SAMSUNG ELECTRO-MECHANICS

SAMSUNG

MagicLAN

SWL-2300M/N/P

User Manual (Rev. 1.0)

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Notice 1

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The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

SAMSUNG Electro-Mechanics Co., Ltd. reserves the right to change this manual and the specifications to improve products without prior notice. So you can get the most recent software and user documentation for all MagicLAN products on our web site.

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http://www.MagicLAN.com

Service Dept.

Young-sik Lyu (youngsik.you@samsung.com)

Tel : +82-31-218-2416 Fax : +82-31-218-2413

Sales

America

Eun-Sung Cho(echo65@samsung.com)

Tel : +82-31-218-2407 Fax : +82-31-218-2414

Europe

Yong-Il Kim (goodland@samsung.co.kr)

Tel : +82-31-218-2408 Fax : +82-31-218-2414

Asia

Seong-Mun Jeong (sungmun.jeong@samsung.com)

Tel : +82-31-218-2412 Fax : +82-31-218-2414

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Notice 2

WARNING

While installing and operating this transmitter and antenna combination the radio frequency exposure limit of 1mW/cm^2 may be exceeded at distances close to the antennas installed. Therefore, the user must maintain a minimum distance of 20 cm from the antenna.

Important Safety Information

- Read these simple guidelines. Breaking the rules may be dangerous or illegal. SAMSUNG will not be responsible for any damages caused by breaking the rules.
- WLAN Card described in this document is approved for use in a wireless local area network.
- Remember to make backup copies of important data.
- When you are transferring data, keep your laptop computer stationary. Roaming between access points (APs) may break the connection.
- Only qualified service personnel must repair the equipment.
- All wireless devices may get interference, which could affect performance.
- Use approved accessories only. Do not connect incompatible products.
- Use only accessories approved by the WLAN Card manufacturer for use with this particular W LAN Card. The use of any other types will invalidate any approval or warranty applying to the WLAN Card, and may be dangerous.
- Use only the region settings appropriate for the area where the WLAN Card is used at the present time. Using the card in any other region or with an incorrect region setting is prohibited and may be illegal.
- Operation of any radio transmitting equipment, including a WLAN Card, may cause interference with the functionality of inadequately protected medical devices.
- Do not use the WLAN Card on aircraft.
- Do not use the WLAN Card at a refueling point.
- Do not use the WLAN Card near inflammable materials or chemicals.
- Do not use the WLAN Card where blasting is in progress.
- Do not use the WLAN Card when the use of wireless device may cause interference or danger.
- Do not use the WLAN Card where the use of cellular terminals is prohibited.
- Microwave oven degrades the performance of wireless LAN drastically. So do not use the WLAN card in the environment where Microwave oven is being used.

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

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

SAMSUNG ELECTRO-MECHANICS

11Mbps High Rate 802.11b Wireless LAN MiniPCI Card

Specifications

Model Name	SWL-2300M
System Interface	MiniPCI Spec 1.0 (Type 3B Form Factor)
Frequency Band	2.400 ~ 2.4835GHz(Subject to local regulations)
Operating Voltage	3.3Vdc (±5%)
Current Consumption	Receive mode : 315mA (Typical)
	Transmit mode: 360mA (Typical)
Data Rate	1, 2, 5.5 or 11Mbps
Spreading	DSSS(Direct Sequence Spread Spectrum)
Output Power	15dBm(mW) for 22MHz Bandwidth
Receive Sensitivity	-86dBm at 11Mbps (Typical)
Security	40-bit/104(128)-bit WEP Encryption
Antenna Connector	SMT Ultra Miniature Coaxial Connector 2 pieces
Available Drivers	Microsoft Windows 98SE/ME/2000/XP/CE
Standards	IEEE 802.11b
Media Access Protocol	CSMA / CA (Carrier Sense Multiple Access with Collision Avoidance)
Temperature Range	Operating : 0~55 (32~131), Storage : -20~70 (-4~158)
Humidity	10% to 90% Non-condensing
Operating Range (1024 bytes file transfer)	Open Space : 150m(500ft) at 11Mbps, 200m(660ft) at 2Mbps
	Office: 30m(100ft) at 11Mbps, 50m(160ft) at 2Mbps *Range differs by environment
Dimensions	59.6 ⁻44.6 ⁻5.0
Certifications & Regulatory Approvals	

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SAMSUNG ELECTRO-MECHANICS

11Mbps High Rate 802.11b Wireless LAN PCI Card

Specifications

Model Name	SWL-2300P
System Interface	PCI Spec 2.2
Frequency Band	2.400 ~ 2.4835GHz(Subject to local regulations)
	1~11ch(U.S and Canada), 1~13ch(ETSI), 1~14ch(Japan)
Operating Voltage	5V ±5%
Current Consumption	Receive mode : 315mA (Typical)
	Transmit mode: 360mA (Typical)
Data Rate	1, 2, 5.5 or 11Mbps
Spreading	DSSS(Direct Sequence Spread Spectrum)
Output Power	15dBm(32mW) for 22MHz Bandwidth
Receive Sensitivity	-86dBm at 11Mbps (Typical)
Security	40-bit/104(128)-bit WEP Encryption
Antenna	External 5dBi Patch Antenna with left-turn SMA connector and 1.5m cable
Available Drivers	Microsoft Windows 98SE/ME/2000/XP/CE
Standards	IEEE 802.11b
Media Access Protocol	CSMA / CA (Carrier Sense Multiple Access with Collision Avoidance)
Temperature Range	Operating : 0~55 (32~131), Storage : -20~70 (-4~158)
Humidity	10% to 90% Non-condensing
Operating Range (1024 bytes file transfer)	Open Space : 150m(500ft) at 11Mbps, 200m(660ft) at 2Mbps Office: 30m(100ft) at 11Mbps, 50m(160ft) at 2Mbps *Range differs by environment
Dimensions	126.8 ϓ70.0 ϓ18.0
Weight	65g
Certifications & Regulatory Approvals	

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11Mbps High Rate 802.11b Wireless LAN PC Card

Specifications

Model Name	SWL-2300N
System Interface	CardBus Spec 7.0
Frequency Band	2.400 ~ 2.4835GHz(Subject to local regulations)
Operating Voltage	3.3V±5%
Current Consumption	Receive : 245mA (Typical), Transmit : 310mA (Typical)
	Power Save: 40mA (Typical)
Data Rate	1, 2, 5.5 or 11Mbps
Spreading	DSSS(Direct Sequence Spread Spectrum)
Output Power	40mW(16dBm) for 22MHz Bandwidth, 7mW/MHz
Receive Sensitivity	-86dBm(Typical) at 11Mbps
Security	40-bit/104(128)-bit WEP Encryption
Antenna	Dual antennas supporting diversity
Available Drivers	Microsoft Windows 98SE/ME/2000/XP/XPSP1/CE
Standards	IEEE 802.11b
Media Access Protocol	CSMA / CA (Carrier Sense Multiple Access with Collision Avoidance)
Temperature Range	Operating : 0~45 (32~113), Storage : -25~70 (-13 ~158)
Humidity	10% to 90% Non-condensing
Operating Range (1024 bytes file transfer)	Open Space : 150m(500ft) at 11Mbps, 200m(660ft) at 2Mbps
	Office: 30m(100ft) at 11Mbps, 50m(160ft) at 2Mbps *Range differs by environment
Dimensions	109mmx54mmx5mm
Certifications & Regulatory Approvals	Wi-Fi certified Korea

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**** Table: The Operating Channels

Channel	Frequency	FCC	Canada	ETSI	Spain	France	Japan
1	2412MHz						
2	2417MHz						
3	2422MHz						
4	2427MHz						
5	2432MHz						
6	2437MHz						
7	2442MHz						
8	2447MHz						
9	2452MHz						
10	2457MHz						
11	2462MHz						
12	2467MHz						
13	2472MHz						
14	2484MHz						

1. MagicLAN Installation

1.1 Introduction

Thank you for your purchase of SAMSUNG MagicLAN. Installing this cards allow the computer to join a wireless network based on the IEEE 802.11b (High Data Rate) WLAN standard. You will be surprised how easy for you are a part of the network with no bother of twisted cables.

1.2 Technical Background

- **What is IEEE 802.11?**

The IEEE 802.11 specification is a wireless LAN standard developed by the IEEE (Institute of Electrical and Electronic Engineering) committee in order to specify an *over an air* interface between a wireless client and a base station or Access Point (AP), as well as among wireless clients. Like other IEEE 802 families, IEEE 802.11 specification addresses both Physical (PHY) layer and Media Access Control (MAC) layer.

- **IEEE 802.11 Physical (PHY) Layer**

At the PHY layer, IEEE 802.11 defines three physical characteristics for WLAN: diffused infrared, direct sequence spread spectrum (DSSS), and frequency hopping spread spectrum (FHSS). While the infrared PHY operates at the baseband, the other two PHYs operate at the 2.4GHz ISM (Industrial, Scientific, and Medical) band, which can be used for operating wireless LAN devices without the need of end-user licenses. In order for wireless devices to be interoperable, they have to be conforming to the same PHY standard.

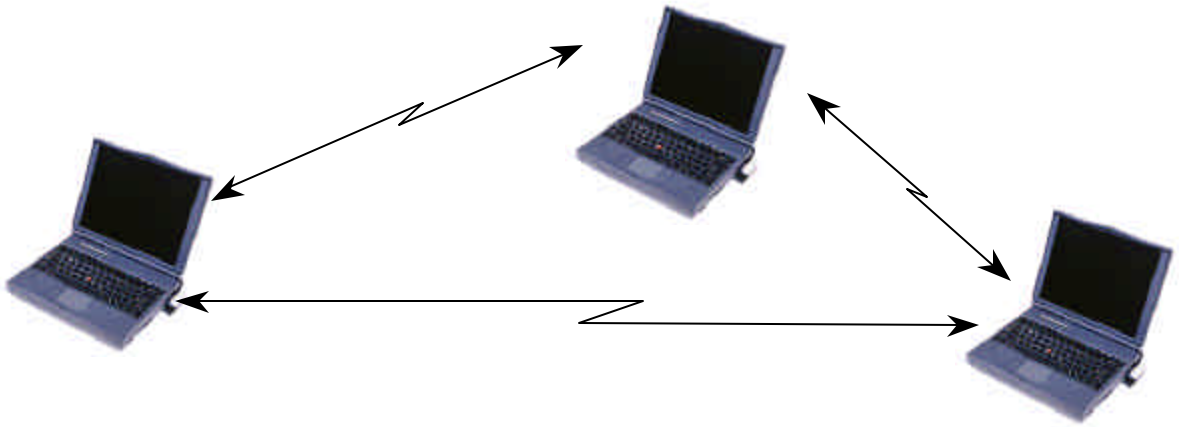
- **IEEE 802.11 Media Access Control (MAC) Layer**

The IEEE 802.11 MAC Layer is mainly concerned with the rules for accessing the wireless medium. There are two network architectures defined: Ad-hoc Network and Infrastructure Network.

- **Ad-hoc Network**

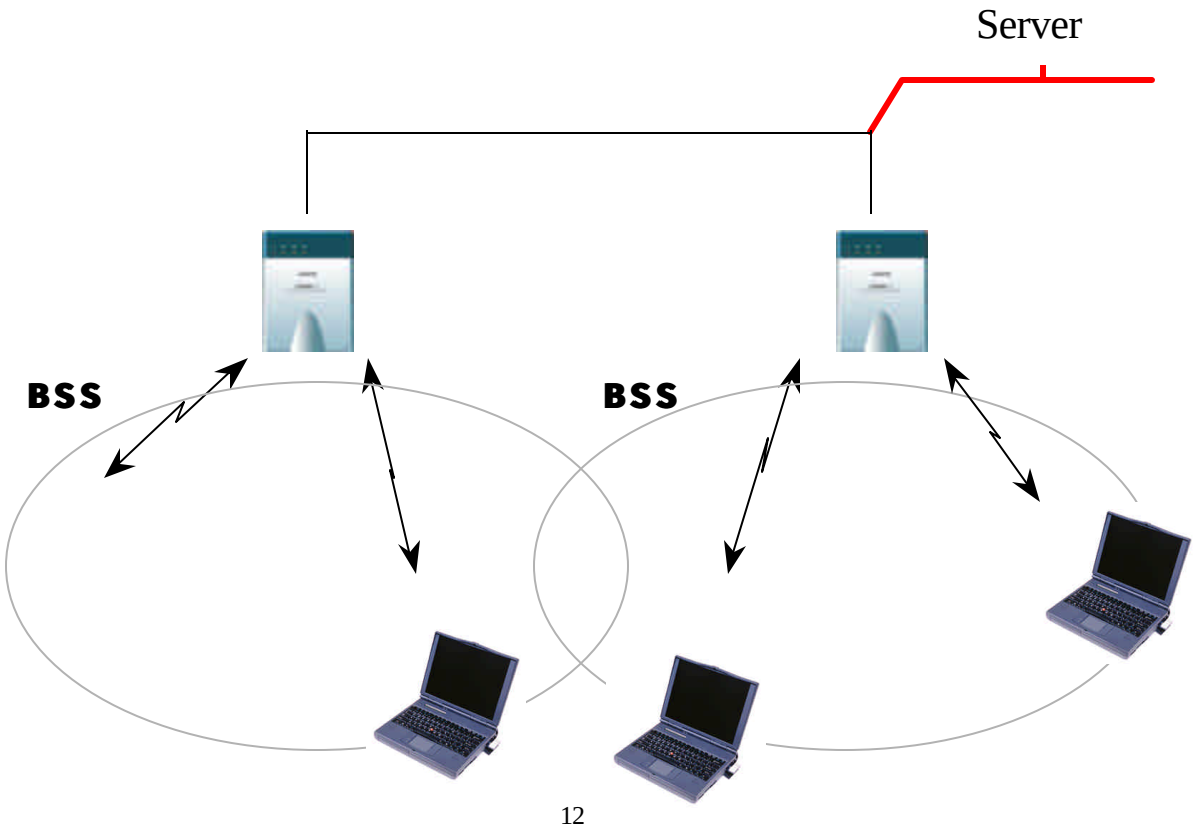
Ad-hoc Network is an architecture that supports mutual communication among wireless clients only. Since Ad-hoc Network does not support access to wired networks, it does not need an Access Point to be a part of the network. You can use the network immediately after setting up

the operating mode by installing the supplied network driver.



• **Infrastructure Network**

Infrastructure Network is architecture that provides communication between wireless clients and wired network resources. An Access Point (AP) and the associated wireless clients define the transition of data. So a wireless client can access all the services that are available for a regular wired LAN by using an AP.



• **Roaming**

Roaming is a service that allows wireless clients to use the network in motion by automatically changing the connection from an old Access Point to a new Access Point when the clients enter in a new cell. During roaming the clients may observe the loose connection or delay in accessing the resources of the network.

• **Scanning, Beaconing & ESS ID**

When a wireless client is initialized, it is necessary for it to find and communicate with the correct group of wireless devices, including AP. At this point, it may search for all the frequency channels and this process is called *scanning*.

There may be multiple APs and networks operating at the same time. It may be necessary to ensure that the station joins with the correct network during the scanning process. To achieve this, each AP is assigned to be part of a logical group called the Extended Service Set (ESS). The name of this logical group is the ESS ID. When roaming is operating, there may be several Access Points as part of the same ESS.

After the power on, wireless clients will listen on its default frequency channel. It will be listening for *beacons* sent by another wireless station or AP. Beacon is a short message containing the ESS ID that will be broadcast roughly ten times a second. When the wireless station hears a beacon and the ESS ID in the beacon matches its own, the client knows that it is on the correct channel and can communicate with its group. If no beacons are seen, or if the ESS ID does not match, the wireless client may move to the next frequency channel and repeat this listening procedure.

In case of direct sequence spread spectrum (DSSS) physical layer, this scanning process occurs at start up and may also occur when the client roams between APs.

1.3 MagicLAN Overview

• The MagicLAN SWL-2300M/N/P(MiniPCI/PCMCIA/PCI Card) are wireless LAN adapter cards that provide wireless connection between computers.

• The MagicLAN is designed to operate with IEEE 802.11 (wireless LAN International Standard) wireless compliant radio cards and uses a CSMA/CA (Collision Sense Multiple Access with Collision Avoidance) algorithm as the media access scheme, which makes high speed communication (with minimal collision probability) possible.

• The MagicLAN supports DSSS (Direct Sequence Spread Spectrum) physical layer. This is a radio technique, which scrambles the data prior to transmission and uses a correlation technique on receiver to improve the signal to noise ratio and makes it possible to communicate in the office having a wall and a compartment.

• The function of the MagicLAN Access Point is to transfer information from a wired LAN to a wireless LAN and vice versa. When operating, the MagicLAN AP is invisible to most users (Normally, unless the user is an administrator, the MagicLAN AP cannot be seen or accessed by users on the network).

• The SWL-2300M/N/P both for Laptop PC and Desktop PC is small and portable as a roaming function is provided for users who need network services while maintaining mobility.

• The MagicLAN supports various network software. The network driver is provided to support network software such as Windows 98SE,ME, Windows 2000, Windows XP, Windows CE.

• To get further information of Samsung MagicLAN WLAN Card, please visit our website at http://www.magiclan.com to download the respective drivers.

2. Before the Installation

The following section will assist you in installing your WLAN Adapter successfully. You will install the SWL-2300M/N/P Card and software(driver & utility), and finally set the network properties to accommodate resource sharing and select the type of wireless network that you wish to install. The MagicLAN can easily be installed and used, without bothering to connect cables for keeping your computer to use network resources, as in case of a wired LAN.

2.1 What is in Your Package?

Please check the contents of the box to make sure everything is included and ready for use. Here is the list of what you should have in your package:

- SWL-2300M/N/P(MiniPCI/PCMCIA/PCI Card)
- External Antenna (SWL-2300P)
- Samsung MagicLAN Installation CD

2.2 System Requirement

- Operating System: 98/98SE,ME, Windows 2000, Windows XP, Windows CE
- Computer System (both Laptop and Desktop) with a CD-ROM drive
- For Desktop PCI Card (SWL-2300P):
  The computer system should have PCI slot.
- For Laptop MiniPCI Card (SWL-2300M):
  The computer system should have MiniPCI Type slot.
- For Laptop Cardbus Card (SWL-2300N)

2.3 Preparations For Installation

You have to prepare Installation CD which is provided by manufacturer.

You can just install SWL-2300M/N/P cards to use Ad-hoc network.

You need to install Access Poing(AP) to use Infrastructure network.(Refer to the AP Manual about the installation method of AP)

You may need the original CD of (Windows 98SE,Windows ME, Windows 2000, Windows XP) to set network environment.

3. MagicLAN Installation For Windows 98SE/ME/2000/XP

We will explain the installation method for SWL-2300M/N/P (MiniPCI/PCMCIA/PCI Card) .

3.1 Installation Overview

Here are some steps you will perform in establishing your wireless network connection:

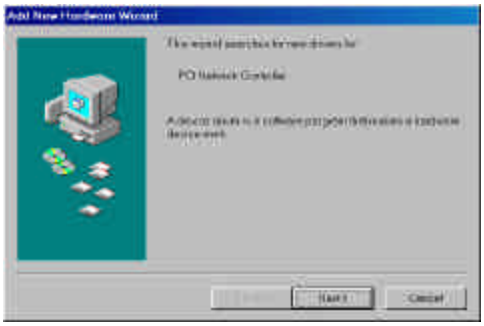
1. Install the Access Point at first. AP is needed in case of Infrastructure network mode.
2. You should install the Wireless LAN Card (SWL-2300M/N/P).
3. Install the software using the Installation CD.
4. Install the network protocol(s) required to communicate on your network. Most likely you will need the TCP/IP protocol.

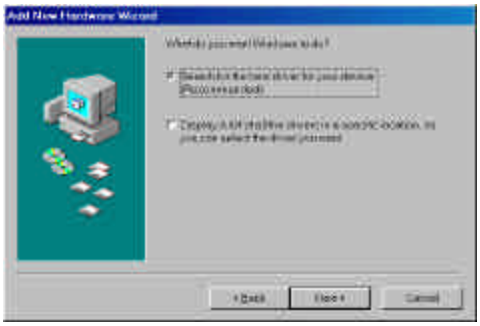
3.2 Installation Procedure of Windows 98SE

Please follow the following steps one by one to install the MiniPCI/PCMCIA/PCI card successfully.

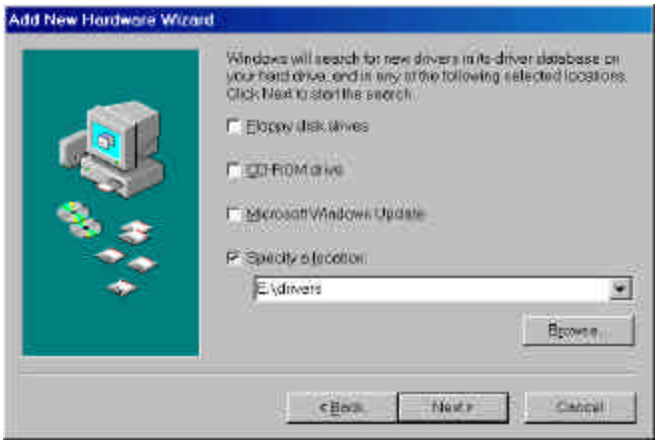
< Method 1 - Inserting card first >

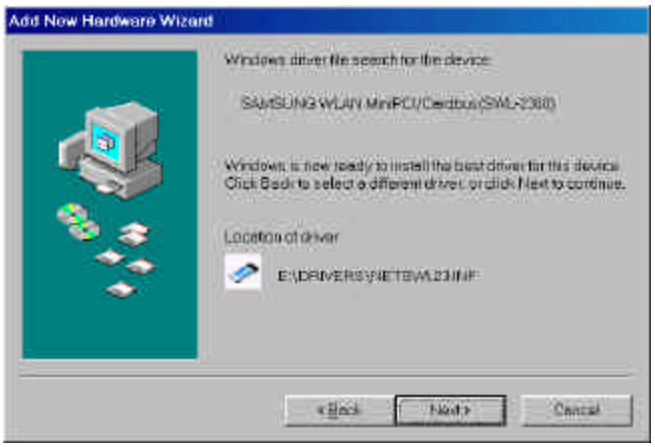
1. Insert the MiniPCI/PCMCIA/PCI Card into the slot of your computer.
2. Power on your computer and allow **Windows 98SE** to load fully.
3. "**Add New Hardware Wizard**" appeared and the system looks for "PCI Network Controller". Press 'NEXT' button and check if "Search for the best driver for your device(recommended)" is selected and then press 'NEXT' button . Insert the MagicLAN Installation CD into the CD-ROM drive.





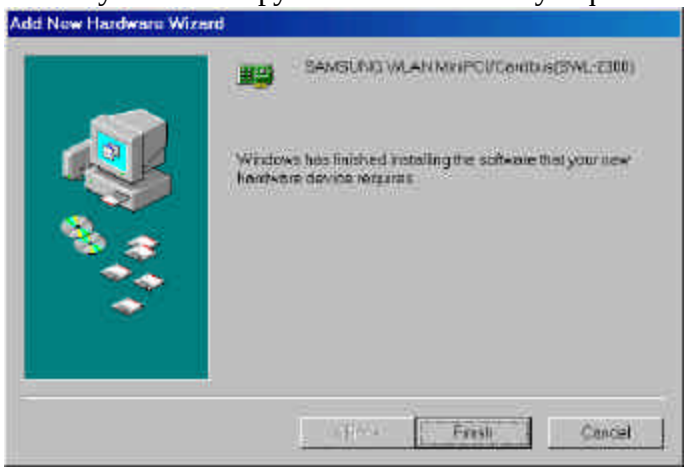
4. Mark the "Specify a location" tap and type "**E:\Drivers**" right below in this tap(Where E is the CD-drive of your PC) and then press 'NEXT'.



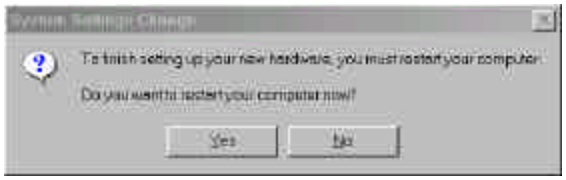


You can find the "SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300)" and now it is ready to install our software.

5. Press 'NEXT' and system will copy driver files. You may require Windows 98 CD.

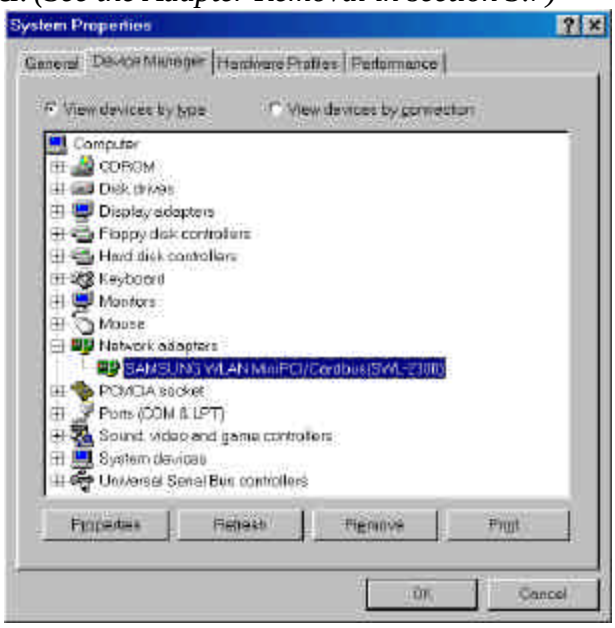


Now driver files are fully installed to start the Wireless LAN Card's operation.

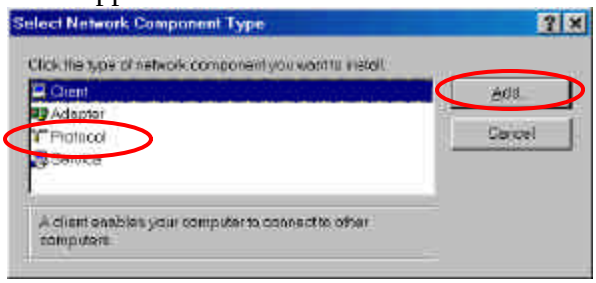


If screen message '**Do you want to restart your Computer now**' will pop up, select **Yes**.

6. After rebooting your computer, right click on the **My Computer** using the mouse and click **Properties**.
7. Check for the **SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300)** by clicking on the **Device Manager**. If you find the **Yellow** sign on the adapter, it shows the installation is not successful. Select the Adapter and click on **Remove**. Restart your computer after uninstalling the driver. *(See the Adapter Removal in section 3.7)*

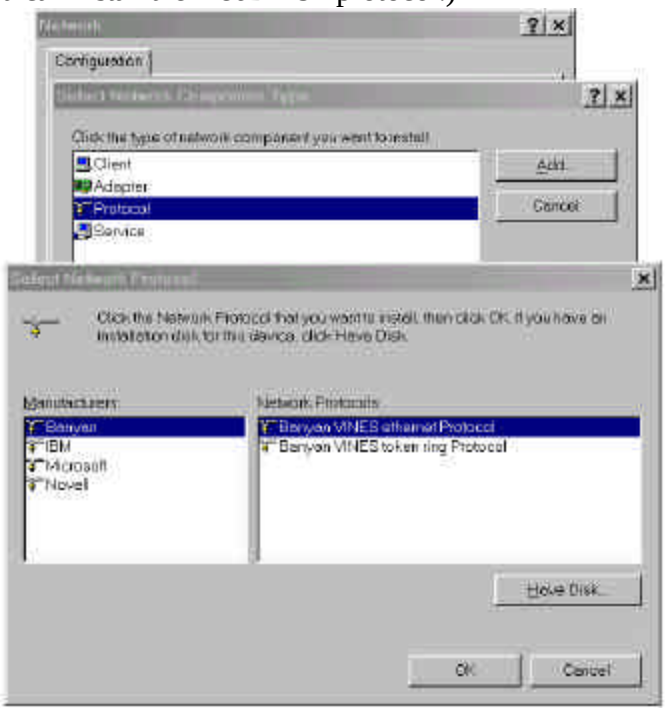


8. Right click on the **Network Neighborhood** using the mouse. Select **Properties** from the pop up menu. The network box appears and you see three main tabs: *Configuration*, *Identification* and *Access Control*.
9. Click on the configuration tab and then click on the add button. Select Network Component Type box appears. Click on the **Protocol** then click the **Add** button.

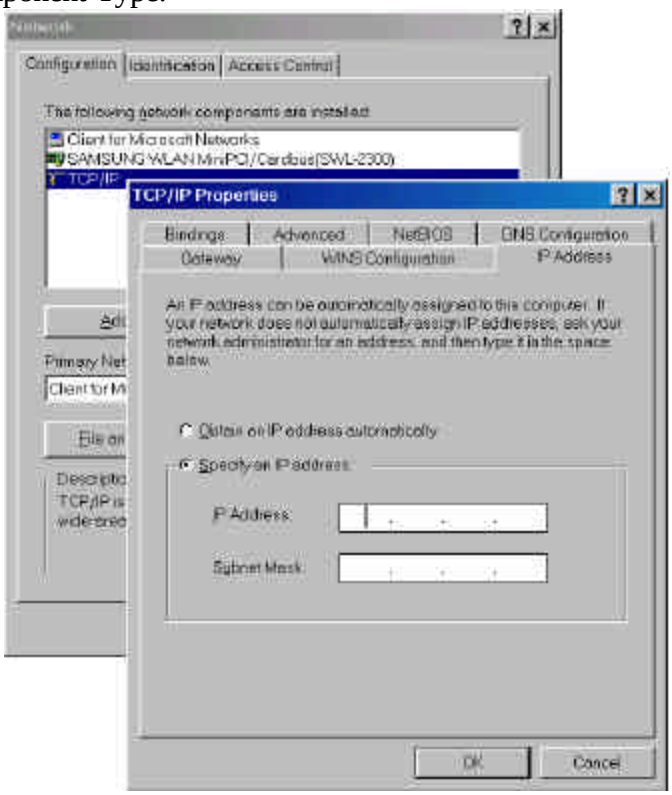


10. Select Network Protocols box appears. From the list of manufactures, click on Microsoft. From the list of network protocols list, select **IPX/SPX** and **TCP/IP**, then click

OK.(If you want, you can install the **NetBEUI** protocol.)

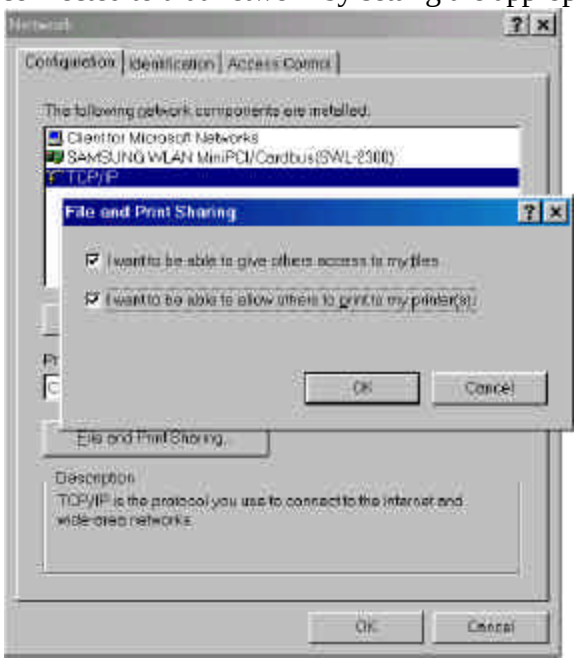


11. Select the **TCP/IP** option for setting the **IP** address value, Gateway value and DNS value of your computer. After setting these parameters appropriately, click **OK** to return to Network Component Type.

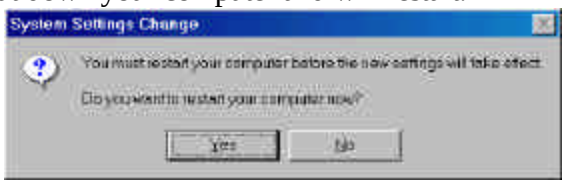


12. you can select the **File and Printer Sharing** options as well as the access to your

computer by other users connected to that network by setting the appropriate options.



13. Screen message '**Do you want to restart your computer now?**' will pop up. Select **Yes**. It will shut down your computer and will restart.



14. After booting the computer, you have to draw out and re-insert the MagicLAN Installation CD to be automatically installed. You can click '**Install Configuration Utility**' to install our utility. Choose the appropriate language when a context box appeared to choose utility's language.

15. You can set up Wireless LAN environment by our utility program provided. Refer to '**Chapter 4**' in this manual.

< Method 2 – Installing software first >

1. If you insert the MagicLAN Installation CD into the CD-ROM drive, software will launch automatically. Then, click on the **'Install MagicLAN Driver'**.

2. You can see the pictures of Wireless LAN Cards by model name.(SWL-2300M/N/P MiniPCI/PCMCIA/PCI Card). Click on the model name to install it's driver.

3. Click on Operating System in the right screen in which you want to install driver.

3. After installing driver, shut down your computer and insert card. And power on the computer.

4. The system recognize the Wireless LAN Card.

5. **The other procedures are same to 7~ 15 of < Method 1 - Inserting card first** >

Cf.) ***The third method*** **:**

You can combine **'Method 1'** with **'Method 2'**. In other words, **after inserting card** into the computer, you can install driver and utility by **using the installshield** instead, not by the inf file. In case of Windows 2000 and Windows XP, system will recognize the card automatically during installation .

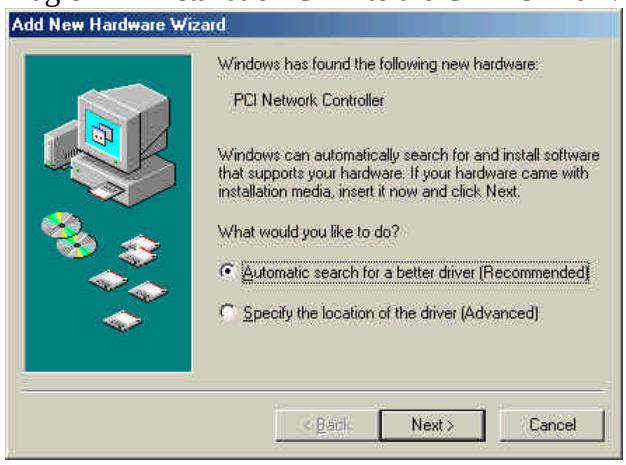
Notice that if you install a card after removing it in a Device Manager, you have to mark the check box("Do you want to scan for hardware changes?"). The function is same to the "Refresh" in the Device Manager.

3.3 Installation Procedure of Windows ME

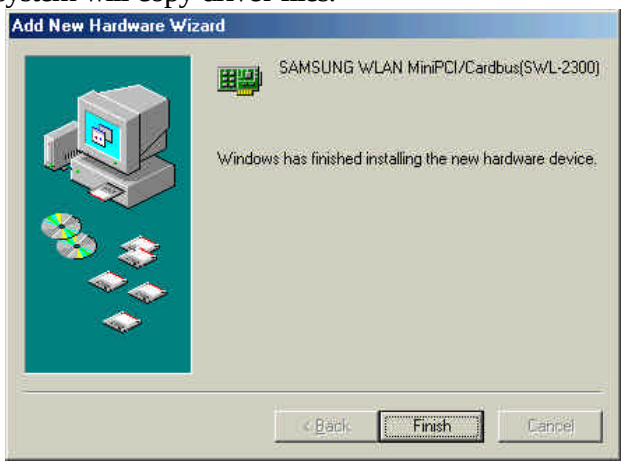
Please follow the following steps one by one to install the MiniPCI/PCMCIA/PCI Card successfully.

< Method 1 - Inserting card first >

1. Insert the MiniPCI/PCMCIA/PCI Card into the slot of your computer.
2. Power on your computer and allow **Windows ME** to load fully.
3. "**Add New Hardware Wizard**" is appeared and the system looks for "PCI Network Controller". Check if "Search for the best driver for your device(recommended)" is selected. Insert the MagicLAN Installation CD into the CD-ROM drive.



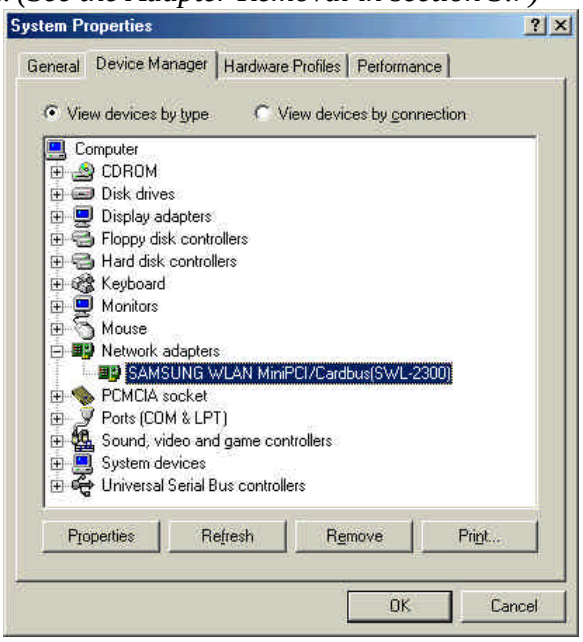
4. Press '**NEXT**' and you can find the "SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300) " . And the system will copy driver files.



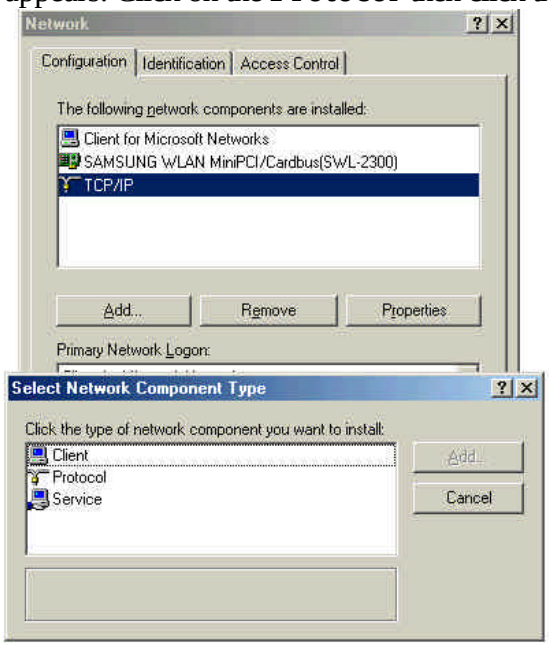
Now driver files are fully installed to start the Wireless LAN Card's operation. If screen message '**Do you want to restart your Computer now?'** will pop up, select **Yes**.

5. After booting the computer, right click on the **My Computer** using the mouse and click property.
6. Check for the SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300) by clicking on the **Device manager**. If you find the **Yellow** sign on the adapter, it shows the installation

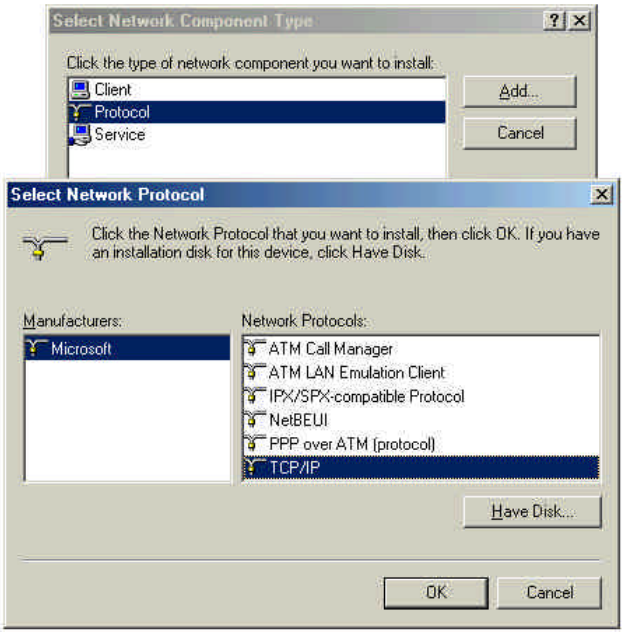
is not successful. Select the Adapter and click on **Remove**. Restart your computer after uninstalling the driver. *(See the Adapter Removal in section 3.7)*



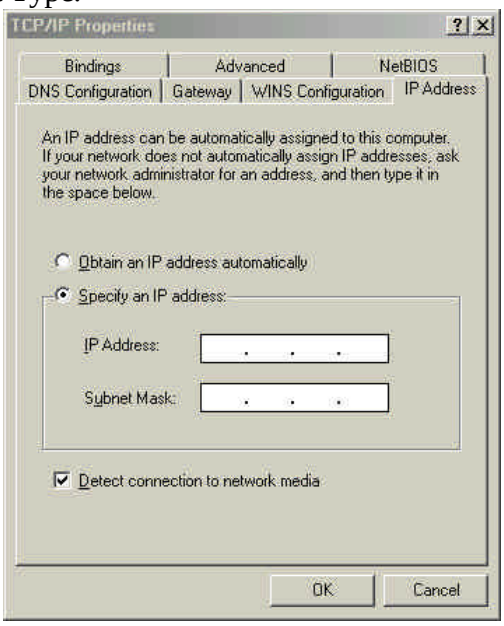
7. Right click on the **Network Neighborhood** using the mouse. Select **Properties** from the pop up menu. The network box appears and you see three main tabs: *Configuration*, *Identification* and *Access Control*.
8. Click on the configuration tab and then click on the add button. Select Network Component Type box appears. Click on the **Protocol** then click the **Add** button.



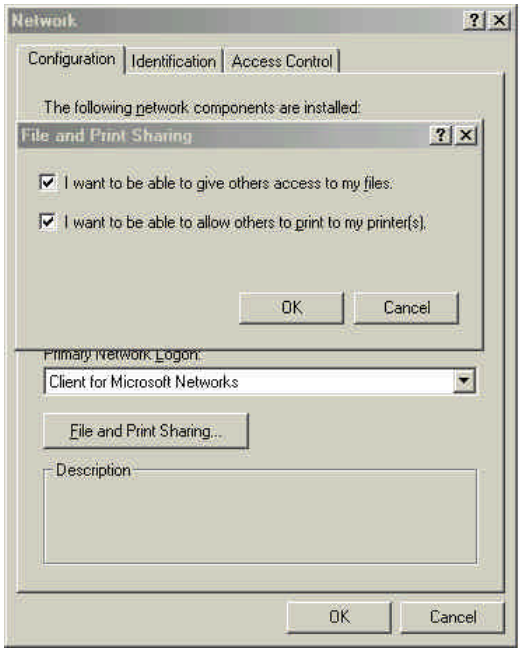
9. Select Network Protocols box appears. From the list of manufactures, click on Microsoft. From the list of network protocols list, select **IPX/SPX** and **TCP/IP**, then click **OK**.(If you want, you can install the **NetBEUI** protocol.)



10. Select the **TCP/IP** option for setting the **IP** address value, gateway value and DNS value of your computer. After setting these parameters appropriately, click **OK** to return to Network Component Type.



11. you can select the **File and Printer Sharing** options as well as the access to your computer by other users connected to that network by setting the appropriate options.



12. Screen message '**Do you want to restart your Computer now?'** will pop up. Select **Yes**. It will shut down your computer and will restart.

13. After booting the computer, you have to draw out and re-insert the MagicLAN Installation CD to be automatically installed. You can click "**Install Configuration Utility**" to install our utility. Choose the appropriate language when a context box appeared to choose utility's language.

14. You can set up Wireless LAN environment by our utility program provided. Refer to '**Chapter 4**' in this manual.

< Method 2 – Installing software first >

1. If you insert the MagicLAN Installation CD into the CD-ROM drive, software will launch

automatically. Then, click on the **'Install MagicLAN Driver'**.

2. You can see the pictures of Wireless LAN Cards by model name.(SWL-2300M/N/P MiniPCI/PCMCIA/PCI Card). Click on the model name to install it's driver.

3. Click on Operating System in the right screen in which you want to install driver.

4. After installing driver, shut down your computer and insert card. And power on the computer.

5. The system recognize the Wireless LAN Card.

6. **The other procedures are same to 5~ 14 of< Method 1 - Inserting card first** >

Cf.) ***The third method*** **:**

You can combine **'Method 1'** with **'Method 2'**. In other words, **after inserting card** into the computer, you can install driver and utility by **using the installshield** instead, not by the inf file. In case of Windows 2000 and Windows XP, system will recognize the card automatically during installation .

Notice that if you install a card after removing it in a Device Manager, you have to mark the check box("Do you want to scan for hardware changes?"). The function is same to the "Refresh" in the Device Manager.

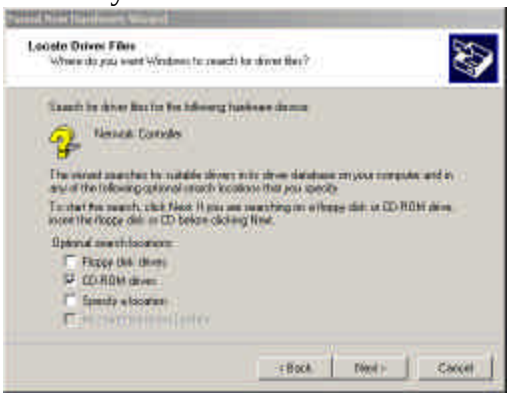
3.5 Installation Procedure of Windows 2000

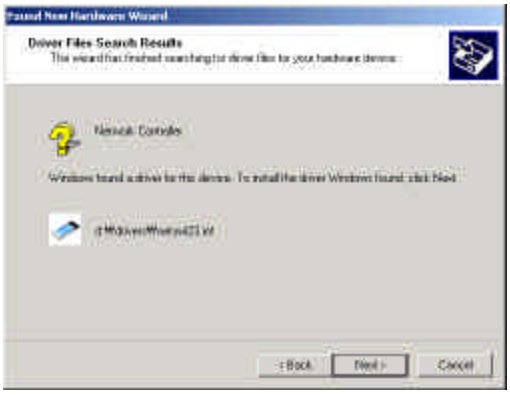
Please follow the following steps one by one to install the MiniPCI/PCMCIA/PCI card successfully.

< Method 1 - Inserting card first >

1. Insert the MiniPCI/PCMCIA/PCI Card into slot of your computer.
2. Power on your computer and allow **Windows 2000** to load fully.
3. **Found New Hardware Wizard** appeared and the system looks for "Network Controller". Press **NEXT** button and check if "Search for the best driver for your device(recommended)" is slected and then press **NEXT** button. Insert the MagicLAN Installation CD into the CD-ROM drive. You can ignore the MagicLAN Utility's screen of the CD-ROM..

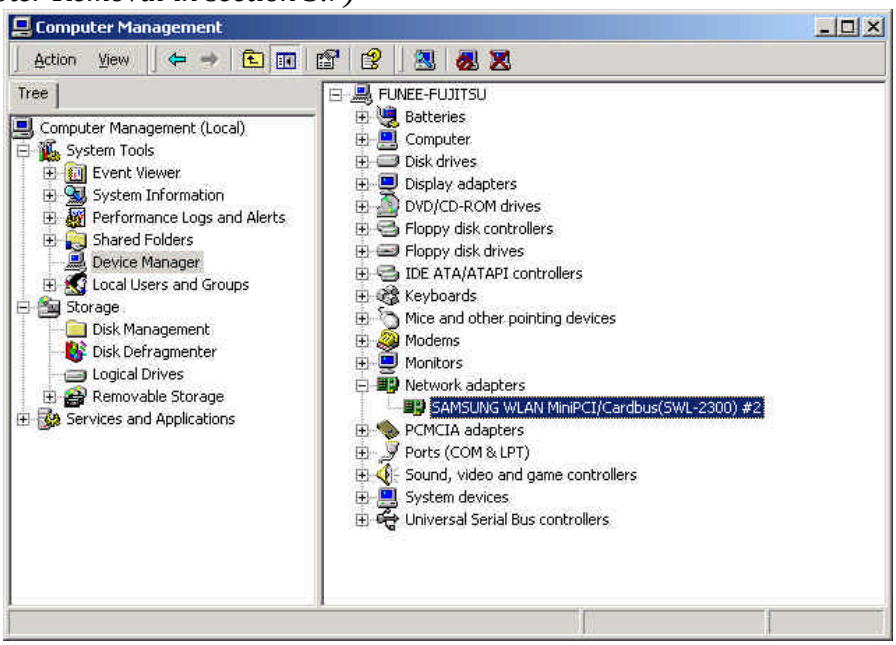
4. Mark the "CD-ROM Drive" tap and then press 'NEXT'. You can find the INF file and now it is ready to install our software.



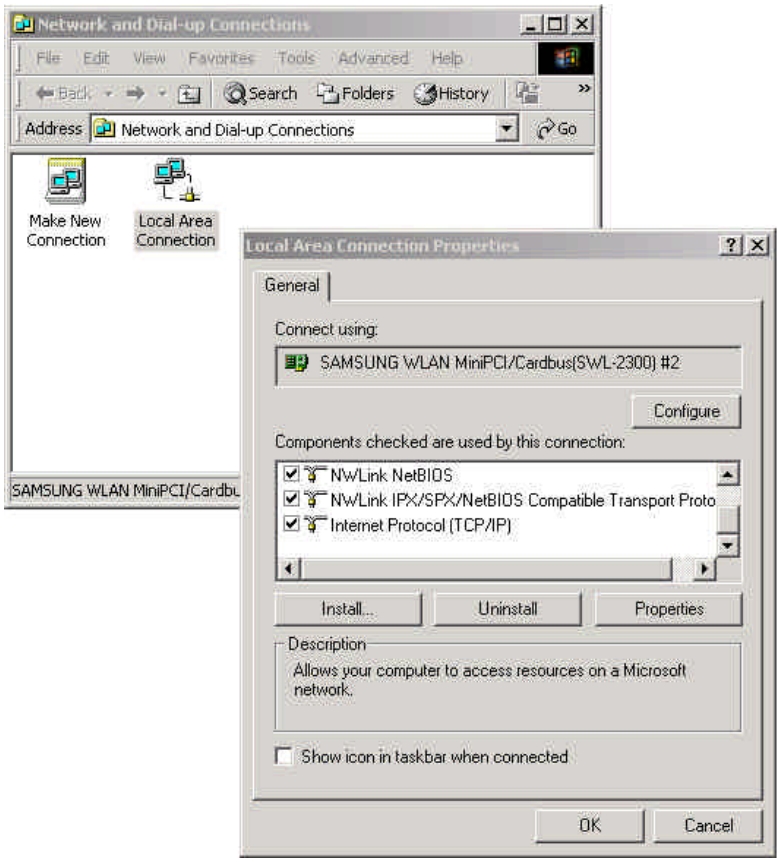


5. Press **NEXT** and system will copy driver files. Now driver files are fully installed to start the Wireless LAN Card's operation.

6. Check for the **SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300)** on the Device Manger of a **Computer Management** in the Administrative Tools . If you find the **Yellow** sign on the adapter, it shows the installation is not successful. In this case, select the adapter and click on **Remove**. Restart your computer after uninstalling the driver to make the changes effective. *(See the Adapter Removal in section 3.7)*



7. Right click on the **Network Places** using the mouse and double-click on the **Local Area Connection** ,and then click on **Properties.**



8. Click on the **TCP/IP** option for setting the **IP** address for your computer. Set the **IP** value, **Gateway** value, **DNS** value. After setting these parameters appropriately, click **OK** to return to Network Component Type.
9. You can select the **File and Printer Sharing for Microsoft Networks** options to allow the **Access** to your computer by other users connected to that network by setting the computer sharing options. Click on OK.
10. After booting the computer, you have to draw out and re-insert the MagicLAN Installation CD to be automatically installed. You can click **Install Configuration Utility** to install our utility. Choose the appropriate language when a context box appeared to choose utility's language.

11. You should reboot the computer to use our utility properly in the NT-based OSs(Windows NT4.0, 2000, XP).
12. After rebooting your computer, you can set up Wireless LAN environment by our utility program provided. Refer to '**Chapter 4**' in this manual.

< Method 2 – Installing software first >

1. If you insert the MagicLAN Installation CD into the CD-ROM drive, software will launch automatically. Then, click on the '**Install MagicLAN Driver**'.

2. You can see the pictures of Wireless LAN Cards by model name.(SWL-2300M/N/P MiniPCI/PCMCIA/PCI Card). Click on the model name to install it's driver.

3. Click on Operating System in the right screen in which you want to install driver.

4. After installing driver, shut down your computer and insert Wireless LAN card. And power on the computer.

5. The system recognize the Wireless LAN Card.

6. **The other procedures are same to 6~ 12 of< Method 1 - Inserting card first** >

Cf.) ***The third method*** **:**

You can combine **'Method 1'** with **'Method 2'**. In other words, **after inserting card** into the computer, you can install driver and utility by **using the installshield** instead, not by the inf file. In case of Windows 2000 and Windows XP, system will recognize the card automatically during installation .

Notice that if you install a card after removing it in a Device Manager, you have to mark the check box("Do you want to scan for hardware changes?"). The function is same to the "Refresh" in the Device Manager.

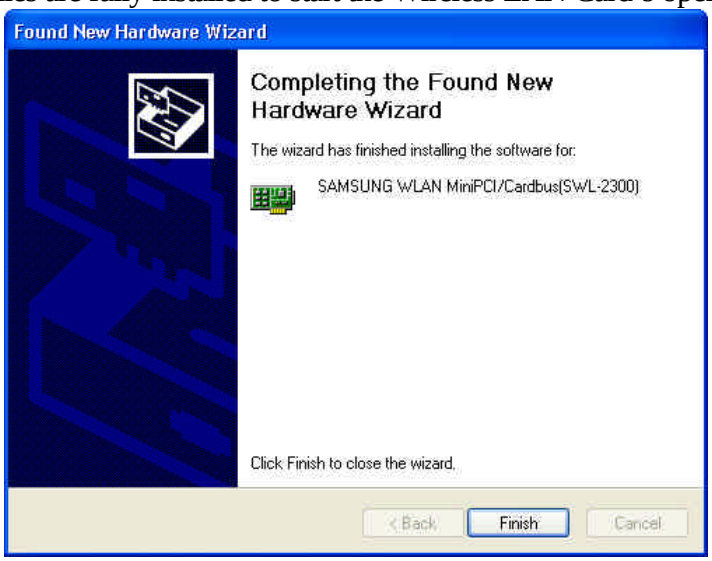
3.6 Installation Procedure of Windows XP

Please follow the following steps one by one in order to install the MiniPCI/PCMCIA/PCI Card successfully.

< Method 1 - Inserting card first >

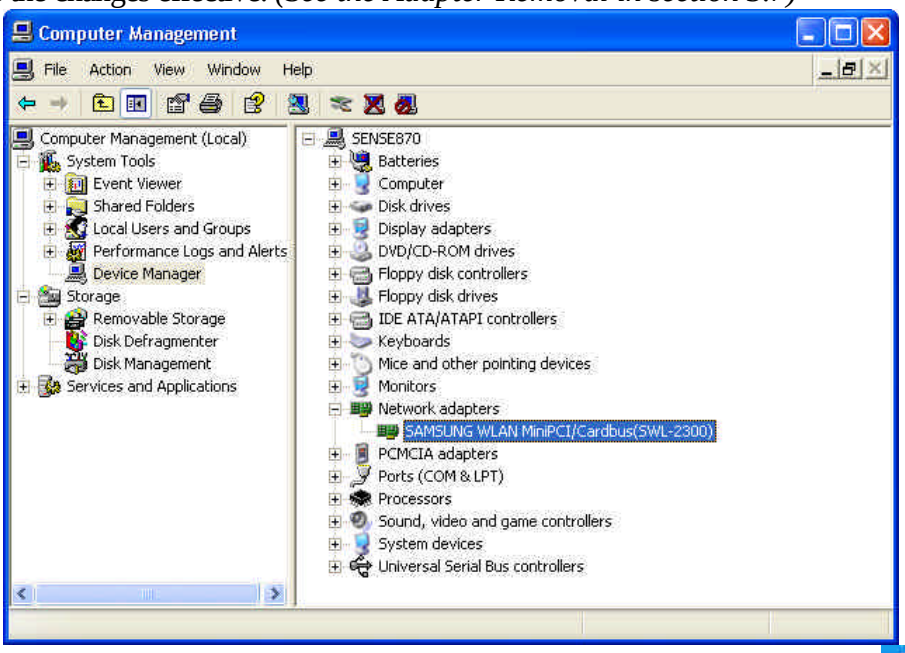
1. Insert the MiniPCI/PCMCIA/PCI Card into slot of your computer.
2. Power on your computer and allow **Windows XP** to load fully.
3. **"Found New Hardware Wizard"** appeared and the system looks for "Network Controller". Insert the MagicLAN Installation CD into the CD-ROM Drive.

4. You can find the "SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300)" and system will copy driver files.
5. Now driver files are fully installed to start the Wireless LAN Card's operation.

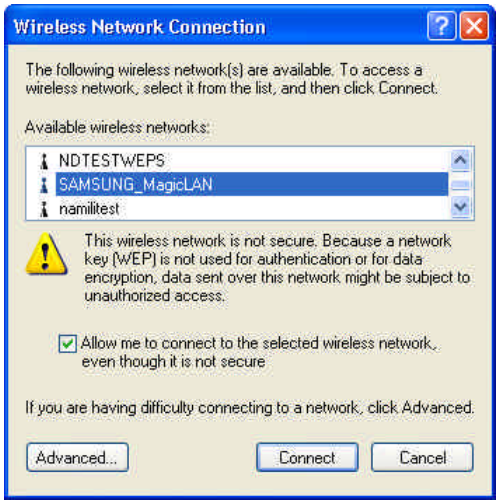


6. Check for the SAMSUNG WLAN MiniPCI/PCI Cardbus(SWL-2300) on **Computer Management** in the **Administrative Tools** of the **Control Panel**. If you find the

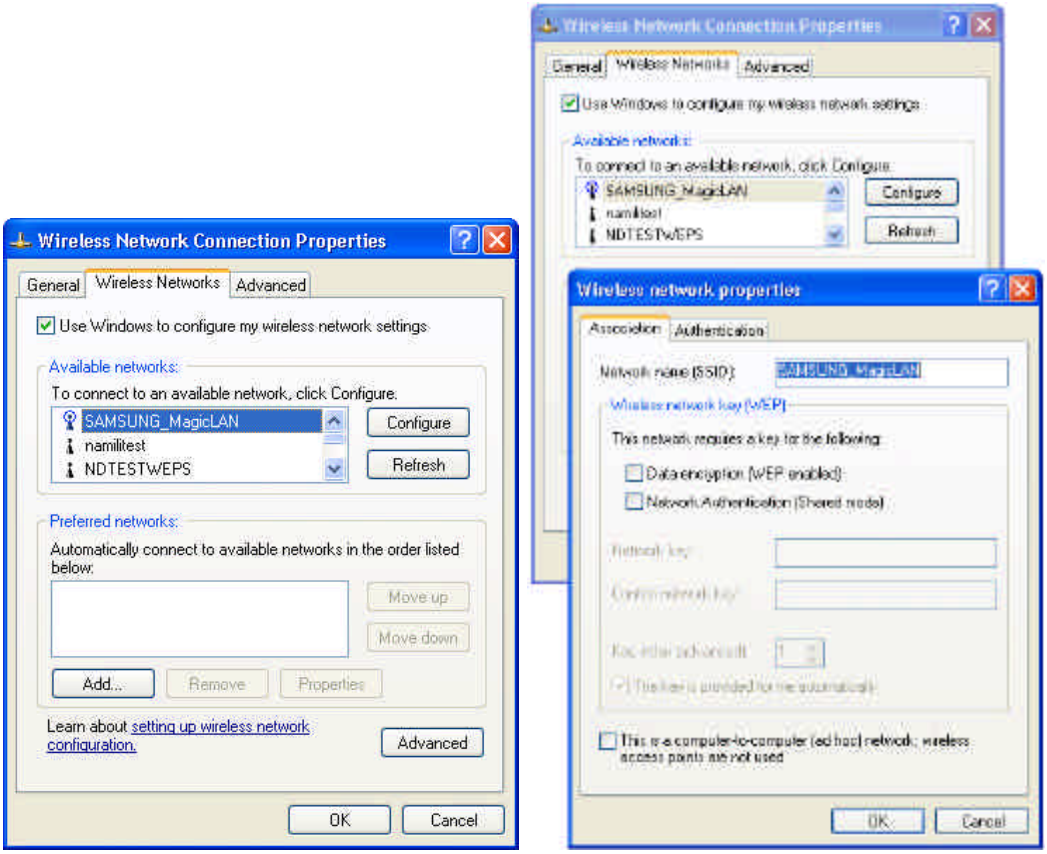
Yellow sign on the adapter, it shows the installation is not successful. In this case, select the adapter and click on **Remove**. Restart your computer after uninstalling the driver to make the changes effective. *(See the Adapter Removal in section 3.7)*

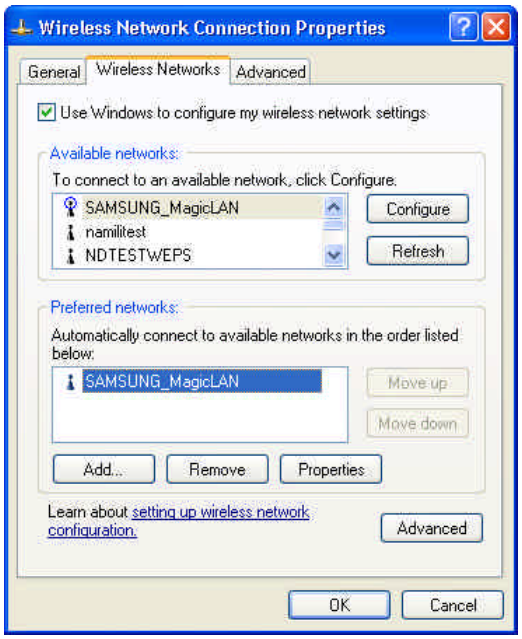


7. Of the icons displayed on the right bottom of desktop, click on icon stated **Wireless Network Connection**.

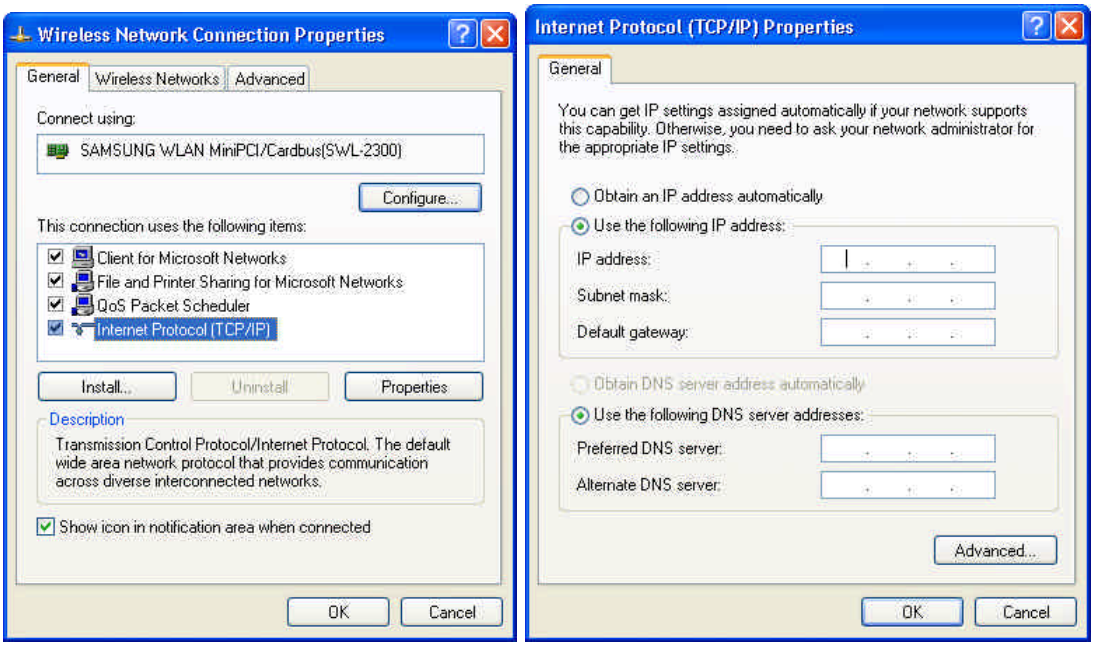


8. When you are using DHCP, just select the AP that you want to connect in the **Connect to Wireless Network** above.
9. To manually set your IP address, WEP and some other configuration, click on **Advanced** of the above picutre and then click **Configure** Available networks on the **Wireless Networks** Tab . Set the SSID and parameters to be needed to modify and then clicking on **OK.** The AP that you selected will be displayed on the Prefered Networks.





10. Next, move to the **General** Tab. After the double click the "**Internet Protocol(TCP/IP)**", set the IP value, Gateway value and DNS value and click on OK. All will be done by clicking on **OK** once more.



< Method 2 – Installing software first >

1. If you insert the MagicLAN Installation CD into the CD-ROM drive, software will launch automatically. Then, click on the **'Install MagicLAN Driver'**.

2. You can see the pictures of Wireless LAN Cards by model name.(SWL-2300M/N/P MiniPCI/PCMCIA/PCI Card). Click on the model name to install it's driver.

3. Click on Operating System in the right screen in which you want to install driver.

4. After installing driver, shut down your computer and insert Wireless LAN card. And power on the computer.

5. The system recognize the Wireless LAN Card. If **Found New Hardware Wizard** appears, just click **Next .**

6.The other procedures are same to 6~ 10 of< Method 1 - Inserting card first >

Cf.) ***The third method*** **:**

You can combine **'Method 1'** with **'Method 2'**. In other words, after **inserting card** into the computer, you can install driver and utility by **using the installshield** instead, not by the inf file. In case of Windows 2000 and Windows XP, system will recognize the card automatically during installation .

Notice that if you install a card after removing it in a Device Manager, you have to mark the check

box(“Do you want to scan for hardware changes?”). The function is same to the “Refresh” in the Device Manager.

[Use of Our company’s Utility in Windows XP]

You can also set up the Wireless LAN by the our company’s utility program instead of Windows XP’ utility program.

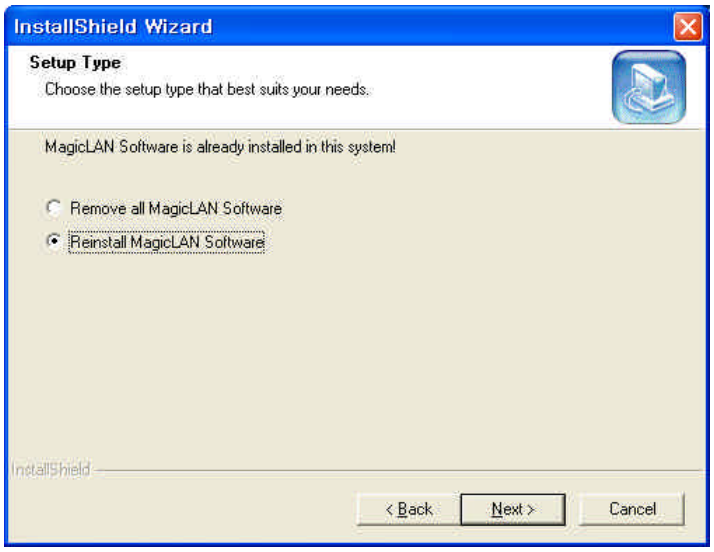
After booting the computer, you have to draw out and re-insert the MagicLAN Installation CD to be automatically installed. You can click “**Install Configuration Utility**” to install our utility. Choose the appropriate language when a context box appeared to choose utility’s language.

You should reboot the computer to use our utility properly in the NT-based OSs(Win NT, Win 2000, Win XP).

- If you click the icon on the right bottom of the desktop, you can see the current state of the Wireless LAN.
- Click on **Option** of the **General settings** on the bottom of the Utility and mark “**Manage the Wireless Control by this utility under WinXP**”. For more details, refer to ‘**Chapter 4’** in this manual.
- If you want to use Wireless LAN Utility in the system of Windows XP , be sure that the mark of “**Manage the Wireless Control by this utility under WinXP**” of the our company’s utility program is removed.

3.6 Update of MagicLAN Wireless LAN Card Driver

1. After inserting the MagicLAN Installation CD, click the Install MagicLAN Driver and select the Card and Operating System that you want to update in.
2. If selection box appears, select 'Reinstall MagicLAN Software' between 'Remove' and 'Reinstall'.



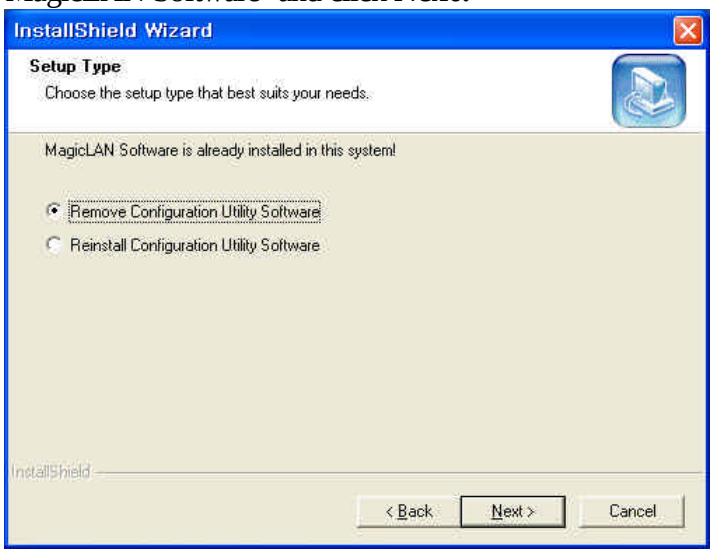
3.7 Removal of MagicLAN Wireless LAN Card Driver

(Adapter Removal)

Click like followings :

-> All Programs -> MagicLAN -> MagicLAN Driver -> Remove MiniPCI Card adapter.

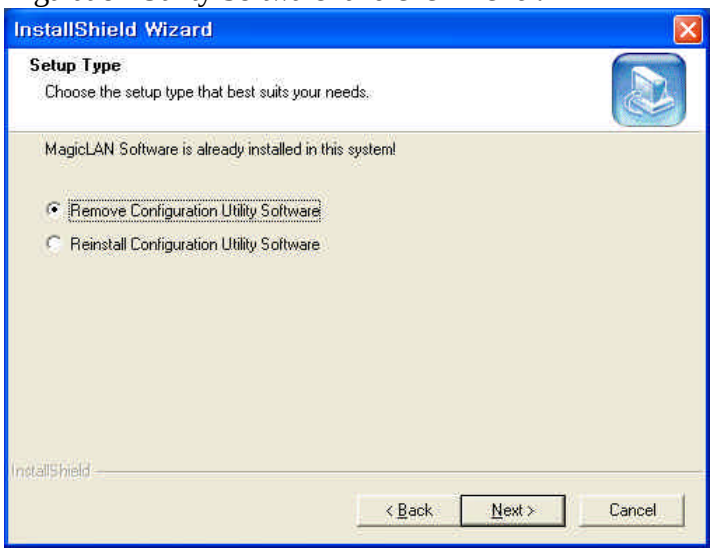
Select 'Remove all MagicLAN Software' and click **Next.**



(Utility Removal)

Click like followings : **-> All Programs -> MagicLAN -> MagicLAN Utility -> Remove Utility Uninstall.**

Select 'Remove Configuration Utility Software' and click **Next .**



(cf) If you want to just remove the WLAN Card from the PC, click and **Stop SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300) Card** icon the right bottom of your computer screen. Then you remove the WLAN Card after clicking the OK button on the message, '**SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300) Card can now be safely removed from the system'** (Notice that you should power off your computer and remove your card in case of MiniPCI/ PCI card)

** - Safely remove hardware icon (Windows ME , 2000, XP)

In the case of Windows NT4.0, right click on the **Network Neighborhood** using the mouse and eliminate the '**SAMSUNG WLAN MiniPCI/Cardbus(SWL-2300)**' on the Network Component.

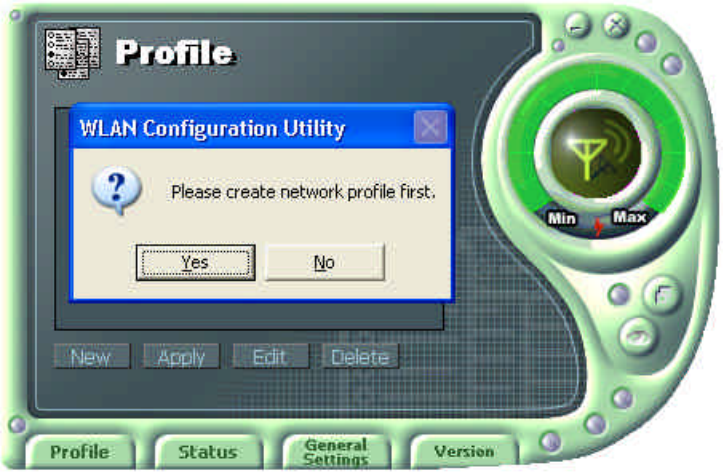
4. The Program For Setting MagicLAN

4.1 The concept of Profile

- TCP/IP settings for the fixed networks/Wired LAN have no problems, as they do not deal with the mobility. But in case of mobile equipments such as WLAN card, when WLAN client has moved from home to Office or vice-versa, the difficulty for using the old TCP/IP settings arises.
- The concept of profile makes it easy to use the same TCP/IP settings for WLAN cards regardless of the movement.
- Profile can be selected again with ease if it were saved. Saving the settings for WLAN and TCP/IP as a Profile, it is easy for user to select and use one of the saved profiles, especially it can be used quickly without rebooting your computer while the settings for TCP/IP is updated.

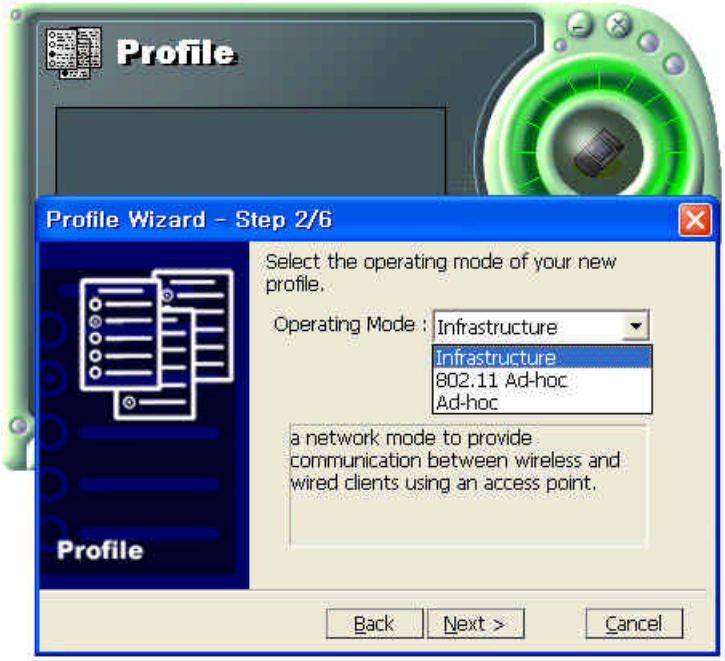
4.2 Installation Procedure

First time use of WLAN on your computer needs the following settings.



1. Insert your WLAN card. After clicking on the icon , which is found at the right bottom your computer screen, “Please create your first network profile now” window will appear. Click ‘Y’ button for yes and the following window will appear. cf) The above message will not be appeared in the Win XP. Make a Profile with clicking ‘New’ button.

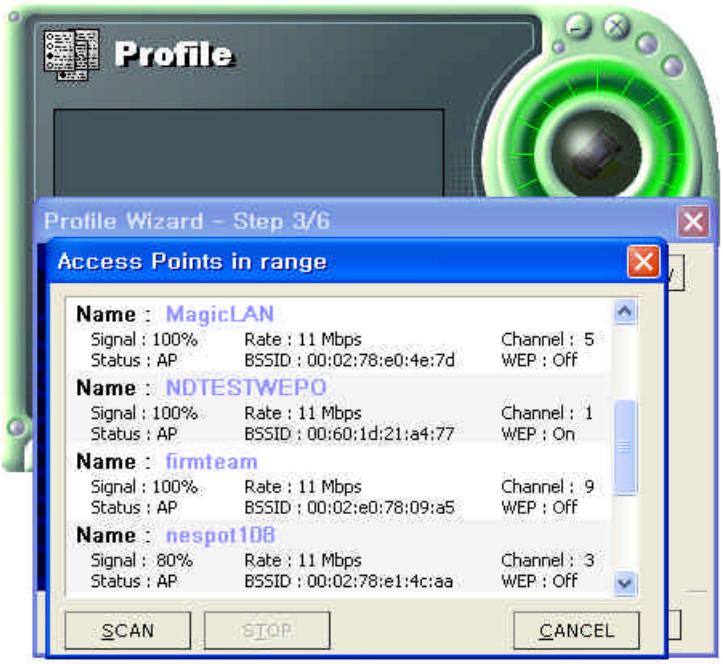
2. Input a profile name in Profile Name and description for your profile name in Description and click the NEXT button, the following window will appear.



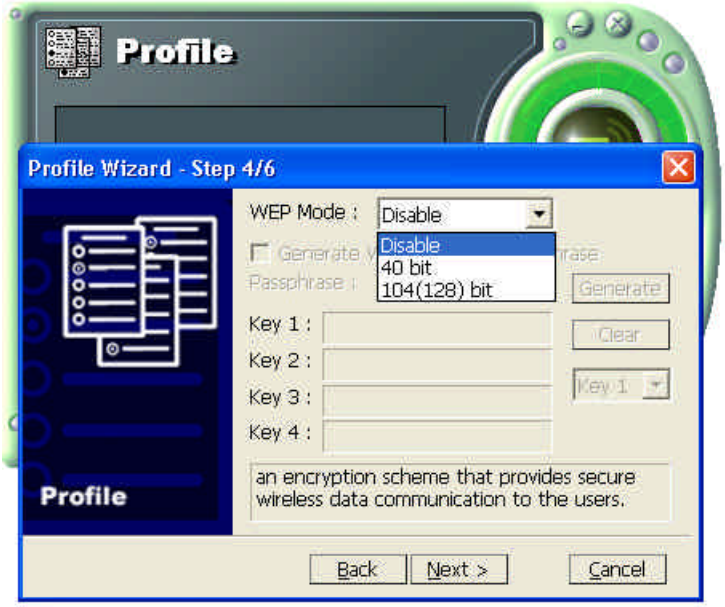
3. Select the Operating Mode to use and click the NEXT button. Default operating mode is Infrastructure.

- Infrastructure Network is the structure that the communication between Wired LAN and Wireless LAN is feasible. Wireless client is possible to access to the other Network (include Internet) via Access Point.

- Ad-hoc/802.11Ad-hoc Network support the communication among Wireless clients. Due to the support of communication among Wireless equipment, Ad-hoc Network doesn't need Access Point. (cf. 802.11 ad-hoc is satisfied with the 802.11 specification)



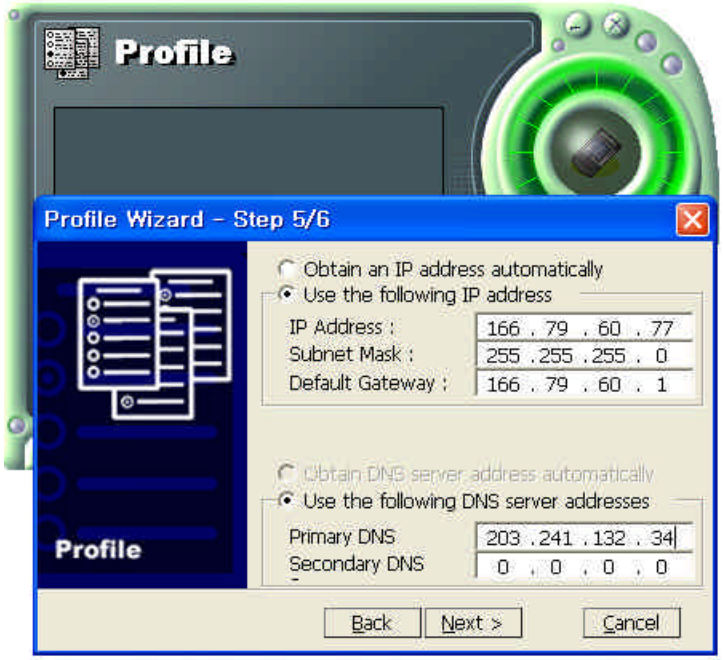
4. If you clicked on the Survey, the above window will appear showing you Access Points or Stations (Ad hoc) that are able to connect now. Select the AP that has the highest signal to use as an SSID.



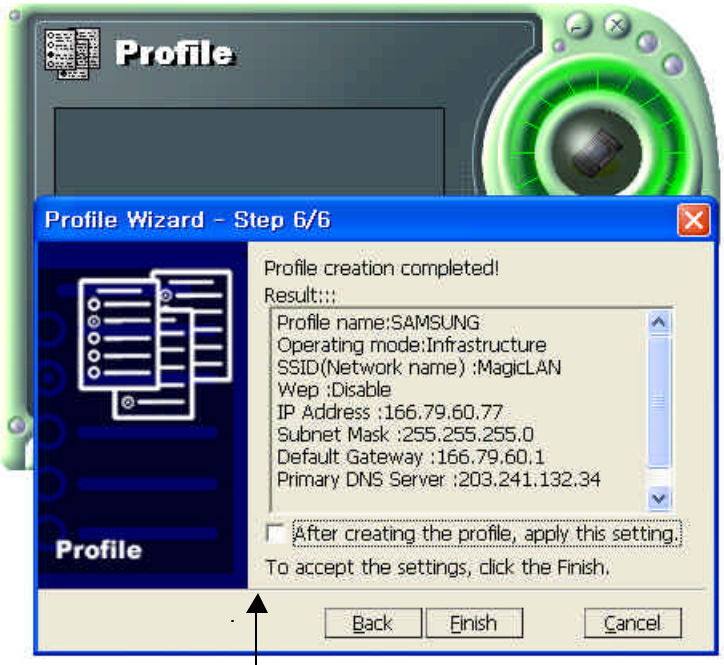
5. Select the WEP Mode and Click the Next button.

- WEP Mode

- This is security tool to protect your DATA from unauthorized users.
- To use the function of WEP, The WEP key settings for client must be same to that of AP in the Infrastructure Mode, and the WEP key settings must be same for all clients in the Ad-hoc/802.11Ad-hoc Mode.



6. Enter a valid IP address. IP address can be allocated automatically. (cf. it is limited to users who use the DHCP server or ADSL connection). As only checked in "Manage TCP/IP together with Profile", IP address can be controlled in the Profile. This menu does not appear under MS Windows NT. Click NEXT to see the following window.



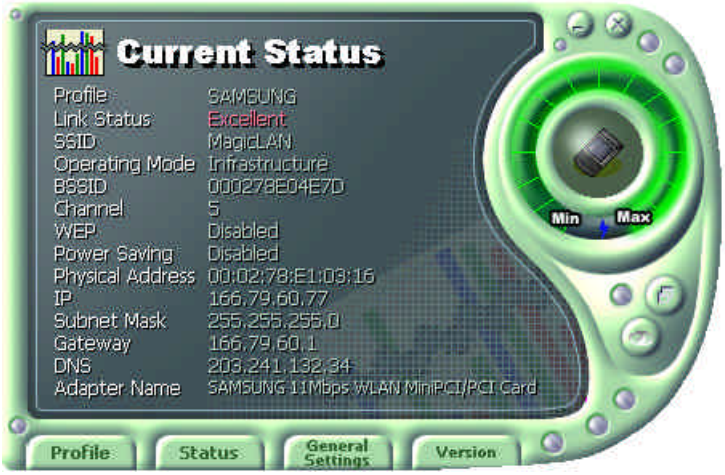
7. Showing you the settings selected so far. Click the Finish button.

Check on this box. It will work on the system after clicking the Finish button.

8. Click the Profile name shown in the above window click the Apply button. The settings will be over. If the IP address entered in the system settings is different than the IP address selected under profile name, system IP settings will be changed without rebooting your system.

5. The main configuration of Program

During the installation of your SAMSUNG WLAN Card, configuration utility is also installed. You can see the icon at the right bottom of your screen. Double clicking that icon will show you the screen as shown below.



The following describes the meanings of variables shown in the WLAN configuration.

- **Profile:** The arbitrary designation by user. It is the profile name to distinguish each Profile. So when you set the Profile, you would better choose the name that can send the contents it has.
- **Link Status**: you Link Status shows a client connection state with AP (In Infrastructure mode) or with other clients (In 802.11Ad-hoc Mode).
- **SSID**: It represents the name of a group consisting of WLAN users only. It is also called ESSID.
- **Operating Mode:** There are three Modes. Infrastructure Mode (the connection among clients through an AP), 802.11Ad-hoc/Ad-hoc Mode (direct connection among clients)
- **BSSID**: It shows the Physical Address of WLAN card inserted in AP in the Infrastructure Mode and the Random Generation value in the 802.11 Ad-hoc Mode.
- **Channel**: It shows channel number in use for communication between AP and client or among clients. When the Network Mode is set to the Infrastructure or 802.11Ad-hoc/Ad-hoc Modes, it searches a channel automatically.

- **WEP:** Security tool to be used for encryption/decryption of data to be exchanged between clients or between clients and AP. It denies the authorized access to network if WEP is enabled.
- **Power Saving:** The Power Saving Mode that prolongs the life of battery.
- **Physical Address:** It is the Physical address of WLAN card being used by user. This is also the MAC address of the WLAN card.
- **IP Address:** Address used to send data from one computer to another to create the network of several computers. IP address is unique for every network card installed on a computer to identify it from other computers.
- **Subnet Mask:** It is an address that enables along with an IP Address to share a network Address within the LAN of company.
- **Gateway:** The network point playing a role as a gateway to enter the other network.
- **DNS:** It is the system that transforms the name of an Internet domain to the corresponding IP Address. IP Address is actually needed to locate a computer/server on the Internet.
- **Adapter Name:** It shows the kind of WLAN card that the user is using now.

The following description is the fundamental installation of WLAN Card.

5.1 Profile

You can modify your wireless environment four buttons on the bottom of Utility.

5.1.1 The 'New' button

Clicking the New button, you can add or make a new Profile.

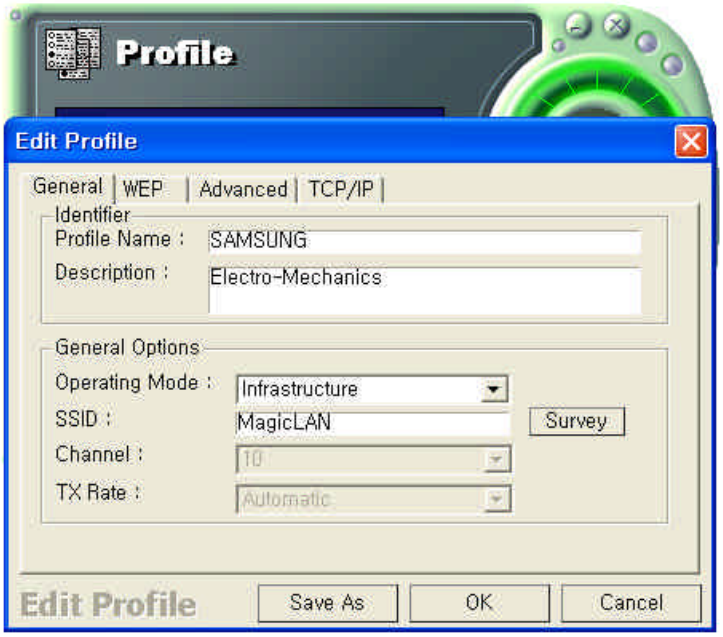
(Refer to 'The Program For Setting MagicLAN' in the Chapter 4)

5.1.2 The 'Apply' button

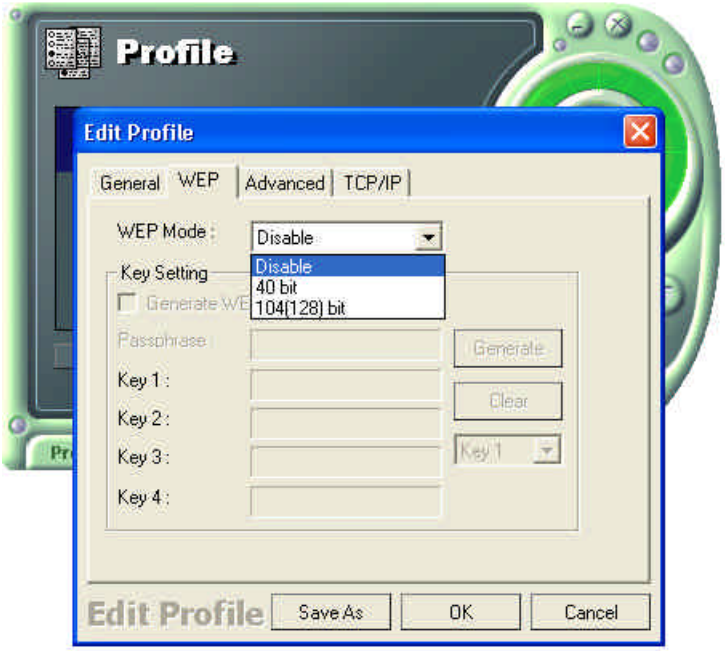
Select and click a Profile to be used, then the saved or modified profile settings will be used for configuring your WLAN card.

5.1.3 The 'Edit' button

Clicking the Edit button or the Profile name that was created previously, you can modify that Profile.

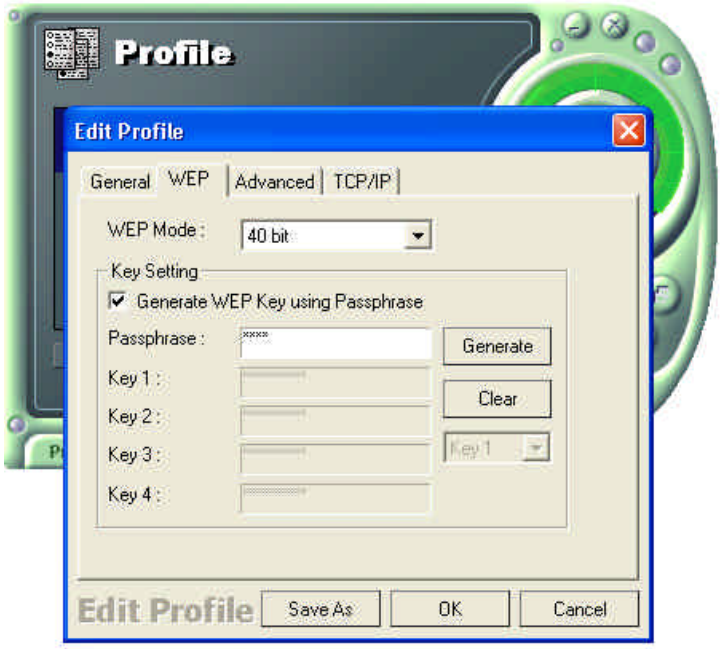


- Click the WEP button to set the security.



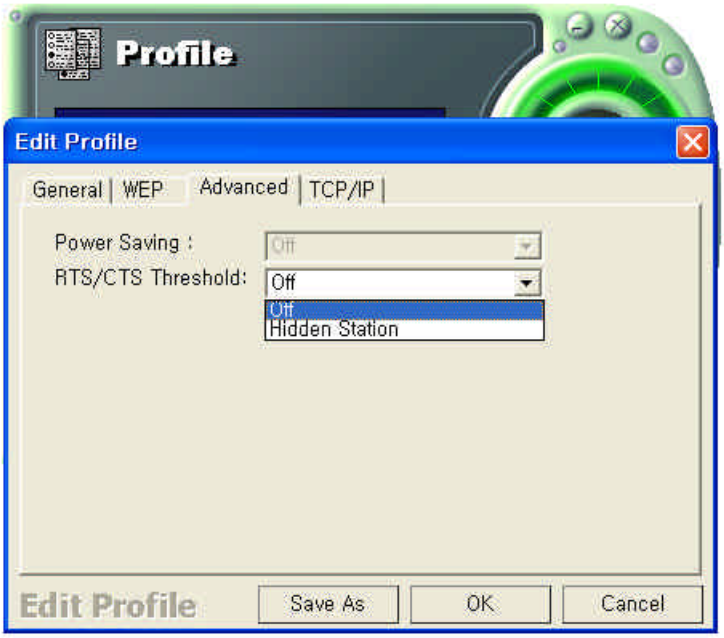
1. First of all, select the '40 bit'.

2. Input a certain value (ex. test1 etc) in the 'Passphrase' and click the Generate button. Then it will make four values of keys automatically.



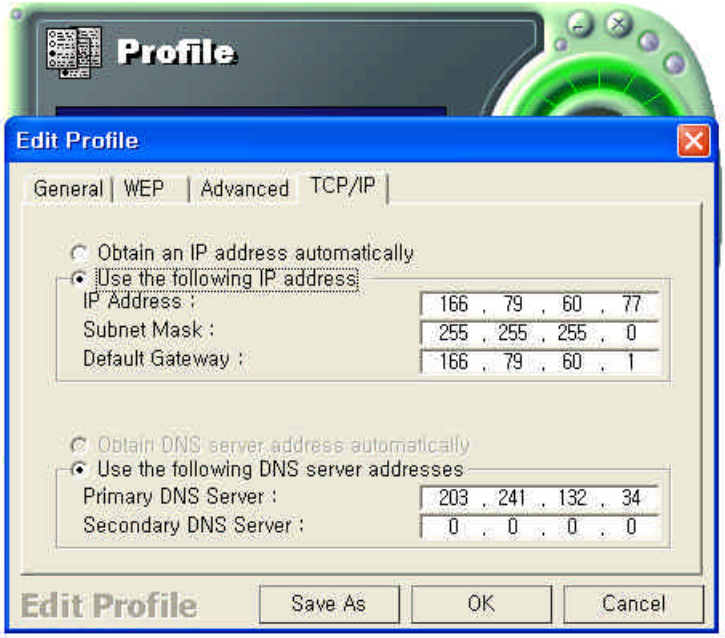
3. Then you set the same value to the WEP of AP. (cf. If you use the WLAN made from other company, you must set the same values in the four keys)

- You can set the 'Power Saving' and 'Threshold' with clicking the Advanced button.



1. Power Saving Mode saves the Battery. (cf.. it can give a lowing of efficiency according to 802.11Specification)
2. RTS/CTS Threshold Mode is better used in the place surrounded with much RF interference.

- Click the TCP/IP to input the IP directly or receive IP automatically.



5.1.4 The 'Delete' button

Select a profile and click on Delete button to remove that profile.

5.2 Status

5.2.1 The 'Current Status' button

It shows the current state of the WLAN card. (Refer to the ' The main configuration of Program')

5.2.2 The 'AP Status' button

It shows the current state of AP. (You can see the IP address changed by the Get Status button)

- **Model:** It shows the name of model.
- **Version**: It shows the version of AP.
- **Description:** It is the name of AP designated by AP manager during AP setup.
- **NAT**: It shows whether the private IP address (NAT server) is enabled or not.
- **DHCP**: It shows whether the DHCP sever is enabled or not.
- **Clients number**: It shows the number of users currently connected with the AP.
- **Internet connection**: It is the connection type with outer network (LAN, ADSL, ISDN etc.).
- **IP Address**: It shows whether the IP address is from DHCP server or NAT server.
- **Connected Status**: In case the connection type with the outside network is of ADSL/CABLE type, it shows the connection state between AP and ASP service.
- **IP**: It is the IP address of the AP.

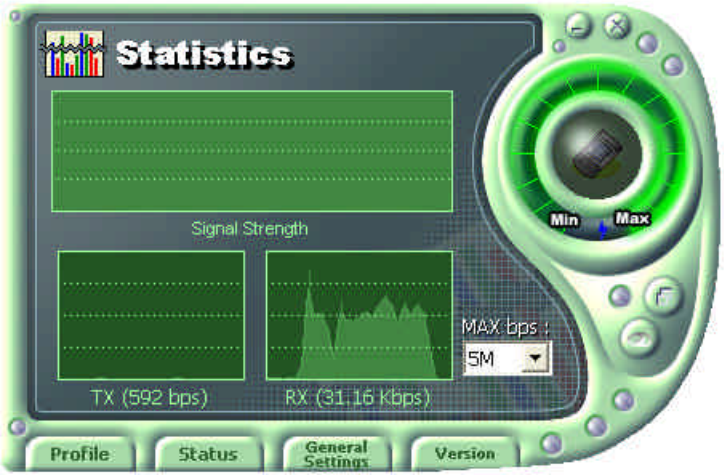
5.2.3 The 'Site Survey' button

It finds you the AP/Station that are connected currently. (It takes a few seconds to be done)

- **Signal**: It shows the connection state of Stations with AP or Master Station.
- **Rate**: It shows the Tx Data rates.
- **WEP:** It shows security state with the AP.
- **BSSID**: It represents the Physical Address of AP in the Infrastructure Mode and the Random Generation value in the 802.11 Ad-hoc Mode.
- **Channel**: It shows the currently used channel number.

5.2.4 Statistics

It shows the state of the data transmission. (You can regulate the graph to be see clearly with the settings of the MAX bps on the right side of bottom)



5.3 General Settings

5.3.1 The 'DHCP' button

- It works when it is enabled.
- The Get Status button shows the updated information obtained from the DHCP server.
- The Release DHCP button releases the IP Address that was received from the DHCP server.
- The Renew DHCP button is for receiving the IP Address from the DHCP server.

5.3.2 The 'Options' button

- If you disable the check from the 'Sound Enable', you cannot hear the sound whenever you click.
- If you disable check from the 'Manage TCP/IP together with profiles', you cannot control TCP/IP in the utility. You can just modify TCP/IP in the Network Neighborhood.
- If you check the 'Do not show the Profile Wizard Welcome message', 'Welcome message does not pop up in case of set or add the Profile.

5.4 Version

- You can see the Driver and Firmware version for your WLAN card currently in use.
- Click the Website to get more information about WLAN.

6. Troubleshooting

To make the installation of SAMSUNG WLAN Card more users friendly, we have suggested following the installation steps one by one as listed in the section 3 and section 4. Still you encounter some problems while installing the WLAN Card or you want to confirm whether your card is installed properly or not, we have listed the procedure for checking the various components after you have installed the card.

Q. Wireless connection icon shows in the Task bar and **Wireless connection unavailable** message appeared.

It's because property setting is wrong. Please check these contents.
A1. Check if there's right network name in the **Available networks** in the client PC. Network name should be same in the infrastructure mode(using AP) as well as in the Peer-to-Peer mode. Wireless LAN's network name distinguish a uppercase letter frome a lowercase letter.
A2. Check if you are using the same WEP string. And you must use the same WEP key. Please ask network manager about the Access Point's WEP string and key.
A3. Check if you are in the range of the Access Point.
A4. Reinstall the driver using MagicLAN Software CD if driver doesn't work.

Q. Samsung's tray icon in the task bar shows red color .

A. This is same to above question. Please refer to the above A1~A4.

Q. Link Status is excellent, but I can't connect to the network.

If TCP/IP setting is not properly established , you can't connect to the network.

A. Check TCP/IP setting.

When you are using DHCP server, if allocated IP is insufficient, you can't use network. In a case like this, please ask the network manager.

Q. A system identify the Wireless LAN Card, but I can't connect the network.

If there's many network adapter in the system, wireless LAN may not work properly.

A. Open Device Manager and set **disable** the unused network adapter(PPP adapter ,etc.) by clicking right mouse.

Q. I want to use Samsung client utility in the Windows XP. But, we can't set up correctly.

A. Windows XP provides each configuration utility of LAN and Wireless LAN by OS in itself. In case of this, you must select the "Manage the Wireless Control by this utility under WinXP" in the Option menu of General Settings in the Samsung client utility.

Q. Found new hardware wizard is popped up when WLAN card is inserted in PCMCIA slot where driver is not installed .

A. Found new hardware wizard is popped up because SWL-2300N comply with Cardbus interface. Therefore, re-install SWL-2300N driver as you saw in chapter 3.

Please refer to the website: http://www.magiclan.com/product/magiclan/support/faq.htm about other detailed questions.