



# **200M Powerline Ethernet Bridge**

**PL-501**

**User's Manual**

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## **FCC Compliance 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 radio interference in a commercial environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measure are necessary to correct the interference.

## CE mark Warning

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

## WEEE



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

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## Revision

User's Manual for PLANET 200M Powerline Ethernet Bridge  
Model: PL-501  
Part No.: 2081-AE0200-000

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# Chapter 1: Introduction

## 1.1 Overview

Thank you for purchasing PLANET 200M Powerline Ethernet Bridge. With Planet powerline communication products, your power outlets are no longer to be viewed only as power receptacles but also as network connection point. The PL-501 is a Powerline to Ethernet Bridge with a RJ-45 Ethernet interface which directly connecting to your computer's network card. With multiple outlets in almost every room, PL-501 allows you to use your existing electrical wiring to give your entire household or Office access to your network connection without the clutter of messy wiring around the house and Office.

By using Planet's powerline communication products, you will not need to spend time and money to installing Ethernet cabling to share network. It is simply by plugging the PL-501 into the wall anywhere in the house or office. The 128-Bit AES data encryption improves the security and reliability, to protect the data leaked by someone else. Customers will not need to worry about the data will be leaked. The speed up to 200 Mbps data rate which provides customers the highest speed in powerline data transferring. This product is cost-effective, easy to install, and do not require any new wired.

## 1.2 Features

- ◆ Direct attached to power outlets
- ◆ HomePlug AV compliant
- ◆ Connect 10/100 Ethernet network to Powerline network
- ◆ Up to 200Mbps data rate on the powerline
- ◆ Up to 200 meters between powerline nodes
- ◆ 128-Bit AES link Encryption for security and reliability
- ◆ Co-existence with HomePlug 1.0 and HomePlug 1.0 Turbo
- ◆ Built-in QoS
- ◆ Throughout the whole house, just use your power circuit to access the Internet or PC network
- ◆ Up to 64 bridged devices per station
- ◆ IGMP snooping for multicast to multiple uni-cast mapping

## 1.3 Specification

<b>Model</b>	<b>PL-501</b>
Standard	HomePlug AV compliant IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX
Ports	One RJ-45 port
Speed	UP to 200Mbps
Encryption	128-Bit AES encryption
Modulation	1024/256/64/16/8 QAM,QPSK, BPSK and ROBO
Forward Error Correction	Turbo Codes
Channel Access	TDMA, CSMA, CA
LED	Power, Ethernet, Data
Powerline Frequency Band	2MHz to 30MHz
Dimensions	105 x 72 x 60 mm(W x D x H)
Weight	149 g
Operating Temperature	0~45 degree C
Operating Relative Humidity	10~90% (non-condensing)
Storage Temperature	-20~70 degree C
Storage Relative Humidity	5~90% (non-condensing)
Power	100~240V AC, 50~60Hz

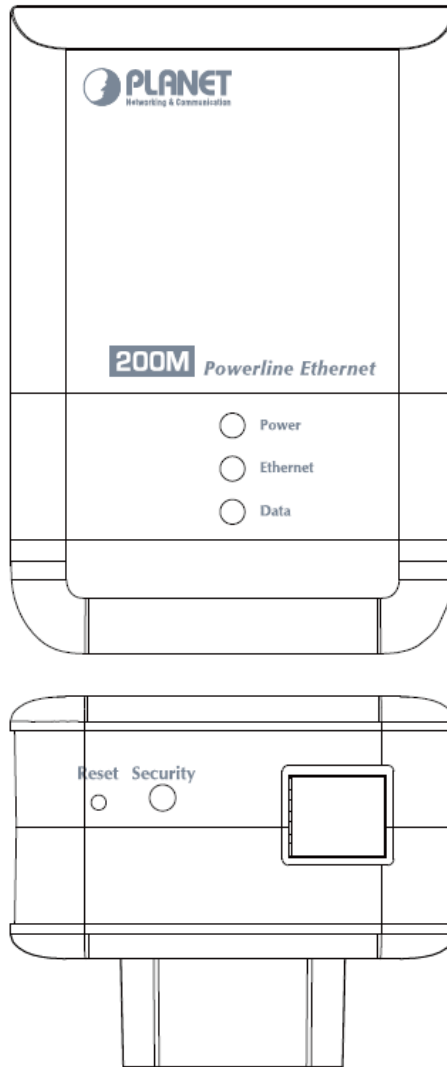
## 1.4 Package Contents

- PL-501 x 1 (PL-501 x 2 for PL-501-KIT)
- CD ROM x 1 (User's Manual, Quick Guide and Utility)
- RJ-45 Cable x 1 (RJ-45 Cable x 2 for PL-501-KIT)
- Quick Installation Guide x 1

## 1.5 System Requirements

- At least 2 Powerline devices
- Available Ethernet port each computer or network
- Available empty power outlet
- Standard home power line wiring
- CD-ROM utility

## Outlook



### LED Definition

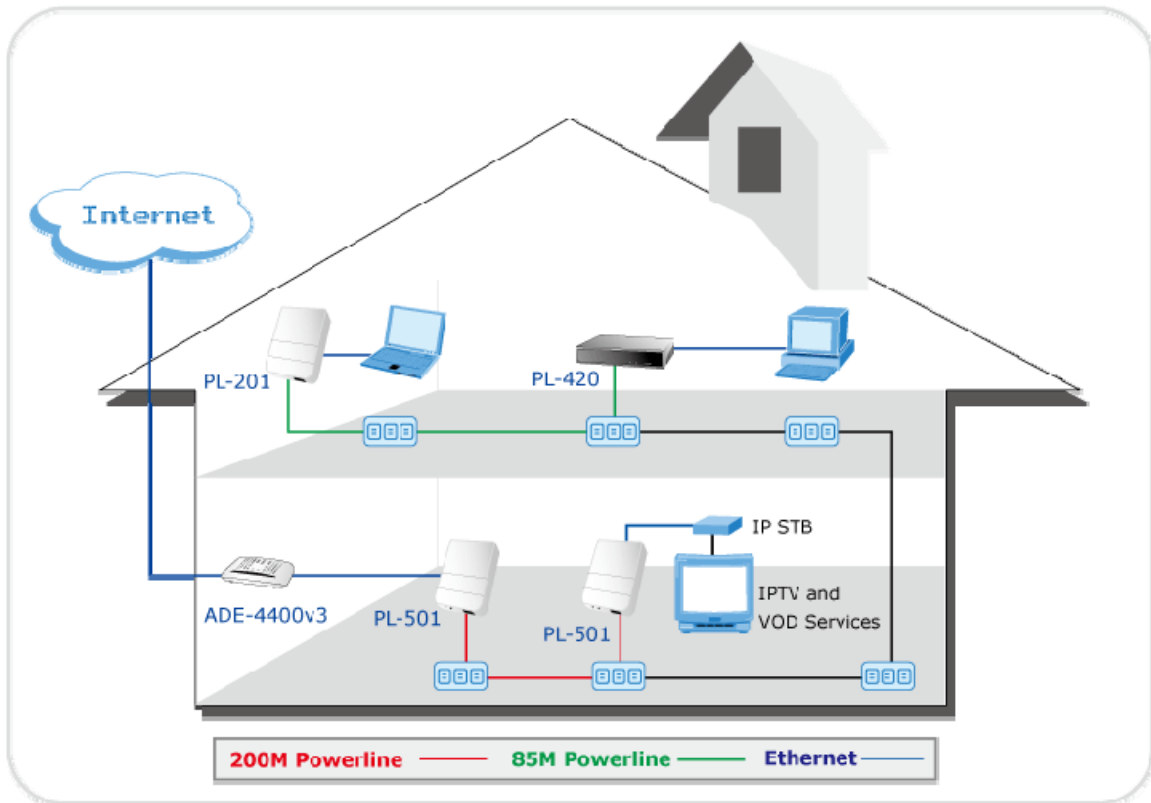
LED	Status	Description
Power	On	Steady on indicate the Powerline device connect to the power outlet
Ethernet	Blinking	Blinking indicates the data are transferring
	On	Steady on indicates the RJ-45 port has correctly connected to the network card of your PC or the Ethernet network

Data	Blinking	If the powerline device serving as a STATION (STA), the LED indicator will flash to indicated transmit or receive powerline activity.
	On	If the powerline device is serving as a CCO (Central Coordinator), the LED indicator will light steadily ON, even in the presence of powerline activity.

### Button Definition

Button	Description	
Reset	Reset to factory default	
Security	Press security button during 1~3 seconds.	Join a another HomePlugAV network
	Press security button more than 10 seconds	Set its security to random value

## 1.6 Wire Diagram





# Chapter 2: Installation

## 2.1 Overview

The installation of 200M Ethernet Bridge will only take minutes. No need to set up long wires through out the house, just simply install the utility, and physically plug the unit into the wall outlet, then to connect RJ-45 to the computer. Users can select to adjust its security functions and the platform of the network after the installation. For further assistance, please read our Frequently Asked Questions section in our Web site.

## 2.2 Running the InstallShield Wizard

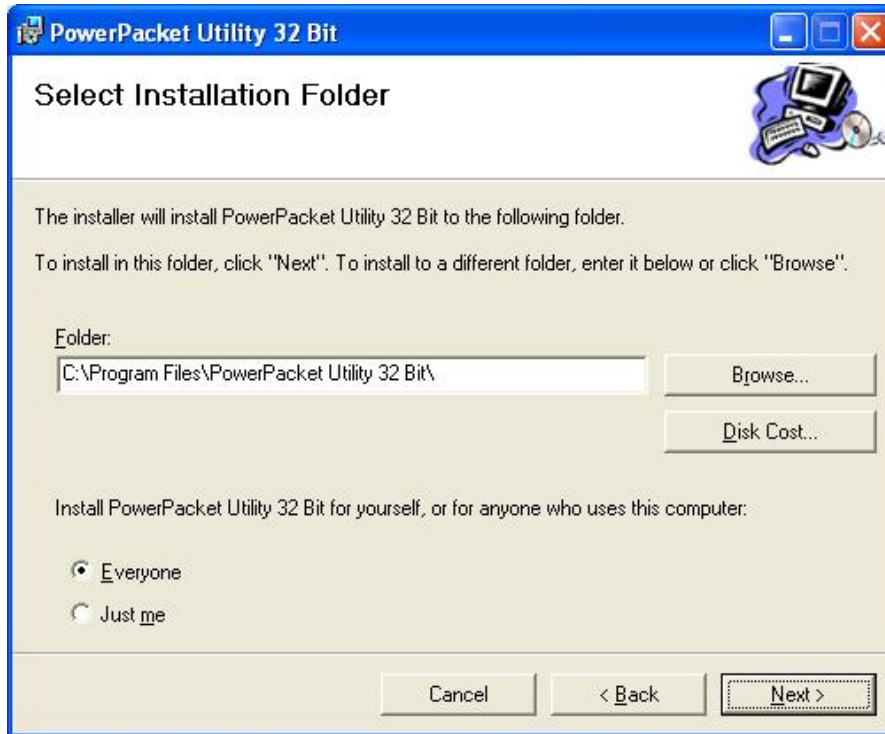
Please verify that no other Powerline Management Utilities are installed before installing this product. If other utilities were installed, uninstall them and restart before installing this software.

To install, insert the utility CD into the computer's CD-ROM drive. The main page shall pop up, then to press the link to install the software. Alternatively this can also be done manually by double clicking the setup.exe file on the CD.

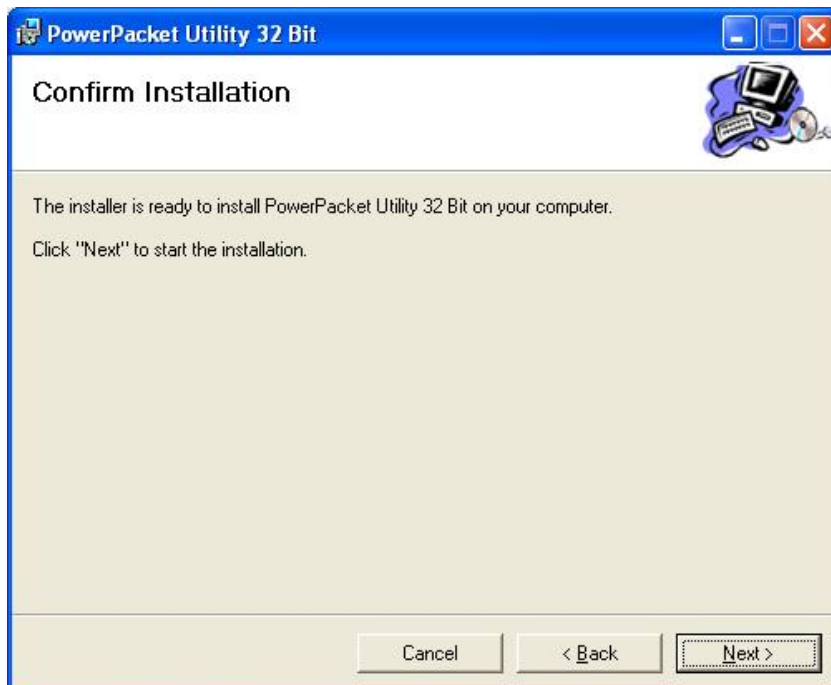
Once the software is loaded, it will display a dialog as following, and please click on '**Next**' to continue the installation.



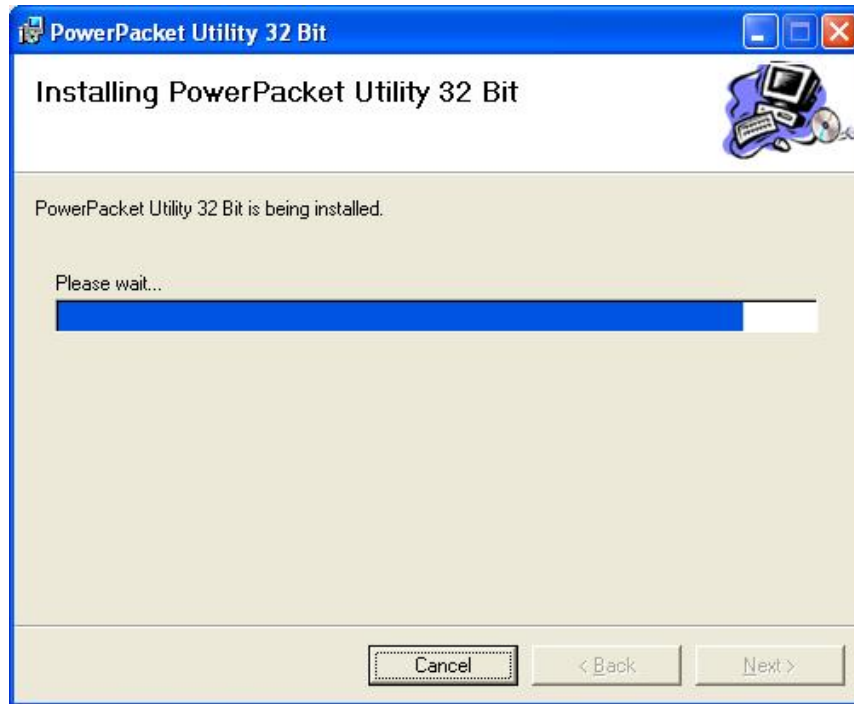
This section allows you to change the default directory where the program is installed. Or go **'Back'**. If you don't want to change it, click on **Next** to continue the installation.



Please click on **'Next'** to confirm the installation.



Powerline Utility is being installed, and please waits for installation.



This screen shows that the installation was completed successfully. Click on **Close** to exit the wizard.



# Chapter 3: Configuration

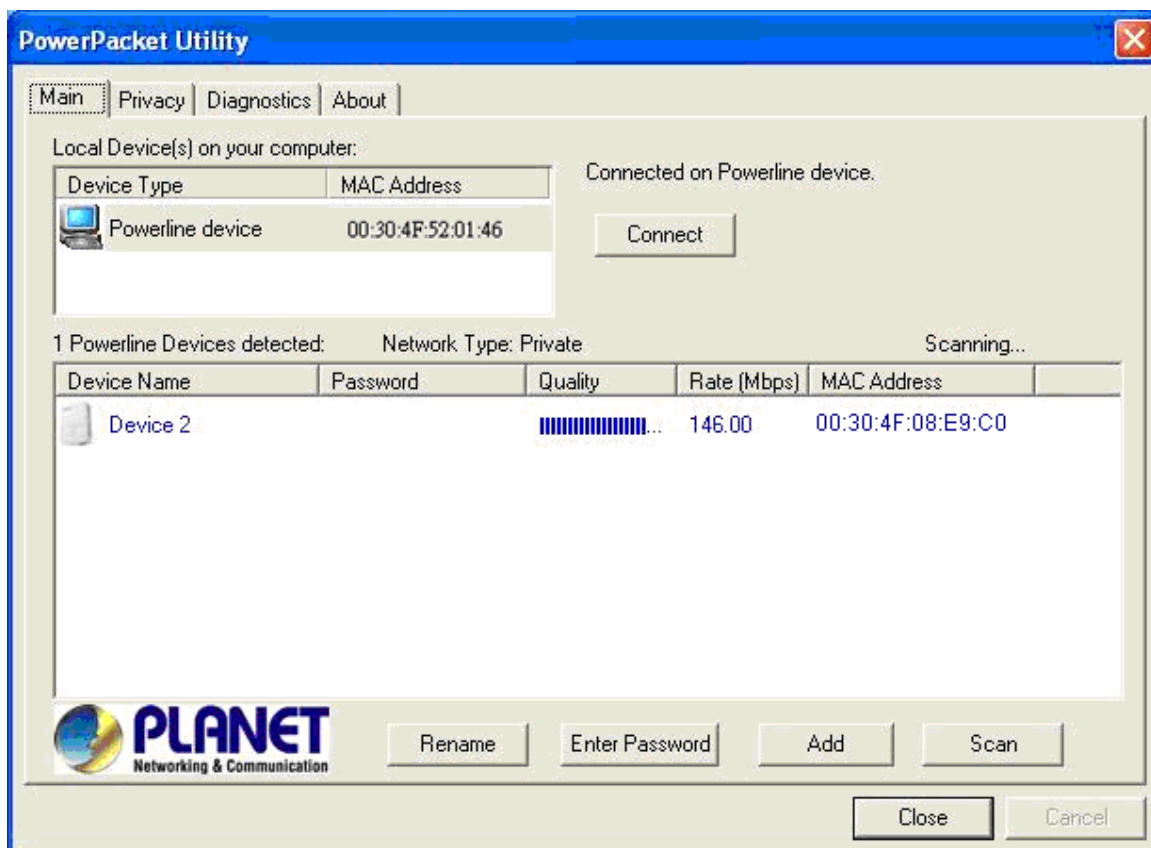
## 3.1 Overview

The PL-501 uses 128-bit AES encryption to block outside access. The key is set by using the Configuration Utility on the CD. By default, the protection is enabled, however, it is recommended to change the default network password. All your Powerline devices must use the same network password in order to be connected together.

## 3.2 Main Screen

### ■ Part 1: Scan a Local Powerline device

Double click the **PowerPacket Utility** icon on your desktop and utility screen will show up as below:



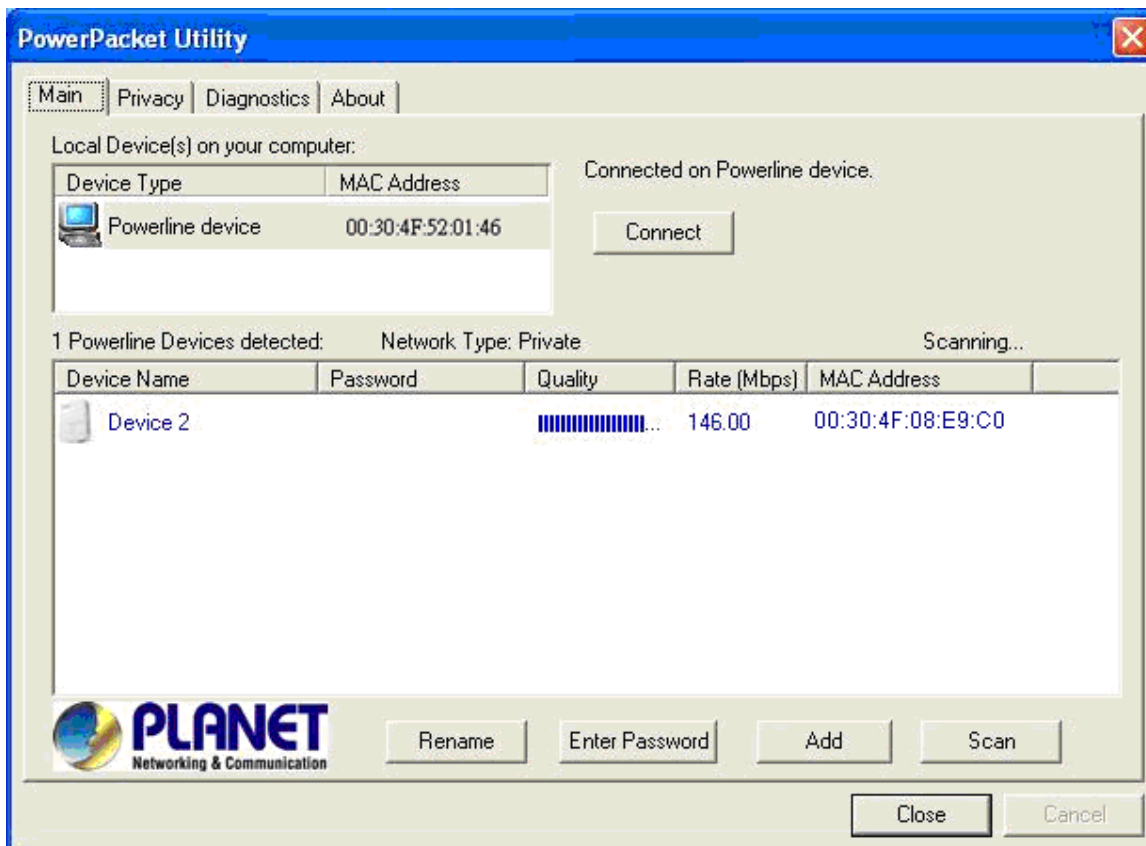
The Main tab shows the Powerline units that are connected to the current computer and other Powerline devices on the home network, and it will also display Mac Address of each device.

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**Note** If you do not see ANY unit in the device status but the Powerline device does exist, try to unplug all devices and plug them back. Meanwhile, please make sure the cable is the right type and working correctly. If all seems to be correct, and you still receive nothing in the **Device** window, try rebooting your computer.

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## ■ Part 2: Detect the Network Powerline device



The Main tab shows all the other Powerline units on your home network. It will represent them by MAC Address, and will also show the available bandwidth to each unit (Units farther away from another Powerline device might have a lower Data Rate). If you add or remove units from your home network, click the “**Scan**” button to re-scan the network, and refresh with any changes.

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**Note** Only units with the same **Network Password** will be shown, (Password case sensitive).

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**Note** If a unit shows MAC Address of all 0's, this unit might not have a solid connection, or might not connect at all.

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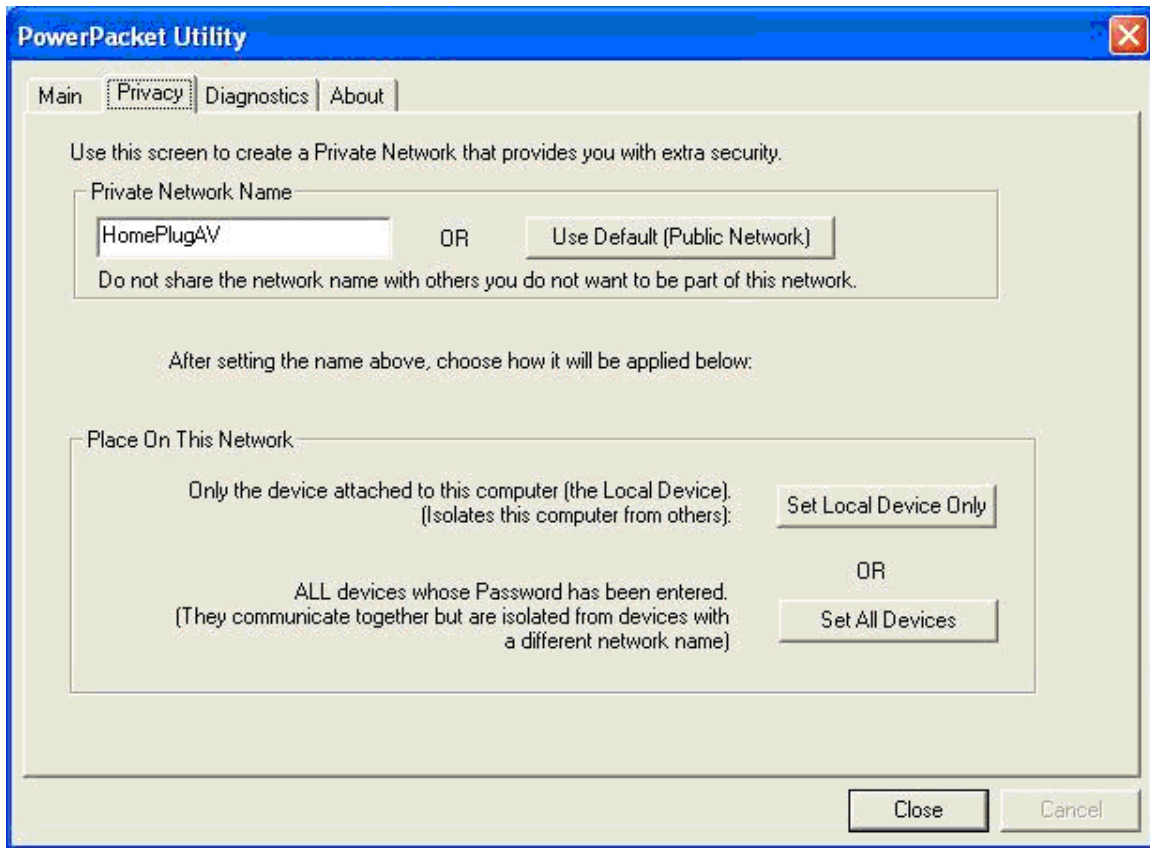
**Note** If there are units in the home network, but nothing displays in this Network scan, try to unplug all devices, and plug them back (Only do this with the units that you do not view in the network screen, you don't have to do this with all units.)

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If the problem persists, try to move the unit closer to this current unit (adjacent plugs on the same wall socket is most preferable). If the problem still persists and that unit is still not shown on the network, then the unit might be defective, please contact technical support. Otherwise if you view the unit working, distance might be the only issue.

## 3.3 Privacy

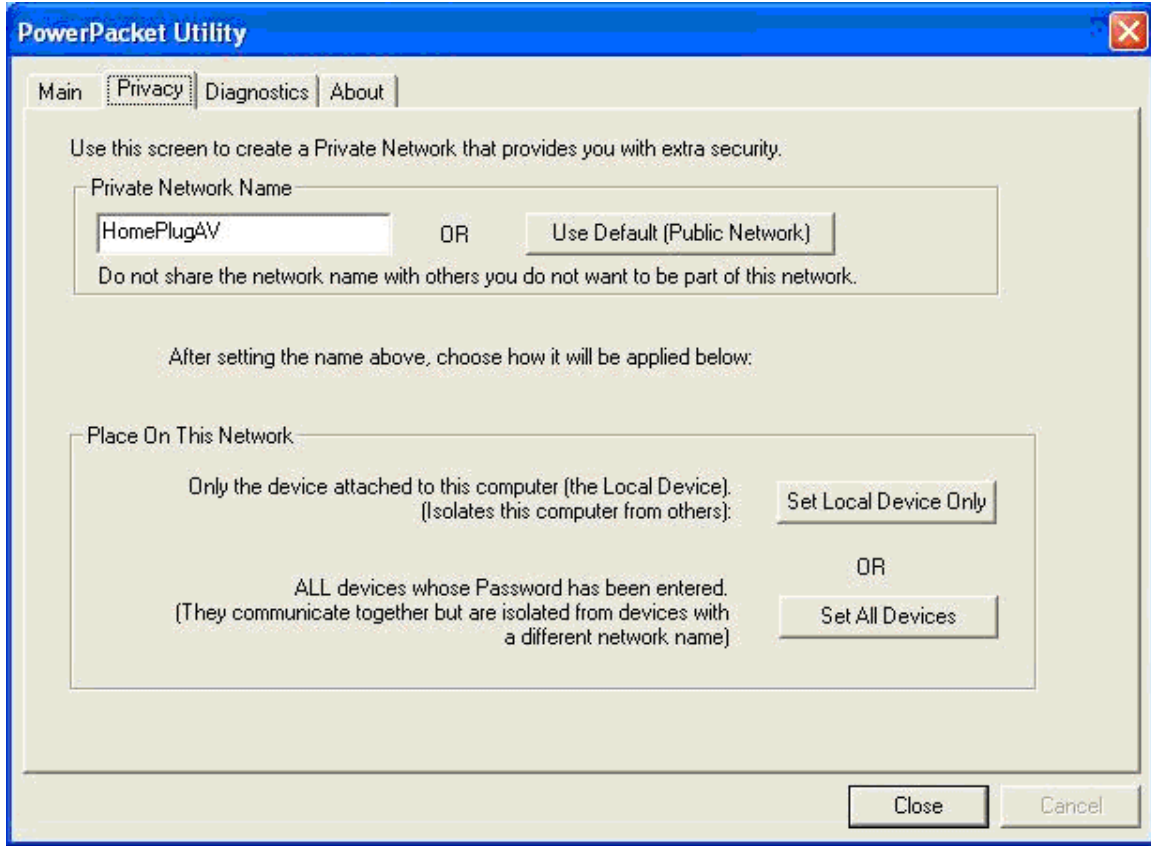
### ■ Setting Up Security on a Local Powerline device



The **Privacy** tab will allow you to change the **Network Password** to the unit that is currently connected to this computer. This network password encrypts all data that is sent from this unit using 128-bit data encryption standard (AES).

**Note** Every unit on your home network **MUST** have the same **Network Password** for connectivity to be established throughout your home. The default network password is "**HomePlugAV**"

## ■ Setting Up Security on a Network Powerline device



The **Privacy Tab** will allow users to use one primary computer to control the **Network Password** of all units on the home network.

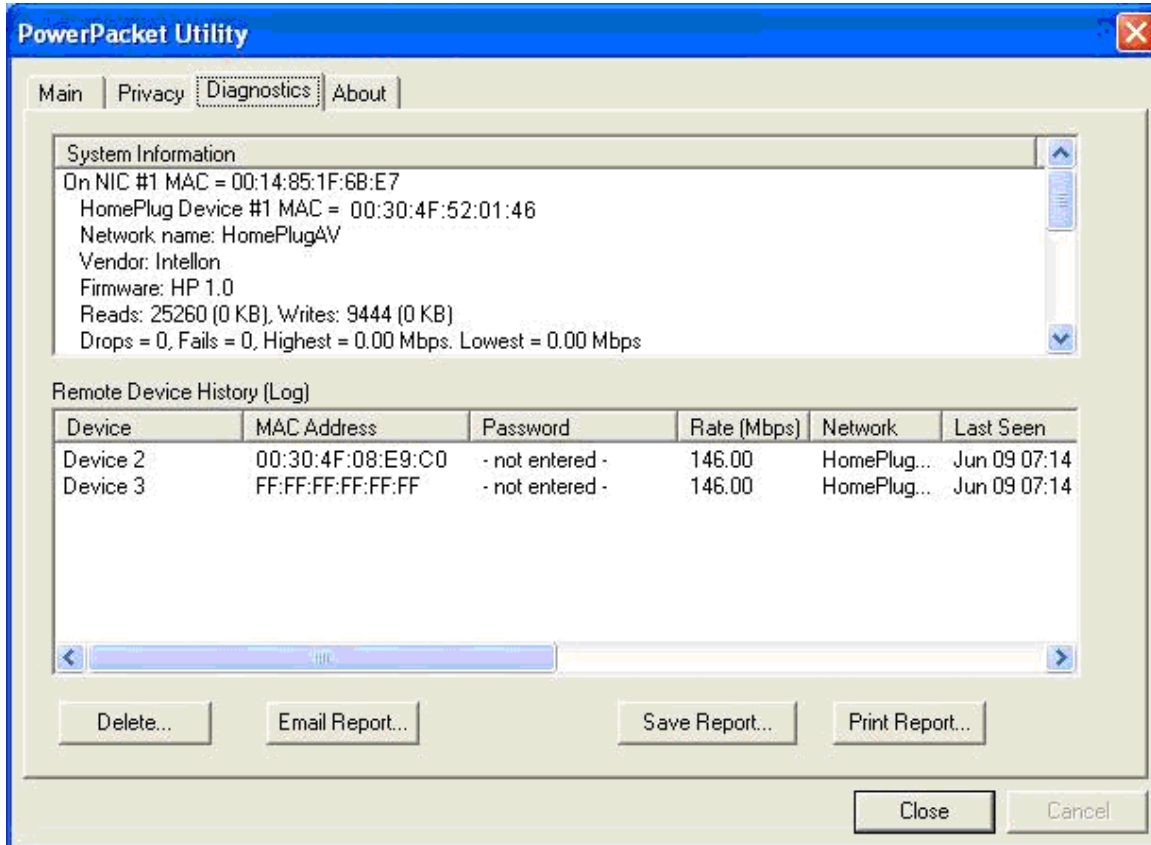
You will have to go back to the **Main Tab** first then find the DEK (Device Encryption Key) Key located on the bottom of each device. Enter this Key into the **Device Password** area. Click **Add**. This Device Key will then appear in the bottom window. Add all the DEK Keys for each unit in your house. You can now go back to the **Main Tab** then change the password remotely from one computer. This will allow you to change the password from one computer, instead of changing the password individually.





### 3.4 Diagnostics

The Diagnostics screen shows system information and a history of all devices seen.



**Diagnostics Screen**

The upper panel shows technical data concerning software and hardware on the host computer used to communicate over HomePlug. It shall include the following:

- Operating System Type/Version
- Host Network Name
- User Name
- MAC Address of all NICs (network interface card)
- Chipset manufacturer name (Turbo Only devices)
- Firmware Version (Turbo Only devices)

The lower panel contains a history of all remote devices. Devices are shown here regardless of whether or not they are on the same logical network.

- Device Name
- MAC Address
- Password
- Last known rate
- Last Known Network
- Chipset manufacturer name (Turbo Only devices)
- Date device last scanned

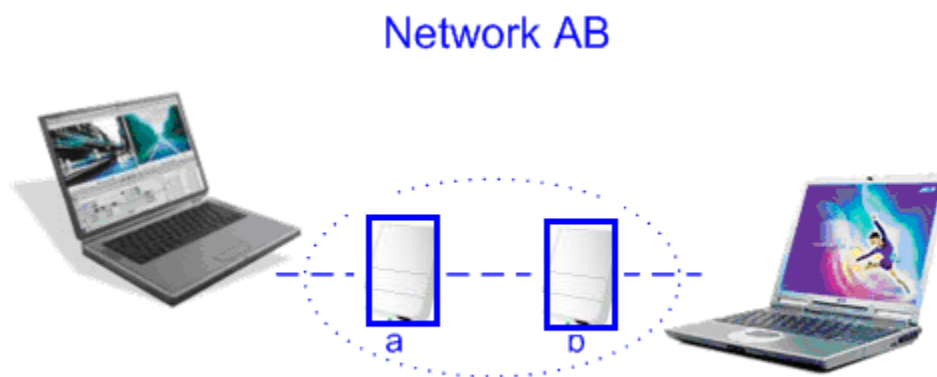
### 3.5 Security Button

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

- **Establish a new security network (Network AB)**

The procedure is as follows:

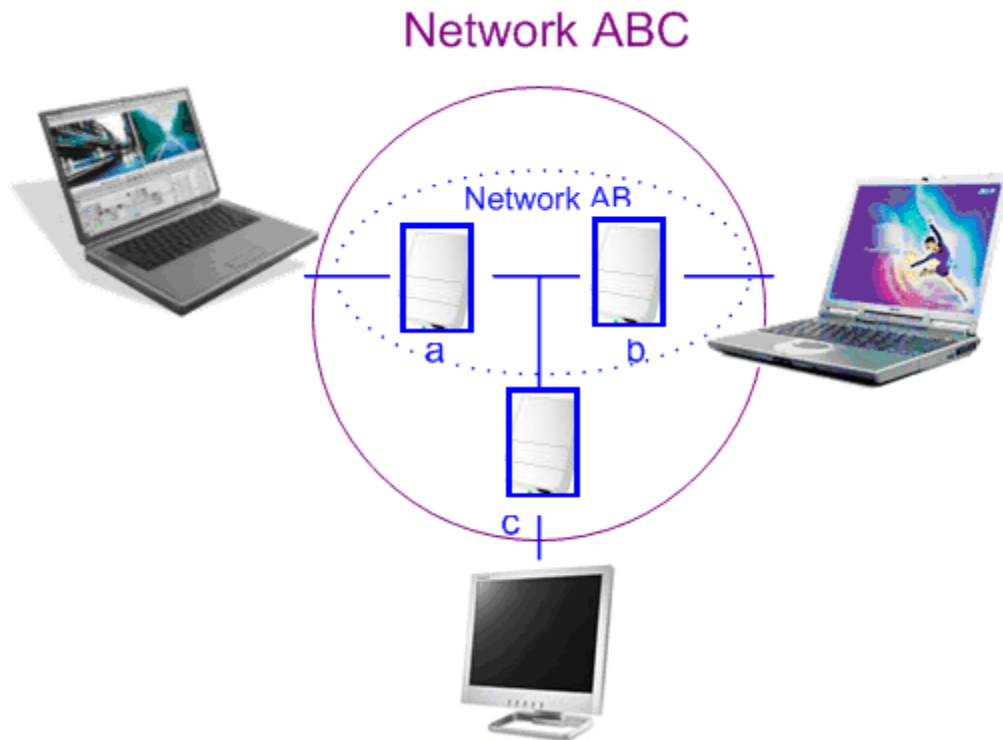
1. Press the security button on the Powerline (a) during 1~3 seconds.
2. Press the security button on the Powerline (b) during 1~3 seconds.
3. The PWR LEDs start to flash.
4. After a few seconds, the PWR and HP LEDs should be on. The connection of Network AB is success.



- **Use random value of security network (Network AB)**

1. Press the security button on Powerline (a) more than 10 seconds until all LEDs off.
2. Press the security button on Powerline (a) during 1~3 seconds.
3. Press the security button on Powerline (b) during 1~3 seconds.
4. The PWR LEDs start to flash.
5. After a few seconds, the PWR and HP LEDs should be on. The connection of Network AB is success.

- **Establish Powerline (c) to join an existing network (Network AB).**



The procedure is as follows:

1. Press the security button on the Powerline (a) or (b) during 1~3 seconds.
2. Press the security button on the Powerline (c) during 1~3 seconds.
3. The PWR LED starts to flash.
4. After a few seconds, the PWR and HP LEDs should be on. The configuration is successful.

## **3.6 Reset Button**

This section describes how to use Reset button, this button can be used to clear ALL data and restore ALL settings to the factory default values.

The procedure is as follows:

1. Hold the reset Button down while Power On for a few seconds.
2. Release the reset button.
3. All the LEDs will off, and then start again.
4. PL-501 is now using the factory default values.

## EC Declaration of Conformity

For the following equipment:

\*Type of Product : 200M Powerline Ethernet Bridge

\*Model Number : PL-501

\* Produced by:

Manufacturer's Name : **Planet Technology Corp.**

Manufacturer's Address: 11F, No 96, Min Chuan Road  
Hsin Tien, Taipei, Taiwan , R. O.C.

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC, Amended by 92/31/EEC, 93/68/EEC & 98/13/EC),  
For the evaluation regarding the Electromagnetic Compatibility (89/336/EEC, Amended by 92/31/EEC, 93/68/EEC & 98/13/EC), the following standards are applied:

EN 55022: 1998 + A1: 2000 + A2: 2003  
EN 50412-2-1: 2005  
EN 61000-3-2: 2006  
EN 61000-3-3: 1995 + A1: 2001 + A2: 2005  
EN 60950-1: 2006

Responsible for marking this declaration if the:

Manufacturer       Authorized representative established within the EU

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **11F, No.96, Min Chuan Road, Hsin Tien, Taipei, Taiwan, R.O.C**

Person responsible for making this declaration

Name, Surname **Allen Huang**

Position / Title : **Product Manager**

Taiwan  
Place

14, July, 2008  
Date

  
Legal Signature

**PLANET TECHNOLOGY CORPORATION**