IEEE 802.11n Wireless LAN PCI Card

Model: XN-990

Quick Installation Guide

Version: 1.0

Date of issue: July, 2007

INTRODUCTION

Thank you for purchasing the IEEE 802.11n Wireless LAN PCI Adapter. This product is the Wireless adapter that base on IEEE 802.11n draft 2.0 standard that deliver up to 12x faster than IEEE 802.11g while staying backward compatible with 802.11g and 802.11b network. This Quick Installation Guide will guide you through the basic installation procedure.   For further information, please check the User's Manual in the Product CD.

About your IEEE 802.11n Wireless LAN PCI Adapter

The IEEE 802.11n Wireless LAN PCI Adapter is a wireless LAN adapter for your computer.   It can be operated in Infrastructure or Ad-Hoc network configurations. *Ad-Hoc mode* allows IEEE 802.11n Wireless LAN PCI Adapter users to join a Basic Service Set (i.e., peer-to-peer mode, without access point). *Infrastructure mode* allows 802.11n Wireless LAN PCI Adapter users to join an Extended Basic Service Set (i.e., connect to an Access Point).

Package Content

The product package should contain the following items:

I.   IEEE 802.11n Wireless LAN PCI Adapter……………………………...…………..x1
II.   Product CD……………………………………..………………………..…………x1
III. Quick Installation Guide……………………..……………………………………x1
IV. Three detachable dipole antennas …………………………………………………x1

If any of the above items are not included or damaged, please contact your local vendor for support.

Installation Requirement

Before installation, make sure you have computer with following:

✓ A minimum of 5MB available hard disk space.

✓ A minimum of 32 MB RAM

✓ A PCI slot port.

✓ A CD-ROM drive.

✓ Windows Vista/XP/2000

Installation of IEEE 802.11n Wireless LAN PCI Adapter for Windows Vista

1. Turn off your desktop PC.

2. Open the case of your desktop computer.

3. Find an available PCI slot on your computer.

4. Firmly insert the PCI Adapter into the PCI slot and close the case of the computer.

5. Connect the three antennas to the antenna connector of PCI Adapter.

6. Power on your desktop PC, it will auto-detect the IEEE802.11n Wireless LAN PCI Adapter and a "**Found New Hardware**" window will show up. Select "**Locate and install driver software (recommended)**" to install the driver.

7. Select "**Don't search online**" to locate the driver on CD-ROM.

8. Insert the included CD into the CD-ROM drive on your laptop. And click **Next**.

9. The windows will appear the message about the Network Control has not passed Windows Logo testing to verify its compatibility with Windows Vista. Select "**Install this driver software anyway**" to continue installing.

10. Click **Close** to complete the installation.

> ***Note:*** *If the driver is not WHQL certified, Vista64 will not load digital-unsigned software.*
>
> *To complete installation with unsigned driver, you may do the following:*
>
> *1. Before starting 64-bit editions of Windows Vista, press "**F8**" to enter advance boot options menu.*
>
> *2. Choose "**Disable Driver Signature Enforcement**" and Windows will start again.*
>
> *3. Start to install the driver and utility for your Wireless LAN PCI Adapter.*

After you install the driver and utility and insert your wireless PCI adapter, the icon appears in the system tray.

Right click the icon, the below window will show up. And select **Connect to a network** to configure the wireless LAN adapter.
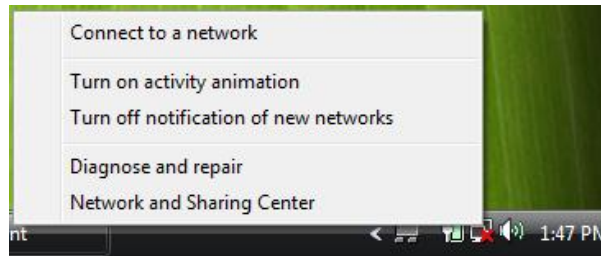
Installation of IEEE 802.11n Wireless LAN PCI Adapter for Windows XP

1. Insert the included CD into the CD-ROM driver on your computer. Locate and double-click **setup.exe**.

2. Click **Next** to accept installing IEEE 802.11n Wireless LAN PCI Adapter driver files.

3. Click **Next** to accept the default file location or click **Browse** to select an alternate folder.

4. Select a program folder or type a new folder name and click **Next**.

5. You may add a shortcut in the startup folder as desired and click **Next**.

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

7. Turn off your desktop PC.

8. Open the case of your desktop computer.

9. Find an available PCI slot on your computer.

11. Firmly insert the PCI Adapter into the PCI slot and close the case of the computer.

10. Connect the three antennas to the antenna connector of PCI Adapter.

11. Start your PC, it will auto-detect new hardware and will display a "**Found New Hardware Wizard**" window. Select "**Install the software automatically (Recommended)**" and press **Next** to install the driver

12. 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.

13. The windows will find 802.11n Wireless LAN PCI Adapter and start copying corresponding files into the system.   Click on **Next** to continue.

14. Click **Finish** to complete the installation.

15. After installing the Wireless LAN 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 LAN Adapter, shown as below.

Warning: You must choose one way to configure Wireless LAN PC Adapter either of using our WLAN Utility, or using Windows XP *Automatic Wireless Network Configuration* first.　If you want to switch configuration from WLAN Utility to Zero Configuration, you need to check the check box "Use Windows to configure my wireless network settings" to enable the WZC service.
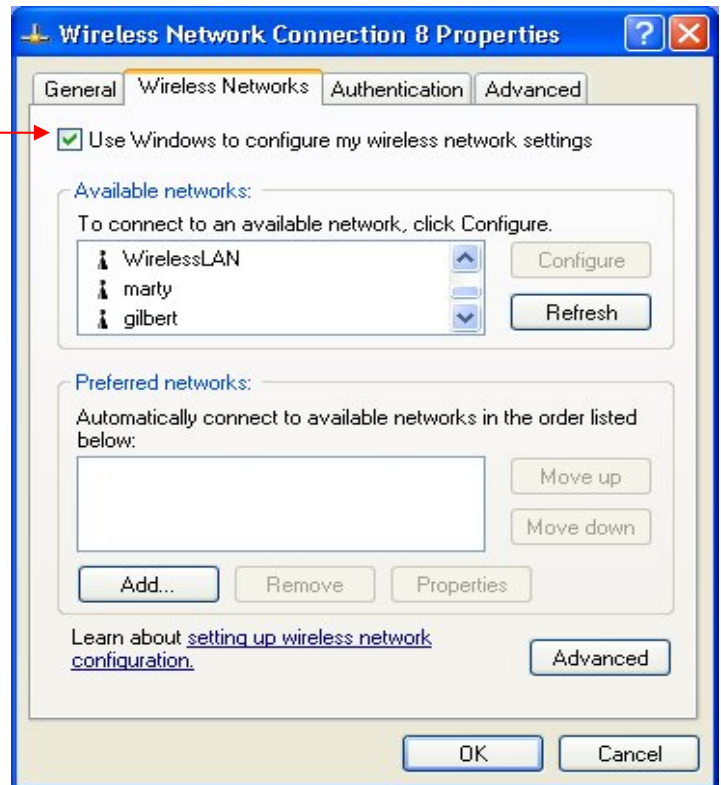
For more information on using the Automatic Wireless Network Configuration please refer to Windows XP **Help** file.

However, the WLAN Utility, which came with the Wireless LAN Adapter, provides you more tools to configure the IEEE 802.11n Wireless LAN PCI Adapter and to monitor the wireless connection. For more information on installing and using the WLAN Utility, please refer to the following sections *"Installation of the Wireless LAN Utility"* and "*Usage of the WLAN Utility*".

Installation of the IEEE 802.11n Wireless LAN PCI Adapter for Windows 2000

1.　Insert the included CD into the CD-ROM driver on your computer.　Go to Utility folder and double-click **setup.exe**.

2.　Click **Next** to accept installing IEEE 802.11n Wireless LAN PCI Adapter driver and utility files.

3.　Click **Next** to accept the default file location or click **Browse** to select an alternate folder.

4.　Select a program folder or type a new folder name and click **Next**.

5.　You may add a shortcut in the startup folder as desired and click **Next**.

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

7. Turn off your desktop PC.

8. Open the case of your desktop computer.

9. Find an available PCI slot on your computer.

10. Firmly insert the PCI Adapter into the PCI slot and close the case of the computer.

11. Connect the three antennas to the antenna connector of PCI Adapter.

12. Power on your desktop PC, it will auto-detect new hardware and will display a "**Found New Hardware Wizard**" window.　Click **Next** to continue.

13. Select "**Search for a suitable driver for my device (recommended)**". Insert the Product CD-ROM into the appropriate drive. Click **Next** to install the driver.

14. The windows will find **"IEEE 802.11n Wireless LAN PCI Adapter"**. Click **Next** to continue.

15. A Digital Signature Not Found message may appear.　Click **Yes** button to proceed.

16. Click **Finish** to complete the installation.

Installation of the Wireless LAN Utility

1. Insert the Driver and Utility CD into the CD-ROM drive. Locate and double-click **setup.exe** to follow the windows instructions to install wireless utility.

2. When the Welcome screen appears, click **Next**.

3. The Choose Destination Location screen displays the default Destination Folder. If you want to change the default folder, you can click **Browse** and choose a different destination folder. Click **Next** to go to the next screen.

4. The Select Program Folder screen appears. Accept or change the default folder name and click **Next** to continue.

5. Accept to add shortcut of this utility and click **Next** to continue.

6. Completing the utility installation.

7. Upon completion, go to Program Files and run the Wireless LAN Utility. The utility interface will then appear and at the same time its icon appears in the System Tray in the bottom right corner of your task bar.

WLAN Utility Summary

The WLAN Utility consists of window with 3 items for you to monitor and configure the IEEE 802.11n Wireless LAN PCI Adapter: **Configuration**, **Site Survey** and **About**.
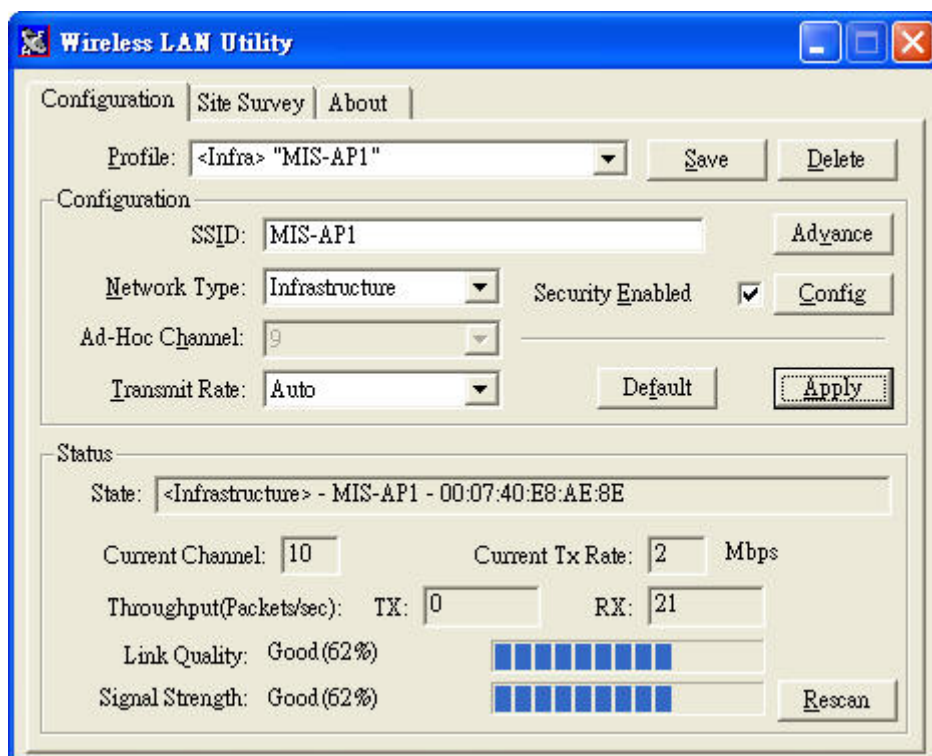

The Configuration Screen

The **Configuration** item allows you to modify the configuration parameters for the IEEE 802.11n Wireless LAN PCI Adapter.

Configuration	
LABEL	DESCRIPTION
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. 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.
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.
Network Type	This field displays the network type (**Infrastructure** or **Ad Hoc**) for user select.
Ad-hoc Channel	To form Ad-Hoc network, the same channel is required. Before choosing a channel, it is advised to use the **Site Survey** tool to check the quality of each channel. Afterwards, go to the **Channel** field and choose a clear channel for your wireless LAN stations. Click on the **Apply** button to make the change take effect.
Transmit Rate	Dynamic Data Rate Scaling from 300 to 1Mbps.
State	This field displays the MAC address of the wireless device to which the wireless LAN Adapter is associated.
Current Channel	This field displays the radio channel the wireless LAN Adapter is currently using.
Current Tx Rate	This field displays the current transmission rate of the wireless LAN adapter in megabits per second (Mbps).
Throughput (Packets/sec)	This field displays the real-time statistics of the data rate.
Link Quality	The status bar shows the quality of the signal.
Signal Strength	The status bar shows the strength of the signal.

The Site Survey Screen

Use the **Site Survey** screen to scan for and connect to a wireless network automatically. By clicking on 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, and Supported Rates. To join any of the displayed Access Points, highlight the Access Point you desire to connect and then click **Join**.
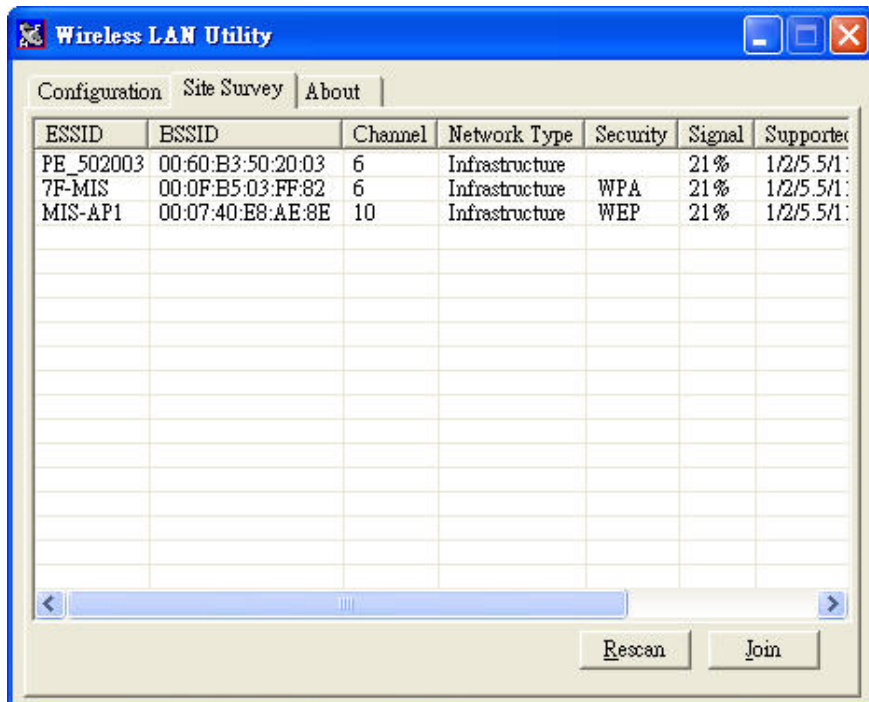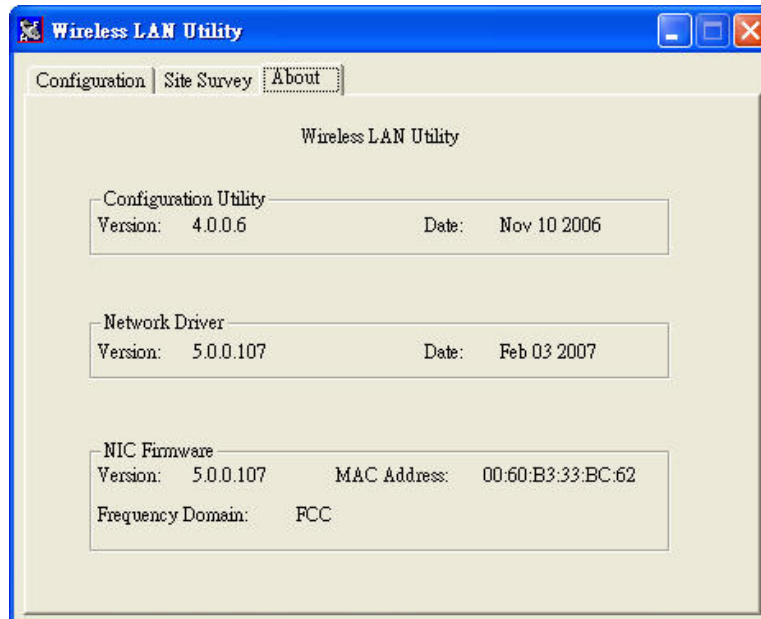
Site Survey

LABEL	DESCRIPTION
ESSID	This field displays the SSID (Service Set IDentifier) of each wireless device.
BSSID	This field displays the MAC address of each wireless device.
Channel	This field displays the channel number used by each wireless device.
Network Type	This field displays the network type (**Infrastructure** or **Ad Hoc**) of the wireless device.
Security	This field shows whether data encryption is activated (**WEP** (WEP or 802.1x), **WPA**, **WPA-PSK**, **WPA2**, **WPA2-PSK**) or inactive (**Disabled**).
Signal	This field displays the signal strength of each wireless device.
Supported Rates	This field displays the supported rates of each wireless device.

The About Screen

The About page shows the versions of the Wireless LAN Utility, driver, and firmware of the IEEE 802.11n Wireless LAN PCI Adapter. Also, the MAC address and frequency domain are displayed.

Site Survey	
LABEL	DESCRIPTION
Configuration Utility	This field displays the utility version number of the wireless LAN adapter.
Network Driver	This field displays the driver version number of the wireless LAN adapter.
NIC Firmware	This field displays the firmware version number of the wireless LAN adapter.

Quick Tips to Configure the IEEE 802.11n Wireless LAN PCI Adapter

This Quick Start Guide covers the basic features needed to use the IEEE 802.11n Wireless LAN PCI Adapter. Follow these steps to configure network settings.

Set the Profile (Optional)

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. 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.
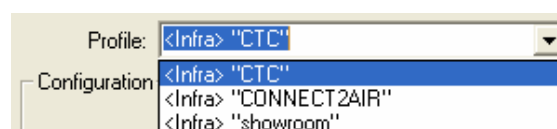
Set the Network Type

From the Main Menu, click the **Configuration** tab, go to **Network Type** and click the down arrow at the right of the **Network Type** field. You will then see 2 network types for the IEEE 802.11n Wireless LAN PCI Adapter to operate. If you need to access wireless network or Internet via Access Point, select "**Infrastructure**". If standard "**802.11 Ad-Hoc"** is selected, you need to set wireless stations with the *same SSID*.
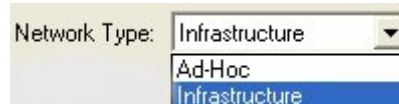
Set the SSID

The default setting is ANY, which allows your Wireless LAN 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.

Set the Channel (for Ad-Hoc network)

To form Ad-Hoc network, the same channel is required. Before choosing a channel, it is advised to use the **Site Survey** tool to check the quality of each channel. Afterwards, go to the **Channel** field and choose a clear channel for your wireless LAN stations. Click on the **Apply** button to make the change take effect.

Set the Advance
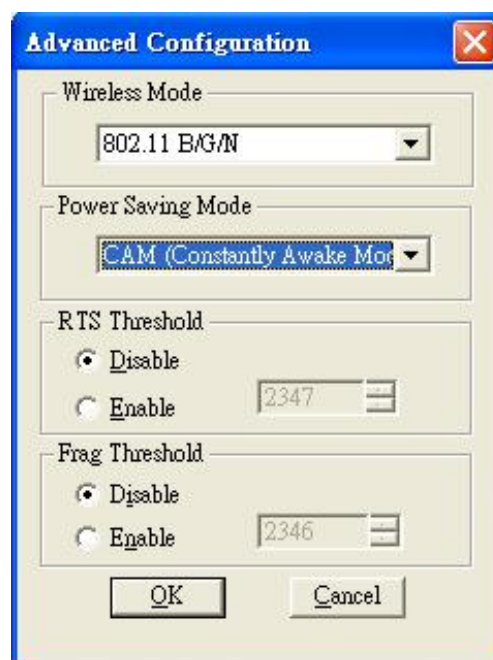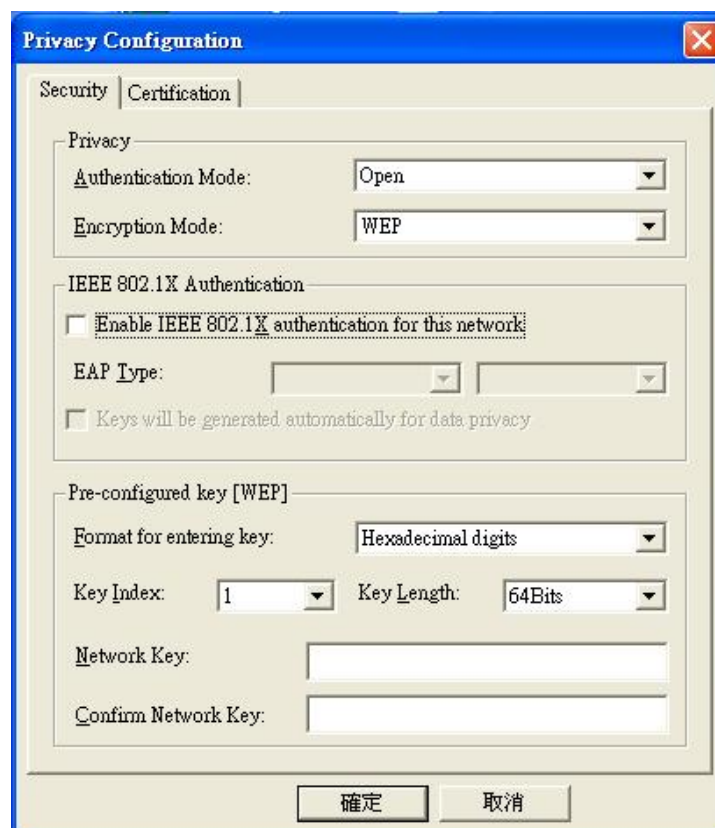
Wireless Mode: There are three Wireless Modes to be supported, 802.11B, 802.11B/G, and 802.11B/G/N.

Power Save Mode: The Power Save option is designed to conserve battery life of you computer. When Power Save is enabled, your IEEE 802.11n Wireless LAN PCI Adapter will go into sleep mode to minimize power consumption.

Set the Security:

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:

Set the Authentication Mode:

Open: If you require NO authentication, select "**Open**" since it allows any device to join a network without performing any security check.

Shared: If you select "**Shared**" mode, make sure that WEP must be enabled and configured on both the access point and the client with a same key.

WPA (2)-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 an alphanumeric password phrases between 8 and 63 characters in the **Pre-shared key** section of this menu.

WPA (2): 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. In order to access the wireless network, you must select EAP type your service provider supplied in the section of **IEEE802.11X Authentication**.

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

Set the Encryption Mode:

WEP: 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.

Pre-configured key [WEP]

You can also create encryption keys manually by pulling down the **Key Length** menu and select either **64bit** or **128bit** encryption method
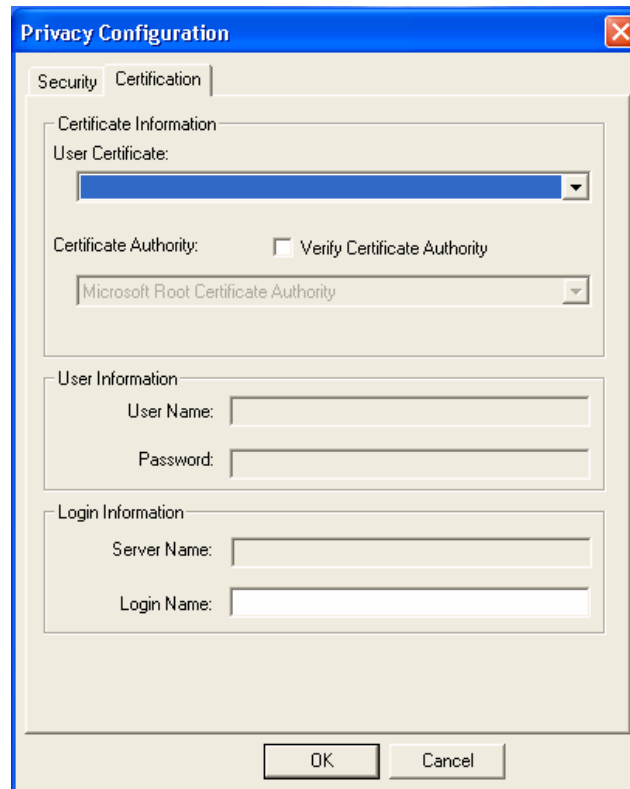
After entering the WEP keys in the key field, click the **OK** button to make the setting take effect.

TKIP: When TKIP is enabled, the key value will be generated automatically for data private.

AES: When AES is enabled, the key value will be generated automatically for data private.

If the Security you are configuring requires authentication, simply click the check box next to **Enable IEEE802.1X authentication for this network** and you can choose an EAP type.

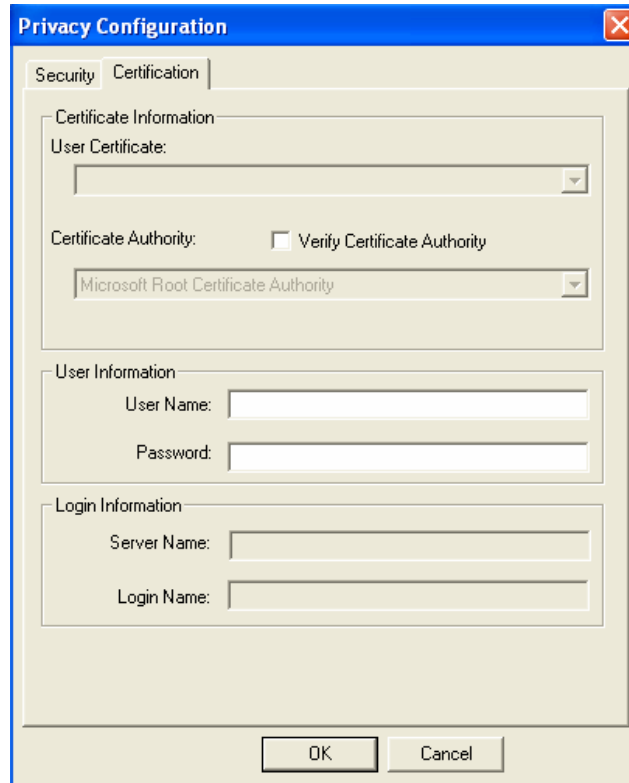**TLS:** TLS requires the entry of Certificate Information and Login Information for mutual authentication.

PEAP: PEAP requires the use of certificates with **Certification Authority** server. You also need to input **User Information** and **Login Information**.

TTLS: LEAP requires the mutual authentication between station and access points. You must present a **User Name** and **Password** that will be verified by TTLS-capable RADIUS server.
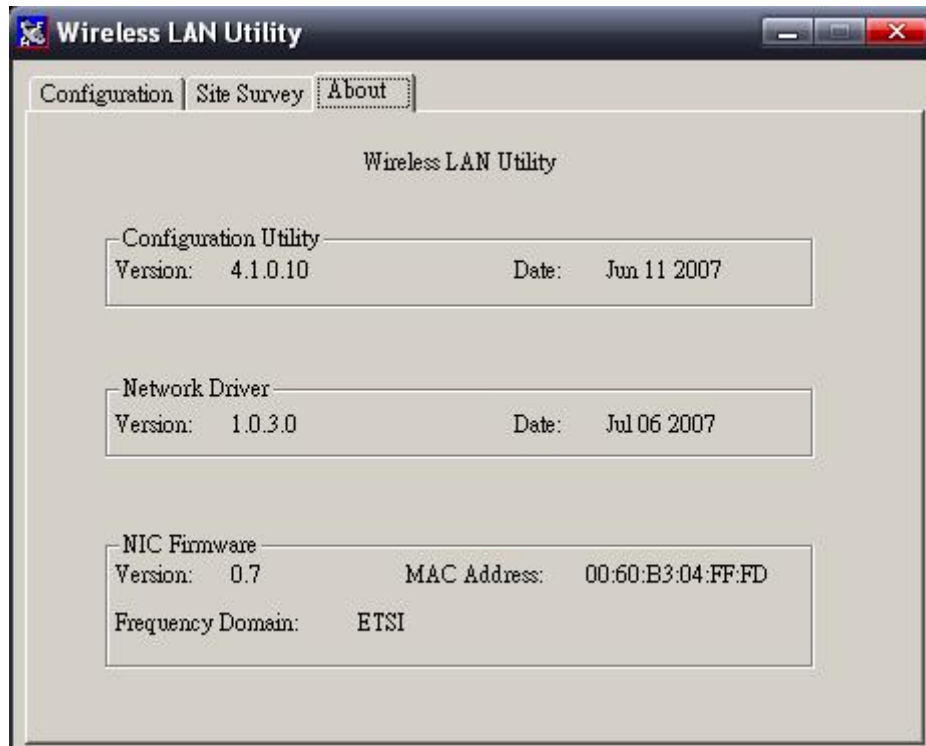
To save the information you entered in the appropriate field, click the **OK** button. Otherwise, click the **Cancel** button to close the menu. If you want to return to select other EAP type, click the **Security** tab.

Technical Support

You can find the most recent software and updated user documentation will be updated periodically on the supplier Web site. If you have difficulty resolving the problem while installing or using the IEEE 802.11n Wireless LAN PCI Adapter, please contact the supplier for support.

# Federal Communications Commission (FCC) Interference

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 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.

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

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

Trade Name	Model Number
FC Tested To Comply With FCC Standards	
FOR HOME OR OFFICE USE	
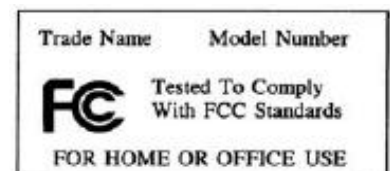
For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

CE Statement：

Hereby, ZCOM, declares that this device is in compliance with the essential requirement and other relevant provisions of the R&TTE Directive 1999/5/EC.

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