



**User Manual**

# PowerLine AV2 1000 HD Gigabit Passthrough Kit

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# Preface

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

## Manual Revisions

| Revision | Date              | Description                                |
|----------|-------------------|--|
| 1.0      | March 3, 2015     | • Initial release for hardware revision A1 |
| 1.01     | September 7, 2015 | • ADD ErP statement                        |

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## 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. If it is not needed during certain periods of time, it can be unplugged to save energy.

**Network Standby:** 2.17 watts

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# Product Overview

## Package Contents

### DHP-P601AV

- D-Link DHP-P600AV PowerLine AV2 1000 HD Gigabit Passthrough Adapter x2
- Ethernet Cable x2
- Quick Install Guide
- CD-ROM

## System Requirements

- Windows® 8, 7, Vista®, or XP® (with Service Pack 3)
- Ethernet network interface (10/100/1000 Mbps)
- PC with 1.5 GHz Processor
- 1 GB memory

# Introduction

The DHP-P600AV is a fast, 1000 Mbps<sup>1</sup> PowerLine AV2 1000 Gigabit Passthrough Adapter which allows you to connect your home computers, networking devices, and gaming devices through the most pervasive medium in your house - the electric powerlines - and share Internet connections and printers, transfer files, play games, and more.<sup>2</sup> Its passthrough design includes a noise filter to reduce interference, maximizing throughput and improving overall performance.

## Features

- Provides Ethernet to PowerLine Connection
- Fast Data Transfer Rate of Up to 1000 Mbps<sup>1</sup>
- One Gigabit Ethernet Port
- Plug & Play, Easy Installation
- Push Button Security
- Passthrough Design

# Hardware Overview

## LEDs



### Power LED

- **Solid.** The device is receiving electrical power.
- **Blinking.** The device is under power saving mode or simple connect button was pressed.
- **Off.** The device is not receiving electrical power.

### Powerline LED

- **Solid.** The device is connected to a PowerLine network.
- **Off.** The device has not found any other compatible PowerLine devices using the same encryption key.

The color indicates the PowerLine link rate:

- **Green.** The PowerLine link rate is excellent.
- **Amber.** The PowerLine link rate is good.
- **Red.** The PowerLine link rate is fair.

### Ethernet LED

- **Solid.** The Ethernet port is linked.
- **Off.** There is no Ethernet connection.

# Hardware Overview

## Connection

### Simple Connect Button

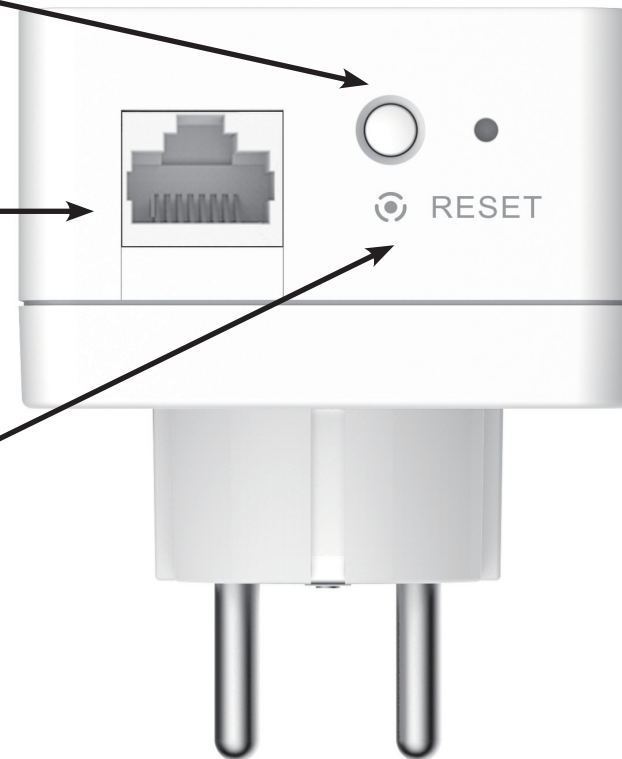
Press to secure your network. Refer to "Push Button Security" on page 9 for more information.

### Gigabit Ethernet Port

Connect a CAT5 Ethernet cable to your PC or Ethernet device.

### Reset Button

Press and hold the button for 5 seconds to reset to the factory default settings.



# Hardware Installation

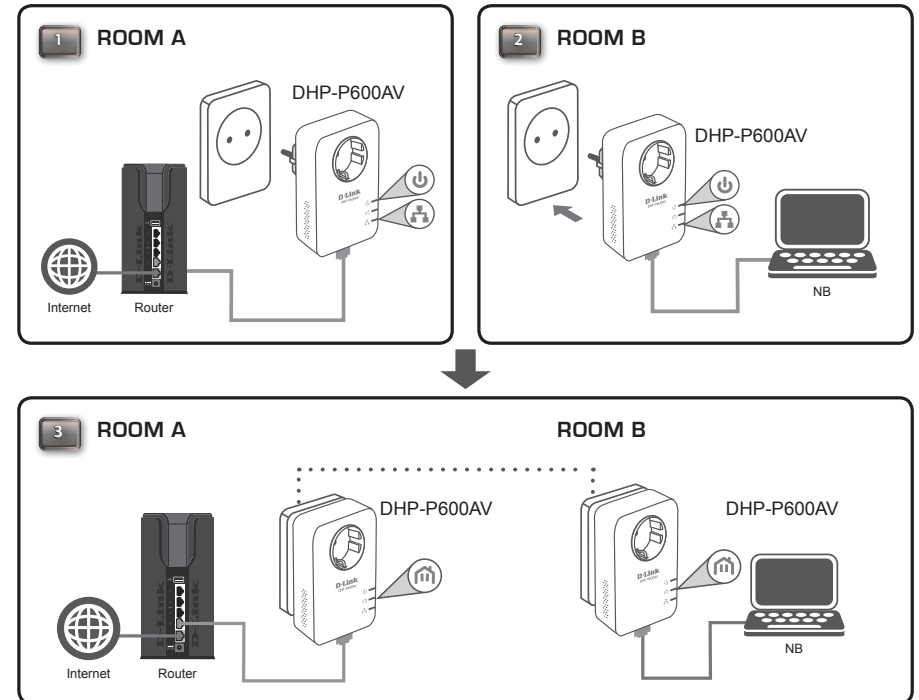
## Power

Plug the DHP-P600AV into an AC wall outlet or power strip.

**Note:** Power supply is confirmed when the Power LED on the DHP-P600AV is illuminated.

## Connect the Ethernet Cable

Connect the included Ethernet cable to the network cable connector located on the DHP-P600AV and attach the other end of the Ethernet cable to the network or PC. Network connectivity is confirmed when the Ethernet LED on the DHP-P600AV are illuminated.





# Push Button Security

## Understanding PowerLine AV2 1000 Gigabit Passthrough Adapter Security

The PowerLine AV2 1000 Gigabit Passthrough Adapters on the same network must use an identical encryption key. The default encryption key of each PowerLine AV2 1000 Gigabit Passthrough Adapter is **HomePlugAV**. All PowerLine AV2 1000 Gigabit Passthrough Adapters with the default encryption key can communicate with each other.

It's recommended to create a private encryption key for network security purpose. The private encryption key allows you to protect your network from unauthorized access via the PowerLine network. To create a private encryption key instead of the default encryption key, please follow the below steps:

### 1. All Adapters

Plug in all the adapters to be configured and make sure each device's encryption key is set to **HomePlugAV** (default value). If the encryption key is not set to the default value, press the reset button for 5 seconds to reset it to the default value.

### 2. First Adapter

Press Simple Connect Button of the first adapter for no more than three seconds.

The Power LED will start blinking after you release the button. The adapter will create a private, randomly generated encryption key that each PowerLine AV2 1000 Gigabit Passthrough Adapter will use.

### 3. Second Adapter

Within two minutes of pushing the Simple Connect Button on the first adapter, press the Simple Connect Button on second adapter in your PowerLine network for no more than three seconds. The Power LED will start blinking after you release the button.

Note: Both Simple Connect Buttons must be pressed within two minutes.

After the above network security setup steps, your PowerLine network will be securely configured with the same network encryption key. The adapters will memorize the security settings even if they are unplugged.

Note: To change the private encryption key, please reset the adapter back to its default value by pressing the reset button for 10 seconds and then follow the security setup procedure above.

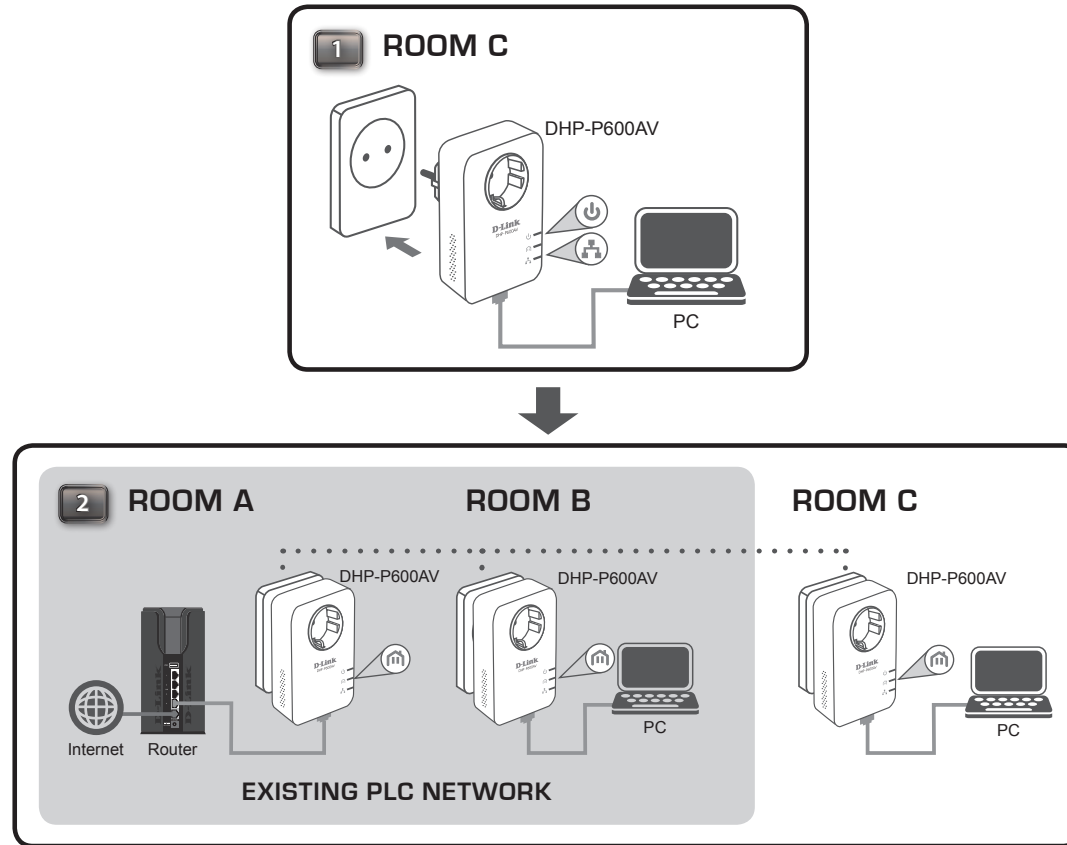
### 4. Adding More Adapters

If you would like to add more than two adapters, press the Simple Connect Button of the additional adapter for no more than three seconds. The Power LED will start blinking after you release the button.

Then press the Simple Connect Button of any adapter in your existing PowerLine network for no more than three seconds. The Power LED will start blinking after you release the button.

Note: Both Simple Connect Buttons must be pressed within two minutes.

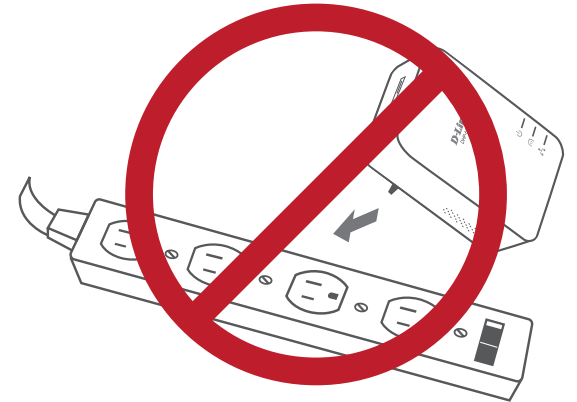
After the above network security setup steps, your PowerLine network will be securely configured with the same network encryption key.



# 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 reduce the 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 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 cable.



# Important Safety Instructions

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. Only use the included power adapter to power your device.
3. Ensure that the device is plugged into the wall in a vertical position, with the ports facing down.
4. Use the device in a dry location, and avoid placing it in humid environments.
5. 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.
6. Keep the device out of direct sunlight.
7. Do not cover or block the vents on the device.
8. Make sure that the device has adequate room for ventilation.
9. Avoid placing the device near a heater or radiator.
10. The device should be located only where sufficient ventilation can be ensured.
11. The purpose of this product is to create a constant network connection for your devices. If you wish to power down this product, please simply unplug it from the power outlet.

# Troubleshooting

- **I can't configure any parameters of the PowerLine AV2 1000 Gigabit Passthrough Adapter, an error is shown when I try to configure it:**  
Please make sure you have not unplugged the PowerLine AV2 1000 Gigabit Passthrough Adapter while configuring it.
- **I changed the connection cable to another network adapter and now the setup utility does not work correctly:**  
Please restart the utility each time you disconnect the connection cable.
- **I'm having a lot of problems configuring my network:**  
If you are having trouble configuring the network with two or more PowerLine AV2 1000 Gigabit Passthrough Adapters, please reset all of the network adapters and try configuring the adapters again.

# Technical Specifications

|                   |                             |  |   |
|-------------------|-----------------------------|--|---|
| General           | PowerLine Interface         | • Power plug (country-dependent)               |   |
|                   | Ethernet Interface          | • Gigabit Ethernet LAN port                    | • RJ-45 connector                                       |
| Functionality     | Standards                   | • IEEE 802.3<br>• IEEE 802.3u                  | • IEEE 1901<br>• HomePlug AV2                           |
|                   | Security                    | • 128-bit AES data encryption                  |   |
|                   | LEDs                        | • Power<br>• Ethernet                          | • PowerLine   |
|                   | PowerLine Modulation Scheme | • OFDM symbol modulation                       |   |
|                   | PowerLine Frequency Band    | • 2 MHz to 86 MHz                              |   |
|                   | Data Rate                   | • Ethernet: 10/100/1000 Mbps (autonegotiation) | • PowerLine: Up to 1000 Mbps (PHY rate) <sup>1</sup>    |
|                   | Physical                    | Dimensions                                     | • 113.49 x 58.48 x 37.80 mm (4.47 x 2.30 x 1.49 inches) |
| Weight            |                             | • 195 grams                                    |   |
| Power             |                             | • Input: 100 to 240 V AC, 50/60 Hz             |   |
| Power Consumption |                             | • < 3.7 W                                      |   |
| Temperature       |                             | • Operating: 0 to 40 °C (32 to 104 °F)         | • Storage: -20 to 65 °C (-4 to 149 °F)                  |
| Humidity          |                             | • Operating: 10% to 90% non-condensing         | • Storage: 5% to 95% non-condensing                     |
| Certifications    |                             | • CE   | • CE/LVD  |

<sup>1</sup> Maximum throughput is based on theoretical transmission PHY rate. Actual data throughput will vary. Network conditions and environmental factors, including volume of traffic and network overhead, may lower actual data throughput rate. Interference from devices that emit electrical noise, such as vacuum cleaners and hair dryers, may adversely affect the performance of this product. This product may interfere with devices such as lighting systems that have a dimmer switch or a touch-sensitive on/off feature, short wave radios, or other PowerLine devices that do not follow the HomePlug AV standard.

<sup>2</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 series products are required to add new devices to the network. A minimum of two D-Link PowerLine AV series products 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.