Data-Linc

910E
900MHz Wireless Network
Mini-PCI Adapter

User's Manual

Date of Issue: Dec. 14th, 2009

Technical Support

The firmware version of the 900 MHz Wireless Network Mini-PCI Adapter is displayed on the utility **About** window. Users could download the most recent software version from the supplier's web site or refer to the selling contact for the latest software information. If you have difficulty resolving the problem while installing or using the 900 MHz Wireless Network Mini-PCI Adapter, please contact the supplier for support.

About This Manual

The 900 MHz Wireless Network Mini-PCI Adapter User Manual is first published on December, 2009. The manual includes procedures for the setup of the 900 MHz Wireless Network Mini-PCI Adapter under Access Point. Take a moment to read through this manual and familiarize yourself with wireless technology.

FCC Information

This device, 900 MHz Wireless Network Mini-PCI Adapter, complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

Federal Communications Commission (FCC) Statement

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. 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 try to correct the interference by one or more of the following measures:

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

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

Warning: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Tested to comply with FCC standard. FOR HOME OR OFFICE USE.

FCC RF Radiation Exposure Statement:

1. This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product which integrates this module.

   20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: UONLEM111790 ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Table of Contents

Chapter 1 About Wireless Network Mini-PCI Adapter

The 900 MHz Wireless Network Mini-PCI Adapter is a standard PCI Card that fits into any standard PCI slot in an Access Point. The 900 MHz Wireless Network Mini-PCI Adapter is an enhanced high-performance that supports high-speed wireless networking at home, at office or in public places. In addition, a detachable antenna version is specifically designed for system integrator application. When installed, the 900 MHz Wireless Network Mini-PCI Adapter is able to communicate with any 900 MHz compliant products.

1-1 Features and Benefits

1. Supports 1, 2, 5.5, 11 Mbps and up to 54Mbps data rate.
2. Direct Sequence Spread Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection.
3. Seamless connectivity to wired Ethernet and PC network LAN's augments existing networks quickly and easily.
4. Greater flexibility to locate or move networked PCs.
5. Wireless connection without the cost of cabling.
6. Easy to install and user friendly, just Plug and Play.
7. Low power consumption.
8. Supports a variety of operating systems (Win98SE/ME/2000/XP)
9. 64-bit, 128-bit and 152-bits WEP encryption capable.
10. Provides Window-based Diagnostic Tools, most notably, Site Survey, Link Quality Test and Access Point Browser.
11. Protection mechanism, which can avoid 11g packet and 11b packet colliding with each other.

1-2 Applications

The 900 MHz Wireless Network Mini-PCI Adapter offers a fast, reliable, cost-effective solution for wireless client access to the network in applications like these:

1. **Remote access to corporate network information**
   E-mail, file transfer and terminal emulation.

2. **Difficult-to-wire environments**
   Historical or old buildings, asbestos installations, and open area where wiring is difficult to deploy.

3. **Frequently changing environments**
   Retailers, manufacturers and those who frequently rearrange the workplace and change location.

4. **Temporary LANs for special projects or peak time**
   - Trade shows, exhibitions and construction sites where a temporary network will be practical.
   - Retailers, airline and shipping companies need additional workstations during peak period.
   - Auditors requiring workgroups at customer sites.

5. **Access to database for mobile workers**
   Doctors, nurses, retailers, accessing their database while being mobile in the hospital, retail store or office campus.

6. **SOHO (Small Office and Home Office) users**
   SOHO users need easy and quick installation of a small computer network.

7. **High security connection**

   The secure wireless network can be installed quickly and provide flexibility.

1-3 Product Kit

The 900 MHz Wireless Network Mini-PCI Adapter comes with the following items. Please go through each item below.

900 MHz Wireless Network Mini-PCI Adapter

- 900 MHz Wireless Network Mini-PCI Adapter…….…….. x 1

- 900 MHz Wireless Network Mini-PCI Adapter Software and Documentation CD .....……..... x 1

Chapter 2 Getting Started

This chapter describes the instructions that guide you through the proper installation of your 900 MHz Wireless Network Mini-PCI Adapter for the Windows XP/2000/ME/98SE operating systems.

The complete installation of the 900 MHz Wireless Network Mini-PCI Adapter consists of the following steps:

STEP 1: Insert your 900 MHz Wireless Network Mini-PCI Adapter into the PCI slot on the Access Point platform.
STEP 2: Power on the Access Point.
STEP 3: Finish Installation.

2-1 Before Installation

In addition to the items shipped with the client adapter, you will also need the following in order to install the adapter:

1. A computer equipped with PCI slot.
2. Windows XP/2000/98SE/ME (with a Windows installation CD-ROM, diskettes for use during installation).
3. Minimum 5 Mbytes free disk space for installing driver and utility program.

2-2 Insert the 900MHz Wireless Network Mini-PCI Adapter

To install the 900MHz Wireless Network Mini-PCI Adapter, please do the following:

1. Find an available PCI slot on your computer.
2. Insert the PCI Adapter into the PCI slot.

CAUTION: Do not force the client adapter into the slot. Forcing it will damage both the client adapter and the slot. If the client adapter does not go in easily, remove the card and reinsert it.

Chapter 3 Install Driver for Windows

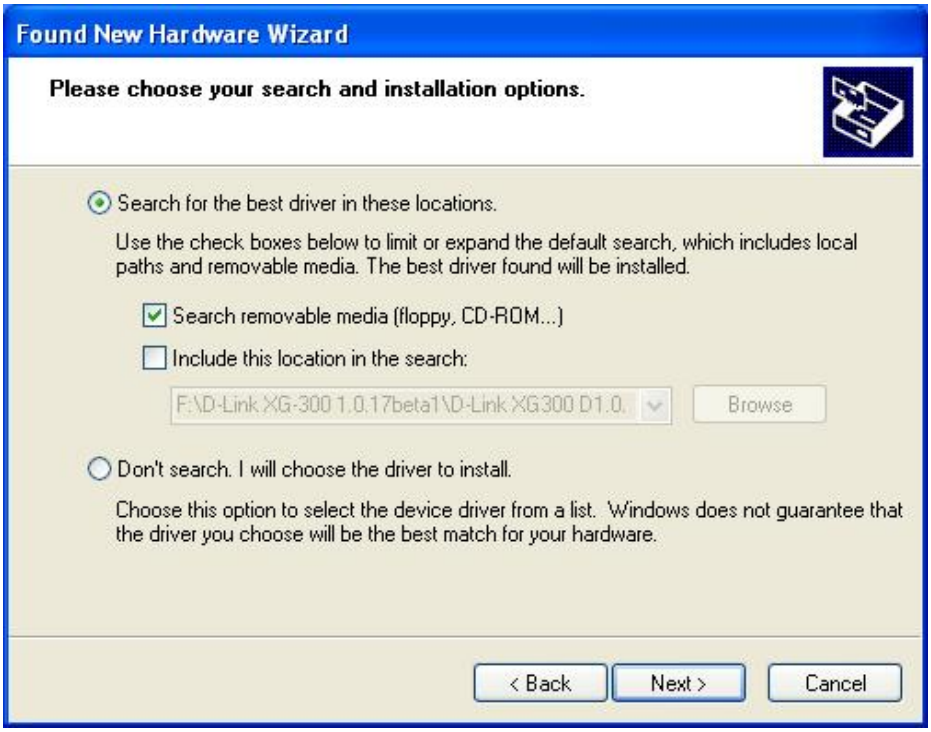
This section describes the installation of the 900 MHz Wireless Network Mini-PCI Adapter driver for the Windows 98SE/ME/2000 and Windows XP operating systems. The installation procedures for Windows XP refer to ***3-1 Set up Wireless Network Mini-PCI Adapter for Windows XP***; for Windows 2000 please see ***3-2 Set up Wireless Network Mini-PCI Adapter for Windows 2000;*** for Windows 98SE/ME refer to ***3-3 Set up Wireless Network Mini-PCI Adapter for Windows 98SE/ME.***

Note: Before you start the installation, you are advised to keep the Windows CD-ROM in case you might need certain system files.

3-1 Set up Wireless Network Mini-PCI Adapter for Windows XP

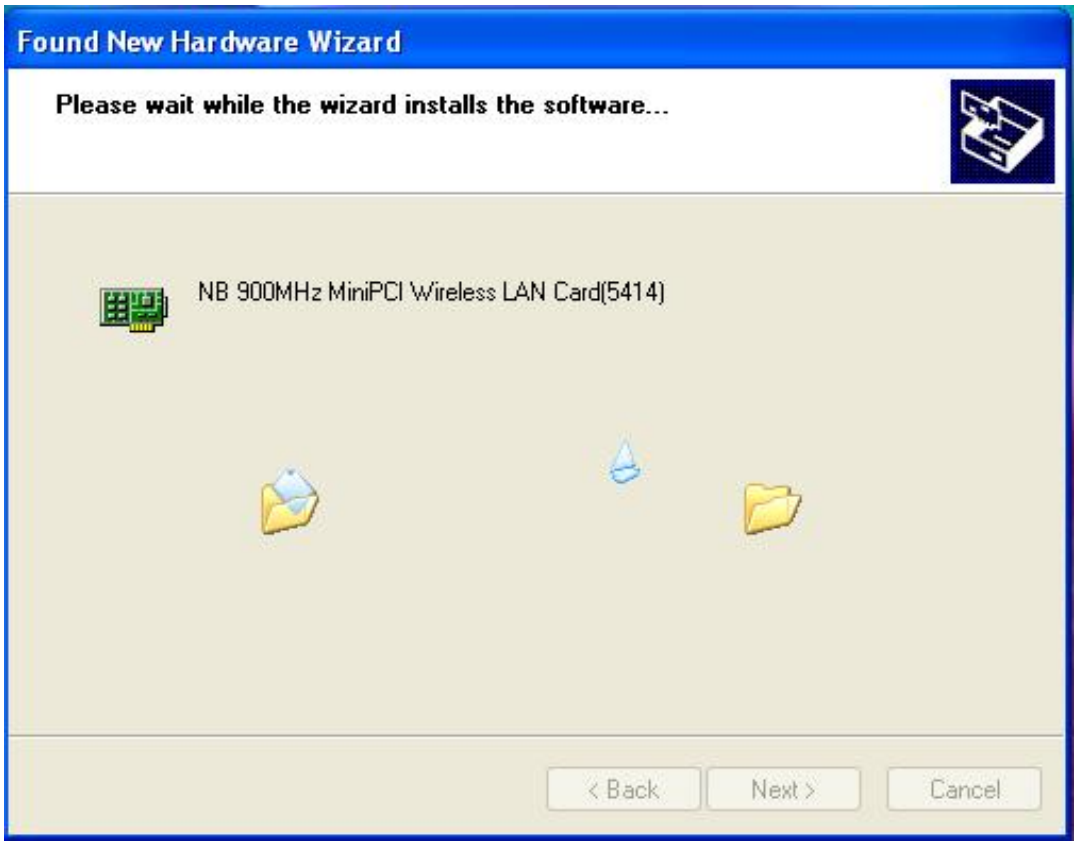
Step 1: After inserting the 900 MHz Wireless Network Mini-PCI Adapter into the PCI slot on your computer, the Windows will auto-detect the Wireless Network Mini-PCI Adapter and a "**Found New Hardware Wizard**" window will show up. Select "**Install from a list or specific (Advanced) location**" and press **Next** to install the driver.

Step 2: Insert the Product CD-ROM into the appropriate drive. Click on **Next** to install the driver.



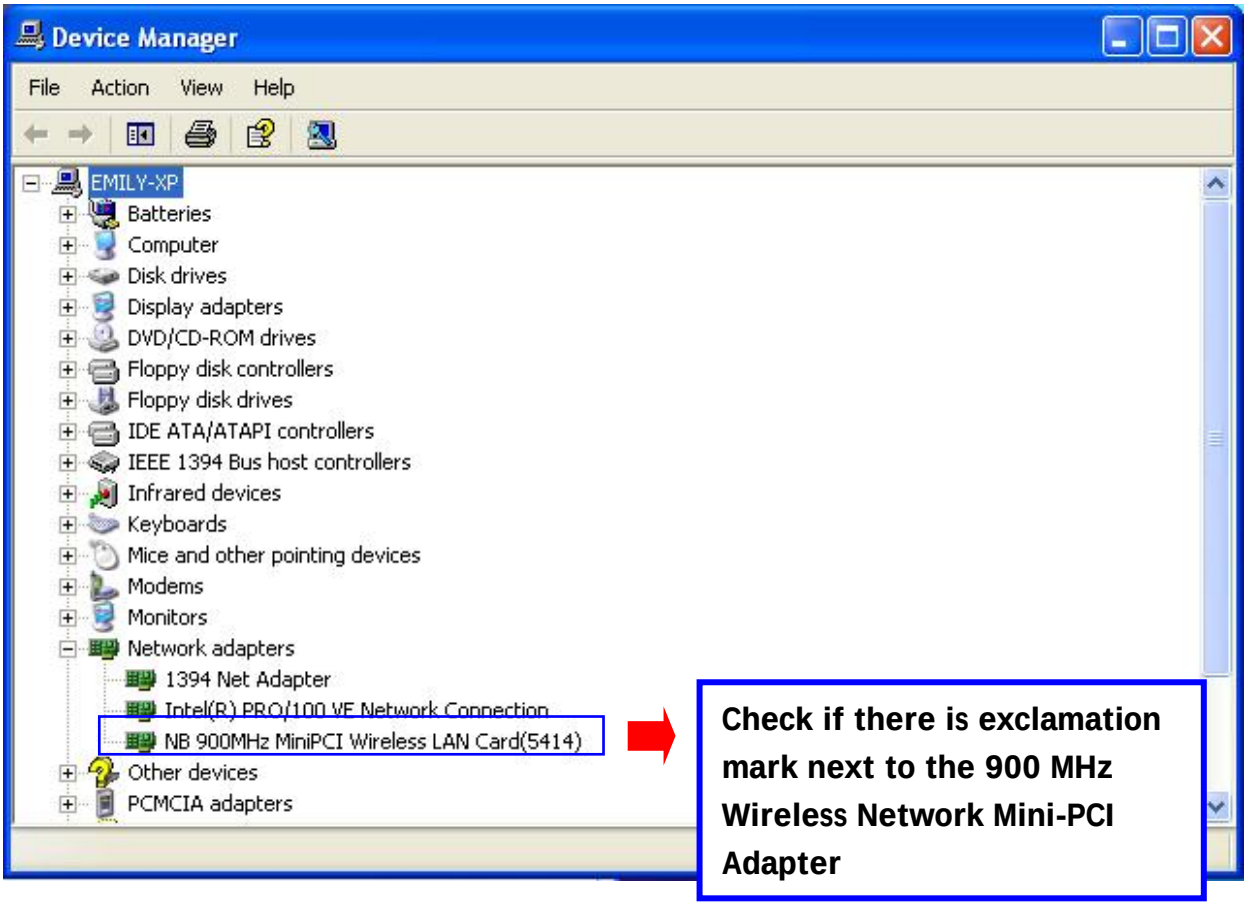
Step 3: The windows will appear the message about the Network Control has not passed Windows Logo testing to verify its compatibility with Windows XP. Click on **Continue Anyway** button to continue installing

Step 4: The windows will find "**900 MHz Wireless Network Mini-PCI Adapter**" and start copying corresponding files into the system. Click on **Next** to continue.



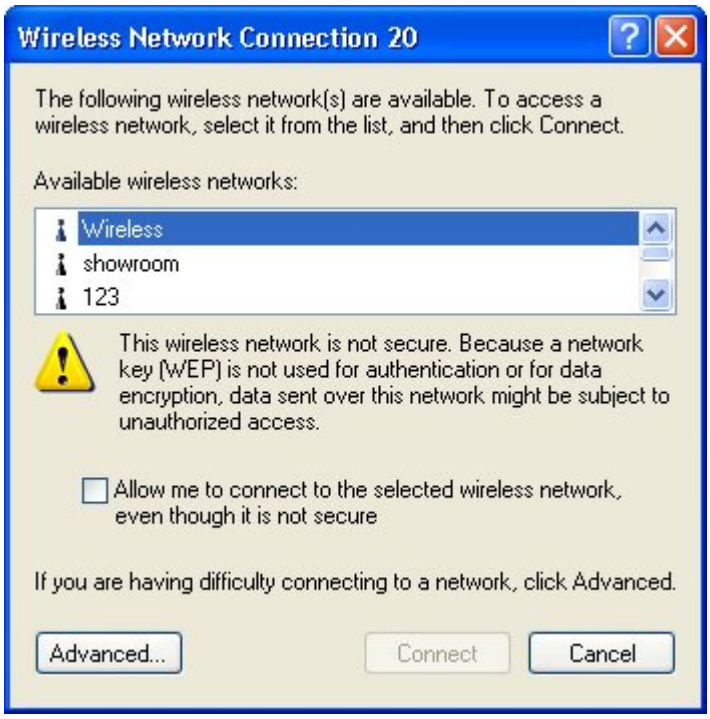
Step 5: Click **Finish** to complete the installation.

Step 6: Right click "**My Computer**" from **Start**, select **Properties**, go to the **Hardware** tab and click the **Device Manager** button to see if any exclamation mark appears next to the **Network Adapter/ 900 MHz Wireless Network Mini-PCI Adapter**. If no, your 900 MHz Wireless Network Mini-PCI Adapter is working well.



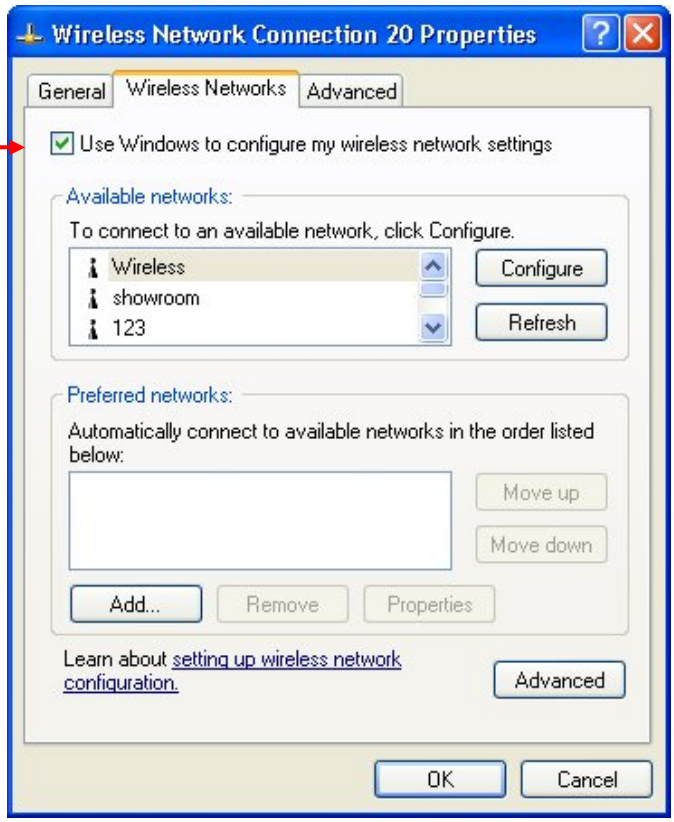
After installing the Wireless Network Mini-PCI Adapter, the Windows XP will display a "**Wireless Network Connection #** " message.

Click on the message and the "*Automatic Wireless Network Configuration*" will then appear automatically. You may click on **Connect** button to allow users to connect to an available wireless infrastructure network (Access Point). You may also click the **Advanced** button to make advanced configuration for the Wireless Network Mini-PCI Adapter, shown as below.



For more information on using the automatic wireless network configuration please refer to Windows XP **Help** file.

Warning: You must choose one way to configure Wireless Network Mini-PCI Adapter either of using our WLAN Utility by un-checking this check box or using Windows XP ***Automatic Wireless Network Configuration*** **first by**



However, the WLAN Utility, which comes with the Wireless Network Mini-PCI Adapter, provides you more tools to configure the Wireless Network Mini-PCI Adapter and monitor the wireless connection. For more information on installing and using the WLAN Utility, please refer to the following sections "*Installation of the WLAN Utility*" and "*Usage of the WLAN Utility*".

Note: To use the WLAN utility under Windows XP, you need to disable the ***Automatic Wireless Network Configuration*** first. Steps are described as follows:

- Right click the **Network Connections** icon. Select **Properties**.
- Go to the **Wireless Networks** tab.
- Uncheck the "**Use Windows to configure my wireless network settings**" check box and click the **OK** button (see the above picture).

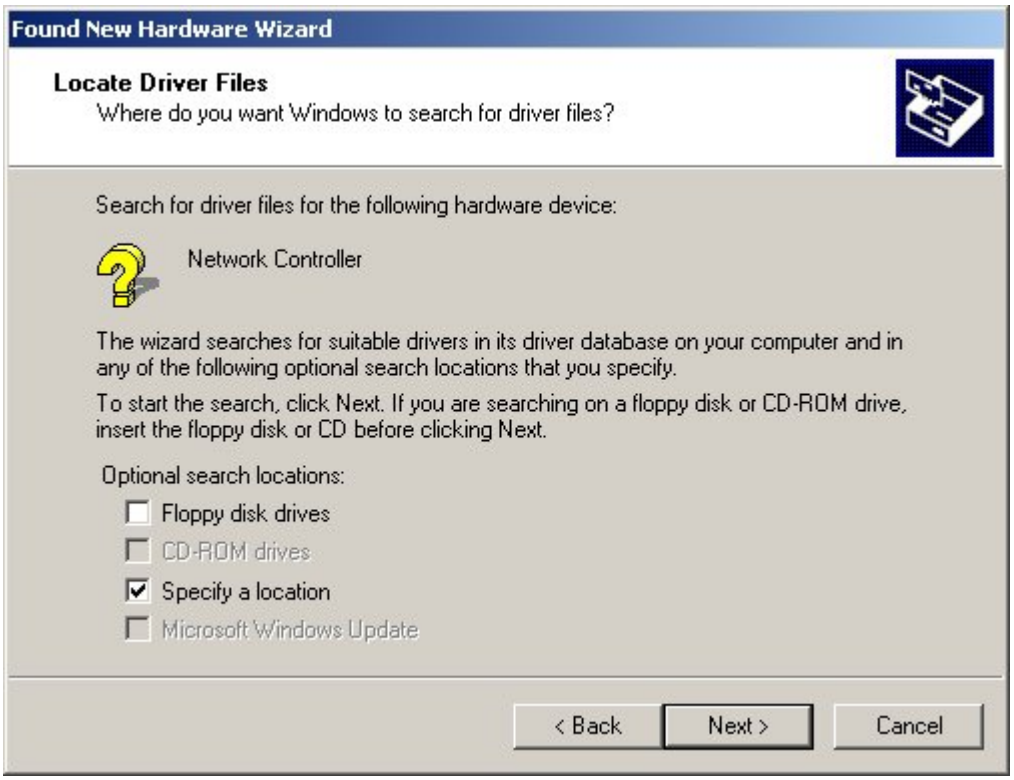
3-2 Set up Wireless Network Mini-PCI Adapter for Windows 2000

Step 1: After inserting the 900 MHz Wireless Network Mini-PCI Adapter into the PCI slot on your notebook, Windows will auto-detect the 900 MHz Wireless Network Mini-PCI Adapter.

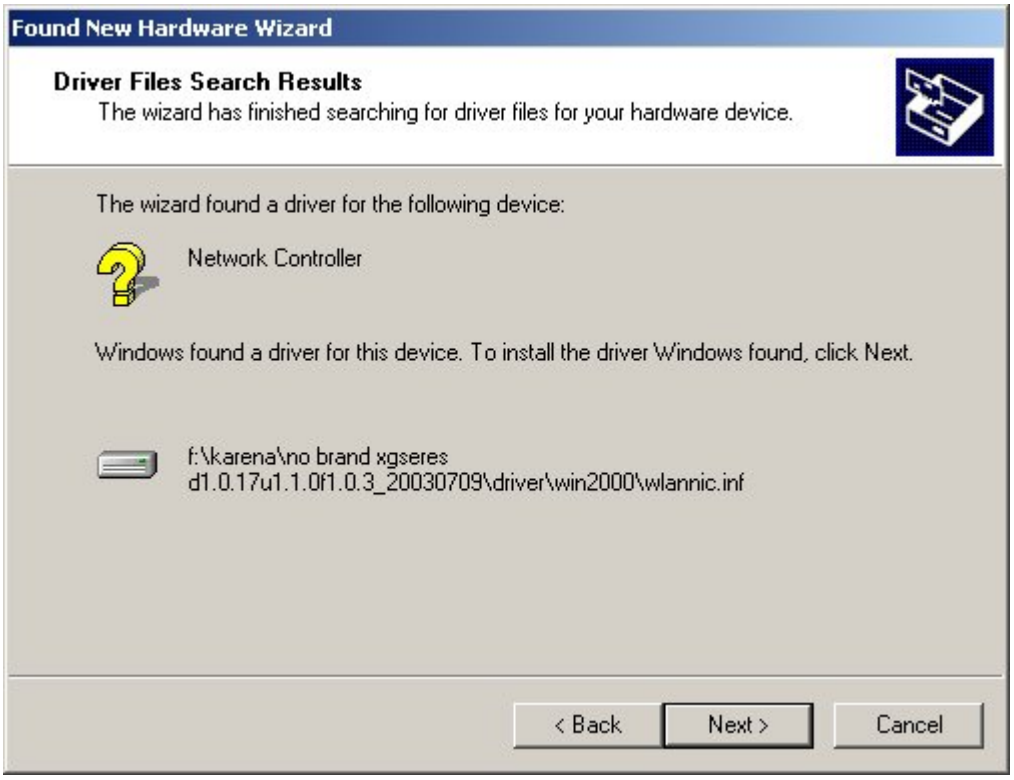
Step 2: A "**Found New Hardware Wizard**" window shows up. Click on **Next** to proceed.

Step 3: Select "**Search for a suitable driver for my device (recommended)**".

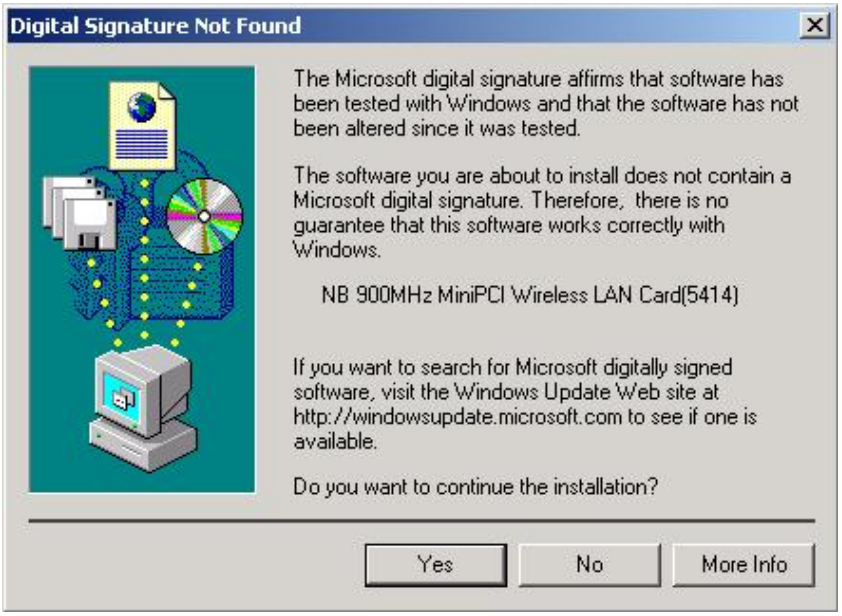
Step 4: Insert the Product CD-ROM into the appropriate drive. Click on **Next** to install the driver.



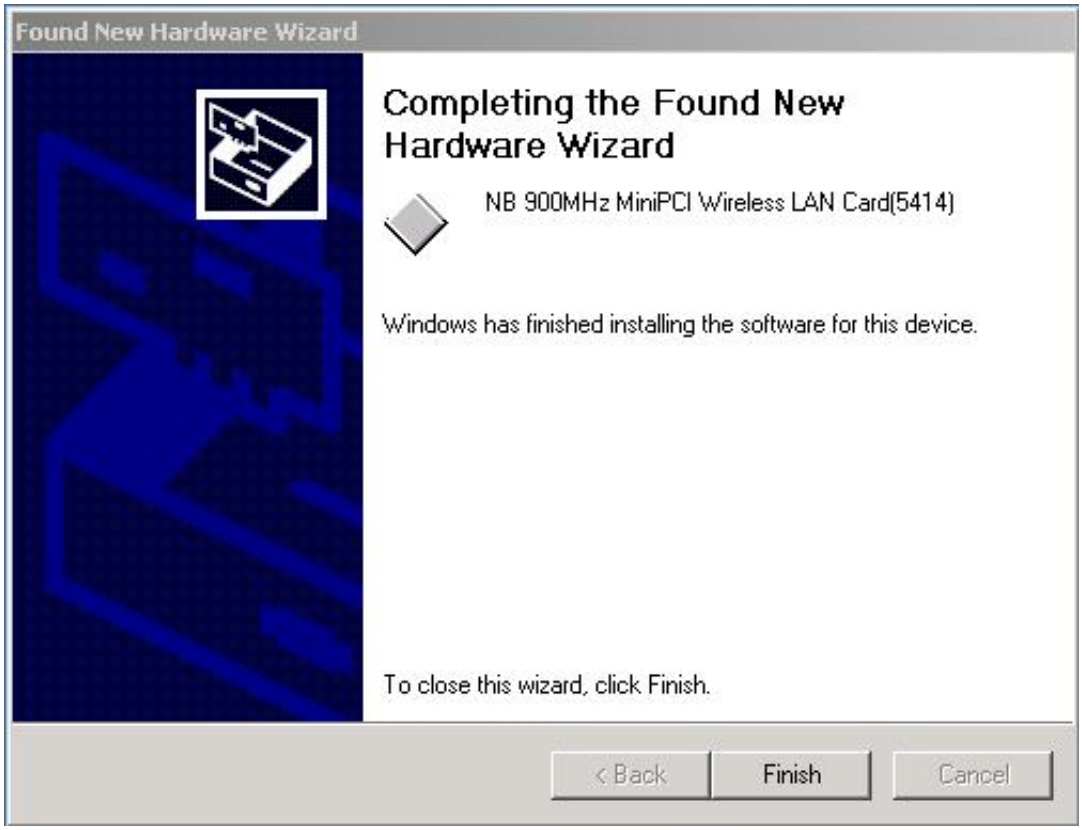
Step 5: The windows will find "**900 MHz Wireless Network Mini-PCI Adapter**". Click on **Next** to continue.



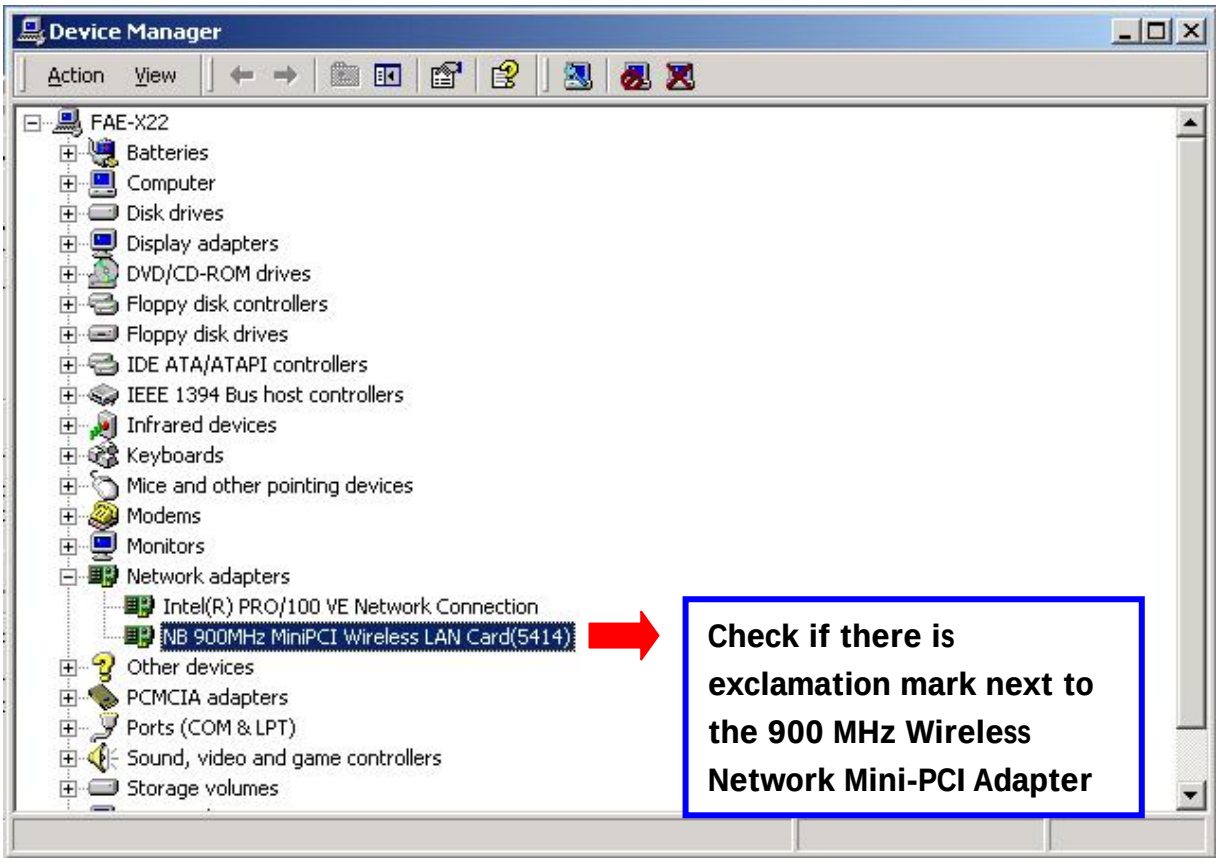
Step 6: The windows will appear the message about the Microsoft digital signature affirms that software has not been tested with Windows and that the software has not been altered since it was tested. Click on **Yes** button to continue installing.



Step 7: Click **Finish** to complete the installation.



Step 8: Open **Control Panel**/**System**/**Device Manager**, and check **Network Adapters** to see if any exclamation mark appears. If no, your 900 MHz Wireless Network Mini-PCI Adapter is working well.


Device Manager
Action View
FAE-X22
Batteries
Computer
Disk drives
Display adapters
DVD/CD-ROM drives
Floppy disk controllers
Floppy disk drives
IDE ATA/ATAPI controllers
IEEE 1394 Bus host controllers
Infrared devices
Keyboards
Mice and other pointing devices
Modems
Monitors
Network adapters
Intel(R) PRO/100 VE Network Connection
NB 900MHz MiniPCI Wireless LAN Card(5414)
Other devices
PCMCIA adapters
Ports (COM & LPT)
Sound, video and game controllers
Storage volumes
Check if there is exclamation mark next to the 900 MHz Wireless Network Mini-PCI Adapter

3-3 Set up Wireless Network Mini-PCI Adapter for Windows 98SE/ ME

Step 1: After inserting the 900 MHzWireless Network Mini-PCI Adapter into the PCI slot on your notebook, Windows will auto-detect new hardware and will display an "**Add New Hardware Wizard**" window. Click on **Next** to continue.

Step 2: Select "**Search for the best driver for your device (Recommended)**" and click on **Next**.

Step 3: Insert the Product CD-ROM into the appropriate drive. Click on **Next** to install the driver.

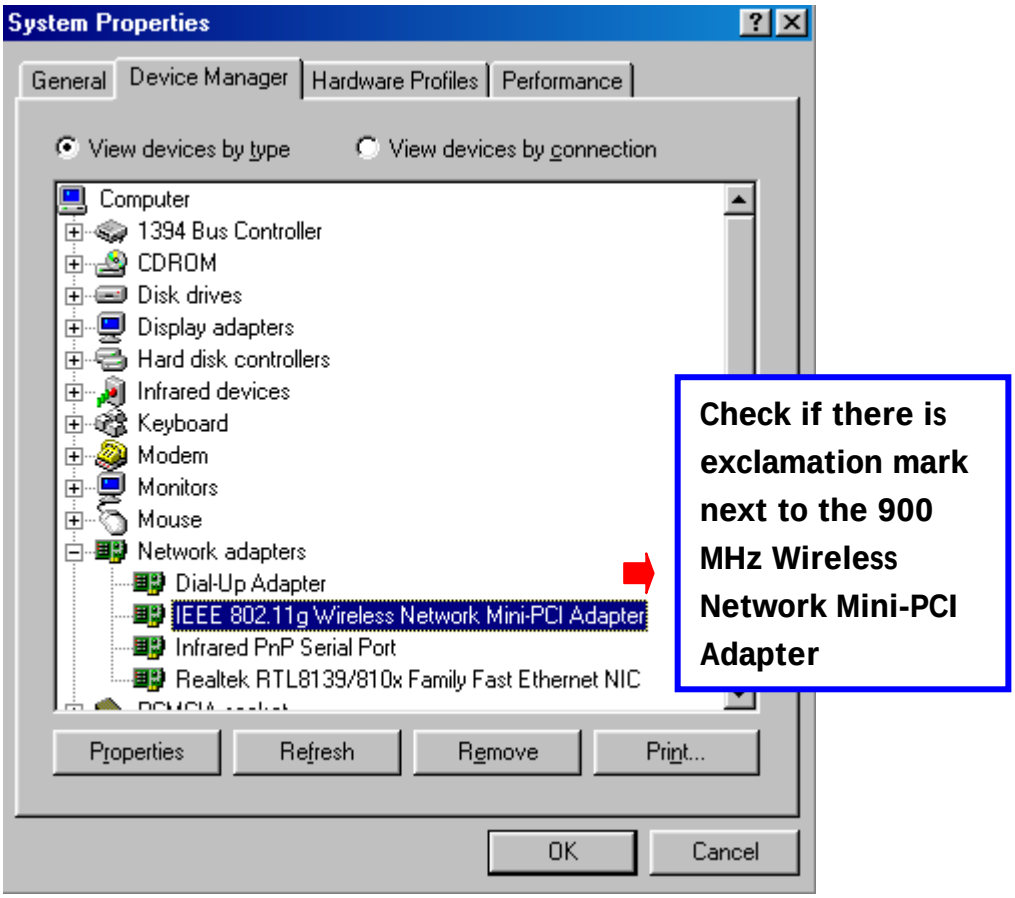
Step 4: The Windows will find "**IEEE 900 MHz Wireless Network Mini-PCI Adapter**". Click on **Next** to continue.

Step 5: Once the [Please insert the disk labeled 'Windows 98 Second Edition CD-ROM/ME CD-ROM", and then click OK] window appears, insert and enter the path corresponding to the appropriate drives and click **OK**. Usually these files can be found at C:\Windows or C:\Windows\system.

Step 6: Click **Finish** to complete the software installation.

Step 7: Restart the computer.

Step 8: Open **Control Panel/System/Device Manager**, and check **Network Adapters** to see if any exclamation mark appears next to the IEEE 802.11 Wireless Network Mini-PCI Adapter. If no, your 900 MHz Wireless Network Mini-PCI Adapter is working well.



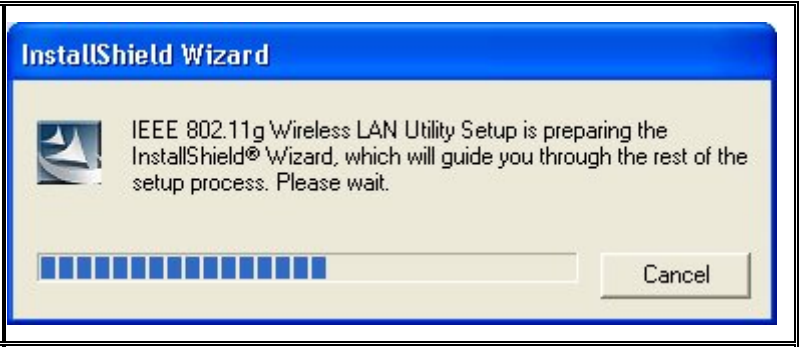
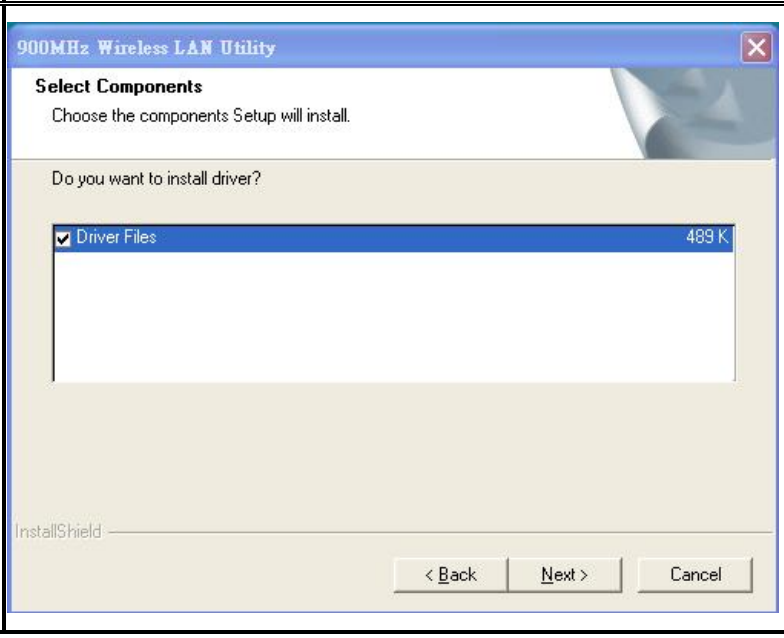
Chapter 4 Configure the Wireless Network Mini-PCI Adapter

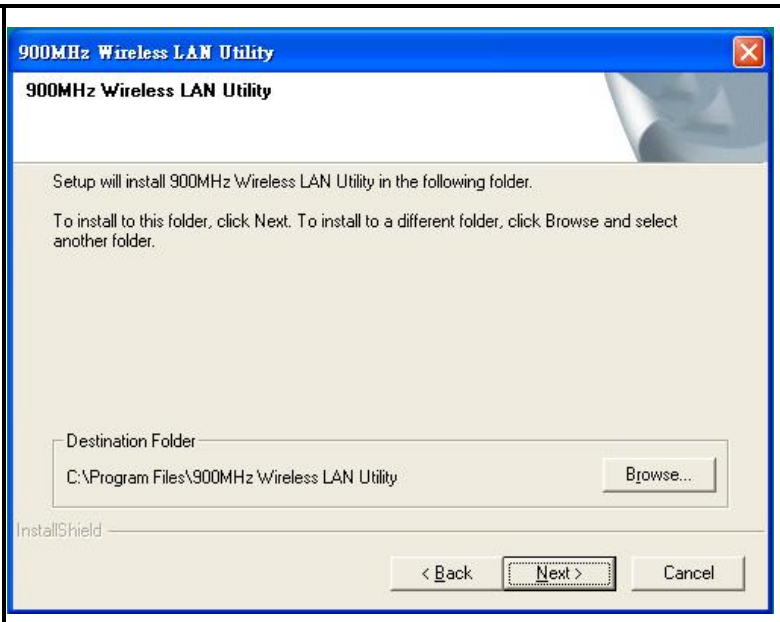
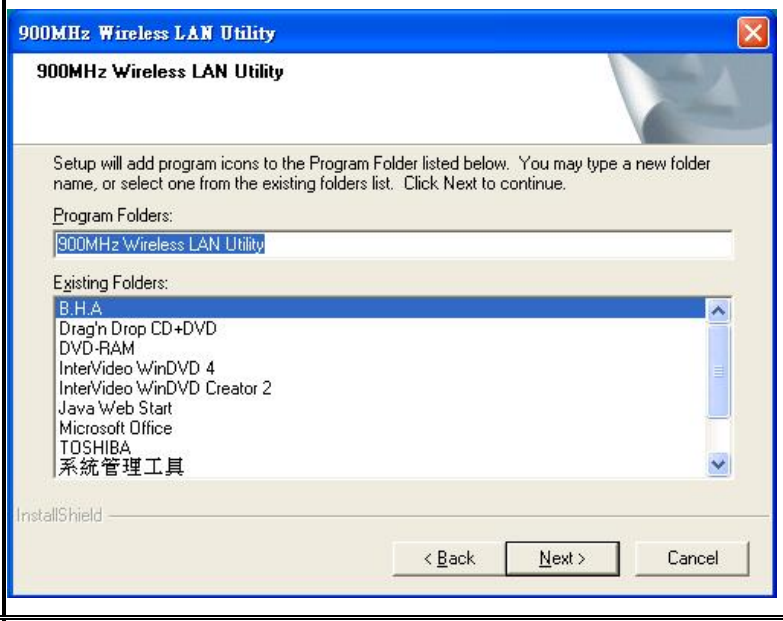
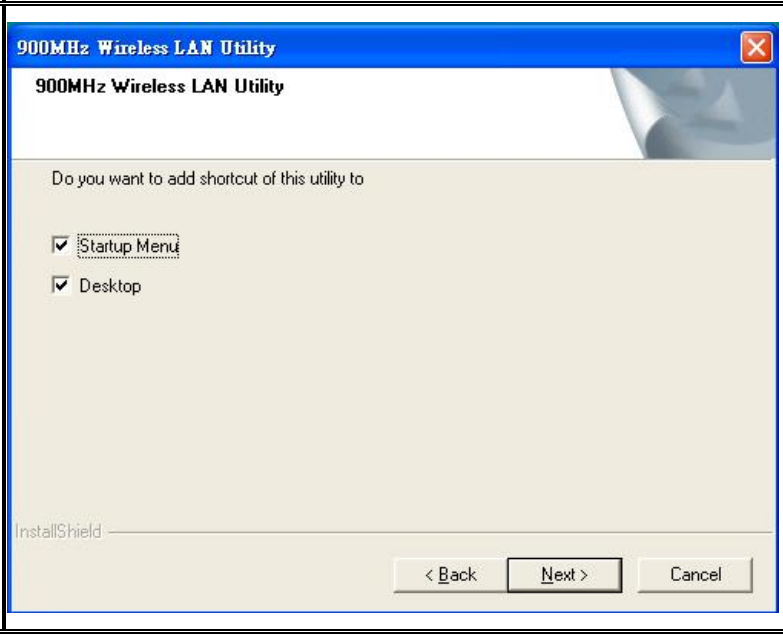
This chapter gives you assistance with detailed configuration for the 900 MHz Wireless Network Mini-PCI Adapter under Windows XP/2000/98SE/ME.

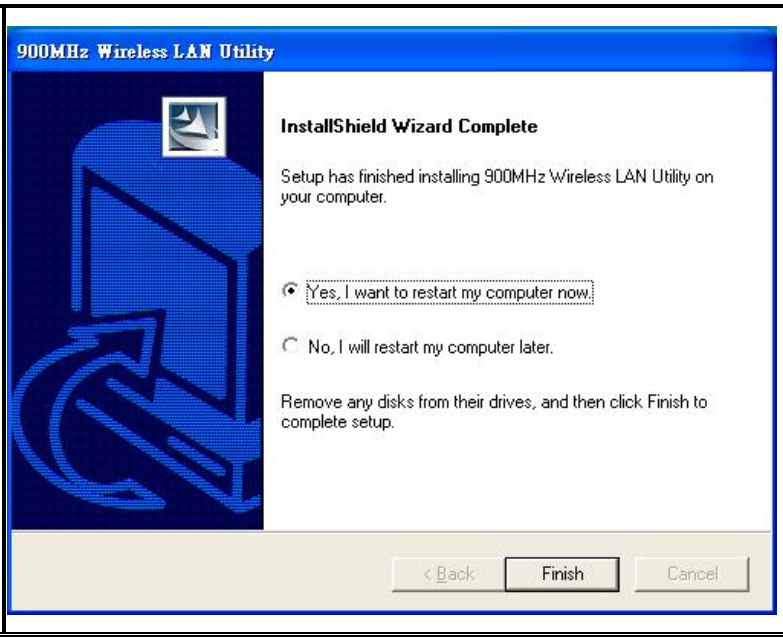
4-1 Install the WLAN Utility

To install the WLAN Utility, follow these steps:

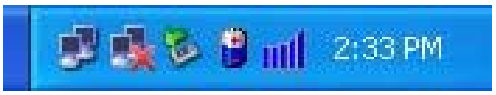
Step 1: Insert the Product CD-ROM.
Step 2: Go to the **utility** folder and run **setup.exe**.
Step 3: The InstallShield Wizard will show up and guide you through the rest of the setup process.

*Run the **Setup** Utility*	
*Check to insatll Driver or not and click **Next** to Continue.*	

*Choose Destination Location and click **Next** to continue*	
*Select a program folder and click **Next***	
*Select **Next** if adding shortcut of utility to **Startup Menu** and **Desktop***	

*Click on **Finish** to complete the installation*	

Upon completion, go to **Program Files** and run the WLAN Utility and its icon will appear in the **System Tray** in the bottom right corner of your task bar. Clicking on the icon will open the configuration window. When you minimize the window, the system tray icon will be loaded in the System Tray again.



The color behind the system tray icon indicates the link status:

 Blue indicates a good or excellent link.

 Yellow indicates a usable but weak link.

 Red indicates no or very poor link quality. When you minimize the window, the system tray icon will be loaded in the **System Tray** again.

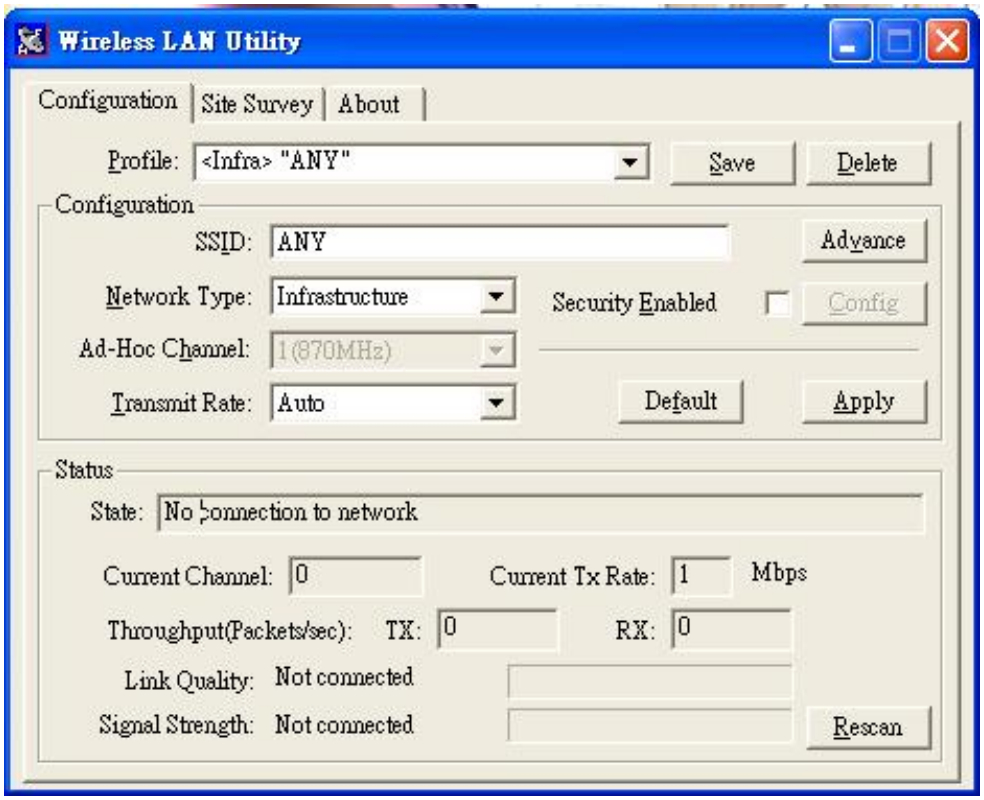
4-2 Use the WLAN Utility

The WLAN Utility enables you to make configuration changes and perform user-level diagnostics on your 900 MHz Wireless Network Mini-PCI Adapter in the Windows XP/2000/98SE/ME operating system environments. The WLAN Utility consists of window with 3 items for you to monitor and configure the 900 MHz Wireless Network Mini-PCI Adapter: **Configuration**, **Site Survey** and **About**.

Basic Setting

Configuration:

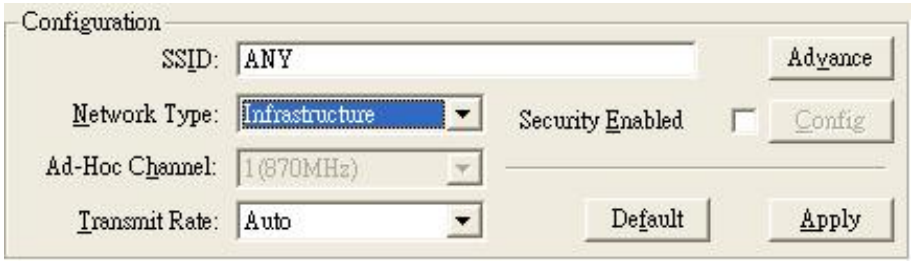
The **Configuration** item allows you to modify the configuration parameters for the 900 MHz Wireless Network Mini-PCI Adapter such as **Profile**, **SSID**, **Network Type**, **Ad-Hoc Channel**, **Transmit Rate**, **WEP**, and **Power Save** mode. Furthermore, you may monitor the current status of the Wireless Network Mini-PCI Adapter such as **State**, **Current Channel**, **Current Tx Rate**, **Throughput**, **Link Quality** and **Signal Strength**.



Profile

The **Profile** field allows you to set values for all parameters by selecting a previously defined profile. To create the profile, go to the **Profile** field, type a profile name and set the corresponding parameters. If one of the profiles is no longer used, you may remove it by clicking the **Delete** button. After changing parameters, save the profile and click the **Apply** button to take effect. You can have multiple profiles and modify the profile at any time.

You may also see the profile from WLAN Utility icon that appears in the **System Tray** in the bottom right corner of your task bar by using right click the WLAN Utility icon or may choose the profile by right clicking the system tray icon on the task bar, making the configuration more friendly and efficient.



SSID

The SSID is the unique ID used by Access Points and stations to identify a wireless LAN. Wireless clients associating to any Access Point must have the same SSID. The default setting is ANY, which allows your Wireless Network Mini-PCI Adapter to automatically associate to any Access Point (Infrastructure mode) in the vicinity of your wireless adapter. The SSID can be set up to *32 characters* and is case sensitive.

Network Type

There are 2 network types for the 900 MHz Wireless Network Mini-PCI Adapter to operate. If you need to access company network or Internet via Access Point, select "**Infrastructure**". If standard "**Ad-Hoc"** is selected, you need to set wireless stations with the *same ESS ID*.

Ad-Hoc Channel

When the Network Type is setted on Ad-Hoc mode, you may selecte the channel via pulling down selecte menu. There are **CH1** – **CH11** to select.

Transmit Rate

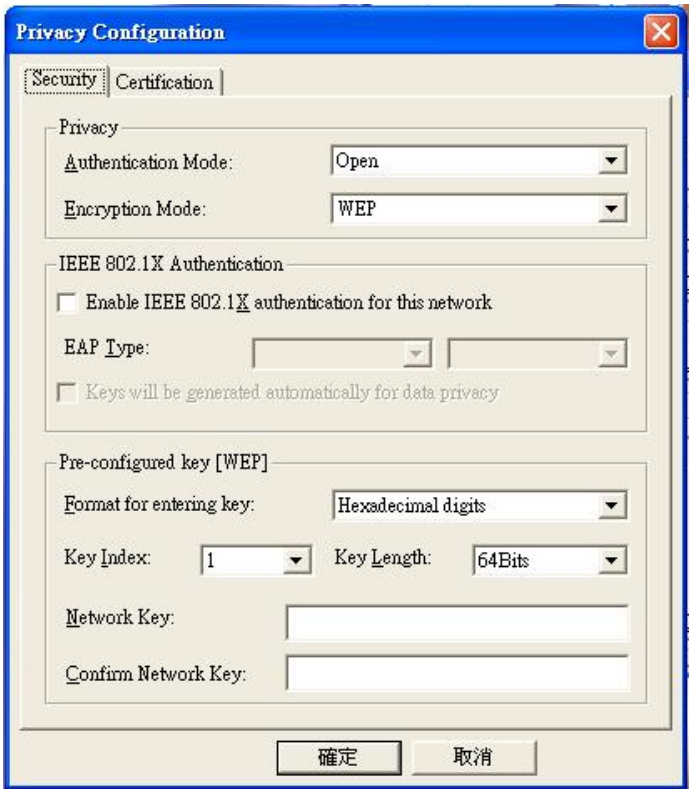
The 900 MHz Wireless Network Mini-PCI Adapter provides various data rate options for you to select. Data rates options include **1Mbps**, **2 Mbps, 5.5 Mbps**, **11Mbps, 6Mbps, 9Mbps, 12**

Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, and **54Mbps**, **Fully Auto**. In most networking scenarios, you will see that the factory-set default "**Fully Automatic**" will prove the most efficient. This setting will allow your 900 MHz Wireless Network Mini-PCI Adapter to operate at the maximum data rate. When the communications quality drops below a certain level, the Card will automatically switch to a lower data rate. Transmission at lower data speeds is usually more reliable. However, when the communications quality improves again, the 900 MHz Wireless Network Mini-PCI Adapter will gradually increase the data rate again, until it has reached the highest available transmit rate.

Security Enable

To protect against hacker entering your system and prevent unauthorized wireless station from accessing data transmitted over the network, the WLAN Utility offers a sophisticated security algorithm. To activate security enable, click the check box next to **Security Enable**.

A **Privacy Configuration** window will then appear.

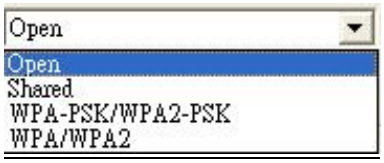


Privacy Configuration consists of specifying **Security** and **Certification**, as explained in the following:

Security Tab

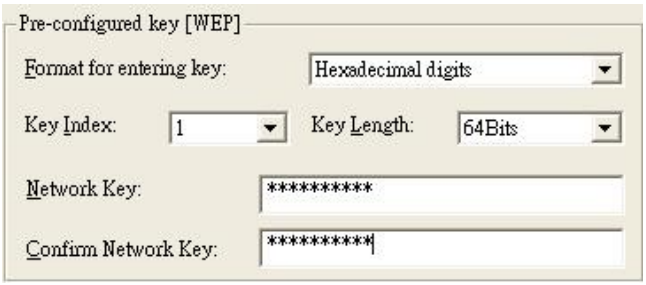
In order to join a network, networks may require an encryption key for association. You must configure the Authentication Mode and Encryption Mode for your keys in the **Privacy** section of this menu.

For Authentication Mode:



Open: Requires NO authentication, since it allows any device to join a network without performing any security check.

Shared: Requires that the station and the access point use the same WEP key to authenticate. This basically means that WEP must be enabled and configured on both the access point and the client with a same key, showed as below:



WPA-PSK/WPA2-PSK: Allows you to gain access to a secured wireless network that the station and the access point use the same pre-shared key to authenticate. You must type a mixture of numbers and letters in the **Pre-shared key [WPA]** section of this menu. You may input either 8-63 ASCII characters or 64 HEX characters. Pre-shared key is usually used for SOHO authentication.

WPA/WPA2: Allows you to gain access to a more secured wireless network that requires mutual authentication between client and access point with a Radius authentication server. This product supports various EAP types (TLS, TTLS and PEAP), which require different credential authentication. In order to access the wireless network, you must select EAP type your service provider supplied in the section of **IEEE802.11X Authentication**.

WPA/WPA2 consists of methods to strengthen data encryption (Temporal key integrity Protocol [TKIP], Advanced Encryption Standard [AES]) and to provide user authentication (strong EAP type such as TLS, PEAP, TTLS).

Once you choose your Authentication Mode, you then need to select the Encryption Mode.

For Encryption Mode

WEP: Specify the encryption keys. There are two methods to set the WEP keys, as described below:

Key will be generated automatically for data private

To create encryption keys automatically, click the **Key will be generated automatically for data private** check box.

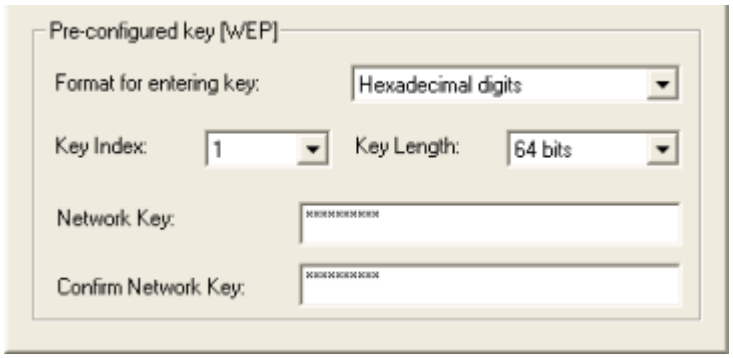
Note: This function is used in IEEE802.1X Authentication mode. Keys are dynamically generated and distributed by the authentication server. Actually, you can obtain keys by asking your service provider for further configuration and information to gain access to the wireless network.

Pre-configured key [WEP]

You can also create encryption keys manually by pulling down the **Key Length** menu and select either **64bit, 128bit, or 152bit** encryption method in the Pre-configured key section of this menu.

For 64bit encryption you may choose:

- **Alphanumeric*:*** entering ***5 characters*** (case sensitive) ranging from "a-z", "A-Z" and "0-9" (e.g. MyKey).
- **Hexadecimal**: entering ***10 hexadecimal digits*** in the range of "A-F", "a-f" and "0-9" (e.g. 11AA22BB33, showed as below).



For 128bit encryption you may choose:

- **Alphanumeric*:*** entering ***13 characters*** (case sensitive) ranging from "a-z", "A-Z" and "0-9" (e.g. MyKey12345678).

- **Hexadecimal**: entering **26 *hexadecimal digits*** in the range of “A-F”, “a-f” and “0-9” (e.g. 00112233445566778899AABBCC).

For 152bit encryption you may choose:

- **Alphanumeric*:*** entering ***16 characters*** (case sensitive) ranging from “a-z”, “A-Z” and “0-9” (e.g. MyKey12345678901).
- **Hexadecimal**: entering **32 *hexadecimal digits*** in the range of “A-F”, “a-f” and “0-9” (e.g. 00112233445566778899AABBCCDDEEFF).

After you type, the utility uses an algorithm to generate 4 keys automatically. The **Key index** field allows you specify which of the four keys you use to transmit data on your wireless LAN. You can change the default key by clicking on the up or down arrow and make sure the default key is set up exactly the same on the Wireless LAN stations as they are on the wireless Access Points.

After entering the WEP keys in the key field, click the **OK** button to make the setting take effect.

Automatic: That means will choose TKIP or AES encryption scheme.

If the Security you are configuring requires authentication, simply go to the **IEEE802.1X Authentication** section of this menu to choose an EAP type.

Certification Tab

After you select the EAP type, you need to click **Certification Tab** to make advanced setting. The following describes configuration of each available EAP type.

TLS: Clicking the **Certification** tab for TLS shows the following menu.

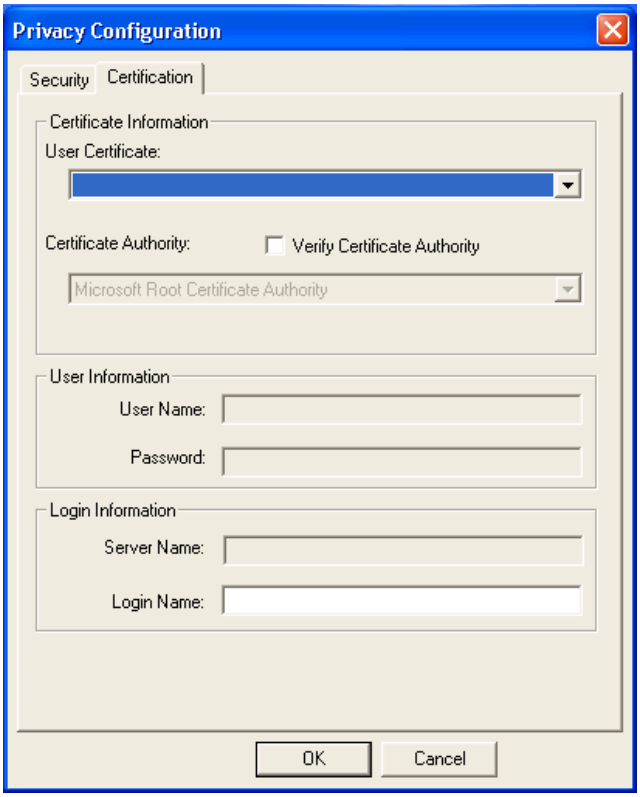


Figure 4.1

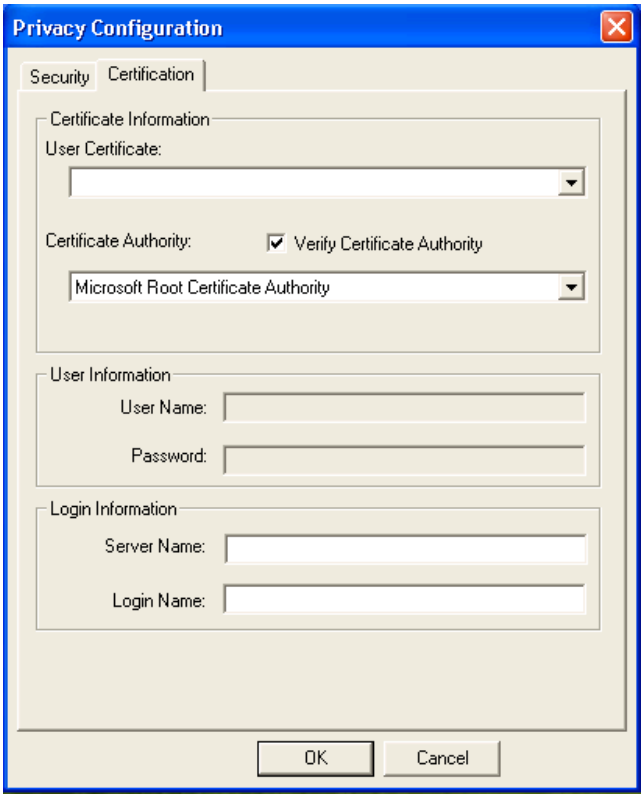


Figure 4.2

TLS requires the entry of Certificate Information and Login Information for mutual authentication. This utility will auto-detect the Certificate Information and Server Name for you to configure TLS easily. You only need to enter the Login Name in the Login information filed to authenticate (Figure 4.1). If you desire to configure TLS manually, you can click the check box next to **"Verify Certificate Authority"** and choose the usable selection in the following field using drop-down menu (Figure 4.2):

User Certificated: select one of user certificates you have enrolled.

Certificate Authority: select one of certificate authorities you have registered.

Besides, you must enter Server Name and Login Name in the Login Information section of this menu manually.

TLS is used to create a secure tunnel through which authentication and encryption keys can be passed and require server and client side keys. To save the information you entered in the appropriate field, click the **OK** button. Otherwise, click the **Cancel** button to close the menu. If you want to return to select other EAP type, click the **Security** tab.

PEAP: Clicking the Certification tab for PEAP displays the following menu.

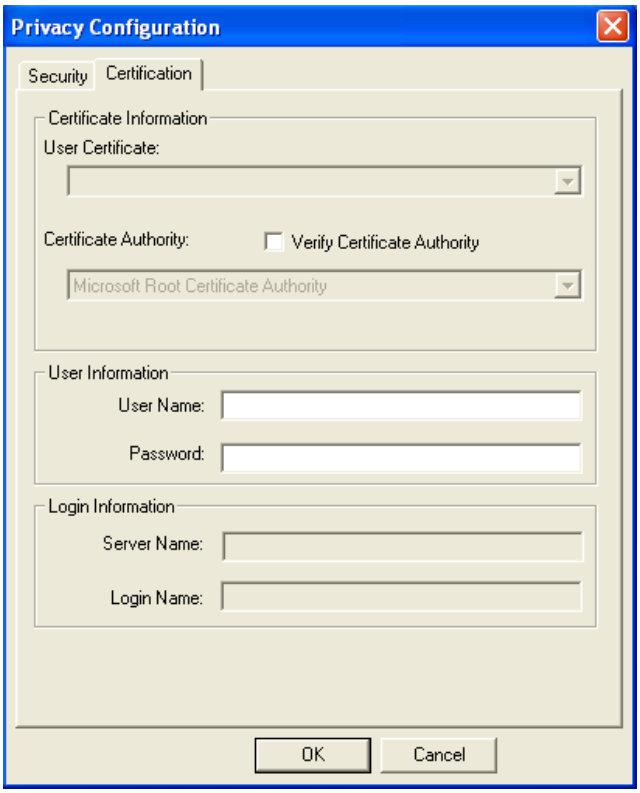


Figure 4.3

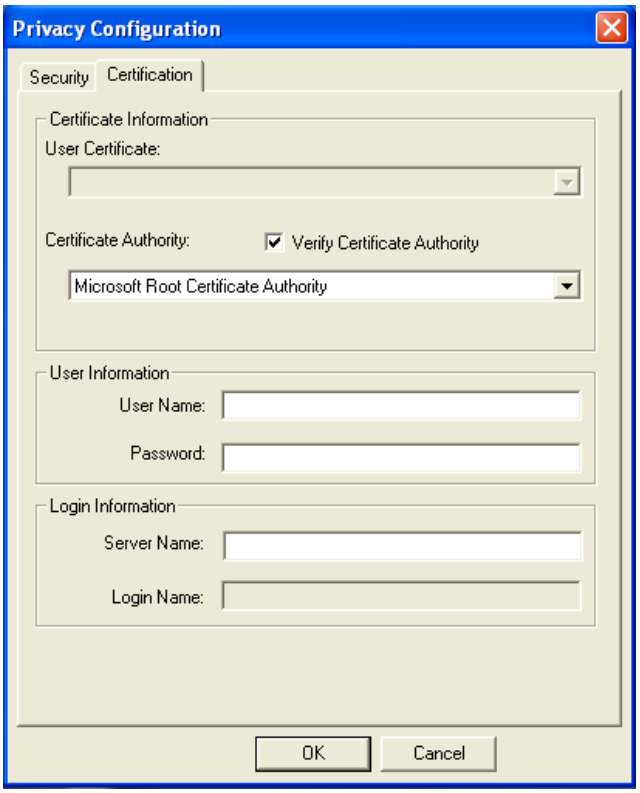
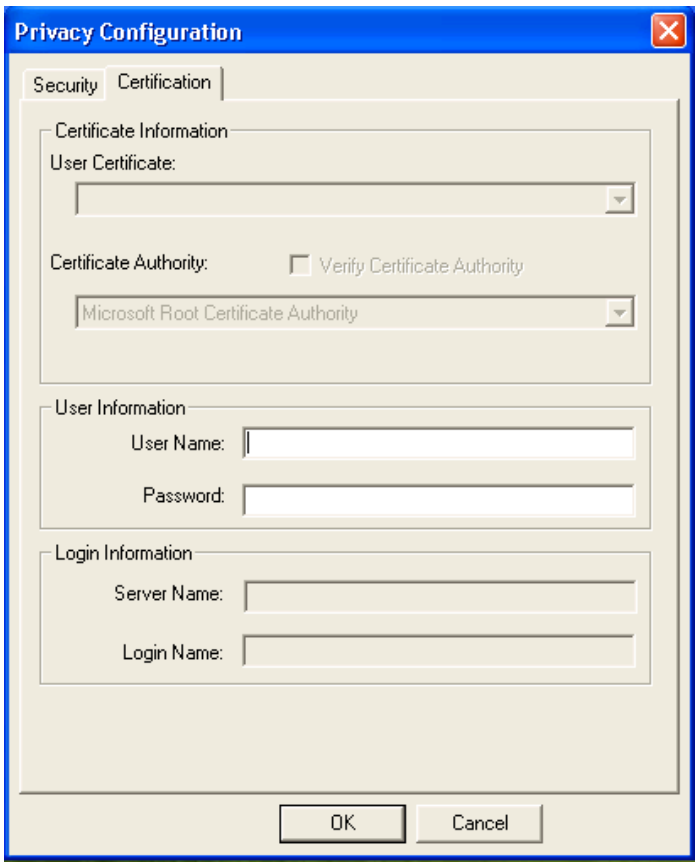


Figure 4.4

PEAP requires the use of Certificate Authority, User Information and Login Information. This utility will automatically identify Certificate Authority and Login Information for users to configure PEAP easily. You only need to enter User Name and Password in the User information filed to authenticate (Figure 4.3). You also can set PEAP manually by clicking the check box next to **"Verify Certificate Authority"** and highlight one of certificate authority to select it. Furthermore, you need to input User Information and Server Name by entering this information in the appropriate fields on your screen (Figure 4.4).

To save the information you entered in the appropriate field, click the **OK** button. Otherwise, click the **Cancel** button to close the menu. If you want to return to select other EAP type, click the **Security** tab.

TTLS: Clicking the **Certification** tab for TTLS shows the following menu.

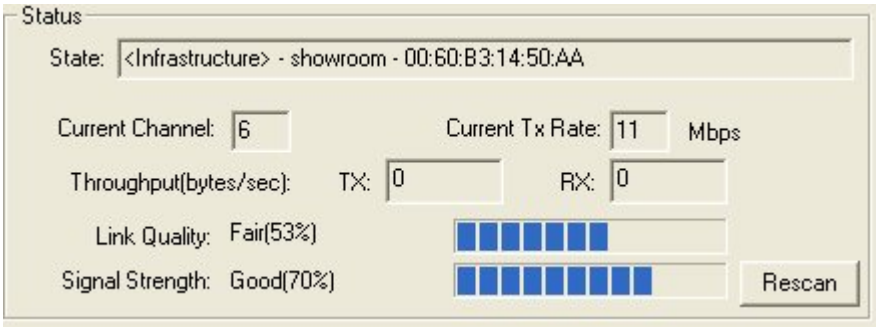


TTLS requires the mutual authentication between station and access points. You must present a **User Name** and **Password** in the User Information field that will be verified by TTLS-capable server. This mutual authentication ensures that only authorized users are allowed access to the network.

To save the information you entered in the appropriate field, click the **OK** button. Otherwise, click the **Cancel** button to close the menu. If you want to return to select other EAP type, click the **Security** tab.

Status:

The Status field on the **Configuration** menu provides the following information.



State: When operating in Infrastructure mode, this field shows the MAC address of the Access Point with which the Wireless Network Mini-PCI Adapter is communicating. When operating in Ad-Hoc mode, it shows the virtual MAC address used by computers participating in the Ad-Hoc network.

Current Channel: Shows the channel on which the connection is made.

Current Tx Rate: Shows the highest transmit rate of the current association.

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

Link Quality: Based on the quality of the received signal of the Access Point beacon. There are 5 states of link quality:

100%~80%: Excellent link.
80%~60%: Good link quality.
60%~40%: Fair link quality.
Under 40%: Poor or no connection.

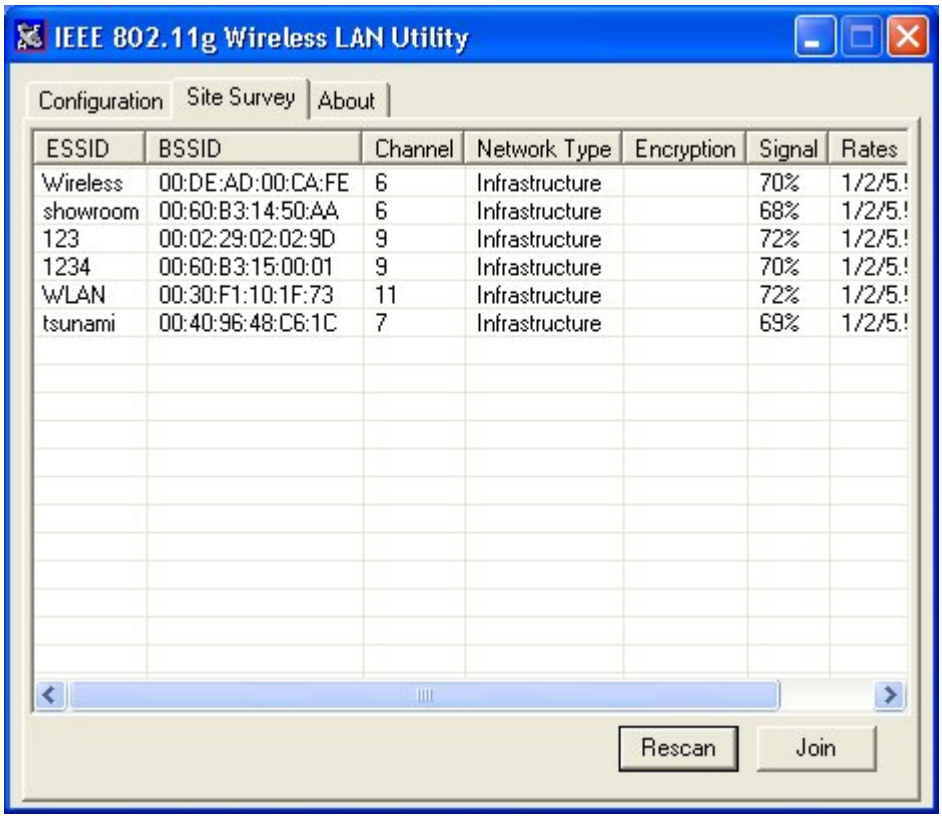
Signal Strength: Based on the received signal strength measurement of the baseband processor of the Beacon signal. Same as link quality, there are 5 states of signal strength:

100%~80%: Excellent signal strength.
80%~60%: Good signal strength.
60%~40%: Fair signal strength.
Under 40%: Poor or no signal strength.

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.

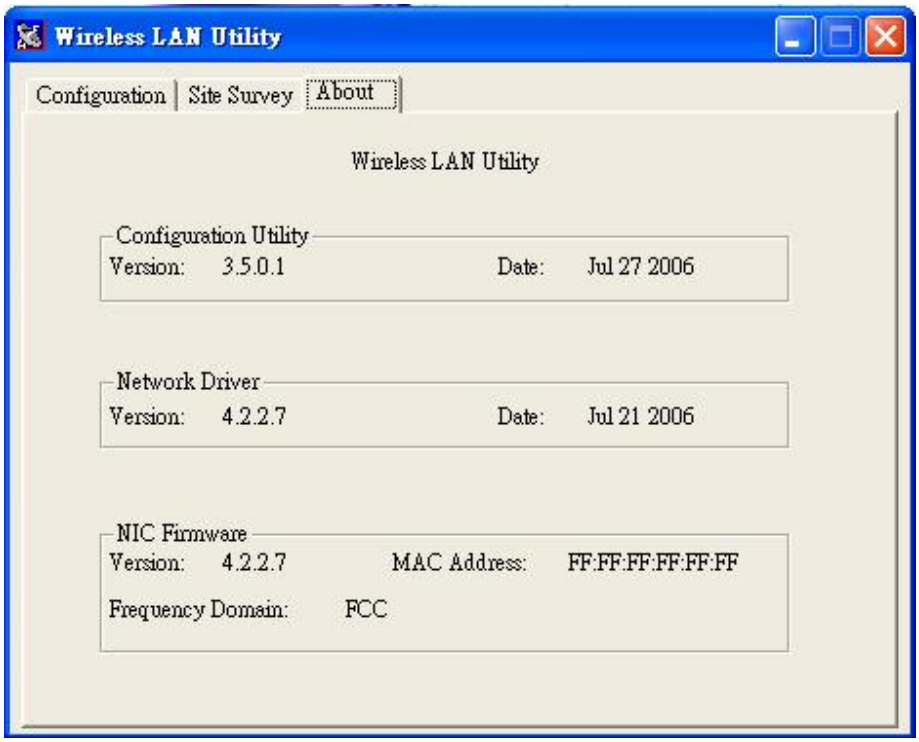
Site Survey:

By clicking the **Rescan** button, the Site Survey can display Access Points around the working environment. Besides showing the ESSID of each Access Point, it also displays BSSID, Channel, Capability, Signal, Noise and Rates. To join any of the displayed Access Points, highlight the Access Point you desire to connect and then click the **Join**.



About:

The **About** item shows the versions of the Wireless LAN Utility, and driver, firmware of the IEEE 900 MHz Wireless Network Mini-PCI Adapter. Also, the MAC address and frequency domain are displayed.

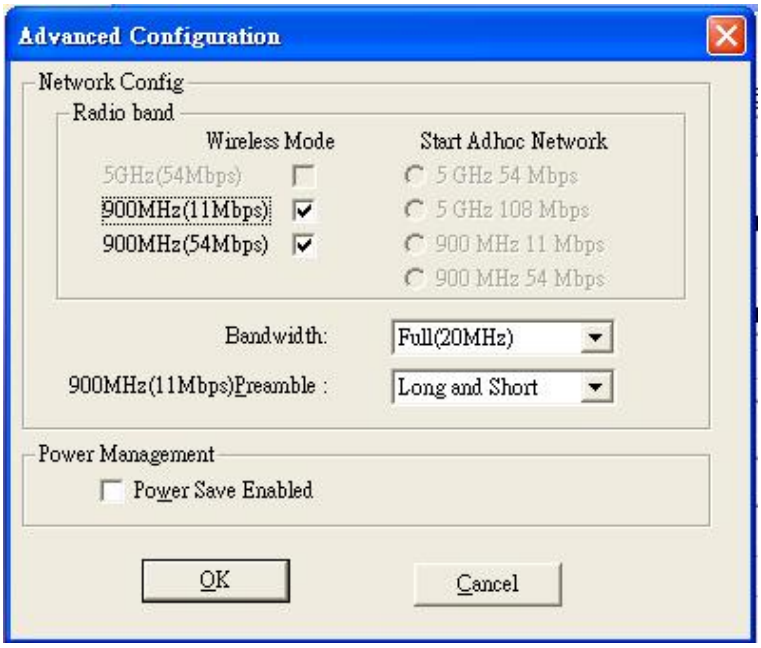


Advance Setting

Advance Options

The Advance configuration provides advance function about network environment if you want to know more detail of the **Advance** configuration. Please consults administrator.

The WLAN Utility also offers the advanced configuration for user to set the 900MHz Wireless Network Mini-PCI Adapter under certain network environment. These advanced options include **Radio Band**, **Bandwidth**, **Preamble** and **Power Management**. To enable the advanced configuration, go to the Configuration tab and click the **Advance** button.



Radio Band: This option is designed to choose the wireless mode to use.

Bandwidth: You may select the Bandwidth that you want to use. It support **Full (20MHz)**, **Half (10MHz)**, and **Quarter (5MHz)**. The default setting is **Full**.

Preamble: The Preamble defines the length of the PLCP synchronization field for communication between the Access Point and Network Card. You may change the preamble setting in this field.

Power Management: The Power Save option is designed to conserve battery life of you computer. When Power Save is enabled, your 900 MHz Wireless Network Mini-PCI Adapter will go into sleep mode to minimize power consumption.

Warning: When power saving mode is enabled, the Access Points you use need to support power saving as well so that the communication can be established.

Limited Warranty

This Warranty constitutes the sole and exclusive remedy of any buyer or reseller's equipment and the sole and exclusive liability of the supplier in connection with the products and is in lieu of all other warranties, express, implied or statutory, including, but not limited to, any implied warranty of merchantability of fitness for a particular use and all other obligations or liabilities of the supplier.

In no even will the supplier or any other party or person be liable to your or anyone else for any damages, including lost profits, lost savings or other incidental or consequential damages, or inability to use the software provided on the software media even if the supplier or the other party person has been advised of the possibility of such damages.

The following are special terms applicable to your hardware warranty as well as services you may use during part of the warranty period. Your formal Warranty Statement, including the warranty applicable to our Wireless LAN products, appears in the Quick Installation Guide that accompanies your products.

Duration of Hardware Warranty: One Year

Replacement, Repair or Refund Procedure for Hardware:

If your unit needs a repair or replacement, return it to your distributor in its original packaging. When returning a defective product for Warranty, always include the following documents:

- The Warranty Repair Card
- A copy of the invoice/proof of purchase, and
- The RMA Report Form (To receive a Return Materials Authorization form (RMA), please contact the party from whom you purchased the product).

Upon proof-of-purchase we shall, at its option, repair or replace the defective item at no cost to the buyer.

This warranty is contingent upon proper use in the application for which the products are intended and does not cover products which have been modified without the reseller's approval or which have been subjected to unusual physical or electrical demands or damaged in any way.

Please complete the information below and include it along with your products.

Name:	
Title:	
Company:	
Telephone:	
Fax:	
Email:	
City/State/Zip code:	
Country:	
Product Name:	
Serial Number:	
MAC Address:	
Invoice Date:	
Product Description:	

If you have any further questions, please contact your local authorized reseller for support.