

# SAMSUNG MagicLAN SWL-2100N

User Manual (Rev. 1.4)

# **Table of Contents**

1. MagicLAN Installation	8
1.1 Introduction	8
1.2 Technical Background	8
1.3 MagicLAN Overview	10
2. Before the Installation	12
2.1 What is in your Package	12
2.2 System Requirement	12
2.3 Preparations For Installation	12
3. MagicLAN Installation for Windows 98/ME/NT4.0/2000/XP/CE	13
3.1 Installation Overview	13
3.2 Installation Procedure of Windows 98	13
3.3 Installation Procedure of Windows ME	20
3.4 Installation Procedure of Windows NT4.0	
3.5 Installation Procedure of Windows 2000	
3.6 Installation Procedure of Windows XP	42
3.7 Installation Procedure of Windows CE	48
3.8 Update of MagicLAN Wireless LAN Card Driver	56
3.9 Removal of MagicLAN Wireless LAN Card Driver	56
4. The Program for setting MagicLAN	
4.1 The concept of Profile	
4.2 Installation Procedure	
5. The main configuration of Program	64
5.1 Profile	65
5.1.1 The 'New' button	65
5.1.2 The 'Apply' button	65
5.1.3 The 'Edit' button	65
5.1.4 The 'Delete' button	68
5.2 Status	69
5.2.1 The 'Current Status' button	
5.2.2 The 'AP Status' button	70
5.2.3 The 'Site Survey' button	71

5.2.4 Statistics	71
5.3 General Settings	71
5.3.1 The 'DHCP' button	71
5.3.2 The 'Options' button	72
5.4 Version	73
6. Troubleshooting	74

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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.

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.

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#### WARNING

While installing and operating this transmitter and antenna combination the radio frequency exposure limit of  $1 \text{mW/cm}^2$  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.

SAMSUNG

ELECTRO-MECHANICS

# 11Mbps High Rate 802.11b Wireless LAN PC Card



Specifications

Model Name	SWL- 2100N
System Interface	PCMCIA Type II
Frequency Band	2.400 ~ 2.4835GHz(Subject to local regulations)
Operating Voltage	3.3V±5%(5V optional)
	Receive :210mA(Typical)
Current Consumption	Transmit : 370mA(Typical)
Data Rate	1, 2, 5.5 or 11Mbps
Spreading	DSSS(Direct Sequence Spread Spectrum)
Output Power	50mW(17dBm) for 22MHz Bandwidth, 7mW/MHz
Receive Sensitivity	Typically -84dBm at 11Mbps
Security	40-bit/104(128)-bit WEP Encryption
Antenna	Dual antennas supporting diversity
Available Drivers	Linux & Microsoft Windows 98/ME/NT/2000/XP/CE
Standards	IEEE 802.11b
Media Access Protocol	CSMA/CA
Temperature Range	Operating: 0~55℃(32~131°F), Storage: -25~70℃(-13°F~158°F)
Humidity	10% to 90% Non-condensing
Operating Range	Open Space : 150m(500ft) at 11Mbps, 200m(660ft) at 2Mbps
(1024 bytes file transfer)	Closed Office: 30m(100ft) at 11Mbps, 50m(160ft) at 2Mbps
Dimensions	113mm x 54mm x 6mm
Certifications	WHQL Certified (Designed For Windows 98/ME/NT/2000) .
&	Wi-Fi certified, FCC Class B, FCC Part 15.247, Canada, CE, Germany, Swiss, England,
Regulatory Approvals	other Europe Conturies and New R&TTE Approval, Korea, Japan

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Channel#	Frequency	FCC	Canada	ETSI	Spain	France	Japan
1	2412MHz	0	0	0	0		0
2	2417MHz	0	0	0	0		0
3	2422MHz	0	0	0	0		0
4	2427MHz	0	0	0	0		0
5	2432MHz	0	0	0	0		0
6	2437MHz	0	0	0	0		0
7	2442MHz	0	0	0	0		0
8	2447MHz	0	0	0	0		0
9	2452MHz	0	0	0	0		0
10	2457MHz	0	0	0	0	0	0
11	2462MHz	0	0	0	0	0	0
12	2467MHz			0	0	0	0
13	2472MHz			0	0	0	0
14	2484MHz						0

\*\*\*\* Table: The Operating Channels

# **1. MagicLAN Installation**

## **<u>1.1 Introduction</u>**

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

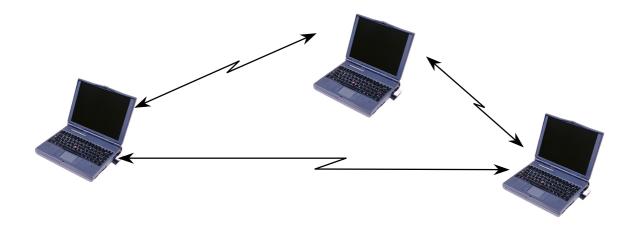
At the PHY layer, IEEE 802.11 defines three physical characteristics for WLAN: diffused infrared, direct sequence spread spectrum (DSSS), and frequency hopping spread spectrum (FHSS). While the infrared PHY operates at the baseband, the other two PHYs operate at the 2.4GHz ISM (Industrial, Scientific, 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.

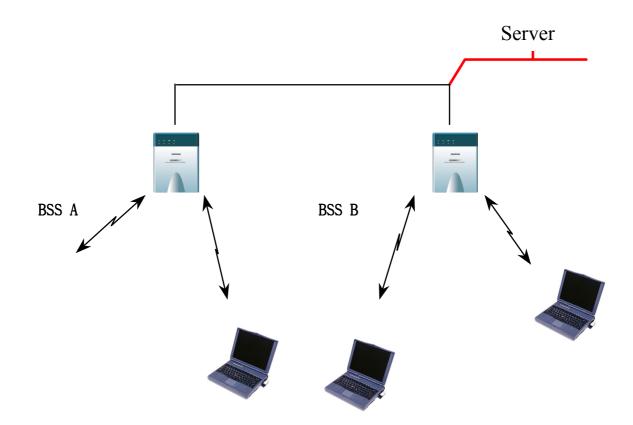
#### • Ad-hoc Network

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.

#### **<u>1.3 MagicLAN Overview</u>**

• The MagicLAN SWL-2100N(PC Card) are wireless LAN 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-2100N 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 95(OSR2), Windows 98/98SE,ME, Windows NT 4.0, Windows 2000, Windows XP, Windows CE.

• To get further information of Samsung MagicLAN WLAN Card, please visit our website at <a href="http://www.magiclan.com">http://www.magiclan.com</a> 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 MagicLAN 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-2100N(PC Card)

• Samsung MagicLAN Installation CD

### 2.2 System Requirement

• Operating System: Windows 95(OSR2), Windows 98SE(98), Windows ME, Windows NT 4.0, Windows 2000, Windows XP, Windows CE

- Laptop Computer with a CD-ROM drive.
- Laptop Computer that have a PCMCIA slot, extra IRQs and I/O address.

#### **2.3 Preparations For Installation**

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

 $\diamond$  You can just install SWL-2100N cards to use Ad-hoc network.

 $\diamond$  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 95(OSR2), Windows 98SE(98), Windows
 ME, Windows NT 4.0, Windows 2000, Windows XP) to set network environment.

# 3. MagicLAN Installation For Windows 98/ME/NT4.0/2000/XP/CE

We will explain the installation method for SWL-2100N(PC Card).

## **3.1 Installation Overview**

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

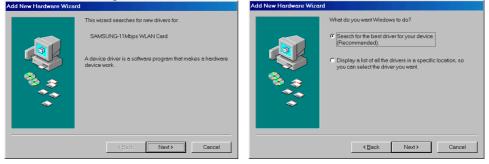
- 1. Install the Access Point at first. AP is needed in case of Infrastructure network mode.
- 2. You should install the Wireless LAN Card (SWL-2100N).
- 3. Install the software using the Installation CD.
- 4. Install the network protocol(s) required to communicate on your network. Most likely you will need the TCP/IP protocol.

## 3.2 Installation Procedure of Windows 98

Please follow the following steps one by one to install the PC card successfully.

#### < Method 1 - Inserting card first >

- 1. Insert the PC Card into the PCMCIA slot of your computer.
- Add New Hardware Wizard appeared and the system looks for "SAMSUNG-11Mbps WLAN Card". 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.



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



#### Then press **NEXT** button.

Add New Hardware Wiza	rd
	Windows driver file search for the device:
	SAMSUNG 11Mbps WLAN PC Card(3V)
	Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
🔹 😵	Location of driver:
	<back next=""> Cancel</back>

You can find the "SAMSUNG 11Mbps WLAN PC Card " and now it is ready to install our software.

4. 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.

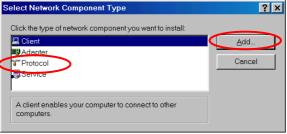
System	Settings Change
?	To finish setting up your new hardware, you must restart your computer.
	Do you want to restart your computer now?
	Yes No

If screen message **Do you want to restart your Computer now** will pop up, select **No**.

- 5. After rebooting your computer, right click on the **My Computer** using the mouse and click **Properties**.
- Check for the SAMSUNG 11Mbps WLAN PC Card 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 3.9)

					<u>?</u> ×
General	Device Manager H	ardware Profiles	Performanc	e	1
⊙ Vie	w devices by type	🔿 View de	vices by <u>c</u> onr	nection	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	computer         CDROM         Disk drives         Display adapters         Floppy disk controller         Keyboard         Monitors         Mouse         Network adapters         PCMCA socket         Ports (COM & LPT)         Sound, video and g         System devices         Universal Serial Burgers	s 1bps WLAN PC ( ame controllers	Card(3V) Rgmove	Pr	i <u>n</u> t
			OK		Cancel

- 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.)

Network		<u>? ×</u>
Configuration		
Select Network Com	nponent Type	<u>? ×</u>
Click the type of netw	rork component you want to install	
🛄 Client		Add
Protocol		Cancel
Service		
Select Network Protocol		×
	Protocol that you want to install, the or this device, click Have Disk.           Network Protocols:           Banyan VINES token right	et Protocol
		<u>H</u> ave Disk
		OK Cancel

10. Select the **TCP/IP-> SAMSUNG 11Mbps WLAN PC Card** 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.

Network	<u>? ×</u>
Configuration Id	lentification Access Control
The following	network components are installed:
	ficrosoft Networks G 11Mbps WLAN PC Card(3V)
	ompatible Protocol
	CCP/IP Properties
	Bindings Advanced NetBIOS DNS Configuration
<u>A</u> dd	Gateway WINS Configuration IP Address
Primary Net	An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your
Client for Mi	network administrator for an address, and then type it in the space below.
<u>F</u> ile and	DEIGW.
Descriptio	C Obtain an IP address automatically
TCP/IP is wide-area	Specify an IP address:
	IP Address: 166 . 79 . 60 . 75
	Sybnet Mask: 255 . 255 . 255 . 0
	OK Cancel

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.

Network	? ×
Configuration Identification Access Control	
The following network components are installed:	
Client for Microsoft Networks     SAMSUNG 11 Mbps WLAN PC Card(3V)     FIPX/SPX-compatible Protocol     TCP/IP	
File and Print Sharing	? ×
✓ I want to be able to give others access to my files.	
🔽 want to be able to allow others to print to my printe	r(s).
ОК	Cancel
Description	
ОК	Cancel

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.

System	Settings Change 🛛 🕅
?	You must restart your computer before the new settings will take effect. Do you want to restart your computer now?

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-2000/2100N/E PC Card). Click on the model name to install it's driver.



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



4. After installing driver, insert card.

5. The other procedures are same to  $5\sim14$  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 ther Device Manager.

## **3.3 Installation Procedure of Windows ME**

Please follow the following steps one by one to install the PC Card successfully.

#### < Method 1 - Inserting card first >

- 1. Insert the PC Card into the PCMCIA slot of your computer.
- "Add New Hardware Wizard" appeared and the system looks for "SAMSUNG-11Mbps WLAN Card". Check if Search for the best driver for your device(recommended) is slected. Insert the MagicLAN Installation CD into the CD-ROM drive.

Add New Hardware Wizard					
	Windows has found the following new hardware: SAMSUNG-11Mbps WLAN Card Windows can automatically search for and install software that supports your hardware. If your hardware came with installation media, insert it now and click Next. What would you like to do? Matematic search for a better driver [Recommended] Specify the location of the driver (Advanced)				
	< <u>B</u> ac Next > Cancel				

3. You can find the "SAMSUNG 11Mbps WLAN PC Card". And the system will copy driver files. You may require Windows ME CD. You can click **Yes** in the "Digital Signature Not Found" Message box.



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 **No**.

- 4. After booting the computer, right click on the **My Computer** using the mouse and click property.
- 5. Check for the SAMSUNG 11Mbps WLAN PC Card 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 3.9)* 

General	Device Manager Hardware Profiles Performance
• Vie	aw devices by type C View devices by connection
	omputer
	1394 Bus Controller
	Disk diffes
	Display adapters Floppy disk controllers
	Hard disk controllers
17 7	Keyboard
	Monitors
- <u></u>	Mouse
. ÷. •	Other devices
÷	PCMCIA socket
l ⊕… 2	Ports (COM & LPT)
Ē 📲	Sound, video and game controllers
1.00	Conten derfere
P <u>r</u> e	operties Refresh Remove Print
	OK Cancel
	Calical

- 6. 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*.
- 7. 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.

Network			? ×
Configuration			
The following netwo	rk components are in	stalled:	
SAMSUNG 11N	1bps WLAN PC Card(	(3V)	
1			
<u>A</u> dd	R <u>e</u> move	Propert	ies
Select Network Con	nponent Type		?
Click the type of netw	ork component vou w	vant to install:	
📃 Client			<u>A</u> dd
Protocol			Cancel
Service 😓			Lancei
-		-	
	ige' a computer uses.		
must use the same p	protocol to communic	ate.	

8. 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**,

	Component Type	<u>?</u> ×
Click the type of r Client Protocol	network component you want to install:	Add Cancel
	col work Protocol that you want to install, then o disk for this device, click Have Disk.	slick OK. If you have
Manufacturers:	Network Protocols: TATM Call Manager ATM LAN Emulation Client FIPX/SPX-compatible Protocol FIPX/SPX-compatible Protocol FIPV/P	
	OK	Have Disk

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

 Select the TCP/IP-> SAMSUNG 11Mbps WLAN PC Card 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.

TCP/IP Properties		<u>?</u> ×					
Bindings	Advanced NetBIOS						
DNS Configuration	Gateway WINS Conf	iguration IP Address					
If your network doe	be automatically assigne is not automatically assig iistrator for an address, a	in IP addresses, ask					
◯ <u>O</u> btain an IP	address automatically						
Specify an IP	address:						
<u>I</u> P Address:	IP Address:						
S <u>u</u> bnet Masl	c						
Detect connection to network media							
DK Cancel							
		Cancel					

10. 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.

Network
Configuration   Identification   Access Control
The following network components are installed:
File and Print Sharing
✓ I want to be able to give others access to my files.
✓ I want to be able to allow others to print to my printer(s).
OK Cancel
Primary Network Logon:
Client for Microsoft Networks
<u>File and Print Sharing</u>
Description
OK Cancel

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



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

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2. You can see the pictures of Wireless LAN Cards by model name.(SWL-2000/2100N/E PC 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, insert card. You can click **Yes** in the "Digital Signature Not Found" Message box.

5.The other procedures are same to 4~13 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 ther Device Manager.

## **3.4 Installation Procedure of Windows NT4.0**

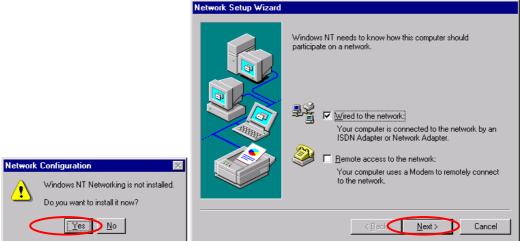
Please follow the following steps one by one to install the PC Card successfully.

There are two cases: when there is no Windows NT networking Installed and the other when the Windows NT networking is already installed.

- 1. Insert SAMSUNG 11Mbps WLAN PC Card into the PCMCIA slot and power on your computer.
- Restart your computer and follow the below procedures. Notice that there's some difference between When Windows NT networking is not installed and When Windows NT networking is already installed

#### <CASE1> When Windows NT networking is not installed:

- 1. Since there is no Windows NT networking installed yet, you should install your driver manually. To do so, click on **Start** in task bar, go to **Settings** and then to **Control Panel**.
- 2. Under Control Panel, double click on Network icon.
- 3. Since there is no **Windows NT** networking installed yet, you maybe asked if you want to install NT networking first. Click on **Yes** and then **Network Setup Wizard** will be start. Select '*Wired to the network*' and click on 'Next'. In 'network setup wizard' box, click on '*Select from list button*'.



Network Setup Wizard	
	To have setup start searching for a Network Adapter, click Start Search button. Start Search Network Adapters: Select from list
	( <b>≺<u>B</u>ack</b> ) <u>N</u> ext⇒ Cancel

4. In Select Network Adapter box, click on Have Disk button.

Selectin	etwork Adapter
ШЩ)	Click the Network Adapter that matches your hardware, and then click DK. If you have an installation disk for this component, click Have Disk.
<u>N</u> etwork	Adapter:
<b>III)</b> 3Co	m 3C508 ISA 16-bit Ethernet Adapter
	m Etherlink II Adapter (also II/16 and II/16 TP)
🗾 💵 3Ca	m Etherlink III ISA/PCMCIA Adapter
🗾 💵 3Ca	m EtherLink III PCI Bus-Master Adapter (3C590)
🗾 💷 3Ca	m Etherlink16/EtherLink16 TP Adapter
Bibe-	m East Ethor Link DCL 10/100BASE T Adaptor (20505)
	Have Disk
	OK Cancel

 In Insert Disk box, you may be asked to specify the necessary software directory. Insert the MagicLAN Installation CD into the CD-ROM drive. Type in D:\nt40 (Where D is the CD-drive of your computer) in the blank and click on OK.

macit Dia		121
f	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
	[D:\nt40]	

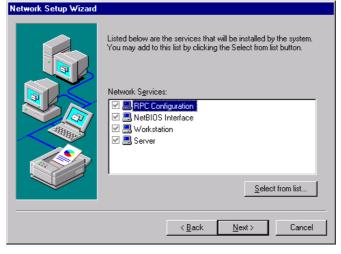
 In Select OEM Option box, you will see SAMSUNG 11Mbps WLAN PC Card and select the correct card type and click on OK. You confirm the SAMSUNG 11Mbps WLAN PC Card on the next message box. Click on NEXT.

Select OEM Option	$\times$				
Choose a software supported by this hardware manufacturer's disk.					
SAMSUNG 11Mbps WLAN MiniPCI/PCI Card SAMSUNG 11Mbps WLAN PC Card					
OK Cancel <u>H</u> elp					

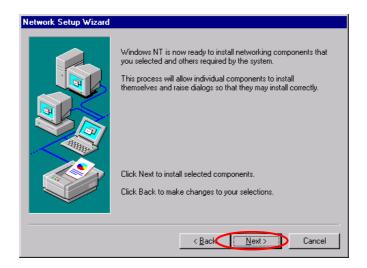
7. Select the network protocols by clicking on the check box. And click on **NEXT.** You must select 'TCP/IP Protocol' among these network protocols at least.

Network Setup Wizard	Select the networking protocols that are used on your network. If you are unsure, contact your system administrator.
	Network Protocols:
	Frotocol
	Select from list
	< Back Next > Cancel

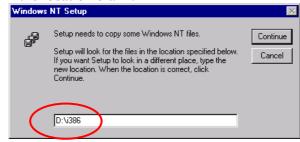
8. In the next box to choose network services to use, make sure that all the services you want to use are checked and click on **Next**.



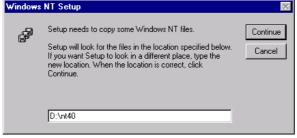
9. In the next box it is confirmed that necessary NT networking components are selected. Click on **Next**.



10. When you are asked to specify the directory that the necessary NT files are copied from, insert your Windows NT CD and type in **D:\i386**(Where D is the CD-drive of your computer) in the location blank.



11. Some files from the D:\i386 directory are copied and you may be prompted the same box to ask you to specify where NT files are once more. Since it is looking for some files form the MagicLAN Installation CD, insert your MagicLAN Installation CD in CD drive and type D:\nt40 in the blank location and click on continue.



12. **Card Setup** box may appear. Set each parameters (Interrupt, I/O, Network mode, ESSID, and Tx rate etc.) for the proper LAN card configuration.

S	SAMSUNG 11Mbps Wireless LAN Card Setup 📃 🖃 🗙							
	- Resources Interrupt Numbe	er 10		IO Base.	Addr 4000			
	Interrupt Numbe	5 [10			Addr [4000			
	Properties							
	Network	Infrastructure	•	ESSID	ANY			
	WEP Req	Disabled	•	Threshold	Off	•		
	Authentication	Open System	•	PSMode	Disabled	•		
	Station Name	client						
				OK	CANCEL			

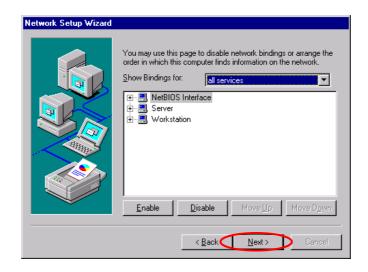
13. **TCP/IP Setup** message will pop up. Select **NO** for not using **DHCP**. If you select the **DHCP** option for **TCP/IP**, you do not need to set the values.

TCP/IP	Setup
⚠	If there is a DHCP server on your network, TCP/IP can be configured to dynamically provide an IP address. If you are not sure, ask your system administrator. Do you wish to use DHCP?
	Yes

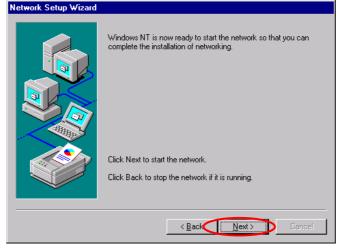
14. If you select the No, enter the IP Address, Subnet Mask, Gateway, and DNS values respectively and then click on OK.

Microsoft TCP/IP Properties	? ×
IP Address DNS WINS Address Routing	
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.	r
Adapter: [[1] SAMSUNG 11Mbps WLAN PC Card	J
C <u>D</u> btain an IP address from a DHCP server	
IP Address:	
Subnet Mask:	
Default <u>G</u> ateway:	
Advanced	
OK Cancel Apply	

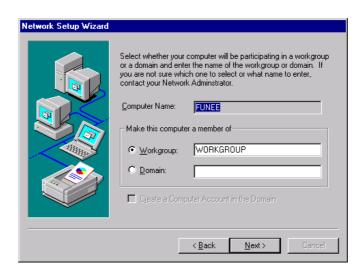
15. Binding properties will pop up. Click on NEXT.



16. Now it is ready for starting network. Click on NEXT.



17. You can assign Workgroup/ Domain name. And click on NEXT.



18. Click on the **Finish** and it will ask you whether you want to restart your computer or not. Click on **No.** 

- 19. You have to insert the MagicLAN Installation CD to be automatically installed.
- 20. You can click '**Install Configuration Utility**' to install our utility. Choose the appropriate language when a context box appeared to choose utility's language.

÷	
nstall Configuration Utility	
Install MagicLAN Driver	You can Install MagicLAN Configuration Utility, with which your can set up
View User's Guide	wireless LAN network environment.
Install Acrobat Reader	To see how to use it, please consult the MagicLAN User's Guide.
Browse CD Contents	

21. You should reboot the computer to use our utility properly in the NT-based OSs(Windows NT4.0, 2000, XP).

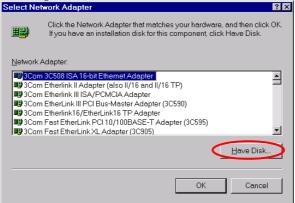
22. You can set up Wireless LAN environment by our utility program provided. Refer to '**Chapter 4**' in this manual.

#### <CASE2> When Windows NT networking is already installed:

- 1. Since there is no Windows NT networking installed yet, you should install your driver manually. To do so, click on start in task bar, go to Settings and then to **Control Panel**.
- 2. Under Control Panel, double click on Network icon.
- 3. Select the Adapter. And click on Add.

etwork		,	<u> ¥ </u>
Identification Servic	es Protocols	Adapters Binding	s
$\underline{N}$ etwork Adapters:			
<u>A</u> dd	<u>R</u> emove	<u>P</u> roperties	<u>U</u> pdate
[tem Notes:			
]			
		OK	Cancel

4. In Select Network Adapter box click on Have Disk button.



5. In Insert Disk box, you may be asked to specify the necessary software directory. Insert the MagicLAN Installation CD into the CD-ROM drive. Type in D:\nt40 (Where D is the CD-drive of your computer) in the blank and click on OK.

F	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
$\langle$	D:\nt40	

6. In Select OEM Option box, you will see SAMSUNG 11Mbps WLAN PC Card and select the correct card type and click on OK. You confirm the SAMSUNG 11Mbps WLAN PC Card on the next message box. Click on Next.

	OEM Option	0		$\times$
Choo	se a software su	pported by this hard	lware manufacturer's disk.	
SAM	SUNG 11Mbps SUNG 11Mbps	WLAN MiniPCI/PCI WLAN PC Card	Card	
	OK	Cancel	Help	

7. **Card Setup** box may appear. Set each parameters (Interrupt, I/O, Network mode, ESSID, and Tx rate etc.) for the proper LAN card configuration.

SAMSUNG 11Mbp	s Wireless LAN	Card Setup		_ 🗆 ×
Resources				
Interrupt Number	10	<ul> <li>IO Base</li> </ul>	Addr 4000	-
- Properties				
	frastructure 💌	ESSID	ANY	
WEP Req D	sabled 💌	Threshold	Off	•
Authentication	pen System 💌	PSMode	Disabled	•
Station Name cli	ent			
			1	
		OK	CANCEL	

8. Confirm that "SAMSUNG 11Mbps WLAN PC Card" is installed and selected.

Network	? ×
Identification Services Protocols Adapters Bindings	
Network Adapters:	
■ [1] SAMSUNG 11Mbps WLAN PC Card	
Add <u>R</u> emove <u>Properties</u> <u>U</u> pda	te
SAMSUNG 11Mbps WLAN PC Card	
	ancel

- 9. Click on Bindings.
- 10. Click on the Protocols. Select 'TCP/IP Protocol' and click 'Properties'
- You can select either DHCP or Static for the IP address. If you select DHCP, you do not need to specify the IP address. In case of Static, enter IP Address, Subnet Mask and Gateway respectively.

Microsoft TCP/IP Properties
IP Address DNS WINS Address Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adapter:
1) SAMSUNG 11Mbps WLAN PC Card
O Obtain an IP address from a DHCP server
Specify an IP address
IP Address:
Subnet Mask:
Default <u>G</u> ateway:
Advanced
OK Cancel Apply

- 12. Select 'DNS' tab and enter the appropriate values. Ask your network administrator about the detailed matter.
- 13. Select 'WINS Address' tab and enter the appropriate values. Ask your network administrator about the detailed matter.
- 14. Select 'Routing' tab and enter the appropriate values. Ask your network administrator about the detailed matter. After you add the **TCP/IP** protocol, click on the **OK** once more. System will ask you whether you want to restart your computer or not. Click on **NO**. Now your network is established successfully.
- 15. You have to insert the MagicLAN Installation CD to be automatically installed.
- 16. You can click '**Install Configuration Utility**' to install our utility. Choose the appropriate language when a context box appeared to choose utility's language.



17. You should reboot the computer to use our utility properly in the NT-based OSs(Windows NT4.0, 2000, XP).

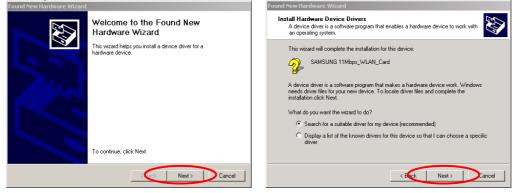
18. You can set up Wireless LAN environment by our utility program provided. Refer to '**Chapter 4**' in this manual.

## **3.5 Installation Procedure of Windows 2000**

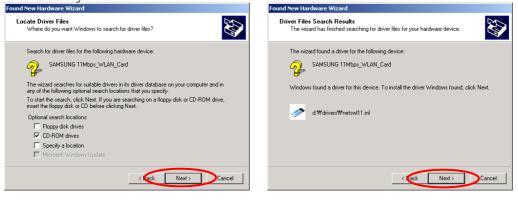
Please follow the following steps one by one to install the PC Card successfully.

#### < Method 1 - Inserting card first >

- 1. Insert the PC Card into PCMCIA slot of your computer.
- 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..



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

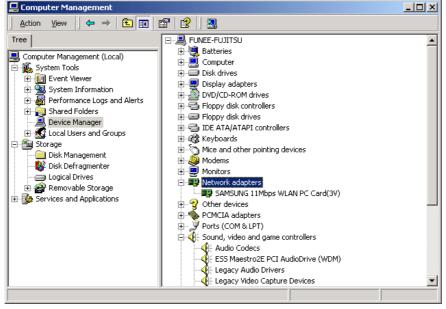


4. Press **NEXT** and system will copy driver files. You can click **Yes** in the "Digital Signature Not Found" Message box.

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



5. Check for the SAMSUNG 11Mbps WLAN PC Card on the Device Manager 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 3.9)* 



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

1	rites Tools Advanced Help
Make New Connection SAMSUNG 11Mbps WLAN PC •	Local Area Connection Properties         General         Connect using:         SAMSUNG 11Mbps WLAN PC Card(3V)         Components checked are used by this connection:         Client for Microsoft Networks         File and Printer Sharing for Microsoft Networks         NwLink NetBIOS         NwLink NetBIOS         NwLink IPX/SPX/NetBIOS Compatible Transport Proto         Install         Uninstall         Properties         Description         Allows your computer to access resources on a Microsoft network.         Show icon in taskbar when connected
	OK Cancel

- 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.
- 8. 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.
- 9. 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.



10. You should reboot the computer to use our utility properly in the NT-based OSs(Windows NT4.0, 2000, XP).

11. 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-2000/2100N/E PC 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, insert card.
- 5. System recognize the card and you can click **Yes** in the "Digital Signature Not Found" Message box.
- 6. The other procedures are same to  $5 \sim 11$  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 ther Device Manager.

# **3.6 Installation Procedure of Windows XP**

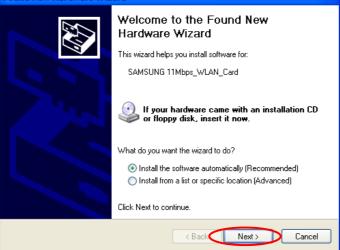
Please follow the following steps one by one in order to install the PC Card successfully.

#### < Method 1 - Inserting card first >

- 1. Insert the PC Card into PCMCIA slot of your computer.
- 2. "Found New Hardware Wizard" appeared and the system looks for "Network

Controller". Insert the MagicLAN Installation CD into the CD-ROM Drive.

Found New Hardware Wizard



- 3. You can find the "SAMSUNG 11Mbps WLAN PC Card" and system will copy driver files. During copying the driver files, you can click **Continue Anyway** in the 'Hardware Installation' Message box.
- 4. Now driver files are fully installed to start the Wireless LAN Card's operation.



5. Check for the SAMSUNG 11Mbps WLAN PC Card 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 3.9)

<ul> <li>File Action View Window Help</li> <li>File Action View Window Help</li> <li>Computer Management (Local)</li> <li>System Tools</li> <li>Computer Management (Local)</li> <li>System Tools</li> <li>Event Viewer</li> <li>Shared Folders</li> <li>Computer Shared Folders</li> <li>Disk drives</li> <li>Disk drives</li> <li>Disk Defragmenter</li> <li>Disk Defragmenter</li> <li>Disk Management</li> <li>Mice and other pointing devices</li> <li>Monitors</li> <li>Monitors</li> <li>SamsUNG 11 Mbps WLAN PC Card(3V)</li> <li>Other devices</li> <li>Porcessors</li> <li>Sond, video and game controllers</li> <li>System devices</li> </ul>	🚽 Computer Management		
Computer Management (Local) Computer Management (Local) System Tools Computer Viewer Computer Shared Folders Computer Co	🖳 File Action View Window H	elp	
Image: System Tools       Image: System Tools         Image: System Tools       Image: Storage         Image: Storage	← → 🖻 🖬 🖀 😫 🧏	3	
	Image: System Tools         Image: System Tools         Image: Shared Folders         Image: Shared Folders         Image: Storage         Image: Storage	Batteries     Computer     Disk drives     Dislay adapters     Disloy disk controllers     Disloy disk controllers     Disloy disk drives     Disk drives	

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

Connect to Wireless Network	x
The following network(s) are available. To access a network, select it from the list, and then click Connect. Available networks:	
🗼 NDTESTWEPO 🔗	
SAMSUNG_MagicLAN	
🗼 wian	
This network requires the use of a network key (WEP). To access this network, type the key, and then click Connect.	
Network key:	1
If you are having difficulty connecting to a network, click Advanced	
Advanced Connect Cancel	)

- 7. When you are using DHCP, just select the AP that you want to connect in the **Connect to Wireless Network** above.
- 8. 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 Preferred Networks.

General Wireless Networks Authenticat Use Windows to configure my wireless Available networks:	
	ion Advanced
Available networks:	network settings
To connect to an available network, clin	
- Wireless Network Connection 17 Properties ?X	Configure
General Wireless Networks Authentication Advanced	
✓ Use Windows to configure my wireless network settings	? 🛛
Available networks: Network name (SSID): SAMSU	JNG_MagicLAN
To connect to an available network, click Configure. Wireless network key (WEP)	
SAMSUNG_MagicLAN	following:
k wlan Refresh Data encryption (WEP enable	
Preferred networks:	ared mode)
Automatically connect to available networks in the order listed	
below: Key format: ASDI	characters 💽
	is (13 characters) 🔽
Key index (advanced): 0	]
Add Remove Properties	omatically
Learn about <u>setting up wireless network</u> <u>configuration.</u> Advanced This is a computer-to-computer (a access points are not used	d hoc) network; wireless
	K D Cancel
👍 Wireless Network Connection 17 Properties 🛛 🕐 🔀	
General       Wireless Networks       Authentication       Advanced         Image: Use Windows to configure my wireless network settings         Available networks:         To connect to an available network, click Configure.         Image: NDTESTWEP0         Image: SAMSUNG_MagicLAN         Image: Ware         Image: Ware         Image: Preferred networks:         Automatically connect to available networks in the order listed below:         Image: SAMSUNG_MagicLAN         Image: Automatically connect to available networks in the order listed below:         Image: SAMSUNG_MagicLAN         Image: Automatically connect to available networks in the order listed below:         Image: SAMSUNG_MagicLAN         Image: Add         Remove       Properties         Learn about setting up wireless network       Advanced	

9. 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.

🕂 Wireless Network Connection 8 Properties 💦 🛛	
General Wireless Networks Authentication Advanced	
Connect using:	Internet Protocol (TCP/IP) Properties
B SAMSUNG 11Mbps WLAN PC Card(3V)	General
Configure This connection uses the following items:	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Client for Microsoft Networks	Obtain an IP address automatically
<ul> <li>File and Printer Sharing for Microsoft Networks</li> <li>QoS Packet Scheduler</li> </ul>	Use the following IP address:
GUS Packet Scheduler	IP address:
	Subnet mask:
Install Uninstall Properties	Default gateway:
Description	Obtain DNS server address automatically
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication	● Use the following DNS server addresses:
across diverse interconnected networks.	Preferred DNS server:
	Alternate DNS server:
Show icon in notification area when connected	
	Advanced
OK Cancel	OK Cancel

#### < 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-2100N PC Card). Click on the model name to install it's driver.



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



4.After installing driver, insert Wireless LAN card. You can click **Continue Anyway** in the "'Hardware Installation' Message box.

5.The system recognize the Wireless LAN Card. If Found New Hardware Wizard appears, just click Next to install the driver files.

6. The other procedures are same to  $5 \sim 9$  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 ther 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.

# **3.7 Installation Procedure of Windows CE**

#### A. Summary of Installation

- 1. In infrastructure mode, install Access Point(AP) first.
- 2. Using ActiveSync to use installation CD, connect PDA to host PC that has CD-ROM.
- 3. Install MagicLAN driver and utility program using the installation CD.

4. Make sure IP address, DNS information, SSID or other values of network parameters that are appropriate to PDA, and start to set up using utility program.

#### **B. Installing PDA Software using installation CD from Host PC**

1. Connect PDA and host PC that has CD-ROM using ActiveSync. During the connection, choose "No" as shown in below picture. If you can see the second picture shown below, the connection is thought to succeed.



Note) You can find the connection process of ActiveSync from the manual of you PDA. However, you can find a latest version of ActiveSync program from Misrosoft website shwon below :

<http://www.microsoft.com/mobile/pocketpc/downloads>

2. If you insert MagicLAN installation CD, the program automatically starts. Click 'Install MagicLAN Driver'.

Note) In case of WindowsCE 'Install MagicLAN Driver' item will install both driver and utility program at the same time.



3. You can see pictures according to model names of MagicLAN cards by choosing products. To install driver, click a MagicLAN model name that you just want to install.



4. Click an operating system of your PDA shown in the right box.



Note) When you start to install, just make sure the version of WindowsCE and check whether you PDA system is Handheld PC(HPC) or PocketPC(PPC). If such information is not correct, utility program may not operate well. To check the version of WindowsCE,

see the system information of your PDA or consult the manual of your PDA.

Here are basic pictures of initial screen after your PDA is on. Left picture represents for HPC and right for PPC.

My Handheld PC	inbox Calendar Contacts Tasks	Microsoft Pocket Word	Start 4:08a Tuesday, April 03, 2001 today
Documents	Microsoft Windows CE Handheid PC	Microsoft Pociet Eucel Microsoft Pociet Access	<ul> <li>Tap here to set owner information</li> <li>No upcoming appointments</li> <li>No unread messages No unsent messages</li> <li>No tasks</li> </ul>
<b>∰</b> Start	<handheld pc=""></handheld>	[] 3:08 PM []	New ₽₀♥ <b>᠒</b> ≮ < Pocket PC >

5. Now MagicLAN installation program starts to operate. Just click 'OK' to proceed until the end of installation.

	Å Add/Remove Programs	
	Select a program's check box if you want to install it on your mobile device, or clear the check box if you want to remove the program from your device.	
	Note: If a program that you installed is not listed, the program was not designed to be used on your mobile device.	
Installing Ap	plications	×
Install "MagicL	AN SWL-2100N PC Card for CE300 HPC" using the default application Ves Ves No Cancel	install directory?
	Space required for selected programs: Space available on device: Image: Install program into the default installation folder Remove from both locations To remove the selected program from both your device and this computer, click Remove.	
	OK Cancel <u>H</u> elp	

#### C. Network Setup of PDA

#### C.1 HPC(HandheldPC)

1. After finishing installation as shown in B, insert MagicLAN card into appropriate slot of PDA. Then a dialog box appears as shown below. Type IP address and DNS information into the dialog box.

P Address Name Servers		
Address [Name Servers]		
An IP address can be	O <u>O</u> btain an IP add	lress via DHCP
automatically assigned to this computer. If your network does	Specify an IP add	dress
not automatically assign IP	IP Address:	166 . 79 . 60 . 106
addresses, ask your network	IF Address.	100.79.00.100
administrator for an address,	Subnet Mask:	255.255.255.0
and then type it in the space		

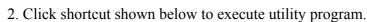
2. Click shortcut shown below to execute utility program.

	se.	Microsoft	
Compu		🗁 MagicLAN	S MagicLAN Utility
Programs	•	🗁 Multimedia 🔷 🔸	
☆ F <u>a</u> vorites	•	🗁 Toolbox 🔹 🕨	dows CE.
Documents	۲	📽 Command Prompt	
Settings	•	🖗 Inbox	
<i>.</i> ● <u>H</u> elp		C Internet Explorer	
<i>□</i> <u>R</u> un		Media Player	
		3 Messenger	
🔍 S <u>u</u> spend		1 Microsoft WordPad	
Start		🔍 Windows Explorer	

#### C.2 PPC(PocketPC)

1. After finishing installation as shown in 2, insert MagicLAN card into appropriate slot of PDA. Then a dialog box appears as shown below. Type IP address and DNS information into the dialog box.



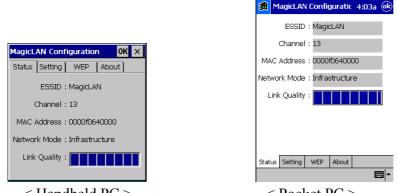


🛃 Start	4:07a
ጷ 🗲 🖩 🗹 🔞	April 03, 2001
🖓 Today	
📅 Calendar	
🖭 Contacts	ner information
🖂 Inbox	htments
🧯 Internet Explorer	
🖶 Notes	5
🔽 Tasks	
💿 Windows Media	
🖶 Programs	]
🙀 Settings 🗟	
Find	
🕜 Help	
New	′ ≞, ♥, <b>Q</b> .≮



#### **D.** Using Utility Program

Utility program is executed shown below.



< Handheld PC >

< Pocket PC >

Though the shape of utility program running on HPC is different from that on PPC, the operation of both is the same. The way of using utility program on HPC is explained here.

#### **D.1. Status Tab**

Status Tab represents the current connection status of MagicLAN card.

MagicLAN Configuration OK ×
Status Setting WEP About
ESSID : MagicLAN
Channel : 13
MAC Address : 0000f0640000
Network Mode : Infrastructure
Link Quality :

- ESSID : represents the name of wireless network group.

- **Channel** : one of channel values that is used to connect wireless client to AP or another client. If network mode is infrastructure or 802.11 ad-hoc, wireless client searched appropriate channel automatically. However, if network mode is ad-hoc, the channel value of wireless client should be set to be the same as that of another wireless client to connect.

- MAC Address : represents a unique MAC address of MagicLAN card.

- **Network Mode** : infrastructure to connect other wireless clients through AP, 802.11Ad-hoc/Ad-hoc to connect other wireless clients as a peer-to-peer method. More

specific explanation is shown in 'Setting' tab.

- Link Quality : shows the status of link connected to network

#### **D.2.** Setting Tab

You can change the configuration of MagicLAN card. After changing the values, to make sure that the values are applied, click 'OK' button and then PDA needs to power off and on again or to extract the card and reinsert it.

D.2.1 ESSID

MagicLAN Configuration 🛛 🛛 🗙
Status Setting WEP About
ESSID : MagicLAN Net Mode : Infrastructure 💌 Tx Rate : Fully Auto 💌
a name of logical wireless network group that your computer is about to join now.

You can change ESSID. Be careful to insert exact ESSID to connect AP or wireless client. Upper and lower characters are distinguishable. If you use 'ANY' or 'any', your system will try to connect to nearby AP or wireless client randomly.

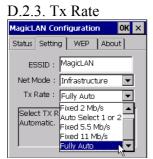
#### D.2.2. Net Mode(Network Mode)



- Infrastructure : is used to connect to network through AP

- Ad-hoc : is used to connect wireless client in network without AP. You can connect to ONLY MagicLAN cards in this mode.

- 802.11 Ad-hoc : is used to connect wireless client in network without AP. You can connect in this mode to wireless LAN cards other than MagicLAN cards that comply with IEEE 802.11b standard.



You can choose wireless transmission rate. Default is 'Fully Auto'.

#### D.3. WEP Tab

You can use WEP option to encrypt transmission data. After setting WEP values, click 'Write' button, and then PDA needs to power off and on again or to extract the card and reinsert it. Make sure the WEP keys between AP and wireless client must be the same to guarantee encrypted transmission.

D.3.1. WEP Mode

MagicLAN Config	juration OK 🗙
Status Setting	WEP About
Disable 💌	Open 🔽
Disable	
40 bit	Generate
128 bit	
Default Key:	
Key 1 💌 0	000000000
Clear	Write

- Disable : disable WEP mode

- 40 bit : encrypts data with 40bit keys, using 4 key IDs, each of which needs 10 hex values

- 104(128)bit : encrypts data with 104(128)bit keys, using 1 key ID, which needs 26 hex values

#### D.3.2. Authentication Mode



You can select one of two modes of authentication. When you want to use WEP, you can change this mode.

- Open : Default value. If you set the values of WEP keys of AP to be different from those of wireless client, communication will fail even though connection to AP succeeds.

- Shared : Only if the values of WEP keys of AP are the same as those of wireless client, communication succeeds.

#### D.3.3. Pass phrase



You can generate 40bit or 26bit WEP keys without entering all hex values using the same 'Pass Phrase' between AP and wireless client. After typing pass phrase, click 'Generate' button. Then WEP keys will be generated. This option is used ONLY among MagicLAN products.

D.3.4. Key ID You can modify the values of specific WEP key ID.



MagicLAN Configuration 🛛 🛛 🗙
Status Setting WEP About
40 bit 💌 Open 💌
PassPhrase Generate
Default Key:
Key 1 💌 2E778453F5
Clear Write



You can see the version information of MagicLAN driver and utility program. (The number of version in this picture may be different from that of you product.)

# **3.8 Update of MagicLAN Wireless LAN Card Driver**

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



# 3.9 Removal of MagicLAN Wireless LAN Card Driver

### (Adapter Removal)

Click like followings :

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

Select 'Remove all MagicLAN Software' and click Next.

InstallShield Wizard			×
Setup Type Choose the setup type that best suits your nee	ds.		
MagicLAN Software is already installed in this s	system!		
Remove Configuration Utility Software			
Reinstall Configuration Utility Software			
InstallShield			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

#### (Utility Removal)

Click like followings :

```
H start -> All Programs -> MagicLAN -> MagicLAN Utility -> Remove Utility
```

#### Uninstall.

Select 'Remove Configuration Utility Software' and click Next.

InstallShield Wizard 🛛 🛛 🔀
Setup Type Choose the setup type that best suits your needs.
MagicLAN Software is already installed in this system!
Remove Configuration Utility Software
C Reinstall Configuration Utility Software
InstallShield
< <u>B</u> ack <u>N</u> ext > Cancel

(cf) If you want to just remove the WLAN Card from the PC, click 🛎 and Stop SAMSUNG 11Mbps WLAN PC Card icon the right bottom of your computer screen. Then you remove the WLAN Card after clicking the OK button on the message, 'SAMSUNG 11Mbps WLAN PC Card can now be safely removed from the system'

- \* 🐱 'PC CARD(PCMCIA)Status' icon (Windows 98)
- \*\* 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 11Mbps WLAN PC Card' 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  $\bigotimes$ , 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.

Profile Wizard - S	Step 1/6		
Profile	Profile Name : Description : type a descrip	SAMSUNG Electro-Mechanics tion for the profile.	ncel

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.

Profile Wizard - S	Step 2/6
Profile	Select the operating mode of your new profile.  Operating Mode : Infrastructure  Infrastructure  802.11 Ad-hoc Ad-hoc Ad-hoc a network mode to provide communication between wireless and wired clients using an access point.
	<u>B</u> ack <u>N</u> ext > <u>C</u> ancel

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)

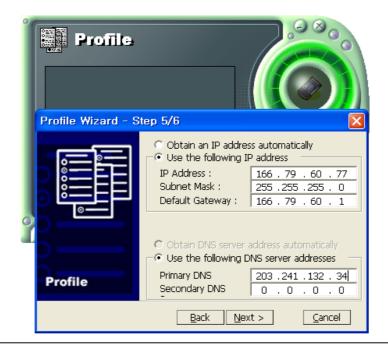


 If you clicked on the Survey, the above window will appear showing you Access Points or Stations (Ad hoc) that are able to connect now. Select the AP that has the highest signal to use as an SSID.

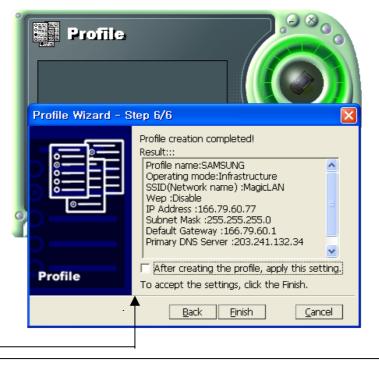
Profile Wizard - Ste	n 4/6
Profile	WEP Mode :       Disable         Generate       V         Passphrase :       104(128) bit         Generate       Clear         Key 1 :       Clear         Key 3 :       Key 1 *         Key 4 :       Image: Clear         an encryption scheme that provides secure       wireless data communication to the users.
	Back Next > Cancel

#### - 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.

0	Curr	ent Status	0
	Profile	SAMSUNG	
	Link Status	Excellent	
	SSID Operating Mode		
	BSSID	000278E1A19C	
	Channel		
	WEP	Disabled	
	Power Saving	Disabled	
	Physical Address		
	IP Subnet Mask	166.79,60.77	
	Gateway	166,79,60,1	
	DNS	203,241,132,34	
	Adapter Name	SAMSUNG 11Mbps WLAN PC Card(5V)	/
ľ	Profile St.	atus General Version	

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.

### **5.1Profile**



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.

Profile	3		0800
Edit Profile			×
Identifier Profile Name : S Description : E	vanced   TCP/IP   AMSUNG lectro-Mechanics		
General Options —			
Operating Mode : SSID :	Infrastructure		2
Channel :	MagicLAN		Survey
TX Rate :	10 Automatic	<ul> <li>▼</li> <li>▼</li> </ul>	
Edit Profile	Save As	OK	Cancel

- Click the WEP button to set the security.

Edit Profile	X
General WEP Advanced TCP/IP	
WEP Mode : Disable	
Key Setting Disable	
Generate WE 104(128) bit Passphrase :	
Key 1 :	Generate
Key 2 :	Clear
м Кеу 3:	Key 1 💌
Key 4 :	

- 1. First of all, select the '40 bit'.
- 2. Check a "Generate WEP Key using Passphrase" box and input a certain value (ex.

test1 etc) in the 'Passphrase' and click the Generate button. Then it will make four values of keys automatically.

Edit Profile			
cuit Profile			
General WEP	Advanced TCP/IP		
WEP Mode :	40 bit 💌	[	
⊢KeySetting—		-	
🔽 Generate V	VEP Key using Passphrase		
Passphrase :	****	Generate	
Key1:	*******		
Key 2 :	********	Clear	
Key 3:	***********	Key 1 💌	
Key 4 :	********		
	,		

- 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.

Profile	0000
Edit Profile	$\mathbf{X}$
General WEP Advanced TCP/IP	
Power Saving : Off RTS/CTS Threshold: Off Utf Hidden Station	
Edit Profile Save As OK	Cancel

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.

Profile.		· · · · · · · · · · · · · · · · · · ·
Edit Profile		
General   WEP   Advanced   TCP/IP		1
<ul> <li>Obtain an IP address automatically</li> <li>Use the following IP address</li> <li>IP Address :</li> <li>Subnet Mask :</li> <li>Default Gateway :</li> <li>Obtain DNS server address automatically</li> <li>Use the following DNS server address automatically</li> <li>Is use the following DNS server address automatically</li> </ul>	sses 203 , 241 ,	255 0 60 1
Secondary DNS Server :	0.0.	0.0
Edit Profile Save As	OK	Cancel

### 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

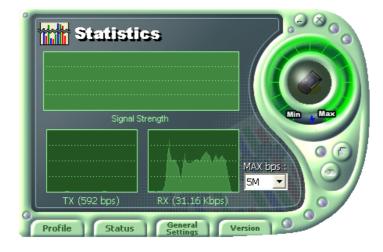
It finds you the AP/Station that are connected currently. (It takes a few seconds to be done)



- 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

0.7	🐲 DHCP		2.080
	DHCP :	Enable	
	Physical Address : IP :	00:02:78:E1:03:16 166.79.60.96	
	Subnet Mask :	255.255.255.0	
	Gateway : DNS Server :	203.241.132.34	Min Max
	DHCP Server :	166.79.60.23	
	Primary WINS : Secondary WINS	0,0,0,0 0,0,0,0	OF.
1	Lease Obtained :	Fri Feb 01 15:57:06 2002	
1	Lease Expires :	Fri Feb 01 16:57:06 2002	
1	Get Status Rele	ease DHCP Renew DHCP	
0		General	100
	Profile Statu:	s General Version	

- 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 Peerto-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 Poing'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 dosen'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 address 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. I can't see the TCP/IP informations in the MagicLAN Utility.
- A. It's related to a file, IPHLPAI.dll. Please reboot the system.
- There maybe some systems that don't show their IP, Subnet Mask, Gateway, DNS, Adapter Name.
- Q. When we use IPX/SPX protocol with NETWARE CLIENT, we can't connect to the network game like STARCRAFT and local server.
- A. In case of Windows 2000, please click Start Settings Control Panel Network and Dial-up Connections(double click)'. Click a right mouse button on the Local Area Connection menu and select Properties. Then, you need to double-click NWLink IPX/SPX/NetBIOS Compatible Transport Protocol and then change Frame Type from Auto Detect to Ethernet 802.3.
- In case of Windows 98, please click Start Settings Control Panel Network(double click)'. Then, you need to double-click IPX/SPX-compatible Protocol -> SAMSUNG ... and then change Frame Type from Auto to Ethernet 802.3 in theAdvanced tap.

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