D-Link®

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User Manual

PowerLine AV+ Wireless Extender Kit

DHP-W311AV

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Product Overview

Package Contents

D-Link DHP-W310AV PowerLine AV+ Wireless N Extender

D-Link DHP-308AV PowerLine AV+ Network Adapter

Two CAT5 Ethernet Cables

Wi-Fi Configuration Card

Quick Install Guide

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

Minimum Requirements

Network Requirements
- IEEE 802.11n or 802.11g wireless clients
- 10/100 Ethernet device(s)
- Two available power outlets

For Internet Access
- Router
- Broadband Internet Connection

Supported Browsers
- Internet Explorer 7.0 or higher
- Firefox 4.0 or higher
- Safari 4.0 or higher
- Chrome 8.0 or higher

Configuration Requirements
- Windows® 8 / Windows® 7 / Mac OS® X (10.7 or higher)

Introduction

The DHP-W311AV includes a DHP-308AV and a DHP-W310AV, that together allow you to connect both wired and wireless computers, high-definition TVs, networking devices, and video game consoles. This adapter and extender combination uses 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 DHP-W311AV supports the latest HomePlug AV technology to improve on older AV speeds. This fast transmission speed provides ample bandwidth for streaming high-resolution 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, are not compromised, even while streaming music and IPTV (Internet Protocol Television).

Data Transmission Over Electrical Wiring

The D-Link DHP-W310AV PowerLine AV+ Wireless N Extender, compliant with the HomePlug AV standard, uses your home's existing electrical wiring[1] to create a network or extend your existing network. It turns every power outlet into a potential 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-W310AV offers increased speed and range beyond standard 802.11g technology. Initial wireless setup can be accomplished quickly, thanks to a convenient setup wizard. WPA and WPA2 encryption keep your network traffic safe and secure.

Ideal For Bandwidth-Intensive Applications

The DHP-W310AV is capable of delivering PowerLine AV data transfer rates even higher than the old AV standard. This rapid transmission speed makes it ideal for bandwidth-intensive applications, guaranteeing smooth HD video streaming, clear VoIP (Voice over Internet Protocol) communication, and a lag-free online gaming experience. In addition, the DHP-W310AV 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.

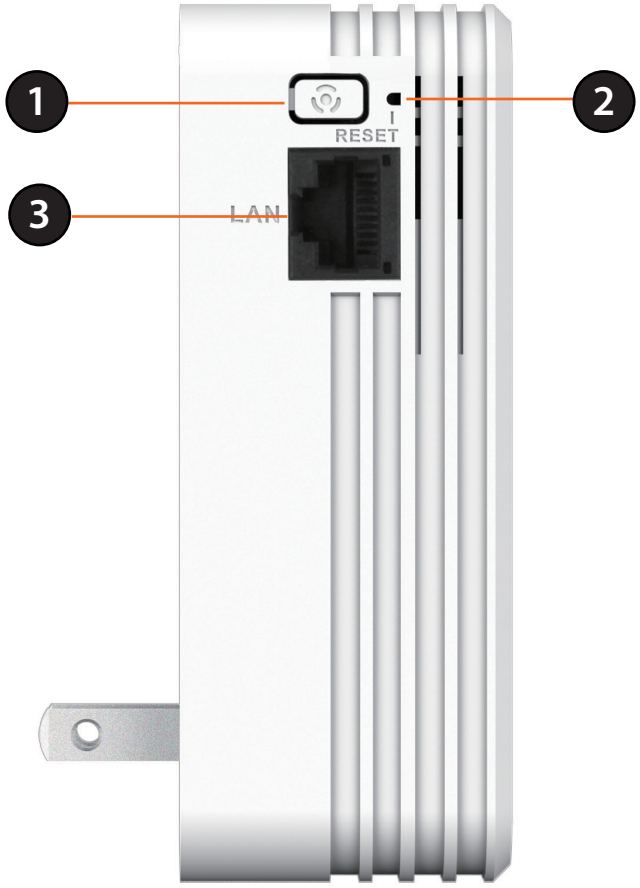
Convenient Setup and Secure Operation

The DHP-W311AV devices plug directly into power outlets, and do not require additional power 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 (Advanced Encryption Standard) to protect your network from unauthorized wiretapping. With hassle-free plug and play installation, the DHP-W311AV is an ideal solution for creating a wall-to-wall home network.

[1]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.

Hardware Overview
DHP-W310AV
Connections

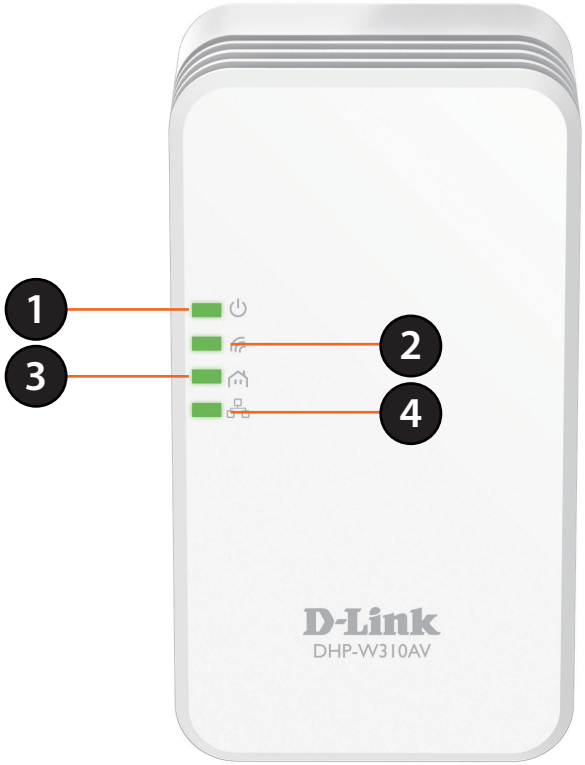
1	**Simple Connect/ WPS Button**	Push this button to create a secure PowerLine connection with another adapter. It can also be used to connect using Wi-Fi Protected Setup (WPS). To connect using WPS, press this button, then press the WPS button on your wireless client.
2	**Reset Button**	Press and hold the button for 5 seconds to reset to factory default.
3	**Ethernet Port**	Connects to a computer, switch, gaming consoles, Network network storage devices (NAS), etc.



Hardware Overview

DHP-W310AV

LEDs

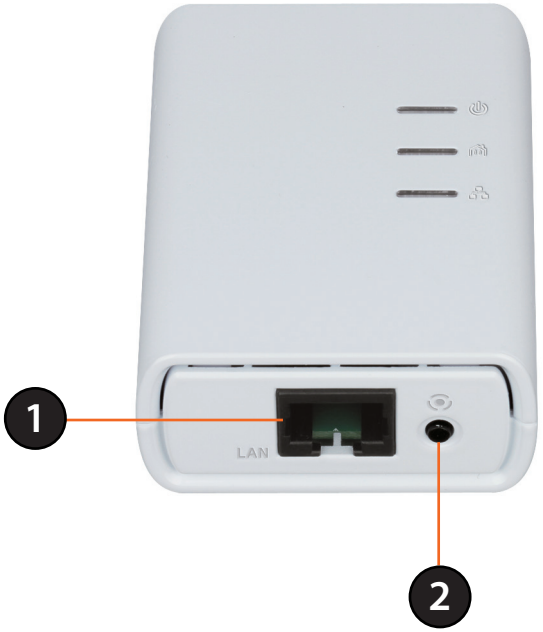


1	**Power LED**	A solid light indicates a proper connection to the power supply. A blinking light indicates it is in sleep mode (after 5 minutes of inactivity) or seeking a PowerLine connection.
2	**Wireless LED**	A solid light indicates that Wi-Fi is enabled.
3	**PowerLine LED**	A solid light indicates that a PowerLine connection is established.
4	**Ethernet LED**	A solid light indicates a connection to an Ethernet-enabled device.

Hardware Overview

DHP-308AV

Connections

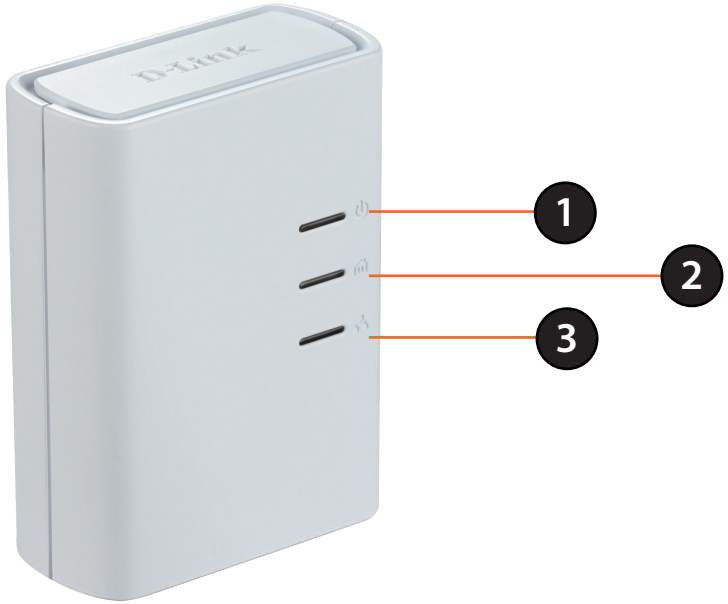


1	**Ethernet Port**	Connects to Digital Media Devices, PCs, Video Game Consoles, Network Storage Devices
2	**Simple Connect/ Reset Button**	Press to secure the connection to other PowerLine adapters. To reset the device back to the factory default settings, press and hold for 10 seconds.

Hardware Overview

DHP-308AV

LEDs



1	**Power LED**	A solid light indicates a proper connection to the power supply. A blinking light indicates it is in sleep mode (after 5 minutes of inactivity) or seeking a PowerLine connection.
2	**PowerLine LED**	A solid light indicates that a PowerLine connection is established.
3	**Ethernet LED**	A solid light indicates a connection to an Ethernet-enabled device.

Hardware Installation

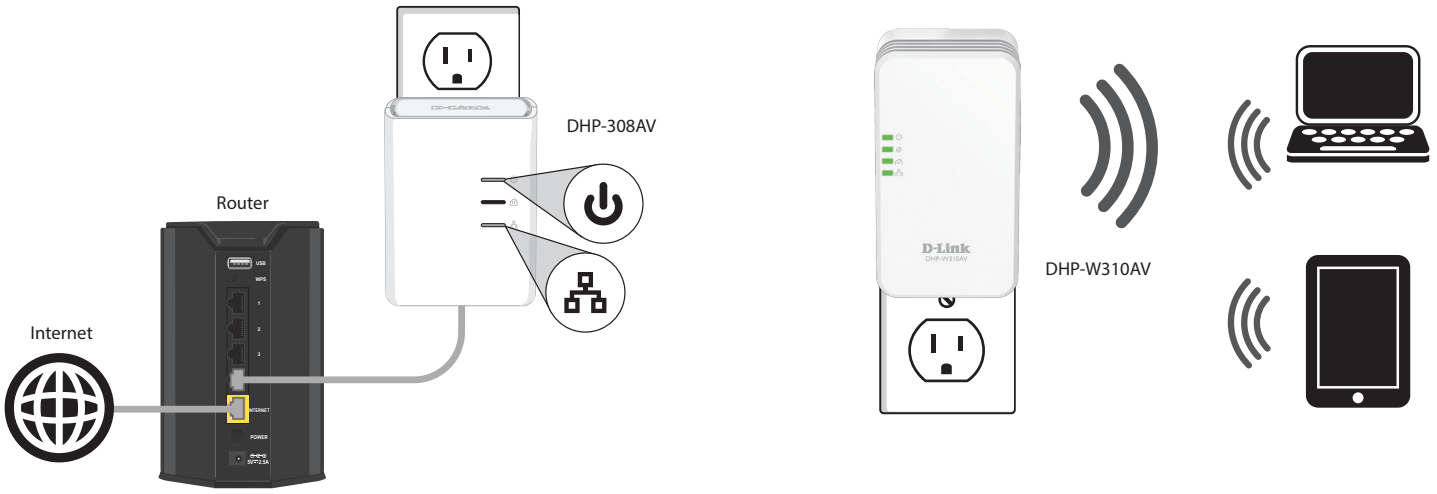
Power
Plug the DHP-308AV into a wall outlet near your router. Plug the DHP-W310AV into a wall outlet where you want to extend your network. The Power LED on both devices will light up to indicate they are receiving power. This may take up to 60 seconds.

Plug in the Ethernet Cable
You should already own a router connected to a modem. Connect one of the supplied Ethernet cables between your router and the DHP-308AV. Connect your wireless devices to the DHP-W310AV. Use the Wi-Fi Network name (SSID) and Wi-Fi Password from the Wi-Fi Configuration Card to connect. Read the guidelines on the following pages, and continue with "DHP-W310AV Configuration" on page 15.

Connect the Devices
Press the Simple Connect button on the DHP-308AV for three seconds. Within two minutes, press the Simple Connect button on the DHP-W310AV for three seconds. The devices will reboot.

Note: *When network connectivity is established, the PowerLine LEDs on both PowerLine devices will be steadily lit. This indicates that your PowerLine network is now secure.*

Adding More Devices (optional)
If you have more PowerLine devices, or if you add more devices to your network in the future, use the method described above. Be sure to press the Simple Connect/WPS button on the new device, and then the Simple Connect/WPS button on the existing network within the required time frame.



Wireless Installation Considerations

The DHP-W310AV lets you access your network using a wireless connection from anywhere within the operating range of your wireless network. Keep in mind the number and thickness of walls and ceilings, as well as the location of 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 DHP-W310AV and other network devices to a minimum. Each wall or ceiling can reduce your adapter's range by 3-90 feet (1-30 meters). Position your devices so that the number of walls or ceilings is minimized.

2. Strive for a direct line between network devices. A wall that is 1.5 feet thick, at a 45-degree angle, will appear to be almost three feet thick. At a two-degree angle it appears to be over 42 feet thick! Position your devices so that the signal will travel straight through a wall or ceiling, instead of at an angle, for the best reception.

3. Be aware of the type of building materials separating your devices. A solid metal door or aluminum studs may have a negative effect on range. Try to position the wireless DHP-W310AV 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 three to six feet) 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 when the phone is not in use.

PowerLine Installation Considerations

Plan the location of your PowerLine devices:

1. Connect PowerLine devices into electrical outlets that are not controlled by a wall switch. This will help you to avoid accidentally turning off power to the device.

2. Do not connect your PowerLine devices to extension cords, surge protectors, or power strips. Doing this might prevent your devices from working correctly, or may negatively impact network performance.

3. Avoid plugging your PowerLine devices into electrical outlets that are located near appliances that use a lot of power, such as washers, dryers, and refrigerators. Doing this could prevent the adapter from working correctly, or may negatively impact network performance.

4. Verify that your PowerLine devices are electrically rated to operate with the power available in your location.

5. Be sure to plug the power cables into properly grounded electrical outlets in order to help prevent against electrical shock.

Safety

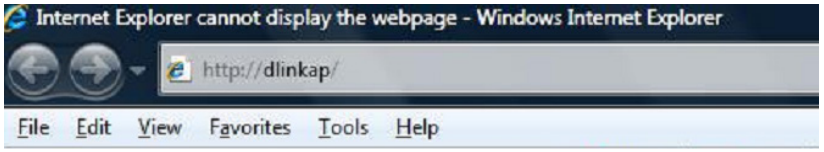
Please read all of the safety and operating instructions before using your devices:

1. Do not open the devices or attempt to repair or service the devices.
2. Use the devices in a dry location, and avoid placing them in humid environments.
3. Do not submerge the devices in liquid or attempt to clean them with liquids or solvents. To clean the devices, disconnect from the power outlet and use a damp towel.
4. Keep the devices out of direct sunlight.
5. Do not cover or block the vents on the devices.
6. Make sure that the devices have adequate room for ventilation.
7. Avoid placing the devices near a heater or a radiator.

DHP-W310AV Configuration
Setup

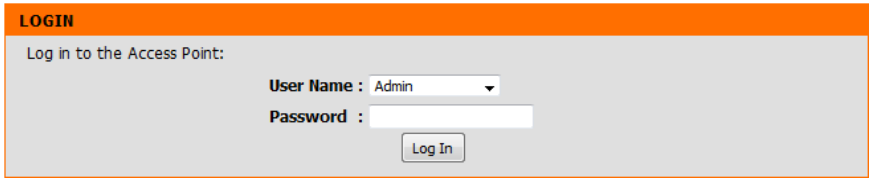
This section covers configuration of your DHP-W310AV. The DHP-308AV does not require configuration other than the intial PowerLine connection.

You can use the web-based configuration utility to change the default settings and optimize the performance of the DHP-W310AV.



Open a web browser such as *Internet Explorer* to access the configuration utility. Enter either **http://dlinkapWXYZ.local.** (this is on the Wi-Fi Configuration Card) or **http://192.168.0.50** in the address field.

At the login screen, enter **Admin** as the **User Name**. Leave the **Password** blank by default. Click **Log In**.



If you receive a "Web Page Cannot be Displayed" error, please refer to "Troubleshooting" on page 47 for assistance.

Hybrid Link Setup

If you have not yet set up your network, use the Setup Wizard's step-by-step instructions. You can also manually configure your network using Settings. Wi-Fi settings are covered under "Wireless Settings" on page 17 and PowerLine settings are at "PLC Settings" on page 20.

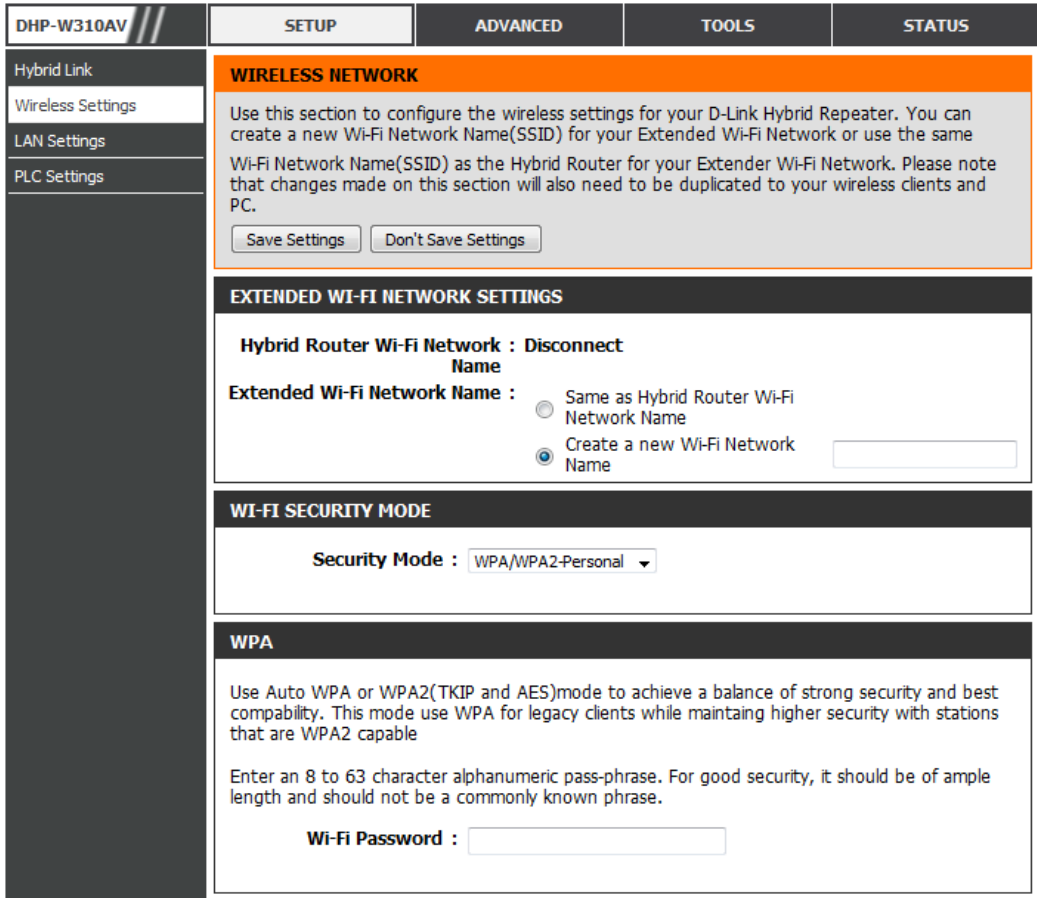
Wireless Settings

The DHP-W310AV lets you customize the wireless settings for your access point. This device allows you to expand your network so you can roam around the house, while staying connected to the network the entire time.

Hybrid Router Wi-Fi Network Name: If you are connected to a hybrid PowerLine router that also broadcasts Wi-Fi, you will see that router's network name (SSID) here.

Extended Wi-Fi Network Name: The name that appears in the list when you are browsing for available wireless networks is the *Extended WiFi Network Name*. Click **Same as Hybrid Router WiFi Network Name** to extend the network that your hybrid router is broadcasting (listed above). As you walk from one area of coverage in your home to another, your device will detect the stronger signal and automatically keep you connected. Click **Create a new Wi-Fi Netowrk Name** to put the DHP-W310AV on a different network.

Security Mode: **WPA/WPA2-Personal** is more secure than **WEP**. Only use **WEP** if you have older devices that are unable to use WPA. Use of **TKIP/AES** security framework provides the optimum mix of security and compatibility. Please refer to "Wireless Security" on page 35 for more information.



Wi-Fi Password: Choose a **Wi-Fi Password** that is strong. A good password uses both letters and numbers in unpredictable order. Examples of poor choices for passwords are *password* and *12345678*.

Click **Save Settings**.

LAN Settings

The *LAN Settings* section allows you to change the local network settings of the DHP-W310AV and to configure the DHCP settings.

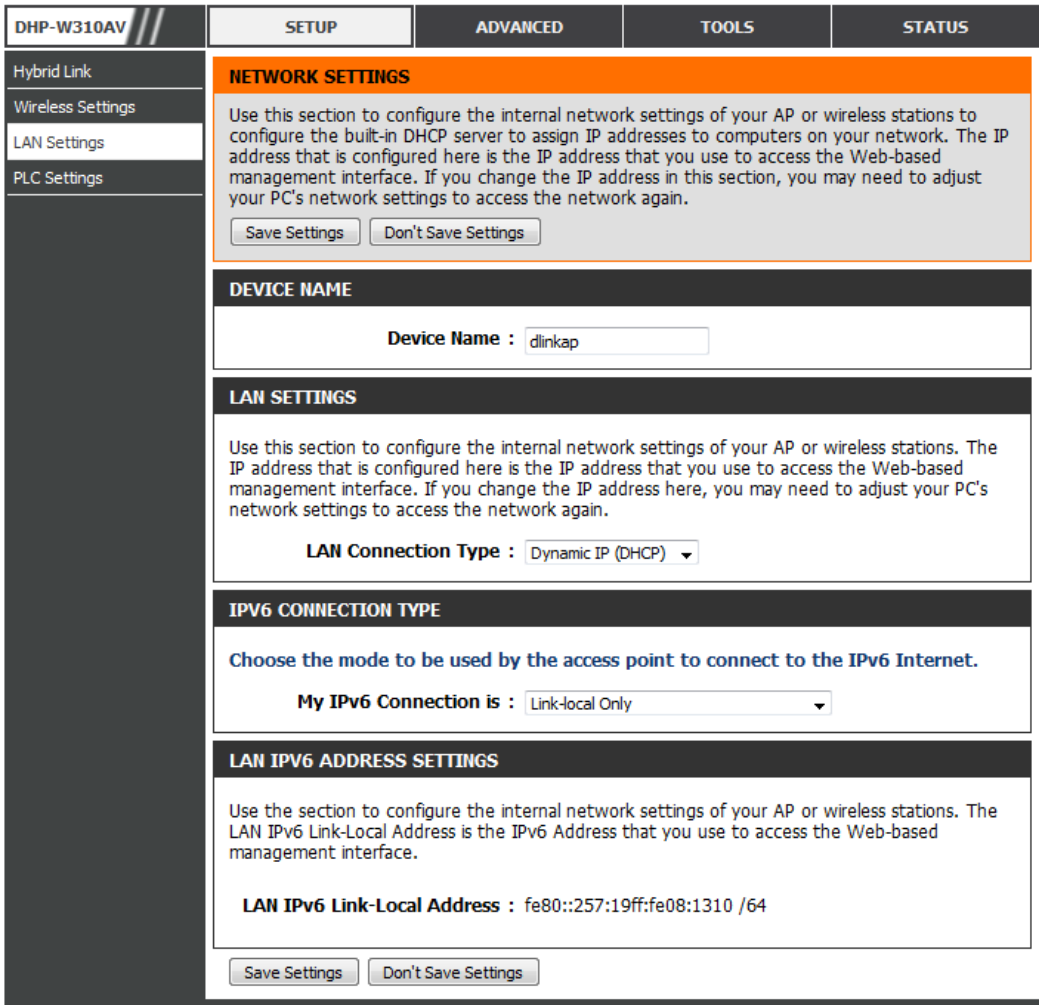
Device Name: Enter the **Device Name** of this DHP-W310AV. The default name is listed on your Wi-Fi Configuration Card. Use this name to connect to your device through a web browser.

LAN Connection Type: Use the drop-down menu to select **Dynamic IP (DHCP)** to automatically obtain an IP address on the LAN/private network. For **Static IP** setup, see the instructions on the next page.

My IPv6 Connection is: Contact your Internet Service Provider (ISP). They may require this field to be set a certain way for Internet access.

LAN IPv6 Link-Local Address: This shows the current IPv6 address of the DHP-W310AV on your network.

Click **Save Settings**.



LAN Settings - Static IP

Under *LAN Settings*, select **Static IP** to manually enter the *Static IP LAN Connection Type*.

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

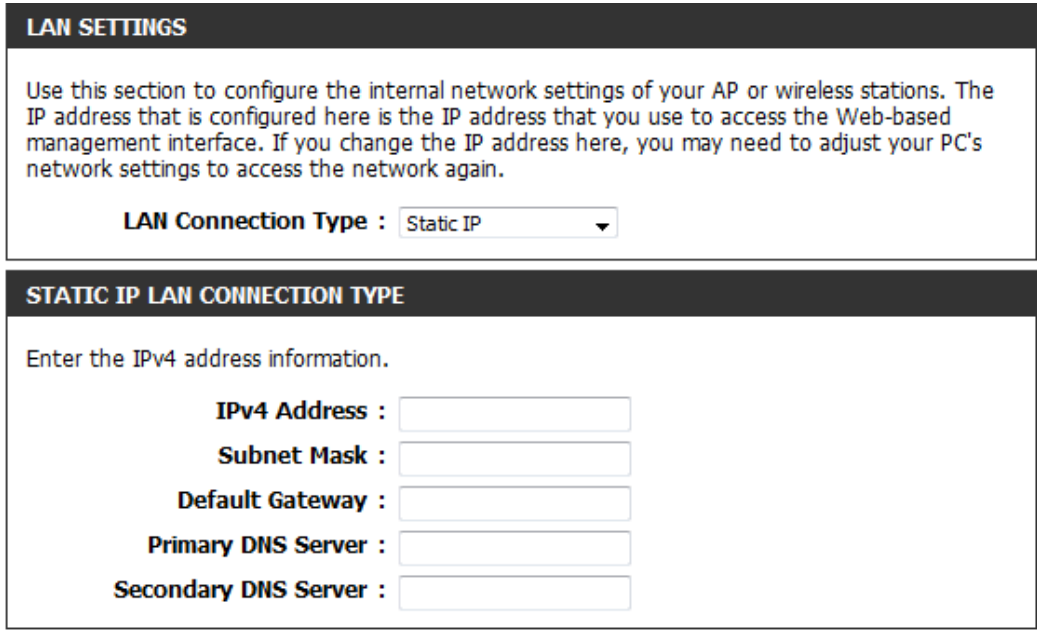
IPv4 Address: Enter the **IPv4 Address** of the DHP-W310AV. The default IP address is 192.168.0.50. If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to return to the configuration utility. You can also connect with the **Device Name**. (See previous page.)

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

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

DNS Server: This is the Domain Name Server that looks up addresses on the Internet. You may have a specific one you need to connect to.

Click **Save Settings**.



PLC Settings

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

Power Saving: Check the box to **Enable** Power Saving mode.

Network Name: Make sure the **Network Name** of all of the devices within your PowerLine network are the same.

Public Network Name: If you would like to make your PowerLine network public, select **Public, Network Name is HomePlugAV**. This is a commonly used Network Name, so it is less secure than a private Network Name.

Private Network Name: If you would like to make your PowerLine network more secure, select **Private, Network Name is**, and enter a name in the text box.

Network List: This section provides information on PowerLine AV devices in your PowerLine network.

Scanning: Click this button to scan for new PowerLine devices. This is automatically done periodically.

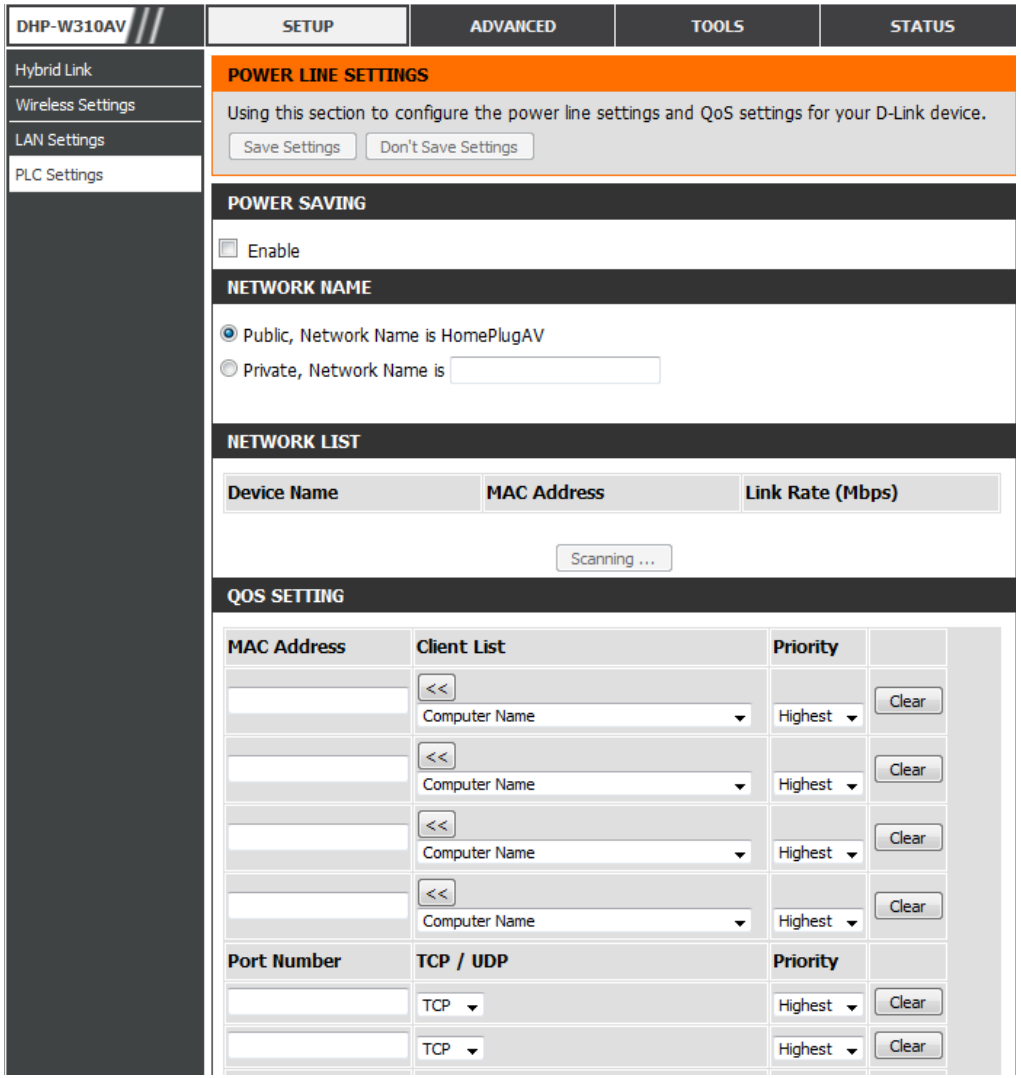
MAC Address: Select a name from the **Computer Name** drop-down box and then click the **<<** button to automatically enter the device's **MAC Address**.

Port Number: Select **TCP** or **UDP** from the drop-down menu.

Priority: From the **Priority** drop-down menu, prioritize network traffic based on the device (by Client) or the port (by Port Numer) the traffic is on.

Clear: Clear settings for a rule with the **Clear** button.

Click **Save Settings**.



Advanced

MAC Address Filter

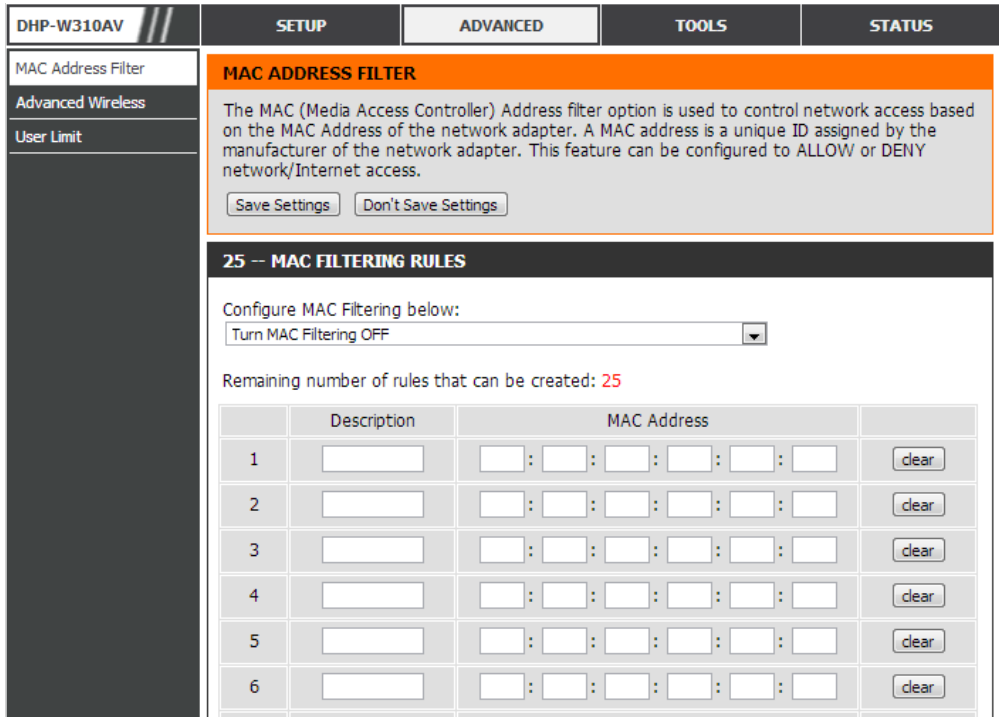
Use MAC (Media Access Control) Filters to authorize wireless clients to access your network by their MAC addresses. When enabled, you can choose to either block the devices listed, or allow only the devices listed.

Configure MAC Filtering: Set MAC Filtering to **ALLOW**, **DENY**, or **Turn MAC Filtering OFF**. **ALLOW** means only the devices listed can access the network. **DENY** means the devices listed cannot access the network.

Description: For your convenience, enter a description, like **My PC** or **My friend's smartphone**.

MAC Address: Enter the **MAC address** you would like to filter. To find the **MAC address** on your computer, refer to "Networking Basics" on page 53. Click **Save Settings** to activate and save.

Note: *If you are filtering to ALLOW only the listed devices, make sure to add your own computer to the list or you will be denied access to the network and the configuration utility. If you DENY the listed addresses, be sure your computer is not on the list.*

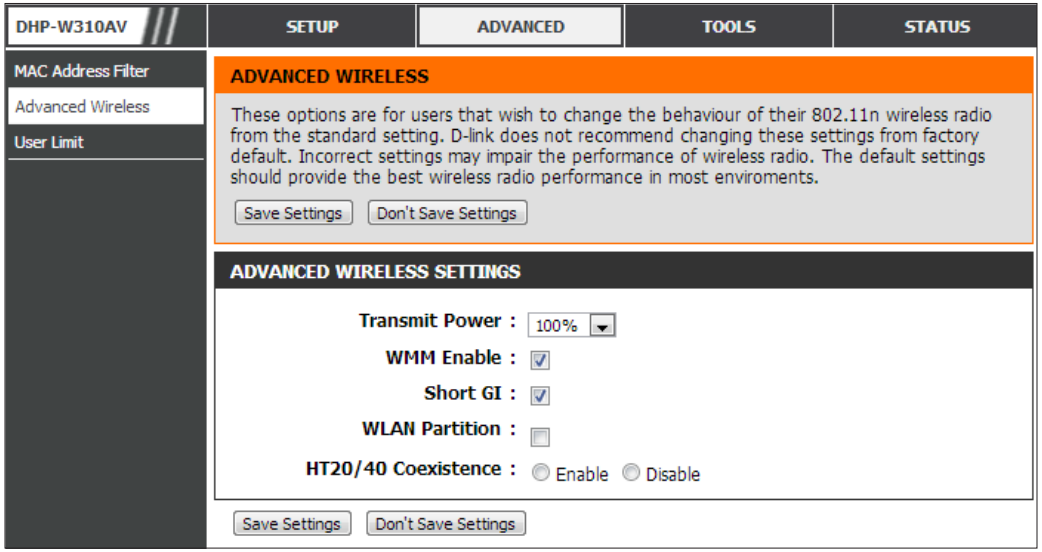


Clear: Click to clear the rule from the list.

Note: *you will have to* ***Save Settings*** *in order for the rule to take effect.*

Advanced Wireless

The *Advanced Wireless* section allows you to change several advanced settings on your DHP-W310AV. Most users will not need to modify this section.



Transmit Power: Select the transmit power of the antennas.

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. ***Warning:*** this setting may decrease stability and reliability.

WLAN Partition: Check this box to enable **WLAN Partition**. If this feature is enabled, then there is no barrier between communication among wireless stations connecting to the DHP-W310AV. If this is disabled, wireless clients are not allowed to exchange data through the DHP-W310AV.

HT20/40 Coexistence: Enabling this function allows compatibility with both 802.11n devices as well as 802.11b/g at the cost of speed. Disabling this will give higher speeds, but will only allow 802.11n devices to function.

Click **Save Settings**.

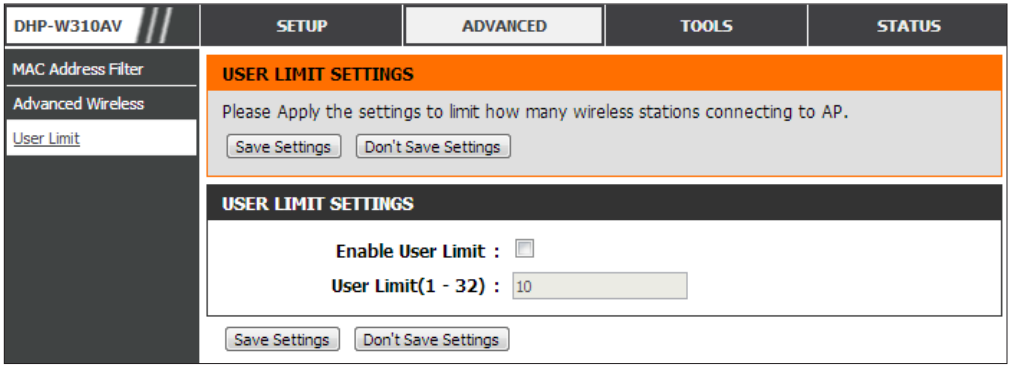
User Limit

This screen lets you set the maximum number of wireless clients that can connect at one time to your DHP-W310AV

Enable User Limit: Check the **Enable User Limit** box to limit the number of devices that can connect to the DHP-W310AV.

User Limit: Enter a number between 1 and 32 representing the maximum allowable clients.

Click **Save Settings**.



Tools
Admin

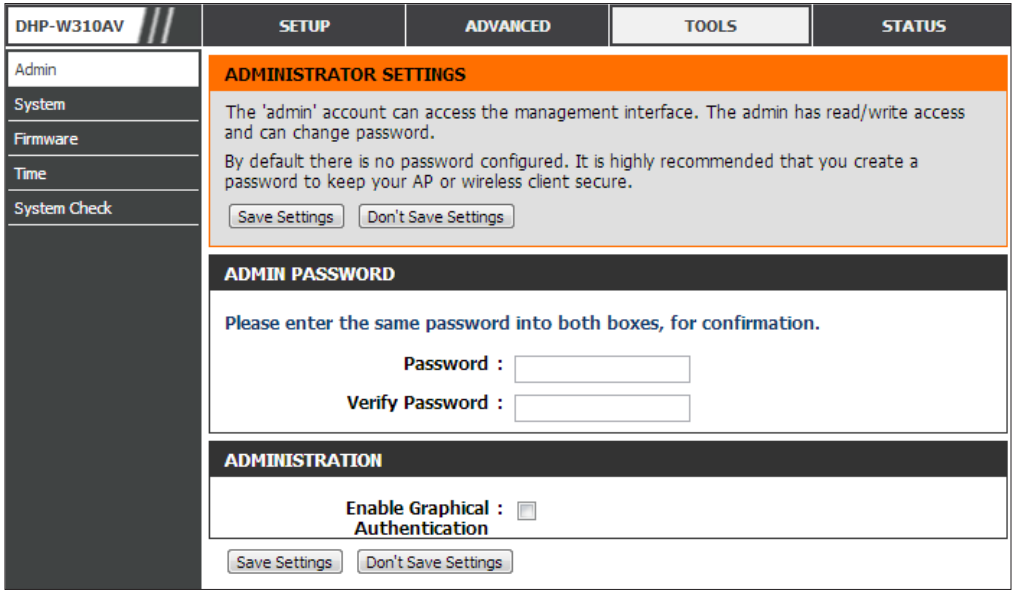
The *Admin* section will allow you to change the administrator password, which is used to access the configuration interface and change the settings.

Password: Enter a new **Password** for the **Admin** user name. Only the administrator can change the configuration of the device.

Verify Password: Enter the same **Password** that you entered in the previous step in order to confirm.

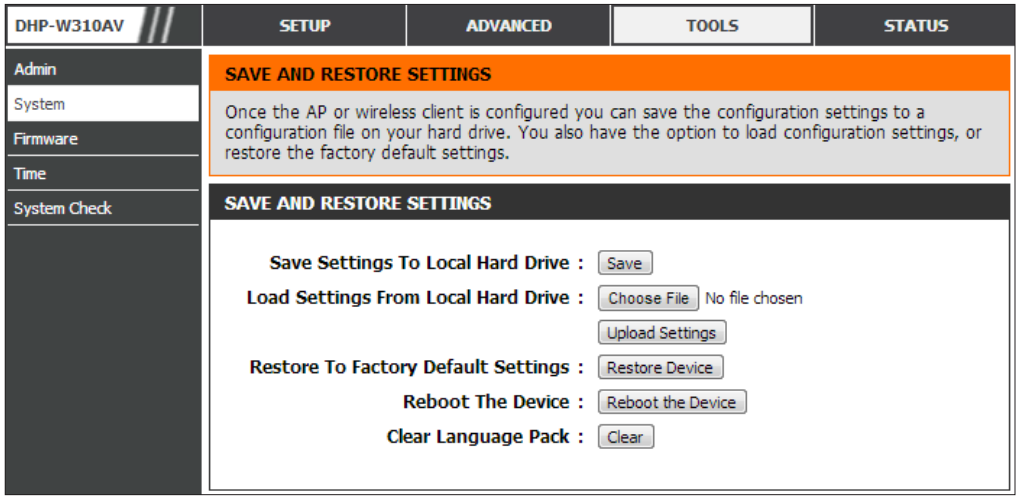
Enable Graphical Authentication: Check the box to enable a CAPTCHA verification. This requires users to type letters or numbers from a distorted image displayed on the screen. It prevents online hackers and unauthorized users from gaining access to your device's configuration. This feature is disabled by default.

Click **Save Settings**.



System

The *System* section allows you both save and delete settings on your DHP-W310AV.



Save Settings To Local Hard Drive: Click **Save** by **Save Settings to Local Hard Drive** to keep the current DHP-W310AV configuration in a file on your computer. You can select a location and file name for your settings.

Load Settings From Local Hard Drive: Click **Choose File** to find a previously saved DHP-W310AV configuration file. Then, click the **Upload Settings** button to transfer those settings to the DHP-W310AV.

Restore to Factory Default Settings: This option restores all configuration settings back to the settings that were in effect at the time the DHP-W310AV 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 DHP-W310AV configuration settings, use the **Save** button to Save Settings to your local hard drive before you **Restore to Factory Default Settings**.

Reboot the Device: Click to **Reboot the Device**.

Clear Language Pack: Click to **Clear** any language pack that is currently installed. For more about language packs, refer to "Firmware" on page 26.

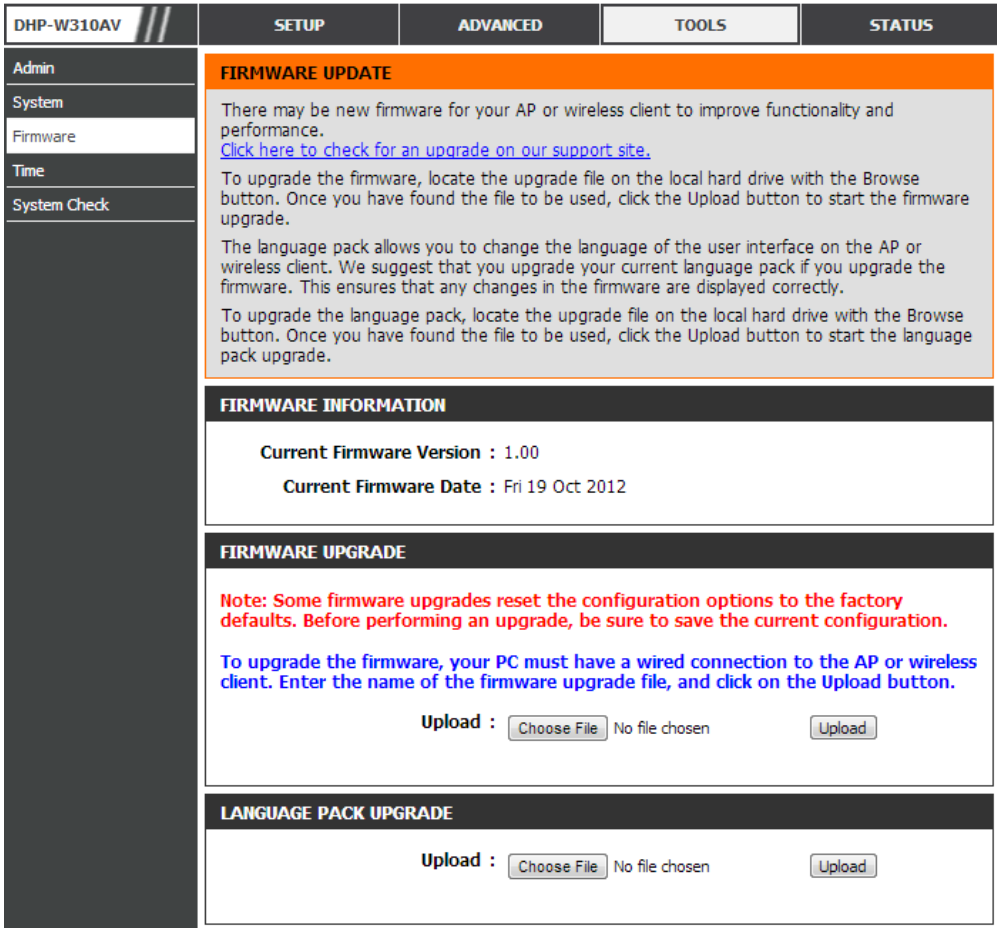
Firmware

You can upgrade the firmware of the DHP-W310AV from the *Firmware Update* page. You can download firmware upgrades to your hard drive from the D-Link support site at http://support.dlink.com. When the firmware you would like to use is on the local hard drive of your computer, click **Choose File** to locate the file to be used for the update, and click **Upload**.

Click here to check for an upgrade: Click on the blue hyperlink at the top of the page the to find out if there is an updated firmware. If a new version exists, download the new firmware to your hard drive.

Firmware Upgrade/ Upload: After you have downloaded the new firmware, click **Choose File** under *Firmware Upgrade* to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade. This can take a minute or more. Finally, wait for the device to reboot. This process can take about 75 seconds.

Language Pack Upgrade/Upload: You can change the language of the user interface by uploading a language pack. To install a language pack, click **Choose File** under *Language Pack Upgrade* to locate the language pack upgrade file on your computer. Click the **Upload** button to begin the *Language Pack Upgrade* process. This can take a minute or more. Finally, wait for the device to reboot. This process can take about 75 seconds.



Time

The *Time* page 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 your **Time Zone** from the drop-down menu.

Enable Daylight Saving: Check the **Enable Daylight Saving** check box. Next, use the drop-down menu to select a **Daylight Saving Offset** and then enter a **DST Start** date and time, and a **DST End** date and time.

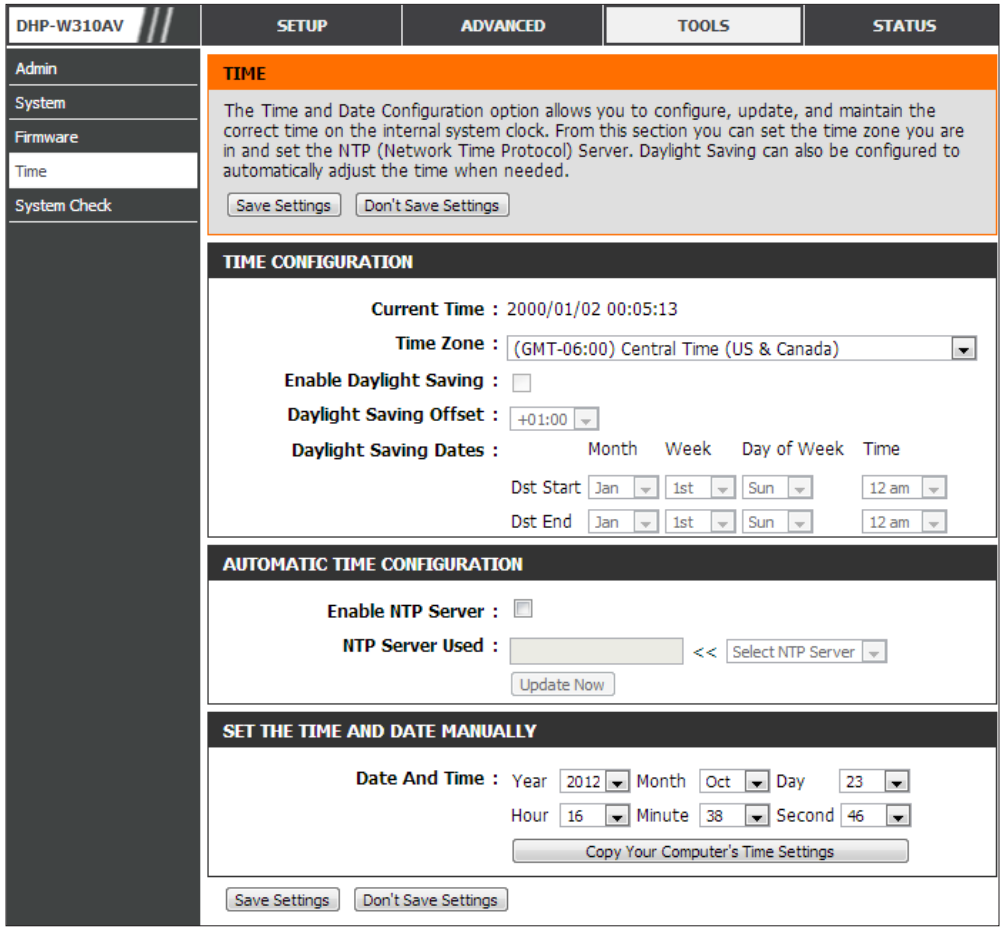
Enable NTP Server: An NTP (Network Time Protocol) server will sync the time and date with your DHP-W310AV. Check this box to **Enable NTP Server**. This will only connect to a server on the Internet, not a local server.

NTP Server Used: Enter the IP address of an NTP Server, or select one from the drop-down menu. Click **Update Now**.

Date and Time: To manually input the time, enter the values in these fields for the **Year, Month**, **Day**, **Hour**, **Minute**, and **Second**.

You can also click the **Copy Your Computer's Time Settings** button at the bottom of the screen to synch the date and time with the computer you are currently using.

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



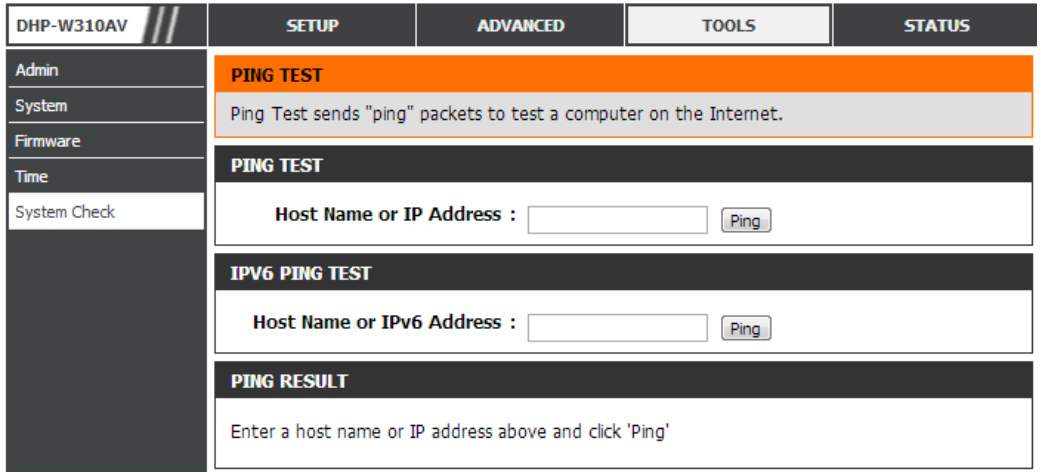
System Check

The *System Check* page helps you to diagnose connection problems using a *Ping Test*. A ping test sends a tiny bit of information to a website and anticipates a response. Pinging an extremely stable site such as your favorite search engine or news site can help you determine if your Internet connection is working properly.

Ping Test/Host Name or IP Address: Enter a **Host Name or IP Address** and click on **Ping**. If you can ping a site or address from here but your computer is getting no connectivity, this indicates the DHP-W310AV is working properly but there is a problem with the computer.

IPv6 Ping Test/ Host Name or IPv6 Address: This is similar to the regular *Ping Test* described above, except you enter an **IPv6 Address**.

Ping Result: The result of your ping attempts will display here.



Status

Device Info

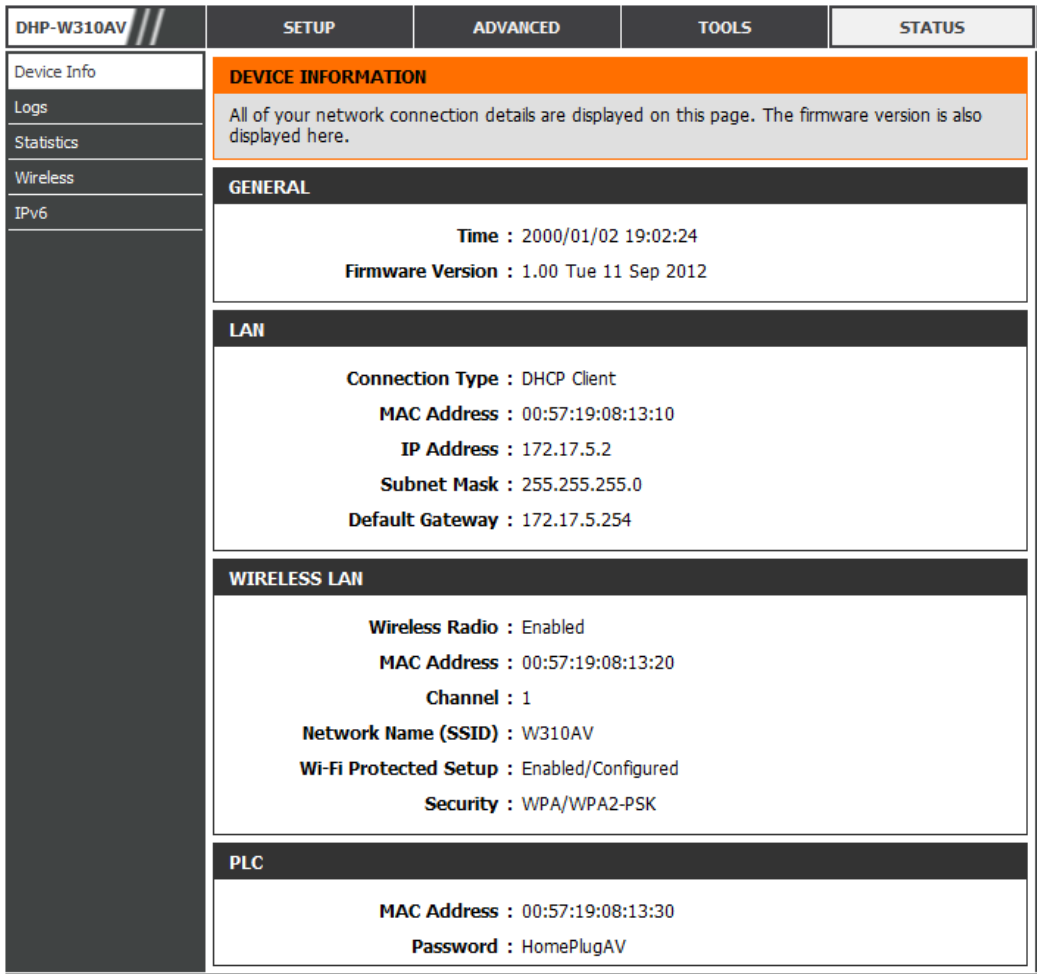
The *Device Info* page displays the network connection details for the DHP-W310AV. It will display the current *LAN* and *Wireless LAN* information.

General: Displays the DHP-W310AV's current *Time* and *Firmware Version*.

LAN: Displays the *MAC Address* and the private (local) IP settings.

Wireless LAN: Displays the wireless *MAC Address* and your wireless settings such as *Channel* and *Network Name (SSID)*.

PLC: Shows the DHP-W310AV's PowerLine Connection settings.



Logs

The DHP-W310AV keeps a running log of events and activities. You can choose the types of messages that you would like to display from the *View Log*. If the device is rebooted, the logs are automatically cleared. You can save the log files prior to clearing them.

Save Log File to Local Hard Drive: Click **Save** to **Save the Log File to your Hard Drive**.

Log Type: Select the type of activity you would like to see in the *Log Files*. Choices are **System Activity** or **Wireless Activity**.

Log Level: Select the level of activity you would like to see. Choices are **Critical**, **Warning**, or **Information**. Click **Save Settings**.

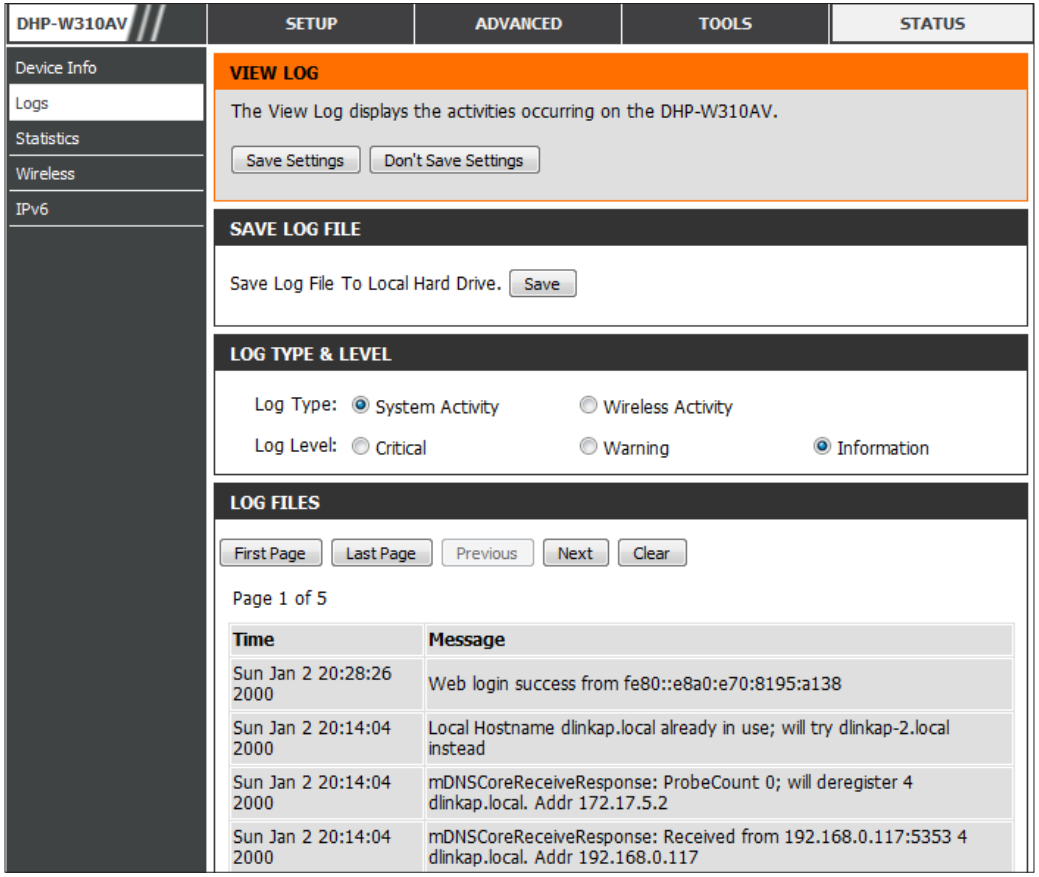
First Page: Go to the first page of the log.

Last Page: Go to the last page of the log.

Previous: Go to the previous page of the log.

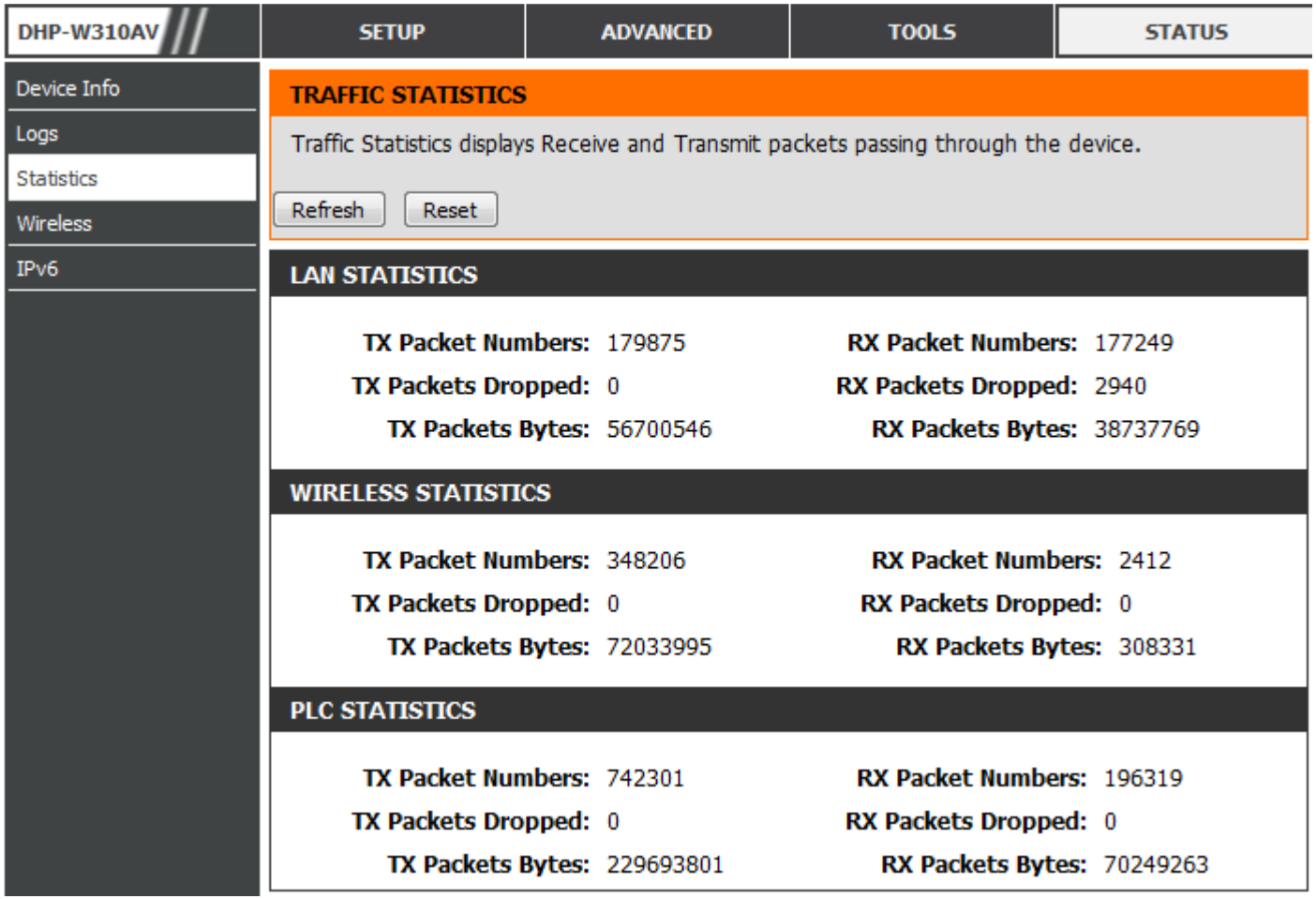
Next: Go to the next page of the log.

Clear: This button clears all current log content.



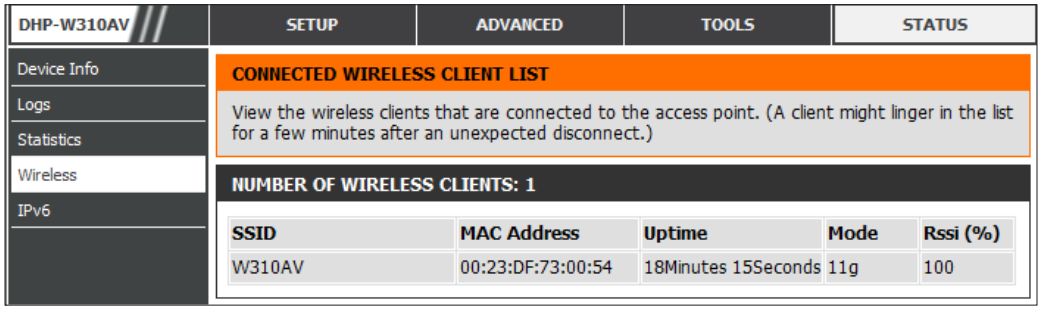
Statistics

The DHP-W310AV keeps statistics on the traffic that passes through the device. You can view the number of packets transmitted and received. Review LAN, Wireless, and PLC (PowerLine connection) statistics. The traffic counter will reset when the DHP-W310AV is rebooted.



Wireless

The *Wireless* section allows you to view information about the wireless devices that are connected to your wireless DHP-W310AV.



Number of Wireless Clients: Displays the number of devices that are connected to the DHP-W310AV via wireless.

SSID: The wireless client's network name.

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

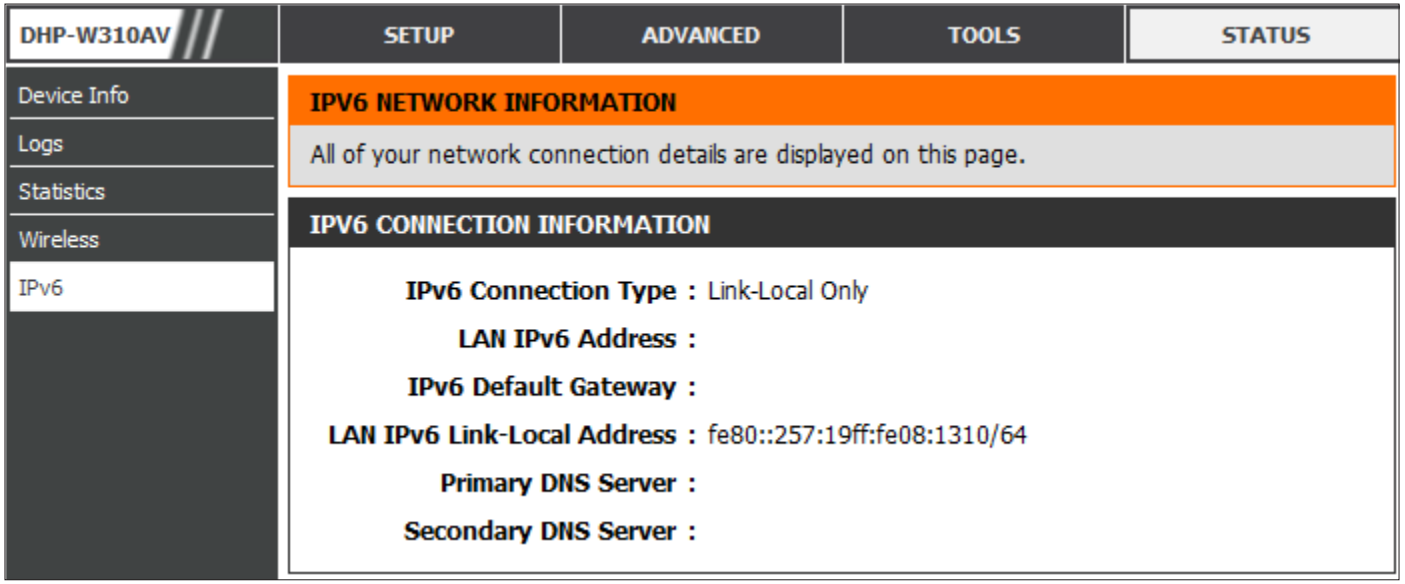
Uptime: Shows how long that device has been connected to the DHP-W310AV.

Mode: Shows the mode the device is using to connect to your DHP-W310AV. This is typically 11b, 11g, or 11n.

Rssi (%): This reflects the strength of your device's connection.

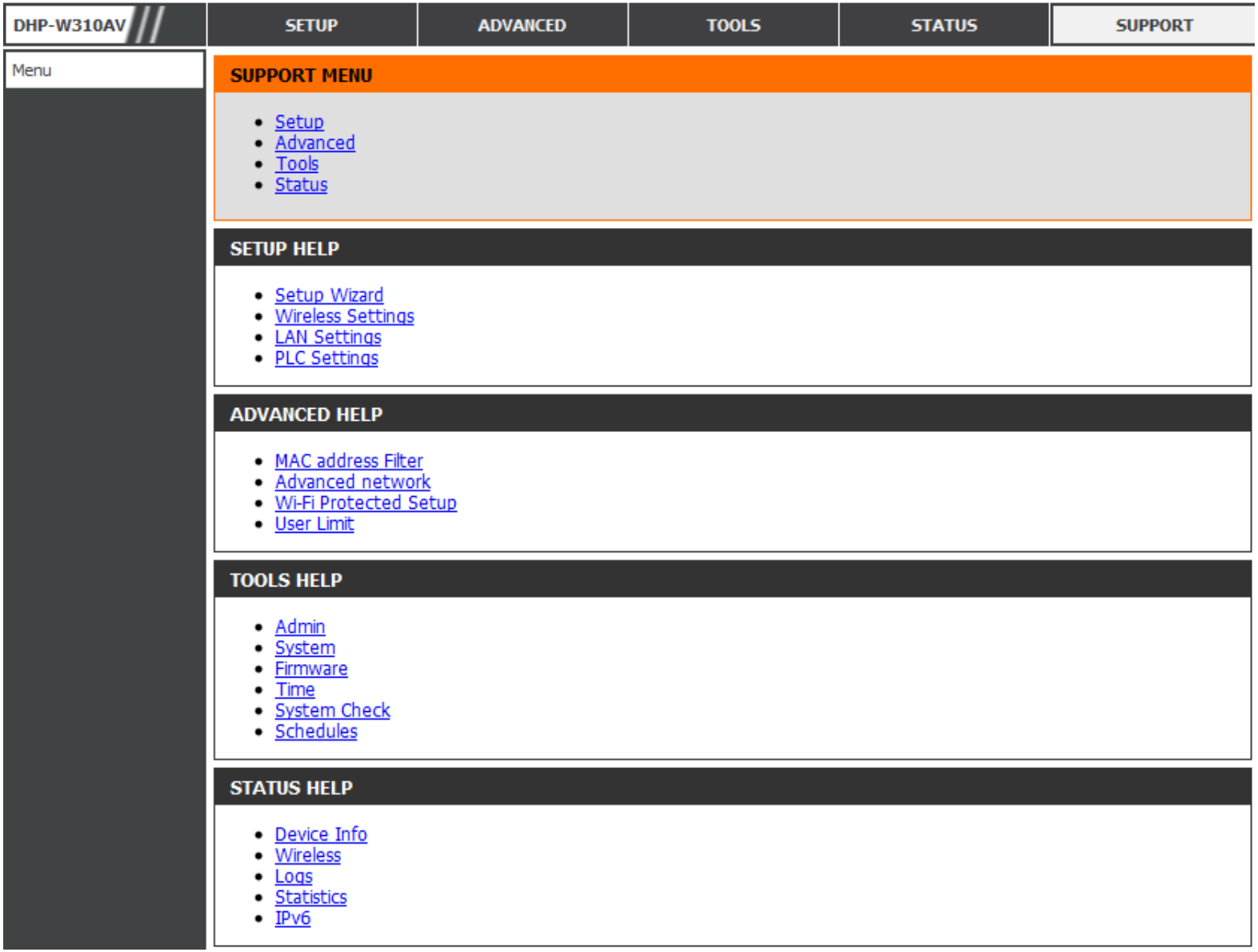
IPv6

The *IPv6* section will display your IPv6 Internet and network connection details.



Support

Click on a link for support information on each topic.



Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DHP-W310AV 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. This key must be the exact same key entered on your wireless bridge or DHP-W310AV.

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.

Configuring WEP

1. Log into the web-based configuration by opening a web browser and entering **http://dlinkapWXYZ.local.** (on the Wi-Fi Configuration Card) or the IP address of the DHP-W310AV (**192.168.0.50**). Click on **Setup** > **Wireless Settings**.

2. In the *Wireless Security Mode* section, next to **Security Mode**, select **WEP** from the drop-down menu.

3. Next to **WEP Key Length**, select a length that applies to all keys from the drop-down menu. Click on **64-bit (10 hex digits)** or **128-bit (26 hex digits)**.

4. Next to **WEP Key 1**, enter a WEP key that you created. Make sure you enter this exact key on all your wireless devices.

5. Next to **Authentication**, select **Both** or **Shared Key**. (**Shared Key** is the most secure.)

Configuring WPA/WPA2 Personal

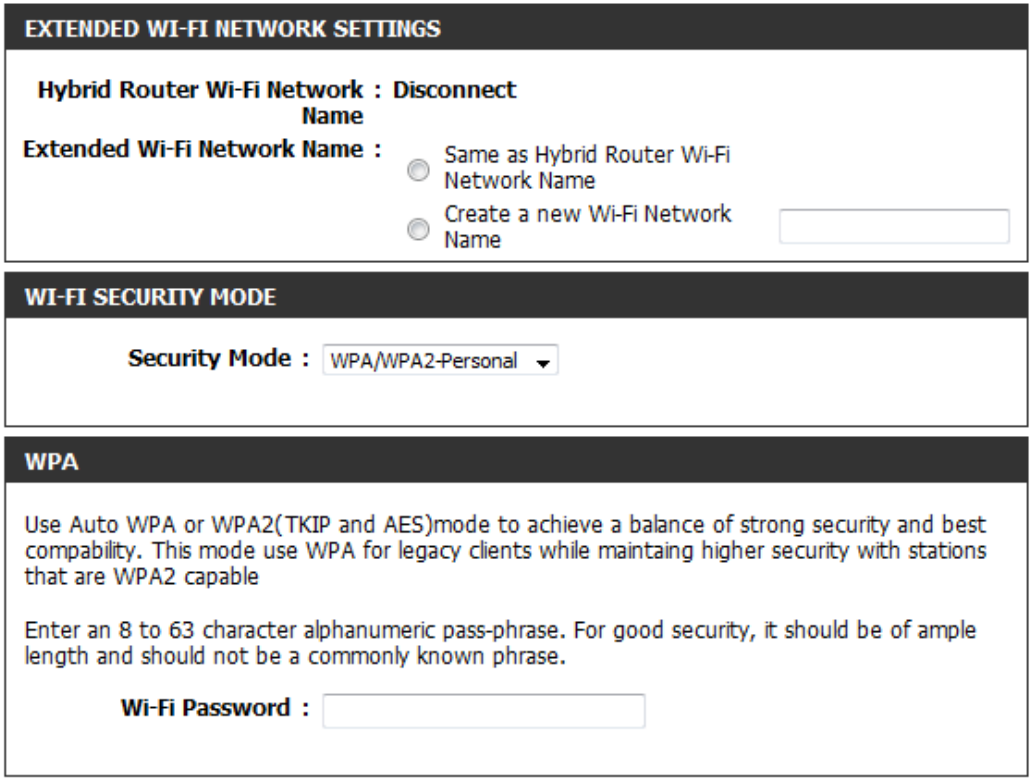
It is recommended to enable encryption on your wireless DHP-W310AV before your wireless network adapters. You should establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the DHP-W310AV (**192.168.0.50**) or **http://dlinkapWXYZ.local.** (on the Wi-Fi Configuration Card). Click on **Setup** > **Wireless Settings**.

2. In the *WI-FI Security Mode* section, next to **Security Mode,** select **WPA/WPA2Personal.**

3. For **Wi-Fi Password**, enter a key. The passphrase must be between 8-63 characters and use numbers, letters, and/or special characters.

4. Click **Save Settings** at the top of the window to save your settings. If you are configuring the DHP-W310AV with a wireless adapter, you will lose connectivity until you enable WPA on your adapter and enter the same passphrase as you did on the DHP-W310AV.

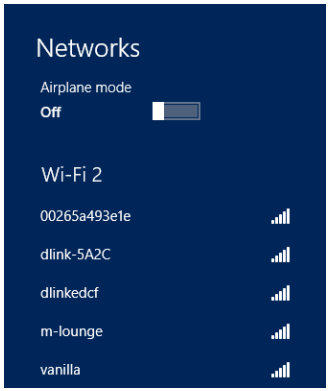


Connecting to a Wireless Network

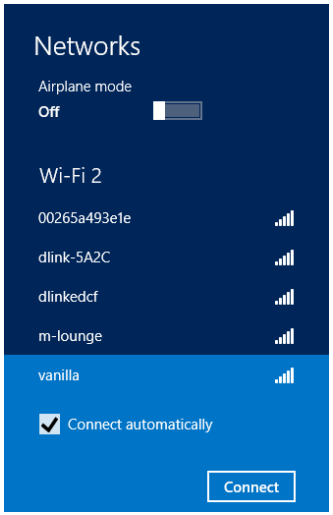
Using Windows® 8

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

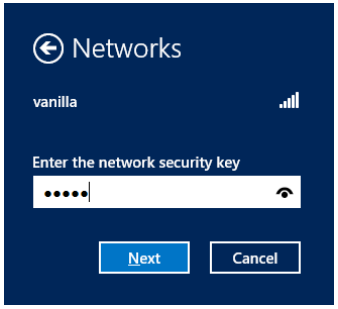
2. A list of available wireless networks will appear.



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



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



5. Click either to enable or disable file sharing.

6. You will now be connected to your wireless network.

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

Using Windows® 7

It is recommended to enable wireless security (WPA/WPA2) on your DHP-W310AV before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

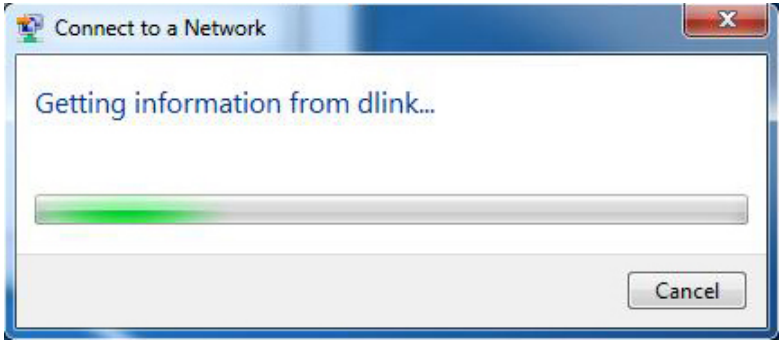
1. Click on the wireless icon in your system tray (lower-right corner).

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. The Wi-Fi Configuration Card will list your device's specific network, it will not be simply dlink.

   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.

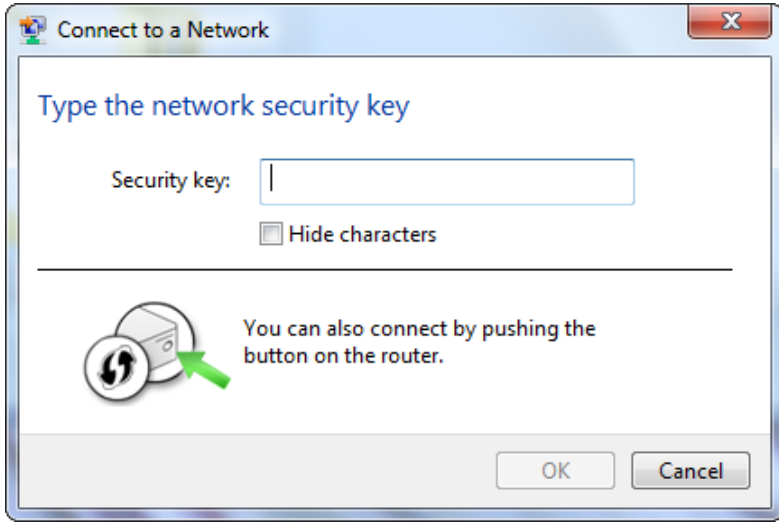
4. The following window appears while your computer tries to connect to the router.



5. Enter the same security key or passphrase that is on your DHP-W310AV 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.

Additionally, you may connect using Wi-Fi Protected Setup (WPS) and Push Button Configuration (PBC). When the window to the right is displayed, press the Common Connect Button on the DHP-W310AV.



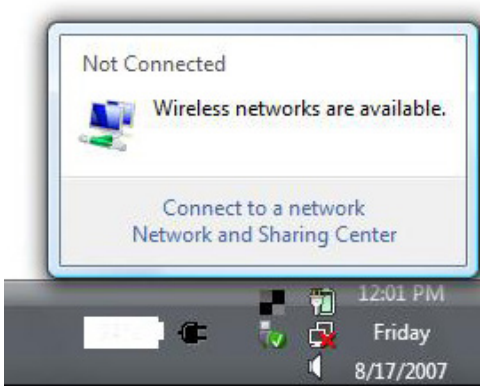
Connecting to a Wireless Network
Using Windows Vista®

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

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

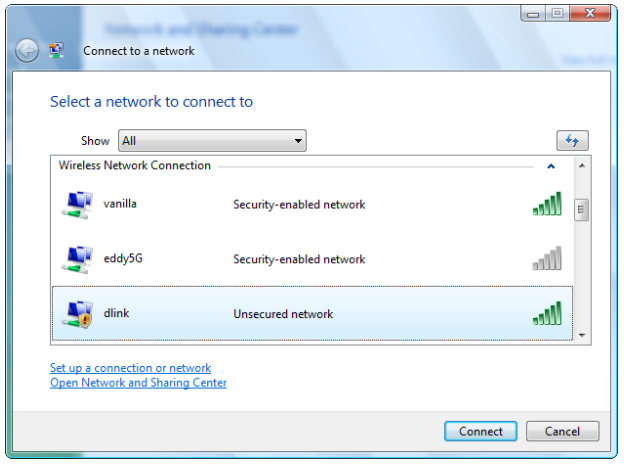
or

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



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

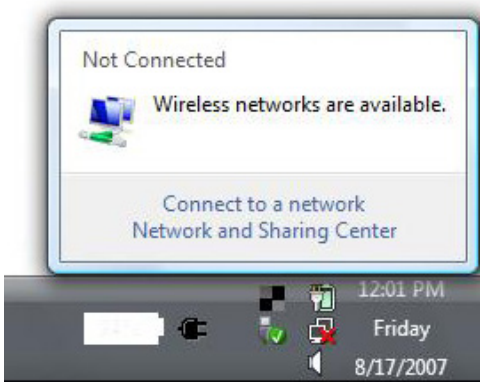
If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



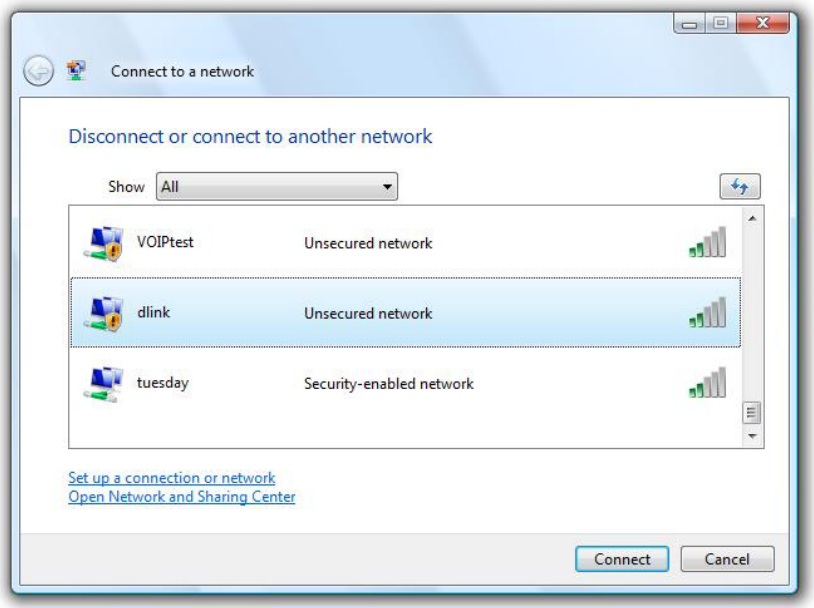
Configuring Wireless Security

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



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



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

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

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DHP-W310AV. 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 DHP-W310AV (**192.168.0.50**), 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 from the factory. Your computer must be on the same IP subnet to connect to the web-based utility. You may also enter **http://dlinkapWXYZ.local.** (on the Wi-Fi Configuration Card) instead of the IP address.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Microsoft Internet Explorer® 7.0 and higher
  - Mozilla Firefox 4.0 and higher
  - Google™ Chrome 8.0 and higher
  - Apple Safari 4.0 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.

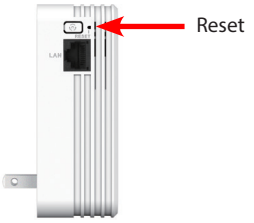
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on 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 DHP-W310AV 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 DHP-W310AV 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 DHP-W310AV. Unfortunately this process will change all your settings back to the factory defaults.

To reset the DHP-W310AV, locate the reset button (hole) on the side of the device. With the DHP-W310AV powered on, use a paperclip to hold the button down for 5 seconds. Release the button and the DHP-W310AV will go through its reboot process. Wait about 30 seconds to access the DHP-W310AV. The default IP address is 192.168.0.50. When logging in, the username is **Admin** and leave the password box empty



3. Can I use only the DHP-W310AV to get online?
At least two PowerLine devices work together to create a network. They communicate over your electrical wiring, but you will still need an Internet connection from a router and/or modem to get online.

4. I cannot 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 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 phones work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)

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

Wireless Personal Area Network (WPAN)

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

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

Who uses wireless?

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

Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, 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 router or Access Point

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

Eliminate Interference

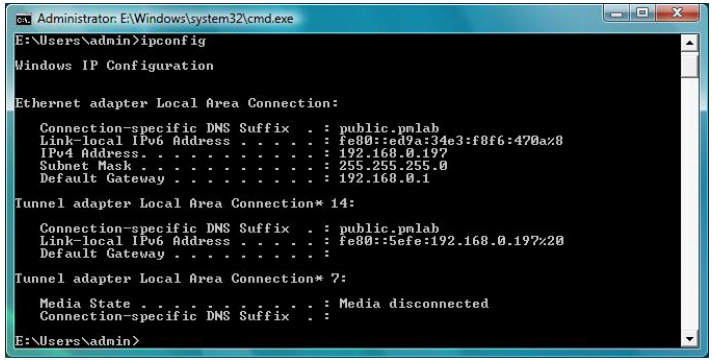
Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Networking Basics
Check your IP address

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

Windows® 8 Users

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



Windows® 7/Vista® Users

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

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

Statically Assign an IP address

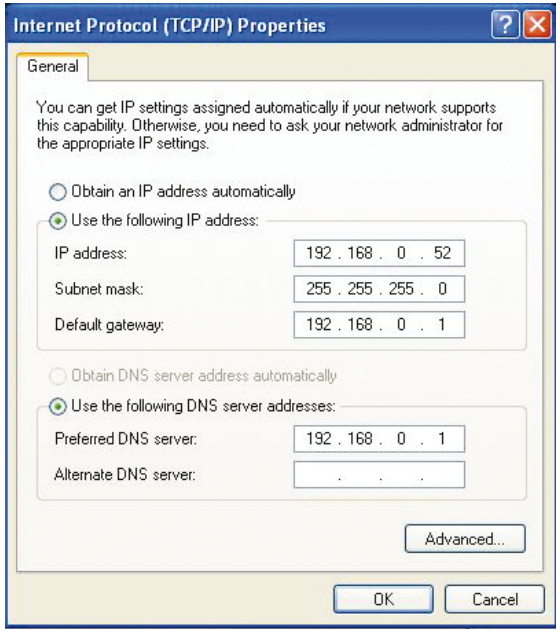
If you are not using a DHCP capable gateway/DHP-W310AV, or you need to assign a static IP address, please follow the steps below:

Windows® 8 Users

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

  Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99 (except 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 or gateway.
- Set **Primary DNS** the same as the LAN IP address of your router or gateway.
- The **Secondary DNS** is optional (you may enter a DNS server from your ISP).
- Click **OK** to save your settings.



Windows® 7/ Vista® Users

- Click on **Start** > **Control Panel** (make sure you are in Classic View). Double-click on the **Network and Sharing Center** icon. If you are using Windows Vista, click on **Manage network connections** along the left panel in the window. For Windows® 7, click on **Change adapter settings**.

- Right-click on the **Local Area Connection** which represents your D-Link wireless network adapter which will be connected to your network.

- Highlight **Internet Protocol Version 4 (TCP /IPv4)** and click **Properties**.

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

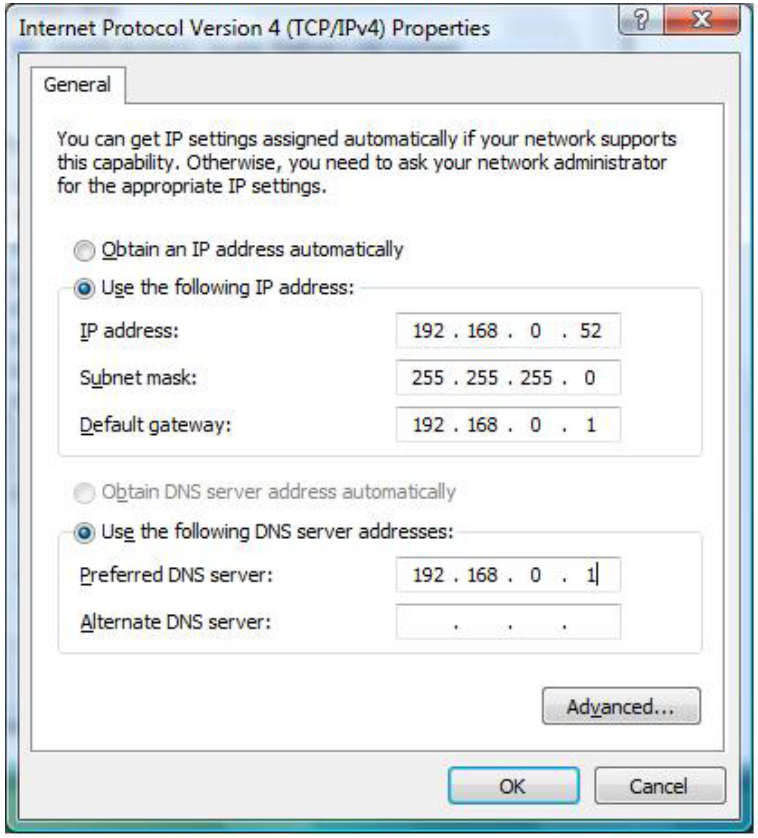
  Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99 (except 50). Make sure that the number you choose is not in use on the network.

- Set **Default Gateway** the same as the LAN IP address of your router 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 (DHP-W310AV)

Standards

- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3u
- IEEE P1905.1 draft
- IEEE 1901
- HomePlug AV

Network Interfaces

- One 10/100 Ethernet port
- Wireless N
- PowerLine

AC Input

- 100-125 VAC 50/60 Hz

Security

- WPA
- WEP
- WPA2

Wireless Signal Rates*

- 300Mbps
- 108Mbps
- 54Mbps
- 48Mbps
- 36Mbps
- 18Mbps
- 24Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps
- 5.5Mbps
- 2Mbps
- 1Mbps

MSC (0-15)

- 130Mbps (270)
- 104Mbps (216)
- 66Mbps (135)
- 52Mbps (108)
- 26Mbps (54)
- 12Mbps (27)
- 117Mbps (243)
- 78Mbps (162)
- 58.5Mbps (121.5)
- 39Mbps (81)
- 19.5Mbps (40.5)
- 6.5Mbps (13.5)

Frequency Range

- 2.4GHz to 2.497GHz

Encryption

- 128-bit AES
- WEP/WPA/WPA2

Operating Temperature

- 32 to 104 °F (0 to 40 °C)

Storage Temperature

- 14 to 158 °F (-10 to 70 °C)

Humidity

- Operation: 10% to 90% Relative Humidity
- Storage: 5% to 90% Relative Humidity

Transmitter Output Power

- 13 dBm (+/- 2dB)

* 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 factors will adversely affect wireless signal range.

LEDs

- Power
- WLAN
- Ethernet
- PowerLine

Safety & Emissions

- FCC
- RoHS
- UL

Dimensions

- 3.54 x 2.56 x 1.97 inches (90 x 65 x 50 mm)

Weight

- .38 lbs (174.5 g)

Technical Specifications (DHP-308AV)

Network Ports
• One Ethernet port

AC Input
• 100-125V, 50/60Hz, 0.1A

Standards
• IEEE1901
• Homeplug AV

Safety & Emissions
• FCC
• UL

Encryption
• 128-bit AES

Operation Temperature
• 32 to 104°F (0 ~ 40 °C)

Storage Temperature
• -4 to 149°F (-20 ~ 65 °C)

Humidity
• Operation: 10% ~ 90% Relative Humidity
• Storage: 5% ~ 90% Relative Humidity

Dimensions
• 2.76 x 2.05 x 1.02 inches (70 x 52 x 26 mm)

Contacting Technical Support

U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. DHP-W311AV)
- Hardware Revision (located on the label on the bottom of the product (e.g. rev C1))
- Serial Number (s/n number located on the label on the bottom of the product).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

For customers within the United States:

Phone Support:
(877) 453-5465

Internet Support:
http://support.dlink.com

For customers within Canada:

Phone Support:
(800) 361-5265

Internet Support:
http://support.dlink.ca

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty:
D-Link warrants that the hardware portion of the D-Link product described below (“Hardware”) will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below (“Warranty Period”), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty:
D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:
The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim:
The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support (USA 1-877-453-5465 or Canada 1-800-361-5265), who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form. Enter the assigned Case ID Number at https://rma.dlink.com/ (USA only) or https://rma.dlink.ca (Canada only).

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc.

- **USA residents** send to 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

- **Canadian residents** send to D-Link Networks, Inc., 2525 Meadowvale Boulevard Mississauga, Ontario, L5N 5S2 Canada. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via Purolator Canada or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in Canada, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements,
  or that is determined by D-Link not to be defective or non-conforming. RMA phone number: 1-800-361-5265 Hours of Operation: Monday-Friday, 9:00AM – 9:00PM EST

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:
EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability:
TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law:
This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

Trademarks:
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CE Mark Warning:
This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate 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.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration

Register your product online at registration.dlink.com

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

Version 3.1
December 18, 2014