

IEEE 802.11n Wireless PCI Adapter

User's Manual

March 2008

FCC Warning

This equipment has been tested and found to comply with the limits for a Class C 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 communication. 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
- Consult the dealer or an experienced radio/TV technician for help. the receiver is connected.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

IMPORTANT NOTE:

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 a minimum distance of about eight inches (20cm) between the radiator and your body.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Revision History

Revision	History
V2.0	Second release

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Contents

1. Introduction	4
1.1 Features.....	4
1.2 LED Indicator	4
1.3 Package Contents	5
1.4 Before you start.....	5
1.5 Hardware Installation	5
2. Installation Procedure.....	7
2.1 For Windows XP and 2000.....	7
2.2 For Vista	12
3. Wireless Network Configuration Utility.....	17
3.1 For Windows XP & 2000.....	17
3.1.1 Start.....	23
3.1.2 Profile.....	29
3.1.3 Network.....	34
3.1.4 Advanced.....	35
3.1.5 Statistics.....	36
3.1.6 WMM	37
3.1.7 WPS.....	43
3.1.8 About	46
3.1.9 Link Status	47
3.1.10 Enable AP Mode Feature in Windows 2000 OS	48
3.2 For Windows Vista.....	53
3.2.1 Profile.....	53
3.2.2 Link Status	61
3.2.3 Site Survey	62
3.2.4 Statistics.....	68
3.2.5 WPS Configuration	69
3.2.6 QoS	71
3.2.7 About	78
3.2.8 How to Manage Windows Profile	79
4. Troubleshooting.....	83

1. Introduction

This is a wireless client device that delivers unrivaled wireless performance for your Desktop PC. It complies with IEEE 802.11n draft standard and backward compatible with IEEE 802.11b/g. With this adapter, you can easily upgrade your Desktop PC wireless connectivity. Once the wireless PCI adapter is connected, access the network with high-speed Internet connection while sharing photos, files, music, video, printers, and storage. Get a better Internet experience with a faster wireless connection so you can enjoy smooth digital phone calls, gaming, downloading, and video streaming. It also provides peer-to-peer communication among any compatible wireless users and no Access Point required.

This Wireless PCI Adapter provides maximum transfer rate up to 300Mbps and supports WEP, WPA, WPA2 and WPS high-level WLAN security features that guarantee the best security for users.

This product is made in ISO9001 approved factory and complies with FCC part 15 regulations and CE approval.

1.1 Features

- Complies with draft IEEE 802.11n standard
- Up to 150Mbps data transfer rates in 802.11n mode
- Backward compatible with IEEE 802.11b/g
- Legacy and High Throughput Modes
- Supports 64/128-bit WEP Data Encryption
- Supports WPA, WPA2 (802.11i), WPS, 802.11x advanced security
- Supports both Infrastructure and Ad-Hoc Networking Modes
- Supports Quality of Service (QoS) - WMM, WMM-PS
- Supports Multiple BSSID
- Supports Windows 2000/XP/Vista
- Simple user setup and diagnostics utilities
- 20MHz/40MHz Bandwidth

1.2 LED Indicator

LED	Light Status	Description
ACT	Blinking	Data is being transmitted or received.
LINK	On	Wireless link is established.

1.3 Package Contents

- One Wireless PCI Adapter
- 2 External Antennas (depends on the model)
- One CD-ROM (Drivers / Utility, User's Manual)

If any of the above items is missing, contact your dealer immediately.

1.4 Before you start

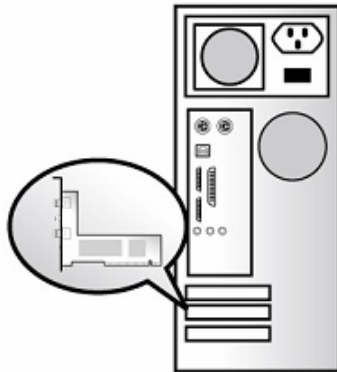
You must have the requirements as follow,

- A computer with an available PCI slot
- At least a 300MHz processor and 32MB memory
- Windows 2000/XP/Vista support
- A CD-ROM drive
- Wireless PCI Adapter properly installed

1.5 Hardware Installation

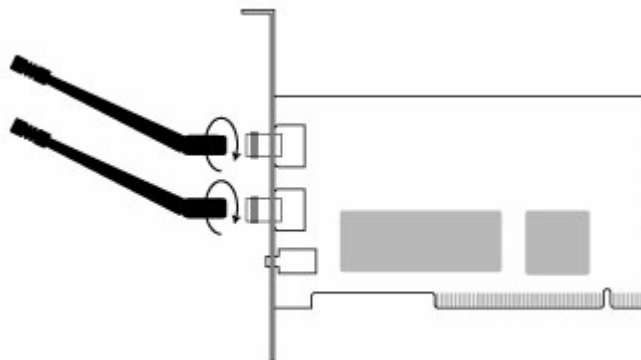
STEP1: Turn off your computer and remove its cover

STEP2: Insert the PCI card to an available PCI slot firmly. Please refer to the illustration below:



STEP3: Secure this card to the rear of the computer chassis and put back the cover.

STEP4: Secure the antenna to antenna connector of the card. Please refer to the illustration below:



STEP5: Turn on the computer.

[Guidelines for the Hardware Installation]

Please observe the following guidelines when you are installing the PCI card to the Desktop PC:

▶ **Avoid placing the PC close to obstacles**

Obstructions such as concrete and thick walls limit radio signal penetration and reduce the throughput and the coverage range of the PCI card.

▶ **Place the PC as high as possible**

The higher the PC is placed, the better the performance.

▶ **Adjust the antenna position**

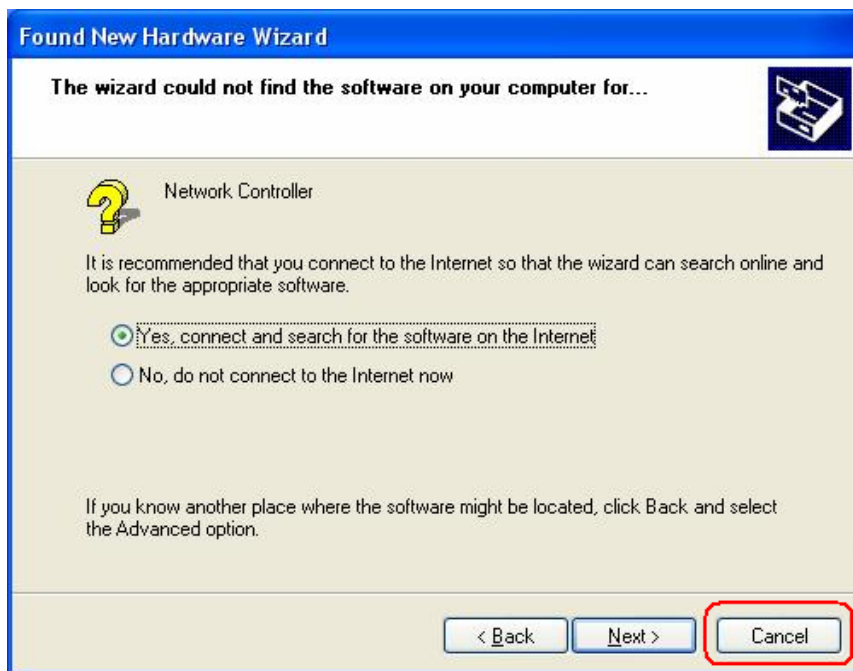
The WLAN PCI card has one antenna for signal reception and another one antenna for high power signal transmission. The antenna on the right side is for signal reception and should be set perpendicular (90 degrees). The left side is for signal transmission and should be set about 90 degree.

2. Installation Procedure

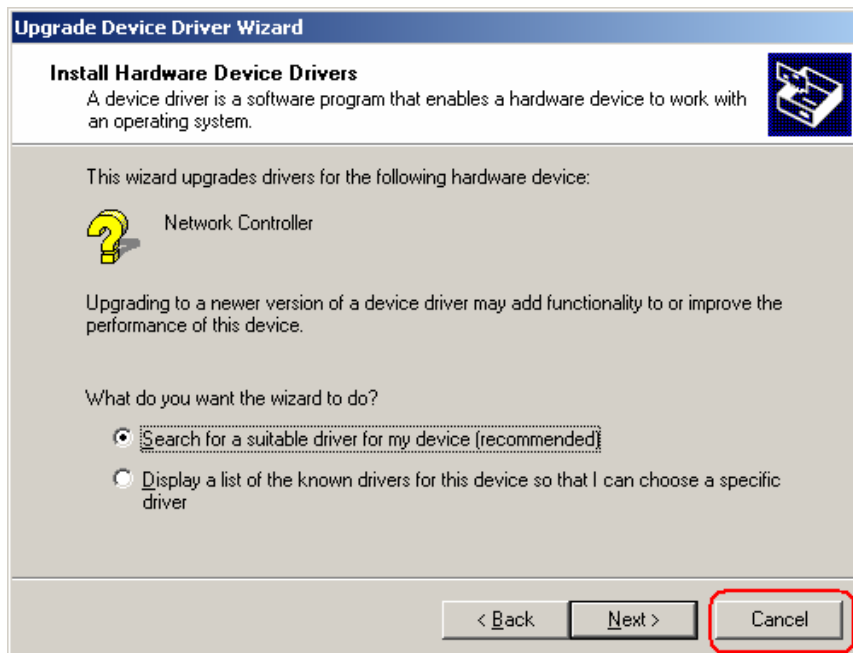
Note: If you have installed the Wireless Adapter driver & utility before, please uninstall the old version first.

2.1 For Windows XP and 2000

STEP1: Found New Hardware Wizard is displayed after the adapter is installed and the computer is restarted. Please click **Cancel** to continue.



(For Windows XP)

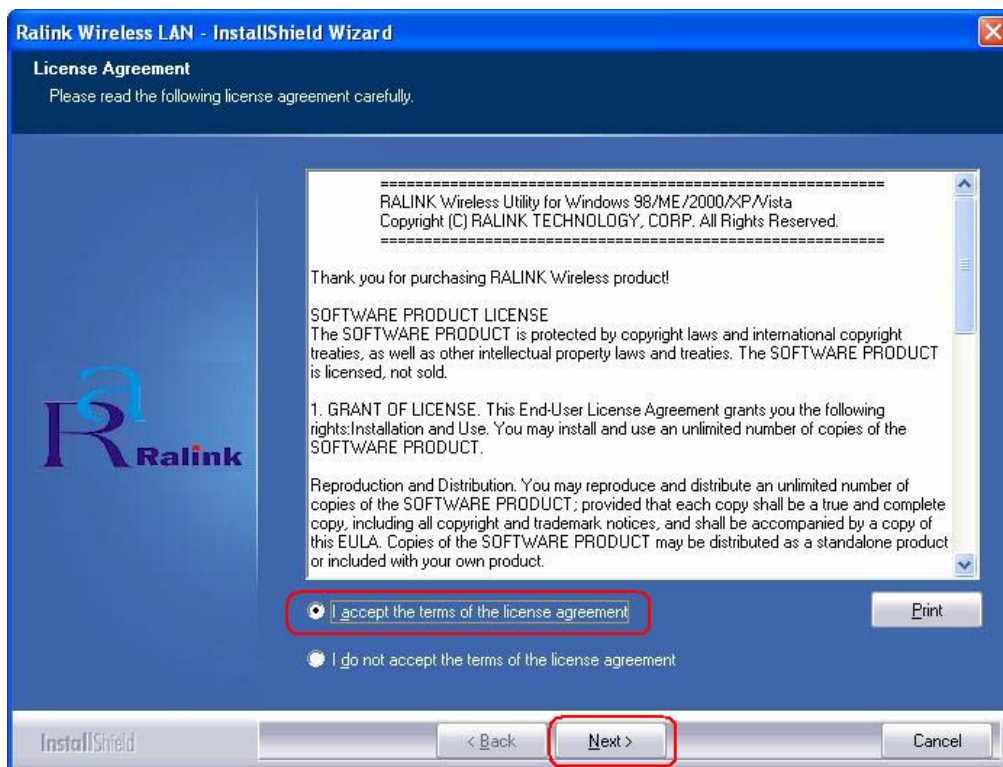


(For Windows 2000)

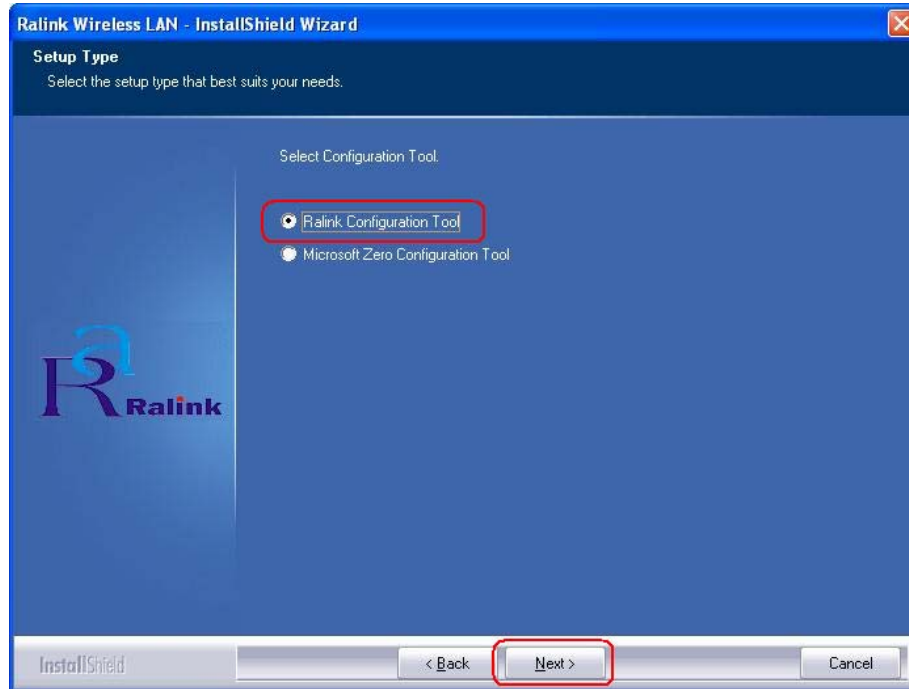
STEP2: Insert Installation CD into CD-ROM drive then windows below will appear. Click **Install Driver & Utility** to begin device driver installation.



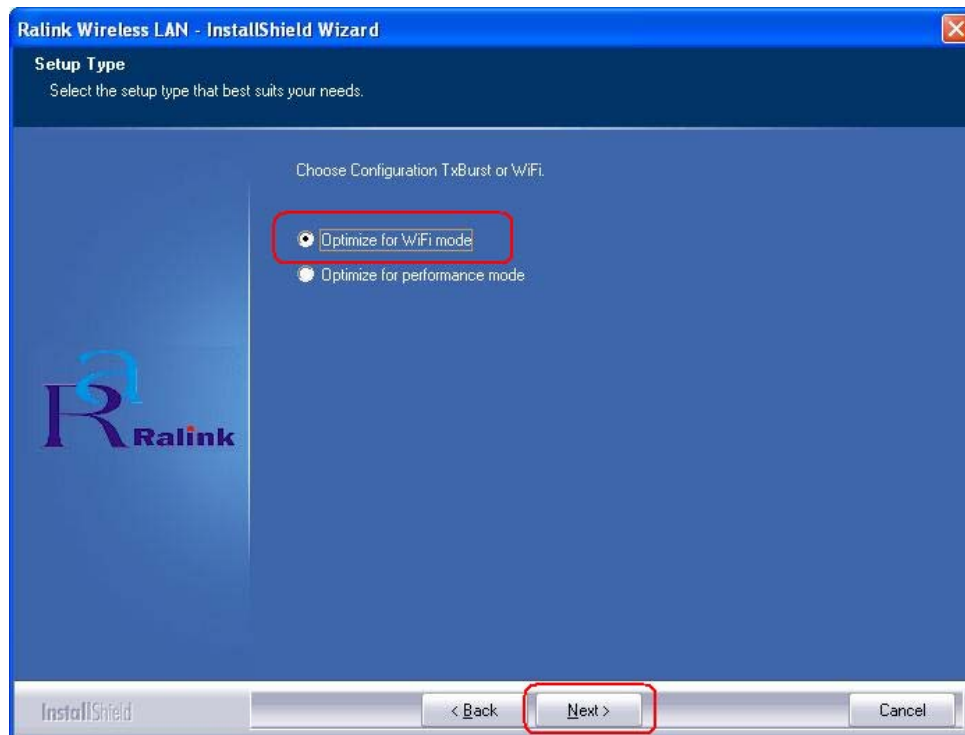
STEP3: Please read the following license agreement. Use the scroll bar to view the rest of this agreement. Select **I accept the terms of the license agreement** and click **Next** to continue.



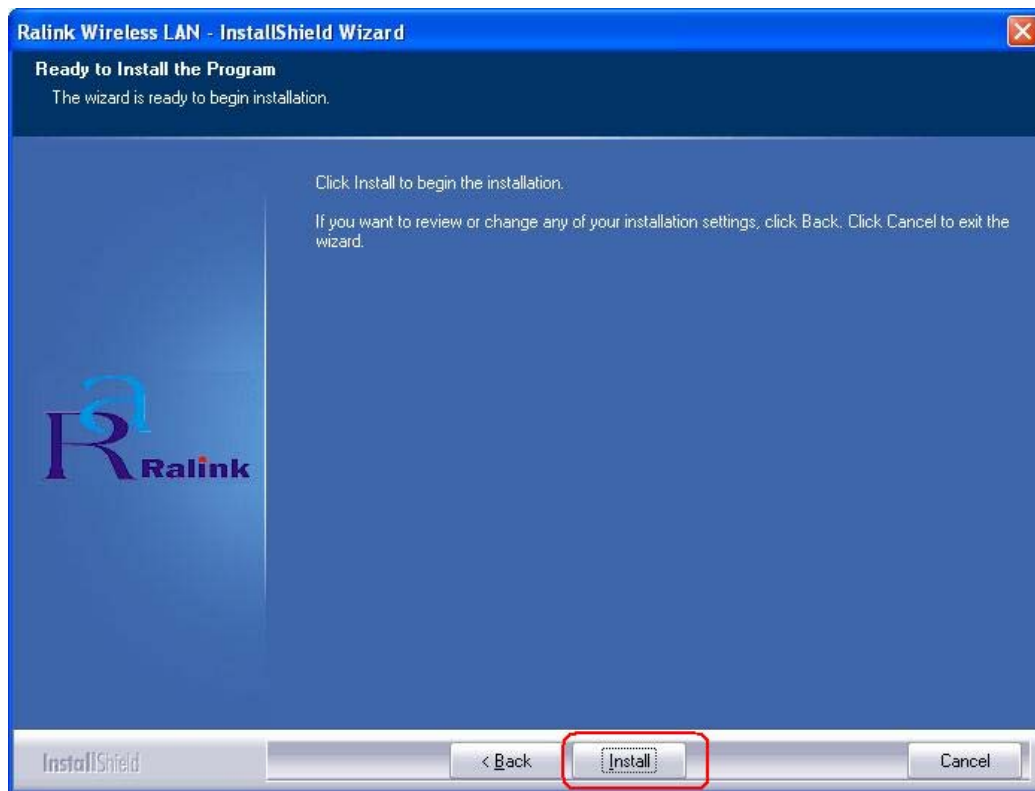
STEP4: In Windows XP, there is a **Windows Zero Configuration Tool** for you to setup wireless adapter. You can choose to configure the adapter through the **Microsoft Zero Configuration Tool** or the **Ralink Configuration Tool**. It is recommended to choose the **Ralink Configuration Tool** for the adapter. Click **Next** to continue.



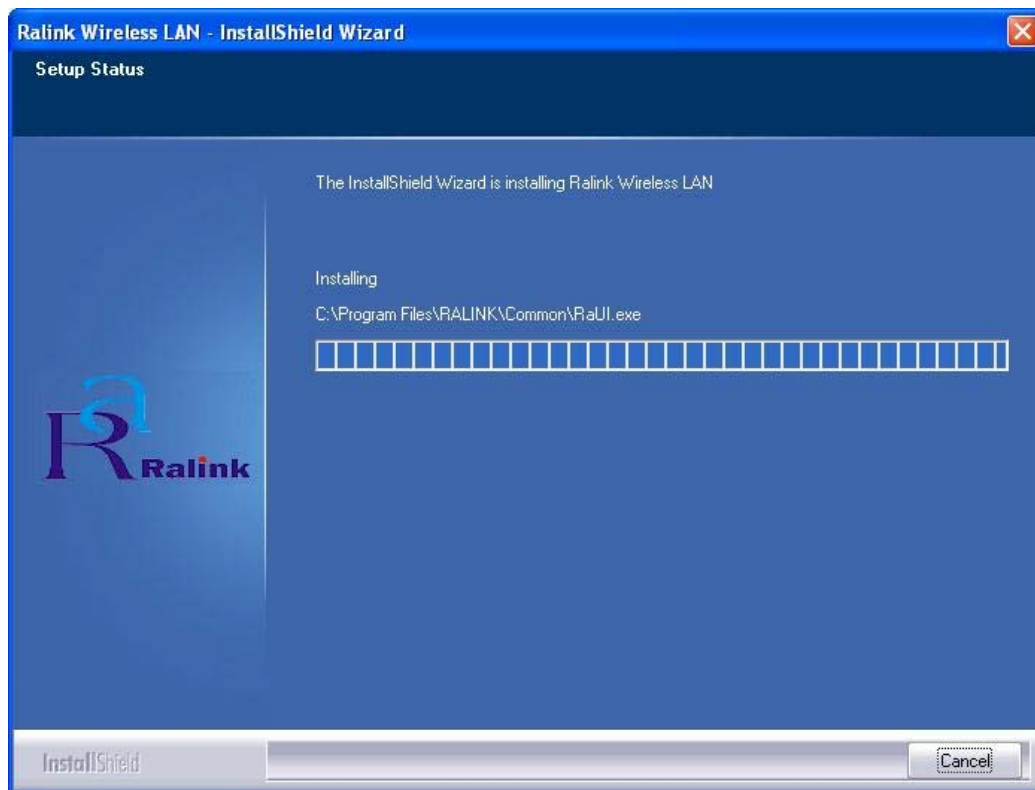
STEP5: If you need the adapter to operate with better performance, please choose **Optimize for performance mode** to enable the **Tx Burst mode**. Or you can choose **Optimize for WiFi mode** to run in standard wireless network.



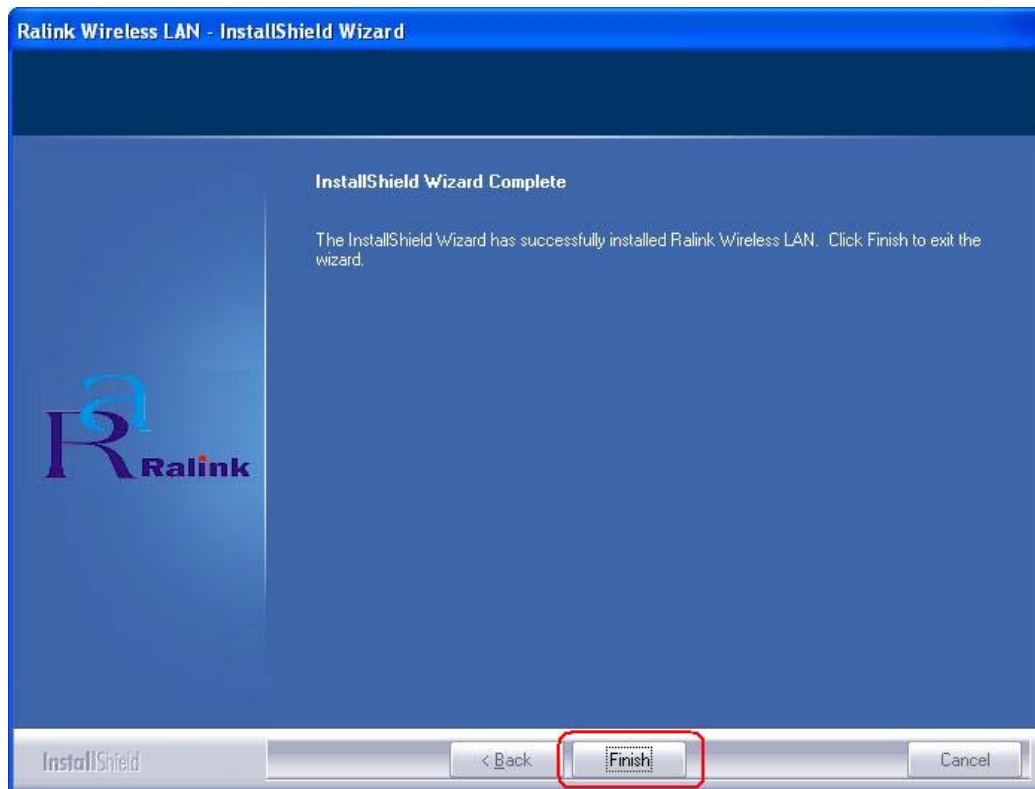
STEP6: Click **Install** to begin the installation.



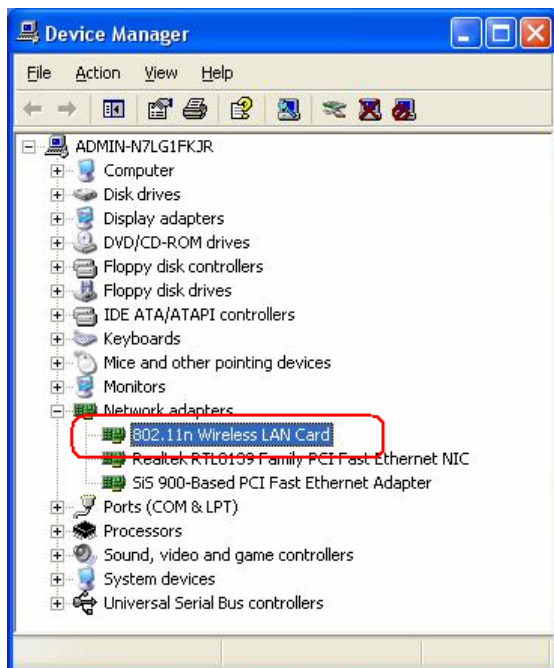
STEP7: Please wait for a while during the adapter is configuring your new software installation.



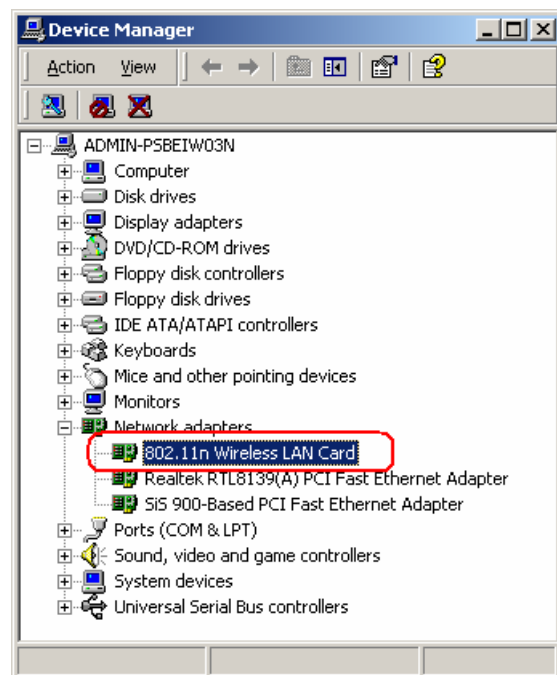
STEP8: After the setup wizard has successfully installed wireless LAN, click **Finish** to exit the wizard.




To check if the adapter is properly installed, you can right-click **My Computer** → choose **Properties** → click **Device Manager**.



(For Widows XP)

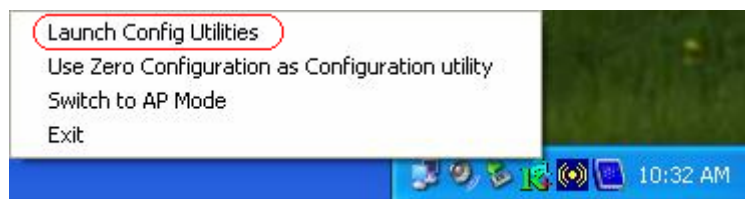


(For Widows 2000)

The Configuration Utility appears as an icon on the system tray of Windows while the adapter is running. You can open the utility by double-click on the icon. 

Right-click the icon, there are some items for you to operate the configuration utility,

- **Launch Config Utilities** → Select this option to open the Configuration Utility tool.
- **Use Zero Configuration as Configuration utility** → Select this option to use Windows XP built-in wireless configuration utility (Windows Zero Configuration) to configure to card.
- **Switch to AP Mode** → Select this option to change to AP mode.
- **Exit** → Select **Exit** to close the Configuration Utility tool.



2.2 For Vista

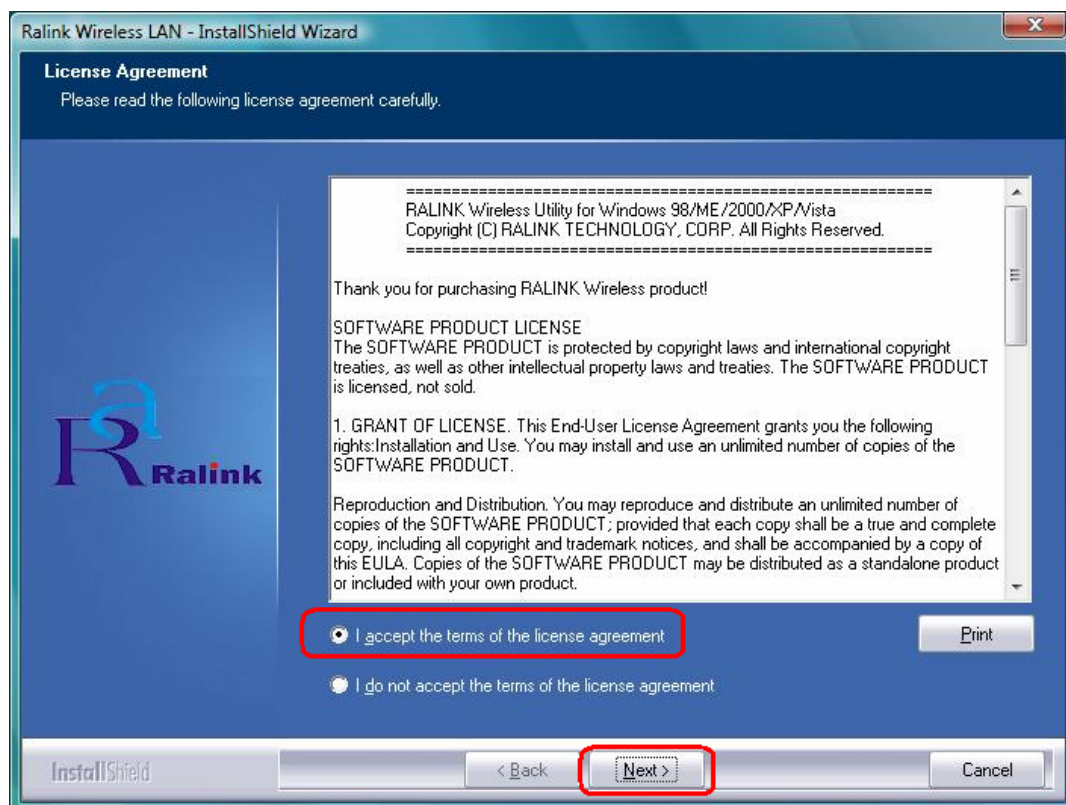
STEP1: Found New Hardware Wizard is displayed after the adapter is installed and the computer is restarted. Please click **Cancel** to continue.



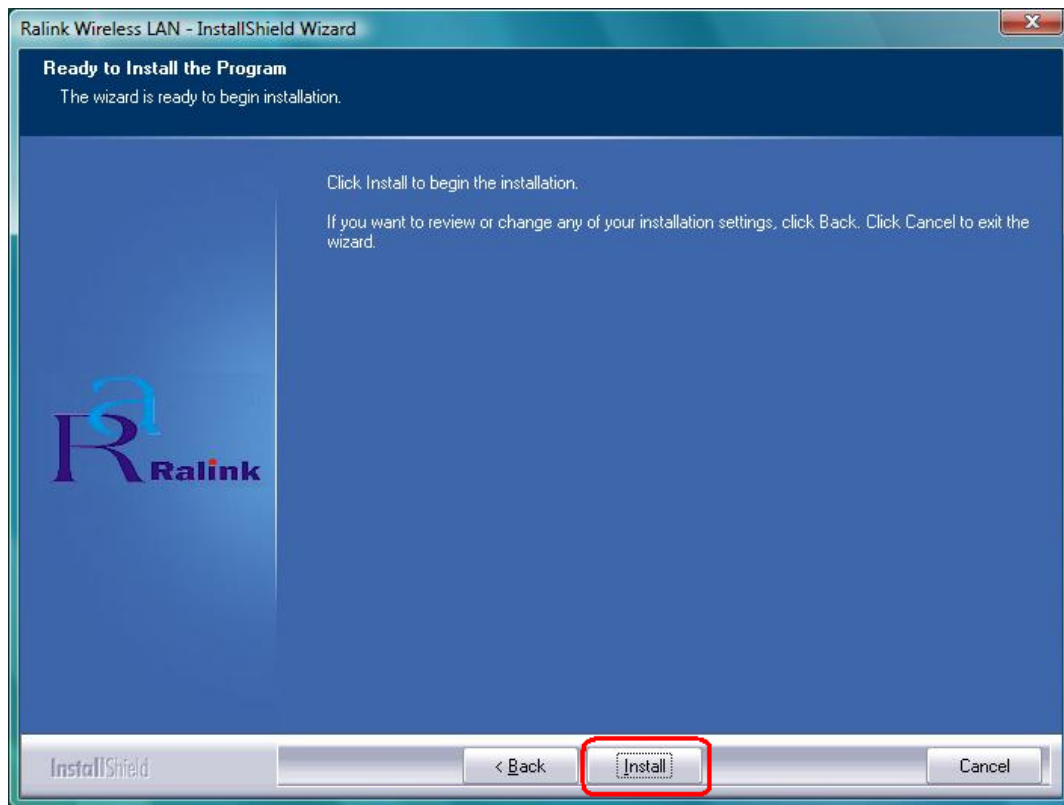
STEP2: Insert Installation CD into CD-ROM drive then windows below will appear. Click **Install Driver & Utility** to begin device driver installation.



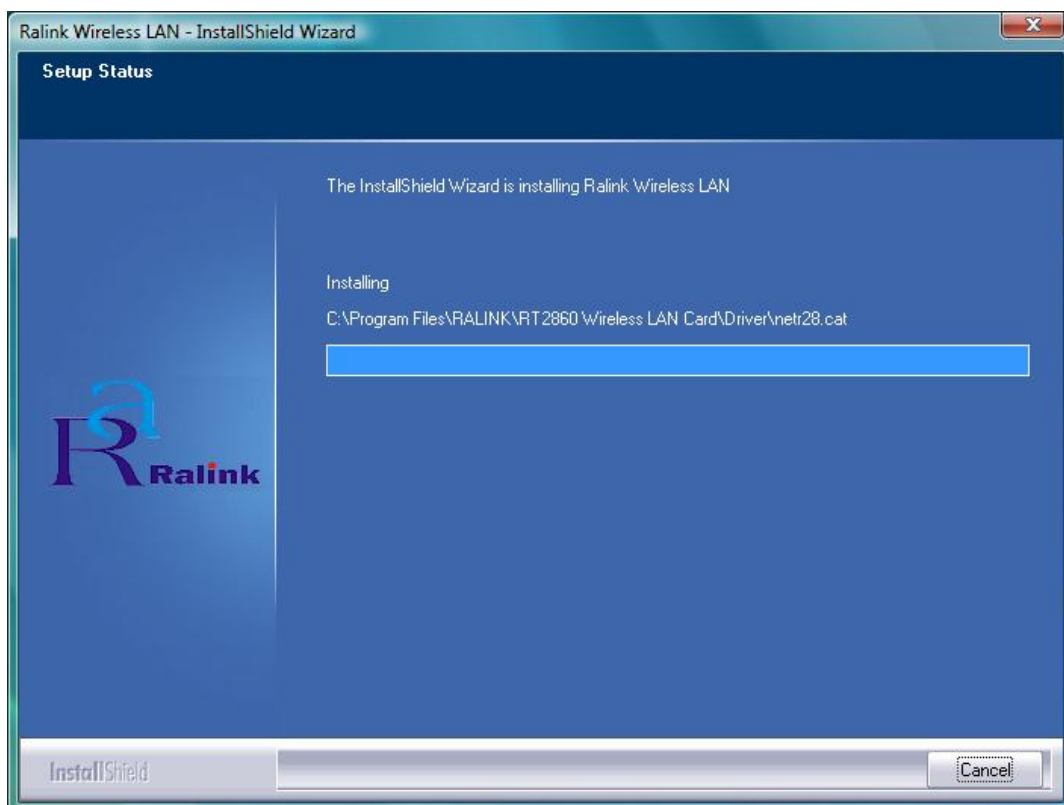
STEP3: Please read the following license agreement. Use the scroll bar to view the rest of this agreement. Select **I accept the terms of the license agreement** and click **Next** to continue.



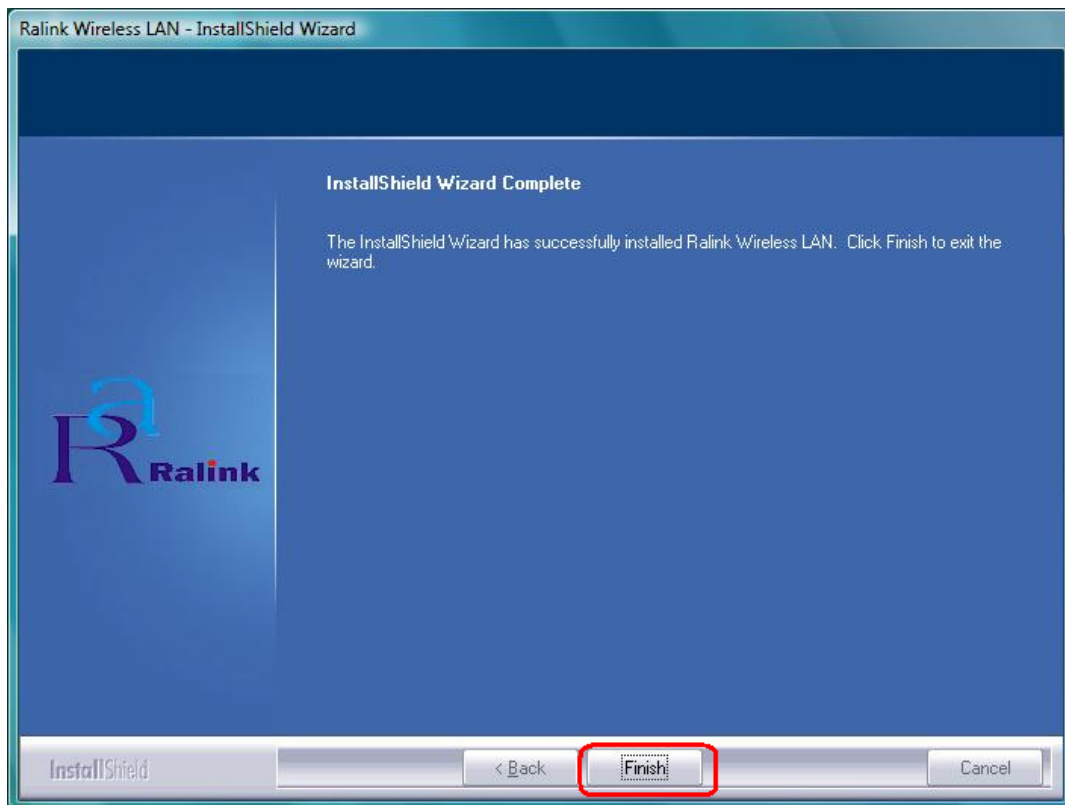
STEP4: Click **Install** to begin the installation.



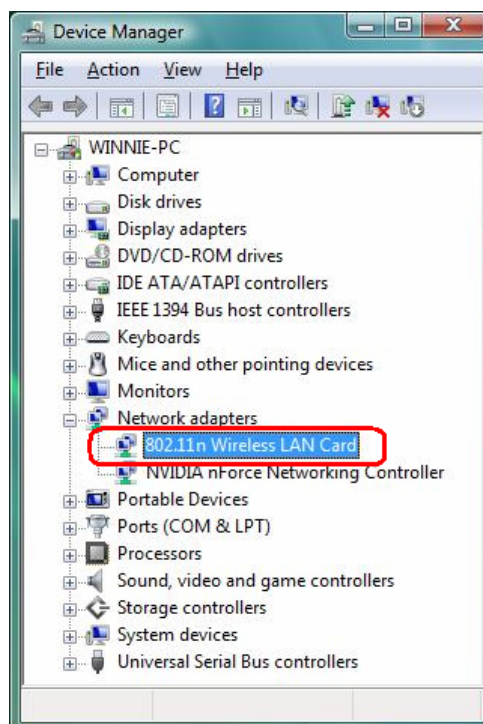
STEP5: Please wait for a while during the adapter is configuring your new software installation.




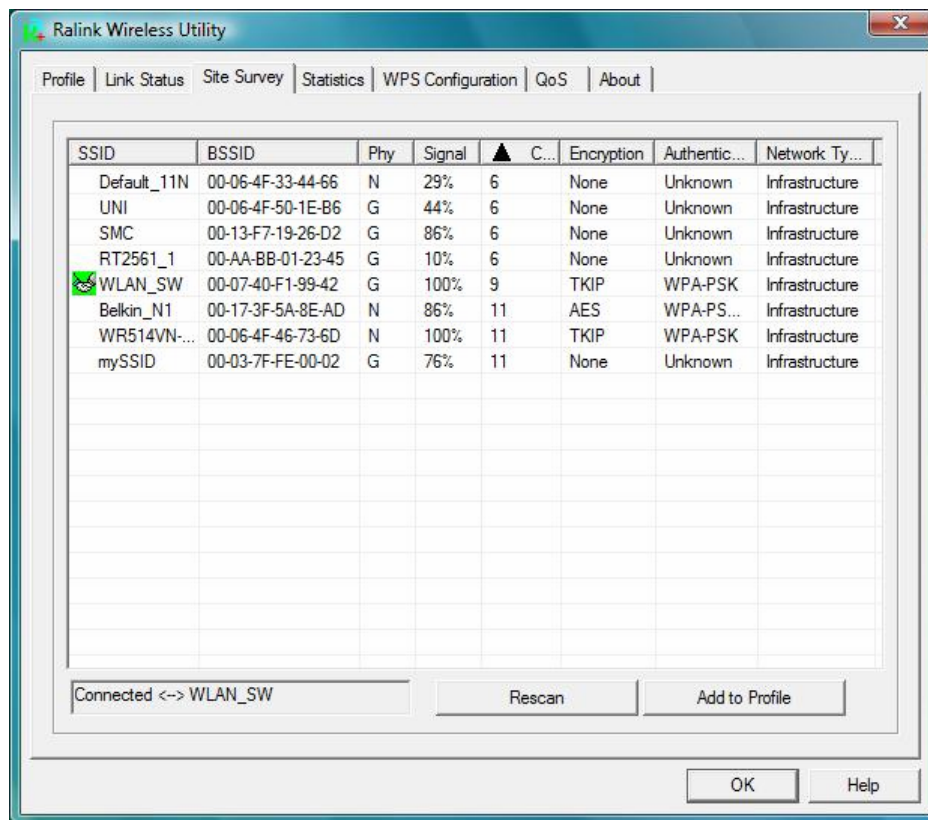
STEP8: After the setup wizard has successfully installed wireless LAN, click **Finish** to exit the wizard.



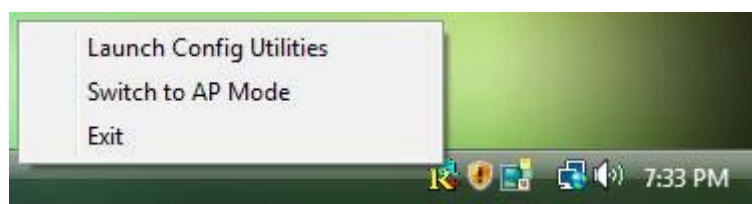
To check if the adapter is properly installed, you can right-click **My Computer** → choose **Properties** → click **Device Manager**.



The Configuration Utility appears as an icon on the system tray of Windows while the adapter is running. You can open the utility by double-click on the icon. 



Ralink wireless utility needs to cooperate with Microsoft AutoConfig service in order to perform scanning and connecting actions, so the AutoConfig service should be enable beforehand.



Control Menu → Once Ralink wireless utility is minimized, the user can click the Ralink icon on the taskbar to bring up the control menu.

- **Launch Config Utilities** → Restore Ralink wireless utility window.
- **Switch to AP Mode** → Select this option to change to AP mode.
- **Exit** → Select **Exit** to close the Configuration Utility tool.

3. Wireless Network Configuration Utility

3.1 For Windows XP & 2000

The Configuration Utility is a powerful application that helps you to configure the Wireless LAN adapter and monitor the link status and statistics during the communication process.

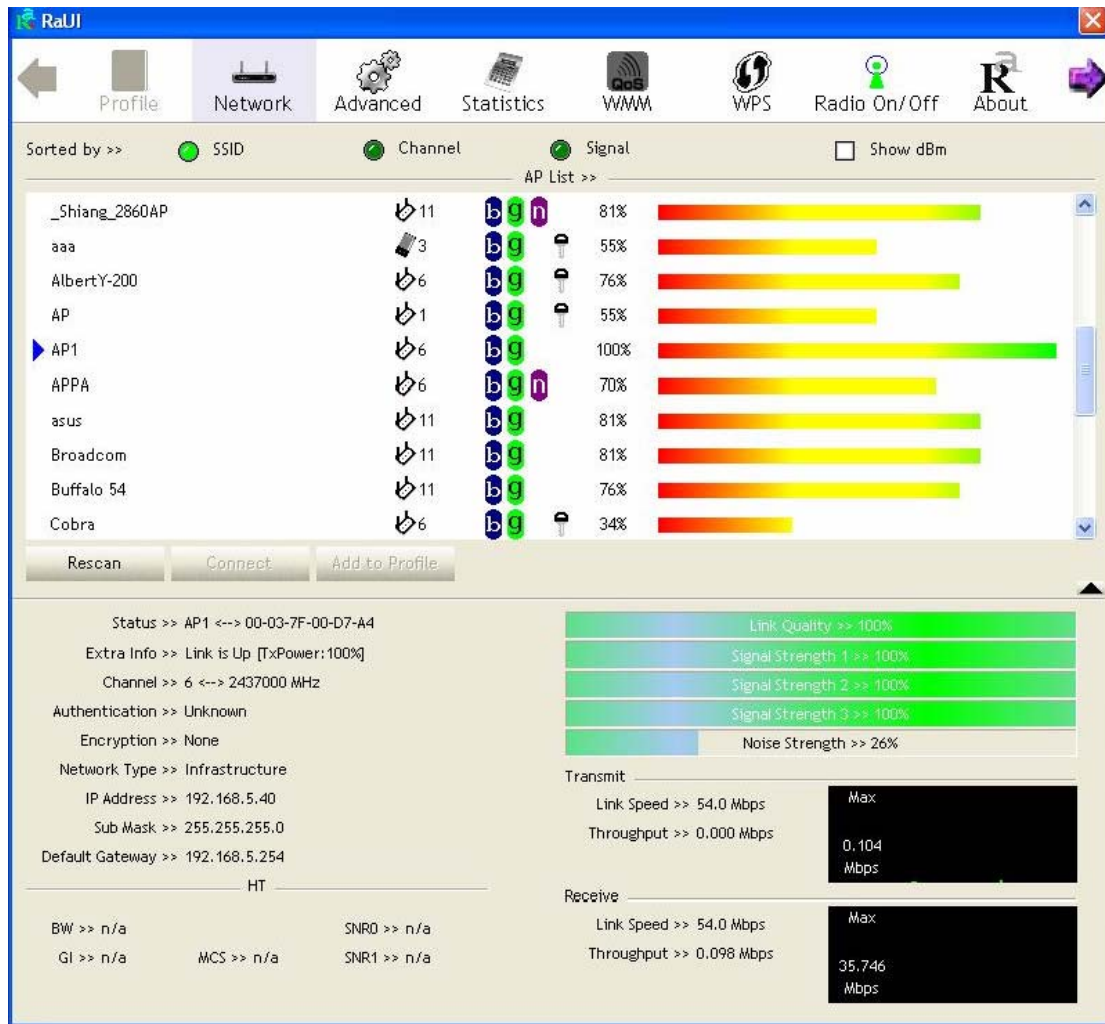
When the adapter is installed, the configuration utility will be displayed automatically. This adapter will auto connect to wireless device which has better signal strength and no wireless security setting.

In Windows XP, it provides wireless configuration utility named "Windows Zero configuration" which provides basic configuration function for Ralink Wireless NIC, Ralink's Utility (RaUI) provides WPA supplicant functionality. To make it easier for user to select the correct utility, RaUI will let user make the selection when it first runs after windows XP boots.

RaUI can co-exist with **WZC (Windows Zero Configuration)**. When coexisting with WZC, RaUI only provides monitoring function, such as link status, network status, statistic counters, advance feature status, WMM status and WPS status. It won't interfere with WZC's configuration or profile functions. Please see below picture: To select WZC or RaUI



If "Use Zero Configurations as Configuration utility" is selected, please continue on the section. Below picture shows that the RaUI status when WZC is active as main control utility.

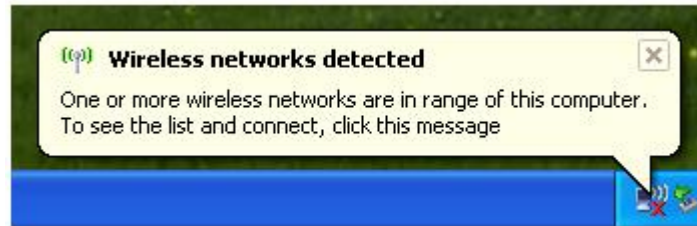


When activating WZC, there are couple different on RaUI status compare to the without WZC running:

- (1) **Profile** button will be gray, profile function is removed since the NIC is controlled by WZC.
- (2) The **connect** and **add profile** function will be gray. The reason is same as the first difference.

[Use WZC to configure wireless NIC]

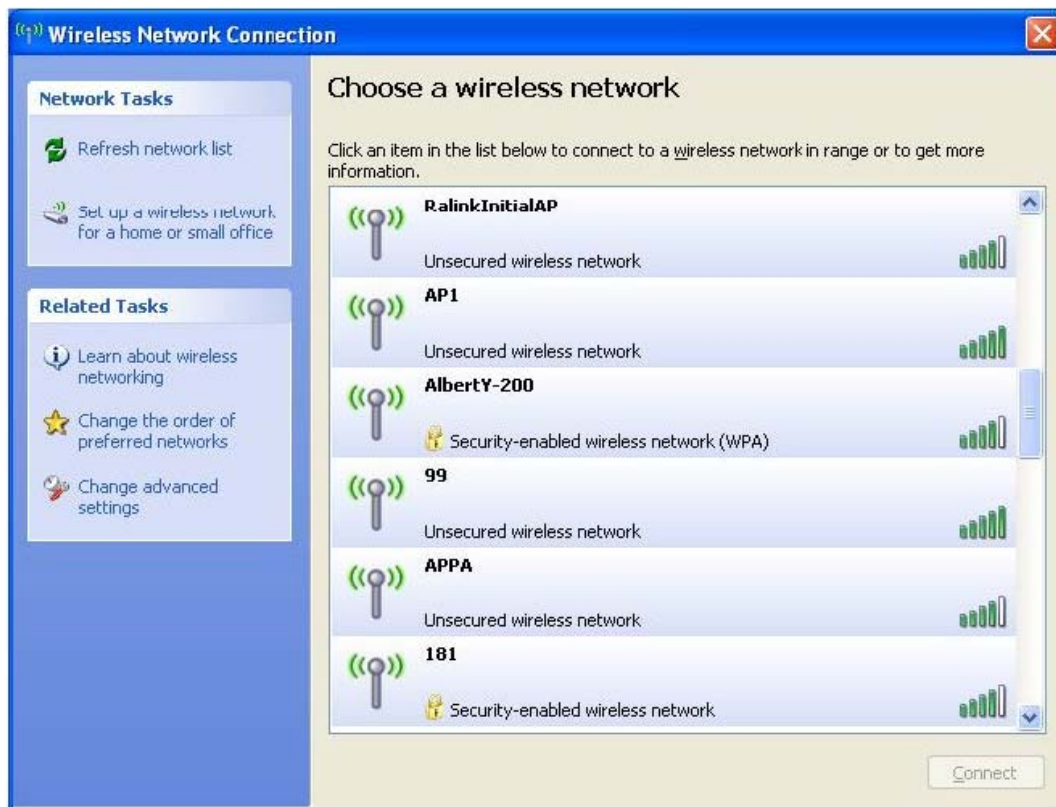
STEP1: If connection is lost or not connected, the status prompt as below will pop up.



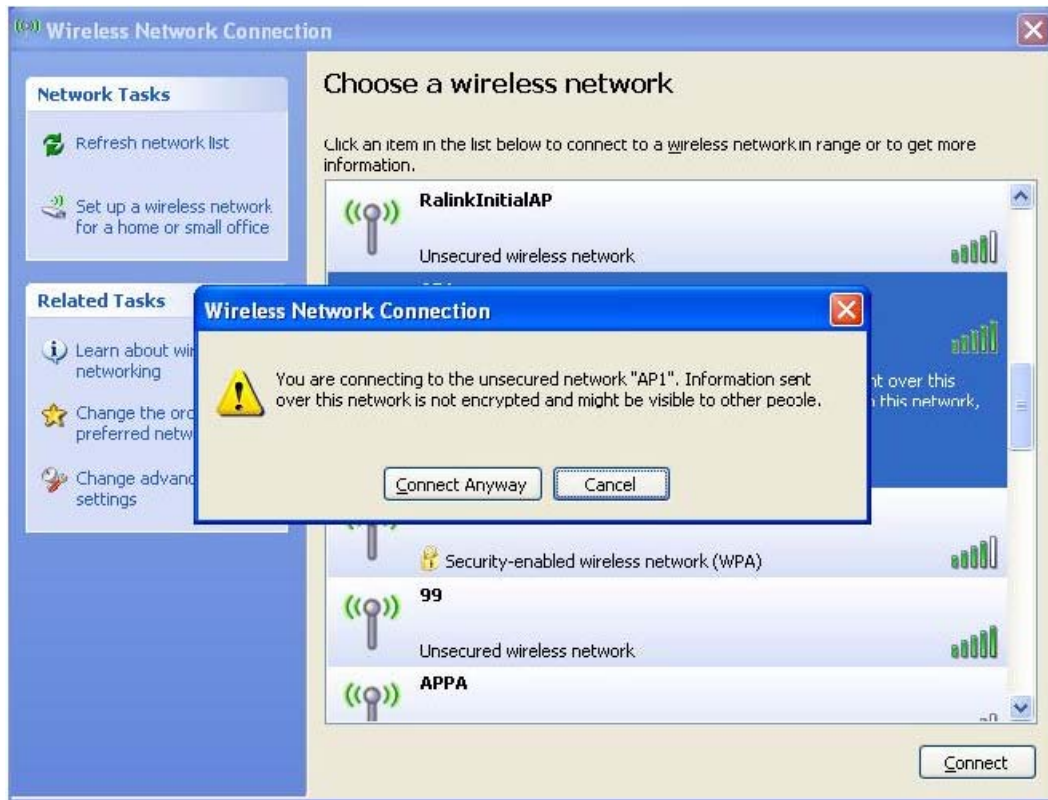
STEP2: Right-click the network connection icon in the task bar.



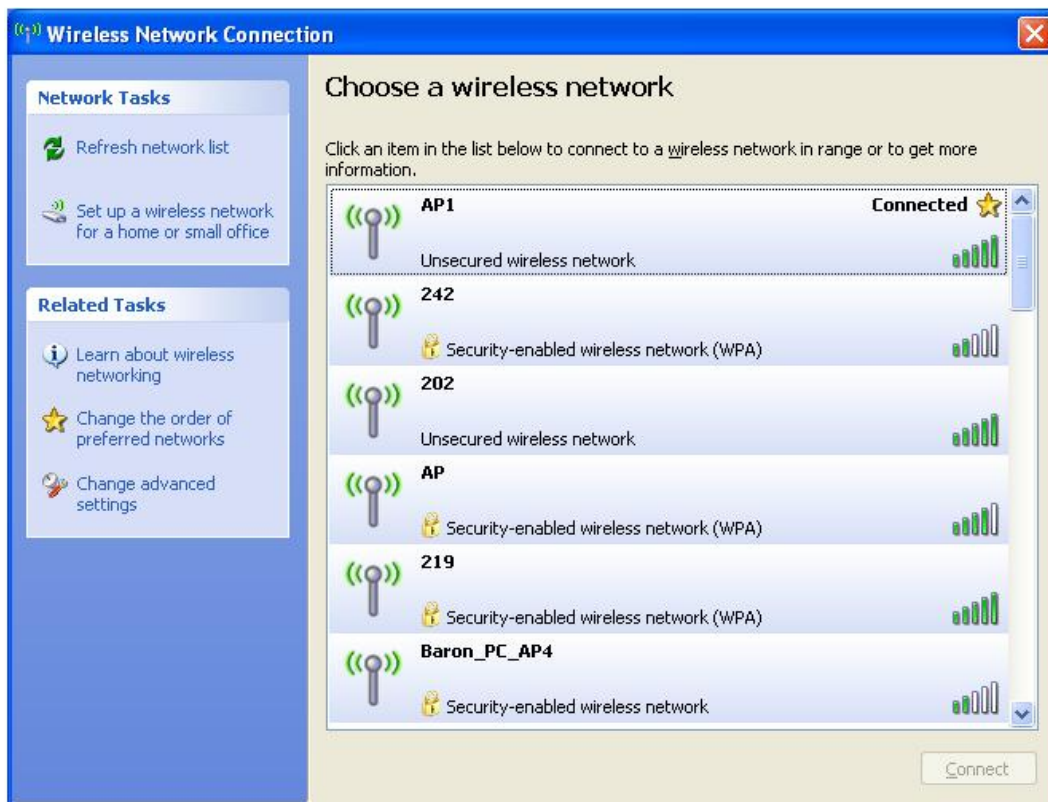
STEP3: Select "View Available Wireless Networks" will pop up the dialog shown as below.



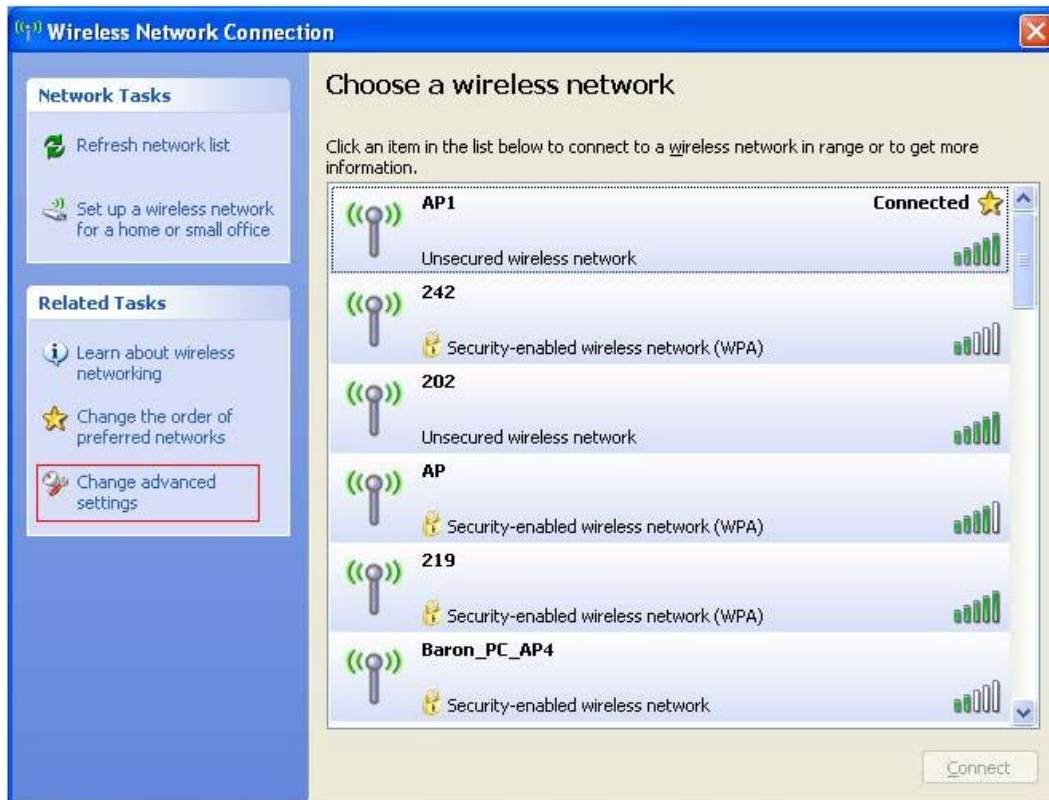
STEP4: Select intended AP and click **“Connect”** shown as below, then click **“Connect Anyway”**.



STEP5: AP1 is successful connected.



STEP6: If you want to modify information about AP, click “Change advanced settings”



STEP7: Choose “Wireless Networks” tab.

