SAMSUNG ELECTRO-MECHANICS

SAMSUNG

SWL-2610U

User Manual (Rev. 0.6)

Table of Contents

Notice

WARNING

USA (FCC):

This product is intended for indoor environment only.
We declare that SWL-2610U USB adapter is limited in CH1~CH11 by specified firmware controlled in USA.

IMPORTANT NOTE: FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
The transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
The device has been SAR evaluated and authorized for use in laptop (notebook) only.

Canada (IC):

To prevent radio interference to the licensed service, this device must be operated indoors only and should be kept away from windows to provide maximum shielding.

Important Safety Information

Read these simple guidelines. Breaking the rules may be dangerous or illegal. SAMSUNG will not be responsible for any damages caused by breaking the rules.

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

Specifications

Model Name	**SWL-2610U**
System Interface	USB Spec 2.0 Compliant
Frequency Band	2.400 ~ 2.4835GHz(Subject to local regulations)
Operating Voltage	5V±5% from Host PC
Current Consumption	At 54Mbps, Continuous Tx Mode : Typical 420mA Continuous Rx mode : Typical 415mA
	At 11Mbps, Continuous Tx Mode : Typical 380mA Continuous Rx mode : Typical 320mA
Data Rate & Modulation	DSSS/CCK : 1Mbps(DBPSK)/ 2Mbps(DQPSK)/ 5.5, 11Mbps(CCK) OFDM : 6, 9Mbps(BPSK)/ 12, 18Mbps(QPSK)/24, 36Mbps(16-QAM)/ 48, 54Mbps(64-QAM)
Standards	IEEE 802.11b & 11g compliant
Output Power	At 11Mbps, typical 18dBm for 22MHz Bandwidth At OFDM, typical 13 ~ 17dBm for 22MHz Bandwidth
Receiving Sensitivity	Typical -86dBm at 11Mbps Typical -70dBm at 54Mbps
Security	40-bit/128-bit WEP Encryption, TKIP, AES
Antenna	Chip Antenna (No Diversity)
Available Drivers	Microsoft Windows 98SE/ME/2000/XP
Media Access Protocol	CSMA/CA
Temperature Range	Operating: 0~45℃(32~113℉) Storage : -25~70℃(-13℉~158℉)
Humidity	10% to 90% Non-condensing
Operating Range (1024 bytes file transfer)	In Open Space, 100m at 54Mbps, 300m(160ft) at 1Mbps
Dimensions	114mm×52mm×15mm & 1.2M Cable with USB A-type Connector
Certifications **&** **Regulatory Approvals**	Wi-Fi certified, Korea, USA(FCC), Canada(IC), Japan(Telec), R&TTE Approval(CE) and 20 Countries Notifications

1. Introduction

Thank you for your purchase of SAMSUNG Wireless LAN. Installing this cards allow the computer to join a wireless network based on the IEEE 802.11b/g (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.

1.1 Technical Background

• What is IEEE 802.11?

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

• IEEE 802.11 Physical (PHY) Layer

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

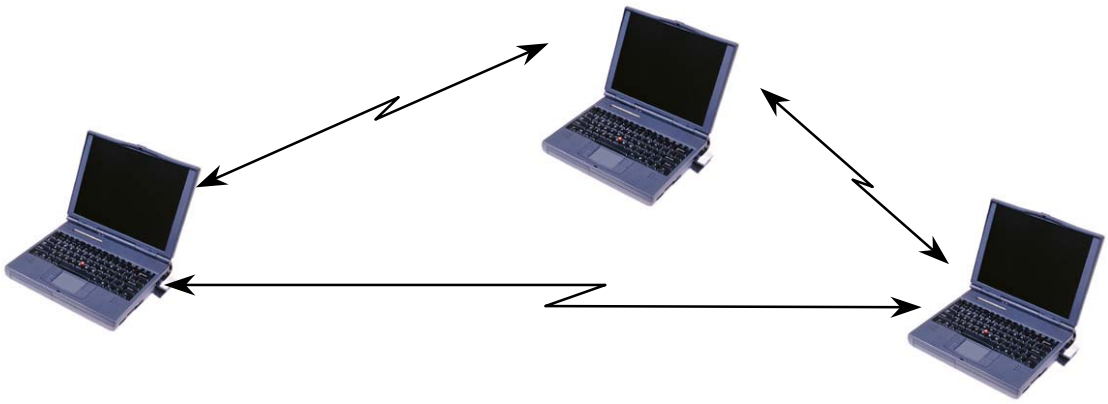
• IEEE 802.11 Media Access Control (MAC) Layer

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

• Ad-hoc Network

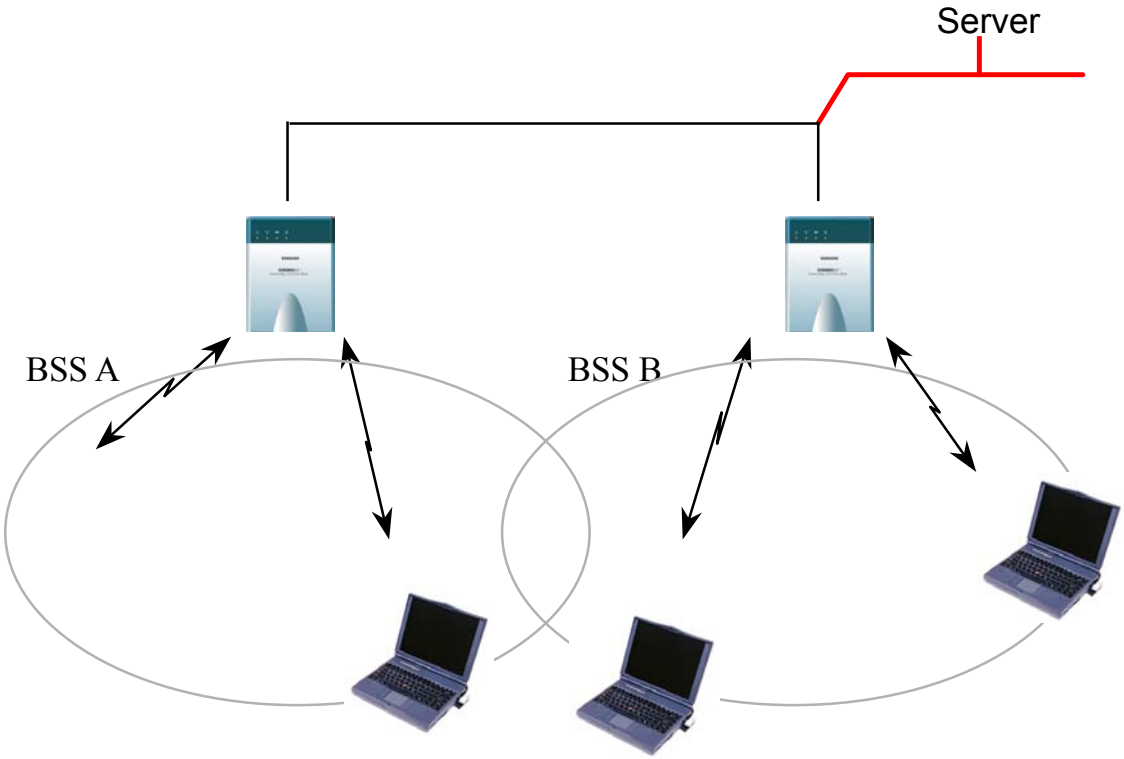
Ad-hoc Network is an architecture that supports mutual communication among wireless clients only. Since Ad-hoc Network does not support access to wired networks, it does not need an Access Point to be a part of the network. You can use the network immediately after setting up the operating mode by installing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

driver.



• **Infrastructure Network**

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



• **Roaming**

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

• Scanning, Beaconing & ESS ID

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

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

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

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

1.2 Overview

• The SWL-2610U(USB Adapter) are wireless LAN adapter that provide wireless connection between computers.

• The SWL-2610U 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 SWL-2610U 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 SWL-2610U both for Laptop PC and Desktop PC is small and portable as a roaming function is provided for users who need network services while maintaining mobility.

• The SWL-2610U supports various network software. The network driver is provided to support network software such as, Windows 98SE,ME, Windows 2000, Windows XP.

• To get further information of Samsung Wireless LAN Card, please visit our website at http://www.magiclan.com to download the latest driver.

2. Before the Installation

The following section will assist you in installing your Wireless LAN Card successfully. You will install the Wireless LAN Card and software (driver & utility), and finally set the network properties to accommodate resource sharing and select the type of wireless network that you wish to install. The Wireless LAN Card 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-2610U(USB Adapter)
- Installation CD

Quick Manual

2.2 System Requirement

- Operating System: Windows 98SE, Windows ME, Windows 2000, Windows XP
- Laptop Computer with a CD-ROM driver.
- Laptop Computer that have a USB slot and an available USB interface.

2.3 Preparations For Installation

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

◇ You can just install SWL-2610U Adapters to use Ad-hoc network.

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

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

3. Installation Procedure

3.1 Installation Procedure of Windows 98SE/ME

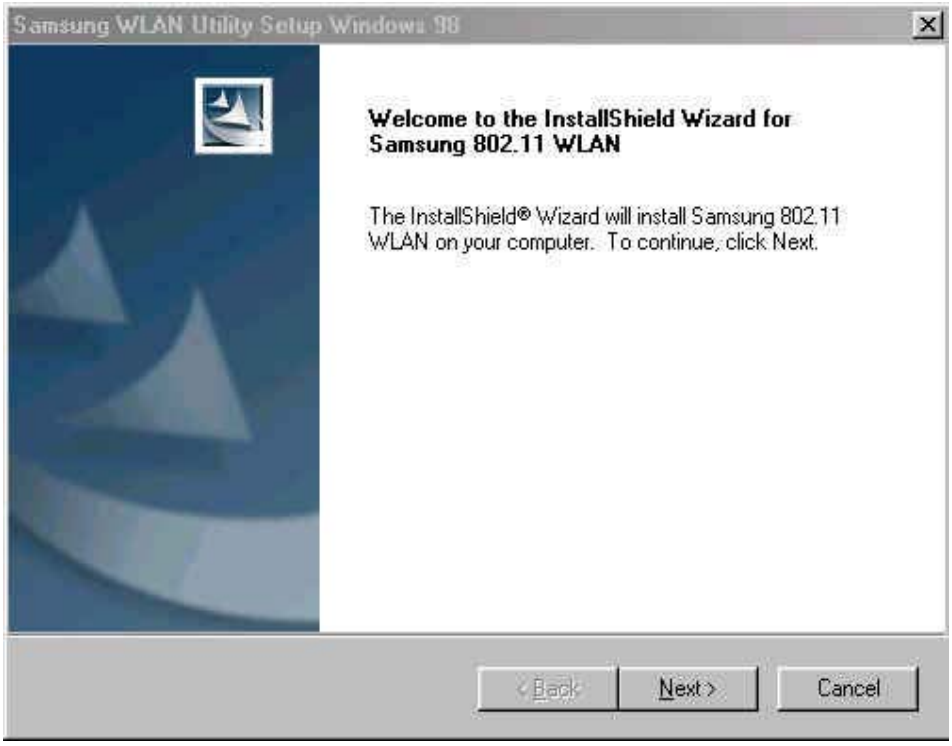
Please follow the following steps one by one to install the USB Adapter successfully.

• **Utility Setup**

If you insert the setup CD into the CD-ROM drive, you can find the driver and utility folder.

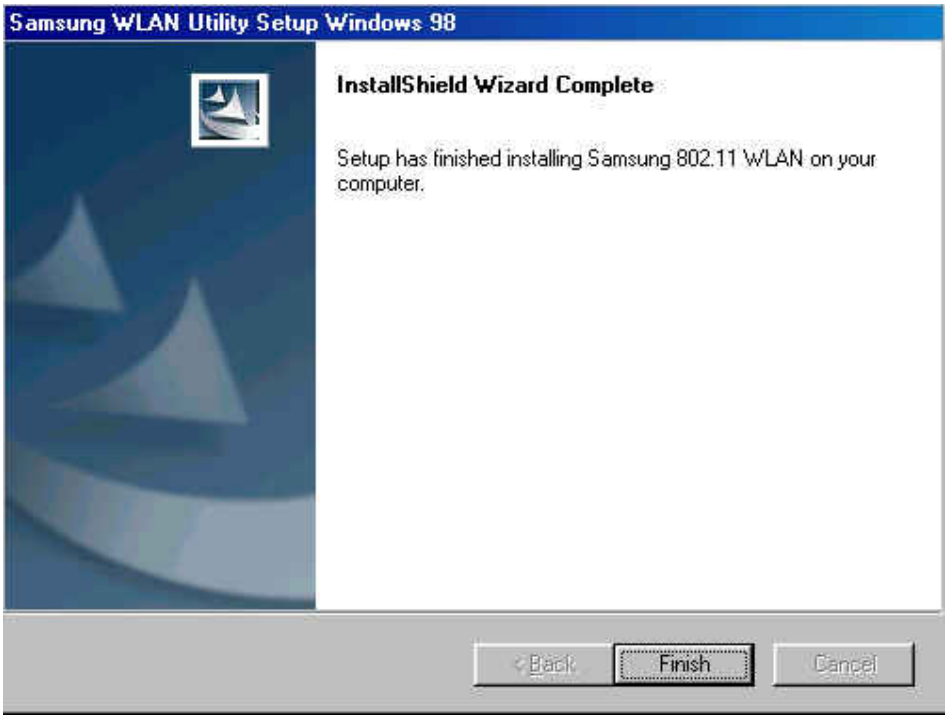
Move to the utility folder, and then click on setup.exe .

You can see the pictures of **Samsung WLAN Utility Setup**.



Press the Next button.

Finally, You can see the following picture. Press the Finish button.



• **Driver Setup**

Insert the USB Adapter into the USB slot of your computer.

Add New Hardware Wizard appears and system looks for “USB Device”.

Press NEXT button

Check **Search for the best driver for your device(Recommended)**

Press NEXT button.

Insert the Setup CD into the CD-ROM drive.

Mark the **Specify a location** tap and type “E:\Driver” in the below tab.

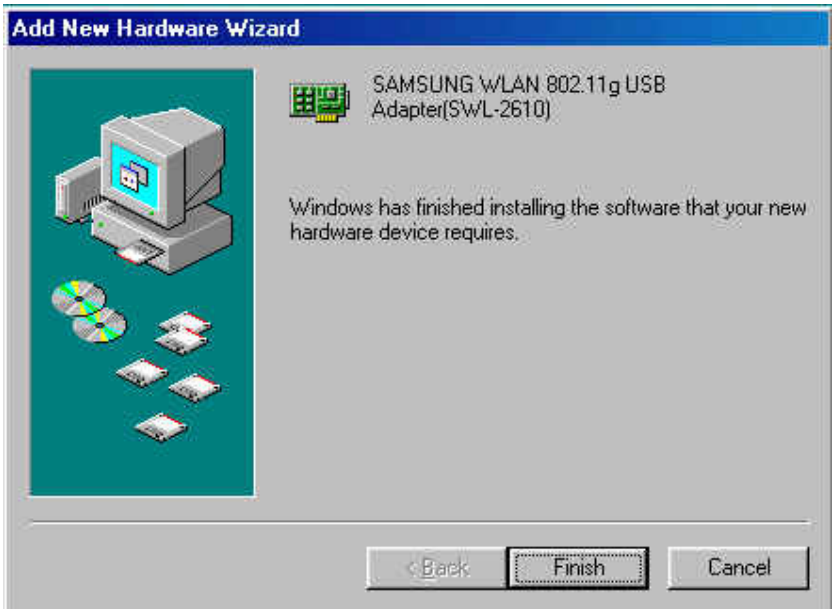
(Where E is the CD-drive of your PC.)

Press NEXT button.

You can find the **SAMSUNG WLAN 802.11g USB Adapter(SWl-2610)** and now it is ready to install the software.

Press NEXT button.

System will copy driver files. System may require Windows 98 CD.

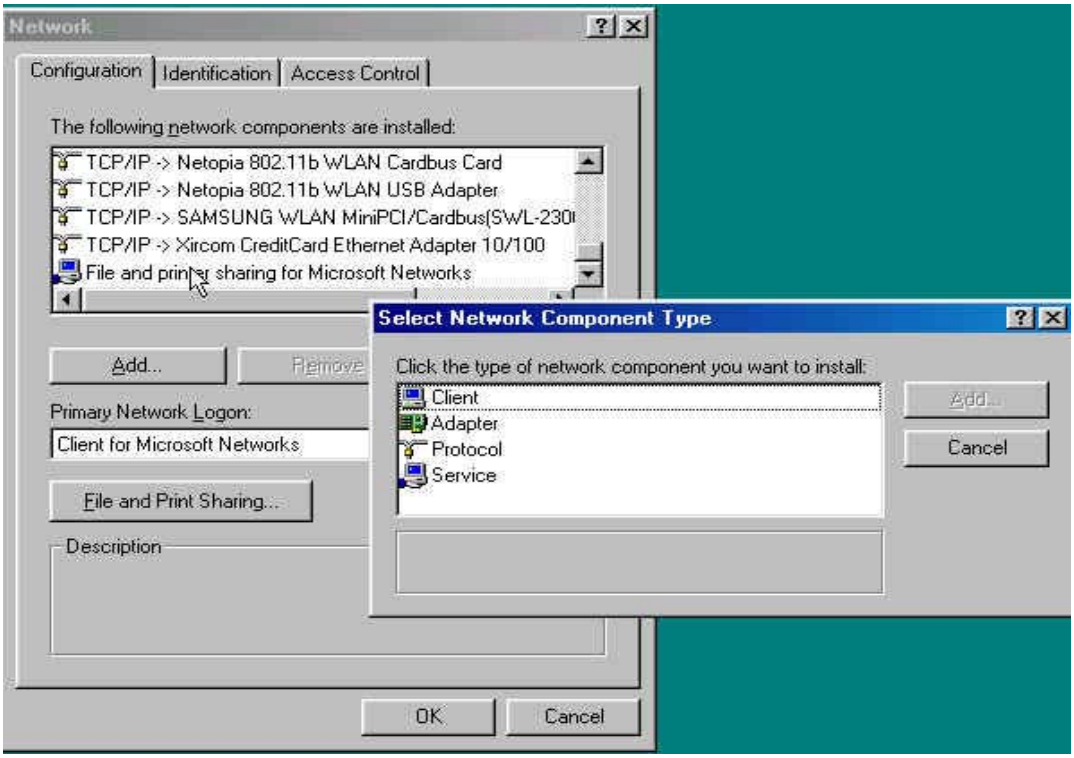


Press Finish button.

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

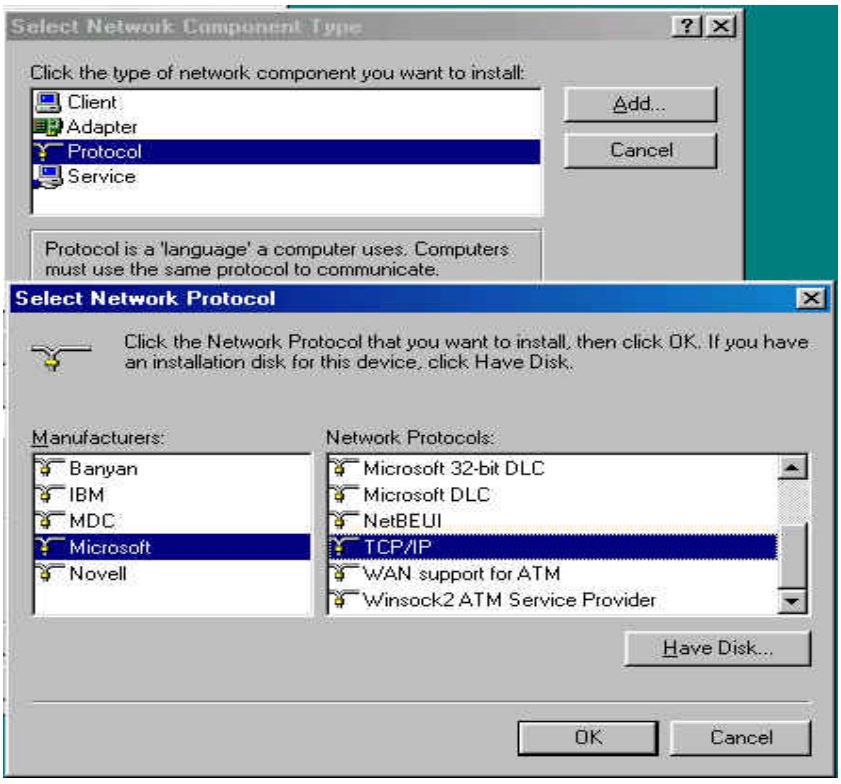
If screen message “Do you want to restart your computer now?” will pop up,
Select No.

Right click on the Network Neighborhood using the mouse. Select Properties from the pop up menu. The network box appears and you see three main tabs:
Configuration, Identification and Access Control.

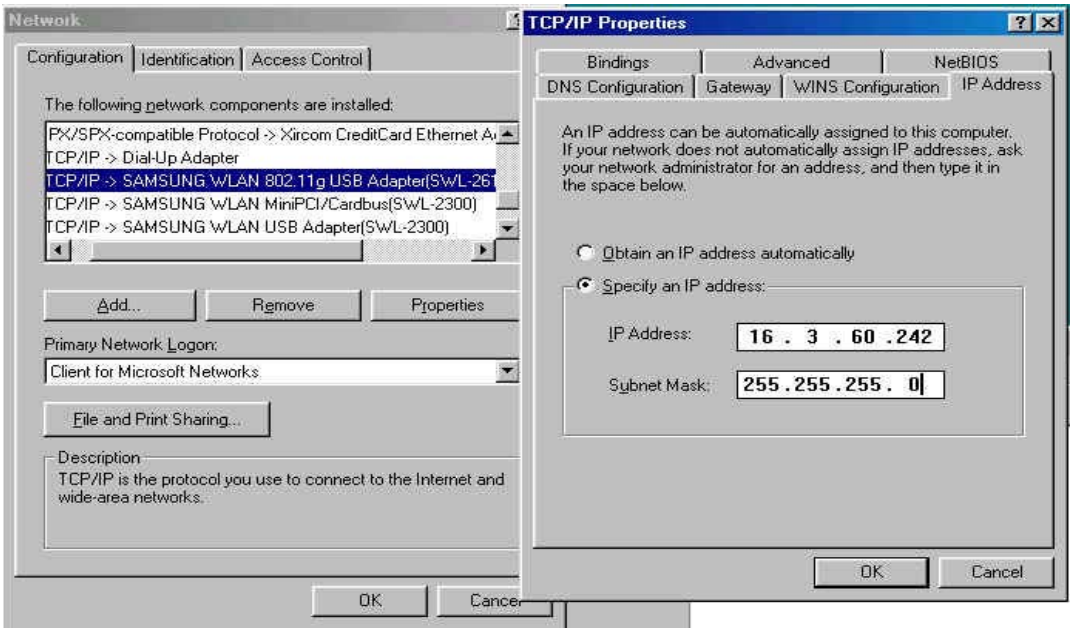


Click the **Configuration** tab and then click the Add button. **Select Network Component Type** box appears. Click on the Protocol then click the Add button

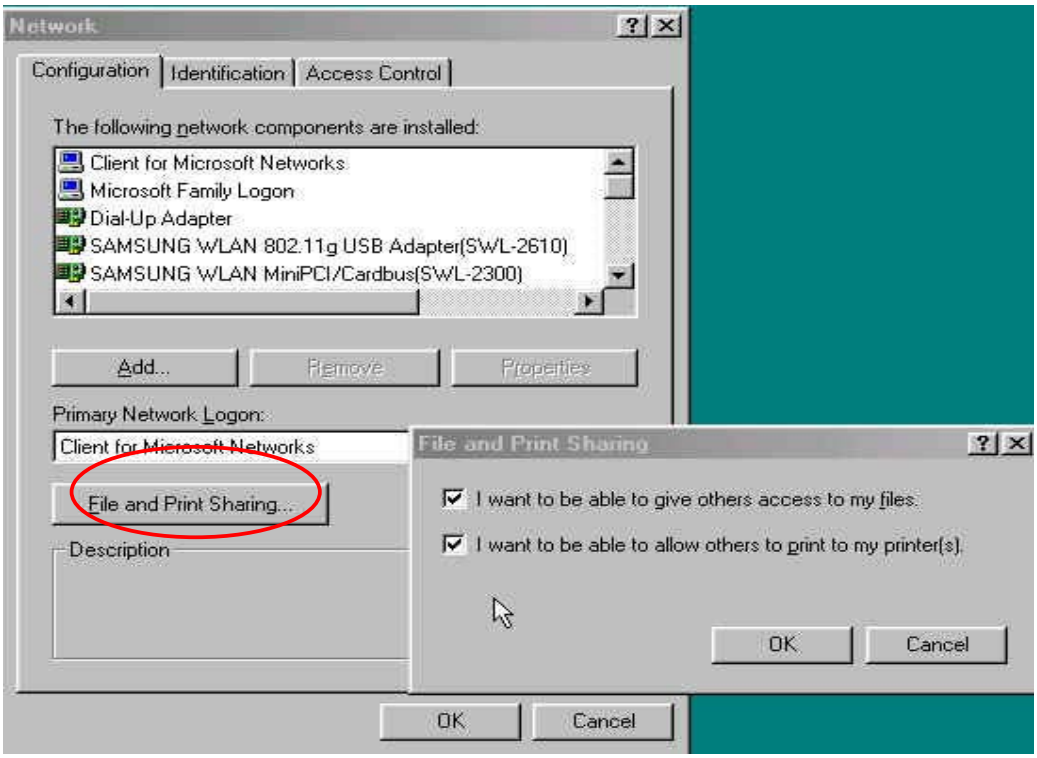
Select Network Protocols box appears. From the list of **Manufactures**, click on Microsoft. From the list of **Network Protocols** list, select TCP/IP then click OK.
(If you want, you can install the IPX/SPX, NetBEUI protocol)



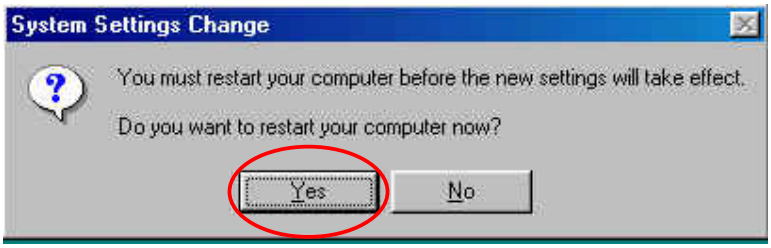
Select the **TCP/IP-> SAMSUNG WLAN 802.11g USB Adapter(SWL2610)** for setting the IP address value, Gateway value and DNS value of your computer. After setting these parameters appropriately, click OK to return to Network Component Type.



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



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



3.2 Installation Procedure of Windows 2000

Please follow the following steps one by one to install the USB Adapter successfully.

• **Utility Setup**

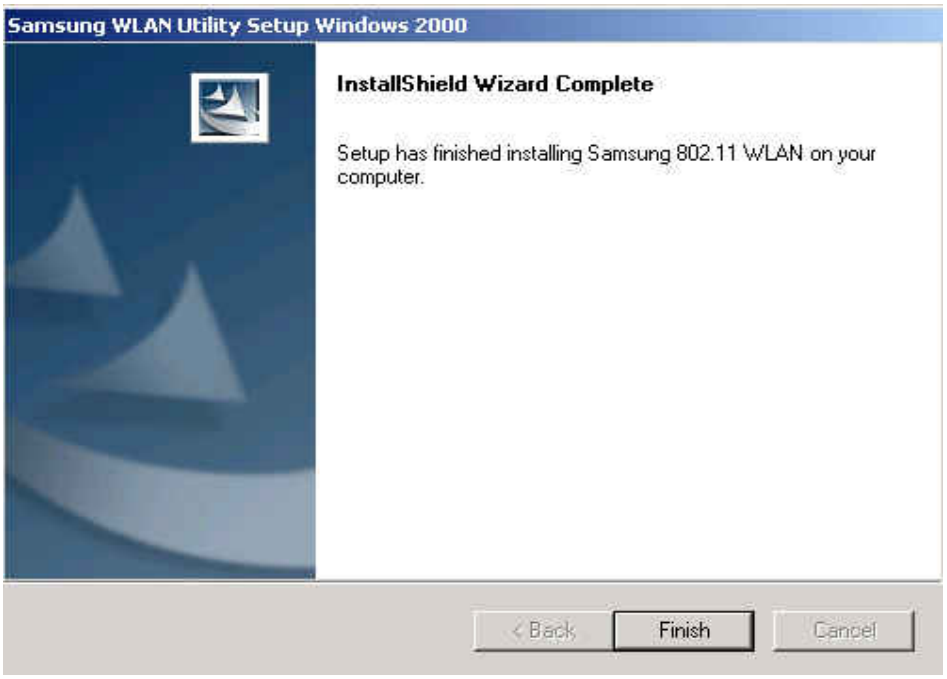
If you insert the setup CD into the CD-ROM drive, you can find the driver and utility folder.

Move to the utility folder, and then click on setup.exe .

You can see the pictures of Samsung 802.11 WLAN Card Utility Install.

Press the Next button.

Finally, You can the following picture. Press the Finish button.



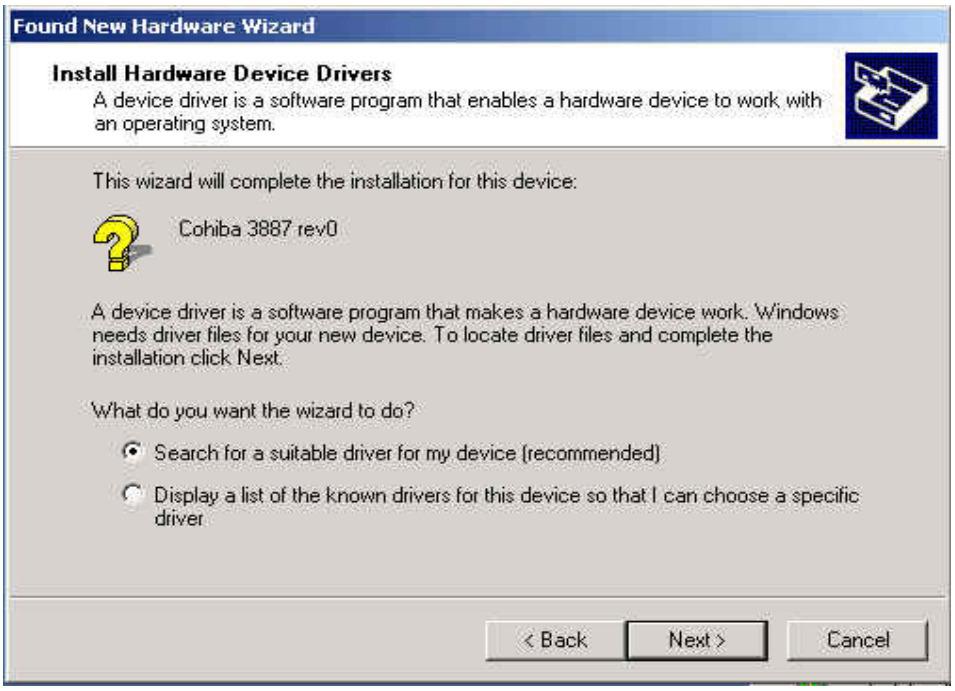
• **Driver Setup**

Insert the USB Adapter into the USB slot of your computer.

Found New Hardware Wizard appears.

Press NEXT button

Check **Search for a suitable driver for my device(Recommended)**



Press NEXT button

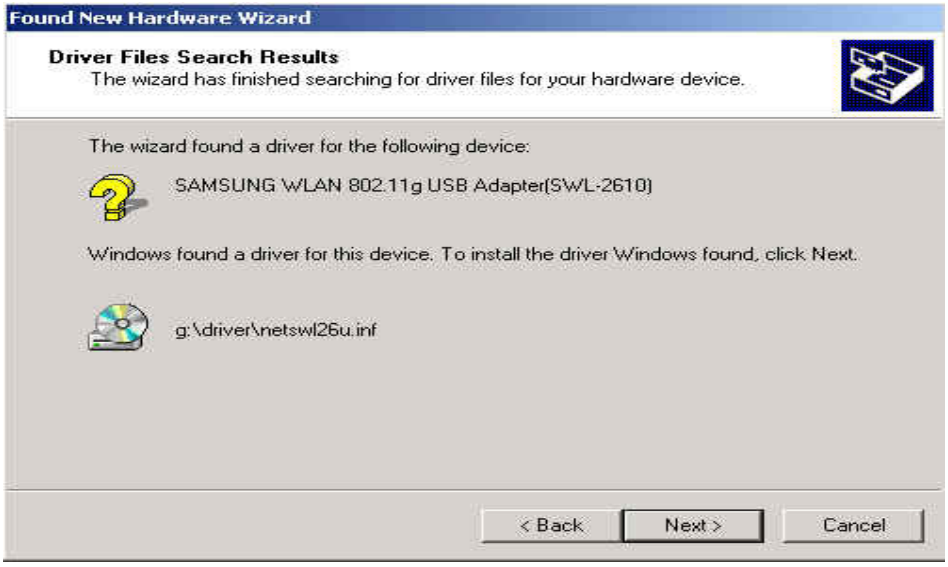
Insert the Setup CD into the CD-ROM drive.

Mark the **Specify a location** tap and Press NEXT button

Type “G:\Driver” in the” **Copy manufacturer’s files from**”
(Where G is the CD-drive of your PC.)

Press OK button.

You can find the **SAMSUNG WLAN 802.11g USB Adapter(SWl-2610)** and now it is ready to install the software.



Press NEXT button.

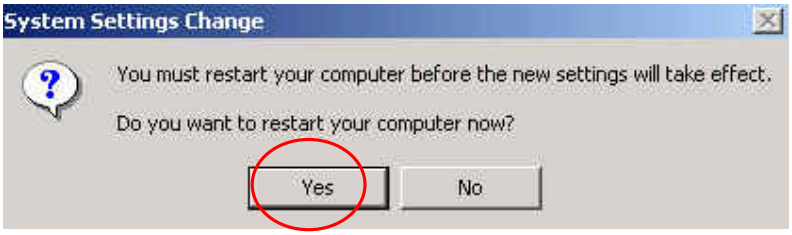
When following window is popped, Press Yes button.

System will copy driver files.

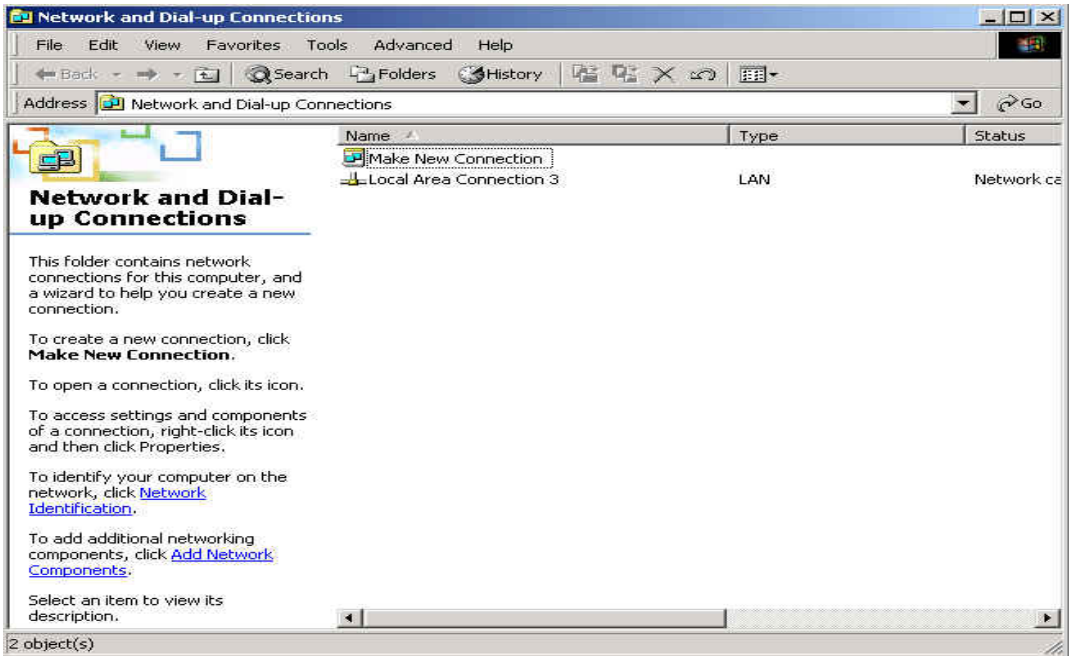
Press Finish button.

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

If screen message "**Do you want to restart your computer now?**" pop up, Select Yes.



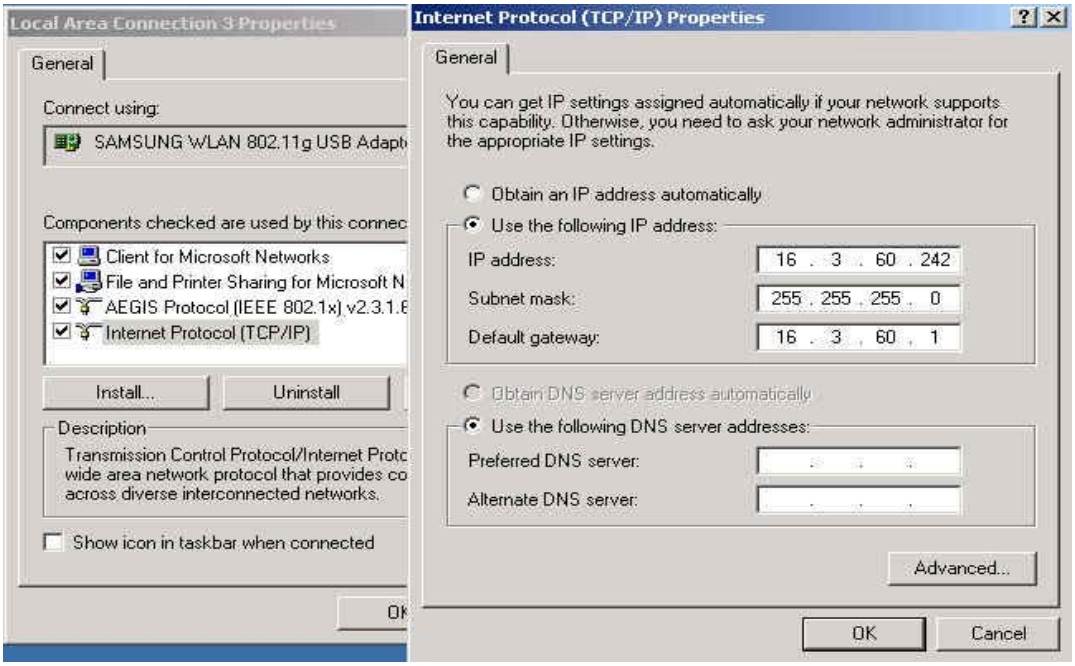
After Rebooting, Right click the My Network Places using the mouse and click Properties.



Double click the **Local Area Connection**

Choose the **Internet Protocol(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.



3.3 Installation Procedure of Windows XP

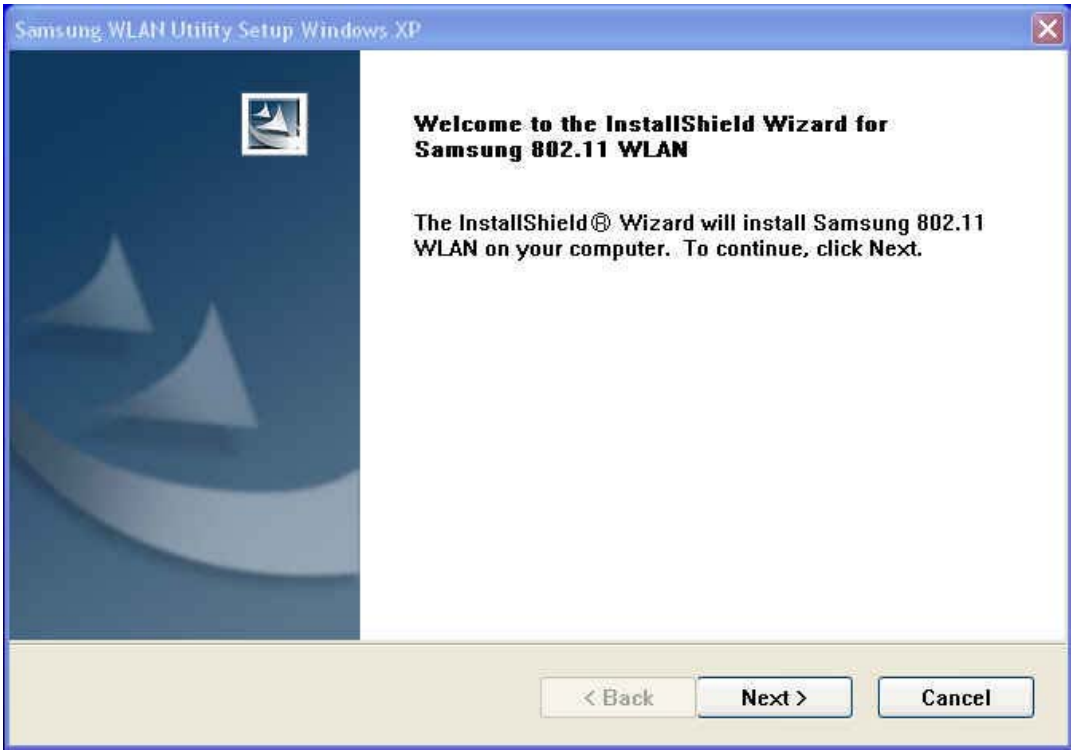
Please follow the following steps one by one to install the USB Adapter successfully.

• **Utility Setup**

If you insert the setup CD into the CD-ROM drive, you can find the driver and utility folder.

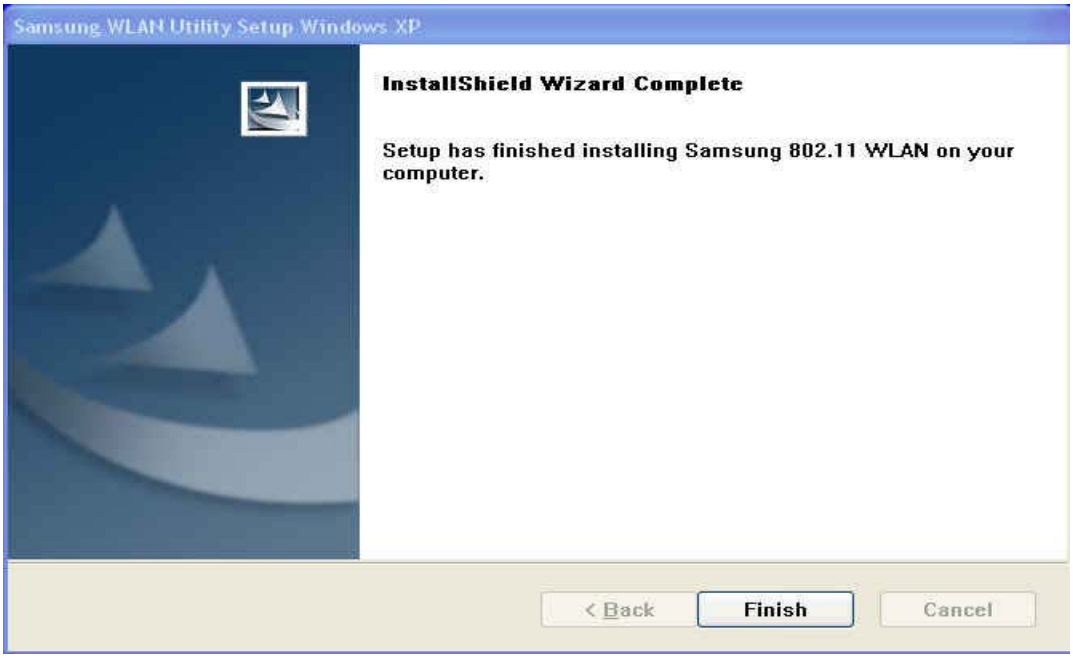
Move to the utility folder, and then click on setup.exe .

You can see the pictures of **Samsung WLAN Utility Setup Windows XP**.



Press the Next button.

Finally, You can the following picture. Press the Finish button.



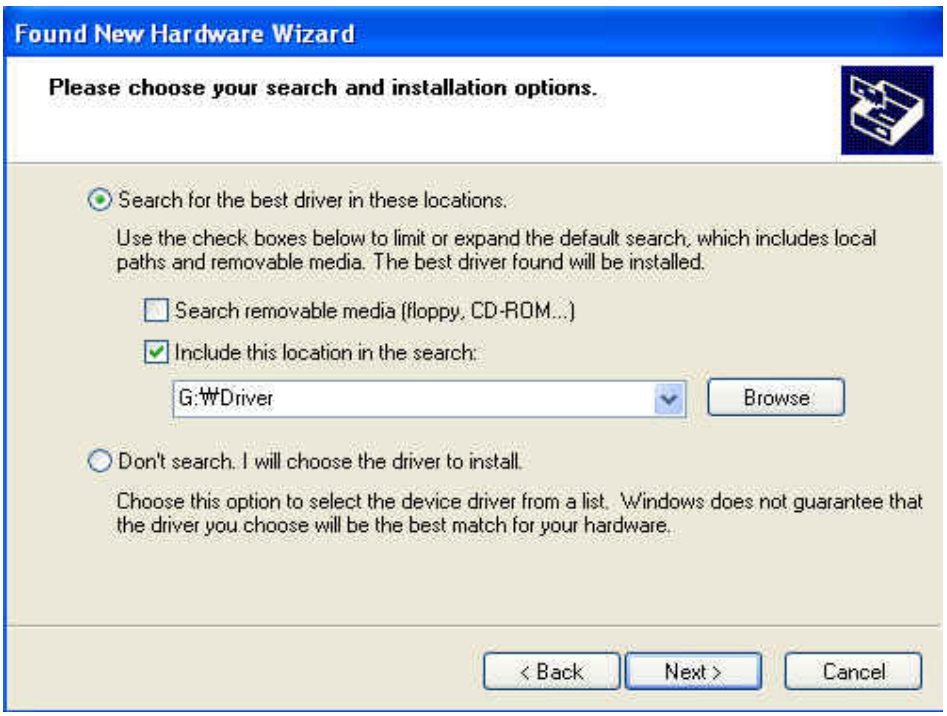
• **Driver Setup**

Insert the USB Adapter into the USB slot of your computer.

When **Found New Hardware Wizard** window appears, check “Install from a list or specific location(Advanced)” and then press NEXT button

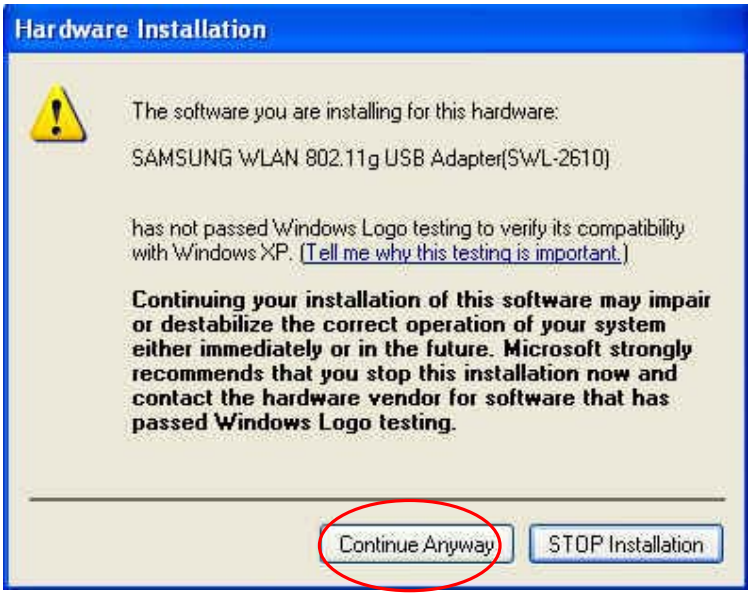
Insert the Setup CD into the CD-ROM drive.

Check “Include this location in the search” and type “G:\Driver” in the Editor Box. (Where G is the CD-drive of your PC.)



Press NEXT button

When following window is popped, Click **Continue Anyway** button

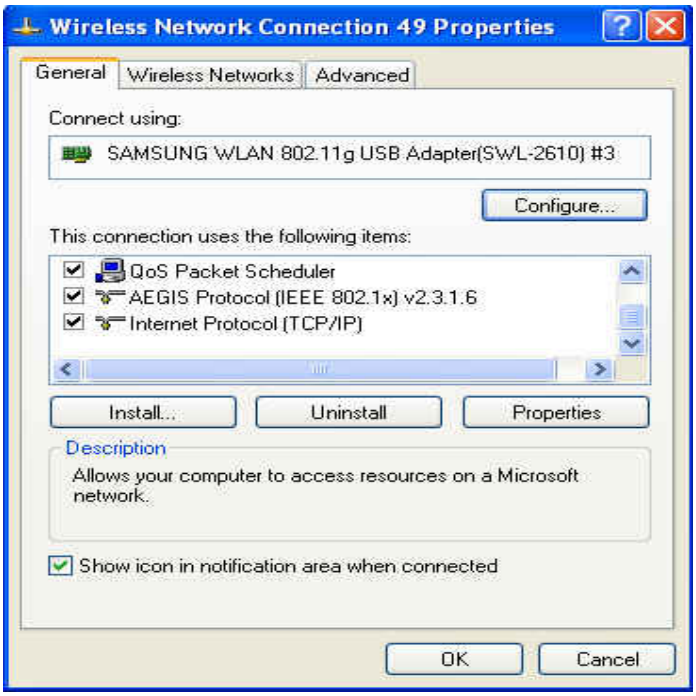


Now, driver files are fully installed to start the Wireless LAN Card operation..

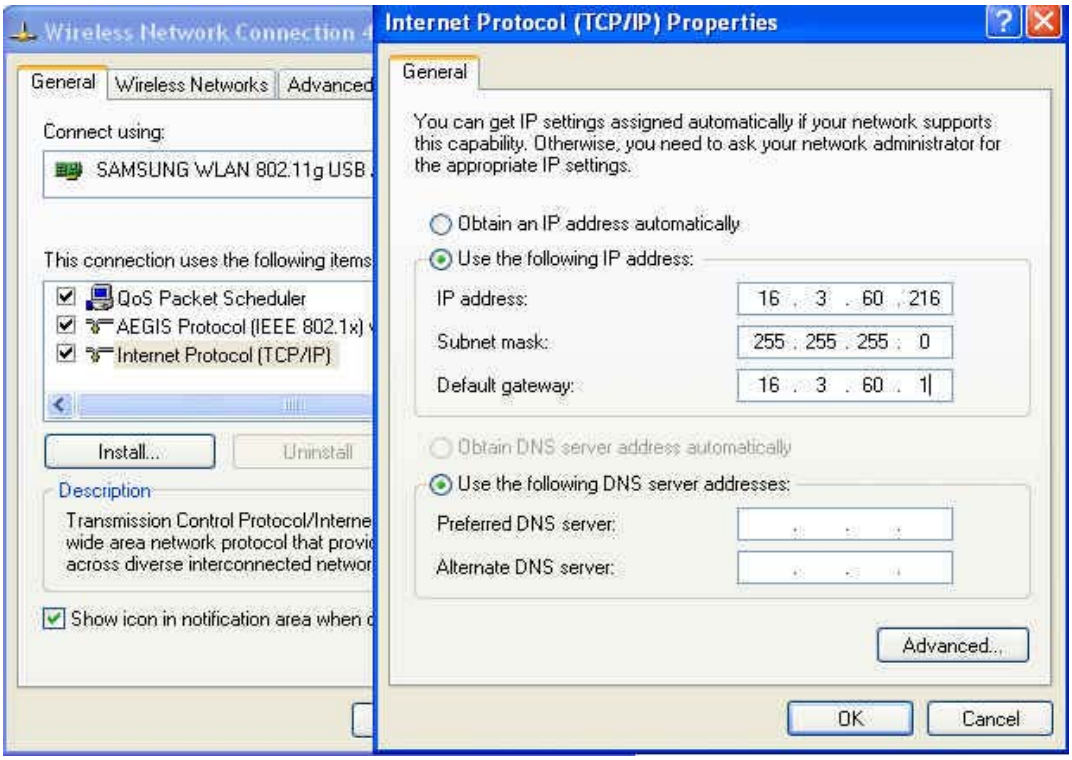
Press Finish button.

Double click the Network Connection icon  in the task bar, and then click Advanced button

Choose the General tab in the **Wireless Network Connection Properties** window.



Click the **Internet Protocol(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.



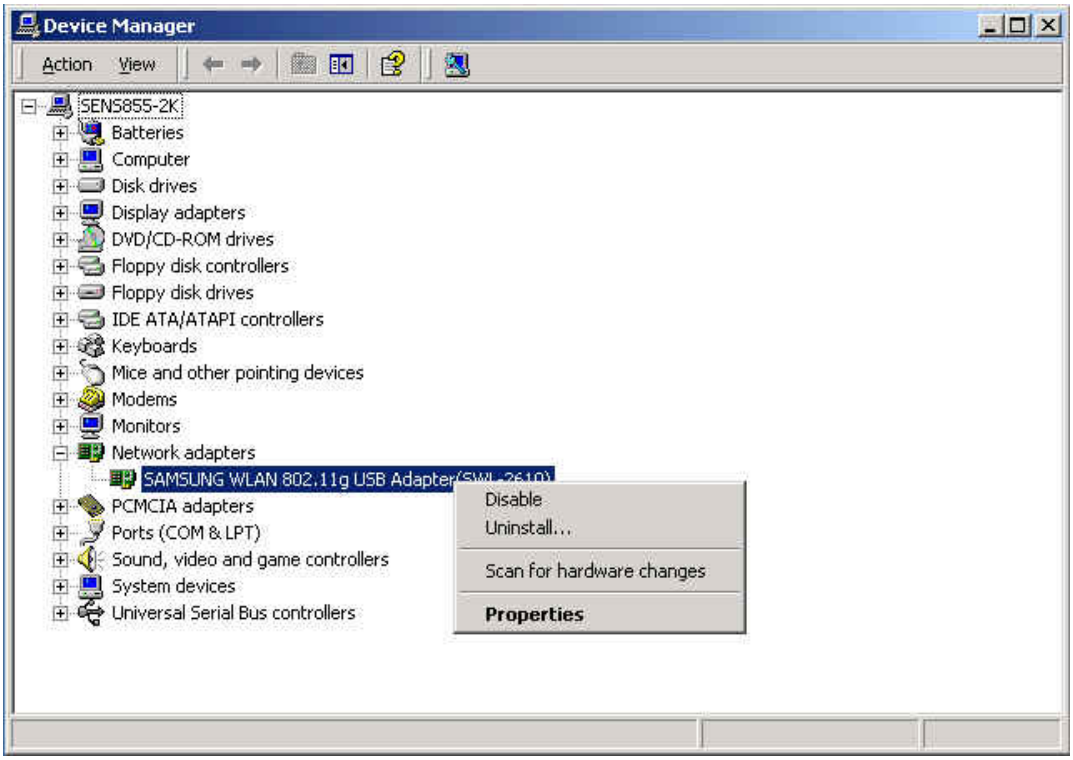
You should reboot the computer to use utility properly in the NT-Based OS(Windows 2000, XP)

3.4 Verifying a Successful Installation

To confirm that the wireless LAN card is properly installed, please follow the procedure below

Right click the My Computer icon and choose Properties.
Choose the Hardware Tab in the System Properties dialog box, and click Device Manager.
In the opened window, expand **Network adapter** and find the **SAMSUNG WLAN 802.11g USB Adapter(SWL-2610)**.
If you find the Yellow sign on the adapter, it shows the installation is not successful.
In this case, right click the adapter and choose the **Uninstall** to remove.
(See the Removal of Wireless LAN in section 3.5)

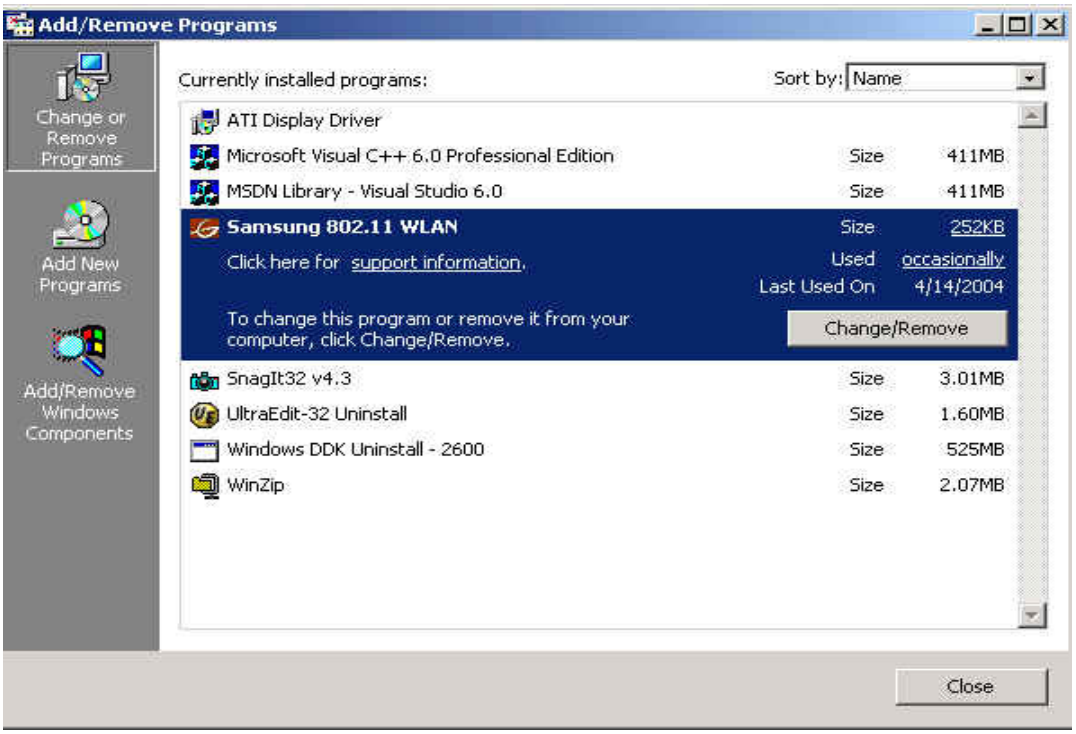
The following picture indicates a successful installation.



3.5 Removal of Wireless LAN Card

Right click the My Computer icon and choose Properties from the opened menu.
In the System Properties dialog box, click the Hardware tab, and then choose the Device Manager button. In the opened window, expand Network adapters
After finding **SAMSUNG WLAN 802.11g USB Adapter(SWL-2610),** right click and choose **Uninstall** from opened menu.
In the **Confirm Device Removal** message box, click OK to proceed with the removal

Click **Start** on the task bar and choose Control Panel from the Settings menu.
Select **Add/Remove Programs** to open the dialog box
Click the Change/Remove button under **Samsung 802.11 WLAN**.



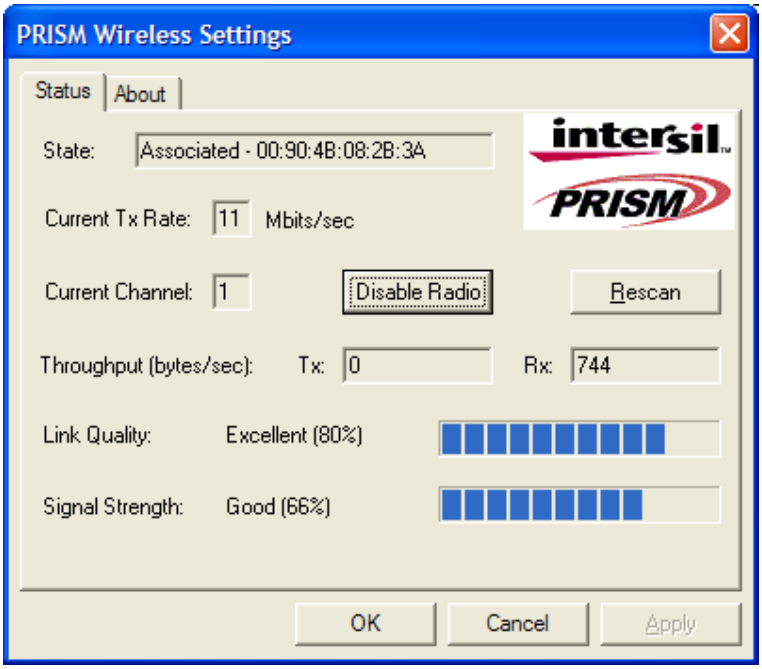
4. PRISM Program Controls

You can launch the Configuration Utility by clicking on the Configuration Utility icon and selecting one of the last four commands in the pop-up menu. If the Configuration Utility icon is not displayed in the System Tray, you can restart the Configuration Utility from the Start Menu by selecting **Programs** and **PRISM Wireless LAN Configuration**.

The Configuration Utility consists of a window with a number of tabs. The following sections describe the options displayed by these tabs in detail.

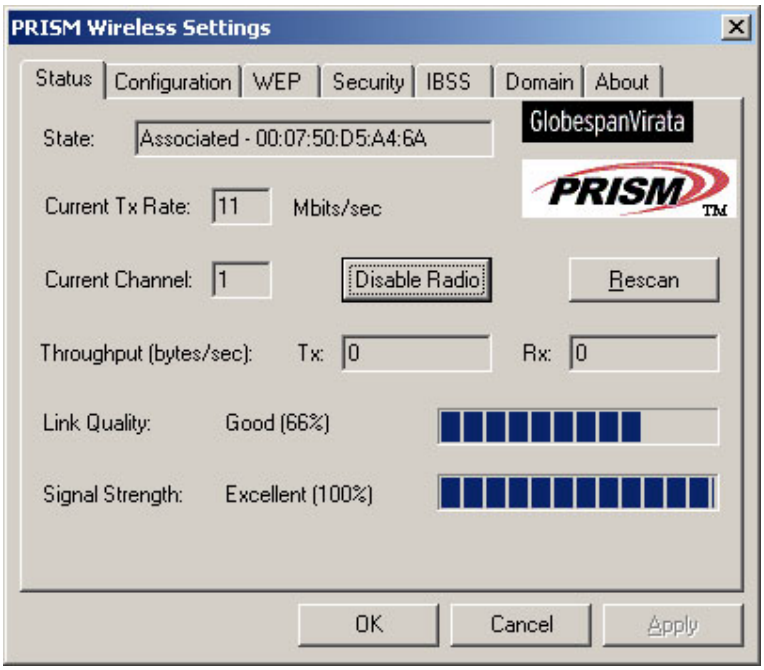
NOTE:

Under Windows XP with the Wireless Zero Configuration service enabled, configuration and encryption are controlled by the operating system. When you start the Configuration Utility with this service enabled, these two tabs do not appear, as shown in the following illustration.



4.1 status Menu

The Status menu displays information on the current status of your connection to the wireless LAN. You can display this menu by choosing the **Wireless Network Status...** command from the pop-up menu, or by clicking on the **Status** tab when the Configuration Utility is displayed on your desktop.



The fields in this menu provide the following information

• **State:** shows the association state of your computer with the wireless LAN. Possible values for this field are:

- AdHoc: The adapter is operating in Peer-to-Peer mode. This field also shows the virtual MAC address used by computers participating in the AdHoc network.

- Associated: The adapter is operating in Infrastructure mode. This field also shows the MAC address of the Access Point with which you are communicating.

- Listening: Indicates that the adapter is listening on all allowed channels, but has not yet found a peer-to-peer or infrastructure network with which to associate.

- Stopped: The radio has been stopped by the Disable Radio Button.

- Scanning: The adapter is scanning for transmissions by other wireless adapters on all channels.

- **Associating:** The adapter is in the process of associating with a network

- **Not Associated:** The adapter has not found any network with which to associate.

- **Hardware Radio Switch OFF:** The radio has been disabled by moving the hardware radio switch to the off position. Note that not all adapters have a hardware switch.

• **Current Tx Rate:** shows the current transmit rate of the current association.

• **Current Channel:** shows the channel on which the connection is made. In Infrastructure mode, this number changes as the radio scans the available channels.

• **Throughput:** shows the short term transmit and receive throughput in bytes/second, and is continuously updated.

• **Link Quality:** is based on the quality of the received signal of the Access Point beacon.

• **Signal Strength:** is based on the received signal strength measurement of the baseband processor of the Beacon signal.

You can click the **Disable Radio** button to turn off the wireless radio. When you click this button, the **State** field indicates that the radio has been stopped and the remaining fields in this window display either a zero or **Not Applicable**. Click this button again to turn the radio back on. However, if the radio has been disabled by the hardware switch on the adapter, clicking this button displays a popup message telling you that the radio cannot be enabled.

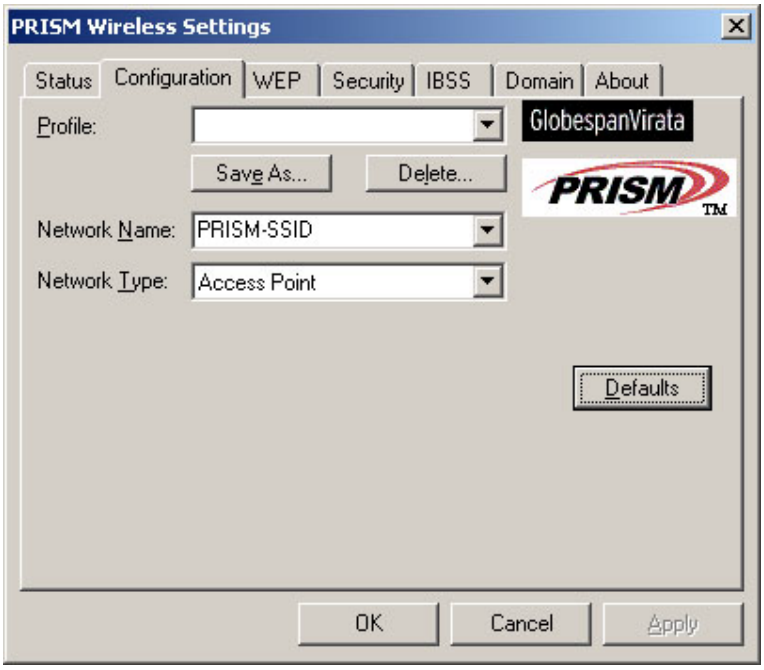
You can click the **Rescan** button to force the radio to rescan all available channels. If your link quality or signal strength is poor, rescanning can be used to push the radio off a weak Access Point and search for a better link with another Access Point.

To apply the information you entered in this menu or any other menu and save it in the current profile, click the Apply button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the Cancel button. Clicking the **OK** button saves any changes you made to the current profile. Clicking either the **Cancel** or **OK** button also closes the utility.

4.2 Configuration Menu

The Configuration menu lets you specify the operating parameters for your PRISM WLAN Interface adapter. You can display this menu by choosing the **Advanced Configuration ...** command from the pop-up menu, or by clicking on the **Configuration** tab when the Configuration Utility is displayed on your desktop.



Profile name

A profile is a named set of operating parameters for your PRISM WLAN Interface adapter. The **Profile Name:** field lets you set values for all parameters by selecting a previously defined profile. Click the down arrow at the right of this field to display the available profiles for your PRISM WLAN Interface adapter.

You can create profiles by clicking the **Save As...** button to display the **Save Wireless Profile** menu.

When you type a name in the **Profile Name:** field and then click the **OK** button, the Configuration Utility uses the current parameters for your adapter to create a separate profile. You can then switch between profiles by clicking the down arrow at the right of the **Profile Name:** field in the Configuration menu, selecting a profile from the drop-down list, and clicking the **Apply** button.

The following example describes a situation in which you would want to create multiple profiles. Suppose that you use the wireless LAN at your work, but you also have a

network in your home (with a wireless Access Point) for sharing an internet connection and a printer between several computers. Suppose also that you have another office within your business which also has WLAN capability, but which is configured differently than your main office.
In this situation, you can create a different profile for each of these three environments. Each profile specifies the parameters used on a single network. Moving from one location to another, you need only apply the appropriate profile to be able to participate in the local network.

Network Name

Officially, in wireless networks the network name is known as the SSID (Service Set IDentifier), and is used by Access Points and stations to identify a wireless LAN. Your PRISM WLAN Interface adapter scans the available channels looking for an Access Point or another station which has specified this same SSID. It then attempts to associate with these Access Points or stations to form a wireless LAN.
To change the SSID, simply highlight it, type the new SSID, and click the **Apply** button.
In typical infrastructure applications a company will use a single SSID for all Access Points. If the radio is scanning and cannot find a channel when an Access Point is known to be in range, verify that the Network Name is set correctly.

Network Type

The PRISM WLAN Interface adapter can operate in one of two types of networks, which are specified in the **Network Type:** field of the Configuration menu. Clicking the down arrow at the right of this field displays the available types.

Peer-to-Peer

IEEE 802.11, the standard on which the WLAN protocol is based, defines two modes to handle two separate needs. The first, called AdHoc (or IBSS) mode, is used when two or more wirelessly-enabled PCs exchange data directly, without an Access Point. In this case the PCs can establish a peer-to-peer network in which they are the only members and over which they can exchange data. To exchange data, each computer participating in the AdHoc network must specify the same Network Name in this menu.
Peer-to-Peer networks operate on a single communications channel. You specify the channel on which your adapter communicates in an IBSS network either in this menu or the information you entered in this menu or any other menu and save it in the current profile, click the **Apply** button.

Note also that IBSS operation is incompatible with the 802.11d standard. If your adapter supports 802.11d operation, choosing Peer-to-Peer as the network type will automatically disable 802.11d support.

Access Point

The second mode defined by the IEEE 802.11 standard is called infrastructure mode, and is the primary application for WLAN operation. In this mode all data on the wireless network is directed to an Access Point, which then routes the data to the appropriate wireless station. The Access Point may also be configured to allow data to be bridged from the wireless network to wired networks.

To participate in a wireless LAN in infrastructure mode, every station and Access Point must specify the same Network Name. In infrastructure mode, all available channels are scanned for traffic, so there is no need to specify a channel.

Peer-To-Peer Channel

For PRISM II, PRISM 2.5, and PRISM III adapters a field labeled **Peer-to-Peer Channel** appears in this menu. When communicating in a peer-to-peer network, you use this field to specify a channel on which you prefer communications to take place. To see the available channels, click the up or down arrow or move the box in the scroll bar at the right of the Channel Selection field. When the channel you want to set appears, click on the channel to select it, and then click the **Apply** button.

Note that this is not necessarily the channel on which peer-to-peer communications will be established. If the IBSS network names (SSID) are the same for nodes in the peer-to-peer network but they have different preferred channels, a network can still be established. In this case, if it cannot find a network with the specified network name on the preferred channel, a station will scan other channels until it finds a peer-to-peer network with the specified network name on which to communicate.

If you specified **Access Point** as the network type), choosing a channel in this field has no effect until you change the network type to **Peer-to-Peer**.

Clicking the Defaults button displays the default communications parameters for your adapters.

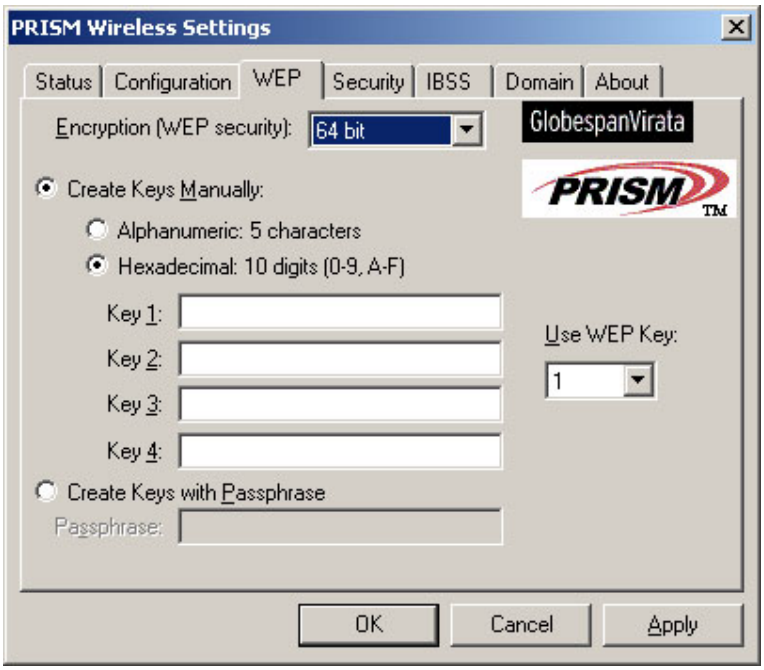
To apply the information you entered in this menu or any other menu and save it in the current profile, click the **Apply** button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the **Cancel** button. Clicking the **OK** button saves any changes you made to the current

profile. Clicking either the **Cancel** or **OK** button also closes the utility.

4.3 WEP Menu

The WEP menu lets you enable encryption and set the encryption keys. To see the available encryption methods, click the down arrow at the right of the Encryption (WEP security) field.



There are two encryption methods available. The IEEE 802.11 specification defines Wired Equivalent Privacy (WEP) using a 64-bit key. This capability was extended by the industry to allow a 128-bit key.

If you specify an encryption method, you will only be able to communicate with Access Points and stations that use the same encryption method and keys.

Disabling Encryption

To disable encryption, click the down arrow at the right of the Encryption field, select Disabled, and click the Apply button.

Enabling Encryption

To enable encryption, click the down arrow at the right of the Encryption field, select either 64 bit or 128 bit, and click the Apply button. After enabling an encryption method, you must then specify encryption keys, as described in the following sections.

Creating Encryption Keys Manually

When you specify either 64-bit or 128-bit encryption, the Configuration Utility selects **Create Keys Manually**, and allows you to enter keys as either alphanumeric or hexadecimal characters. When you click one of these buttons, the cursor appears in the field for Key 1. For 64-bit encryption, you must type exactly 5 alphanumeric or 10 hexadecimal characters in each of the four key fields; for 128-bit encryption, you must type exactly 13 alphanumeric or 26 hexadecimal characters. You then click the Apply button to create your encryption keys. After you click the Apply button, the Configuration Utility uses asterisks to mask your keys.

The Use WEP Key field lets you specify which of the four encryption keys you use to transmit data on your wireless LAN. You can change the default key by clicking on the down arrow at the right of this field, selecting the number of the key you want to use, and then clicking the Apply button. As long as the Access Point or station with which you are communicating has the same key in the same position, you can use any of the keys as the default.

Creating Encryption Keys Using a Passphrase

To create encryption keys using a passphrase, click the radio button next to **Create Key with Passphrase** and type a character string in the Passphrase field. As you type, the Configuration Utility displays asterisks to mask your passphrase and uses an algorithm to generate four keys used for encryption.

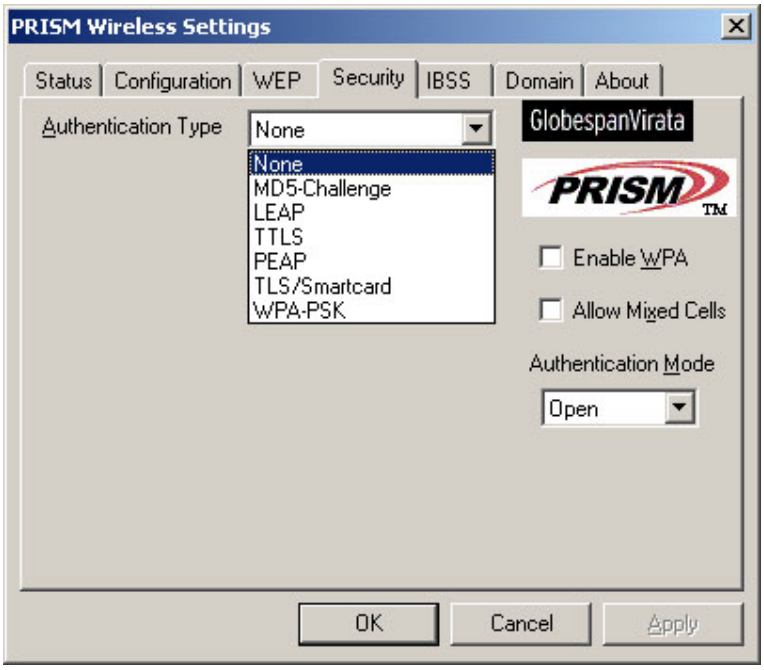
Using a passphrase to generate the four keys makes it easy to set the same keys for all members of your wireless LAN.

To apply the information you entered in this menu or any other menu and save it in the current profile, click the Apply button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the Cancel button. Clicking the **OK** button saves any changes you made to the current profile. Clicking either the **Cancel** or **OK** button also closes the utility.

4.4 Security Menu

If the network you are configuring requires authentication, select the Security tab to continue. Selecting this tab displays a menu similar to the following:



To enable authentication, click the check box next to the Authentication Type field. Checking this box lets you choose one of the authentication types offered by your adapter. The following sections describe configuration of each available type.

No Authentication

If you choose **None** as the authentication type, you can enable WPA (WiFi Protected Access) for enhanced encryption by clicking the check box next to Enable WPA in this menu. If you enable WPA with no authentication, you must enter the correct WEP keys for your network in the **WEP** menu.

You can allow association to APs that do not support encryption by clicking the check box next to **Allow Mixed Cells**. To associate with these APs, you must still supply the correct network name in the **Configuration** menu.

The **Authentication Mode** field allows you to specify the type of authentication used in the network. Three modes are available:

Open specifies that you must supply an authentication key which is accepted by the network

Shared specifies that the authentication key is supplied by an authentication server on the network

AutoSwitch specifies that the driver will choose the authentication method

To apply the information you entered in this menu or any other menu and save it in the

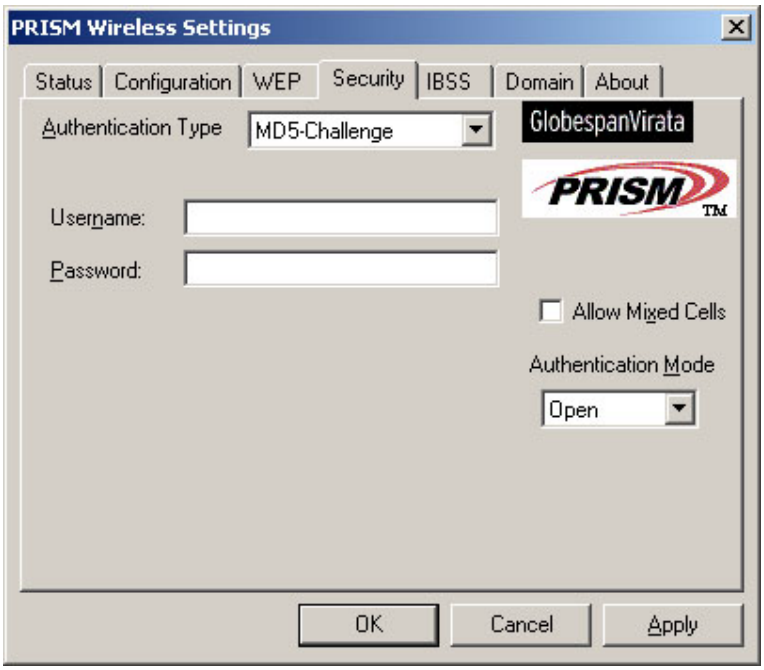
current profile, click the **Apply** button. Clicking this button leaves the utility open on your desktop.

To apply the information you entered in this menu or any other menu and save it in the current profile, click the **Apply** button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the **Cancel** button. Clicking the **OK** button saves any changes you made to the current profile. Clicking either the **Cancel** or **OK** button also closes the utility.

MD5-Challenge Authentication

When you choose MD5-Challenge as the authentication type, a menu similar to the following appears

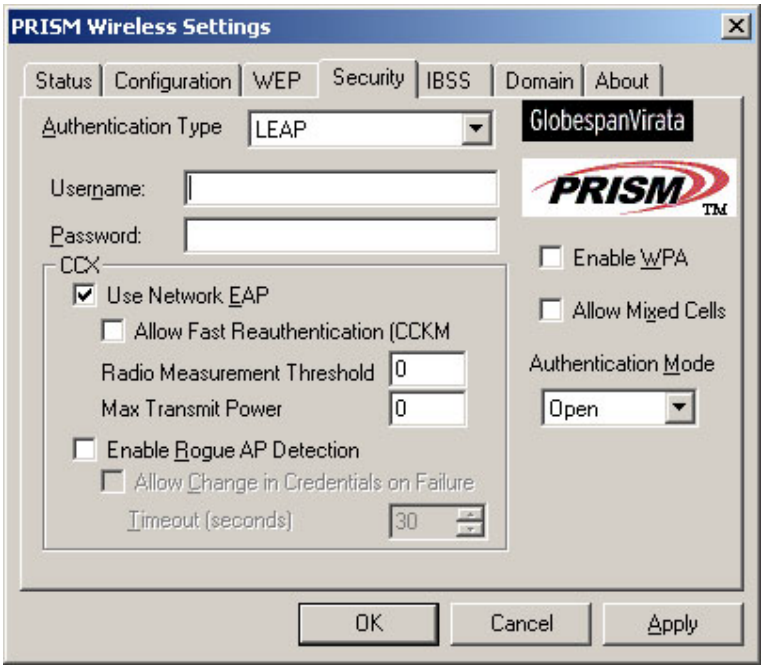


MD5-Challenge authentication requires only a Username and Password; enter this information in the appropriate fields on your screen.

You can allow association to APs that do not support encryption by clicking the check box next to **Allow Mixed Cells**. To associate with these APs, you must still supply the correct network name in the **Configuration** menu.

LEAP Authentication

When you choose LEAP as the authentication type, a menu similar to the following appears



LEAP security requires a Username and Password; enter this information in the appropriate fields on your screen.

You can also enable CCX (Cisco Compatible Extensions) with LEAP security. Network EAP utilizes an authentication server on the network. To use this facility, click the check box next to Use network EAP.

Allow Fast Reauthentication is used when roaming within a wireless LAN containing multiple APs using LEAP authentication. With fast reauthentication, these APs are able to share authentication information, allowing you to roam between APs without the need to authenticate with each AP.

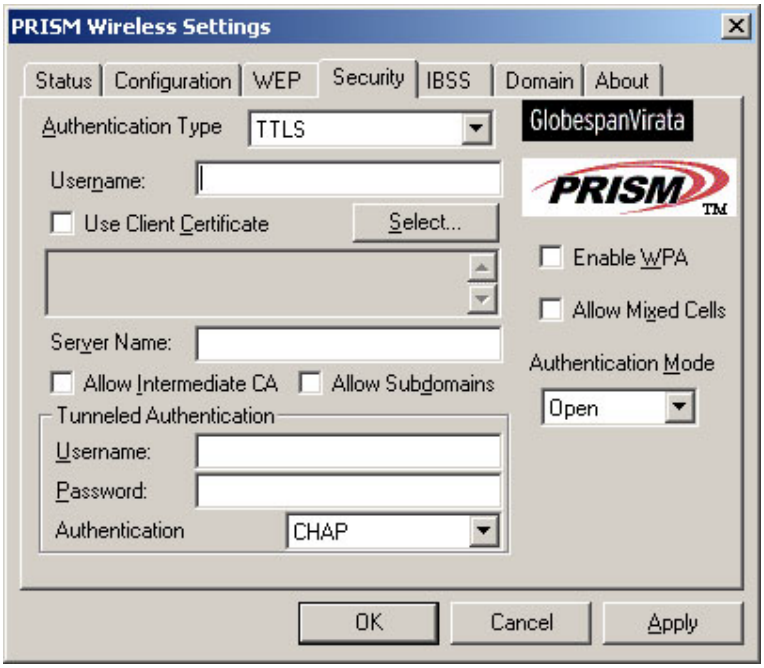
CCX also provides a means to avoid associating with unauthorized Access Points. To enable this facility, click the check box next to Enable rogue AP detection. With this facility enabled, you can also change authentication credentials if AP authentication fails by clicking the check box next to the Allow Change in Credentials on Failure field, and set a time out value for this authentication by clicking the up and down arrows to the right of the Timeout field.

With LEAP authentication, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to Enable WPA enables WPA with LEAP authentication.

TTLS Authentication

When you choose TTLS as the authentication type, a menu similar to the following

appears:



TTLS requires a Username and a Server Name; enter this information in the appropriate fields on your screen. With TTLS, you can use a client certificate for authentication with the server by clicking in the check box next to the **Use client certificate** field and then highlighting a certificate from the list to select it.

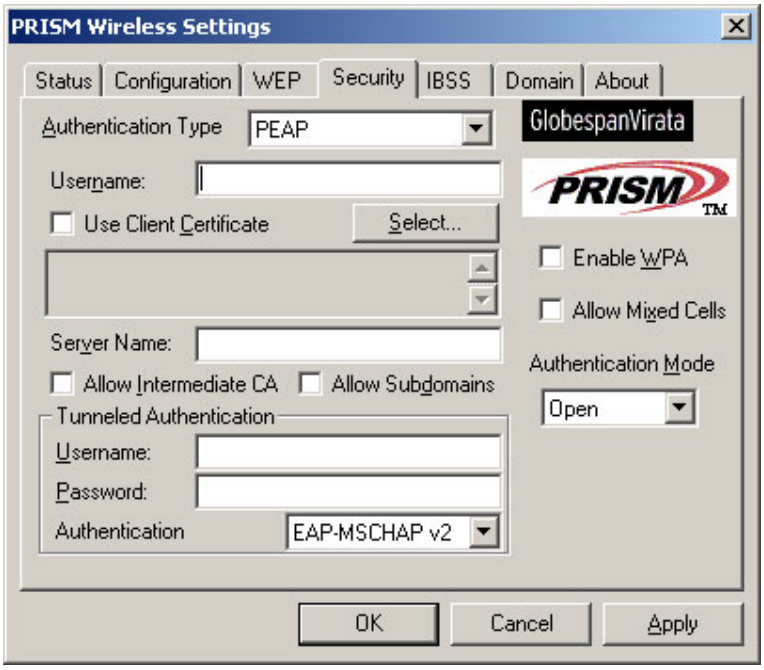
Clicking next to the **Allow intermediate certificate authority** field lets you receive certification credentials form any authentication server authorized to provide authentication services by the server named in the **Server Name** field. Clicking next to the **Allow subdomains** field allows you to receive certification from an authorized server on any subdomain in your network.

Tunneled authentication requires a Username and Password (which you can enter in the appropriate fields in this menu), and an authentication method. To choose a method, click the down arrow next to the **Authentication** field, and then click on the method in the displayed list that you wish to use.

With TTLS authentication, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WPA** enables WPA with TTLS authentication.

PEAP Authentication

When you choose PEAP as the authentication type, a menu similar to the following appears



PEAP requires a Username and a Server Name; enter this information in the appropriate fields on your screen. With PEAP, you can use a client certificate for authentication with the server. To use a client certificate, click in the check box next to the **Use client certificate** field and then highlight a certificate from the list to select it.

Clicking next to the **Allow intermediate certificate authority** field lets you receive certification credentials from any authentication server authorized to provide authentication services by the server named in the **Server Name** field. Clicking next to the **Allow subdomains** field allows you to receive certification from an authorized server on any subdomain in your network.

Tunneled authentication requires a Username and Password (which you can enter in the appropriate fields in this menu), and an authentication method. To choose a method, click the down arrow next to the **Authentication** field, and then click on the method in the displayed list that you wish to use.

With PEAP authentication, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WPA** enables WPA with PEAP authentication.

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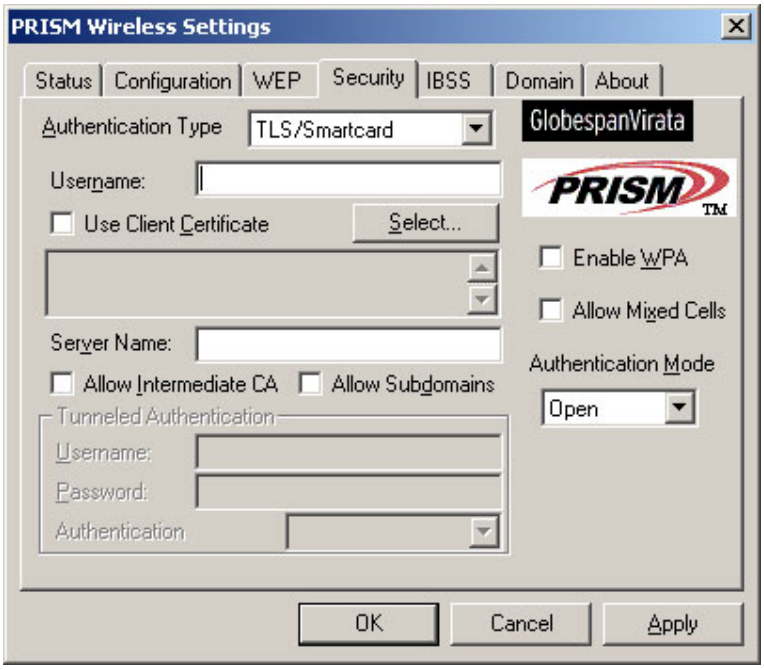
TLS/Smartcard Authentication

When you choose TLS/Smartcard as the authentication type, a menu similar to the following appears:



TLS/SmartCard authentication requires a Username and a Server Name; enter this information in the appropriate fields on your screen. With TLS/SmartCard authentication, you can use a client certificate for authentication with the server by clicking in the check box next to the **Use client certificate** field and then highlight a certificate from the list to select it.

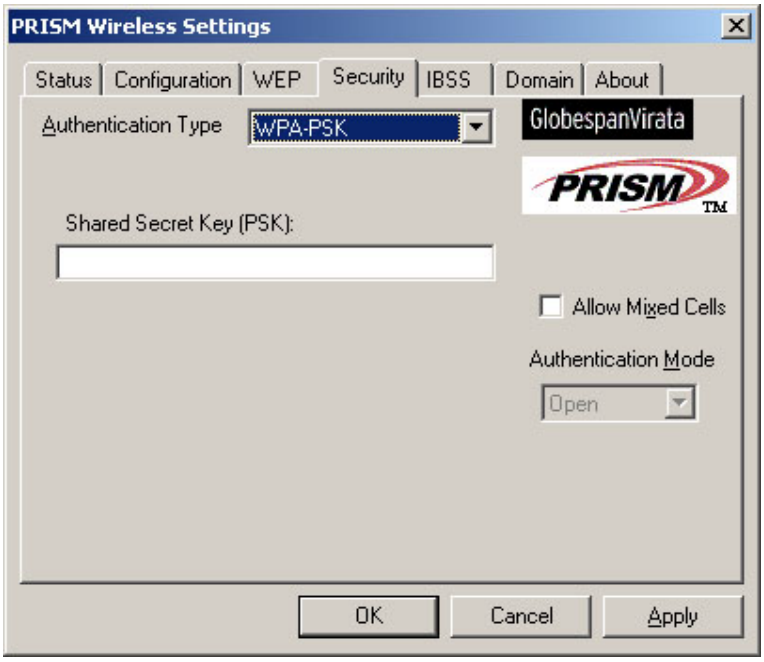
Clicking next to the **Allow intermediate certificate authority** field lets you receive certification credentials form any authentication server authorized to provide authentication services by the server named in the **Server Name** field. Clicking next to the **Allow subdomains** field allows you to receive certification from an authorized server on any subdomain in your network.

Tunneled authentication requires a Username and Password (which you can enter in the appropriate fields in this menu), and an authentication method. To choose an authentication method, click the down arrow next to the **Authentication** field, and then click on the method in the displayed list that you wish to use.

With TLS/SmartCard authentication, you can also enable WPA (WiFi Protected Access) for enhanced encryption. Clicking the check box next to **Enable WPA** enables WPA with TLS/SmartCard authentication.

WPA/PSK Authentication

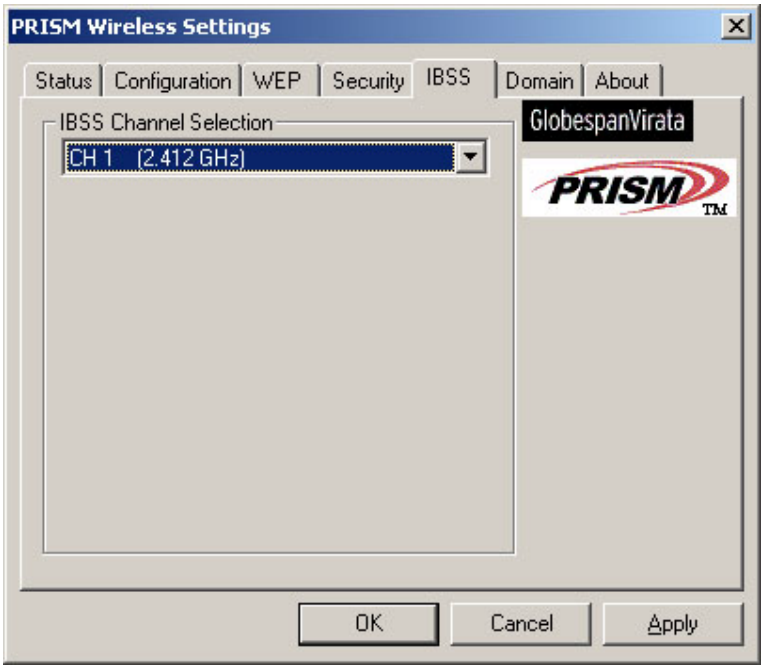
When you choose WPA/PSK as the authentication type, a menu similar to the following appears:



WiFi Protected Access with a Pre-Shared Key (WPA-PSK) provides Access Point-based authentication with either WEP or TKIP encryption. To use WPA-PSK, you must enter the correct key in the field in this menu. If you use WPA-PSK with WEP encryption, you must enter the correct WEP keys in the WEP menu. To use WPA-PSK with TKIP encryption, do ***not*** enter WEP keys.

4.5 IBSS Menu

Some PRISM adapters are capable of operating in only a single transmission band. For these adapters, the Configuration utility displays the **IBSS** menu:



When communicating in a peer-to-peer network, you may specify a channel on which you prefer communications to take place. To specify a channel, click on the down arrow to the right of the **IBSS Channel Selection** field and then highlight a channel.

Note that this is not necessarily the channel on which peer-to-peer communications will be established. If the IBSS network names (SSID) are the same for nodes in the peer-to-peer network but they have different preferred channels, a network can still be established. In this case, if it cannot find a network with the specified network name on the preferred channel, a station will scan other channels until it finds a peer-to-peer network with the specified network name on which to communicate.

If you specified **Access Point** as the network type (in the **Configuration** menu), choosing a channel in this field has no effect until you change the network type to **Peer-to-Peer**.

To apply the information you entered in this menu or any other menu and save it in the current profile, click the **Apply** button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the **Cancel** button. Clicking the **OK** button saves any changes you made to the current profile. Clicking either the **Cancel** or **OK** button also closes the utility.

4.6 Domain Menu

A *domain* refers to a territory in which radio frequency transmissions must conform to

the standards set by a single regulatory agency. For example, in the United States, the allowed frequencies and channels for wireless data communications are set by the FCC. Every country is free to set its own standards, although in practice many countries may use the same standards.

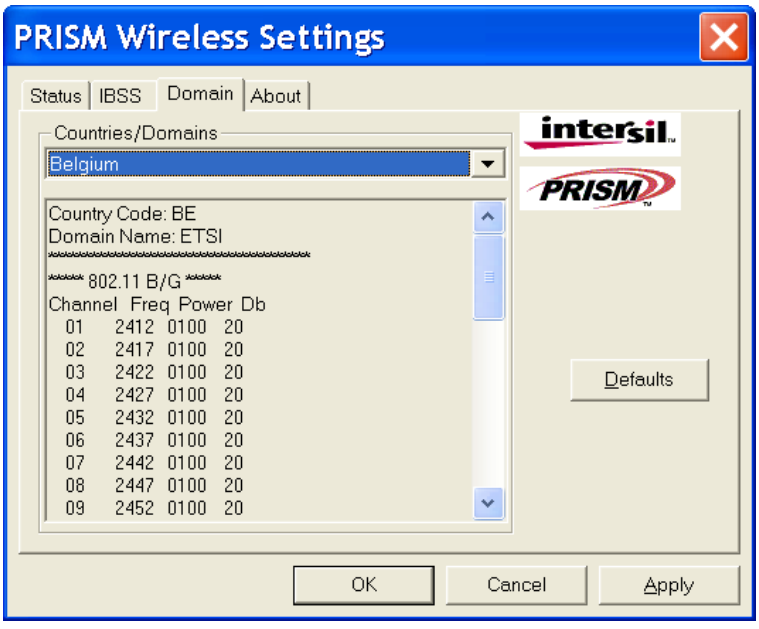
The IEEE 802.11d standard provides a means for a wireless LAN adapter to detect the domain in which it is located and conform its transmissions to the standards set by the controlling regulatory agency. Not all PRISM adapters include this mechanism, however, so the version of the **Domain** menu displayed by the Configuration Utility depends on the versions of driver and firmware for your adapter.

802.11D Not Supported

If your PRISM adapter does not support 802.11d operation, the **Domain** menu simply provides a list of the domains established throughout the world for radio frequency transmissions. In most cases, these domains correspond to a single country.

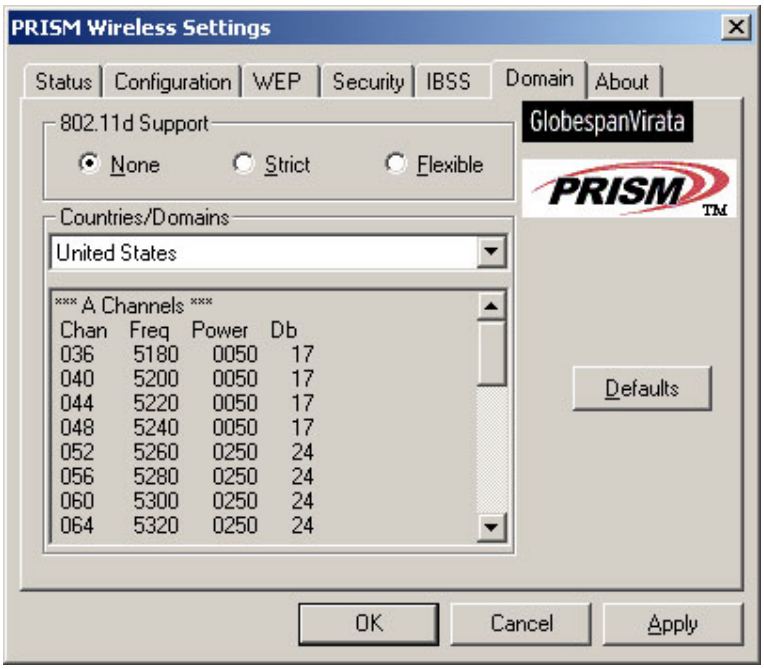
To see a list of the domains supported by your adapter, click on the arrow to the right of the Countries/Domains field. Use the arrows or the scroll bar to the right of the list to see the complete list of domains. Choose the appropriate domain for your location by clicking on its name in the list, and then click the **Apply** button.

When you specify a domain, the Domain menu then displays information about the domain you chose. Use the arrows or the scroll bar to the right of the display to see the complete information, such as country code, domain name, and transmission standards (channels, frequencies, etc.) for the domain.



802.11D Supported

If your PRISM adapter supports 802.11d operation, the **Domain** menu lets you specify one of three levels of 802.11d support.



If you specify **None** in the **802.11d support** field, you must then choose the county in the **Countries/Domains** field which corresponds to your location. In this case your adapter operates according to the standards set by the appropriate regulatory agency.

If you choose **Strict** in the **802.11d support** field, your adapter will only communicate with Access Points which provide 802.11d support. In this case, the adapter scans all communications channels for an Access Point which provides information on the channels, frequencies, and power levels permitted in your location. Once it finds such an Access Point, the adapter conforms its operations to these standards. The adapter will not communicate with an Access Point that does not provide this information, nor will it join or create a peer-to-peer network if Strict 802.11d support is specified in this field.

If you choose **Flexible** in this field, your adapter can communicate with any Access Point it finds. In this case, you must also choose the county in the **Countries/Domains** field which corresponds to your location. Your adapter then searches for an Access Point which provides information on the channels, frequencies, and power levels permitted in your location. If it finds such an Access Point, the adapter conforms its operations to these standards.

If it does not find an Access Point which provides this information, it then will establish

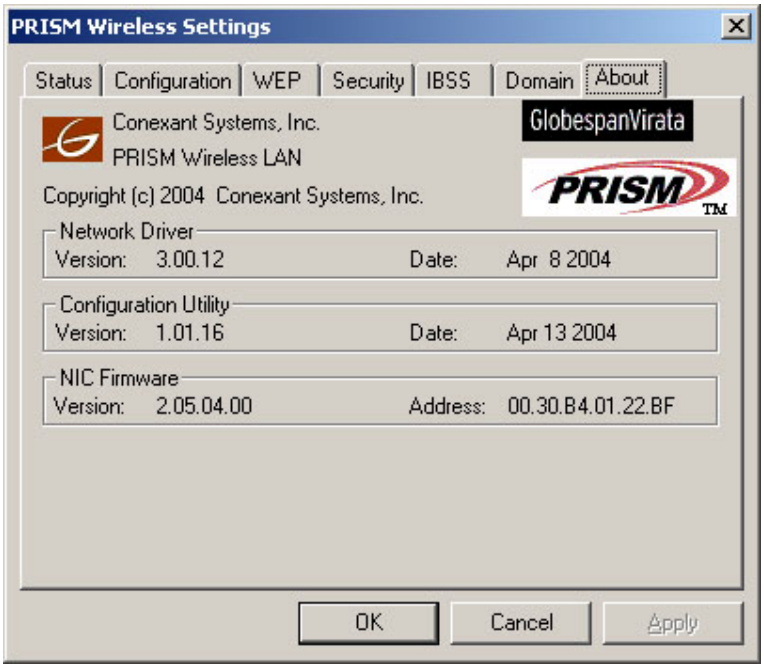
communications with any Access Point it finds.

To apply the information you entered in this menu or any other menu and save it in the current profile, click the **Apply** button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the **Cancel** button. Clicking the **OK** button saves any changes you made to the current profile. Clicking either the **Cancel** or **OK** button also closes the utility.

4.7 About Menu

The About menu provides information on the version of the Network Driver, the Configuration Utility, and the firmware in the PRISM WLAN Interface adapter. You can display this menu by choosing the **Version Information...** command from the pop-up menu, or by clicking on the **About** tab when the Configuration Utility is displayed on your desktop.



To apply the information you entered in this menu or any other menu and save it in the current profile, click the **Apply** button. Clicking this button leaves the utility open on your desktop.

To discard any changes you made since you last clicked the Apply button, click the **Cancel** button. Clicking the **OK** button saves any changes you made to the current profile. Clicking either the **Cancel** or **OK** button also closes the utility.

5. 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.
If you encounter some problems while installing the WLAN Card or you want to confirm whether your card is installed properly or not, Refer to the listed procedure for checking the various components after you have installed the card.

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

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

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

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

Q. Link Status is excellent, but I can't connect to the network.
A. If TCP/IP setting is not properly established , you can't connect to the network. Check TCP/IP setting.
When you are using DHCP server, if allocated IP address is insufficient, you can't use network. In a case like this, please ask the network manager.

Q. When we use IPX/SPX protocol with NETWARE CLIENT, we can't connect to the network game like STARCRAFT and local server.
A. In case of Windows 2000, please click Start – Settings – Control Panel – Network and Dial-up Connections(double click)'. Click a right mouse button on the Local Area

Connection menu and select Properties. Then, you need to double-click NWLink IPX/SPX/NetBIOS Compatible Transport Protocol and then change Frame Type **from Auto Detect to Ethernet 802.3**.
In case of Windows 98, please click **Start – Settings – Control Panel – Network**(double click)'. Then, you need to double-click **IPX/SPX-compatible Protocol -> SAMSUNG …** and then change Frame Type **from Auto to Ethernet 802.3** in the Advanced tap.

Q. "USB Device Not Recognized" message is displayed on right below tray bar when you are installing driver.
A. Ignore the message and install the driver continuously.

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