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Chapter 1 Product Introduction

Thank you for choosing our wireless adapter!

The wireless adapter supports IEEE wireless standards, and is able to quickly process file transfer, video, multi-media and other applications that require higher bandwidth.

This wireless adapter also integrates wireless configuration program, which makes it easy and quick to set up the wireless client. Besides, Soft AP is supported forfast wireless network establishment, and WPS encryption supported for you to quickly encrypt and secure your wireless network.

All in all, the wireless adapter is easy-to-use, and of robust signal, long transmitting distance.

1.1 Package Contents

- One Wireless network adapter
- One Software CD (includes user guide and driver)

The above list is for your reference only; the actual contents may differ according to the product you purchase.

1.2 Product Features

- Supports soft AP feature
- Detects wireless network and adjusts transmitting rate automatically
- Provides two working modes: Infrastructure and Ad-Hoc
- Supports WEP data encryption and WPA-PSK/WPA2-PSK encryption methods
- Supports WPS (Wi-Fi Protected Setup) encryption to secure your wireless network
- Complies with Windows 7/Windows 8/XP/ 2000/Vista, Linux, MAC OS, etc.

1.3 Product Usage

This Wireless Adapter offers a fast, reliable and extendable solution for wireless access.

It is mostly used in the following circumstances:

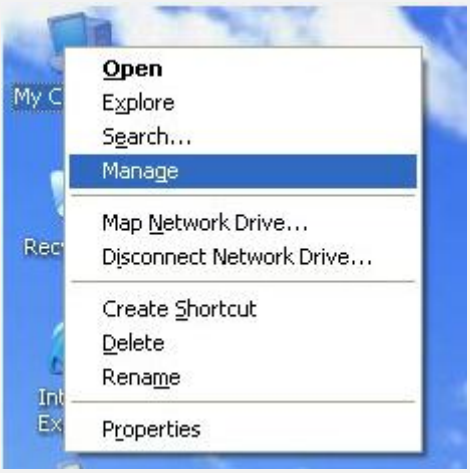
1. Enables staff members who require higher mobility, to have access to the wireless network anywhere inside their company.
2. Enables wireless communication for companies or places which are not suitable for wired LAN installation because of budget or building environment restrictions, such as historical buildings, rentals, or places for short-term usage.
3. Suitable for Enterprises or individuals requiring to regularly alter the networking topology
4. Helps enterprises or individuals who would like to use wireless to establish wireless network quickly and frees them from the trouble of cable distribution.

1.4 Before Installation

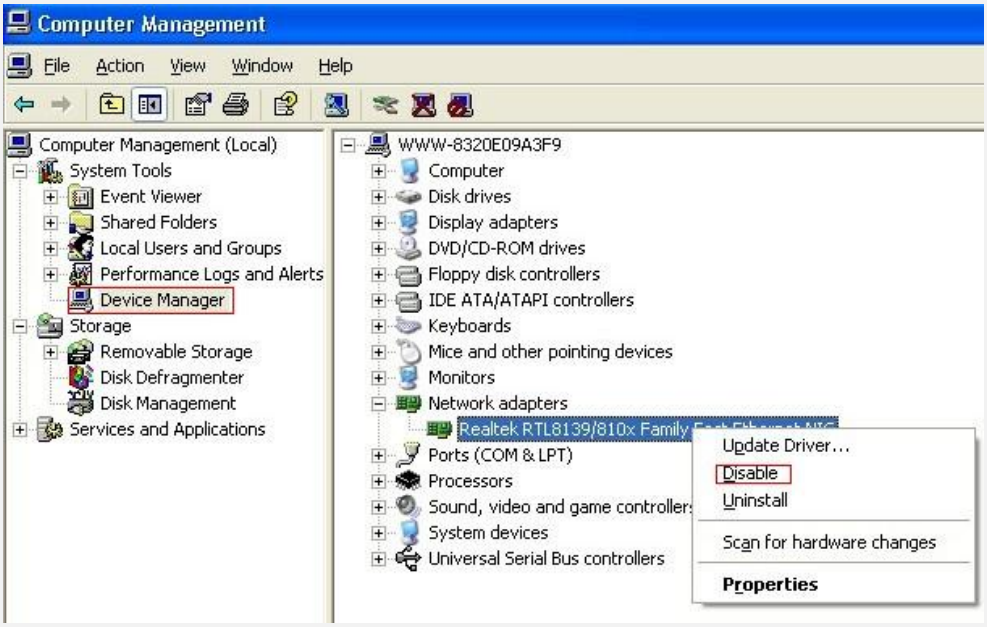
1. Please read through the whole user guide before you install and use this product.
2. Please close or uninstall the configuration programs of other manufacturers' before you install the configuration programs of the network adapters to avoid possible UI (user interface) conflict.
3. To avoid possible network conflicts between this the network adapter and those of other manufactures', we recommend that you first disable the network adapters of other manufacturers before installing the driver.

1.5 Disable other manufacturers' wireless network adapters

1. Right click "My Computer" and select "Manage"



2. On the Computer Management screen ,select "Device Manager" — "Network adapters", and right click the network adapter you want to disable and click "Disable"



3. Click the "Yes" button on the dialogue box to disable thenetwork adapter.

1.6 Product Maintenance

1. Please keep the product away from water and humid environment to guarantee its normal performance
2. Protect it against hazardous substances (such as acids, alkalis etc).
3. Please don't directly expose the adapter to the sunlight or excessive heat.
4. Please contact our tech support if any problems occur.

Chapter 2 Installation Guide

This chapter will guide you through the process of installing the network adapter software package, with the included software CD. The package integrates driver and configuration software. Thus, when you are installing the driver, the configuration software will be installed automatically as well.

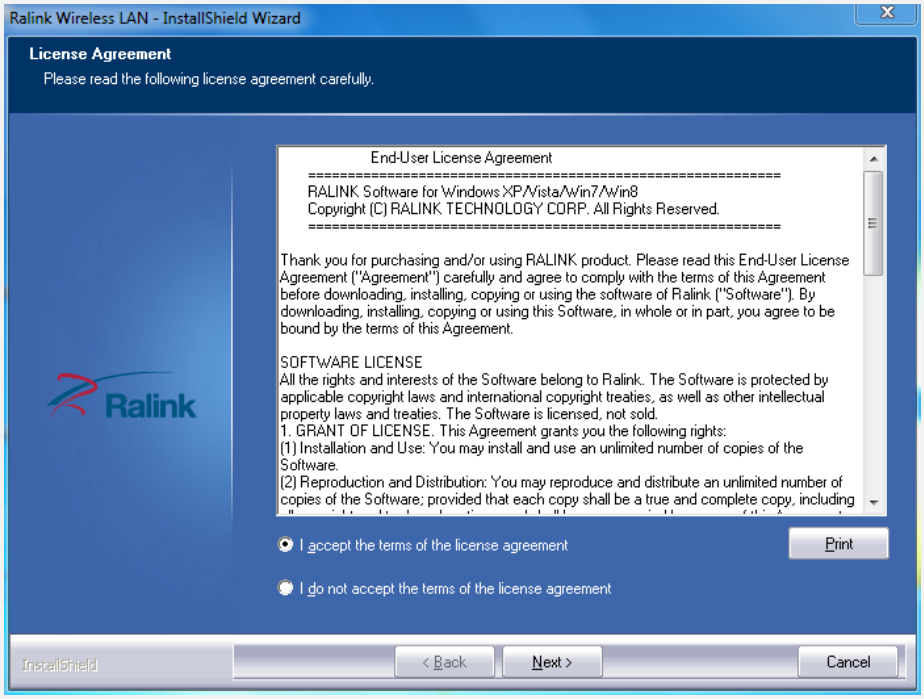
The software installation steps and operating guide in this user guide are explained under Windows XP, Installation steps for other operating systems are similar.

2.1 Install the USB network adapter

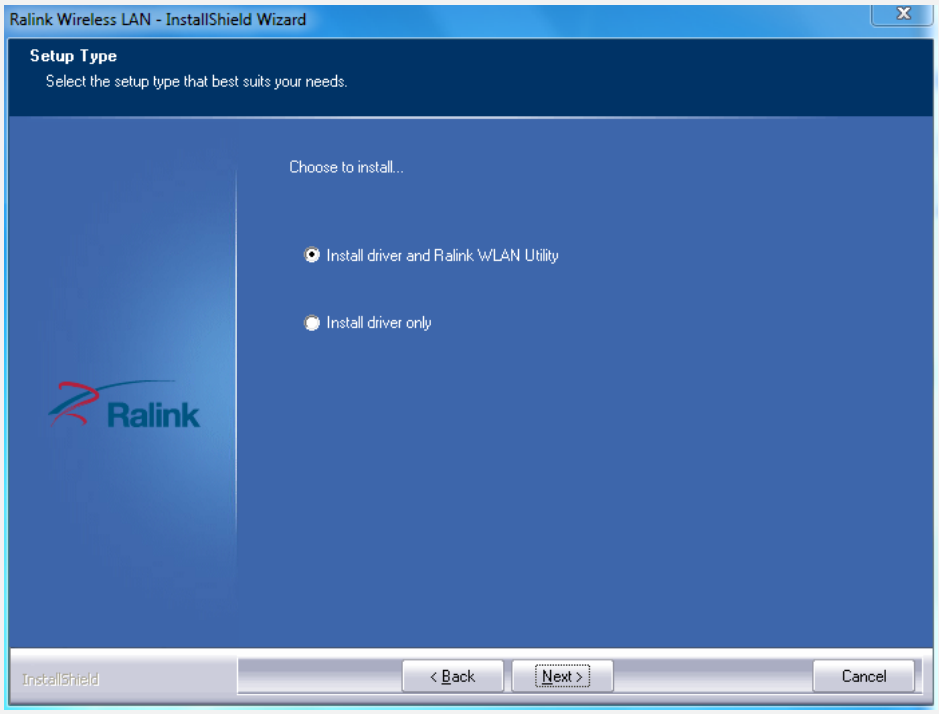
2.1.1 Please insert the Wireless USB Adapter into the USB port of your computer.

2.1.2 Put the software program CD, then auto installation window pops up on following. Just click **Windows**, the driver should run automatically. (Double click "**Setup.exe**" in the software CD and manually install when it doesn't auto-run).

2.1.3 Select “I accept the terms of the license agreement” and click “Next”.

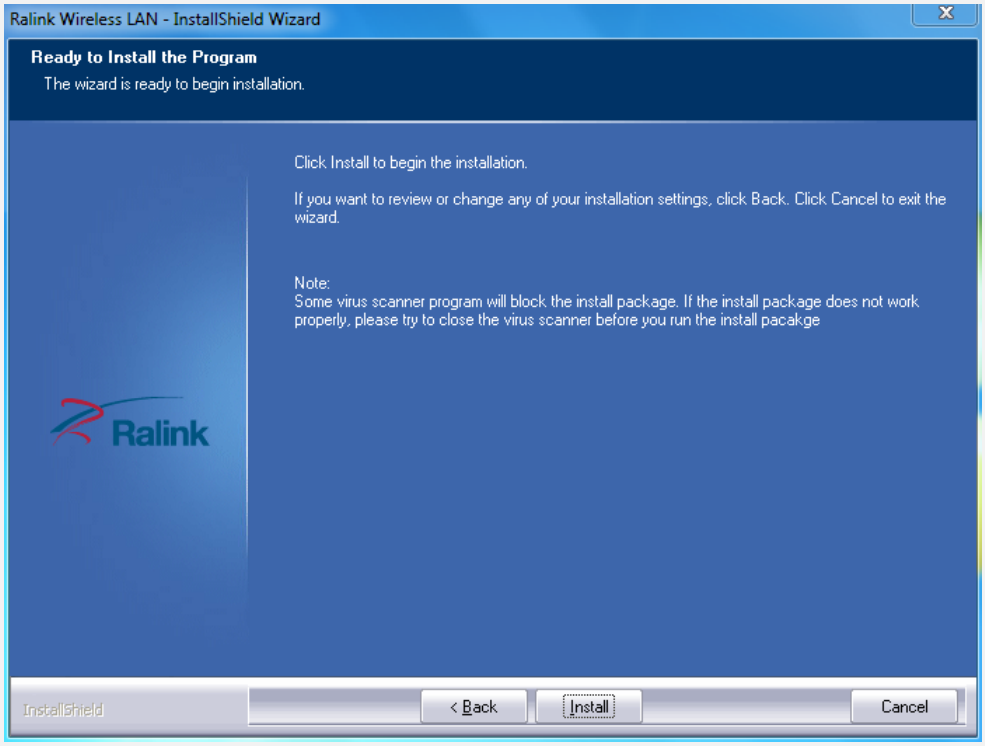


2.1.4 Two set up types are provided: one is “Install driver and Ralink WLAN utility”,the other is “Install driver only”.

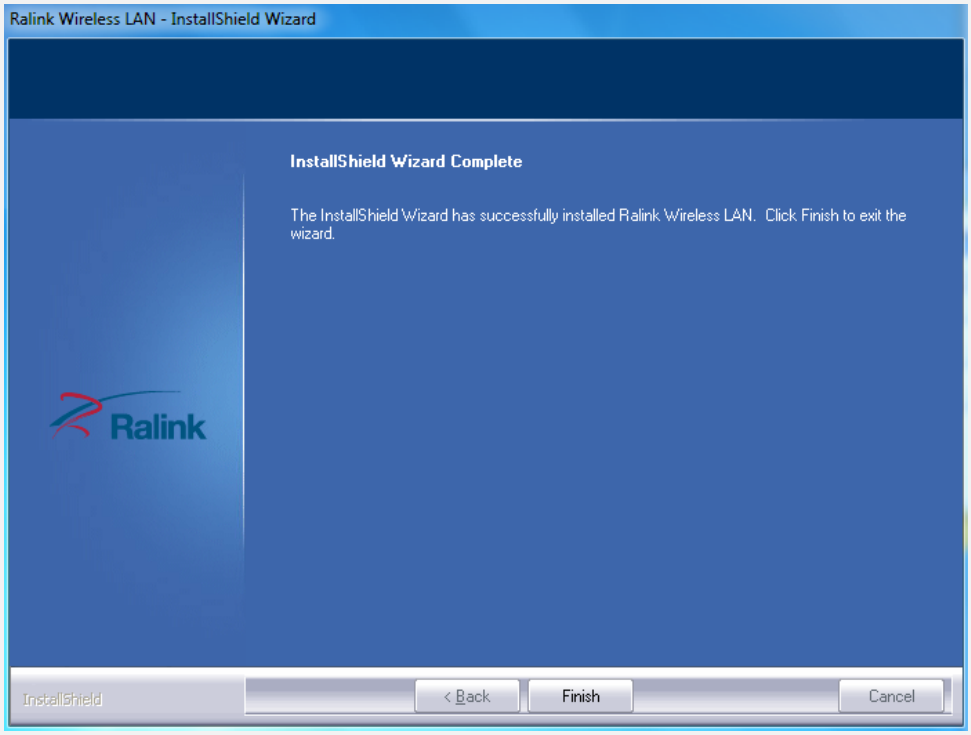


NOTE*: *you may select the second method when you are accustomed to use the WINDOWS built-in wireless configuration program.However, this program doesn't support AP mode, WPS, and the WPS button on the wireless adapter. To use these advanced features, the first method is recommended.

2.1.5 Click "Install" to begin the driver installation.



2.7 Click "Finish" to complete the installation.

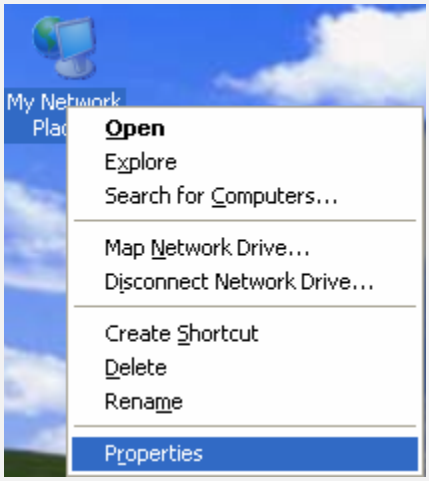


Chapter 3 How to use the Windows Built-in Wireless Configuration

This chapter explains to users who don't install configuration program how to use Windows Built-in Wireless Configuration to connect to the wireless network. Use of the Windows Built-in Wireless Configuration requires enabling Wireless Zero Configuration service(the default is enabled).

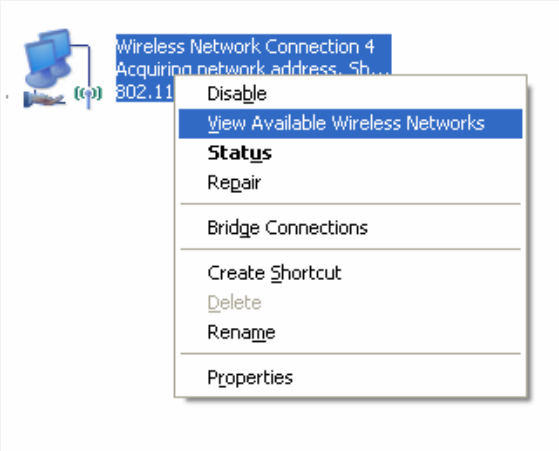
3.1 Wireless Network Connection under Windows XP

1. Right click "My Network Places" on the desktop and select "Properties".

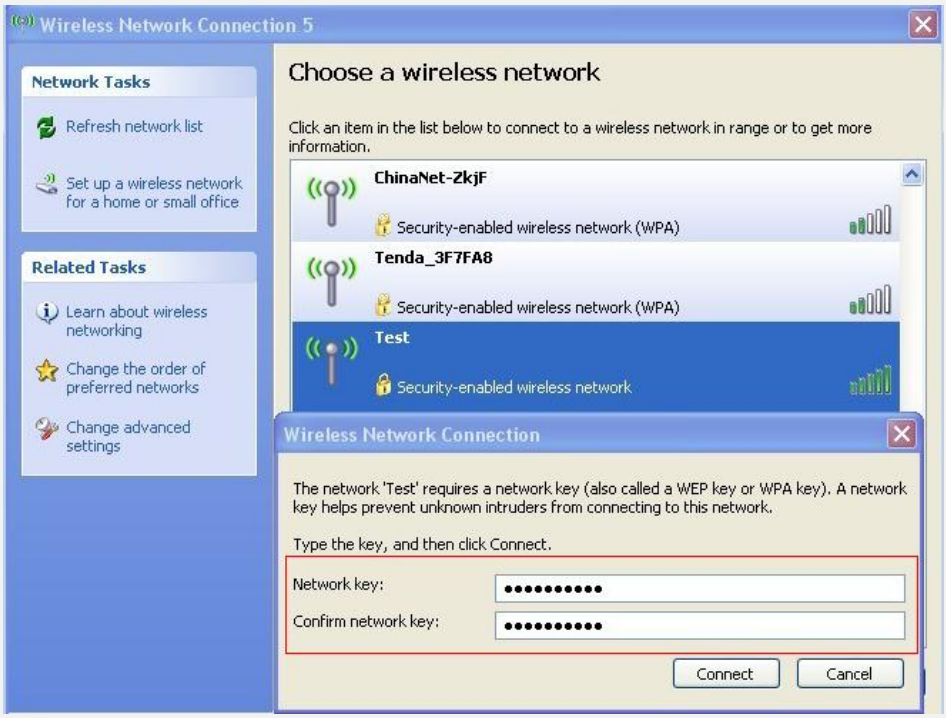


2. Open the network connection. Right click "Wireless Network Connection" and select "View

Available Wireless Networks" as shown below.

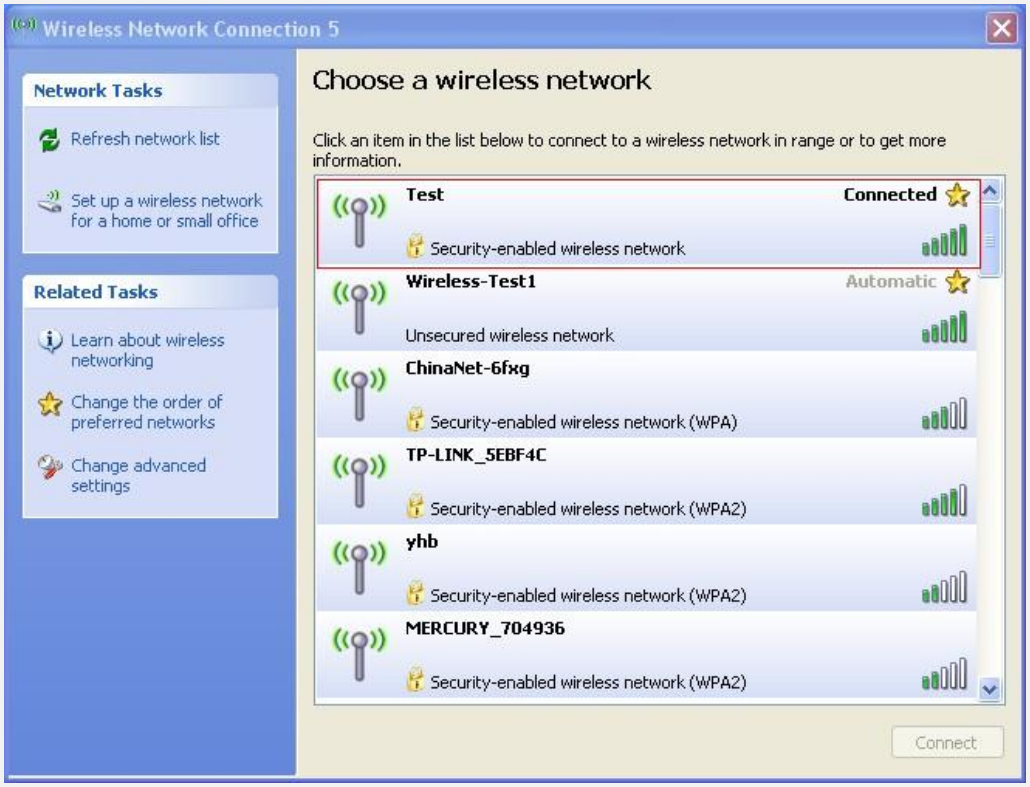


3. On the right of the screen displayed are the currently scanned wireless networks. If the one you want to connect has not been scanned, click "Refresh Network List" to update the network list. Select the wireless network you want to connect, and click "Connect" or double click this wireless network. Input the key in the key dialogue box (the key input is case-sensitive) then click "Connect".

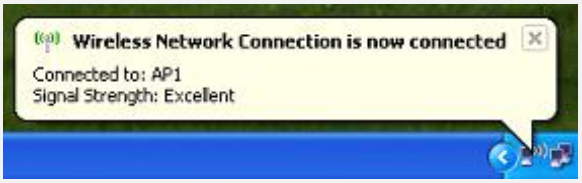


NOTE: If the wireless device you are connecting to is not encrypted, the key dialogue box will not pop up.

4. When it shows "Connected" as the picture below, then you can enjoy wireless access to Internet now.

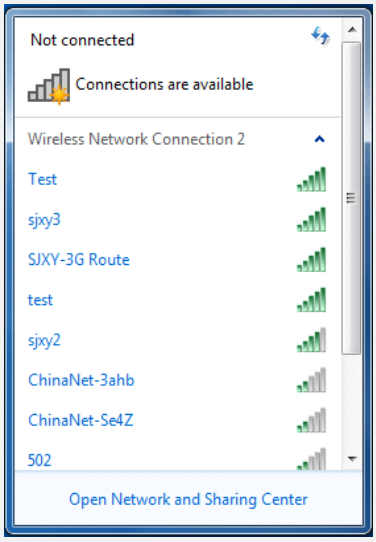


5. You should see the pop-up window on your low right hand corner indicate the connected status

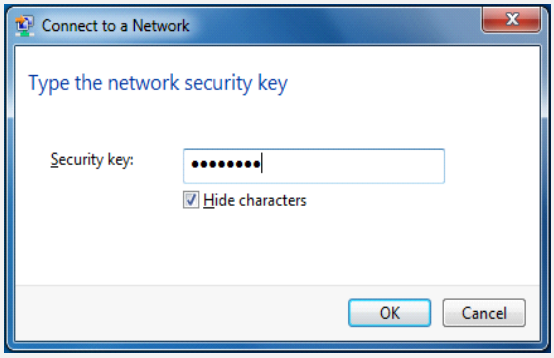


3.2 Wireless Network Connection under Windows 7

1. Click the wireless connection in the lower right corner of the computer's desktop to view the available wireless networks. Select the wireless network you wish to connect and click "Connect" or double click the wireless network to connect. If you don't find the specified one, please click the refresh icon in the upper right corner to update the list.



2. If the wireless network you are connecting is encrypted, you'll be prompted to enter the key.Click "Ok" after you enter the correct key.



3. It shows "Connected" after successfully connected. You can disconnect it, view its status or modify the wireless network properties by right click the wireless network

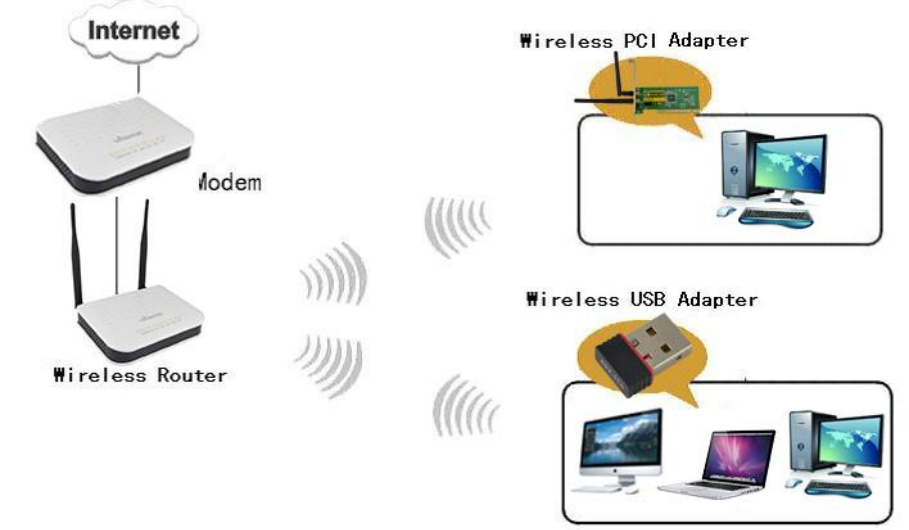
Chapter 4 Wireless Utility

When you are installing the driver, select "Install driver and Ralink WLAN utility" and the adapter driver and client utility will be installed. All functions of this adapter can be configured viaits utility interface (in the following text it is abbreviated as UI).

Select "Start"—"All Programs" —"Ralink Wireless"— Ralink Wireless Utility", or click the "Ralink Wireless Utility" shortcut on your PC's desktop to start the UI.

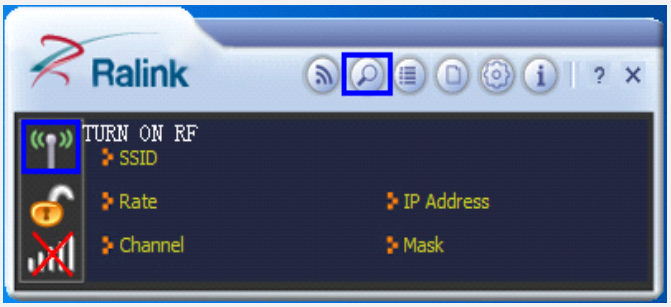
4.1 Client Mode

Client Mode Overview



It is a common solution to use the wireless network adapter as a client to receive signals.

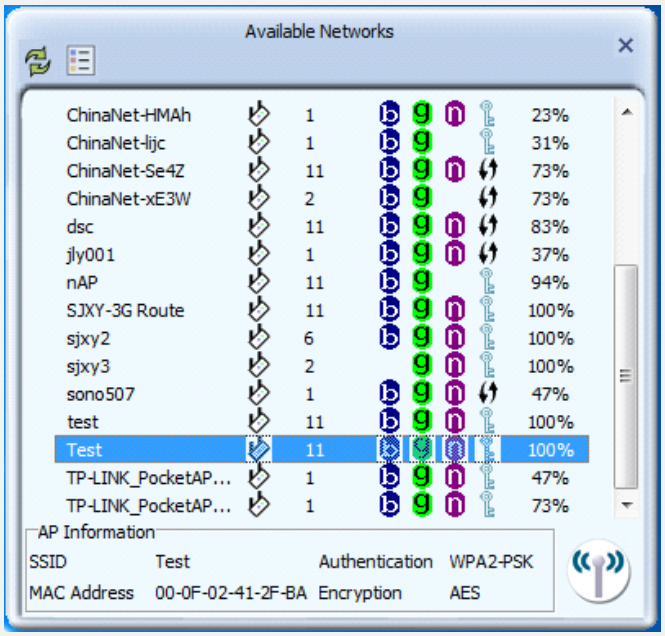
Main interface for client mode



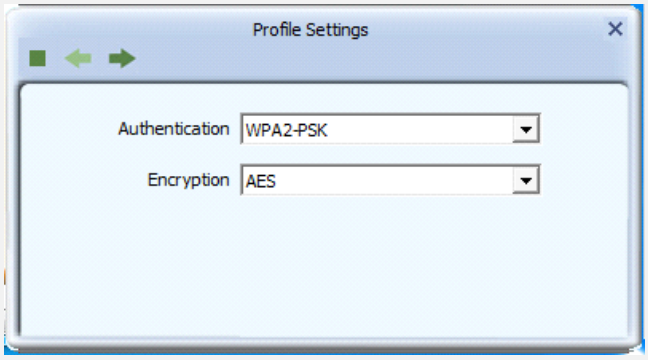
The function buttons on the top(From L to R)are respectively WiFi-Direct, Available Networks, Link Information, Profile Settings, Advanced, About, Help, and MiniSize. While the left column displays Turn On/Off RF, Security /No security, and Signal status.

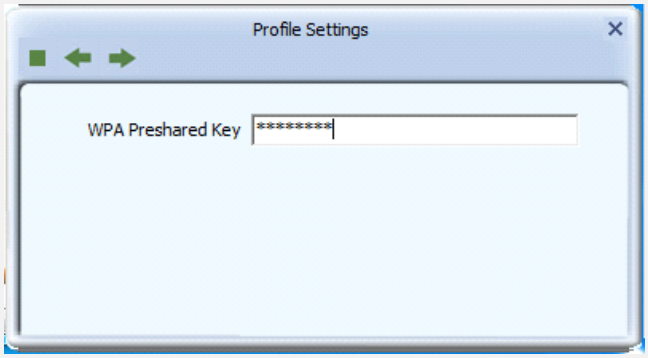
4.1.1 Available Networks

The "Available Networks" screen displays currently scanned wireless signals and you can click one to connect the signal. Select one and you may view the AP's MAC address, wireless mode (A/B/G/N), authentication type, and encryption type, or WPS authentication and signal strength. Before you connect to a wireless network, please click the "Rescan" button to update the wireless network list and select the one you wish to connect, and then click the "Connect" icon.



For the networks that are not encrypted, you can directly click "Connect". However, for the encrypted wireless networks, a "Profile Settings" dialog will pop up and you must select the corresponding authentication type and encryption type, and then click the "Next" button to input the correct key. Please note that this type of connection will not create a profile, thus next time connect to this network you still need to select it manually.





The detailed explanations about the authentication and encryption are as follows:

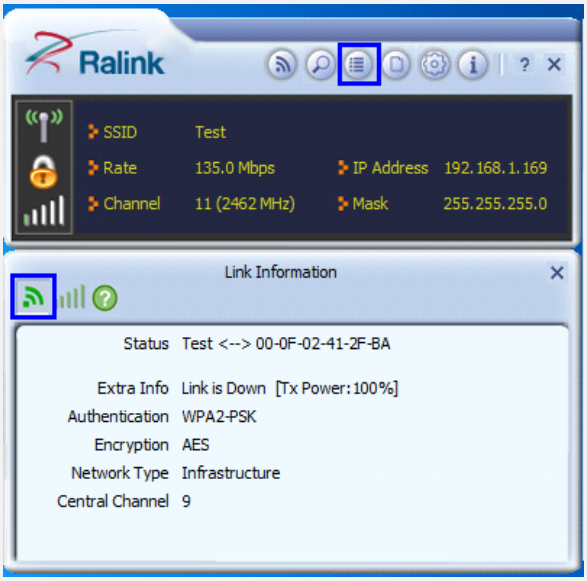
WEP: Supports 10/26-bit Hex characters and 5/13-bit ASCII.

WPA-PSK: Supports 8-63-bit ASCII and 8-64-bit Hex characters.

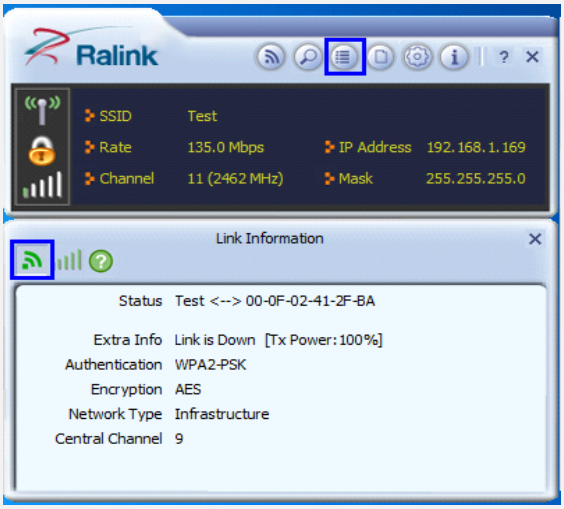
WPA2-PSK： Supports 8-63-bit ASCII and 8-64-bit Hex characters.
WPA-PSK/WPA2-PSK： Supports 8-63-bit ASCII and 8-64 -bit hex characters.
NOTE:
The Hex characters consist of numbers 0~9 and letters a-f.
ASCII characters consist of any Arabic digitals/letters and characters.

4.1.2 Link Information

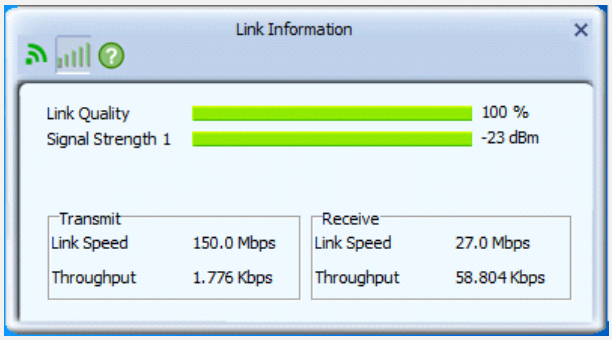
After successfully connected to one wireless network, you can view its detailed information by clicking the "Link Information" on the main interface.



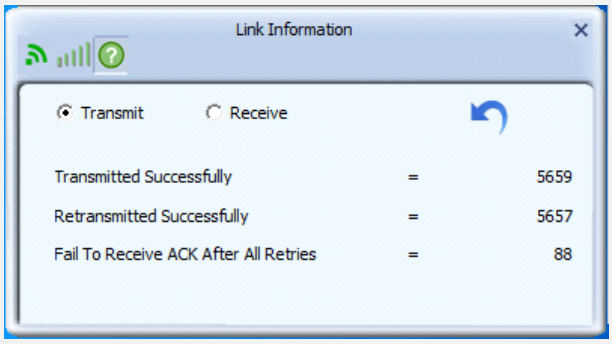
1. "LinkStatus" screen displays the detailed information of the connected AP including its SSID, MAC address, authentication type, encryption type, network type and channel.



2. "Throughput" screen displays the signal strength of each of the wireless adapter's antennas and the link quality.

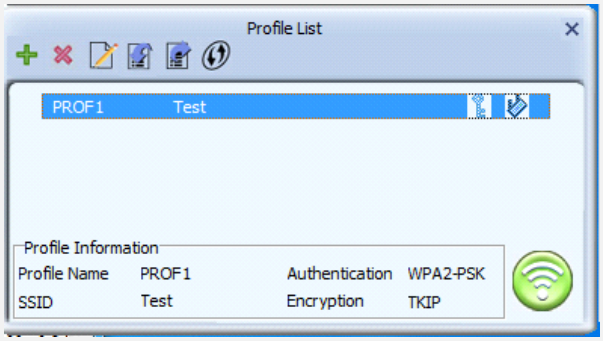


3."Statistics" screen is used to count the total Rx and Tx data packets,including transmitted, retransmitted and fail to receive ACK after all retries. You can click the "Reset Counter" button to clear the count.



4.1.3 Profile Settings

Except the above common connection type, you can also connect to the wireless network by adding a profile on the "Profile List"screen. The Profile screen is used to save the wireless network parameters. When the adapter is successfully connected to a network, the profile name of this network will automatically be added here, which helps the adapter to quickly connect to the wireless network next time. However, there's one exception that when you have set the hidden SSID,namely the SSID cannot be scanned, and then you must manually connect by adding the profile name. The main interface is as shown below.

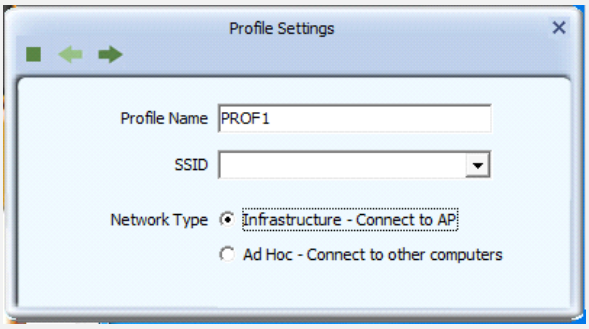


Add: create a new profile

Delete: delete the existing profile

Edit: modify the existing profile

There are two network types for your option when clicking the "Add" button to add wireless adapter connection: Infrastructure and Ad-Hoc.



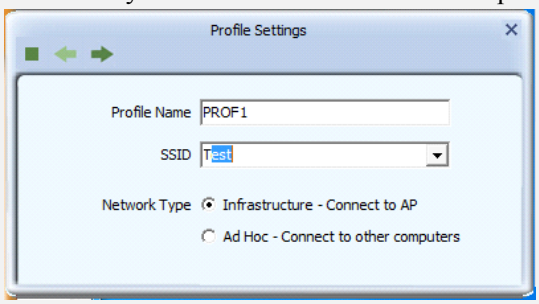
Infrastructure is an application mode that integrates the wired and wireless LAN architectures. It is different from Ad-Hoc in that in this mode the computer installed with the wireless network adapter has to fulfill the wireless communication via AP or wireless router. It can be divided into two modes: “wireless AP + wireless network adapter” and “wireless router + wireless network adapter”.

Ad-Hoc is a special wireless mobile network application mode. All nodes in the network are equal. Usually it is used to share resources by connecting the opposing computer’s wireless adapter.

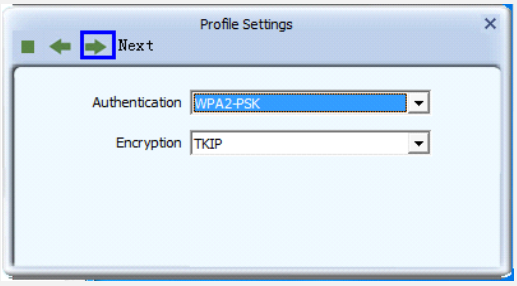
1. Infrastructure Profile Management

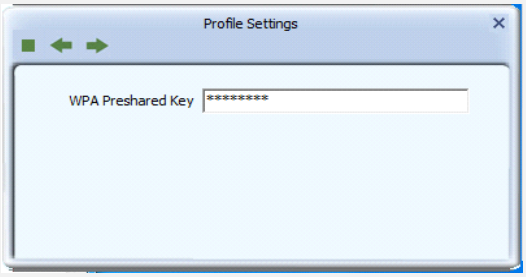
When you are connecting the wireless adapter to an AP or a wireless router, please select the Infrastructure mode.

Click the “Add “button and select the network type as” Infrastructure”, and enter the profile name and SSID or you can find the SSID you wish to connect from the drop-down list.

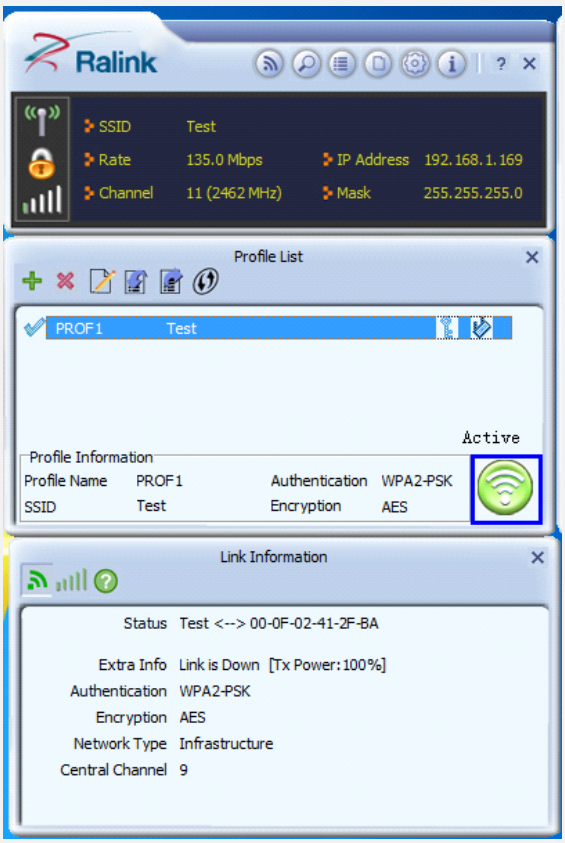


Click the next button to select the authentication type and encryption type such as WPA－PSK and AES, and then input the key and click next.





After a profile is successfully added, the profile name can be seen on the profile list; you can edit, import or export the profile, click “Active” to finish the connection, now you can also view the detailed connection status on the “Link Information”screen.



NOTE:

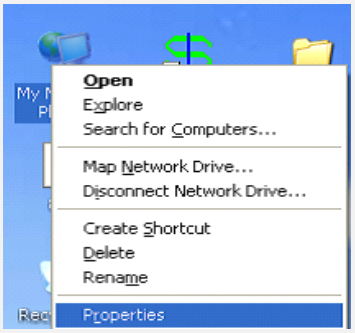
If the SSID broadcast function of the wireless router or AP you wish to connect is disabled, then the wireless adapter cannot scan the SSID, thus you need to connect by creating the corresponding profile.

2. Ad-Hoc Profile management

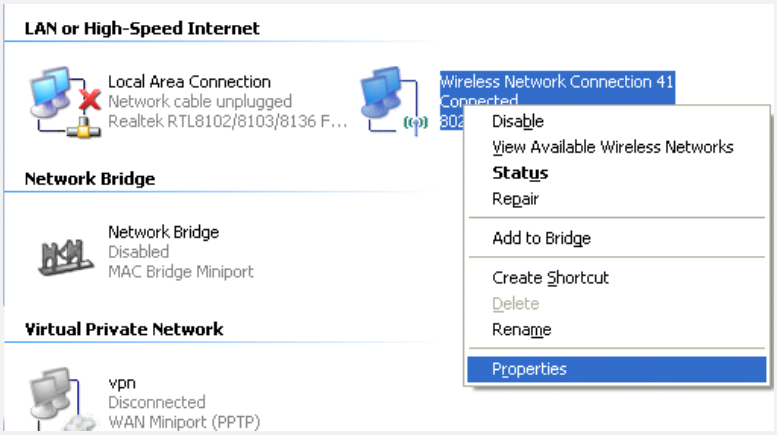
Using the Ad-hoc mode to establish a wireless network requires that each computer should be equipped with a wireless network adapter. By connecting these wireless adapters, computers are able to share the resources. The detailed setting steps are as follows:

1）Firstly you’ll have to allocate a static IP to each wireless adapter to be connected in Ad-hoc mode.

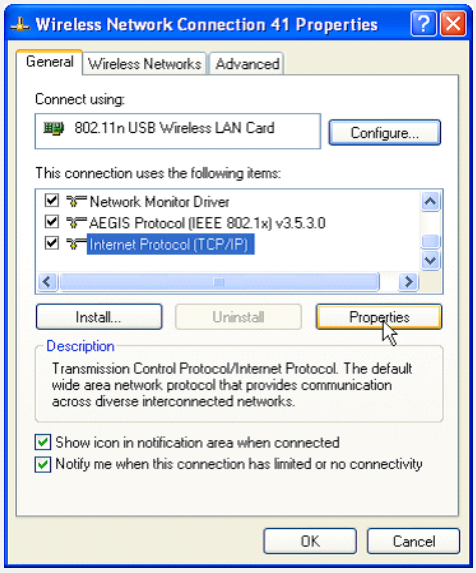
A. rightclick “My Network Places” on your computer’s desktop and selects “Properties”.



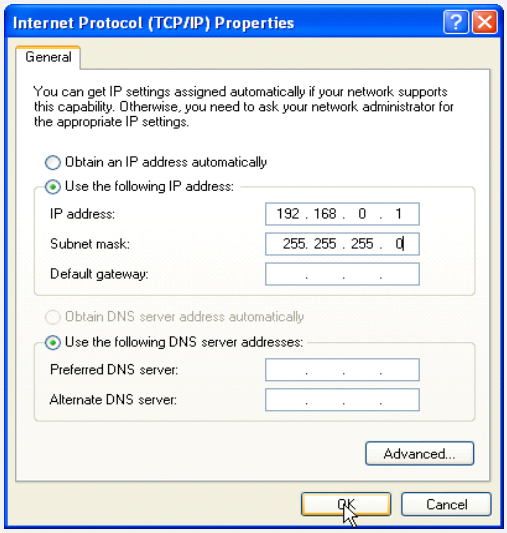
b.Right click “Wireless Network Connection”, and select “Properties”



c.Select “Internet Protocol(TCP/IP)”and click “Properties”.

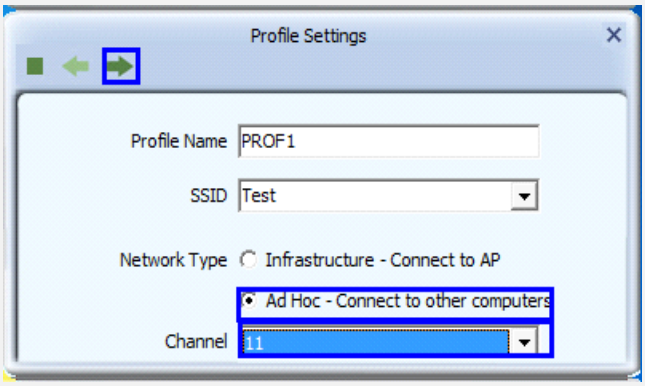


d. Please enter the IP address and subnet mask, and make sure this IP address is not used by other devices in the network. For example: if your wireless adapter’s IP address is 192.168.0.1, then set other wireless adapters' IP addresses within the range of 192.168.0.2—192.168.0.254.Click “Ok” to save the settings.

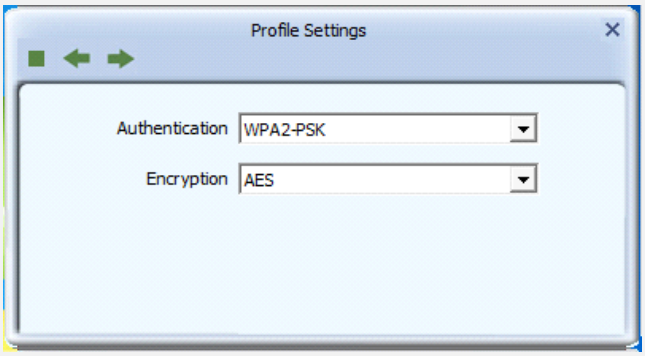


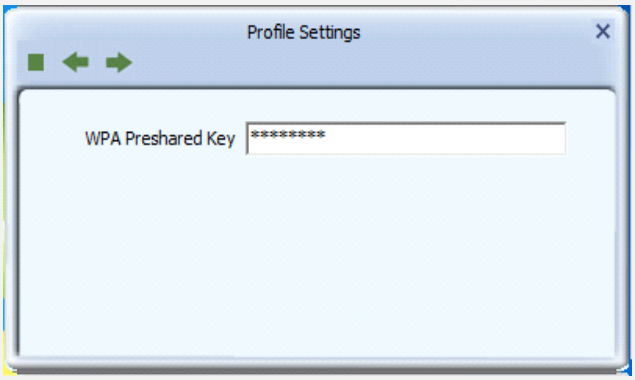
2) Create a new Ad-hoc profile

Click the "Add" button and enter the network name in the SSID field to identify the wireless network, and select Ad-hoc as the network type and then select the channel.

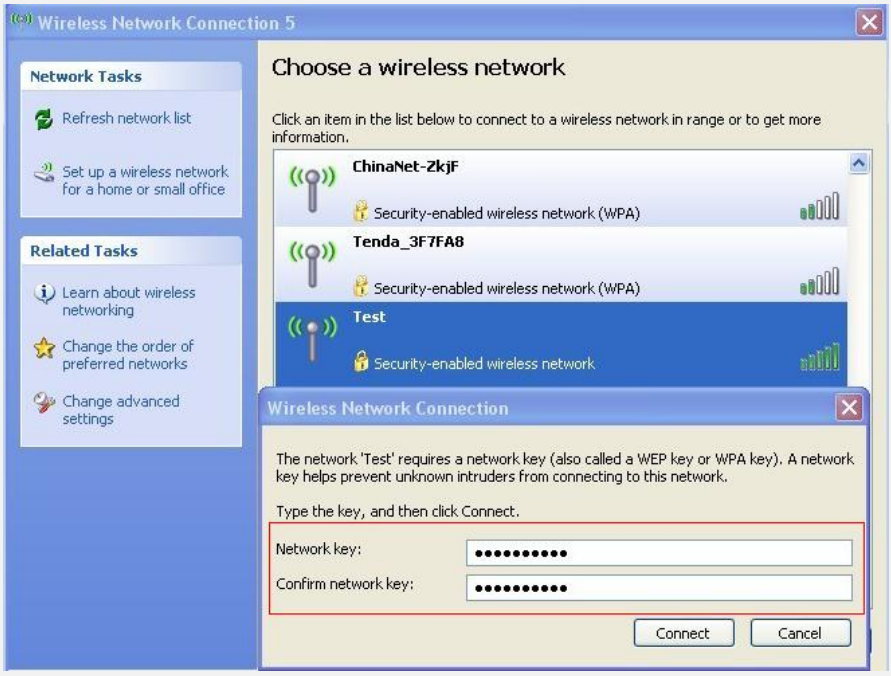


Click the "Next" button to select the authentication type and encryption type and then input the correct key and click "Next".

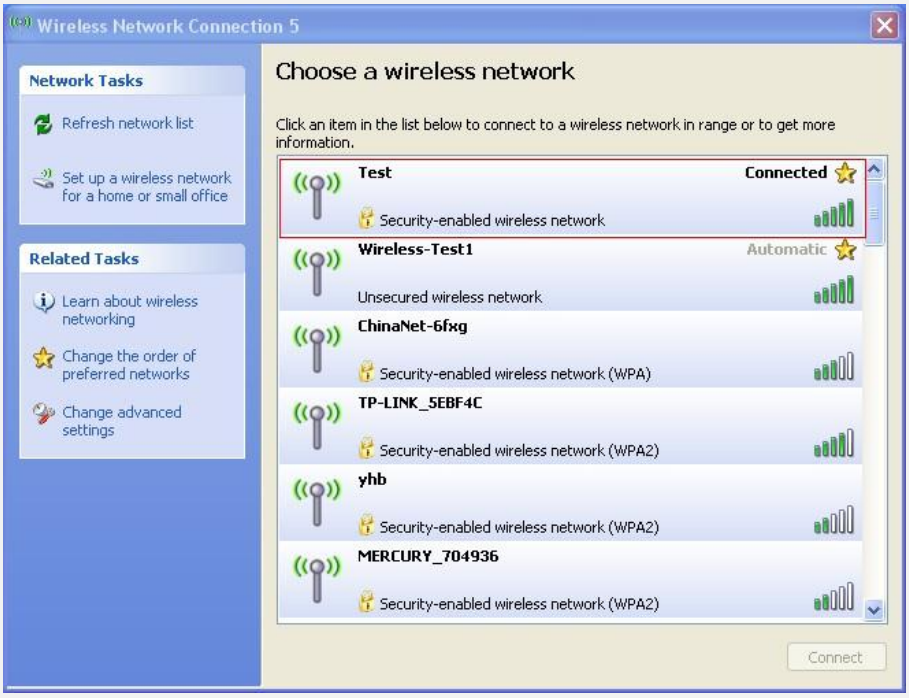




After a profile is successfully added, the profile can be seen on the profile list, select it and click the "Active" icon on the lower right corner. And then search for the wireless network on other clients. Double click the wireless network you have configured and you'll be prompted for the key .After entering the key, click "Connect".

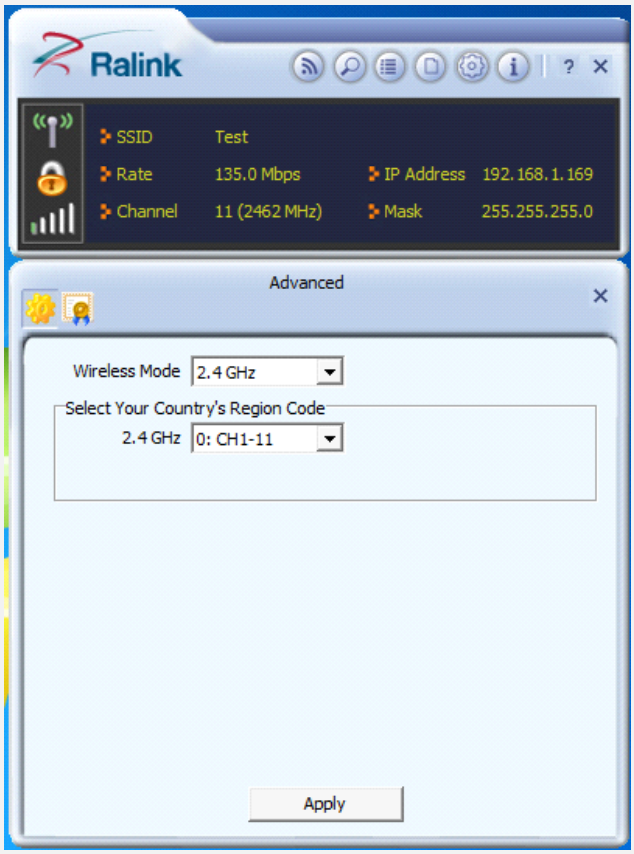


When the highlighted part shows “Connected”, it indicates the connection is successful.



4.1.4 Advanced

This section is used to set the wireless mode and country region code for the current wireless adapter. You have three options to choose from: 2.4G, 5G or 2.4G+5G. The widely used is 2.4G wireless adapter. To use the 5G mode of 802.11a technology, please set it here.

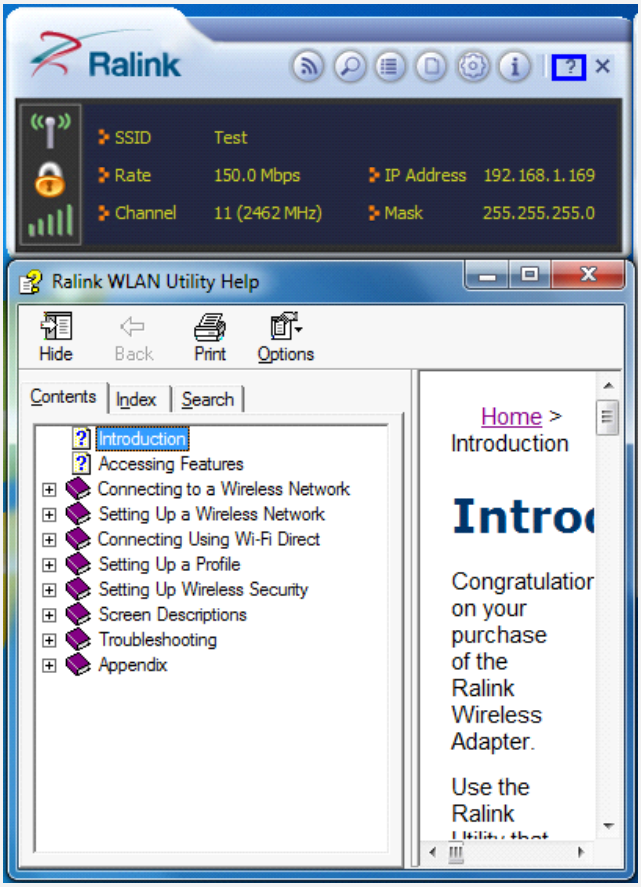


4.1.5 About

This screen mainly displays the version information of the UI's different programs as well asits copyright statement.

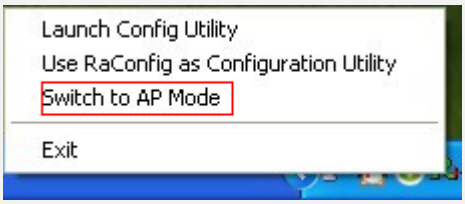
4.1.6 Help

Click the help button to open the user manual.



4.2 AP mode under XP

When you want to use the wireless adapter's AP function, please right click the UI icon on the taskbar of your computer desktop and select "Switch to AP Mode".



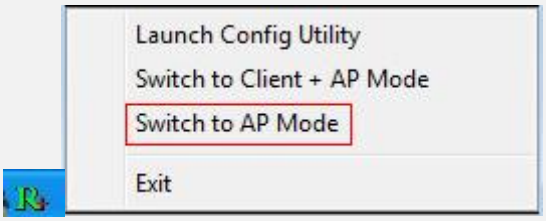
In this mode, the wireless adapter acts as an AP to transmit wireless signal and create a wireless network, while allowing other wireless clients to access this network.

As shown in the diagram below: The PC in the left has already accessed to the Internet by using a wired network adapter, meanwhile, you install awireless adapter (take a USB wireless adapter as an example) and its UI on this computer, and set the adapter to AP mode.

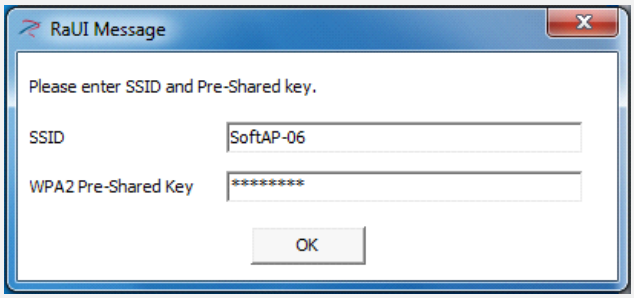
By using the wireless adapters to scan the AP'S SSID to connect, the computers in the right can also access to the Internet after successfully connected

4.2.1 AP Mode under Windows 7

1. Under Windows 7, wireless adapters are allowed to work in both STA and AP modes. Here, the wireless adapter acts not only as a client, but also an AP to send wireless signal, which equals to an amplifier. Right click the UI icon on the lower right corner of the computer desktop and select "Switch to Client +AP Mode".



2. You can change the SSID on the Config AP screen and control the number of the connected clients by modifying the max number of peers. AP mode has only one encryption method which is WPA2-AES by default and cannot be modified.



Appendix 1: Acronyms and Terms

WLAN Wireless Local Area Network

802.11 A family of specifications developed by the IEEE for WLAN technology.

802.11a An extension to 802.11 WLAN standards that provides up to 54 Mbps transmission in the 5 GHz UNI radio band.

802.11b An extension to 802.11 WLAN standard that provides up to 11 Mbps transmission in the 2.4 GHz ISM radio band. 802.11b uses DSSS modulation.

802.11g An extension to 802.11 WLAN standard that provides up to 54 Mbps transmission in the 2.4 GHz ISM radio band. 802.11b uses OFDM modulation and is backwards compatible with 802.11b.

802.11n higher transmission rate, supports Multi-Input Multi-Output(MIMO）technology.

WEP Wired Equivalent Privacy. A security protocol for WLANs defined in the IEEE 802.11 standard.

WPA Wireless Protected Access, adopts rotating keys.

RSN Robust Security Network，A substitute for WPA, and it adopts 802.1x standard andadvanced encryption

ICS Microsoft Internet Connection Sharing enables multi-computer to share access to Internet via one PC.

Appendix 2: FAQ

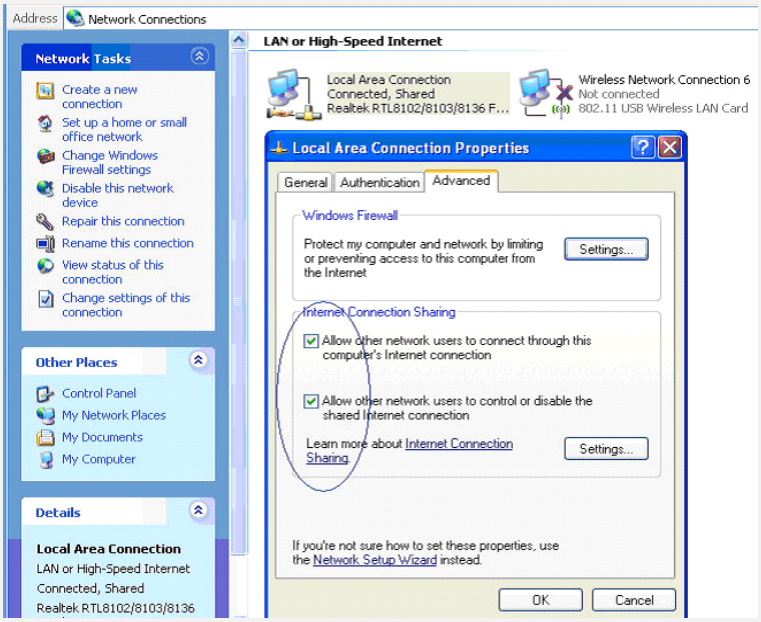
Q1: Microsoft ICS service is pending.

A1: If ICS service cannot be enabled after a long time, please re-switch from Station Mode to AP Mode, if not successful, please restart the computer.

Q2: ICS is already bound by another network device.

A2: Microsoft ICS service can only combine one group of WAN and LAN. This message indicates ICS may have been enabled by other network adapters. Please manually cancel ICS and re-switch to

AP mode.



Manually enable or cancel ISC.

Q3: Failed to enable ICS.

A3: Microsoft ICS service can only combine one group of WAN and LAN. This message indicates ICS may have been enabled by other network adapters.

1. Please manually cancel or restart and cancel ICS, then re-switch to AP mode.

2. This dialogue box appears because virtual wi-fi miniport adapter can only be used by one wireless network adapter at a time. Please disable any other non-the wireless network adapters and re-switch to AP mode.

Q4: Under Windows 7, when I switch from station mode to AP mode, the screen flashes "DisablingICS, please wait……"and immediately return to station screen.

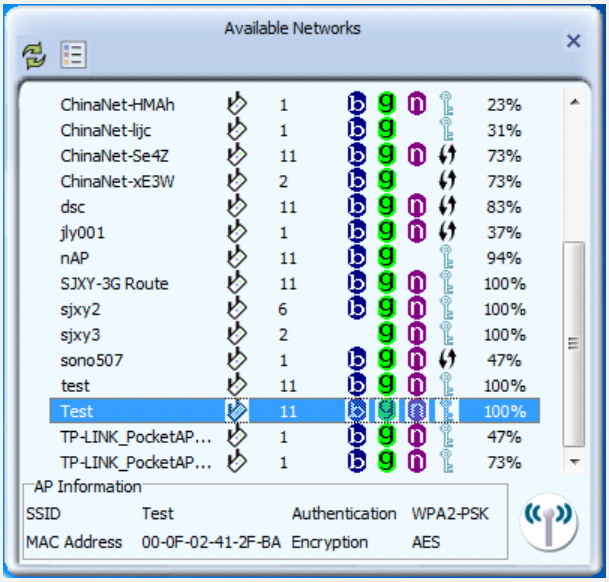
A4: This is because you have disabled "Microsoft Virtual WiFi Miniport Adapter", please re-enable it and then switch to AP mode.

Q5:Client cannot obtain IP when connected to soft AP of the wireless network adapter.

A5: Manually set an IP address at the same net segment as that of the AP and the gateway and DNS at the IP address of AP.Thus, communication can be achieved.

Q6: The SSID is not fully displayed on the wireless network list, what should I do?

A6: Keep the mouse on the displayed SSID for about 2 seconds, as the below picture shows, and you'll see the full SSID on the appearing box.



Q7: Under Windows 2000 system, IP address cannot be obtained when it is switched to AP Mode.

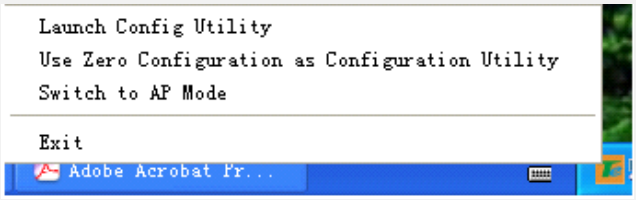
A7: Under Windows 2000 system, you have to manually configure sharing and then switch to AP. And an IP address of 192.168.0.1 will be obtained.

Q8:Sometimes the UI cannot be moved by the mouse and also cannot be minimized,why?

A8:when you are performing some configurations or connections, the UI only activates the currently operating window, other windows are locked and cannot be operated, but it will restore to normal when you close or finish the current configuration and connection.

Q9: How to exit the UI?

A9: Right click the system tray icon and click "Exit" on the appearing dialog.



Q10: Now that thethe wireless adapter's driver can be installed without the Software CD, why it still provide the CD?

A10: Some functions are missing for the drive integrated in the adapter, and also the drive does not support the WPS button and AP mode, however, by installing the drive on the CD, the UI can be installed to fulfill these advanced features.

Q11: Why I cannot normally use the Drive integrated in this adapter under MAC operating system?

A11:This adapter can only integrates the drive under Windows system, to use this item under MAC

system, please insert the adapter to the computer with MAC OS; the system will identify the adapter as a CD, pop this CD out, and then install the MAC drive included in the CD.

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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your 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.

RF Exposure Information
The device has been evaluated to meet general RF exposure requirement.
The device can be used in portable exposure condition without restriction.