

Instant PowerLine™ Series

PowerLine USB Adapter



Use this guide to install:

PLUSB10 ver. 2

User Guide

 **LINKSYS**®

Industry Canada (Canada)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe (B) est conforme à la norme NMB-003 du Canada.

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Linksys guarantees that every Instant PowerLine™ PowerLine USB Adapter will be free from physical defects in material and workmanship for one year from the date of purchase, when used within the limits set forth in the Specifications section of this User Guide. If the product proves defective during this warranty period, call Linksys Technical Support in order to obtain a Return Authorization Number. **BE SURE TO HAVE YOUR PROOF OF PURCHASE AND A BARCODE FROM THE PRODUCT'S PACKAGING ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE.** When returning a product, mark the Return Authorization Number clearly on the outside of the package and include a copy of your original proof of purchase. All customers located outside of the United States of America and Canada shall be held responsible for shipping and handling charges.

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Linksys P.O. Box 18558, Irvine, CA 92623.

FCC STATEMENT

The Instant PowerLine™ PowerLine USB Adapter have been tested and complies with the specifications 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 according to 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 is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

UG-PLUSB10 ver. 2-111902NC KL

Table of Contents

Chapter 1: Introduction	1	Chapter 7: Using the PowerLine Configuration Utility	16
The Linksys PowerLine USB Adapter	1	Overview	16
Features	1	Accessing the PowerLine Configuration Utility	16
Chapter 2: Getting to Know the PowerLine USB Adapter	2	Device	17
The USB Adapter's Ports	2	Network	18
The USB Adapter's Front Panel LEDs	3	Security	19
Chapter 3: Planning Your PowerLine Network	4	About	20
Chapter 4: Using the Setup CD-ROM	5	Appendix A: Troubleshooting	21
Overview	5	Common Problems and Solutions	21
Running the Installation Wizard	5	Frequently Asked Questions	21
Chapter 5: Connecting the PowerLine USB Adapter	11	Appendix B: Glossary	22
Chapter 6: Installing the Driver for the PowerLine USB Adapter	12	Appendix C: IP Addressing	28
Overview	12	What's an IP Address?	28
Windows 98SE	12	Static IP Addresses	28
Windows Millennium	13	Dynamic IP Addresses	28
Windows 2000	13	DHCP (Dynamic Host Configuration Protocol)	28
Windows XP	14	Appendix D: Specifications	29
		Environmental	30
		Appendix E: Warranty Information	31
		Appendix F: Contact Information	32

Chapter 1: Introduction

The Linksys Powerline USB Adapter

The PowerLine USB Adapter lets you turn the existing powerlines in your home or office into a high-speed network. Now you don't have to drill through the walls, and climb through the attic or cellar to install network cables, just use the wires that already run through the building!

The PowerLine USB Adapter interfaces USB-equipped PCs to the HomePlug PowerLine network standard. Just plug the PowerLine USB Adapter into the wall, connect your computer to it using the included USB cable, and you've turned your whole house into network infrastructure! Attach more computers to the network by simply plugging them into the wall anywhere in the house, using more PowerLine USB Adapters, or Linksys PowerLine EtherFast® 10/100 Bridges.

Once your computers are connected to the network, they can share resources like printers and storage space, and all kinds of files -- music, digital pictures, and documents. With up to 12Mbps data rates*, you can play head-to-head network computer games, too. And if you use a PowerLine Bridge to interface one of the famous Linksys Broadband Routers from your cable or DSL Internet connection to your PowerLine network, you'll be able to get to the Internet from any computer in the house.

* The HomePlug powerline network data rate is 14Mbps. Actual throughput of the PLUSB10 is limited to 12Mbps by the USB 1.1 specification.

Features

- Use your home or office's existing powerlines to network your computers
- Connects USB-equipped PCs to powerline networking
- Data rates up to 12Mbps* — 56-bit encryption keeps your data secure
- Share files, printers, network storage, gaming, and your PowerLine-Bridged cable/DSL Internet connection throughout your home
- Free Technical Support—24 Hours a Day, 7 Days a Week, Toll-Free US Calls
- 1-Year Limited Warranty

Chapter 2: Getting to Know the PowerLine USB Adapter

The USB Adapter's Ports



Figure 2-1

USB The USB Port, shown in Figure 2-1, is where you will connect your USB cable. To work with USB ports, your computer must be running Windows 98SE, 2000, Millennium, or XP.

The USB icon shown in Figure 2-2 marks a USB port on a PC or device.



Figure 2-2

Your USB Adapter comes with a USB cable that has two different types of connectors, as shown in Figure 2-3. Type A, the master connector, is shaped like a rectangle and plugs into your computer's USB port. Type B, the slave connector, resembles a square and connects to the USB port on the USB Adapter.

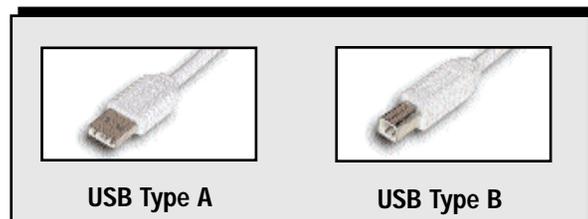


Figure 2-3

Important: Windows 95 and NT do not support the USB Adapter.

The USB Adapter's Front Panel LEDs



Figure 2-4

The Adapter's LEDs (shown in Figure 2-4), where network activity is displayed, are located on the Adapter's front.

- | | |
|------------------|--|
| Link | <i>Green.</i> The Link LED will light up when the PowerLine USB Adapter is powered on. |
| Activity | <i>Green.</i> The Activity LED will light up when there is power-line network traffic. |
| Collision | <i>Orange.</i> The Collision LED flashes when there is a collision. |

Chapter 3: Planning Your Powerline Network

With the Instant PowerLine products, a network can be created using home powerlines. Computers can be networked over powerlines using a PowerLine USB Adapter or an EtherFast 10/100 Bridge. Use the USB Adapter for a USB-enabled computer, or use the 10/100 Bridge for an Ethernet-enabled computer.

The PowerLine EtherFast 10/100 Bridge is also ideal for any user who already has a router and wants to share high-speed Internet access across the powerline network. (An example of such a network is shown in Figure 3-1.)

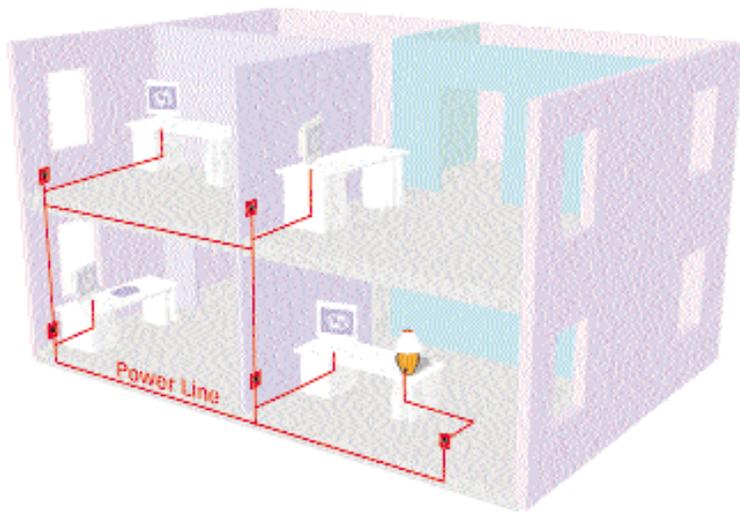


Figure 3-1

Chapter 4: Using the Setup CD-ROM

Overview

To begin installation of the PowerLine USB Adapter, you will use the Setup CD-ROM to run the Installation Wizard.

Running the Installation Wizard

1. Insert the Setup CD-ROM into the computer's CD-ROM drive. The Setup CD-ROM should run automatically. If it does not, click the **Start** button and choose **Run**. In the box that appears, enter **D:\setup.exe** (if "D" is the letter of your CD-ROM drive).

When you see Figure 4-1, click the **Next** button to continue. Click the **Cancel** button to end the installation. Click the **User Guide** button to view the User Guide.



Figure 4-1

2. As the installation starts, you will see the screen shown in Figure 4-2.

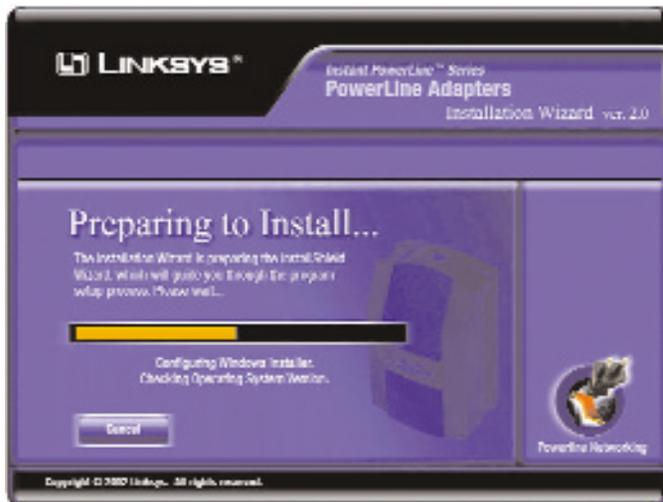


Figure 4-2

3. The License Agreement screen appears next, shown in Figure 4-3. Read the license agreement. To continue the installation, you must accept the terms of the license agreement. Click the radio button next to *I accept the terms in the license agreement*, and click the **Next** button. If you do not accept these terms, then click the **Cancel** button to end the installation. To return to the previous screen, click the **Back** button.



Figure 4-3

4. Enter your **User Name** and **Organization** on the screen shown in Figure 4-4. Select **Anyone who uses this computer (all users)** to install a shortcut to the PowerLine Configuration Utility on every user's desktop. Then click the **Next** button to continue.



Figure 4-4

5. The screen in Figure 4-5 will appear next. It will list the current settings of Setup Type, Destination Folder, User Name, and Organization. Click the **Install** button to begin installation of the PowerLine Configuration Utility. Click the **Cancel** button to end the installation. To return to the previous screen, click the **Back** button.



Figure 4-5

6. The screen in Figure 4-6 may appear while the files are being copied.

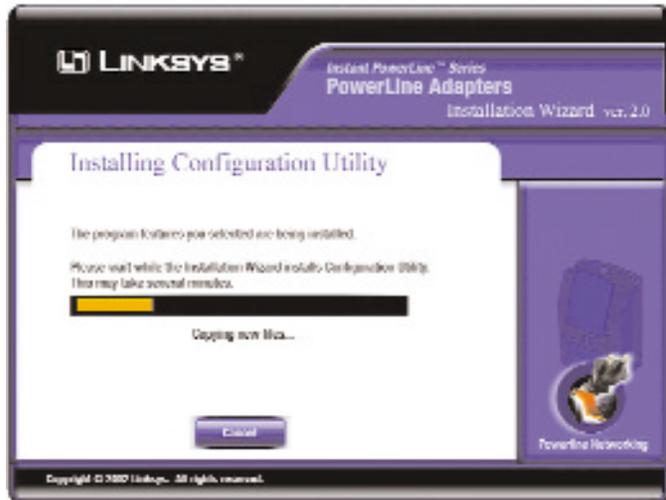


Figure 4-6

Windows 2000 users: Windows will inform you that there was no digital signature found (on the screen shown in Figure 4-7). Click the **Yes** button to proceed with the installation. Click the **No** button to end the installation.

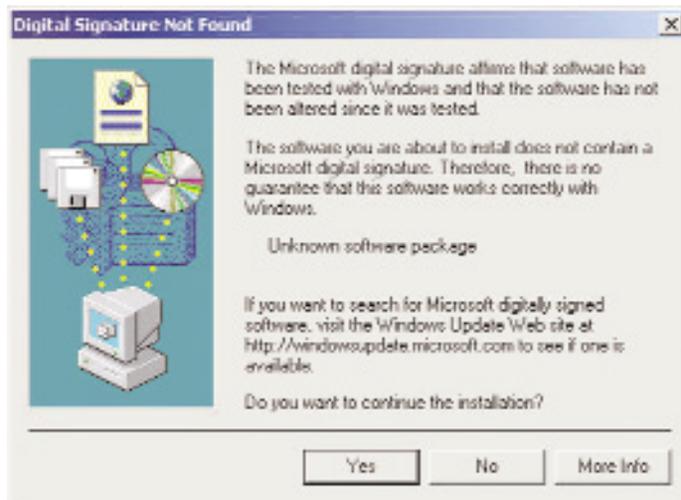


Figure 4-7

Windows XP users: Windows will notify you that the driver has not passed Windows Logo testing (on the screen shown in Figure 4-8). Click the **Continue Anyway** button. Click the **STOP Installation** button if you want to stop the installation.



Figure 4-8

7. Click the **Finish** button, from the screen shown in Figure 4-9, to exit the Installation Wizard.



Figure 4-9

8. You will be asked to restart your computer (shown in Figure 4-10). Click the **Yes** button to restart now, or click the **No** button to restart later.

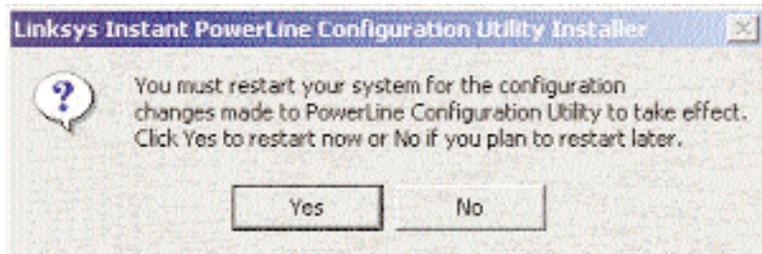


Figure 4-10

Proceed to “Chapter 5: Connecting the USB Adapter.”

Chapter 5: Connecting the PowerLine USB Adapter

1. Insert the end of the USB cable with the Type A connector into the computer's USB port. Figure 5-1 shows two USB ports as they might appear on your computer. Note the two USB icons marking the ports.
2. Insert the standard USB cable's Type B connector into the USB port on the USB Adapter. (See Figure 5-2.)



Figure 5-1

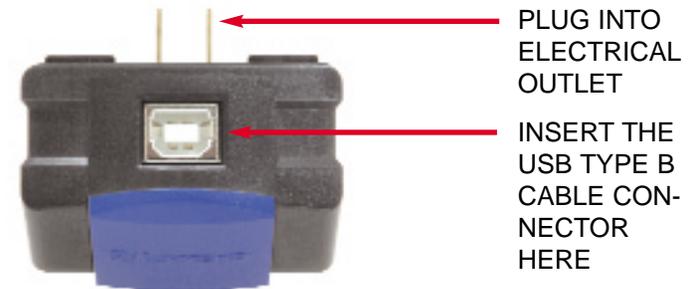


Figure 5-2

3. Plug the PowerLine USB Adapter into an electrical outlet. (See Figure 5-3.)



Figure 5-2

The hardware installation of the USB Adapter is complete. Proceed to Chapter 6: Installing the Driver for the USB Adapter.

Chapter 6: Installing the Driver for the PowerLine USB Adapter

Overview

After installing your USB Adapter in your computer, you will install the network driver. The installation procedure for the network driver will vary depending on which operating system you are using on your computer. Proceed to the instructions for your operating system: Windows 98SE, 2000, Millennium, or XP.

Windows 98SE

1. Windows 98SE will automatically detect the presence of the USB Adapter hardware in your computer once you have completed the hardware installation.
2. Windows will ask you to supply your Windows 98SE Installation Files, as shown in Figure 6-1. Insert the Windows 98SE CD-ROM into the CD-ROM drive of your computer. Then click the **OK** button to continue.

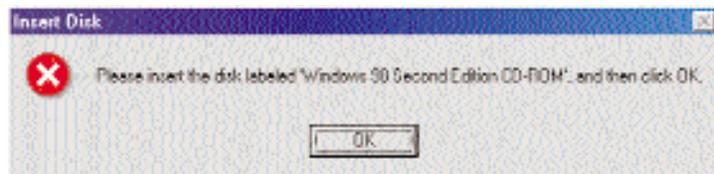


Figure 6-1

3. A Version Conflict screen may appear if an older file is being copied (as shown in Figure 6-2). If your existing file is newer and you want to keep it, click the **Yes** button. If you want the old file to write over the new file, click the **No** button.

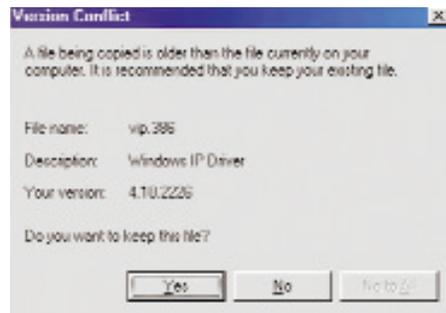


Figure 6-2

**The Windows 98SE driver installation is now complete.
Proceed to Chapter 7: Using the PowerLine Configuration Utility.**

Windows Millennium

Windows Millennium will automatically detect the presence of the USB Adapter in your computer after you have completed the hardware installation and will automatically install the driver for you.

**The Windows Millennium driver installation is now complete.
Proceed to Chapter 7: Using the PowerLine Configuration Utility.**

Windows 2000

Windows 2000 will automatically detect the presence of the USB Adapter in your computer after you have completed the hardware installation. Windows will inform you that there was no digital signature found, as shown in Figure 6-4. Click the **Yes** button to install the USB driver.



Figure 6-4

**The Windows 2000 driver installation is now complete.
Proceed to Chapter 7: Using the PowerLine Configuration Utility.**

Windows XP

1. Windows XP will automatically detect the presence of the USB Adapter in your computer after you have completed the hardware installation. Click the radio button next to **Install the software automatically (Recommended)** on the screen shown in Figure 6-5. Then click the **Next** button.



Figure 6-5

2. Windows will notify you that the driver has not passed Windows Logo testing, on the screen shown in Figure 6-6. Click the **Continue Anyway** button.

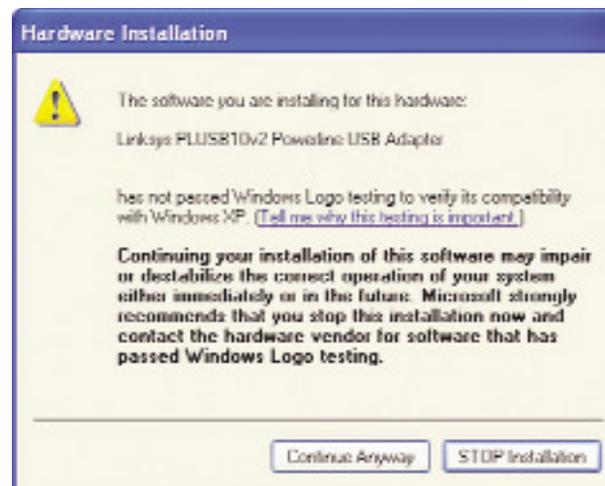


Figure 6-6

3. When Windows tells you it has finished installing the new driver, as on the screen shown in Figure 6-7, click the **Finish** button.



Figure 6-7

The Windows XP driver installation is now complete. Proceed to **Chapter 7: Using the PowerLine Configuration Utility**.

Chapter 7: Using the PowerLine Configuration Utility

Overview

After installing the PowerLine USB Adapter, you will run the PowerLine Configuration Utility. Use this utility to check the PC's direct connection to the powerline network, search for powerline devices on your network, and set up security using a network password.

Accessing the PowerLine Configuration Utility

1. To access the PowerLine Configuration Utility, double-click the PowerLine Configuration Utility icon on your desktop.



Figure 7-1

2. The *Welcome* screen will appear, as shown in Figure 7-2. Click the **Next** button.

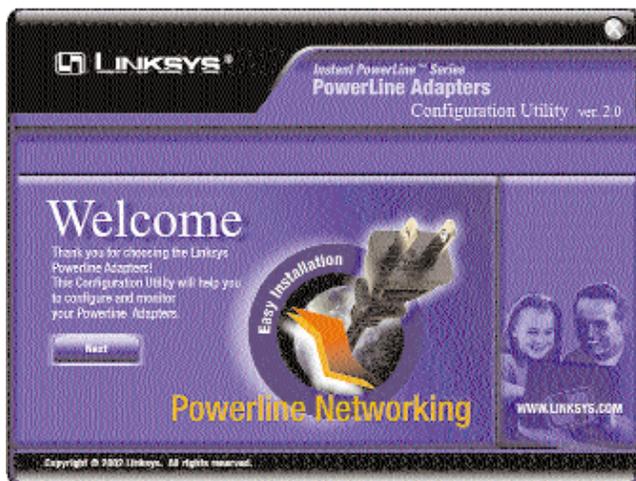


Figure 7-2

PowerLine USB Adapter

3. The *Device* screen will appear. You have a choice of four screens:

- **Device** - Select which local powerline device to use when connecting your PC to the powerline network.
- **Network** - Discover what powerline devices are on the powerline network.
- **Security** - Set the password for your current local device.
- **About** - If you have an active Internet connection, connect to Linksys's website, www.linksys.com, from this screen.

Device

The *Device* screen (Figure 7-3) lists the powerline devices connected to your PC.

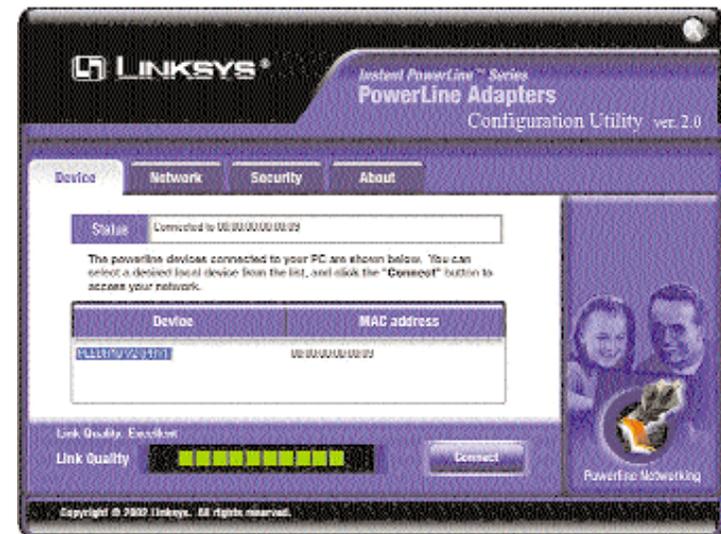


Figure 7-3

Status - This indicates which powerline device is currently used by the PC.

Device - The name of each powerline device is displayed here.

MAC address - The MAC address of each powerline device is shown here.

Link Quality - The signal quality of the powerline network connection is indicated here.

Connect - Select the Device you want to use to access the powerline network, and then click the **Connect** button.

Network

The *Network* screen (Figure 7-4) lists allows you to search the powerline network for all powerline devices configured with the same Network Password as the device you are currently using for your PC.

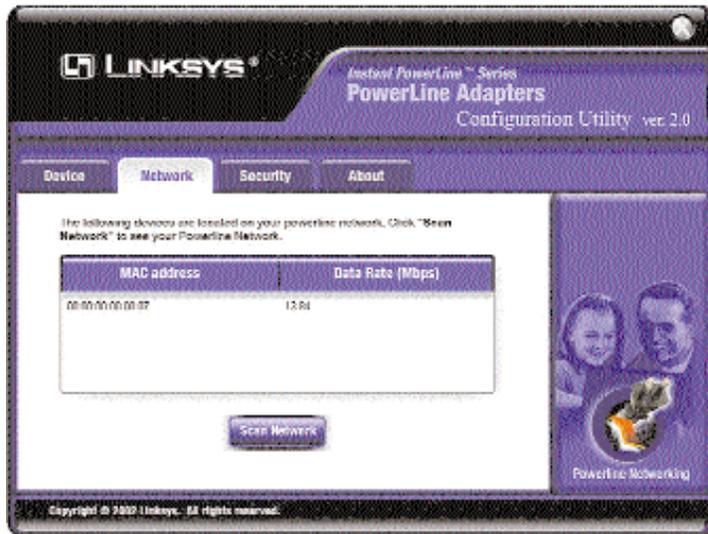


Figure 7-4

MAC address - The MAC address of each powerline device is shown here.

Data Rate (Mbps) - The transmission speed of the powerline device is displayed here.

Scan Network - Click the **Scan Network** button to perform a search for all powerline devices configured with the same Network Password.

Security

The *Security* screen (Figure 7-5) allows you to set the Network Password of the powerline device being used by your PC. All of the powerline devices on your powerline network must use the same Network Password.

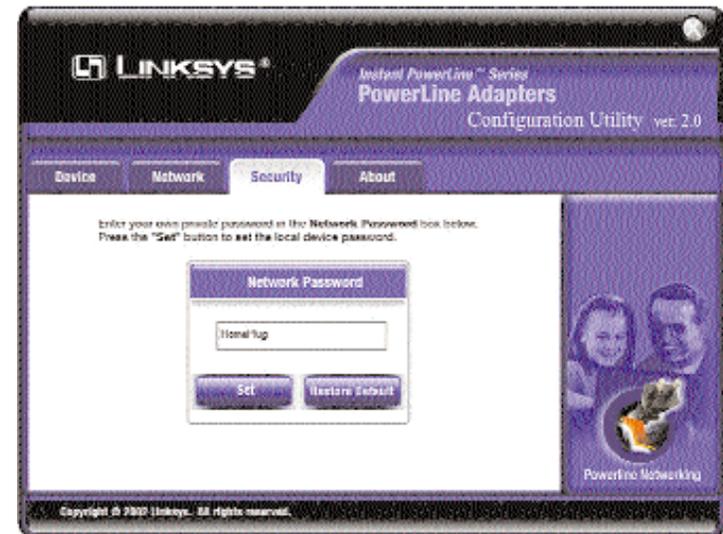


Figure 7-5

Network Password - This must have between 4 and 24 characters. The Network Password is case-sensitive, so note whether you use lowercase or uppercase letters. It can include any letters of the alphabet, numbers, or punctuation marks.



Note: Remember this password. You will need to set this password on each powerline device on your powerline network.

Set - Enter the Network Password in the *Network Password* field. Then click the **Set** button.

Restore Default - Click the **Restore Default** button to set the Network Password back to its factory default setting, **HomePlug**. Then click the **Set** button.

About

The *About* screen (Figure 7-6) offers a convenient link to the Linksys website, www.linksys.com. You must have an active Internet connection to use this link.

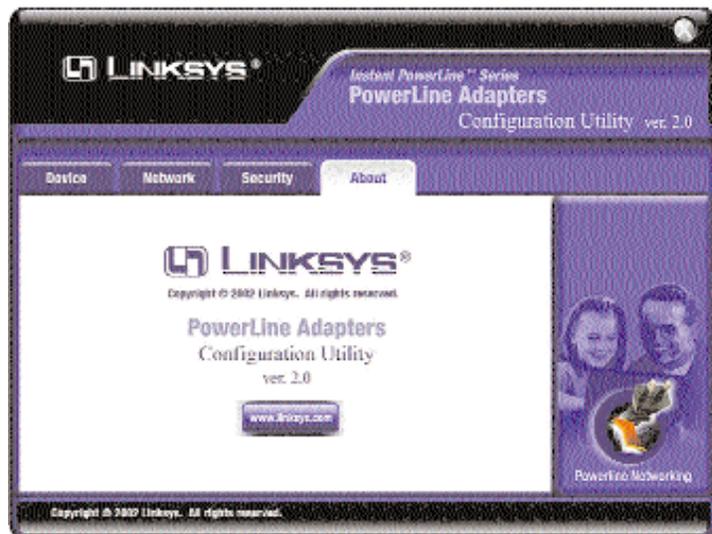


Figure 7-6

Appendix A: Troubleshooting

Common Problems and Solutions

This section provides possible solutions to problems regarding the installation and operation of the PowerLine USB Adapter. Read the description below to solve your problems. If you can't find an answer here, check the Linksys website at www.linksys.com.

1. None of the LEDs light up after I installed the PowerLine USB Adapter.
 - Unplug the USB cable from the computer. Unplug the PowerLine USB Adapter from the power outlet. Then repeat the hardware installation process. Make sure the power outlet is working properly.
2. I can't connect to other computers on my powerline network or to the Internet.
 - Make sure the IP address and TCP/IP protocol are set up correctly for all the powerline networked computers. For more information on IP addresses, see **Appendix C: IP Addressing**.
 - Make sure all devices on the powerline network have been configured using the Security Configuration Utility. The network password must be the same for all devices in order for them to communicate with each other. See **Chapter 7: Using the PowerLine Configuration Utility**.

Frequently Asked Questions

Does the PowerLine USB Adapter cause interference with other home networking or powerline products?

No. The PowerLine USB Adapter can co-exist with phoneline and wireless networking technologies. Instant PowerLine operates in a different frequency band than powerline control and can co-exist with technologies such as X-10, CEBus, and LONworks.

How does the PowerLine USB Adapter handle signal interference between two adjacent homes? How is eavesdropping prevented?

The PowerLine USB Adapter uses 56-bit DES security encryption to ensure network separation between homes. To enable 56-bit DES security encryption on Instant PowerLine products, you must run the PowerLine Configuration Utility on each and every Instant PowerLine product.

Appendix B: Glossary

10BaseT - An Ethernet standard that uses twisted wire pairs.

100BaseTX - IEEE physical layer specification for 100 Mbps over two pairs of Category 5 UTP or STP wire.

Bridge - A device that interconnects different networks together.

CAT 5 - ANSI/EIA (American National Standards Institute/Electronic Industries Association) Standard 568 is one of several standards that specify “categories” (the singular is commonly referred to as “CAT”) of twisted pair cabling systems (wires, junctions, and connectors) in terms of the data rates that they can sustain. CAT 5 cable has a maximum throughput of 100 Mbps and is usually utilized for 100BaseTX networks.

CSMA/CD (Carrier Sense Multiple Access/Collision Detection) - The LAN access method used in Ethernet. When a device wants to gain access to the network, it checks to see if the network is quiet (senses the carrier). If it is not, it waits a random amount of time before retrying. If the network is quiet and two devices access the line at exactly the same time, their signals collide. When the collision is detected, they both back off and each wait a random amount of time before retrying.

Default Gateway - The router used to forward all traffic that is not addressed to a station within the local subnet.

DHCP (Dynamic Host Configuration Protocol) - A protocol that lets network administrators centrally manage and automate the assignment of Internet Protocol (IP) addresses in an organization's network. Using the Internet's set of protocol (TCP/IP), each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

DHCP uses the concept of a “lease” or amount of time that a given IP address will be valid for a computer. The lease time can vary depending on how long a

user is likely to require the Internet connection at a particular location. It's especially useful in education and other environments where users change frequently. Using very short leases, DHCP can dynamically reconfigure networks in which there are more computers than there are available IP addresses.

DHCP supports static addresses for computers containing Web servers that need a permanent IP address.

DNS - The Domain Name System (DNS) is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses. A domain name is a meaningful and easy-to-remember “handle” for an Internet address.

Driver - A workstation or server software module that provides an interface between a network interface card and the upper-layer protocol software running in the computer; it is designed for a specific NIC, and is installed during the initial installation of a network-compatible client or server operating system.

Dynamic IP Address - An IP address that is automatically assigned to a client station in a TCP/IP network, typically by a DHCP server. Network devices that serve multiple users, such as servers and printers, are usually assigned static IP addresses.

Encryption - A security method that applies a specific algorithm to data in order to alter the data's appearance and prevent other devices from reading the information.

Ethernet - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium. Has a transfer rate of 10 Mbps. Forms the underlying transport vehicle used by several upper-level protocols, including TCP/IP and XNS.

Fast Ethernet - A 100 Mbps technology based on the 10Base-T Ethernet CSMA/CD network access method.

Firmware - Programming that is inserted into programmable read-only memory, thus becoming a permanent part of a computing device.

HomePlug™ Powerline Alliance - A nonprofit organization established to provide a forum for the creation of specifications for home powerline networking products and services.

Hot Swap - The ability to replace a card or other hardware part in a hardware device without turning it off or losing functionality.

IEEE - The Institute of Electrical and Electronics Engineers. The IEEE describes itself as “the world’s largest technical professional society—promoting the development and application of electrotechnology and allied sciences for the benefit of humanity, the advancement of the profession, and the well-being of our members.”

The IEEE fosters the development of standards that often become national and international standards. The organization publishes a number of journals, has many local chapters, and has several large societies in special areas, such as the IEEE Computer Society.

IP Address - In the most widely installed level of the Internet Protocol (Internet Protocol) today, an IP address is a 32-binary digit number that identifies each sender or receiver of information that is sent in packets across the Internet. When you request an HTML page or send e-mail, the Internet Protocol part of TCP/IP includes your IP address in the message (actually, in each of the packets if more than one is required) and sends it to the IP address that is obtained by looking up the domain name in the Uniform Resource Locator you requested or in the e-mail address you’re sending a note to. At the other end, the recipient can see the IP address of the Web page requester or the e-mail sender and can respond by sending another message using the IP address it received.

IPCONFIG - A utility that provides for querying, defining and managing IP addresses within a network. A commonly used utility, under Windows NT and 2000, for configuring networks with static IP addresses.

ISP - An ISP (Internet service provider) is a company that provides individuals and companies access to the Internet and other related services such as website building and virtual hosting.

LAN - A local area network (LAN) is a group of computers and associated devices that share a common communications line and typically share the resources of a single processor or server within a small geographic area (for example, within an office building).

MAC Address - The MAC (Media Access Control) address is a unique number assigned by the manufacturer to any Ethernet networking device, such as a network adapter, that allows the network to identify it at the hardware level.

Network - A system that transmits any combination of voice, video and/or data between users.

Network Mask - also known as the “Subnet Mask.”

Plug-and-Play - The ability of a computer system to configure expansion boards and other devices automatically without requiring the user to turn off the system during installation.

PowerPacket™ - The basis for the HomePlug™ Powerline Alliance 1.0 specification, PowerPacket is a robust, secure, and reliable means of transferring data. This technology reduces interference generated by appliances, electronic devices, and halogen lights. PowerPacket also has encryption techniques built into the hardware to prevent neighbors on the same power grids from gaining access to sensitive data or the Internet connection.

Powerline Networking - Data transmission over powerlines.

RJ-45 - A connector similar to a telephone connector that holds up to eight wires, used for connecting Ethernet devices.

Router - Protocol-dependent device that connects subnetworks together. Routers are useful in breaking down a very large network into smaller subnetworks; they introduce longer delays and typically have much lower throughput rates than bridges.

Static IP Address - A permanent IP address that is assigned to a node in a TCP/IP network.

STP (Shielded Twisted Pair) - Telephone wire that is wrapped in a metal sheath to eliminate external interference.

Subnet Mask - The method used for splitting IP networks into a series of subgroups, or subnets. The mask is a binary pattern that is matched up with the IP address to turn part of the host ID address field into a field for subnets.

TCP (Transmission Control Protocol) - A method (protocol) used along with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

TCP/IP - Transmission Control Protocol/Internet Protocol (TCP/IP) is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet). When you are set up with direct access to the Internet, your computer is provided with a copy of the TCP/IP program just as every other computer that you may send messages to or get information from also has a copy of TCP/IP.

UDP (User Datagram Protocol) - A communications method (protocol) that offers a limited amount of service when messages are exchanged between computers in a network that uses the Internet Protocol (IP). UDP is an alternative to the Transmission Control Protocol (TCP) and, together with IP, is sometimes referred to as UDP/IP. Like the Transmission Control Protocol, UDP uses the Internet Protocol to actually get a data unit (called a datagram) from one computer to another. Unlike TCP, however, UDP does not provide the service of dividing a message into packets (datagrams) and reassembling it at the other end. Specifically, UDP doesn't provide sequencing of the packets that the data arrives in. This means that the application program that uses UDP must be able to make sure that the entire message has arrived and is in the right order. Network applications that want to save processing time because they have very small data units to exchange (and therefore very little message reassembling to do) may prefer UDP to TCP.

USB (Universal Serial Bus) - A “plug-and-play” interface between a computer and add-on devices (such as audio players, joysticks, keyboards, telephones, scanners, and printers). With USB, a new device can be added to your computer without having to add an adapter card or even having to turn the computer off. The USB peripheral bus standard was developed by Compaq, IBM, DEC, Intel, Microsoft, NEC, and Northern Telecom and the technology is available without charge for all computer and device vendors.

USB supports a data speed of 12 megabits per second. This speed will accommodate a wide range of devices, including MPEG video devices, data gloves, and digitizers. It is anticipated that USB will easily accommodate plug-in telephones that use Integrated Services Digital Network and digital private branch exchange.

Since October, 1996, the Windows operating systems have been equipped with USB driver or special software designed to work with specific I/O device types. USB is integrated into Windows 98SE. Today, most new computers and peripheral devices are equipped with USB.

A different “plug-and-play” standard, FireWire/IEEE 1394, is designed to support much higher data rates and devices such as video camcorders and digital video disk (digital versatile disk) players. Both standards are expected to exist together, serving different device types.

UTP - Unshielded twisted pair is the most common kind of copper telephone wiring. Twisted pair is the ordinary copper wire that connects home and many business computers to the telephone company. To reduce crosstalk or electromagnetic induction between pairs of wires, two insulated copper wires are twisted around each other. Each signal on twisted pair requires both wires. Since some telephone sets or desktop locations require multiple connections, twisted pair is sometimes installed in two or more pairs, all within a single cable.

WINIPCFG - Configuration utility based on the Win32 API for querying, defining, and managing IP addresses within a network. A commonly used utility, under Windows 95, 98, and Millennium, for configuring networks with static IP addresses.

Appendix C: IP Addressing

What's an IP Address?

IP stands for Internet Protocol. Every device on an IP-based network, including PCs, print servers, and routers, requires an IP address to identify its “location,” or address, on the network. Since the Internet is simply one huge global network, every PC that logs on to the Internet also needs an IP address.

There are two ways of assigning an IP address to your network devices.

Static IP Addresses

A static IP address is a permanent IP address that you assign manually to a PC or other device on a TCP/IP network. Since a static IP address remains valid until you disable it, static IP addressing insures that the device assigned it will always have that same IP address. Static IP addresses are commonly used with network devices such as server PCs or print servers.

Dynamic IP Addresses

A dynamic IP address is automatically assigned to a device on a TCP/IP network, such as PCs and print servers. These IP addresses are called “dynamic” because they are only *temporarily* assigned to the PC or device. After a certain time period, they expire and may change. Dynamic IP addresses are typically assigned by a DHCP server, which can be a computer on the network or another piece of hardware, such as a router.

If a PC logs on to the network (or the Internet) and its dynamic IP address has expired, the DHCP server will assign it a new dynamic IP address.

DHCP (Dynamic Host Configuration Protocol)

DHCP is software that automatically assigns IP addresses to client stations logging onto a TCP/IP network. DHCP frees you from having to manually assign permanent IP addresses to every device on your network. DHCP software typically runs on servers and is also found on network devices such as routers.

Appendix D: Specifications

Standards:	USB Spec. 1.1, HomePlug 1.0
Ports:	One USB Port
Cabling Type:	Standard USB Cable
Speed:	
Powerline	Up to 14Mbps
USB	Up to 12Mbps
LEDs:	Activity, Link, Collision
Encryption:	56-Bit Data Encryption with Key Management, Network Password to secure local powerline networking

Environmental

Dimensions:	2.68" x 4.25" x 2.60" (68 mm x 108 mm x 66 mm)
Unit Weight:	0.5 lb (0.142 kg)
Certifications:	FCC Class B, UL Listed, HomePlug 1.0
Operating Temp.:	32°F to 104°F (0°C to 40°C)
Storage Temp.:	-4°F to 158°F (-20°C to 70°C)
Operating Humidity:	10% to 85% Non-Condensing
Storage Humidity:	5% to 90% Non-Condensing

Appendix E: Warranty Information

BE SURE TO HAVE YOUR PROOF OF PURCHASE AND A BARCODE FROM THE PRODUCT'S PACKAGING ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE.

IN NO EVENT SHALL LINKSYS'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE, OR ITS DOCUMENTATION. LINKSYS DOES NOT OFFER REFUNDS FOR ANY PRODUCT.

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Appendix F: Contact Information

For help with the installation or operation of this product, contact Linksys Technical Support at one of the phone numbers or Internet addresses below.

Sales Information	800-546-5797 (LINKSYS)
Tech Support	888-793-4632
RMA Issues	949-271-5461
Fax	949-265-6655
Email	support@linksys.com
Web	http://www.linksys.com
FTP Site	ftp.linksys.com



<http://www.linksys.com>

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