

TP-LINK®

User Guide

TL-PA4010

AV600 Powerline Adapter



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Chapter 1 Introduction

This device is an AV600 Powerline Adapter which transforms your house's existing electrical wiring into a ubiquitous networking infrastructure. Simply plug this AV600 Powerline Adapter into an ordinary AC power outlet which will easily extend your Cable/xDSL broadband connection or existing Ethernet (LAN) network to any other electrical outlet on the same electrical circuit of a house without the need of any new cabling.

This powerline adapter supports up to 600Mbps data rate over the existing household power circuit. With data rates of 600Mbps, full multimedia application can easily be supported throughout the whole house in addition to Internet access. This powerline adapter uses the existing power lines installed in a home as a path to transmit digital data, voice, audio and video between devices.

To ensure data communication's security and multimedia applications, this powerline adapter supports built-in 128-bit AES encryption and Quality of Service (QoS) features. With minimum setup, you can install and use this powerline adapter within minutes. The adapter adds two useful functions.

1. Existing connection with a new unassociated device added via the **Pair Button**.
2. Reset to default setting via the **tpPLC** or the **Pair Button**.

Note:

TP-LINK tpPLC Utility is provided to manage powerline devices. For detailed instructions, please refer to the tpPLC Utility's User Guide.

1.1 System Requirement

- a) At least two AC power outlets (100–240V~, 50/60Hz) with standard home power wiring
- b) A computer with the following:
 - Operating System with TCP/IP installed
 - Pentium III compatible processor and above
 - Ethernet LAN card installed with TCP/IP protocol
 - 64 MB RAM or more
 - 50 MB of free disk space (Minimum)

1.2 Important Safety Instructions

1. Do not open this product or attempt to service it; it may expose you to dangerous high voltage or other risks.
2. Do not operate this product near water.
3. Do not place or operate this product near a radiator or a heat register.
4. Do not expose this product to dampness, dust or corrosive liquids.
5. Do not connect this product or disconnect it from a wall socket during a lightning or a thunderstorm.
6. Do not block the ventilation slots of this product, for insufficient airflow may harm it.
7. Do not put anything on this product.
8. Plug this product directly into a wall socket (100–240V~, 50/60Hz). Do not use an extension cord between this product and the AC power source.

9. When plugging this product into a wall socket, make sure that the electrical socket is not damaged, and that there is no gas leakage.
10. Place the connecting cables properly so that people won't stumble or walk on it.
11. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult the qualified technician.
12. Unplug this product from the mains and refer the product to qualified service personnel for the following conditions:
 - If liquid has been spilled on the product
 - If the product has been exposed to rain or water
13. Unplug this product from the wall socket before cleaning. Use a damp cloth for cleaning. Do not use liquid cleaners or aerosol cleaners.
14. The specification of the fuse is **T2.5AL250V**. To avoid damage, please do not change the fuse.
15. The Operating temperature is 0°C~40°C (32°F~104°F).
16. The Storage temperature is -20°C~70°C (-4°F~158°F).


1.3 Conventions



The powerline adapter or AV600 Powerline Adapter mentioned in this guide stands for TL-PA4010 AV600 Powerline Adapter without any explanation.

1.4 LED Indicator

The LED indicator displays information about the device's status.



Item	Status	Indication
 Power LED	On/Off	The powerline adapter is on or off.
	Blinking	Once every second: Pairing is in process.
		Once every 15 seconds: Power-Saving Mode is on.*

Item	Status	Indication
 Powerline LED	On	The powerline adapter is connected to a powerline network.
	Off	The powerline adapter is not connected to any powerline network or is in Power-Saving Mode.*
 Ethernet LED	On/Off	The Ethernet port is connected or not connected.

Note:

Five minutes after the device connected to the powerline adapter is turned off or inactive, the powerline adapter will automatically switch to Power-Saving Mode.

1.5 Physical Interface

There are several types of physical interfaces on this powerline adapter.



Interface	Description
Power Plug	A power plug for connecting the adapter to an AC power socket (100–240V~, 50/60Hz).
Pair Button	Press and hold for 1 second to set up or join a secure powerline network. Press and hold for about 8 seconds to leave an existing powerline network. Press and hold for more than 15 seconds to reset the powerline adapter.
Ethernet Port	A 10/100 Mbps Ethernet port for connecting the adapter to the PC or the broadband device with a network cable.

 **Note:**

1. If the pair button is pressed for about 8 seconds, the powerline adapter will leave the network which it has joined and its new network name assumes a random value. The Powerline LED turns off when it disconnects from the powerline network.
2. For detailed information about the pair button, please refer to [Chapter 3 Advanced Feature: How to Use the Pair Button](#).

Chapter 2 Connecting Mechanism

2.1 Introduction

The powerline adapter supports up to 600Mbps data rate. With this high speed connection rate, this powerline adapter allows you to set up a high speed home network by using your home existing electrical wiring. Simply plug this powerline adapter into an ordinary power outlet to extend your Cable/xDSL broadband connection or existing LAN network to any other electrical outlet in any room of your house.

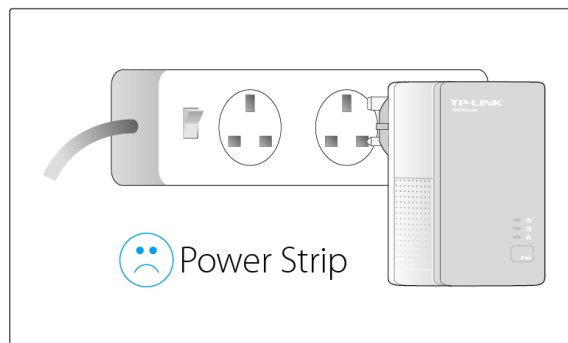
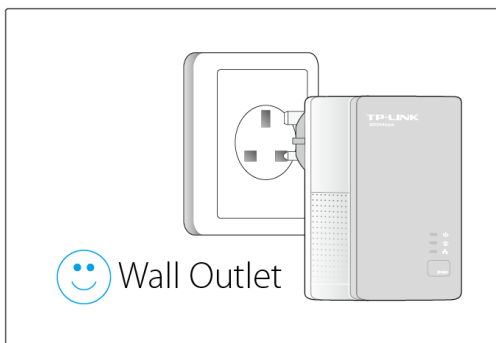
Note that powerline adapters work in pairs. One powerline adapter is connected to your Cable/xDSL broadband to extend broadband connection and Internet surfing. The other powerline adapter is connected to the computer for network access. With clean power line, the distance between two powerline adapters can reach up to 300 meters, but the actual distance may vary due to the environment.

Section below describes the connection instructions and hardware connection mechanism.

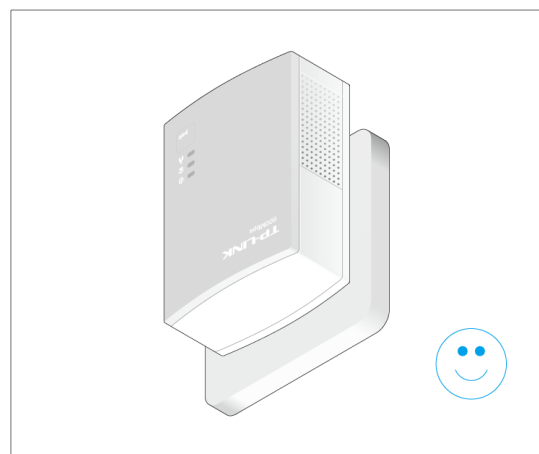
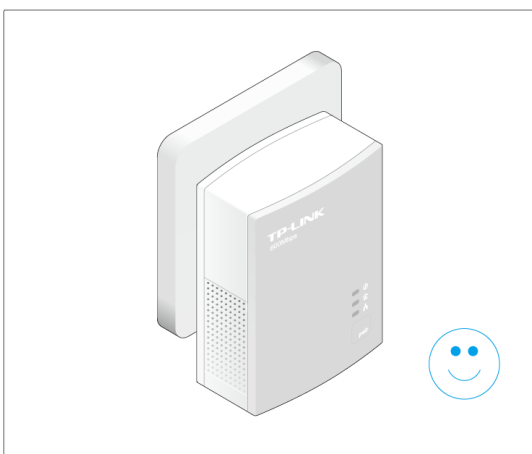
2.2 Connection Instruction

To ensure the optimum performance of the powerline adapter and significantly improve the transmission capacity of the network, we recommend that you comply with the following connection rule:

- Plug the powerline adapter directly into a wall socket but not the multiple sockets.



- The equipment can only be used in below directions.





- All powerline adapters and extenders should be on the same electrical circuit.

2.3 Hardware Connection – Computer

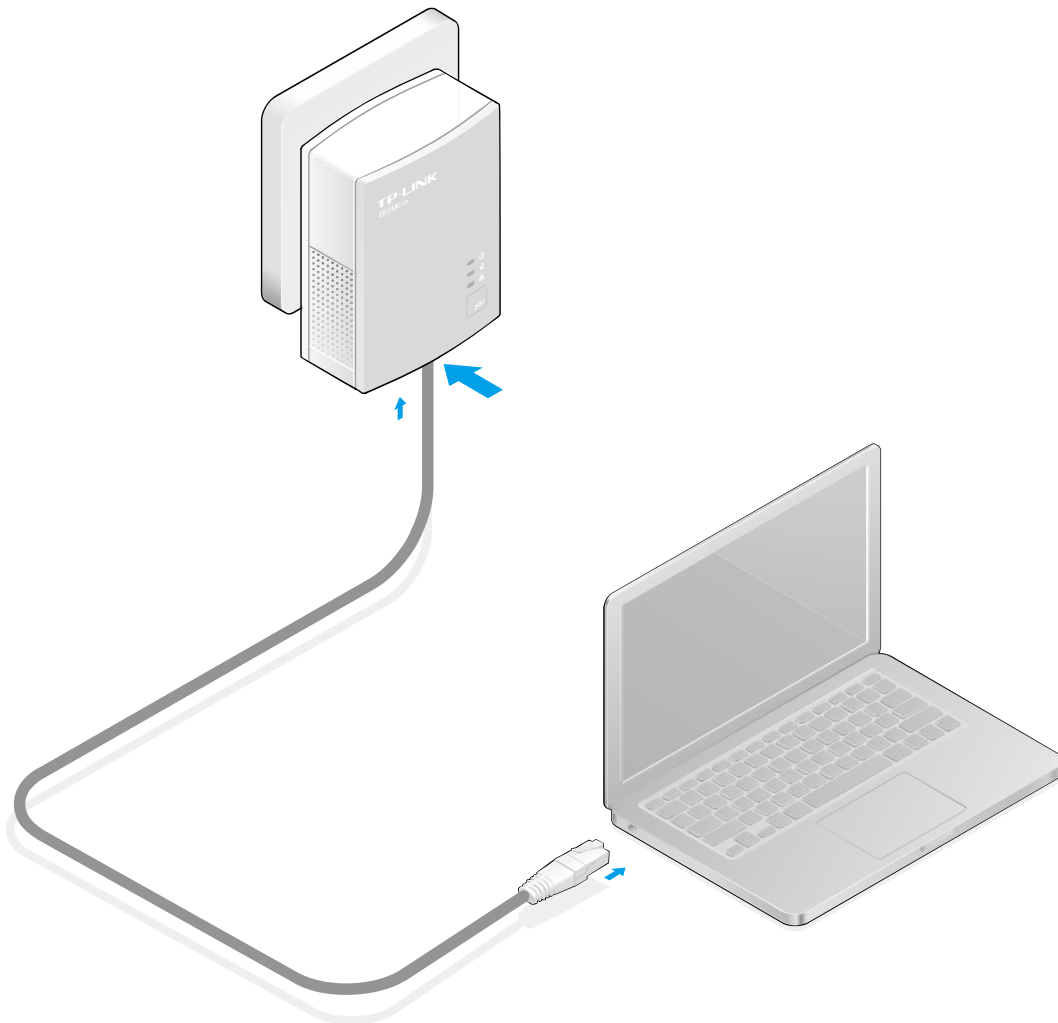
For those computers you wish to be networked by powerline adapter, each of the computers must be

properly connected with a powerline adapter through an Ethernet (RJ45) cable.

Following are the steps to properly connect the powerline adapter to your computer:

1. Connect one end of the provided Ethernet (RJ45) cable to an Ethernet port of the powerline adapter.
2. Connect the other end of the Ethernet (RJ45) cable to your computer's LAN port.
3. Plug the powerline adapter into a wall socket.
4. Turn on your computer.
5. Check and confirm that the Power LED  and Ethernet LED  on the powerline adapter are **ON**.

The hardware connection mechanism is shown below:



 **Note:**




Do not connect the powerline adapter to any extension lead, power strip, extension cord or surge protector, as this may degrade the network performance.

2.4 Hardware Connection – Internet

This section describes how to connect the powerline adapter into your existing ADSL broadband connection via ADSL Ethernet port. Follow the procedures described below to connect the powerline adapter to your ADSL broadband connection:

1. Connect one end of the provided Ethernet (RJ45) cable to an Ethernet port of the powerline adapter.
2. Connect the other end of the Ethernet (RJ45) cable to an available Ethernet port of your ADSL

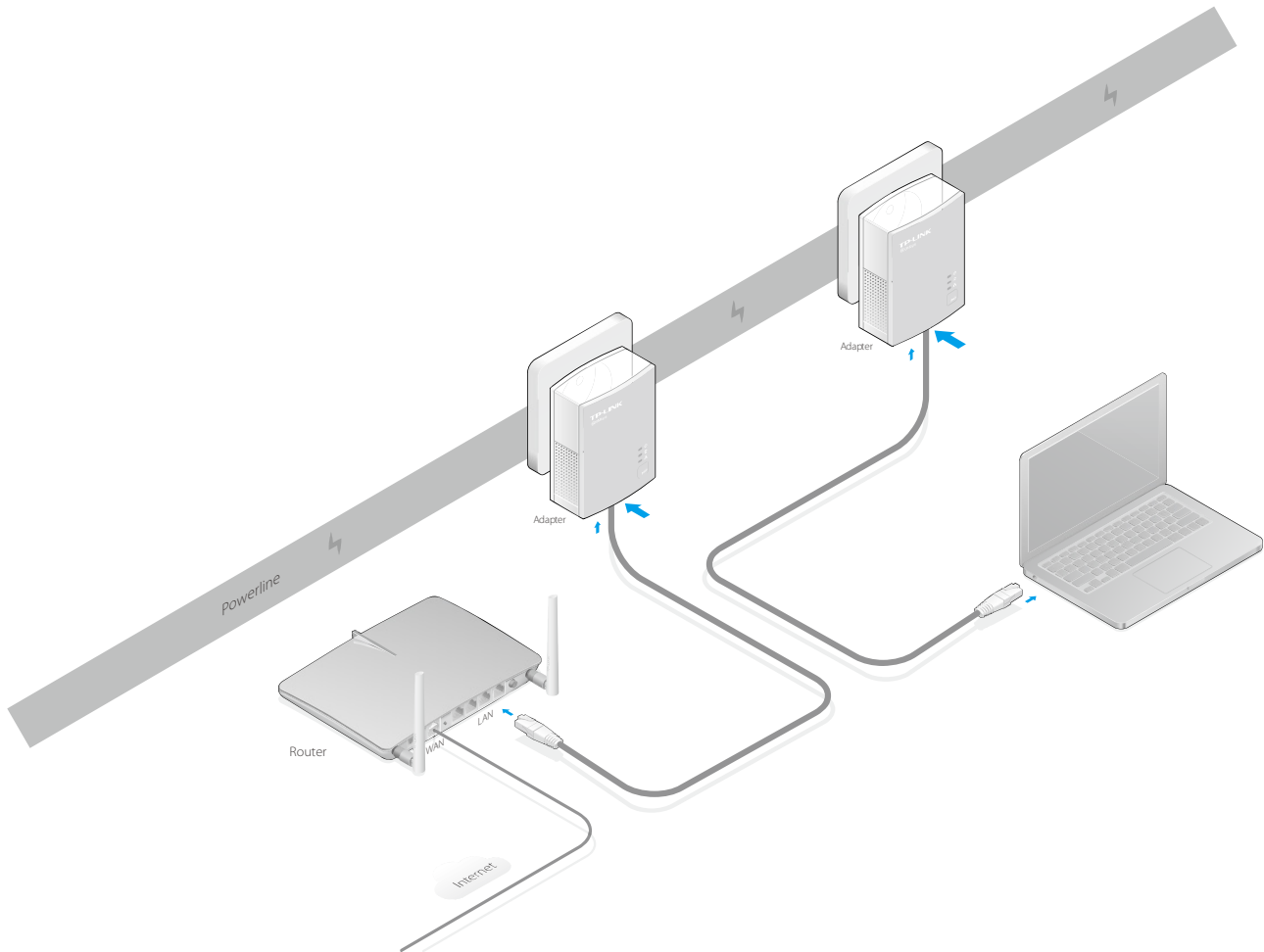
broadband Router.

3. Plug the powerline adapter into a wall socket.
4. Check and confirm that the Power LED , Ethernet LED , and Powerline LED  on the powerline adapter are **ON**.

 **Note:**

If any LED does not turn on, refer to [Appendix: Troubleshooting](#).

The hardware connection mechanism is shown below:



 **Note:**

Where the MAINS plug or an appliance coupler is used as the disconnected device, the disconnected device shall remain readily operable. The idle wall sockets or electrical outlets in your household electrical circuit can be used normally without interference from the network.

Chapter 3 Advanced Feature: How to Use the Pair Button

3.1 Set Up a Secure Powerline Network

The Homeplug AV standard uses 128-bit AES (Advanced Encryption Standard) to safely transmit data between powerline adapters. For the powerline adapters to communicate with each other, they all need to use the same Network Membership Key (NMK). Otherwise, they cannot unscramble the encrypted data sent in the powerline network.

The **Pair** button allows you to set up a secure powerline connection with other HomePlugAV compliant powerline devices which also support the **Pair** feature.

You can connect a number of devices on a powerline network, but you can only use the Pair button on two devices at a time.

Create a secure powerline network using the Pair button:

- Step 1.** Press the Pair button of powerline adapter A for one second. The Power LED will start flashing.
- Step 2.** Within 2 minutes, press the Pair button of powerline adapter B for one second. The Power LED will start flashing.
- Step 3.** Wait for about 1 minute while your powerline adapters A and B are connecting. The Power LEDs on both adapters will stop flashing and become solid light when the connection is made.

Join an existing secure powerline network:

Powerline adapter A and powerline adapter B form a HomeplugAV network. Powerline adapter C wants to join this network.

- Step 1.** Press and hold the Pair button on powerline adapter C for one second.
- Step 2.** Within 2 minutes, press and hold the Pair button on powerline adapter A/B for one second.
- Step 3.** Wait for about 1 minute while your powerline adapters are connecting. The Power LEDs on powerline adapters A/B and C will stop flashing and become solid light when the connection is made.



Note:

The sequence of Step 1 and Step 2 can be exchanged.

3.2 Leave an Existing Secure Powerline Network

Powerline adapters A, B and C have formed a HomeplugAV network. The user wants to remove one device (powerline adapter A) from this network.

- Step 1.** Press and hold the Pair button on powerline adapter A for about 8 seconds, and then release the button. (All LEDs of powerline adapter A will momentarily go off.)
- Step 2.** Wait until the Powerline LED of powerline adapter A turns off, and the powerline adapter is disconnected from the powerline network.

3.3 Reset

To reset the powerline adapter:

Press and hold the Pair button for more than 15 seconds, and then release the button. You will see all LEDs go off momentarily, and then begin to flash. When the Power LED turn solid, the reset process is completed.

Be careful, don't power off the powerline adapter when it is in reset process.

Appendix: Troubleshooting

The Troubleshooting provides answers to common problems regarding the powerline adapter.

1. The Power LED does not light up.

Ans. Check the following:

- A. Make sure that the powerline adapter is properly plugged into a power outlet.
- B. Make sure the power outlet is active (working) by plugging another electric device into it.
- C. Re-plug the powerline adapter to the power outlet. If the Power LED still fails to light up, contact your local dealer for technical support.

2. The Ethernet LED does not light up.

Ans. Check the following:

- A. Make sure that the Ethernet cable (RJ45) is properly connected to an Ethernet port of the powerline adapter.
- B. Make sure that the other end of the Ethernet cable (RJ45) is properly connected to the computer LAN card or to your Cable/xDSL Ethernet port.
- C. Make sure your computer LAN card is properly installed and configured.
- D. Contact your local dealer for technical support if the Ethernet LED still fails to light up after the above procedures.

3. The Powerline LED does not light up.

Ans. Check the following:

- A. Make sure all powerline adapters are on the same electrical circuit.
- B. Install and open the tpPLC Utility. The utility will automatically detect all other powerline adapters on your powerline network. If only one powerline adapter is detected, the powerline network is not set up successfully. Set up a powerline network again by following "[3.1 Set Up a Secure Powerline Network](#)" and check whether the Powerline LED lights up or not.
- C. Try to add a second Powerline Adapter to the existing powerline network by plugging a Powerline Adapter into a nearby power outlet or by following "[3.1 Set Up a Secure Powerline Network](#)" and check whether the Powerline LED lights up or not.
- D. Contact your local dealer for technical support if the Powerline LED still fails to light up after the above procedures.

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CE Mark Warning






This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Safety Information

- When product has power button, the power button is one of the way to shut off the product; when there is no power button, the only way to completely shut off power is to disconnect the product or the power adapter from the power source.
- Don't disassemble the product, or make repairs yourself. You run the risk of electric shock and voiding the limited warranty. If you need service, please contact us.
- Avoid water and wet locations.

Explanation of the symbols on the product label

Symbol	Explanation
	<p>RECYCLING</p> <p>This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment.</p> <p>User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.</p>
	AC voltage
	Indoor use only

DECLARATION OF CONFORMITY

For the following equipment:

Product Description: **AV600 Powerline Adapter**

Model No.: **TL-PA4010**

Trademark: **TP-LINK**

We declare under our own responsibility that the above products satisfy all the technical regulations applicable to the product within the scope of Council Directives:

Directives 2004/108/EC, Directives 2006/95/EC, Directives 2011/65/EU, Directives 1999/5/EC, Directives 1999/519/EC

The above product is in conformity with the following standards or other normative documents:

EN 55022: 2010 + AC: 2011

EN 50412-2-1: 2005

EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013

EN 50581: 2012

(EC) No 1275/2008

(EU) No 801/2013

The product carries the CE Mark



Person responsible for making this declaration:

A handwritten signature in black ink, appearing to read 'Yang Hongliang', is written over a light gray rectangular background.

Yang Hongliang

Product Manager of International Business

Date of issue: **2016-02-24**

TP-LINK TECHNOLOGIES CO., LTD.

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