IEEE 802.11b Wireless USB Adapter

User's Guide

Version: 3.00 — Aug. 2001

Copyright Statement

Notes:

The Product is passed CE and able to be used in these countries as following:

North America: US, Canada

Europe: Germany, France, Italy, England, Spain, Austria, Danish, Finland, Iceland, Luxembourg, Netherlands, Norway, Sweden, Switzerland

Asia: Hongkong, Taiwan, Korea, Singapore

Australia, New Zealand

Radio Channel Selection Table

	Regulatory domains					
Channel_ID	U.S.A.	Canada	Most of Europe	Spain	France	Japan
1	X	X	X	-	-	X
2	X	X	X	-	-	X
3	X	X	X	-	-	X
4	X	X	X	-	-	X
5	X	X	X	-	-	X
6	X	X	X	-	-	X
7	X	X	X	-	-	X
8	X	X	X	-	-	X
9	X	X	X	-	-	X
10	X	X	X	X	X	X
11	X	X	X	X	X	X
12	-	-	X	-	X	X
13	-	-	X	-	X	X
14	-	-	-	-	-	X

X = Yes **- = No**

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Regulatory Information

The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device or the substitution or attachment of connecting cables and equipment other than specified. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user. Built-in antennas, whether installed indoors or out, should be installed only by experienced antenna installation professionals who are familiar with local building and safety codes and, wherever applicable, are licensed by the appropriate government regulatory authorities.

FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

USA – Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for Class B Digital Devices, 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 instruction, 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 the 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.

Canada – Industry Canada (IC)

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

EU Declaration of Conformity (Europe)

USB adapter conforms to the specifications listed below, following the provisions of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC

ETSI	ETS 300 328
	ETS 300 826
Safety	EN60950/IEC950

1. Welcome

Thank you for purchasing IEEE 802.11b USB WLAN Adapter. 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. After install IEEE 802.11b USB Wireless LAN, you can:

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

IEEE 802.11b Wireless LAN can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to eleven megabit per second. With IEEE 802.11b Wireless LAN you can locate your PC wherever you want without wires and cables.

IEEE 802.11b Wireless LAN provides LAN users with an access to real-time information anywhere in their organization. The mobility provides productivity and service, which are not available under wired networks.

The IEEE 802.11b Wireless LAN 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.

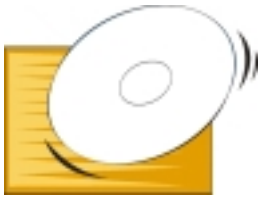
Please read this manual to get familiar with the IEEE 802.11b Wireless LAN. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

1.1 Kit Contents

The IEEE 802.11b WLAN USB Adapter kit includes the following items:

a. An USB Adapter and cable

b. The CD including: 1. IEEE802.11b USB WLAN Utility & Driver software



2. Acrobat Reader 4.05

3. User Manual PDF file

c. The User's Manual (this document)

d. Multi-Language Quick Start Guide

For friendly using, please click the Start Menu, and then choose Programs and select IEEE802.11b USB WLAN Utility. Besides, you can click User Manual to real time instructions after IEEE802.11b USB WLAN Driver & Utility installation completed.

1.2 Advantages for Using Wireless Network

Advantages for Using a Wireless Network:

- *For hard-to-wire areas*: IEEE 802.11b USB WLAN Adapter provides access to network services in areas otherwise hard or expensive to wire, such as historic buildings with asbestos and classrooms.

- *Flexible workgroups*: Lower total cost of ownership for workspaces that are frequently reconfigured.

- *Networked conference rooms*: user can access the network as they move from meeting to meeting, getting up to date access to information and the ability to communicate decision while 'on the go'

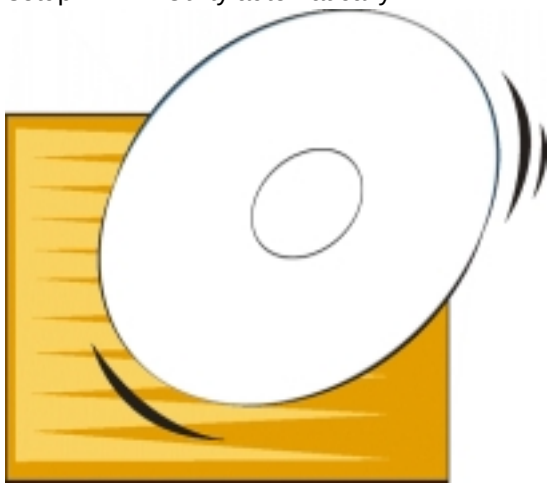
- *802.11 Ad-Hoc networking*: on site consultants and small workgroups increase productivity with quick network setup and collaboration software

- *Branch office networking*: provides an easy-to-install, use-and-maintain network for a remote or sales office

- *Campus-wide network mobility:* roaming capabilities allow enterprise to set up easy-to-use wireless networks that cover the entire campus transparently.

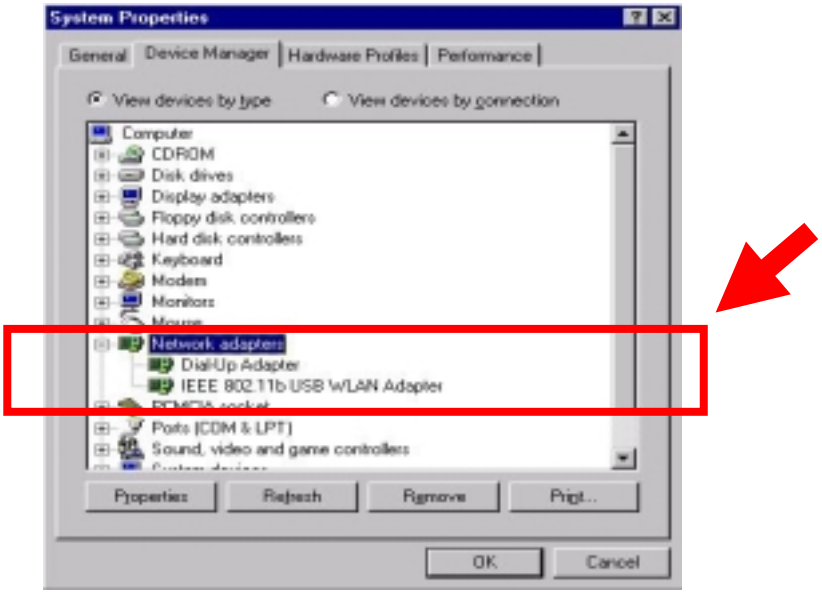
2. Quick Start to Wireless Networking

1. Insert CD into driver and setup WLAN Utility automatically.

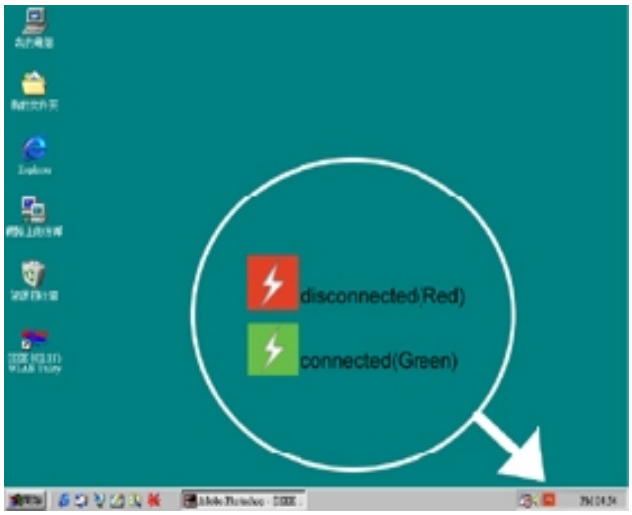


2. Follow the installation wizard to setup step by step.

3. Operation System will detect new device and search for driver automatically, after you install the IEEE 802.11b USB WLAN Adapter. (You can check the Network Adapter in the Device Manager to find that the IEEE 802.11b USB WLAN Adapter has been installed successfully.)

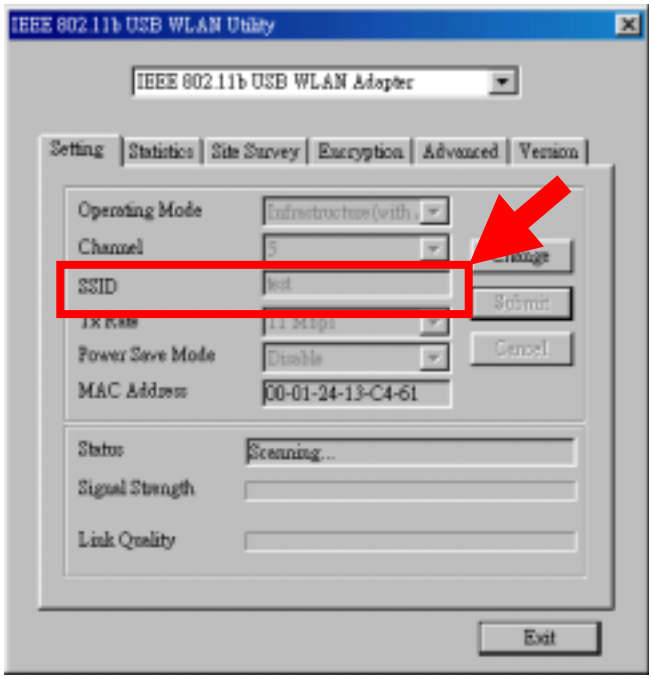


4. Check the toolbar at the bottom of the screen. There is a small icon indicates the connection status. Red color means disconnected and green color means connected (If red color appears, please check whether any AP is nearby; if there is no AP around the USB Device, please install one. Then the small icon should become green color automatically).



5. The default operating mode is “Infrastructure” mode, and the default SSID is “ANY”, which will automatically choose the best performance AP for connection. If you want to select a specific AP to connect with , just click “change” and enter the proper SSID the same as the AP to connect, then click “submit” to enable the setting.

Otherwise, just click “Site Survey” Tab, and click “Rescan” to find all the available AP around your USB WLAN Adapter, then double click the AP’s BSSID that you want to connect with, after that, the utility will automatically choose the proper AP you want to connect with.



6. Click “IE explorer” to surf the Internet.

3. Step by step Installation Guide

This section will lead you through the installation of USB Adapter and IEEE 802.11b USB WLAN software in through details. You may wish to skip to quick start guide to wireless networking.

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

1. Install the software using the installation CD.

2. Install the IEEE 802.11b USB WLAN Adapter.

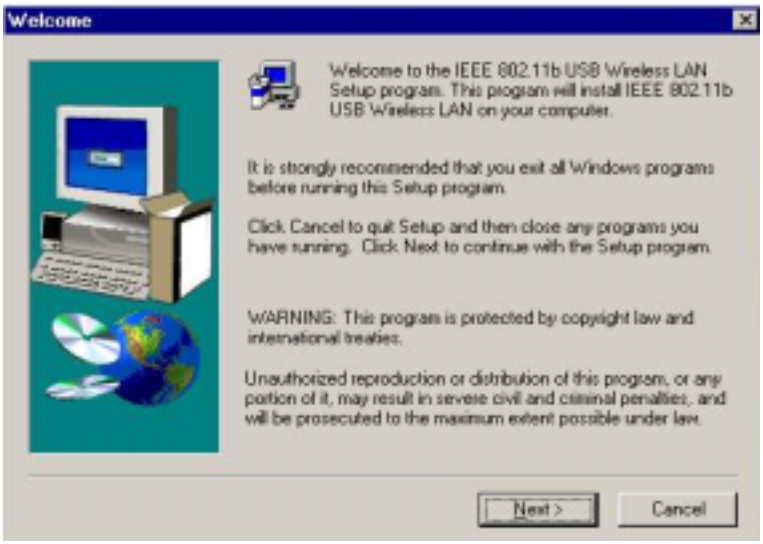
3. Install the required network protocols to communicate with your network. Most likely, you will need the TCP / IP protocol.

The product is designed to operate in Windows 98SE, Windows Me, 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 the Windows 98SE.

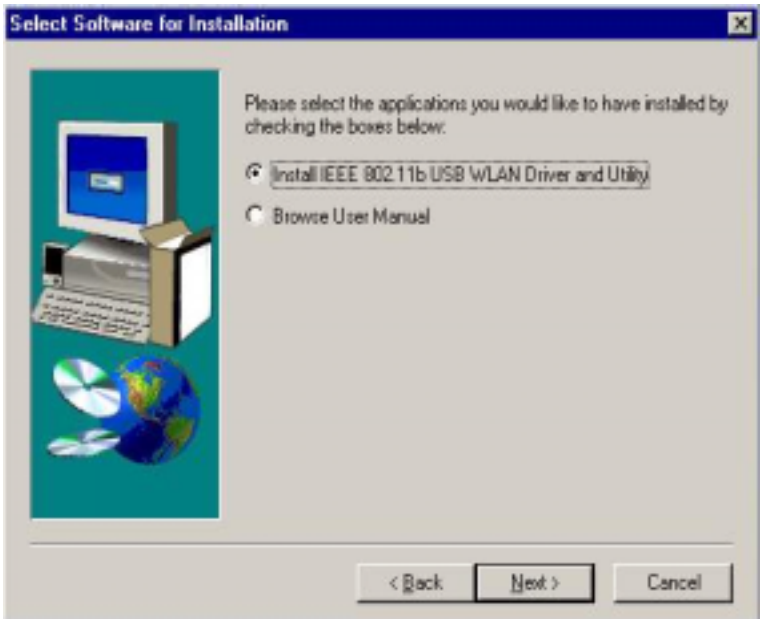
3.1 Install the IEEE 802.11b USB WLAN Utility / Driver

Please install the IEEE 802.11b USB WLAN Utility / Driver first before inserting the IEEE 802.11b USB WLAN Adapter.

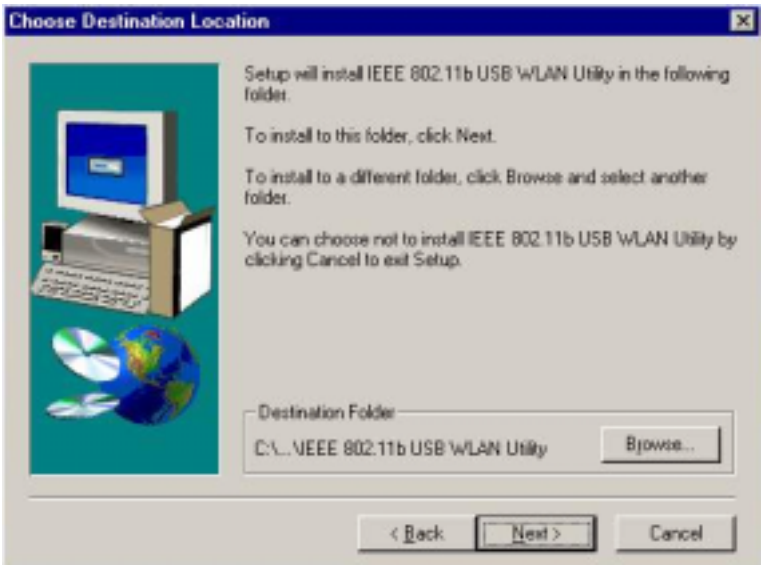
1. Insert the IEEE 802.11b USB WLAN Adapter installation CD into your CD-ROM drive. The setup program will then automatically start.
2. The setup program will start and the setup screen will appear on your monitor. Select " Next " to go to the next screen.



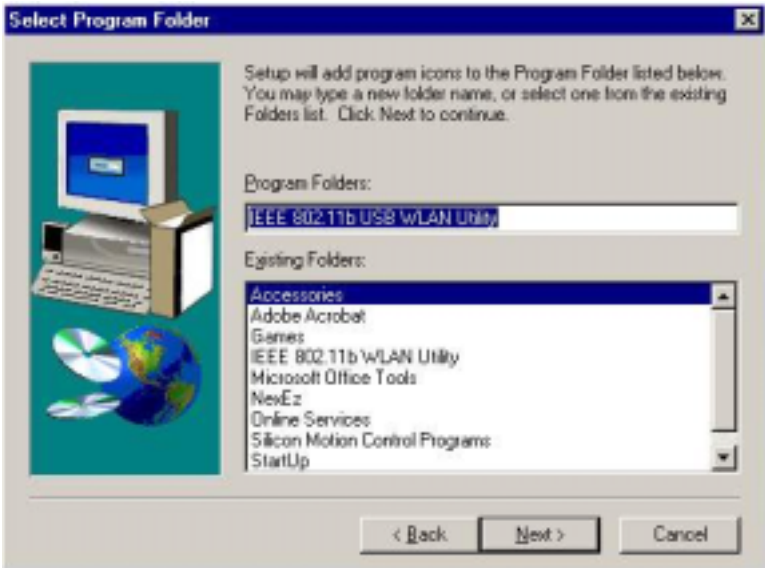
3. Please select the applications you would like to install, and click " Next ". If you select " Browse User Manual ", system will prompt a message to suggest you installing the Acrobat Reader.



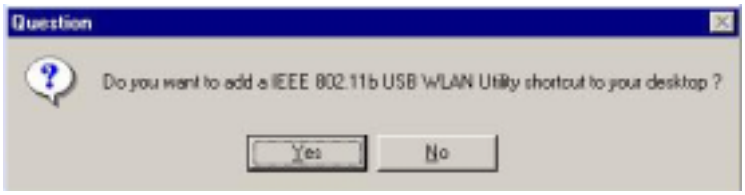
4. The default destination folder is displayed in the setup dialog column. To change the default folder you can click “ Browse “ to set the destination folder. Click “ Next “ to go to the next screen.



5. Select the Program Folder for IEEE802.11b USB WLAN Utility and click “ Next “.

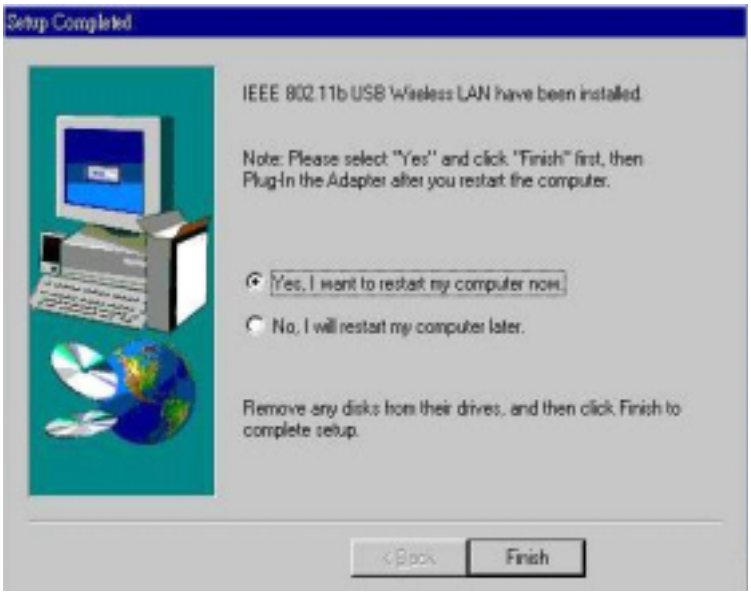


6. You will be asked if you want to add an IEEE802.11b USB WLAN Utility shortcut to your desktop. Click “ Yes “.



7. The user manual is published in Portable Document Format (PDF). If Acrobat Reader doesn’t exist in your system, the following message will be prompted and the system will automatically enter Acrobat Reader installation screen. Please follow the instructions to complete the Acrobat Reader 4.05 installation.

8. The driver, utility and user manual will be copied to the system. Wait the setup program to finish the IEEE802.11b USB WLAN installation. Then select “ Yes “ and click “ Finish “ to complete the installation. It’s recommended to close other applications before rebooting your system.



9. Regarding to the installation of the IEEE802.11b USB WLAN Adapter, please refer to the next chapter 3.2 “ Install the IEEE 802.11b USB WLAN Adapter. “

3.2 Install the IEEE 802.11b USB WLAN Adapter

The IEEE802.11b USB WLAN driver and utility are included on the accompanying installation CD. Please follow the installation procedures in Section 3.1. (Your USB Adapter will not work properly if the driver and utilities are not installed correctly.)

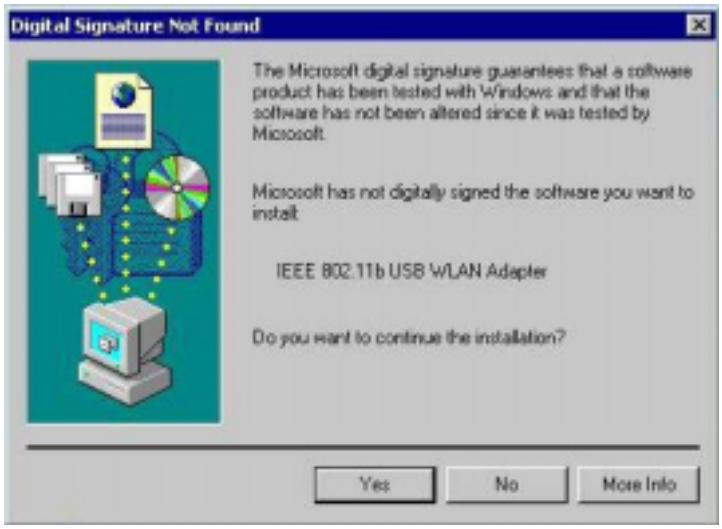
1. After completing the software installation, please insert the USB Adapter and then the setup will automatically start.

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

2. When the USB Adapter setup task is completed, you can start the IEEE 802.11b USB WLAN Utility. To start the utility, please refer to the chapter 3.3 " IEEE 802.11b USB WLAN Utility".

Additional Note for Windows 2000

If you install the IEEE802.11b USB Wireless LAN under Windows 2000, it will be a little bit different from Windows 98SE or Me. A message will be prompted as follows, click "Yes" to complete the USB adapter setup.



3.3 IEEE802.11b USB WLAN Utility

IEEE802.11b USB WLAN Adapter has its own management software. Users can control all functions provided by the application named IEEE802.11b USB WLAN Utility. The Utility icon will appear in the taskbar by clicking the IEEE802.11b USB WLAN Utility shortcut on your desktop. The monitor Utility includes six tabs: Monitor, Statistics, Site Survey, Encryption, Advanced, and Version.

In 802.11 Ad-Hoc mode, the SSID must be the same among stations so that the computers can communicate within the local LAN properly. Moreover, all connected computers should have the same net ID and subnet ID, you can follow the procedure below to check whether you have the same net ID and subnet ID among stations:

1. Right-click on the Network Neighborhood on your desktop and then click on “Properties”.

2. In Configuration, click on “TCP/IP -> IEEE802.11b USB WLAN Adapter” and then click on “Properties”.

3. Click on “IP Address”.

4. Click on “Specify an IP Address” and make sure having the same net ID and subnet ID of all the connected computers.

To open IEEE802.11b USB WLAN Utility, please double click the icon in the taskbar.

3.3.1 Setting

- Operating Mode:

If you want to connect with Access Point, please set the mode as" Infrastructure". If you have more stations and just want to set them as local network, please set the Mode as " 802.11 Ad-Hoc".

- Channel:

It shows radio channel numbers that used for networking. The Channel number must be the same among stations, so that computers can communicate within the local LAN. It can be changed only under the 802.11 Ad-Hoc Mode. If the Mode is Infrastructure, this parameter will not be active.

- SSID:

SSID 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 case sensitive. Please note that when you are in the 802.11 Ad-hoc mode, the SSID must be the same among stations so that computers can communicate within the local LAN properly.

- TX Rate:

You can choose one of the transmission rates as follows, 1Mbps, 2Mbps, 5.5Mbps, 11Mbps, and Fully Auto.

- Power Save Mode:

You can set this mode as Power Save to set your USB adapter as power saving mode.

- MAC Address:

It shows the MAC address of your IEEE802.11 USB device, and the parameter can't be changed.

- Other information:

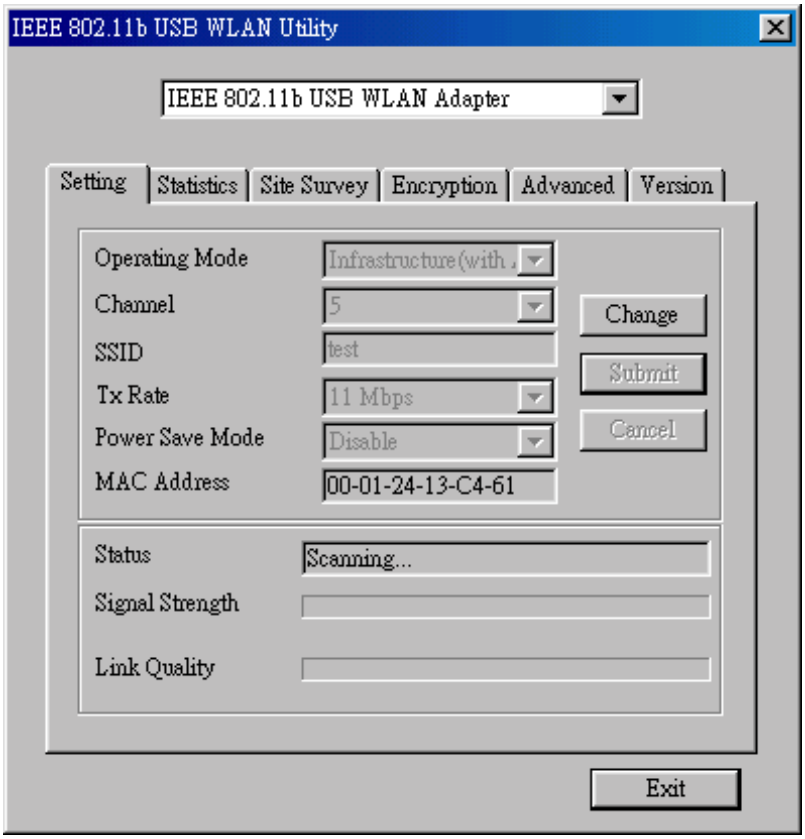
The Signal Strength and Link Quality will be shown in the screen below under the Status of your USB adapter,

- Status:

The Status will show the "Ready-SSID:xx-xx-xx-xx-xx-xx" if you select "802.11b Ad-Hoc mode" in the Operating Mode. Besides, the Status will show BSSID of AP that you associated if you select the "Infrastructure " in the "Operating Mode".

There are three processes once you want to change the parameter in the "Setting":

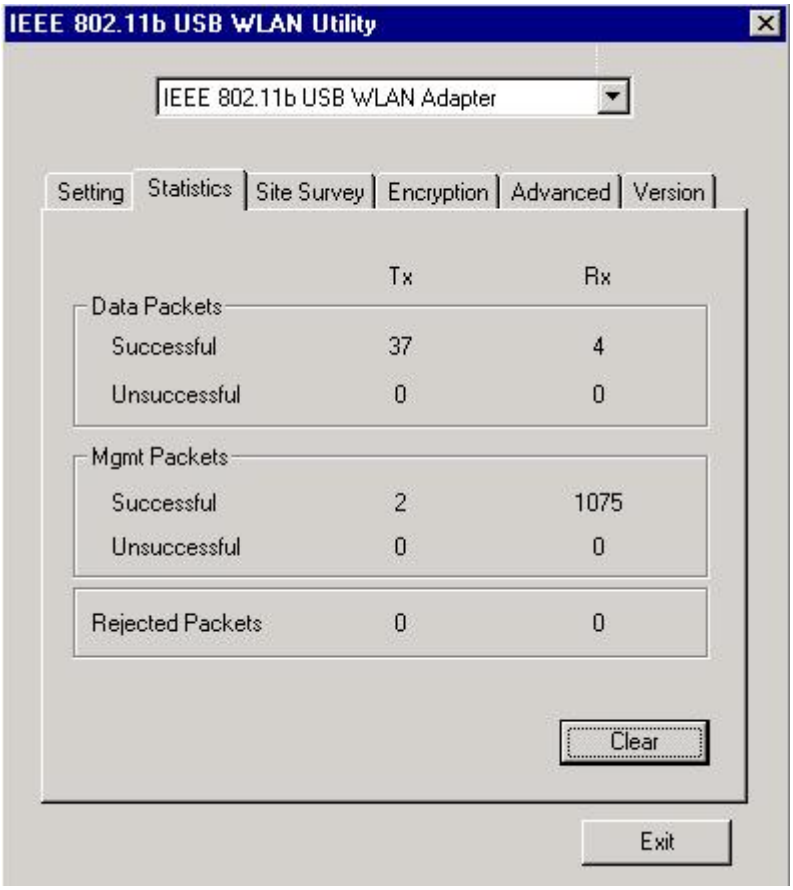
1. Click the "Change" button first if you want to change any of the parameter.
2. Choose the parameter you wish to change.
3. After changing the parameter, please click on the "Submit" button to finish.



3.3.2 Statistics

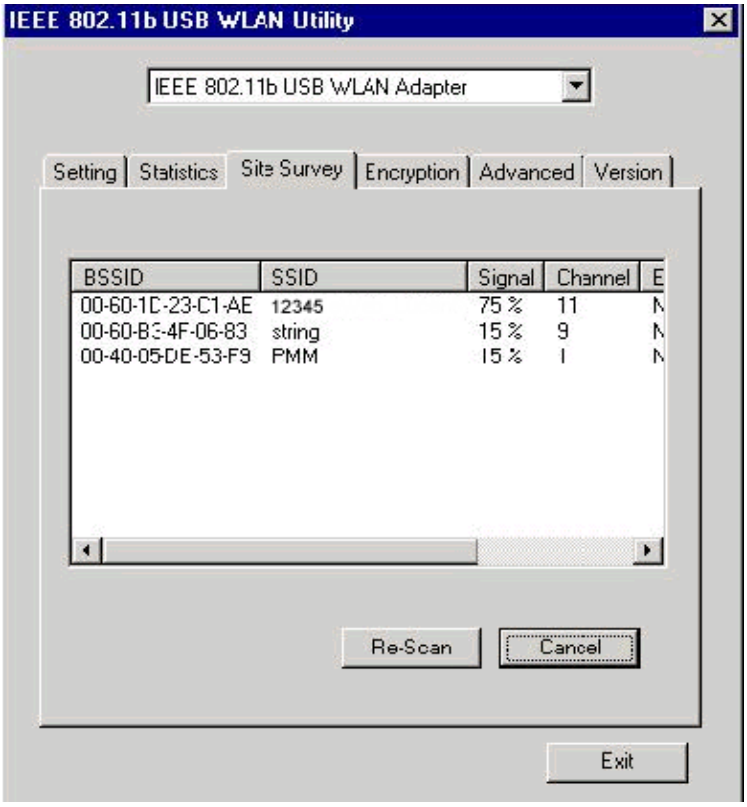
- The following screen shows various statistics including the Data Packets, Management Packets and Rejected Packets in transmitting and receiving status.

- You can click the Clear button to reset Statistics Tab.



3.3.3 Site Survey

- The screen shows all the messages of Access Point around your IEEE 802.11b USB WLAN Adapter. The messages of Access Point include BSSID, SSID, Signal, the Channel used by AP, and enabled the Encryption AP or not.
- You can click the Rescan button to find the new AP.
- You can double-click the BSSID to choose the AP that you want to connect with.



3.3.4 Encryption

! Caution:

WEP Key needs to be the same for all IEEE802.11b devices.

Infrastructure mode:

Note: Before enabling the WEP function, you must obtain the WEP key (Hexadecimal codes) being used in the Access Point and then apply these codes as the WEP Key.

(1) Encryption: Select 64 Bit if you have obtained 10 valued codes from the Access Point; select 128 Bit if you have obtained 26 valued codes from the Access Point.

(2) Apply the hexadecimal codes to your WEP Key in 1 of the 4 keys. It can support up to 4 sets of different WEP keys, and any blanks in the unused WEP key needed to be filled with a value.

Example of WEP Key in 64 Bit type

Key 1	1023c2d2e5
Key 2	0000000000
Key 3	0000000000
Key 4	0000000000

Note: Apply ten" 0" to substitute each of unused WEP Key.

Example of WEP Key in 128 Bit type

Key 1	1e23c2d225b012ee29e689c123
Key 2	00000000000000000000000000
Key 3	00000000000000000000000000
Key 4	00000000000000000000000000

Note: Apply twenty-six "0" to substitute each of unused WEP key.

(3) WEP Key: Select one of WEP Key (Key1 to Key4) to use.

(4) WEP Mode: Mandatory for communicating with all stations having WEP enabled or Optional for WEP disabled.

(5) Authentication Type: Open System or Shared Key. (Select Shared Key to work with Access Point)

(6) After all the settings are completed, click on "Submit" button to save the setting.

Note: It is very important to be sure that WEP key is to be exactly same value with all other WEP enabled wireless devices.

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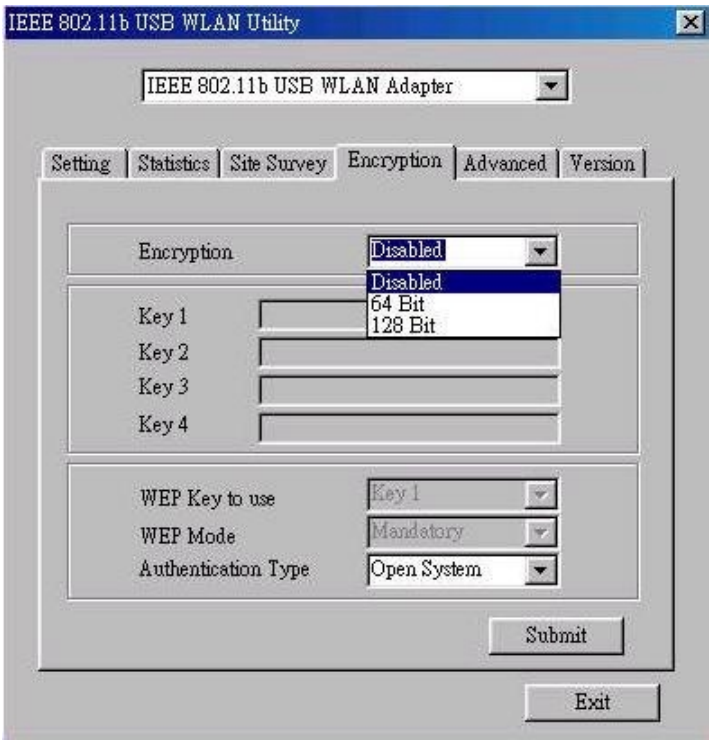
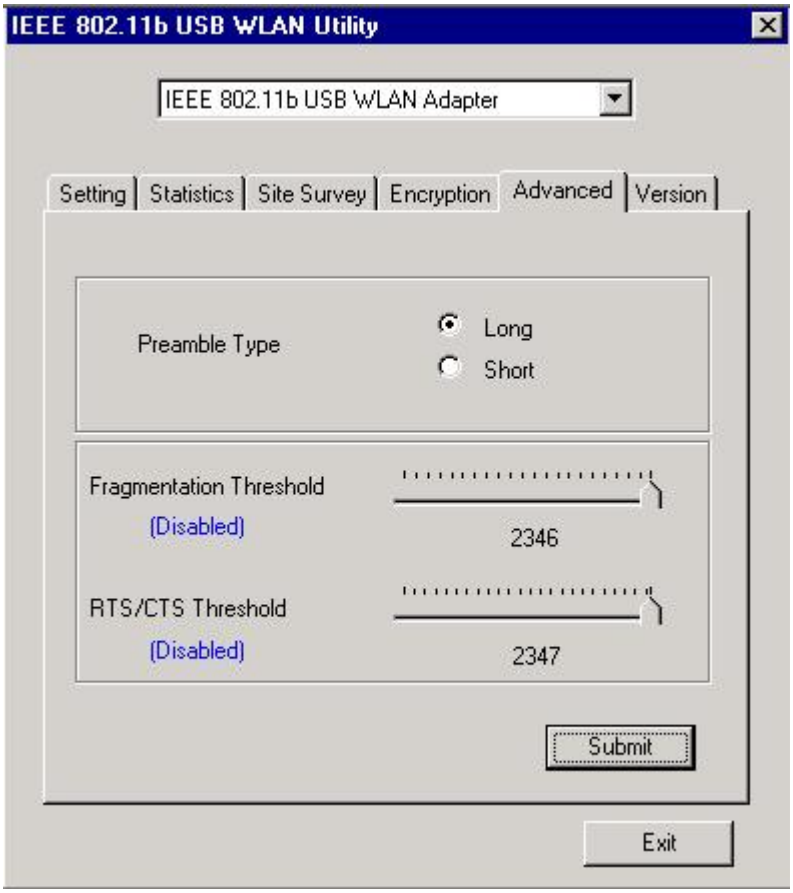


3.3.5 Advanced

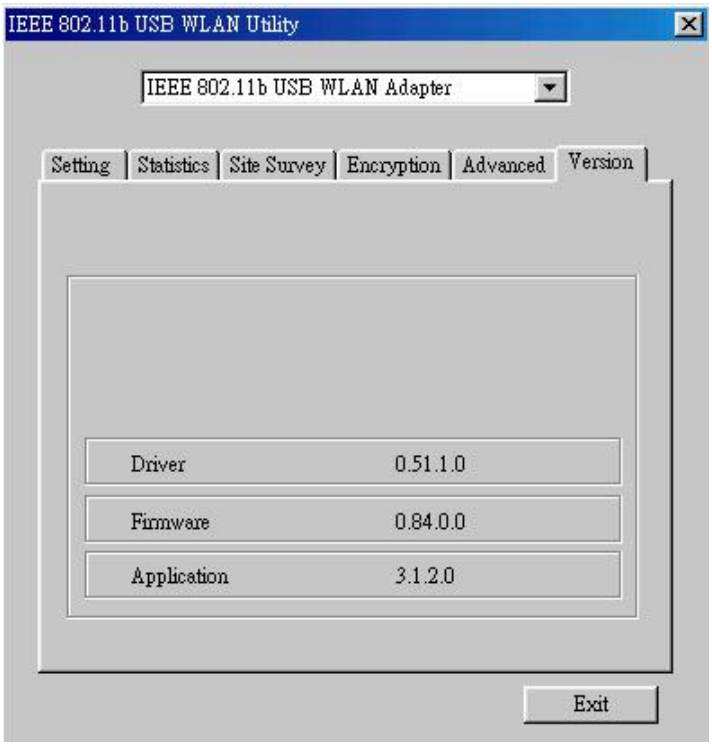
- The screen shows the advanced setting of the IEEE802.11b USB WLAN Utility, and it includes Preamble Type, Fragmentation Threshold, and RTS / CTS Threshold. We suggest to use the default settings: Preamble Type: Long.

- Click on Submit button to save all the settings.



3.3.6 Version

- The screen shows the version of Driver, Firmware, and Application for IEEE802.11b USB WLAN Utility / Driver.



3.4 Remove your IEEE 802.11b USB WLAN Adapter

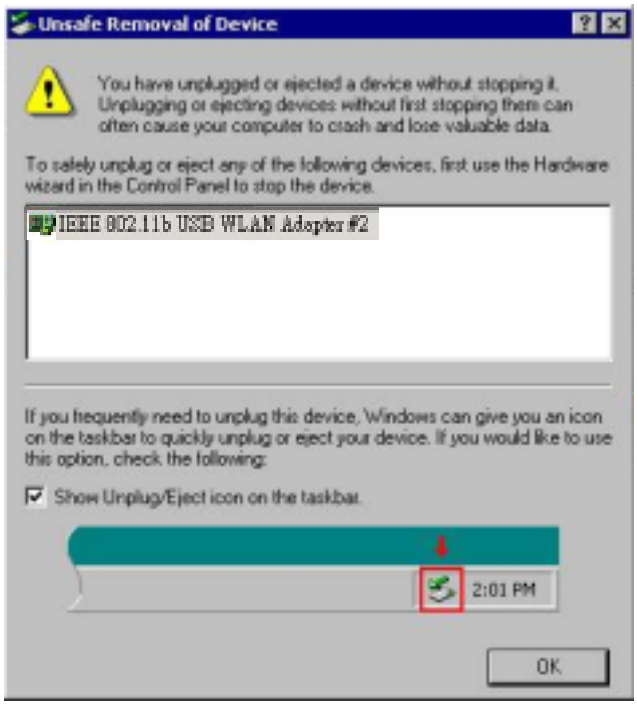
If you do not need the wireless connectivity of your IEEE802.11b USB WLAN Adapter, you can unplug your USB adapter directly, and follow the procedures mentioned below to remove the IEEE 802.11b USB WLAN Adapter from its slot.

! Caution:

- When removing the IEEE802.11b USB WLAN Adapter, you will lose your connection to the network. Make sure you have closed all files and network applications (such as e-mail) prior to removing the IEEE 802.11b USB WLAN Adapter,

Additional Note for Windows 2000

If you directly remove your USB device in Windows 2000, a message of unsafe remove device will be prompted as follows. Please click OK.

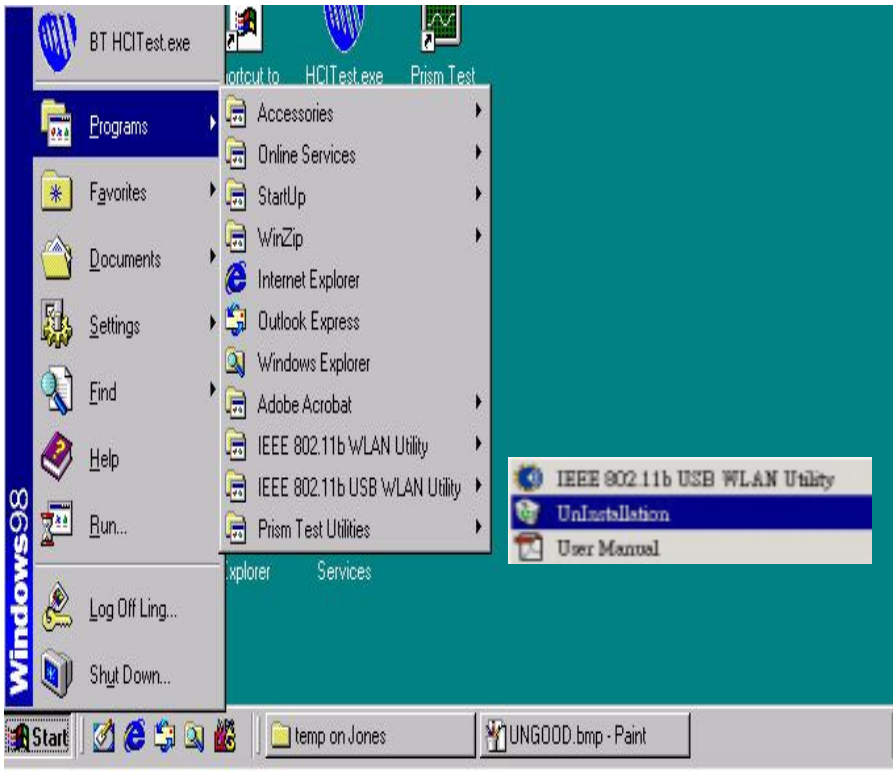


3.5 Uninstall the IEEE802.11b USB WLAN Utility / Driver

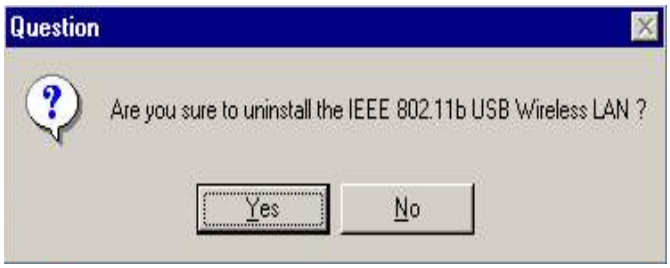
If you do not need the wireless connectivity of your IEEE802.11b USB WLAN Adapter,

1. First you should remove the IEEE802.11b USB WLAN Adapter.

2. To uninstall the IEEE802.11b USB WLAN Utility and Driver, you can move to Start ---> Programs ---> IEEE802.11b USB WLAN Utility, and click " UnInstallation ".



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



4. Now the un-installation is completed. Please click “ Finish “.

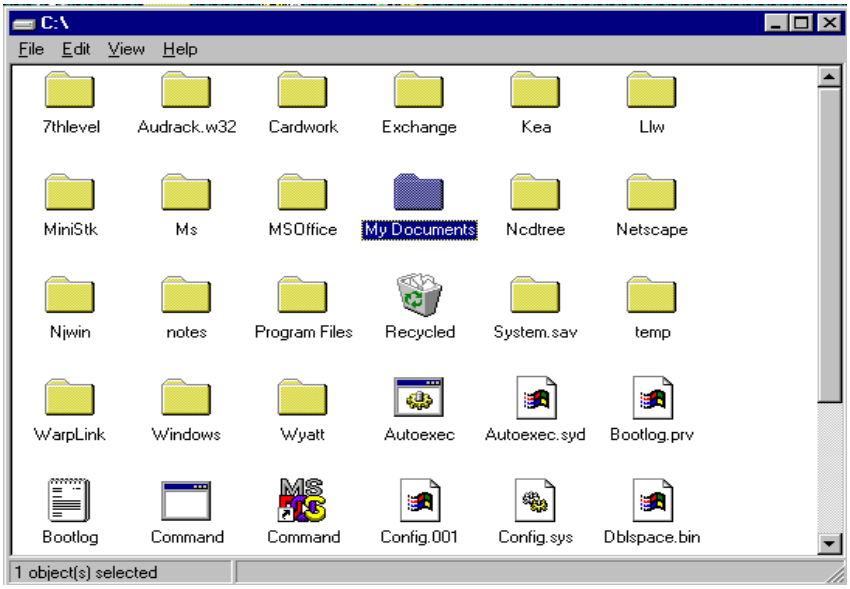
4. Application

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

4.1 File Sharing in Microsoft Windows 98SE

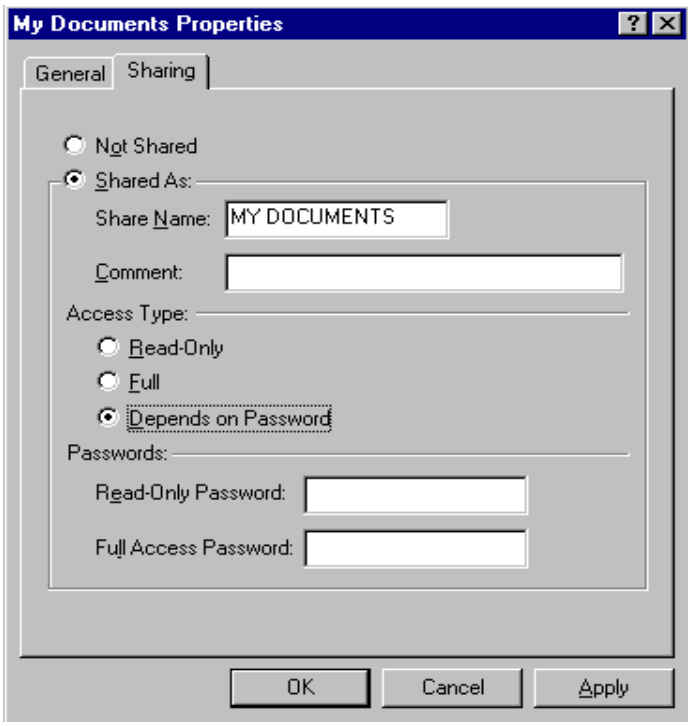
IEEE802.11b USB WLAN allows the sharing of files between computers that are logged onto the same wireless network. Let's assume that you want your folder " My Documents " to be shared with other computers and the wireless network:

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.



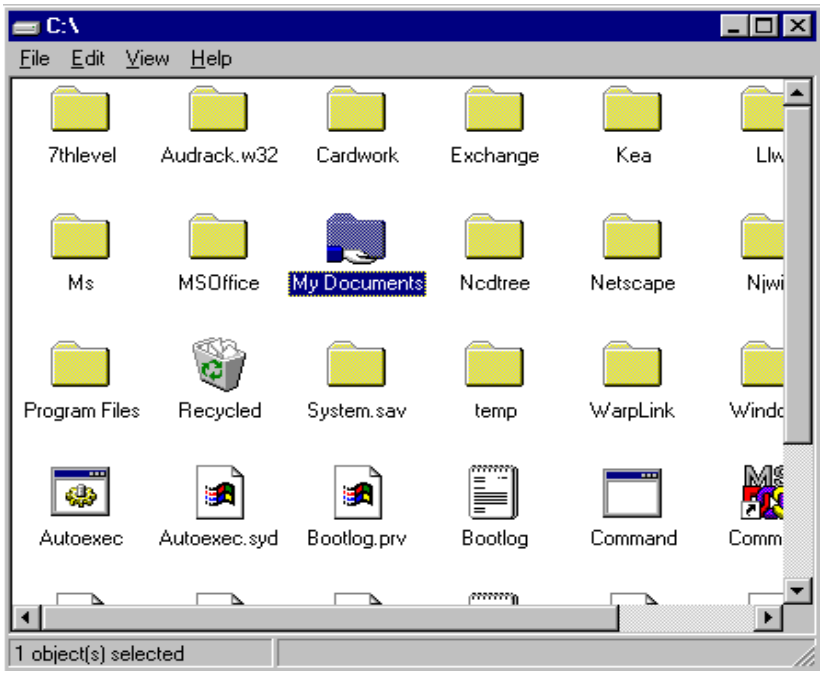
- If “ Read-Only “ is selected, the other users in the wireless network can only copy files from your folder. Copying files into your folder is not allowed.

- 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 wireless network will be like sharing files on a wired LAN.

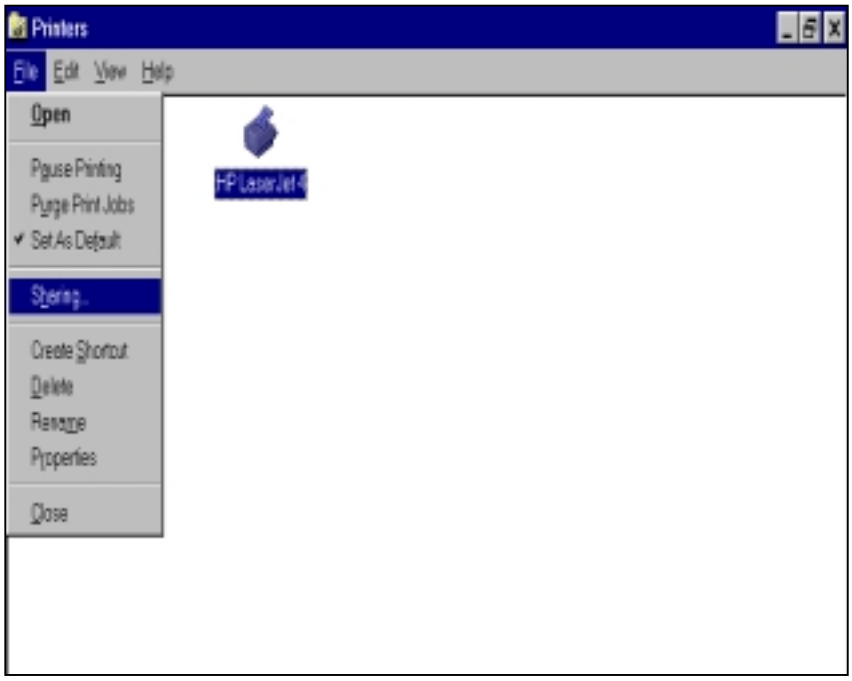
4.2 Printer Sharing in Windows 98SE

In order to the printer can 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:

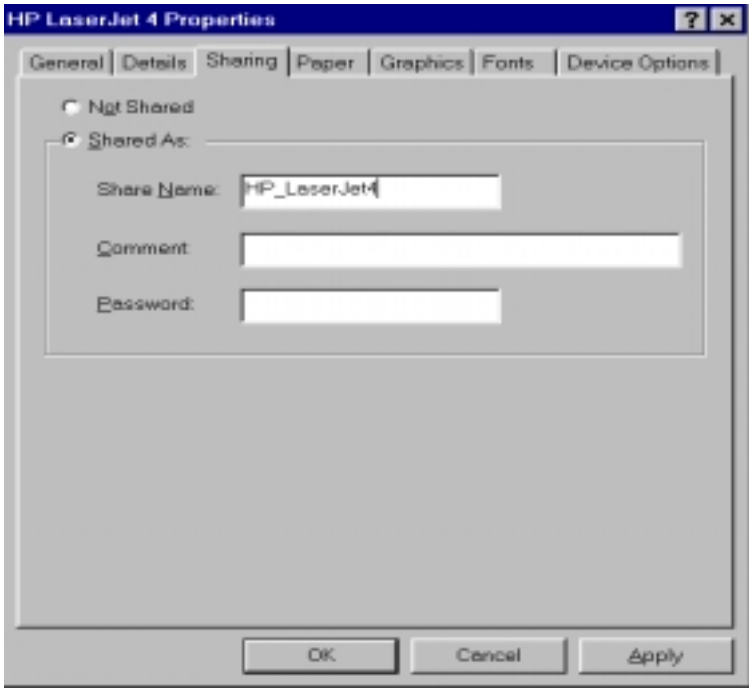
1. Click the " Start " button, point to the " Settings ", and then click " Printers ".

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.



4.3 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.

4.4 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.

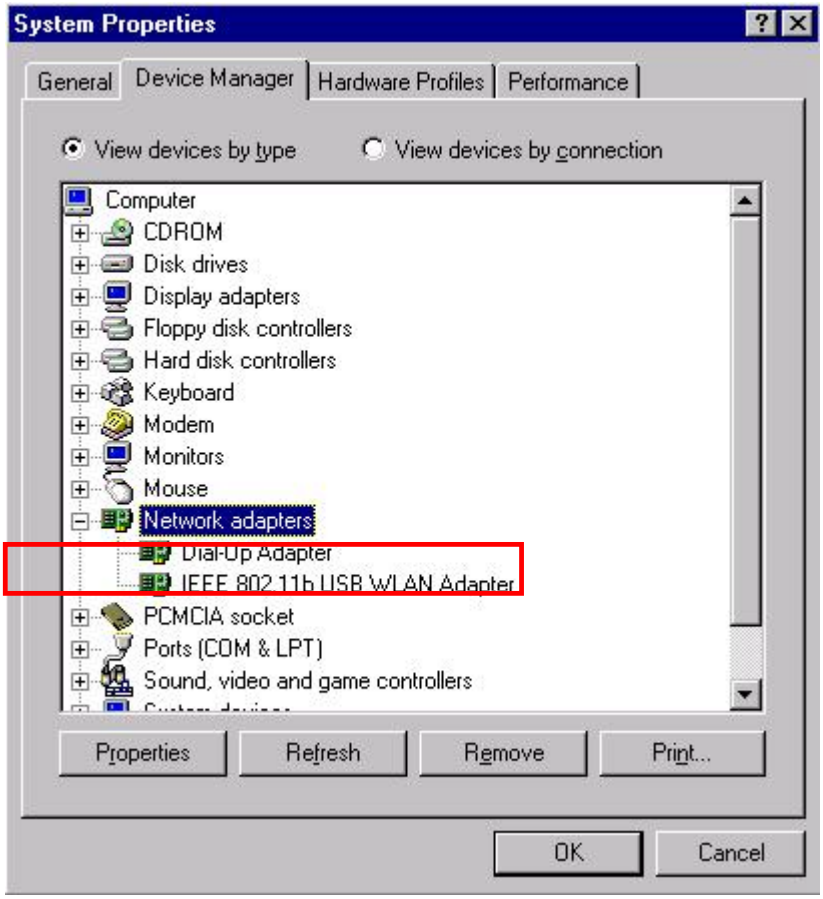
5. Troubleshooting

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

5.1 Check the Various Properties of the Card

To verify whether the driver has been set in your computer properly, you can follow the procedures below.

- Right-click " My Computer " and then select " Properties ", then you will enter your system properties. Select the Device Manager and click the Network Adapter. You will find the IEEE802.11b USB WLAN Adapter if it is installed successfully.



- If there is Question-mark (?) or Exclamation-mark (!) in yellow on your IEEE802.11b WLAN Adapter in previous picture (IEEE 802.11b USB WLAN Adapter Properties & System Properties), please make sure you have inserted the right IEEE 802.11b USB WLAN Adapter, the proper driver and utility have been installed as well. If you are not sure, follow the procedure below to reinstall (update) the driver.

a. Enter “System Properties” and click “Device Manager” on upper menu.

b. Click “Network Adapter” and choose IEEE802.11b USB WLAN Adapter

c. Select “Driver” on the upper menu of IEEE802.11b USB WLAN Adapter properties, and then click on “ Update Driver” button.

d. Follow the Update Device Driver Wizard to complete the driver installation.

5.2 Microsoft Networking Checklist

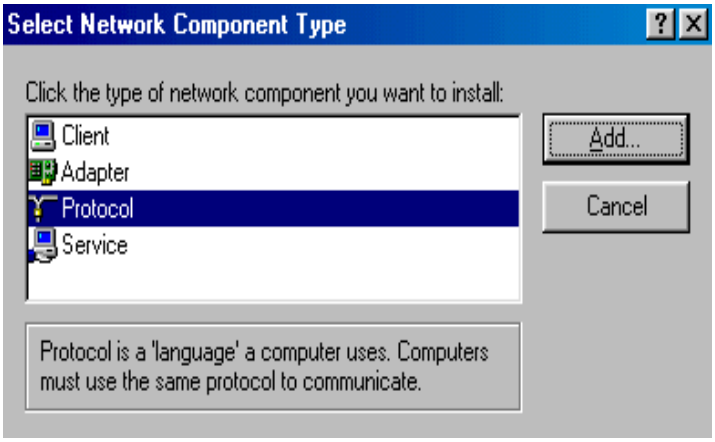
For the IEEE 802.11b USB WLAN to run properly, some network items must be presented in the Microsoft " Network Neighborhood " setup. To check and activate the network setup, right-click the "Network Neighborhood" and select "Properties". The following items should be presented in the network setup:

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

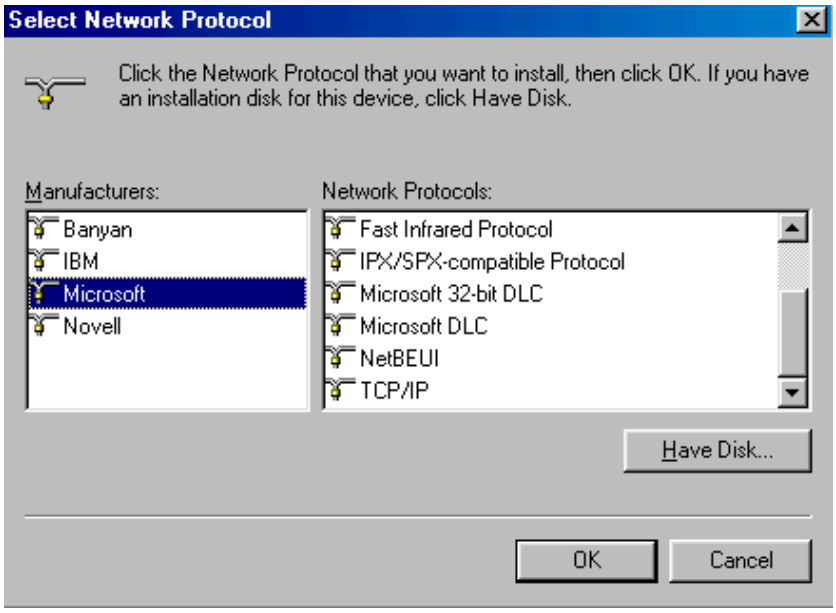
If any of these items are missing, please follow the instructions below to install them properly:

Set up the Network Protocols:

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



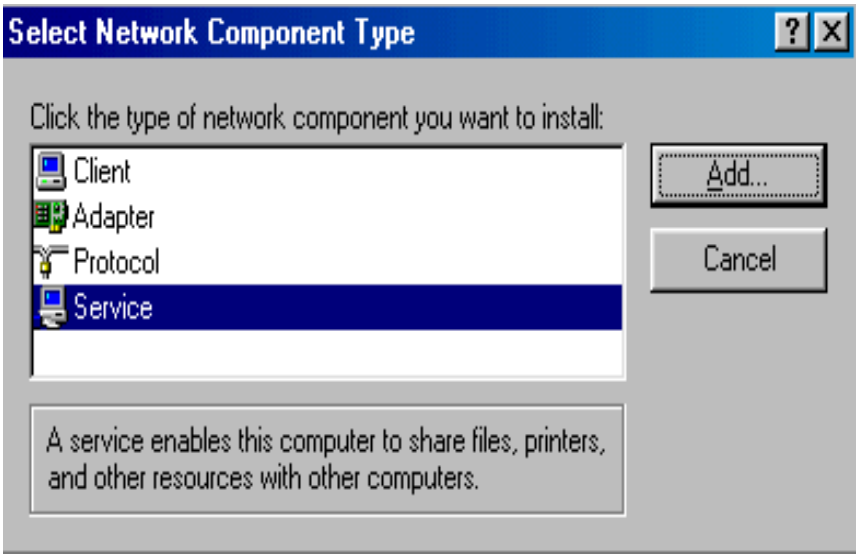
- Click “ Add “ and then choose the network protocol. Select Microsoft as the manufacturer and “ NetBEUI “, “ TCP/IP “, and “ IPX/SPX-compatible “ for the network protocols. Then click “OK“.



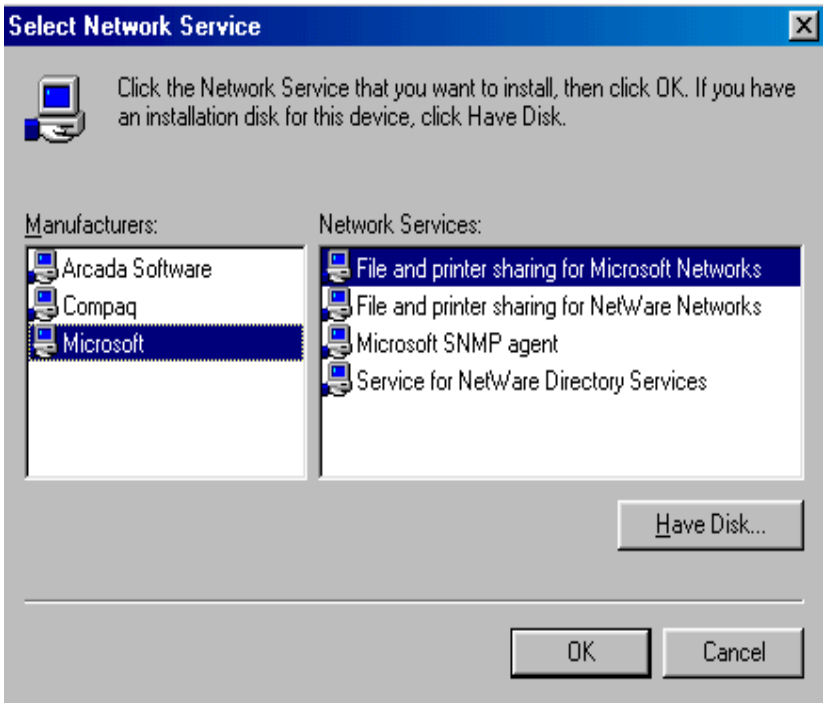
- Now your network protocol should be set. Please check if your network needs any special requirements to operate in your office environment.

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.

5.3 Others

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 USB 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.