

# USER MANUAL

*DHP-W306AV*

VERSION 1.0



**D-Link**<sup>®</sup>




**WIRELESS**

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## Package Contents

<b>D-Link DHP-W306AV Powerline AV Wireless N Extender</b>	
<b>CAT5 Ethernet Cable</b>	
<b>CD-ROM</b>	

# System Requirements

<b>Network Requirements</b>	<ul style="list-style-type: none"><li>• IEEE 802.11n or 802.11g wireless clients</li><li>• 10/100 Ethernet clients</li></ul>
<b>Web-based Configuration Utility Requirements</b>	<p><b>Computer with the following:</b></p> <ul style="list-style-type: none"><li>• Windows®, Macintosh®, or Linux-based operating system</li><li>• An installed Ethernet adapter</li></ul> <p><b>Browser Requirements:</b></p> <ul style="list-style-type: none"><li>• Internet Explorer 6.0 or higher</li><li>• Firefox 3.0 or higher</li><li>• Safari 3.0 or higher</li><li>• Chrome 2.0 or higher</li></ul> <p><b>Windows® Users:</b> Make sure you have the latest version of Java installed. Visit <a href="http://www.java.com">www.java.com</a> to download the latest version.</p>
<b>CD Installation Wizard Requirements</b>	<p><b>Computer with the following:</b></p> <ul style="list-style-type: none"><li>• Windows® XP with Service Pack 2 / Vista® / Windows 7</li><li>• An installed Ethernet adapter</li><li>• CD-ROM drive</li></ul>

# Introduction

The DHP-W306AV allows you to connect both wired and wireless computers, high-definition TVs, networking devices, and gaming consoles using the most pervasive medium in your home - the electrical wiring. Share Internet connections and experience smooth file transfers, streaming multimedia, online gaming and more. The Powerline AV Wireless N Extender features easy plug-and-play installation and can be connected to any Ethernet-enabled device.

The Powerline AV Wireless N Extender incorporates the latest technology to deliver up to 200 Mbps over a home's existing electrical wiring. This fast transmission speed provides ample bandwidth suitable for streaming high-quality video HDTV signals while simultaneously providing high-speed Internet access throughout the home. With Quality of Service (QoS) support, the performance of applications which require real-time communication, such as VoIP phone calls and multiplayer online games, will not be compromised even while streaming Internet TV and music.

### **DATA TRANSMISSION OVER ELECTRICAL WIRING**

The D-Link DHP-W306AV Powerline AV Wireless N Extender, compliant with the Powerline AV standard, uses your home's existing electrical wiring to create a network or extend your existing network.<sup>1</sup> It turns every power outlet into a possible network connection to access digital media devices, game consoles, print servers, computers, and network storage devices throughout your home. Additionally, Wireless N provides high speed transfers without the need for unsightly network cables.

### **FASTER WIRELESS SPEEDS, WIDER OPERATIONAL RANGE**

The Wireless N technology incorporated into the DHP-W306AV offers increased speed and range over standard 802.11g/b. Initial wireless setup can be accomplished quickly, thanks to a convenient WPS button atop the device. WEP, WPA, and WPA2 encryption keep your network traffic safe and secure.

### **IDEAL FOR BANDWIDTH-INTENSIVE APPLICATIONS**

The DHP-W306AV is capable of delivering data transfer rates of up to 200 Mbps.<sup>2</sup> This rapid transmission speed makes it ideal for bandwidth-intensive applications, guaranteeing smooth HD video streaming, VoIP calls, and lag-free online gaming experiences. In addition, it prioritizes Internet traffic, ensuring that multimedia applications do not experience glitches while web surfing and downloads are in progress. This device provides ample network bandwidth, enabling digital home consumers to tap into existing electrical wiring for high-quality multimedia streaming.

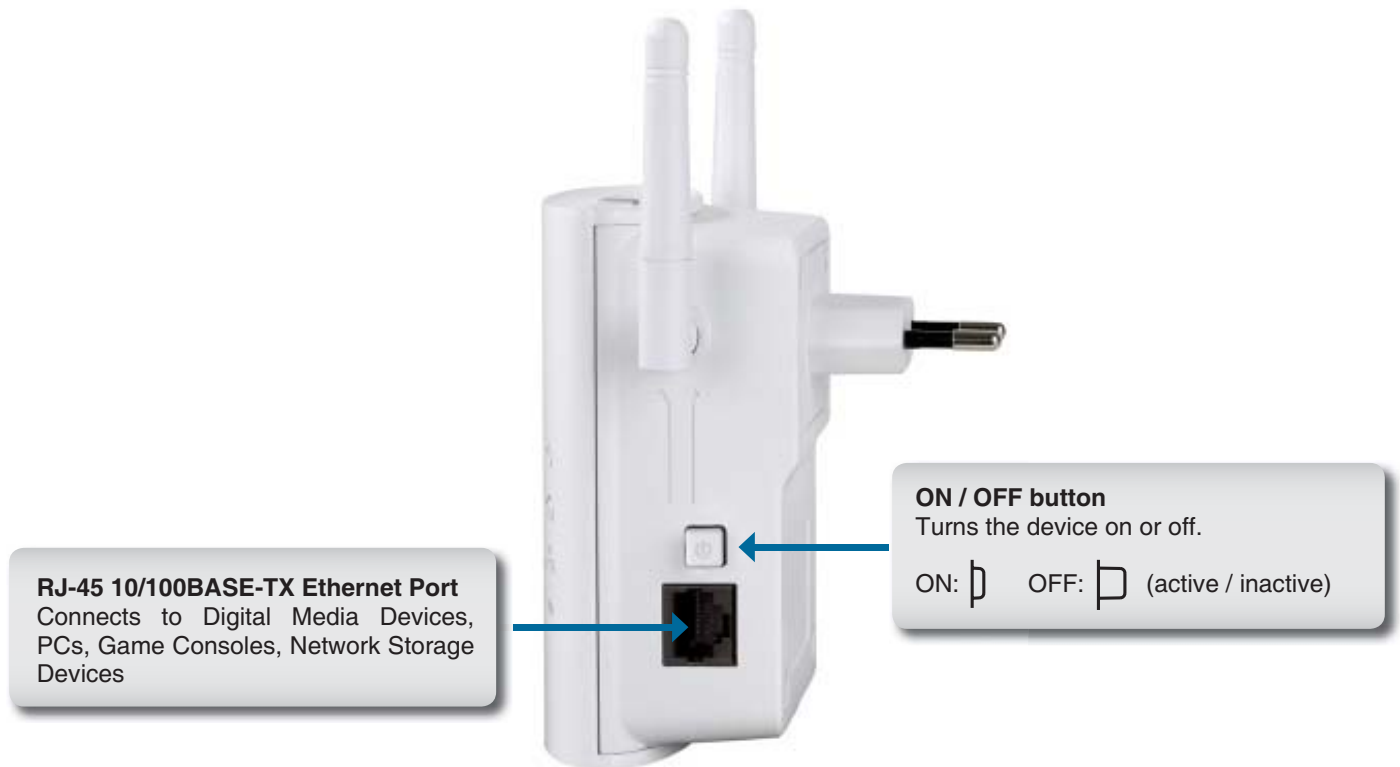
### **CONVENIENT SETUP AND SECURE OPERATION**

The DHP-W306AV plugs directly into a power outlet, and does not require any additional cables. Extend your home network by connecting multiple devices in the farthest corners of your home via Ethernet cable or Wireless N. For convenient setup, wired or wireless encryption keys can be quickly configured with the push of a button on top of the device. The adapter implements 128-bit AES data encryption to protect the network from unauthorized wiretapping. With hassle-free plug and play installation, the DHP-W306AV is an ideal solution to create a wall-to-wall home network.

<sup>1</sup> Power outlets and electrical wiring must all be part of the same electrical system. Certain electrical conditions in your home, such as wiring condition and configuration, may affect the performance of this product. Additional D-Link Powerline AV adapters are required to add new devices to the network. A minimum of two D-Link Powerline AV Network Adapters are required to create a network. Connecting this product to a power strip with a surge protector may adversely affect the performance of this product. For best results, plug the adapter directly into a wall outlet.

<sup>2</sup> Maximum throughput based on theoretical transmission PHY rate. Actual data throughput will vary. Network conditions and environmental factors, including volume of traffic and network overhead, may lower actual data throughput rate. Interference from devices that emit electrical noise, such as vacuum cleaners and hair dryers, may adversely affect the performance of this product. This product may interfere with devices such as lighting systems that have a dimmer switch or a touch-sensitive on/off feature, shortwave radios, or other Powerline devices that do not follow the HomePlug standard.

## Hardware Overview Connections





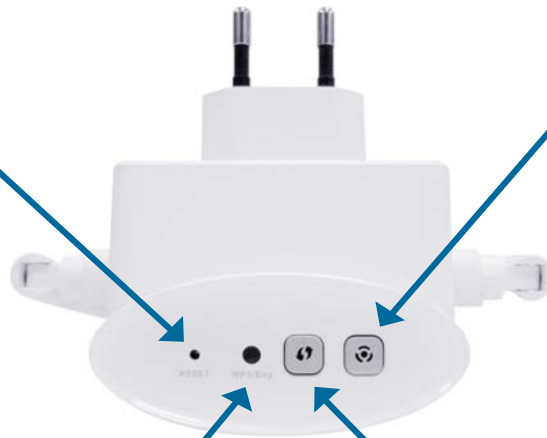
## Hardware Overview Side

### Reset Button

Press and hold to reset the device back to the factory default settings.

### Encryption Button

Push this button to establish a secure powerline network with other Powerline AV devices.



### WPS/Eny LED

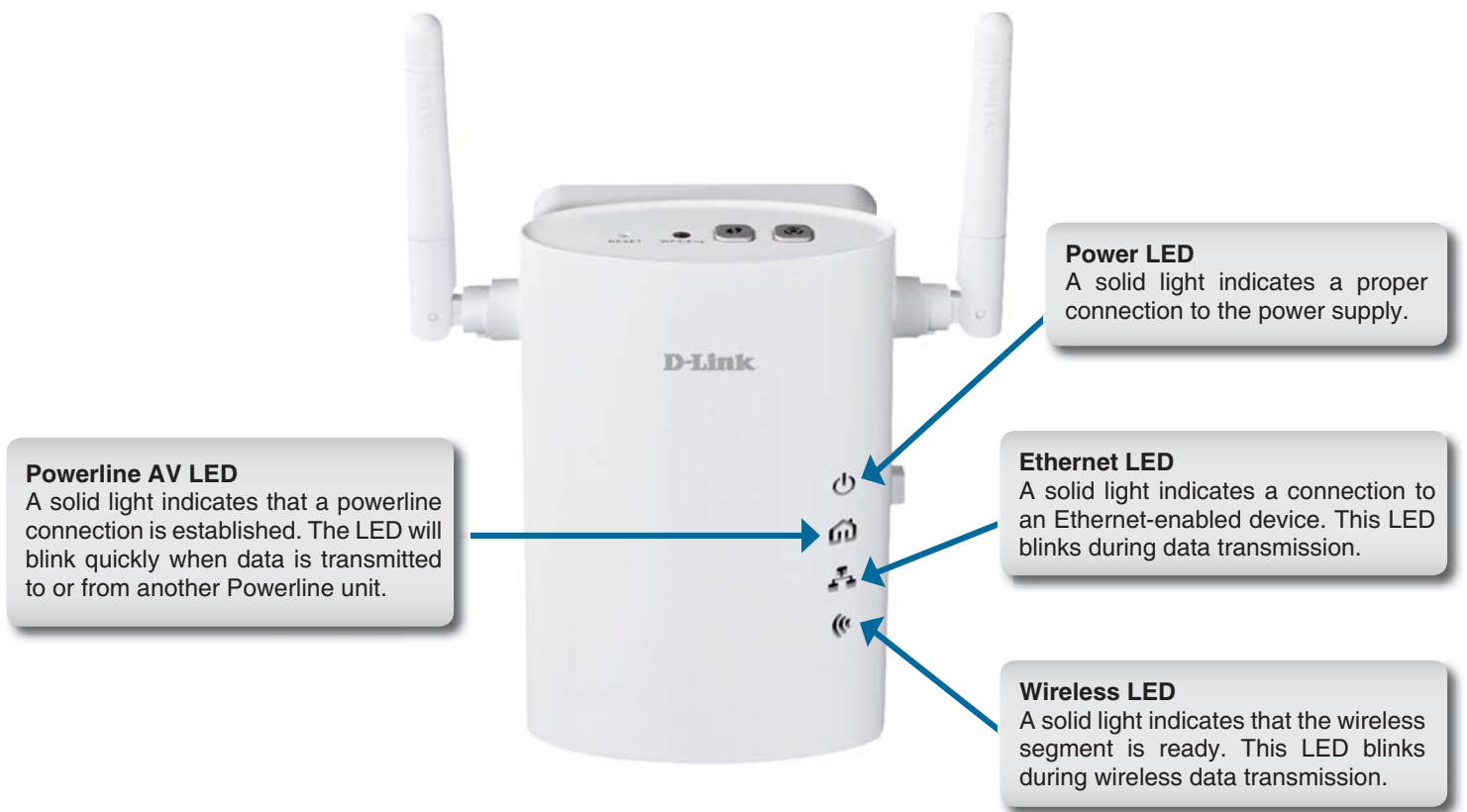
When enabling WPS, the light will blink during broadcast. Once connected, the LED will remain lit 5 seconds and then will turn off. The LED will start blinking after the Encryption button is pushed. The LED will turn off once the Powerline AV is connected to a Powerline network.

### WPS Button

Press to start the WPS process. You will have 120 seconds to start the WPS process on another wireless device.

## Hardware Overview

### LEDs



# Installation

## Connecting the Powerline AV Adapter

It is easy to connect the DHP-W306AV simply by performing the following instructions:

1. Plug the DHP-W306AV into the wall outlet/socket.



2. Connect one end of the supplied CAT5 Ethernet cable to the Ethernet port on the DHP-W306AV and the other end of the cable to the device's Ethernet interface. You can also enable wireless to connect to the WiFi devices using WPS.



## Wireless Installation Considerations

The D-Link wireless access point 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 access point 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 access points, 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 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.

# Powerline Network - Quick Setup

## Encryption Button Usage

The Eny Button is used to add a Powerline AV device to a Powerline network. You can allow the DHP-W306AV to join a network by pressing the Eny Button to toggle it to the Broadcast state or Join state.

The Eny Button has 3 different trigger states:

**Broadcast state** - Enables the DHP-W306AV to provide information for another Powerline AV device to join its Powerline network (works even if it is the only device existing within the network group). The first Powerline device will use this state when the Eny Button is pressed.

**Join state** - This allows an ungrouped Powerline AV device to join an existing Powerline network. Powerline devices added after the first device will be in the Join State when the Eny Button is pressed.

**Ungroup state** - Hold down the Eny Button for more than 10 seconds to detach the device from its network group.

## **Configuring a Powerline Network**

### **Connecting two Powerline AV devices for the first time**

To initially connect the DHP-W306AV to another Powerline AV device and create a network:

1. Plug a Powerline device into a power outlet. Press the Eny button for 1 to 3 seconds. The Eny LED should start to blink.
2. Plug the other Powerline device into a power outlet. Press the Eny button on this Powerline device for 1 to 3 seconds.
3. Wait for both devices to reboot (all LEDs will turn off and on). When the Powerline AV LEDs on both devices are steadily lit, the two devices will be networked together.

### **Connecting a Powerline AV device to an existing Powerline network**

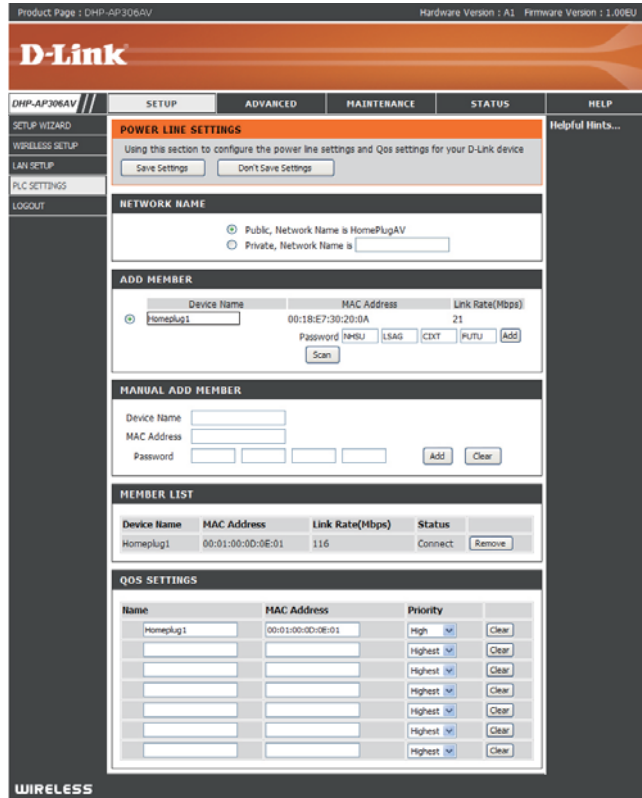
To add a DHP-W306AV if you already have an existing network with 2 or more Powerline devices:

1. Press the Eny button on the DHP-W306AV for more than 10 seconds to make sure it is not connected to any other Powerline network.
2. Press the Eny button of any device already in your Powerline network for 1 to 3 seconds. The Eny LED should start to blink.
3. Press the Eny button on the DHP-W306AV for 1 to 3 seconds. The Power LED should blink.
4. Wait for the devices to reboot (all LEDs will turn off and on). When the Powerline AV LEDs on all devices are steadily lit, the DHP-W306AV will be connected to the existing network.

# Configuration

## PLC Settings

This section will show you how to configure your new D-Link Powerline AV using the web-based configuration utility.



**Network Name:** You can set the name of your network and to make it either public or private. Make sure the Network Name of all of the devices within your Powerline network is the same.

**Public Network Name:** Select this option if you would like to make your powerline network public with the default Network Name of “HomePlugAV”. Since this is a commonly used Network Name, it is less secure than a private Network Name.

**Private Network Name:** Select this option if you wish to make your powerline network more secure by using a private Network Name. Type the name of your private Powerline network in the field.

**NETWORK NAME**

Public, Network Name is HomePlugAV  
 Private, Network Name is

**ADD MEMBER**

Device Name	MAC Address	Link Rate(Mbps)
<input checked="" type="radio"/> Homeplug1	00:18:E7:30:20:0A	21

Password  NHSU  LSAG  CIXT  FUTU

**MANUAL ADD MEMBER**

Device Name   
 MAC Address   
 Password

**Add Member:** This section lets you add new Powerline AV devices to your Powerline network. To add a new device, give it a **Device Name** and enter its **Password**, then click **Add**. When you add a device it is given the current Network Name.

**Scan:** Scan for new Powerline devices.

**Device Name:** Type a name you wish to use to identify a specific Powerline AV device. For example, “Jack’s room”.

**MAC Address:** You can find the MAC address printed on the back of your device.

**Password:** The **Password** is used to verify that you are authorized to perform changes on a device. You can find the **Password** printed on the back of your device.



**Member List:** This section provides information on the Powerline AV devices in your Powerline network, or any devices that were previously connected but it are currently disconnected.

**Link Rate:** Displays the device's current data rate in Mbps.

**Status:** This field shows the status of the device. If the field displays the word **Connect**, then the device is connected to your Powerline network. If the field displays the word **Disconnect**, then the device has been added to the network but it is not ready. Please check its password and make sure the device is powered on.

**QoS Setting:** You can configure your Powerline AV devices to give priority to powerline network traffic according to its unique **MAC Address**.

MEMBER LIST				
Device Name	MAC Address	Link Rate(Mbps)	Status	
Homeplug1	00:01:00:0D:0E:01	116	Connect	<input type="button" value="Remove"/>

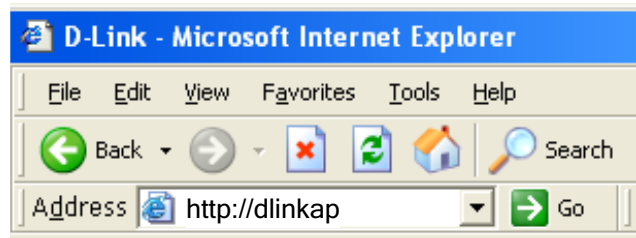
QOS SETTINGS				
Name	MAC Address	Priority		
Homeplug1	00:01:00:0D:0E:01	High	<input type="button" value="Clear"/>	
<input type="text"/>	<input type="text"/>	Highest	<input type="button" value="Clear"/>	
<input type="text"/>	<input type="text"/>	Highest	<input type="button" value="Clear"/>	
<input type="text"/>	<input type="text"/>	Highest	<input type="button" value="Clear"/>	
<input type="text"/>	<input type="text"/>	Highest	<input type="button" value="Clear"/>	
<input type="text"/>	<input type="text"/>	Highest	<input type="button" value="Clear"/>	
<input type="text"/>	<input type="text"/>	Highest	<input type="button" value="Clear"/>	

## Wireless

Connect an Ethernet cable from the Ethernet port on the DHP-W306AV to a computer for configuration.

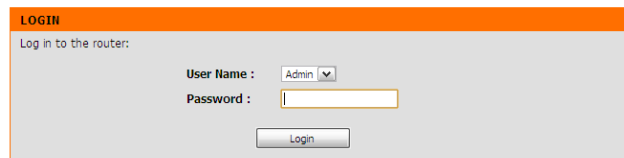
If you wish to change the default settings or optimize the performance of the DHP-W306AV, you may use the web-based configuration utility.

To access the configuration utility, open a web browser such as Internet Explorer and enter either **http://dlinkap** or **http://192.168.0.50** in the address field.



Type **Admin** as the User Name and then enter your password. Leave the password blank by default.

If you receive a "Page Cannot be Displayed" error, please refer to the **Troubleshooting** section on page 64 for assistance.

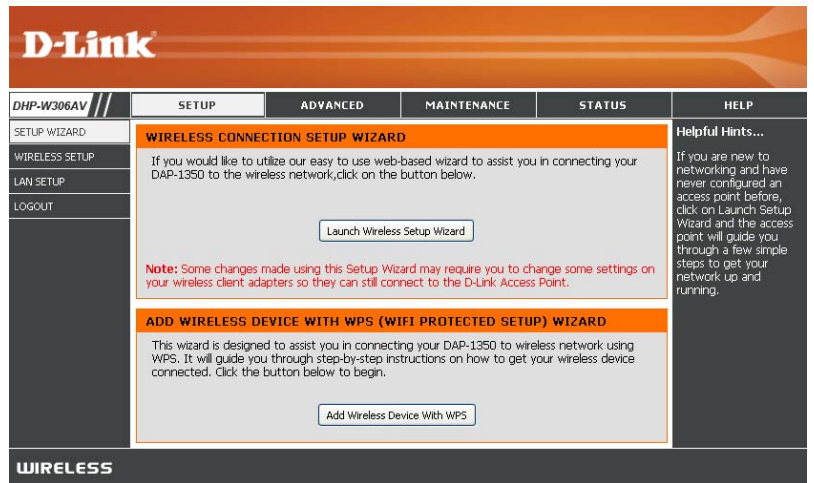


## Wireless Setup Wizard

Click **Launch Wireless Setup Wizard** to configure your access point and skip to the next page.

To set up your wireless network, click **Add Wireless Device With WPS** and skip to page 24.

If you would like to enter your settings without running the wizard, click **Wireless Setup** on the left side and skip to page 26.



This Wizard is designed to assist you in configuring your DHP-W306AV as an access point.

Enter the Device Name of the AP and click **Next** to continue. This is the NetBIOS name for the AP. Changing the Device Name is recommended if there is more than one D-Link device within the same wireless network.

**SET YOUR DEVICE NAME**

Enter the Device Name of the AP. Recommend to change the Device Name if there're more than one D-Link devices within the subnet. Click **Next** to continue.

Device Name(Netbios Name) :

If you would like to change the admin account password, enter a new password and click **Next**. Changing the password is strongly recommended.

**SET YOUR NEW PASSWORD**

You may change the **Admin** account password by entering in a new password. Click **Next** to continue.

Password :

Verify Password :

Select **Auto** as the configuration method only if your wireless device supports Wi-Fi Protected Setup (WPS). For **Manual** setup, skip to the next page.

Click **Next** to continue.

**SELECT CONFIGURATION METHOD**

Please select one of the following configuration methods. Click **Next** to continue.

**Auto** -- Select this option if your wireless device supports WPS(Wi-Fi Protected Setup)

**Manual** -- Select this option if you want to setup your network manually.

Prev Next Exit

Click **Save** to save your network settings.

In order for your network settings to take effect the AP will reboot automatically.

When the device has finished rebooting the main screen will be displayed.

**WELCOME TO THE D-LINK WIRELESS SETUP WIZARD**

Please enter the following settings in the wireless device that you are adding to your wireless network and keep a note of it for future reference.

**Wireless Network Name (SSID) :** dlink20FE

**Wireless Security Mode :** WPA-PSK

**Network key :** 172B0133E2C6927F484EC68C68C464E  
13572341DFB7333B396DCC47F0A5A0A

Prev Save Exit

Select **Manual** as the configuration method to set up your network manually.

Click **Next** to continue.

Enter a name for your wireless network (SSID).

Select **Automatically assign a network key** to have the access point generate a key for you to enter on your wireless clients. If you would like to enter your own key, select **Manually assign a network key**.

To use WPA security, check the **use WPA encryption instead of WEP box**. If left unchecked, WEP encryption will be used.

Click **Next** to continue.

If you selected **Manually assign a network key** as the configuration method, enter your network key. This key must be entered on your wireless clients.

For **WEP** encryption, enter a Network Key exactly 5 or 13 characters long or exactly 10 or 26 characters using 0-9 and A-F.

Click **Next** to continue.

**SELECT CONFIGURATION METHOD**

Please select one of the following configuration methods and click next to continue.

Auto -- Select this option if your wireless device supports WPS (Wi-Fi Protected Setup)

Manual -- Select this option if you want to setup your network manually

Prev Next Exit

**WELCOME TO THE D-LINK WIRELESS SETUP WIZARD**

Give your network a name, using up to 32 characters.

Network Name (SSID):

Automatically assign a network key (Recommended)

To prevent outsiders from accessing your network, the AP will automatically assign a security key (also called WEP or WPA key) to your network.

Manually assign a network key

Use this option if you prefer to create your own key.

Use WPA encryption instead of WEP (WPA is stronger than WEP and all D-Link wireless client adapters support WPA)

Prev Next Exit

**WELCOME TO THE D-LINK WIRELESS SETUP WIZARD**

The WPA (Wi-Fi Protected Access) key must meet the following guidelines

- Between 8 and 63 characters (A longer WPA key is more secure than a short one)

Network key :

Prev Next Exit

The following screen will display you the network key to enter on your wireless clients.

Click **Save** to finish the Setup Wizard.



**WELCOME TO THE D-LINK WIRELESS SETUP WIZARD**

Please enter the following settings in the wireless device that you are adding to your wireless network and keep a note of it for future reference.

<b>Wireless Network Name (SSID) :</b>	<b>dlink20FE</b>
<b>Wireless Security Mode :</b>	<b>WPA-PSK</b>
<b>Network key :</b>	<b>123456789</b>

## Add Wireless Device with WPS

This Wizard is designed to assist you with your wireless network setup. It will guide you through step-by-step instructions on how to set up your wireless network and how to make it secure.

### Adding a Wireless Device Using the PIN Method

Select **PIN** to use your PIN number from your wireless device to connect to your network.

Click **Connect** to continue.

Start **WPS** on the wireless device you are adding to your wireless network to complete the setup.

**ADD WIRELESS DEVICE WITH WPS (WIFI PROTECTED SETUP) WIZARD**

There are two ways to add wireless device to your wireless network :

- PIN(Personal Identification Number)
- PBC(Push Button Configuration)

**PIN** :

please enter the PIN from your wireless device and click the below 'Connect' Button

**PBC**

please press the push button on your wireless device and click the below 'Connect' Button within 120 seconds



## Adding a Wireless Device Using the PBC Method

Select **PBC** to use Push Button Configuration in order to connect to your network.

Click **Connect** to continue.

**ADD WIRELESS DEVICE WITH WPS (WIFI PROTECTED SETUP) WIZARD**

There are two ways to add wireless device to your wireless network :

- PIN(Personal Identification Number)
- PBC(Push Button Configuration)

PIN :

please enter the PIN from your wireless device and click the below 'Connect' Button

**PBC**

please press the push button on your wireless device and click the below 'Connect' Button within 120 seconds

Press the **WPS Button** on the wireless device that you are adding to your network to complete the setup.

**VIRTUAL PUSH BUTTON**

Please press down the Push Button (physical or virtual) on the wireless device you are adding to your wireless network within **118** seconds...

## Wireless Setup

**Enable Wireless:** Check this box to enable the wireless function. If you would prefer not to use wireless, uncheck the box to disable all the wireless functions. You may also set up a specific time range (schedule). Select a schedule from the drop-down menu or click **Add New Schedule** to create a new schedule.

**Wireless Network Name:** When you are browsing for available wireless networks, this is the name that will appear in the list (unless Visibility Status is set to Invisible, see below). This name is also referred to as the SSID. For security purposes, changing the default network name is highly recommended.

**Enable Auto Channel Scan:** The **Auto Channel Scan** setting can be selected to allow the DHP-W306AV to select the channel with the least amount of interference (during boot-up).

**Wireless Channel:** Indicates the channel setting for the DHP-W306AV. The channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you enable Auto Channel Scan, this option will be grayed out.

**802.11 Mode:** Select one of the following:  
**802.11n Only** - Select if you are only using 802.11n wireless clients.  
**Mixed 802.11n, 802.11g and 802.11b** - Select if you are using a mix of 802.11n, 11g, and 11b wireless clients.



**Channel Width:** Select the Channel Width:  
**Auto 20/40** - Select if you are using both 802.11n and non-802.11n wireless devices.  
**20MHz** - Select if you are not using any 802.11n wireless clients.

**Transmission Rate:** Select the transmission rate. **Best (automatic)** is recommended for best performance.

**Enable Hidden Wireless:** Check the box if you do not want the SSID of your wireless network to be broadcasted by the DHP-W306AV. If checked, the SSID of the DHP-W306AV will not be seen by site survey utilities, so your wireless clients will have to know the SSID of your DHP-W306AV in order to connect to it.

**Security Mode:** Refer to page 43 for more information regarding wireless security.

**Enable:** Enables the Wi-Fi Protected Setup feature.

**Lock Wireless Security Settings:** Locking the wireless security settings prevents the settings from being changed by any new external user using its PIN. Devices can still be added to the wireless network using Wi-Fi Protected Setup. It is still possible to change wireless network settings with Manual Wireless Network Setup, Wireless Network Setup Wizard, or an existing external WLAN Manager user.

**Current PIN:** Shows the current value of the access point's PIN.

**Generate New PIN:** Create a random number that is a valid PIN. This becomes the access point's PIN. You can then copy this PIN to the user interface of the user.

**Reset PIN to Default:** Restores the default PIN of the access point.

**Reset to Unconfigured:** Resets Wi-Fi Protected Status to Not Configured. The Vista WPS icon will only be displayed when the Wi-Fi Protected status is Not Configured.

## LAN Setup - DHCP

This section will allow you to change the local network settings of the access point and to configure the DHCP settings.

**LAN Connection Type:** Use the drop-down menu to select Dynamic IP (DHCP) to automatically obtain an IP address on the LAN/private network.

**Device Name:** Enter the Device Name of the AP. Changing the Device Name is recommended if there is more than one D-Link device within the subnet.

The screenshot shows the D-Link W306AV web interface. The top navigation bar includes 'DHP-W306AV', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'SETUP' tab is active, and the 'LAN SETUP' sub-tab is selected. The main content area is titled 'NETWORK SETTINGS' and contains the following sections:

- NETWORK SETTINGS:** A text box explaining that this section is for configuring the internal network settings of the AP. It mentions that the Device Name (NetBIOS Name) can be used instead of an IP address for configuration. Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'.
- LAN CONNECTION TYPE:** A section titled 'Choose the mode to be used by the Access Point.' with a dropdown menu showing 'My LAN Connection is : Dynamic IP (DHCP)'.
- DYNAMIC IP(DHCP) LAN CONNECTION TYPE:** A section titled 'IP Address Information.' with three input fields:
  - IP Address : 192.168.0.50
  - Subnet Mask : 255.255.255.0
  - Gateway Address : 0.0.0.0
- DEVICE NAME(NETBIOS NAME):** A section with an input field for 'Device Name' containing the text 'dlinkap'.

On the right side of the interface, there is a 'Helpful Hints...' section with the following text:

**LAN Settings:** Also referred to as private settings. LAN settings allow you to configure LAN interface of DAP-1350. LAN IP address is private to your internal network and is not visible to Internet. The factory default setting is Dynamic IP(DHCP).

**LAN Connection type:** The factory default setting is Dynamic IP(DHCP) to allow the DHCP host to automatically assign the Access Point an IP address that conforms to the applied local area network. Enable 'Static IP' which allows the IP address of the DAP-1350 to be manually configured in accordance to the applied local area network.

**IP Address:** The default IP address is 192.168.0.50. It can

## LAN Setup - Static IP

Select **Static IP** to manually enter the IP address, subnet mask, and default gateway addresses.

**LAN Connection Type:** Select Static IP from the drop-down menu.

**IP Address:** Enter the IP address of the access point. The default IP address is 192.168.0.50. If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to return to the configuration utility.

**Subnet Mask:** Enter the Subnet Mask.

**Default Gateway:** Enter the Gateway. This is usually the LAN or internal IP address of your router.

**Device Name:** Enter the Device Name of the AP. It is recommended that you change the Device Name if there is more than one D-Link device within the subnet. You can enter the device name of the AP into your web browser to access it instead of IP address for configuration. If you are using the device name to connect, make sure that your PC and your DHP-W306AV are on the same network.

The screenshot shows the D-Link web interface for the DHP-W306AV device. The main navigation tabs are SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The left sidebar contains links for SETUP WIZARD, WIRELESS SETUP, LAN SETUP, and LOGOUT. The main content area is titled 'NETWORK SETTINGS' and includes the following sections:

- NETWORK SETTINGS:** A text box explaining that this section is for configuring the internal network settings of the AP. It mentions that the Device Name (NetBIOS Name) can be used for easier access via a browser instead of an IP address. Below this text are 'Save Settings' and 'Don't Save Settings' buttons.
- LAN CONNECTION TYPE:** A section with the instruction 'Choose the mode to be used by the Access Point.' Below this, a dropdown menu is set to 'Static IP'.
- STATIC IP ADDRESS LAN CONNECTION TYPE:** A section with the instruction 'Enter the static address information.' It contains three input fields: 'IP Address' (192.168.0.50), 'Subnet Mask' (255.255.255.0), and 'Gateway Address' (0.0.0.0).
- DEVICE NAME (NETBIOS NAME):** A section with an input field for 'Device Name' containing the value 'dlinkap'.

On the right side of the interface, there is a 'Helpful Hints...' section titled 'LAN Settings'. It explains that LAN settings are private and not visible to the Internet, and that the factory default is Dynamic IP (DHCP). It also notes that the factory default setting is Dynamic IP (DHCP) to allow the DHCP host to automatically assign the IP address of the DHP-3350 to be manually configured in accordance to the applied local area network. At the bottom of this section, it states the default IP address is 192.168.0.50.

## MAC Address Filter

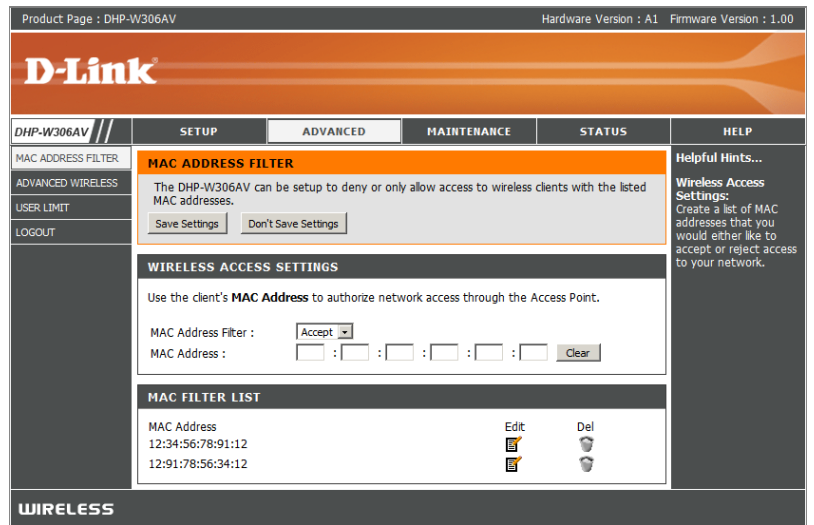
Use MAC (Media Access Control) Filters to authorize wireless clients to access your network by their MAC addresses. When enabled, any client not on the MAC filter list will not be able to access your network.

**MAC Address Filter:** Select **Enable** or **Disable** from the drop-down menu.

**MAC Address:** Enter the MAC address you would like to filter. To find the MAC address on a computer, please refer to the Networking Basics section in this manual. Click **Save Settings** to activate and save.

**Note:** Make sure to enter the computer you are currently using to configure the access point first or you will not be able to access the configuration utility once you click Save Settings.

**MAC Filter List:** Displays the list of clients in the filter list.



## Advanced Wireless

**Transmit Power:** Sets the transmit power of the antennas.

**Note:** Transmit power is regulated by international standard. Users are forbidden to change its maximum limit.

**Beacon Period:** Beacons are packets sent by an access point to synchronize a wireless network. Specify a value. 100 is the default setting and is recommended.

**DTIM Interval:** (Delivery Traffic Indication Message) 1 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

**RTS Threshold:** This value should remain at its default setting of 2346. If inconsistent data flow is a problem, only a minor modification should be made.

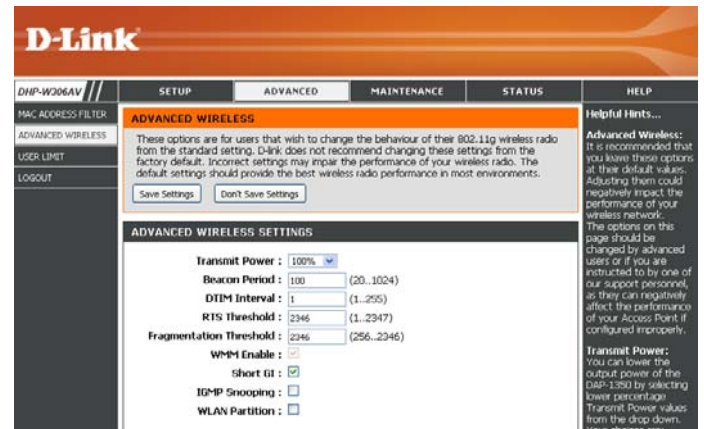
**Fragmentation Threshold:** The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.

**WMM Enable:** WMM is a Quality of Service (QoS) system for your wireless network. Enabling this feature will improve the quality of video and voice applications for your wireless clients.

**Short GI:** Check this box to reduce the guard interval time therefore increasing the data capacity. However, this setting less reliable and may create higher data loss.

**IGMP Snooping:** Select this checkbox to enable IGMP snooping. IGMP snooping is a layer 2 feature which enables the device to learn Multicast group membership based on IGMP messages passing through the built-in switch. Because the switch learns the IGMP messages and knows which clients are involved in the multicast group membership, it is able to forward multicast traffic only to the ports that requested for it (based on their membership).

**WLAN Partition:** Select this checkbox to enable WLAN partition. If this feature is enabled, then there is no barrier between communication among wireless stations connecting to the Access Point. If this is disabled, wireless clients are not allowed to exchange data through the Access Point.



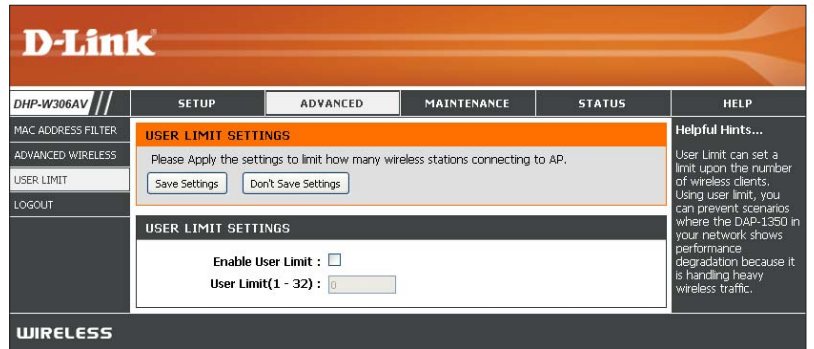
## User Limit

Enter the maximum number of wireless clients that can connect at one time to your access point.

**Enable User Limit:** Check the **Enable User Limit** box to enable this feature.

**User Limit:** Enter the maximum number of clients, between 1 and 32.

**Save Settings:** Click **Save Settings** to save and activate the new changes.





## Admin

This page will allow you to change the Administrator password. The administrator password has read/write access.

**Password:** Enter a new password for the **Admin** User Name. The administrator account can change the configuration of the device.

**Verify Password:** Enter the same password that you entered in the previous textbox in order to confirm its accuracy.

**Enable Graphical Authentication:** Enables a challenge-response test which will require users to type letters or numbers from a distorted image displayed on the screen to prevent online hackers and unauthorized users from gaining access to your device's configuration. This feature is disabled by default.

The screenshot shows the D-Link web interface for the DHP-W306AV device. The top navigation bar includes 'D-Link' and tabs for 'DHP-W306AV', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The left sidebar lists menu items: ADMIN, SYSTEM, FIRMWARE, TIME, SCHEDULES, and LOGOUT. The main content area is titled 'ADMINISTRATOR SETTINGS' and contains the following text: 'Enter the new password in the "New Password" field and again in the next field to confirm. Click on "Save Settings" to execute the password change. The Password is case-sensitive, and can be made up of any keyboard characters. The new password must be between 0 and 15 characters in length.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. The 'PASSWORD' section contains the instruction 'Please enter the same password into both boxes, for confirmation.' and two input fields: 'New Password :' and 'Verify Password :'. The 'ADMINISTRATION' section contains the option 'Enable Graphical Authentication : '. The right sidebar, titled 'Helpful Hints...', contains a 'Passwords:' section with the text: 'For security reasons, it is recommended that you change the Password for the Administrator accounts. Be sure to write down the Passwords to avoid having to reset the AP in the event that they are forgotten.'

## System

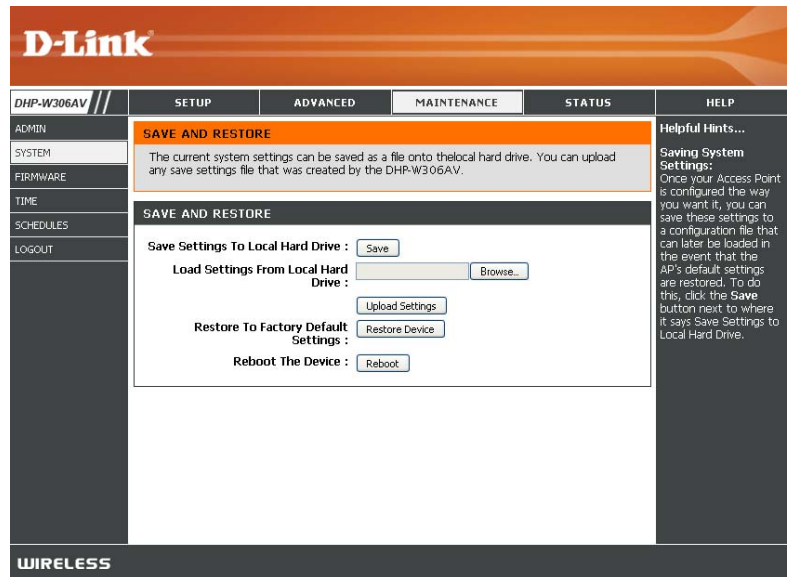
**Save to Local Hard Drive:** Use this option to save the current access point configuration settings to a file on the computer you are using. Click the **Save** button. You will then see a file dialog where you can select a location and file name for the settings.

**Upload from Local Hard Drive:** Use this option to load previously saved access point configuration settings. Click **Browse** to find a previously saved configuration file. Then, click the **Upload Settings** button to transfer those settings to the access point.

**Restore to Factory Default:** This option will restore all configuration settings back to the settings that were in effect at the time the access point was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you would like to save the current access point configuration settings, use the **Save** button above.

**Note:** Restoring the factory default settings will not reset the Wi-Fi Protected Status to Not Configured.

**Reboot the Device:** Click to reboot the access point.



## Firmware

You can upgrade the firmware of the access point from this page. Make sure the firmware you would like to use is on the local hard drive of your computer. Click **Browse...** to locate the firmware file to be used for the update. Please check the D-Link support site for firmware updates at <http://support.dlink.com>. You can download firmware upgrades to your hard drive from the D-Link support site.

**Firmware Information:** Click on the **Check Now** button to find out if there is an updated firmware or language pack version. If a new version exists, download the new firmware to your hard drive.

**Firmware Upgrade:** After you have downloaded the new firmware, click **Browse** to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

**Language Pack Upgrade:** To upgrade the language pack, follow these steps:

1. Click the **Browse** button to locate the D-Link language pack upgrade file on your computer.  
**Note:** Language pack file extension will be \*.lng
2. Once you have found the file, click the **Upload** button to begin the language pack upgrade process. This can take a minute or more.
3. Wait for the device to reboot. This process can take about 75 seconds.

The screenshot shows the D-Link W306AV web interface. The top navigation bar includes tabs for SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The left sidebar contains menu items: ADMIN, SYSTEM, FIRMWARE, TIME, SCHEDULES, and LOGOUT. The main content area is titled 'FIRMWARE' and contains the following sections:

- FIRMWARE:** A message stating: "There may be new firmware for your DHP-W306AV to improve functionality and performance. To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button below to start the firmware upgrade." Below this is a 'Check Now' button.
- FIRMWARE INFORMATION:** Displays 'Current Firmware Version : 1.00' and 'Date : Fri, 26 Feb 2010'. It also shows 'Current Language Pack Version : No Language Pack'.
- FIRMWARE UPGRADE:** Includes a note: "Note: Some firmware upgrades reset the configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration from the Tools -> System screen." Below the note, it states: "To upgrade the firmware, your PC must have a wired connection to the router. Enter the name of the firmware upgrade file, and click on the Upload button." There is a text input field with a 'Browse...' button and an 'Upload' button.
- LANGUAGE PACK UPGRADE:** Similar to the firmware upgrade section, it has a text input field with a 'Browse...' button and an 'Upload' button.

On the right side of the interface, there is a 'Helpful Hints...' section with a 'Firmware Updates' note: "Firmware updates are released periodically to improve the functionality of your Access Point and also to add features. If you run into a problem with a specific feature of the Access Point, check our support site by clicking on the Click here to check for an upgrade on our support site link and see if an updated firmware is available for your Access Point."

## Time

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in. Daylight Saving can also be configured to automatically adjust the time when needed.

**Time Zone:** Select the Time Zone from the drop-down menu.

**Daylight Saving:** To select Daylight Saving time manually, click the **Enable Daylight Saving** check box. Next use the drop-down menu to select a Daylight Saving Offset and then enter a start date and an end date for daylight saving time.

**Enable NTP Server:** NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. Check this box to use a NTP server. This will only connect to a server on the Internet, not a local server.

**NTP Server Used:** Enter the NTP server or select one from the drop-down menu.

**Date and Time:** To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second and then click **Save Settings**. You can also click the **Copy Your Computer's Time Settings** button at the bottom of the screen.



## Schedules

Schedules can be created for use with enforcing rules. For example, if you would like to restrict web access to Mon-Fri from 3:00 p.m. to 8:00 p.m., you could create a schedule selecting Mon, Tue, Wed, Thu, and Fri and enter a Start Time of 3:00 p.m. and End Time of 8:00 p.m.

**Name:** Enter a name for your new schedule.

**Days:** Select a day, a range of days, or All Week to include every day.

**Time:** Check **All Days** or enter a start and end time for your schedule.

**Add:** After making your changes, click **Save** to save the schedule rule.

**Schedule Rules** The list of schedules will be listed here. Click the **List:** **Edit** icon to make changes or click the **Delete** icon to remove the schedule.

The screenshot shows the D-Link web interface for the DHP-W306AV device. The main navigation menu on the left includes ADMIN, SYSTEM, FIRMWARE, TIME, SCHEDULES (highlighted), and LOGOUT. The main content area is titled 'SCHEDULES' and contains the following sections:

- ADD SCHEDULE RULE:** This section allows users to create a new schedule rule. It includes a text input for 'Name', a radio button for 'All Week' and a checked radio button for 'Select Day(s)'. Below this are checkboxes for days of the week: Sun, Mon, Tue, Wed, Thu, Fri, and Sat. There is also an 'All Day - 24 hrs' checkbox. The 'Start Time' and 'End Time' are set to 12:00 AM, with dropdown menus for AM/PM and a note '(hour:minute, 12 hour time)'. 'Save' and 'Clear' buttons are at the bottom.
- SCHEDULE RULES LIST:** This section contains a table with columns for 'Name', 'Day(s)', and 'Time Frame'. The table is currently empty.

The right sidebar, titled 'Helpful Hints...', provides additional information:
 

- It explains that schedules are used with other features to define when those features are in effect.
- It gives an example: 'Give each schedule a name that is meaningful to you. For example, a schedule for Monday through Friday from 3:00pm to 8:00pm, might be called "After School".'
- It instructs users to click the 'Save' icon to add a completed schedule to the list below.
- It instructs users to click the 'Edit' icon to change an existing schedule.
- It instructs users to click the 'Delete' icon to permanently delete a schedule.

## Device Info

This page displays the current information for the DHP-W306AV. It will display the LAN and wireless LAN information.

**General:** Displays the access point's time and firmware version.

**LAN:** Displays the MAC address and the private (local) IP settings for the access point.

**Wireless LAN:** Displays the wireless MAC address and your wireless settings such as SSID and Channel.

The screenshot shows the D-Link web interface for the DHP-W306AV. The top navigation bar includes 'DHP-W306AV', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The main content area is titled 'DEVICE INFORMATION' and contains the following details:

GENERAL
Time : Jan/01/2008 02:08:14
Firmware Version : 1.00, Mon, 10 Aug 2009

LAN
MAC Address : 00:18:e7:6a:20:fe
Connection : Static IP
IP Address : 192.168.0.50
Subnet Mask : 255.255.255.0
Gateway Address : 0.0.0.0

WIRELESS LAN
MAC Address : 00:18:e7:6a:23:40
Network Name (SSID) : dlink
Channel : 9
Security Mode : Disable

On the right side of the interface, there is a 'Helpful Hints...' section with the text: 'All of your LAN and Wireless connection details are displayed here.'

## Logs

The DHP-W306AV keeps a running log of events and activities occurring on the AP. If the AP is rebooted, the logs are automatically cleared. You can save the log files under Log Settings.

**Log Options:** You can select the types of messages that you would like to display from the log: **System Activity**, **Debug Information**, **Attacks**, **Dropped Packets**, and **Notice**. Select the types you want to view and click **Apply Log Settings Now**.

**First Page:** This button directs you to the first page of the log.

**Last Page:** This button directs you to the last page of the log.

**Previous:** This button directs you to the previous page of the log.

**Next:** This button directs you to the next page of the log.

**Clear:** This button clears all current log content.

**Log Settings:** This button opens a new menu where you can configure the log settings.

**Refresh:** This button refreshes the log.

Product Page : DHP-W306AV Hardware Version : A1 Firmware Version : 1.00

**D-Link**

DHP-W306AV // SETUP ADVANCED MAINTENANCE STATUS HELP

DEVICE INFO

LOGS

STATISTICS

WIRELESS

LOGOUT

**LOGS**

Use this option to view the device logs. You can define what types of events you want to view and the event levels to view. This device also has internal syslog server support so you can send the log files to a computer on your network that is running a syslog utility.

**LOG OPTIONS**

Log Type :  System Activity  Debug Information  Attacks  
 Dropped Packets  Notice

Apply Log Settings Now

**LOG DETAILS**

First Page Last Page Previous Next Clear

Log Settings Refresh

1/1

Time	Message
Mar 22 16:49:50	Sending discover...
Mar 22 16:49:48	Sending discover...
Mar 22 16:49:46	Sending discover...
Mar 22 16:49:46	DHCP client start.

WIRELESS

Helpful Hints...  
Check the log frequently to detect unauthorized network usage.

## Statistics

The DHP-W306AV keeps statistics of the traffic that passes through it. You can view the amount of packets that pass through the LAN and wireless portions of the network. The traffic counter will reset if the access point is rebooted.

**D-Link**

DHP-W306AV // SETUP ADVANCED MAINTENANCE STATUS HELP

DEVICE INFO LOGS STATISTICS WIRELESS LOGOUT

**TRAFFIC STATISTICS**  
 Traffic Statistics display Receive and Transmit packets passing through your router.  
 Refresh Statistics Clear Statistics

**LAN STATISTICS**

Sent : 23	Received : 22
TX Packets Dropped : 0	RX Packets Dropped : 0
Collisions : 0	Errors : 0

**WIRELESS STATISTICS**

Sent : 0	Received : 123
TX Packets Dropped : 0	RX Packets Dropped : 0
Collisions : 0	Errors : 0

**Helpful Hints...**  
 This is a summary of the number of packets that have passed between the Wireless and the LAN since the device was last initialized.

**WIRELESS**



## Wireless

The wireless section allows you to view the wireless clients that are connected to your wireless access point.

**Connection Time:** Displays the amount of time the wireless client has been connected to the access point.

**MAC Address:** Displays the Ethernet ID (MAC address) of the wireless client.

DHP-W306AV		SETUP	ADVANCED	MAINTENANCE	STATUS	HELP					
DEVICE INFO	<b>WIRELESS</b>					<b>Helpful Hints...</b> <b>Wireless</b> Displays connected client station main parameters, such as Connect Time and station MAC address. In AP Client mode it displays the connected AP's MAC address and connected Time.					
LOGS	The Wireless Client table below displays Wireless clients connected to the AP (Access Point). In Wireless Client mode it displays the connected AP's MAC address and connected Time.										
STATISTICS	<b>NUMBER OF WIRELESS CLIENTS : 2</b>										
WIRELESS	<table border="1"> <thead> <tr> <th>Connected Time</th> <th>MAC Address</th> </tr> </thead> <tbody> <tr> <td>00:12:23</td> <td>00-52-54-3A-43-56</td> </tr> <tr> <td>00:25:14</td> <td>00-27-37-1B-96-17</td> </tr> </tbody> </table>						Connected Time	MAC Address	00:12:23	00-52-54-3A-43-56	00:25:14
Connected Time	MAC Address										
00:12:23	00-52-54-3A-43-56										
00:25:14	00-27-37-1B-96-17										
LOGOUT	<b>WIRELESS</b>										

## Help

The screenshot displays the D-Link WIRELESS configuration interface. At the top, the D-Link logo is visible on an orange background. Below the logo is a navigation bar with tabs for **DHP-W306AV**, **SETUP**, **ADVANCED**, **MAINTENANCE**, **STATUS**, and **HELP**. The **HELP** tab is currently selected. On the left side, there is a **MENU** sidebar. The main content area is titled **HELP MENU** and lists the following categories and links:

- Setup**
  - [Setup Wizard](#)
  - [Wireless Setup](#)
  - [Lan Setup](#)
- Advanced**
  - [MAC Address Filter](#)
  - [Advanced Wireless](#)
  - [User Limit](#)
- Maintenance**
  - [Admin](#)
  - [System](#)
  - [Firmware](#)
  - [Time](#)
  - [Schedules](#)
- Status**
  - [Device Info](#)
  - [Logs](#)
  - [Statistics](#)
  - [Wireless](#)

On the right side of the main content area, there is a **Helpful Hints...** section with the text: "Click on the links for more informations of each section in the GUI."

At the bottom of the interface, the word **WIRELESS** is displayed in a dark grey bar.

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DHP-W306AV offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

## What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

## 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 (AES) 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 bridge 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 WEP

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Setup** and then click **Wireless Settings** on the left side.
2. Next to Security Mode in the Wireless Security Mode section, select **Enable WEP Wireless Security (Basic)**.
3. Next to **Authentication**, select **Open** or **Shared Key**.
4. Next to **WEP Encryption**, select **64-bit** or **128-bit** encryption.
5. Next to **Key Type**, select either **Hex** or **ASCII**.  
Hex (recommended) - Letters A-F and numbers 0-9 are valid.  
ASCII - All numbers and letters are valid.
6. Next to Key 1, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.
7. Click **Save Settings** at the top of the window to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the access point.

**WIRELESS SECURITY MODE :**

Security Mode :

**WEP :**

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the AP and the wireless stations. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP set the authentication type to "Open Key" when WEP is enabled.

You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. 5 text characters can be entered for 64 bit keys, and 13 characters for 128 bit keys.

Authentication :

WEP Encryption :

Key Type :

Default WEP Key :

WEP Key 1 :

WEP Key 2 :

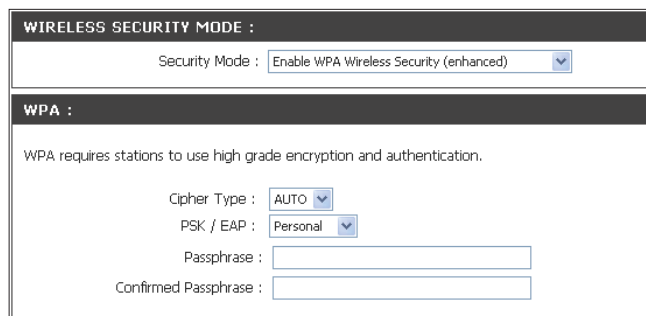
WEP Key 3 :

WEP Key 4 :

## Configure WPA/WPA2 Personal

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on Setup and then click Wireless Settings on the left side.
2. Next to **Security Mode**, select **Enable WPA Wireless Security**, **Enable WPA2 Wireless Security**, or **Enable WPA2-Auto Wireless Security**.
3. Next to **Cipher Type**, select **TKIP**, **AES**, or **Auto**.
4. Next to **PSK / EAP**, select **Personal**.
5. Next to **Passphrase**, enter a key. The key is entered as a passphrase in ASCII format at both ends of the wireless connection. The passphrase must be between 8-63 characters.
6. Click **Save Settings** at the top of the window to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the access point.



**WIRELESS SECURITY MODE :**

Security Mode :

---

**WPA :**

WPA requires stations to use high grade encryption and authentication.

Cipher Type :

PSK / EAP :

Passphrase :

Confirmed Passphrase :

## Configure WPA/WPA2 Enterprise

It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Setup** and then click **Wireless Settings** on the left side.
2. Next to **Security Mode**, select **Enable WPA Wireless Security**, **Enable WPA2 Wireless Security**, or **Enable WPA2-Auto Wireless Security**.
3. Next to **Cipher Mode**, select **TKIP**, **AES**, or **Auto**.
4. Next to **Personal / Enterprise**, select **Enterprise**.
5. Next to **RADIUS Server**, enter the IP Address of your RADIUS server.
6. Next to **Port**, enter the port you are using with your RADIUS server. 1812 is the default port.
7. Next to **Shared Secret**, enter the security key.
8. Click **Save Settings** to save your settings.

The screenshot displays the 'WIRELESS SECURITY MODE' configuration page. At the top, 'Security Mode' is set to 'Enable WPA Wireless Security (enhanced)'. Below this, the 'WPA' section is active, showing 'Cipher Type' set to 'AUTO' and 'PSK / EAP' set to 'Enterprise'. Under the '802.1X' heading, there are two RADIUS server configurations. 'RADIUS Server 1' has fields for IP, Port (1812), and Shared Secret. 'RADIUS Server 2' also has fields for IP, Port (1812), and Shared Secret.

## Connect to a Wireless Network 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.



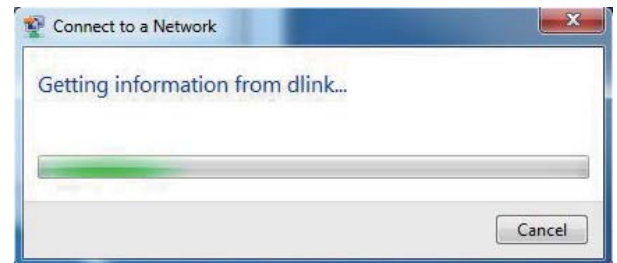


3. Highlight the wireless network (SSID) you would like to connect to and click the Connect button.

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.

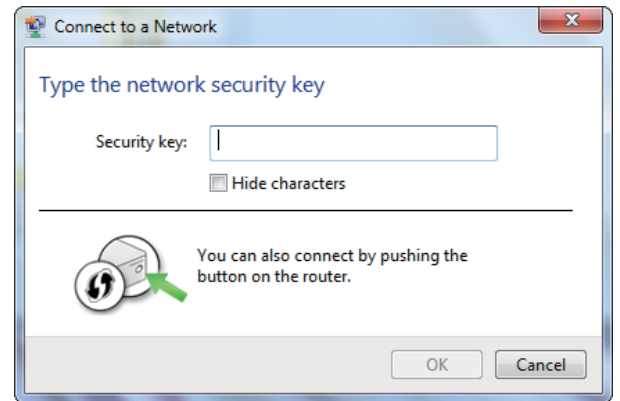


4. The following window appears while your computer tries to connect to the router.



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.

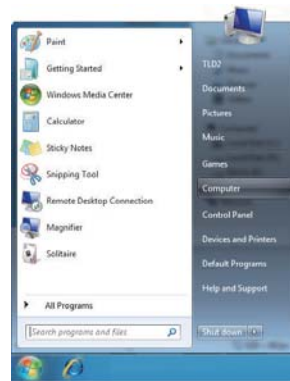
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.



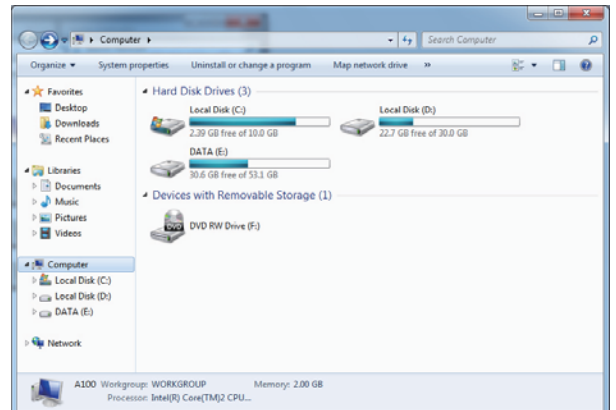
## Configure WPS

The WPS feature of the DHP-W306AV can be configured using Windows® 7. Carry out the following steps to use Windows® 7 to configure the WPS feature of the DHP-W306AV:

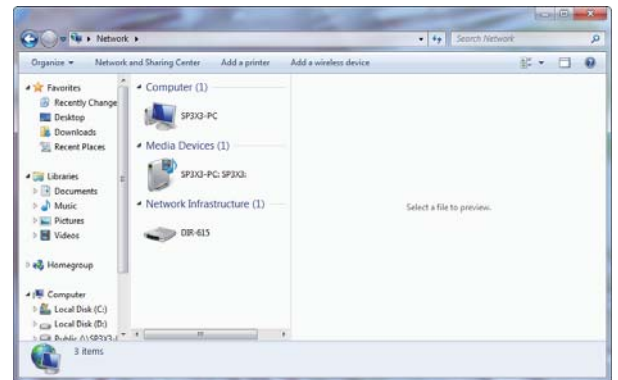
1. Click the **Start** button and select **Computer** from the Start menu.



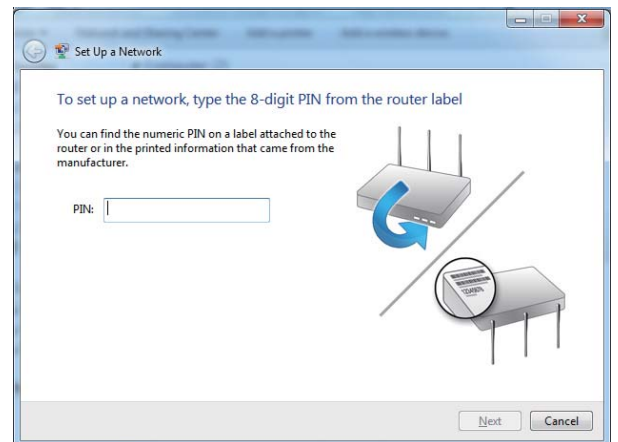
2. Click the **Network** option.



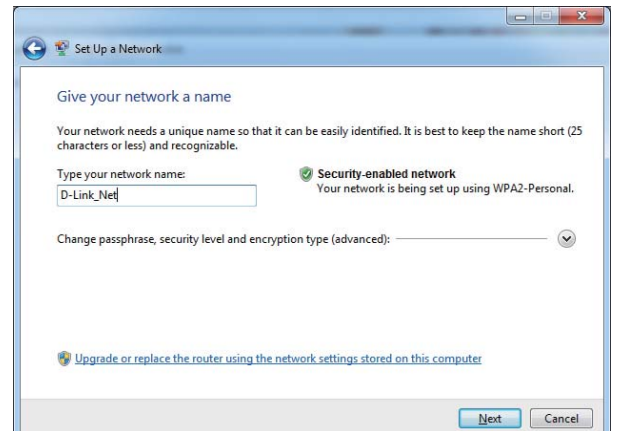
3. Double-click the DHP-W306AV.




4. Input the WPS PIN number (displayed in the WPS window on the Router's LCD screen or in the **Setup > Wireless Setup** menu in the Router's Web UI) and click **Next**.

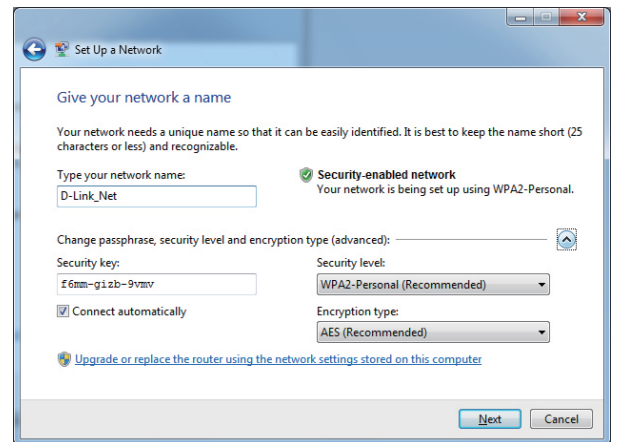


5. Type a name to identify the network.



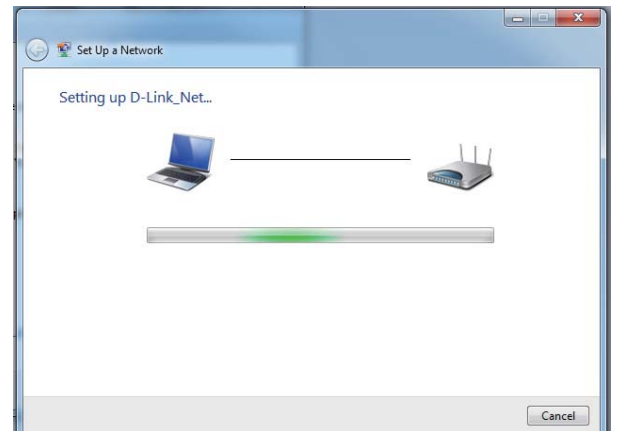
6. To configure advanced settings, click the  icon.

Click **Next** to continue.



7. The following window appears while the Router is being configured.

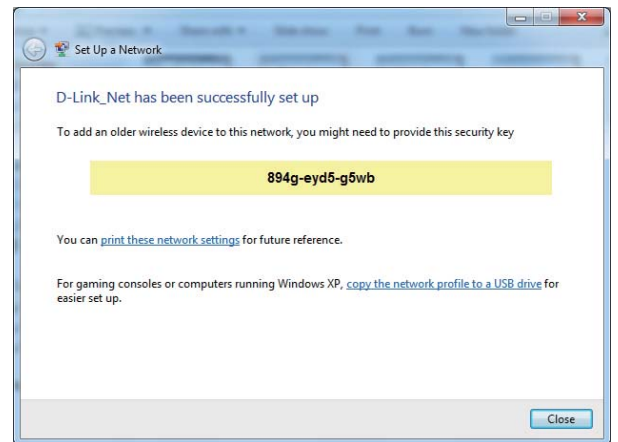
Wait for the configuration to complete



8. The following window informs you that WPS on the DHP-W306AV has been setup successfully.

Make a note of the security key as you may need to provide this security key if adding an older wireless device to the network in the future.

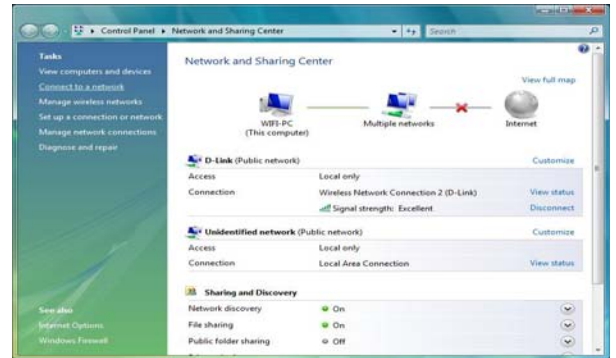
9. Click **Close** to complete WPS setup.



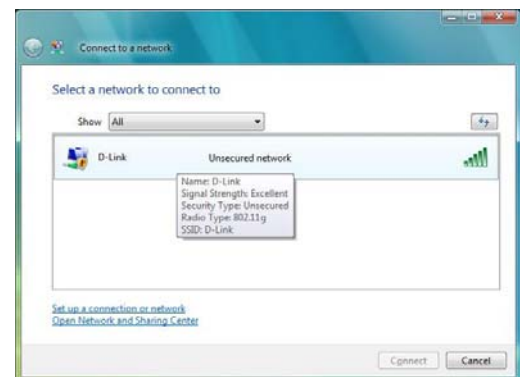
# Connect to a Wireless Network Using Windows Vista®

Windows Vista® users may use the convenient, built-in wireless utility. Follow these instructions:

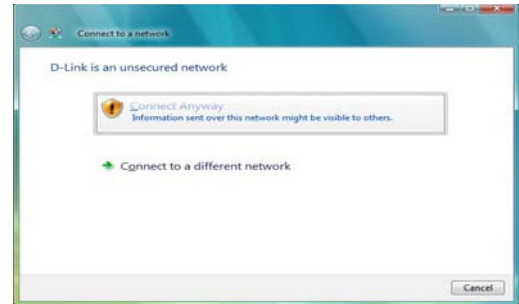
From the Start menu, go to Control Panel, and then click on **Network and Sharing Center**.



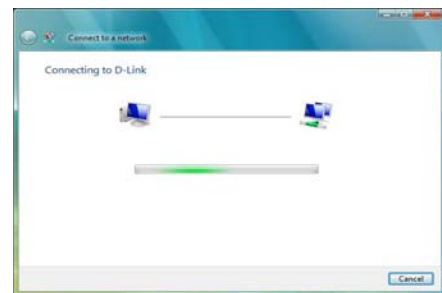
The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) under **Select a network to connect to** and then click the **Connect** button.



Click **Connect Anyway** to continue.

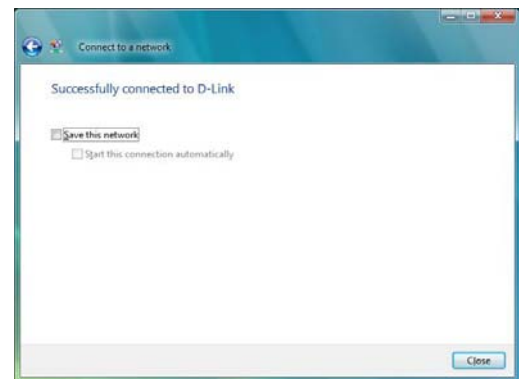


The utility will display the following window to indicate a connection is being made.



The final window indicates the establishment of a successful connection.

The next two pages display the windows used to connect to either a WEP or a WPA-PSK wireless network.

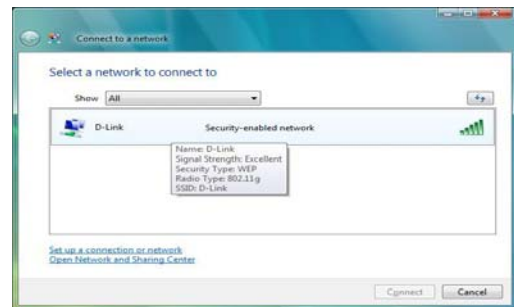




## Configure WEP

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

Click on a network (displayed using the SSID) using WEP under Select a network to connect to and then click the **Connect** button.



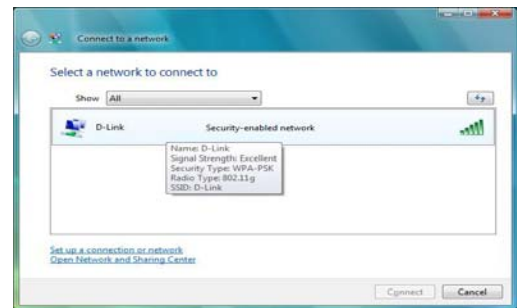
Enter the appropriate security key or passphrase in the field provided and then click the **Connect** button.



## Configure WPA-PSK

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

Click on a network (displayed using the SSID) using WPA-PSK under Select a network to connect to and then click the **Connect** button.



Enter the appropriate security key or passphrase in the field provided and then click the **Connect** button.



# 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 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® XP utility as seen below.

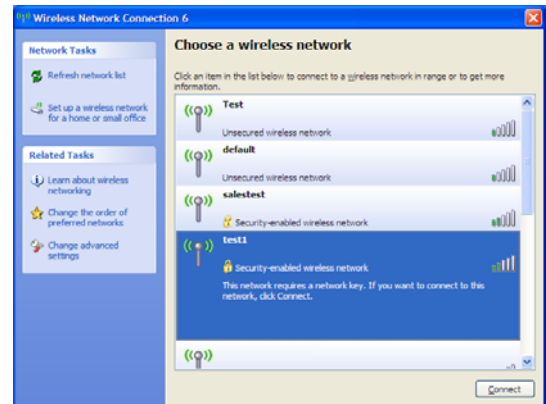
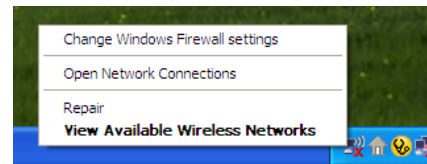
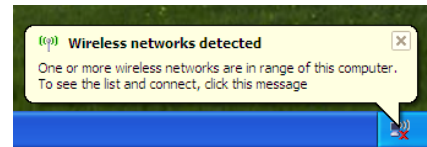
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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.

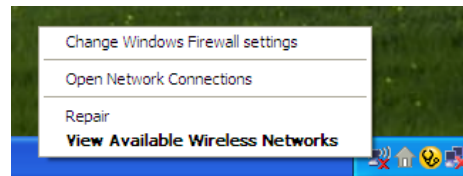
If you get a good signal, but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



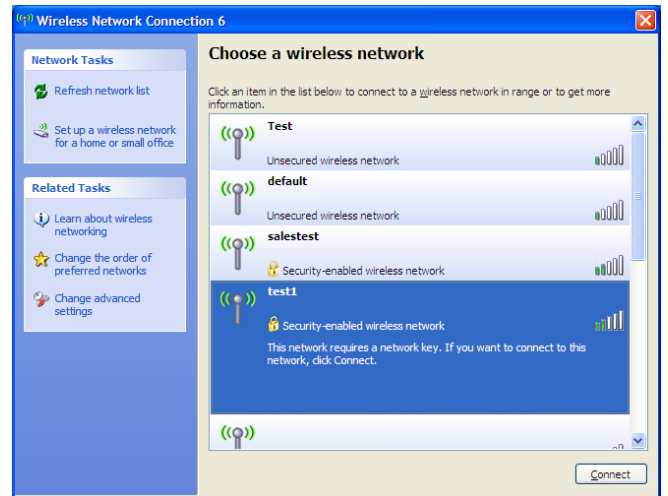
## Configure WEP

It is recommended to enable WEP on your wireless bridge or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP 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**.

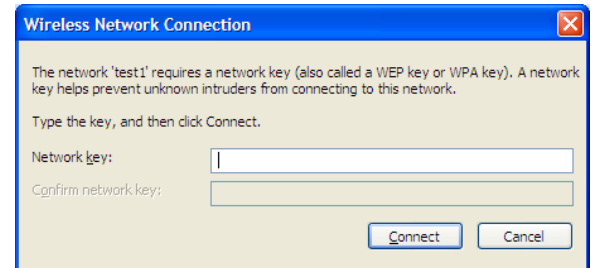


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the same WEP key that is on your access point and click **Connect**.

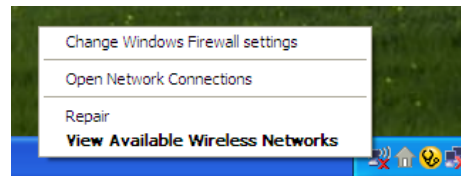
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless access point.



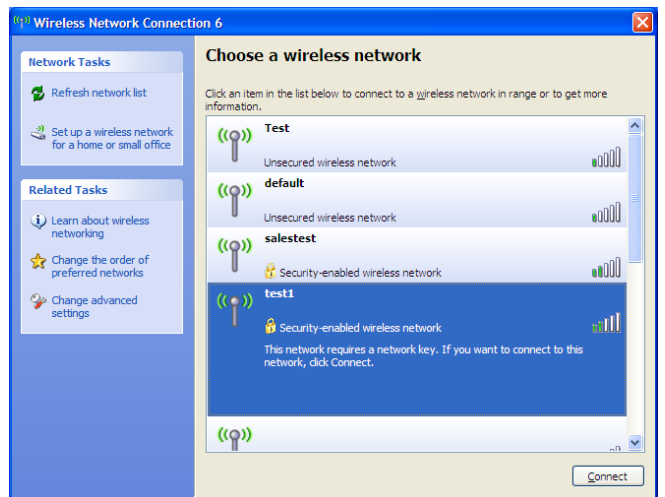
## Configure WPA-PSK

It is recommended to enable WEP on your wireless bridge or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP 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**.

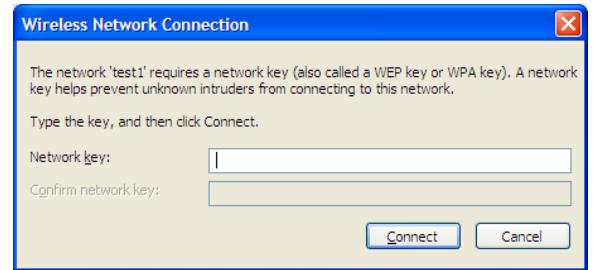


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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 access point.



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DHP-W306AV. 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. Why am I unable to access the web-based configuration utility?

When entering the IP address of the D-Link access point (192.168.0.50 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Microsoft Internet Explorer® 6.0 and higher
  - Mozilla Firefox 3.0 and higher
  - Google™ Chrome 2.0 and higher
  - Apple Safari 3.0 and higher
  
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.
  
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.



- Configure your Internet settings:
  - Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** icon. From the **Security** tab, click the button to restore the settings to their defaults.
  - Click the **Connection** tab and set the dial-up option to **Never Dial a Connection**. Click the **LAN Settings** button. Make sure nothing is checked. Click **OK**.
  - Go to the **Advanced** tab and click the **Reset...** button to restore these settings to their defaults. Click **OK** three times.
  - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link access point in the address bar. This should open the login page for your the web management.
- If you still cannot access the configuration, unplug the power to the access point for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

## 2. What can I do if I forgot my password?

If you forgot your password, you must reset your access point. Unfortunately this process will change all your settings back to the factory defaults.

To reset the access point, locate the reset button (hole) on the rear panel of the unit. With the access point powered on, use a paperclip to hold the button down for 5 seconds. Release the button and the access point will go through its reboot process. Wait about 30 seconds to access the access point. The default IP address is **192.168.0.50**. When logging in, the username is **Admin** and leave the password box empty.

### **3. Why can't my Powerline AV device detect my other Powerline AV devices.**

This may be due to the accidental change of the device password. Use the web-based configuration utility and select **Setup > PLC SETTINGS**. Fill in the password in the blank. Then repeat the same procedure to the other Powerline AV device via web-based configuration utility.

### **4. I can not start my Powerline AV device.**

Please check your power supply is working. Powerline AV device operates from the power supplied by the home electrical wiring and can not operate without a working power supply.

# 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 Access point 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.

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.

## **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, 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 Cardbus 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 access point or Access Point**

Make sure you place the bridge/access point in a centralized location within your network for the best performance. Try to place the bridge/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, wireless speakers, and televisions as far away as possible from the bridge/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, WPA2, or WEP security feature on the access point. 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 bridge.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more wireless network Cardbus adapters.

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

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

# Networking Basics

## Check your IP address

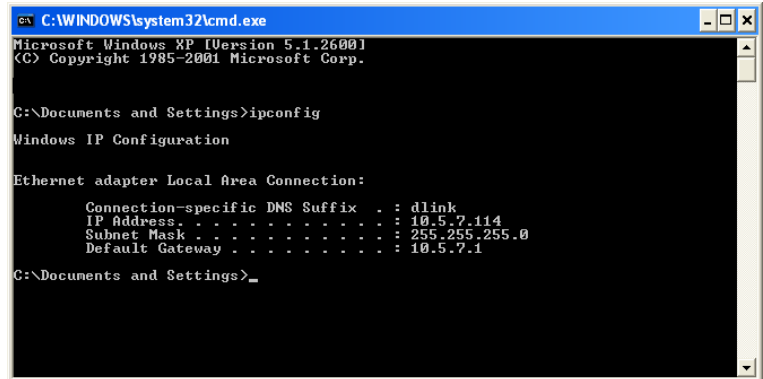
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type **cmd** and click **OK**. (Windows Vista® users type **cmd** in the **Start Search** box.)

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

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

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



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

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>_
```

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.



## Statically Assign an IP address

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

### Step 1

Windows Vista® - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections.**

Windows® XP - Click on **Start > Control Panel > Network Connections.**

Windows® 2000 - From the desktop, right-click **My Network Places > Properties.**

### Step 2

Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties.**

### Step 3

Highlight **Internet Protocol (TCP/IP)** and click **Properties.**

### Step 4

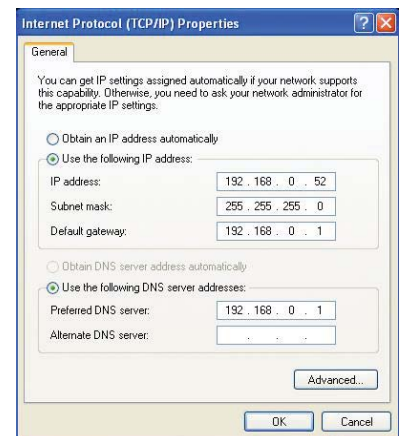
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

**Example:** If the AP's LAN IP address is 192.168.0.50, make your IP address 192.168.0.X where X is a number between 2 and 99 (excluding the number 50). 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 (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

### Step 5

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



# Technical Specifications

## STANDARDS

- IEEE 802.3
- IEEE 802.3u
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n
- HomePlug AV

## POWERLINE INTERFACE

- Power plug (country-dependent)

## ETHERNET INTERFACE

- 10/100BASE-TX Ethernet Port with auto MDI/ MDIX
- RJ-45 Connector

## POWERLINE MODULATION SCHEME

- OFDM Symbol Modulation

## POWERLINE FREQUENCY BAND

- 2 MHz to 30 MHz

## DATA RATE

- Powerline: 200 Mbps (PHY rate)
- Ethernet: 10/100 Mbps (autonegotiation)
- Wireless: Up to 300 Mbps

## QOS

- Integrated QoS prioritizes media and data
- Wireless frequency range
- 2.4 GHz to 2.497 GHz

## ANTENNAS

- Two fixed external 2 dBi omni-direction antennas

## SECURITY

- 128-bit AES Data Encryption
- WEP 64/128-Bit Data Encryption
- Wi-Fi Protected Access (WPA/WPA2)
- WPS™

## LEDS

- Power
- Powerline
- Ethernet
- WLAN

## POWER INPUT

- 240 V AC, 50/60 Hz

## POWER SAVING

- Power saving mode supported
- Compliant with European Energy Using Product Directive (EuP)

## DIMENSIONS

- 105 x 70 x 52 mm (4.1 x 2.8 x 2.0 inches)

## WEIGHT

- 208 g (0.46 lb)

## OPERATING TEMPERATURE

- 0° to 40°C (30° to 104°F)

## OPERATING HUMIDITY

- 10% to 95% non-condensing

## EMC CERTIFICATION

- CE EMC Class B
- Quick setup wizard
- D-Link Click and Connect (DCC)
- FCC Class B
- IC

## SAFETY CERTIFICATION

- UL
- CE LVD
- Wi-Fi

<sup>1</sup>. 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.

<sup>2</sup>. Range varies depending on country's regulation.

# Warranty

## **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

## **FCC Statement:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **CE Statement:**

See also the description in the manual and the DoC (!) I would say that you need to apply for an SoO, based upon the R&TTE directive comply with the requirements set out in the Council (European parliament) Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility of Radio and Telecom device (1999/5/EC).



**IMPORTANT NOTE:**

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

**Industry Canada statement:**

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**IMPORTANT NOTE:**

Radiation Exposure Statement:

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.