User's Guide

TRENDNET®

200Mbps Compact Powerline AV Adapter
200Mbps Compact Powerline AV Adapter Kit

TPL-306E/ TPL-306E2K

Contents

Product Overview

TPL-306E

TPL-306E2K

Package Contents

The *TPL-306E* package includes:
- 1 x TPL-306E 200Mbps Compact Powerline AV adapter
- Muti-Language Quick Installation Guide
- CD-ROM (Utility & User's Guide)
- Network cable (1.5m / 5ft)

The *TPL-306E2K* package includes:
- 2 x TPL-306E 200Mbps Compact Powerline AV adapters
- Muti-Language Quick Installation Guide
- CD-ROM (Utility & User's Guide)
- 2 x network cables (1.5m / 5ft)

If any package contents are missing or damaged, please contact the retail store, online retailer, or reseller/distributor that the item was purchased.

Features

The 200Mbps Compact Powerline AV Adapter, model TPL-306E, uses any electrical outlet to create a secure high speed building-wide network. Connect one adapter to your existing network and plug another adapter in to any outlet on your electrical system for instant high speed network access throughout your home.

The compact form factor offers more space around electrical outlets for other devices. Adapters connect automatically with no installation required. For added security, TRENDnet recommends using the one-touch connect button to change the default network key.

Use up to 6 adapters to network devices in different rooms without the need for new cabling. Power Save mode reduces power consumption by up to 80%. LED displays convey device status for easy power management and troubleshooting. Quality of Service technology prioritizes video, audio, and online gaming. Advanced AES encryption secures your network. This adapter is ideal for use in buildings that interfere with wireless networking signals.

- 200Mbps building-wide networking over an existing connected electrical system
- Compliant with the HomePlug® AV and IEEE 1901 standard
- 1 x 10/100Mbps Auto-MDIX Ethernet Port
- Compact form factor saves space
- One-touch Sync button to change the default encryption key
- Connect one 200Mbps** Powerline AV Adapter to the Internet and then plug in up to 5* additional Powerline AV adapters for instant building connectivity
- Share data intensive files, play games, download music, and more at faster data transfer rates
- Advanced 128-bit AES encryption to ensure total network security
- Power Save mode reduces electrical consumption by 80%
- Neighbor network support for up to 4 overlapping networks
- Three LED indicators: Power (on/off), Powerline Connection (green (best), amber (better), red (good), off(no connection)), Ethernet Connection (solid (connection), blinking (transfer activity), off (no connection))
- Network signal transmits up to 300 meters (984 ft.)
- Auto QoS support through traffic classification and multiple priority queuing
- Compatible with all operating systems

- Optional management utility compatible with Windows 7 (32/64-bit), Vista (32/64-bit), and XP (32/64-bit) operating systems

* Maximum of 6 adapters (nodes) for streaming video across your network.

** 200Mbps is the maximum theoretical Powerline data rate. Actual throughput will vary depending on environment.

*** Networked Powerline devices need to be plugged into power outlets that are on the same electrical system.

Product Hardware Features

Device Label

Product Model
Device Serial Number

Device MAC Address
Device Password (DPW)
Hardware Version
Firmware Version

TRENDNET
MODEL NO:
S/N:

MAC:
DPW: VARS-ECHE-SAGA-OWED
H/W: V1.0R
F/W:
This device complies with Part 15 of FCC Rules.
Made in China

Ethernet Connection (ETH) LED

Power (PWR) LED

Powerline (PL) LED

Reset Button

Sync Button   Ethernet Port

Power Prong

US EU

UK
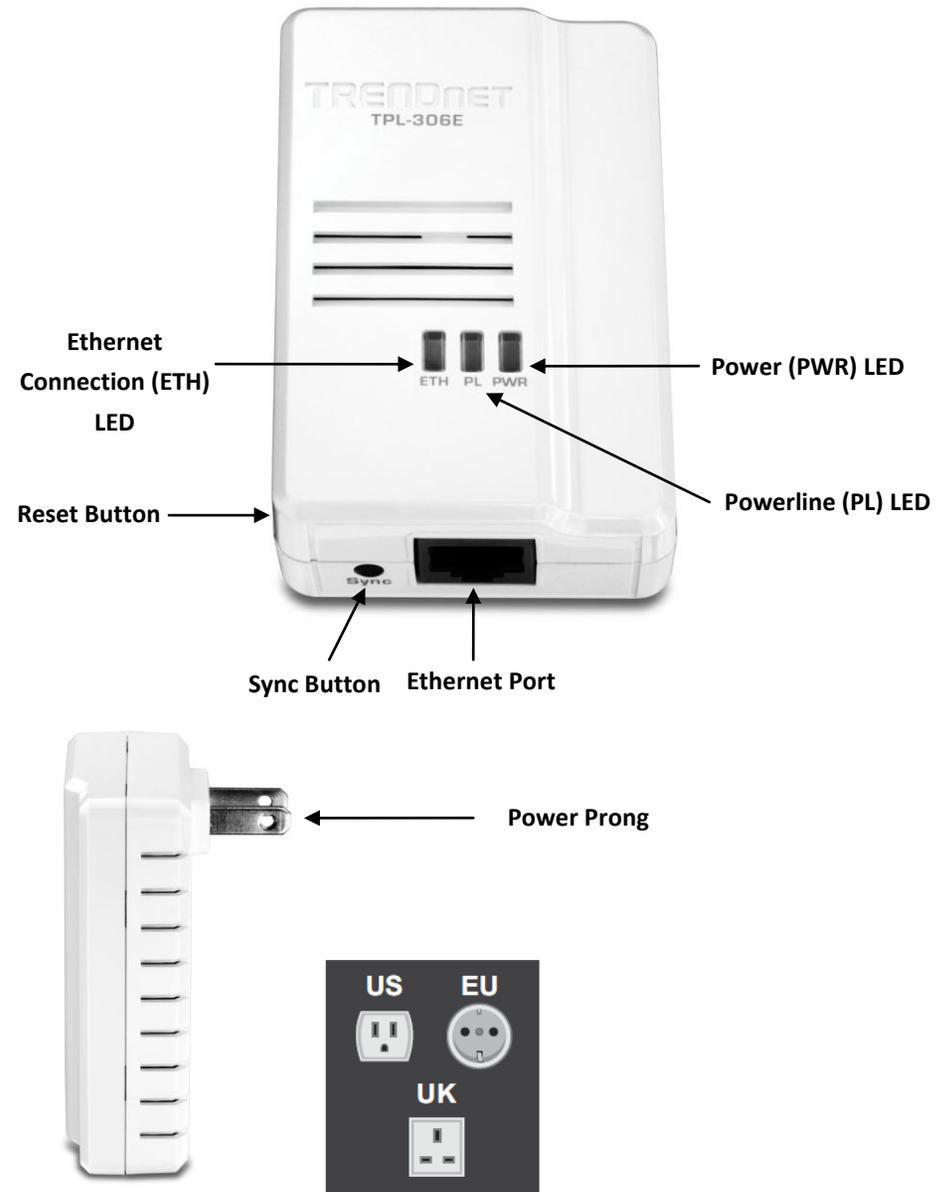
- **Ethernet Port -** Connect an Ethernet cable (also called network cable) from your Powerline adapter Ethernet port and to your computer or network device.

- **Sync Button –** Changes the default encryption key.

- **Reset Button –** Resets the unit to factory defaults.

Button	Action	Function
Sync	Push/Hold for 2 sec	Initiate Sync/Connection and generate random network name/key on first adapter (PWR LED will start blinking)
		Match network name/key on secondary or additional adapter and connect to first adapter. (PWR LED will start blinking)
		Note: The secondary or additional Powerline adapter's Sync button must also be pushed within 2 minutes (120 sec) of pushing the Sync button of the first adapter in order to establish connectivity.
	Push/Hold for 10 sec	Erases the network name/key (All LEDs will turn off and turn back on)
Reset	Push/Hold for 1 sec	Reset device to factory defaults (All LEDs will turn off and turn back on) Note: Will reset to the factory default private network name "HomePlugAV"

- **Power Prong** – Plugs into an available power outlet.

- **Diagnostic LEDs –** Indicates the device status and connectivity.

Note: Powerline (PL) LED color indicates the strength and quality of the Powerline connection through the electrical system.

LED	Color	Sequence	Definition
PWR (Power)	Green	Solid	Device powered On
	N/A	Off	Device powered Off
PL (Powerline)	Green	Solid	Powerline Connected (Connection Quality is Best)
		Blinking	Syncing or Powerline Data Transmitting/Receiving (Connection Quality is Best)
	Amber	Solid	Powerline Connected (Connection Quality is Better)
		Blinking	Powerline Data Transmitting/Receiving (Connection Quality is Better)
	Red	Solid	Powerline Connected (Connection Quality is Good)
		Blinking	Powerline Data Transmitting/Receiving (Connection Quality is Good)
	N/A	Off	Powerline is not synced or connected
ETH (Ethernet Connection)	Green	Solid	10/20 Mbps or 100/200Mbps (Half/Full Duplex) Connected
		Blinking	10/20Mbps or 100/200Mbps (Half/Full Duplex) Data Transmitting/Receiving
	N/A	Off	Port Disconnected/No Ethernet Link

*Note: The following factors may affect the Powerline network's connection quality:*
- *Noise – Generated by appliances that are connected to your electrical system through power outlets that have high power consumption requirements. (e.g. Microwaves, ovens, blow dryer, iron, dishwasher, etc.) The quality of your household electrical wiring may also cause additional noise on your electrical system.*
- *Distance – Long lengths of electrical wiring through your electrical system between connected Powerline adapters.*

Power Saving: The device will automatically reduce power usage when the connected devices via Ethernet are powered off, unplugged or inactive for more than 3 minutes.

Erp (EuP) Operation: Standby Mode

- Disconnect the Ethernet cables from the device Ethernet ports, and after 3 minutes, the device will enter standby mode. The Power (PWR) LED will flash every 15 seconds to indicate that the device is currently in standby mode.
- To return to active mode, reconnect the Ethernet cables to the device Ethernet ports, and the device will re-enter active mode.

Application Diagram
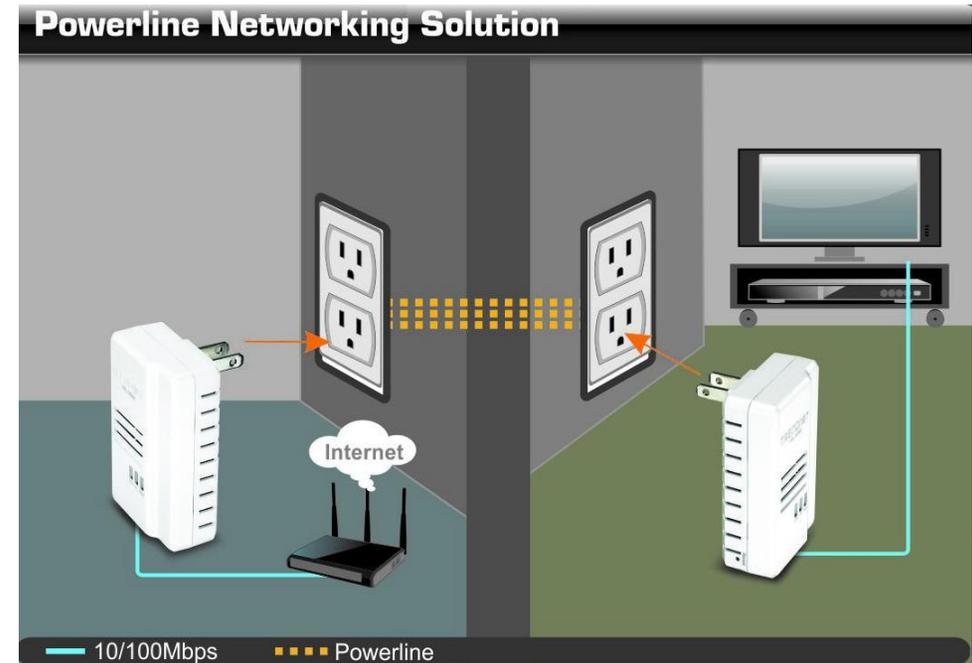
A router is already installed in the room where the xDSL/Cable modem (typically supplied by your ISP "Internet Service Provider") is located in order to physically connect an Ethernet cable (also called network cable) from the router WAN port to the modem network port which connects to the Internet. A second Powerline adapter is plugged into a wall power outlet in another room in order to extend the network connectivity to the network devices in that room. The Ethernet port of the second Powerline adapter is then connected to a network enabled TV or other network enabled media device in order to extend connectivity to these devices allowing access to your network and to the Internet through the electrical system.

Installing your Powerline Adapters

Before you Install

1. Before you proceed with the installation, verify the following:

- You already have an existing Ethernet network along with a router already installed.
- You already have Internet access through your existing network.
- An Ethernet port (also called LAN port) is available on your router.
- Verify that you have at least two Powerline adapters. You will need at least two Powerline adapters to create a Powerline network.

  Note: The TPL-306E package only includes a single Powerline adapter. Please ensure that your other Powerline adapter is HomePlug® AV or IEEE 1901 compliant (e.g. TRENDnet models TPL-303E, TPL-304E, TPL-305E, TPL-307E, TPL-310AP, TPL-401E, TPL-402E, TPL-405E, or another TPL-306E.) The TPL-306E2K package already includes two Powerline adapters.

2. Plan the location of where you will install your Powerline adapters.

- Avoid plugging the adapters into power strips, extension cords, or surge protectors as this may prevent the adapter from functioning correctly such as degrading performance.
- Avoid plugging the adapters into wall power outlets that are controlled by a switch to prevent the Powerline adapter from being turned off accidentally.
- Avoid plugging the adapters into wall power outlets that are located near appliances that consume a lot of power (e.g. refrigerators, washers, dryers) as this may degrade performance.
- Make sure there is an available wall power outlet in the room where the router is installed and also near the router.
- Make sure there is an available wall power outlet in the room where you want to extend your network connectivity.
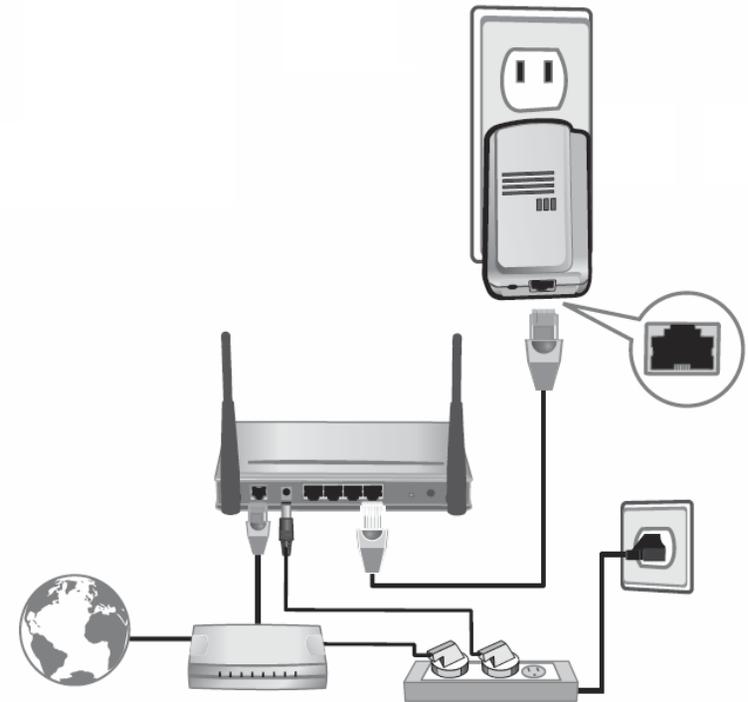
Connect a Powerline adapter to your router

1. Plug the Powerline adapter into an available wall power outlet near your router.
Note: This will allow devices connected to your Powerline network to access the Internet and other devices connected to your network.

2. Connect the included Ethernet cable (also called network cable) from the Ethernet port (also called network port) of your Powerline adapter to an available Ethernet port (also called LAN port) on your router.

3. Once the Powerline adapter is installed and connected to your router, verify that the **Power (PWR) LED** is on or blinking and the **Ethernet Connection (ETH) LED** is on or blinking.

Add adapters to your network

Once you have installed and connected the first Powerline adapter to your router, you can easily extend your network to other rooms by adding additional Powerline adapters.

To extend your network using an additional Powerline adapter:

1. First, make sure the first Powerline adapter is installed and connected to your router.

Note: This will allow devices connected to your Powerline network to access the Internet and other devices connected to your network. See "Connect a Powerline adapter to your router" on <u>page 5</u>.

2. Plug the additional Powerline adapter into an available wall power outlet in another room near a computer or network device (e.g. game consoles, network-enabled TVs, network attached storage, network media server/players, etc.) that you would like to connect to your network.

3. Connect the included Ethernet cable (also called network cable) from the Ethernet port (also called network port) on your Powerline adapter to the to the Ethernet port of your computer or network device.

4. After the additional Powerline adapter is connected and installed to your computer or network device, wait for the **Powerline (PL) LED** to turn on. After the **Powerline (PL) LED** turns on, verify that the **Power (PWR) LED** is on, the **Powerline (PL) LED** is on or blinking, and the **Ethernet Connection (ETH) LED** is on or blinking.

Note: To verify that your Powerline adapters are connected successfully to your network, you can check if the computers or network devices are able to access the Internet through your Powerline adapters, or using a computer, check if you are able to access the network devices connected to your network.

To install additional Powerline adapters in other rooms, repeat the steps above for each adapter.
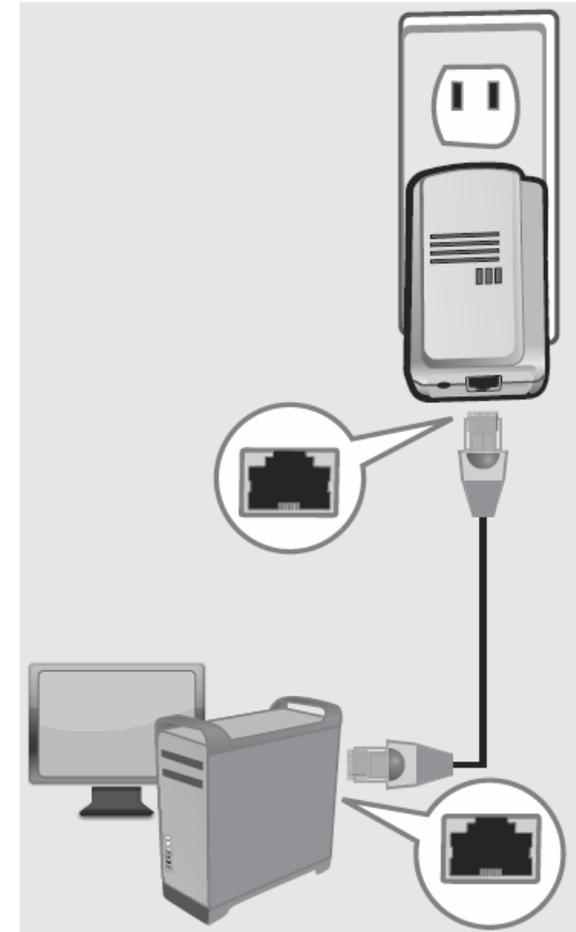
Securing your Powerline Network

Powerline networks consist of two or more Powerline devices connected together using the same encryption key. At default settings, all TRENDnet Powerline adapters are assigned the same encryption key and there is no additional setup required for the first installation. You would simply need to plug the TRENDnet Powerline adapters into available wall power outlets and the adapters will connect to each other using the default encryption key **HomePlugAV** and create your Powerline network automatically.

In order for your Powerline devices to connect to the same Powerline network, the same encryption key must be assigned to all Powerline devices in that network. Powerline devices that are not assigned the same encryption key will not be able to connect to the Powerline network.

For additional security, it is recommended that you can change the default encryption key to prevent anyone nearby with a Powerline network from gaining access to your network.

Note: After the default encryption key has been changed and the Powerline adapters have been connected using a new encryption key, the Powerline adapters will retain their security settings when they are unplugged and moved to a new location. No additional reconfiguration of the Powerline adapters is needed after the default encryption has been changed.

There are two methods you can change the default encryption key:

- Use the physical **Sync** button on your Powerline adapter to generate a random encryption key. See "Using the Sync Button" on page 7.

    OR

- Create a customized encryption key for your Powerline network using the included Powerline Utility. See "Using the Powerline Utility" on page 9.

Using the Sync button

Change your default encryption key using the Sync button

The physical **Sync** button on the Powerline adapter provides an easy method of changing the default encryption key. The **Sync** button generates a random encryption key for your Powerline network. To create a customized encryption key, see "Using the Powerline Utility" on page 9.

Note: The default encryption key assigned to TRENDnet Powerline adapters is HomePlugAV. Before changing the default encryption, please ensure that your Powerline adapters are already installed and connected using the default encryption key.

See "Installing your Powerline Adapters" on page 5.
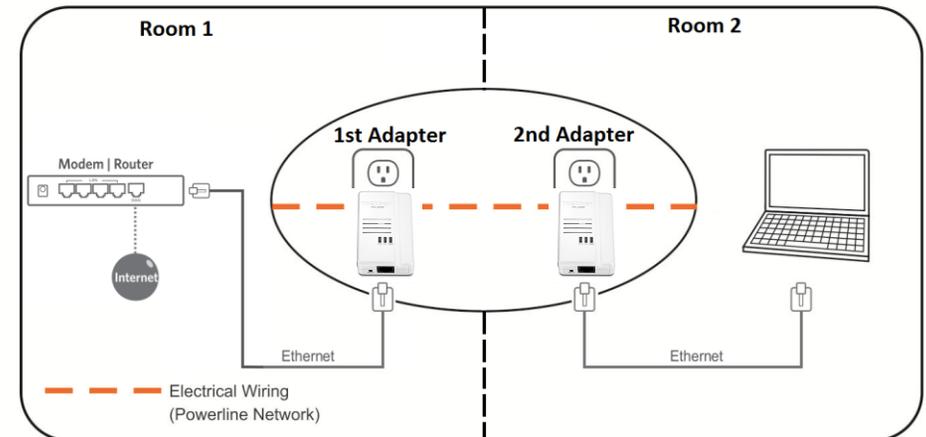
**To change the default encryption key between two Powerline adapters:**

1. Verify that all Powerline adapters are already installed and connected using the default encryption key, see "Installing your Powerline Adapters" on *page 5*.

2. On one of your connected Powerline adapters, push and hold the **Sync** button for 10 seconds and release it. All LEDs will turn off and turn back on. This will erase the current encryption key assigned to the first Powerline adapter.

Note: Once you complete this step, the other Powerline adapter will not be able to communicate to this Powerline adapter.

3. Push and hold the **Sync** button on the other Powerline adapter for 10 seconds and release it. All LEDs will turn off and turn back on. This will erase the current encryption key assigned to the second Powerline adapter.

4. Within 2 minutes, push and hold the **Sync** button on the first Powerline adapter for 2 seconds and release it. The **Power (PWR) LED** will start blinking. This will generate a random encryption key on the first Powerline adapter.

5. Push and hold the **Sync** button on the second Powerline adapter for 2 seconds and release it. The **Power** (**PWR) LED** will start blinking. This will create a connection between both Powerline adapters using the new encryption key. All LEDs will turn off and turn back on and the **Powerline (PL) LED** will turn on the when adapters are connected.

Add adapters using the Sync button

If you have changed the default encryption key assigned to your Powerline adapters, additional adapters will not automatically connect to your Powerline network after they are plugged into a wall power outlet. For any additional adapters, you will need to reconfigure any additional Powerline adapters that you add to use the encryption key of your existing Powerline network.
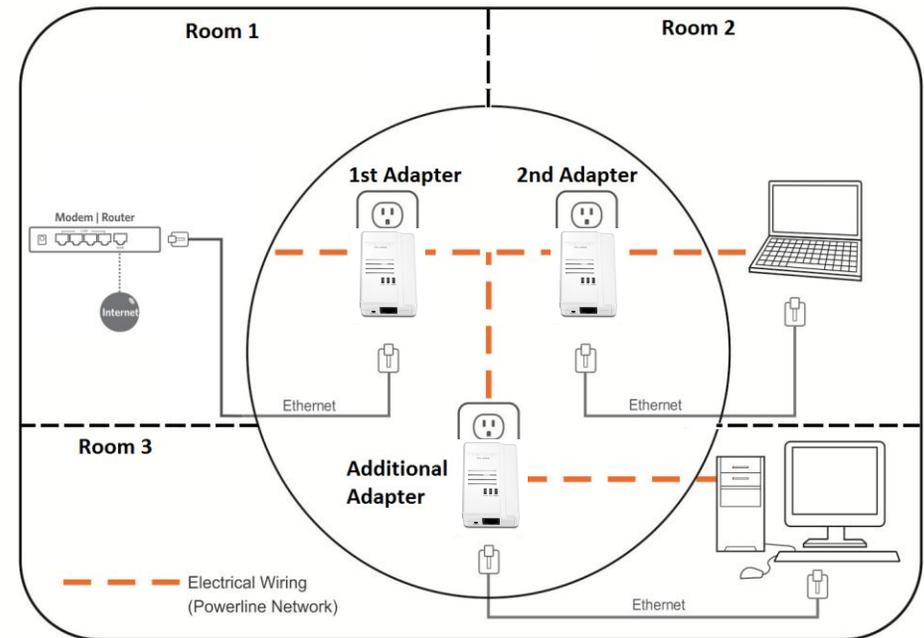
To reconfigure an additional Powerline adapter to connect and use the encryption key of your existing Powerline network:

1. Verify that all existing Powerline adapters are already installed and connected.

2. Push and hold the **Sync** button on the additional Powerline adapter for 10 seconds and release it. All LEDs will turn off and turn back on. This will erase the current encryption key assigned to the additional Powerline adapter.

3. Push and hold the **Sync** button on one of the existing Powerline adapters connected to your Powerline network for 2 seconds and release it. The **Power** (**PWR) LED** will start blinking.

4. Within 2 minutes, push and hold the **Sync** button on the additional Powerline adapter for 2 seconds and release it. The **Power** (**PWR) LED** will start blinking. This will reconfigure your additional Powerline adapter to connect and use the encryption key of your existing Powerline network. All LEDs will turn off and turn back on and the **Powerline (PL) LED** will turn on the adapters are connected.

To reconfigure the encryption key and connect additional Powerline adapters to your existing Powerline network, repeat the steps above for each adapter.

Using the Powerline Utility

The Powerline Utility allows you to do the following:

- Create a customized encryption key for your Powerline network and apply it to multiple Powerline adapters at the same time.
- Allows you to view the Powerline adapters connected to your network (using the MAC address) and the approximate connection quality and speed of each Powerline adapter
- View and upgrade your Powerline adapter firmware version.
  Note: Link speed displayed in the utility of your Powerline adapters to another through your electrical system is estimated. Actual link speed may vary.

Before installing and using the utility, please ensure the following:

- *Write down the **Device Password (DPW)** (16-digit characters A-Z only) and **MAC Address** (12-digit characters a-f, A-F, 0-9) of each Powerline adapter as this will be required to change the encryption key for multiple Powerline adapters. See "Product Hardware Features" on page 2.*
- *Make sure your computer in which you are installing the utility is connected to your network and your Powerline adapters are also connected to your network.*
- *If you have changed your encryption key using the **Sync** button and you are creating a customized encryption key, it is required to reset all Powerline devices to defaults using the physical **Reset** button on your Powerline adapter first before using the utility. See "Product Hardware Features" on page 2.*
- *Please ensure that your Powerline adapters are already installed and connected and the Ethernet port on each adapter is connected to a device powered on.*

Powerline Utility System Requirements

Supported Operating Systems	CPU	Memory
Windows 7 (32/64-bit)	1GHz or above	1GB RAM or above
Windows Vista (32/64-bit)	800MHz or above	512MB RAM or above
Windows XP (32/64-bit)	300MHz or above	256MB RAM or above

Software Installation

1. Insert the included CD-ROM into your computer's CD-ROM drive.

2. At the CD Autorun Prompt window, click *Run Autorun.exe*

Note: If the Autorun prompt does not appear automatically, open the CD contents and double-click Autorun.exe.

3. At the CD-ROM main menu, click **Install Utility**.

4. Click **OK**.

Note: The Powerline Configuration Utility requires the use of the WinPcap application. If this prompt does not appear, you may already have the WinPcap application installed. If so, please skip over to Step 11.
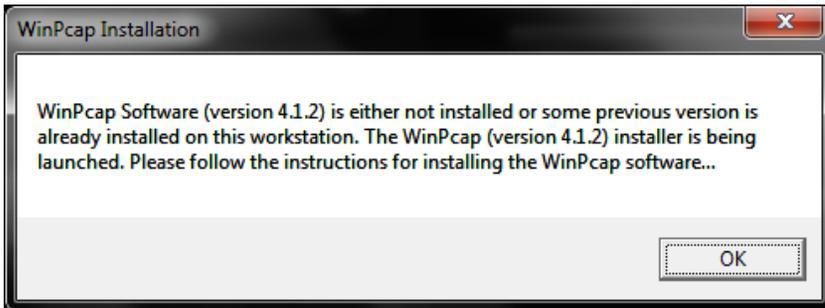
5. At the WinPcap installer window, click **Next**.
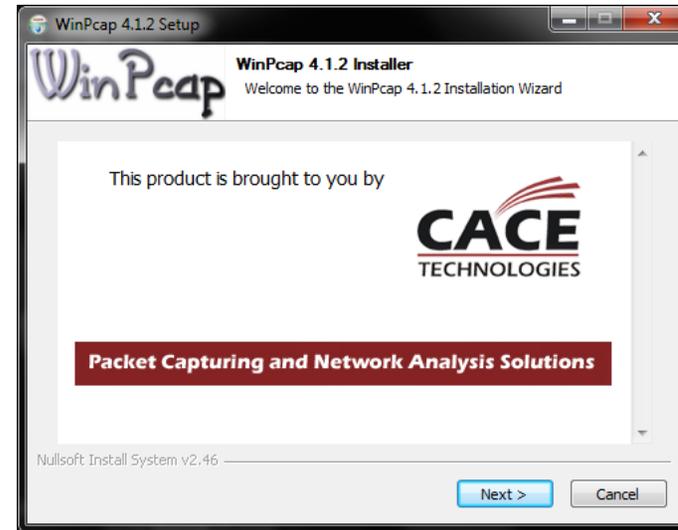
6. In the Setup Wizard window, click **Next**.

7. In the License Agreement window, click **I Agree**.
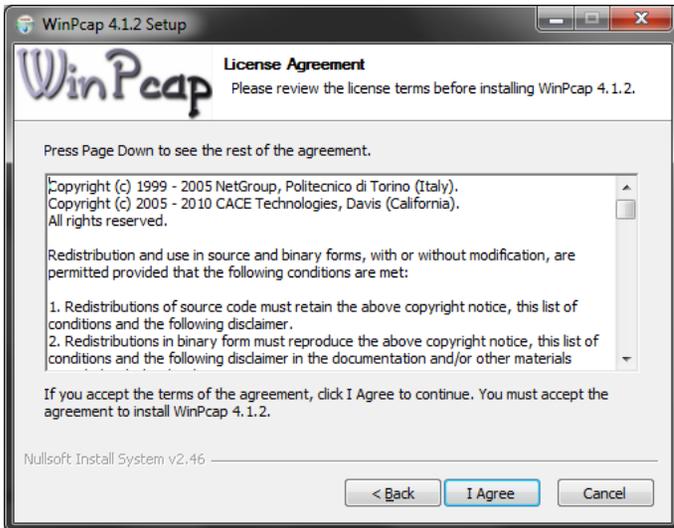
8. In the Install Options window, leave the option **Automatically start the WinPcap driver at boot time** checked and click **Install**.
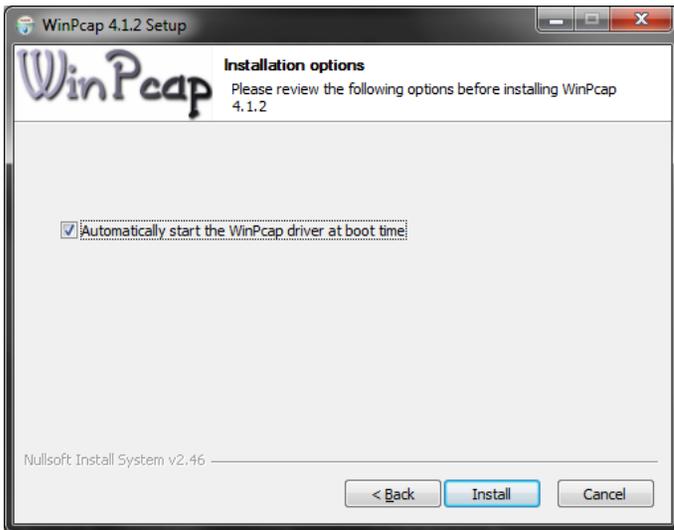
9. Wait for the WinPcap installation to complete.
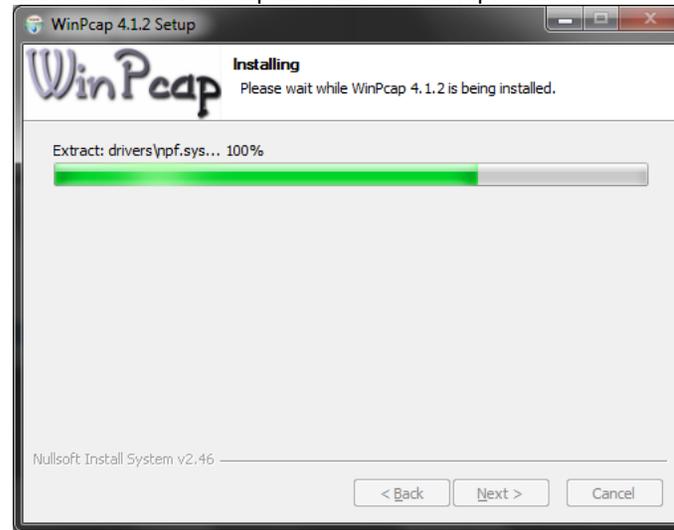
10. After the process is completed, click **Finish.**

11. At the Powerline Configuration Utility installation window, click **Next**.
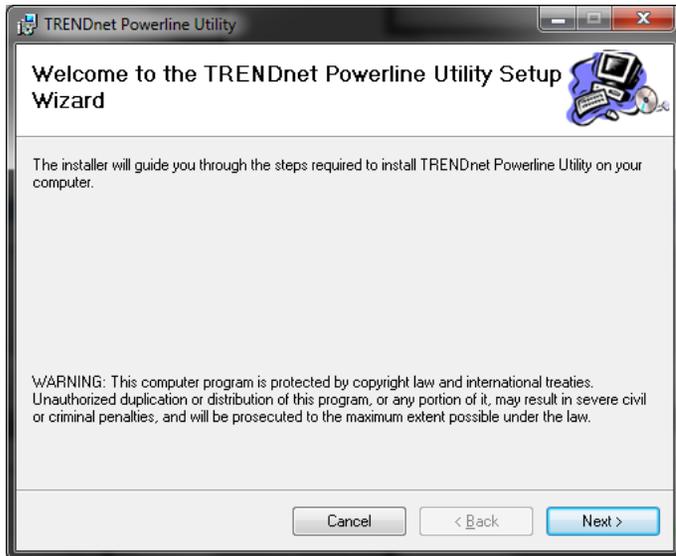
13. In the Select Installation Folder window, click **Next**.
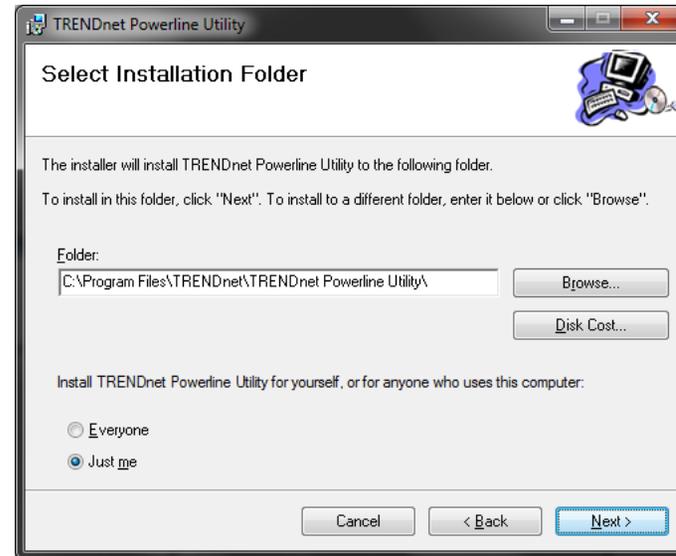
12. In the License Agreement window, check the radio button **I Agree**, and click **Next**.

14. In the Confirm Installation window, click **Next**.

15. Wait for the Powerline Utility installation to complete.
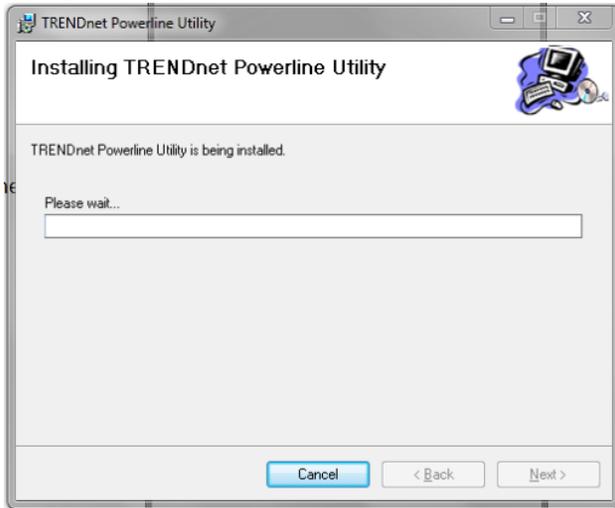
16. At the Installation Complete window, click **Close**.
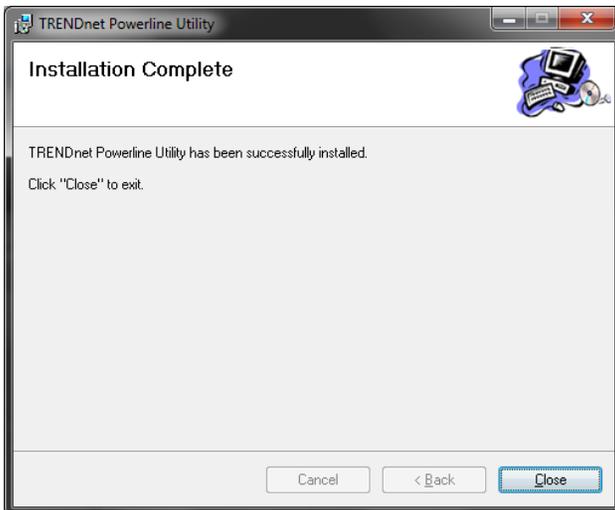
17. Reboot your computer to complete the installation.

Using the Utility

Before using the utility, please ensure the following:

- *Write down the **Device Password (DPW)** (16-digit characters A-Z only) and **MAC Address** (12-digit characters a-f, A-F, 0-9) of each Powerline adapter as this will be required to change the encryption key for multiple Powerline adapters. See "Product Hardware Features" on page 2.*
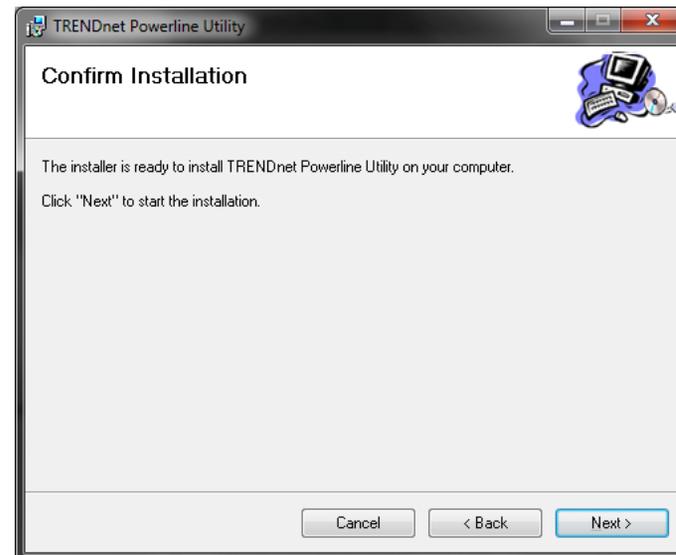
- *Make sure your computer in which you are installing the utility is connected to your network and your Powerline adapters are also connected to your network.*

- *If you have changed your encryption key using the **Sync** button and you are creating a customized encryption key, it is required to reset all Powerline devices to defaults using the physical **Reset** button on your Powerline adapter first before using the utility. See "Product Hardware Features" on page 2.*

- *Please ensure that your Powerline adapters are already installed and connected and the Ethernet port on each adapter is connected to a device powered on.*

Upon completing the software installation, a desktop shortcut is automatically created.

Double-click the icon to start the utility or open the utility if it is already running. Closing the utility will exit the application.

You can also launch the utility from the Start Menu programs.

Start > Programs (or All Programs) > TRENDnet > TRENDnet Powerline Utility
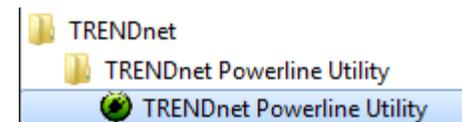
Powerline Utility Overview

Main Window
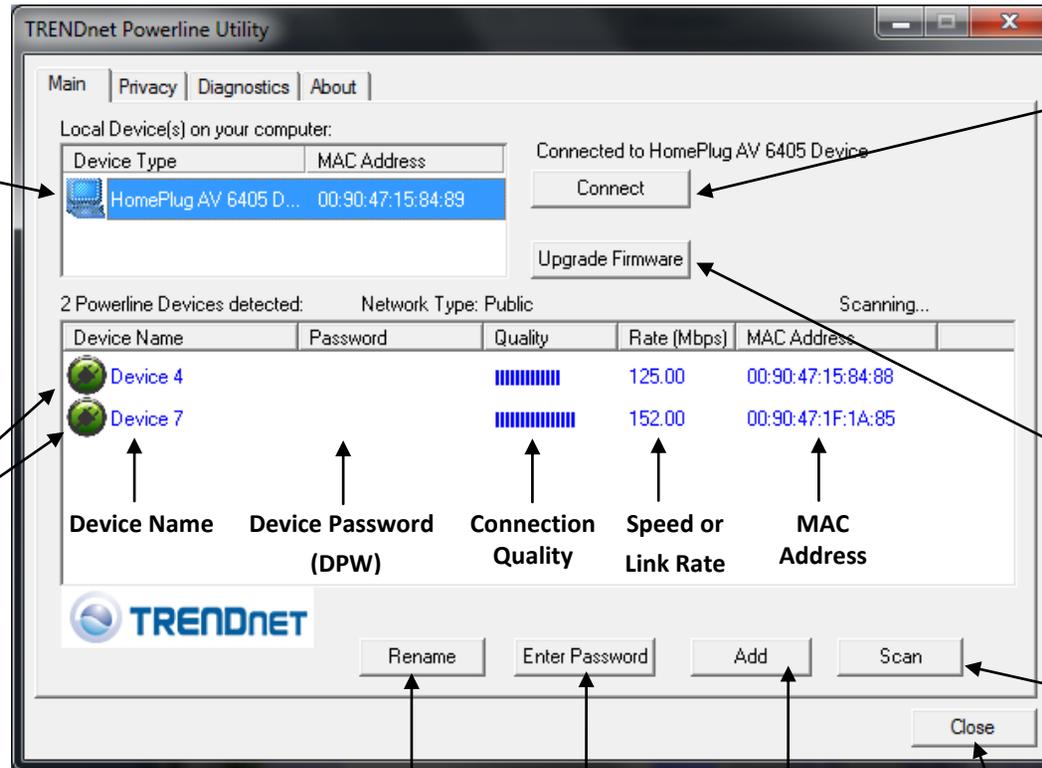
Local Device

The Powerline adapter connected to your router.

Note: If your computer is connected directly to your Powerline adapter, the Local Device listed will be the Powerline adapter your computer is directly connected.

Remote Devices

Powerline adapters in remote locations that are connected to the selected Powerline adapter (Local Device) across the electrical system.

Note: If all of your Powerline adapters are already connected to your Powerline network, they will automatically detected and appear in the list. If not, you will need to add them manually.

Device Name

Device Password (DPW)

Connection Quality

Speed or Link Rate

MAC Address

Connect

If your Powerline adapter (Local Device) is not detected automatically and does not appear in the list, click Connect to detect and rescan and connecte to the Powerline adapter (Local Device) again.

Upgrade Firmware

Allows you to upgrade the Powerline adapter (Local Device) firmware

See page

Scan

Rescans the Powerline adapters that are connected to your Powerline network (Remote Device)

Rename

Renames the listed Powerline adapter (Remote Device)

Enter Password

Allows you to enter the DPW for the listed Powerline adapter (Remote Device)

Add

Allows you to add a Powerline adapter to your Powerline network that is not listed (Remote Device)

Close

Closes and exits the Powerline Utility application

Powerline Utility Overview

Privacy Window
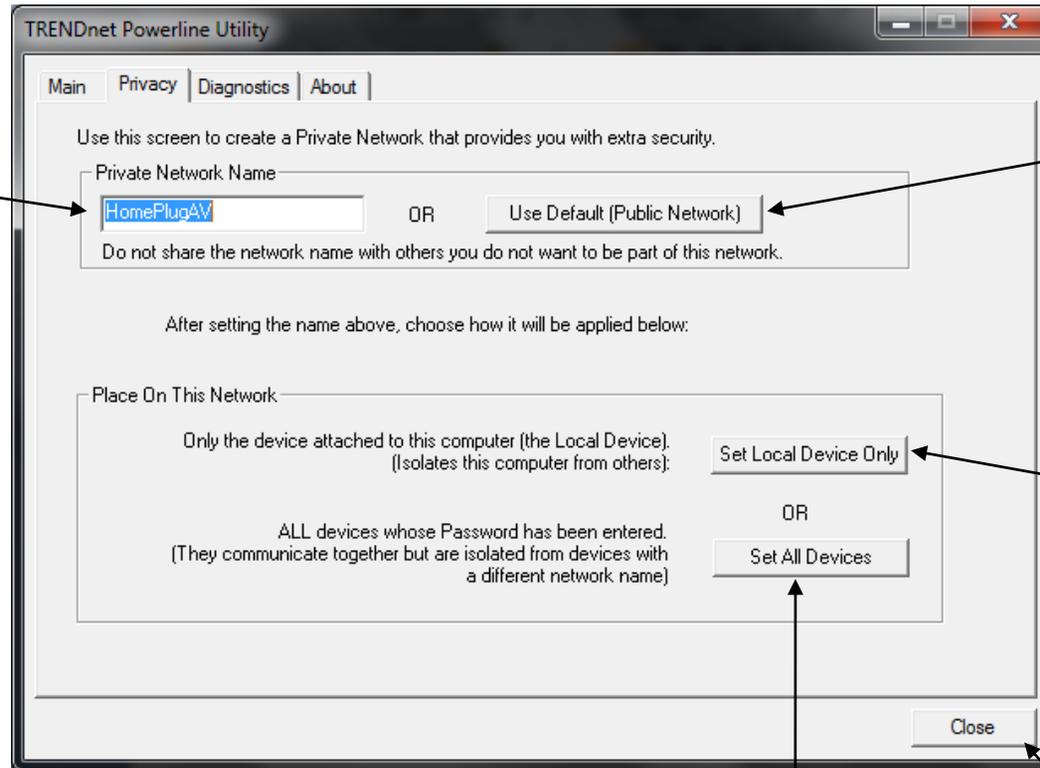
Encryption Key

Encryption key for your Powerline network.

Note: The default encryption key is HomePlugAV. If you have used the Sync button to change and generate a random encryption key, Unknown Networkname will be displayed.

Use Default (Public Network)

Replaces the current encryption key value with the default **HomePlugAV**.

Note: You will still need to apply the settings to your Powerline adapters by clicking Set Local Device Only or Set All Devices.

Set Local Device Only

Changes the encryption key for the Powerline adapter listed as the Local Device on the adapter on the Main window.

Note: If you change the encryption key for the Powerline adapter (Local Device), this will disconnect the Local Device Powerline adapter from the Powerline network.

Set All Devices

Changes the encryption key for all or multiple Powerline adapters connected to your Powerline network.

Note: Please make sure you have added and entered the DPW for all Powerline adapters in your Powerline network before applying this setting. If you do not, the encryption key will not change for any Powerline adapters without the DPW entered.

Close

Closes and exits the Powerline Utility application

Powerline Utility Overview

Diagnostics Window
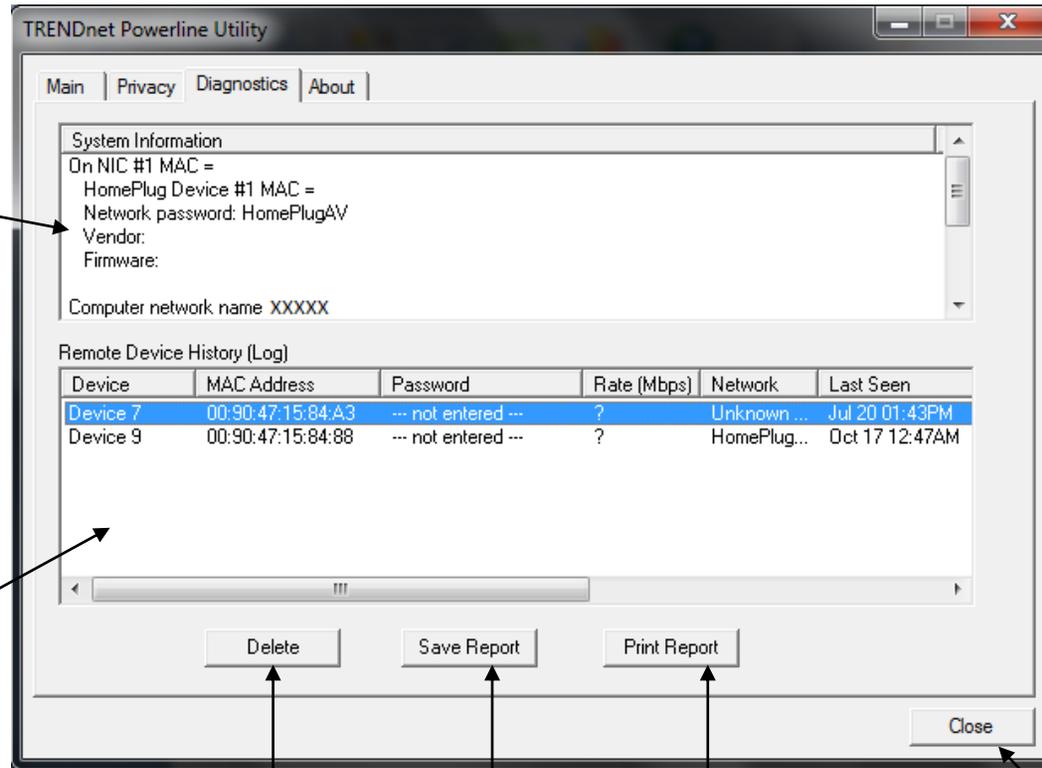
System Information

Displays the device and other related information such as firmware version, MAC address, and encryption key (also called network password).

You can vertically scroll the window to view all of the system information.

Remote Device History (Log)

Displays Powerline adapters or other Powerline devices (Remote Device) that have been previously connected to or discovered on your Powerline Network.

Delete

Deletes or removes the selected entry listed in the Remote Device History (Log) (Remote Device)

Save Report

Saves the information contained in the System Information window to a text file on your computer.

Print Report

Prints the information contained in the System Information window.

Close

Closes and exits the Powerline Utility application

Powerline Utility Overview

About Window
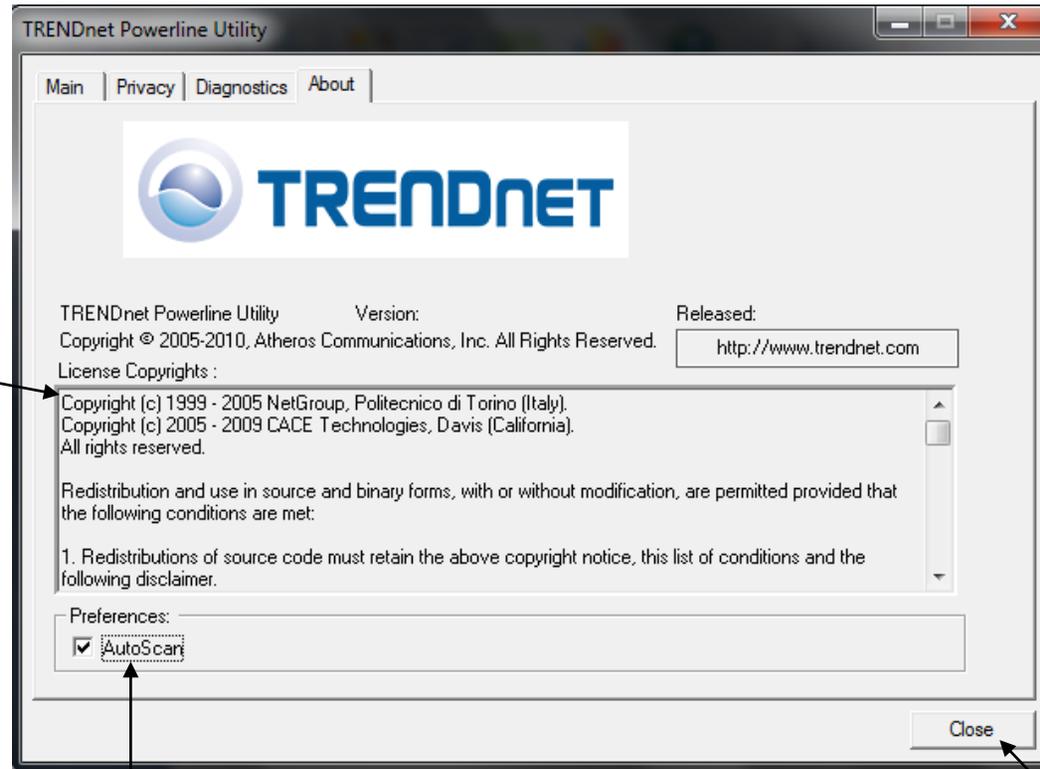
System Information

Displays copyright information.

You can vertically scroll the window to view all of the copyright information.

AutoScan

Enables or disables the autoscan feature for automatically discovering Powerline adapter or devices (Remote Device) connected to your Powerline network.

Note: It is recommended to keep this option checked (Enabled).

Close

Closes and exits the Powerline Utility application

Add adapters in the utility and create a customized encryption key

If you have not written down the **Device Password (DPW)** and **MAC address** for each of your Powerline adapters, please do so as it is required to applying the customized encryption key for all of your Powerline adapters using the utility.

> **Note:** Write down the **Device Password (DPW)** (16-digit characters A-Z only) and **MAC Address** (12-digit characters a-f,A-F,0-9) of each Powerline adapter first before proceeding.

Example:

Location of Powerline Adapter	Device Password (DPW)	MAC Address
To Router	ZAYB-VIMV-YFAQ-ZFPA	00:90:47:15:84:89
John's Room	WECC-ZZYC-WJVY-GZRS	00:90:47:15:84:88
Jane 's Room	UXMA-UOUP-IQXJ-UTYN	00:90:47:1F:1A:85

Note: It is recommended to ensure that your Powerline adapters are already installed and connected and the Ethernet port on each adapter is connected to a device powered on.

First, add all of the Powerline adapters to the utility and enter the Device Password (DPW) for each Powerline adapter to ensure you can change the encryption key for multiple adapters. This is required when using the Powerline utility to change the encryption key for multiple Powerline adapters.

To add automatically detected Powerline adapters to the Powerline Utility

1. Launch the Powerline Utility.

2. In the Powerline Utility Main window, wait for the utility to automatically scan for Powerline adapters already connected to your Powerline network. If your Powerline adapters have already been installed and connected using the same encryption key, they should appear in the Remote Device list.
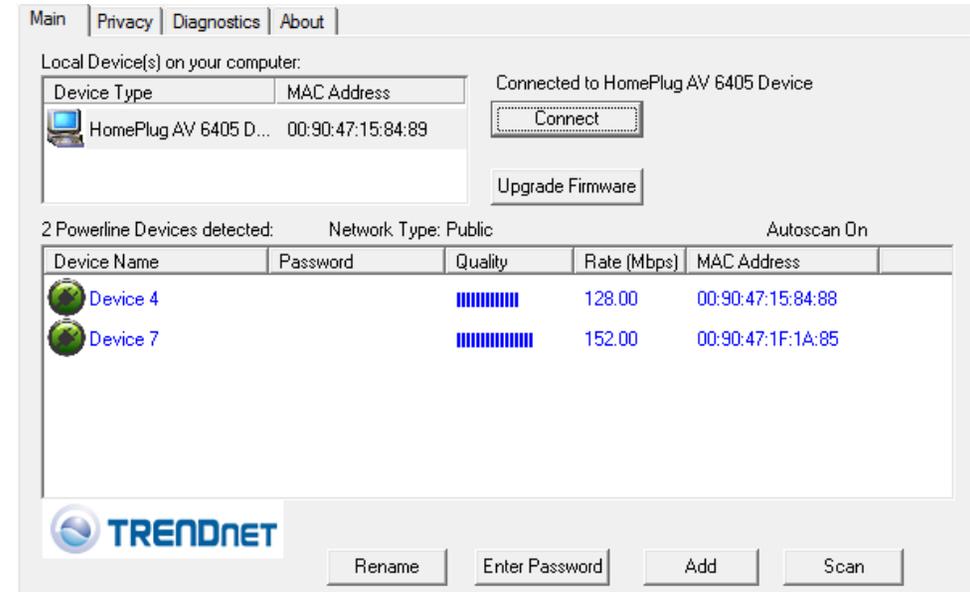
3. Select one of the Powerline adapters listed under Remote Device.

4. Click **Enter Password**.

5. Enter the Device Password (DPW) and click **OK.**

Note: Match the Device Password (DPW) to the corresponding MAC address.

6. If successful, you will receive a message indicating that the password is correct. Click **OK.**

Repeat steps 2-6 for each additional Powerline adapter listed in Remote Device until you have added all of your remaining Powerline adapters before continuing to the next step "To create a customized encryption key".

To create a customized encryption key

1. In the Powerline Utility Privacy window, under **Private Network Name**, enter the new encryption key for your Powerline network.
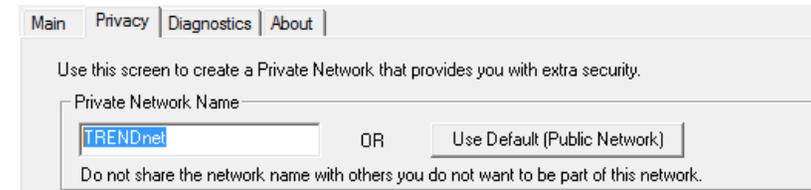
2. After you have entered your new Powerline encryption key, click **Set All Devices**.
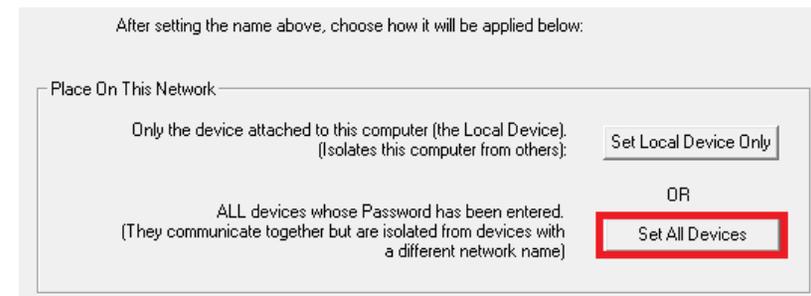
3. Click **OK**. If successful, you will receive a message indicating that all Powerline adapters were added to your network verifying that the encryption key was changed for all Powerline adapters. Click **OK**.
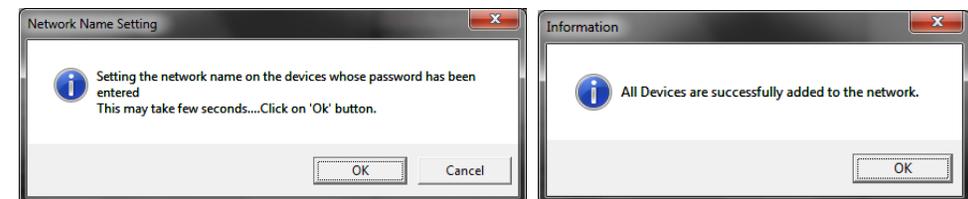
To rename the Powerline adapters

Note: Renaming the Powerline adapters (Remote devices) to describe the location of the device will help you to easily identify which Powerline adapter you are monitoring in the utility.

1. In the Powerline Utility Main window, select one of the Powerline adapters listed under Remote Device.

2. Click **Rename**.

3. The device name field will be available to edit.

4. Enter the new device name and press **Enter** on your keyboard.

Upgrade Firmware

Note: The firmware can only be upgraded when your computer is directly connected to the Powerline adapter Ethernet port (also called network port) using an Ethernet cable (also called network cable). The Device Password (DPW) is not required when upgrading the firmware.

1. To check if firmware updates are available for your Powerline adapter, check your Powerline model. http://www.trendnet.com/downloads/

2. Save the zipped firmware file (.zip) and extract the file to your computer.

3. Make sure you connect your computer with the utility installed is directly connected to the Powerline adapter using an Ethernet cable (also called network) cable when upgrading the device firmware.
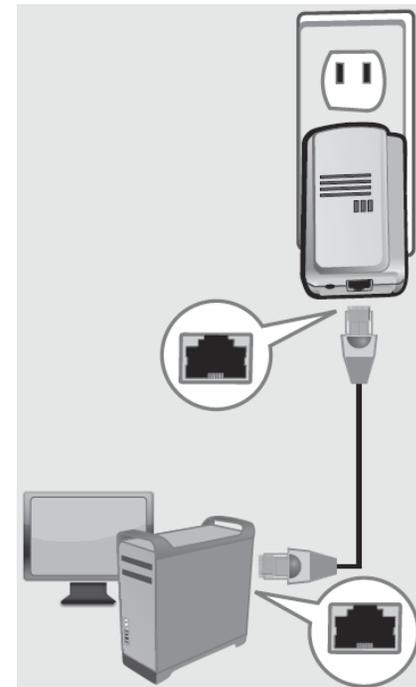
4. Launch the Powerline Utility by double-clicking the icon.

TRENDnet
Powerline Utility

5. The device should appear in the Main window of the utility under Local Device. Click **Upgrade Firmware**.
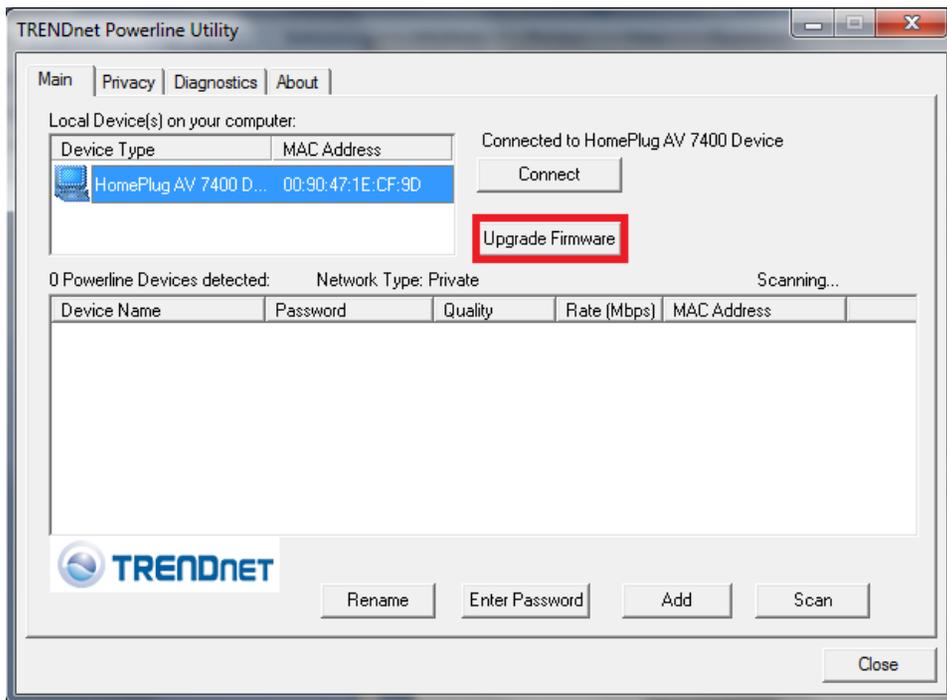
6. Click **Browse** next to the **PIB** field and navigate to the unzipped folder with the firmware files. Select the PIB file. (Ex. TPL-401E-PIB-v50100.pib)
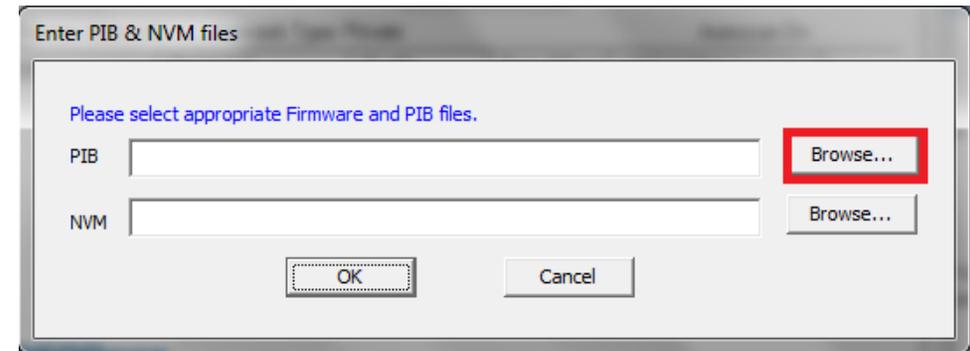
7. Click **Browse** next to the **NVM** field and navigate to the unzipped folder with the firmware files. Select the NVM file. (Ex. TPL-401E-NVM-v5.0.1-0-0-X-FINAL.nvm)
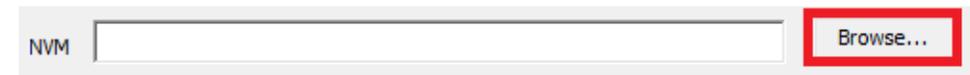
8. Click **OK**.
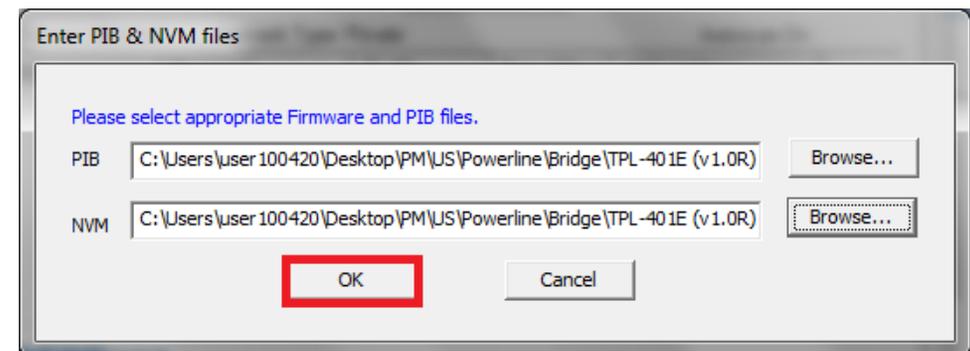
Wait until the firmware upload completed and the device reboot

Important! Do not turn off the device or press the reset button while this procedure is in progress.

Technical Specifications

Hardware	
Standards	IEEE 802.3, IEEE 802.3x, IEEE 802.3u, HomePlug® AV, IEEE 1901
Interface	1 x 10/100Mbps Auto-MDIX RJ-45 Port Power prong: • A: North America Type B (NEMA 5–15) • EU: Euro Type C (CEE 7/16) • UK : United Kingdom Type G (BS 1363)
Frequency Band	2 ~ 28 MHz
Modulation	OFDM Symbol modulation on link synchronization, 1024/256/64/8 - QAM, QPSK, BPSK, ROBO carrier
Protocols	TDMA and CSMA/CA
Speed	Powerline: Up to 200Mbps** Ethernet: Up to 200Mbps (Full Duplex mode)
Utility OS Compatibility	Windows 7 (32/64-bit), Vista (32/64-bit), XP(32/64-bit)
Nodes	Up to 6 (max.)
Overlapping Powerline Networks Supported	Up to 4 (per electrical system)
Coverage	Up to 300 m (984 ft.)
Security	128-Bit AES (Advanced Encryption Standard)
LED	Power (PWR) Powerline (PL) Connection • Best (Green) • Better (Amber) • Good (Red) • No connection (Off)
	Ethernet (ETH) Connection • Solid • Blinking • Off
Buttons	Sync, Reset
Dimension (L x W X H)	A: 55 x 87 x 51 mm (2.2 x 3.4 x 2 in.) per unit EU: 55 x 87 x 65 mm (2.2 x 3.4 x 2.6 in.) per unit UK: 55 x 87 x 58 mm (2.2 x 3.4 x 2.3 in.) per unit
Weight	A: Total Weight: 148 g (5.2 oz) / Per Unit Weight: 74 g (2.6 oz) EU: Total Weight: 158.8 g (5.6 oz) / Per Unit Weight: 79.4 g (2.8 oz) UK: Total Weight: 170g (6 oz) / Per Unit Weight: 85 (3 oz)
Power Source	100~240V AC, 50~60Hz
Consumption	Active mode: 3.1 Watts (max.) Standby mode: 0.5 Watts (max.)
Temperature	Operating: 0° ~ 40°C (32° ~ 104°F) Storage: -20° ~ 70°C (-4° ~ 158°F)
Humidity	Max. 90% (non-condensing)
Certifications	CE, FCC, HomePlug® AV

* Maximum of 6 adapters (nodes) for streaming video across your network.

** 200Mbps is the maximum theoretical Powerline data rate. Actual throughput will vary depending on environment.

*** Networked Powerline devices need to be plugged into power outlets that are on the same electrical system.

**** GFCI outlets and AFCI circuit breakers may degrade Powerline network signals.

Troubleshooting

Please reference the items below if you continue to experience difficulty with installing and using your Powerline adapters.

- Try power cycling the unit by unplugging it from the wall power outlet for 15 seconds and plugging it back in.

- If the Powerline (PL) LED is red indicating good quality only, try plugging the Powerline adapter into another available wall power outlet to check if you can obtain better connection quality.

- If you are having issues connecting the Powerline adapters after changing the encryption key using the Sync button or Powerline utility, reset the Powerline adapters to defaults using the physical Reset button.

- Use a pin or paperclip and push and hold the Reset button for 1 second on each Powerline adapter. All LEDs will turn off and turn back on. This will reset the Powerline adapters to their default settings, default encryption key assignment **HomePlugAV**.

- The Powerline adapters can provide better connectivity and performance when plugged directly into a wall power outlet instead of a power strip or surge protector.

- Connecting the Powerline adapters to a power strip or surge protector may degrade Powerline performance.

- Using the Powerline adapters on GFI protected outlets and electrical systems with AFCI circuit breakers as these items may degrade Powerline performance.

- The Powerline adapters should not be used in areas with excessive heat.

- Certain florescent or incandescent lights are noise sources on the electrical system and can degrade Powerline performance.

- If your building has more than one circuit breaker box, the Powerline adapter may not be able to establish connectivity between different circuit breaker boxes. In this case, connect a Powerline adapter into a wall power outlet located on each of the circuit breaker boxes, and then connect an Ethernet cable between the Powerline adapters to bridge the two circuits together. This will allow the Powerline adapters from different circuit breaker boxes connect to each other.

In addition to this User's Guide, you can find help below:

- http://www.trendnet.com/support
  (documentation, downloads, FAQs, how to contact technical support)

- Autorun CD (Quick Installation Guide)

Appendix

Overlapping Powerline networks

It is possible to create multiple Powerline networks on the same electrical system separated and grouped by different network encryption keys. The Powerline networks will work and communicate independently of each other which can provide security between different groups of Powerline adapters. For example, if you have five powerline adapters (Adapter A, Adapter B, Adapter C, Adapter D, Adapter E), you can group Adapters A,B, and C together on one powerline network and group Adapters D and E on a different Powerline network. Each group will use a different encryption key.

Note: It is recommended that only a maximum of up to 4 Powerline networks can be created per electrical system. Any additional Powerline networks above the recommended may result in significant degradation in Powerline performance.
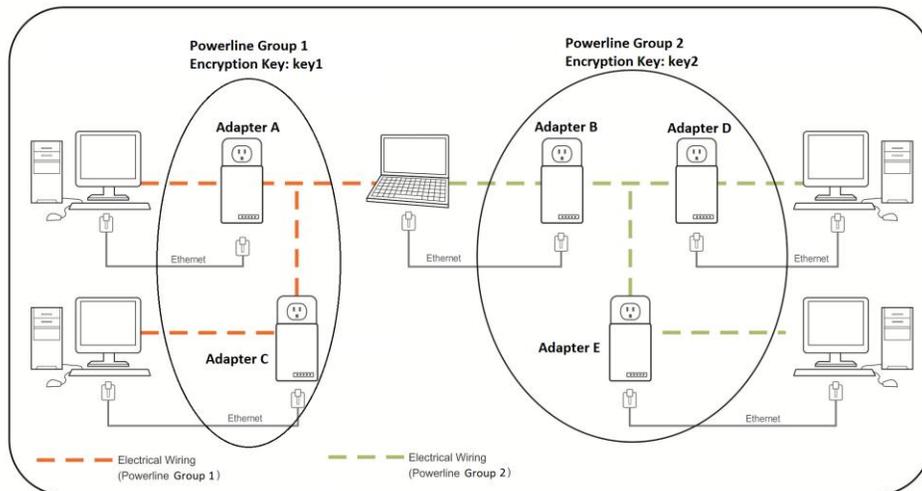
Move Powerline adapters between different overlapping Powerline networks

*Note: Assuming all powerline adapters are TRENDnet Powerline adapters and for reference in the diagram and this procedure, the adapters will be labeled **Adapter A, B, C, D**, and **E**. **Adapters A, B,** and **C** are currently connect together to form one powerline network and **Adapters D** and E form another powerline network. Adapter B will be disconnected from Adapters A and C and connected to Adapters D and E.*
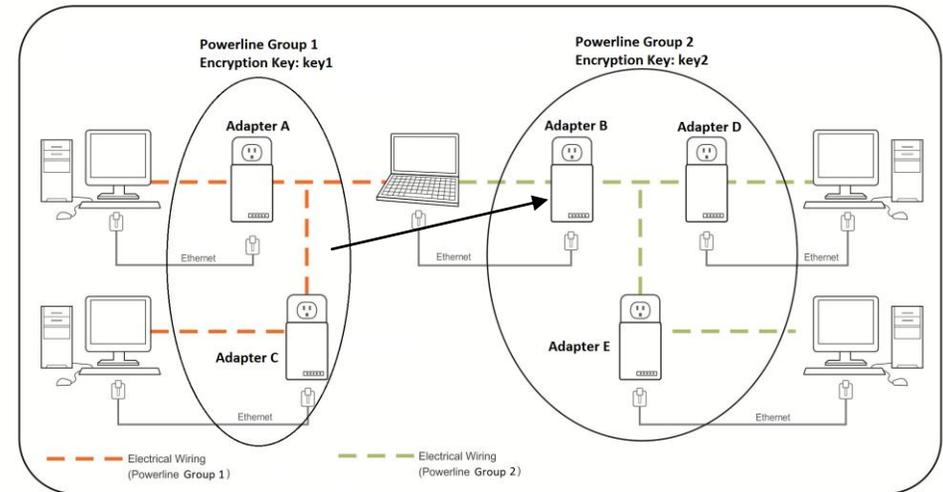
1. Push and hold the Sync button on **Adapter B** for 10 seconds and release it. All LEDs will turn off and turn back on. This will erase the current encryption key assigned to **Adapter B** and disconnect from **Adapter A** and **Adapter C**.

2. Push and hold the **Sync** button on **Adapter D** for 2 seconds and release it. The **Power (PWR) LED** will start blinking.

3. Within 2 minutes, push and hold the **Sync** button on **Adapter B** for 2 seconds and release it. The **Power (PWR) LED** will start blinking. This will establish connectivity between **Adapter B**, **Adapter D**, and **Adapter E** by reconfiguring the encryption key of **Adapter B** to match the encryption key of **Adapter D** and **Adapter E**. All LEDs will turn off and turn back on and the **Powerline (PL) LED** will turn on the when adapters are connected.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

RoHS

This product is RoHS compliant.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the Directive 2004/108/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the Directive 2004/108/EC:

- **EN 55022 : 2006 + A1 : 2007**
- **EN 61000-3-3 : 2008**
- **EN 50412-2-1 : 2005**
- **EN 60950-1 : 2006 + A11 : 2009**

cs Česky [Czech]	TRENDnet tímto prohlašuje, že tento TPL-306E je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2004/108/ES.
da Dansk [Danish]	Undertegnede TRENDnet erklærer herved, at følgende udstyr TPL-306E overholder de væsentlige krav og øvrige relevante krav i direktiv 2004/108/EF.
de Deutsch [German]	Hiermit erklärt TRENDnet, dass sich das Gerät TPL-306E in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2004/108/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab TRENDnet seadme TPL-306E vastavust direktiivi 2004/108/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, TRENDnet, declares that this TPL-306E is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.
es Español [Spanish]	Por medio de la presente TRENDnet declara que el TPL-306E cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2004/108/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ TRENDnet ΔΗΛΩΝΕΙ ΟΤΙ TPL-306E ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2004/108/ΕΚ.
fr Français [French]	Par la présente TRENDnet déclare que l'appareil TPL-306E est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2004/108/CE.
it Italiano [Italian]	Con la presente TRENDnet dichiara che questo TPL-306E è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2004/108/CE.
Latviski [Latvian]	Ar šo TRENDnet deklarē, ka TPL-306E atbilst Direktīvas 2004/108/EK būtiskajām prasībām un citiem ar to saistītajiem

	noteikumiem.
Lietuvių [Lithuanian]	Šiuo TRENDnet deklaruoja, kad šis TPL-306E atitinka esminius reikalavimus ir kitas 2004/108/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart TRENDnet dat het toestel TPL-306E in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2004/108/EG.
mt Malti [Maltese]	Hawnhekk, TRENDnet, jiddikjara li dan TPL-306E jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2004/108/EC.
hu Magyar [Hungarian]	Alulírott, TRENDnet nyilatkozom, hogy a TPL-306E megfelel a vonatkozó alapvető követelményeknek és az 2004/108/EC irányelv egyéb előírásainak.
pl Polski [Polish]	Niniejszym TRENDnet oświadcza, że TPL-306E jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2004/108/EC.
pt Português [Portuguese]	TRENDnet declara que este TPL-306E está conforme com os requisitos essenciais e outras disposições da Directiva 2004/108/CE.
sl Slovensko [Slovenian]	TRENDnet izjavlja, da je ta TPL-306E v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2004/108/ES.
Slovensky [Slovak]	TRENDnet týmto vyhlasuje, že TPL-306E spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2004/108/ES.
fi Suomi [Finnish]	TRENDnet vakuuttaa täten että TPL-306E tyyppinen laite on direktiivin 2004/108/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar TRENDnet att denna TPL-306E står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2004/108/EG.

Limited Warranty

TRENDnet warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

TPL-306E / TPL-306E2K – 3 Years Warranty

AC/DC Power Adapter, Cooling Fan, and Power Supply carry 1 year warranty.

If a product does not operate as warranted during the applicable warranty period, TRENDnet shall reserve the right, at its expense, to repair or replace the defective product or part and deliver an equivalent product or part to the customer. The repair/replacement unit's warranty continues from the original date of purchase. All products that are replaced become the property of TRENDnet. Replacement products may be new or reconditioned. TRENDnet does not issue refunds or credit. Please contact the point-of-purchase for their return policies.

TRENDnet shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to TRENDnet pursuant to any warranty.

There are no user serviceable parts inside the product. Do not remove or attempt to service the product by any unauthorized service center. This warranty is voided if (i) the product has been modified or repaired by any unauthorized service center, (ii) the product was subject to accident, abuse, or improper use (iii) the product was subject to conditions more severe than those specified in the manual.

Warranty service may be obtained by contacting TRENDnet within the applicable warranty period and providing a copy of the dated proof of the purchase. Upon proper submission of required documentation a Return Material Authorization (RMA) number will be issued. An RMA number is required in order to initiate warranty service support for all TRENDnet products. Products that are sent to TRENDnet for RMA service must have the RMA number marked on the outside of return packages and sent to TRENDnet prepaid, insured and packaged appropriately for safe shipment. Customers shipping from outside of the USA and Canada are responsible for return shipping fees. Customers shipping from outside of the USA are responsible for custom charges, including but not limited to, duty, tax, and other fees.

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Product Warranty Registration

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