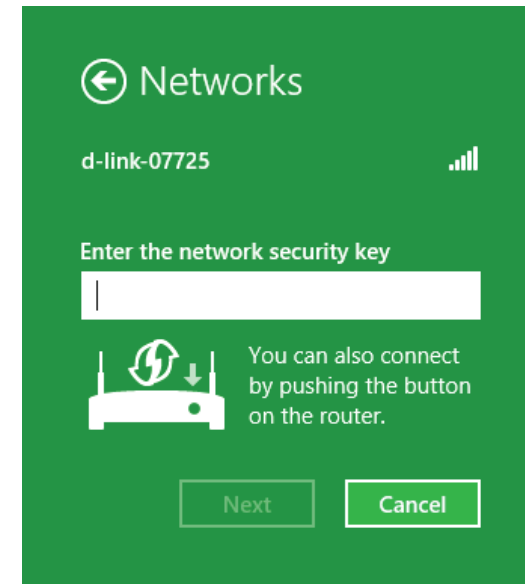


Clicking on this icon will display a list of wireless networks which are within connecting proximity of your computer. Select the desired network by clicking on the network name.

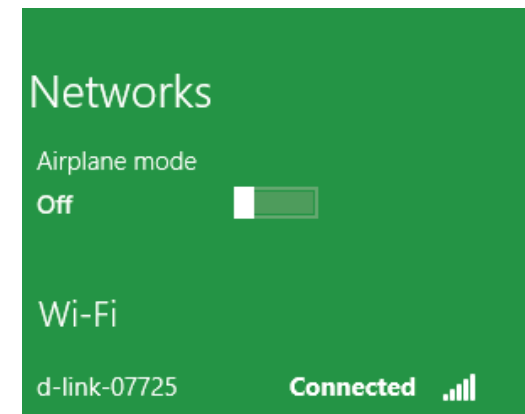


You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click Next.

If you wish to use Wi-Fi Protected Setup (WPS) to connect to the router, you can also press the WPS button on your router at this point to enable the WPS function.



When you have established a successful connection to a wireless network, the word Connected will appear next to the name of the network to which you are connected.



Using Windows 7

Windows 7 users may use the built-in wireless utility to connect to a wireless network. If you are using another company's utility or Windows 2000, 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. You can also click on the wireless icon in your system tray (lower-right corner).

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



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

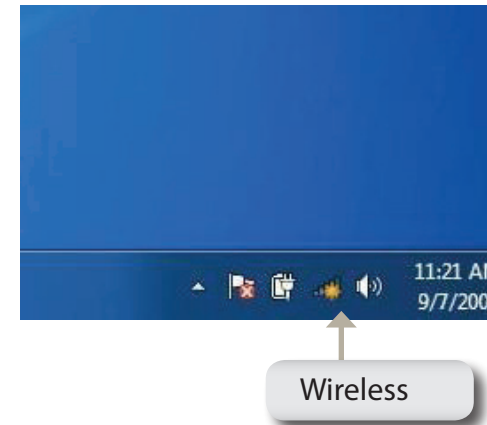
If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to **Networking Basics** on page 34 for more information.



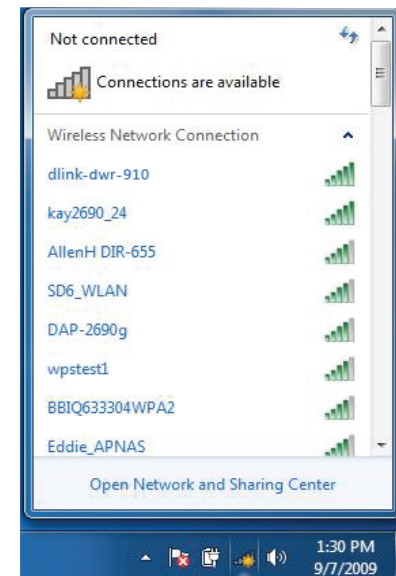
Configuring Wireless Security

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).



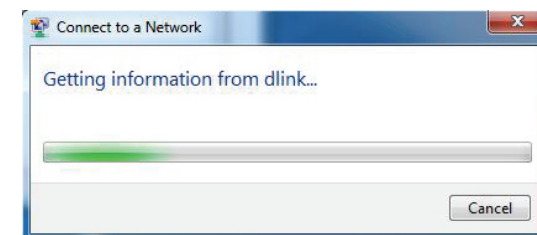
2. The utility will display any available wireless networks in your area.



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

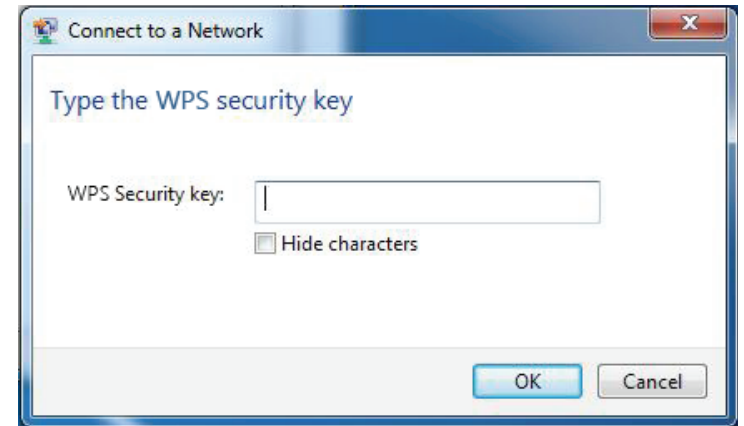


4. The following window appears while your computer tries to connect to the router.



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

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.



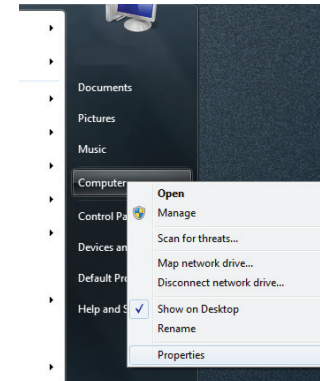
Troubleshooting

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® 7. If you have a different operating system, the process on your computer will be similar.

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

Go to **Start > Computer** (right-click) > **Properties**.

This will bring up the System settings under the Windows Control Panel.



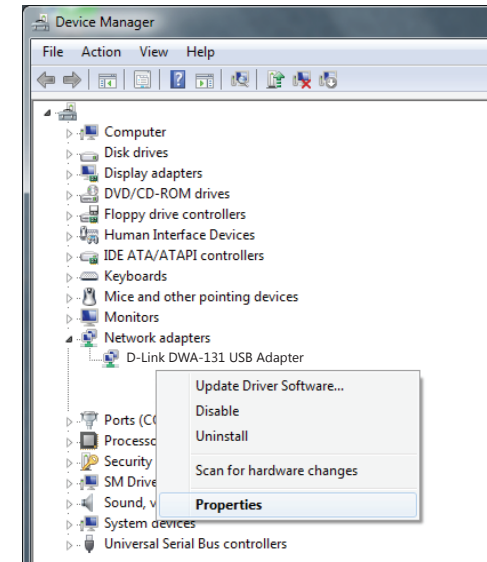
Click **Device Manager**.



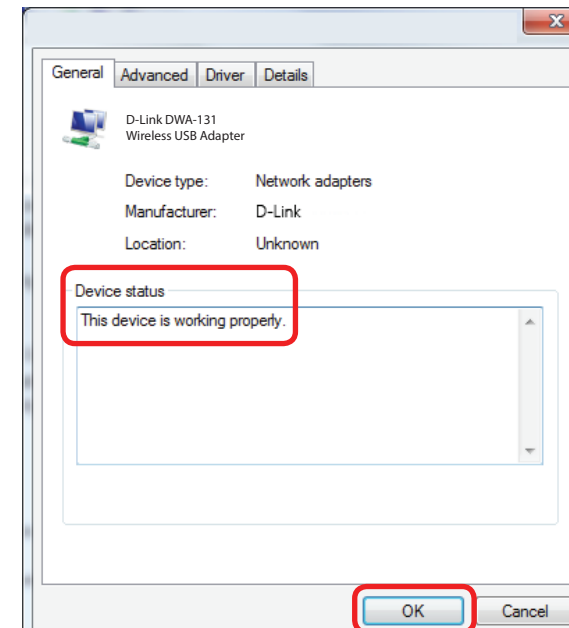
Click the + sign next to **Network Adapters**.

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 N Nano USB Adapter.

Make sure that the DWA-131 Wireless N Nano 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 has 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.

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.

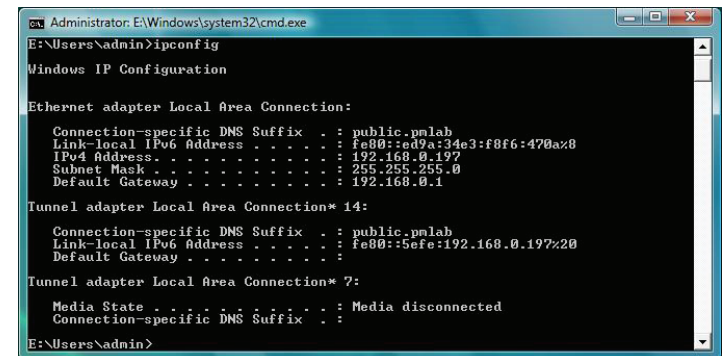
Networking Basics

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.

- 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.



```
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:f8f6:470a%8
    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::5efc:192.168.0.197%20
    Default Gateway . . . . . :

Tunnel adapter Local Area Connection* 7:

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

E:\Users\Admin>
```

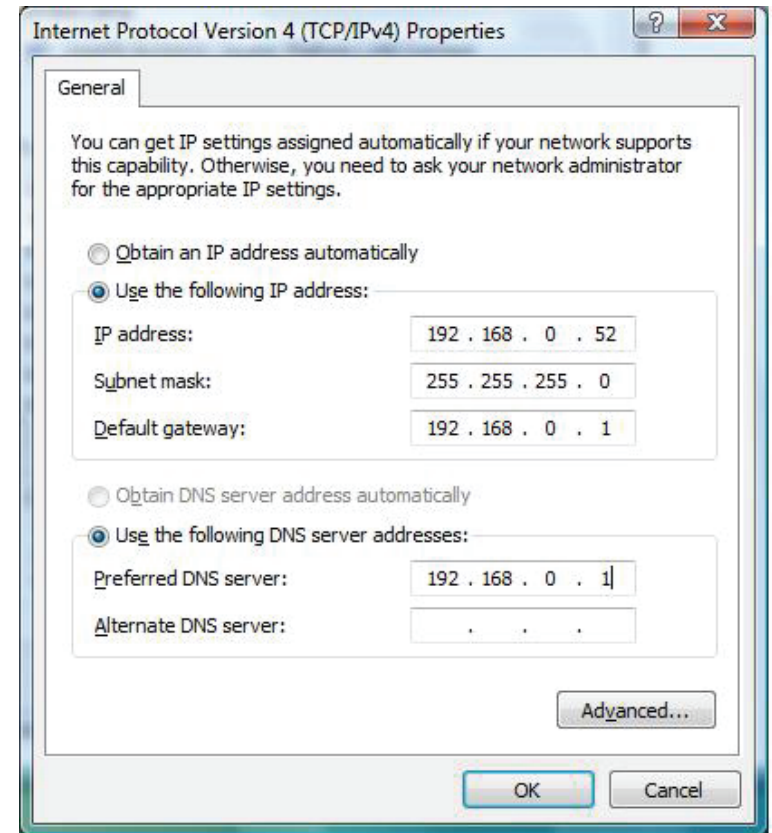
Statically Assign an IP address

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

- Click on **Start > Control Panel** (make sure you are in Classic View). Double-click on the **Network and Sharing Center** icon and then 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.



Technical Specifications

Standards

- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.11b

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

- 2.4 GHz to 2.4835 GHz

Modulation Technology

- Orthogonal Frequency

Division Multiplexing (OFDM)

- Complementary Code Keying (CCK)

Operating Voltage

- 5 V DC +/- 10%

Operating Temperature

- 0 °C to 40 °C (32 °F to 104 °F)

Operating Humidity

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

Dimensions

- 30 x 16 x 8.5 mm (1.2 x 0.6 x 0.3 inches)

Weight

- 27.22 g (0.96 ounces)

Certifications

- FCC Class B
- IC
- CE
- C-Tick
- 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.