level®

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PLI-3210
HomePlug Pro 4-Port Bridge

User Manual

Ver. 1.0.0

Safety

FCC

This equipment has been tested and found to comply with Part 15 Class B of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference

(2) This device must accept any interference received, including interference that may cause undesired operation.

CE

This equipment is in compliance with the requirements of the following regulations: CE Mark, 89/336/EEC

RoHS

This product is RoHS compliant.

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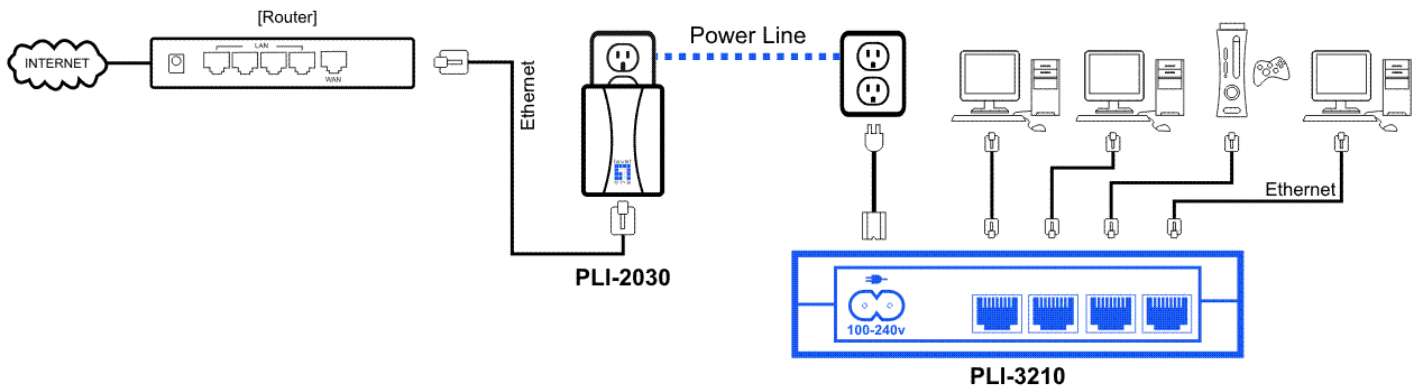
1   HomePlug Powerline

HomePlug powerline is an excellent solution that can be used to extend your network. In the home or small office building, use HomePlug Ethernet Bridge Adapters to link multiple locations without the need to run Ethernet cable. Combined with a broadband DSL/Cable connection, every room with electrical power outlets will have easy access to high-speed Internet connection.

1.1   Introduction

HomePlug Pro 4-Port Bridge allows you to connect up to 4 devices that have Ethernet ports to a Powerline network. In operation, the **HomePlug Pro 4-Port Bridge** is completely transparent, and simply passes data between the Ethernet port and the Powerline network. The Powerline data transfer rate can be reached up to 200Mbps. Any device may be connected to the **HomePlug Pro 4-Port Bridge's** Ethernet ports, but a Windows PC must be used for configuration.

* Strongly recommend Windows Vista/2000/XP for utility configuration

1.2   Usage Diagram


1.3   Physical Details

Front Panel LEDs

Power	**On** - Normal operation.	
	Off - No power	
HomePlug	**On** - The Powerline network is active. This means that at least one other HomePlug device was detected.	
	Off - Powerline network is not available - no other HomePlug devices were detected.	
	Flashing - Data is being transmitted or received via the Powerline network.	
Ethernet	**On** - Ethernet connection is active.	
	Off - No Ethernet connection.	
	Flashing - Data is being transmitted or received via the Ethernet Port.	
Security	This button is designed to generate an individual network group under multiple nods environment.	
	Please refer to **Security Button** section for more details.	
Reset	This button is used to clear ALL data and restore ALL settings to the factory default values. Press for 2 seconds and release the reset button to begin restore factory default.	

Power LED   **HomePlug LED**   **Ethernet Port LEDs**
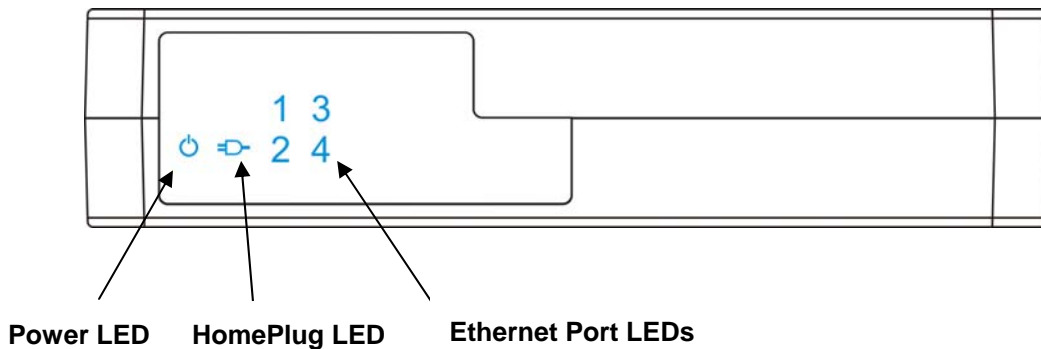
Rear Panel

The rear panel contains an AC Power Cord Plug (100-240V), a Security Button, a recessed Reset Button, and 4 Ethernet Ports.

Power Port   **Reset Button**   **Security Button**   **4 Ethernet Ports**
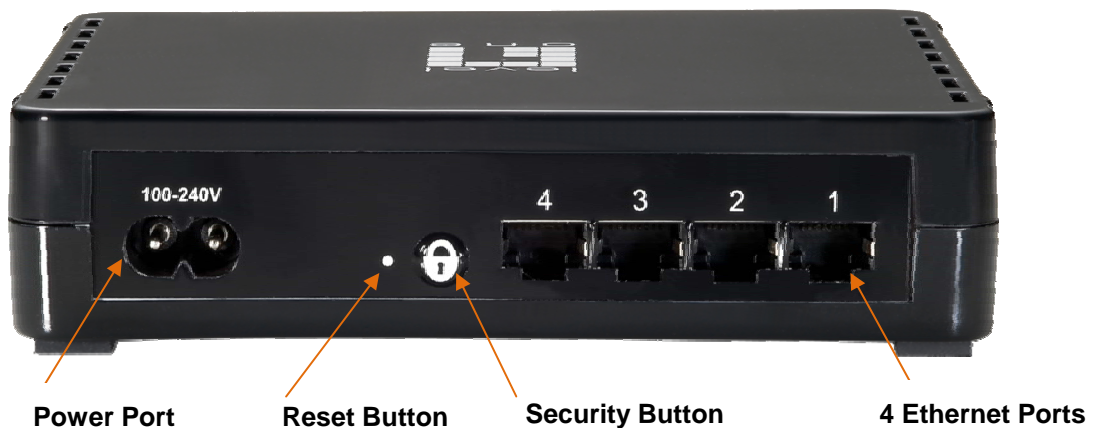
1.4 Setup

Plug and Play Installation for Homes:

HomePlug is plug and play device; user is able to plug and play without any complex configuration and settings.

Please execute the following hardware installation steps 1 to 4.

Installation in homes with Existing HomePlug Network:

1. Connect the **HomePlug Pro 4-Port Bridge** Ethernet Port to your devices.

2. Plug the **HomePlug Pro 4-Port Bridge** into a power outlet.

3. Wait a few seconds for startup to be completed, and then check the LEDs.

   - The *Power* LED should be ON

   - The *HomePlug* LED will be ON

   - The *Ethernet* LED should be ON

4. Hardware Installation is now completed, enjoy HomePlug Powerline connectivity.

**Installation in homes with NO EXISTING HomePlug Network:**
1. Make sure that another HomePlug 200M device is connected to your network at the router or directly to a computer.
2. Connect the **HomePlug Pro 4-Port Bridge** Ethernet Port to your devices.
3. Wait a few seconds for startup to be completed, and then check the LEDs.

   - The *Power* LED should be ON

   - The *HomePlug* LED will be ON

   - The *Ethernet* LED should be ON

4. Hardware Installation is now completed, enjoy HomePlug Powerline connectivity.

2 Security Button

This section describes how to use Security button for configuration in the following situations:

Creating a new security network

Two unassociated Adapters (*Adapter A* and *Adapter B*) are forming a new network—Network AB
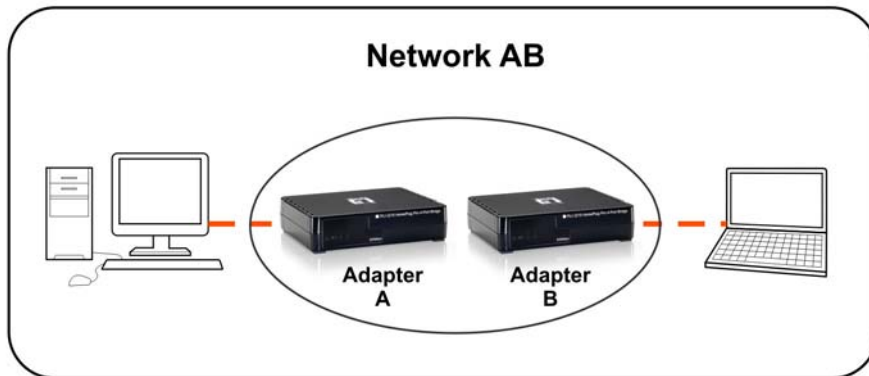
The procedure is as follows:

5. Press and hold the security button on *Adapter A* for 10 seconds and release it when device LED auto reboots.
    The password to *Adapter A* becomes "Random_A"

6. Press and hold the security button on *Adapter B* for 10 seconds and release it when device LED auto reboots.
    The password to *Adapter B* becomes "Random_B"

7. Currently, *Adapter A* and **Adapter B** are not networked

8. Press and hold the security button on *Adapter A* for 2 seconds then release.

9. The *Power* LED on *Adapter A* starts to flash.

10. Within 120 seconds after the Power LED on *Adapter A* starts to flash, press and hold the security button on
    Adapter B for 2 seconds then release.

11. Both *Adapter A* and *Adapter B* are now networked together.

## Adding Adapter C to existing Network AB (Adapter A and Adapter B)

One unassociated *Adapter C* is added to an existing Network AB.
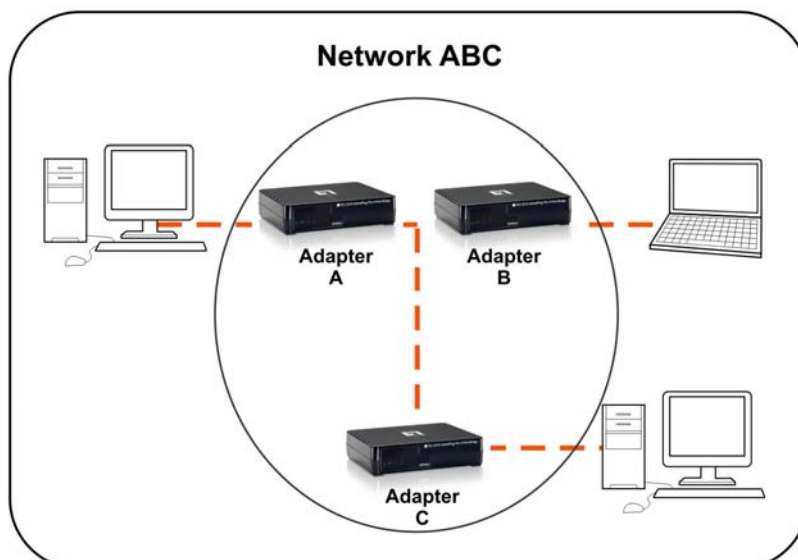
The procedure is as follows:

12. Press and hold the security button on **Adapter C** for 10 seconds and release it when device LED auto reboots. The password to **Adapter C** becomes "Random_C"

13. Press and hold the security button on **Adapter A** for 2 seconds. The *Power* LED on **Adapter A** starts to flash.

14. Within 120 seconds after the Power LED on **Adapter A** starts to flash, press and hold the security button on **Adapter C** for 2 seconds then release.

15. **Adapter A**, **Adapter B** and **Adapter C** are now networked to each other.

Removing Adapter B from Adapter A & C Network and join with Adapter D & E to become Network BDE
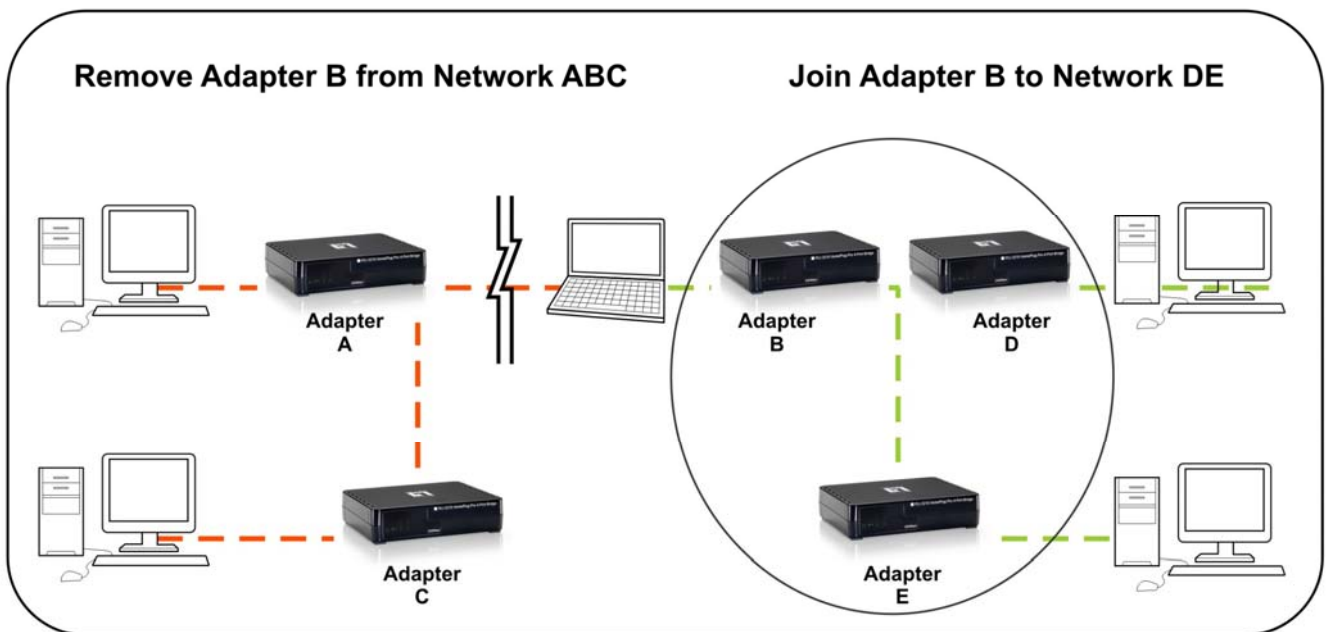
The procedure is as follows:

16. Press and hold the security button on **Adapter B** for 10 seconds and release it. The password to **Adapter B** becomes "Random B" and removes itself from **Adapter A & C**.

17. Press and hold the security button on **Adapter D** for 2 seconds.

18. Within 120 seconds after the Power LED on **Adapter D** starts to flash, press and hold the security button on **Adapter B** for 2 seconds then release.

19. **Adapter B** and **Adapter D** are now connected to each other, which in turn becomes part of Network BDE.

3 Operation

Operation is completely automatic, and no user intervention is required.

If your HomePlug devices have difficulty communicating with each other, check the following:

- Try plugging the unit into an adjacent plug.

- Use a pin and hold the Reset Button down for two seconds on each unit you are trying to connect. The unit lights should flash. Then units will then connect based off factory settings.

- **HomePlug Pro 4-Port Bridge** works better when plugged directly into the wall socket. Connecting the **Home-Plug Pro 4-Port Bridge** into the power strip or surge protectors may degrade the network performance.

4 Specification

Powerline Standards	HomePlug AV
PHY Rate	Up to 200 Mbps
Modulation	1024/256/64/16/8 QAM, QPSK, BPSK, ROBO Carrier Modulation
Forward Error Correction	Turbo Codes
Protocol	TDMA, CSMA/CA
Security	128-bit AES Encryption
LEDs	1 * Power 1 * HomePlug 1 Thru 4* Ethernet
Ethernet Interface	4 * RJ45 LAN Port Auto-negotiation, Auto MDI/MDIX
Ethernet Standards	Ethernet specification IEEE802.3, IEEE802.3u, IEEE802.3x
Power	100 - 240VAC, 50/60 Hz
Power Consumption	100mA (max.)
Operating Temperature	0° C to 40° C
Storage Temperature	-20° C to 70° C
Operating Humidity	10-90%RH (max)
Hardware Operating Systems	Windows Vista, Windows 2000, Windows XP, Linux, Mac OS X or any other operating system with network support