IEEE 802.11b WLAN PC Card
WarpLink 2411

User's Guide

Version:1.08

Please install the Utility/Driver first before inserting the PCMCIA Card.

FCC Class B Radio Frequency Interference Statement

Note:

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, 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:

1. Reorient or relocate the receiving antenna.

2. Increase the separation between the equipment and receiver.

3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

4. Consult the dealer or an experienced radio/television technician for help.

Notice 1:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2:

Shielded interface cables, if any, must be used in order to comply with the emission limits.

Notice 3:

This device complies with part 15 of the FCC Rules. The operation is subject to the following two conditions:

(1) This device may not cause harmful interference.
(2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: To comply with FCC RF exposure compliance requirements, a separation distance of at least 2.5cm must be maintained between the antenna of this device and all persons."

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1 Introduction

Thank you for purchasing our IEEE802.11b WLAN PCMCIA Card. It will be interoperable among IEEE 802.11b standard compliant products from other manufacturers and allows you to build a wireless LAN. Besides, you can use your PC to connect with an access point wirelessly to share the wired network resource:

a. Share your Internet access by using just *one* connection

b. Share printers and other peripheral devices

c. Share data and image files between networked PCs

d. Play multi-player games

IEEE802.11b WLAN can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to eleven megabit per second. With IEEE802.11b WLAN you can locate your PC wherever you want without wires and cables.

IEEE802.11b WLAN provide LAN users with great mobility, which are not available under wired network, for real-time information access at anywhere within a reasonable distance.

The IEEE802.11b WLAN configuration is easy to change from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

Please read this manual to get familiar with the IEEE802.11b WLAN. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

Kit Contents

The IEEE802.11b WLAN PC Card kit includes the following items:

a. A PCMCIA Card

b. A CD including:IEEE802.11b WLAN Utility & Driver software, Acrobat Reader3.0 and user manual PDF file.

c. The User's Guide (this document)

2 Installation

2.1 Overview

In this chapter we will cover how to install the IEEE802.11b WLAN PCMCIA Card.

To establish your wireless network connection, the following steps should be executed.

1. Install the software using the installation CD

2. Install the wireless LAN card.

3. Install the required network protocols to communicate with your network. Most likely, you will need the TCP/IP protocol.

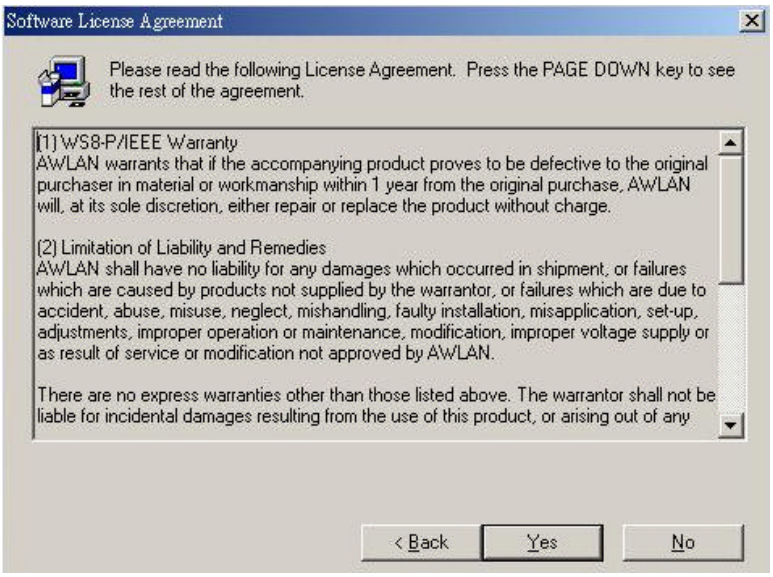
The product is designed to operate in Windows 98SE, Windows Me, Windows NT4.0 with Service Pack 3 or later and Windows 2000. And the installation procedure is about the same. Please follow up the installation wizard that provided by your system to install the software. The example here is based on Window 98SE.

2.2 Install the IEEE802.11b WLAN Utility/Driver

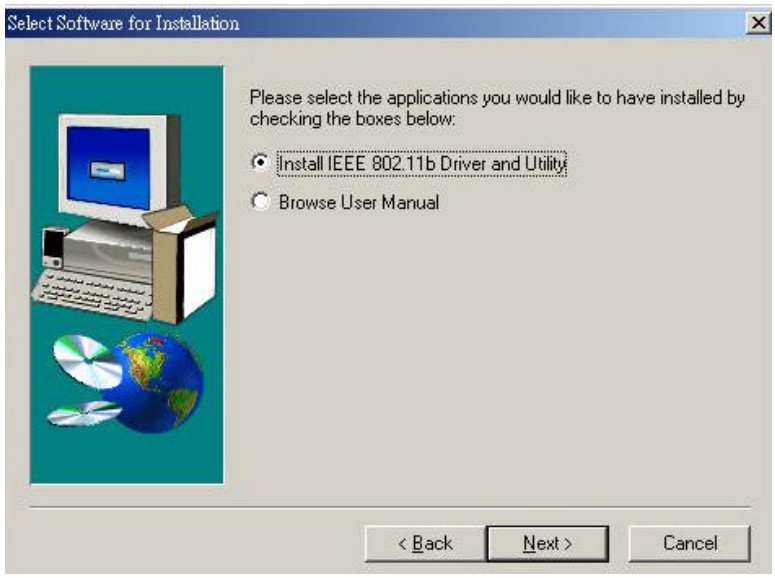
Please install the IEEE802.11b WLAN Utility/Driver first before inserting the IEEE802.11b WLAN PCMCIA Card.

1. Insert the IEEE802.11b WLAN installation CD into your CD-ROM drive. The setup program will then automatically start.
2. The setup program will start and the setup screen will appear on your monitor. Select " Next " to go to the next screen.

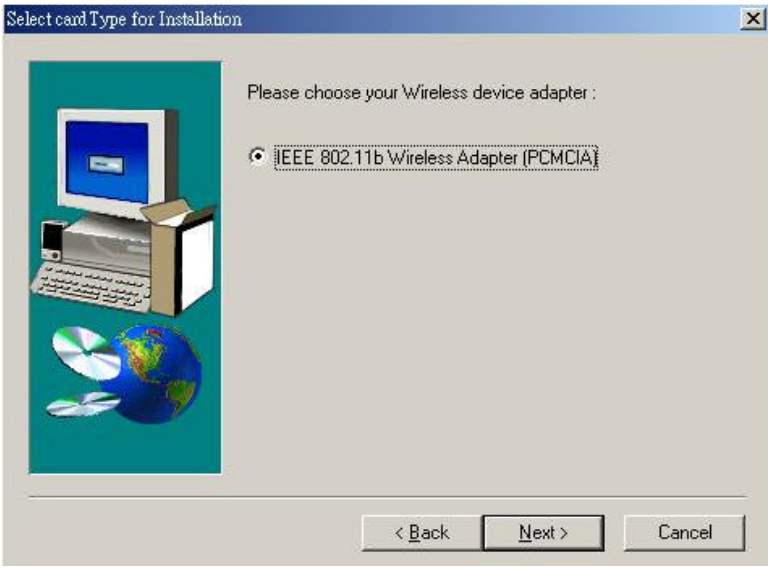
3. Please carefully read the " Software License Agreement. " If you accept the contract, click " Yes " to move to the next screen. If not, click " No " to exit.



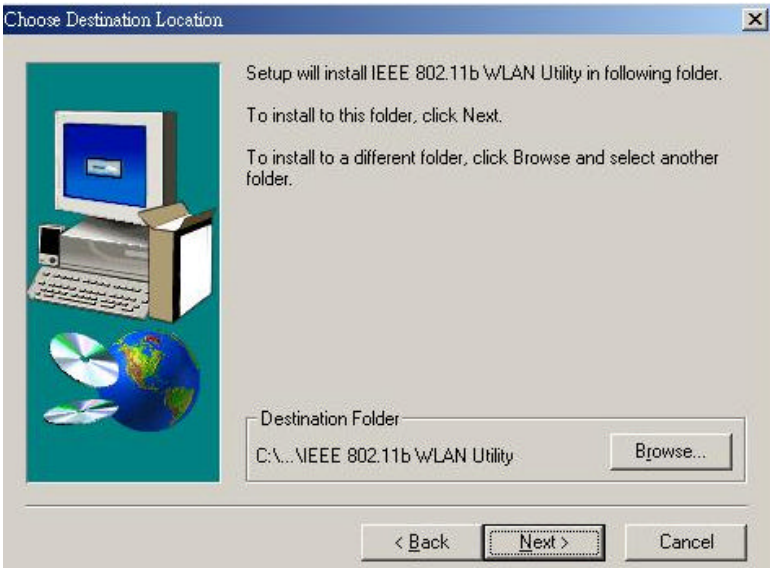
4. Please select the applications you would like to install, and click " Next " . If you select " Browse User Manual " system will prompt a message to suggest you installing Acrobat Reader.



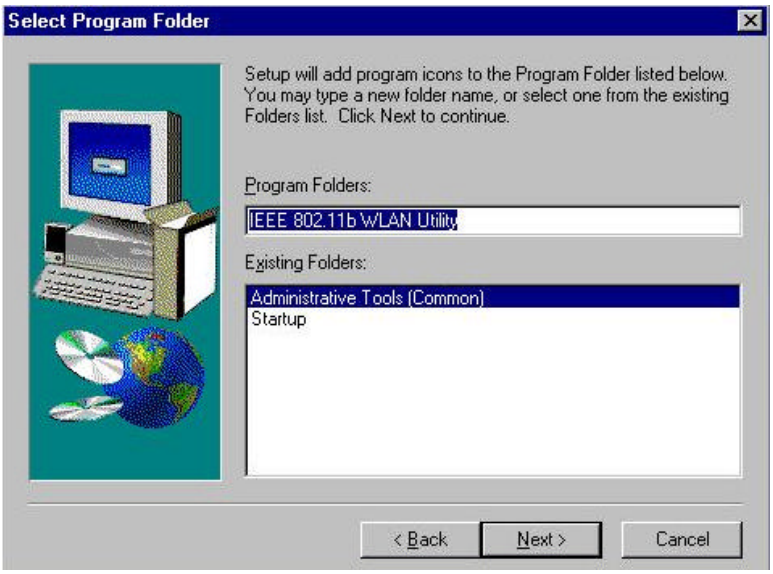
5. Please choose your wireless device adapter, and click " Next " .



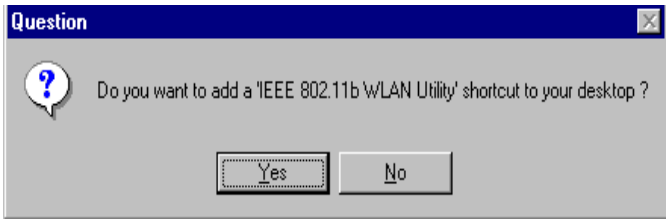
6. The default destination folder is displayed in the setup dialog box. To change the default folder you can click " Browse " to set the destination folder. Click " Next " to go to the next screen.



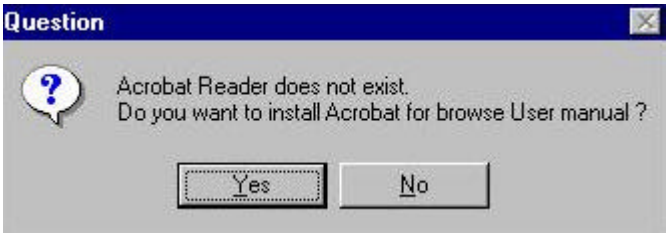
7. Select the Program Folder for IEEE802.11b WLAN Utility and click " Next " .



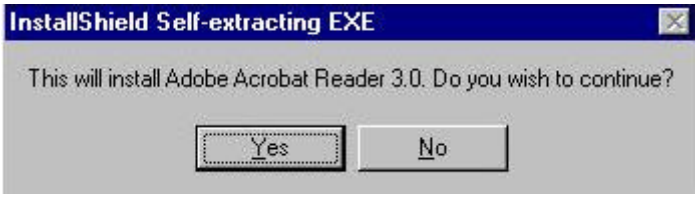
8. You will be asked if you want to add an IEEE802.11b WLAN Utility shortcut to your desktop. Click " Yes " .



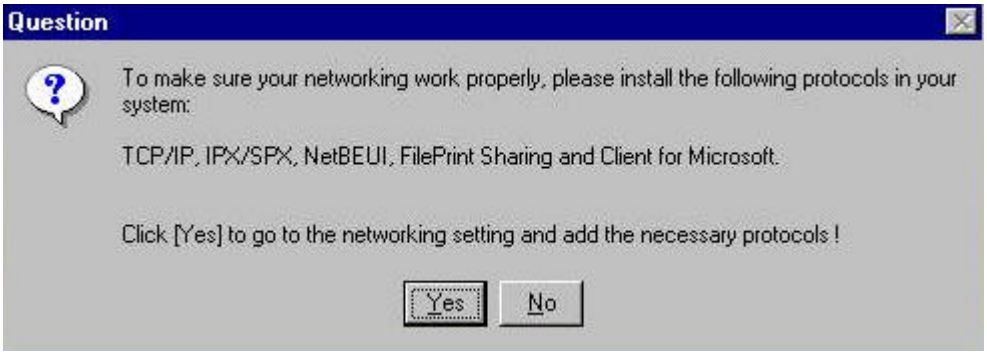
9. The user manual is published in Portable Document Format (PDF); we suggest you install Acrobat Reader to read it. If Acrobat Reader doesn't exist in your system, a " Question " dialog box will prompt as follows. Select " Yes " to install Acrobat for browsing user manual.



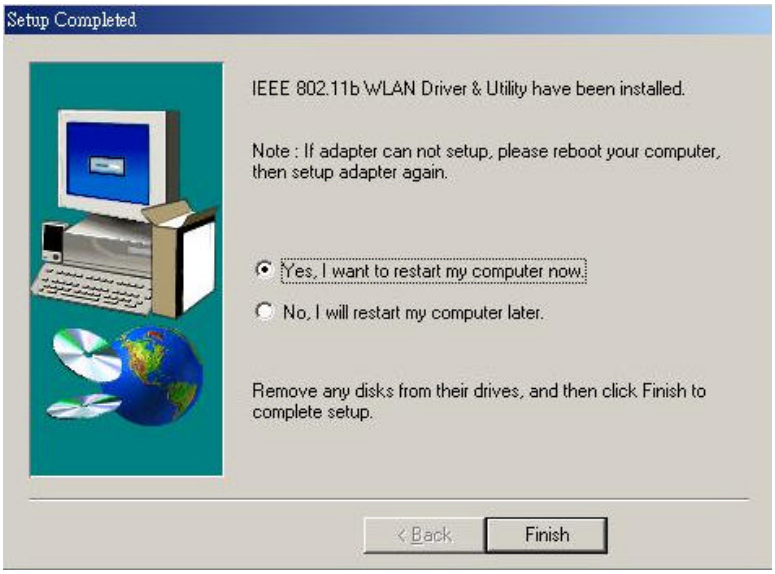
10. If you are sure to install Acrobat, click " Yes " and then system will guide you to enter the Acrobat Reader 3.0 setup program. Follow the setup procedure to complete the Acrobat Reader 3.0 installation.



11. The following page will remind you to install Microsoft network protocols for IEEE802.11b WLAN to work properly. If the network protocol has existed in your system, click " No " to the next page, otherwise click " Yes " to go to the network setting and add the necessary protocols. Please refer to the session 4.2 Microsoft Networking Checklist for the detailed Microsoft network setting. If you add the necessary protocols and finish the network setting, system will prompt a reboot request and then click " No " to go to the next page.



12. The Driver and Help files will be copied to the system. Wait for the setup program to finish the IEEE802.11b WLAN installation. Then select " Yes " and click " Finish " to complete the installation. It's recommended to close other applications before rebooting your system.

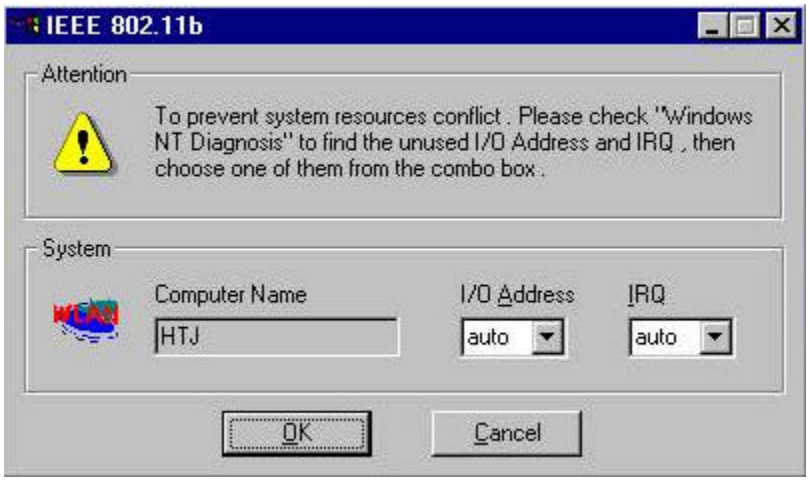


13. To install the PCMCIA card, please refer to the chapter 2.3. " Install the PCMCIA card. "

Additional Note for Windows NT4.0

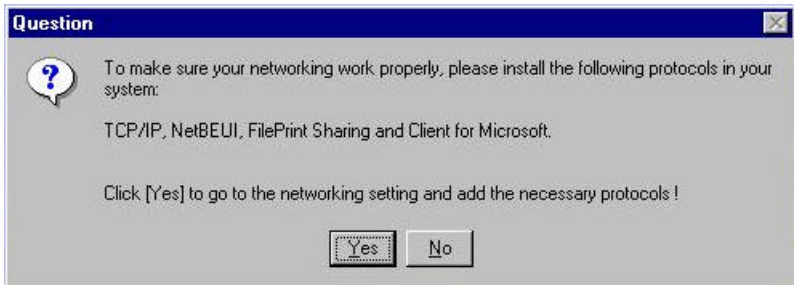
The installation procedure under Windows NT4.0 will be a little different from Windows 98 shown below. It will be change after step10 refer to the installation of Windows 98.

1. Click " OK " and system will auto-select I/O address and IRQ and remind you to choose the unused I/O address and IRQ from Windows NT Diagnosis to prevent system resource conflict.

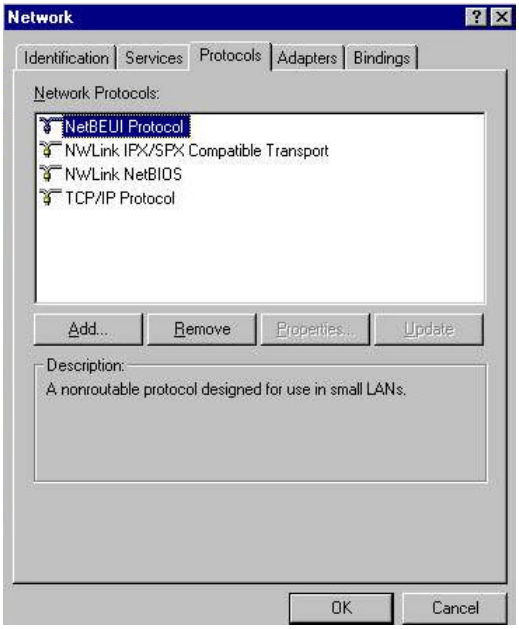


2. If the Ndis 3.0 packet driver has already existed in your system, the setup message will be prompted as follows, just click " OK " .

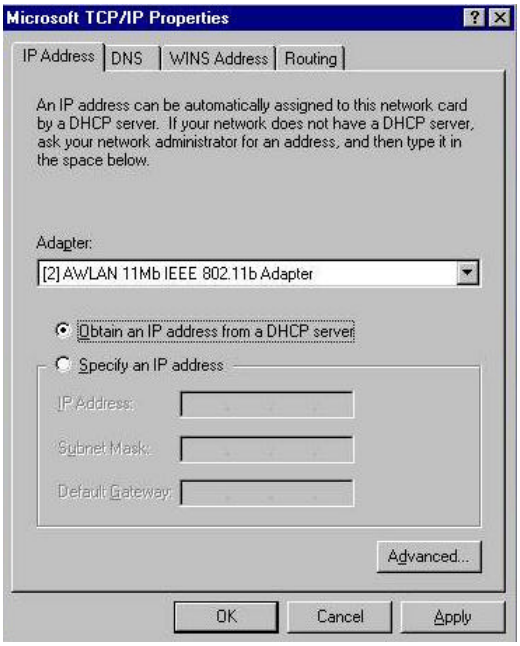
3. A prompt of networking setting will appear as follows. It's the same as Windows 98 operating system.



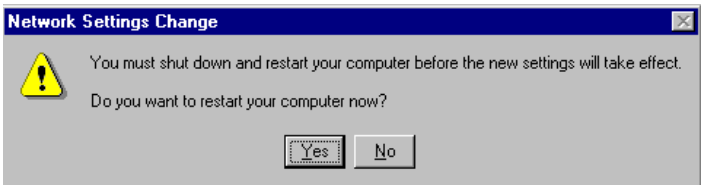
4. The Network properties page will appear automatically in the screen if you click " Yes " in the last step. You should choose " AWLAN 11 Mb IEEE802.11b Adapter " in the Network Adapter of upper menu and add necessary protocols, then click OK.



5. The Microsoft TCP/IP setting page will be prompted. You can use DHCP or manual set the IP address. The related Microsoft Networking setting is like Windows 98.



6. Click " Yes " and insert IEEE802.11b WLAN PC card before system reboot.

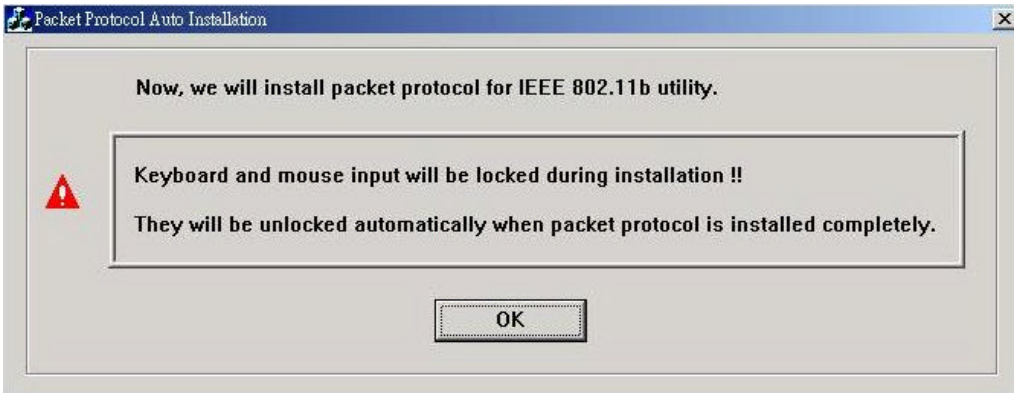


Additional Note for Windows 2000 to install Packet Protocol

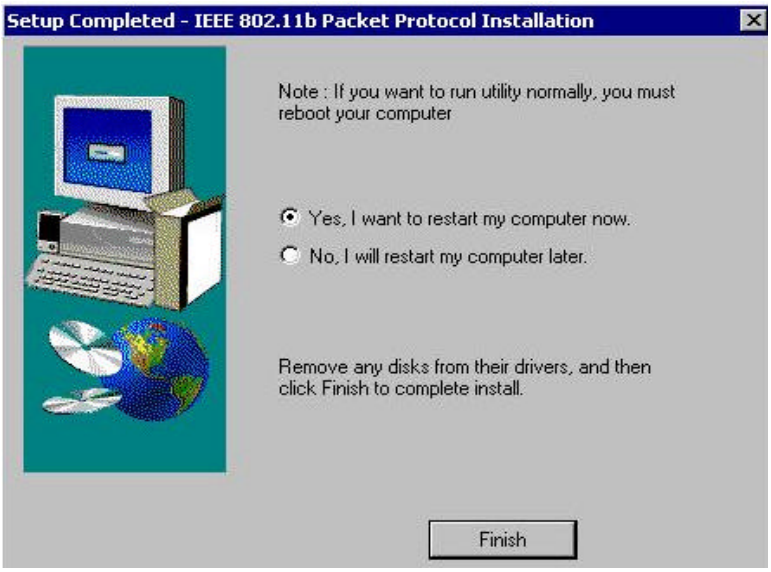
You should add Packet Protocol under Windows 2000If the Packet Protocol doesn't exist in your system. The installation procedure will be a little different from Windows 98. A message will be prompted to guide you to auto-install Packet Protocol. Follow the on–screen instructions as listed below to complete the IEEE802.11b WLAN Utility and driver installation.

1. Please insert 802.11b adapter (refer to section 2.3) .If the adapter installation completed, click on " Yes " .

2. If your wireless adapter installed successfully, you will enter " Packet Protocol Auto Installation " frame, click on " OK " and system will auto-install Packet Protocol.



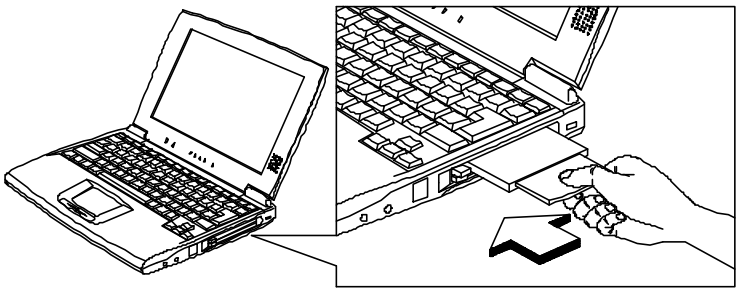
3. If Packet Protocol installed successfully, you have to reboot your system and the IEEE802.11b Utility/driver installation under Windows 2000 is complete.



4. If the Packet Protocol installation has failed, a message will be prompted as follows. Click " OK " to continue next step.

5. System will give you an on-screen instruction as follows to install the Packet Protocol. Remember and follow the procedure to complete the Packet Protocol installation and then click " OK " .

2.3 Install the PCMCIA card



The IEEE802.11b WLAN driver and utilities are included on the accompanying installation CD. Please follow the installation procedures in Section 2.2. (Your PCMCIA card will not work properly if the driver and utilities are not installed correctly.)

Make sure that there is an empty PCMCIA slot for IEEE802.11b WLAN PC card. Install the IEEE802.11b WLAN Utility/Driver first before inserting the PCMCIA card.

1. Insert the PCMCIA Card and then the system will automatically start.

If you're asked to insert a " Windows 98 CD-ROM " during the installation, insert your " Windows 98 CD-ROM " and click " Yes " . Once the setup task is completed, the " Microsoft Internet Explorer " should start up. Please close it.

2. When the PCMCIA card setup task is completed, you can start up the IEEE 802.11b WLAN Utility. To start up the utility, please refer to the chapter 2.4 " Utility Start up Configuration " .

2.4 Utility Startup Configuration

IEEE802.11b WLAN PCMCIA Adapter/Card has its own management software. Users can control all functions provided by the application named IEEE802.11b WLAN Utility. The Utility icon will appear in the working bar by clicking the IEEE802.11b WLAN Utility shortcut on your desktop. The definition of the color of the Utility icon is as follows:

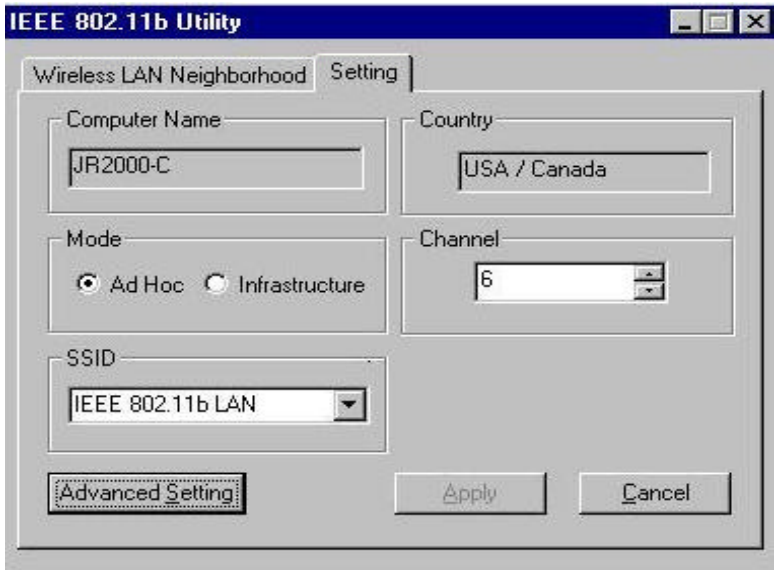
Connected (Green) low quality (Yellow) disconnected (Red)

Double click the icon and the IEEE802.11b Utility will be opened.

2.4.1 Setting

This page is aimed at the basic setting of IEEE802.11b WLAN. You can set the configuration by changing the following items and click " Apply " .

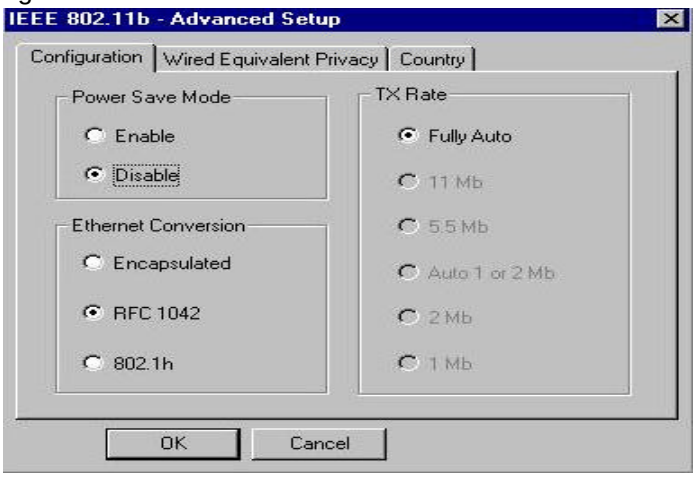
- Computer Name: The login name of your computer.
- Mode: If you want to connect with an access point, choose " Infrastructure " . If you have more stations and just want to set them as peer- to- peer local network, choose " Ad Hoc " .
- SSID :It is the group name that will be shared by every member of your wireless network .You will only be able to connect with an Access Point (AP), which has the same SSID. Note that the SSID will be the continuous string excluding blank and case sensitivity.
- Channel: It shows radio channel numbers used for networking. The Channel can be changed only under the Ad Hoc Mode. If the Mode is Infrastructure, this parameter will not be active. Infrastructure Client nodes will always go to the same channel as their AP.



- Click " Advanced Setting " and then the following advanced setting about your IEEE802.11b WLAN will be displayed.

Configuration

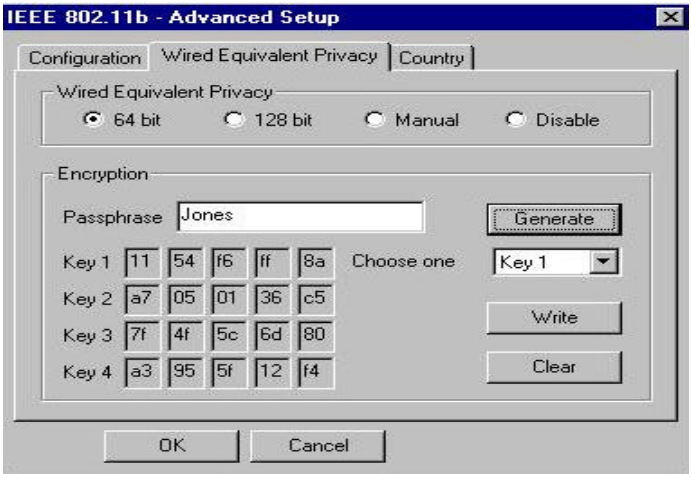
- It displays the configuration items that you can change under the AdHoc mode: Power Saving Mode, Ethernet Conversion and Data Transmission Rate. If the mode is Infrastructure, The Tx Rate will be fixed in " Fully Auto " and users can't change it.



Wired Equivalent Privacy

- If you would like to enable WEP, the system will prompt a message to suggest that you contact with your network administrator.

- You may desire an additional measure of security in your wireless network, which can be achieved by using the Wired Equivalent Privacy (WEP). Follow the steps below to set your WEP:
  (1) Select the data privacy algorithm you want (64 or 128 bit WEP type)
  (2) Type Pass phrase
  (3) Click " Generate " to generate automatically the corresponding WEP key. If select 64 bit WEP type, 4 sets of WEP key will be generated; if select 128 bit WEP type, only a set WEP key will be generated.
  (4) Choose one key (under 64 bit WEP type)
  (5) Click " Write " and then press " OK " . WEP encrypts each frame transmitted from the radio, using one of the keys entered from this panel.
  (6) If you select " Manual " , you can type the 64bit WEP key manually. Especially note that all the blanks of WEP key have to be filled by manual typing. Click on " Clear " you can clean away all the settings of Encryption.



Country

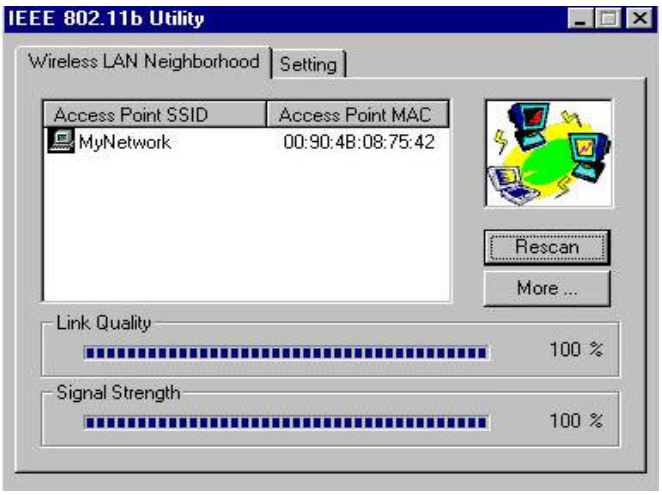
- Every country has different legal frequency range. Please choose proper country setting. Under the infrastructure mode, the setting value will be determined by the Access Point and can't be set by users.

2.4.2 Wireless LAN Neighborhood

- The Access Point SSID and Access Point MAC will appear in the screen if you choose the Infrastructure Mode. Your Station Name and MAC Address will appear if you choose the Ad Hoc Mode. (Please refer to the 2.4.1 Setting to set your network mode.) The status of the Link Quality and Signal Strength will be showed under the Wireless LAN Neighborhood.

- Double click the Access Point SSID (under the Infrastructure Mode) or Network Neighbors in the frame of Utility (under the Ad Hoc Mode) to access to the Microsoft Network Neighborhood folder to find other on-line computers.

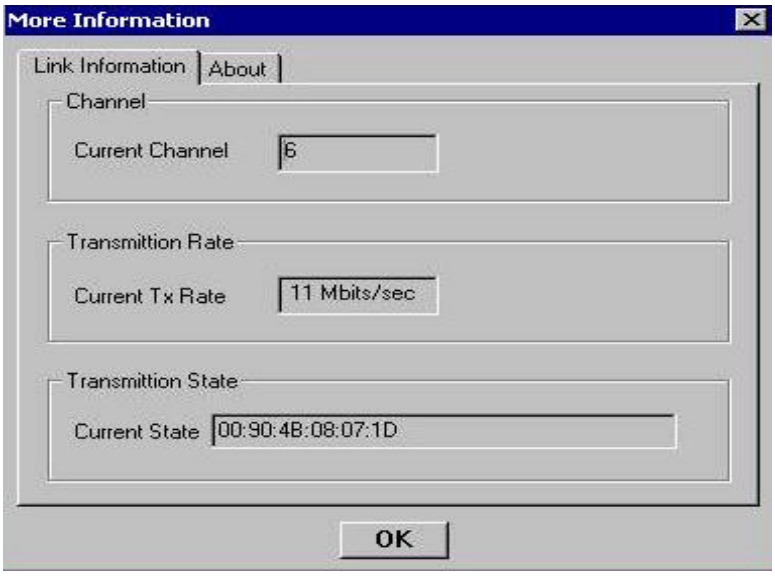
- Click " Rescan " if you don't find any other station.



- Clicking " More " will spread the following information about your network:

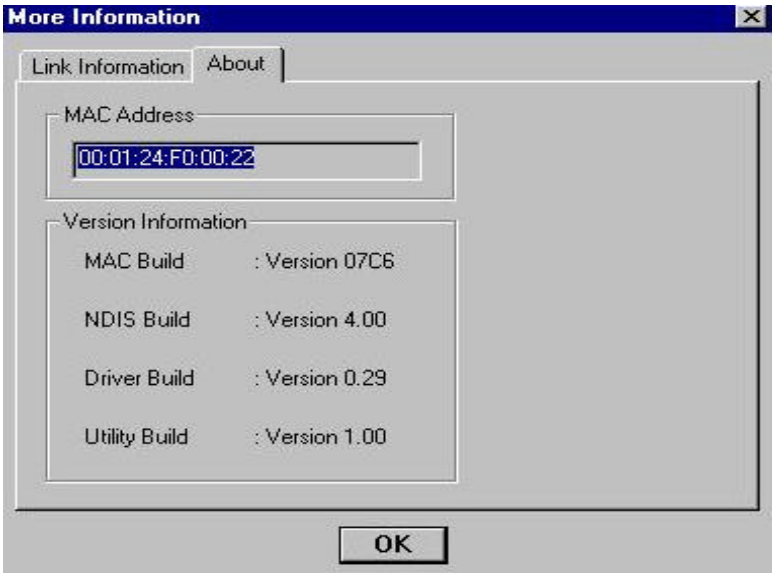
Link Information

- The link information, including the Current Channel, Transmission Rate, Transmission State, is revealed here.



About

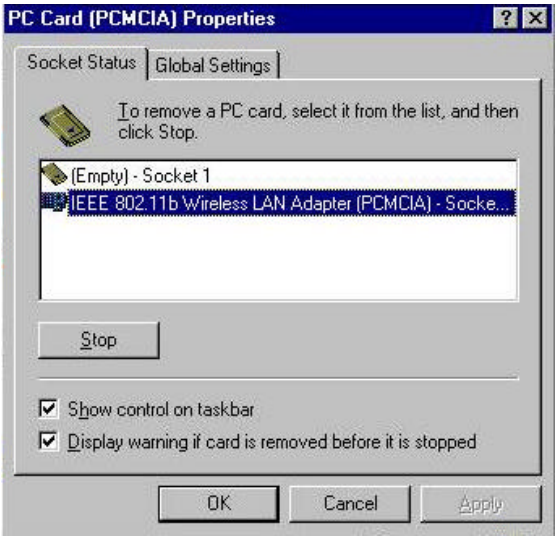
- From this dialog box, you can get the details such as the MAC address and the version information of each S/W.



2.5 Uninstall the IEEE802.11b WLAN Utility / Driver

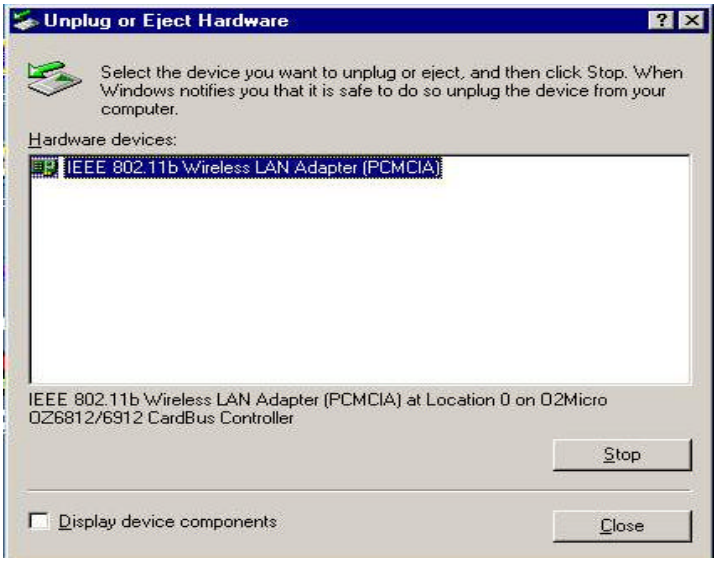
1. First you should remove the IEEE802.11b WLAN PC card. To safely remove your PC card, we suggest you should follow the procedure below.

   Click the Start Menu, choose Settings – Control Panel, and click the PC Card (PCMCIA) icon. You will enter the PC Card (PCMCIA) Properties page as follows, choose " IEEE802.11b Wireless LAN Adapter " and then click the " Stop " button to disable PCMCIA socket. As the message: " You may safely remove the device " prompted you may remove your PC card.



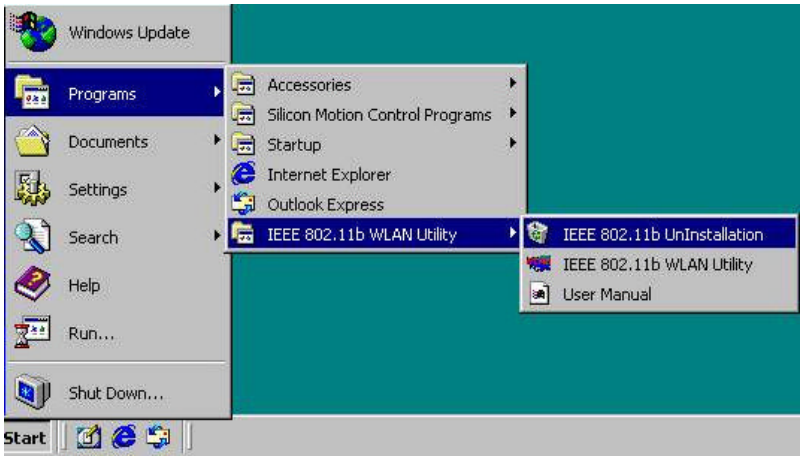
Additional Note for Windows Me

If you use Windows Me operating system, you may double click the " Unplug or Eject Hardware " icon at the lower right side of the screen to enter the picture as follows. You may choose the IEEE802.11b Wireless LAN Adapter from Hardware devices list and then click " Stop " button to remove this device. The procedure is like on Windows98 operating system.

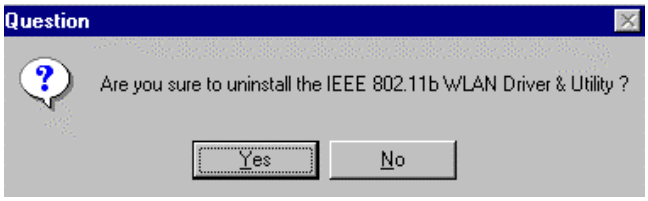


2. To exit the IEEE802.11b WLAN Utility, you should click the right bottom on the Utility icon in the working bar and select " Exit " .

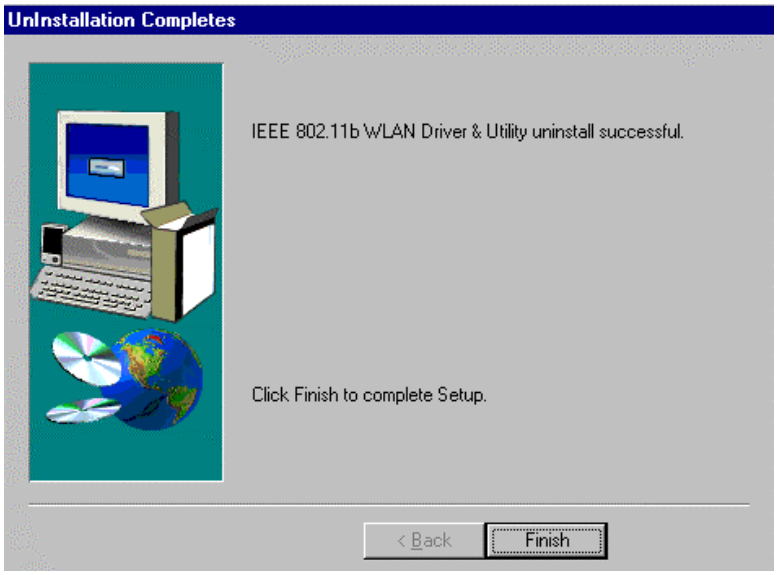
3. To uninstall the IEEE802.11b WLAN Utility and Driver, you can move to Start – Programs – IEEE802.11b WLAN Utility, and click " IEEE802.11b Un-Installation " .



4. You will be asked if you want to uninstall the IEEE802.11b WLAN Utility and all of its components. Click " Yes " to start to uninstall or click " No " to exit.



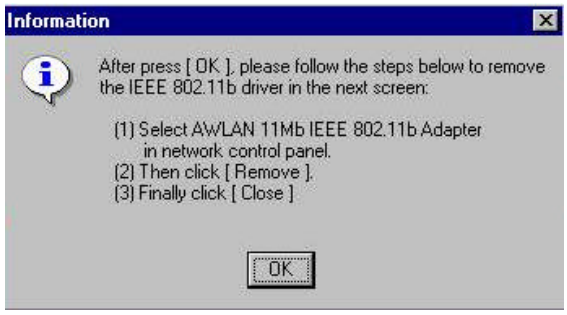
5. Now the un-installation is completed. Please click " Finish " .



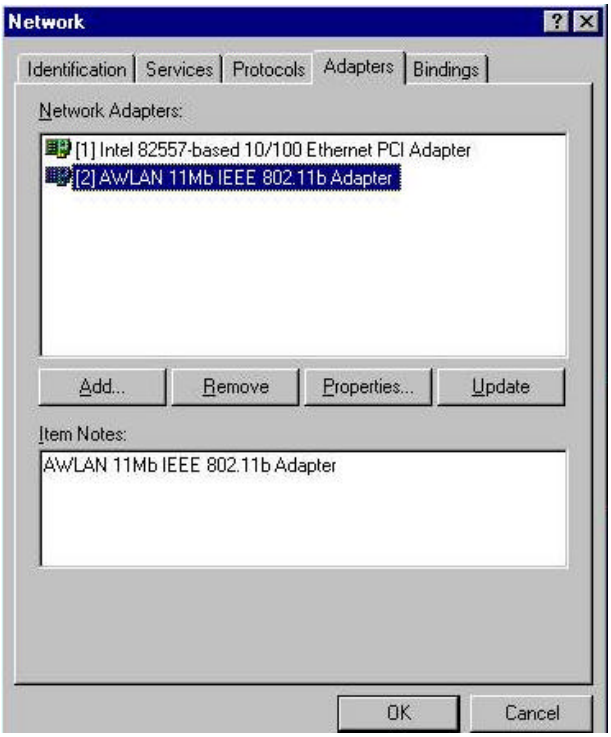
Additional Note for Windows NT4.0

The additional pages will be prompted as follows under the un-installation procedure on Windows NT 4.0 operating system.

1. A un-installation guide will be prompted as follows, just click " OK " and follow the steps on it.

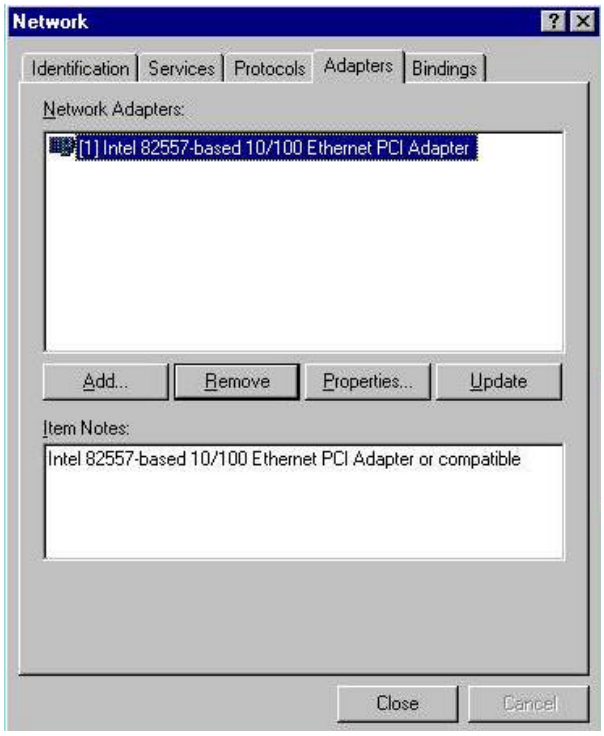


2. The network properties page will be prompted automatically as follows, select " AWLAN 11Mb IEEE 802.11b Adapter " and then click on " Remove " button. If the step is finished press " OK " .



3. The warning message will appear as follows if you want to remove the component from the system, and then click on " Yes " .

4. Make sure the AWLAN 11Mb IEEE 802.11b Adapter has been removed and click on " Close " , and then system will restart.



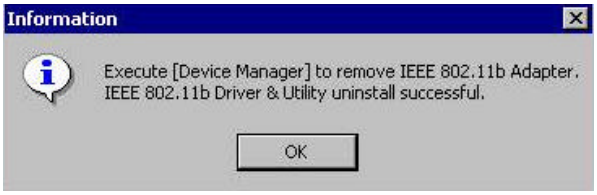
Additional Note for Windows 2000

The following items should be noted:

1. Please don't remove your PC card unless the IEEE802.11b WLAN un-installation is completed.

2. Make sure to exit the IEEE802.11b WLAN Utility before uninstalling.

3. If you are sure to uninstall the IEEE802.11b WLAN Utility and Driver, the system will give you a prompt as below to execute " Device Manager " to remove the IEEE802.11b WLAN adapter, and then click " OK " .



4. System will give you a prompt as below while waiting for " Device Manager " . Follow the instruction to uninstall IEEE802.11b WLAN adapter.

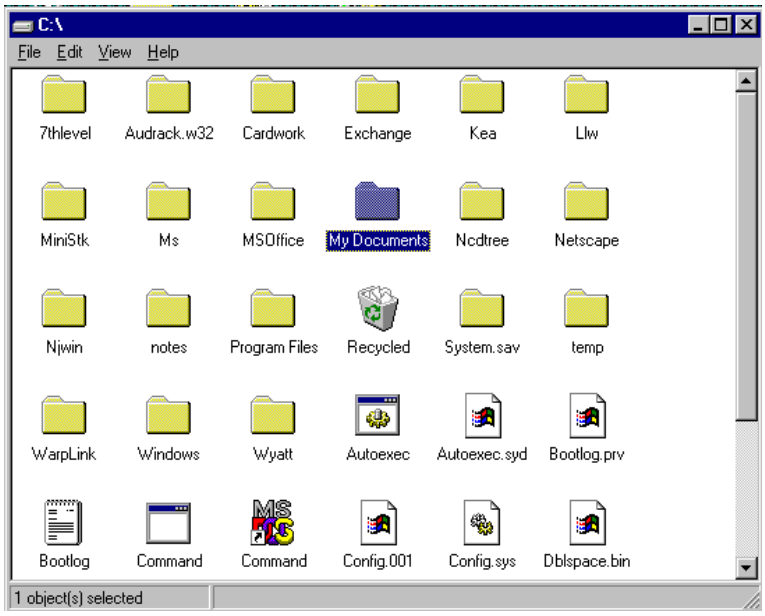
3 Application

To enable the sharing of the Internet access, you should set your IEEE802.11b WLAN mode as " Infrastructure " and connect to the access point (please refer to the chapter 2.4.1 " Setting "). When the procedure is completed, an access point will appear on the Wireless LAN Neighborhood of IEEE802.11b WLAN Utility. Double click it to enter the Network Neighborhood folder. This folder contains the links to all computers in your workgroup on the entire network.

3.1 File Sharing in Microsoft Windows 98

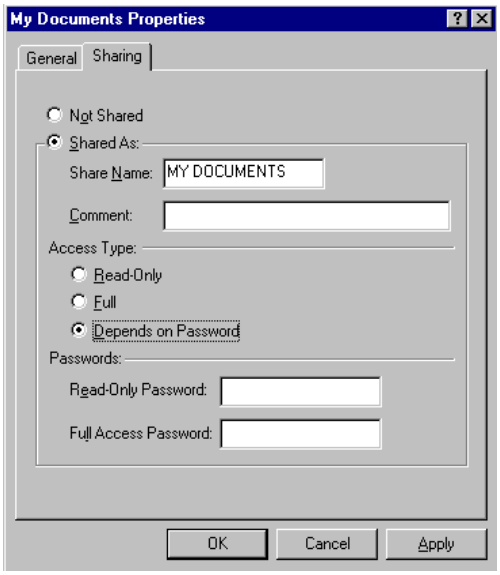
IEEE802.11b WLAN allows the sharing of files between computers that are logged onto the same wireless network. Let's assume that you want your folder " My Documents " to be shared with other computers and the wireless network:

1. First, locate the folder " My Documents " and right click it.



2. Select " Sharing " from the available options.

3. Select " Shared As " to open your folder for file sharing. You can also select and define the level of access you want for your folder.



- If " Read-Only " is selected, the other users in the wireless network can only copy files from your folder. Copying files into your folder is not allowed.

- If " Full " is selected, the other users in the wireless network have full access into your folder. They can copy to and from your folder as well as modify files.

- You can also set the option to " Depends on Password " wherein the user in the wireless network can access to your folder through a set password. The set password will determine if the user can only read your folder or has full access to your folder.

4. Click " Apply " or " OK " to activate the options that you have set.

Now you can see the folder " My Documents " with a little hand under it. The folder is now open for file sharing.

Sharing files in the IEEE802.11b WLAN wireless network will be like sharing files on a wired LAN.

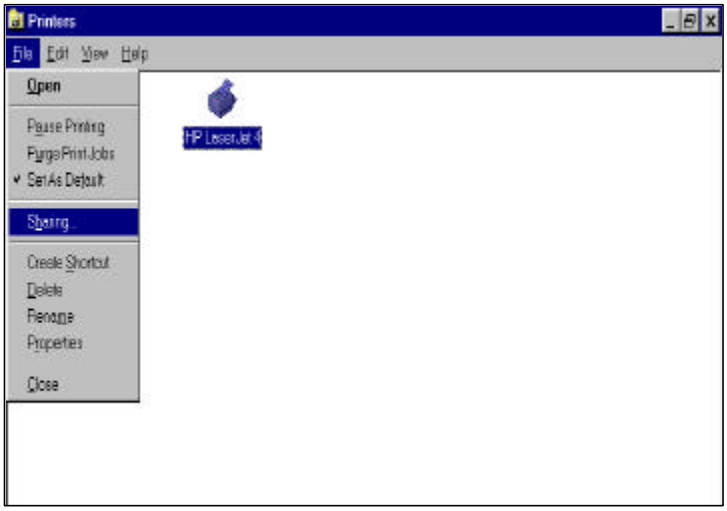
3.2 Printer Sharing in Windows 98

In order for a printer to be shared across the network, it has to be set as the network printer. Follow the instructions below to set a printer as a network printer:

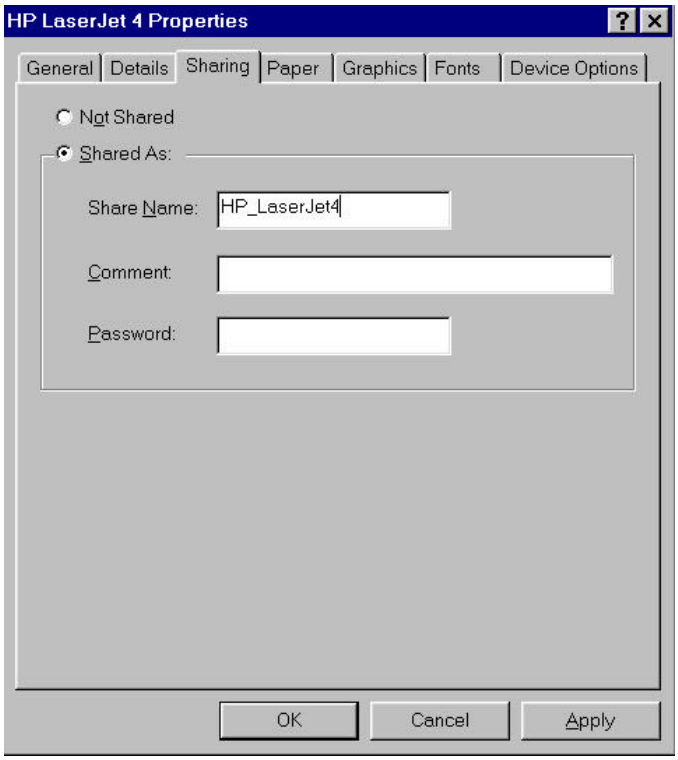
1. Click the " Start " button, point to the " Settings " , and then click " Printers " .

2. In the Printers window, click the printer you want to share.

3. Click " Sharing… " on the " File " menu.



4. Click the Sharing tab, then click " Shared As " , and if necessary, enter a password.



3.3 Using the shared folder

1. Double click the " Network Neighborhood " icon, and then double click the computer where the shared folder is located.

2. Double click the folder you want to connect to.

3. You may want to assign a drive letter for shared folder that you connect to.

4. In the " Network Neighborhood " , double click the computer where the shared folder is located.

5. Click the folder you want to connect, and click " File " menu, and then click " Map Network Drive " .

6. Select an available drive, and then click OK.

Note: If a password is required, the Windows will prompt you. Then you need to enter the password that had been assigned to this shared folder.

3.4 Using the shared network printer

1. In the " Network Neighborhood " , locate and double click the computer where the printer you want to use is located.

2. Double click the printer icon in the window.

3. To set up the printer, follow the instructions on the screen.

Note:

1. After you have set up a network printer, you can use it as if it were attached to your computer.

2. If a password is required, the Windows will prompt you, and you need to enter the password that had been assigned to this shared printer.

Whenever printing a document through the network, be sure to select the printer that is set as the network printer.

4 Troubleshooting

If you encounter some problems installing the IEEE802.11b WLAN PC card or you want to confirm whether your card is installed properly or not, refer to below the procedure after you have installed the card.

4.1 Check the Various Properties of the Card

- Click the " Control Panel " and then the " PC Card " . Check whether there is a PCMCIA card in one of the sockets or not.
- If you find an IEEE802.11b WLAN Adapter (PCMCIA) in one of the sockets, it means a card is detected.
- If you see a Question-mark (?) or Exclamation-mark (!) in yellow, the resources are conflicting.
- Right click " My Computer " and then select " Properties " . Select the Device Manager and click the Network Adapter. You will find the IEEE802.11b WLAN PC Card if it is installed successfully.
- If you see the yellow sign, the resources are conflicting. Click " PCMCIA Card " and then " PCMCIA Card Service " , you can see the status of the PCMCIA Card.
- If there are yellow signs either on the adapter or the PCMCIA card, please check the followings:
  1) Check if your Notebook supports 3.3V Card.
  2) Check if your Notebook has a free IRQ. If not, make an IRQ free by assigning the same IRQ to some devices.
  3) Check that you have inserted the right card and have installed the proper driver.

4.2 Microsoft Networking Checklist

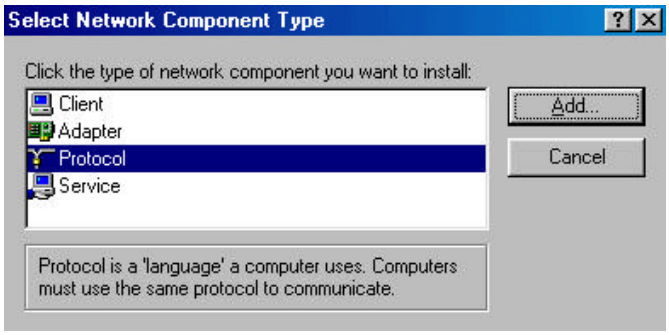
In order for the IEEE802.11b WLAN to run properly, some network items must be presented in the Microsoft " Network Neighborhood " setup. To check and activate the network setup, right click the " Network Neighborhood " with your mouse. The following items should be presented in the network setup:

1. IEEE802.11b Wireless LAN Adapter (PCMCIA)
2. IPX/SPX-compatible Protocol ->IEEE802.11b Wireless LAN Adapter (PCMCIA)
3. NetBEUI -> IEEE802.11b Wireless LAN Adapter (PCMCIA)
4. TCP/IP -> IEEE802.11b Wireless LAN Adapter (PCMCIA)
5. File and printer sharing for Microsoft Networks.
6. Client for Microsoft Networks

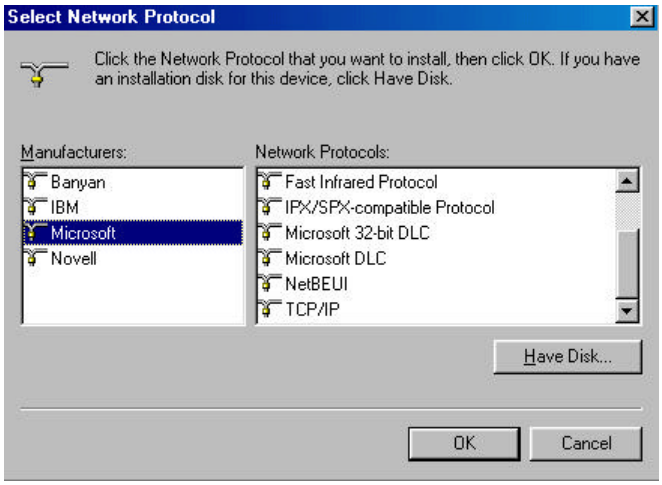
If any of these items are missing, please follow the instructions below to install them properly:

Set up the Network Protocols:

- Click " Add " and select " Protocol " on Network " Configuration " .



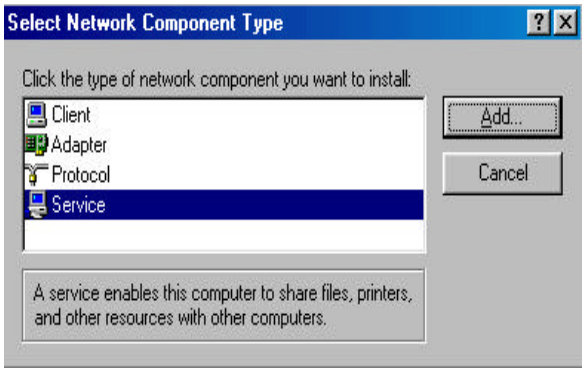
- Click " Add " and then choose the network protocol. Select Microsoft as the manufacturer and " NetBEUI " , " TCP/IP " , and " IPX/SPX-compatible " for the network protocols. Then click " OK; "



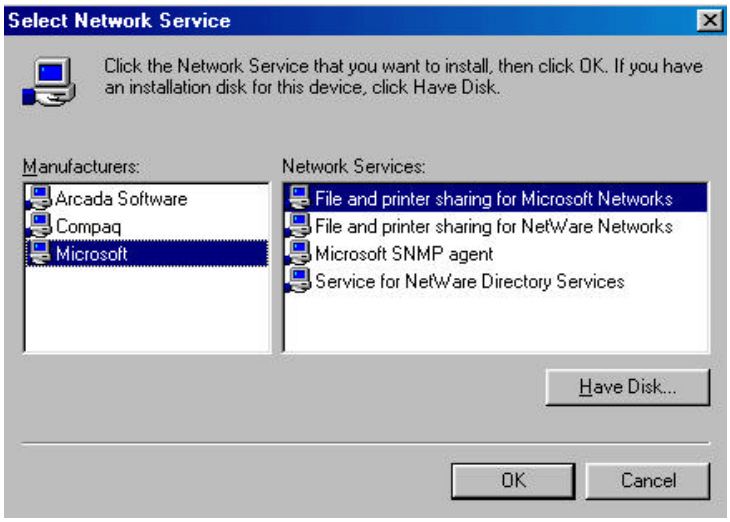
- Now your network protocol should be set. Please check if your network needs any special requirements to operate in your office environment.

Network Service for Microsoft Networking:

- Click " Add " and select " Service " .



- Select " Microsoft " as the manufacturer and choose " File and printer sharing for Microsoft Networks " for network service;



- Click " OK " to set the network service.

4.3 Others

Wired Equivalent Privacy (WEP)

If you set the WEP Pass phrase, which is the same as the Access Point (AP) in your IEEE802.11b WLAN PC card, but still can't connect with the AP. It may be that the key generated by your PC card is different from the key generated by the AP even if the same Pass phrase is used between your PC card and AP. Please follow the steps below to set WEP manually.

1. Check the WEP type and WEP key generated from the AP.
2. Select " Manual " on Wired Equivalent Privacy in your IEEE 802.11b Utility advanced setting.
3. Type a set of WEP key generated from the AP into the key1blank of your Encryption frame, other space you can type anything you like, but make sure all the blanks will be filled.
4. Remember to press the " Write " button and " OK " to finish the WEP setting.

Additional Note for Windows 98 earlier edition

If your system is running Windows 98 first edition, you may use one of the following ways to make IEEE 802.11b WLAN Utility work properly.

1. Copy and replace the file MFC42.dll from c:\windows\system of Windows 98SE to the same directory of your Windows 98 first edition.
2. Upgrade your system and IE from Microsoft web site.

Additional Note for Windows NT4.0

1. If you are not the first time to install WLAN IEEE 802.11b Utility and driver under Windows NT4.0, the following message will be prompted during installation:

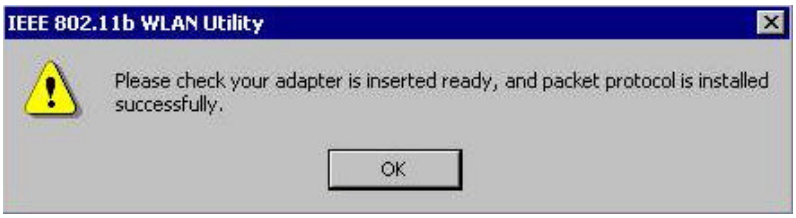
   " NDIS3.0 Packet Driver has existed in the system. " Click " Yes " to update the new driver.

2. If your WLAN Utility and driver can't work properly, make sure the setting of I/O address and IRQ are correct. From Start/System Manager Tool/Windows NT Diagnosis/Resource to find the unused I/O address and IRQ, and then choose one of them from the combo box.

Additional Note for Windows 2000

1. IEEE802.11b WLAN Utility error message

- If the IEEE802.11b WLAN Utility and Driver installation has completed under Windows 2000, but an error message appeared as follows, you should check if your adapter inserted successfully and packet protocol installed successfully. (See Section 2.2 " Install the IEEE802.11b WLAN Utility/Driver " -----Additional note for windows 2000 to install packet protocol, in the User Guide for details.)



2. Uninstall failed

- If you cannot uninstall IEEE802.11b WLAN Utility and Driver successfully. Please follow the procedure below to reinstall the Utility and Driver.
  (1) Find the file AWLAN.isu and delete it from the Programs files\ IEEE802.11bWLAN Utility folder.
  (2) Reboot your system
  (3) Reinstall IEEE802.11b WLAN Utility and Driver.