WLAN PCMCIA Card

Regulatory notes and statements

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of FCC Rules.
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 this device.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 64C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When nearby persons has to be kept to ensure RF exposure compliance. In order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 2.5 cm.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it 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 and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US of Canada without an approved US Department of Commerce export license.

Safety Statements

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

· This device may not cause harmful interference, and

· This device must accept any interference received, including interference that may cause undesired operation.

SAFETY INFORMATION

Your device contains a low power transmitter. When device is transmitted it sends out radio frequency (RF) signal.

CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 2.5cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

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

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1 Introduction

PCMCIA (Provides a high-speed link for external devices to connect to a PC, and it has better Plug-and-Play support). With a WLAN(Wireless LAN) (IEEE 802.11b/Bluetooth) PCMCIA Card, a desktop or laptop computer can communicate with another computer in a wireless way. Besides, through a wireless access point or a wireless Internet router, the computer can access resources on an Ethernet LAN or on the Internet. Easy-to-use utilities are bundled with WLAN PCMCIA Card for configuration, monitoring, and diagnosis purposes. After install WLAN PCMCIA Card, 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

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

WLAN PCMCIA Card 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 WLAN PCMCIA Card 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 WLAN PCMCIA Card. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

1.1 Package Contents

The WLAN PCMCIA Card kit includes the following items:

a. WLAN PCMCIA Card

b. The CD including:

   1. WLAN PCMCIA Card Utility & Driver software

   2. User's Manual (this document)

c. Quick Installation Guide

1.2 Advantages for Using Wireless Network

Advantages for Using a Wireless Network:

- *Hard to wire area*s: WLAN PCMCIA Card provides access to network services in areas otherwise hard or expensive to wire, such as historic buildings with asbestos and classrooms.
- *Flexible workgroup*s: Lower total cost of ownership for workspaces that are frequently reconfigured.
- *Networked conference room*s: 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'
- *Ad hoc networkin*g: on site consultants and small workgroups increase productivity with quick network setup and collaboration software
- *Branch office networkin*g: 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. Step by step Installation Guide

This section will lead you through the installation of WLAN PCMCIA Card and its software in through details. You may wish to skip to quick installation guide to wireless networking. To establish your wireless network connection, the following steps should be executed.

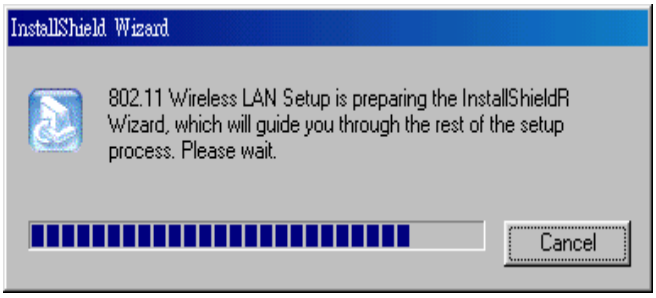
1. Install the software using the installation CD.
2. Install the WLAN PCMCIA Card.
3. Install the required network protocols to communicate with your network. Most likely, you will need the TCP / IP protocol.

The product is designed to operate in Windows 98, Windows Me, Windows 2000, and Window XP. 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.

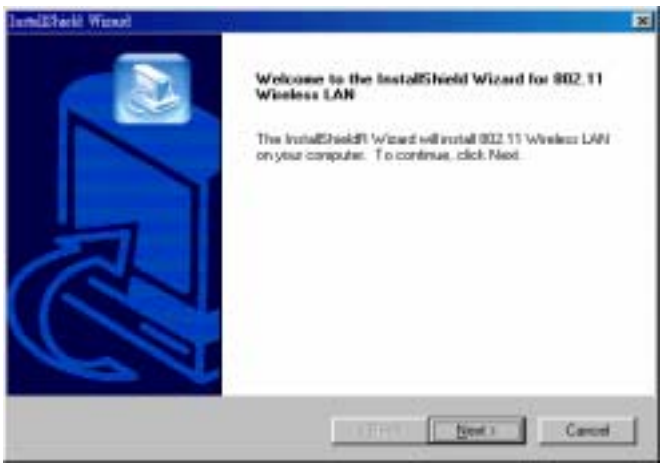
! Caution: Do not insert the WLAN PCMCIA Card into your computer until the setup is done.

2.1 Install WLAN PCMCIA Card Utility & Driver

1.Insert the CD ROM of driver into computer and ready to setup. Then elect ***Run*** from the **Start** menu. Type "E:\WLAN PCMCIA Card \Utility\Setup.exe" in the **Open** box (where is your CD-ROM drive) and click **OK**.

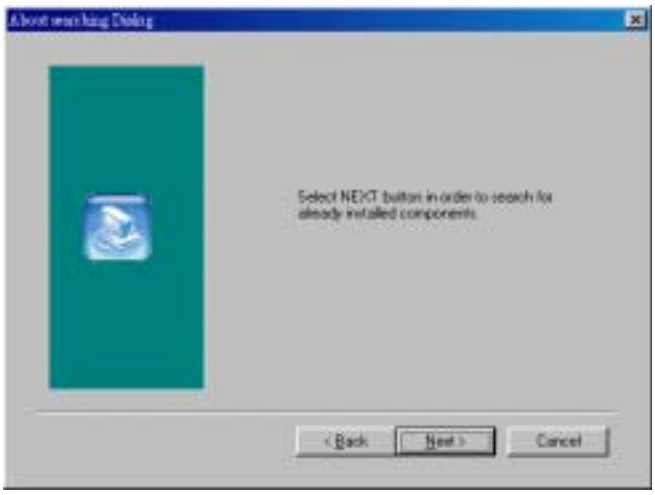


2. InstallShield tool helps you to setup the PCMCIA driver.

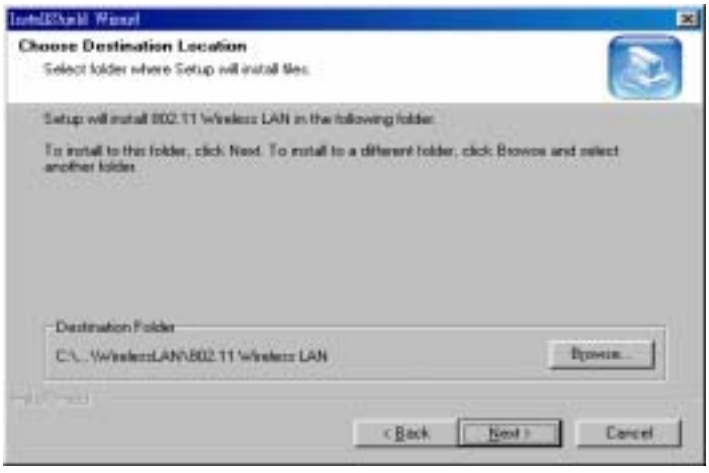


3. Click on ***Next*** to go to the Adapter Type Dialog. The following dialog box asks how would you like to install the driver. Select the **one of them** and click ***Next***.

4. This step asks you to install components, click ***Next***.

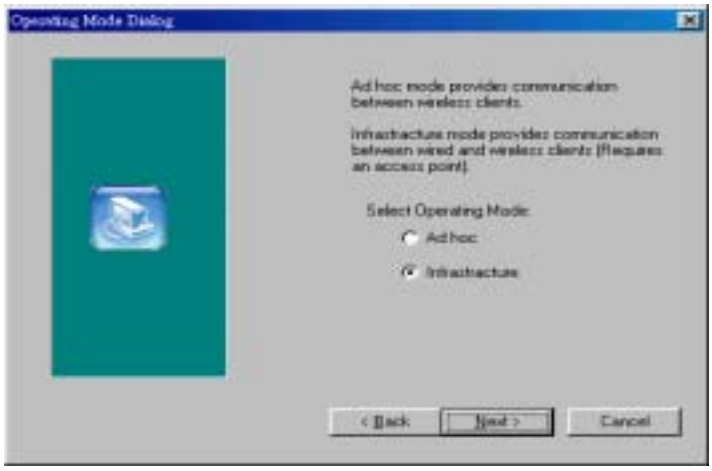


5. This proces asks you to install the 802.11 Wireless LAN into the right folder.

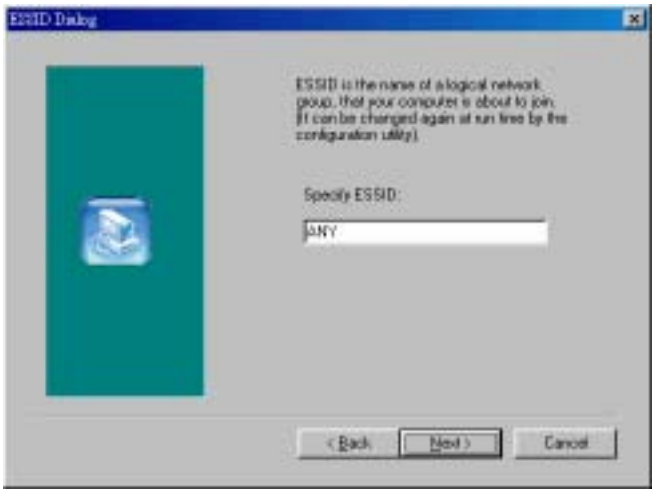


6. The **Select Program Folder** dialog box allows you to accept the default application program folder name or to assign a name of your preference.

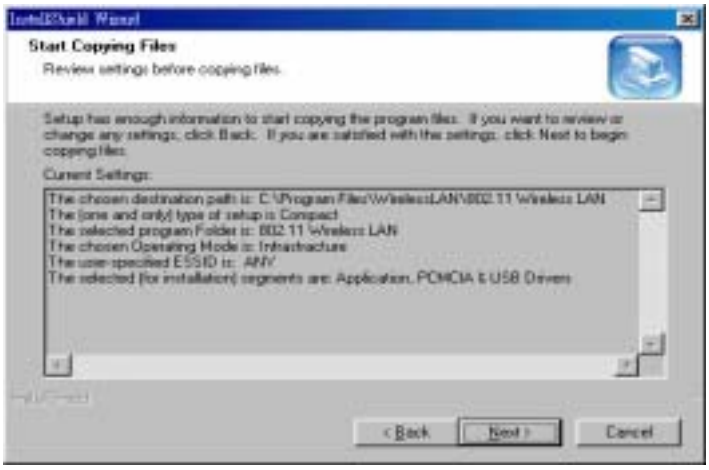
7. This dialog helps you to select two different operating modes. Ad hoc mode is set up for wireless clients. For those wired and wireless clients, Infrastructure mode is they need and the AP is necessary for this mode.



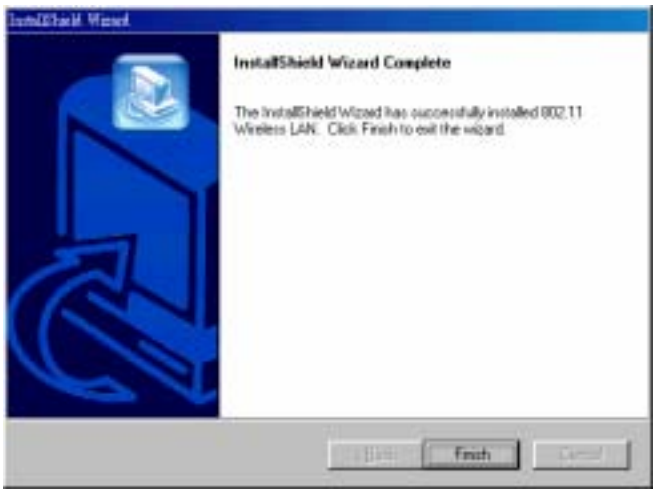
8. The *ESSID Dialog* asks you to type the name of AP (Access Point), where you want to install. After typing the name of AP, click *Next*.



9. This information tells you which and how many functions you have been added. If those selections are not your expectation, you may go back and do the selection again.

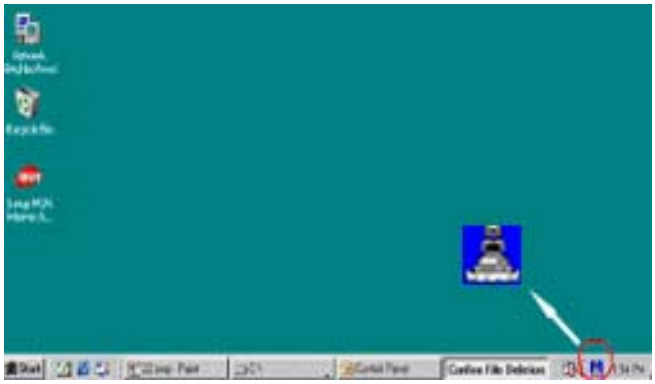


10. Now, you almost finish the setup and ready to start using the feature. Click *Finish.*



11. Restart your computer, the WLAN PCMCIA Card feature is ready to use.

12. After the restart, you may insert the WLAN PCMCIA Card into computer, then computer will set up the driver for you, the Wireless LAN Monitor Utility icon, at the right side bottom in blue color, indicates the WLAN PCMCIA Card is ready.



2.2 Wireless LAN Monitor Utility

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

In Ad Hoc mode, the Channel and 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 netid and subnetid, you can follow the procedure below to check whether you have the same netid and subnetid among stations:

1. Right-click on the Network Neighborhood on your desktop and then click on “Properties”.
2. In Configuration, click on “TCP/IP -> WLAN PCMCIA Card” and then click on “Properties”.
3. Click on “IP Address”.
4. Click on “Specify an IP Address” and make sure having the same netid and subnetid of all the connected computers.

2.2.1 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 " 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 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 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 WLAN PCMCIA Card as power saving mode.

● MAC Address:

It shows the MAC address of your WLAN PCMCIA Card 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 WLAN PCMCIA Card,

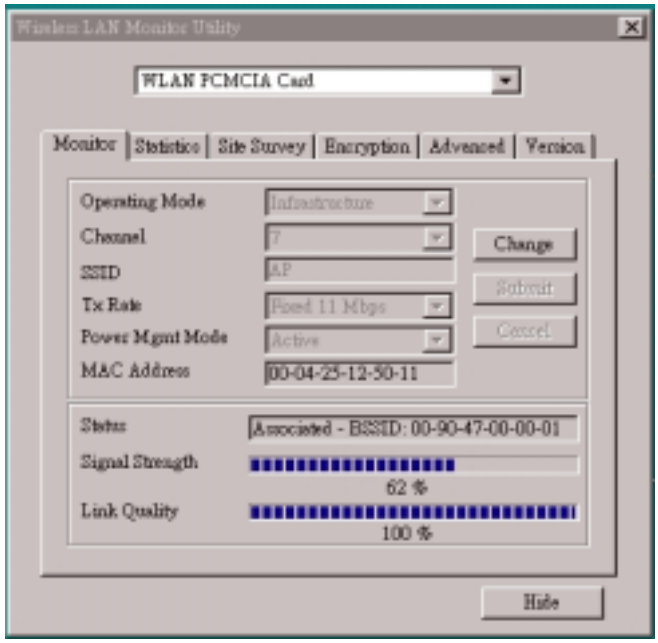
● Status:

The Status will show the "ready" if you select "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.



2.2.2 Statistics

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

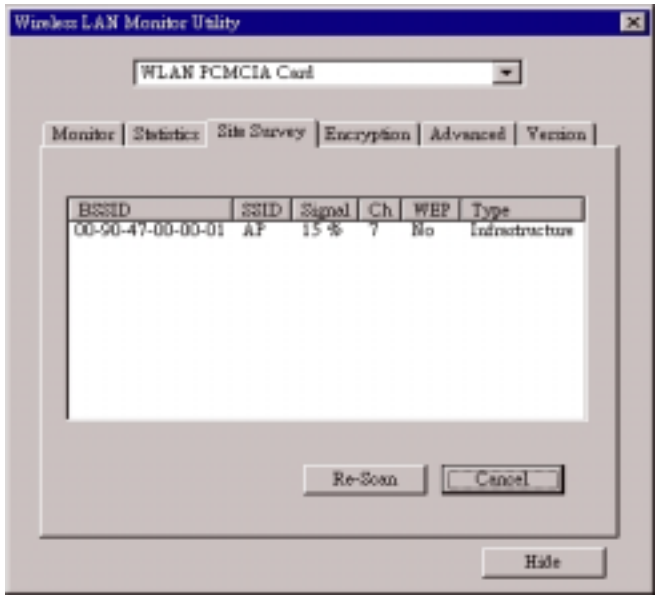
You can click the Clear button to reset Statistics Tab.

2.2.3 Site Survey

The screen shows all the messages of Access Point around your WLAN PCMCIA Card device. 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 Re-Scan button to find the new AP.

You can double-click the BSSID to choose the AP that you want to connect with.



2.2.4 Encryption

You may desire an additional measure of security in your wireless network, which can be achieved by using the Encryption function.

WEP Key to use:

You can choose one of the four Keys you typed (Key1~Key4) as the WEP Key.

WEP Mode:

If you set the Mode to Optional, your device can communicate with the stations with disabled WEP. Otherwise, if you set Mode to Mandatory, then your device cannot communicate with the stations with disabled WEP.

Authentication Type:

Open System Authentication algorithm is mostly used. In Shard Key Authentication algorithm, you must have WEP on, the algorithm should be different, and some steps use packets with encryption by transferring a challenge text. In order to choose which authentication algorithm will be used, you must know which one the AP supports first. Most APs only support Open System.

! Caution: WEP Key needs to be the same for all IEEE802.11b stations.

Follow the steps below to set your WEP:

(1) Select the Encryption type: 64bit or 128bit.

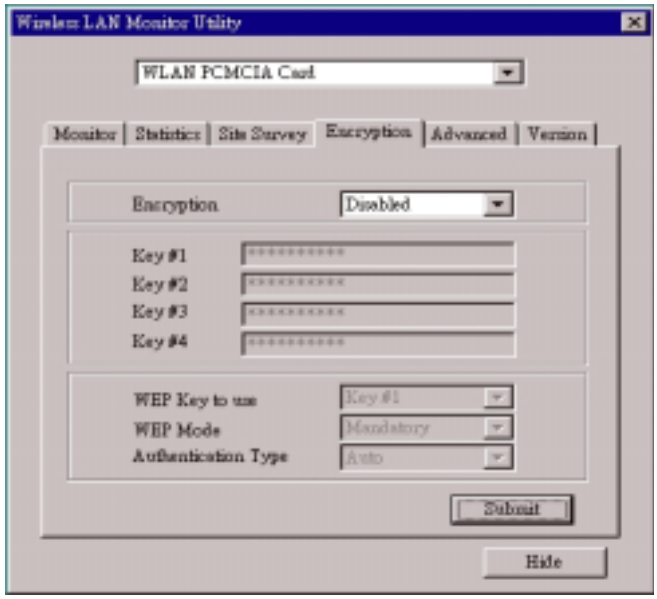
(2) Type WEP Key: If you select 64bit, you must type 10 values in the following range (0~F) from Key1 to Key 4 space. Besides, if you select 128 bit, you must type 26 values (0~F) in each WEP Key from Key 1 to Key 4. Please note that all the WEP Keys (key1~key4) have to be filled.

(3) Select WEP Key: Select one of WEP Key from Key1 to Key4 for using.

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

(5) Select the Authentication Type: Open System or Shared Key.

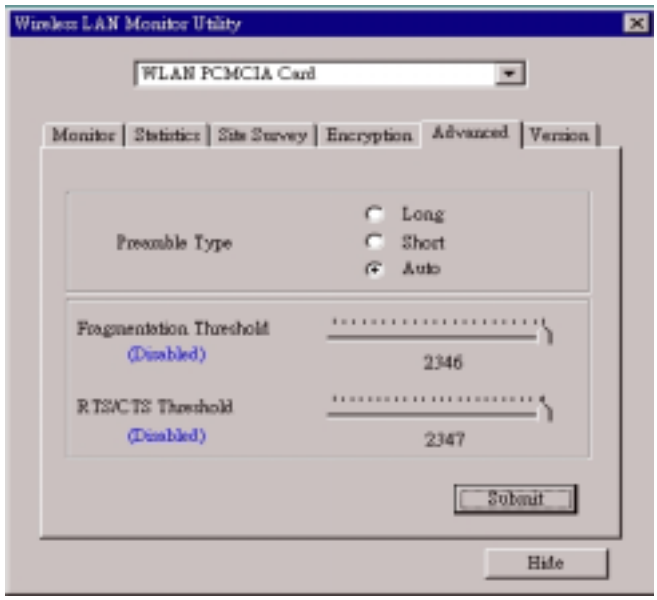
(6) After all the settings are completed, click on Submit button to save the setting.



2.2.5 Advanced

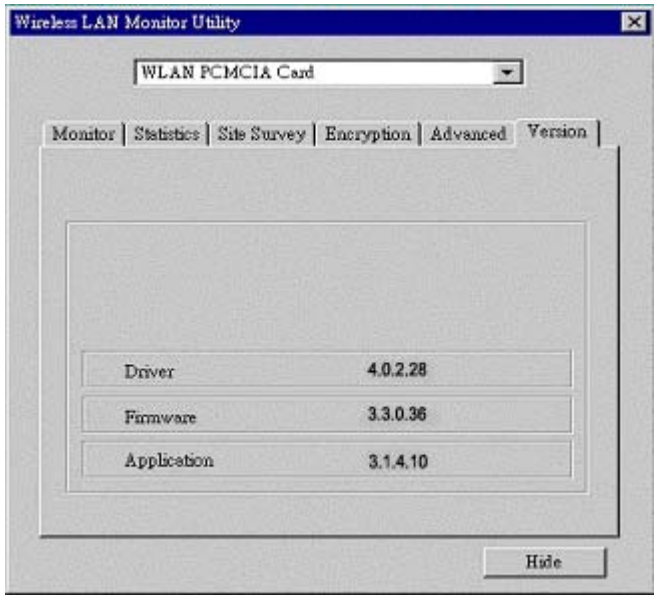
The screen shows the advanced setting of the Wireless LAN Monitor Utility, and it includes Preamble Type, Fragmentation Threshold, and RTS / CTS Threshold. We suggest to use the default settings: Preamble Type: Long.

Click on Submit button to save all the settings.



2.2.6 Version

The screen shows the version of Driver, Firmware, and Application for WLAN PCMCIA Card Utility / Driver.



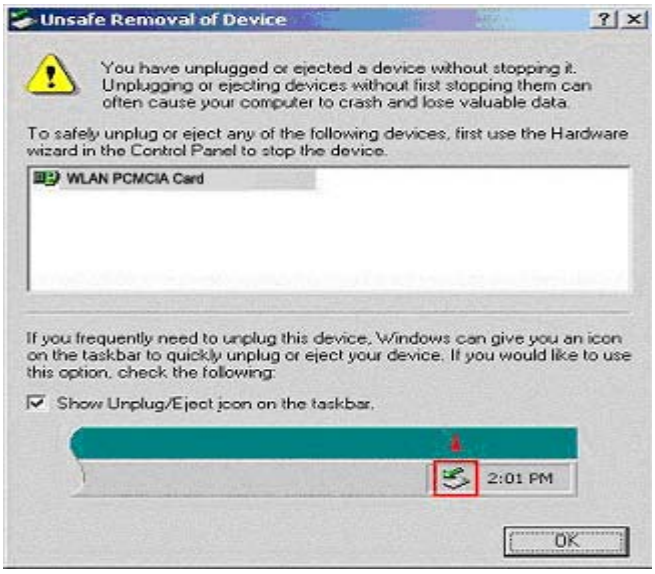
2.3 Remove your WLAN PCMCIA Card

If you do not need the wireless connectivity of your WLAN PCMCIA Card, you can unplug your PCMCIA card directly, and follow the procedures mentioned below to remove the PC Card from its slot.

! Caution: When removing the WLAN PCMCIA Card, 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 PCMCIA device.

Additional Note for Windows 2000

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



2.4 Uninstall the WLAN PCMCIA Card Utility / Driver

If you do not need the wireless connectivity of your WLAN PCMCIA Card,

1. First you should remove the WLAN PCMCIA Card.
2. To uninstall the WLAN PCMCIA card Utility and Driver, you can move to ***Start*** ---> Program---> 802.11 Wireless LAN , and click " Uninstall Configuration and Monitor Utility".
3. You will be asked if you want to uninstall the WLAN PCMCIA Card Utility and all of its components. Click " Yes " to uninstall or click " No " to exit.
4. Now the un-installation is completed. Please click " OK".

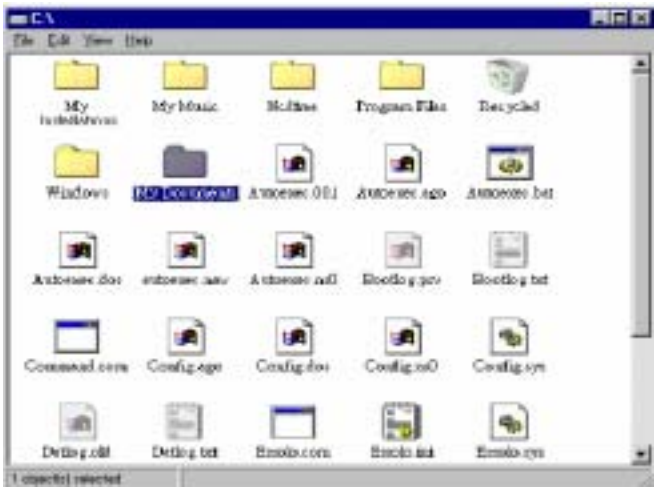
3. Application

To enable the sharing of the Internet access, you should set your WLAN PCMCIA card 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 WLAN PCMCIA Card 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.

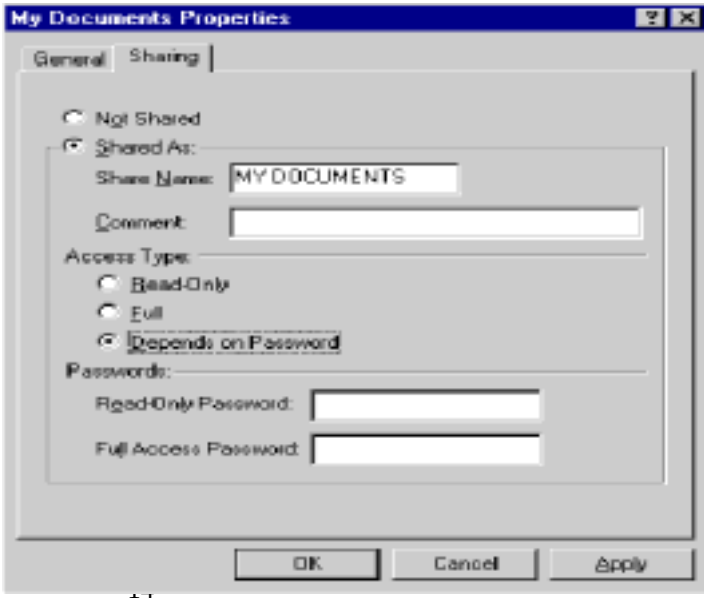
3.1 File Sharing in Microsoft Windows 98

WLAN PCMCIA Card 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.



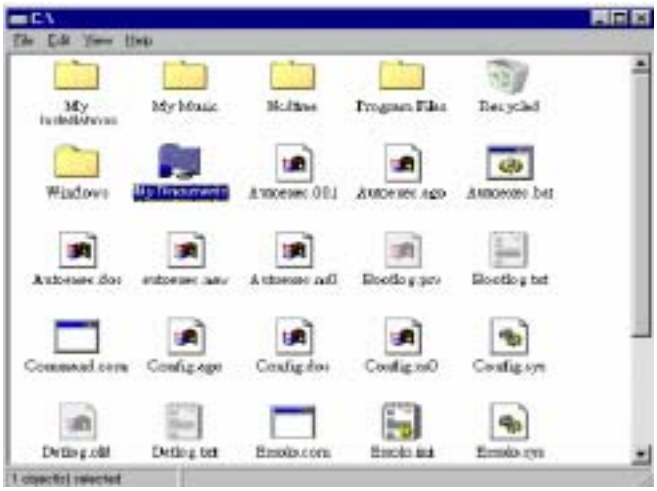
2. Select “ Sharing “ from the available options.



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.



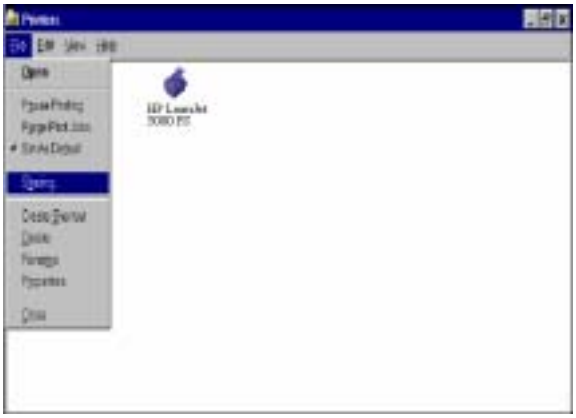
Sharing files in the 802.11b wireless network will be like sharing files on a wired LAN.

3.2 Printer Sharing in Windows 98

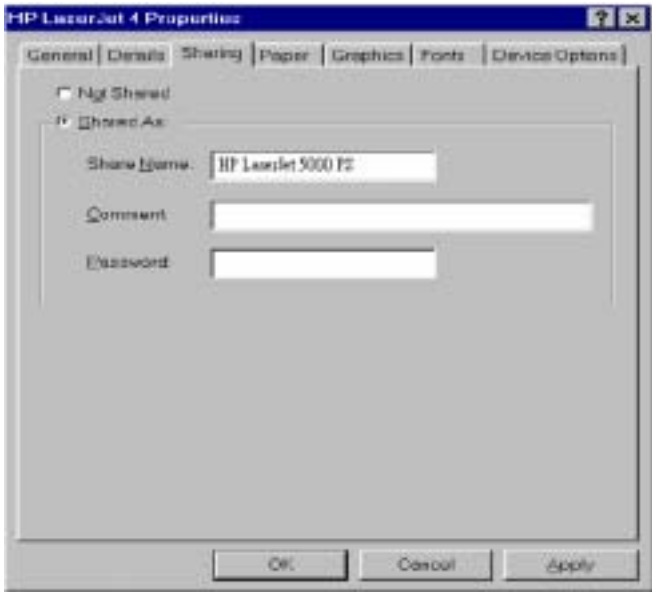
In order the printer can be shared across the network, it has to be set as the network printer.

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.



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 WLAN PCMCIA Card or you want to confirm whether your card is installed properly or not, refer to the procedure below after you have installed the card.

4.1 Check the Various Properties of the Card

To verify if 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 WLAN PCMCIA Card if it is installed successfully.

If there is Question-mark (?) or Exclamation-mark (!) in yellow on your WLAN PCMCIA Card in previous picture (PC Card Properties & System Properties), please make sure you have inserted the right PC Card, 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 WLAN PCMCIA Card
c. Select "Driver" on the upper menu of WLAN PCMCIA Card properties, and then click on " Update Driver" button.
d. Follow the Update Device Driver Wizard to complete the driver installation.

4.2 Microsoft Networking Checklist

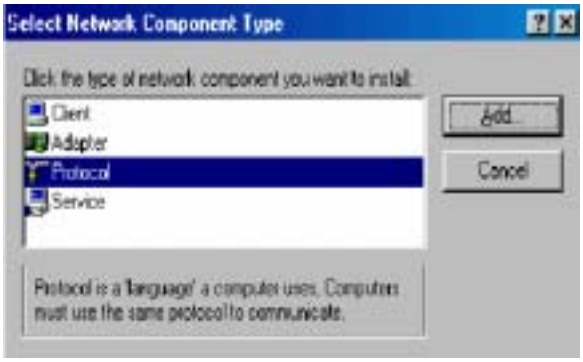
In order to the WLAN PCMCIA Card can run properly, some network items must be presented in the Microsoft " Network Neighborhood " setup. To check and activate the network setup, right-click the "Network Neighborhood" and select "Properties". The following items should be presented in the network setup:

1. WLAN PCMCIA Card
2. IPX / SPX-compatible Protocol -> WLAN PCMCIA Card
3. NetBEUI -> WLAN PCMCIA Card
4. TCP / IP -> WLAN PCMCIA Card
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 ".

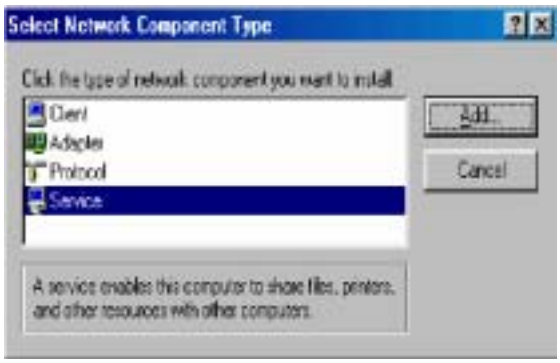


Click " Add " and then choose the network protocol. Select Microsoft as the manufacturer and " NetBEUI ", " TCP/IP ", and " IPX/SPX-compatible " for the network protocols. Then click "OK".

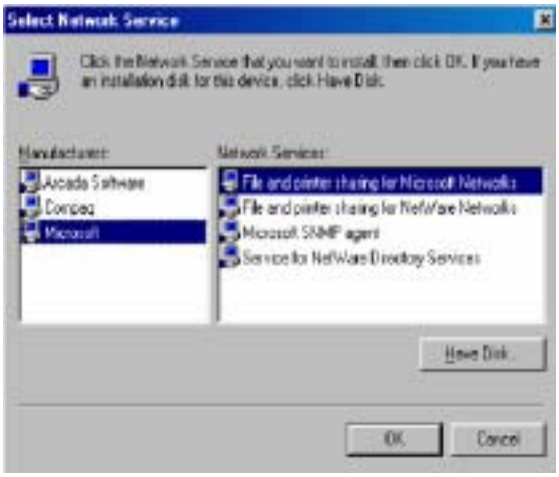
Now your network protocol should be set. Please check if your network needs any special requirements to operate in your office environment.

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

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 Wireless LAN Monitor 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.