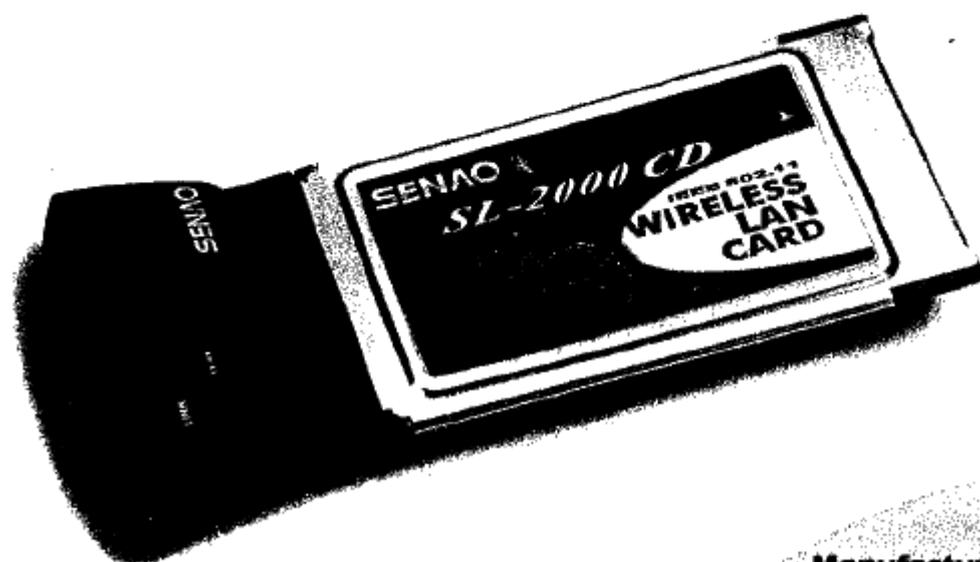# EXHIBIT C-2

# User Manual

# SENAO

# Wireless LAN Card
# SL-2000 CD

## User's Manual

Before operating the unit, please read this manual thoroughly, and retain it for future reference.

# Contents

# Chapter 1 Introduction

This chapter describes the general features, applications and network configurations of SL-2000 wireless LAN products.

## 1-1 Package Contents

The PC Card package contains the following items as shown in Figure 1-1.

1. One PC Card
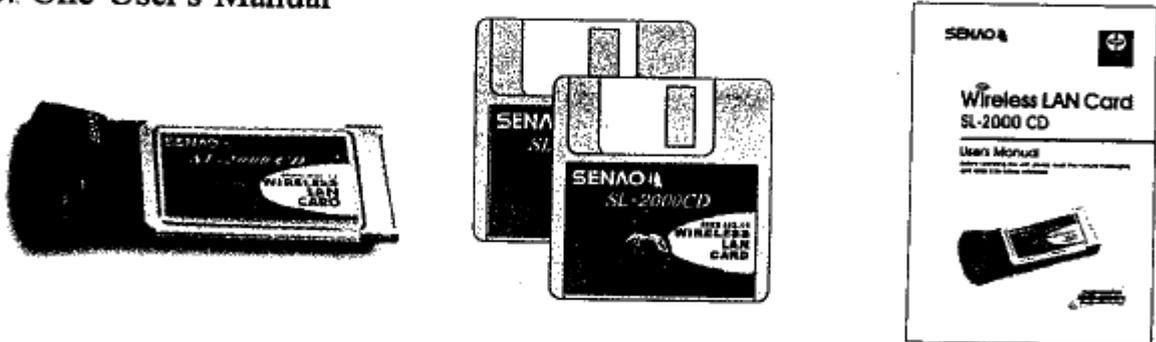2. Two PC Card Driver and Utility Diskettes
3. One User's Manual



**Figure 1-1**

## 1-2 System Requirements

Installation of the PC Card requires:

1. PC/AT compatible computer with PCMCIA Type II slot.
2. Windows 95/98 or Windows NT4.0 operating system environment.
3. Minimum 1.3M bytes free disk space for installing the PC Card driver and utility program.

## 1-3 Features

1. Comply with IEEE802.11 standard
2. Secure and robust Direct Sequence Spread Spectrum (DSSS) technology
3. Data rate up to 2Mbps
4. Wide coverage range up to 250 meters in open space
5. Built-in antenna and connector for external antenna (optional) ensure optimal RF performance
6. Plug and Play PC Card type II interface
7. Support operation with Windows 95/98 and Windows NT4.0 operating systems
8. Multi-channel frequency selection from license-free 2.4GHz ISM band

1

# 1-4 Applications

The SL-2000 wireless LAN products are easy to install and highly efficient. The following list describes some of the many applications made possible through the power and flexibility of wireless LANs:

## 1. Difficult-to-wire environments

There are many situations where wires can not or not easily be laid. Historic buildings, older buildings, open areas and across busy streets make the installation of LANs either impossible or very expensive.

## 2. Temporary workgroups

Consider situations in parks, athletic arenas, exhibitions, disaster-recovery, temporary office and construction sites where one wants a temporary WLAN established and removed.

## 3. The ability to access real-time information

Doctors/nurses, point-of-sale employees, and warehouse workers can access real-time information while dealing with patients, serving customers and processing information.

## 4. Frequently changed environments

Show rooms, meeting rooms, retail stores, and manufacturing sites where frequently rearrange the workplace.

## 5. Small Office and Home Office (SOHO) networks

SOHO users need a cost-effective, easy and quick installation of a small network.

## 6. Wireless extensions to Ethernet networks

Network managers in dynamic environments can minimize the overhead caused by moves, extensions to networks, and other changes with wireless LANs.

## 7. Wired LAN backup

Network managers implement wireless LANs to provide backup for mission-critical applications running on wired networks.

## 8. Training/Educational Facilities

Training sites at corporations and students at universities use wireless connectivity to ease access to information, information exchanges, and learning.

# 1-5 Network Configurations

To better understand how the SL-2000 wireless LAN products work together to create a wireless network, it might be helpful to depict a few of the possible SL-2000 network configurations. The SL-2000 wireless LAN products can be configured as:

1. Ad-hoc (or peer-to-peer) for departmental or SOHO LANs.
2. Infrastructure for enterprise LANs.
3. IP Sharing for 56K/ISDN TA/Cable/XDSL Modem - Connect Internet and your SOHO network.

## Ad-hoc (peer-to-peer) Mode

This is the simplest network configuration that several computers equipped with the PC cards that form a wireless network whenever they are within range of one another (Figure 1-2). In ad-hoc mode, each client, is peer-to-peer, would only have access to the resources of the other client and requires no the access point. This is the easiest and least expensive way for the SOHO to set up a wireless network.
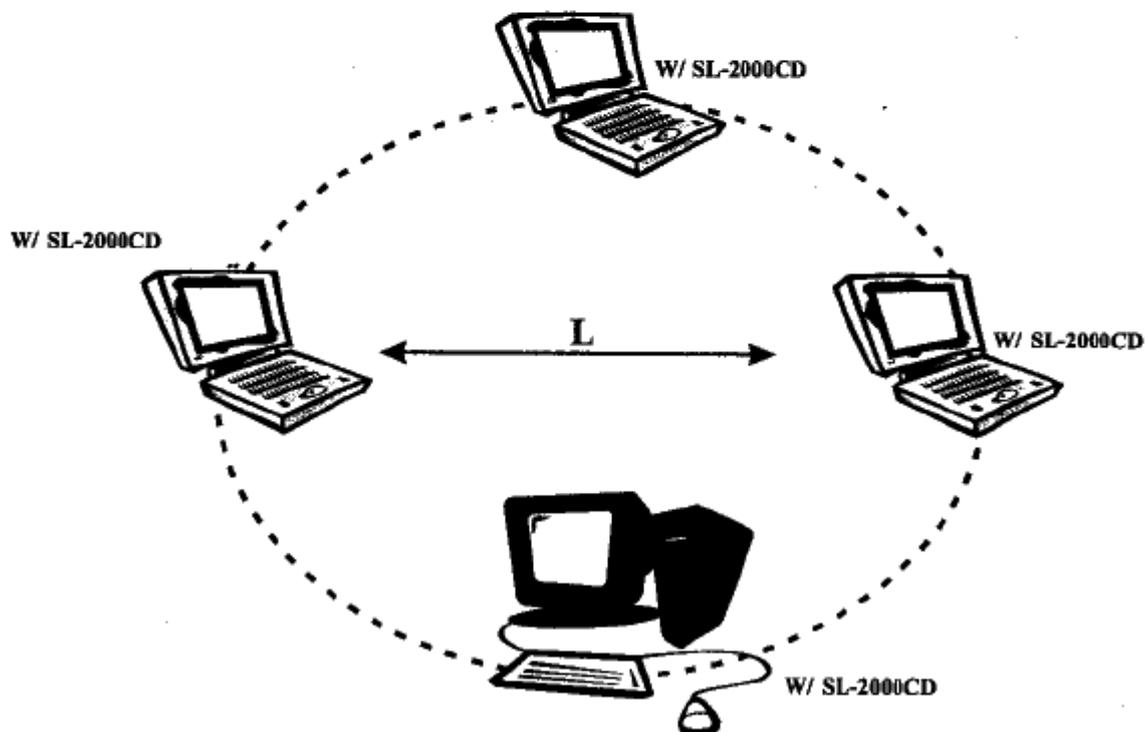


**Figure 1-2 A wireless Ad-hoc network**

3

# Infrastructure Mode

The infrastructure mode requires the use of an access point (AP). In this mode, all wireless communications between two computers have to be via the AP no matter the AP is wired to Ethernet network or stand-alone. If used in stand-alone, the AP can extend the range of independent wireless LANs by acting a repeater, which effectively doubling the distance between wireless stations as shown in Figure 1-3.
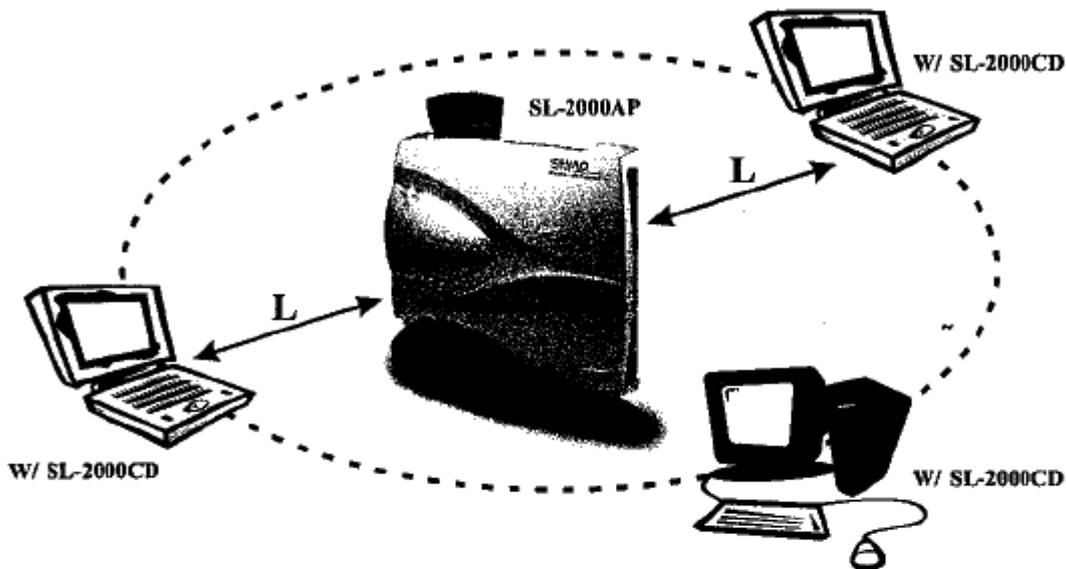


**Figure 1-3 Extended-range independent WLAN using AP as repeater**

If wired to an Ethernet network as shown in Figure 1-4, the AP serves as a bridge and provides the link between the server and the wireless clients. The wireless clients can move freely throughout the coverage area of the AP while remaining connected to the server. Since the AP is connected to the wired network, each client would have access to server resources as well as to other clients.
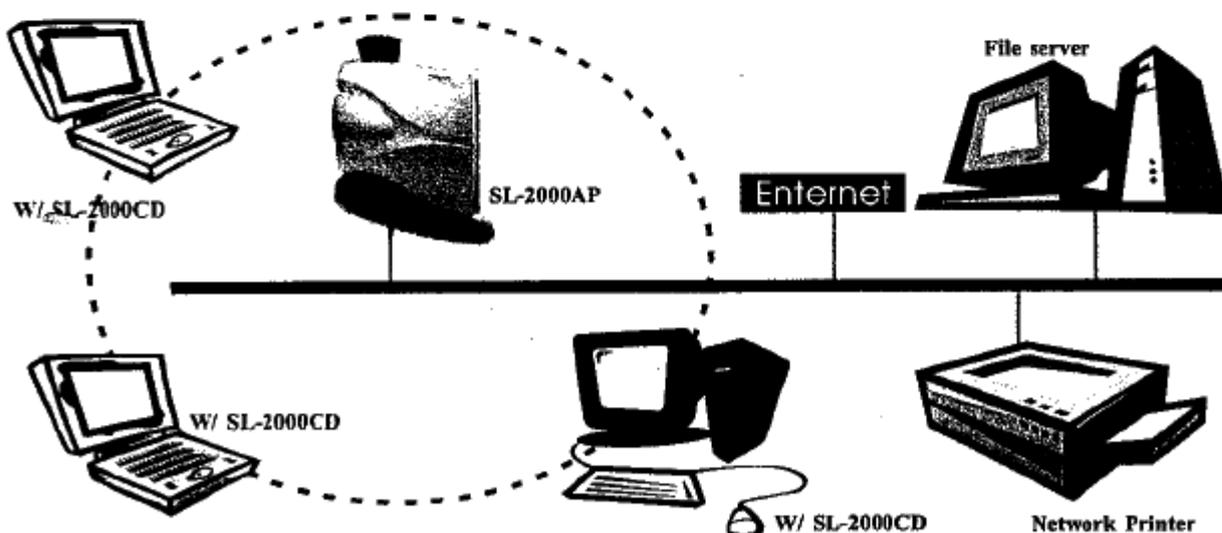


**Figure 1-4 Single AP bridge**

4

Access points have a finite range, on the order of 50 meters indoor and 100 meters outdoors. In a very large facility such as an enterprise, a warehouse, or on a college campus, it will probably be necessary to install more than one access point to cover an entire building or campus, as shown in Figure 1-5. In this scenario, access points hand the client off from one to another in a way that is invisible to the client, ensuring unbroken connectivity. Wireless clients can roam seamlessly between different coverage areas and remain connected to the network.
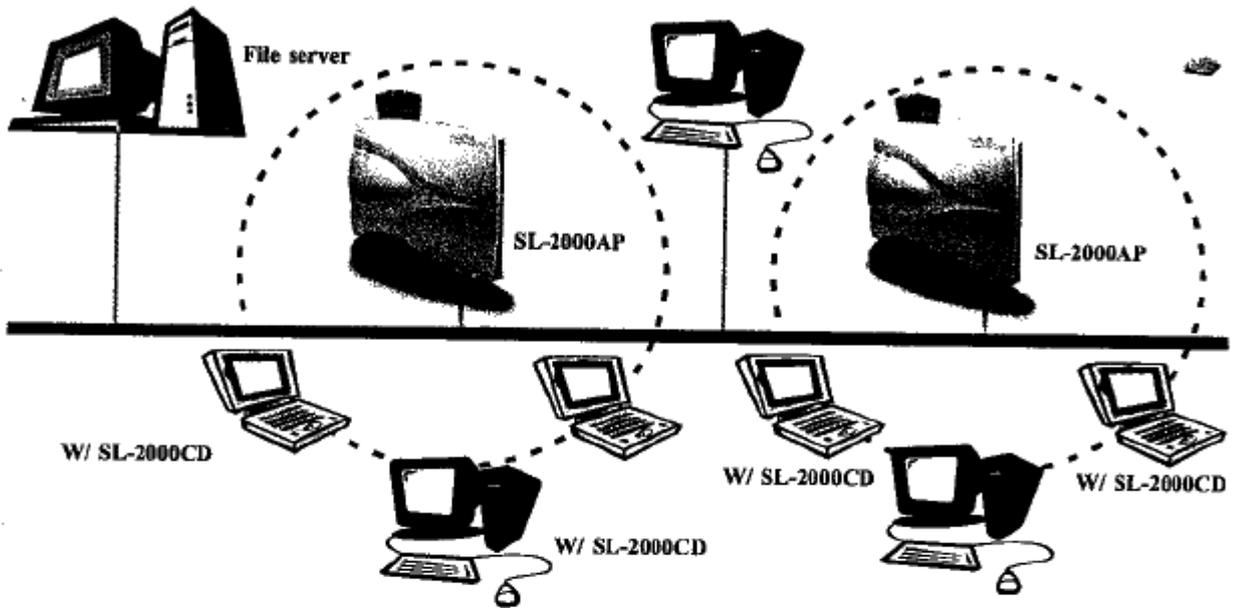


**Figure 1-5 Multiple-AP and roaming**

## IP Sharing

In infrastructure mode, in addition to acting as a bridge between an Ethernet and wireless network, the AP can be configured as an IP sharing device for Internet access as shown in Figure 1-6. You don't have to buy an expensive router. Nor you have to buy several modems and setup phone lines. Just share one AP, one Modem, single dial-up account, and one phone line, dozens of network users can go surfing the Internet concurrently.



**Figure 1-6 IP Sharing**

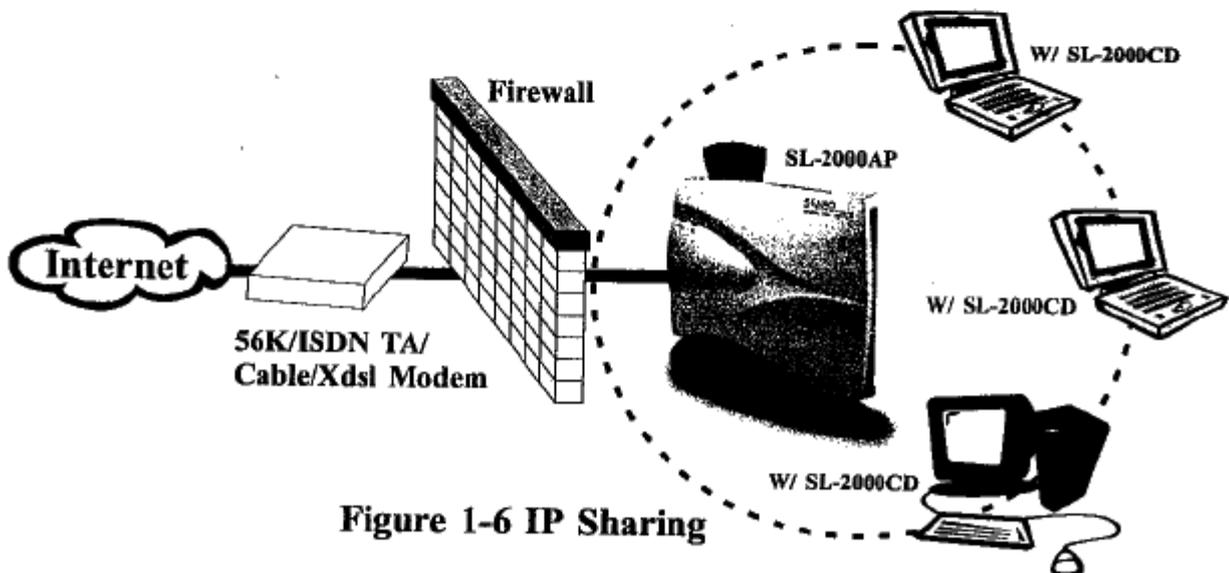# Chapter 2 Hardware Installation

This chapter describes how to install the PC Card into the PC Card slot of your computer.

## 2-1 Hardware Description

The PC Card is a standard PC Card that fits into any PCMCIA Card Type II slot. The PC Card has two LED indicators and internal antenna. Optionally you can use the PC Card in combination with an external antenna (see "Optionally Available" on page 7) to extend the range.

1. Internal Antenna

2. Transmit/Receive LED

   ◆ Off —— No wireless activity

   ◆ Blinking —— Receiving/transmitting wireless data

3. Connector for optional External Antenna (see page 7 )

4. Link LED

   ◆ Solid GREEN —— Infrastructure Network mode

   ◆ Blinking GREEN —— Peer-to-Peer Network mode



**Figure 2-1 The PC Card**

## 2-2 Installing the PC Card

1. Shut down your computer.
2. Insert the PC Card into the PC Card slot of your computer as shown in Figure 2-2.
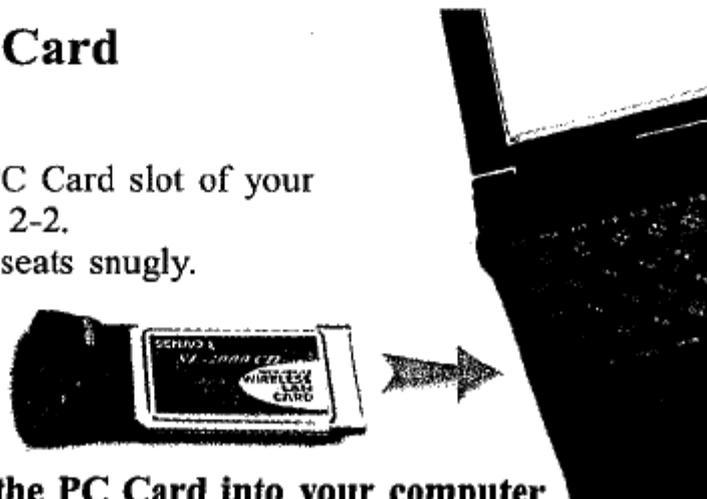3. Slide in the PC Card until it seats snugly.



**Figure 2-2 Insert the PC Card into your computer**

6

## 2-3 Removing the PC Card

When removing the card, use the release lever or button on your card slot to release the card.

## 2-4 Optionally Available

1. External Antenna
   Use the external antenna to ensure optimal transmission and receiving quality for situations where the internal antenna is shielded as shown in Figure 2-3.
   - The PC Card is close to metal surfaces
   - The PC Card is inserted into an Access Point or a computer that is installed in a "hidden" location, e.g. under a desk or inside a cabinet
   - Objects like thick stacks of books shield the antenna

2. ISA to PC Card-bus adapter
   The ISA to PC Card-bus adapter enable you to install the PC Card into a computer without a PC Card slot, for example a desktop computer.
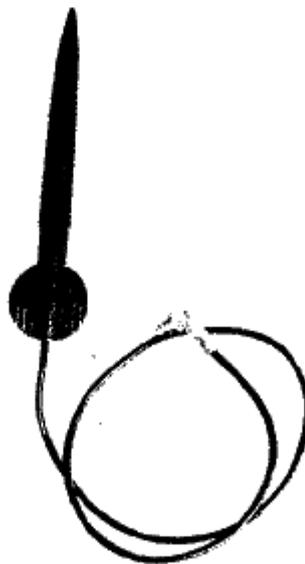
**Figure 2-3**

# Chapter 3 Software Installation

This chapter describes how to install the PC Card drivers and software under Windows 95, Windows 98 and Windows NT v4.0 environment.

## 3-1 Installing Windows 95 Drivers

The PC Card is a Plug and Play device (Windows 95 supports "Plug & Play" for PC Cards). Once you insert the PC Card into your computer, Windows 95 will automatically detect the card, and prompt you to install the driver. Just follow the instructions to install the driver.

### Before Installing the Drivers

During the installation, Windows 95 may need to copy Windows systems files from the Windows 95 installation diskette or CD-ROM. Therefore you will need a copy of the Windows 95 installation diskette or CD-ROM at hand before installing the driver. On many systems, instead of a CD, the necessary installation files are archived on the hard disk in C:\WINDOWS \OPTIONS\CABS directory.

### Installation Procedure:

1. Insert the PC Card into the PCMCIA slot of your computer as described in "Hardware Installation" on page 6.
2. Turn on your computer.
3. Windows will automatically detect your PC Card. Once Windows has identified the PC Card, it then prompts "Update Device Driver Wizard" as shown in Figure 3-1.



**Update Device Driver Wizard**

This wizard will complete the installation of:

SENAO-SL 2000CD WLAN Card

by searching your local drives, network, and Internet locations for the most current driver.

If you have a disk or CD-ROM that came with this device, insert it now.

It is recommended that you let Windows search for an updated driver. To do this, click Next to continue.
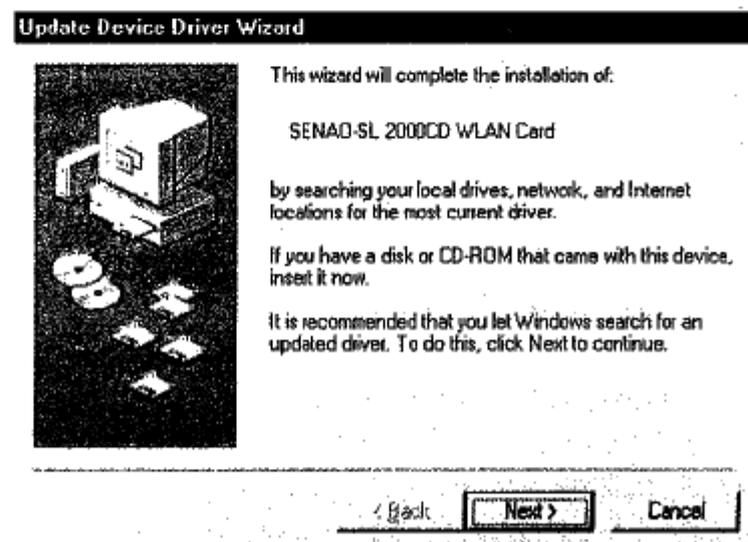
< Back | Next > | Cancel

**Figure 3-1**

4. Insert the "SL-2000CD Driver & Utility" diskette into the floppy disk drive A, and click "Next". Windows will find the PC Card driver as shown in Figure 3-2. Then click "Finish".
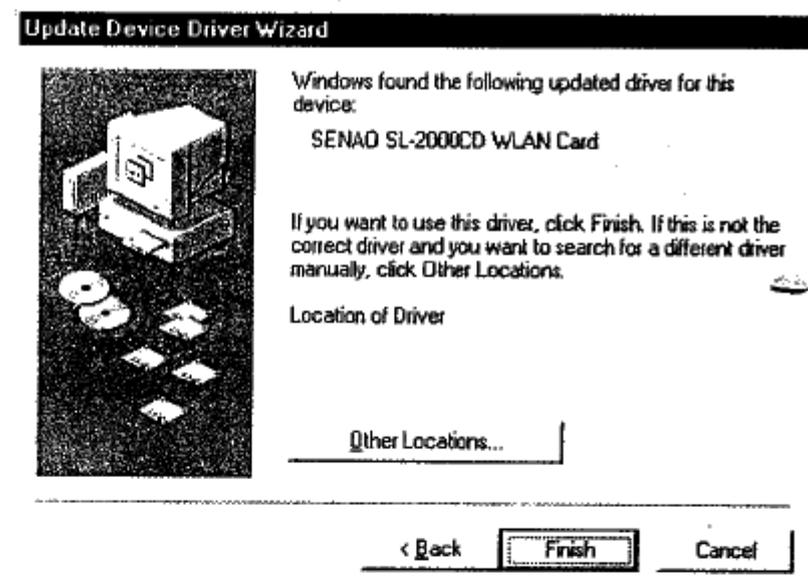
**Update Device Driver Wizard**

Windows found the following updated driver for this device:

SENAO SL-2000CD WLAN Card

If you want to use this driver, click Finish. If this is not the correct driver and you want to search for a different driver manually, click Other Locations.

Location of Driver

Other Locations...

< Back    Finish    Cancel

**Figure 3-2**

5. If it's the first time for you to setup a network on this computer, Windows will ask you to enter a computer name and workgroup name as shown in Figure 3-3.
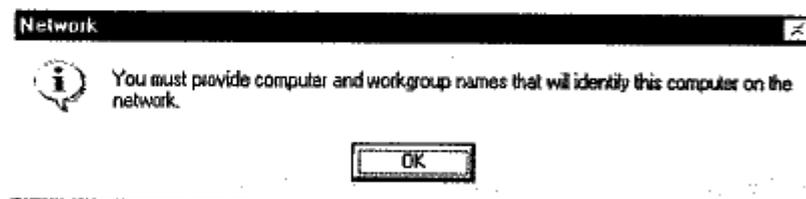
**Network**

You must provide computer and workgroup names that will identify this computer on the network.

OK

**Figure 3-3**

6. Click "OK" to bring out the "Network/Identification" window as shown in Figure 3-4. The description field may be left blank. Enter a computer name, workgroup name and click "Close".
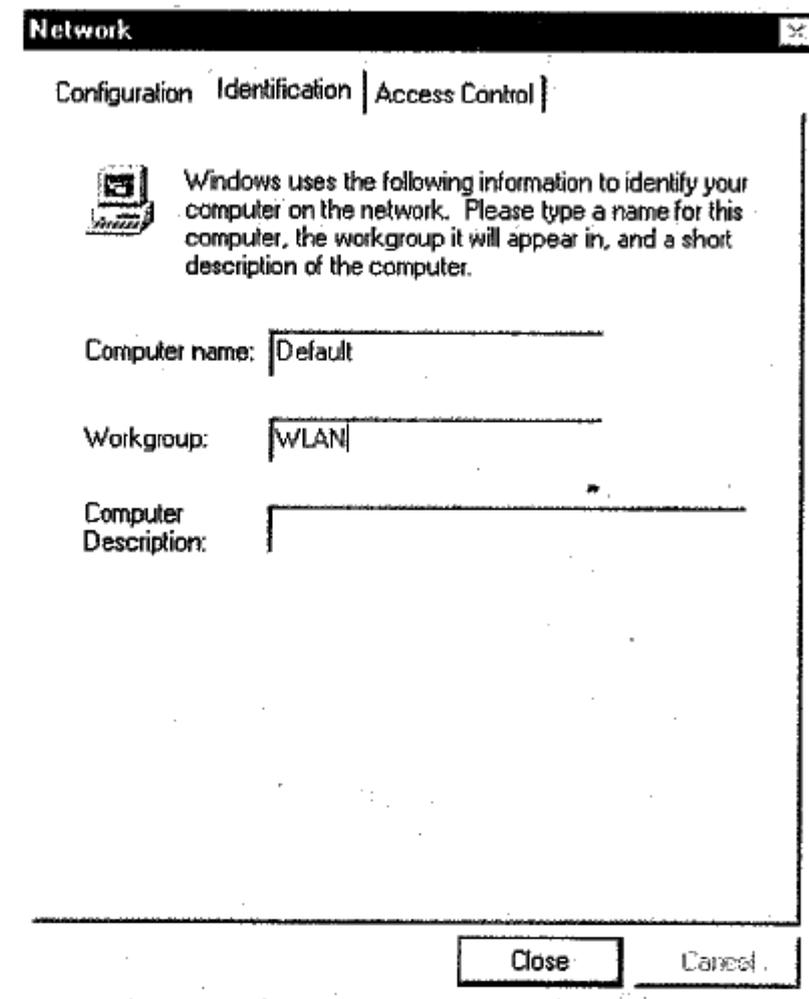
**Network**

Configuration    Identification    Access Control

Windows uses the following information to identify your computer on the network. Please type a name for this computer, the workgroup it will appear in, and a short description of the computer.

Computer name: |Default

Workgroup: |WLAN|

Computer Description: |

Close    Cancel

**Figure 3-4**

7. Windows may attempt to copy part of software from original Windows 95 CD-ROM as shown in Figure 3-5. Please insert the Windows 95 CD-ROM, and then click "OK".
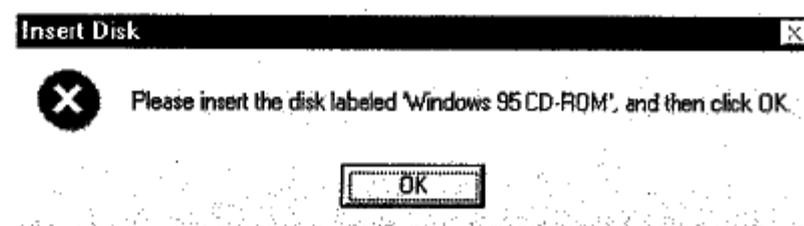
**Insert Disk**

Please insert the disk labeled 'Windows 95 CD-ROM', and then click OK.

OK

**Figure 3-5**

10

8. In the "Copying Files" dialog box. Enter the location of "Windows 95 CD-ROM" as shown Figure 3-6, and click "OK".

**Copying Files...**

The file 'netapi.dll' on Windows 95 CD-ROM could not be found.

Insert Windows 95 CD-ROM into the drive selected below, and click OK.

OK
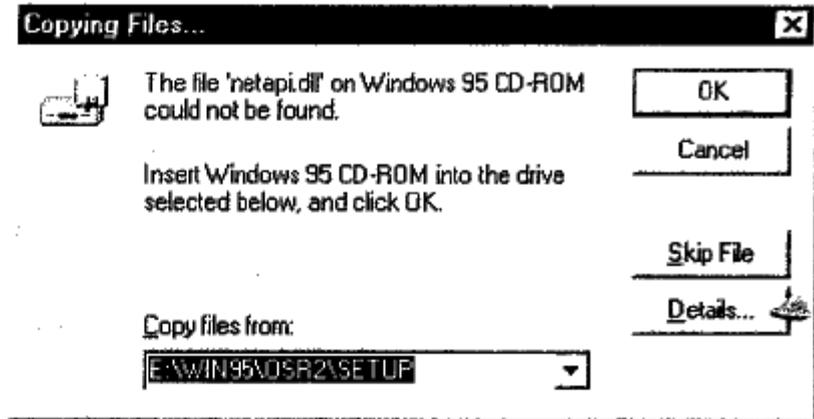
Cancel

Skip File

Details...

Copy files from:

E:\WIN95\OSR2\SETUP

**Figure 3-6**

9. The computer will load the PC Card Driver from floppy drive A automatically. In the "Copying Files" dialog box. Enter the location (e.g. "A:\") of the PC Card driver as shown in Figure 3-7.
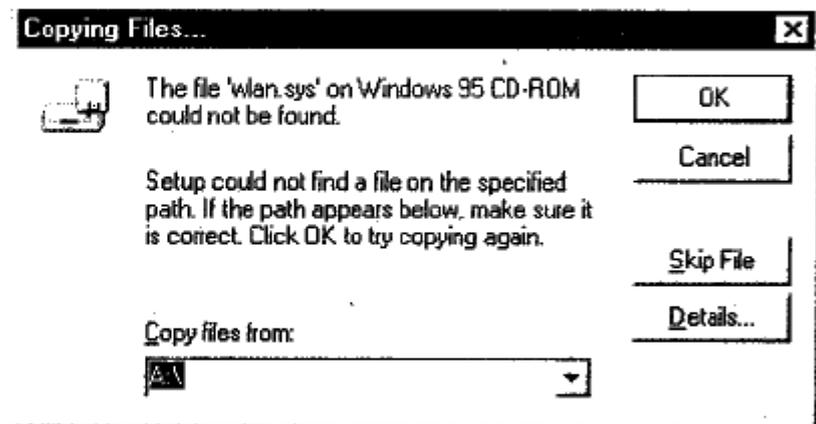
**Copying Files...**

The file 'wlan.sys' on Windows 95 CD-ROM could not be found.

Setup could not find a file on the specified path. If the path appears below, make sure it is correct. Click OK to try copying again.

OK

Cancel

Skip File

Details...

Copy files from:

A:\

**Figure 3-7**

10. After finishing loading, the computer will display a dialog box titled "System Settings Change" as shown in Figure 3-8. Remove the "SL-2000CD Driver & Utility" diskette from floppy disk drive A. Click "Yes" to restart your computer.
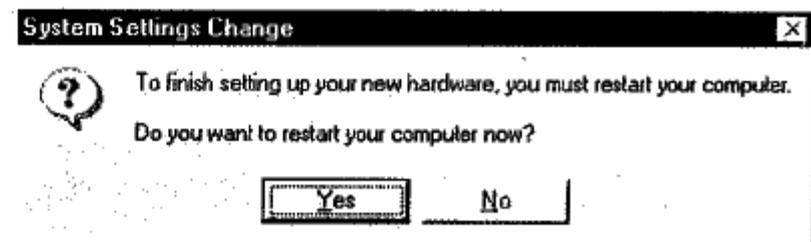
**System Settings Change**

(?) To finish setting up your new hardware, you must restart your computer.

Do you want to restart your computer now?

Yes    No

**Figure 3-8**

11

# 3-2 Installing Windows 98 Drivers

The PC Card is a Plug and Play device (Windows 98 operating systems support "Plug & Play" for PC Cards). Once you insert the PC Card into your computer, Windows 98 will automatically detect the card, and prompt you to install the driver. Just follow the instructions to install the driver.

## Before Installing the Drivers

During the installation, Windows 98 may need to copy Windows systems files from the Windows 98 installation diskette or CD-ROM. Therefore you will need a copy of the Windows 98 installation diskette or CD-ROM at hand before installing the driver. On many systems, instead of a CD, the necessary installation files are archived on the hard disk in C:\WINDOWS \OPTIONS\CABS directory.

## Installation Procedure:

1. Insert the PC Card into the PCMCIA slot of your computer as described in "Hardware Installation" on page 6.
2. Turn on your computer.
3. Windows will automatically detect your PC Card. Once Windows has identified the PC Card, it then prompts a dialog box titled "Add New Hardware Wizard" as shown in Figure 3-9. Then click "Next".
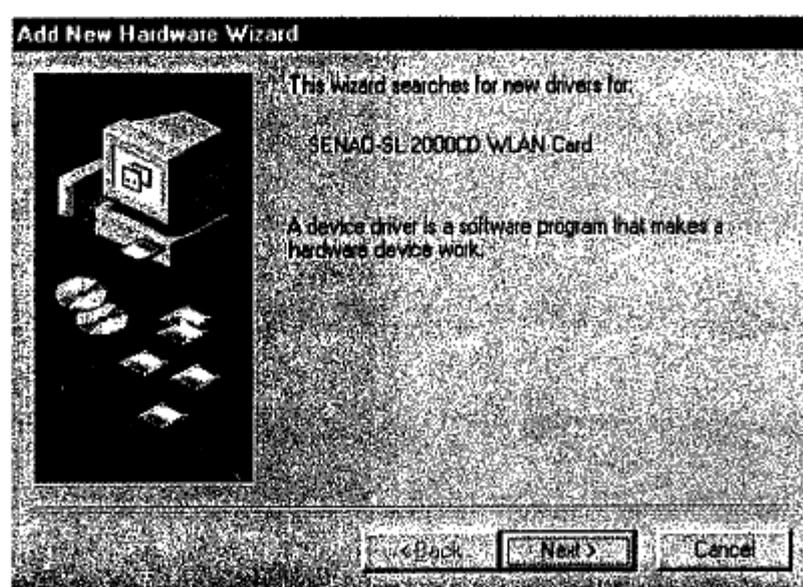


Figure 3-9

4. Select the "Search for the best driver for your device" as shown in Figure 3-10, and click "Next".
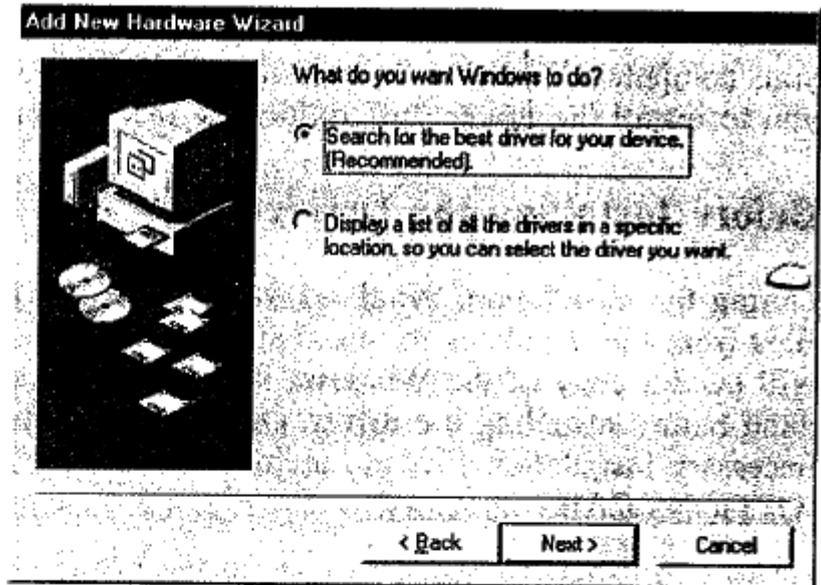


**Figure 3-10**

5. Insert the "SL-2000CD Driver & Utility" diskette into the floppy disk drive. Select "Floppy disk drives" as shown in Figure 3-11. Then click "Next".
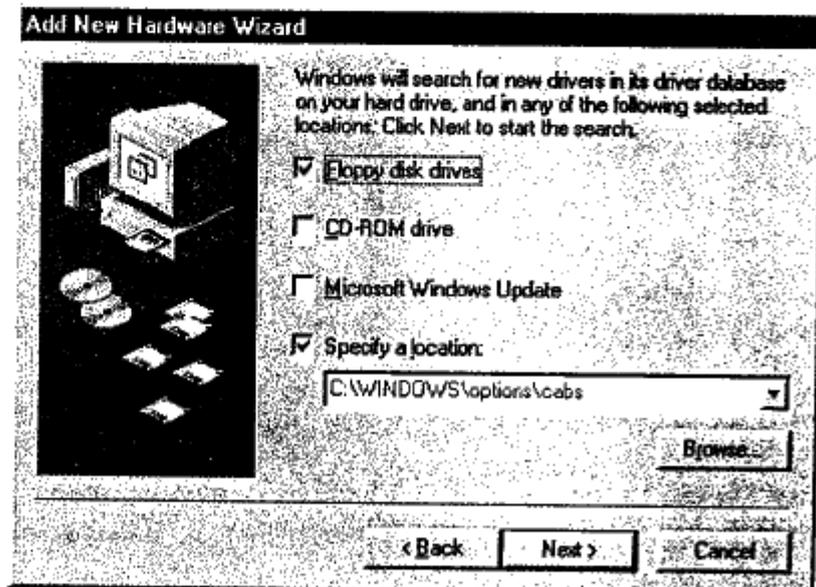


**Figure 3-11**

6. Windows will find the driver as shown in Figure 3-12. Click "Next".



**Figure 3-12**

7. Windows may attempt to copy part of software from original Windows 98 CD-ROM as shown in Figure 3-13. Please insert the Windows 98 CD-ROM, and then click "OK".
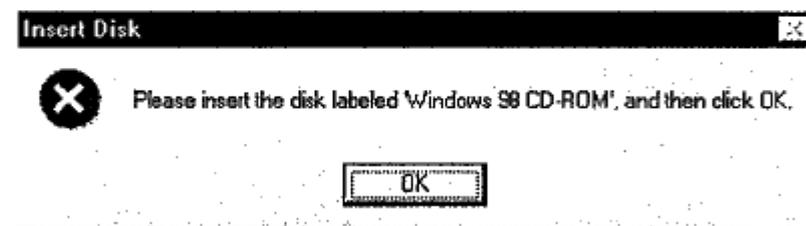


**Figure 3-13**

8. In the "Copying Files" dialog box. Enter the location of "Windows 98 CD-ROM" as shown Figure 3-14, and click "OK".
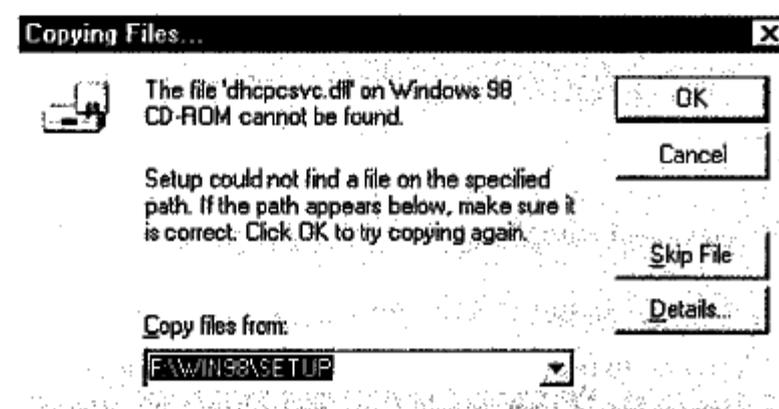


**Figure 3-14**

14

9. After finishing loading, the computer will display "Windows has finished installing the software that your new hardware device requires" as shown in Figure 3-15.
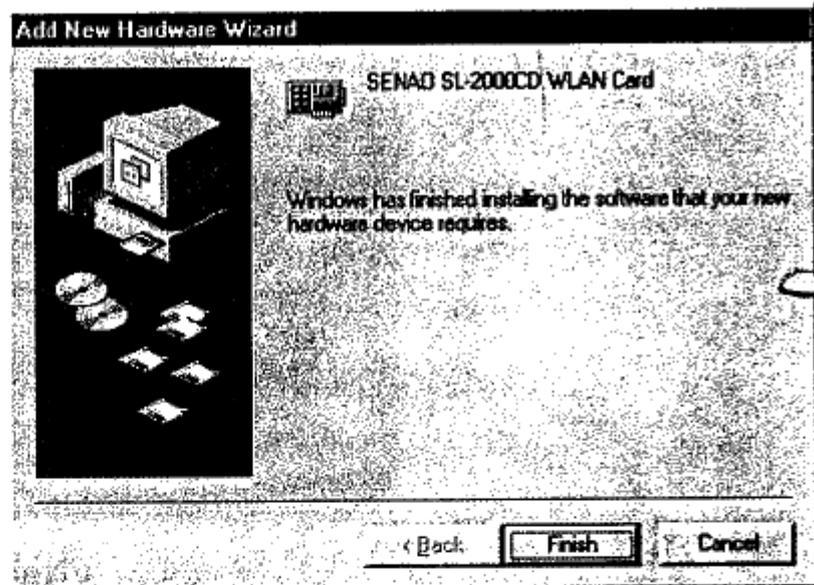


**Figure 3-15**

10. Click "Complete" to bring out a dialog box titled "System Settings Change". Remove the "SL-2000CD Driver & Utility" diskette from floppy disk drive A. Click "Yes" to restart your computer as shown in Figure 3-16.
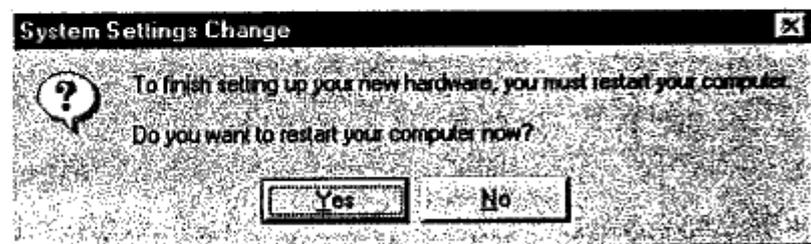


**Figure 3-16**

# 3-3 Installing Windows NT Drivers

Unlike Windows 95/98, Windows NT 4.0 does not support "Plug & Play"; therefore, you need to install the driver of the PC Card manually.

## Before Installing the Drivers

During the installation, Windows NT may need to copy Windows systems files from the Windows NT installation diskette or CD-ROM. Therefore you will need a copy of the Windows NT installation diskette or CD-ROM at hand before installing the driver.

1. Insert the PC card into your computer as described in "Hardware Installation" on page 6
2. Power up and log in with "administrator privileges".
3. Enable the PC Card controller.
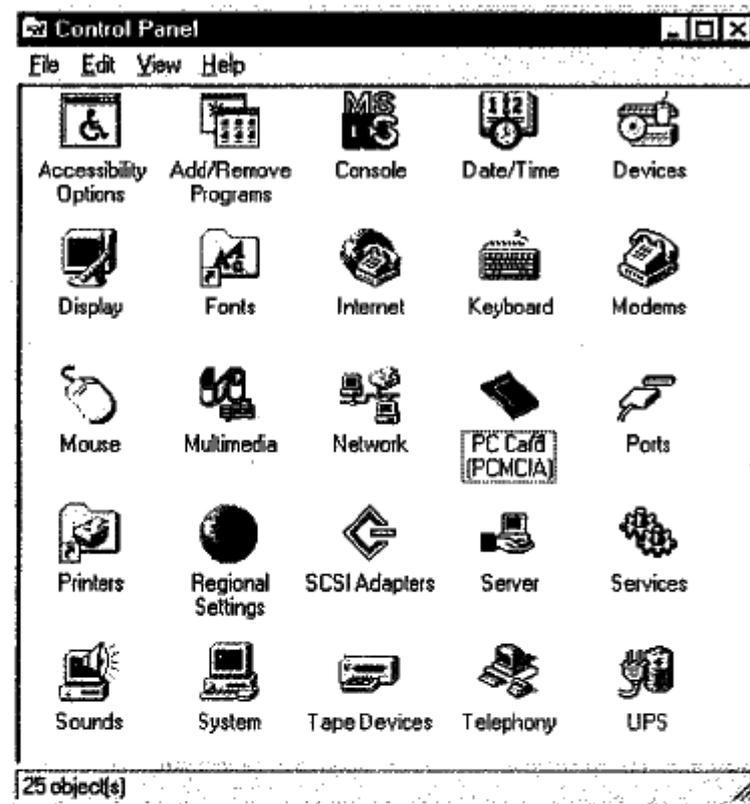   3-1 Click the "Start" button, select "Settings" and then click "Control Panel" as shown in Figure 3-16.



**Figure 3-16**

3-2 In the "Control Panel", double-click the "PC Card" icon to open the "PC Card Device" window as shown in Figure 3-17.
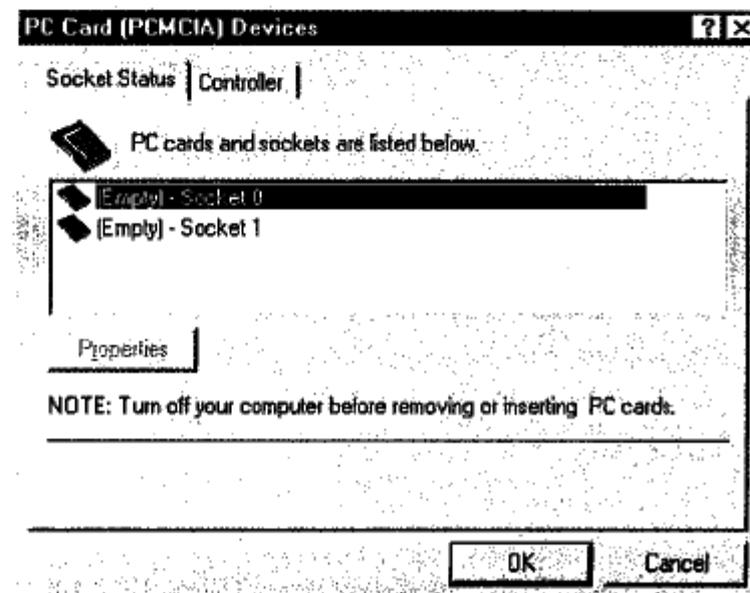


**Figure 3-17**

16

3-3 Double-click the "PC Card Sockets" to enable it.

3-4 Click "OK" and close the "PC Card Device" window.

4 Run "NT Diagnostics" to avoid a device conflict. During the driver installation, Windows NT prompts you to confirm or modify the factory-set device values for the "PC Card I/O" and "IRQ". To make sure that you use available I/O port and IRQ values, perform the following:

4.1 Click the "Start" button, select and click "Program/Administrative Tools/Windows NT Diagnostics" as shown in Figure 3-18.
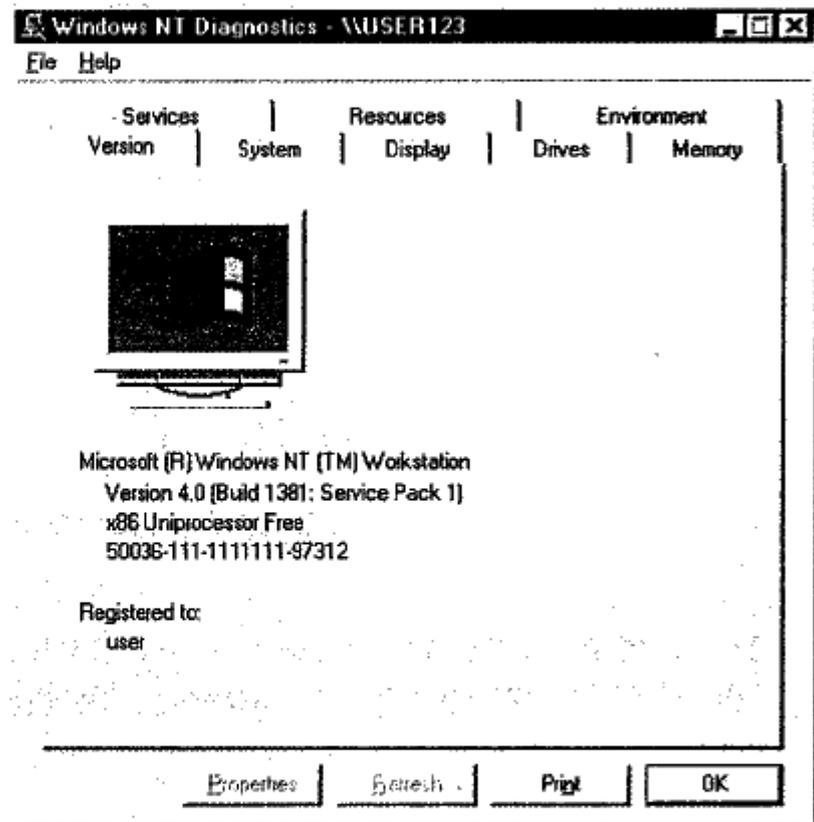


**Figure 3-18**

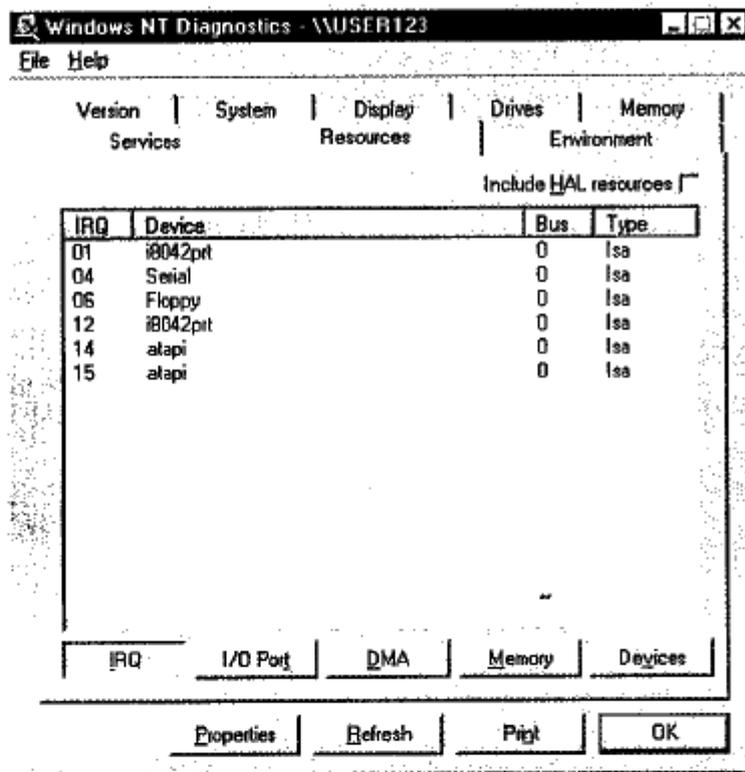4-2 Click the "Resources" tab as shown in Figure 3-19. Write down an IRQ not listed in the window.



**Figure 3-19**

4-3 Click the "I/O Port" button as shown in Figure 3-20. Write down an unlisted I/O port value in the range 0300-FFC0 with increments of 40. Typically, addresses before 0400 are used even if not shown in the window.
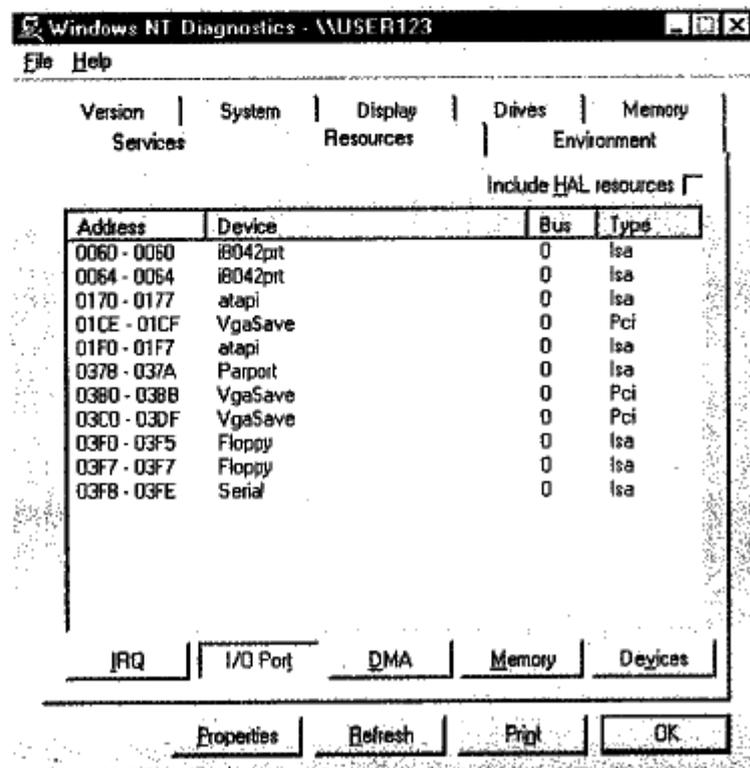


**Figure 3-20**

5 Enable network support
   5-1 Click the "Start" button, select "Settings", and then click "Control
       Panel".
   5-2 In the "Control Panel" window, double-click "Network" icon to open
       the "Network" window as shown in Figure 3-21.

Figure 3-21

◆ If no network has been installed yet, you will be prompted to install it now. Click "Yes" to install Windows NT Networking, and follow the instructions as they appear on your screen.

◆ If networking support was already installed, you will see a window with multiple tabs. Select the "Adapters" tab, and then click the "Add" button as shown in Figure 3-22. When prompted for the driver, follow the "Installing Procedure" in next paragraph.

**Figure 3-22**

## Installation Procedure

To install the PC Card on a computer running Windows NT 4.0, proceed as follows:

1. Insert the "PC Card Driver diskette for Windows NT 4.0" into the floppy drive A.
2. Click the "Start" button, select "Settings" and then click "Control Panel".
3. In the "Control Panel" window, double-click the "Network" icon to open the "Network" window as shown in Figure 3-23.
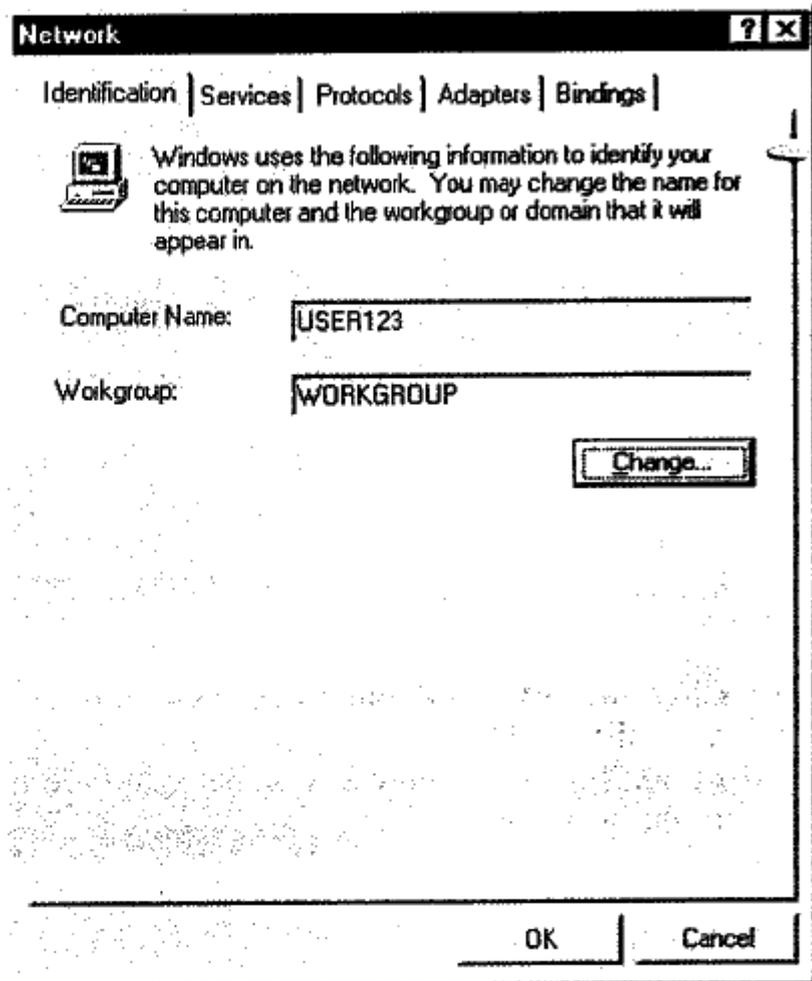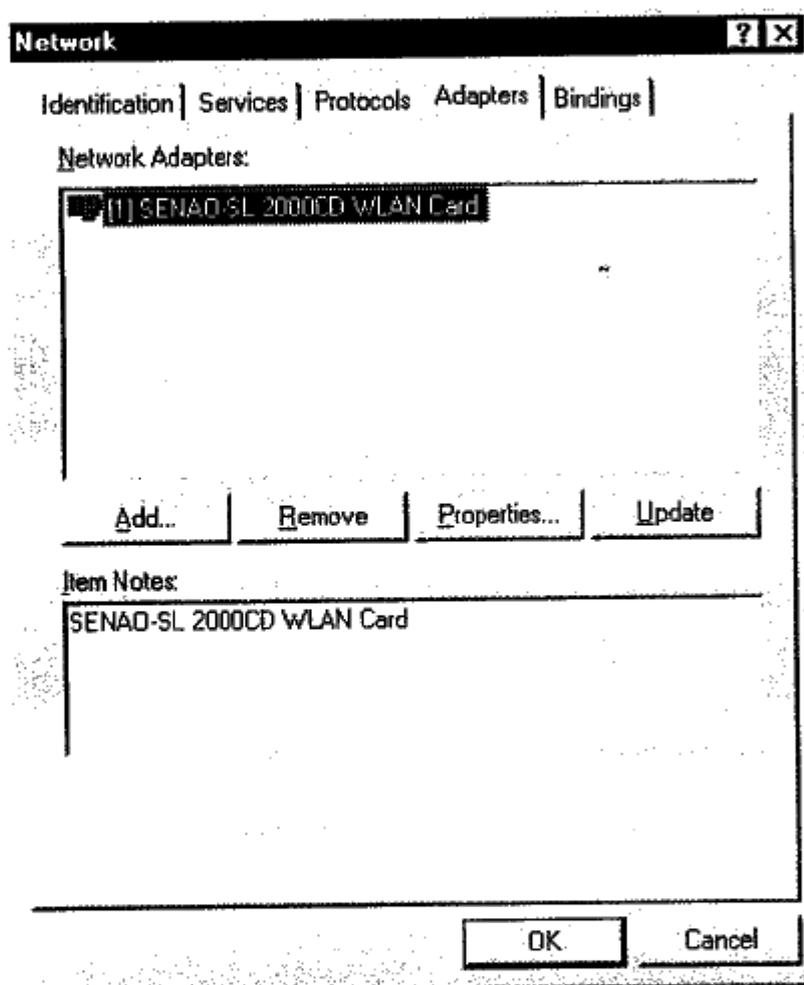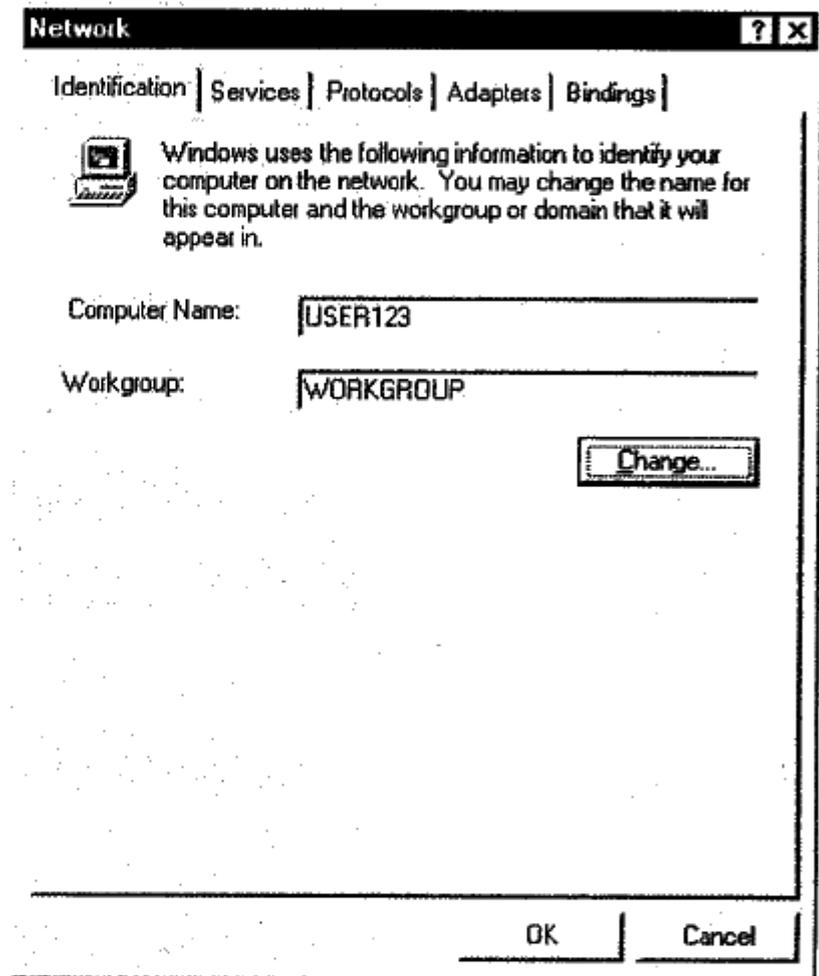


**Figure 3-23**

4. Select "Adapters" tab, and then click the "Add" button as
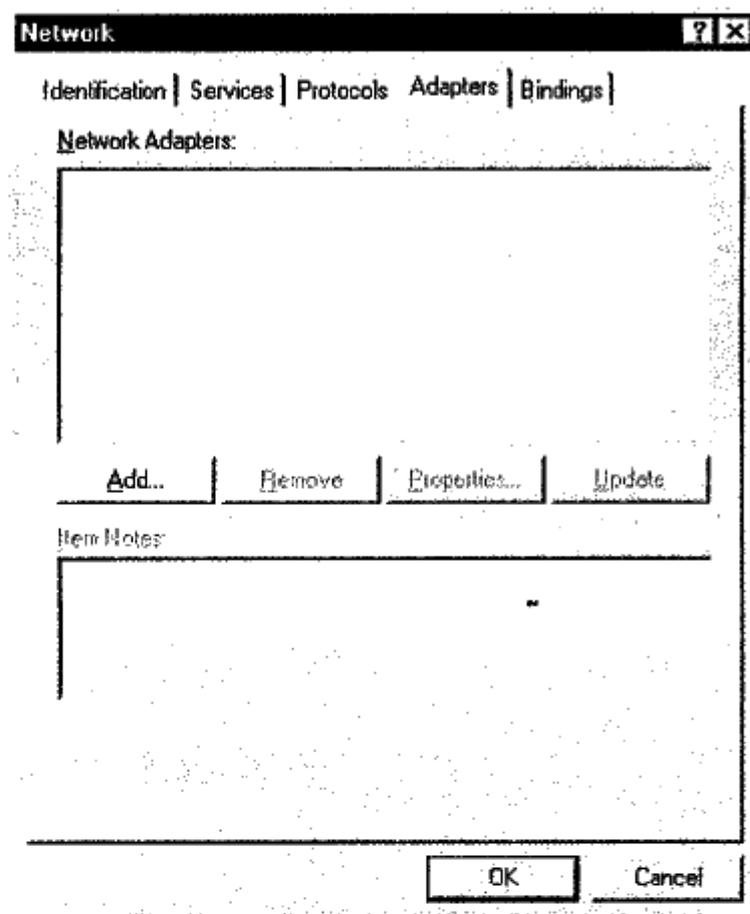   shown in Figure 3-24.



**Figure 3-24**

5. In the "Select Network Adapter" dialog box, select the "Have Disk" as shown
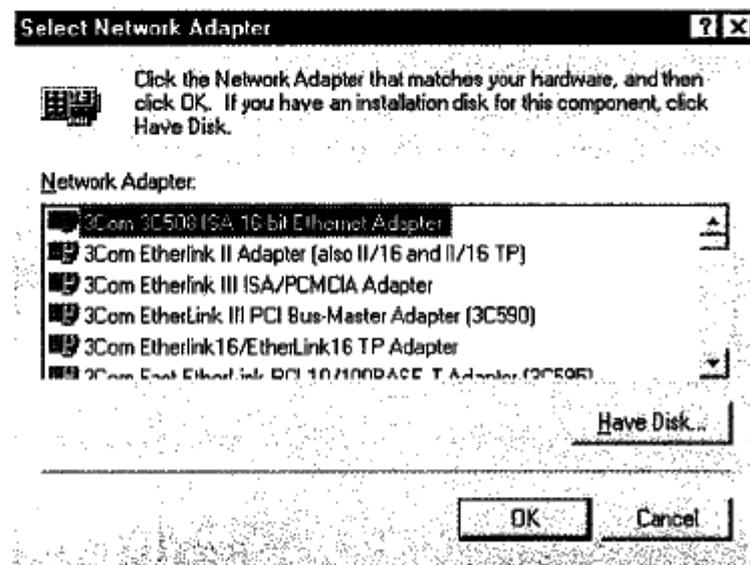   in figure 3-25.



**Figure 3-25**

6. In the "Insert Disk" window, enter "A:" as shown in Figure 3-26, then click "OK".

**Insert Disk**

Insert disk with software provided by the software or hardware manufacturer. If the files can be found at a different location, for example on another drive type a new path to the files below.

OK

Cancel

A
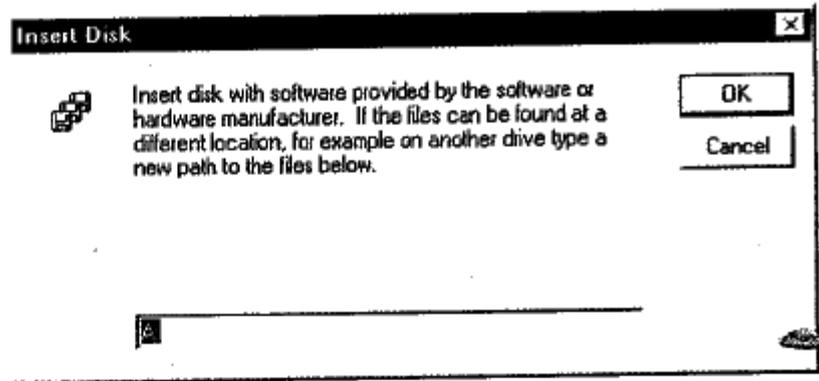
**Figure 3-26**

7. In the "Select OEM Option", click "OK" as shown in Figure 3-27.

**Select OEM Option**

Choose a software supported by this hardware manufacturer's disk.

SENAO-SL 2000CD WLAN Card

OK          Cancel          Help

**Figure 3-27**

8. In the window labeled "SENAO SL-2000CD WLAN Card Setup", you will be asked to select or enter values for the driver parameters I/O base, IRQ Level etc., as shown in Figure 3-28.

**SENAO-SL 2000CD WLAN Card Setup**

I/O Base:    240          Network ID:    IEEE802.11

IRQ Level:    10

Network Mode    Infrastructure          OK

Region Domain    FCC          Cancel

**Figure 3-28**

23
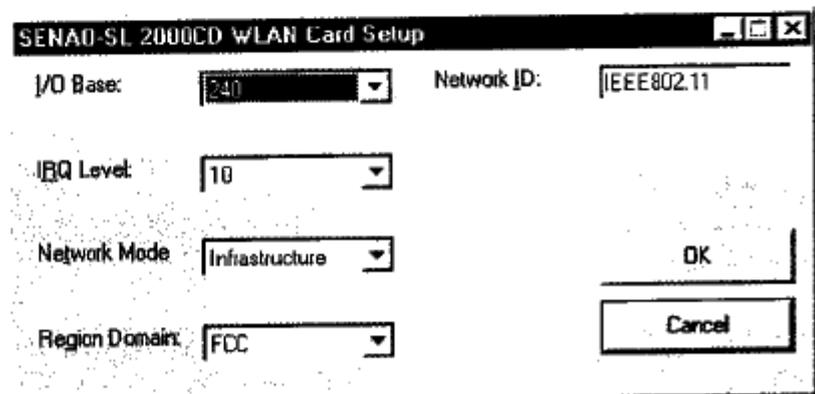
You must select conflict-free values for the driver parameters. The default values were chosen carefully, but are not guaranteed to be conflict-free. You can use the Windows NT Diagnostics in the Adm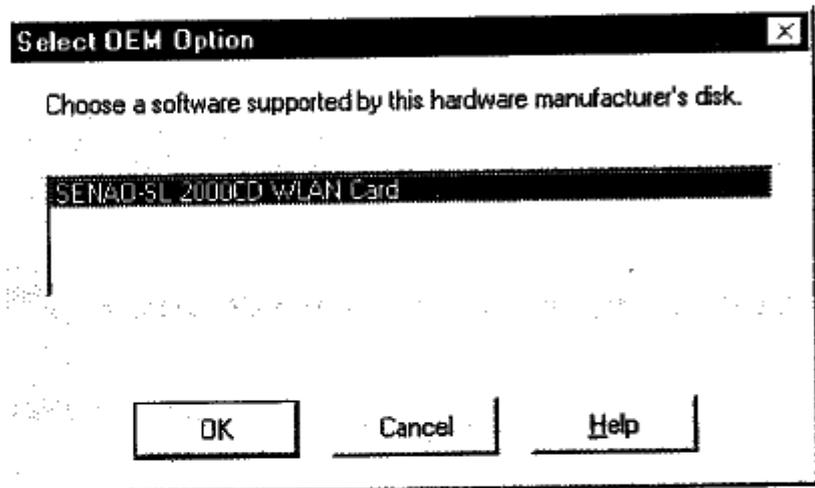inistrative Tools group to see what I/O ports and IRQ are being used. Do not select values that conflict with those in use. You will also find in the Setup window several other parameters for the PC Card to configure. Please refer to "Chapter 4 Configuration" for the description of these parameters.

9. Click "OK" to return to "Network/Adapters" window as shown in Figure 3-29.
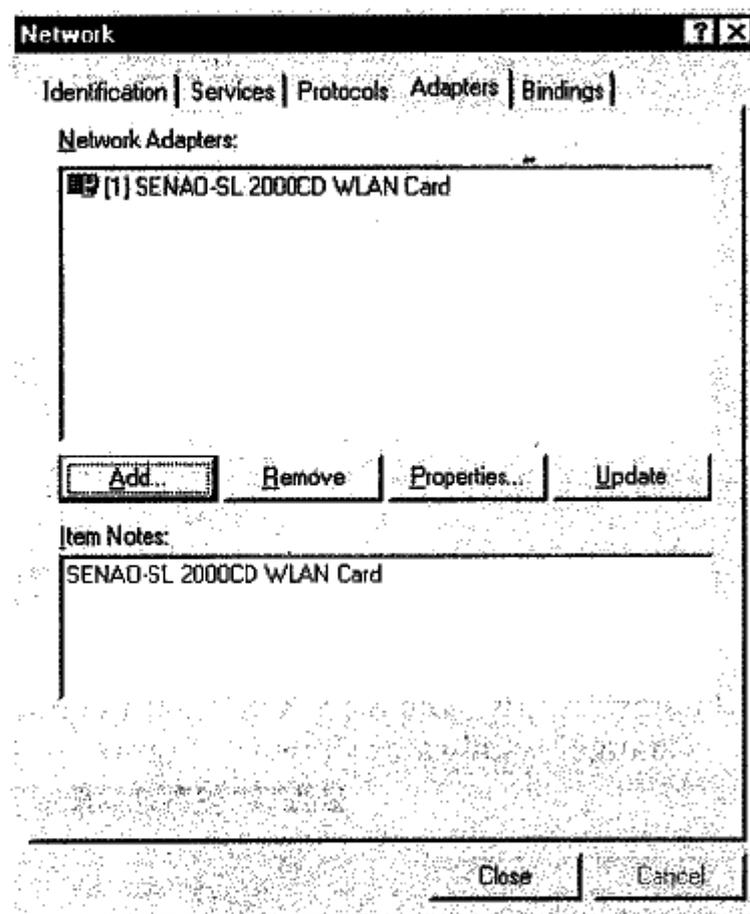


**Figure 3-29**

10. Click "Close" to open the "Microsoft TCP/IP Properties" window. Windows NT will ask for the IP address assignment method. Select "Obtain an IP address from a DHCP server" or "Specify an IP address" as shown in Figure 3-30.
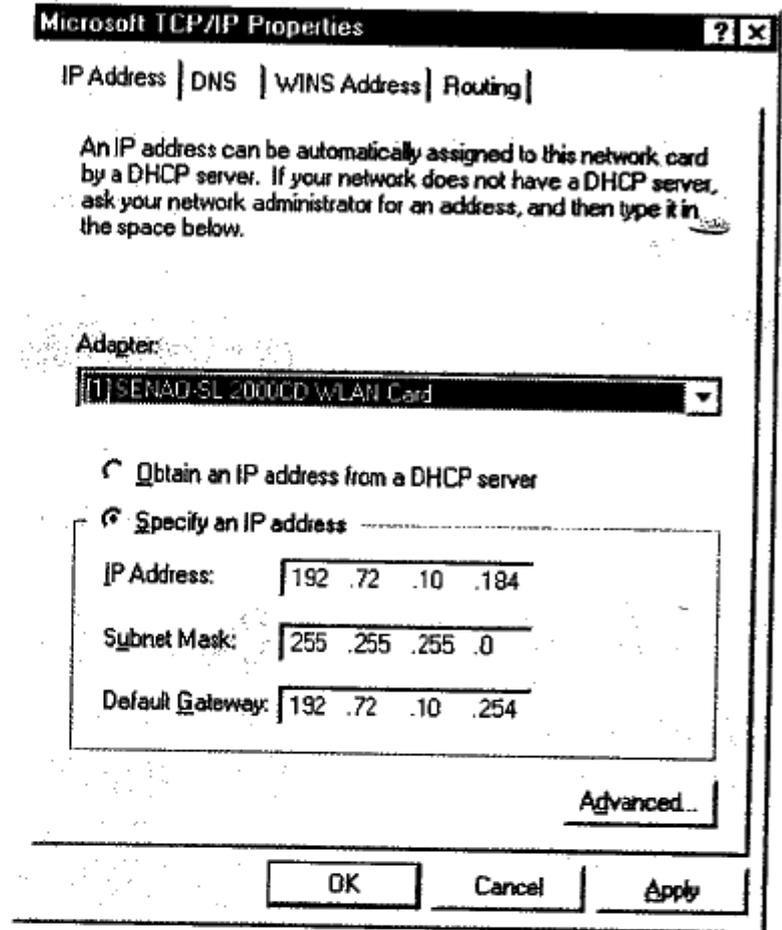


**Figure 3-30**

11. Click "Apply" and then "OK" to bring out the "Network Settings Change" window as shown in Figure 3-31.
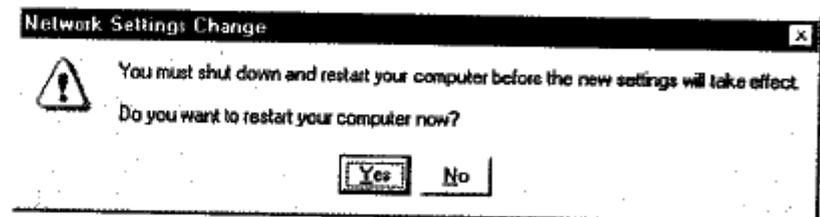


**Figure 3-31**

12. Click "Yes" to restart your computer to complete the driver installation process.

## 3-4 Uninstalling the PC Card

If the PC Card installation is unsuccessful for any reason, the best way to solve the problem may be to completely uninstall the PC Card and its software and repeat the installation procedure again.

# Removing the PC Card Driver

1. Click the "Start" button, select "Settings", and then click "Control Panel" as shown in Figure 3-32.
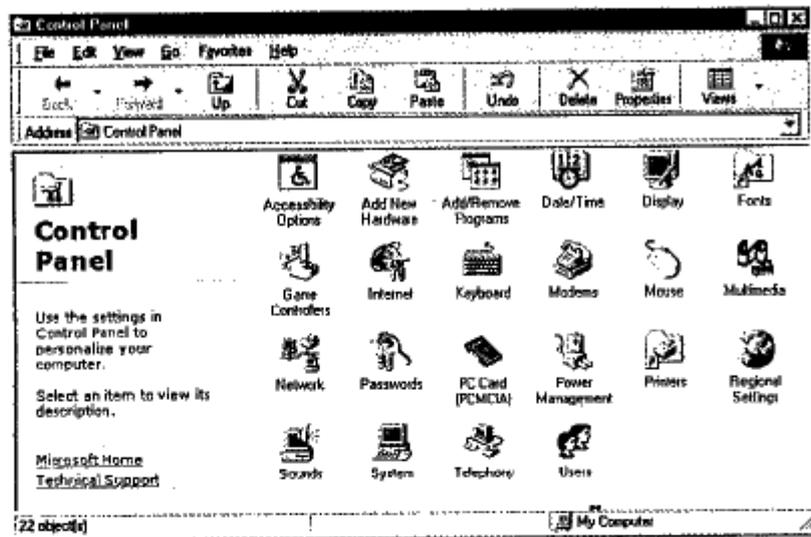


**Figure 3-32**

2. In the "Control Panel" window, double-click "System" icon, then select "Device Manager" as shown in Figure 3-33.



**Figure 3-33**

3. Double-click the "Network adapters", then select "SENAO SL-2000CD WLAN Card" component and click "Remove" to uninstall the PC Card driver files, as shown in Figure 3-34.
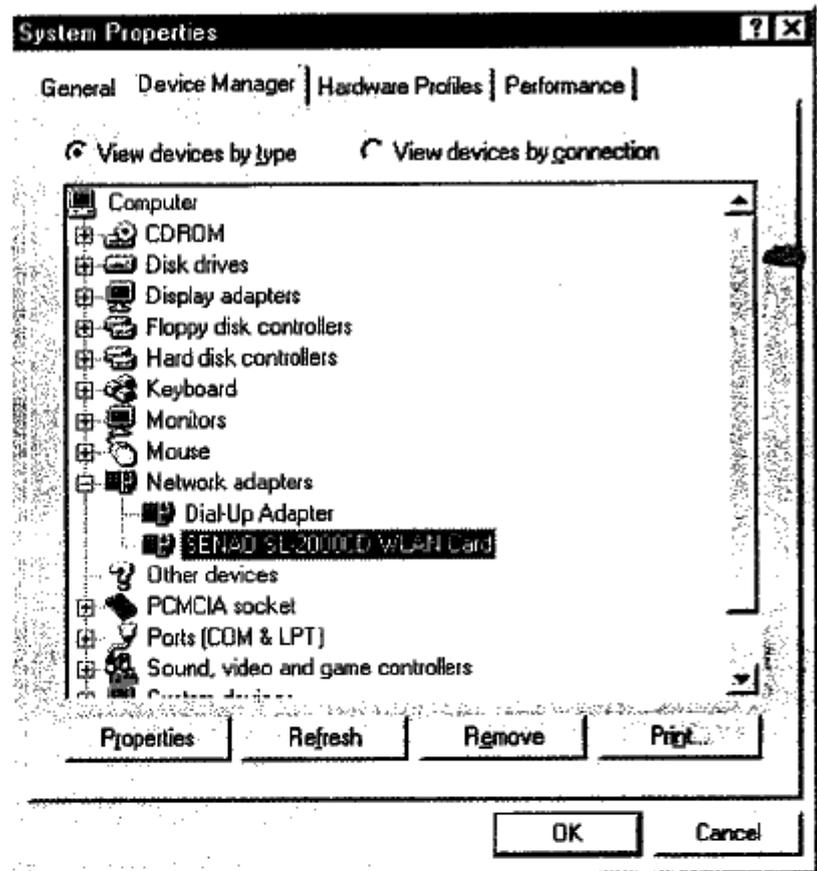


**Figure 3-34**

## Removing the Card

When removing the card, use the release lever or button on your card slot to release the card.

# Chapter 4 Configuration

This chapter describes how to configure the PC Cards and install the Driver Status program. To better understand how SL-2000 wireless LAN products work together to create a wireless network, we recommend to see "Network Configurations" in Chapter 1, page 3, for various applications. The Driver Status program can be used to display the PC Cards status information about the current card settings, the connection status, real-time statistics and the current signal strength.

## 4-1 Configuring the PC Card

1. After finishing installing the driver and rebooting the computer as described in Chapter 3, the computer will show a dialog box titled "Enter Network Password" dialog box as shown in Figure 4-1. Enter your password if it had been set or just click "Cancel".
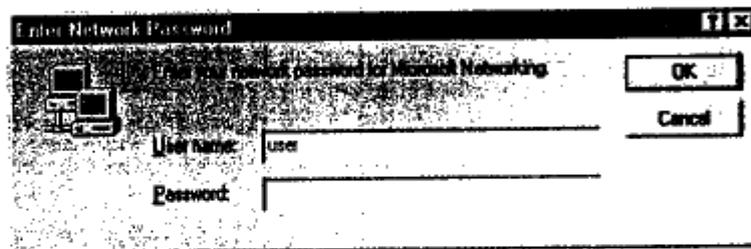


**Figure 4-1**

2. Click "Start" button, select "Settings" and then click "Control Panel" to open the "Control Panel" window as shown in Figure 4-2.
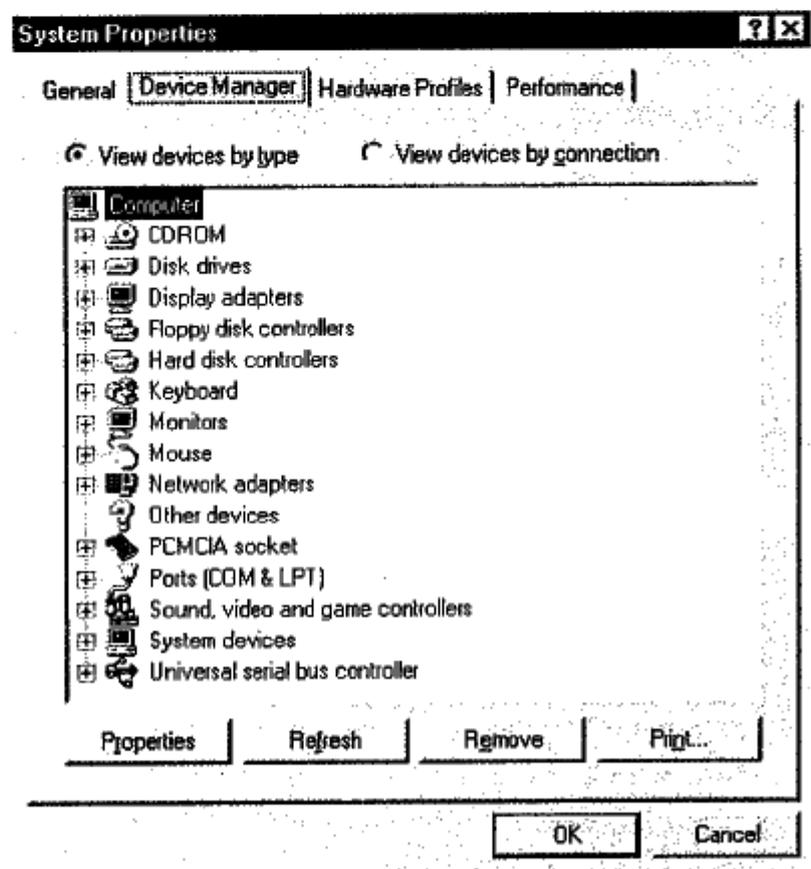


**Figure 4-2**

28
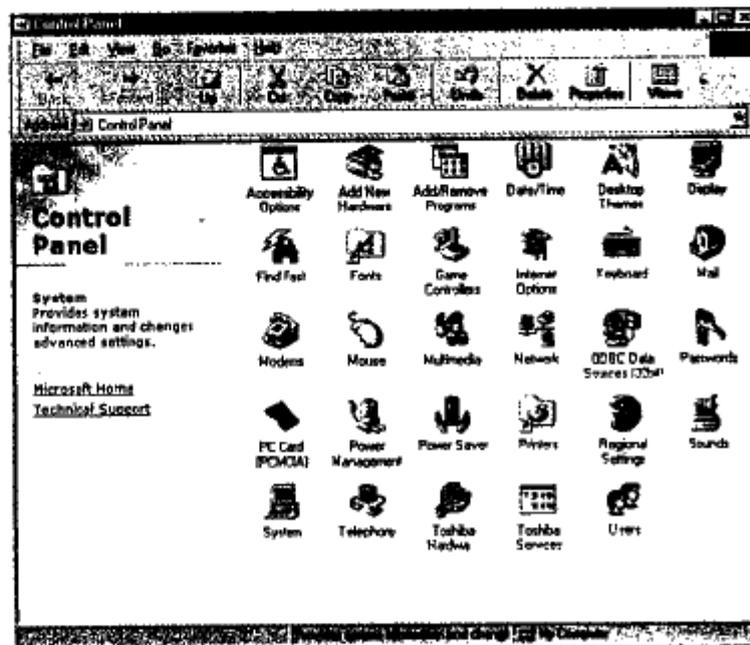
3. In Control Panel window, double-click the "Network" icon to open the "Network" dialog box as shown in Figure 4-3.
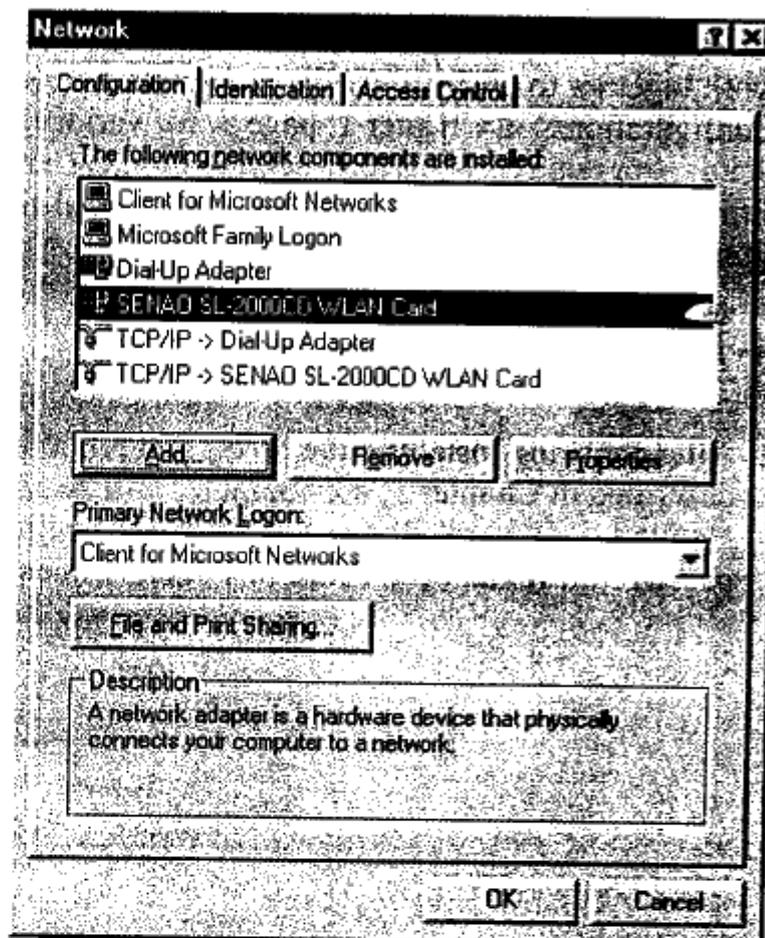


**Figure 4-3**

4. Select "Configuration" tab and double click "SENAO SL-2000CD WLAN Card" to bring out "SENAO SL-2000CD WLAN Card Properties" dialog box as shown in Figure 4-4.
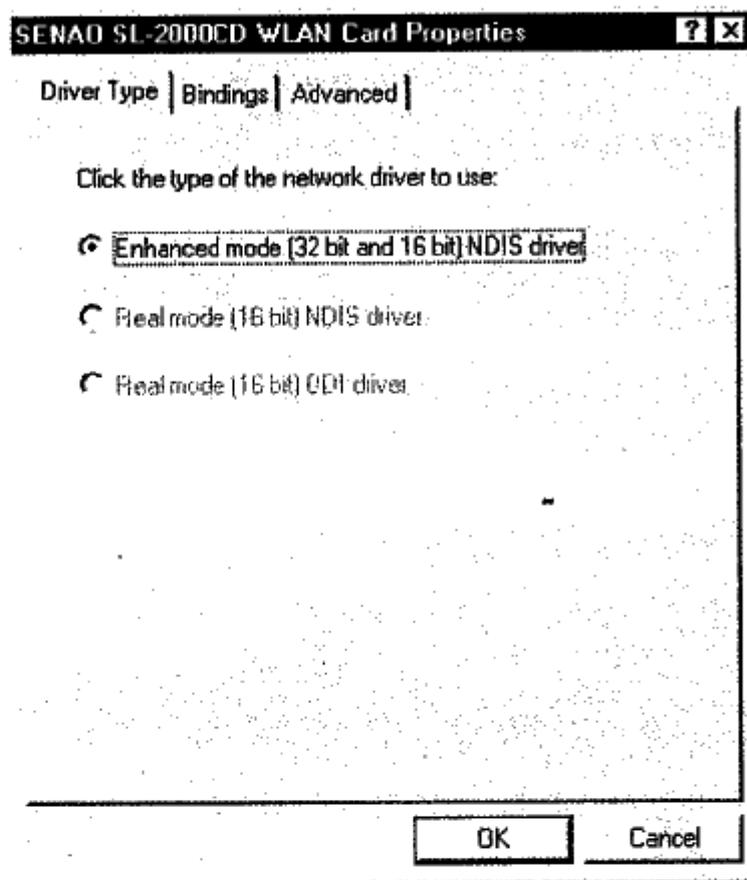


**Figure 4-4**

5. Select "Advanced" tabs to show "Network ID", "Network Mode", and "Region Domain" properties as shown in Figure 4-5.
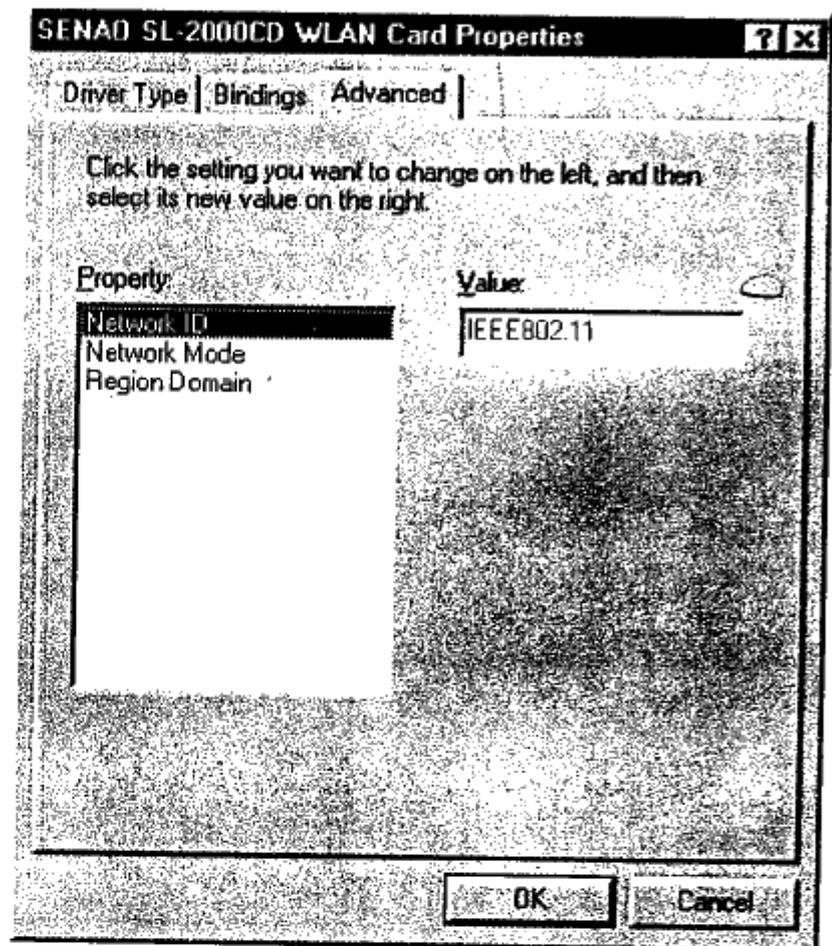


**Figure 4-5**

6. Select "Network ID" property and enter a Network ID name. Default "Network ID" is "IEEE802.11". In ad-hoc network mode, (or ad-hoc network configuration), enter the same network ID group name (case sensitive) on each computer. In infrastructure network mode (infrastructure network configuration), enter the same network ID (case sensitive) as the AP's on each computer.

7. Select "Network Mode" property and use the pull-down menu to select "Ad-hoc" or "Infrastructure" mode depending on your applications. Default is infrastructure mode.

8. Select "Region Domain" property and use the pull-down menu to select proper countries you are locating as shown in the "Radio Characteristics/ Numbers of selectable sub-channels" of Appendix A, page 40. Default "Region Domain" is FCC. Then click "OK" to return to "Network" dialog box.

9. If it is the first time for you to setup a network on this computer, you need to select "Identification" tab and enter an unique name and a working group name as shown in Figure 4-6, and then click "OK". If you would like to share files with other person, make sure you have the same workgroup name.
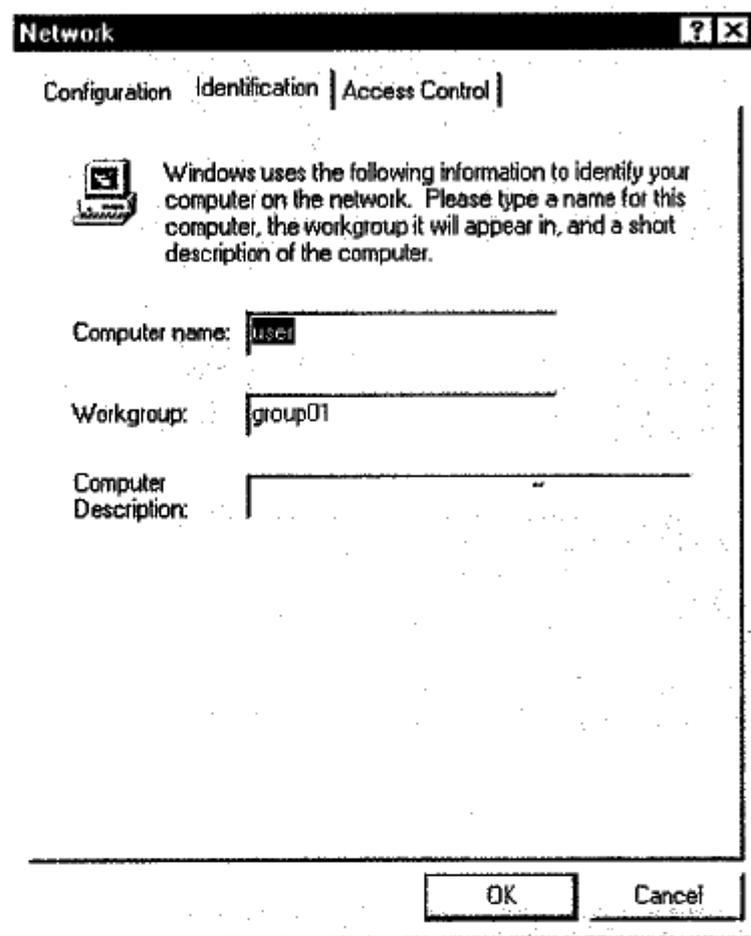
Figure 4-6

## 4-2 Installing Driver Status Utility

1. Click the "Start" button, then select "Run" to bring out "Run" dialog box.
2. Insert the "SL-2000CD Driver & Utility" diskette into the floppy disk drive. Enter "A:\setup.exe" at "Open". Then click "OK" as shown in Figure 4-7.
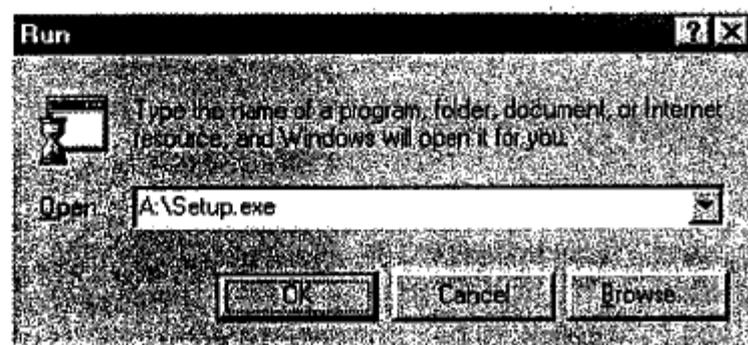
Figure 4-7

3. The computer will load the utility from floppy drive A and start the "Driver Status Setup" program as shown in Figure 4-8. In the "Welcome" dialog box, click "Next" to continue the setup procedures. Just follow the instructions to install the utility.
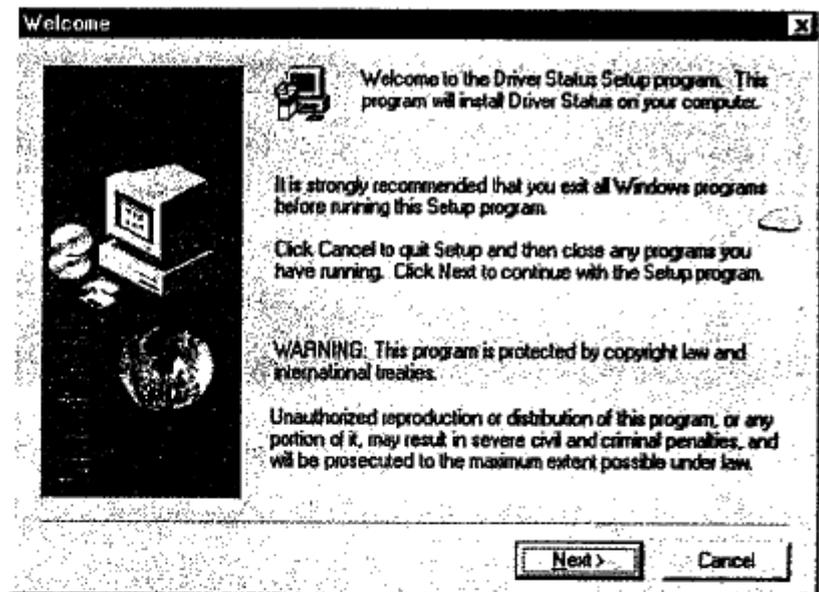


**Figure 4-8**

4. In the "Choose Destination Location" dialog box, you can click "Browse" and select to install "Driver Status" program to a different folder or click "Next" to a default folder as shown in Figure 4-9.
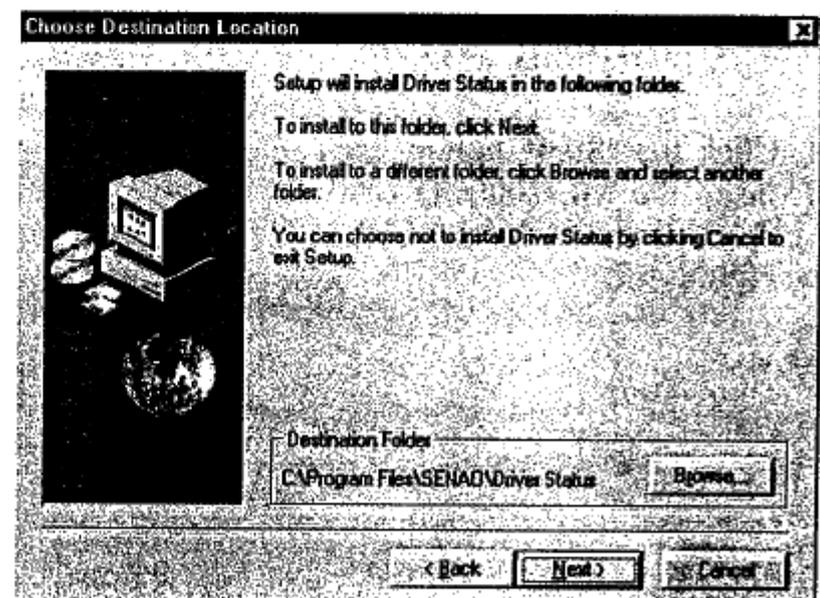


**Figure 4-9**

5. "Driver Status Setup" program will add the program icon to the "Program Folder". You may enter a new folder name or select one from the existing Folder list. Click "Next" to select a default "Driver Status" program folder as shown in Figure 4-10.
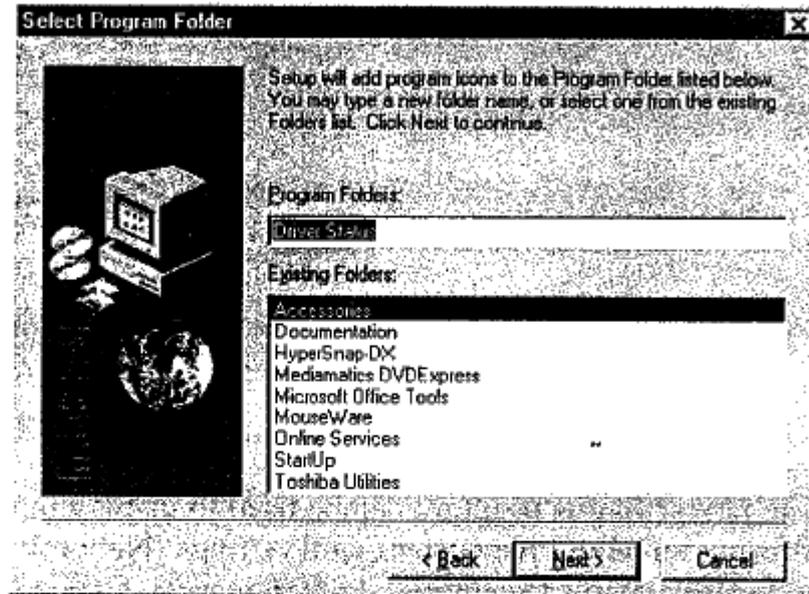


**Figure 4-10**

6. Click "Finish" to complete the installation of "Driver Status" as shown in Figure 4-11.
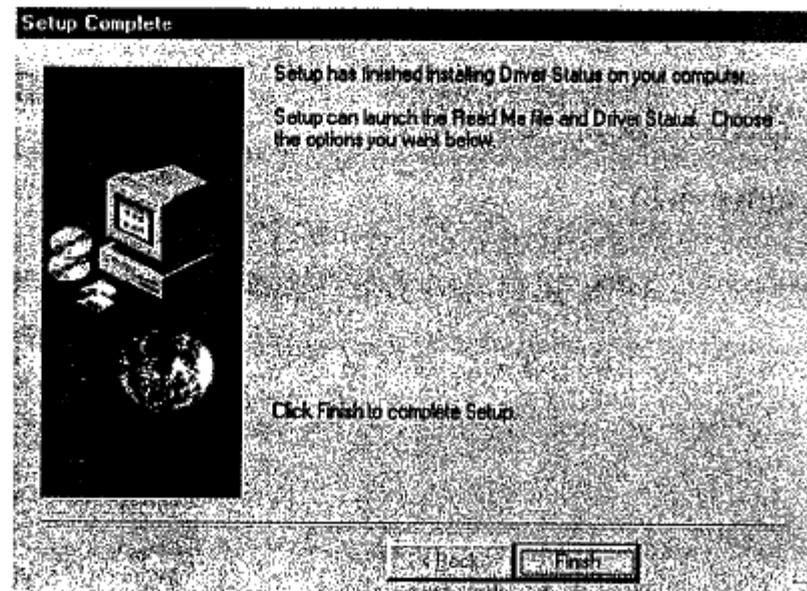


**Figure 4-11**

7. In "Reboot" windows, select "Yes" or "No" to restart the computer as shown in Figure 4-12. If you select "Yes", be sure to remove the "SL-2000CD Driver & Utility" diskette from the disk drive A.
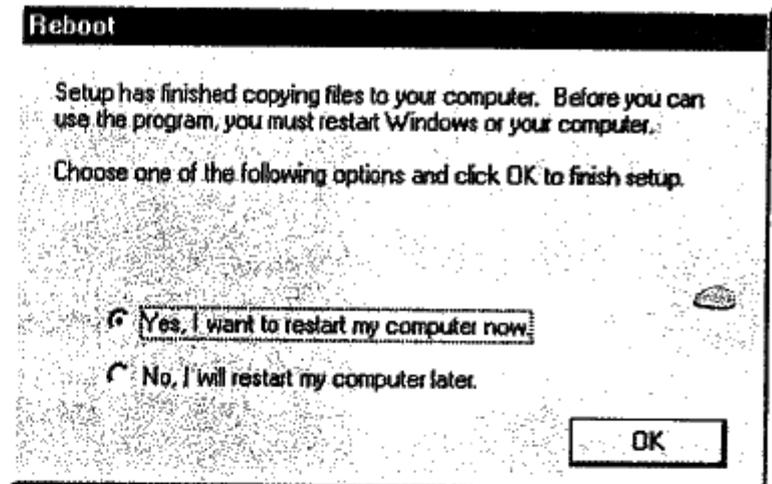


**Figure 4-12**

The Driver Status program can be used to display the PC Cards status information about the current card settings (Network ID, Network Mode), the connection status (Scanning, Authentication, Connection), real-time statistics (Transmission packets, Receiving packets, Transmission Packet Error Rate) and the current signal strength (Received Signal Strength Indication).

After finishing installing the "Driver Status" program, the program will automatically be executed and show a small "radio" icon at the right corner of "Taskbar" as shown in Figure 4-13 whenever the PC Card is inserted into the PC Card slot of your computer. Double-click the "radio" icon to open the "SENAO SL-2000CD Wireless LAN" window as shown in Figure 4-14.



**Figure 4-13**
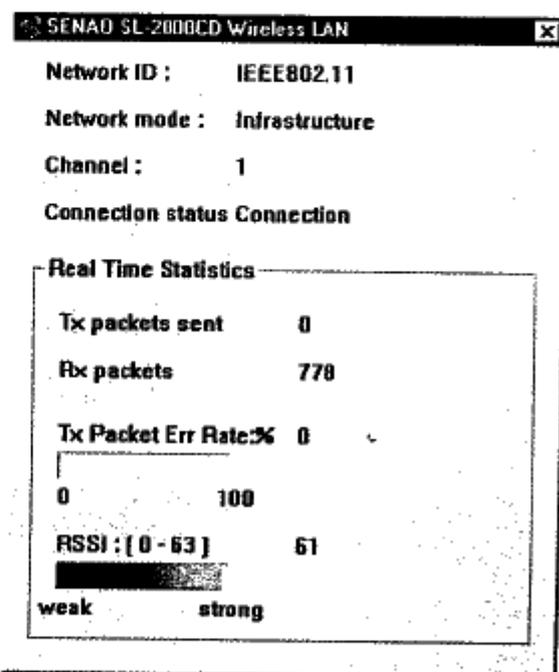


**Figure 4-14**

# Chapter 5 Troubleshooting

This chapter describes the problems and corresponding solutions that may occur when installing a PC Card.

| Symptom | Solution |
|---|---|
| Windows does not detect the PC Card when installed | Verify that the PC Card is properly inserted into the PC Card slot.<br><br>Check whether the computer has a Plug and Play BIOS.<br><br>Windows 95/98 might not detect the PC Card if a previous installation of the PC Card was cancelled before it was finished. Remove the previous driver, and redo the installation again. |
| Driver fails to load | A resource conflict could exist.<br><br>For Windows 95/98, use the "Device Manager" to resolve resource conflicts. Select "System" from the "Control Panel", then click on the "Device Manager" tab as shown in Figure 5-1.<br><br>For Windows NT4.0, use the Service Monitor entries in the System Log to look for the conflicts. Use the NT diagnostics program to locate free resources. |
| Device conflict on a Windows system | A device conflict under Windows 95/98/NT may be related to the PC Card.<br><br>For Windows 95/98, use the Computer properties to identify the used I/O port addresses and IRQ values as shown in Figure 5-1 and Figure 5-2. |

For Windows NT4.0, use the Windows NT diagnostics program to detect the cause of the card conflict and to determine unused I/O port addresses and IRQ values.

If there is a device conflict, select alternative settings for I/O Base Address or IRQ values as shown in Figure 5-3. If you know which device is conflicting with the PC Card, you have the option of changing that device's I/O address or IRQ instead of changing the PC Card.

Edit Input/Output Range

Enter the input/output range you would like to set for this device.

You may either enter a specific range and the nearest valid range will be selected automatically, or you may select a range using the arrows.

Value: 0280 - 028F

Conflict information

The setting you have chosen does not conflict with any other devices.

No devices are conflicting.

OK     Cancel

**Figure 5-1**

**SENAO SL-2000CD WLAN Card Properties**    ?X

General | Driver | Resources |

SENAO SL-2000CD WLAN Card

☐ Use automatic settings

Setting based on: | Basic configuration 0000 ▼ |

| Resource type | Setting |
|---|---|
| Input/Output Range | 0250 - 025F |
| Interrupt Request | 10 |

Change Setting...

Conflicting device list:

| No conflicts. ▲ |
|---|
| ▼ |

OK    Cancel

**Figure 5-2**

**System Properties**    ?X

General  Device Manager | Hardware Profiles | Performance |

⦿ View devices by type      ◯ View devices by connection

- Disk drives
- Display adapters
- Floppy disk controllers
- Hard disk controllers
- Keyboard
- Modem
- Monitors
- Mouse
- Network adapters
  - Dial-Up Adapter
  - SENAO SL-2000CD WLAN Card
- PCMCIA socket
- Ports (COM & LPT)
- Sound, video and game controllers
- System devices
- Universal Serial Bus controllers

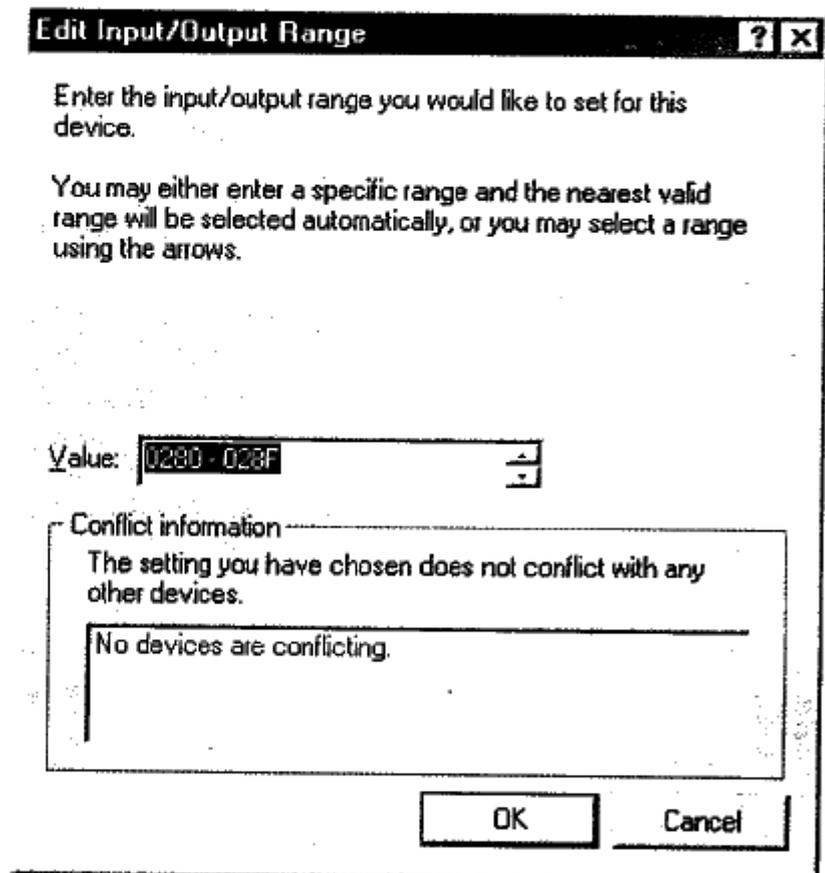Properties    Refresh    Remove    Print...

OK    Cancel

**Figure 5-3**

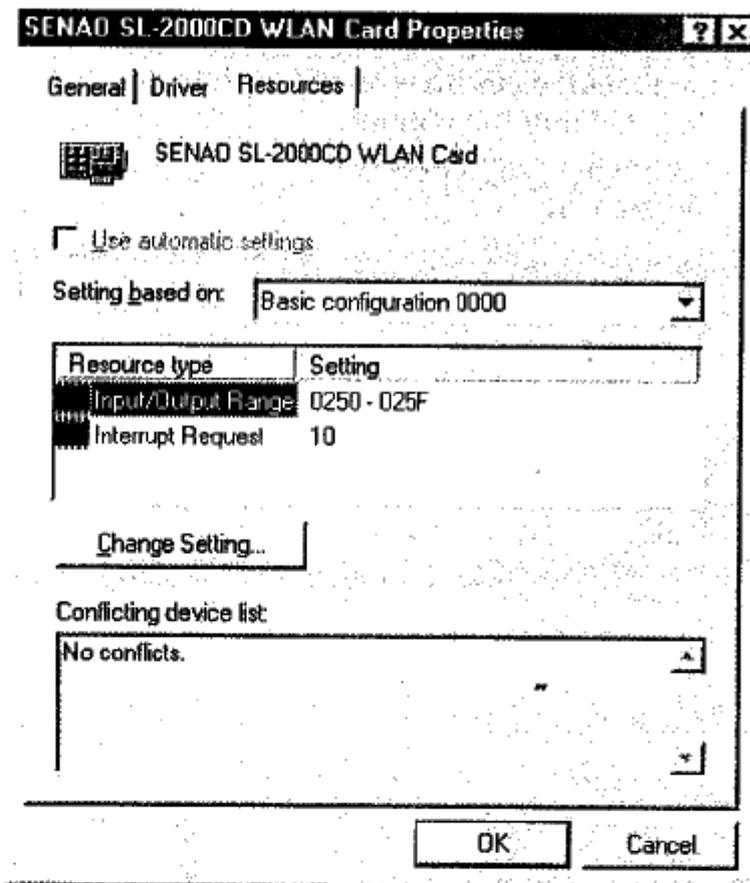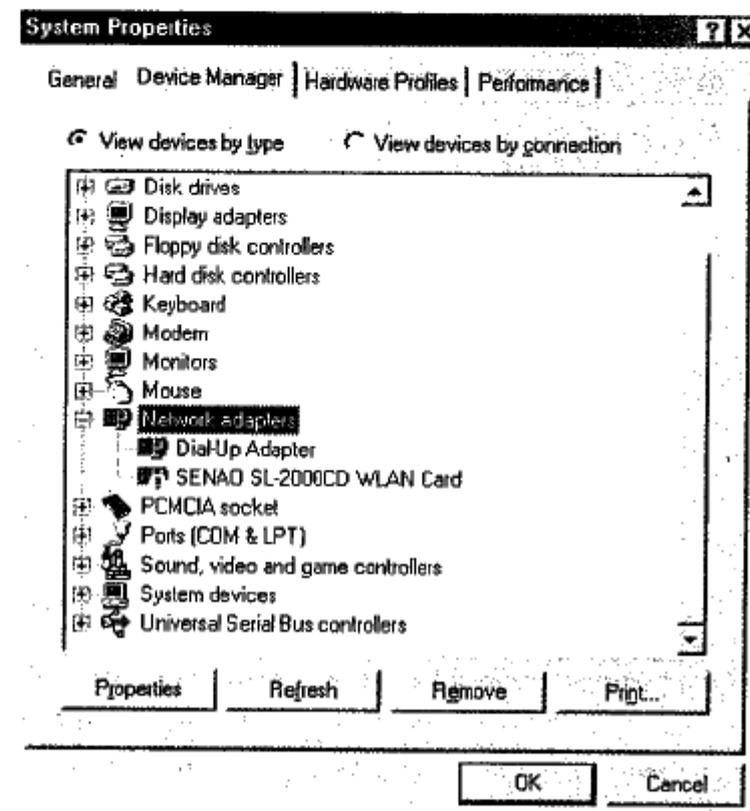| | |
|---|---|
| No resource conflicts were detected, but the wireless station does not attach to the network | Verify that the "Network ID" of the PC Card matches that of the access point. Use the "Network Configuration Properties Application" in the "Control Panel" to modify the "Network ID". Verify that the "Network Mode" of the PC Card is configured correctly. |
| Nonfunctioning card LED | The PC Card is not powered on. The cause may be:<br>◆ No Driver loaded or installed.<br>◆ Card — Driver mismatch which prevented the driver from loading.<br>◆ Device conflict which prevented the driver from loading.<br>Actions:<br>◆ Verify that a driver has been installed.<br>◆ Determine if there is a conflict with another device. |
| Weak signal or intermittent connection. | Try reorienting the antenna. The PC Card antenna is attached to the end of the PC Card. For best use of the antenna:<br>◆ Keep the area around the antenna clear from materials that could block radio transmission, such as metal objects, electronic devices, and cordless telephones.<br>◆ If your signal is weak, change the direction of the antenna slightly.<br>◆If necessary, move your notebook computer a few inches to find a better signal.<br>Use the RSSI (Received Signal Strength Indicator) display in the "Driver Status" utility to determine the best location and orientation for a network connection. |

# Appendix A   Specifications

## Radio Characteristics

| | |
|---|---|
| Operating Frequency | 2.412~2.484GHz |
| Number of Channels | 14 |
| Number of selectable sub-channels | North America (FCC)    11<br>Europe (ETS)    13<br>France (FR)    4<br>Japan (JP)    1<br>Other Countries (FCC)    11 |
| RF Technology | Direct Sequence Spread Spectrum |
| Data Rate | 1 or 2Mbps |
| Modulation Type | DBPSK/DQPSK |
| Spread Code | 11 chips barker code |
| Chipping Rate | 11 Mcps |
| Normal Output Power | 15dBm |
| RX Sensitivity@FER=0.08 | -88dBm |
| Range (Office Environment) | 50 meters |
| Range (Open Space) | 250 meters |

## Physical and Power Specifications

| | |
|---|---|
| Form Factor | Standard PC Card Type II |
| Dimensions (L x W x H) | 126 x 60 x 8 mm |
| Weight | 50 gram |
| Voltage | 5V |
| Power consumption | RX:330mA,TX:550mA |
| Temperature | Typical indoor environment 0~55 C |
| Relative humidity | 20% to 90% |

## Regulations

| Country | Regulation |
|---|---|
| USA | FCC Part15B |
| Canada | IC RS210 |

## Networking Characteristics

| | |
|---|---|
| Wireless Protocol | IEEE802.11 |
| Seamless Roaming | Compliant with IEEE802.11 |
| Media Access Protocol | Carrier Sense Multiple Access /Collision Avoidance |
| Error Detection | CRC32 |
| Architecture | Supports Ad-hoc and Infrastructure networks |
| Supported Operation System | Win 95/98/NT4.0 |
| Network Configuration | 1) Network ID: Maximum 36 characters Default : IEEE802.11 2) Network Mode : Ad-hoc mode Infrastructure mode Default : Infrastructure 3) Region Domain : ETSI (Channel 1~13) FCC (Channel 1~11) France (Channel 10~13) IC (Channel 1~11) MKK (Channel 14) Spain (Channel 10~11) Default : FCC |

## Driver Status Utility

| | |
|---|---|
| Supported Operation System | Win 95/98 |
| Diagnostics | (1) Network ID (2) Channel (3) Network Mode (4) Connection Status (5) Real Time Statistics a. Tx packets sent b. Rx packets received c. Tx Packet Error Rate d. RSSI |

# Appendix B Regulatory Compliance Information

## Radio Frequency Interference Requirements

This device complies with Part 15 of FCC Rules and Canada RSS-210. Operation is subject to the following conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

## 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 and Regulation. 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 manual, may cause harmful interference to nearby TV's, VCR's, radio, computers, or other electronic devices. To minimize or prevent such interference, this equipment should not be placed or operated near these devices. If interference is experienced, moving the equipment away from them will often reduce or eliminate the interference.

However, there is no guarantee that interference will not occur in a particular installation. If the 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:

◆ Re-orient or relocate the receiving antenna.
◆ Increase the separation between the equipment and receiver.
◆ Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
◆ Consult the dealer or an experienced radio/TV technician for help.

SENAO International is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this IEEE802.11 Genie LAN kit, or substitution or attachment of connecting cables and equipment other than specified by SENAO International. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

# Appendix C   Limited Warranty

## HARDWARE

SENAO International ("SENAO") warrants its products to be free from defects in workmanship and materials, under normal use and service, for the following length of time from the date of purchase from SENAO or its authorized reseller:

◆ One (1) year for the PC Cards.
◆ One (1) year for the Access Points

If a product does not operate as warranted during the applicable warranty period, SENAO will, at its option and expense, repair the defective product or part, or deliver to Customer an equivalent product or part to replace the defective item. All products that are replaced will become the property of SENAO. Replacement products or parts may be new or reconditioned. SENAO warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

## SOFTWARE

Software and documentation materials are supplied "as is" without warranty as to their performance, merchantability, or fitness for any particular purpose. However, SENAO warrants the media containing software against failure for a period of ninety (90) days from the date of purchase from SENAO or its authorized reseller.

## OBTAINING WARRANTY SERVICE

Customer must contact a SENAO Corporate Service Center or an Authorized SENAO Service Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from SENAO or its authorized reseller may be required. Products returned to SENAO's Corporate Service Center must be pre-authorized by SENAO with a Return Material Authorization (RMA) number marked on the outside of the package, and sent prepaid, and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. Responsibility for loss or damage does not transfer to SENAO until the returned item is received by SENAO. The repaired or replaced item will be shipped to the Customer, at SENAO's expense, not later than thirty (30) days after SENAO receives the defective product, and SENAO will retain risk of loss or damage until the item is delivered to the Customer. SENAO shall not be responsible for any software, firmware, information, or memory data of Customer contained in, stored on, or integrated with any products returned to SENAO for repair, whether under warranty or not.

43

# WARRANTIES EXCLUSIVE

If a SENAO product does not operate as warranted above, Customer's sole remedy for breach of that warranty shall be repair, replacement, or refund of the purchase price paid, at SENAO's option. To the full extent allowed by law, the foregoing warranties and remedies are exclusive and are in lieu of all other warranties, terms, or conditions, express or implied, either in fact or by operation of law, statutory or otherwise, including warranties, terms, or conditions of merchantability, fitness for a particular purpose. SENAO neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale, installation, maintenance or use of its products.

SENAO shall not be liable under this warranty if its testing and examination disclose that the alleged defect or malfunction in the product does not exist or was caused by the Customer's or any third party's misuse, neglect, improper installation or testing, unauthorized attempts to open, repair or modify the product, or any other cause beyond the range of the intended use, or by accident, fire, lightning, or other hazards.

# LIMITATION OF LIABILITY

To the full extent allowed by law, SENAO also excludes for itself and its suppliers any liability, whether based in contract or tort (including negligence), for incidental, consequential, indirect, special, or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss of information or data, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure, or interruption of its products, even if SENAO or its authorized reseller has been advised of the possibility of such damages, and limits its liability to repair, replacement, or refund of the purchase price paid, at SENAO's option. This disclaimer of liability for damages will not be affected if any remedy provided herein shall fail of its essential purpose.