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## **APPENDIX F:   MANUAL**



**SAMSUNG**

**MagicLAN**

**SWL-2000/2100**

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**User Manual**

## Notice 1

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## Notice 2

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The SWL-2000N/2100N/2100E, SWL-2000P/2100P and SWL-2100U complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions.

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Note:** The SWL-2000N/2100N/2100E, SWL-2000P/2100P and SWL-2100U have been tested and found to comply with the limits for a Class B digital device and a low power transmitter, according to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to resolve the problem by one or more of the following measures;

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

## Important Safety Information

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- 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.
- Samsung WLAN PC Card supports 3V(3.3V) Notebook computers.
- 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 WLAN 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.

| Specifications              |                  |                              |                              |                                                                                                                                       |                              |                              |                              |
|-----------------------------|------------------|------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|
| Product Name                |                  | SWL-2000N                    | SWL-2100N                    | SWL-2000P                                                                                                                             | SWL-2100P                    | SWL-2100E                    | SWL-2100U                    |
| General                     |                  |                              |                              |                                                                                                                                       |                              |                              |                              |
| Type                        |                  | PC Card Type II              |                              | PCI 2.0                                                                                                                               |                              | 2MMCX Connector              | Printed Dipole Ant           |
| Cover-<br>age<br>Area<br>** | Open<br>Space    | 100m<br>(330ft) at<br>11Mbps | 150m<br>(500ft) at<br>11Mbps | 100m<br>(330ft) at<br>11Mbps                                                                                                          | 150m<br>(500ft) at<br>11Mbps | 150m<br>(500ft) at<br>11Mbps | 150m<br>(500ft) at<br>11Mbps |
|                             |                  | 150m<br>(500ft) at<br>2 Mbps | 200m<br>(660ft) at<br>2 Mbps | 150m<br>(500ft) at<br>2 Mbps                                                                                                          | 200m<br>(660ft) at<br>2 Mbps | 200m<br>(660ft) at<br>2 Mbps | 200m<br>(660ft) at<br>2 Mbps |
|                             | Closed<br>Office | 20m<br>(65ft) at<br>11Mbps   | 30m<br>(100ft) at<br>11Mbps  | 20m<br>(65ft) at<br>11Mbps                                                                                                            | 30m<br>(100ft) at<br>11Mbps  | 30m<br>(100ft) at<br>11Mbps  | 30m<br>(100ft) at<br>11Mbps  |
|                             |                  | 40m<br>(130ft) at<br>2 Mbps  | 50m<br>(160ft) at<br>2 Mbps  | 40m<br>(130ft) at<br>2 Mbps                                                                                                           | 50m<br>(160ft) at<br>2 Mbps  | 50m<br>(160ft) at<br>2 Mbps  | 50m<br>(160ft) at<br>2 Mbps  |
| Operating Voltage           |                  | 3V +/- 5%                    |                              | 5V +/- 5%                                                                                                                             |                              | 3V +/- 5%                    | 5V fromPC                    |
| Current<br>consumption      |                  | Tx: Max<br>320mA             | Tx: Max<br>450mA             | Tx: Max<br>320mA                                                                                                                      | Tx: Max<br>450mA             | Tx: Max<br>450mA             | Tx: Max<br>450mA             |
|                             |                  | Rx: Max<br>200mA             | Rx: Max<br>280mA             | Rx: Max<br>200mA                                                                                                                      | Rx: Max<br>280mA             | Rx: Max<br>280mA             | Rx: Max<br>280mA             |
| Data Rates                  |                  |                              |                              | 1,2,5.5, and 11Mbps                                                                                                                   |                              |                              |                              |
| Certifications              |                  |                              |                              | FCC Class B, FCC part 15.247, Canada, CE, Germany, Swiss, England, other Europe Countries and New R&TTE Approval, Korea, Japan        |                              |                              |                              |
| Security                    |                  |                              |                              | WEP 64/128 bits encryption(40/104bits encryption)                                                                                     |                              |                              |                              |
| Warranty                    |                  |                              |                              | 1 Year                                                                                                                                |                              |                              |                              |
| Network Specifications      |                  |                              |                              |                                                                                                                                       |                              |                              |                              |
| Network architecture        |                  |                              |                              | Ad-hoc, infrastructure                                                                                                                |                              |                              |                              |
| Wireless standard           |                  |                              |                              | IEEE 802.11b                                                                                                                          |                              |                              |                              |
| Operating System            |                  |                              |                              | Win 95(OSR2)***, Win 98SE(98), Win ME, Win NT***, Win 2k , Win CE(only supported by PC Card)***, Linux***<br>Win XP (to be supported) |                              |                              |                              |
| Roaming                     |                  |                              |                              | IEEE 802.11 compliant with enhanced roaming features                                                                                  |                              |                              |                              |
| Radio Data                  |                  |                              |                              |                                                                                                                                       |                              |                              |                              |
| Frequency band              |                  |                              |                              | FCC, Canada, ETSI, Spain, France and Japan****                                                                                        |                              |                              |                              |
| Wireless medium             |                  |                              |                              | Direct Sequence Spread Spectrum                                                                                                       |                              |                              |                              |
| Modulation techniques       |                  |                              |                              | CCK, BPSK, QPSK                                                                                                                       |                              |                              |                              |
| Sensitivity                 |                  |                              |                              | Min. -80dBm at 2Mbps/ Min. -78dBm at 11Mbps                                                                                           |                              |                              |                              |
| Output power                |                  | Max<br>20mW                  | Max<br>70mW                  | Max<br>20mW                                                                                                                           | Max<br>70mW                  | Max<br>70mW                  | Max<br>70mW                  |
|                             |                  | Typical<br>13dBm             | Typical<br>17dBm             | Typical<br>13dBm                                                                                                                      | Typical<br>17dBm             | Typical<br>17dBm             | Typical<br>17dBm             |

| Environmental Specifications                                |                     |                     |                                                        |                    |                    |                    |
|-------------------------------------------------------------|---------------------|---------------------|--------------------------------------------------------|--------------------|--------------------|--------------------|
| Temperature                                                 |                     |                     | 0 °C to 40 °C in operation/ -20 °C to 70 °C in storage |                    |                    |                    |
| Humidity                                                    |                     |                     | 95% non-condensing                                     |                    |                    |                    |
| Physical Characteristics                                    |                     |                     |                                                        |                    |                    |                    |
| Dimension                                                   | 113.8 × 54 × 6 (mm) | 113.8 × 54 × 6 (mm) | 148 × 90 × 16 (mm)                                     | 148 × 90 × 16 (mm) | 85.6 × 54 × 6 (mm) | 114 × 52 × 15 (mm) |
| Weight                                                      | 39g                 | 39g                 | 95g                                                    | 95g                | 40g                | 40g                |
| Optional Antenna                                            |                     |                     |                                                        |                    |                    |                    |
| Patch Antenna, 3" / 5" Stub Antenna, Yagi Antenna Available |                     |                     |                                                        |                    |                    |                    |

\*\*The operating environment may affect coverage

\*\*\* Not to be supported by USB (Win CE, Linux will be supported soon)

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

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

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# 1. MagicLAN Installation

## 1.1 Introduction

Thank you for your purchase of SAMSUNG MagicLAN. This new Adapter series includes two different models: SWL-2000N/2100N/2100E for PC Card-compatible computers, SWL-2000P/2100P for PCI-compatible computers and SWL-2100 for USB-compatible computers. Installing those 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

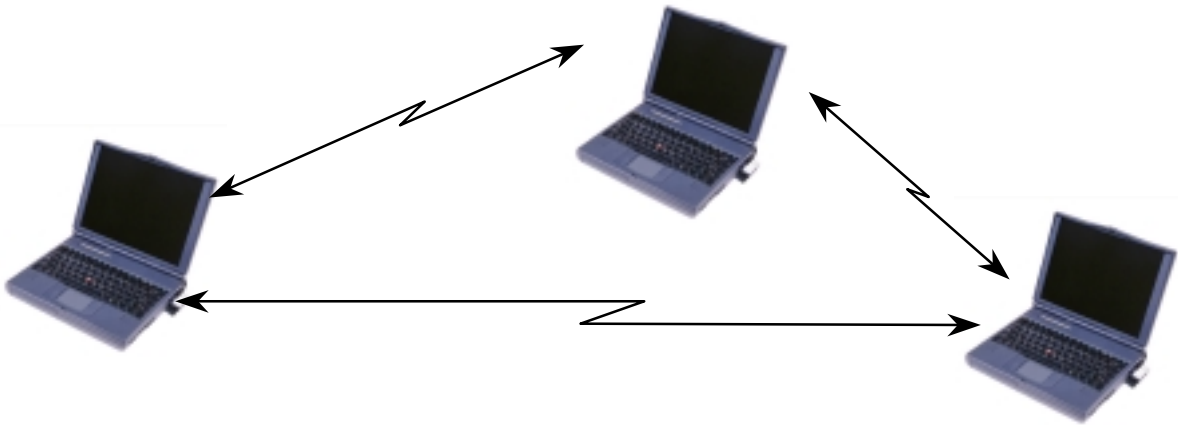
At the PHY layer, IEEE 802.11 defines three physical characteristics for WLAN: diffused infrared, direct sequence spread spectrum (DSSS), and frequency hopping spread spectrum (FHSS). While the infrared PHY operates at the baseband, the other two PHYs operate at the 2.4GHz ISM (Industrial, Scientific,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

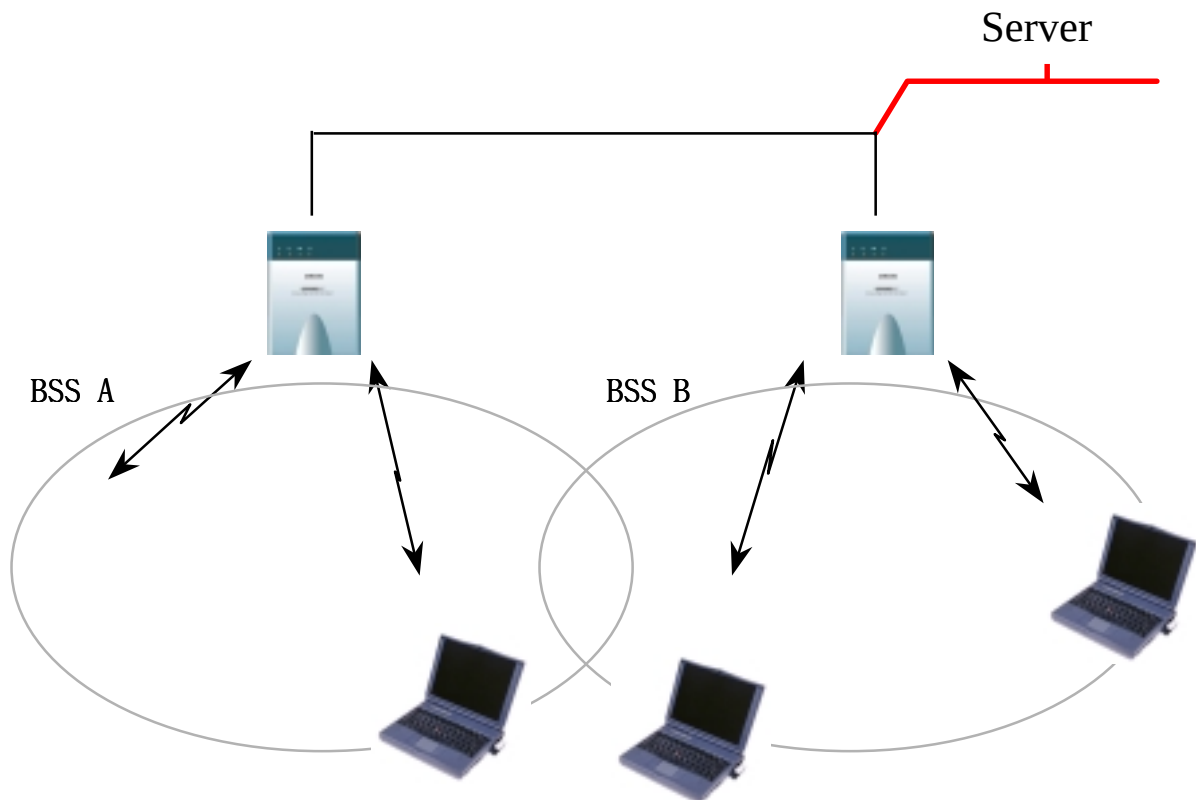
- Ad-hoc Network

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, Beacons & 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-2000P/2100P (for Desktop PCs), SWL-2000N/2100N/2100E (for Notebook PCs) and SWL-2100U(for Desktop PCs and Notebook PCs) 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-2000N/2100N/2100E for Notebook PC is small and portable as a roaming function is provided for users who need network services while maintaining mobility.
- The MagicLAN Adapter (only PC Card) has an LED (Light Emitting Diode) on the part of the card. The yellow LED will illuminate when the power is supplied and the card is inserted properly.
- 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 CE, Linux (**cf. Win 95(OSR2) and Windows NT 4.0 are not supported by USB Card**)
- **The Caution of using the SWL-2000P/2100P**
  1. Make the Antenna of WLAN PCI Card and WLAN PC Card of AP in same direction.
  2. The efficiency of communication can be improved by regulating the direction of WLAN PCI Card and AP.
- **The Caution of using the SWL-2100U**

Some problems may occur when you use the other USB equipments, such as PC Camera, scanner, etc, with the USB Card.
- 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 first install software (driver) and then will insert the SWL-2000P/2100P, SWL-2000N/2100N/2100E or SWL-2100U WLAN card, 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-2000N/2100N/2100E (PC Card), SWL-2000P/2100P(PCI Card) or SWL-2100U(USB Card)
- SWL-2000X Installation CD
- External Antenna (for SWL-2000P/2100P only)

### **2.2 System Requirement**

- Operating System: MS Windows 95(OSR2)/98/98SE,ME, Windows NT 4.0, Windows 2000, Windows CE, Linux
- Computer System (both Notebook and Desktop) with a CD-ROM drive
- For Desktop PC Adapter Card (SWL-2000P/2100P):  
The computer system should have an extra IRQs and I/O address.
- For Notebook PC Adapter Card (SWL-2000N/2100N/2100E):  
The computer system should have PCMCIA Type II or Type III card slot.

***Important: In case of using 3V PC Card, notebook PC must support 3V(3.3V) Card. If you are not aware of this issue, please contact your dealer. Some old Notebook PCs may not support 3.3V Card.***

### 3. MagicLAN Installation for Windows 98/98SE/ME

There are two types of WLAN Cards i.e. **PC Card** and **PCI Card** for **Notebook** PC and **Desktop** PCs respectively. Here we explain the procedure of installing both cards under **Windows 98/98SE/ME** operating system (OS) one by one (to be also supported by **Windows 95(OSR2)**). We will explain the installation method for **SWL-2000N/2100N/2100E PC Card** followed by the installation method for **SWL-2000P/2100P PCI Card** and **SWL-2100U USB Card**.

#### 3.1 Installation Overview

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

- Install the Access Point at first. AP is needed in case of Infrastructure network mode.
- Install the software using the Installation CD.
- Now you should install the Wireless LAN Card (SWL-2000N/2100N/2100E or SWL-2000P/2100P or SWL-2100U).
- 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 SWL-2000N/2100N/2100E PC Card

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

1. Power on your computer and allow **Windows 98/98SE/ME** to load fully.
2. Be sure that there is no **PC Card** adapter inserted yet.
3. Insert the given **Installation CD** in the **CD-ROM**. Select the **Software Installation** from the menu and then click on the **Install**.
4. Select the **Windows PC Card and PCI Card Driver** from the menu then the Setup Program will be installed automatically.
5. Accept the *license agreement*.
6. Give the path of the destination folder. To set the path of your choice click **Browse** and then click **Next**.
7. Select the type of card. As you are preparing to install the PC Card, select the **SWL-2000/2100(PC Card type)** and click on **Next**.
8. It takes a few seconds for copying the utility files and then click on **Finish** to complete the installation.

9. Insert the **PC Card**. Illuminating **LED** and **Sound** confirms the detection of your PC card. Also you will see the PC Card icon on the right bottom of your screen.
10. Restart your computer and a message window pops up saying **New Hardware Found**
11. It takes a few seconds in setting up the driver for the new hardware .
12. Check for the **SAMSUNG 11Mbps WLAN PC Card 3V/5V** by right clicking on **My Computer** using the mouse. Select the **Device manager** and then Network Adapters. 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 (*See the Uninstallation method in section 3.4*) the driver to make the changes effective. And refer to the **Troubleshooting** at the end of the manual.
13. Right click on the **Network Neighborhood** using the mouse.
14. Select **Properties** from the pop up menu. The network box appears and you see three main tabs: **Configuration**, **Identification** and **Access Control**.
15. 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.
16. *Select Network Protocols* box appears. From the list of manufactures, click on **Microsoft**. From the list of network protocols list, select **IPX/SPX**, then click **OK**.
17. **IPX/SPX** protocol is now installed. After clicking on **OK** return back to Network Component Type box.
18. Repeat the step 16 and 17 to add **TCP/IP** protocol.
19. If you want, you can install the **NetBEUI** protocol.
20. Click on the **TCP/IP** and set the **IP** address value, **Gateway** value, **DNS** value for your computer. After setting these parameters appropriately, click **OK** to return to Network Component Type and 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 computer sharing options. Click on **OK**.
21. Screen message **do you want to restart your Computer** will pop up. Select **Yes**. It will shut down your computer and will restart.
22. After rebooting your computer, you can set up WLAN Utility Program provided previously. Refer to chap 6 in this manual.

### **3.3 Installation procedure of SWL-2000P/2100 PCI Card**

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

1. Power on your computer.
2. Be sure that there is no PCI card inserted yet.

3. Insert the **Installation CD**. Select the *Software Installation* from the menu and click on **Install**.
4. Select the **Windows PC Card and PCI Card Driver** from the menu then Setup Program will be installed automatically.
5. Accept the *license agreement*.
6. Give the path of the destination folder. Click on **NEXT**.
7. Select the type of card as **SWL-2000/2100(PCI Card Type)** and click on **NEXT**.
8. Click on **Finish** to complete the software installation.
9. Switch off your computer and insert the **PCI Card** in the PCI slot.
10. Restart your computer and a message window pops up saying **New Hardware Found**.
11. It takes a few seconds in setting up the driver for the new hardware.
12. Check for the **SAMSUNG 11Mbps WLAN PCI 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 (*See the Uninstallation method in section 3.4*) the driver. And refer the troubleshooting at the end of manual.
13. Right click on the **Network Neighborhood** using the mouse.
14. Select **Properties** from the pop up menu. The network box appears and you see three main tabs: *Configuration*, *Identification* and *Access Control*.
15. 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.
16. Select Network Protocols box appears. From the list of manufactures, click on Microsoft. From the list of network protocols list, select **IPX/SPX**, then click **OK**.
17. The **IPX/SPX** protocol is now installed. After clicking on **OK** return back to Network Component Type box.
18. Repeat the steps 16 and 17 to add **TCP/IP** protocol.
19. If you want, you can install the **NetBEUI** protocol.
20. 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 and 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.
21. Screen message '**Do you want to restart your Computer**' will pop up. Select **Yes**. It will shut down your computer and will restart.
22. After rebooting your computer, you can set up WLAN Utility Program provided previously. Refer to chap 6 in this manual.

### **3.4 Installation procedure of SWL-2100U USB Card**

Please follow the following steps one by one to install the USB card successfully

1. Power on your computer.
2. Insert the **Installation CD**. Select the *Software Installation* from the menu and click on **Install**.
3. Select the **Windows USB Card Driver** from the menu then Setup Program will be installed automatically.
4. Accept the *license agreement*.
5. Give the path of the destination folder. Click on **NEXT**.
6. Click on **Finish** to complete the software installation.
7. Insert the **USB Card**. Illuminating **LED** and **Sound** confirms the detection of your USB card. Also you will see the USB Card icon on the right bottom of your screen
8. A message window pops up saying **New Hardware Found**.
9. It takes a few seconds in setting up the driver for the new hardware .
10. Check for the **SAMSUNG 11Mbps WLAN USB 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 (*See the Uninstallation method in section 3.4*) the driver. And refer the troubleshooting at the end of manual.
11. Right click on the **Network Neighborhood** using the mouse.
12. Select **Properties** from the pop up menu. The network box appears and you see three main tabs: *Configuration*, *Identification* and *Access Control*.
13. 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.
14. Select Network Protocols box appears. From the list of manufactures, click on Microsoft. From the list of network protocols list, select **IPX/SPX**, then click **OK**.
15. The **IPX/SPX** protocol is now installed. After clicking on **OK** return back to Network Component Type box.
16. Repeat the steps 14 and 15 to add **TCP/IP** protocol.
17. If you want, you can install the **NetBEUI** protocol.
18. 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 and 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.
19. Screen message **do you want to restart your Computer** will pop up. Select

**Yes.** It will shut down your computer and will restart.

20. After rebooting your computer, you can set up WLAN Utility Program provided previously. Refer to chap 6 in this manual.

### **3.5 Uninstallation Method:**

If you want to uninstall the PC Card/PCI Card/USB Card under Windows 95(OSR2), Windows 98/98SE,ME, click the **MagicLAN Utility Uninstall** from the **start** button on the desk bar. Check on the **Remove all MagicLAN Software** and Click the **Next** button. UninstallShield removes the software successfully.

(cf. If you want to just remove the WLAN Card from the PC, Click the '**Stop SAMSUNG 11Mbps WLAN PC Card/PCI Card/USB Card**' on 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/PCI Card/USB Card device can now be safely removed from the system**') )

## 4. MagicLAN Installation for Windows NT 4.0

### 4.1 Installation procedure of SWL-2000N/2100N/2100E PC Card

***Important:*** Some notebook computers for Win NT 4.0 operating system that do not support 3V cards will not install your 3V PC Card successfully. You are advised to install the driver for PC Card Controller available from set manufactures or install the **CardWizard** program that will enable the notebook computers supporting 5V cards to support 3V cards also and will install your PC Card successfully.

Please follow the following steps one by one to install the **PC Card** successfully. There are two cases: one is when there is no Windows NT networking Installed and the other is when the Windows NT networking is installed.

#### **When Windows NT networking is not installed yet:**

1. Power on your PC and allow the **Windows NT** to load fully.
2. Now insert the **Installation CD**. Select the *software Installation* and click on **Install**. Then if you click on the '**Windows PC Card and PCI Card driver**', the MagicLAN Setup Program will start to install.
3. When 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**.
4. Under **Control Panel**, double click on **Network** icon.
5. Since there is no **Windows NT** networking installed yet, you will be asked if you want to install NT networking first. Click on **Next** and then you will be asked how will you access the network: *modem* or *LAN*. Check the proper selection and click on next. In network setup wizard box, click on select from list button.
6. In **Select Network Adapter** box click on **Have Disk** button.
7. 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 Notebook) in the blank and click on **OK**.
8. In **Select OEM Option** box, you will see **Samsung 11Mbps WLAN PC Card/ Samsung 11Mbps WLAN PCI Card** and select the correct card type and click on **OK**.
9. You confirm the **Samsung 11Mbps WLAN PC Card**.
10. Select the network protocols by clicking on the **Protocols**. And click on **TCP/IP**.
11. 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**.

12. In the next box it is confirmed that necessary NT networking components are selected. Click on **Next**. 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** in the location blank.
13. 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.
14. Since it is looking for some files from the installation CD, insert your installation CD in CD drive and type **D:\nt40** in the blank location and click on continue.
15. **SAMSUNG 11Mbps WLAN Card** setup box may appear. Set each parameter (I/O Address, Interrupt) for the proper system configuration set up and other parameters (network mode, ESS ID, and Tx Rate) for the proper LAN card configuration. If the resource allocation or I/O addresses conflicts with other devices, change the I/O address or Interrupt using the **Windows NT Diagnostic program**.
16. Next box will say network installation is done and network is ready to start. Click on **Next**.
17. If you select the **DHCP** option for **TCP/IP**, you do not need to set the values. If you select the **Static** option, enter the **IP** value, **Subnet** masking, **Gateway**, and **DNS** values respectively and then click on **OK**.
18. If you want, you can install the **NetBEUI** protocol.
19. Now it is ready for installing networking. Click on **NEXT**.
20. You can assign the **Workgroup/ Domain** name. And click on **NEXT**.
21. Click on the **Finish** and it will ask you whether you want to restart your computer or not. Click on **Yes**.
22. Insert the **PC Card** in the PC Card slot and restart your computer so that the changes may be placed in effect.
23. If your computer does not detect the PC Card WLAN Card or the card is not functioning properly, refer to the **Troubleshooting** at the end of the manual.

#### **When Windows NT networking is installed already:**

1. Power on your computer.
2. Now insert the **Installation CD**. Select the *Software Installation* and click on **Install**. Then if you click on the '**Windows PC Card and PCI Card driver**', the MagicLAN Setup Program will start to install.
3. Right click on the **Network Neighborhood** using the mouse and select **Properties**.
4. Select the **Adapter**. And click on **Add**.
5. Since it is looking for the driver files, enter the path name **D:\nt40** (where D is the CD drive of your Notebook PC) and click on **Have Disk**. It copies the driver files.  
You will see **Samsung 11Mbps WLAN PC Card/ Samsung 11Mbps WLAN**

**PCI Card** and select the correct card type and click on **OK**.

6. **Configure Wireless LAN Card** box may appear. Set each parameter (I/O base, Interrupt) for the proper system configuration set up and other parameters (network mode, ESS ID, and Tx rate) for the proper LAN card configuration.
7. Click on **Bindings**.
8. Click on the **Protocol** to access the network and share the resources.
9. Select **TCP/IP** and you can select either **DHCP** or **Static** for the IP address. If you select DHCP, you do not need to specify the **IP** address. If you select the **Static** option, enter the **IP** value, **Subnet** masking, **Gateway**, and **DNS** values respectively. Also add the **Workgroup/ Domain** name
10. If you want, you can add the optional protocols such as **NetBEUI**.
11. After you add the **TCP/IP** protocol, it will ask you whether you want to restart your computer or not. Click on **Yes** to make the changes effective and insert the **PC Card** in the PCMCIA slot. Now your network is established successfully, if your PCMCIA card is detected. If you encounter some problems during installation or your card is not functioning properly, please refer to the **Troubleshooting** at the end of the manual.

## **4.2 Installation procedure of SWL-2000P/2100P PCI Card**

Please follow the following steps one by one to install the **PCI** card successfully. There are two cases: when there is no Windows NT networking Installed and the other when the Windows NT networking is installed.

### **When Windows NT networking is not installed:**

1. Power on your PC on and allow the **Windows NT** to load fully.
2. Now insert the **Installation CD**. Select the *software Installation* and click on **Install**. Then if you click on the '**Windows PC Card and PCI Card driver**', the MagicLAN Setup Program will start to install.
3. Shut down your computer and insert the **PCI** card in the PCI slot and restart your computer.
4. 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**.
5. Under **Control Panel**, double click on **Network** icon.
6. Since there is no **Windows NT** networking installed yet (If you have already installed Windows NT networking, jump to the step 13 directly), you maybe asked

- if you want to install NT networking first. Click on **Next** and then you will be asked how will you access the network: *modem* or *LAN*. Check the proper selection and click on next. In network setup wizard box, click on select from list button.
7. In **Select Network Adapter** box click on **Have Disk** button.
  8. 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 Notebook) in the blank and click on **OK**.
  9. In **Select OEM Option** box, you will see **Samsung 11Mbps WLAN PC Card/ Samsung 11Mbps WLAN PCI Card** and select the correct card type and click on **OK**. You confirm the **Samsung 11Mbps WLAN PCI Card**.
  10. Select the network protocols by clicking on the **Protocols**. And click on **TCP/IP**.
  11. 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**.
  12. In the next box it is confirmed that necessary NT networking components are selected. Click on **Next**. 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** in the location blank.
  13. 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.
  14. Since it is looking for some files form the installation CD, insert your installation CD in CD drive and type **D:\nt40** in the blank location and click on continue.
  15. **Configure WLAN Card** box may appear. Set each parameter (I/O base) for the proper system configuration set up and other parameters (network mode, ESS ID, and Tx rate) for the proper LAN card configuration.
  16. **TCP/IP** installation message will pop up. Select **NO** for **DHCP**.
  17. If you select the **DHCP** option for **TCP/IP**, you do not need to set the values. If you select the **Static**, enter the **IP** value, **Subnet** masking, **Gateway**, and **DNS** values respectively and then click on OK.
  18. Binding properties will pop up. Click on **NEXT**.
  19. If you want, you can install the **NetBEUI** protocol.
  20. Now it is ready for installing networking. Click on **NEXT**.
  21. Networking is confirmed. Click on **NEXT**.
  22. You can assign **Workgroup/ Domain** name. And click on **NEXT**.
  23. Click on the **Finish** and it will ask you whether you want to restart your computer or not. Click on **Yes**.
  24. If your PCI card is not detected or not functioning properly, please refer to **Troubleshooting** at the end of the manual.

### **When Windows NT networking is already installed:**

1. Power on your computer.
2. Now insert the **Installation CD**. Select the *Software Installation* and click on **Install**. Then if you click on the '**Windows PC Card and PCI Card driver**', the MagicLAN Setup Program will start to install.
3. Shut down your computer and insert the **PCI** card and restart your computer.
4. Right click on the **Network Neighborhood** using the mouse and select **Properties**.
5. Select the **Adapter**. And click on **Add**.
6. Since it is looking for the driver files, enter the path name **D:\nt40** (where D is the CD drive of your Notebook PC) and click on **Have Disk**. It copies the driver files. And you will see **Samsung 11Mbps WLAN PC Card/ Samsung 11Mbps WLAN PCI Card** and select the correct card type and click on **OK**.
7. **Configure Wireless LAN Card** box may appear. Set each parameter (I/O base) for the proper system configuration set up and other parameters (network mode, ESS ID, and Tx rate) for the proper LAN card configuration.
8. Click on **Bindings**.
9. Click on the **Protocols** to access the network and share the resources.
10. Select **TCP/IP** and 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** value, **Subnet** masking, **Gateway**, and **DNS** values respectively. Also enter the **Workgroup/Domain** name.
11. If you want, you can add the optional protocols such as **NetBEUI**.
12. After you add the **TCP/IP** protocol, it will ask you whether you want to restart your computer or not. Click on **Yes** to make the changes effective. Now your network is established successfully, if your **PCI** card is detected. If you encounter some problems during installation or if your card is not functioning properly, please refer to the **Troubleshooting** at the end of the manual.

### **4.3 Uninstallation Method:**

If you want to uninstall the PC Card/PCI Card/USB Card under Windows 95(OSR2), Windows 98/98SE,ME, click the **MagicLAN Utility Uninstall** from the **start** button on the desk bar. Check on the **Remove all MagicLAN Software** and Click the **Next** button. UninstallShield removes the software successfully.

If it is done, right click on the **Network Neighborhood** using the mouse and eliminate the '**SAMSUNG 11Mbps LAN PC Card (PCI Card)**' on the **General**

## 5. MagicLAN Installation for Windows 2000

### 5.1 Installation Procedure of SWL-2000N/2100N/2100E PC Card

Please follow the following steps one by one in order to install the PCMCIA card successfully.

1. Power on your computer and allow **Windows 2000** to load fully.
2. Be sure that there is no **PC Card** adapter inserted yet.
3. Insert the given **Installation CD** in the **CD-ROM**. Select the **Software Installation** from the menu and then click on the **Install**.
4. Select the **Windows PC Card and PCI Card Driver** from the menu then Setup Program will be installed automatically.
5. Accept the *license agreement*.
6. Give the path of the destination folder. To set the path of your choice click on **Browse** and then click **Next**.
7. Select the type of card. As you are preparing to install the PC Card, select the **SWL-2000/2100(PC CARD type)** and click on **Next**.
8. It takes a few seconds for copying the utility files and then click on **Finish** to complete the installation.
9. Insert the **PC Card**. Illuminating **LED** and **Sound** confirms the detection of your PC card. Also you will see the PC Card icon on the right bottom of your screen.
10. Windows 2000 may display a message states that “ No valid Windows 2000 signature was found.” Continue the installation by clicking on YES. The drivers are then loaded.
11. Check for the **SAMSUNG 11Mbps WLAN PC Card 3V/5V** on **Computer Management** in the Administrative Tools. 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 (*See the Uninstallation method in section 5.3*) the driver to make the changes effective.
12. Right click on the **Network Places** using the mouse and clicks on the **Local Area Connection** and then click on **Properties..**
13. 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 and 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 computer sharing options. Click on OK.
14. After rebooting your computer, you can set up WLAN Utility Program provided previously. Refer to ‘Chapter 8’ in this manual.

## **5.2 Installation procedure of SWL-2000P/2100P PCI Card**

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

1. Power on your computer.
2. Be sure that there is no PCI card inserted yet.
3. Insert the **Installation CD**. Select the **Software Installation** from the menu and click on **Install**.
4. Select the **Windows PC Card and PCI Card Driver** from the menu then Setup Program will be installed automatically.
5. Accept the *license agreement*.
6. Give the path of the destination folder. To set the path of your choice click on **Browse** and then click **Next**.
7. Select the type of card as **SWL-2000/2100(PCI CARD type)** card and click on **NEXT**.
8. Click on **Finish** to complete the software installation.
9. Switch off your computer and insert the **PCI** card in the PCI slot.
10. Restart your computer and a message window pops up saying **New Hardware Found**.
11. It takes a few seconds in setting up the driver for the new hardware.
12. Check for the **SAMSUNG 11Mbps WLAN PCI Card** on **Computer Management** in the Administrative Tools . 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 (*See the Uninstallation method in section 5.3*) the driver to make the changes effective.
13. Right click on the **Network Places** using the mouse and clicks on the **Local Area Connection** and then click on **Properties..**
15. 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 and 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 computer sharing options. Click on **OK**.
16. After rebooting your computer, you can set up WLAN Utility Program provided previously. Refer to 'Chapter 8' in this manual.

## **5.3 Installation procedure of SWL-2100U USB Card**

Please follow the following steps one by one to install the USB card successfully

1. Power on your computer.
2. Insert the **Installation CD**. Select the *Software Installation* from the menu and click on **Install**.
3. Select the **Windows USB Card Driver** from the menu then Setup Program will be installed automatically.
4. Accept the *license agreement*
5. Give the path of the destination folder. To set the path of your choice click on **Browse** and then click **Next**.
6. Click on **Finish** to complete the software installation.
7. Insert the **USB Card**. Illuminating **LED** and **Sound** confirms the detection of your USB card. Also you will see the USB Card icon on the right bottom of your screen.
8. A message window pops up saying **New Hardware Found**.
9. It takes a few seconds in setting up the driver for the new hardware.
10. Check for the **SAMSUNG 11Mbps WLAN USB 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 (*See the Uninstallation method in section 3.4*) the driver. And refer the troubleshooting at the end of manual.
11. Right click on the **Network Neighborhood** using the mouse.
12. Select **Properties** from the pop up menu. The network box appears and you see three main tabs: *Configuration*, *Identification* and *Access Control*.
13. Click on the configuration tab and then click on the add button. Select Network Component Type box. Click on the **Protocol** then click the **Add** button.
14. Select Network Protocols box appears. From the list of manufactures, click on Microsoft. From the list of network protocols list, select **IPX/SPX**, then click **OK**.
15. The **IPX/SPX** protocol is now installed. After clicking on **OK** return back to Network Component Type box.
16. Repeat the steps 14 and 15 to add **TCP/IP** protocol.
17. If you want, you can install the **NetBEUI** protocol.
18. 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 and 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.
19. Screen message **do you want to restart your Computer** will pop up. Select **Yes**. It will shut down your computer and will restart.
20. After rebooting your computer, you can set up WSA Utility Program provided previously. Refer to 'Chapter 8' in this manual.

#### **5.4 Uninstallation Method:**

If you want to uninstall the PC Card/PCI Card/USB Card under Windows 2000, click the **MagicLAN Utility Uninstall** from the **start** button on the desk bar. Check on the **Remove all MagicLAN Software** and Click the **Next** button. UninstallShield removes the software successfully.

(cf. If you want to just remove the WLAN Card from the PC, Click the '**Stop SAMSUNG 11Mbps WLAN PC Card/PCI Card/USB Card**' on 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/PCI Card/USB Card device can now be safely removed from the system**')

## 6. Magic LAN Installation for Windows CE

1. First of all, to determine whether your Windows CE device can be used in combination with this Magic LAN driver, verify the version of the operating system and the processor type of your Windows CE device.

To get the version of the operating system and the type of processor used on your Windows CE device, open "Control Panel" , double click on "System Properties" and the device will show the information.

(HPC is Handheld PC – WebPad or like small notebook-, PPC is Palm PC(or Pocket PC)(for example Compaq iPaq Pocket PC).)

2. Ensure your desktop PC and Win CE set are connected and the Windows CE services are running on the desktop computer.(with ActiveSync)

3. Insert the installation CD then it will be installed automatically. Select the Soft installation and click on Install. Select Windows CE PC Card Driver. You will see the message of choosing Win CE version. Select the appropriate version and click on OK to start installation.

4. After finish the installation, insert PC Card. You will see the message to set IP then select the appropriate IP.(To get more information, contact with Network Manager)

4-1 To change IP in another way, click Control Panel->Network and select "SWLD11CE:Samsung 11Mbps Wireless LAN PC Card Driver", then you can change IP.

## 7. MagicLAN Installation for Linux

### 7.1 Installation Procedure of SWL-2000N/2100N/2100E PC Card

```
/******  
*  
* SAMSUNG 11Mbps Wireless LAN PCMCIA device driver for Linux (swld11_cs).  
*  
* Copyright (c) 2000 SAMSUNG Electro-Mechanics CO.,Ltd. --  
* http://www.MagicLan.com  
* All rights reserved.
```

This file contains general information on the SAMSUNG 11Mbps PC Card,  
and specific information for the Linux software.

```
*****  
Table of Contents:  
1. About the Linux Driver Source/Library distribution  
2. Installation  
3. Troubleshooting  
4. Module parameters  
*****
```

#### 1. About the Linux Driver Source/Library distribution

=====

The distribution archive swld11\_cs-1.21.tar.gz contains driver  
source files. With this software you can build and  
install a SAMSUNG 11Mbps PC Card driver for your specific Linux kernel.  
Currently Linux kernel versions 2.0.x through 2.4.x for the Intel  
architecture are supported.

#### 2. Installation

- =====
- 1) Get David Hinds' PCMCIA package source at  
<http://pcmcia-cs.sourceforge.net/>
  - 2) Unpack the PCMCIA package (usually into /usr/src) and change into  
its directory (usually /usr/src/pcmcia-cs-3.1.\*).
  - 3) Extract the SAMSUNG 11Mbps PC Card distribution archive into the standard  
PCMCIA distribution.

```
% cd pcmcia-cs-3.1.*
% tar xzvf swld11_cs-1.21.tar.gz
```

4) Build and install the PCMCIA package as normal.

```
% make config
% make all
% make install
```

5) Configure the SAMSUNG 11Mbps PC Card. Refer to the PCMCIA documentation for more information (network adapter sections).

```
% more PCMCIA-HOWTO
% vi /etc/pcmcia/config.opts
```

For example:

a) Attaching to an access point with the network name of

"Magiclan", enter the following in the config.opts file:

```
module "swld11_cs" opts "essid=Magiclan"
```

b) Ad-Hoc (peer-to-peer) network without an access point, enter the following in the config.opts file:

```
module "swld11_cs" opts "networkmode=3"
```

c) Attach to an access point with the network name of "Ocean", and export the station name as "magiclan", enter the following in the config.opts file:

```
module "swld11_cs" opts "essid=Ocean stationname=magiclan"
```

```
% vi /etc/pcmcia/network.opts
```

Modify the network options for your adapter. The parameters need to be correct for the connected network. Check with your system administrator for the correct network information. Refer to the PCMCIA-HOWTO for more configuration information.

For example:

```
*,*,*,*)
IF_PORT=""
BOOTP="n"
IPADDR="10.0.0.5"
NETMASK="255.255.255.0"
NETWORK="10.0.0.0"
BROADCAST="10.0.0.255"
GATEWAY="10.0.0.1"
DOMAIN="domain.org"
DNS_1="dns1.domain.org";;
```

If you have serveral network cards used for different purposes, one option would be to configure the cards based on socket position, as in:

```
case "$ADDRESS" in
    *,0,*,*)
        # definitions for network card in socket 0
        ;;
    *,1,*,*)
        # definitions for network card in socket 1
        ;;
esac
```

% vi /etc/pcmcia/wireless.opts

Using Wireless Extension "iwconfig",you can configure serveral network cards.

If you have only one wireless card,you does not need to use this file,just uses "config.opts" file.

For example:

# Here are a few examples with a few Wireless LANs supported...

# SAMSUNG 11Mbps Wireless LAN Card

# Note : swld11\_cs/swldpc11\_cs driver only, and version 1.0.4+ for encryption support

\*,\*,\*,\*)

INFO="SAMSUNG 11Mbps WLAN"

#ESSID (extended network name) : My Network, any

ESSID="test3"

# Operation mode : Ad-Hoc, Managed

MODE="Managed"

# Frequency or channel : 1, 2, 3 (channel) ; 2.422G, 2.46G (frequency)

CHANNEL="4"

# Bit rate : auto, 1M, 11M

RATE="auto"

# Encryption key : 4567-89AB-CD, s:password

KEY="883e-aa67-21 [1] key 5501-d0da-87 [2] key 91f5-3368-6b [3] key 2d73-31b7-96 [4]"

# Other iwconfig parameters : power off, ap 01:23:45:67:89:AB

IWCONFIG="power on"

;;

6) Restart the PCMCIA services.

% /etc/rc.d/init.d/pcmcia restart (in case of Red Hat,Caldera,Mandrake distributions)

or

- % /etc/init.d/pcmcia restart (in case of Debian distributions)
- or
- % /sbin/init.d/pcmcia restart (in case of Suse distributions)
- or
- % /etc/rc.d/rc.pcmcia restart (in case of Slackware distributions)
- 7) Extract the Utility distribution archive into local directory.
- % tar xzvf configlinux-0.2.tar.gz
- 8) Build and install the Utility package.
- % cd configlinux-0.2
- % ./configure
- (if you use the redhat 6.2 or later, please type like this.
- % ./configure --with-qt-dir=/usr/lib/qt-1.45)
- % make
- % make install
- % make clean
- 9) There is a link(configlinux) in the Applications of the KDE menus.
- % configlinux or configlinux eth0
- 10) To use wireless extension, please get the package at.
- [http://www.hpl.hp.com/personal/Jean\\_Tourrilhes/Linux/Tools.html](http://www.hpl.hp.com/personal/Jean_Tourrilhes/Linux/Tools.html)

### 3. Troubleshooting

=====

When the SAMSUNG 11Mbps PC Card is inserted, the card manager will emit beeps in different tones to indicate success or failure of particular configuration steps.

#### a) Two high beeps

- The card was identified and configured successfully.

#### b) One high beep followed by a low beep

- The card was identified, but could not be configured.
- Examine the system log (dmesg) for PCMCIA error or warning messages.

#### c) One low beep

- The card could not be identified.
- Execute "cardctl ident" to display the adapter PnP information.

Verify the PnP information matches an entry in the PCMCIA configuration file (/etc/pcmcia/config).

- Examine the system log (dmesg) for PCMCIA error or warning messages.

The SAMSUNG 11Mbps PC Card has one LED that indicate the state of the adapter and network.

\* LED(Power/Link Status)

- This LED indicates that power has been applied, and the card is functional. In normal operation mode with Card Power Management disabled, it will be steady-on if the card is connected with a AP and it will be blink slowly if the card in not connected with a AP. With Card Power Management enabled, it will blink rapidly (several times per second).

\* LED blink slowly.

- The adapter was unable to make contact with the named wireless network. Verify the ESSID value,in the config.opts file matches the network name of the access point.

#### 4. MODULE PARAMETERS

```
=====
irq_list      Select IRQ to use
                -1 = auto-assign (default)
networkmode   Select 802.11 Network type
                1 = Infrastructure Mode(default)
                3 = Ad-hoc Mode
stationname   Station name
ssid          Network name (SSID)
                Sets the independent network name in ad-hoc mode.
                Sets the desired network (desired SSID) to connect
                to if using an access point.
                default is card-configured
txrate        Transmit rate control
                1 = fixed 1Mbps
                2 = fixed 2Mbps
                4 = fixed 5.5Mbps
                8 = fixed 11Mbps
                15 = Fully Auto(default)
psmode        Power Saving Mode
                (! if you enable this mode,there is degradation in the throughput performance.)
                0 = disabled(default)
                1 = enabled
wepreq        Enables or diabled encryption of Data.
                0 = disabled(default)
```

3 = 64 bit WEP  
7 = 128 bit WEP

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| keyid      | <p>Designates which of the keys is to be used for the enciphering of data that is transmitted by this action.</p> <p>0 .. 3(default=0)</p> <p>In case of 128 bit WEP it only supports the keyid 0.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| key0       | <p>Specifies one of 4 possible keys for the Data encryption.</p> <p>One of these keys, identified by keyid,is used for the enciphering of Data that is transmitted by this station.</p> <p>All keys specified can be used for the deciphering of Data that is received.</p> <p>The key value can be an ASCII character string or a hexadecimal value.</p> <p>In case of 64 bit WEP,the length of the key value can be 5 characters or 10 hexadecimal digits and in cse of 128 bit WEP,the length of the key value can be 13 characters or 26 hexadecimal digits.</p> <p>The keys defined in the station must match the keys defined in the access points; both on value and number (0 through 3).</p> <p>Numbers are considered integers. (ie. key0=1234567890,or key0=12345abcde,or key0=1234567890abcd12345678a4d3)</p> |
| key1       | Same as key0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| key2       | Same as key0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| key3       | Same as key0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| channel    | <p>Channel (frequency) for ad-hoc networks.</p> <p>4 = default</p> <p>Useless if using an access point.</p> <p>valid range: 1-14 (depends on local restrictions)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| threshold  | <p>Medium reservation (RTS/CTS frame length)</p> <p>Sets the number of octets in a message or fragment above which a RTS/CTS handshake is performed.</p> <p>500 = hidden stations</p> <p>2347 = no RTS/CTS (default)</p> <p>valid range: 0-2347</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| fragthresh | <p>Defines the number of bytes used for the fragmentation boundary for directed messages.</p> <p>2346 = default</p> <p>range: 256-2346 (even numbers only!)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| mtu        | <p>Maximum transfer unit</p> <p>1500 = default</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

valid range: 256-2296

pc\_debug       Selects the PCMCIA debugging level.  
0 .. 5

## 5. WIRELESS EXTENSION

=====

Use "iwconfig" to manipulate wireless extensions.

essid

Set the network name of the desired network to connect to (with access point) or the name of your private ad-hoc network.

mode

Set the operating mode to "Ad-Hoc" or "Managed" (infrastructure mode).

In managed mode, the card will try to connect to an Access Point, to get access to the infrastructure. In Ad-Hoc mode, the card doesn't require an Access Point and can communicate directly with its peers.

channel

Channel for ad-hoc networkings. (1~14).

rts

Set the medium reservation threshold (RTS/CTS frame length), which affects the number of the octets in a message or fragment above which a RTS/CTS handshake is performed.

frag

Set the number of bytes used for the fragmentation boundary for directed messages.

rate

Set the rate used for transmission (but not reception).

enc

Set the encryption key.

(64 bit WEP -> XXXX-XXXX-XX. 128 bit WEP -> XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XX).

power

Set the power saving mode. (on/off)

## **7.2 Installation procedure of SWL-2000P/2100 PCI Card**

```
/*
*
* SAMSUNG 11Mbps Wireless LAN PCMCIA device driver for Linux (swldpc11_cs).
*
* Copyright (c) 2000 SAMSUNG Electro-Mechanics CO.,Ltd. --
http://www.MagicLan.com
* All rights reserved.
```

This file contains general information on the SAMSUNG 11Mbps PC Card,  
and specific information for the Linux software.

```
*****
Table of Contents:
1. About the Linux Driver Source/Library distribution
2. Installation
3. Troubleshooting
4. Module parameters
*****
```

### 1. About the Linux Driver Source/Library distribution

=====

The distribution archive swld11\_cs-1.21.tar.gz contains driver  
source files. With this software you can build and  
install a SAMSUNG 11Mbps PC Card driver for your specific Linux kernel.  
Currently Linux kernel versions 2.0.x through 2.4.x for the Intel  
architecture are supported.

### 2. Installation

=====

- 1) Get David Hinds' PCMCIA package source at  
<http://pcmcia-cs.sourceforge.net/>
- 2) Unpack the PCMCIA package (usually into /usr/src) and change into  
its directory (usually /usr/src/pcmcia-cs-3.1.\*).
- 3) Extract the SAMSUNG 11Mbps PC Card distribution archive into the standard

PCMCIA distribution.

```
% cd pcmcia-cs-3.1.*
```

```
% tar xzvf swldpc11_cs-1.21.tar.gz
```

4) Build and install the PCMCIA package as normal.

```
% make config
```

```
% make all
```

```
% make install
```

5) Configure the SAMSUNG 11Mbps PC Card. Refer to the PCMCIA documentation for more information (network adapter sections).

```
% more PCMCIA-HOWTO
```

```
% vi /etc/pcmcia/config.opts
```

For example:

a) Attaching to an access point with the network name of "Magiclan", enter the following in the config.opts file:

```
module "swld11_cs" opts "essid=Magiclan"
```

b) Ad-Hoc (peer-to-peer) network without an access point, enter the following in the config.opts file:

```
module "swld11_cs" opts "networkmode=3"
```

c) Attach to an access point with the network name of "Ocean", and export the station name as "magiclan", enter the following in the config.opts file:

```
module "swld11_cs" opts "essid=Ocean stationname=magiclan"
```

```
% vi /etc/pcmcia/network.opts
```

Modify the network options for your adapter. The parameters need to be correct for the connected network. Check with your system administrator for the correct network information. Refer to the PCMCIA-HOWTO for more configuration information.

For example:

```
*,*,*,*)
```

```
IF_PORT=""
```

```
BOOTP="n"
```

```
IPADDR="10.0.0.5"
```

```
NETMASK="255.255.255.0"
```

```
NETWORK="10.0.0.0"
```

```
BROADCAST="10.0.0.255"
```

```
GATEWAY="10.0.0.1"
```

```
DOMAIN="domain.org"
DNS_1="dns1.domain.org"
;;
```

If you have serveral network cards used for different purposes, one option would be to configure the cards based on socket position, as in:

```
case "$ADDRESS" in
*,0,*,*)
    # definitions for network card in socket 0
    ;;
*,1,*,*)
    # definitions for network card in socket 1
    ;;
esac
```

% vi /etc/pcmcia/wireless.opts

Using Wireless Extension "iwconfig",you can configure serveral network cards. If you have only one wireless card,you does not need to use this file,just uses "config.opts" file.

For example:

```
# Here are a few examples with a few Wireless LANs supported...
# SAMSUNG 11Mbps Wireless LAN Card
# Note : swld11_cs/swldpc11_cs driver only, and version 1.0.4+ for encryption support
*,*,*,*)
    INFO="SAMSUNG 11Mbps WLAN"
#ESSID (extended network name) : My Network, any
    ESSID="test3"
# Operation mode : Ad-Hoc, Managed
    MODE="Managed"
# Frequency or channel : 1, 2, 3 (channel) ; 2.422G, 2.46G (frequency)
    CHANNEL="4"
# Bit rate : auto, 1M, 11M
    RATE="auto"
# Encryption key : 4567-89AB-CD, s:password
    KEY="883e-aa67-21 [1] key 5501-d0da-87 [2] key 91f5-3368-6b [3] key 2d73-31b7-96 [4]"
# Other iwconfig parameters : power off, ap 01:23:45:67:89:AB
```

```
IWCONFIG="power on"
```

```
::
```

6) Restart the PCMCIA services.

```
% /etc/rc.d/init.d/pcmcia restart
```

7) Extract the Utility distribution archive into local directory.

```
% tar xzvf configlinux-0.2.tar.gz
```

8) Build and install the Utility package.

```
% cd configlinux-0.2
```

```
% ./configure
```

(if you use the redhat 6.2 or later, please type like this.

```
% ./configure --with-qt-dir=/usr/lib/qt-1.45)
```

```
% make
```

```
% make install
```

```
% make clean
```

9) There is a link(configlinux) in the Applications of the KDE menus.

```
% configlinux or configlinux eth0
```

10) To use wireless extension, please get the package at.

```
http://www.hpl.hp.com/personal/Jean\_Tourrilhes/Linux/Tools.html
```

### 3. Troubleshooting

=====

When the SAMSUNG 11Mbps PC Card is inserted, the card manager will emit beeps in different tones to indicate success or failure of particular configuration steps.

a) Two high beeps

- The card was identified and configured successfully.

b) One high beep followed by a low beep

- The card was identified, but could not be configured.
- Examine the system log (dmesg) for PCMCIA error or warning messages.

c) One low beep

- The card could not be identified.
- Execute "cardctl ident" to display the adapter PnP information.

Verify the PnP information matches an entry in the PCMCIA configuration file (/etc/pcmcia/config).

- Examine the system log (dmesg) for PCMCIA error or warning messages.

The SAMSUNG 11Mbps PC Card has one LED that indicate the state of the adapter and network.

\* LED(Power/Link Status)

- This LED indicates that power has been applied, and the card is functional. In normal operation mode with Card Power Management disabled, it will be steady-on if the card is connected with a AP and it will be blink slowly if the card in not connected with a AP. With Card Power Management enabled, it will blink rapidly (several times per second).

\* LED blink slowly.

- The adapter was unable to make contact with the named wireless network. Verify the ESSID value,in the config.opts file matches the network name of the access point.

#### 4. MODULE PARAMETERS

```
=====
networkmode  Select 802.11 Network type
               1 = Infrastructure Mode(default)
               3 = Ad-hoc Mode
stationname  Station name
ssid         Network name (SSID)
               Sets the independent network name in ad-hoc mode.
               Sets the desired network (desired SSID) to connect
               to if using an access point.
               default is card-configured
txrate       Transmit rate control
               1 = fixed 1Mbps
               2 = fixed 2Mbps
               4 = fixed 5.5Mbps
               8 = fixed 11Mbps
               15 = Fully Auto(default)
psmode       Power Saving Mode
               (!if you enable this mode,there is degradation in the throughput
```

|                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                           | performance.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                                           | 0 = disabled(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                           | 1 = enabled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| wepreq                                                                    | Enables or disabled encryption of Data.<br>0 = disabled (default)<br>3 = 64 bit WEP<br>7 = 128 bit WEP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| keyid                                                                     | Designates which of the keys is to be used for the enciphering of data that is transmitted by this action.<br>0 .. 3(default=0)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| key0                                                                      | In case of 128 bit WEP it only supports the keyid 0.<br>Specifies one of 4 possible keys for the Data encryption.<br>One of these keys, identified by keyid,is used for the enciphering of Data that is transmitted by this station.<br>All keys specified can be used for the deciphering of Data that is received.<br>The key value can be an ASCII character string or a hexadecimal value.<br>In case of 64 bit WEP,the length of the key value can be 5 characters or 10 hexadecimal digits and in cse of 128 bit WEP,the length of the key value can be 13 characters or 26 hexadecimal digits.<br>The keys defined in the station must match the keys defined in the access points; both on value and number (0 through 3).<br>Numbers are considered integers. |
| (ie.key0=1234567890,orkey0=12345abcde,orkey0=1234567890abcd12345678a4d3). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| key1                                                                      | Same as key0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| key2                                                                      | Same as key0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| key3                                                                      | Same as key0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| channel                                                                   | Channel (frequency) for ad-hoc networks.<br>4 = default<br>Useless if using an access point.<br>valid range: 1-13 (depends on local restrictions)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| threshold                                                                 | Medium reservation (RTS/CTS frame length)<br>Sets the number of octets in a message or fragment above which a RTS/CTS handshake is performed.<br>500 = hidden stations<br>2347 = no RTS/CTS (default)<br>valid range: 0-2347                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| fragthresh                                                                | Defines the number of bytes used for the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

fragmentation boundary for directed messages.  
 2346 = default  
 range: 256-2346 (even numbers only!)

mtu                   Maximum transfer unit  
 1500 = default  
 valid range: 256-2296

pc\_debug             Selects the PCMCIA debugging level.  
 0 .. 5

## 5. WIRELESS EXTENSION

=====

Use "iwconfig" to manipulate wireless extensions.

essid

Set the network name of the desired network to connect to (with access point) or the name of your private ad-hoc network.

mode

Set the operating mode to "Ad-Hoc" or "Managed" (infrastructure mode).

In managed mode, the card will try to connect to an Access Point, to get access to the infrastructure. In Ad-Hoc mode, the card doesn't require an Access Point and can communicate directly with its peers.

channel

Channel for ad-hoc networkings. (1~13).

rts

Set the medium reservation threshold (RTS/CTS frame length), which affects the number of the octets in a message or fragment above which a RTS/CTS handshake is performed.

frag

Set the number of bytes used for the fragmentation boundary for directed messages.

rate

Set the rate used for transmission (but not reception).

enc

Set the encryption key.

(64 bit WEP -> XXXX-XXXX-XX. 128 bit WEP -> XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XX).

power

Set the power saving mode. (on/off)

## **8. The Program for setting Magic LAN**

### **8.1 The concept of Profile**

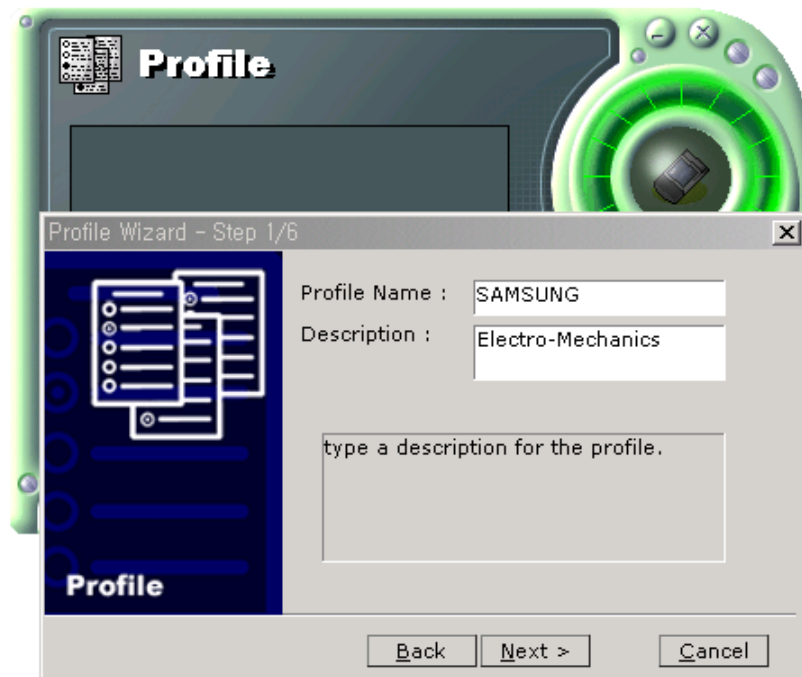
- TCP/IP settings for the fixed networks/Wired LAN have no problems, as they do not deal with the mobility. But in case of mobile equipments such as WLAN card, when WLAN client has moved from home to Office or vice-versa, the difficulty for using the old TCP/IP settings arises.
- The concept of profile 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.

## 8.2 Installation Procedure

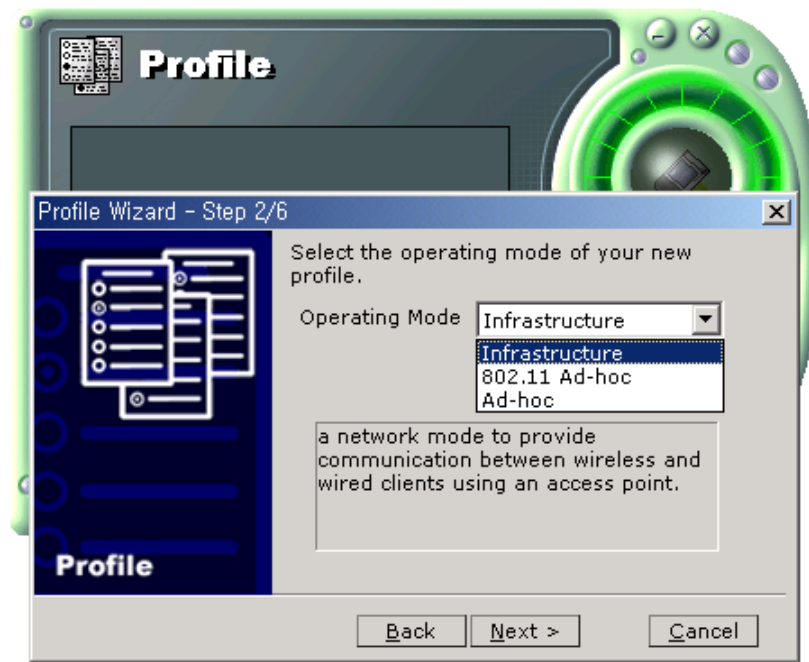
First time use of WLAN on your computer needs the following settings.



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.

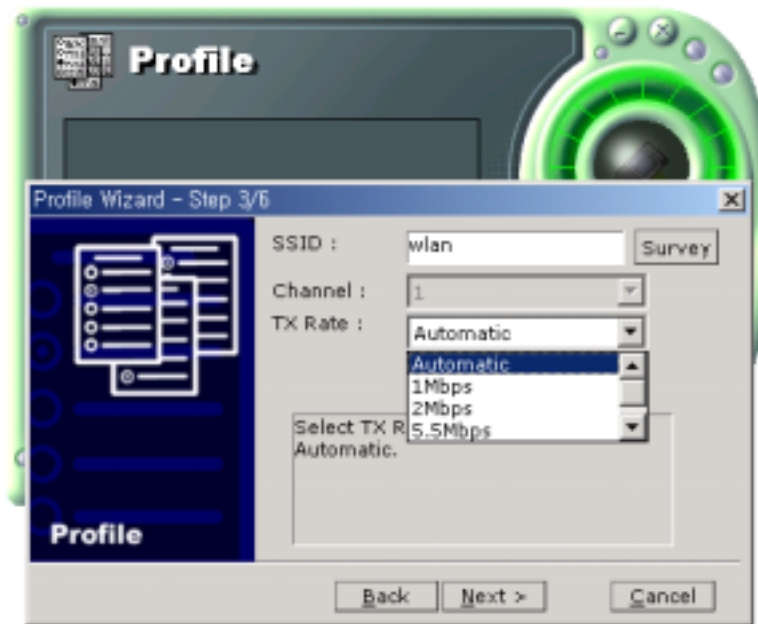


2. Input a profile name in Profile Name and description for your profile name in Description and click the NEXT button, the following window will appear.

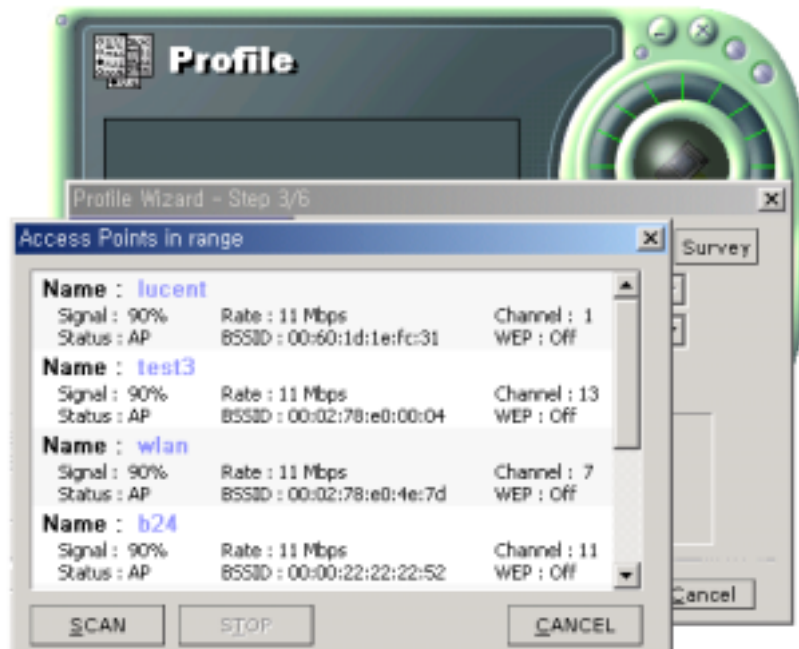


3. Select the Operating Mode to use and click the NEXT button.  
Default operating mode is Infrastructure.

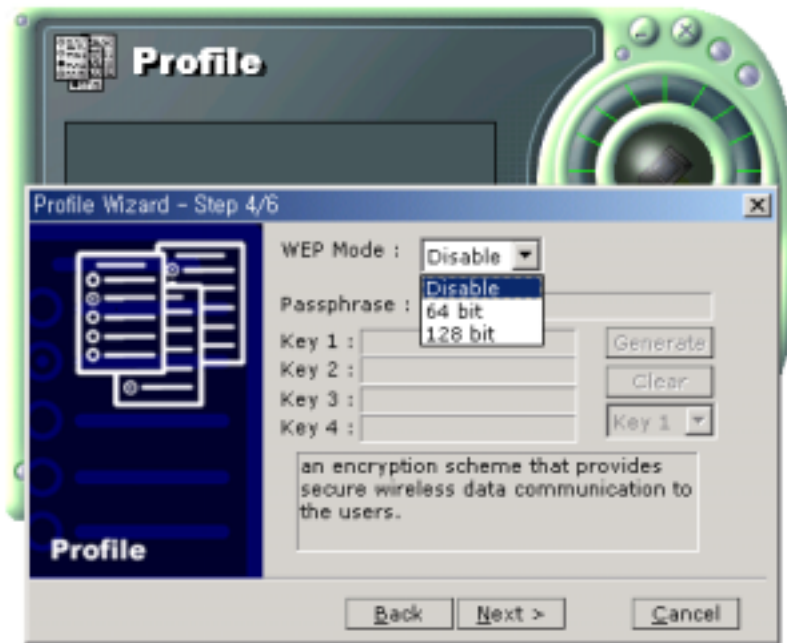
- Infrastructure Network is the structure that the communication between Wired LAN and Wireless LAN is feasible. Wireless client is possible to access to the other Network (include Internet) via Access Point.
- Ad-hoc/802.11Ad-hoc Network support the communication among Wireless clients. Due to the support 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. Enter the SSID (Max 32 characters) of AP to be used in SSID. If you are not sure which SSID to use, click on Survey and refer to 4.1. Select the TX Rate for your WLAN card and click the Next button.



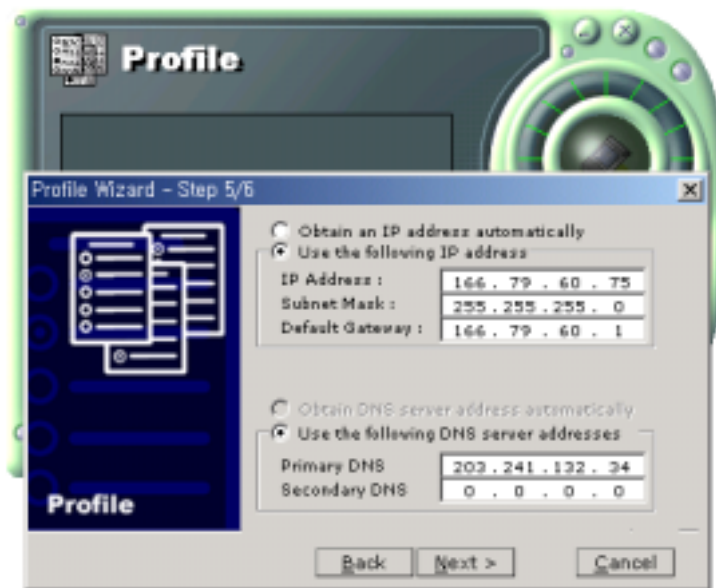
- 4-1. If you clicked on the Survey, the above window will appear showing you Access Points or Stations (Ad hoc) that are able to connect now. Select the AP that has the highest signal to use as an SSID.



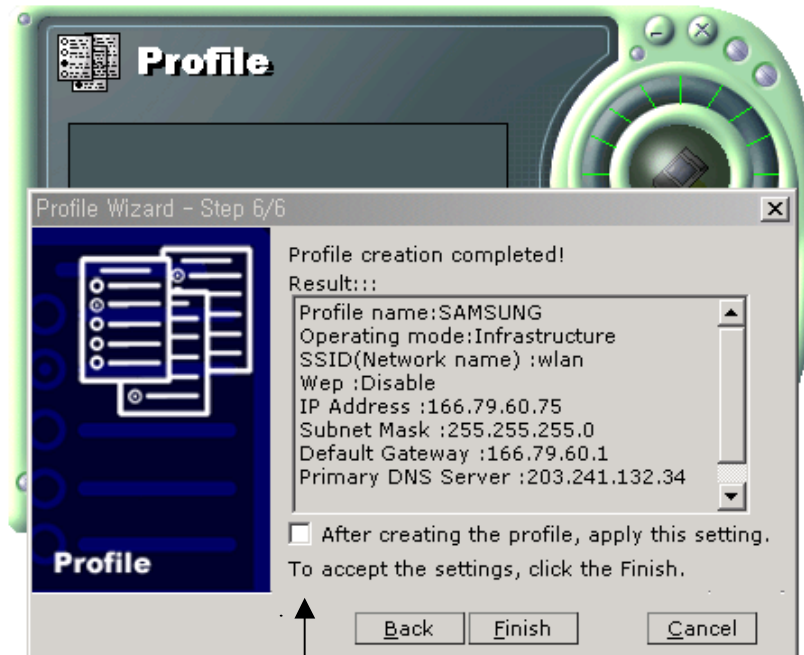
5. Select the WEP Mode and Click the Next button.

- 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.



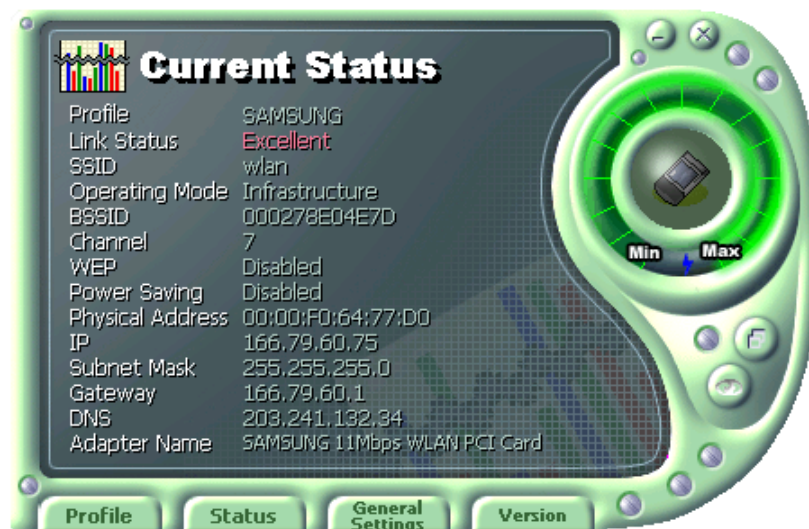
7. Showing you the settings selected so far. Click the Finish button.  
 → Check on this box. It will work on the system after clicking the Finish button.



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.

## 9. 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:** Link Status shows you 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 Modes, it searches a

channel automatically. But when the Network Mode is set to the Ad-hoc, all clients must use the same channel to communicate with each other.

**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. (It is operated by four buttons on the bottom of Utility)

## 9.1 Profile



### 9.1.1 The 'New' button

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

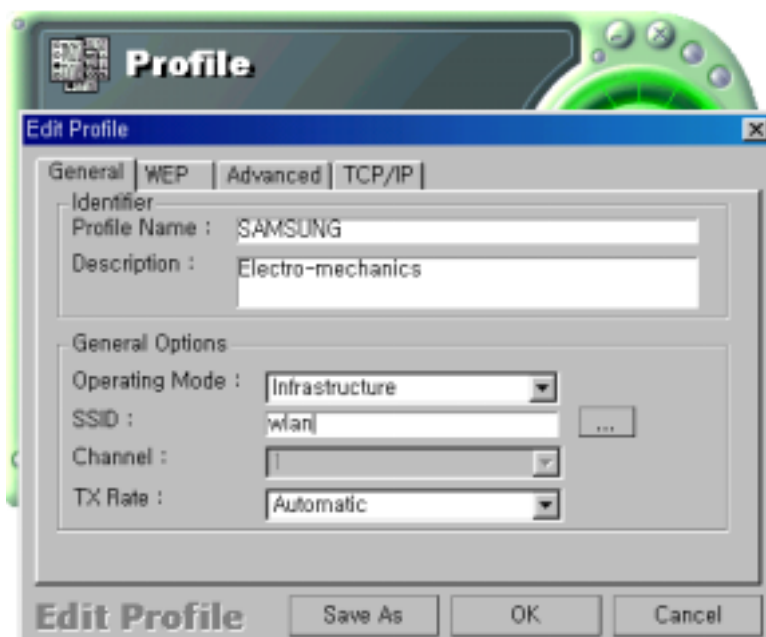
(Refer to 'The Program for setting Magic LAN' in the Chapter 8)

### 9.1.2 The 'Apply' button

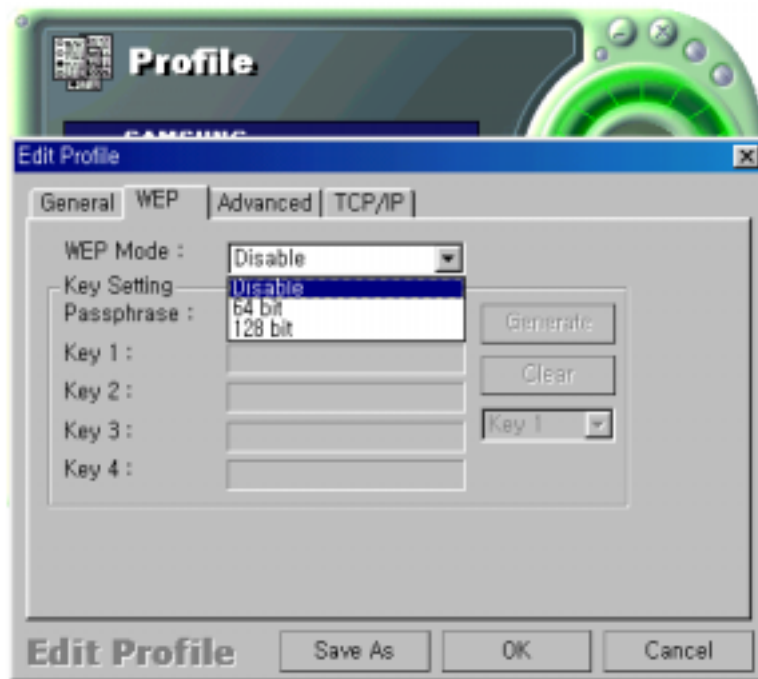
Select and click a Profile to be used, then the saved or modified profile settings will be used for configuring your WLAN card.

### 9.1.3 The 'Edit' button

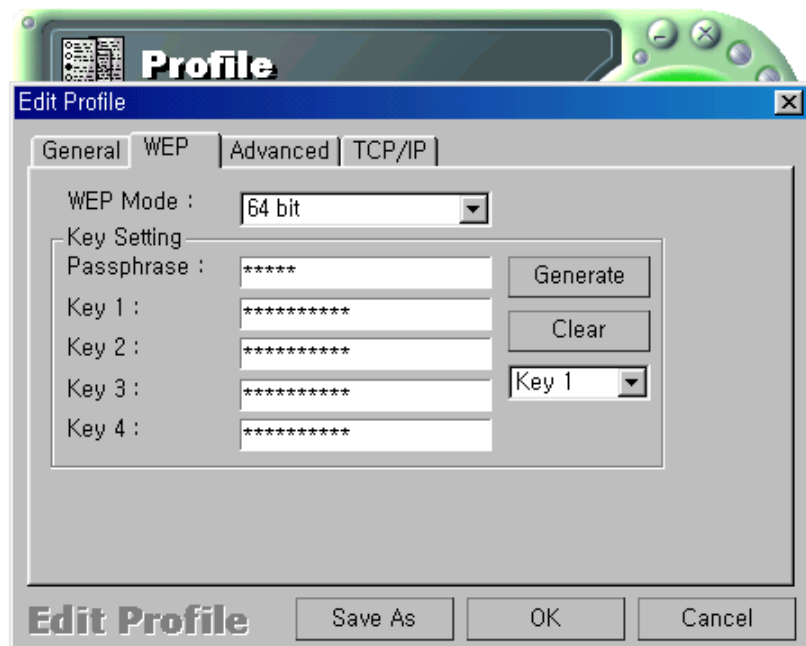
Clicking the Edit button or the Profile name that was created previously, you can modify that Profile.



- Click the WEP button to set the security.

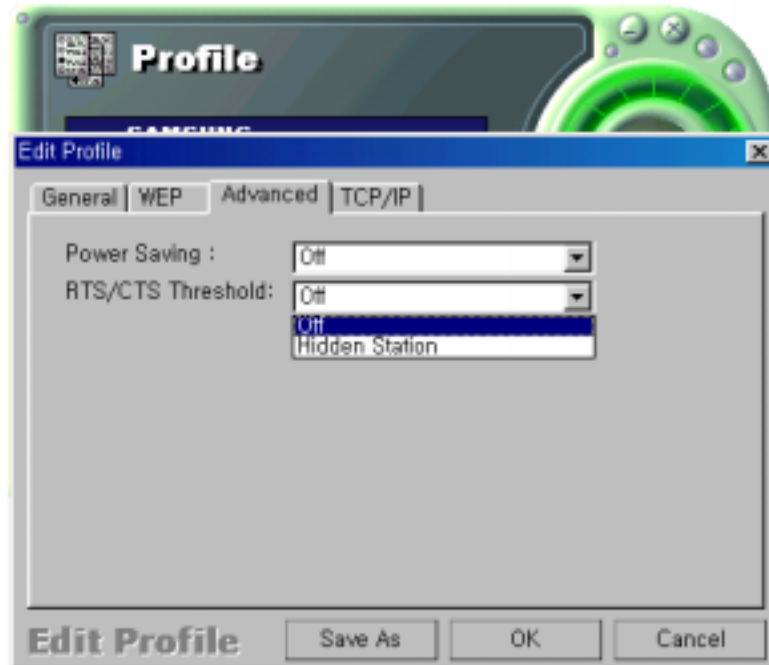


1. First of all, select the '64 bit'.
2. Input a certain value (ex. test1 etc) in the 'Passphrase' and click the Generate button. Then it will make four values of keys automatically.



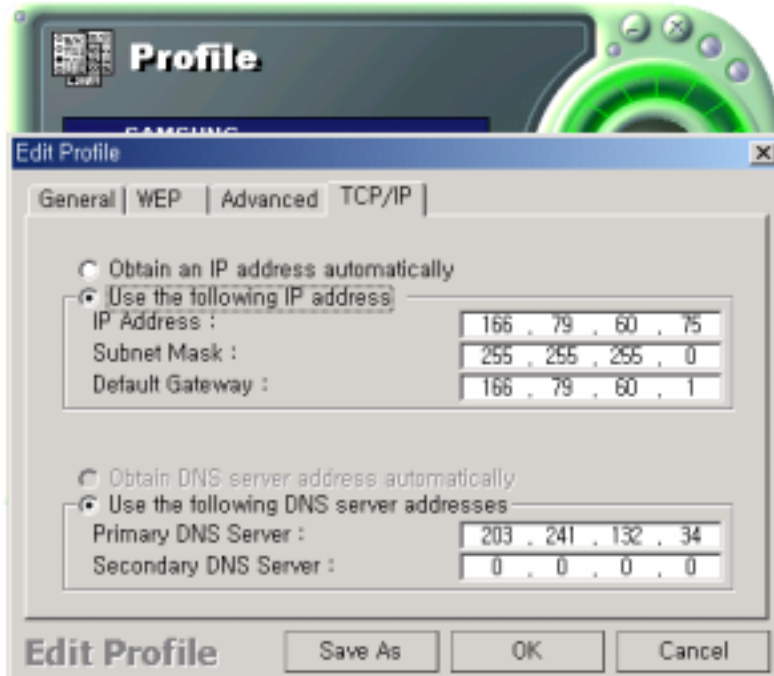
3. Then you set the same value to the WEP of AP. (cf. If you use the WLAN made from other company, you must set the same values in the four keys)

- 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 lowering of efficiency according to 802.11 Specification)
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.



#### 9.1.4 The 'Delete' button

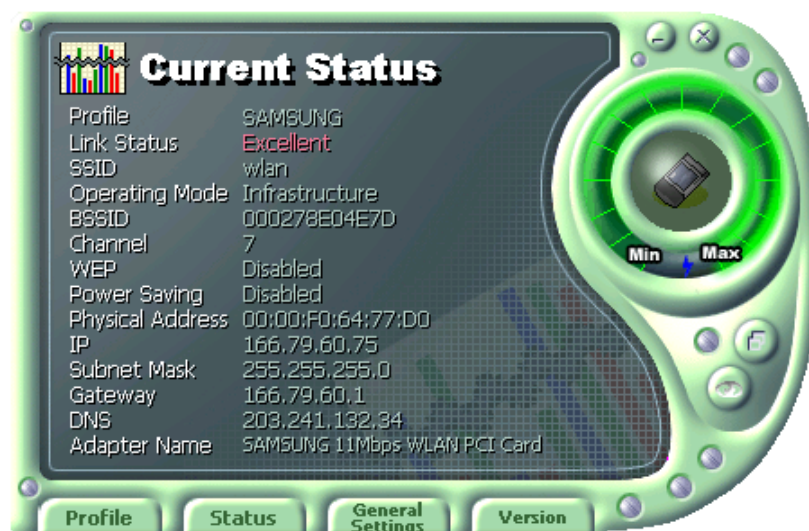
Select a profile and click on Delete button to remove that profile.

## 9.2 Status



### 9.2.1 The 'Current Status' button

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



### 9.2.2 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.).

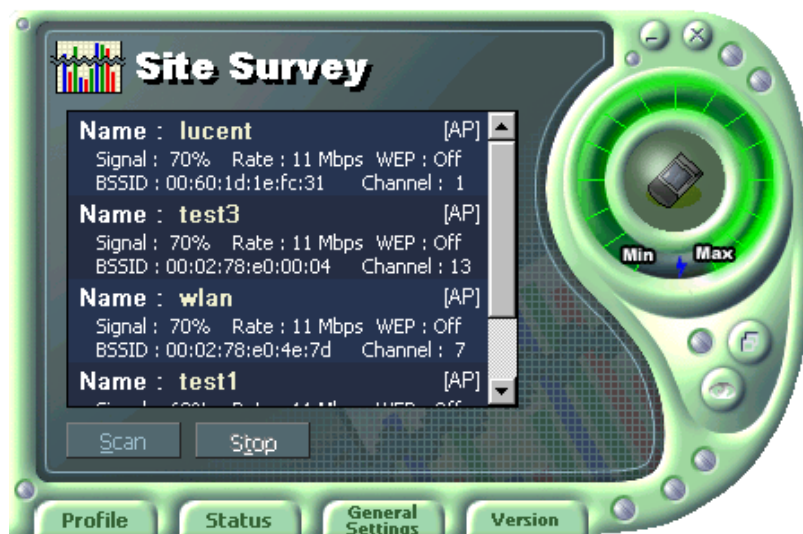
**IP Address:** It shows whether the IP address is from DHCP server or NAT server.

**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.

### 9.2.3 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.

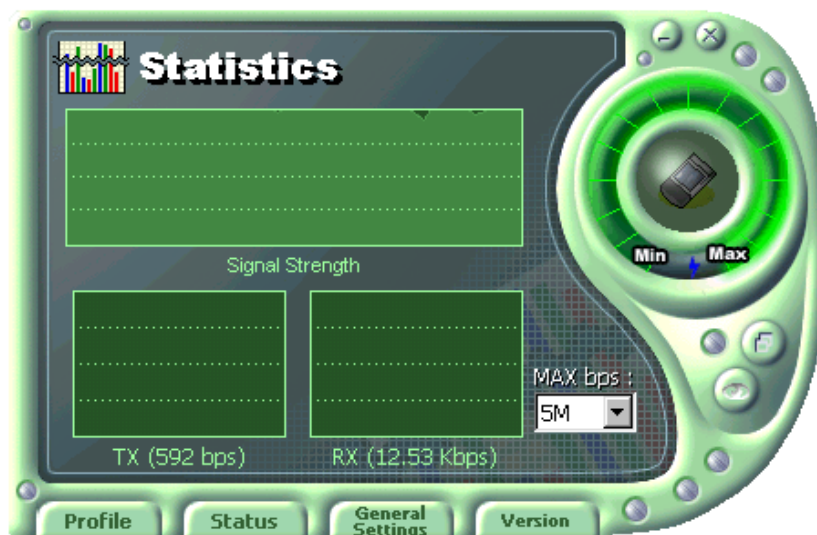
**WEP:** It shows security state with the AP.

**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.

### 9.2.4 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)



## 9.3 General Settings

### 9.3.1 The 'DHCP' button



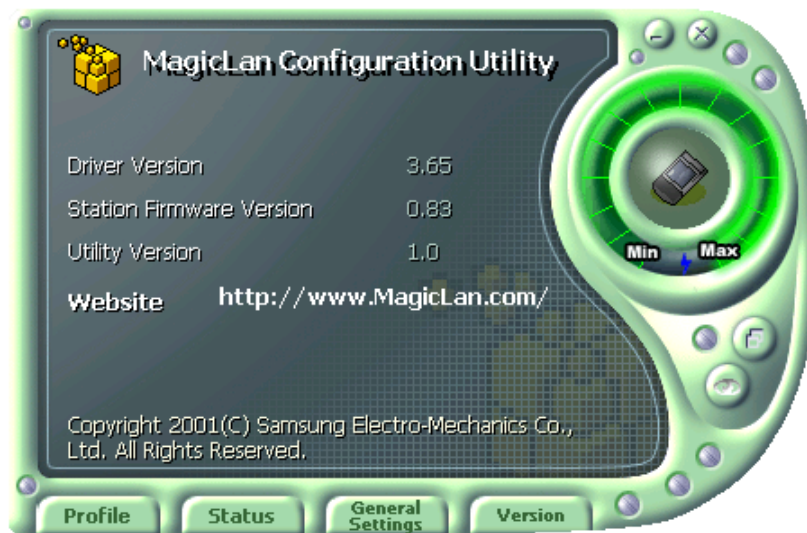
- It works when it is enabled.
- The Get Status button shows the updated information obtained from the DHCP server.
- The Release DHCP button releases the IP Address that was received from the DHCP server.
- The Renew DHCP button is for receiving the IP Address from the DHCP server.

### 9.3.2 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.

## 9.4 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.

## 10. 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. In first part of **Troubleshooting**, we have suggested the users to check the various properties of the card to check the proper installation. In second section, we have listed the various problems that you may encounter during the installation and have also listed the possible solution. Check the first part to guess the probable reason of unsuccessful installation.

### 10.1 Procedure to Check the Various Properties of Card after Installation:

#### For PC Card under Windows 95 (OSR2)/98:

Please check the followings if you encounter some problem while installing the PC card or your PC card is non-functional.

1. Click on the **Control Panel** and then on **PC Card**. Check whether it has **PC Card** in one of the sockets or not. If you find **SAMSUNG 11Mbps WLAN PC Card** in one of the sockets, it means the card is detected properly. If you see the **Yellow** sign of Question-mark (?), the resources are conflicting.
2. Right click on **My Computer** and the select **Properties**. Select the **Device Manager** and click on the **Network Adapter**. You will find **SAMSUNG 11Mbps WLAN PC Card 3V/5V** if it is installed successfully. If you see the **Yellow** sign the resources are conflicting. Click on PC Card and then on PC Card Service, you can see the status of PC Card. If there are yellow sign either on adapter or PC Card, please check the followings.
  - i) Check if your Notebook supports **3.3V** Card.
  - ii) Check if your Notebook has a free **IRQ**. If not, make an IRQ

free by assigning the same IRQ to some devices, for example COM 1, COM 2 can be assigned same IRQ values.

- iii) Check that you have inserted the right card and have installed the proper driver.

#### **For PC Card under Windows 95/98:**

Please check the following if you encounter some problem while installing the PC Card or your PCI card is non-functional.

1. Click on the **Control Panel** and then on **PC Card**. Check whether it has **PCI card** in one of the sockets or not. If you find **SAMSUNG 11Mbps WLAN PCI Card** in one of the sockets, it means the card is detected properly. If you see the **Yellow** sign of Question-mark (?), the resources are conflicting.
2. Right click on **My Computer** and then select **Properties**. Select the **Device Manager** and click on the Network Adapter. You will find **SAMSUNG 11Mbps WLAN PCI Card** if it is installed successfully. If you see the yellow sign the resources are conflicting. Click on **PC Card** Socket and then you can see the **PCI/PC Card**. If there are **Yellow** signs either on **PC Card** or **PCI** card, please check the followings.
  - i) Check that you have installed the proper driver.
  - ii) If the above i) and ii) are already checked and are set properly, uninstall the driver, remove the PCI card and reinstall the driver.

#### **For PC Card under Windows NT:**

***Important: Some notebook computers for Win NT 4.0 operating system that do not support 3V cards will not install your PC Card successfully. You are advised to install the driver for PC Card Controller available from set manufactures or install the **CardWizard** program that will enable the notebook computers supporting 5V cards to support 3V cards also and will install your PC Card successfully.***

Please check the followings if you encounter some problem while installing the PC Card or your PC Card is non-functional.

1. Check the **Windows NT Diagnostics**. You should find out whether there is any conflict in the **resource** allocation or the **I/O address, IRQ** allocations. If you find that the **IRQ,I/O** addresses are already assigned to some other devices, you must change that value. I/O address needs 40h byte length.
2. Event viewer will show you about the events such as PC Card, swld11 (driver name) and the status. If you find the **Red** or **Yellow** sign, there is some problem. Please refer to the **Troubleshooting** at the end of the manual.
3. Click on the **Control panel**. Double click on the **PC Card**. You will see **SAMSUNG 11Mbps WLAN Card**. Double clicking on that will show you the **Card Information**, driver name and the driver file. You must confirm the name of the driver and the driver file as “**swld11**” and “**swld11.sys**”. If you do not find the names as we listed before, there are some problems and the driver is not installed properly. Reinstall the driver.

|                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|
| <p><b>Note:</b> Check the PnP BIOS setup menu and select <b>no</b> in case of the WLAN Card installation.</p> |
|---------------------------------------------------------------------------------------------------------------|

#### **For PCI Card under Windows NT:**

Please check the following if you encounter some problem while installing the PC Card or your PCI card is non-functional.

1. Check the **Windows NT Diagnostics**. You should find out whether there is any conflict in the **Resource** allocation or the **I/O Base** address allocation. If you find that the I/O port address is already assigned to some other devices, you must change that.
2. **Event Viewer** will show you about the events such as **PC Card** type i.e. **PC Card** or **PCI**, driver file **swldpc11** and the **status**. If you find the **Red** or **Yellow** sign, there is some problem.
3. Click on the **Control panel**. Double click on the **PC Card**. You will see

**SAMSUNG 11Mbps WLAN PCI Card.** Double clicking on that will show you the **Card Information**, driver name and the driver file. You must confirm the name of the driver and the driver file as “**swld11**” and “**swld11.sys**”. If you do not find the names as we listed before, there is some problems and the driver is not installed properly. Reinstall the driver.

## 10.2 Probable Symptoms and their Diagnosis:

This section lists the problems you may encounter during the installation of your PCI or PC Card.

### Solving Problems.

| Symptom                                                                                   | Diagnosis                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The system tray wireless monitor is always red.                                           | <p>Make sure that all the clients have the same SSID.</p> <p>Set all clients to the same wireless channel in case of Ad-hoc network mode.</p> <p>Make it sure that you are with in the range of an Access Point (AP). If your PC can't be associated with any AP, it cannot communicate with other clients.</p> |
| If you cannot connect to one of the clients in the network.                               | <p>Make it sure that all clients are up and are running with a blue taskbar icon.</p> <p>Make it sure that the client that you want to communicate with is within the range of an AP.</p> <p>Make sure that your TCP/IP is set properly and correctly.</p>                                                      |
| The NT event log lists the error: “Server Service terminated. Not enough Server Storage.” | Reinstall the Windows NT service pack.                                                                                                                                                                                                                                                                          |

|                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>In Windows NT, there is no wireless monitor icon in the taskbar or the Samsung Adapter does not appear in the PC Card Control Panel applet.</p> | <p>Make sure the PC Card device is started as <b>Automatic</b> in the device applet of the Control Panel.</p> <p>Double click on the PC Card icon in Control Panel. Click on Samsung Adapter and then on the properties button. It should say the driver started correctly.</p> <p>Make sure the drivers were installed correctly. If all else fails, uninstall drivers and software through Add/Remove Program, remove the WLAN Card and reinstall the drivers following the manual.</p> |
| <p>You cannot connect to some computers in the Network Neighborhood.</p>                                                                           | <p>Make sure a resource is shared among all computers connected to the same network.</p> <p>Click on OK on the MS Networking login box and OK on the following domain error.</p> <p>If you cannot share a device in NT, you may need to reinstall the NT service pack.</p> <p>You may wait for several minutes for all of the PCs to appear.</p>                                                                                                                                          |
| <p>In case of the Windows NT, if there is no sound after you insert the Wireless LAN card.</p>                                                     | <p>You must check the resources of the sound card driver. If the resources are conflicting with Samsung Wireless (PCI/PC Card) LAN Card driver, you must change the resources.</p>                                                                                                                                                                                                                                                                                                        |