LevelOne

PLI-2040

200Mbps HomePlug AV Adapter

User Manual

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.

Introduction

200Mbps HomePlug AV Adapter allows you to connect any device which has an Ethernet port to a PowerLine network. In operation, the 200Mbps HomePlug AV Adapter 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 200Mbps HomePlug Ethernet Bridge's Ethernet port, but a Windows PC must be used for configuration.

Strongly recommend Windows 2000/XP/Vista/7 for utility configuration

Physical Details

Figure 1: 200Mbps HomePlug AV Adapter

Front Panel LEDs

Power	**On** - Normal operation.	
	Off - No power	
	Sleep - blanking	
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.	

LED Link quality (Data PHY Rate)
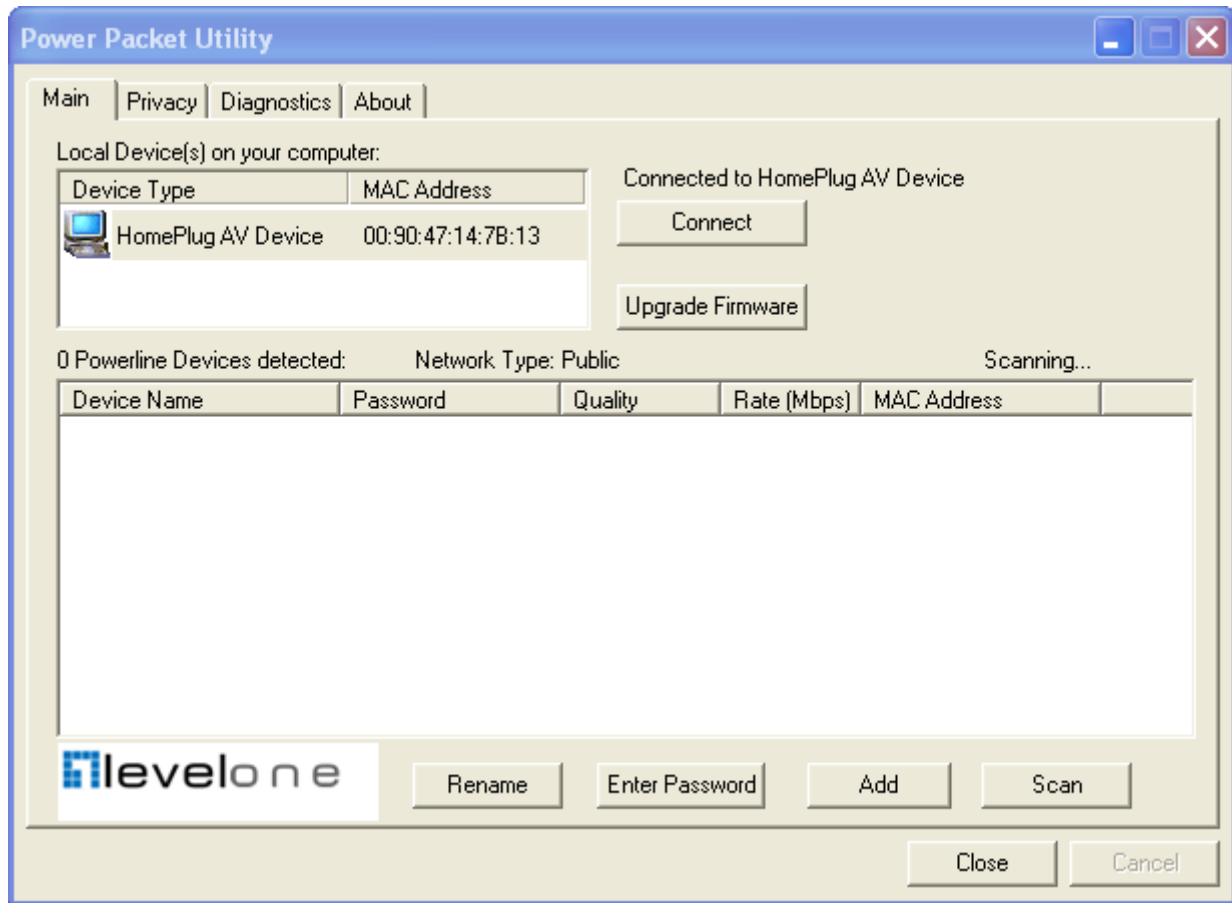
Green:100Mbps~ (good link quality)
Orange:50~99Mbps
Red: less 50Mbps (bad link quality)

Setup

Configuration requires the use of Windows PC. Once configured, any device may be connected to the 200Mbps HomePlug AV Adapter's Ethernet port. To perform configuration, follow the procedures list below.

1. Connect a standard LAN cable from the 200Mbps HomePlug AV Adapter's Ethernet port to your PC.

2. Plug the 200Mbps HomePlug AV Adapter 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 if other HomePlug devices are detected, otherwise it will be OFF.
   - The *Ethernet* LED should be ON.

4. Insert the supplied CD-ROM into your Windows PC, and wait for it to start, select "Utility" from the autorun screen. If it does not start automatically, locate and run SETUP.EXE.

5. Follow the prompts to install the *PLI-2040* utility.

6. Once installation is completed, run the *PLI-2040* utility program. The first screen (*Network* Tab) will display information of the compatible devices found, such as their MAC Addresses and current transfer speeds. Choose the desired device from the *Device Selection*, and the information of the selected device will be displayed in the table.

Figure 2: PLI-2040 Utility - Network Tab

7. Click *Close* to exit the *PLI-2040* utility.

Setup is now complete.

If your PC is not the device you wish to use with the 200Mbps HomePlug AV Adapter, connect the Ethernet cable from the 200 Mbps HomePlug AV Adapter to the desired device.
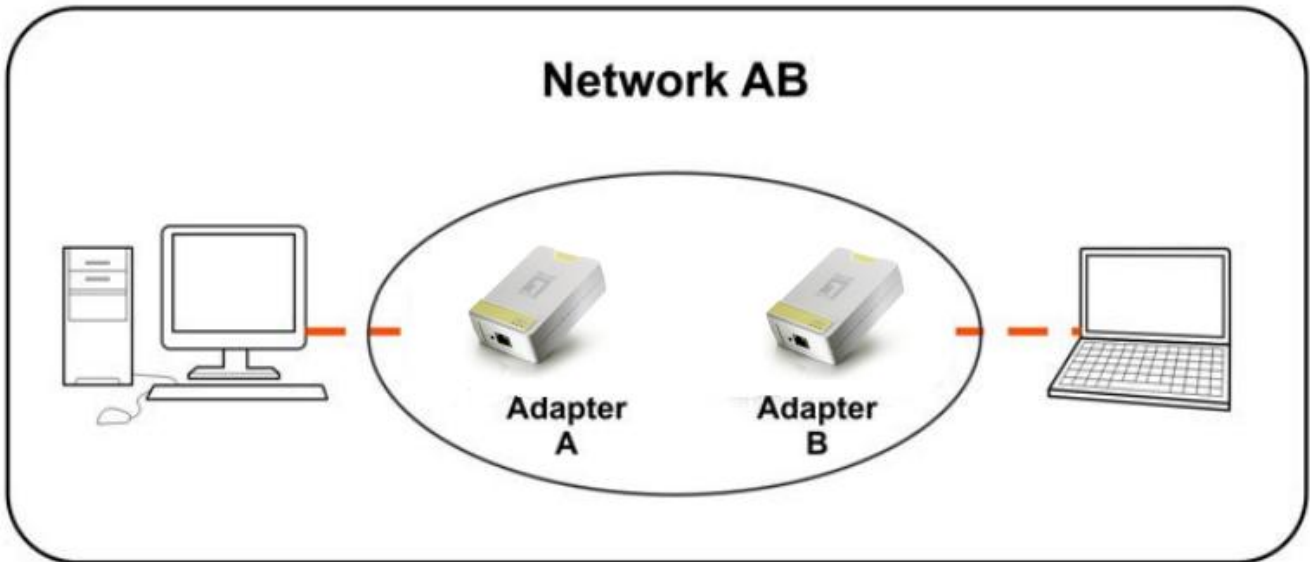
The 200Mbps HomePlug AV Adapter is now ready for use.

Security Setting

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"

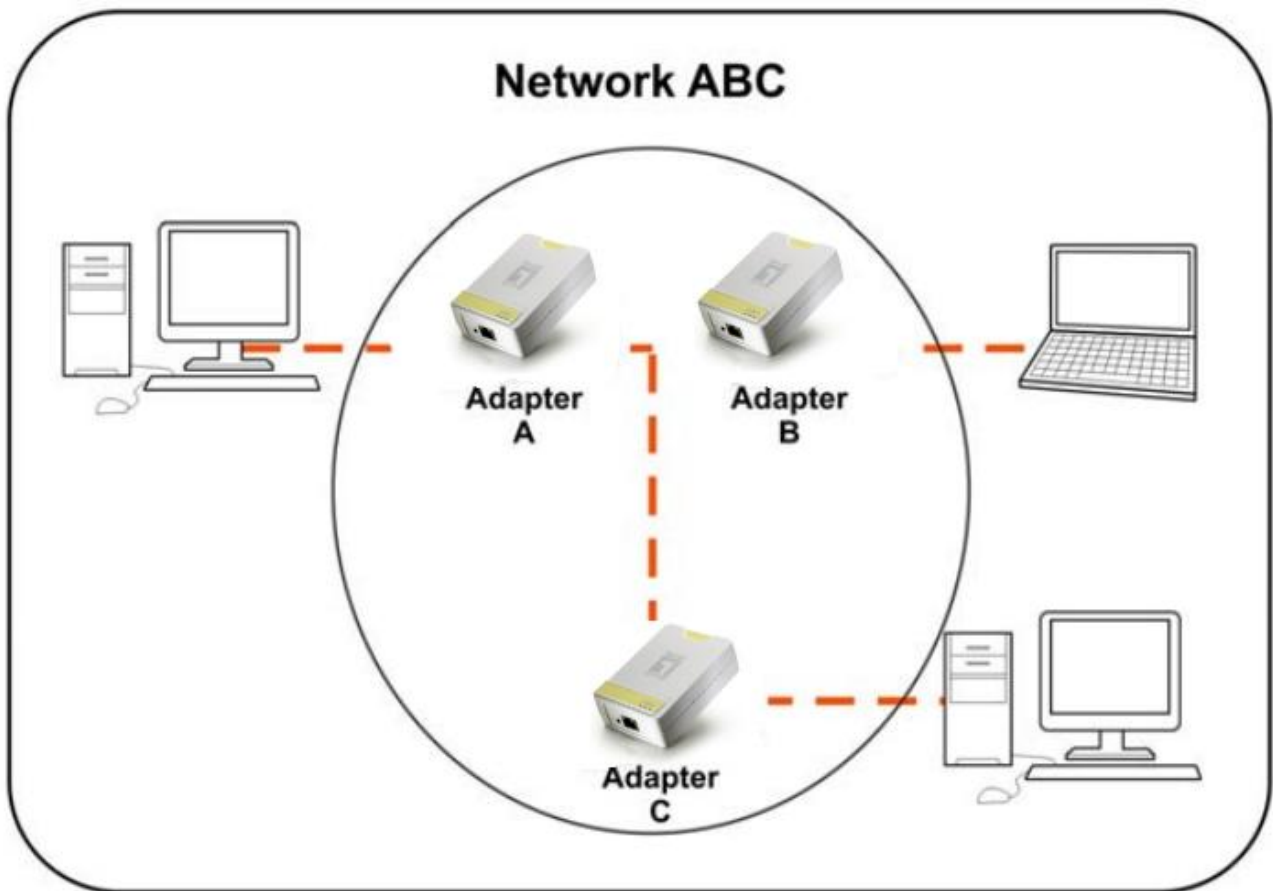7. Currently, Adapter A and Adapter B are not networked

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.

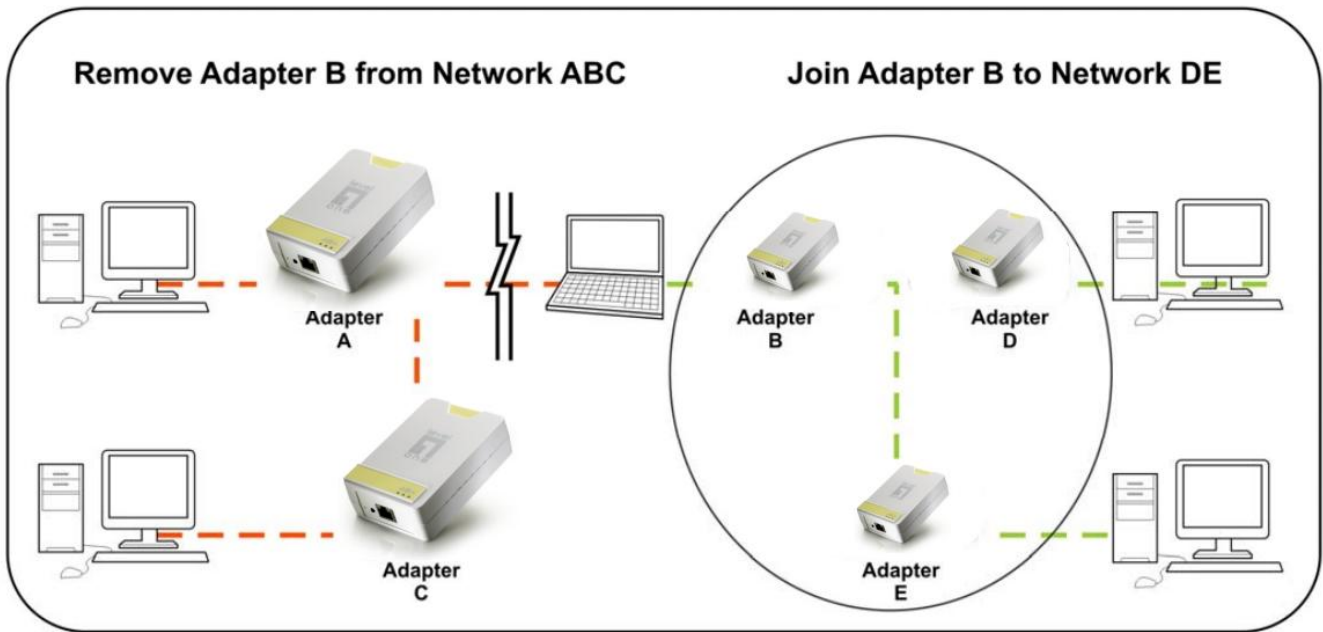## Adding Adapter C to existing Network AB (Adapter A and Adapter B)

One unassociated Adapter C is added to an existing Network AB.

The procedure is as follows:

1. 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"

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

3. 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.

4. 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:

1. 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.

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

3. 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.

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

Operation

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

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

- Each HomePlug device must use the same **Network Key**.
  You can use the *Encryption* tab of the *PLI-2040* utility to assign a **Network Key** to other HomePlug devices.

- **200Mbps HomePlug AV Adapter** works better when plugged into the wall socket. Connect the **200Mbps HomePlug AV Adapter** into the power strip or surge protectors may degrade the network performance.

Specification

PowerLine Standards	HomePlug AV
Transfer Rate	Up to 200Mbps
Modulation	1024/256/64/16/8 QAM, QPSK, BPSK
Forward Error Correction	Turbo Codes
Protocol	TDMA, CSMA/CA
Security	128-bit AES Encryption
LEDs	1 * Power 1 * HomePlug 1 * Ethernet
Ethernet Interface	1 * 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)
Certifications	FCC Part 15 Class B CE Mark
Safety Approvals	UL Listed (UL60950-1)/cUL CSA No.22-60950-01-03 CB, IEC/EN 60950-1;2001
Operating Systems	Windows 98SE, Windows ME, Windows 2000, Windows XP, Windows Vista, 7 or any other operating system with network support