

**PHILIPS WLAN Configuration Utility
Operation Manual**

Version 1.10
2001-12-15

DRAFT

Development Information

Revision History

Version	Item	Date	Contents
1.00	Config Manual	2001-11-23	Initial Release
1.10	Config Manual	2001-12-15	New GUI and Initial installation & upgrade revised

Notice

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The following words and symbols mark special messages throughout this guide:



WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.



WARNING: Exposure to Radio Frequency Radiation

The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact during normal operation is minimized. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna should not be less than 2.5 cm (1 inch) from a person's hand, wrist, feet and ankles and not be less than 5 cm from a person's body during normal transmitting operations.

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1 Introduction

The PHILIPS Wireless Local Area Network (WLAN) Interface card enables high-speed access without wires to network assets. This card uses the IEEE 802.11 protocol to enable communications between the host computer and other computers, using the 2.4GHz ISM Radio Band for the communications medium. The host computer uses the PHILIPS Wireless LAN card for communications in the same way that it would use an Ethernet Network Interface Card.

The PHILIPS WLAN Configuration Utility is a Windows application which allows the user of a computer equipped with a PHILIPS WLAN Interface Card to configure the card and to display the card's current configuration and status.

2 Installation

The PHILIPS WLAN Configuration Utility is installed simultaneously with the driver by executing the PHCWL for Windows.exe file. The following illustration shows this program's initial screen:



Installation procedures differ depending on whether this is an initial installation or an upgrade. The following sections discuss these scenarios.

NOTE: Some versions of Microsoft Windows operating systems require administrator privileges to install software. If this is the case for your operating system, be sure that you have such privileges before executing the PHCWL for Windows.exe file.

2.1 Initial installation

For initial installation, the PHCWL for Windows.exe file should be run before the PHILIPS WLAN card is physically installed in your computer. Only after you have run this command to install the utility and driver should you install the PHILIPS WLAN card in your computer.

When you click on the Next button, an InstallShield window appears Welcome Message. Click on the Next button to continue. A screen then appears with the software license agreement displayed. Click on the Yes button to accept the agreement and continue with the installation. Once the installation is complete, click on the Finish button to return to your Windows desktop.

For PCMCIA or USB cards, simply insert or connect the card after running the exe file. For PCI cards, you must shut down the computer, install the card in an available PCI slot, and restart the computer.

When it detects the card, the operating system starts the New Hardware Found wizard. Respond to the prompts displayed by the wizard, but do not check the Specify Location check box; since the operating system will find the driver on its own. The operating system then uses the newly-installed driver to operate the card.

2.2 *Upgrade Installation*

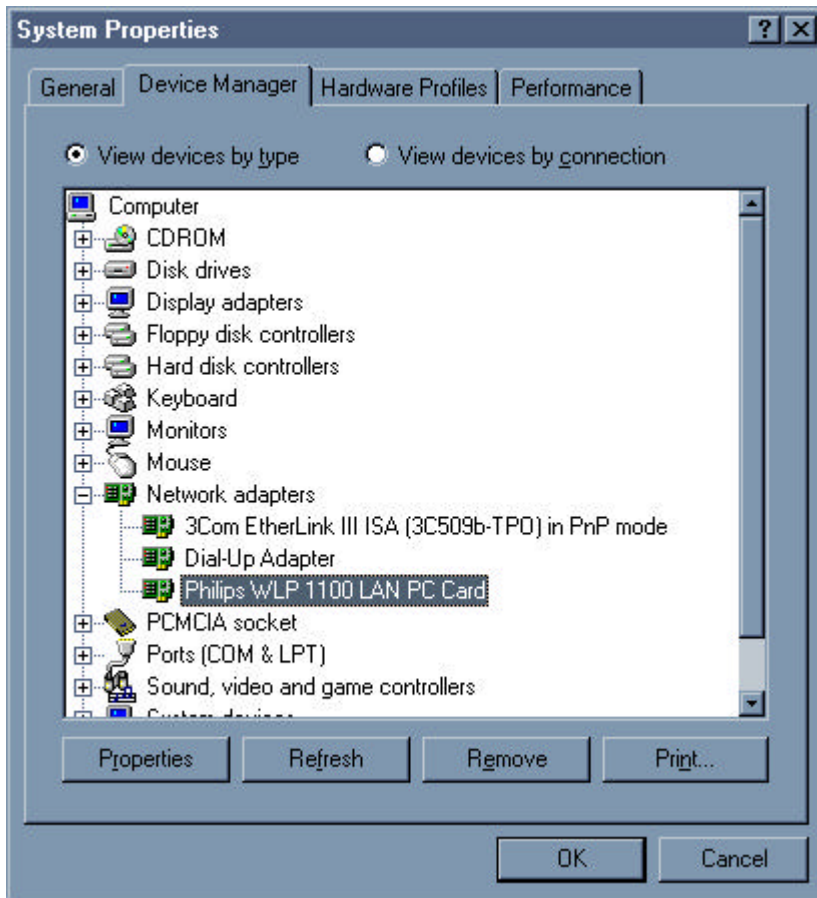
It is not necessary to physically remove your PHILIPS WLAN card from your computer to upgrade the driver. To upgrade an existing driver, you must

- uninstall your PHILIPS WLAN card from your operating system configuration
- uninstall the driver from your operating system configuration
- install the latest version of the driver
- restart the operating system

For all Microsoft operating systems, you must complete these tasks to upgrade the driver. The following sections give procedures for completing these tasks in Windows 98. For other versions of Windows (Windows NT or Windows 2000, for example) the details may differ slightly; consult your operating system documentation or your system administrator.

Uninstall the PHILIPS WLAN Card: On the Windows desktop, right-click on the My Computer icon, move the mouse pointer to Properties, and click the left mouse button to display the System Properties window. Next click on the Device Manager tab (and the View devices by type radio button if it is not already selected).

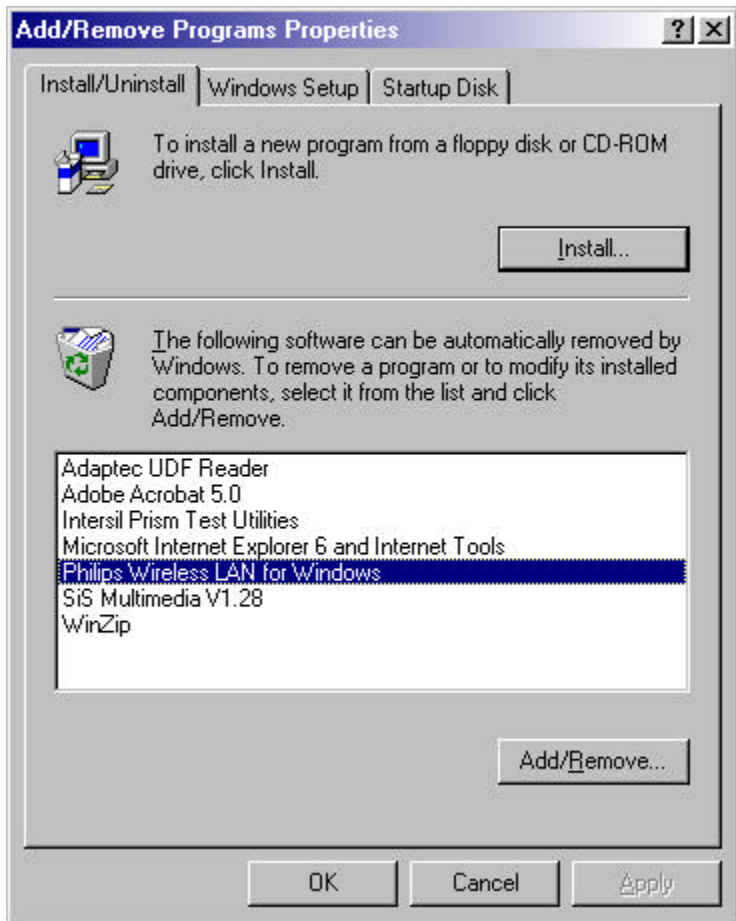
Expand the list of network adapters by clicking on the plus sign to the left of this entry; your display will appear similar to the following:



Click on the entry for the PHILIPS WLP 1100 LAN PC card (the above illustration shows an entry for a PCMCIA card) and click on the Remove button beneath the list. The operating system displays a confirmation window warning that you are about to remove this device from your system; click the OK button to continue.

Once the operating system removes the device, a dialog box appears asking if you want to restart your computer. Click on the No button, close the System Properties window, and proceed to the next section to remove the driver for your card. Do not physically remove the PHILIPS WLAN card from your computer.

Uninstall the Driver: Next you must remove the old driver for your PHILIPS WLAN card. Start by displaying the Windows control panel and opening the Add/Remove Programs window. Then, in the Install/Uninstall tab, click on the entry for Philips Wireless LAN for Windows.



When you click on the Add/Remove... button, Windows asks you to confirm that you want to completely remove the driver and all its components. Click on the Yes button to continue, and after the operation completes, close the confirmation window, the Add/Remove Programs window, and the Control Panel window. Proceed to the next section to install the new driver.

Install the New Driver: After uninstalling the PHILIPS WLAN card and the old driver, run the new PHCWL for Windows.exe file. When the program's initial screen appears, click on the Next button. An InstallShield window appears Welcome Message on your computer. Click on the Next button to continue. A screen then appears with the software license agreement displayed. Click on the Yes button to accept the agreement and continue with the installation. Once the installation is complete, click on the Finish button to return to your Windows desktop.

Restart the Operating System: After installing the new driver, you must restart the operating system. Click the Start button in the taskbar, choose the Shut Down... command in the command menu, click the Restart radio button in the dialog box, and then click the OK button.

Once Windows starts, it displays the New Hardware Found wizard, followed immediately by the Configuration menu of the PHILIPS WLAN Configuration utility. Examine this information and make any necessary changes (for example, you may need to specify an SSID or encryption keys to reconnect to your network). After you enter the correct information, click the OK button.

Windows then displays a warning box, telling you that your system settings have changed and that you must restart your computer to implement these changes. Click the Yes button to restart the operating system. Windows then restarts, and your PHILIPS Wireless LAN card will operate normally with the new driver.

3 Operation

The utility is installed simultaneously with the driver by executing the PHCWL for Windows.exe file. When you click the Finish button in the installation screen, both the driver and the Configuration Utility are installed on your computer.

3.1 System Tray Icon

After the installation of the PHILIPS WLAN Configuration Utility, its icon appears in the System Tray in the bottom right corner of your desktop.



The color of icon indicates the link status.



Red indicates no or very poor link quality.

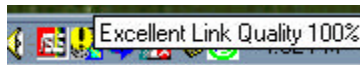


Yellow indicates a usable but weak link.



Green indicates a good or excellent link.

You can also view the status of the link by placing the cursor over the Configuration Utility icon, as shown in the following illustration. This illustration indicates that the PHILIPS WLAN Card is able to communicate, that the signal to the radio is excellent.



3.2 Icon Menu

Clicking the left mouse button on the System Tool Tray Icon displays a menu similar to the following illustration:



The first two items in this menu let you turn the wireless radio on or off. When the wireless radio is turned off, the following icon appears in the system tray.



Remove Status Icon... removes the System Tray Icon. The driver continues to operate the card in the last commanded configuration. The next time you power up your computer, the configuration utility will return. You can also restart the Configuration Utility from the Start Menu by selecting Programs and PHILIPS Wireless LAN Configuration.

Wireless Network Status... launches the Configuration Utility with the Link menu selected. This shows the link status, including Signal Strength and Link Quality, when the card is operating in Access Point type.

WEP Encryption... launches the Configuration Utility with the Wep menu displayed, as discussed in the following section. This lets you set WEP parameters which change the operation of the PHILIPS WLAN card.

Advanced Configuration... launches the Configuration Utility with the Configuration menu displayed, as discussed in the following section. This lets you set configuration parameters which change the operation of the PHILIPS WLAN card.

Version Information... launches the Configuration Utility with the About menu selected, giving the revision level of the driver, configuration utility and firmware.

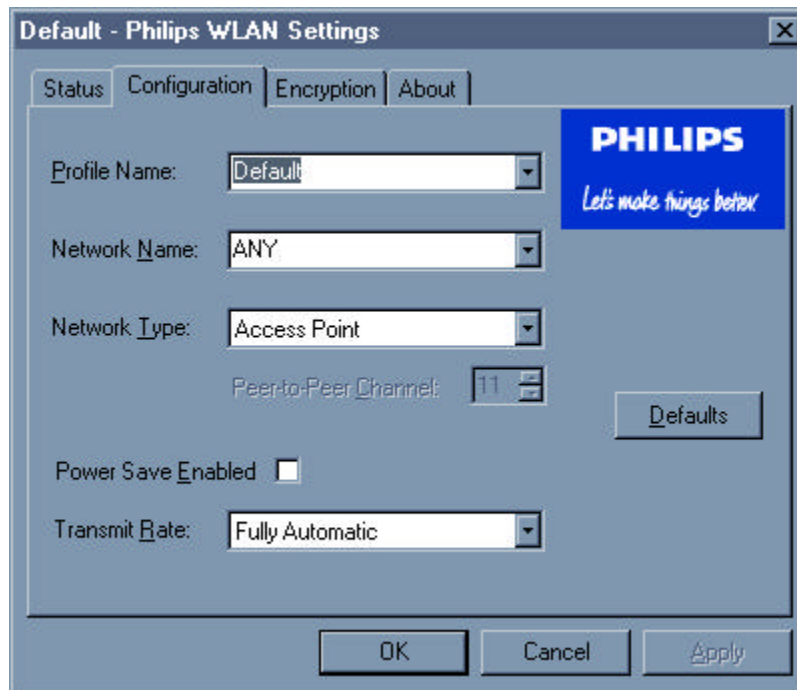
4 Starting the Configuration Utility

You can launch the Configuration Utility by clicking the left mouse button on the Configuration Utility icon and selecting Advanced Configuration... If the Configuration Utility icon is not displayed in the System Tray, you can restart the Configuration Utility from the Start Menu by selecting Programs and PHILIPS Wireless LAN Configuration.

The Configuration Utility consists of window with four tabs: Configuration, Encryption, Link, and About. The following sections describe the options displayed by these tabs in detail.

4.1 Configuration Tab

The Configuration menu lets you specify the operating parameters for your PHILIPS WLAN Interface card. When you first start the Configuration Utility, this menu is displayed. If another menu is displayed, you can display the Configuration options by clicking on its tab in the Configuration Utility panel.



4.1.1 Setting the Profile

A profile is a named set of operating parameters for your PHILIPS WLAN Interface card. The Profile field lets you set values for all parameters by selecting a previously defined profile. Click the down arrow at the right of the Profile field to display the available profiles for your PHILIPS WLAN Interface card.

You will always have at least one profile, named Default. Initially, this profile contains the parameters configured at installation. You can modify this profile at any time after the installation. After changing parameters, you can save them in the profile named in this field by clicking the Apply button in the Configuration Utility panel.

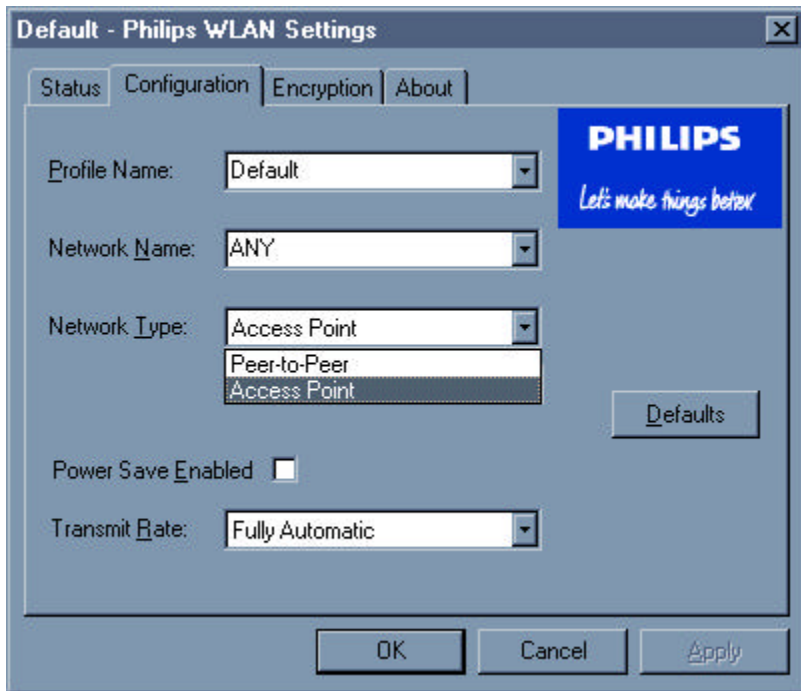
You can also create additional profiles by typing a name in the Profile field. When you change the name in the Profile field and then click the Apply button, the Configuration Utility uses the current parameters for your card to create a separate profile. You can then switch between profiles by clicking the down arrow at the right of the Profile field, selecting a profile from the drop-down list, and clicking the Apply button.

The following example describes a situation in which you would want to create multiple profiles. Suppose that you use the wireless LAN at your work, but you also have a network in your home (with a wireless Access Point) for sharing an internet connection and a printer between several computers. Suppose also that you have another office within your business which also has WLAN capability, but which is configured differently than your main office.

In this situation, you can create a different profile for each of these three environments. Each profile specifies the parameters used on a single network. Moving from one location to another, you only need to apply the appropriate profile to be able to participate in the local network.

4.1.2 Setting the Network Type

The PHILIPS WLAN Interface card can operate in one of two types, which are specified in the Network Type field of the Configuration menu. Clicking the down arrow at the right of the Network Type field displays the available types.



4.1.2.1 Peer-to-Peer

IEEE 802.11, the standard on which the WLAN protocol is based, defines two types to handle two separate needs. The first, called Peer-to-Peer (or IBSS) type, is used when two or more wirelessly-enabled PCs wish to exchange data directly, without an Access Point. In this case the PCs can establish an Peer-to-Peer network in which they are the only members and over which they can exchange data. To exchange data, each computer participating in the Peer-to-Peer network must also specify the same SSID and Channel in this menu.

4.1.2.2 Access Point

The second type defined by the IEEE 802.11 standard is called Access Point type, and is the primary application for WLAN operation. In this type all data on the wireless network is directed to an Access Point, which then routes the data to the appropriate wireless station. The Access Point may also be configured to allow data to be bridged from the wireless network to wired networks.

To participate in a wireless LAN in Access Point type, every station and Access Point must specify the same SSID. In Access Point type, all

available channels are scanned for traffic, so there is no need to specify a channel.

4.1.3 Setting the SSID

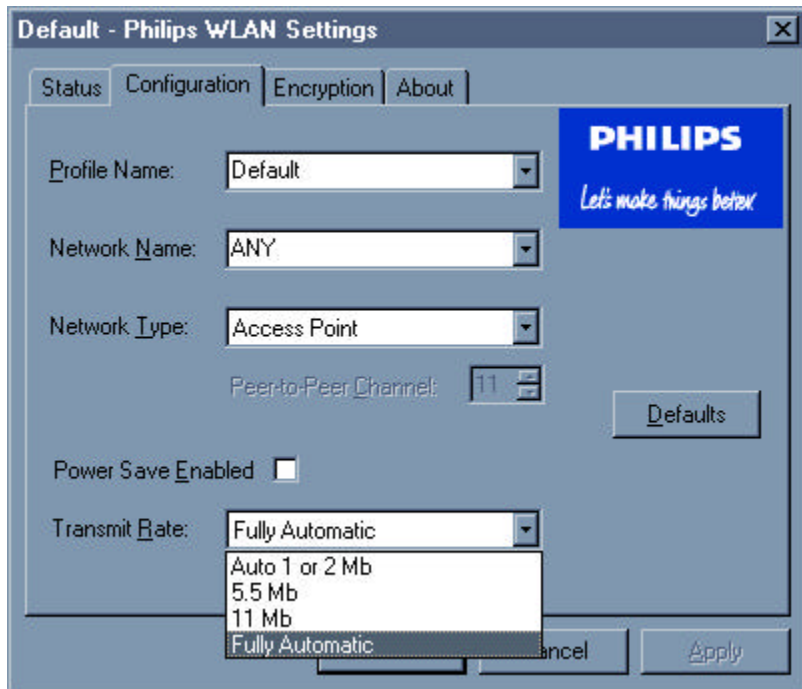
The SSID is the Service Set Identifier used by Access Points and stations to identify a wireless LAN. Your PHILIPS WLAN Interface card scans the available channels looking for an Access Point (in Access Point type) or another station (in Peer-to-Peer type) which has specified this same SSID. It then attempts to associate with these Access Points or stations to form a wireless LAN.

To change the SSID, simply highlight it, type the new SSID, and click the Apply button.

In typical infrastructure applications a company will use a single SSID for all Access Points. If the radio is scanning and cannot find a channel when an Access Point is known to be in range, verify that the SSID is set correctly.

4.1.4 Setting the Transmit Rate

The Transmit Rate field specifies the rate at which the radio in your PHILIPS WLAN Interface card transmits and receives data. You can view the available rates by clicking the down arrow at the right of the Transmit Rate field.



The transmit rate can be set to:

- Fully Automatic – your PHILIPS WLAN card chooses the highest available rate providing reliable communications based on the capabilities of the Access Point or station with which it communicates and on the received signal quality
- Auto 1 or 2 Mb – allows only 1 and 2 Mb/s operation
- 5.5 Mb – allows only 5.5 Mb/s operation
- 11 Mb – allows only 11Mb/s operation

To change the Transmit Rate, click the down arrow at the right of the field, highlight the rate you want to set, and click the Apply button.

Under most conditions, you should choose Fully Automatic as the transmit rate. In general, fixed rates are used only in test environments.

4.1.5 Enabling Power Save Mode

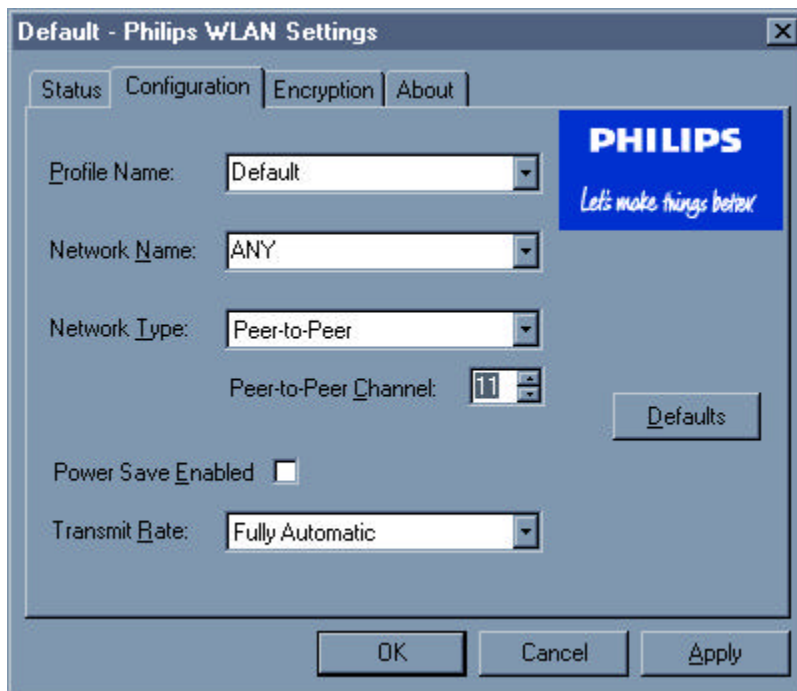
The IEEE 802.11 standard provides a Power Save Mode. In this mode your PHILIPS WLAN card listens for a beacon (a periodic frame which defines the network type and attributes) and determines the beacon interval. Between beacons the card puts itself to sleep, enabling power

savings. At the time of the expected beacon the card wakes itself up and receives the beacon. The received beacon contains information about whether the Access Point or station has buffered frames for the card. If frames are available the card requests those frames until no more frames are available. The card then goes back to sleep until the next beacon.

For Access Points that support power save mode and for stations equipped with WLAN cards, enabling this mode can significantly reduce power consumption, which is particularly important if the host computer is operating on battery power. However, be aware that power save mode also results in lowered transmission and reception speed on the wireless LAN.

4.1.6 Selecting the Peer-to-Peer Channel

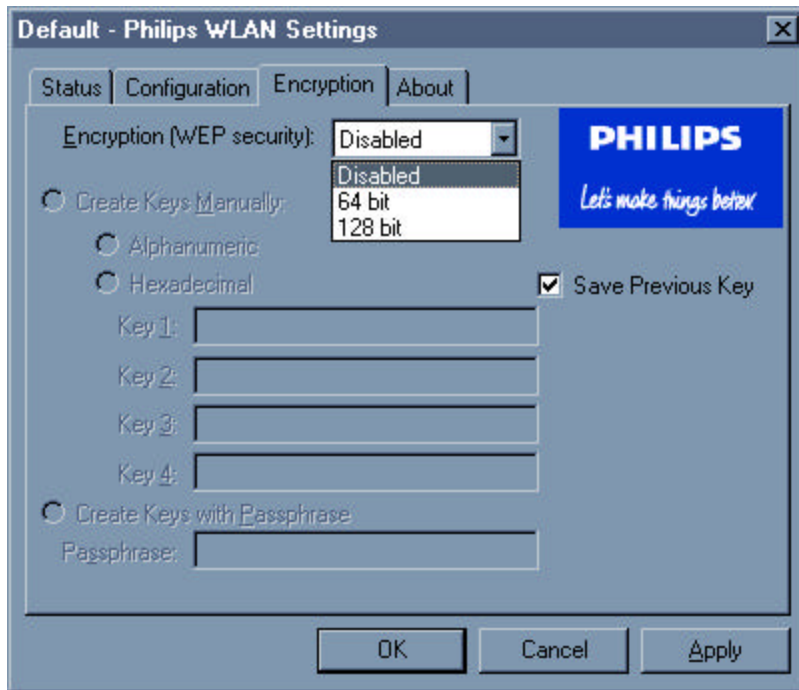
When communicating in Peer-to-Peer or Pseudo AdHoc type, you must specify a channel on which communications will take place. To specify a channel, click the up or down arrow at the right of the Peer-to-Peer Channel field until the channel you want to set appears, and then click the Apply button.



This field is greyed in Access Point type because the channel is automatically selected by the Access Point.

4.2 Encryption Tab

The Encryption menu lets you enable encryption and set the encryption keys. To see the available encryption methods, click the down arrow at the right of the Encryption {WEP} field.



There are two encryption methods available. The IEEE 802.11 specification defines Wired Equivalent Privacy (WEP) using a 64-bit key. This capability was extended by the industry to allow a 128 bit key.

If you specify an encryption method, you will only be able to communicate with Access Points and stations that use the same encryption method and keys.

4.2.1 Disabling Encryption

To disable encryption, click the down arrow at the right of the Encryption field, select Disabled, and click the Apply button.

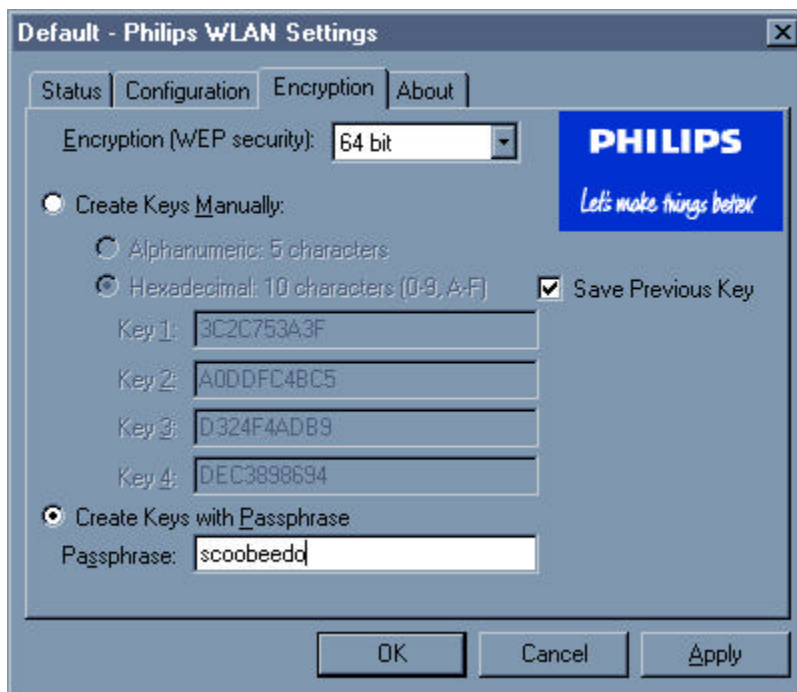
4.2.2 Enabling Encryption

To enable encryption, click the down arrow at the right of the Encryption field, select either 64 bit or 128 bit, and click the Apply button. After

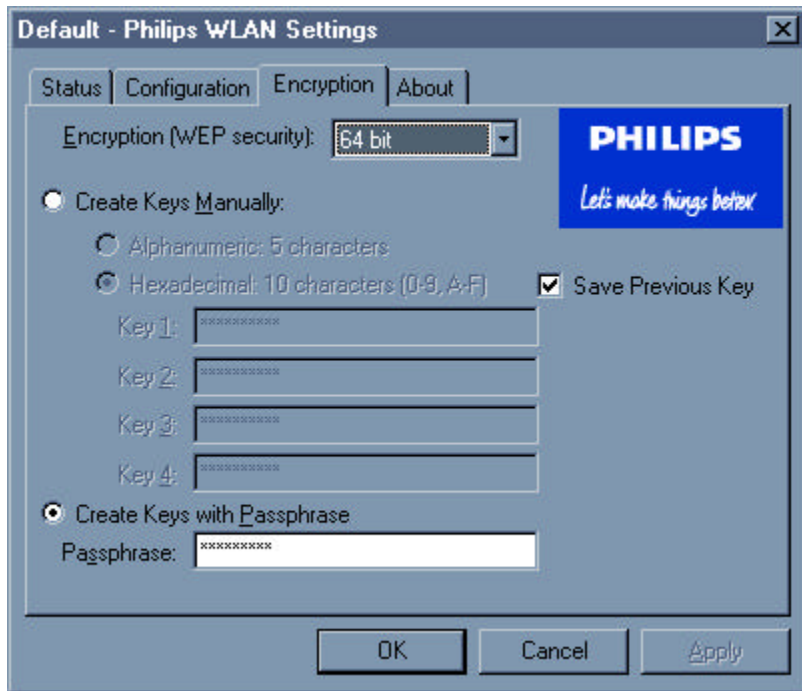
enabling an encryption method, you must then specify encryption keys, as described in the following sections.

4.2.3 Creating Encryption Keys Using a Passphrase

To create encryption keys using a passphrase, click the radio button next to Create Key with Passphrase and type a character string in the Passphrase field. As you type, the Configuration Utility uses an algorithm to generate four keys used for encryption.



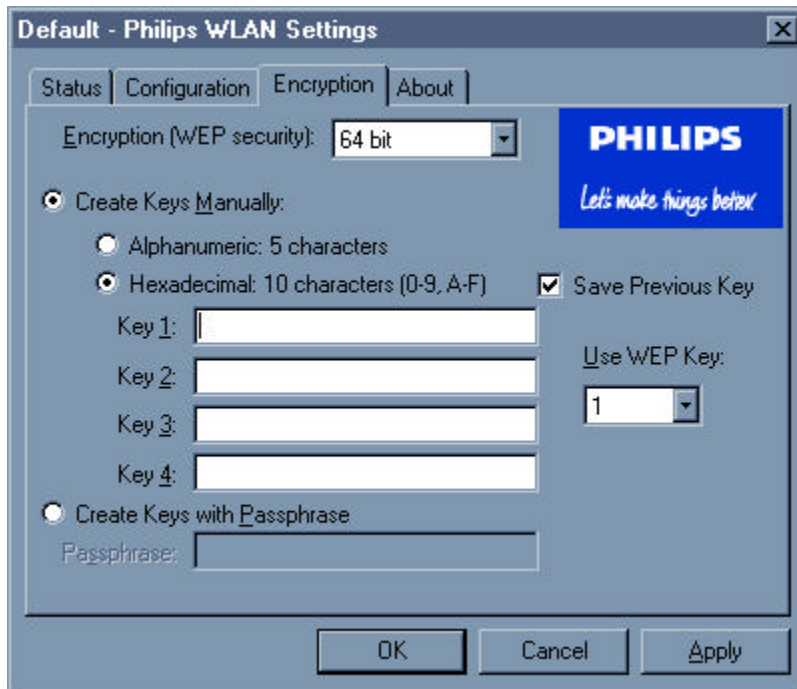
When you finish typing your character string and click the Apply button, the Configuration Utility uses asterisks to mask both your passphrase and the keys it generates.



Using a passphrase to generate the four keys makes it easy to set the same keys for all members of your wireless LAN.

4.2.4 Creating Encryption Keys Manually

If you want, you can create encryption keys manually by clicking the radio button next to Create Key Manually, as shown in the following illustration.



When you click this button, the cursor appears in the field for Key 1.

4.2.4.1 Alphanumeric:

For 64-bit encryption, you must type *exactly* 5 characters in each of the four key fields; for 128-bit encryption, you must type *exactly* 13 characters. You then click the Apply button to create your encryption keys. After you click the Apply button, the Configuration Utility uses asterisks to mask your keys.

4.2.4.2 Hexadecimal:

For 64-bit encryption, you must type *exactly* 10 hexadecimal digits in each of the four key fields; for 128-bit encryption, you must type *exactly* 26 hexadecimal digits. You then click the Apply button to create your encryption keys. After you click the Apply button, the Configuration Utility uses asterisks to mask your keys.

4.2.5 Save Previous Key

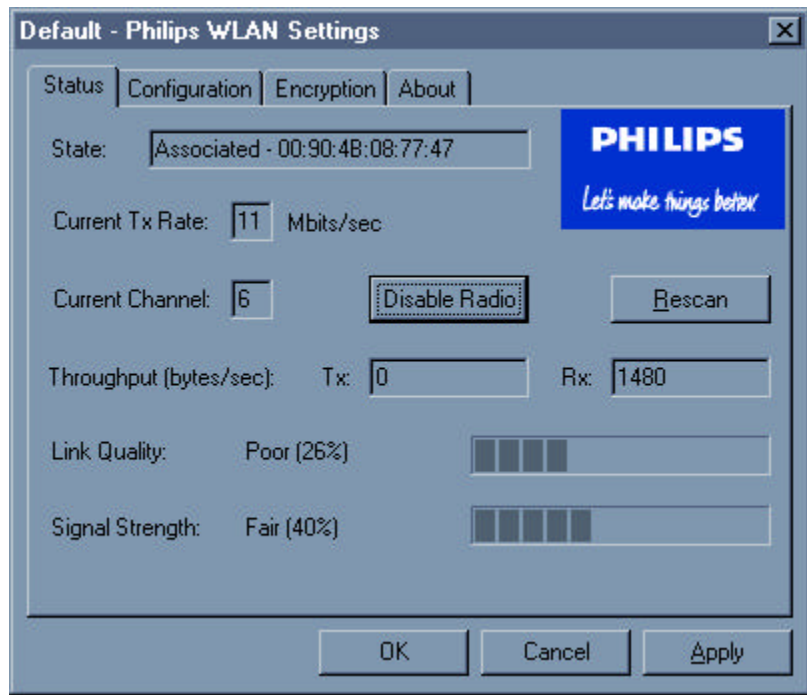
The Save Previous Key checkbox give you option of previous key recall when you apply the new key. If it is unchecked, previous key will be lost after you apply new key.

4.2.6 Default Key

The Default Key field lets you specify which of the four encryption keys you use to transmit data on your wireless LAN. You can change the default key by clicking on the down arrow at the right of this field, selecting the number of the key you want to use, and then clicking the Apply button. As long as the Access Point or station with which you are communicating has the same key in the same position, you can use any of the keys as the default.

4.3 **Status Tab**

The Status menu provides information on the status of your communications with the wireless LAN.



The fields in this menu provide the following information:

- **State:** shows the association state of your computer with the wireless LAN. When operating in Access Point type, this field shows the MAC address of the Access Point with which you are communicating. When operating in Peer-to-Peer type, this field shows the virtual MAC address used by computers participating in the Peer-to-Peer network.
- **Current Channel:** shows the channel on which the connection is made. In Access Point type, this number changes as the radio scans the available channels.
- **Current Tx Rate:** shows the highest transmit rate of the current association.
- **Throughput:** shows the short term transmit and receive throughput in bytes/second, and is continuously updated.
- **Link Quality:** is based on the quality of the received signal of the Access Point beacon.
- **Signal Strength:** is based on the received signal strength measurement of the baseband processor of the Beacon signal.

You can click the Rescan button to force the radio to rescan all available channels. If your link quality or signal strength is poor, rescanning can be used to push the radio off a weak Access Point and search for a better link with another Access Point.

Radio On/Off button let you turn the wireless radio on or off.

4.4 About Tab

The About menu provides information on the version of the Network Driver, the Configuration Utility, and the firmware in the PHILIPS WLAN Interface card. In addition, this menu also provides the MAC address of the PHILIPS WLAN card.



Agency Requirements

Federal Communications Commission Notice

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 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 or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Philips Components may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Declaration of Conformity for products marked with the FCC logo - United States only

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.

For questions regarding your product, contact:

Philips Components

Or, call

1-800-

For questions regarding this FCC declaration, contact:

Or, call

To identify this product, refer to the Part, Series, or Model number found on the product.

Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Japanese Notice

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Wireless Notices

In some situations or environments, the use of wireless devices may be restricted. Such restrictions may apply aboard airplanes, in hospitals, near explosives, in hazardous locations, etc.

If you are uncertain of the policy that applies to the use of this device, please ask for authorization to use it prior to turning it on.

Canadian Regulatory Wireless Notice

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

European Union Notice



Products bearing the CE marking comply with the R&TTE Directive (1999/5/EC), EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22) – Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) – Electromagnetic Immunity
- EN61000-3-3 (IEC61000-3-3) – Power Line Flicker
- EN 60950 (IEC 60950) – Product Safety
- ETS 300 328 – Technical requirements for radio equipment
- ETS 300 826 – General EMC requirements for radio equipment

This product may be used in all EU and EFTA countries.

Japanese Notice

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- 3 その他、この機器から移動体識別用の特定小電力無線局に対して電波干渉の事例が発生した場合など何かお困りのことが起きたときは、次の連絡先へお問い合わせ下さい。

連絡先：コンパックコンピュータ株式会社 TEL：0120-101589

2.4 FH 2
