



User Manual

PowerLine AV Mini Adapter

DHP-310AV

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
1.0	April 29, 2011	• Initial release
1.1	November 17, 2011	Add mac os 10.5, 10.6

Trademarks

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Table of Contents

Preface	2	Troubleshooting	16
Manual Revisions.....	2	Technical Specifications	17
Trademarks	2		
Product Overview	4		
Package Contents.....	4		
System Requirements.....	4		
Introduction	5		
Features.....	5		
Hardware Overview.....	6		
LEDs	6		
Connection	7		
Simple Connect Button	8		
Hardware Installation	9		
Push Button Security	10		
Using the Setup Wizard	11		
Configuration.....	12		
Security	14		

Package Contents



One D-Link DHP-310AV PowerLine AV Mini Adapter



One CAT5 Ethernet Cable



CD-ROM with Software and User Manual



Quick Install Guide

System Requirements

Software Requirements*

- Windows® 7, Windows Vista®, XP (with Service Pack 3), MAC OS 10.5, 10.6
- PC with 233MHz Processor, 64MB Memory
- Ethernet Adapter (10/100Mbps)

Network Requirements

- An existing PowerLine network
- Router/Gateway (If sharing an Internet connection)
- Ethernet device (such as a computer, game console, NAS device, media player, wireless access point, etc.)
- An available electrical outlet

* *The D-Link PowerLine AV Utility is optional but is required for firmware upgrades; and is used to manually configure your security/encryption settings, reset your PowerLine adapter to default settings, and display information such as firmware version, security settings, and connection quality/speed.*

Introduction

D-Link announces a fast, 200Mbps* PowerLine AV Mini Adapter that allows you to connect your home computers, networking devices and gaming devices through the most pervasive medium in your house - the electric power lines. With the DHP-310AV PowerLine AV Mini Adapters, you may access the Internet, transfer files, play games, and stream HD video.

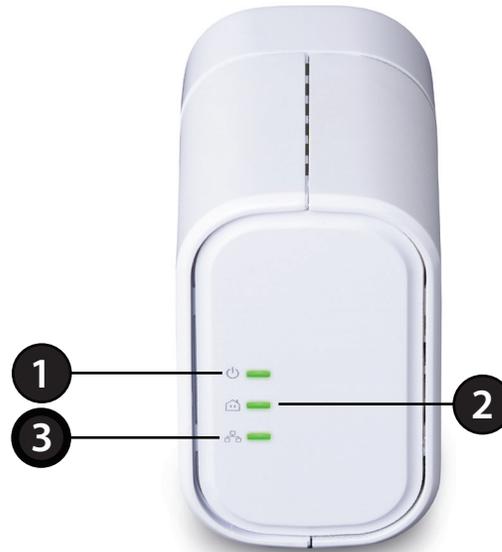
Features

- Use your home's electrical wiring by plugging into existing power outlets
- Speeds of up to 200Mbps*
- One 10/100 Ethernet port
- Plug & Play, Easy Installation
- Supports 128-bit AES encryption for network security
- Push and secure encryption button
- Power Saving mode
- Compact size

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

Hardware Overview

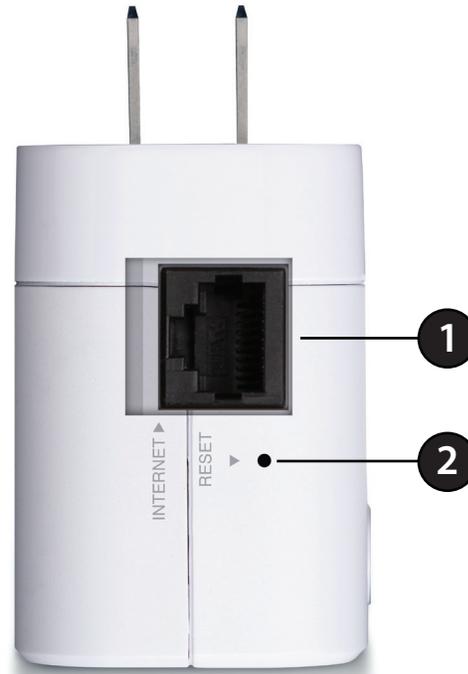
LEDs



1	Power LED	<ul style="list-style-type: none"> • Solid - Indicates that the device is receiving electrical power. • Blinking - Indicates that the device is setting itself up after reset or when the security button was pressed or power saving mode enabled. • Off - The device is not receiving electrical power.
2	PowerLine LED	<ul style="list-style-type: none"> • Solid - The device is connected to a PowerLine network. • Blinking - The device is transmitting data. • Off - The device has not found any other compatible PowerLine devices using the same encryption key. <p><i>The color indicates the PowerLine link rate:</i></p> <ul style="list-style-type: none"> • Green - The PowerLine link rate is faster than 80 Mbps. • Amber - The PowerLine link rate is between 50 Mbps and 80 Mbps. • Red - The PowerLine link rate is less than 50 Mbps.
3	Ethernet LED	<ul style="list-style-type: none"> • Solid - The Ethernet port is linked but there is no data traffic. • Blinking - The device is transmitting data. • Off - There is no Ethernet connection.

Hardware Overview

Connection



1	Ethernet Port	Connect the CAT5 Ethernet cable to the DHP-310AV Ethernet port.
2	Reset Button	Press and hold the button for 1 second to reset to factory default.

Hardware Overview

Simple Connect Button



1	Simple Connect Button	Press to secure your network. Refer to page 10 for more information.
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Hardware Installation

Recommendations

- For best results, use in a regular wall outlet without any other product plugged into the same outlet. Connecting this product to a power strip or a surge protector may adversely affect the performance of this product.
- Avoid using the PowerLine AV Mini Adapters in an electrical outlet that is located near an appliance that uses a lot of power such as a washer, dryer, refrigerator, microwave, hair dryer, or air conditioning system.
- To verify connectivity or if you are having connection problems, plug the adapters in the same room to verify whether your home's electrical wiring is contributing to the issue. The adapters' PowerLine LED indicators will illuminate if the connection is established.

Power

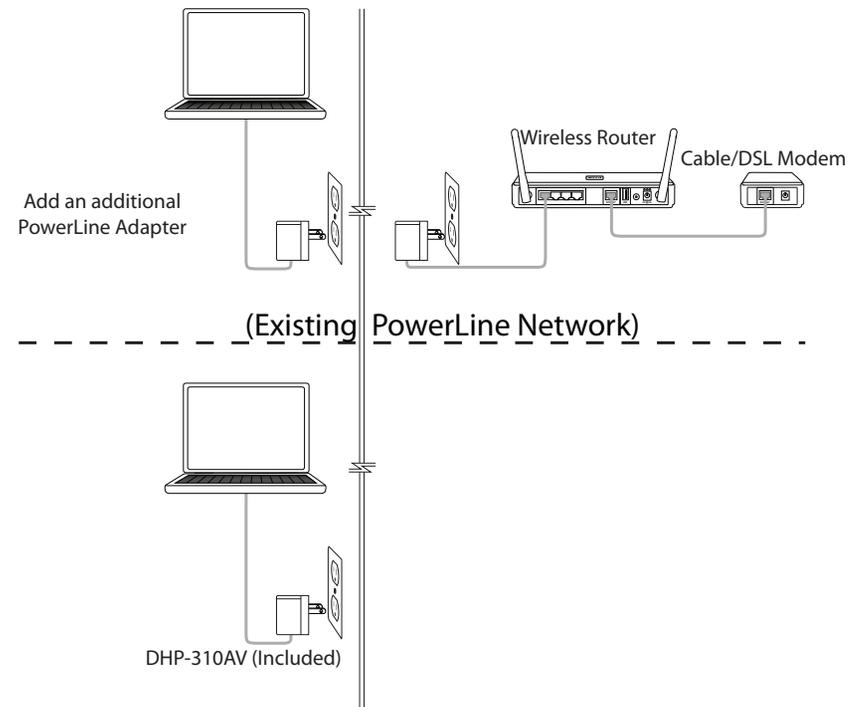
Plug in the DHP-310AV into an AC wall outlet.

Note: Power source is confirmed when the Power LED on the DHP-310AV is illuminated.

Connect the Ethernet Cable

Connect the included Ethernet cable to the network cable connector located on the DHP-310AV and attach the other end of the Ethernet cable to the network (e.g. router or switch) or PC. Network connectivity is confirmed when the PowerLine and Ethernet LEDs on the DHP-310AV are illuminated.

Note: If you set security on your other adapters and you have plugged in your new D-Link PowerLine AV Mini Adapter, press the DHP-310AV Simple Connect button for 2 seconds. Then, press the Simple Connect button on any PowerLine adapter in your existing network for 2 seconds. Both buttons must be pressed within 2 minutes.



Push Button Security

Understanding PowerLine AV Network Security

The PowerLine AV Mini Adapter must use an identical encryption key as the network. The default encryption key for each PowerLine AV Mini Adapter is the HomePlugAV. All PowerLine AV Mini Adapters with a default encryption key can communicate with each other.

It is 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 steps below:

1. PowerLine AV Mini Adapter

Press the Simple Connect button on the DHP-310AV for 2 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 AV Mini Adapter will use.



2. Additional Adapters in the Existing PowerLine Network

Within 2 minutes of pushing the Simple Connect button on the PowerLine AV Mini Adapter, press the Simple Connect button on the additional adapter in your existing PowerLine network for 2 seconds. The Power LED will start blinking after you release the button.

Note: Both Simple Connect buttons must be pressed within 2 minutes.

3. PowerLine Network

After the network security setup steps, your PowerLine network will be securely configured with the same network encryption key. The PowerLine AV Mini 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 1 second and then follow the security setup procedure above.

Using the Setup Wizard

Follow the simple steps below to run the Setup Wizard to guide you quickly through the installation process. Insert the D-Link DHP-310AV CD into your CD-ROM drive. If the CD Autorun function does not automatically start on your computer, click **Start** > **Run**. In the Run command box type "**D:\autorun.exe**", where D: represents the drive letter of your CD-ROM. If it does start, proceed to the next screen.

Click on **Install** to begin.

Note: In order to properly install the PowerLine AV utility, you will first need to install WinPcap.



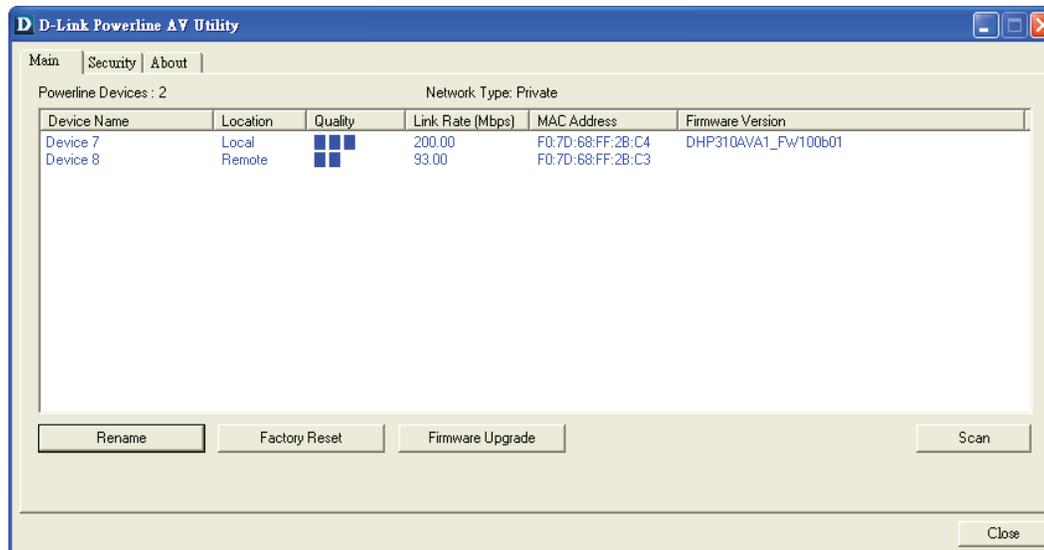
Configuration

After you have completed the D-Link PowerLine AV Utility installation wizard, double-click the D-Link PowerLine AV Utility icon on your desktop to start the configuration of the DHP-310AV.

Double-click the D-Link PowerLine AV Utility icon



The D-Link PowerLine AV Utility provides you the option of setting your own PowerLine network and the network information of connected PowerLine devices.



Device Name: Shows the name of the devices that have been discovered. The device's name is initially set by the utility itself.

Location: Shows if the device is local or remote

Quality: Shows the network connection quality of the connected device.

- Three squares - Suitable for HD video stream connection.
- Two squares - Suitable for SD video stream connection.
- One square - Suitable for data and Internet activity connection.

Link Rate: Shows the link rate of the connected to the PowerLine device.

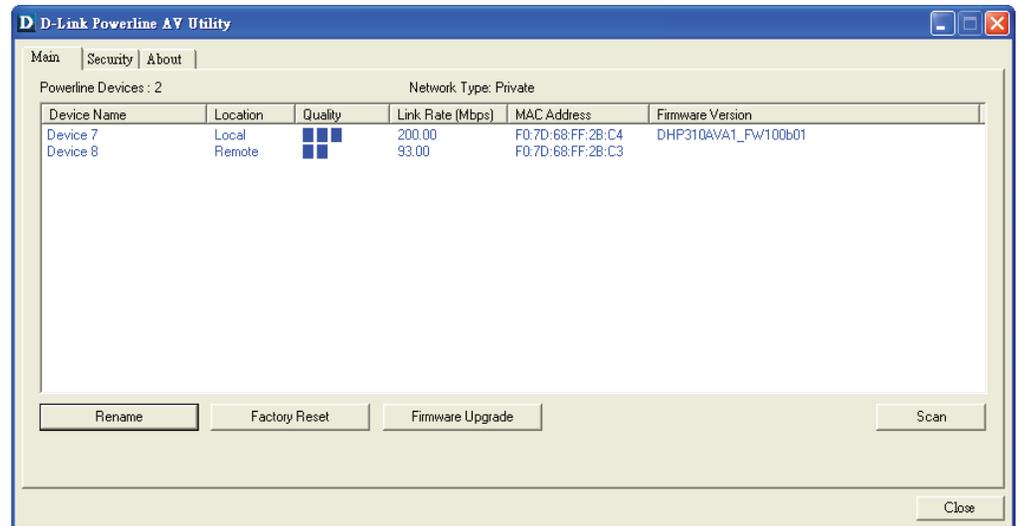
MAC Address: Shows the MAC address of the connected PowerLine device.

Firmware Version: Shows the firmware version of the connected PowerLine device.

Factory Reset: Click **Factory Reset** to reset the device back to factory default settings.

Firmware Upgrade: Click **Firmware Upgrade** to improve the functionality of your powerLine device.

After you have downloaded the new firmware, click **Browse** to locate the firmware update on your hard drive. Click **OK** to proceed to firmware upgrade.



Security

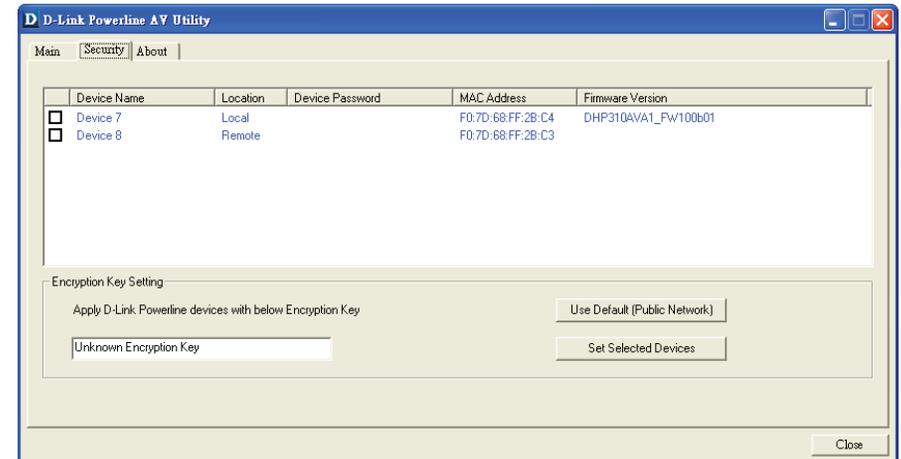
Understanding the Encryption Key setting:

The PowerLine devices on the same network must use an identical encryption key. The default encryption key for each PowerLine device is HomePlugAV. All devices with a default encryption key can communicate with each other. It is 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.

Setting your private Encryption Key

1. Enter the device's password before changing the encryption key:
 - Local Device: You do not need to enter the device's password before changing the encryption key.
 - Remote Device: You must enter the device's password before changing the encryption key.

Note: Each device has a unique device password on the device label.



2. Select the remote device and then enter the device's password into the Set Device Password window. Then click **OK**.
3. Select the PowerLine devices that you would like to apply the encryption key setting. Then, type your private encryption key into the Encryption Key Setting field and click **Set Selected Devices**. The utility will show a message once the setting has been completed.



Adding a Device to your PowerLine network

If you use the default encryption key within the existing PowerLine network and the new device retains the default encryption key, you can plug the new device into a power outlet. Then, all devices can communicate with each other.

If the encryption key within the existing PowerLine network has been customized, you have two ways to add the new device to your PowerLine network.

1. You can use the PowerLine AV Utility to apply the customized encryption key in your record to the new device. Then, all devices can communicate with each other by using the customized encryption key.
2. You can use the PowerLine AV Utility to set all devices within the existing PowerLine network and the new device back to the first default encryption key. Then follow the 1 to 3 steps of "Setting your private Encryption Key". Your PowerLine network will securely be configured with a customized encryption key and all of the devices will be able to communicate with each other after your setting.

Troubleshooting

- **PowerLine AV utility does not start correctly:**

Reinstall the utility.

- **PowerLine AV utility does not detect the PowerLine AV Mini Adapter:**

Please make sure your PowerLine AV Mini Adapter is correctly plugged and connected to the computer or network device.

- **I can't configure any parameter of the PowerLine AV Mini Adapter, an error is shown when I try to configure it:**

Please make sure you have not unplugged the PowerLine AV Mini Adapter while configuring it.

- **I changed the connection cable to another Mini Adapter and now the 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 problems configuring your network with two or more PowerLine AV Mini Adapters, please make a reset to all of the Mini Adapters and start configuring the adapters again. To test whether the electrical wiring is contributing to the problem, plug the PowerLine adapters in the same room.

Technical Specifications

Network Ports

- One 10/100 Ethernet port

EMC

- FCC Part 15 Class B
- CE Class B
- C-Tick

AC Input

- 100 ~ 240VAC, 50/60Hz

Safety

- UL, CE LVD

Power Consumption Compliance

- EuP (Energy using Product Directive)
- Code of Conduct on Energy Consumption of Broadband Equipment

Encryption

- 128-bit AES

Operation Temperature

- 0°C ~ 40°C

Storage Temperature

- -10°C ~ 70°C

Humidity

- Operation: 10% ~ 90% RH
- Storage: 5% ~ 90% RH