



# User Manual

## PowerLine AV2 1000 Wireless AC1200 Starter Kit

DHP-W611AV (DHP-P610AV & DHP-W610AV)

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# Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

## Manual Revisions

Revision	Date	Description
1.00	23 September, 2016	• Initial release

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All rights reserved. This publication may not be reproduced, in whole or in part, without prior expressed written permission from D-Link Systems, Inc. This purpose of this product is to create a constant network connection for your devices. As such, it does not have a standby mode or use a power management mode. If you wish to power down this product, please simply unplug it from the power outlet.

## Power Usage

This device is an Energy Related Product (ErP) with High Network Availability (HiNA), and automatically switches to a power-saving Network Standby mode within 1 minute of no packets being transmitted. It can also be turned off through a power switch to save energy when it is not needed.

**DHP-W610AV:**

**Networked standby mode:** 4.11watts

**Switched Off:** 0.27 watts

This device is an Energy Related Product (ErP) with High Network Availability (HiNA), and automatically switches to a power-saving Network Standby mode within 1 minute of no packets being transmitted. If it is not needed during certain periods of time, it can be unplugged to save energy.

**DHP-P610AV:**

**Networked standby mode:** 1.98 watts

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# Product Overview

## Package Contents



D-Link DHP-W610AV PowerLine AV2 1000 Wireless AC1200 Extender



D-Link DHP-P610AV PowerLine AV2 1000 Gigabit Passthrough Adapter



CAT5 Ethernet Cable (x2)



Wi-Fi Configuration Card

# System Requirements

<b>Network Requirements</b>	<ul style="list-style-type: none"><li>• An Ethernet-based cable or DSL modem</li><li>• 10/100/1000 Ethernet clients</li><li>• 802.11ac/n/g/b wireless clients</li></ul>
<b>Browser Requirements</b>	<ul style="list-style-type: none"><li>• Internet Explorer 7.0 or higher</li><li>• Firefox 3.5 or higher</li><li>• Safari 4.0 or higher</li><li>• Chrome 8.0 or higher</li></ul>

# Introduction

The DHP-W610AV 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 DHP-W611AV consists of the DHP-W610AV PowerLine AV2 1000 Wireless AC1200 Extender and the DHP-P610AV PowerLine AV2 1000 Gigabit Passthrough Adapter, giving you everything you need to create a high-speed Powerline network in your home. Simply plug the devices into your home's electrical outlets and you'll be able to use your existing wiring to expand your Internet access and wireless network.

The PowerLine AV2 1000 Wireless AC1200 Extender incorporates the latest technology to improve on AV data speeds over a home's existing electrical wiring. This faster transmission speed provides ample bandwidth suitable for streaming HD video while simultaneously providing high-speed Internet access throughout the home. With Quality of Service (QoS) support, you can prioritize and allocate bandwidth based on media type. This feature ensures that applications that require real-time communication (such as VoIP calling and online gaming) stay uninterrupted even while streaming Internet TV and music.

A D-Link exclusive, the Clone My Wi-Fi feature lets you quickly and easily set up your Powerline devices in your existing network if you are using a compatible router. Simply choose the Clone My Wi-Fi option in the setup wizard and the extender will automatically copy your current network settings to your new Powerline devices. Gigabit Ethernet and Wireless AC provide high speed data transfers so you can enjoy speedy performance no matter how you are connected. Plug and Play completes the package, so you can expand your home network and share your Internet connection with other devices at the touch of a button.

# Features

## **Data Transmission Over electrical Wiring**

The D-Link DHP-W610AV PowerLine AV2 1000 Wireless AC1200 Extender, compliant with the HomePlug AV2 standard, uses your home's existing electrical wiring<sup>1</sup> to create or extend your 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 ac provides high speed transfers without the need for unsightly network cables.

## **Faster Wireless Speeds & Wider Operational Range**

The Wireless AC technology incorporated into the DHP-W610AV offers increased speed and range beyond standard 802.11n 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-W610AV 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 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-W611AV devices plug directly into a power outlet, and do not require any additional power cables. Extend your home network by connecting multiple devices in the farthest corners of your home via Ethernet cable or Wireless AC. 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-W611AV is an ideal solution to create a wall-to-wall home network.

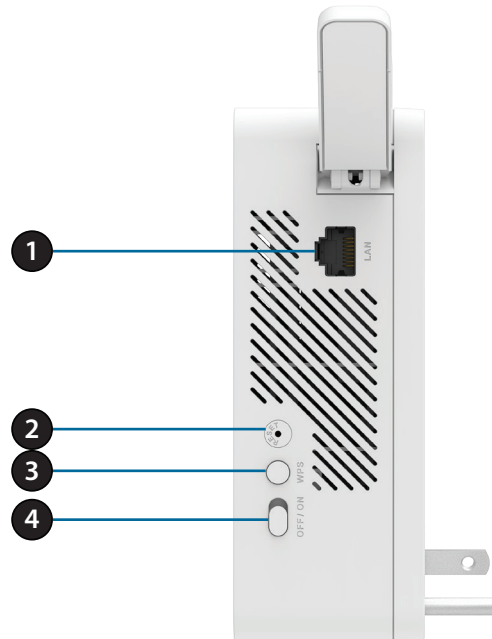
<sup>1</sup>Power outlets and electrical wiring must all be part of the same electrical system. Certain electrical conditions in your home, such as wiring condition and configuration, may affect the performance of this product. Additional D-Link PowerLine AV adapters are required to add new devices to 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.



# Hardware Overview

## DHP-W610AV

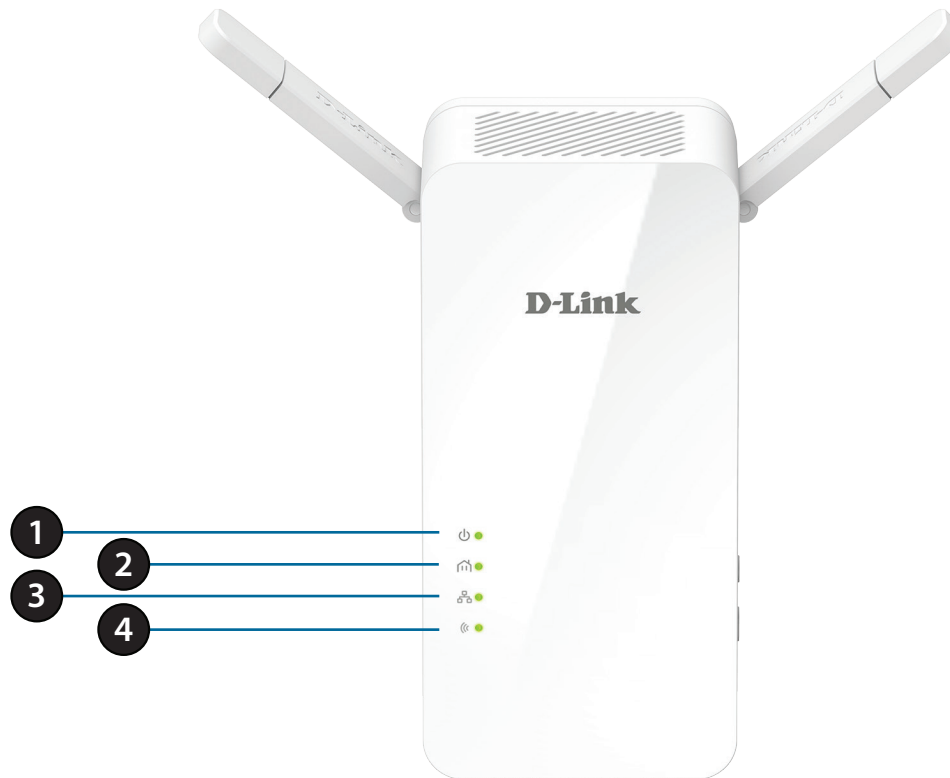
### Connections



1	<b>RJ-45 10/100BASE-TX Ethernet Port</b>	Connects to Digital Media Devices, PCs, Game Consoles, Network Storage Devices
2	<b>Reset Button</b>	Press and hold the button for 5 seconds to reset to factory default.
3	<b>Simple Connect/WPS Button</b>	Push this button to create a secure Powerline connection with another adapter. More on this connection is available at <b>Hardware Installation</b> on page 9. 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.
4	<b>On/Off Switch</b>	Slide this switch to power on or off the device.

# Hardware Overview

## LEDs



<b>1</b>	<b>Power LED</b>	A solid light indicates a proper connection to the power supply. A blinking light indicates it is in sleep mode or seeking a Powerline connection.
<b>2</b>	<b>Powerline LED</b>	A solid light indicates that a Powerline connection is established.
<b>3</b>	<b>Ethernet LED</b>	A solid light indicates a connection to an Ethernet-enabled device.
<b>4</b>	<b>Wireless LED</b>	A solid light indicates that the wireless segment is ready.

# Hardware Overview

## DHP-P610AV

### Connections

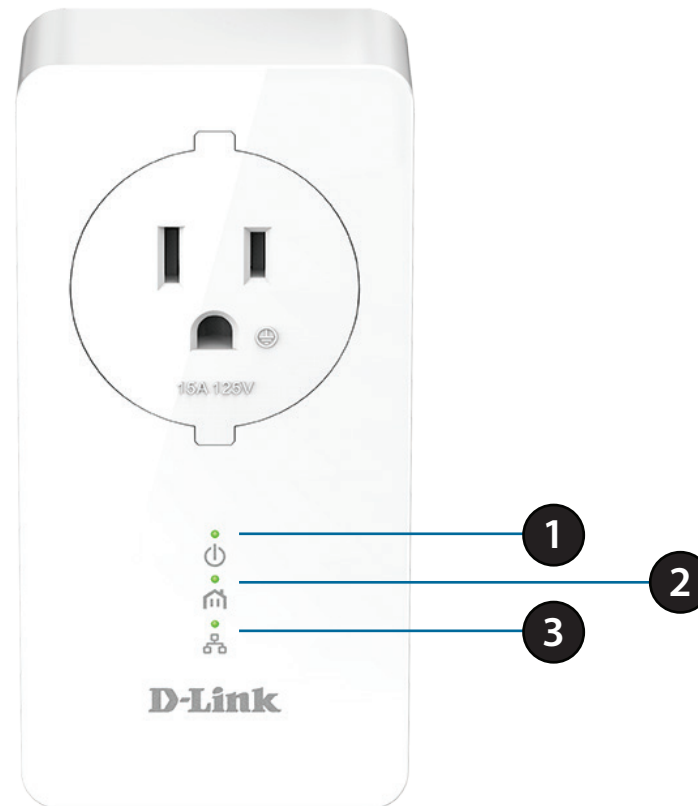


1	<b>RJ-45 10/100BASE-TX Ethernet Port</b>	Connects to digital media devices, PCs, game consoles, network storage devices.
2	<b>Simple Connect Button</b>	Use this button to set up a Powerline network.

# Hardware Overview

## DHP-P610AV

### LEDs



<b>1</b>	<b>Power LED</b>	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.
<b>2</b>	<b>Powerline LED</b>	A solid light indicates that a Powerline connection is established.
<b>3</b>	<b>Ethernet LED</b>	A solid light indicates a connection to an Ethernet-enabled device.

# Hardware Installation

## Power

Plug the DHP-P610AV into a wall outlet near your router. Fully extend the antennas and plug the DHP-W610AV into a wall outlet where you want to extend your network. Slide the power switch on the side of the device to the **ON** position. The Power LED will light to indicate the devices are receiving power.

## Connect the Devices

Press the Simple Connect Button on the DHP-P610AV for 3 seconds. Then, press the Simple Connect Button on the DHP-W610AV for 3 seconds. This must be done within two minutes after pressing the Simple Connect Button on the DHP-P610AV.

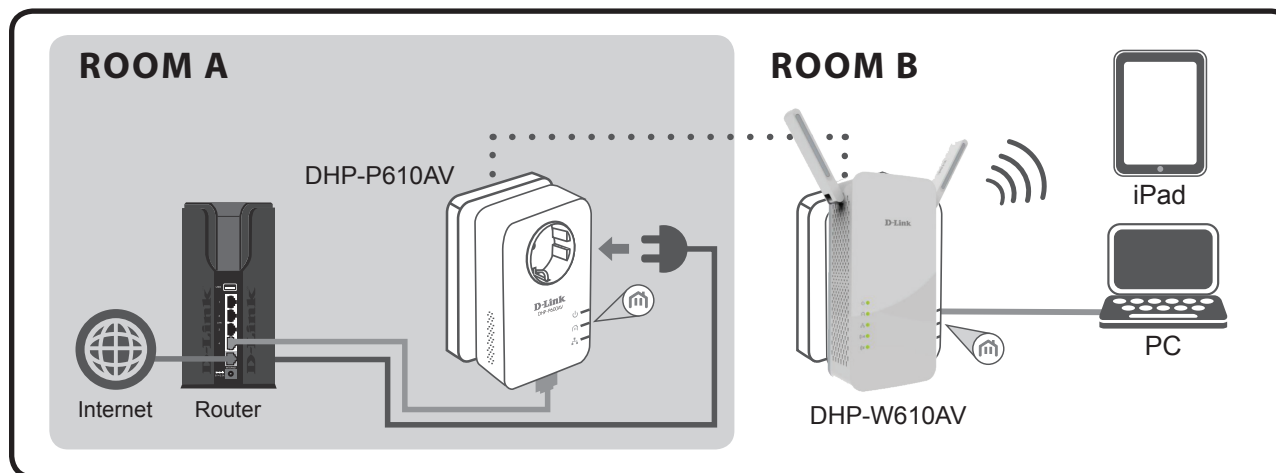
**Note:** Network connectivity is confirmed when the Powerline LEDs on both Powerline devices are steadily lit. This will indicate that your network is now secure.

## 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-P610AV. Connect the other Ethernet cable between your DHP-W610AV and your computer. Read the guidelines on the following pages, and continue to **DHP-W610AV Configuration** on page 13.

## Adding More Devices (optional)

If you have more Powerline devices now or in the future, you may add them to your network in the same way as above. Be sure to press the Simple Connect Button on the new device, then the Simple Connect Button on the existing network.



# Wireless Installation Considerations

The DHP-W610AV lets you access your network using a wireless connection from 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 DHP-W610AV 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. 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 the wireless DHP-W610AV 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 2.4 GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

# Powerline Installation Considerations

Plan the location of your Powerline devices:

1. Connect Powerline devices to electrical outlets that are not controlled by a wall switch to avoid accidentally turning off power to the device.
2. Do not connect the Powerline devices to an extension cord, surge protector, or power strip as this might prevent it from working correctly, or negatively impact network performance.
3. Avoid using the Powerline devices in an electrical outlet that is located near an appliance that uses a lot of power, such as a washer or dryer, or a refrigerator. This may prevent the adapter from working correctly, or negatively impact network performance.
4. Verify that your Powerline devices are electrically rated to operate with the power available in your location.
5. To help prevent against electrical shock, be sure to plug the power cables into properly grounded electrical outlets.
6. The Powerline device is designed to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from the device.



# Important Safety Notes

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

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



# DHP-W610AV Configuration Setup

This section covers configuration of your DHP-W610AV. The DHP-P610AV does not require configuration other than the initial Powerline connection.

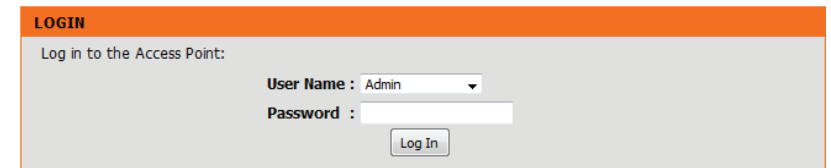
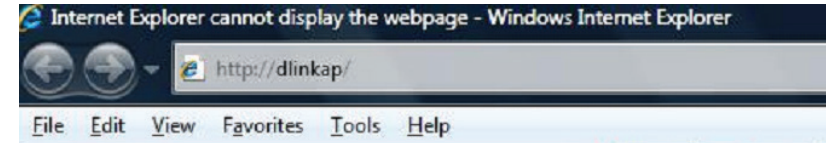
If you wish to change the default settings or optimize the performance of the DHP-W610AV, you may use the web-based configuration utility.

To access the configuration utility, open a web browser such as Internet Explorer and enter either **http://dlinkapWXYZ.local**. (this is on the Wi-Fi Configuration Card) or **http://dlinkapWXYZ** in the address field.

By default, **Admin** will be the User Name . Leave the password blank.

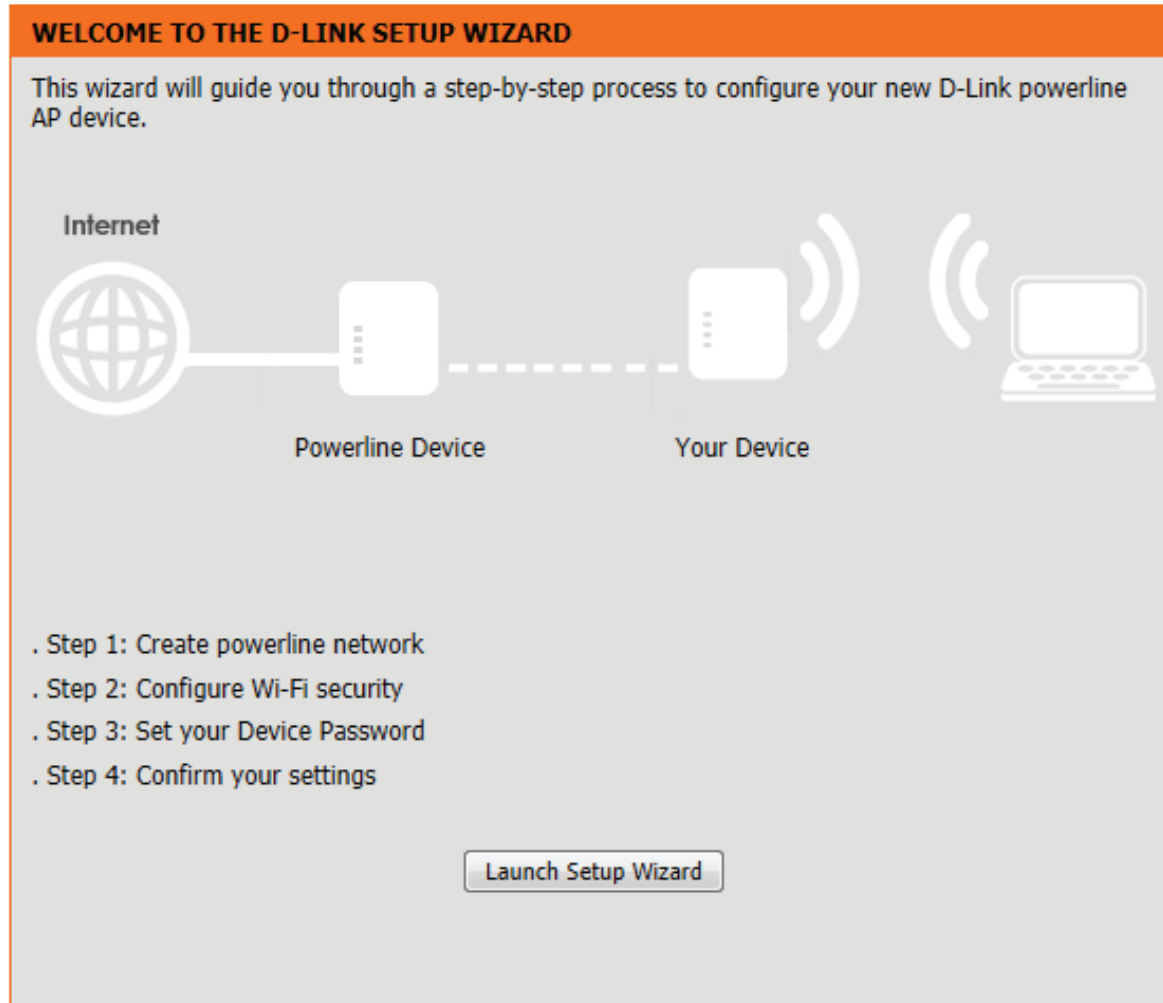
If you receive a "Page Cannot be Displayed" error, please refer to **Troubleshooting** on page 49 for assistance.

You will automatically proceed to the **Setup** heading after logging in.



# Setup Wizard

Use the wizard's on-screen instructions to conveniently set up your network if you have not done so yet. You can also manually configure your network by going to **Settings** from the main page. Wi-Fi settings are covered in **Wireless Settings** on page 15 and Powerline settings are under **PLC Settings** on page 18.



# Wireless Settings

The DHP-W610AV lets you customize your wireless settings for your access point. This device allows you to extend your current network so you can roam about the house while staying connected to the Internet. The following settings apply to both 2.4G and 5G modes.

**WiFi Security Mode:** You can choose to use WPA/WPA2 encryption or copy the settings from your current router if you have a router that supports Clone My Wi-Fi.

**Wi-Fi Network Name:** The Service Set Identifier (SSID) is the name of your wireless network. Create a name using up to 32 characters. The SSID is case-sensitive.

**Enable Auto Channel Scan:** The auto channel selection setting can be selected to allow this device to choose the channel with the least amount of interference.

**Wireless Channel:** By default the channel is set to 1. The channel can be changed to match the channel setting for an existing wireless network or to customize the wireless network. If you enable Auto Channel Scan, this option will be greyed out.

**WPA/WPA2 Network Key:** Use of TKIP/AES security framework provides the optimum mix of security and compatibility. Choose a password that is strong. A good password uses both letters and numbers in unpredictable places. Example bad passwords could be *password* or *12345678*.

Click **Save Settings** for the changes to take effect.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
SETUP WIZARD WIRELESS SETTINGS NETWORK SETTINGS PLC SETTINGS	<div style="background-color: #f0f0f0; padding: 5px;"> <p><b>WIRELESS NETWORK</b></p> <p>Use this section to configure the wireless settings for your D-Link Access Point. Please note that changes made in this section may also need to be duplicated on your wireless client.</p> <p>To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: WEP, WPA and WPA2.</p> <p> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </p> </div> <div style="background-color: #333; color: white; padding: 5px; text-align: center;"> <b>WI-FI SECURITY MODE 2.4G</b> </div> <div style="padding: 5px;"> <p>Security Mode : <input type="text" value="WPA/WPA2"/></p> </div> <div style="background-color: #333; color: white; padding: 5px; text-align: center;"> <b>WI-FI NETWORK SETTINGS 2.4G</b> </div> <div style="padding: 5px;"> <p>Enable Wireless : <input checked="" type="checkbox"/></p> <p>Wi-Fi Network Name (SSID) : <input type="text" value="dlink-9FBC"/></p> <p>Enable Auto Channel Scan : <input checked="" type="checkbox"/></p> <p>Wireless Channel : <input type="text" value="2.412 GHz - CH 1"/></p> </div> <div style="background-color: #333; color: white; padding: 5px; text-align: center;"> <b>WPA/WPA2</b> </div> <div style="padding: 5px;"> <p>WPA/WPA2 requires stations to use high grade encryption and authentication.</p> <p>Network Key : <input type="text" value="12345678"/> (8~63 ASCII or 64 HEX)</p> </div> <div style="background-color: #333; color: white; padding: 5px; text-align: center;"> <b>WI-FI SECURITY MODE 5G</b> </div> <div style="padding: 5px;"> <p>Security Mode : <input type="text" value="WPA/WPA2"/></p> </div> <div style="background-color: #333; color: white; padding: 5px; text-align: center;"> <b>Wi-Fi Network Settings 5G</b> </div> <div style="padding: 5px;"> <p>Enable Wireless : <input checked="" type="checkbox"/></p> <p>Wi-Fi Network Name (SSID) : <input type="text" value="dlink-9FBC-5GHz"/></p> <p>Enable Auto Channel Scan : <input checked="" type="checkbox"/></p> <p>Wireless Channel : <input type="text" value="5.180 GHz - CH 36"/></p> </div> <div style="background-color: #333; color: white; padding: 5px; text-align: center;"> <b>WPA/WPA2</b> </div> <div style="padding: 5px;"> <p>WPA/WPA2 requires stations to use high grade encryption and authentication.</p> <p>Network Key : <input type="text" value="mawyt54852"/> (8~63 ASCII or 64 HEX)</p> <p> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </p> </div>			
WIRELESS				

# Network Settings

This section will allow you to change the local network settings of the DHP-W610AV and to configure the DHCP settings.

**Device Name:** You can customize the Device Name of this DHP-W610AV. You will use this name to connect to it through a web browser. The default name is listed on your Wi-Fi Configuration Card.

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

**IPv6 Connection Type:** Your Internet Service Provider (ISP) may require this to be set a certain way for Internet access. You can choose from **Static IPv6, Autoconfiguration, or Link-local Only**. Contact your ISP for more help on the above requirements.

**IPv6 DNS Settings:** This shows the current IPv6 address of the DHP-W610AV on your network.

Click **Save Settings** for the changes to take effect.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
SETUP WIZARD WIRELESS SETTINGS <b>NETWORK SETTINGS</b> PLC SETTINGS	<b>NETWORK SETTINGS</b> Use this section to configure the internal network settings of your AP or wireless stations to assign IP addresses to computers on your network. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address in this section, you may need to adjust your PC's network settings to access the network again. <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>			
<b>DEVICE NAME</b> Device Name : <input type="text" value="dlinkap"/>				
<b>LAN SETTINGS</b> Use this section to configure the internal network settings of your AP or wireless stations. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address here, you may need to adjust your PC's network settings to access the network again. LAN Connection Type : <input type="text" value="Dynamic IP (DHCP)"/>				
<b>IPv6 CONNECTION TYPE</b> Choose the mode to be used by the access point to connect to the IPv6 Internet. My IPv6 Connection is : <input type="text" value="Link-local Only"/>				
<b>LAN IPv6 ADDRESS SETTINGS</b> Use the section to configure the internal network settings of your AP or wireless stations. The LAN IPv6 Link-Local Address is the IPv6 Address that you use to access the Web-based management interface. LAN IPv6 Link-Local Address : fe80::12be:f5ff:fed9:9fdb /64 <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				
<b>WIRELESS</b>				

## LAN Settings - 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.

**IPv4 Address:** Enter the IP address of the DHP-W610AV. 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.

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

**Primary and Secondary DNS Servers:** This is the Domain Name Server that looks up addresses on the Internet, you may choose your preferred DNS provider as well as a backup.

Click **Save Settings** for the changes to take effect.

**LAN SETTINGS**

Use this section to configure the internal network settings of your AP or wireless stations. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address here, you may need to adjust your PC's network settings to access the network again.

**LAN Connection Type :** Static IP

---

**STATIC IP LAN CONNECTION TYPE**

Enter the IPv4 address information.

**IPv4 Address :**

**Subnet Mask :**

**Default Gateway :**

**Primary DNS Server :**

**Secondary DNS Server :**

# PLC Settings

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

**Network Name:** You can set the name of your network and set it as either public or private. Make sure the network names 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 using “HomePlugAV” as the default network name. 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.

**Network List:** This section lists devices connected to your Powerline network as well as their MAC address and connection speed. Click the **Scan** button to scan for new Powerline devices. This list is automatically updated and will refresh with this page.

**QoS Settings:** Here you can set the Quality of Service (QoS) Settings for each network device. QoS helps you prioritize network traffic based on device or the port the traffic is on.

**MAC Address/ Priority:** Select a device from the **Client List** dropdown box and then click the << next to **Computer Name** to automatically fill in the device’s MAC Address. Then set the order of priority for the device under the **Priority** dropdown box. Clear settings for a rule using the **Clear** button.

Click **Save Settings** for the changes to take effect.

The screenshot shows the web-based configuration utility for a DHP-W610AV device. The interface is divided into several sections:

- POWER LINE SETTINGS:** A header section with a sub-header "POWER LINE SETTINGS" and a description: "Using this section to configure the power line settings and QoS settings for your D-Link device." Below this are two buttons: "Save Settings" and "Don't Save Settings".
- NETWORK NAME:** A section with two radio button options: "Public, Network Name is HomePlugAV" (selected) and "Private, Network Name is" followed by an empty text input field.
- NETWORK LIST:** A section with a table header: "Device Name", "MAC Address", and "Link Rate (Mbps)". Below the header is a "Scanning..." button.
- QoS SETTINGS:** A section with a table for configuring Quality of Service settings. The table has columns for "MAC Address", "Client List", and "Priority". There are four rows, each with a "Clear" button. The "Client List" column contains a dropdown menu with "Computer Name" selected. The "Priority" column contains a dropdown menu with "Highest" selected.

At the bottom of the page, there is a "WIRELESS" section header.

# 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 block the devices listed, or only allow the devices listed.

**MAC Filtering Rules:** Set MAC Filtering to **ALLOW**, **DENY**, or **OFF**. **ALLOW** means only the devices listed can access the network. **DENY** means the devices listed cannot access the network. **OFF** means this function is currently disabled.

**Description:** You enter a custom description for convenience; for example, "My PC" or "My friend's smartphone".

**MAC Address:** Enter the MAC address you would like to filter. To find the MAC address on a computer, please refer to **Networking Basics** on page 57.

**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 not to include your own computer. You can delete the rule by clicking on the **Clear** button next to the rule.

Click **Save Settings** for the changes to take effect.

**DHP-W610AV** // **SETUP** **ADVANCED** **TOOLS** **STATUS**

**MAC ADDRESS FILTER**

**ADVANCED WIRELESS**

**USER LIMIT**

**MAC ADDRESS FILTER**

The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/wireless access.

**25 -- MAC FILTERING RULES**

Configure MAC Filtering below:  
Turn MAC Filtering OFF

Remaining number of rules that can be created: 25

	Description	MAC Address	
1	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
2	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
3	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
4	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
5	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
6	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
7	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
8	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
9	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>
10	<input type="text"/>	<input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/> : <input type="text"/>	<input type="button" value="Clear"/>

# Advanced Wireless

This section allows you to change several advanced settings for both 2.4G and 5G on your DHP-W610AV.

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

**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 DHP-W610AV. If this is disabled, wireless clients are not allowed to exchange data through the DHP-W610AV.

**HT20/40 Coexistence:** Enabling this function allows compatibility with both 802.11ac/n devices as well as 802.11a/g by using both bands. Disabling this will may provide higher speeds by automatically selecting one band but may only allow 802.11ac/n devices to function.

Click **Save Settings** for the changes to take effect.

The screenshot displays the configuration interface for the DHP-W610AV router. The top navigation bar includes 'DHP-W610AV', 'SETUP', 'ADVANCED', 'TOOLS', and 'STATUS'. The 'ADVANCED' tab is active, leading to the 'ADVANCED WIRELESS' section. A warning message states: 'These options are for users that wish to change the behaviour of their 802.11n wireless radio from the standard setting. D-link does not recommend changing these settings from factory default. Incorrect settings may impair the performance of wireless radio. The default settings should provide the best wireless radio performance in most environments.' Below this, there are 'Save Settings' and 'Don't Save Settings' buttons. The settings are organized into two sections: 'ADVANCED WIRELESS SETTINGS 2.4G' and 'ADVANCED WIRELESS SETTINGS 5G'. In the 2.4G section, 'Transmit Power' is set to 'High', 'WLAN Partition' is unchecked, and 'HT20/40 Coexistence' has 'Disable' selected. The 5G section shows 'Transmit Power' set to 'High' and 'WLAN Partition' unchecked. At the bottom of the settings area, there are 'Save Settings' and 'Don't Save Settings' buttons. The footer of the page is labeled 'WIRELESS'.



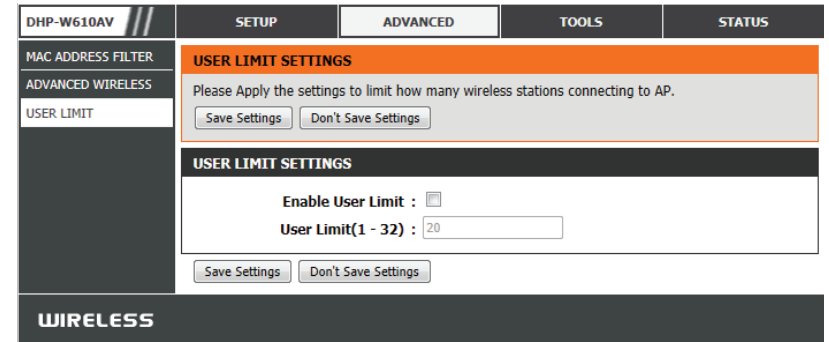
# User Limit

This screen lets you set the maximum number of wireless clients that can connect at one time to your DHP-W610AV.

**Enable User Limit:** Check this box to enable limiting the number of devices that can connect to the DHP-W610AV.

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

Click **Save Settings** for the changes to take effect.



# Tools Admin

This page will allow you to change the administrator password, which is used to access the configuration interface and change settings.

**Password:** Enter a new password for the admin user name. The administrator account can change the configuration of the device.

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

**Enable Graphical Authentication:** Enables a CAPTCHA verification 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.

Click **Save Settings** for the changes to take effect.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
ADMIN	<b>ADMINISTRATOR SETTINGS</b>			
SYSTEM	The 'admin' account can access the management interface. The admin has read/write access and can change password.			
FIRMWARE	By default there is no password configured. It is highly recommended that you create a password to keep your AP or wireless client secure.			
TIME	<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>			
SYSTEM CHECK	<b>ADMIN PASSWORD</b>			
	Please enter the same password into both boxes, for confirmation.			
	Password : <input type="text"/> Verify Password : <input type="text"/>			
	<b>ADMINISTRATION</b>			
	Enable Graphical : <input type="checkbox"/> Authentication			
	<input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>			
<b>WIRELESS</b>				

# System

This page lets you both save and update the settings of your DHP-W610AV.

**Save Settings To Local Hard Drive:** Use this option to save the current DHP-W610AV 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.

**Load Settings From Local Hard Drive:** Use this option to load previously saved DHP-W610AV configuration settings. Click **Browse** to find a previously saved configuration file. Then, click the **Upload Settings** button to transfer those settings to the DHP-W610AV.

**Restore to Factory Default Settings:** This option will restore all configuration settings back to the settings that were in effect at the time the DHP-W610AV 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-W610AV configuration settings, use the **Save** button above.

**Reboot the Device:** Click to reboot the DHP-W610AV.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
ADMIN	<b>SAVE AND RESTORE SETTINGS</b>			
SYSTEM	Once the AP or wireless client is configured you can save the configuration settings to a configuration file on your hard drive. You also have the option to load configuration settings, or restore the factory default settings.			
FIRMWARE	<b>SAVE AND RESTORE SETTINGS</b>			
TIME	<p>Save Settings To Local Hard Drive : <input type="button" value="Save"/></p> <p>Load Settings From Local Hard Drive : <input type="text"/> <input type="button" value="Browse...."/></p> <p><input type="button" value="Upload Settings"/></p> <p>Restore To Factory Default Settings : <input type="button" value="Restore Device"/></p> <p>Reboot The Device : <input type="button" value="Reboot the Device"/></p>			
SYSTEM CHECK				

# Firmware

You can upgrade the firmware of the DHP-W610AV from this page. Click on the blue hyperlink to check if there is an updated firmware available. Make sure the firmware you would like to use is on the local hard drive of your computer. 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 the **Check Now** button to check online for the latest update to your firmware. 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.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
ADMIN	<b>FIRMWARE UPDATE</b>			
SYSTEM	There may be new firmware for your AP or wireless client to improve functionality and performance. <a href="#">Click here to check for an upgrade on our support site.</a>			
FIRMWARE	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 to start the firmware upgrade.			
TIME	<b>FIRMWARE INFORMATION</b>			
SYSTEM CHECK	Current Firmware Version : 1.00NA Current Firmware Time : 07/21/2016 17:36:00 Check Online Now for Latest Firmware Version : <input type="button" value="Check Now"/>			
	<b>FIRMWARE UPGRADE</b>			
	<b>Note: Some firmware upgrades reset the configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration.</b>  To upgrade the firmware, your PC must have a wired connection to the AP or wireless client. Enter the name of the firmware upgrade file, and click on the Upload button.			
	Upload : <input type="text"/> <input type="button" value="Browse..."/> <input type="button" value="Upload"/>			
<b>WIRELESS</b>				

# 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.

**Daylight Saving:** To enable Daylight Saving time adjustment, 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 dates.

**Enable NTP Server:** NTP (Network Time Protocol) allows the device to automatically set the system clock based on an Internet NTP server. 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.

Click **Save Settings** for the changes to take effect.

The screenshot shows the 'TIME' configuration page for a D-Link DHP-W610AV device. The page is organized into several sections:

- TIME:** A header section with a description of the configuration options and 'Save Settings' and 'Don't Save Settings' buttons.
- TIME CONFIGURATION:** Contains fields for 'Current Time' (2000/01/03 05:10:45), 'Time Zone' (GMT-08:00 Pacific Time (US & Canada, Tijuana)), 'Enable Daylight Saving' (checkbox), 'Daylight Saving Offset' (+01:00), and 'Daylight Saving Dates' (DST Start and DST End with dropdowns for Month, Week, Day of Week, and Time).
- AUTOMATIC TIME AND DATE CONFIGURATION:** Includes 'Enable NTP Server' (checkbox) and 'NTP Server Used' (input field with a 'Select NTP Server' dropdown and an 'Update Now' button).
- SET THE TIME AND DATE MANUALLY:** Features dropdown menus for 'Date And Time' (Year: 2009, Month: Jan, Day: 3, Hour: 5, Minute: 10, Second: 45) and a 'Copy Your Computer's Time Settings' button.

At the bottom of the page, there are 'Save Settings' and 'Don't Save Settings' buttons, and a 'WIRELESS' logo.

# System Check

This page has tools to help you to diagnose connection problems.

**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 a widely-used search engine or news site can help tell you if your Internet connection is working properly. If you can ping a site or address from here but your computer is getting no connectivity, then the DHP-W610AV is working properly and your computer may be the problem.

**IPv6 Ping Test:** This is similar to the regular Ping Test but using an IPv6 address.

**Ping Result:** “Ping timeout” means that the site did not respond. This happens if the site is down or does not exist, but also if you do not have Internet connectivity. If you ping several common websites and they all result in a timeout then there is likely an issue with your Internet connection. If the result shows that a site is alive, then your Internet connection is working.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
ADMIN	<b>PING TEST</b>			
SYSTEM	Ping Test sends "ping" packets to test a computer on the Internet.			
FIRMWARE	<b>PING TEST</b>			
TIME	Host Name or IP Address : <input type="text"/> <input type="button" value="Ping"/>			
SYSTEM CHECK	<b>IPv6 PING TEST</b>			
	Host Name or IPv6 Address : <input type="text"/> <input type="button" value="Ping"/>			
	<b>PING RESULT</b>			
	Enter a host name or IP address above and click 'Ping'			
<b>WIRELESS</b>				

# Status

## Device Info

This page displays the current information for the DHP-W610AV. It will display the LAN and wireless LAN information.

**General:** Displays the DHP-W610AV's time and firmware version.

**LAN:** Displays the MAC address and the private (local) IP settings for the DHP-W610AV.

**Wireless LAN 2.4G:** Displays the wireless 2.4G MAC address and your wireless settings such as SSID and Channel.

**Wireless LAN 5G:** Displays the wireless 5G MAC address and your wireless settings such as SSID and Channel.

**Powerline:** Shows the DHP-W610AV's Powerline Connection settings.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
DEVICE INFO	<b>DEVICE INFORMATION</b>			
LOGS	All of your network connection details are displayed on this page. The firmware version is also displayed here.			
STATISTICS	<b>GENERAL</b>			
WIRELESS	<b>Time</b> : 2000/01/03 05:10:53 <b>Firmware Version</b> : 1.00NA Thu 21 Jul 2016			
IPv6	<b>LAN</b>			
	<b>Connection</b> : DHCP Client <b>MAC Address</b> : 10:be:fs:d9:9f:bd <b>IP Address</b> : 192.168.100.112 <b>Subnet Mask</b> : 255.255.255.0 <b>Gateway Address</b> : 192.168.100.1			
	<b>WIRELESS LAN 2.4 G</b>			
	<b>Wireless Radio</b> : Enabled <b>MAC Address</b> : 10:be:fs:d9:9f:bd <b>802.11 Mode</b> : Mixed 802.11n and 802.11g <b>Channel Width</b> : 20/40MHz <b>Channel</b> : 5  <b>Network Name (SSID)</b> : dlink-9FBC <b>Wi-Fi Protected Setup</b> : Enabled/Configured <b>Security</b> : WPA/WPA2-PSK			
	<b>WIRELESS LAN 5 G</b>			
	<b>Wireless Radio</b> : Enabled <b>MAC Address</b> : 10:be:fs:d9:9f:be <b>802.11 Mode</b> : Mixed 802.11ac, 802.11n and 802.11a <b>Channel Width</b> : 20/40/80MHz <b>Channel</b> : 48  <b>Network Name (SSID)</b> : dlink-9FBC-5GHz <b>Wi-Fi Protected Setup</b> : Enabled/Configured <b>Security</b> : WPA/WPA2-PSK			
	<b>POWER LINE</b>			
	<b>MAC Address</b> : 10:be:fs:d9:9f:bc <b>Password</b> : LKWS-OKDY-DUOA-AKIZ			

# Logs

The DHP-W610AV keeps a running log of events and activities occurring on the DHP-W610AV. If the device is rebooted, the logs are automatically cleared. You can save the log files prior to clearing them.

**Log Options:** You can select the types of messages that you would like to display from the log. Check the boxes next to the types you want to view and 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.

**Save Log File:** Save the log to your hard drive.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
DEVICE INFO LOGS STATISTICS WIRELESS IPv6	<b>LOGS</b> The View Log displays the activities occurring on the DHP-W610AV.			
	<b>LOG OPTIONS</b> Log Type: <input type="checkbox"/> System Activity <input type="checkbox"/> Debug Information <input type="checkbox"/> Attacks <input type="checkbox"/> Dropped Packets <input type="checkbox"/> Notice <input type="button" value="Apply Log Settings Now"/>			
	<b>LOG DETAILS</b> <input type="button" value="First Page"/> <input type="button" value="Last Page"/> <input type="button" value="Previous Page"/> <input type="button" value="Next Page"/> <input type="button" value="Refresh"/> <input type="button" value="Clear"/> <input type="button" value="Save log"/>			
<b>WIRELESS</b>				



# Statistics

The DHP-W610AV keeps statistics on 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 DHP-W610AV is rebooted.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
DEVICE INFO	<b>STATISTICS</b> Traffic Statistics displays Receive and Transmit packets passing through the device. <input type="button" value="Refresh"/> <input type="button" value="Reset"/>			
LOGS				
<b>STATISTICS</b>				
WIRELESS				
IPv6				
<b>LAN STATISTICS</b>				
TX Packet Numbers: 105292                      RX Packet Numbers: 315902 TX Packets Dropped: 0                              RX Packets Dropped: 0 TX Packets Bytes: 11089889                      RX Packets Bytes: 67858861				
<b>WIRELESS STATISTICS : 2.4GHZ</b>				
TX Packet Numbers: 97951                              RX Packet Numbers: 9301886 TX Packets Dropped: 0                              RX Packets Dropped: 0 TX Packets Bytes: 38170194                      RX Packets Bytes: 2161014061				
<b>WIRELESS STATISTICS : 5GHZ</b>				
TX Packet Numbers: 37872                              RX Packet Numbers: 3900019 TX Packets Dropped: 0                              RX Packets Dropped: 0 TX Packets Bytes: 19533231                      RX Packets Bytes: 1040664192				
<b>PLC STATISTICS</b>				
TX Packet Numbers: 19729                              RX Packet Numbers: 310656 TX Packets Dropped: 1                              RX Packets Dropped: 0 TX Packets Bytes: 17301995                      RX Packets Bytes: 81292797				

# Wireless

This section allows you to view the wireless devices that are connected to your DHP-W610AV on 2.4G and 5G bands.

**Number of Wireless Clients:** Displays the number of devices that are connected to the DHP-W610AV via wireless.

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

**Mode:** Shows the mode the device is using to connect to your DHP-W610AV. This should be 11a, 11g, 11n, or 11ac.

**Rate:** This shows the data transfer rate of your wireless clients.

**Signal (%):** This shows the strength of your device's connection.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
DEVICE INFO	<b>WIRELESS</b>			
LOGS	View the wireless clients that are connected to the access point. (A client might linger in the list for a few minutes after an unexpected disconnect.)			
STATISTICS				
WIRELESS	<b>NUMBER OF WIRELESS CLIENTS - 2.4GHZ BAND : 1</b>			
IPv6	<b>MAC Address</b>	<b>Mode</b>	<b>Rate</b>	<b>Signal (%)</b>
	38:D5:47:88:10:5B	802.11n	72.2M	66
	<b>NUMBER OF WIRELESS CLIENTS - 5GHZ BAND : 0</b>			
	<b>MAC Address</b>	<b>Mode</b>	<b>Rate</b>	<b>Signal (%)</b>
<b>WIRELESS</b>				

# IPv6

This section will display all of your IPv6 Internet and network connection details.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS
DEVICE INFO	<b>IPv6 NETWORK INFORMATION</b>			
LOGS	All of your network connection details are displayed on this page.			
STATISTICS	<b>IPv6 CONNECTION INFORMATION</b>			
WIRELESS	IPv6 Connection Type : Link-local Only			
IPv6	LAN IPv6 Address : None			
	IPv6 Default Gateway : None			
	LAN IPv6 Link-Local Address : fe80::12be:f5ff:fed9:9fbd/64			
	Primary DNS Server : None			
	Secondary DNS Server : None			

# Help

Click on a link in the Help heading for more information on each section of the firmware.

DHP-W610AV	SETUP	ADVANCED	TOOLS	STATUS	HELP
MENU	<b>SUPPORT MENU</b> <ul style="list-style-type: none"><li>• <a href="#">Setup</a></li><li>• <a href="#">Advanced</a></li><li>• <a href="#">Maintenance</a></li><li>• <a href="#">Status</a></li></ul>				
	<b>SETUP HELP</b> <ul style="list-style-type: none"><li>• <a href="#">Setup Wizard</a></li><li>• <a href="#">Wireless Setup</a></li><li>• <a href="#">Network Settings</a></li><li>• <a href="#">PLC Settings</a></li></ul>				
	<b>ADVANCED HELP</b> <ul style="list-style-type: none"><li>• <a href="#">MAC Address Filter</a></li><li>• <a href="#">Advanced Wireless</a></li><li>• <a href="#">User Limit</a></li></ul>				
	<b>MAINTENANCE HELP</b> <ul style="list-style-type: none"><li>• <a href="#">Admin</a></li><li>• <a href="#">System</a></li><li>• <a href="#">Firmware</a></li><li>• <a href="#">Time</a></li><li>• <a href="#">System Check</a></li></ul>				
	<b>STATUS HELP</b> <ul style="list-style-type: none"><li>• <a href="#">Device Info</a></li><li>• <a href="#">Logs</a></li><li>• <a href="#">Statistics</a></li><li>• <a href="#">Wireless</a></li><li>• <a href="#">IPv6</a></li></ul>				

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DHP-W610AV offers the following types of security:

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

## What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy). The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (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-W610AV.

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 WPA/WPA2 Personal

For improved security, it is highly recommended that you enable encryption for both 2.4G and 5G networks on your DHP-W610AV. Please establish wireless connectivity before enabling encryption.

1. Log into the web-based configuration by opening a web browser and entering **http://dlinkapWXYZ.local** to get access to the DHP-W610AV web UI. Click on **Setup** and then click **Wireless Settings** on the left side.
2. For **Security Mode**, select **WPA/WPA2**.
3. For **Wi-Fi Password**, enter a key. The password 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-W610AV 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-W610AV.

WI-FI SECURITY MODE 2.4G
Security Mode : <input type="text" value="WPA/WPA2"/>

WI-FI NETWORK SETTINGS 2.4G
Enable Wireless : <input checked="" type="checkbox"/>
Wi-Fi Network Name (SSID) : <input type="text" value="dlink-9FBC"/>
Enable Auto Channel Scan : <input checked="" type="checkbox"/>
Wireless Channel : <input type="text" value="2.412 GHz - CH 1"/>

WPA/WPA2
WPA/WPA2 requires stations to use high grade encryption and authentication.
Network Key : <input type="text" value="12345678"/> (8~63 ASCII or 64 HEX)

WI-FI SECURITY MODE 5G
Security Mode : <input type="text" value="WPA/WPA2"/>

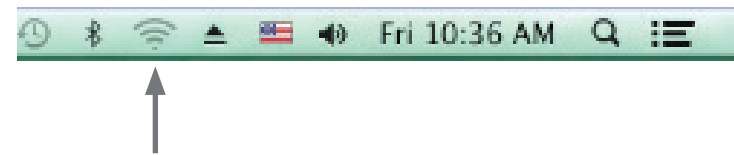
Wi-Fi Network Settings 5G
Enable Wireless : <input checked="" type="checkbox"/>
Wi-Fi Network Name (SSID) : <input type="text" value="dlink-9FBC-5GHz"/>
Enable Auto Channel Scan : <input checked="" type="checkbox"/>
Wireless Channel : <input type="text" value="5.180 GHz - CH 36"/>

WPA/WPA2
WPA/WPA2 requires stations to use high grade encryption and authentication.
Network Key : <input type="text" value="mawyt54852"/> (8~63 ASCII or 64 HEX)

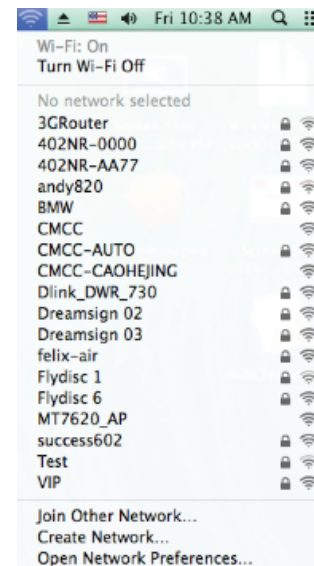
# Connecting to a Wireless Network Using Mac OS

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

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



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



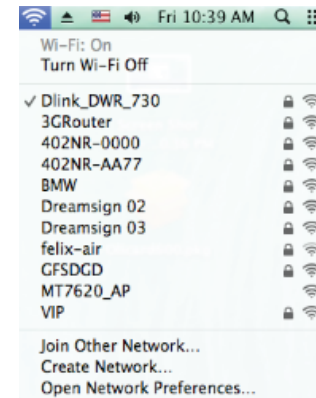
## Section 3 - Configuration

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

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



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





# Connecting to a Wireless Network Using Windows® 10

When connecting to the DHP-W610AV wirelessly for the first time, you will need to input the wireless network name (SSID) and Wi-Fi password (security key) of the device you are connecting to. If your product has a Wi-Fi Configuration Card, you can find the default network name and Wi-Fi password here. Otherwise refer to the product label for the default Wi-Fi network SSID and password, or enter the Wi-Fi credentials set during the product configuration.

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



Wireless Icon

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



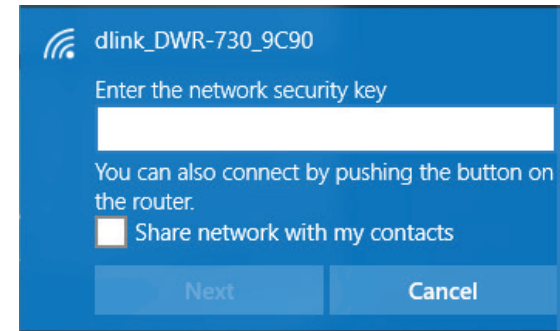
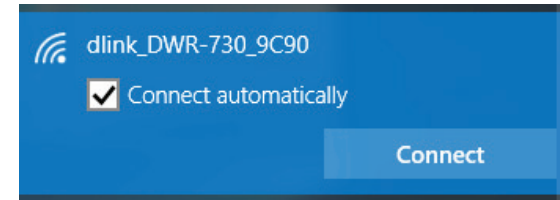
## Section 3 - Configuration

---

To connect to the SSID, click **Connect**.

To automatically connect with the router when your device next detects the SSID, click the **Connect Automatically** check box.

You will then be prompted to enter the Wi-Fi password (network security key) for the wireless network. Enter the password into the box and click **Next** to connect to the network. Your computer will now automatically connect to this wireless network when it is detected.



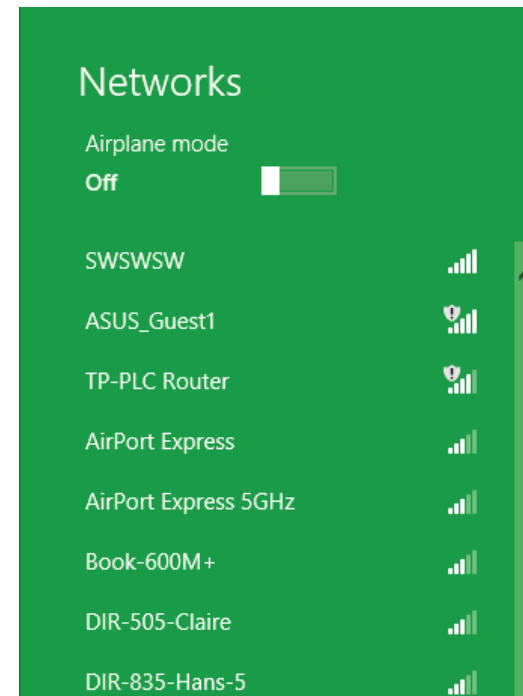
# Using Windows® 8

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

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



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

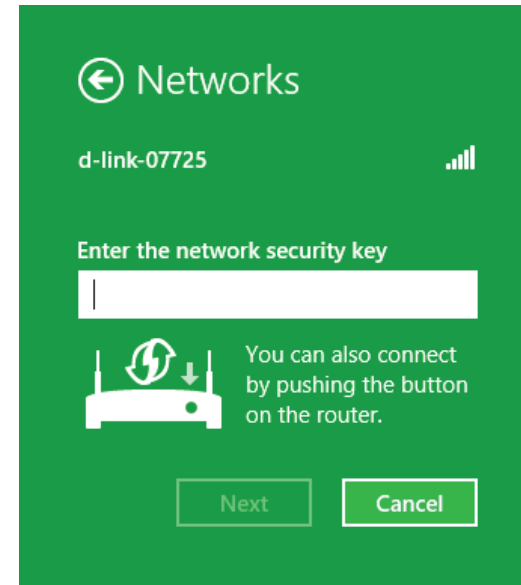


## Section 3 - Configuration

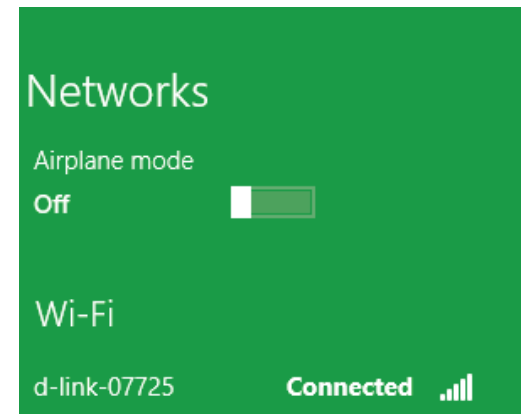
---

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

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



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



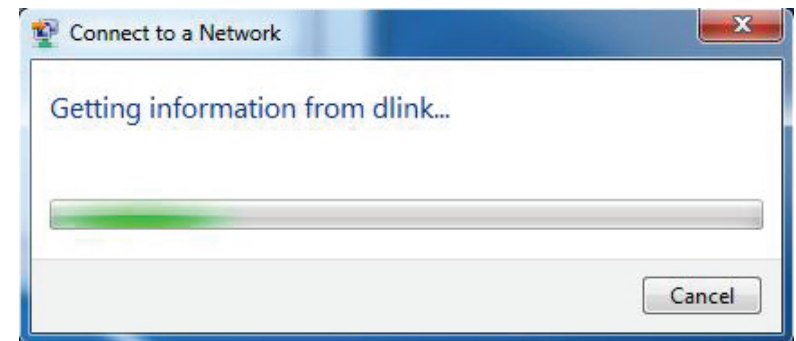
## Section 3 - Configuration

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.



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

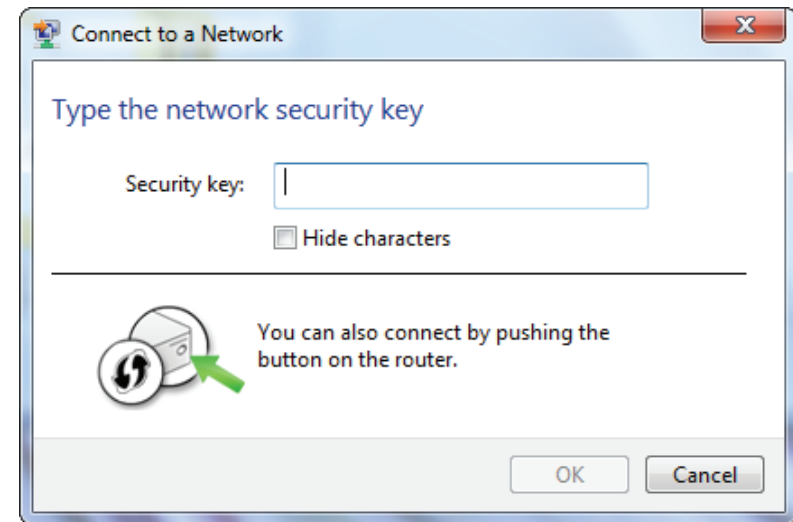


## Section 3 - Configuration

Enter the same security key or passphrase that is on your DHP-W610AV 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 Simple Connect Button on the DHP-W610AV.



# Using Windows® 7

It is recommended to enable wireless security (WPA/WPA2) on your DHP-W610AV before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

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



Wireless Icon

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



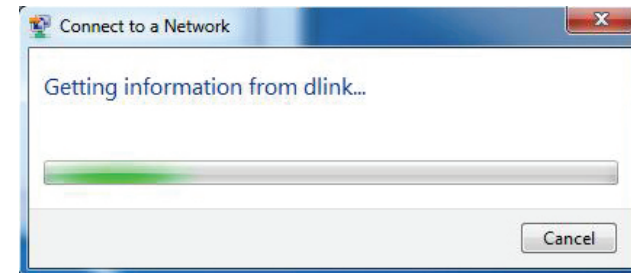
## Section 3 - Configuration

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.

If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to **Networking Basics** on page 57 for more information.



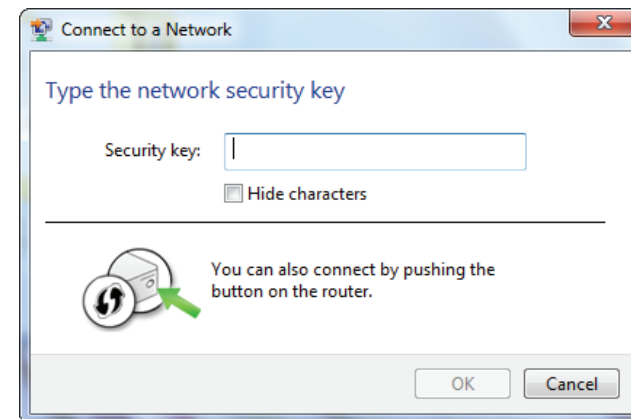
The following window appears while your computer tries to connect to the router.



Enter the same security key or passphrase that is on your DHP-W610AV 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 Simple Connect Button on the DHP-W610AV.

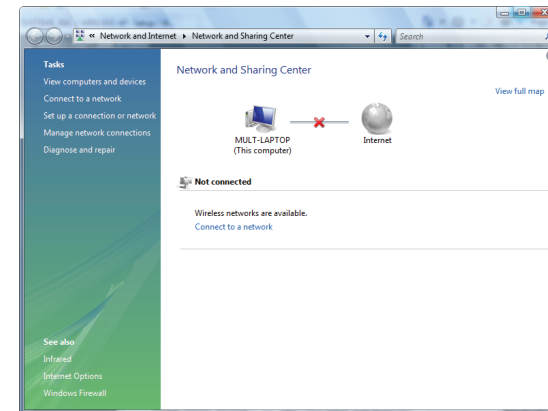




# Using Windows Vista®

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

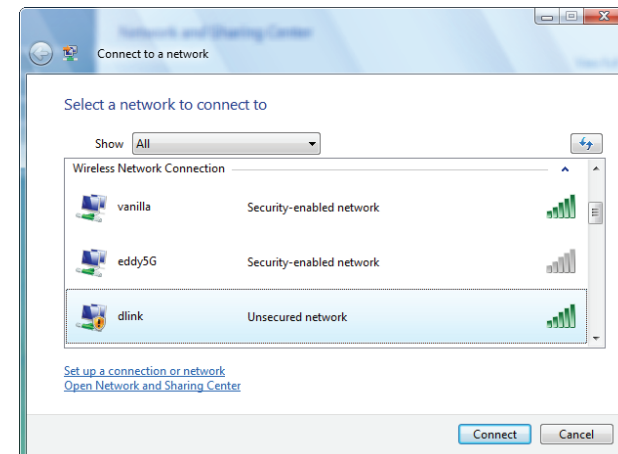
From the **Start menu**, go to **Control Panel**, and then click on **Network and Sharing Center**.



The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button. The Wi-Fi Configuration Card will list your device's specific network.

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.

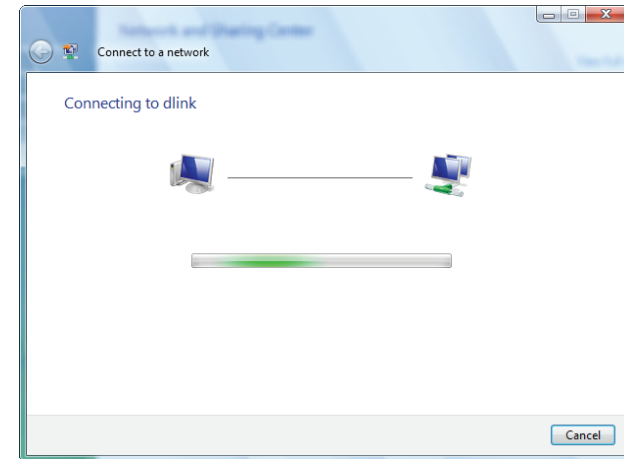
Click **Connect** to continue.



## Section 3 - Configuration

---

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



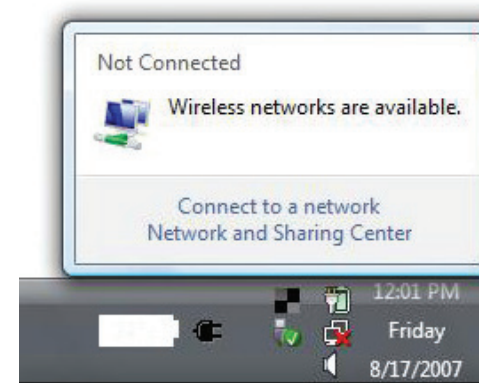
The final window indicates a successful connection has been established.

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

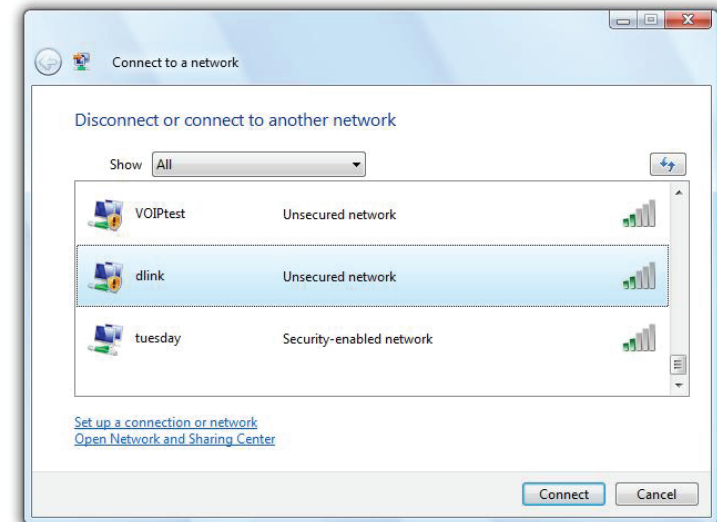
# Configuring Wireless Security

It is recommended to enable wireless security (WPA/WPA2) on your wireless router or DHP-W610AV 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**.

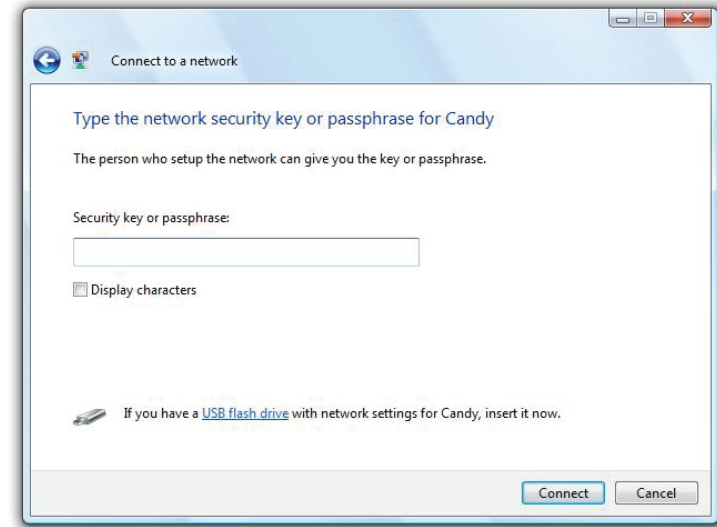


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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 your Powerline devices. Verify connectivity by checking the LEDs for solid link lights on the device. Read the following descriptions if you are having problems.

**1. The Power LED is off even when plugged in:**

Please make sure that power to the electrical outlet is on, and you have not plugged the DHP-W610AV into an extension cord, power strip, or surge protector.

**2. My DHP-W610AV can't find my DHP-610AV:**

Be sure both devices are plugged directly into a wall outlet. Plugging into a power strip or another device may disrupt the connection. The electrical wiring must be on the same electrical circuit.

**3. My Powerline device doesn't detect my other Powerline devices?**

This may be due to the accidental change of the device password. Use the web-based configuration utility and select **Setup > PLC SETTINGS**. Input your password in the textbox. Then repeat the same procedure for other Powerline devices via their web-based configuration utility.

**4. I can't connect to my network via the Powerline device (Powerline LED is off):**

Check that all of your Powerline devices are using the same encryption key. To be sure, press the Reset button on each device briefly to return the adapter to its factory default settings.

**5. The network connection is slow (Powerline LED is amber or red):**

You can move the Powerline devices closer together and remove nearby devices and power adapters to reduce interference.

**6. I can't get an Ethernet connection working through the DHP-W610AV (Ethernet LED is off):**

Check your Ethernet cables and make sure they are plugged in securely and make sure the client device is powered on.

**7. Why am I unable to access the web-based configuration utility?**

When entering the IP address of the D-Link DHP-W610AV, 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 3.5 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® 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 by opening your web browser and entering the IP address of your D-Link DHP-W610AV 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-W610AV 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.

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

If you forgot your password, you must reset your DHP-W610AV. Unfortunately this process will revert all your settings back to the factory defaults.

To reset the DHP-W610AV, locate the reset button (hole) on the side of the unit. With the DHP-W610AV powered on, use a paperclip to hold the button down for 5 seconds. Release the button and the DHP-W610AV will go through its reboot process. Wait about 30 seconds to access the DHP-W610AV. The default IP address is 192.168.0.50. When logging in, the username is Admin and leave the password box empty to log in.

# 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.

## 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.

## How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from 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 DHP-W610AV 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, or office 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.

A 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 DHP-W610AV**

Make sure you place the bridge/DHP-W610AV in a centralized location within your network for the best performance. Try to place the bridge/DHP-W610AV 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/DHP-W610AV. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

#### **Security**

Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WPA2 security feature on the DHP-W610AV.

# Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DIR-868L wireless network Cardbus adapters.

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

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

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DHP-W610AV offers the following types of security:

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

## What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy). The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (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-W610AV.

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 WPA/WPA2 Personal

For improved security, it is highly recommended that you enable encryption for both 2.4G and 5G networks on your DHP-W610AV. Please establish wireless connectivity before enabling encryption.

1. Log into the web-based configuration by opening a web browser and entering **http://dlinkapWXYZ.local** to get access to the DHP-W610AV web UI. Click on **Setup** and then click **Wireless Settings** on the left side.
2. For **Security Mode**, select **WPA/WPA2**.
3. For **Wi-Fi Password**, enter a key. The password 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-W610AV 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-W610AV.

WI-FI SECURITY MODE 2.4G
Security Mode : <input type="text" value="WPA/WPA2"/>

WI-FI NETWORK SETTINGS 2.4G
Enable Wireless : <input checked="" type="checkbox"/>
Wi-Fi Network Name (SSID) : <input type="text" value="dlink-9FBC"/>
Enable Auto Channel Scan : <input checked="" type="checkbox"/>
Wireless Channel : <input type="text" value="2.412 GHz - CH 1"/>

WPA/WPA2
WPA/WPA2 requires stations to use high grade encryption and authentication.
Network Key : <input type="text" value="12345678"/> (8~63 ASCII or 64 HEX)

WI-FI SECURITY MODE 5G
Security Mode : <input type="text" value="WPA/WPA2"/>

Wi-Fi Network Settings 5G
Enable Wireless : <input checked="" type="checkbox"/>
Wi-Fi Network Name (SSID) : <input type="text" value="dlink-9FBC-5GHz"/>
Enable Auto Channel Scan : <input checked="" type="checkbox"/>
Wireless Channel : <input type="text" value="5.180 GHz - CH 36"/>

WPA/WPA2
WPA/WPA2 requires stations to use high grade encryption and authentication.
Network Key : <input type="text" value="mawyt54852"/> (8~63 ASCII or 64 HEX)

# Networking Basics

## Check your IP address

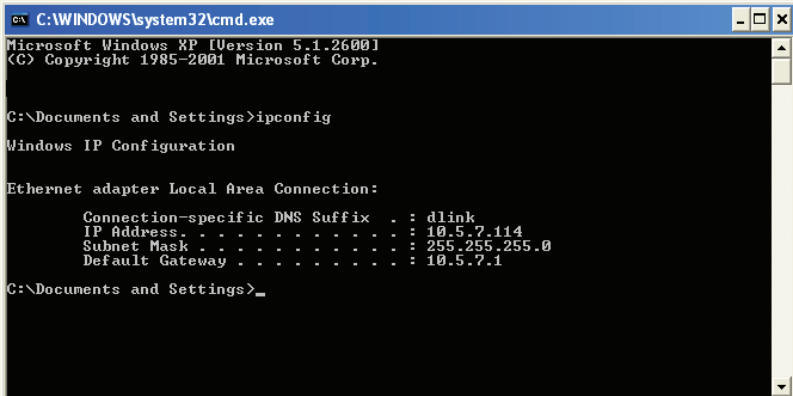
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type *cmd* and click **OK**. (Windows® 7/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 router. 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>_
```

# Statically Assign an IP address

If you are not using a DHCP capable gateway/DHP-W610AV, or you need to assign a static IP address, please follow the steps below:

## Step 1

Windows Vista®/7/8 - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections**.

## 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.

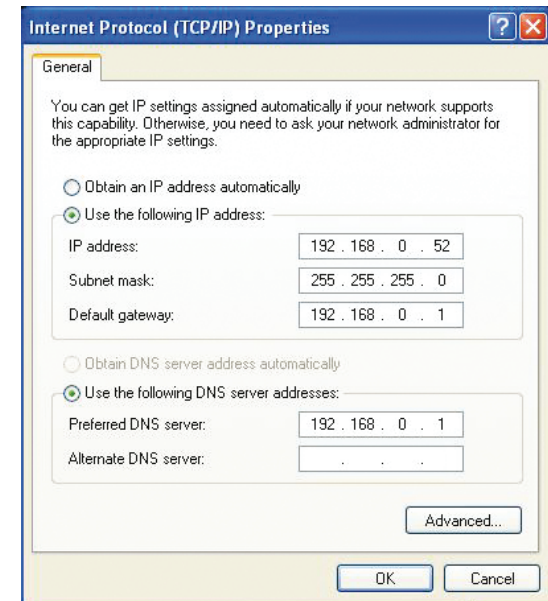
Example: If the AP's LAN IP address is 192.168.0.50, make your IP address 192.168.0.X where X is a number between 2 and 99 (excluding the number 50). Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

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 (DHP-W610AV)

## Standards

- IEEE 802.11ac
- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.11a
- IEEE 802.3x
- IEEE 802.3u
- IEEE 1901
- HomePlug AV2

## Network Interfaces

- One 10/100/1000 Ethernet port
- Wireless AC
- Powerline

## Power Input

- 100 - 240V AC 50/60 Hz

## Security

- WPA
- WPA2

## Wireless Signal Rates\*

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

## MSC (0-15)

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

## Frequency Range

- 2.4G: 2.4 GHz to 2.483 GHz
- 5G: 5.150 GHz to 5.850 GHz

## Encryption

- 128-bit AES
- WPA/WPA2

## Operating Temperature

- 32 to 104 °F (0 to 40 °C)

## Storage Temperature

- -4 to 149 °F (-20 to 65 °C)

## Humidity

- Operation: 10% to 90% RH
- Storage: 5% to 95% RH

## Transmitter Output Power

- 13 dBm (+/- 2dB)

\* Maximum wireless signal rate derived from IEEE Standard 802.11ac 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
- Ethernet
- WLAN
- Powerline

### Safety & Emissions

- FCC
- CE
- RoHS
- UL, CE LVD

### Dimensions

- 140 x 68 x 50 mm (5.51 x 2.68 x 1.97 inches)

### Weight

- United Kingdom: g (.41 lbs)
- United States: g (.38 lbs)
- Australia: g (.39 lbs)
- Europe: 174.8 g (.38 lbs)



# Technical Specifications (DHP-P610AV)

## Standards

- Compatible with IEEE 1901
- HomePlug AV2

## Network Interfaces

- One 10/100/1000 Ethernet port

## Power Input

- 100 - 240V AC, 50/60 Hz

## Encryption

- 128-bit AES

## Operation Temperature

- 32 to 104 °F (0 to 40 °C)

## Storage Temperature

- -4 to 149 °F (-20 to 65 °C)

## Humidity

- Operation: 10% to 90% RH
- Storage: 5% to 95% RH

## EMC

- CE

## Safety

- CE LVD

## Dimensions

- 114 x 59 x 38 mm (4.49 x 2.32 x 1.50 inches)

## Weight

- United Kingdom: 184 g (6.50 ounces)
- United States: 156 g (5.50 ounces)
- Europe: 188 g (6.63 ounces)
- France: 189 g (6.67 ounces)

# Regulatory Information