HomePlug
802.11g Access Point

User's Guide

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Chapter 1
Introduction

This Chapter provides an overview of the HomePlug 802.11g Access Point's features and capabilities.

Congratulations on the purchase of your new HomePlug 802.11g Access Point. The HomePlug 802.11g Access Point links your 802.11b or 802.1x Wireless Stations to your HomePlug network.. The Wireless stations and HomePlug devices are then on the same network, and can communicate with each other without regard for whether they are connected to the network via a Wireless or HomePlug connection.

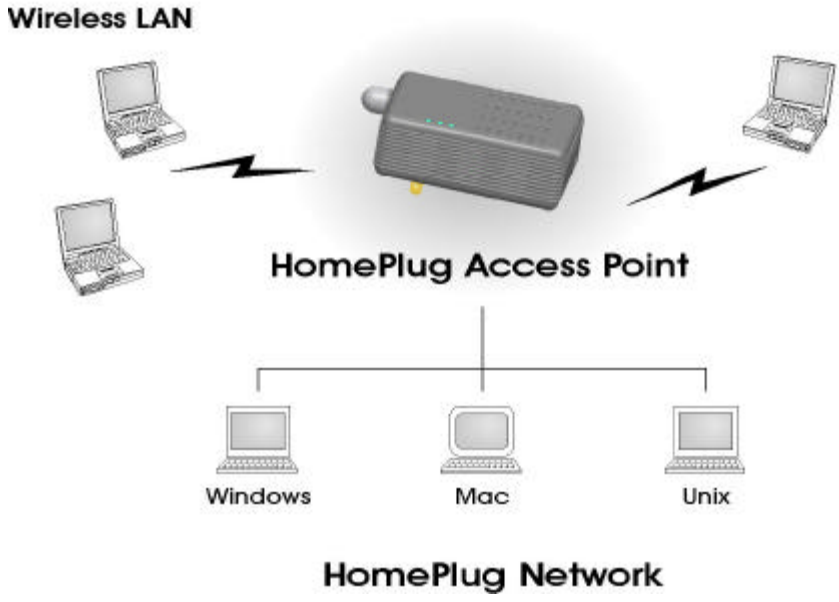

Figure 1: HomePlug 802.11g Access Point

The auto-sensing capability of the HomePlug 802.11g Access Point allows wireless clients to use either 802.11g or 802.11b connections.

Features of your HomePlug 802.11g Access Point

The HomePlug 802.11g Access Point incorporates many advanced features, carefully designed to provide sophisticated functions while being easy to use.

- ***Standards Compliant.*** The HomePlug 802.11g Access Point complies with the IEEE 802.11b (DSSS) and IEEE 802.11g specifications for Wireless LANs.
- ***Upgradeable Firmware.*** Firmware is stored in a flash memory and can be upgraded easily, using only your Web Browser.
- ***WEP support.*** Support for WEP (Wired Equivalent Privacy) is included. Both 64 Bit and 128 Bit keys are supported.
- ***WPA-PSK support.*** Support for WPA-PSK is included, providing enhanced data security.
- ***Simple Configuration.*** If the default settings are unsuitable, they can be changed quickly and easily.
- ***DHCP Client Support.*** **D**ynamic **H**ost **C**onfiguration **P**rotocol provides a dynamic IP address to PCs and other devices upon request. The HomePlug 802.11g Access Point can act as a **DHCP Client**, and obtain an IP address and related information from your existing DHPC Server.
- ***Password - protected Configuration***. Optional password protection is provided to prevent unauthorized users from modifying the configuration data and settings.

Package Contents

The following items should be included:

- HomePlug 802.11g Access Point
- Quick Start Guide
- CD-ROM

If any of the above items are damaged or missing, please contact your dealer immediately.

Physical Description

The HomePlug 802.11g Access Point is illustrated below.

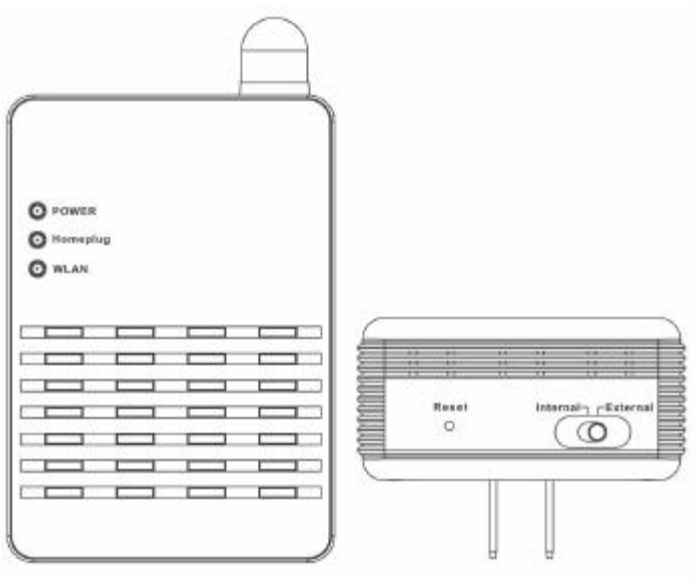

Figure 2: HomePlug Access Point

LEDs

There are three (3) LEDs on the top face on the unit.

Power	**On** - Normal operation.
	Off - No power
HomePlug	**On** - The HomePlug network is active. This means that at least one other HomePlug device was detected.
	Off - HomePlug network is not available - no other HomePlug devices were detected.
	Flashing - Data is being transmitted or received via the HomePlug network.
WLAN	**On** - Idle.
	Off - Error- Wireless connection is not available.
	Flashing - Data is being transmitted or received via the HomePlug 802.11g Access Point. Data includes "network traffic" as well as user data.

Buttons and Switches

Reset Button

This button has two (2) functions:

- **Reboot**. When pressed and released, the HomePlug 802.11g Access Point will reboot (restart).
- **Clear All Data**. This button can also be used to clear ALL data and restore ALL settings to the factory default values.

To Clear All Data and restore the factory default values:

1. Power Off.
2. Hold the Reset Button down while you Power On.
3. Keep holding the Reset Button for a few seconds, until the RED LED has flashed TWICE.
4. Release the Reset Button. The HomePlug 802.11g Access Point is now using the factory default values.

Antenna Switch

Use this to select either the internal antenna (if connected).
The default is "Internal". This should not be changed to "External" unless an external antenna is fitted.

Chapter 2
Installation

2

This Chapter covers the physical installation of the HomePlug 802.11g Access Point.

Requirements

Requirements:

- TCP/IP network protocol
- HomePlug network
- Installed Wireless network adapter for each PC that will be wirelessly connected to the network

Procedure

1. Select a suitable location for the installation of your HomePlug 802.11g Access Point. To maximize reliability and performance, follow these guidelines:
   - Use an elevated location if possible. This will assist the wireless range and throughput. It may be advisable to use an extension cord if all your power points are located at floor level.
   - Place the HomePlug 802.11g Access Point near the center of your wireless coverage area if possible.
   - If possible, ensure there are no thick walls or metal shielding between the HomePlug 802.11g Access Point and Wireless stations.

Figure 3: Installation Diagram

2. Plug the HomePlug 802.11g Access Point into a power outlet, and wait a few seconds for startup to be completed.
3. Check the LEDs:
   - The *Power* LED should be ON.
   - The *WLAN* LED should be ON.
   - The *HomePlug* LED should be ON.

   For more information, refer to LEDs in Chapter 1.

Chapter 3
Access Point Setup

This Chapter provides details of the Setup process for Basic Operation of your HomePlug 802.11g Access Point.

Overview

This chapter describes the setup procedure to make the HomePlug 802.11g Access Point a valid device on your LAN, and to function as an Access Point for your Wireless Stations.

Wireless Stations may also require configuration. For details, see *Chapter 4 - Wireless Station Configuration*.

The HomePlug 802.11g Access Point can be configured using either the supplied Windows utility or your Web Browser

Preparation

Before commencing, install the HomePlug 802.11g Access Point in your LAN, as described previously.

Then, to establish a connection to the HomePlug 802.11g Access Point, you can use either the HomePlug interface or the Wireless interface.

Ensure that a connection is possible, as described below.

HomePlug Interface

To use the HomePlug interface:

- Your PC needs a HomePlug network adapter.
- The HomePlug Adapter on the PC must be set to use the same HomePlug Network Password as the HomePlug 802.11g Access Point.
  The default HomePlug Network Password for the HomePlug 802.11g Access Point is **`HomePlug`**
- The software supplied with your HomePlug adapter will allow you to change the HomePlug Network Password on your PC, and may allow you to change the HomePlug Network Password on the HomePlug 802.11g Access Point, provided you know its *Access Code*.
  The *Access Code* is shown on a sticker on the HomePlug 802.11g Access Point.

Wireless Interface

To use the Wireless interface, your PC needs to match the current Wireless settings on the HomePlug 802.11g Access Point. The default Wireless settings are:

SSID	default
Wireless Security	Disabled.

If using the default settings, the HomePlug 802.11g Access Point will appear in your PC's list of "Available Wireless Networks", and you can simply select it.

IP Address

Your PC needs to have an IP address which is compatible with the HomePlug 802.11g Access Point. The default IP address and subnet mask for the HomePlug 802.11g Access Point are:

IP address	192.168.0.101
Subnet Mask	255.255.255.0

To perform initial configuration, you will need to set your PC to use a fixed IP address which is compatible with this IP address (e.g. 192.168.0.100) and using the same Subnet Mask (255.255.255.0).

See ***Appendix C - Windows TCP/IP Setup*** for details of this procedure.

Configuration

1. Start your Web browser. You must use a Browser which supports frames and JavaScript.
2. In the *Address* box, enter "HTTP://" and the IP Address of the HomePlug 802.11g Access Point
   e.g.
   `HTTP://192.168.0.101`
3. You should then see a login prompt, which will ask for a *User Name* and *Password*.
   Enter **`admin`** for the *User Name*, and leave the *Password* blank.
   These are the default values. The password (but not the user name) can and should be changed. Always enter the current password, as set on the *Password* screen.

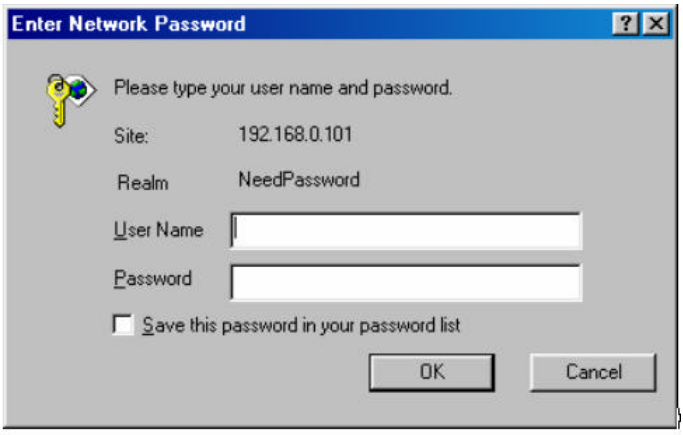

Figure 4: Password Dialog

4. You will then see the *Status* screen, which displays the current settings and status. No data input is possible on this screen.
5. From the menu, select and configure the following options, as described in the following sections:
   - **HomePlug Settings**
   - **Wireless Settings**
   - **LAN IP Setup**
   - **Set Password**

If you change the IP address of the HomePlug 802.11g Access Point, you will lose the connection from your PC to the HomePlug 802.11g Access Point.
You need to re-connect using the new IP address.
If the address range has changed, you will need to re-configure your PC to use a compatible IP address

6. Setup of the HomePlug 802.11g Access Point is now complete.
Wireless stations must now be set to match the HomePlug 802.11g Access Point. See Chapter 4 for details.

If you can't connect:

It is likely that your PC' s IP address is incompatible with the HomePlug 802.11g Access Point' s IP address. This can happen if your LAN does not have a DHCP Server.
The default IP address of the HomePlug 802.11g Access Point is 192.168.0.101, with a Network Mask of 255.255.255.0.

If your PC' s IP address is not compatible with this, you must change your PC' s IP address to an unused value in the range 192.168.0.1 ~ 192.168.0.254, with a Network Mask of 255.255.255.0. See ***Appendix C - Windows TCP/IP*** for details for this procedure.

Status Screen

When you first connect, you will see the *Status* screen. This displays the current settings and status of the HomePlug 802.11g Access Point. No data can be input on this screen.

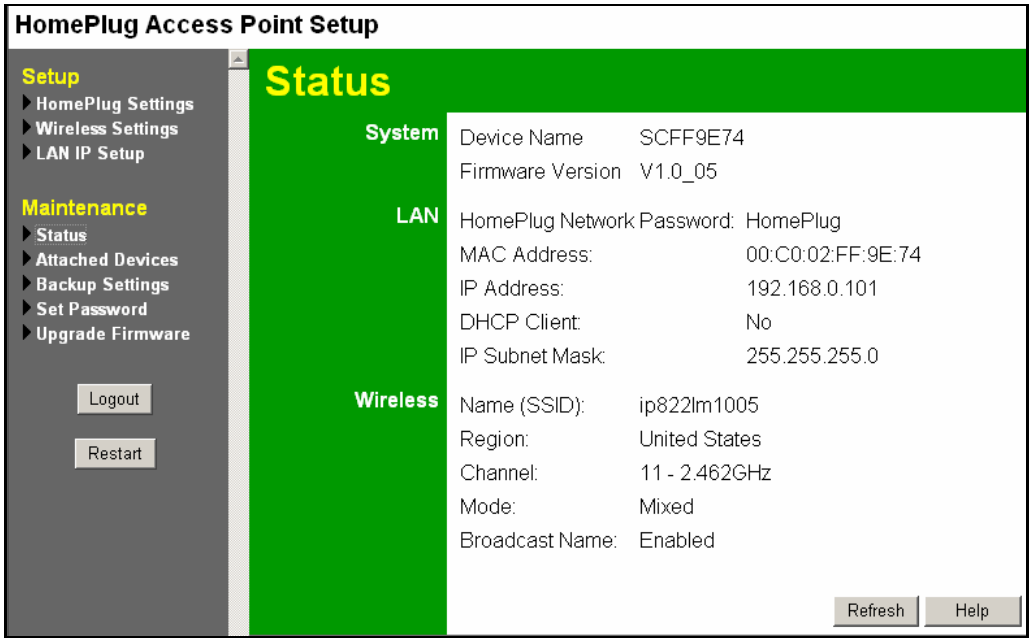

Figure 5: Status Screen

For further details of this screen, refer to *Status Screen* in Chapter 5.

HomePlug Settings

This screen can be reached via the *HomePlug Settings* link on the main menu.

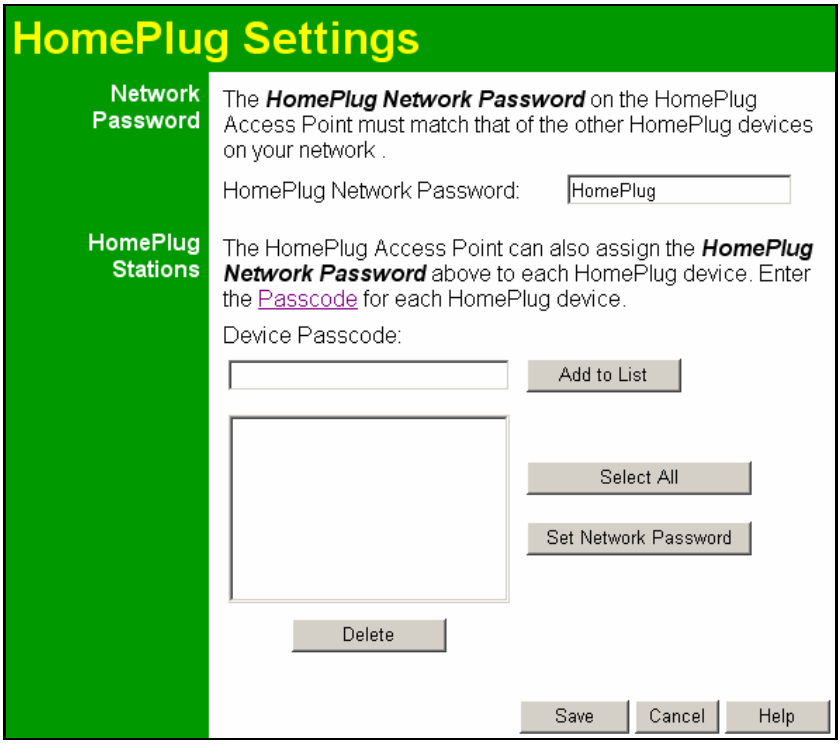

Figure 6: HomePlug Settings Screen

This screen allows you to set the HomePlug Network Password for the HomePlug 802.11g Access Point as well as other HomePlug stations (devices) on your network. All HomePlug devices must use the same HomePlug Network Password in order to communicate with each other.

You can also use this screen to assign a new Network Password to other HomePlug stations on your HomePlug Network. To do this:

1. Enter the Device Passcodes of each HomePlug stations on your LAN.
   Each HomePlug station has a unique Passcode in the format xxxx-xxxx-xxxx-xxxx, usually shown on a label on the rear or base of the HomePlug device.
2. When completed, click "Save" to save the list (or click "Cancel" if you decide to discard your changes).
3. Select the HomePlug stations you wish to assign the Network Password to.
4. Click the "Set Network Password" button.
5. A confirmation message will appear confirming the success of the password change for each device. An error message will appear if any device is not able to be reset to the new network password.

Data - HomePlug Settings

Network Password	
HomePlug Network Password	Enter the Network Password for your HomePlug network here. All HomePlug devices must use the same Network Password. • This password is case-sensitive. • All HomePlug devices must use the same Network Password. • The password can contain letters, numbers or punctuation. • The password must be at least 4 characters.
HomePlug Stations	
Station List	This list is used if you wish to use the HomePlug 802.11g Access Point to assign the same Network Password to other HomePlug stations. If you don't wish to do this, there is no need to input your other HomePlug stations here.
Device Passcode	Use this to add a HomePlug station to the list: 1. Enter the HomePlug's Default Passcode in the *Device Passcode* field. Each HomePlug station has a unique Passcode in the format xxxx-xxxx-xxxx-xxxx, usually shown on a label on the rear or base. 2. Click the *Add to List* button. 3. When finished, click the *Save* button to save the list.
Select All Button	Click this button to select all HomePlug stations in the list. You can also select stations individually if desired.
Set Network Password Button	Click this button to assign the current network password to all selected HomePlug stations. Wait a few seconds for the message regarding the success of this operation.
Delete Button	Click this button to delete all selected HomePlug stations.

Wireless Settings Screen

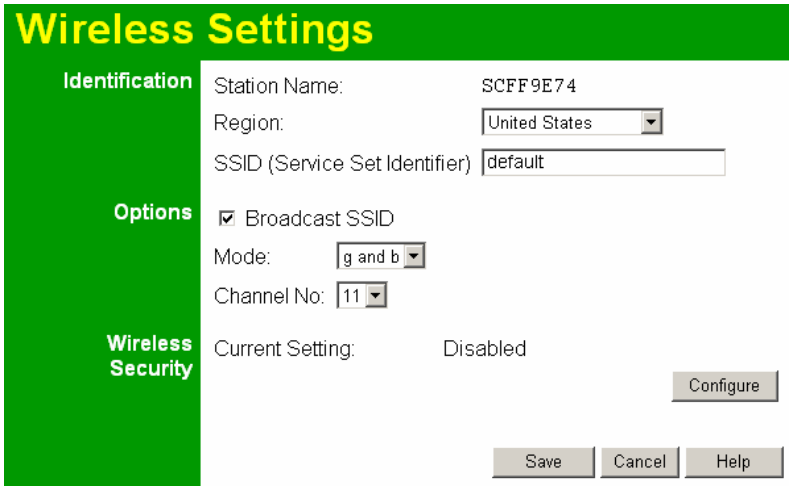

Figure 7: Wireless Settings Screen

Data - Wireless Settings Screen

Identification	
Station Name	On your PC, some Wireless status screens may display this name as the Access Point in use.
Region	The region can not be changed by the users.
SSID	Enter a 32-character (maximum) service set ID in this field. The SSID is case sensitive. To connect to this Access Point, all Wireless stations must use the same SSID as this Access Point.
Options	
Broadcast SSID	If Enabled, the SSID will broadcast its name to all Wireless Stations. Wireless stations will be able to see this Access Point in their list of "Available Networks", and adopt the correct SSID. If the *Broadcast SSID* option is disabled, users must enter the SSID and other wireless details manually.

Mode	Select the desired option. • **g & b** Both 802.11g and 802.11b stations are able to connect. • **g only** If selected, this ensures that 802.11g mode Wireless stations will connect at high speed, but 802.11b mode Wireless stations will be unable to connect at all. • **b only** If selected, 802.11g mode is unavailable. 802.11g mode Wireless stations will only be able to connect if they can also run in standard 802.11b mode.
Channel No.	Select the Channel you wish to use on your Wireless LAN. If you experience interference (shown by lost connections and/or slow data transfers) you may need to experiment with different channels to see which is the best.
Wireless Security	
Current Setting	The current security setting is displayed.
Configure Button	Click this button to access the Wireless security sub-screen, and modify the security settings as required.

Wireless Security

This screen is accessed by clicking the "Configure" button on the *Wireless Settings* screen. There are 3 options for Wireless security:

- **Disabled** - no data encryption is used.
- **WEP** - data is encrypted using the WEP standard.
- **WPA-PSK** - data is encrypted using the WPA-PSK standard. This is a later standard than WEP, and provides much better security than WEP. If all your Wireless stations support WPA-PSK, you should use WPA-PSK rather than WEP.

WEP Wireless Security

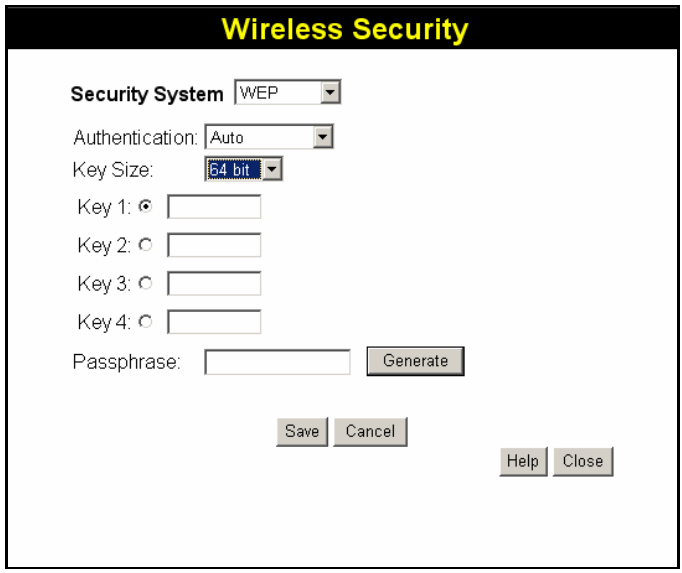

Figure 8: WEP Screen

Data - WEP Screen

Security System	**WEP** The 802.11b standard. Data is encrypted before transmission.
Authentication	Normally this can be left at the default value of "Auto". If that fails, select the appropriate value - "Open System" or "Shared Key." Check your wireless station's documentation to see what method to use.
Data Key Size	Select the WEP Encryption level: • 64-bit (sometimes called 40-bit) encryption • 128-bit (sometimes called 104 bit) encryption
Keys	All wireless stations must use the same key values as the HomePlug 802.11g Access Point. • Use the radio buttons to select the default key. • Enter the key value you wish to use. Other stations must have the same key values. • Keys must be entered in Hex. Hex characters are the digits (0 ~ 9) and the letters A ~ F.

Passphrase	This feature allows you to generate a key or keys from a text (ASCII) phrase, rather than enter keys in Hex. To use this feature: • Enter a word or group of printable characters in the Passphrase field • Click the "Generate Key" button. • If encryption strength is set to 64 bit, then each of the four key fields will be populated with key values. If encryption strength is set to 128 bit, then only the selected WEP key field will will be given a key value.

WPA-PSK Wireless Security

If "WPA-PSK" is selected, the screen will look like the following example.

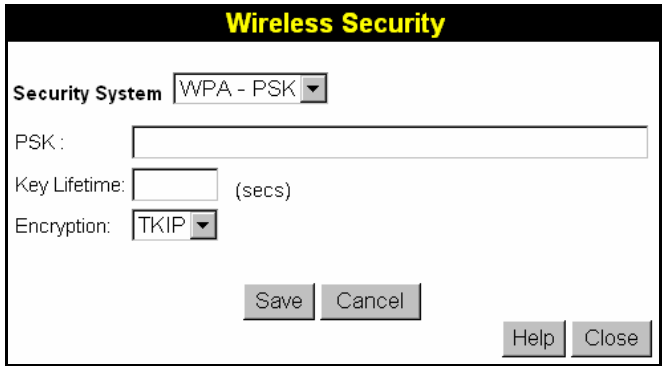

Figure 9: WPA-PSK Screen

Data – WPA-PSK Screen

Security System	**WPA-PSK** Like WEP, data is encrypted before transmission. WPA is more secure than WEP, and should be used if all wireless stations support WPA.
PSK	This is also called the "Passphrase" or "Network Key". Enter the desired key value. Data is encrypted using a key derived from the PSK. Other Wireless Stations must use the same key. The PSK must be from 8 to 63 characters in length.
Key Lifetime	This determines how often the encryption key is changed. You can change the default value if desired.
Encryption	The WPA-PSK standard allows different encryption methods to be used. Select the desired option. Wireless Stations must use the same encryption method.

LAN IP Setup Screen

Click ***LAN IP Setup*** on the menu to view a screen like the following.

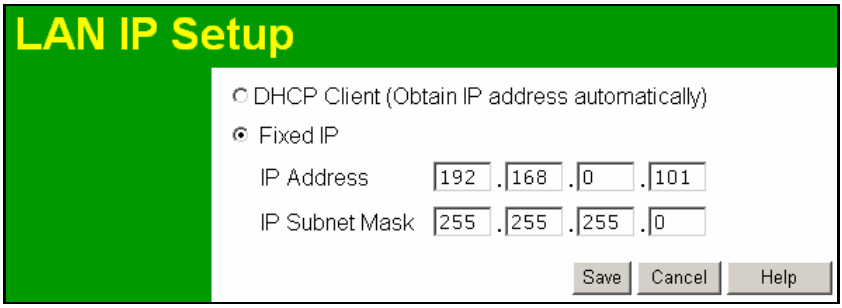

Figure 10:LAN IP Setup Screen

Data - LAN IP Setup Screen

LAN IP Setup	
DHCP Client	If selected, the HomePlug 802.11g Access Point will obtain an IP address from the DHCP Server on your LAN. **Only select this option if you have a DHCP Server on your LAN.** However, even if you have a DHCP Server, it is usually better to use a *Fixed IP* address as described below.
Fixed IP	If you don't have a DHCP Server on your LAN, the **Fixed IP** setting must be selected, and the following data entered: • **IP Address**: IP address for the HomePlug 802.11g Access Point. Enter an unused IP Address from within the range used by your LAN. • **Subnet Mask**: Use the same value as PCs on your LAN. The default value 255.255.255.0 is standard for small (class "C") networks.

Set Password Screen

The *Set Password* screen allows you to assign a password to the HomePlug 802.11g Access Point. This password limits access to the configuration interface. The default password is blank (no password). It is recommended that this be changed, using this screen.

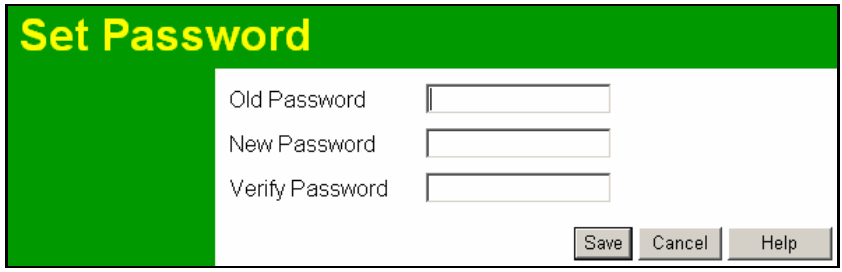

Figure 11: Set Password Screen

Data - Set Password Screen

Current Password	Enter the current password here. If the current password is blank, leave this blank.
New Password	Enter the new password here
Repeat New Password	Re-enter the new password in this field.

You will be prompted for the password when you connect, as shown below.

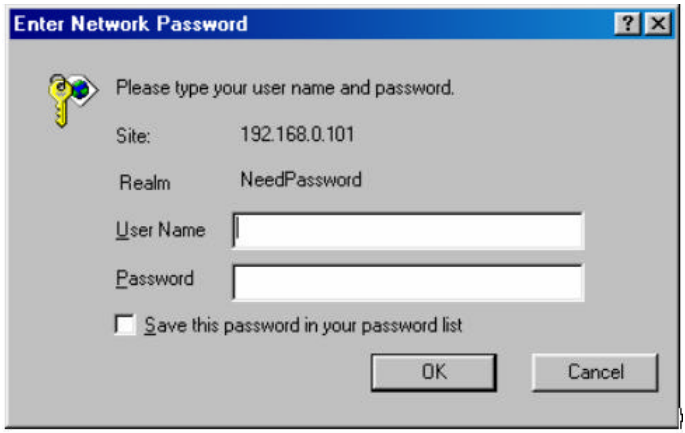

Figure 12: Password Dialog

- Enter **`admin`** for the *User Name*.
- Enter the HomePlug 802.11g Access Point's password, as set on the *Password* screen above.

Chapter 4
Wireless Client Configuration

This Chapter details the configuration required for each PC or other Wireless Client using the HomePlug 802.11g Access Point.

Overview

All Wireless Stations need to have settings which match the HomePlug 802.11g Access Point. These settings depend on the mode in which the Access Point is being used.

Wireless Settings

For each of the following items, each Wireless Station must have the same settings as the HomePlug 802.11g Access Point.

Mode	On each PC, the mode must be set to ***Infrastructure***.
SSID (ESSID)	This must match the value used on the HomePlug 802.11g Access Point. The default value is **`default`** **Note! The SSID is case sensitive.**
WEP	If WEP is enabled on the HomePlug 802.11g Access Point, each station must use the same settings as the HomePlug 802.11g Access Point. • The Encryption type or Key size (64Bit/128Bit) must match. • Each Wireless Station must have the HomePlug 802.11g Access Point's *Default Key* in the **same location** in its Key table. (But it does not have to be the Default key for the Wireless Station.) • The HomePlug 802.11g Access Point must have the *Default Key* for each Wireless Station in the **same location** in its Key table. This is usually achieved by having all Stations and the HomePlug 802.11g Access Point use the same Key table, but having different Default keys.
WPA-PSK	If WPA-PSK is enabled on the HomePlug 802.11g Access Point, each station must also be set to use WPA-PSK. The PSK (also called Network Key or Passphrase) used on the HomePlug 802.11g Access Point must also be set on each Wireless station. Each Wireless Station must use the same encryption method as the HomePlug 802.11g Access Point.

Chapter 5
Operation and Status

This Chapter details the operation of the HomePlug 802.11g Access Point and the status screens.

Operation

Once both the HomePlug 802.11g Access Point and the PCs are configured, operation is automatic.

Status Screen

Use the ***Status*** link on the main menu to view this screen.

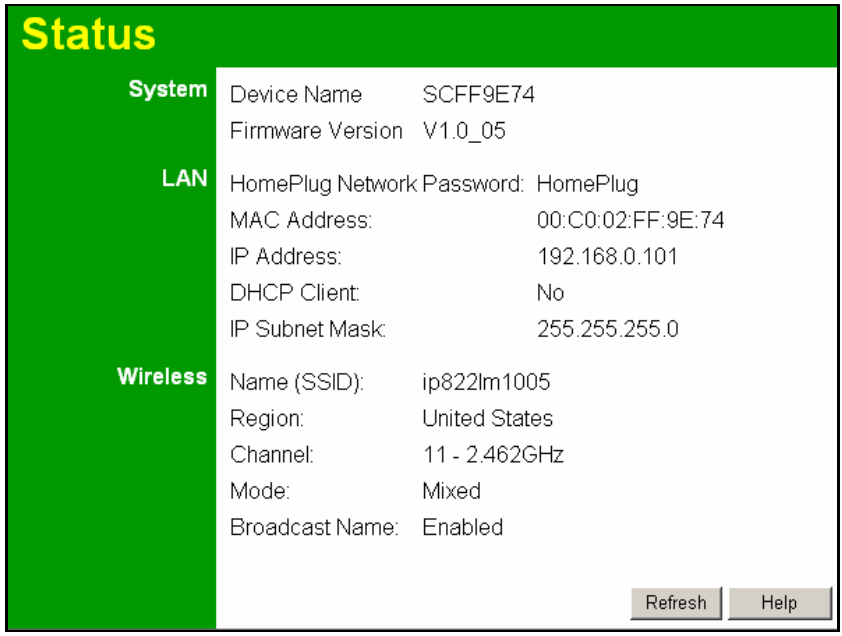

Figure 13: Status Screen

Data - Status Screen

System	
Device Name	The name of the HomePlug 802.11g Access Point. This name is used to identify the HomePlug 802.11g Access Point when using the supplied Windows utility.
Firmware Version	The version of the current firmware installed.

LAN	
HomePlug Network Password	The Network Password used by the HomePlug network. Only devices using the same password can communicate with each other.
MAC Address	This shows the MAC Address for this device, as seen from the LAN interface.
IP Address	The IP Address of this device.
DHCP Client	This indicates if the IP address above was obtained from a DHCP Server. If it was, then the DHCP client value will be "Yes". If the IP address above was set a fixed or static IP address, the DHCP client value will display as "No".
IP Subnet Mask	The IP Subnet Mask (Network Mask) for the IP Address above.
Wireless	
Name (SSID)	The SSID (network name) in use is displayed.
Channel	This shows the Channel currently used.
Mode	This indicates the 802.11 wireless mode currently used.
Broadcast Name	This indicates if the SSID (network name) is being broadcast.

Attached Devices

The ***Attached Devices*** screen shows all the known devices attached to your network.

An example screen is shown below.

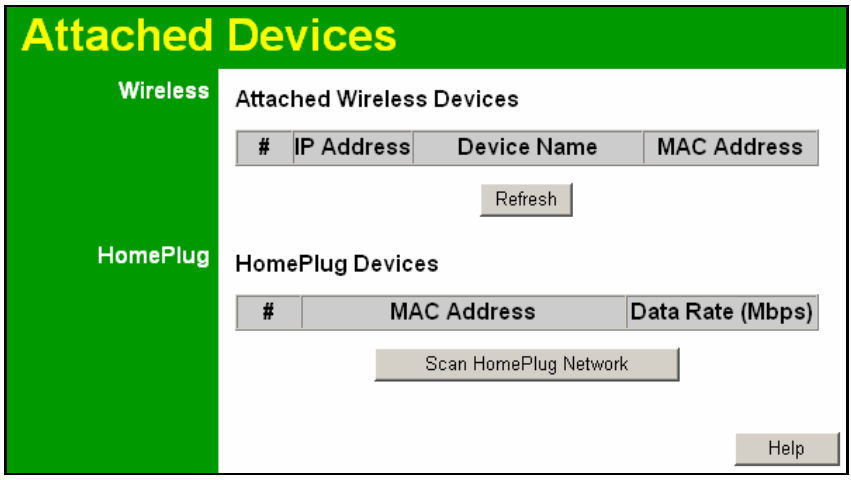

Figure 14: Attached Devices

Data - Attached Devices Screen

Wireless	
Attached Wireless Devices	This table lists all the Wireless devices (clients) currently associated with the HomePlug 802.11g Access Point.
IP Address	The IP address of each Wireless station is displayed in this column.
MAC Address	The MAC address of each Wireless station is displayed in this column. The MAC address is a low-level network identifier assigned to each Ethernet interface at the time of manufacture.
Refresh Button	Clicking this will update the list of Wireless stations currently associated with the HomePlug Access Point
HomePlug	
HomePlug Devices	This table lists all the known HomePlug devices on your LAN.
MAC Address	The MAC address of each HomePlug station is displayed in this column. The MAC address is a low-level network identifier assigned to each Ethernet interface at the time of manufacture.
Data Rate	The HomePlug connection speed of each HomePlug device is displayed here.
Scan HomePlug Network Button	Clicking this will scan the HomePlug network and update the list of HomePlug devices.

Chapter 6
Maintenance

This Chapter explains when and how to use the HomePlug 802.11g Access Point's "Maintenance" Features.

Overview

This Chapter covers the features available on the HomePlug 802.11g Access Point' s ***Maintenance*** menu.

The ***Maintenance*** menu has the following options:

- **Status** - see Chapter 5 for details.
- **Attached Devices** - - see Chapter 5 for details.
- **Backup Settings** - see the following section.
- **Set Password** - see Chapter 3 for details.
- **Upgrade Firmware** - see later in this Chapter.

Backup Settings

This screen is displayed when the *Backup Settings* button on the *Maintenance* screen is clicked.

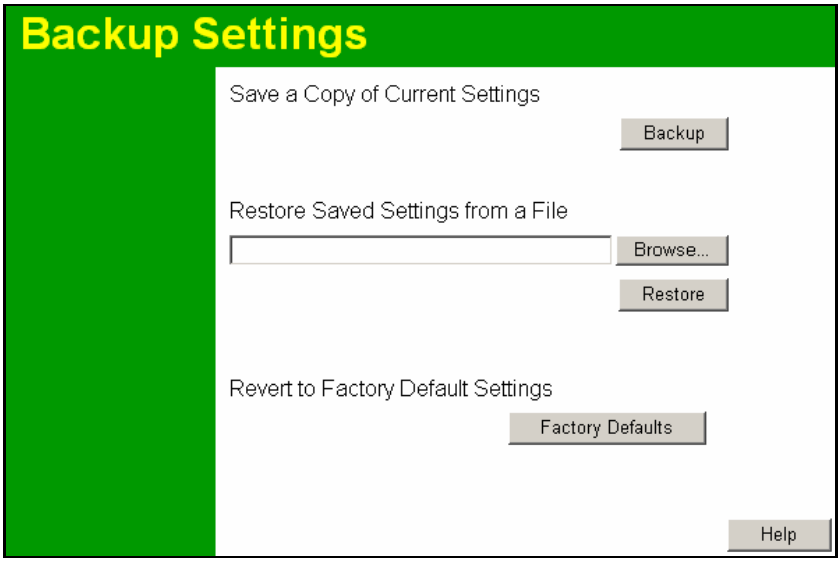

Figure 15 Backup Settings Screen

Data - Backup Settings Screen

Buttons	
Backup	Use this to download a copy of the current configuration, and store

	the file on your PC. Click "Backup" to start the download.
Restore	This allows you to restore a previously-saved config file back to the Access Point. Click "Browse" to select the config file, then click "Restore" to upload the config file. **WARNING !** Uploading a config file will destroy (overwrite) ALL of the existing settings.
Factory Defaults	Clicking the "Factory Defaults" button will reset the Access Point to its factory default settings. **WARNING !** This will delete ALL of the existing settings.

Firmware Upgrade

The firmware (software) in the HomePlug 802.11g Access Point can be upgraded using your Web Browser.

You must first download the upgrade file, and then select *Upgrade Firmware* on the menu. You will see a screen like the following.

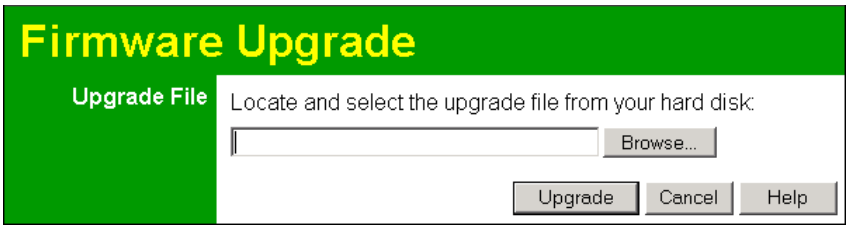

Figure 16: Firmware Upgrade Screen

To perform the Firmware Upgrade:

1. Click the *Browse* button and navigate to the location of the upgrade file.
2. Select the upgrade file. Its name will appear in the *Upgrade File* field.
3. Click the *Upload* button to commence the firmware upgrade.

The HomePlug 802.11g Access Point is unavailable during the upgrade process, and must restart when the upgrade is completed. Any connections to or through the HomePlug 802.11g Access Point will be lost.

Appendix A
Specifications

HomePlug 802.11g Access Point

Model	HomePlug 802.11g Access Point
Dimensions	141mm(W) * 100mm(D) * 27mm(H)
Operating Temperature	0° C to 40° C
Storage Temperature	-10° C to 70° C
Network Protocol:	TCP/IP
Network Interface:	802.11b / 802.11g Wireless Ethernet HomePlug interface
LEDs	3
Power	100VAC - 240VAC auto-sensing

Wireless Interface

Standards	IEEE802.11g WLAN, JEIDA 4.2, roaming support
Frequency	2.4 to 2.4835GHz (Industrial Scientific Medical Band)
Channels	Maximum 14 Channels, depending on regulatory authorities
Modulation	DSSS BPSK/QPSK/CCK, OFDM/CCK
Data Rate	Up to 54 Mbps
Coverage Area	Indoors : 15m @54Mbps, 120m @6Mbps or lower Outdoors : 40m @54Mbps, 300m @6Mbps or lower
Security	WEP (64Bit/128Bit), WPA-PSK (TKIP)
Output Power	13dBm (typical)
Receiver Sensitivity	-80dBm Min.

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 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 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 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.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC 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.

This device complies with Part 15 of the 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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Channel

The Wireless Channel sets the radio frequency used for communication.
¡EAccess Points use a fixed Channel. You can select the Channel used. This allows you to choose a Channel which provides the least interference and best performance. In the USA and Canada, 11 channel are available. If using multiple Access Points, it is better if adjacent Access Points use different Channels to reduce interference.
¡E In "Infrastructure" mode, Wireless Stations normally scan all Channels, looking for an Access Point. If more than one Access Point can be used, the one with the strongest signal is used. (This can only happen within an ESS.)
¡E If using "Ad-hoc" mode (no Access Point), all Wireless stations should be set to use the same Channel. However, most Wireless stations will still scan all Channels to see if there is an existing "Ad-hoc" group they can join.

CAUTION:

1) To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
2) This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Appendix B
Troubleshooting

Overview

This chapter covers some common problems that may be encountered while using the HomePlug 802.11g Access Point and some possible solutions to them. If you follow the suggested steps and the HomePlug 802.11g Access Point still does not function properly, contact your dealer for further advice.

General Problems

Problem 1: **Can't connect to the HomePlug 802.11g Access Point to configure it.**

Solution 1: If you don't know the Wireless settings of the HomePlug 802.11g Access Point, you must use the HomePlug interface for configuration. Use a HomePlug adapter on your PC to connect to the HomePlug network.

Then use the Windows utility to locate the HomePlug 802.11g Access Point. The Windows utility is able to locate the HomePlug 802.11g Access Point even if its IP address is incompatible with your PC, or your PC and the HomePlug 802.11g Access Point are using different HomePlug network passwords.

Problem 2: **My PC's wireless interface can't connect to the HomePlug 802.11g Access Point.**

Solution 2 Check the following:

- The SSID and wireless security settings on the PC match the settings on the HomePlug 802.11g Access Point.
  Note that if the SSID (network name) is not broadcast, you will not be able to see the HomePlug 802.11g Access Point in your PC's list of "Available Networks", so will not be able to select it. Instead, you must configure the network details manually.
- On the PC, the wireless mode is set to "Infrastructure"

Problem 3: My PC's HomePlug interface can't connect to the HomePlug 802.11g Access Point.

Solution 3 Check that your PC and the HomePlug 802.11g Access Point are using the same HomePlug network password.

Appendix C
Windows TCP/IP

Overview

Normally, no changes need to be made to your Network. Adding the HomePlug 802.11g Access Point does not change your network.

- By default, the HomePlug 802.11g Access Point will act as a DHCP client, automatically obtaining a suitable IP Address (and related information) from your DHCP Server.
- If you don't have a DHCP Server on your LAN, you should use fixed (static) IP addresses on each PC.
- If using Fixed (specified) IP addresses on your LAN (instead of a DHCP Server), there is no need to change the TCP/IP of each PC. Just configure the HomePlug 802.11g Access Point to match your existing LAN.

The following sections provide details about checking the TCP/IP settings for various types of Windows, should that be necessary.

Checking TCP/IP Settings - Windows 9x/ME:

1. Select *Control Panel - Network*. You should see a screen like the following:

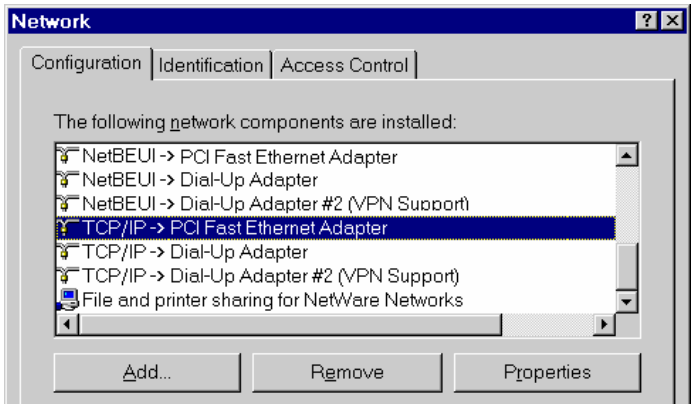

Figure 17: Network Configuration

2. Select the *TCP/IP* protocol for your network card.
3. Click on the *Properties* button. You should then see a screen like the following.

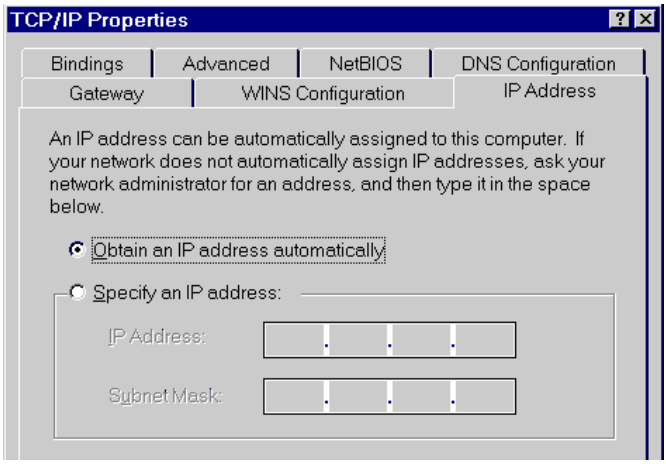

Figure 18: IP Address (Win 95)

Ensure your TCP/IP settings are correct, as follows:

Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows settings.

Using a Fixed or Static IP Address

To use a fixed or static IP address

- Select "Specify an IP address".
- Enter the desired IP Address and Subnet Mask.
- Click "OK"

Each device on your network must have a **unique IP address** and the **same Subnet Mask**.

To perform initial configuration of the HomePlug 802.11g Access Point, you can use the following values on your PC:

- IP Address: `192.168.0.100`
- Subnet Mask: `255.255.255.0`

Checking TCP/IP Settings - Windows NT4.0

1. Select *Control Panel - Network*, and, on the *Protocols* tab, select the TCP/IP protocol, as shown below.

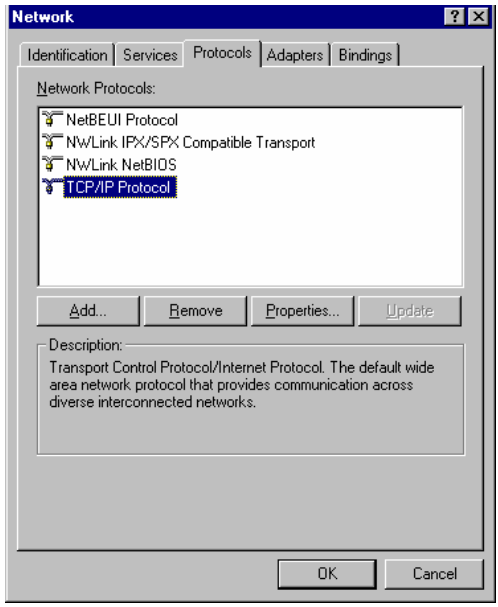

Figure 19: Windows NT4.0 - TCP/IP

2. Click the *Properties* button to see a screen like the one below.

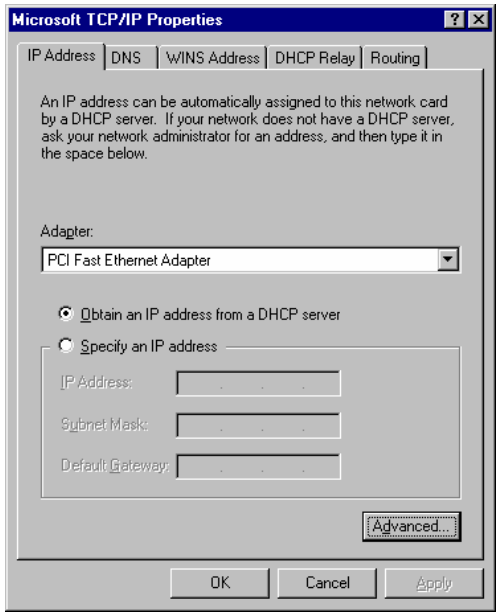

Figure 20: Windows NT4.0 - IP Address

3. Select the network card for your LAN.
4. Select the appropriate radio button - *Obtain an IP address from a DHCP Server* or *Specify an IP Address*, as explained below.

Obtain an IP address from a DHCP Server

This is the default Windows setting. **Using this method is recommended**. By default, the HomePlug 802.11g Access Point will act as a DHCP Server.

Using a Fixed or Static IP Address

To use a fixed or static IP address

- Select "Specify an IP address".
- Enter the desired IP Address and Subnet Mask.
- Click "OK"

Each device on your network must have a **unique IP address** and the **same Subnet Mask**.

To perform initial configuration of the HomePlug 802.11g Access Point, you can use the following values on your PC:

- IP Address: `192.168.0.100`
- Subnet Mask: `255.255.255.0`

Checking TCP/IP Settings - Windows 2000

1. Select *Control Panel - Network and Dial-up Connection*.
2. Right click the *Local Area Connection* icon and select *Properties*. You should see a screen like the following:

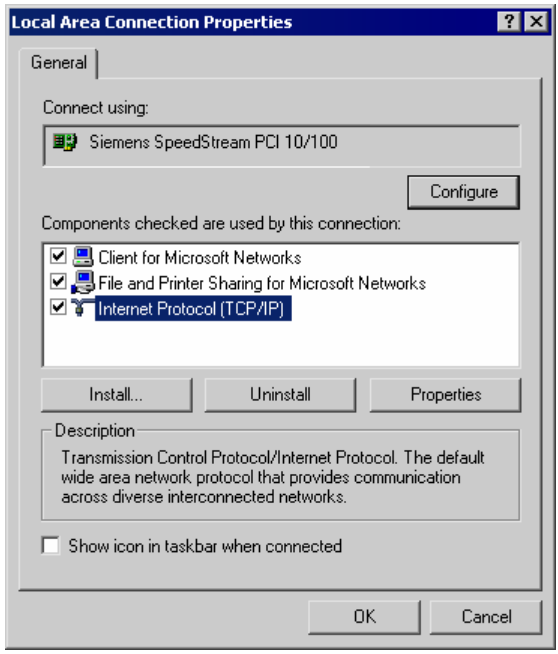

Figure 21: Network Configuration (Win 2000)

3. Select the *TCP/IP* protocol for your network card.
4. Click on the *Properties* button. You should then see a screen like the following.

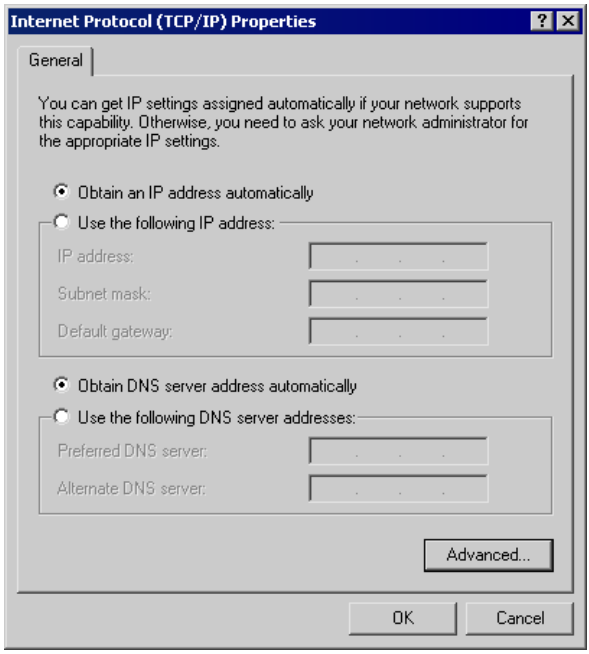

Figure 22: TCP/IP Properties (Win 2000)

5. Ensure your TCP/IP settings are correct:

Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows settings.

Using a Fixed or Static IP Address

To use a fixed or static IP address

- Select "Specify an IP address".
- Enter the desired IP Address and Subnet Mask.
- Click "OK"

Each device on your network must have a **unique IP address** and the **same Subnet Mask**.

To perform initial configuration of the HomePlug 802.11g Access Point, you can use the following values on your PC:

- IP Address: `192.168.0.100`
- Subnet Mask: `255.255.255.0`

Checking TCP/IP Settings - Windows XP

1. Select *Control Panel - Network Connection*.
2. Right click the *Local Area Connection* and choose *Properties*. You should see a screen like the following:

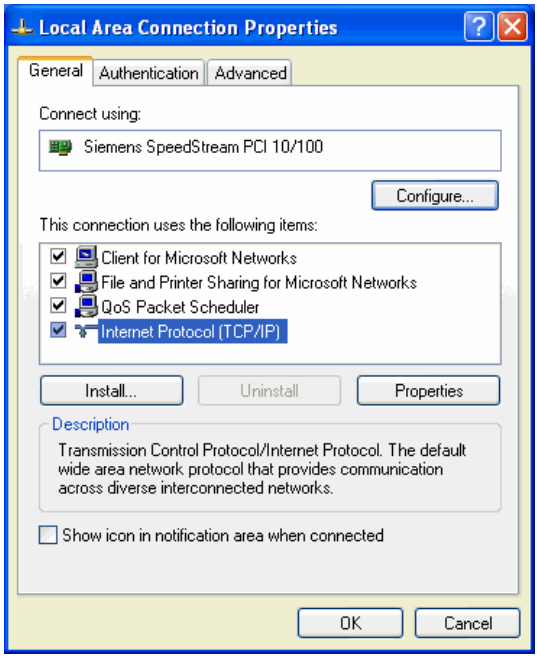

Figure 23: Network Configuration (Windows XP)

3. Select the *TCP/IP* protocol for your network card.
4. Click on the *Properties* button. You should then see a screen like the following.

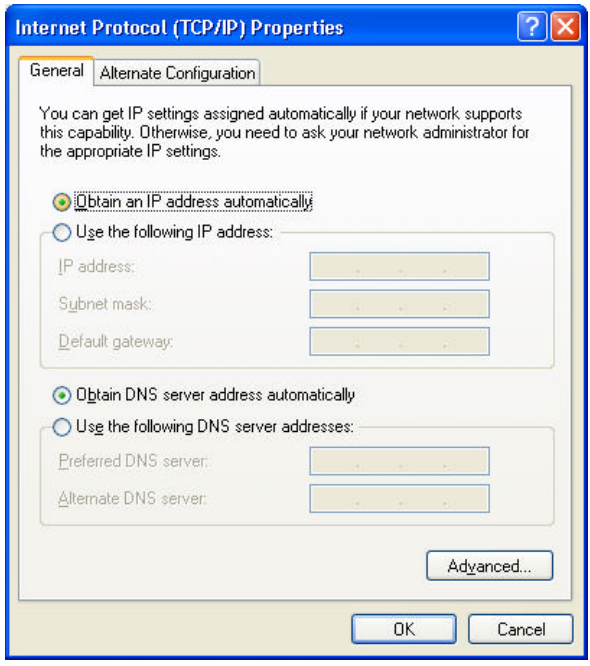

Figure 24: TCP/IP Properties (Windows XP)

5. Ensure your TCP/IP settings are correct.

Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows settings.

Using a Fixed or Static IP Address

To use a fixed or static IP address

- Select "Specify an IP address".
- Enter the desired IP Address and Subnet Mask.
- Click "OK"

Each device on your network must have a **unique IP address** and the **same Subnet Mask**.

To perform initial configuration of the HomePlug 802.11g Access Point, you can use the following values on your PC:

- IP Address: `192.168.0.100`
- Subnet Mask: `255.255.255.0`