PlugLink®
by Asoka®

User's Guide
PlugLink 9650 Ethernet Adapter
PL9650-ETH

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PL9650UG-66-0302-011

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Chapter 1

Introduction

Thank you for purchasing a PlugLink 9650 Ethernet Adapter (PL9650-ETH) from Asoka. This adapter lets you network your home or office by simply plugging directly into your wall outlet. Now, networking is as easy as plugging in a night light. With your PlugLink 9650 Ethernet Adapter, you can easily share your high-speed Internet broadband, mp3s, video and gaming throughout the home or office without pulling any new cabling.

This unit will not interfere with other household appliances such as hair dryers, vacuum cleaners or microwave ovens. Consuming only 5 watts of power, it is environmentally friendly and will not noticeably increase your electrical bill. It is a simple, secure and reliable choice for web surfing, playing games, complimenting your existing wireless network, mp3 streaming and even high-definition (HD) video sharing.

This User's Guide shows you how to connect your PlugLink 9650 Ethernet Adapter to your PC or cable/DSL router. Setup is easy, just follow the instructions in this guide and your network will be up and running in a matter of minutes.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER¡¯S AUTHORITY TO OPERATE THE EQUIPMENT.

Chapter 2

Important Safety Instruction for the PlugLink 9650 Ethernet Adapter

The following precautions should be taken when using this product:

- Read all instructions before installing and operating this product.
- Do not open the cover on this product and/or alter this product in any way.
- Follow common household electrical safety practices.

If you have any questions or concerns regarding these safety measures, please contact Technical Support at 1-888-ASOKAUSA(276-5287) or email at support@asokausa.com Monday through Friday from 9:00 am to 5:00 pm PST, excluding holidays.

Chapter 3

Learning about your PlugLink 9650 Ethernet Adapter

Package Contents
- PlugLink 9650 Ethernet Adapter (PL9650-ETH)
- 6 feet Ethernet cable
- Quick Installation Guide
- Installation Resource CD
- Warranty and Support Information Card

If any of the parts are incorrect, missing, or damaged, contact the retailer where you made your purchase. Keep the carton, including the original packing materials, in case you need to return the unit for repair.

The Front Panel

The front panel of the PL9650-ETH Adapter contains the status lights described below.

Figure 3-1: PL9650-ETH Front Panel

You can use the status lights to verify connections. Viewed from top to bottom, left to right, the table describes the lights on the front panel of the unit.

Table 3-1: Status Light Descriptions

Power	On Off	Indicates Device Powered On Indicates No Power
PLC Activity	Blinking Off	Indicates Activity on Powerline Indicates No Activity on Powerline (Should blink Intermittently)
ETH Link	On Blinking Off	Indicates Ethernet Connectivity Indicates Ethernet Traffic Indicates No Ethernet Activity

The Bottom Panel

The bottom panel of the PL9650-ETH contains an Ethernet (RJ-45) port as shown in figure 3-2.

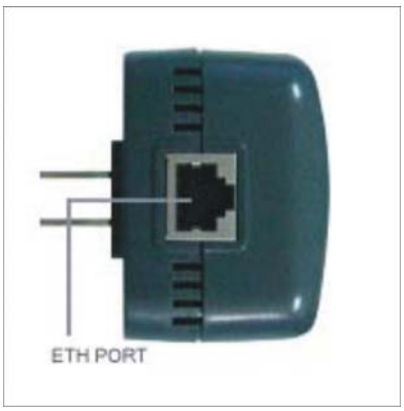


Figure 3-2: PL9650-ETH Front Panel

The Rear Panel

The label on the rear panel of the PL9650-ETH Adapter contains the items listed below.

- MAC address
- Model number
- Part number
- Serial number
- Unique device password

Note: For future convenience, please write this information down in your Warranty Support Information card.

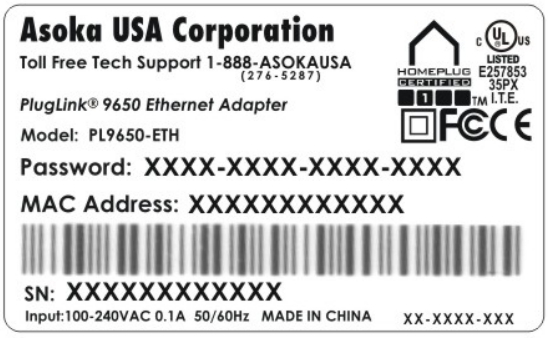


Figure 3-3: Rear Label

Chapter 4

Preparing to Install the PlugLink 9650 Ethernet Adapter

The PlugLink 9650 Ethernet Adapter lets you set up a home or an office network using your existing electrical outlets. It can also easily compliment your existing network by connecting to any device with a 10BaseT/ 100BaseT Ethernet-capable device.

In order to share a peer-to-peer connection between computers, all you will need is:

- One (1) PL9650-ETH device attached to each computer.

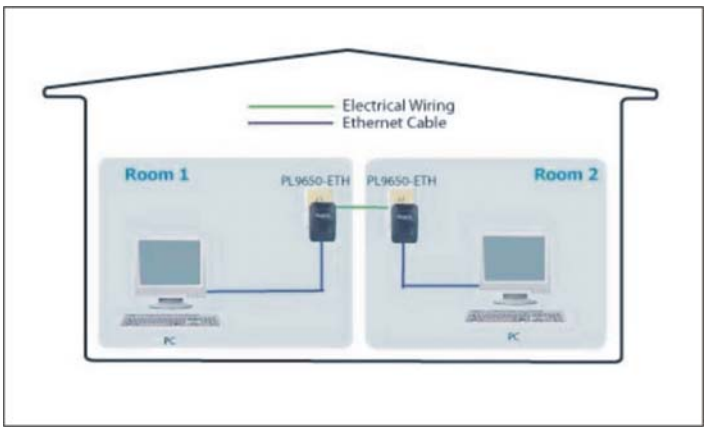
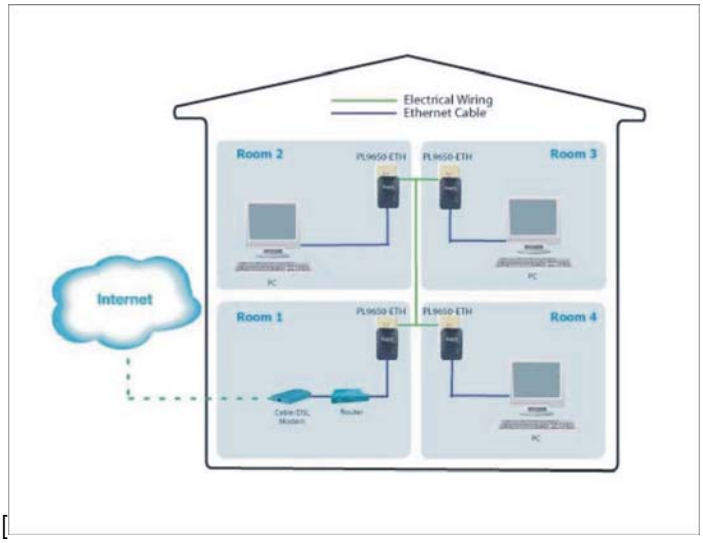


Figure 4-1: Peer-to-peer network diagram.

In order to share a Broadband connection between computers, all you will need is:

- One (1) PL9650-ETH device attached to each computer
- Standard Cable/DSL Modem
- Standard Cable/DSL Router or Wireless Router



[

Figure 4-2: Sharing broadband connection network diagram.

You can also use the PlugLink 9650 Ethernet Adapter with other Ethernet enabled device like IP Cameras, IP STB, game consoles, and many more.

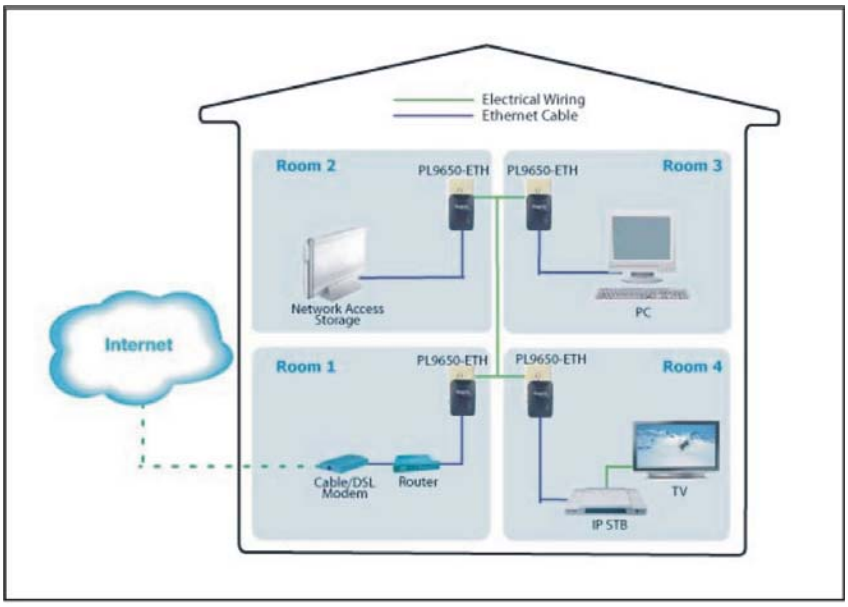


Figure: 4-3: Networking other Ethernet enabled devices.

Chapter 5

Installing the PlugLink 9650 Ethernet Adapter

Note: Do not connect the PlugLink 9650 Ethernet Adapter into a power strip, extension cord, uninterruptible power supply (UPS), or surge protector. This may prevent the unit from working properly or degrade the network performance.

1. Connect each of your PlugLink 9650 Ethernet Adapters.
   a) Connect the unit into a nearby wall outlet
   b) Connect the enclosed Ethernet cable to the Ethernet port of the unit
   c) Connect the other end of the cable to the Ethernet port of the PC
2. Insert the enclosed Installation Resource CD into your CD-ROM drive. The PlugLink 9650 Ethernet Adapter Installation Utility should appear automatically. If it does not appear within 30 seconds, select your CD-ROM drive and double-click on the icon named "Setup.exe" to initiate the Installation Utility.
3. The Welcome screen should appear. Click on "Install Driver and Utility" to proceed to installation.

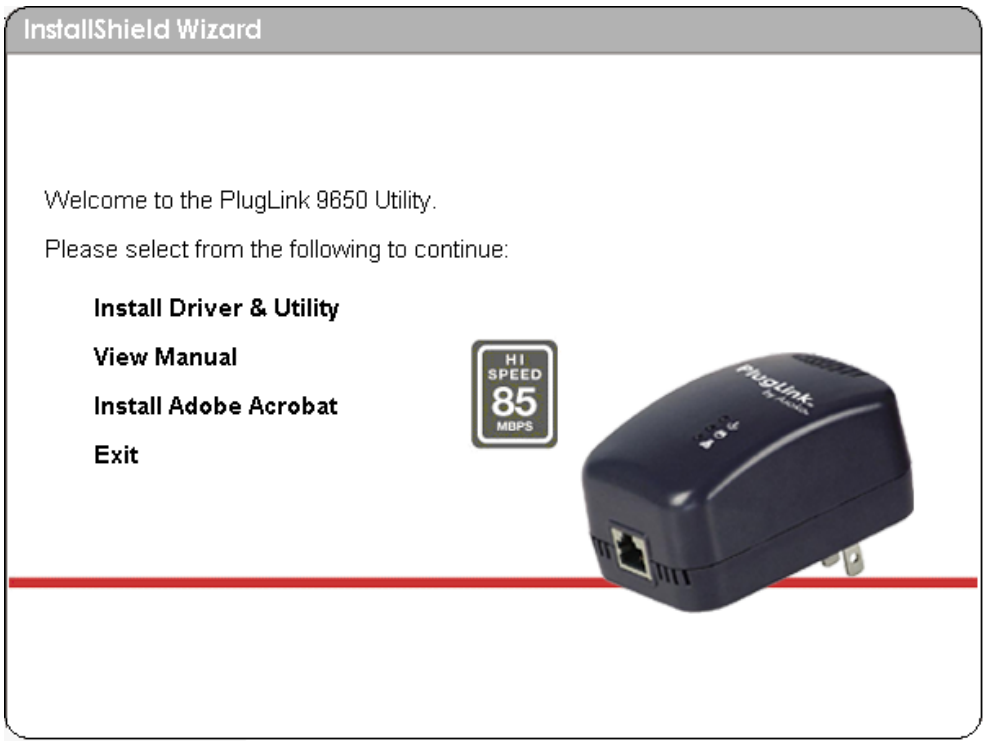


Figure: 5-1: Welcome screen.

4. Click "Next" to begin the installation process.

Figure: 5-2: Begin Installation Screen.

5. Click "Next" to continue Installation.

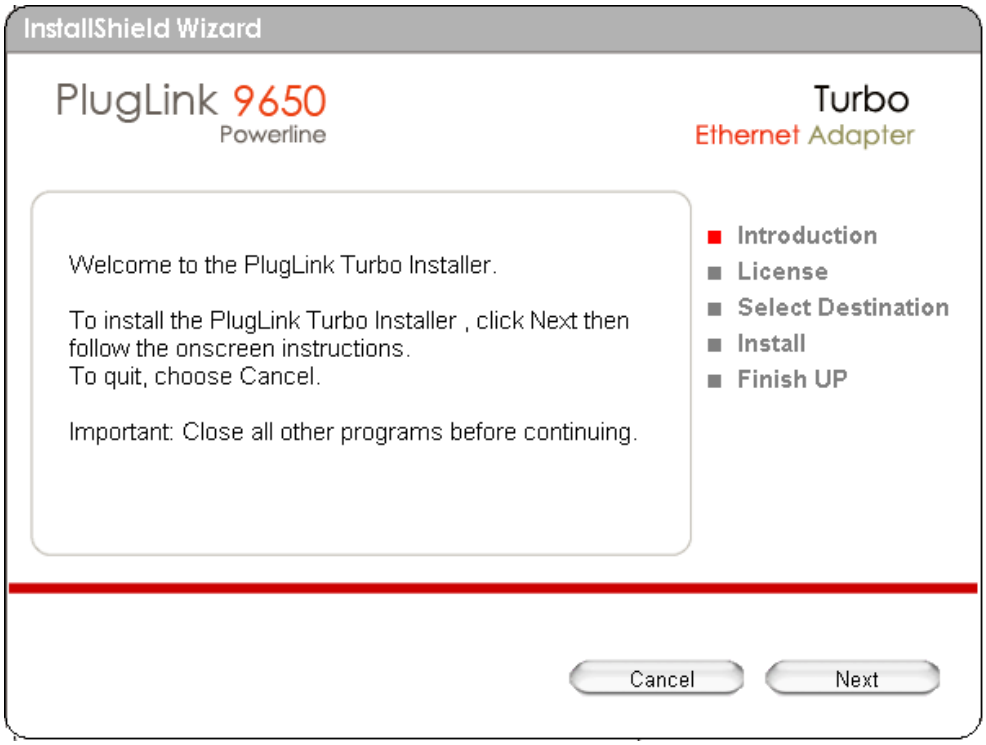


Figure: 5-3: InstallShield Installation Welcome Screen.

6. An End User Software License Agreement (EULA) should appear. Read thoroughly, click "Agree" to continue.

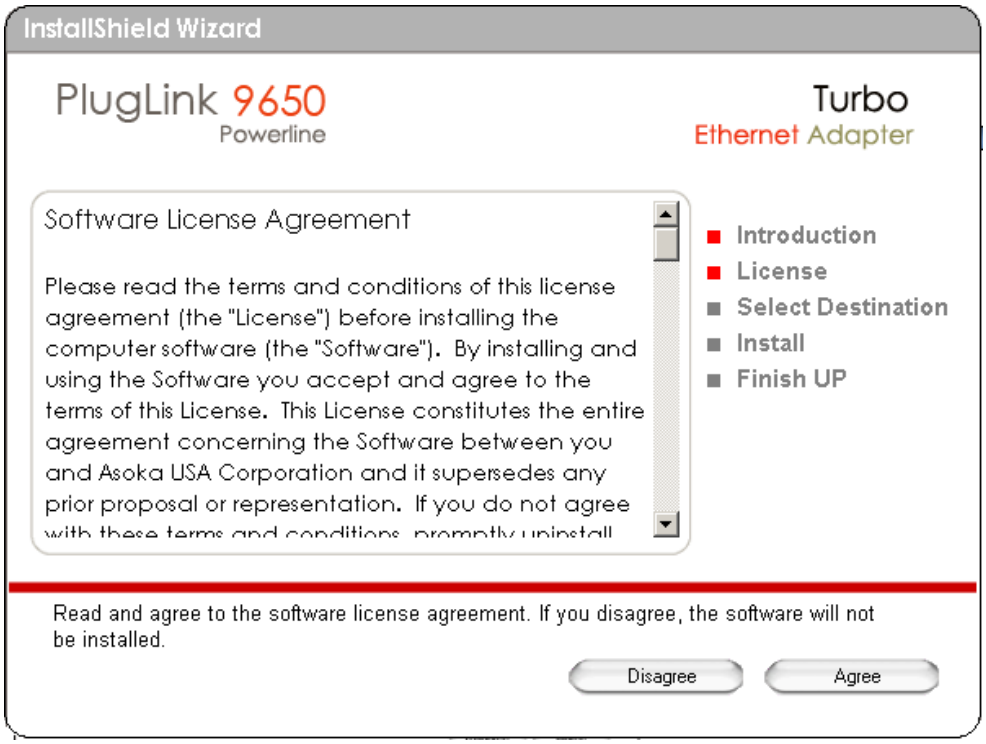


Figure: 5-4: End User License Agreement screen.

7. Select the destination folder where you want to install and Click "Install".

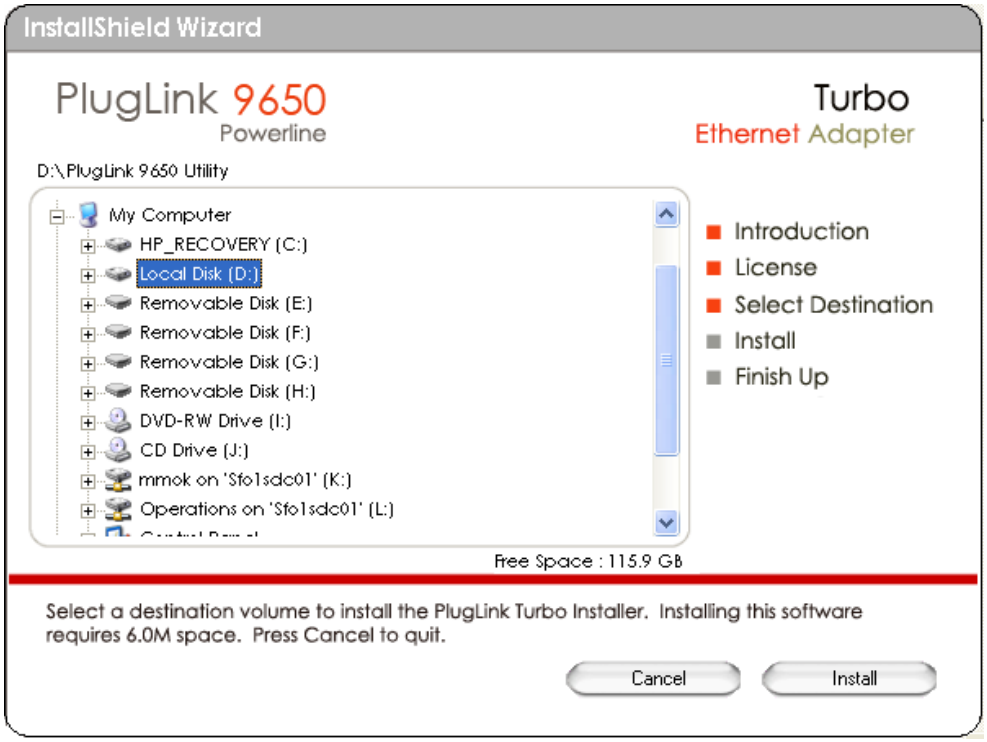


Figure: 5-5: Installation Destination screen.

8. Click "Begin" to start the installation.

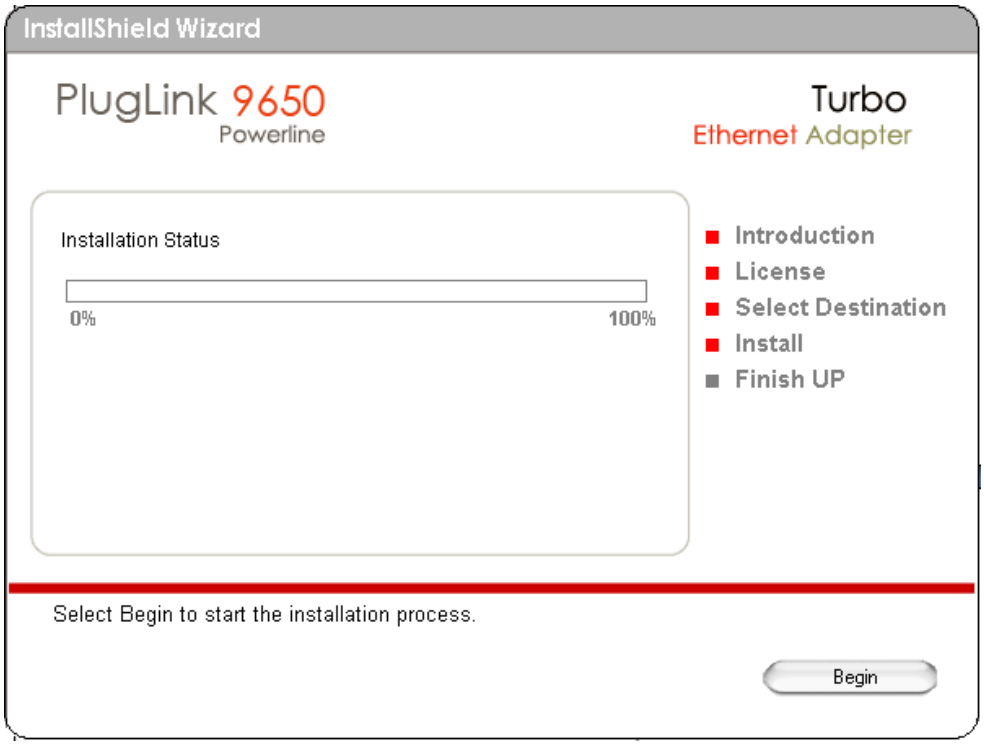


Figure: 5-6: Begin Installation screen.

9. Click "Continue" to complete the installation.

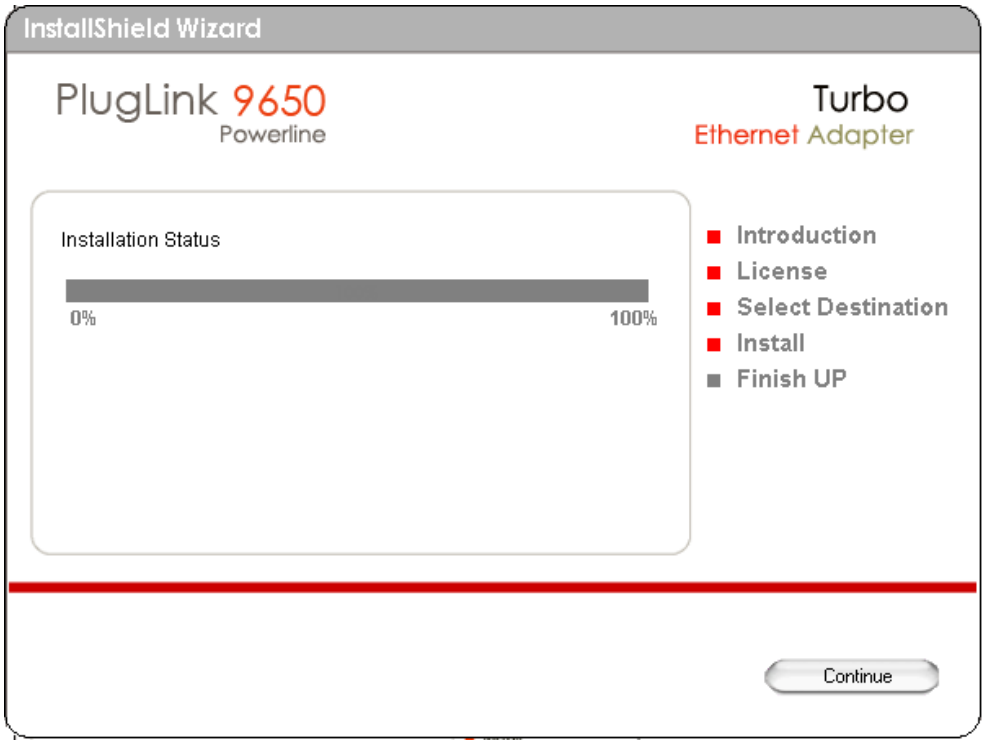


Figure: 5-7: Complete Installation screen.

10. Click "Close" to complete the installation.

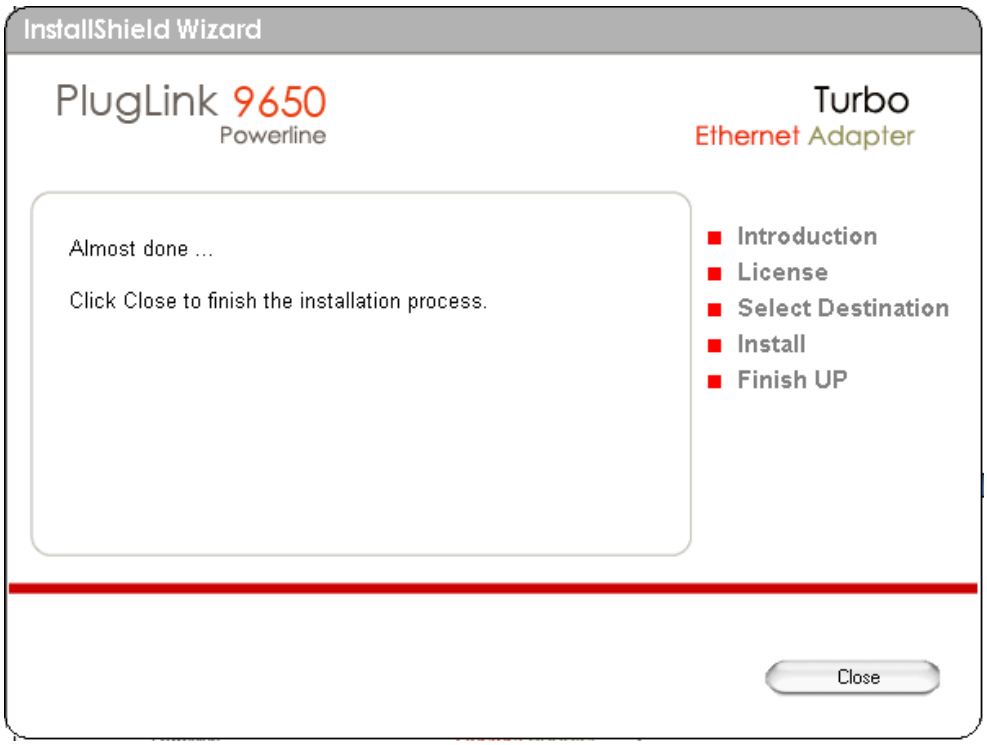


Figure: 5-8: Finish Installation screen.

11. A notification window will appear confirming the completion of the installation. Click "OK" to begin the Setup Assistant.

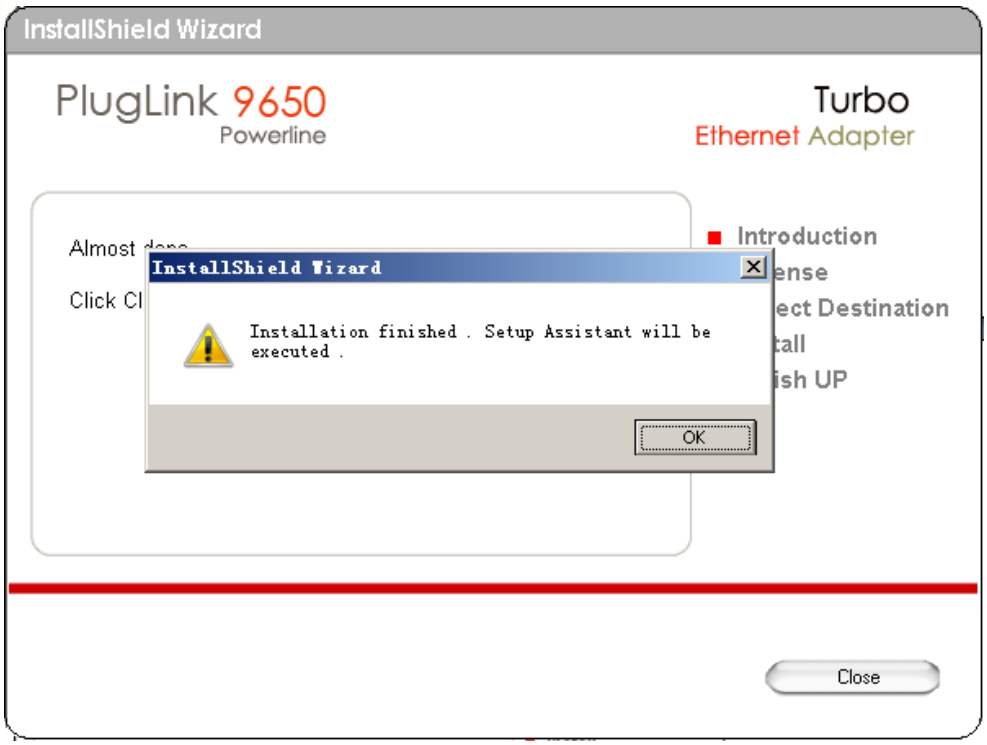


Figure: 5-9: Installation completion notification screen.

Chapter 6

Using the Setup Assistant

Setup Assistant will help guide you to configure your PlugLink 9650 Ethernet Adapter.

1. The Setup Assistant automatically starts after completing the installation. You may also start the Setup Assistant manually by clicking on the Setup Assistant icon on your desktop.

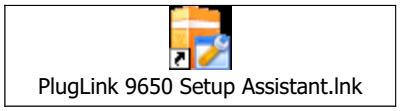


Figure: 6-1: Setup Assistant Icon

2. Click "Next" to begin the Setup Assistant. For advanced users, you may bypass the Setup Assistant and click on "Admin Utility" to manually configure settings. For instructions on using the Admin Utility, go to Chapter 7.

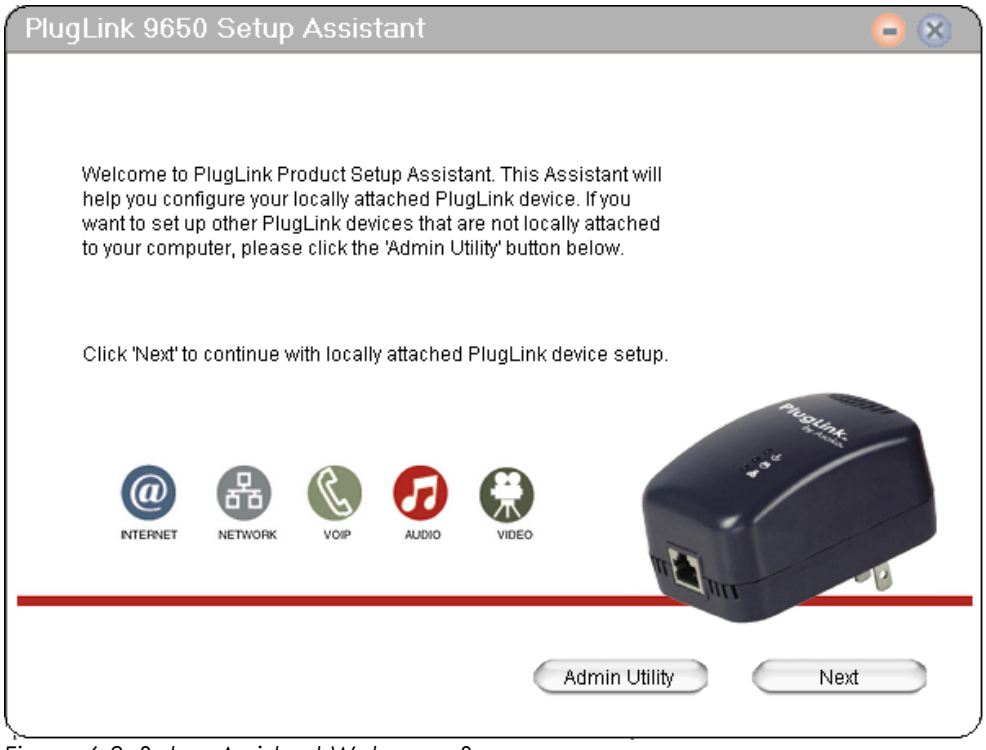


Figure 6-2: Setup Assistant Welcome Screen.

3. Select which application you are using the PlugLink 9650 Adapter for and Click "Next". There are three applications options available.

Online Game/ Internet	Select this if you are going to use the device with your PC or game console.
Audio or Video	Select this if you are going to use this device for IPTV or audio

	and video streaming.
Voice over IP	Select this if you are going to use this device with your VoIP phone.

Table 6-1: Applications options.

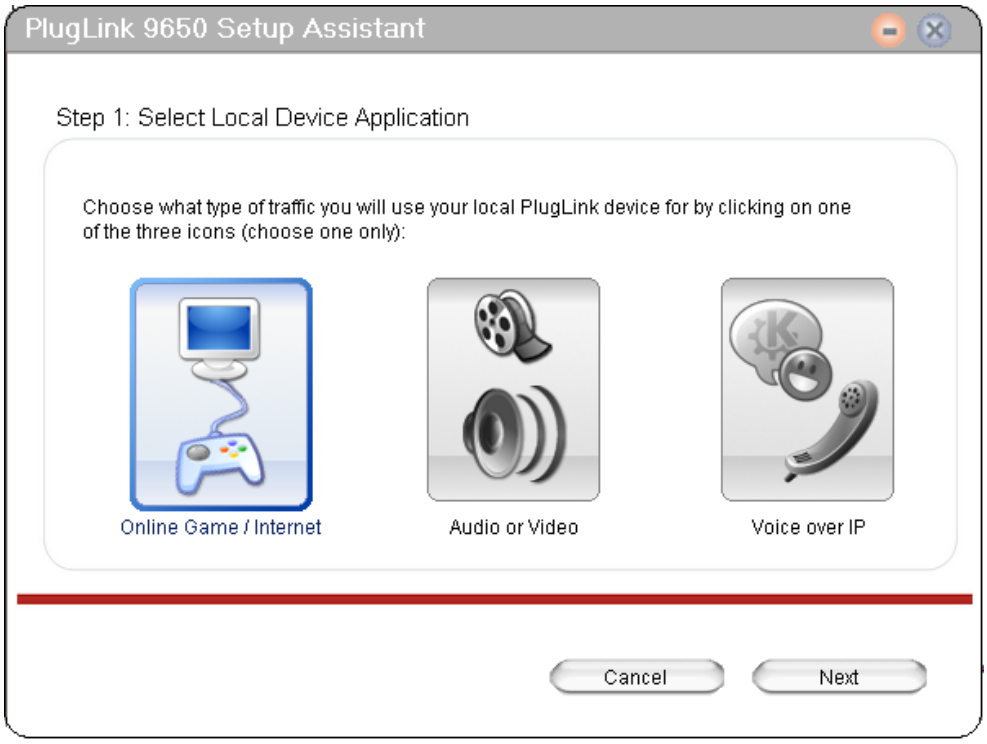


Figure 6-3: Applications screen.

4. Select to change the device name and Click "Next". Changing your device name can help enable easier device recognition. For example, you can name the devices according to where each unit is located in your building. (Ex. Bedroom, Office, Living Room, etc.)

Yes	To change device name.
No	To keep the default device name, 'PlugLink(local)'.

Table 6-2: Device Name options.

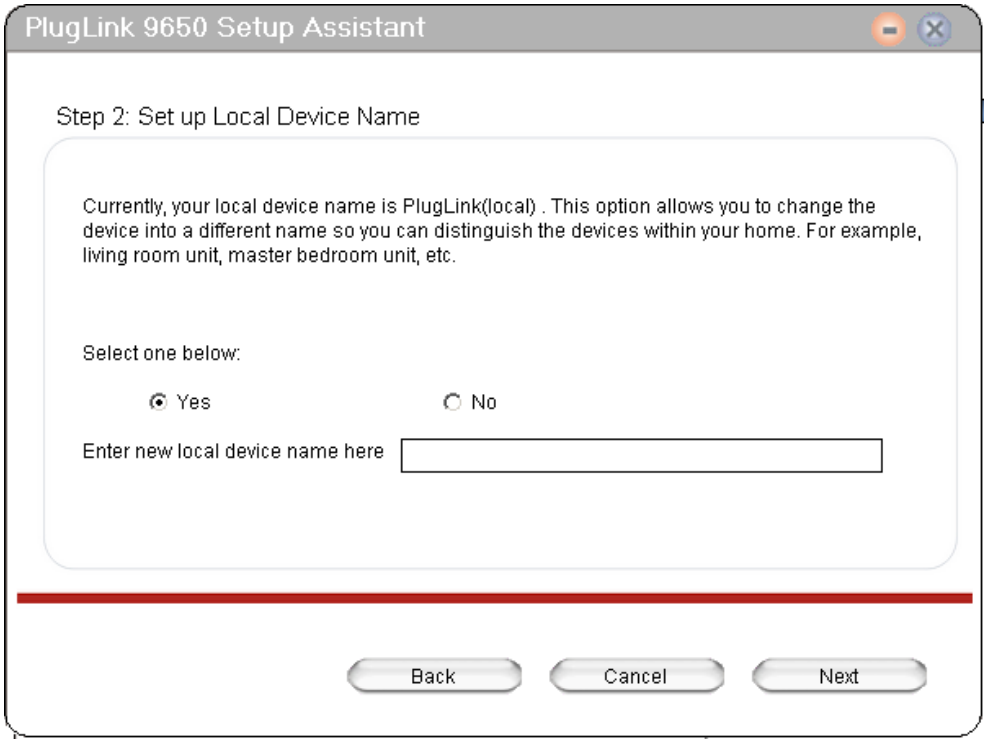


Figure 6-4: Device Name option screen.

5. Select to change the network password and Click "Next". The local device network password screen allows you to change your network password. It is highly recommended to change the network password on all your PlugLink devices. Changing the network password will prevent your neighbors or outsiders from accessing the network.

Yes	To change local device network password.
No	To keep the existing local device network password.
Factory Default	To reset to the default local device network password, 'HomePlug'.

Table 6-3: Local Device Network Password Options.

Figure 6-5: Local Device Network Password Screen.

6. Click 'Finish' to complete the configuration and exit the Setup Assistant or Click 'Admin Utility' for advanced settings.

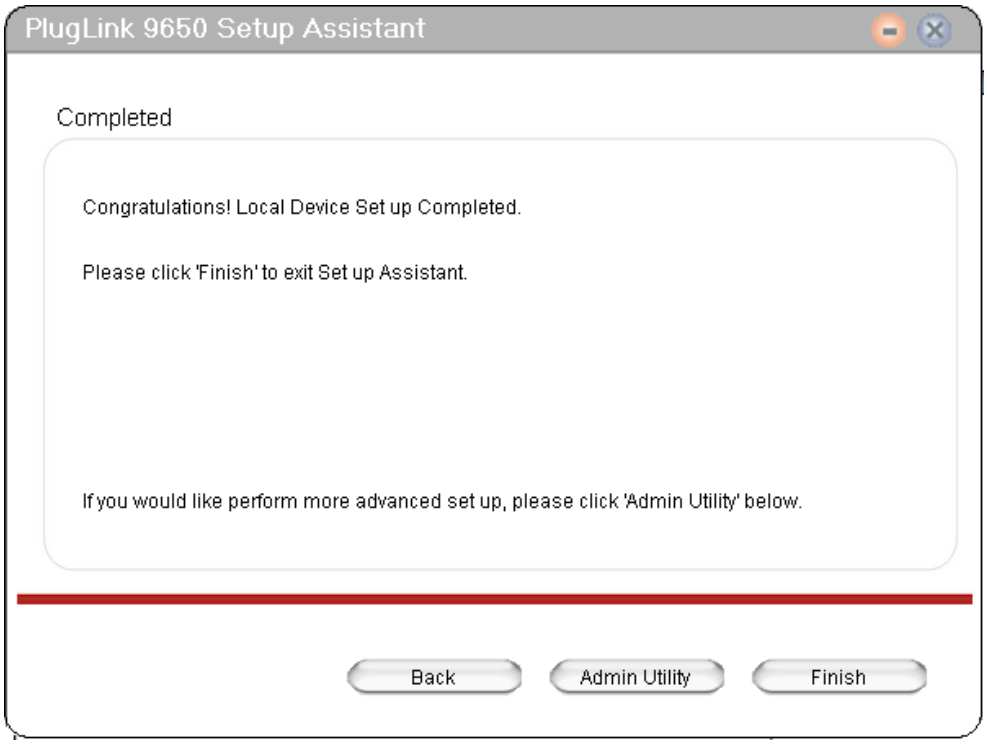


Figure 6-6: Setup Assistant Completion Screen.

Chapter 7

Using the Admin Utility

The Admin Utility is a tool for Advanced Users. It allows you to manually configure a PlugLink 9650 Ethernet Adapter that is directly connected to your Personal Computer or any PlugLink 9650 Ethernet Adapters that are remotely residing on your PlugLink Powerline network.

Figure 7-1: Admin Utility Icon

The Admin Utility consists of four (4) screens.

Profile Screen

The Profile Screen displays information about all Powerline devices attached directly to your PC and other Powerline devices on your network. The screen displays the Device Name, MAC Address, and Type (local or remote; 14mbps or 85mbps) of connection for each device on your network. To refresh the list of Powerline devices, Click on the 'Rescan' icon. *(Note: Devices set up with a different network password will NOT show up on this list.)*

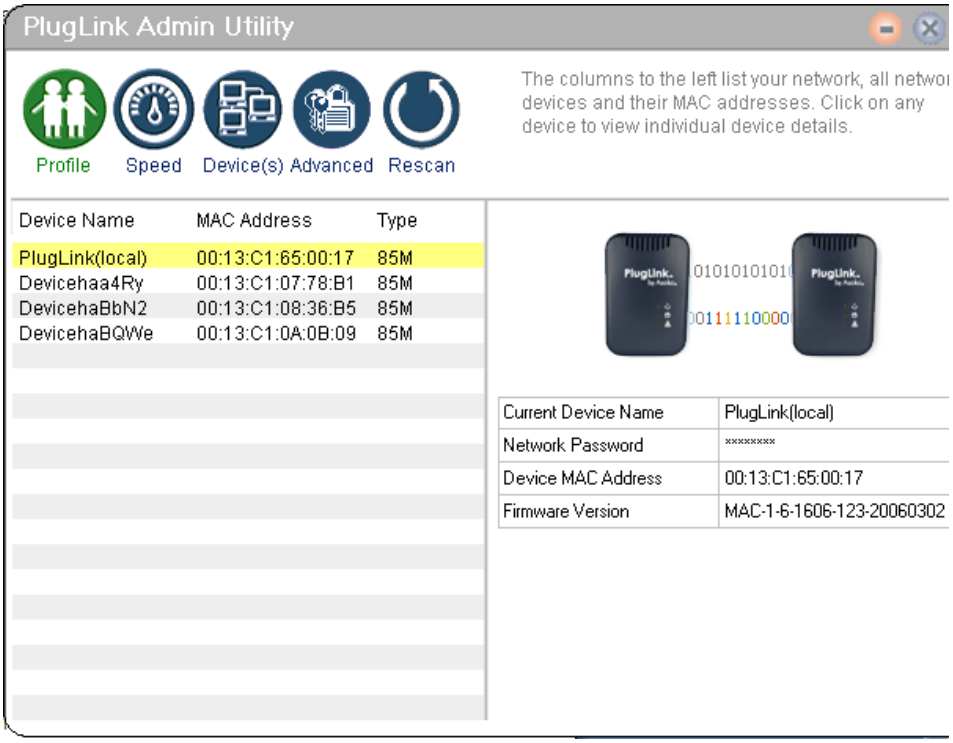


Figure 7-2: Profile Screen.

Speed Screen

The Speed Screen displays the speed of your device's connection to the Powerline network. You can check the speed of the other devices by clicking on them.

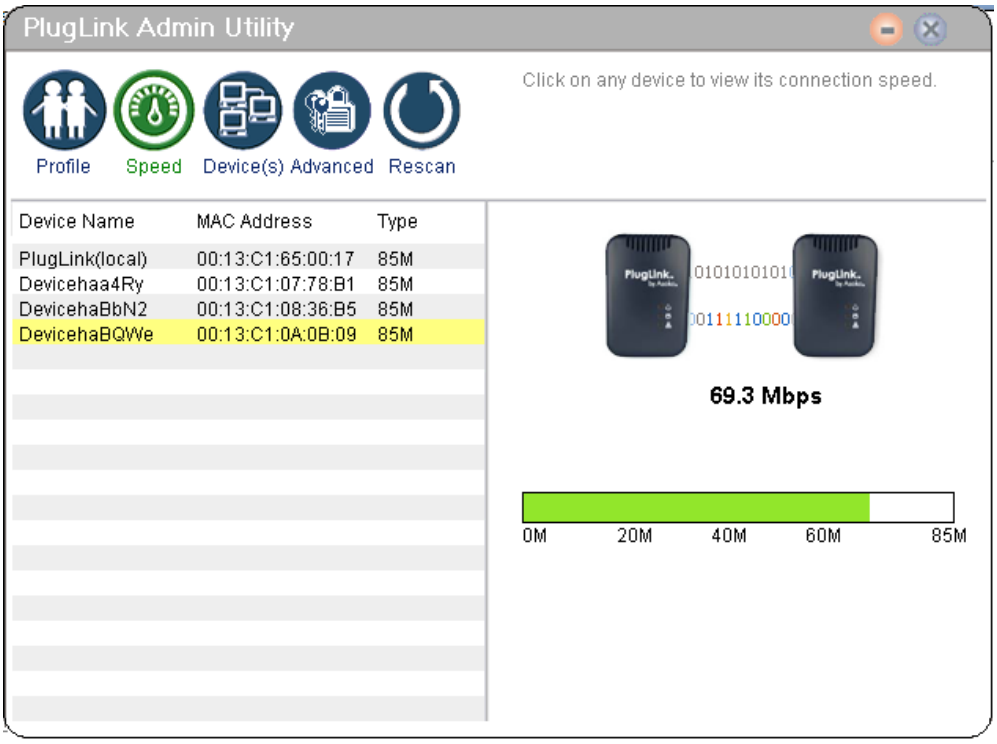


Figure 7-3: Speed Screen.

Device Screen

The Device Screen displays the names of all the devices on your network. It also allows you to rename devices enabling easier device recognition. To rename the device:

1. Double-click on the device you want to rename on the left.
2. Enter new device name in the field box on the right and click "Update".
3. A confirmation screen will appear to inform you if the device name change was successful or unsuccessful.

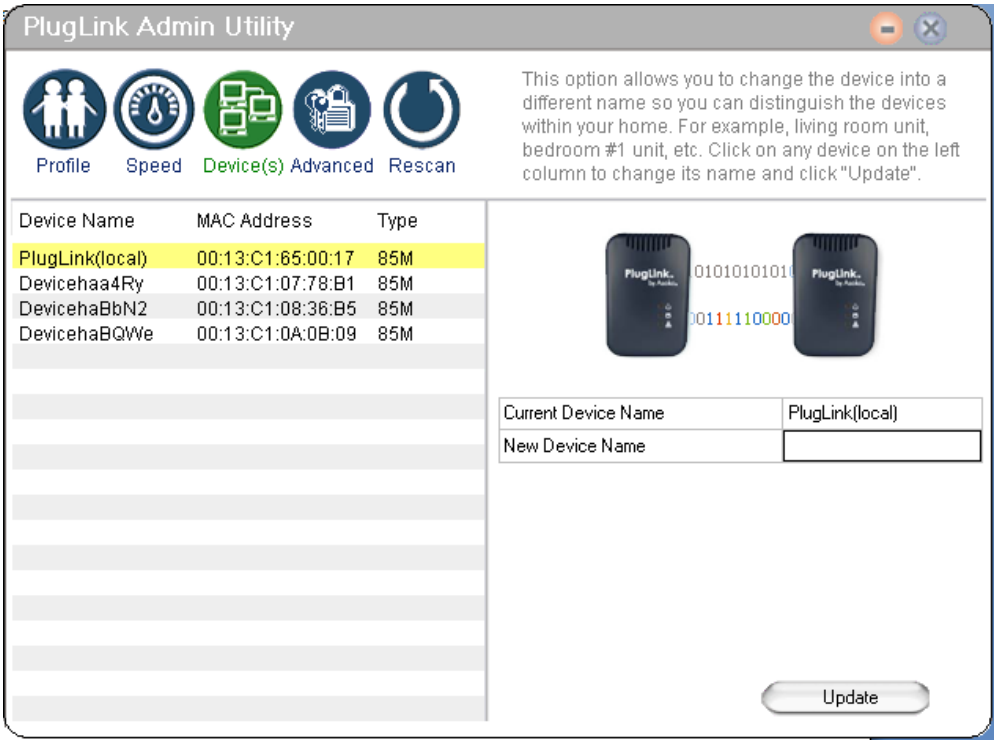


Figure 7-4: Device Screen

Advanced Screen

The Advanced Screen allows you to

- Maintain security and application for the device that is attached directly to your PC
- Maintain security for other Powerline devices on your network.

To modify the security and application on a device that is directly connected to your PC:

1. Select the device connected directly to your computer on the left panel
2. Type in the current network password in the field box next to "New Network Password".
3. Type the new password in the field box labeled New Network Password.
4. Click on the drop down menu next to "Local Device Application."
5. Select the application you would like to change to. See table 7.1 for options.
6. Click 'Update'.
7. A screen will appear asking if you are sure you want to these changes. Click "Yes".
8. A confirmation screen will appear to inform you if the changes were successful or unsuccessful.

Online Game/ Internet	Select this if you are going to use the device with your PC or game console.
Audio or Video	Select this if you are going to use the device for IPTV or any video and audio streaming.
Voice over IP	Select this device if you are going to use the device for VoIP services. (This excludes web-based voice programs such as Yahoo Voice or

	Skype. These should default to the 'Online Game/ Internet' option).

Table 7-1: Local Device Application Options

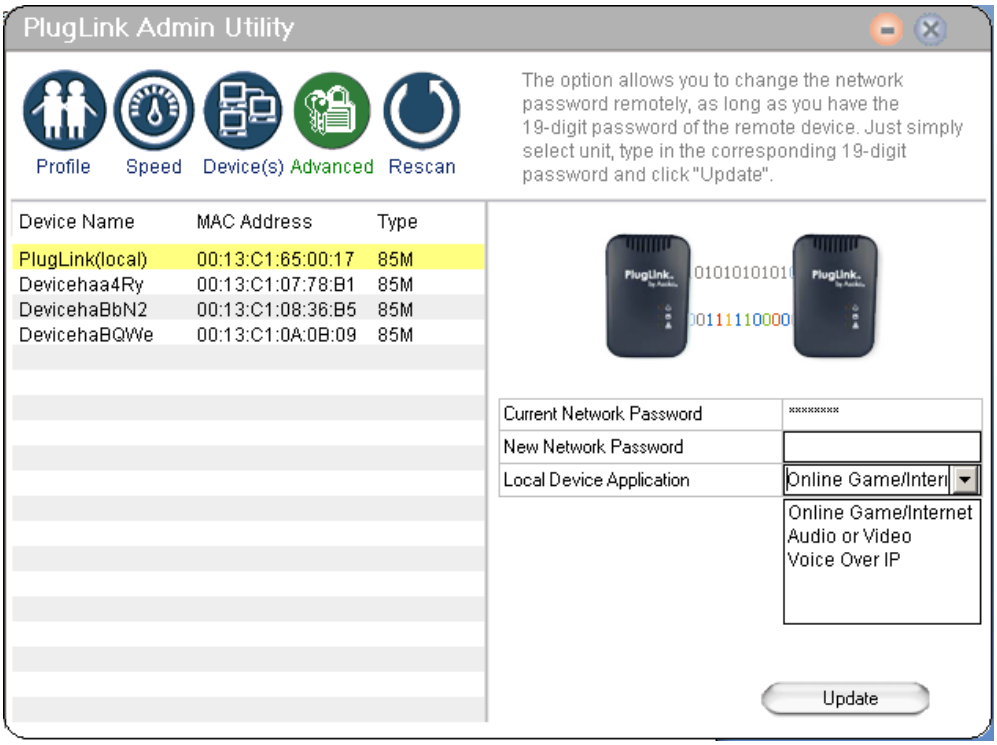


Figure 7-5: Advanced Screen

To modify the security on a device that is remotely connected but on the same Powerline network:

1. Select the remotely connected device you would like to change the password on.
2. Type in the device password found on the product label located in the back of your device in the field box Device Password.
3. Type the new password in the field box labeled 'New Network Password'.
4. Click 'Update'.
5. A screen will appear asking if you are sure you want to change the password. Click 'Yes'.
6. A confirmation screen will appear to inform you if the password change was successful or unsuccessful.

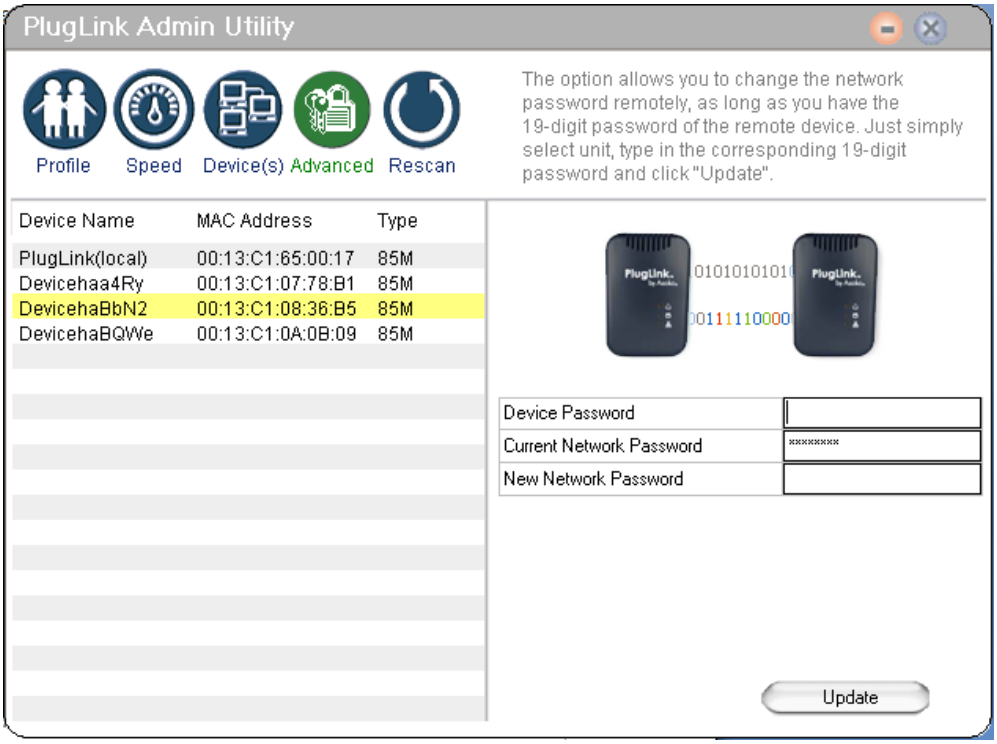


Figure 7-6: Advanced Screen

Rescan Icon

The Rescan Icon allows you to rescan the devices on the Powerline network.

Chapter 8

Technical Support

PLEASE REFER TO THE WARRANTY AND SUPPORT INFORMATION CARD THAT WAS SHIPPED WITH YOUR PRODUCT.

By registering your product at www.asokausa.com/register, we can provide you with faster expert technical support and timely notices of product and software upgrades.

Support Information
Phone: 1-888-ASOKAUSA(276-5287)
Email: support@asokausa.com
URL: www.asokausa.com

Chapter 9

Technical Specifications

Standards Compliance
- HomePlug® I
- IEEE 802.3 10BASE-T Ethernet

System Requirements
- Windows® 98 SE, 2000, ME and XP OS

Network Protocol
- TCP/IP

Network Interface
- Ethernet (RJ-45)

Bandwidth
- 85 Mbps

Operating Frequency
- 4 to 21 MHz

Modulation Schemes
- Orthogonal Frequency Division Multiplexing (OFDM)
- Symbol Modulation DQPSK
- DBPSK
- ROBO Carrier Modulation

Security
- 56-bit DES Encryption

Additional Protocols
- Forward Error Correction (FEC)
- Automatic Channel Adaptation

Power Supply
- 100-240V

LEDs
- Power
- PLC Activity
- Ethernet Activity

Dimensions
- Size: 3.5x2.4x1.8" (L x W x H)
- Weight: 125g
- Cable length: 6'

Environmental Specifications
- Operating temperature: 32°F to 113°F (0°C to 45°C)
- Operating humidity: 10% to 85% Non-condensing
- Storage temperature: -4°F to 158°F (-20°C to 70°C)
- Storage humidity: 5% to 90% Non-condensing

Electromagnetic Emissions
- FCC Part 15 Class B
- UL (US and Canada)
- CE

Chapter 10

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates 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 or more 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.

This device complies with Part 15 of 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.

FCC RF Radiation Exposure Statement:

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

Chapter 11

Declaration of Conformity

CE

Company Name and Address:	Asoka USA Corporation 558 Pilgrim Drive Unit H Foster City, CA 94404 USA
Declares that the Product:	PL9650-ETH, Turbo Ethernet Adapter
Intended purpose:	PLC Ethernet Adapter

Complies with the following the provisions of Council Directives:

89/336/EEC	approximation of the laws of the Member States relating to electromagnetic compatibility (as amended)
73/23/EEC	harmonization of the laws of Member States relating to electrical equipment designed for use within low Voltage Directive (as amended)

to which this declaration relates, is in conformity with the following standards and /or normative:

EMC	**EN 55022:**	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.
	EN 55022 + Draft CISPR I/89/CD	Amendment to CISPR 22: Clarification of its application to telecommunication system on the method of disturbance measurement at ports used for PLC (Power Line Communication)
	EN 55024:	Information technology equipment - Immunity characteristics - Limits and methods of measurement.
	EN 61000-3-2:	Limits for harmonic current emissions (equipment input current ≤ to 16A per phase)
	EN 61000-3-3:	Limitation of voltage fluctuation and flicker in low-voltage supply systems for equipment with rated current ≤ to 16A.
	EN 60950:	Safety for information technology equipment including electrical business equipment

Signature	President Title
TK Chan Name	Dec 1, 2005 Date

Chapter 12

Warranty and Support Information

Thank you for selecting an Asoka product! Please retain the receipt as proof of purchase and write down the information below in case you need to obtain support.
Date of Purchase: _____
Model: _____
Serial No: _____
Device Password: _____
MAC Address: _____

Warranty

Asoka warrants that (a) the hardware components of the product will be free from defects in materials and workmanship under normal use for one (1) year from the date of purchase when used within the limits set forth in the Specifications section of the User Guide, and (b) the software components will perform substantially in accordance with Asoka's published specifications for ninety (90) days from the date of purchase, but does not warrant that the software will be error-free or free of all defects.
Should a product fail to perform as described in the User Guide within the warranted period, it will be repaired or replaced with the same or functionally equivalent product by Asoka, at its discretion, free of charge provided that you: (a) return the failed product to an Asoka designated repair facility with shipping charge prepaid, and (b) provide Asoka with proof of the original date of purchase. Repaired or replacement products will be returned to you with shipping charges prepaid. Asoka warrants any replaced or repaired product or component for the remainder of the initial warranty period whichever is longer. Replacement products may be refurbished or contain refurbished materials or components. If Asoka, by its sole determination, is unable to restore the product to proper operating condition, it will refund the depreciated purchase price of the product.
This warranty extends only to you, the original purchaser and is not transferable to any subsequent purchasers. Warranty is void on products purchased or used outside the United States and Canada.
This warranty does not apply if, in the judgment of Asoka, the product fails due to damage from shipment, handling, storage, accident, abuse, misapplication or misuse, or if it has been used or maintained in a manner not conforming to product manual instructions, has been modified in any way, or has had any serial number removed or defaced. Repair by anyone other than Asoka or an approved agent will void this warranty. The maximum liability of Asoka under this warranty is limited to the purchase price of the product covered by the warranty. Prior to returning any defective product, the purchaser or the authorized merchant from whom the purchaser originally bought the product must obtain a Return Material Authorization (RMA) number from Asoka. All defective products should be returned to Asoka with shipping charges prepaid. Asoka will not accept collect shipments.
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Technical Support Information

- Online knowledgebase and FAQs
- Support contact:1-888-ASOKAUSA(276 2587); support@asokausa.com

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