

# PL-14PE HomePlug Ethernet Adaptor

## Easy Start

Version 1.0

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#### CE conformity

These products comply with the technical requirements of the 1999/5/EC Directive (R&TTE) and the other relevant provisions of the FTEG, and they are designed for use in the EU and Switzerland.

The products are class A equipment. This equipment may cause interference with radio waves in home use; if this occurs the operator may be required to take corrective action.

The CE and compliance certificate is available for download from the Solwise web site

Product warranty does not apply to damage caused by lightning, power surges or wrong voltage usage.

## **1 Introduction to PL-14PE HomePlug Ethernet Adaptor**

One of the major drawbacks in setting up home network is the absence of required wiring inside the house to interconnect networked computers. In recent years several technologies have attempted to address the issue. The most prominent technology so far is the family of WIFI (802.11 X) products. Recently, however, another technology called HomePlug has come forth. It uses electrical grids, already available inside walls to transmit data from computer to computer. HomePlug technology modulates computer data in a way to enable them use power grid as a medium of transmission from point to point. Using this technology, two computers have a virtual Ethernet connection without the need to be physically connected to each other.

The PL-14PE HomePlug Ethernet Adaptor has 3 indicator lights (LEDs) and an Ethernet port. The LEDs depict the connection status, as well as other information, enabling detailed diagnosis of system malfunction. The Ethernet port is to connect to a device in the home network. The PL-14PE HomePlug Ethernet Adaptor has a standard power plug for connection to a power outlet. There are three main kinds of power plugs:

- PL-14PE (UK) – 3 pins UK plug with integrated 230V AC power supply.
- PL-14PE (EUR) – 2 pins Euro plug with integrated 230V AC power supply.
- PL-14PE (US) – 2 pins US plug with integrated 120V AC power supply.

Computer networking in the office or at home has the following advantages:

1. Share centrally stored data
2. Share one printer
3. Multi-access to one Internet connection
4. Multi-user games over the network.

### **1.1 Package Contents**

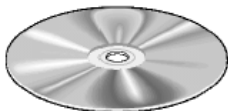
Make sure that you have the following items. If any of the items is damaged or missing, please contact your dealer immediately.



PL-14PE HomePlug Ethernet Adaptor (Qty:1)



Easy Start (Qty:1)



Configuration Utility Installation CD (Qty:1)



CAT-5 UTP Straight Ethernet Network cable (RJ-45) (Qty:2)

## **1.2 Important Safety Instructions**

Please read these instructions carefully:

1. Unplug the PL-14PE HomePlug Ethernet Adaptor from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
2. Do not use the PL-14PE HomePlug Ethernet Adaptor near water.
3. The PL-14PE HomePlug Ethernet Adaptor should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation provided.
4. The PL-14PE HomePlug Ethernet Adaptor should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
5. The PL-14PE HomePlug Ethernet Adaptor relies on the building's electrical installation for short-circuit (over current) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC or 230 VAC (depends on the power supply type in your country) is used on the phase conductors (all current-carrying conductors).
6. Plug the PL-14PE HomePlug Ethernet Adaptor directly into a 120V AC or 230V AC (depends on the power supply type in your country) wall outlet. Do not use an extension cord between the adapter and the AC power source.
7. Do not attempt to service the PL-14PE HomePlug Ethernet Adaptor yourself, as opening or removing covers may expose you to dangerous voltage points or other risks as well as ruin product warranty. Refer all servicing to qualified service personnel.
8. Unplug the PL-14PE HomePlug Ethernet Adaptor from the wall outlet and refer the product to qualified service personnel for the following conditions:
  - If liquid has been spilled into the product.
  - If the product has been exposed to rain or water.
  - If the product does not operate normally when the operating instructions are followed.
  - If the product exhibits a distinct change in performance.

## **2 Installation and Connection**

### **2.1 System Requirements**

PL-14PE HomePlug Ethernet Adaptor is applicable with all TCP/IP operating systems with Ethernet port. Drivers are not required for this adaptor. But the supplied Configuration Utility software to assign the network password operates only with Windows operating systems.

Your computer must meet the following requirements in order to use the PL-14PE HomePlug Ethernet Adaptor Configuration Utility:

**Operating systems:**

- **Windows 98SE, Windows Me, Windows 2000 or Windows XP with Ethernet connection**
- **Pentium II 300 MHz MMX-Compatible PC or greater**
- **At least 64MB hard disk space and memory**
- **CD-ROM drive**

**Note: Your computer or the device to which you want to connect the PL-14PE HomePlug Ethernet Adaptor must have an Ethernet port, i.e. a network card or a network adaptor.**

### **2.2 Installation and Uninstallation of Configuration Utility**

**Simple Installation:**

1. **Connect** the PL-14PE HomePlug Ethernet Adaptor to the computer or the device with the **Ethernet** cable.
2. **Connect** the PL-14PE HomePlug Ethernet Adaptor to the **Power Outlet**.
3. **Install** the **Configuration Utility**. The Configuration Utility Installation CD has **auto run** feature. If the Configuration Utility Installation CD auto run fails, please run the **Setup.exe** file in the CD.
4. Follow the on screen instructions to install the Configuration Utility.  
**Please refer to Page 11 for the Configuration Utility User Guide.**

**Note: 1) Before connecting the PL-14PE HomePlug Ethernet Adaptor, please note its Security ID / Device Password and keep it available for configuration of the network.**

**2) No drivers are required for installation of the PL-14PE HomePlug Ethernet Adaptor.**

**Uninstallation:**

1. To uninstall the Configuration Utility, go to the **Control Panel** of your system.
2. **Open** the **Add/Remove Programs**.
3. **Select** and **double click** on the **PowerPacket Utilities** in the **Add/Remove Programs Properties**.
4. Follow the on screen instructions to uninstallation the Configuration Utility.

### **2.3 Connection and Indicator Lights**

The PL-14PE HomePlug Ethernet Adaptor has three **lights indicator** (LEDs) and an **Ethernet port**:



**PWR:**               **Lights** up when connected to AC power supply.

**PL-LINK:**           **Lights** up when detected and connected with another HomePlug adaptor within the network.

**ETH-LINK/ACT:**   **Lights** up when connected to the Ethernet port of the computer or other Ethernet devices.  
**Flashes** during data transfer.

**ETHERNET:**       This is the connection point for connecting it to a computer or other devices with Ethernet port.

### **3 All about the Home Network**

This chapter contains important and useful information on networks—from the configuration of your computer to examples of applications to general tips.

#### **3.1 Configuring the Computer**

Now that you have successfully connected and installed your PL-14PE HomePlug Ethernet Adaptor, we show you how to configure your computer correctly and how to check existing settings.

##### **3.1.1 Windows 98 and Windows Me**

1. Open the properties of the LAN connection on the connected computers by selecting **Start** ⇨ **Settings** ⇨ **Control Panel** ⇨ **Network**
2. Click the entry for the TCP/IP protocol of the network adaptor and on **Properties**. Enable the option 'Obtain an IP address automatically'. You can ignore all other options: they either remain empty or retain their default settings. Close the dialogs with **OK**.

**Note:** If you cannot find an entry similar to 'TCP/IP' or 'TCP/IP -> Network Adaptor Name' or 'Internet Protocol (TCP/IP)', you must **install** the TCP/IP protocol. Under **Add** select 'Protocol' and click **Add** again. In the next dialog box under 'Manufacturer' select 'Microsoft' and under 'Network Protocol' select 'TCP/ IP'.

3. If you use a router for Internet access, you will still need to configure it, because the router dials into the Internet, not the computer.  
Under **Start** ⇨ **Settings** ⇨ **Control/Panel** ⇨ **Internet Option** select the 'Connections' tab and enable the 'Never dial a connection' option. Close the dialogs with **OK**.

##### **3.1.2 Windows 2000**

1. Open the properties of the LAN connection on the connected computers by selecting **Start** ⇨ **Settings** ⇨ **Control Panel** ⇨ **Network and Dial-up Connections**. Click with the right mouse button on the corresponding LAN connection and select 'Properties'.
2. Click the entry for the TCP/IP protocol of the network adaptor and on **Properties**. Enable the option 'Obtain an IP address automatically'. You can ignore all other options: they either remain empty or retain their default settings. Close the dialogs with **OK**.

**Note:** If you cannot find an entry similar to 'TCP/IP' or 'TCP/IP -> Network Adaptor Name' or 'Internet Protocol (TCP/IP)', you must **install** the TCP/IP protocol. Under **Install** select 'Protocol' and click **Add**. In the next dialog box select 'Internet Protocol (TCP/IP)' and confirm with **OK**.

3. If you use a router for Internet access, you will still need to configure it, because the router dials into the Internet, not the computer.  
Under **Start** ⇨ **Settings** ⇨ **Control Panel** ⇨ **Network and Dial-up Connections**, and enable the 'Never dial a connection' option. Close the dialogs with **OK**.

### **3.1.3 Windows XP**

The Windows XP start menu can be configured in different ways. See the Windows XP documentation for more information.

1. Open the properties of the LAN connection on the connected computers.  
Select **Start** ⇨ **Control Panel** ⇨ **Network and Internet Connections**. Click with the right mouse button on the corresponding LAN connection and select 'Properties'.
2. Click the entry for the TCP/IP protocol of the network adaptor and on **Properties**. Enable the option 'Obtain an IP address automatically'. You can ignore all other options: they either remain empty or retain their default settings. Close the dialogs with **OK**.

**Note:** If you cannot find an entry similar to 'TCP/IP' or 'TCP/IP -> Network Adaptor Name' or 'Internet Protocol (TCP/IP)', you must **install** the TCP/IP protocol. Under **Install** select 'Protocol' and click **Add**. In the next dialog box select 'Internet Protocol (TCP/IP)' and confirm with **OK**.

3. If you use a router for Internet access, you will still need to configure it, because the router dials into the Internet, not the computer.  
Under **Start** ⇨ **Settings** ⇨ **Control/Panel** ⇨ **Internet Options**, select the 'Connections' tab and enable the 'Never dial a connection' option. Close the dialogs with **OK**.

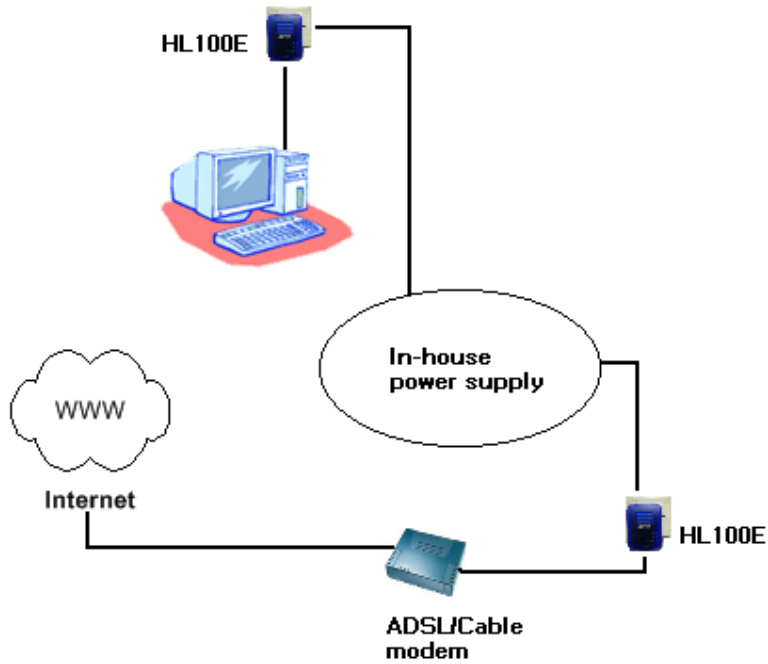
**Note:** Other Internet applications such as e-mail clients may also need this information. This generally involves changing a setting with a name like 'Connect to' or similar to 'LAN'.

### 3.2 Examples of Applications

This section demonstrates some of the application scenarios.

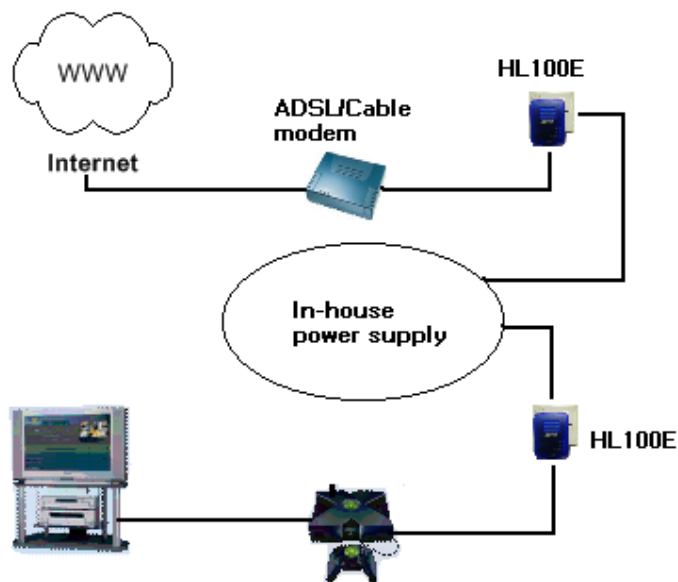
#### 3.2.1 Home Networking—option 1

Workstation with Internet connection over an ADSL/Cable modem



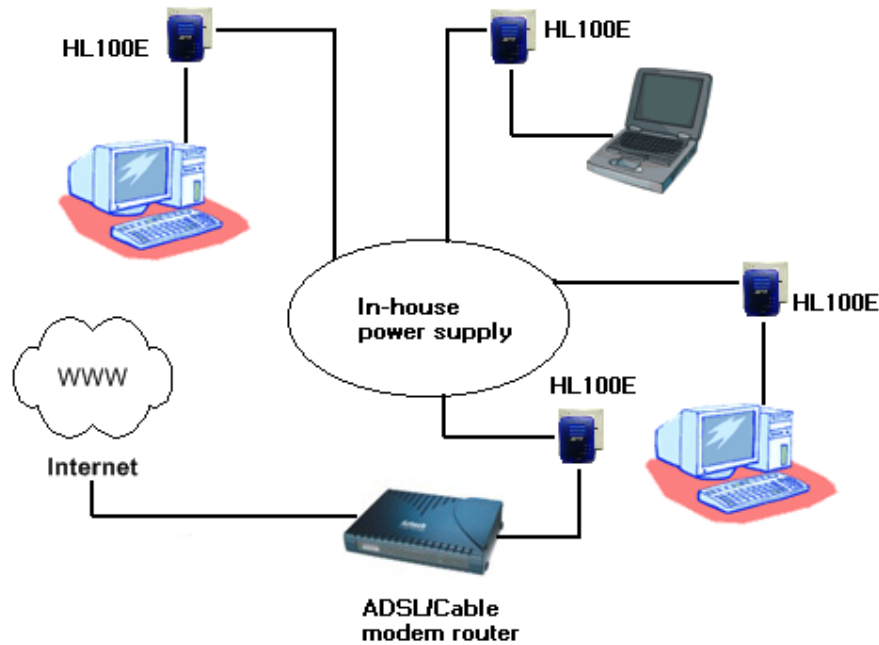
#### 3.2.2 Home Networking—option 2

Networking for Online Gaming.



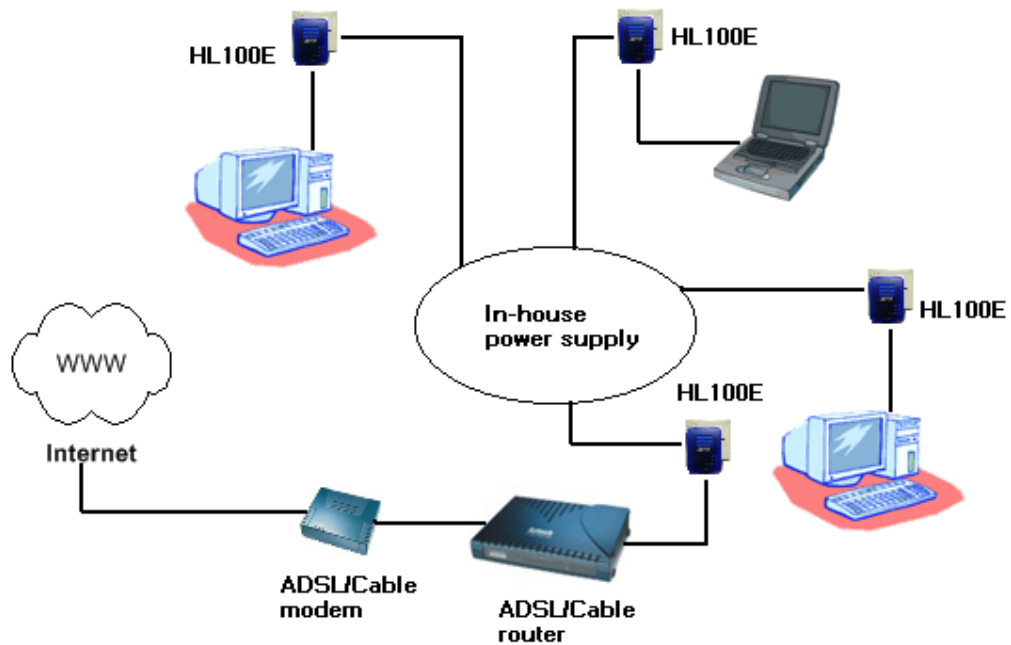
### 3.2.3 Home Networking—option 3

Networking for several workstations with one Internet connection over an ADSL/Cable modem router.



### 3.2.4 Home Networking—option 4

Networking for several workstations with one Internet connection over an ADSL/Cable router and an ADSL/Cable modem.



### **3.3 Care Instructions**

#### **Network Volume**

The maximum number of HomePlug adaptors in a single-family house is theoretically 253 connections, but in practice no more than 10 devices should be transferring data simultaneously.

#### **Network Security**

Normally the electric meter forms a physical barrier, i.e. only devices connected to this meter can be part of the network and benefit from the phase coupling. We strongly recommend that you use the PL-14PE HomePlug Ethernet Adaptor internal device encryption. It is configured with the PL-14PE HomePlug Ethernet Adaptor Configuration Utility (refer to the Appendix on Page 11).

#### **How to Use Passwords Correctly**

You can improve your security substantially by following some important rules regarding the use of passwords.

- Keep your passwords as secret as possible.
- Never write a password down. Popular, but completely unsuitable storage options include notebooks, wallets and text files in computers.
- Do not pass on your password unnecessarily.
- Select a random password. Use random strings of letters and numbers. Passwords from common language usage are not secure.
- Change the password regularly or immediately if you feel it has been compromised.
- Passwords should be changed as frequently as possible. This requires a little effort, but increases your security considerably. Even if only the slightest indication of a leak exists, the password should be changed.

***Note:** Always use the internal device encryption (the network password) for security. It can be configured using the PL-14PE HomePlug Configuration Utility (please refer to Page 11 for the Configuration Utility User Guide).*

### **3.3 Frequently Asked Questions**

Please refer to the FAQ.html file located in the \Manuals folder on the Configuration Utility Installation CD for the PL-14PE HomePlug Ethernet Adaptor frequently asked questions (FAQ).

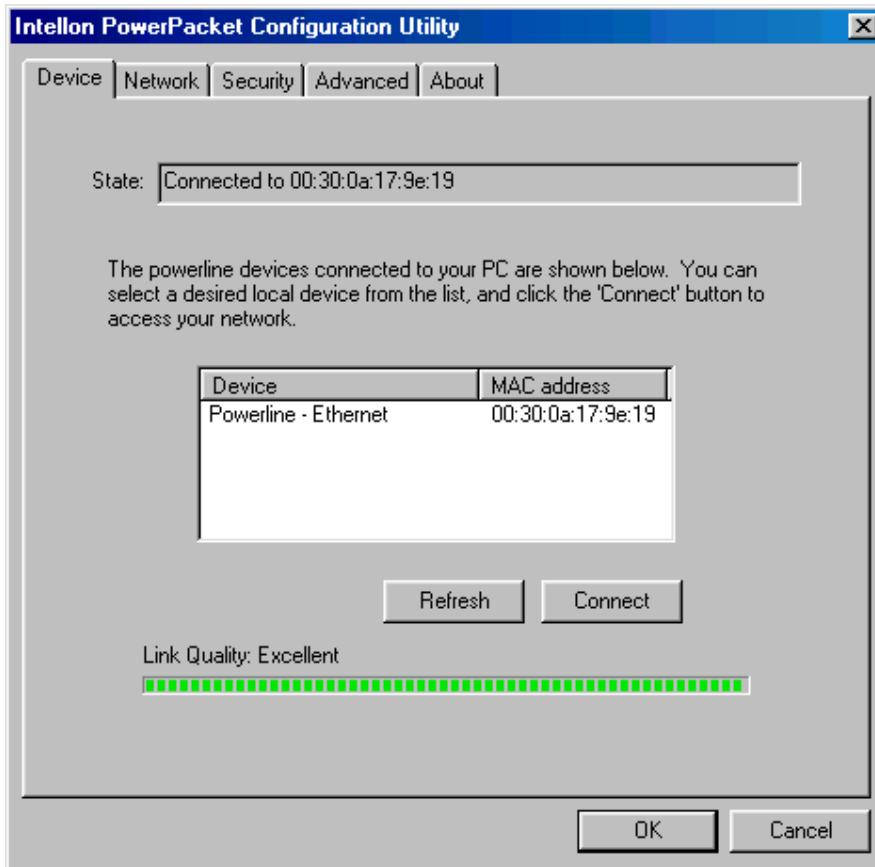
## 4 Configuration Utility User Guide

### Running the Utility:

To run the utility, **double click** the **PowerPacket Configuration Utility** icon on your desktop.



### Device dialog screen:



In the text list box, it reports back all devices that are found locally connected to the computer where the utility is running. In most cases, one device only is listed.

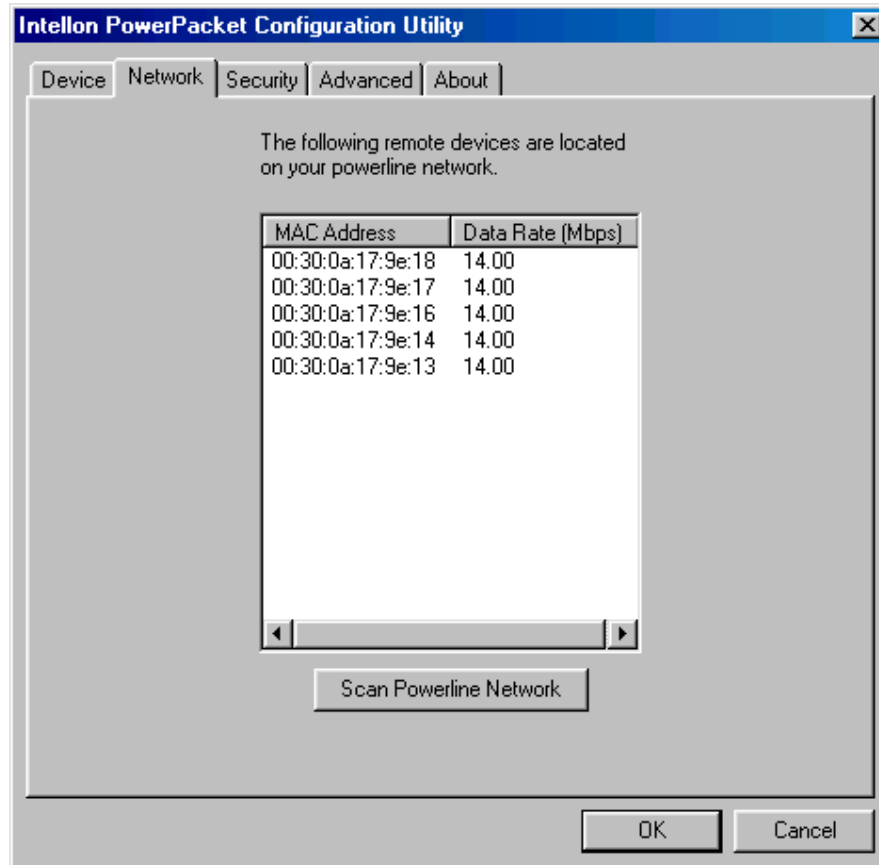
In case you have more, click on one of them and hit **Connect**. Make sure that the **State** box indicates that your PC is connected to the same device. Now you are ready to manage the powerline network connected to this device, ensure its privacy and measure its data rate performance.

Press the **Refresh** button to refresh the search of the powerline devices connected to your computer. The progress bar will change into a status bar indicating the network average data rate.

The color of the bar reflects the average performance of the powerline network:

- **Green:** Excellent performance
- **Yellow:** Fair performance
- **Red:** Poor performance

**Network dialog screen:**

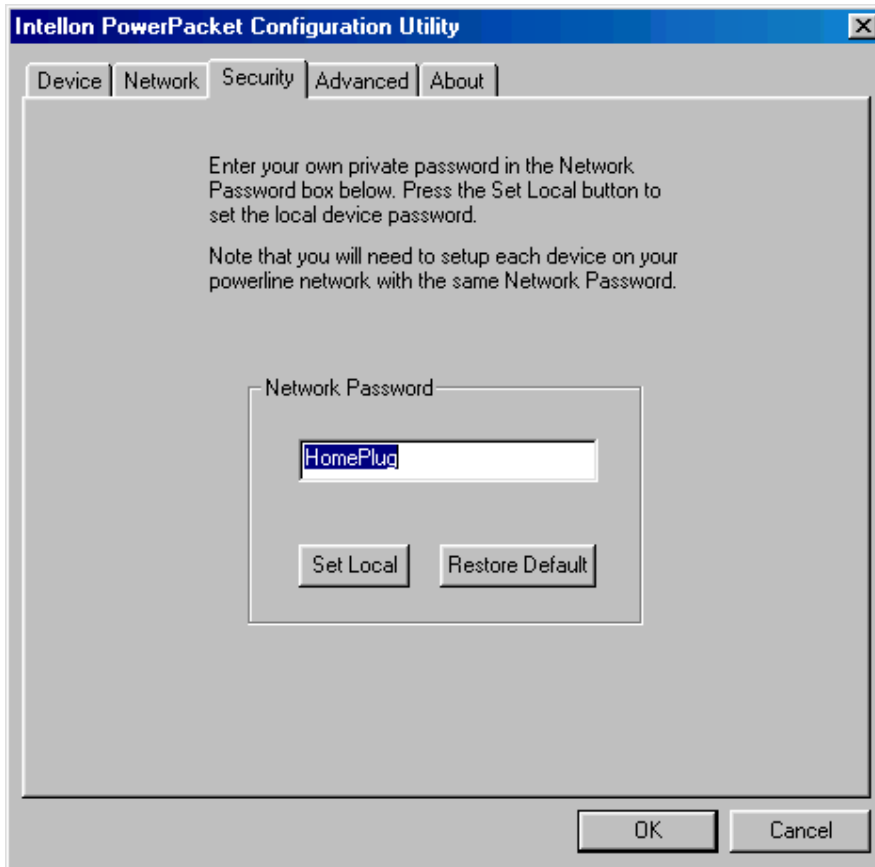


The **Network** dialog screen provides detailed information about your powerline network. The text list box shows all HomePlug devices found on your powerline network identified by their MAC addresses. A second column indicates their data rate measurements in Mbps. **Click** on the **Scan Powerline Network** button to refresh the listed information.

**Important Note:**

In case a HomePlug device in your home is not listed in the screen above, make sure that its **Network Password** has not been made private previously with a different password than your current private network password.

You can always reset a HomePlug Network Password to the universal one by running the **PowerPacket Configuration Utility** on the PC attached to this device and choose **“HomePlug”** as the network password.

**Security dialog screen:**

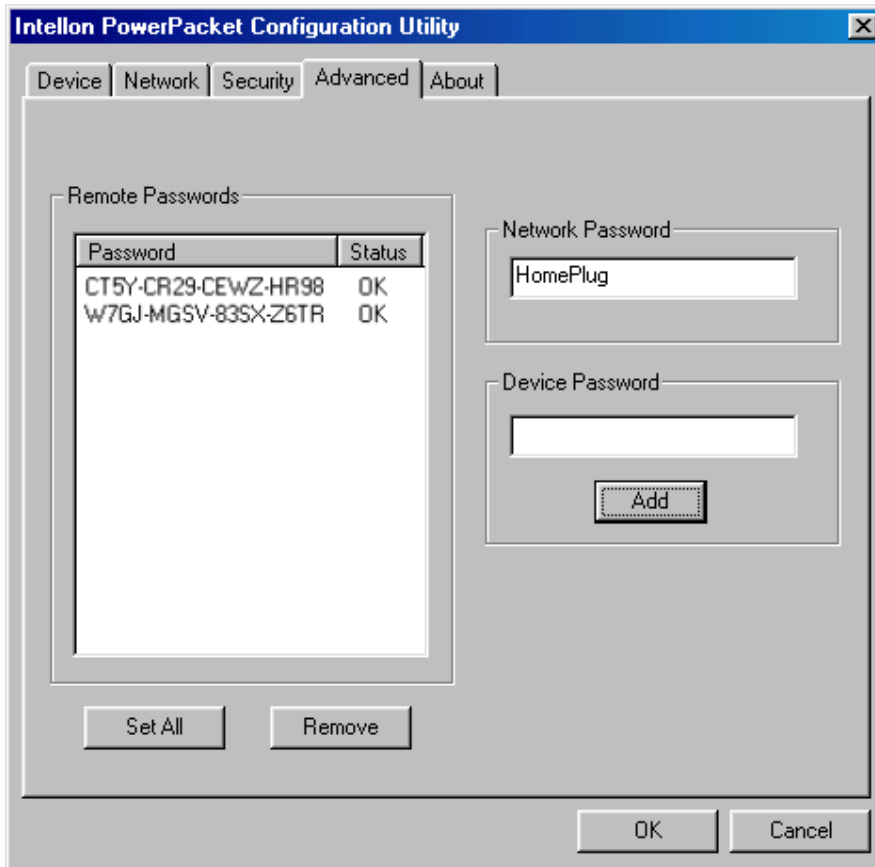
All HomePlug devices are shipped using “**HomePlug**” as a **Network Password**. The **Security** dialog screen allows you to change this **Network Password** and set your own private password and apply it to the HomePlug device connected to the computer where the utility is running.

**Click** on the **Restore Default** button to restore the original **Network Password** “HomePlug” and apply it locally.

**Click** on the **Set Local** button to change the network password locally.

**Important Note:**

Your private **Network Password** must have between **4 and 24 characters**. The password is **case sensitive**. The **Network Password** can include any letters of the alphabet, numbers or punctuation marks. Remember the **Network Password** as it will be needed when adding other devices to the network later.

**Advanced dialog screen:**

The **Advanced** dialog screen allows you to set up a network password remotely on other HomePlug devices through the powerline.

Type your private network password into the **Network Password** text box.

The other devices on the network with HomePlug capabilities will have a **Security ID/Device Password** printed on the device itself. Find the passwords for all devices you want to manage and type them one by one into the **Device Password** text box and **Click** on the **Add** button. This will add the passwords to **Remote Passwords** text list box and set them to the currently defined **Network Password**.

**Important Note:**

The device must be present on the powerline in order for the password to be confirmed and added to the **Remote Passwords** list.

The **Status** indicates whether each device is successfully set to the **Network Password**. An "OK" indicates success while "Fail" indicates a failure.

**Click** on the **Set All** button to apply your private network password to all devices that are listed in the **Remote Passwords** text list box and to your local device connected to the computer where the utility is running as well.

**Select** a password and **Hit** the **Remove** button to remove it from the list.

## 5 Technical Data

The table below shows the Technical Specifications of the PL-14PE HomePlug Ethernet Adaptor.

<b>HL100E HomePlug Ethernet Adaptor</b>	
Standards	10Base-T Ethernet, IEEE 802.3 10 Mbps Auto MDI / MDIX Support 14 Mbps HomePlug 1.0 compatible
Protocols	CSMA/CA MAC control
Transfer rate	14 Mbps
Transfer procedure	Asynchronous
Modulation	OFDM, DQPSK, DBPSK, ROBO Carrier Modulation Support
Frequency Band	4.3 Mhz to 20.9 Mhz band
Range	Up to 5000 square feet
Security	56 bit DES
Platform Support	OS Independent with TCP/IP protocol installed and with Ethernet port
LED Indicators	1x Power LED 1x Powerline Link Status LED 1x Ethernet Link/Activity Status LED
HomePlug connection	Standard power plug
Computer interface	RJ45
Power consumption	5.8W
Power supply	Integrated 230V AC Supply via Power Socket for Europe/UK Model Integrated 120V AC Supply via Power Socket for US Model
Temperature	Storage: -25°C -70°C Operation: suitable for room temperature, 27°C
Environment	Suitable for room temperature, 27°C, 10-90% humidity (non-condensing)
System requirements (for Configuration Utility)	Ethernet interface Windows 98SE, Windows Me, Windows 2000, Windows XP
External Connectors	1 x Electrical Power Socket 1 x RJ45 for 10Base-T Ethernet (AutoMDI/MDI-X)
Dimension	Plastic housing 92mm x 66mm x 45mm(height x width x depth)
Weight	Approx 180g