

Wireless LAN USB Adapter

User Manual 1.0

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1. Windows Wireless Utility for Driver installation

1.1 Windows Zero Configuration for XP

1.1.1 Mediatek Wireless Utility and Windows Zero Configuration

Windows XP includes a wireless configuration utility named "Windows Zero configuration" (WZC) which provides basic configuration functions to the Mediatek Wireless NIC. Mediatek's utility (RaUI) additionally provides WPA functionality. To make it easier for the user to select the correct utility, RaUI will let users make a selection when it first runs after windows XP boots.

Right-clicking the icon will bring up the selection window and allow the user to make a selection.



Figure 1-1 RaUI.exe

RaUI can co-exist with [WZC](#). When coexisting with [WZC](#), RaUI only provides monitoring functions, such as surveying the link status, network status, statistic counters, advanced feature status, WMM status and WPS status. It won't interfere with WZC's configuration or profile functions. It is shown as Figure 1-2.



Figure 1-2 Select WZC or RaUI

If "Use RaConfig as Configuration utility" is selected, please jump to Section 2 on running RaUI.

If "Use Zero Configuration as Configuration utility" is selected, please continue.

We will explain the difference between RaUI and [WZC](#). Figure 1-3 shows the RaUI status when [WZC](#) is activated as the main control utility.

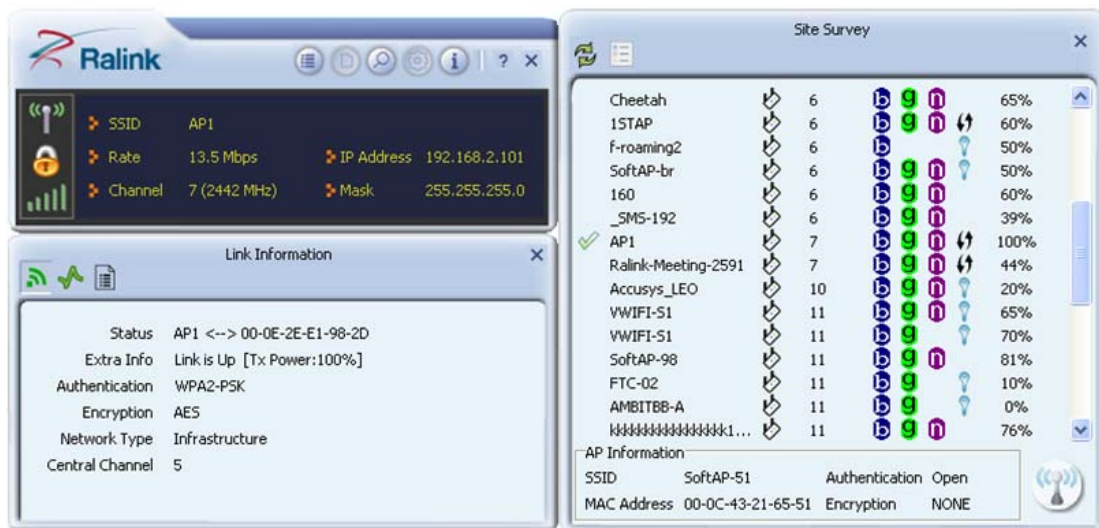


Figure 1-3 RaUI status with WZC active

When activating [WZC](#), there are several difference with the RaUI status, compared to the RaUI status without [WZC](#) running.

- The profile button will be gray. Profile functionality is removed since the NIC is controlled by [WZC](#).
- The Connect and Add Profile function will be gray. Profile functionality is removed since the NIC is controlled by [WZC](#).

Please read through this document for full details on the other functions provided by RaUI.

1.1.2 Windows Zero Configuration (WZC)

- If there is no connection or it is lost, the status prompt will pop up, as shown in Figure 1-4.

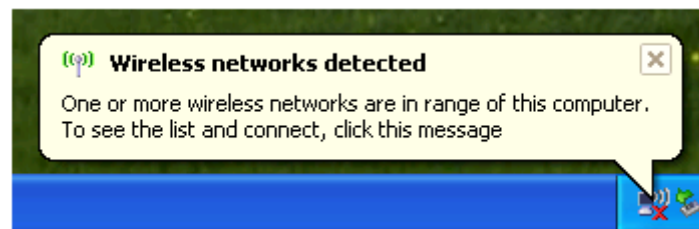


Figure 1-4 status prompt for no connection

- Right-click the network connection icon in taskbar.



Figure 1-5 Select WZC main status

- Select "View Available Wireless Networks" and the "Wireless Network Connection" dialog box will pop up, as shown in Figure 1-6.

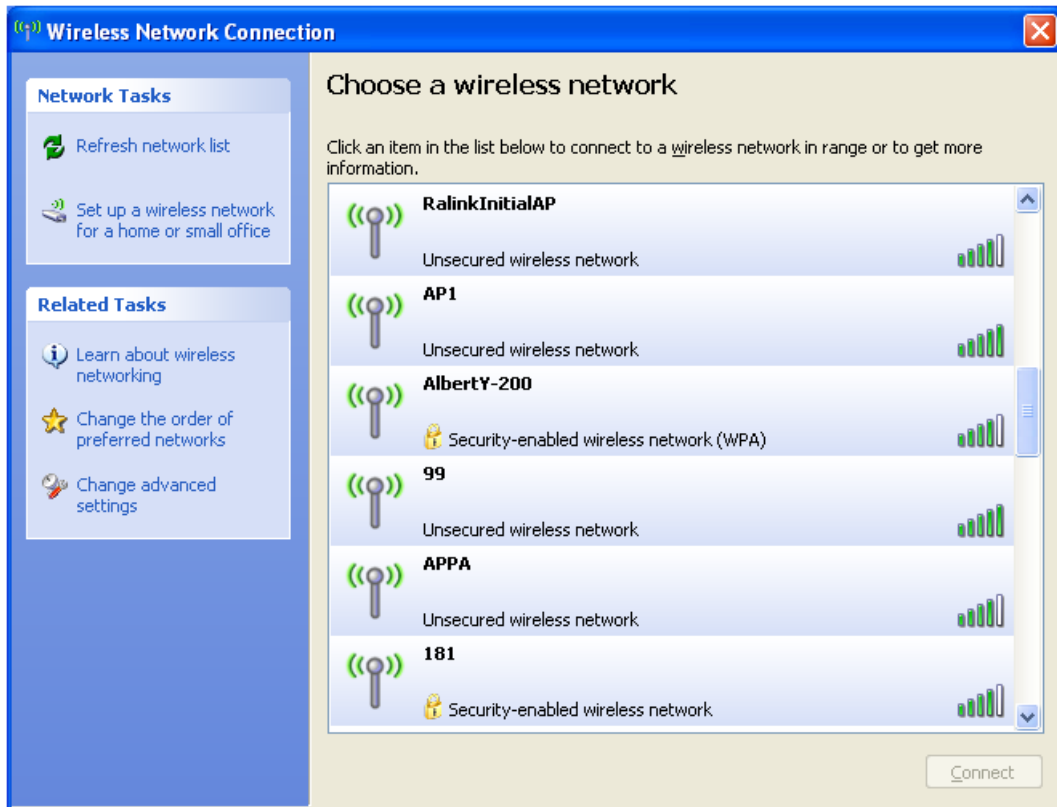


Figure 1-6 Wireless Network Connection

- Select the intended access point and click "Connect". Then click "Connect Anyway" as shown as Figure 1-7.

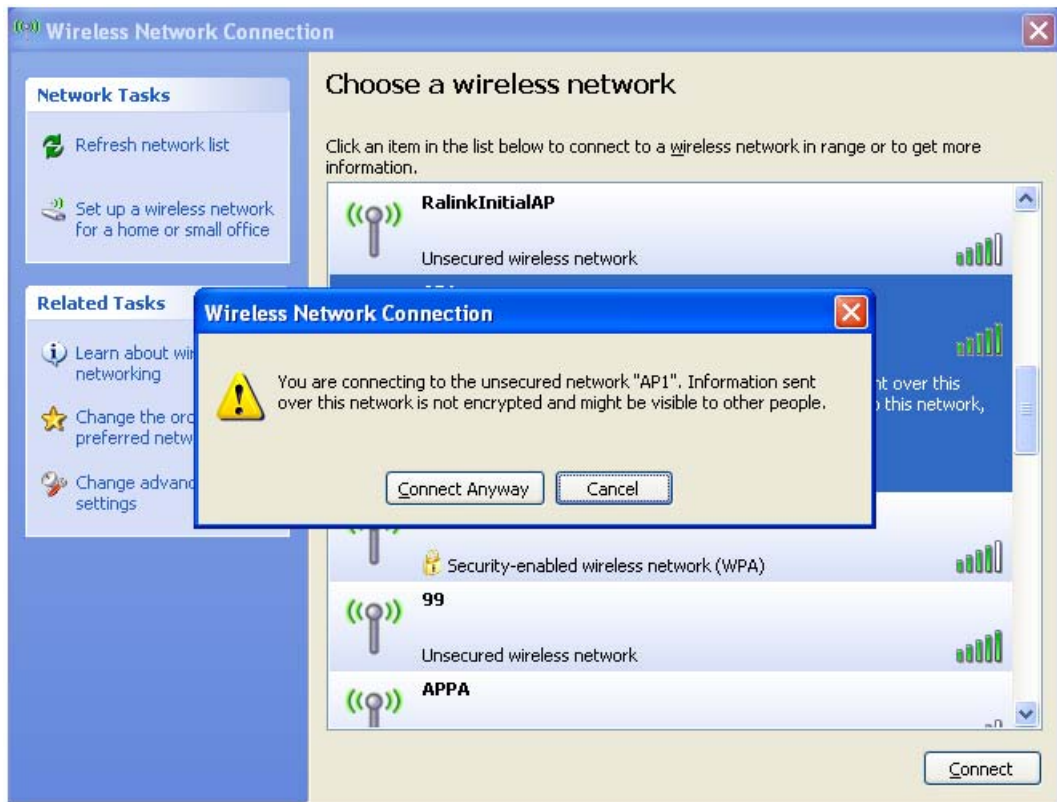


Figure 1-7 Select intended AP: AP1, then click "Connect"

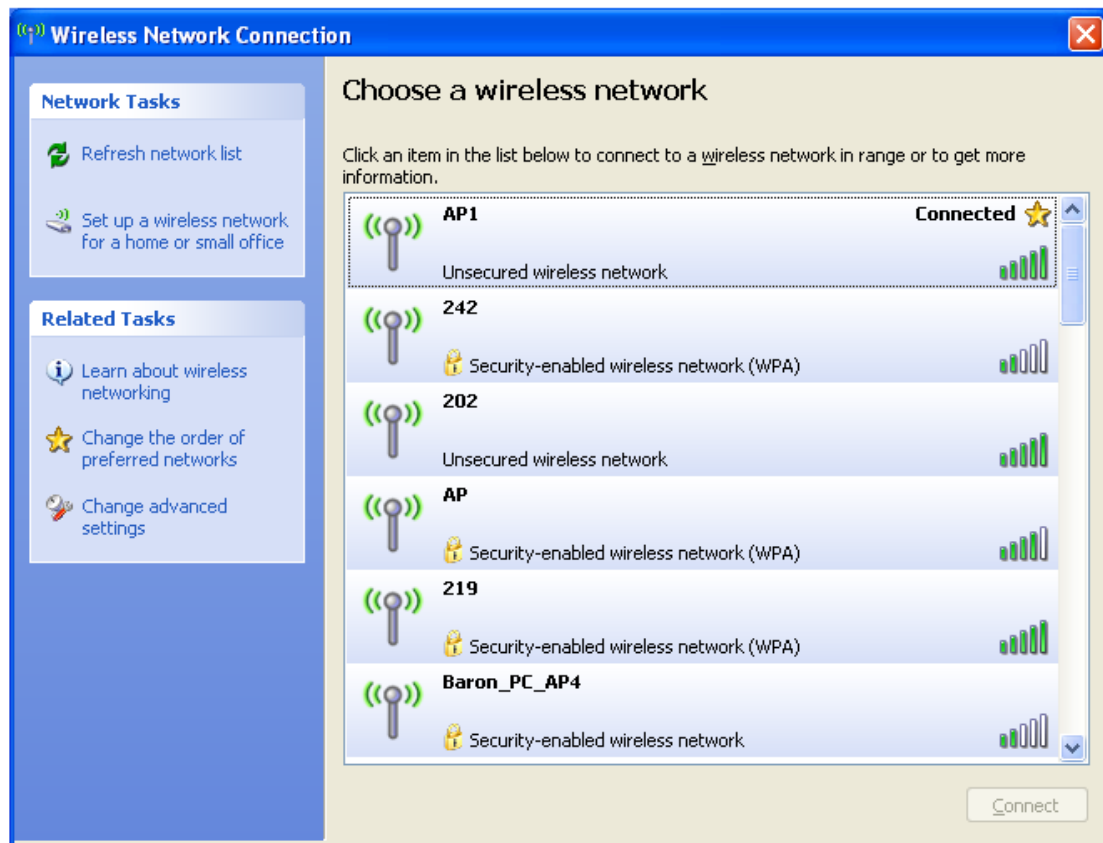


Figure 1-8 Connect AP: AP1 successfully

- If you want to modify information about the AP, click "Change advanced settings" as shown in Figure 1-9. Then select the "Wireless Networks" tab shown as Figure 1-10.

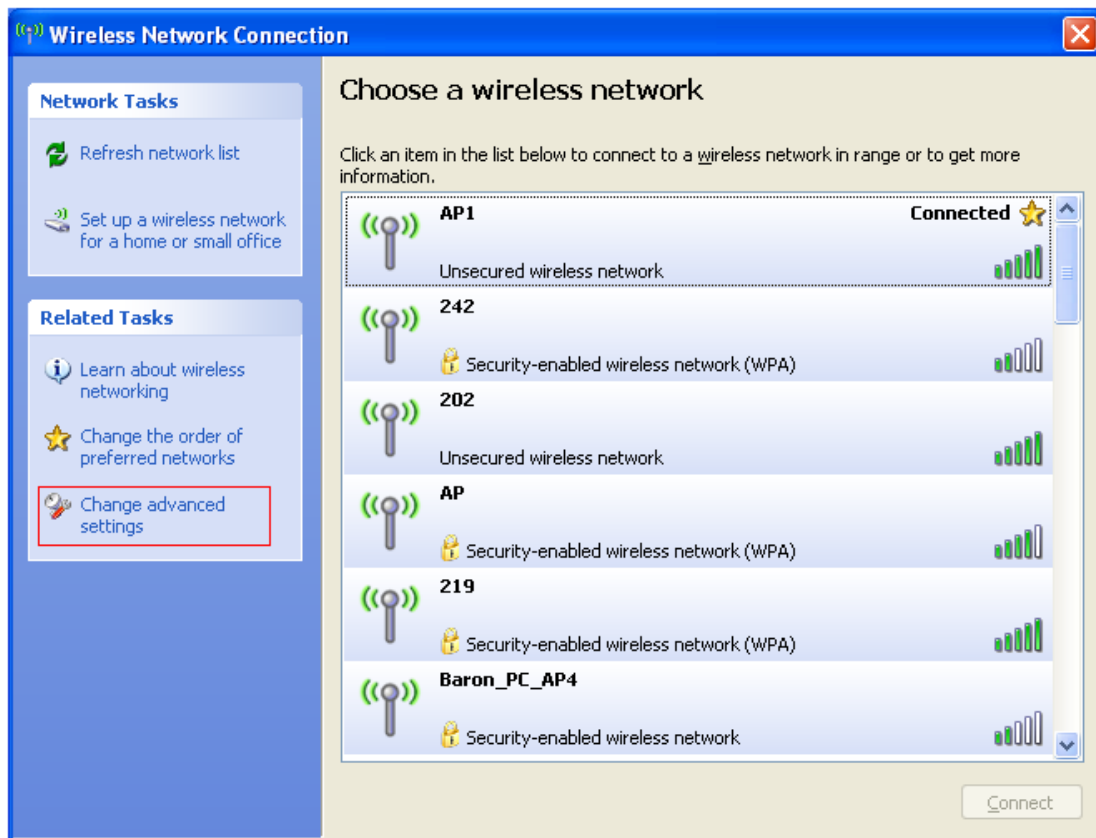


Figure 1-9 Click "Change advanced settings"

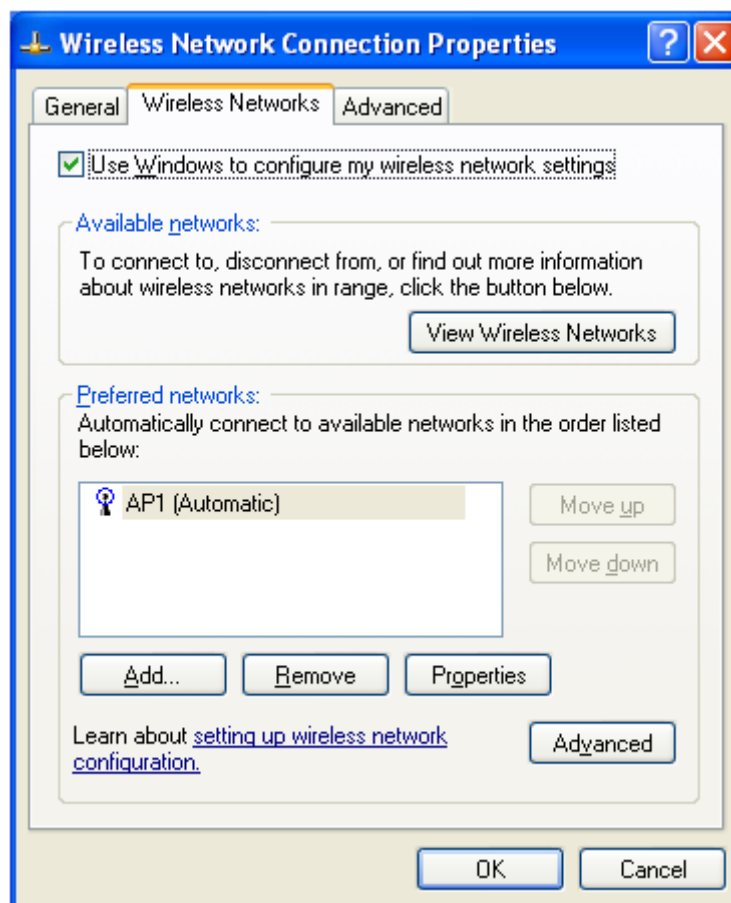


Figure 1-10 Choose the "Wireless Networks" tab

- Click "Properties" as shown in Figure 1-11. Then click "OK" button.

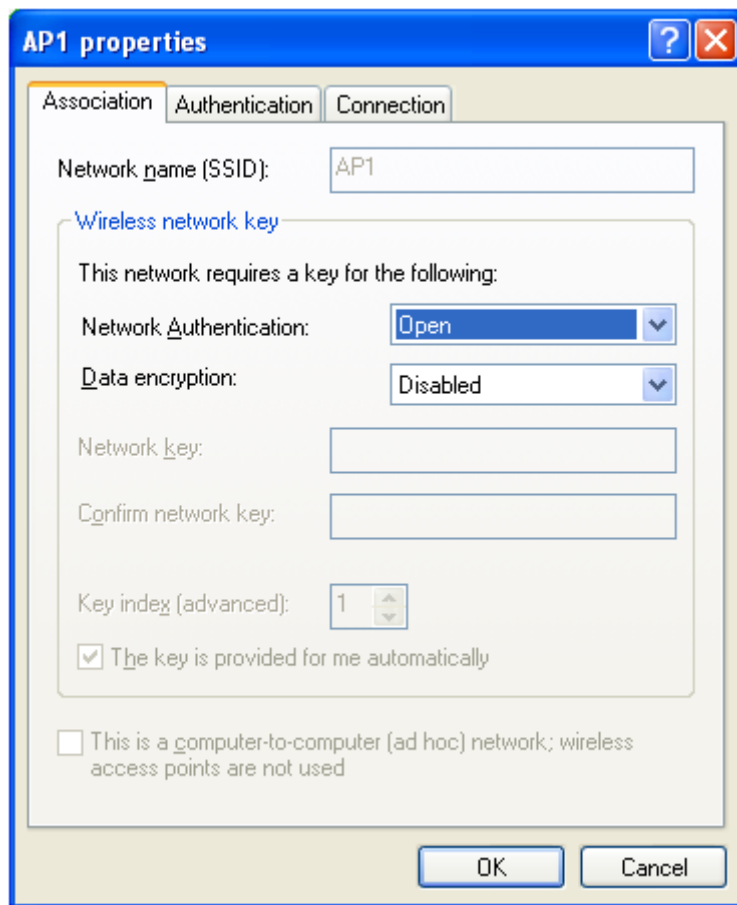


Figure 1-11 AP's properties

- After filling in the appropriate value, click "OK." The pop-up will indicate the status as shown in Figure 1-12.

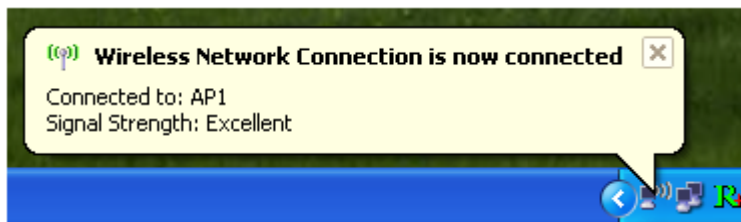


Figure 1-12 Network connection status

- Clicking the Mediatek icon will bring up the RaUI main window. Users can find the surrounding APs in the list. The currently connected AP will be shown with a blue icon beside it, as shown in Figure 1-13. Users may use the advanced tab to configure more advanced features provided by Mediatek's wireless NIC. For details on configuring the advanced features, please check the Advance setting section.

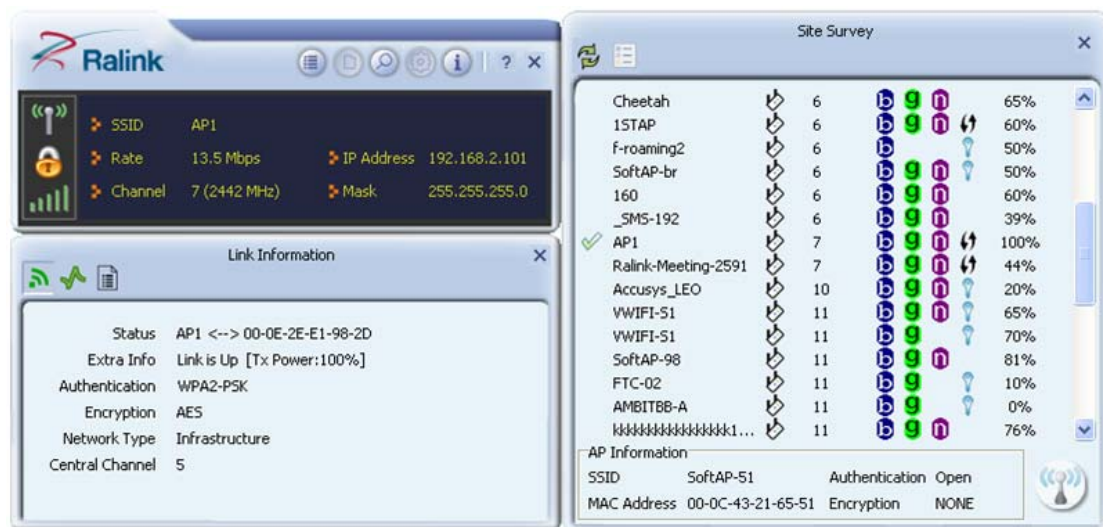


Figure 1-13 Show connection status by using WZC to initiate the connection

1.2 Windows AutoConfig Service for Vista

1.2.1 Mediatek Wireless Utility and Windows AutoConfig Service

In Windows Vista, the Auto Config service provides basic wireless configuration functions for the Mediatek Wireless Network Interface Controller. In order to perform these functions, the Auto Config service should first be enabled (Refer to Section 1-2-2).

Once the Mediatek wireless utility is minimized, click the Mediatek icon as shown in Figure 1-1. This will bring up the option menu shown as Figure 1-2 for the user to restore the utility window or terminate the utility.



Figure 1-1

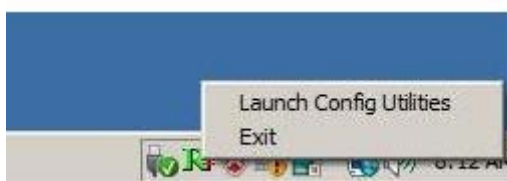


Figure 1-2

The Mediatek wireless utility as shown in Figure 1-3, provides profile management, the available networks listing, a statistical counter display, Wi-Fi multimedia (WMM), protected Wi-Fi setup, Cisco compatible extensions (CCX), call admission control (CAC), radio controls, Mediatek driver/utility information, and help functions.



Figure 1-3 Mediatek Utility

The Mediatek wireless utility starts in compact mode as shown in Figure 1-3. Clicking the expanding icon at the bottom-right corner can change to the full mode as shown in Figure 1-4.

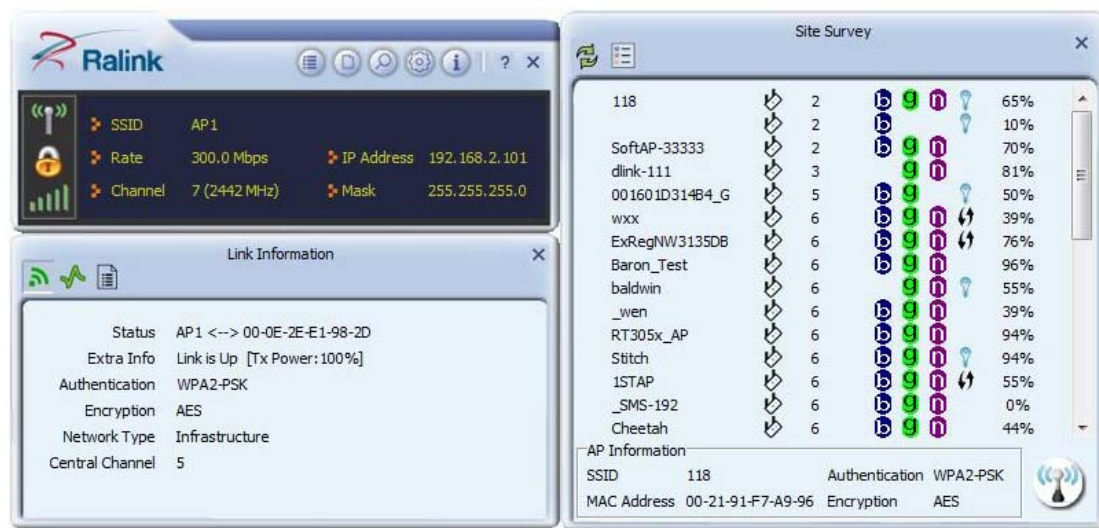


Figure 1-4 Mediatek Utility in full mode

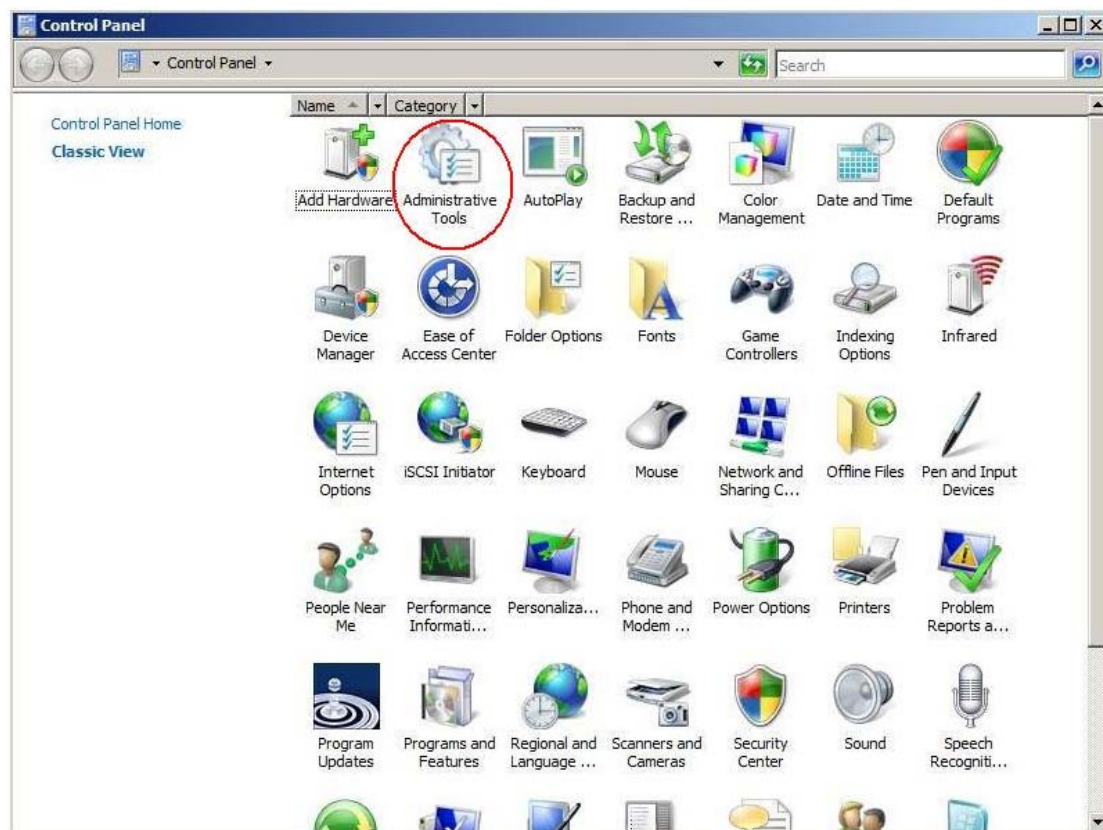
1.2.2 Windows AutoConfig Service

The following steps outline the procedure for starting/stopping the Windows AutoConfig service.

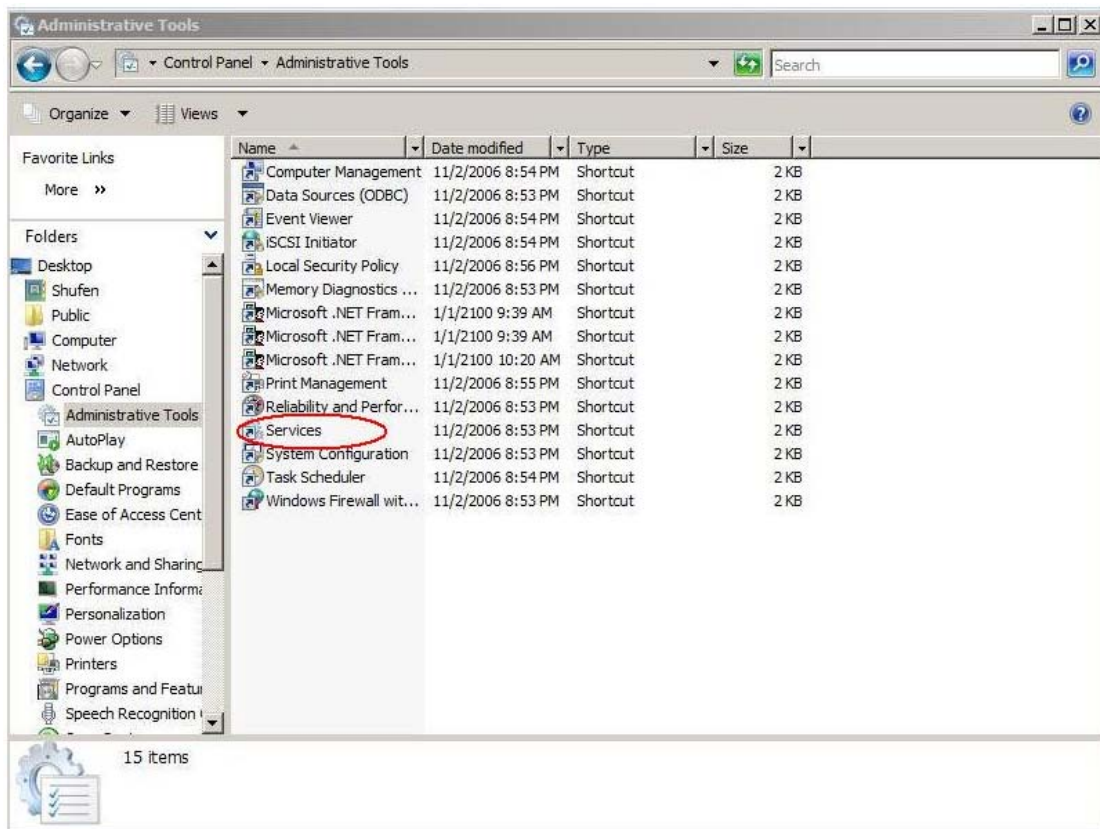
Select "Control Panel" from "Settings" in the start menu



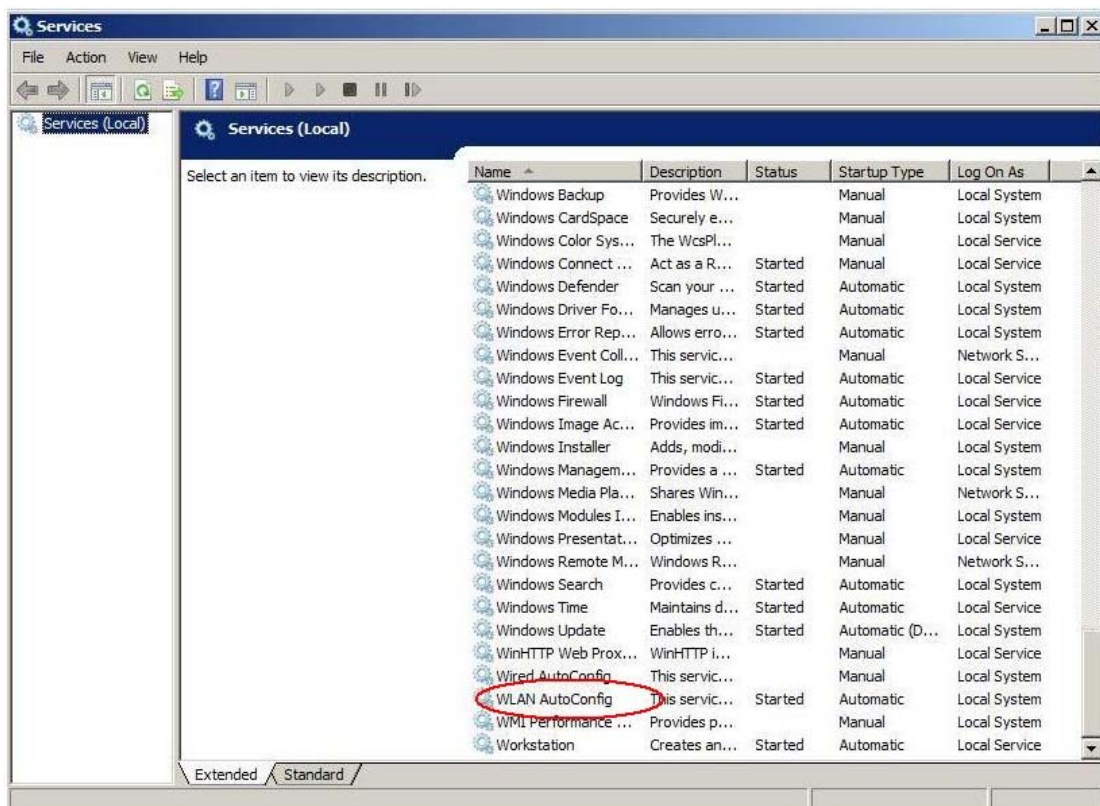
Double-click the "Administrative Tools" icon



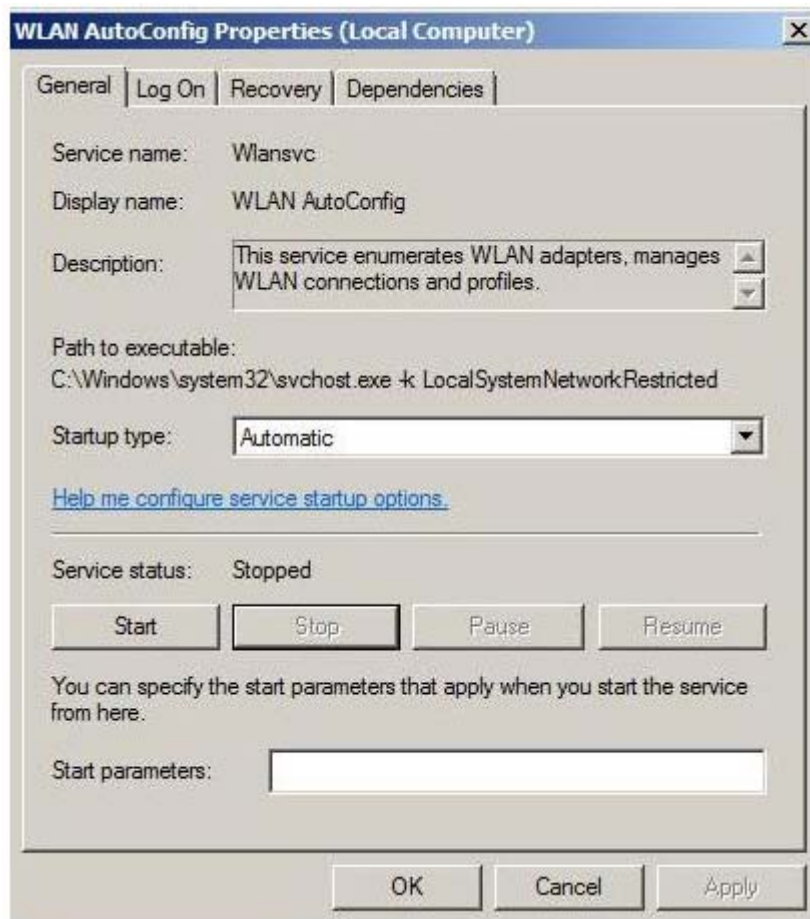
Double-click "Services"



Double-click "WLAN AutoConfig"



Manage the AutoConfig properties in the dialog box



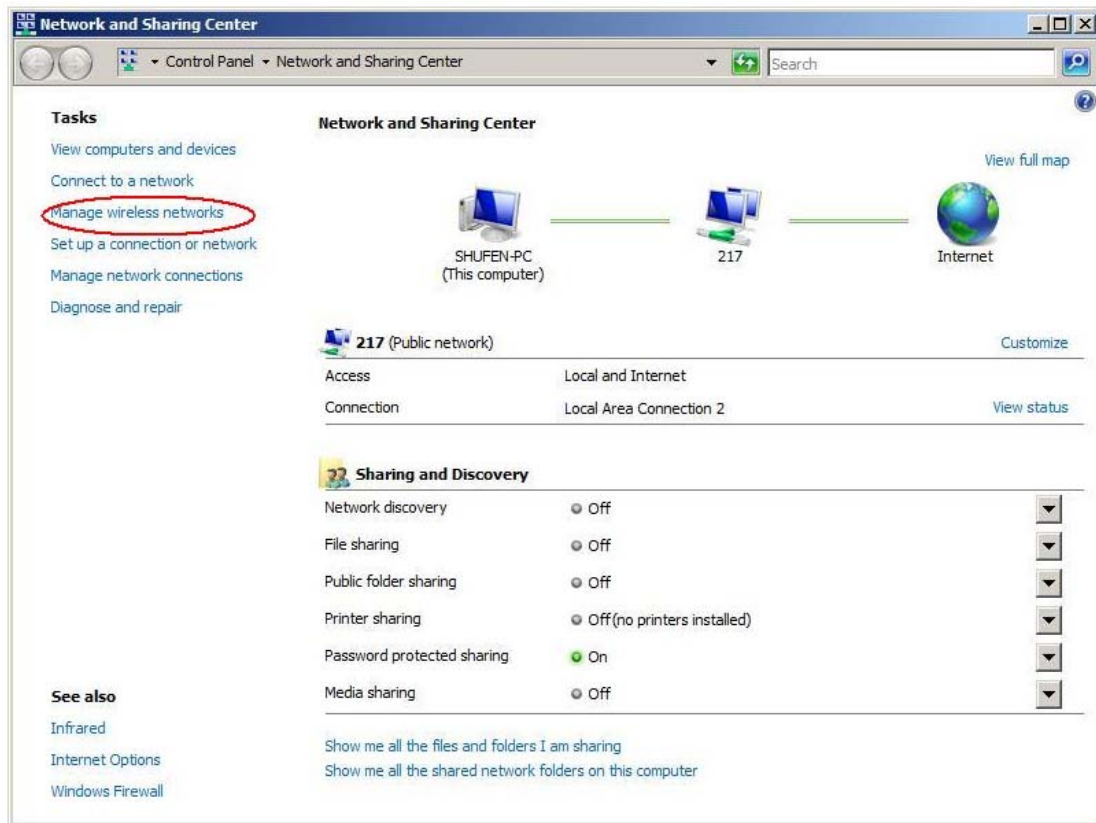
Windows profile manager can be accessed via control panel or network connection icon in the task bar.

1. Access via network connection icon

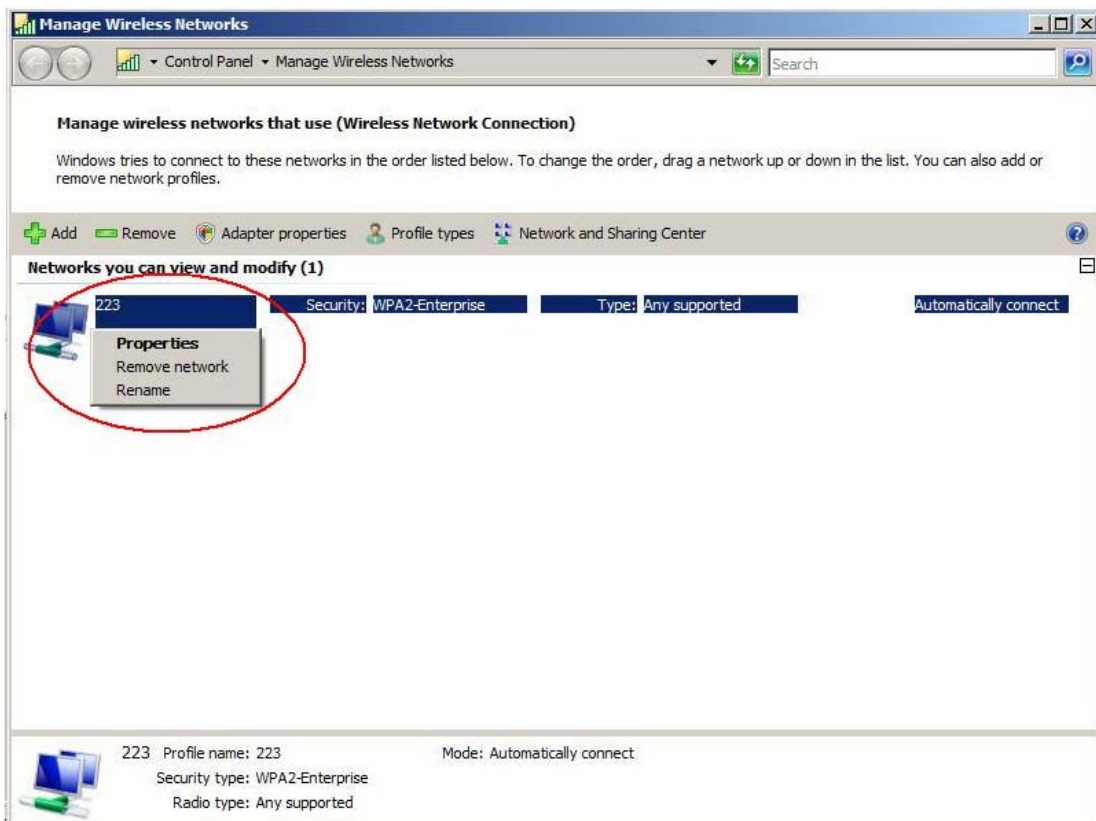
Right-click the network connection icon in the taskbar, then select "Network and Sharing Center" from the pop-up menu



Select "Manage wireless networks" from the tasks list

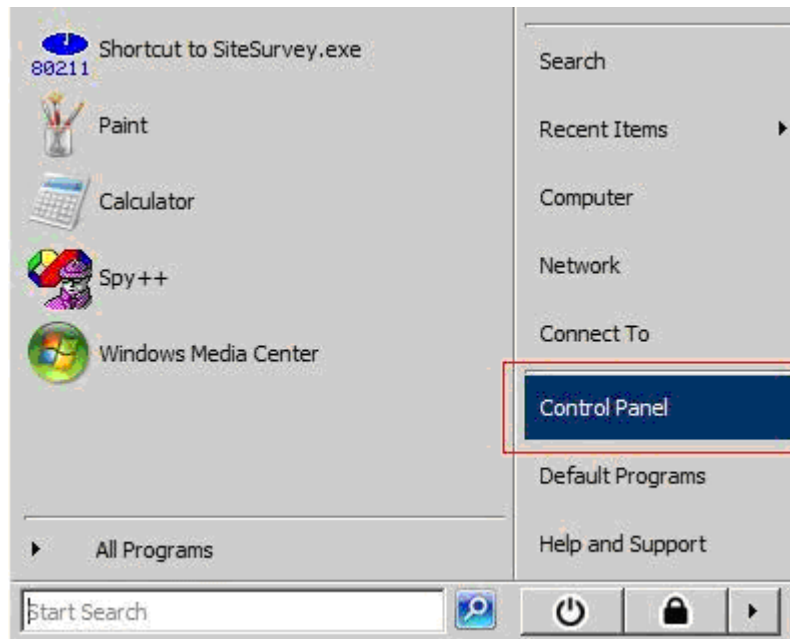


Right-click the network to bring up the profile managing menu

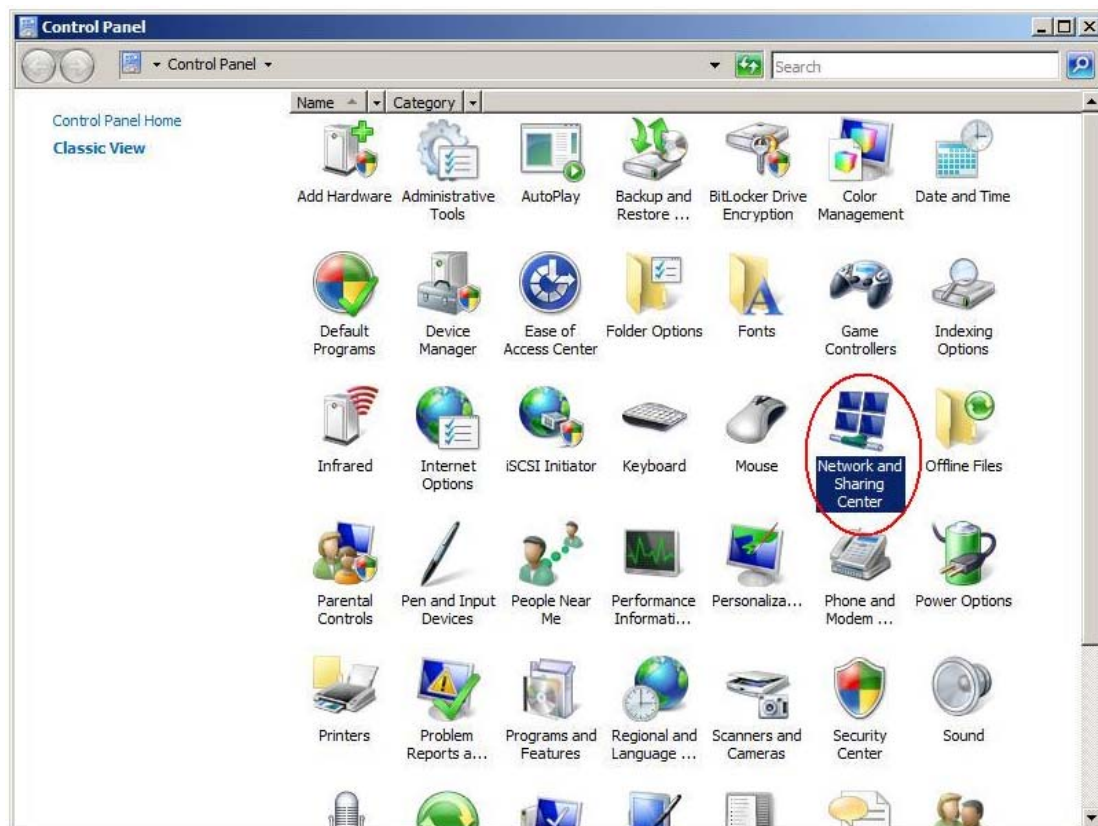


2. Access via control panel

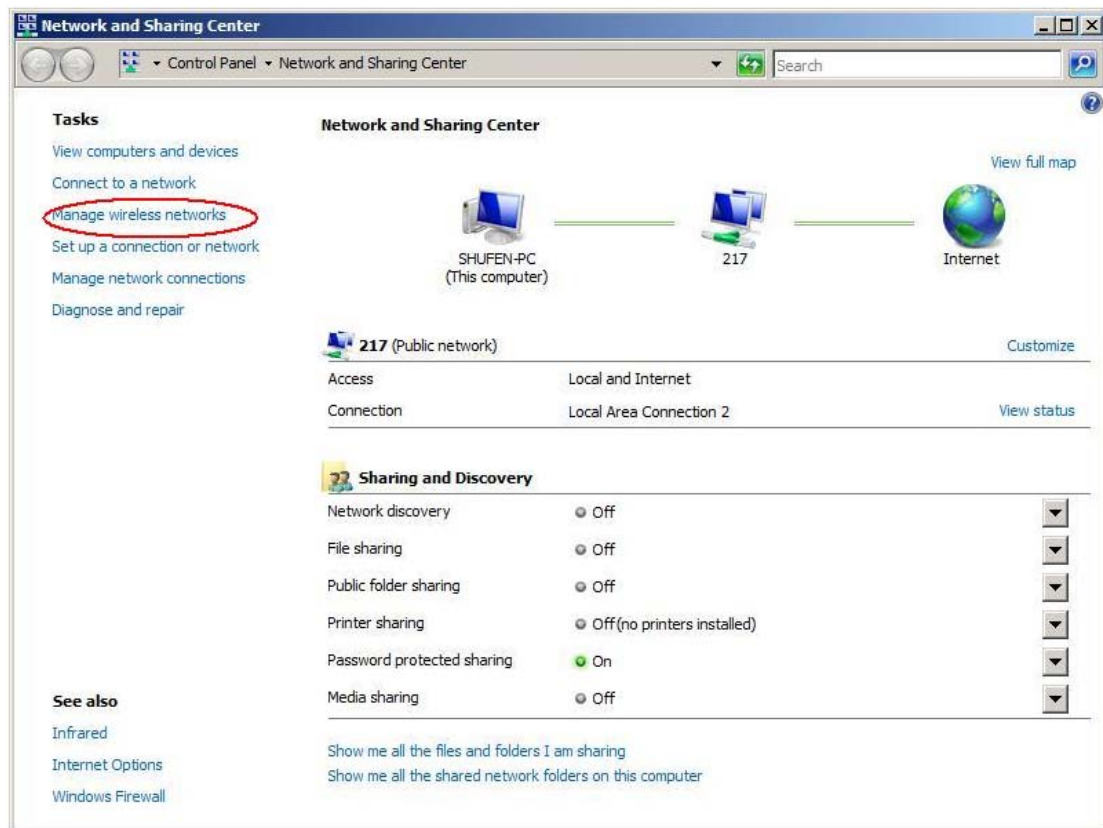
Select "Control Panel" from the start menu



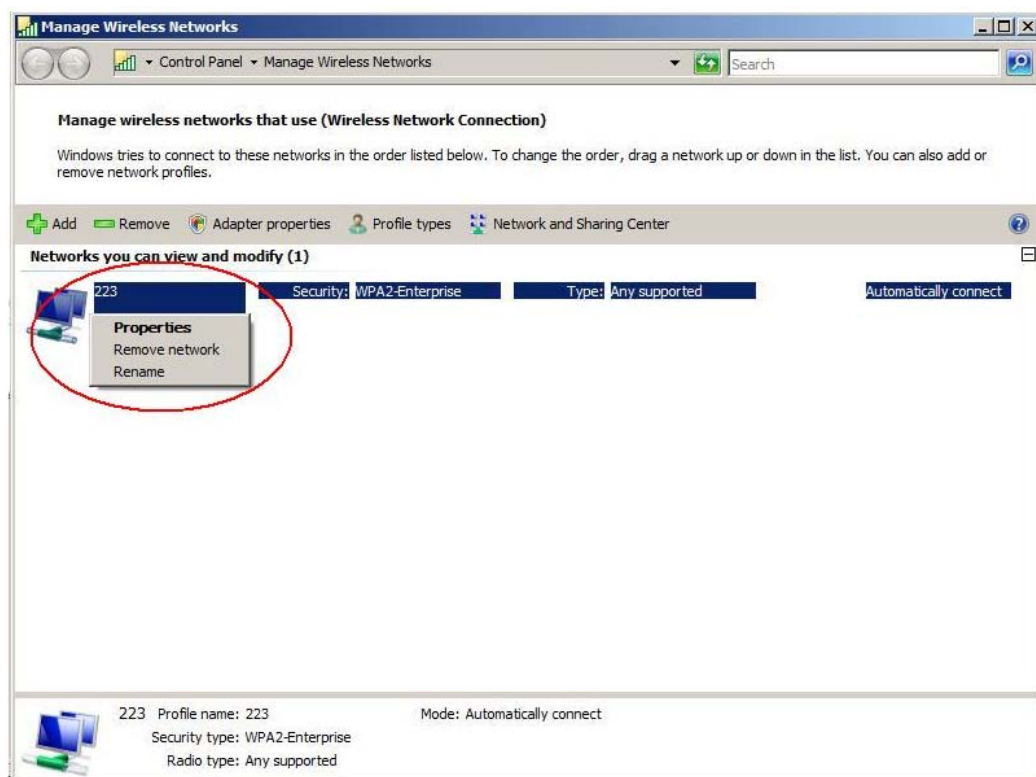
Double-click the "Network and Sharing Center" icon



Select "Manage wireless networks" from the tasks list



Right-click the network to bring up the profile managing menu



2. Mediatek Wireless Utility (RaUI)

2.1 Start

2.1.1 Start RaUI

When starting RaUI, the system will connect to the AP with best signal strength without setting a profile or matching a profile setting. When starting RaUI, it will issue a scan command to a wireless NIC. After two seconds, the AP list will be updated with the results of a BSS list scan. The AP list includes most used fields, such as SSID, network type, channel used, wireless mode, security status and the signal percentage. The arrow icon indicates the connected BSS or IBSS network. The dialog box is shown in Figure 2-1.

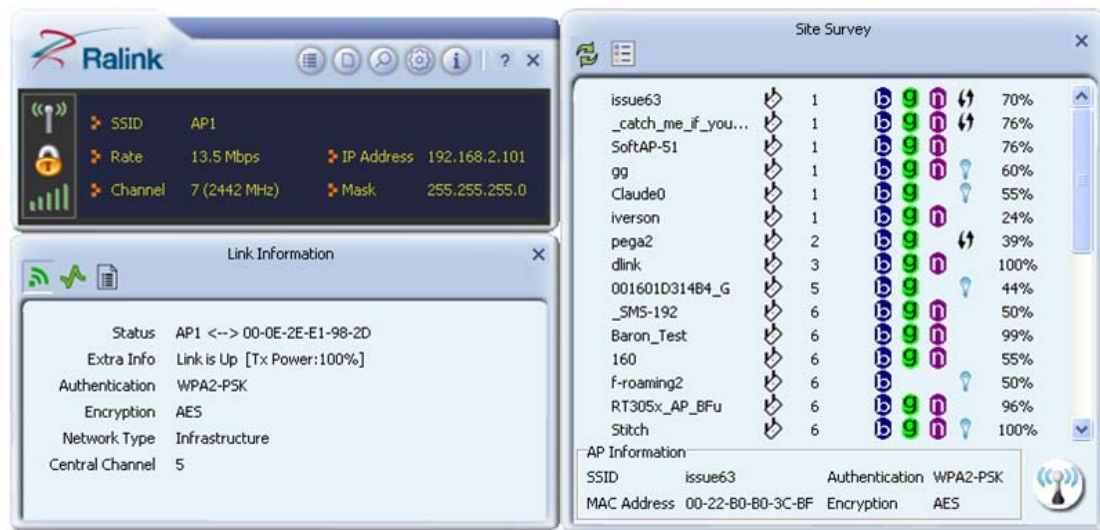


Figure 2-1-1 RaUI section introduction

There are three sections to the RaUI dialog box. These sections are briefly described as follow.

Button Section: Include buttons for selecting the Profile page, Network page, Advanced page, Statistics page, WMM page, WPS page, the About button, Radio On/Off button and Help.



Figure 2-1-2 Button section

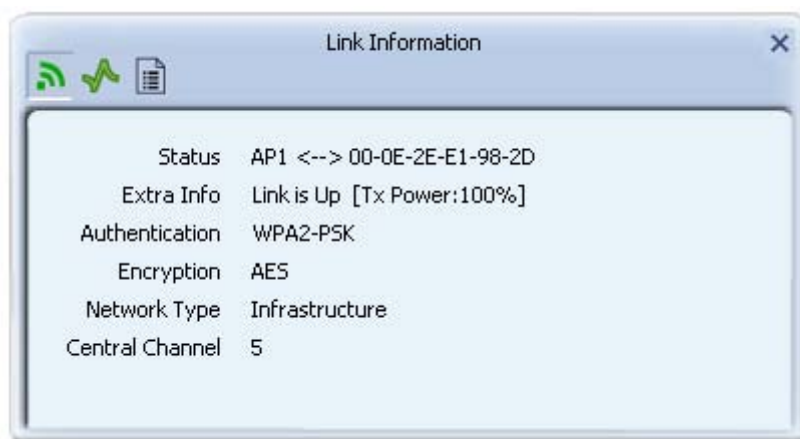


Figure 2-1-3 Link Information page



Figure 2-1-4 Profile page

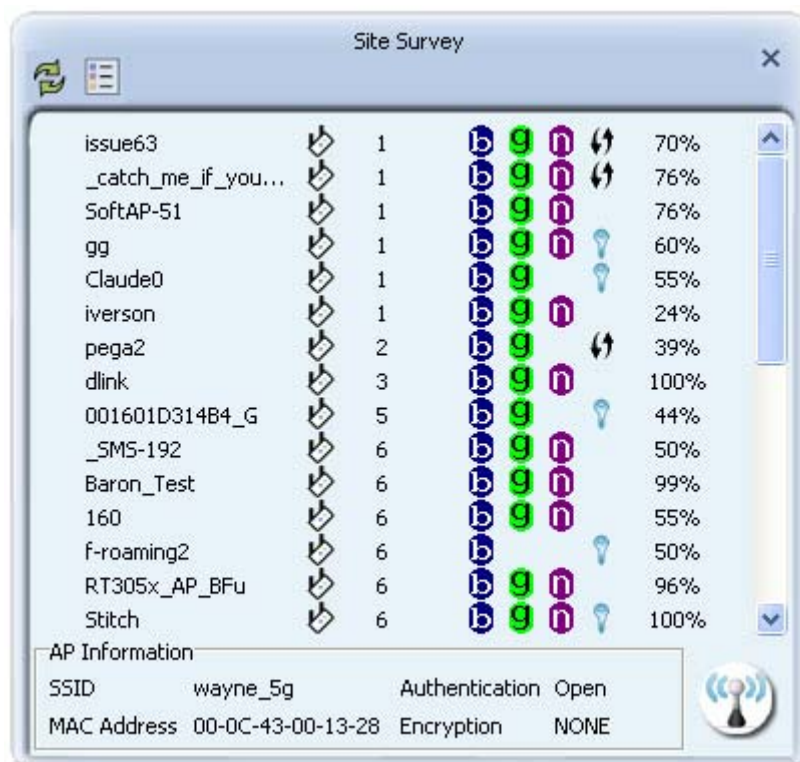


Figure 2-1-5 Network page



Figure 2-1-6 About page

When starting RaUI, a small Mediatek icon appears in the notifications area of the taskbar, as shown in Figure 2-1-15. You can double click it to maximize the dialog box if you selected to close it earlier. You may also use the mouse's right button to close RaUI utility.



Figure 2-1-9 Mediatek icon in system tray

Additionally, the small icon will change color to reflect current wireless network connection status. The status is shown as follows:

R+ : Indicates the connected and signal strength is good.

R : Indicates the connected and signal strength is normal.

R : Indicates that it is not yet connected.

R : Indicates that a wireless NIC can not be detected.

R : Indicates that the connection and signal strength is weak.

2.2 Profile

2.2.1 Profile

The Profile List keeps a record of your favorite wireless settings at home, office, and other public hot-spots. You can save multiple profiles, and activate the correct one at your preference. Figure 2-2-1 shows the basic profile section.



Figure 2-2-1 Profile function

Definition of each field:

- Profile Name: Name of profile, preset to PROF* (* indicate 1, 2, 3...).
- SSID: The access point or Ad-hoc name.
- Network Type: Indicates the networks type, including infrastructure and Ad-Hoc.
- Authentication: Indicates the authentication mode used.
- Encryption: Indicates the encryption Type used.
- Use 802.1x: Shows if the 802.1x feature is used or not.
- Cannel: Channel in use for Ad-Hoc mode.
- Power Save Mode: Choose from CAM (Constantly Awake Mode) or Power Saving Mode.
- Tx Power: Transmitting power, the amount of power used by a radio transceiver to send the signal out.
- RTS Threshold: Users can adjust the RTS threshold number by sliding the bar or keying in the value directly.

- Fragment Threshold: The user can adjust the Fragment threshold number by sliding the bar or key in the value directly.

Icons and buttons:

-  : Indicates if a connection made from the currently activated profile.
-  : Indicates if the connection has failed on a currently activated profile.
-  : Indicates the network type is infrastructure mode.
-  : Indicates the network type is in Ad-hoc mode.
-  : Indicates if the network is security-enabled.
-  : Click to add a new profile.
-  : Click to edit an existing profile.
-  : Deletes an existing profile.
-  : Import an existing profile.
-  : Export an existing profile.
-  : Activates the selected profile.

2.2.2 Add/Edit Profile

There are three methods to open the Profile Editor dialog box.

You can open it by clicking the "Add to Profile" button in the Site Survey tab.

You can open it by clicking the "Add" button in the Profile tab.

You can open it by clicking the "Edit" button on the Profile tab.

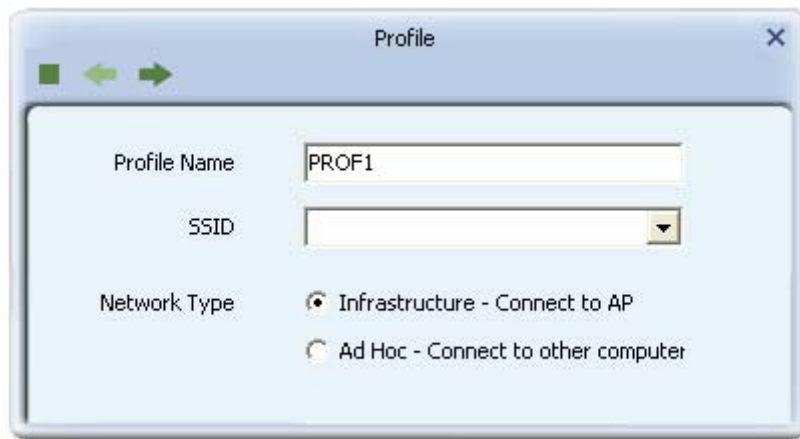


Figure 2-2-1 Add a new Profile

Icons and buttons:

-  : To the next page.
-  : Back to the previous page.
-  : Cancel button.

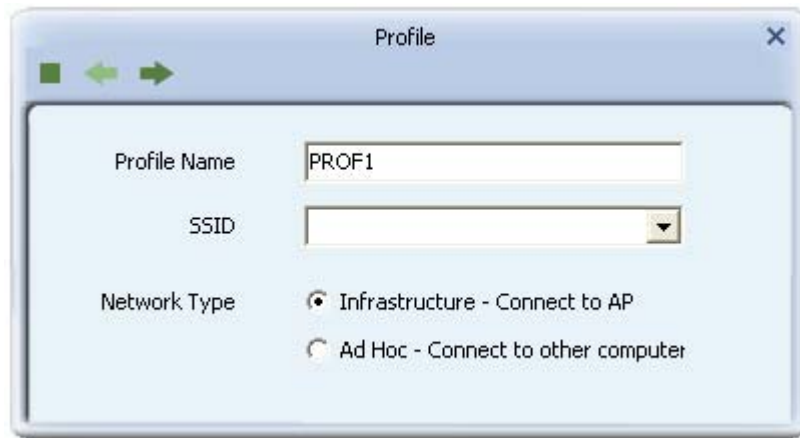


Figure 2-2-2 Profile Name, SSID, Network Configuration

- Profile Name: The user can chose any name for this profile, or use the default name defined by system.
- SSID: The user can key in the intended SSID name or select one of the available APs from the drop-down list.
- Power Save Mode: Choose CAM (Constantly Awake Mode) or Power Saving Mode.
- Network Type: There are two types, infrastructure and 802.11 Ad-hoc modes. Under Ad-hoc mode, user can also choose the preamble type. The available preamble type includes auto and long. In addition, the channel field will be available for setup in Ad-hoc mode.



Figure 2-2-3 Authentication and Encryption Configuration

- Authentication Type: There are 7 types of authentication modes supported by RaUI. They are open, Shared, LEAP, WPA and WPA-PSK, WPA2 and WPA2-PSK, 802.1X, WAPI-PSK, and WAPI-CA.
- Encryption Type: For open and shared authentication mode, the selection of available encryption type are none and WEP. For WPA, WPA2, WPA-PSK and WPA2-PSK authentication mode, both TKIP and AES encryption is available.

Profile

Default Tx Key: Key 1

Key Format: Hex(10 or 26 hex digits)

WEP Key:

Figure 2-2-4 WEP Key Configuration

- WEP Key: Only valid when using WEP encryption algorithms. The key must be identical to the AP's key. There are several formats to enter the keys.
 1. Hexadecimal - 40bits: 10 Hex characters.
 2. Hexadecimal - 128bits: 26 Hex characters.
 3. ASCII - 40bits: 5 ASCII characters.
 4. ASCII - 128bits: 13 ASCII characters.

Profile

WPA Preshared Key:

Figure 2-2-5 Pre-shared Key Configuration

- Pre-shared Key: This is the key shared between the AP and STA. For WPA-PSK and WPA2-PSK authentication mode, this field must be filled with a key between 8 and 32 characters in length.

Profile

EAP Method: PEAP ☒ Session Resumption

Tunnel Authentication: EAP-MSCHAP v2

Tunnel ID: Authentication ID

Tunnel Password:

Domain Name:

Figure 2-2-6 802.1x Configuration

- 802.1x Setting: This is introduced in the topic of “Section 3-2 : 802.1x Setting”

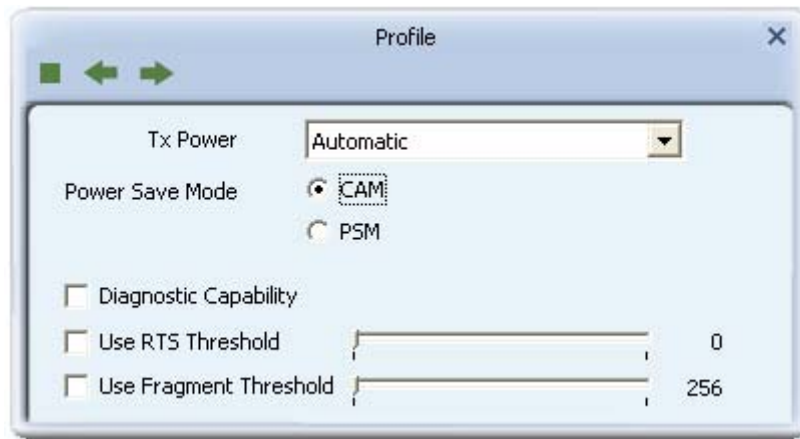


Figure 2-2-7 Advanced Configuration

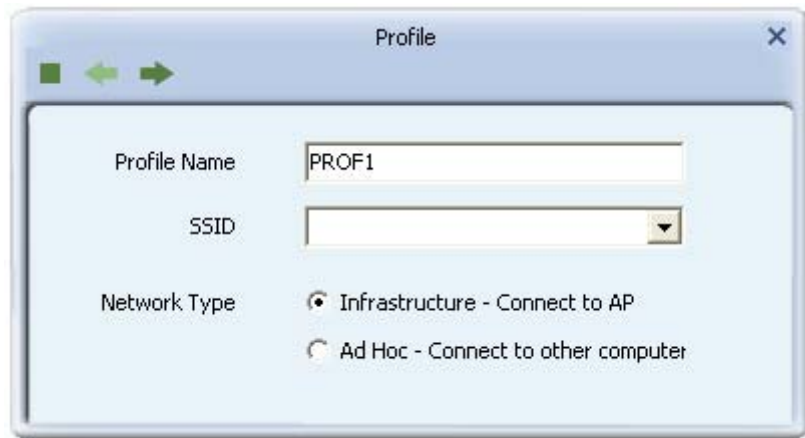
- Power Save Mode: Choose CAM (Constantly Awake Mode) or Power Saving Mode.
- Channel: Only available for setting under Ad-hoc mode. Users can choose the channel frequency to start their Ad-Hoc network.
- RTS Threshold: User can adjust the RTS threshold number by sliding the bar, or key in the value directly. The default value is 2347.
- Fragment Threshold: User can adjust the Fragment threshold number by sliding the bar or key in the value directly. The default value is 2346.

2.2.3 Example to Add Profile in Profile

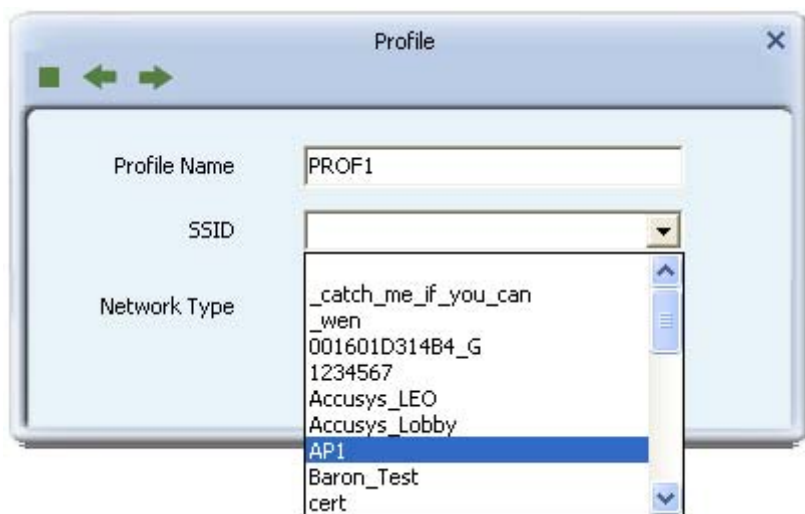
- Click "Add" below the Profile List.



- The "Add Profile" will appear.



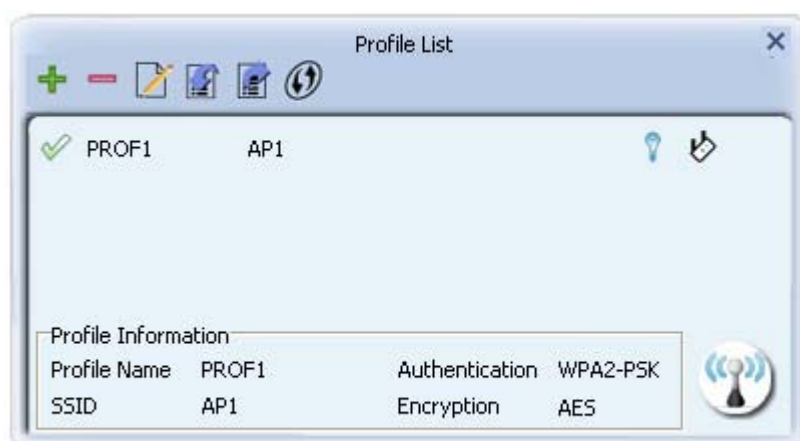
- Specify a Profile Name. Select an AP from the SSID drop-down list. The AP list from the last Network.



- Now the profile which the user set appears in the profile list. Click "Activate".



- Now the profile which the user active will connect to AP.



2.2.4 Pre-logon Connect

The Pre-logon Connect configuration page as shown in Figure 2-2-4.

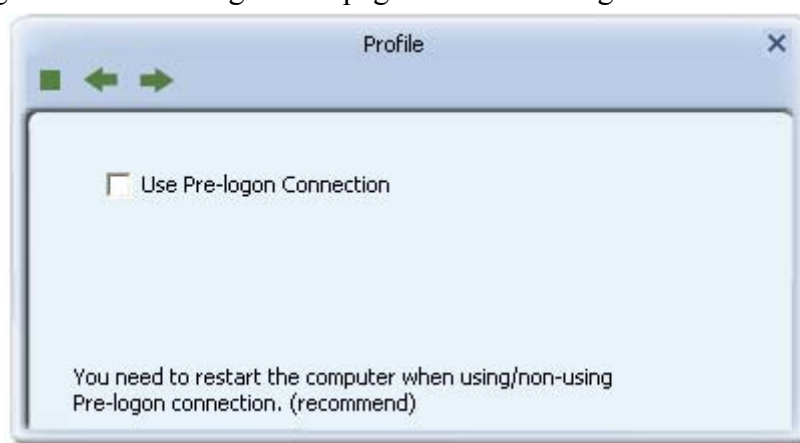


Figure 2-2-4 Pre-logon Connect Page

Field definitions:

- Pre-logon Connect: Use ID and Password in Profile.
- ** Recommend: You need to restart the computer when using/non-using Pre-logon connection.**

2.3 Network

2.3.1 Network

The system will display the information of local APs from the last scan result as part of the Network section. The Listed information includes the SSID, BSSID, Signal, Channel, Encryption algorithm, Authentication and Network type as shown in Figure 2-3-1-1.

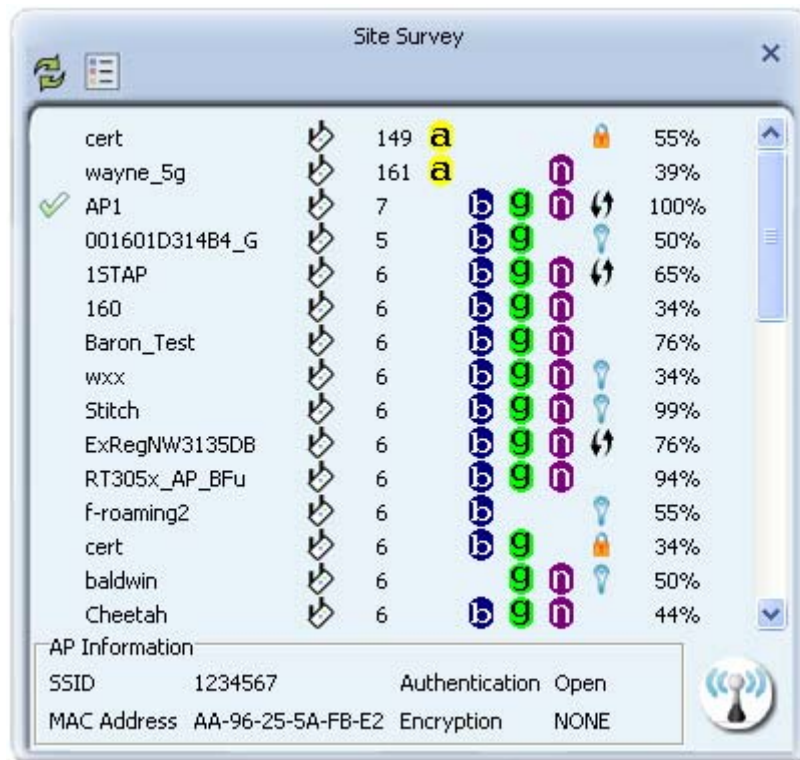


Figure 2-3-1-1 Network function

Definition of each field:

- SSID: Name of BSS or IBSS network.
- Network Type: Network type in use, Infrastructure for BSS, Ad-Hoc for IBSS network
- Channel: Channel in use.
- Wireless Mode: AP support wireless mode. It may support 802.11b, 802.11g or 802.11n wireless mode.
- Security-Enable: Indicates if the AP provides a security-enabled wireless network.
- Signal: Receive signal strength of the specified network.

Icons and buttons:

- ✓: Indicates that the connection is successful.
- : Indicates the network type is in infrastructure mode.
- : Indicates the network type is in Ad-hoc mode.
- : Indicates that the wireless network is security-enabled.
- : Indicates 802.11b wireless mode.
- : Indicates 802.11g wireless mode.
- : Indicates 802.11n wireless mode.



: Indicate that the AP list is sorted by SSID, Channel or Signal.



: Button to connect to the selected network.



: Issues a rescan command to the wireless NIC to update information on the surrounding wireless network.



: Adds the selected AP to the Profile setting. It will bring up a profile page and save the user's setting to a new profile.

Connected network:

- When RaUI first runs, it will select the best AP to connect to automatically.
- If the user wants to use another AP, they can click "Connect" for the intended AP to make a connection.
- If the intended network uses encryption other than "Not Use," RaUI will bring up the security page and let the user input the appropriate information to make the connection. Please refer to the example on how to fill in the security information.

When you double click an AP, you can see detailed information about that AP.

The detailed AP information is divided into three parts. They are General, WPS, CCX information and 802.11n (The 802.11n button only exists for APs supporting N mode.)

The introduction is as follows:

- General information contains the AP's SSID, MAC address, authentication type, encryption type, channel, network type, beacon interval, signal strength and supported rates. It is shown in Figure 2-3-1-2.

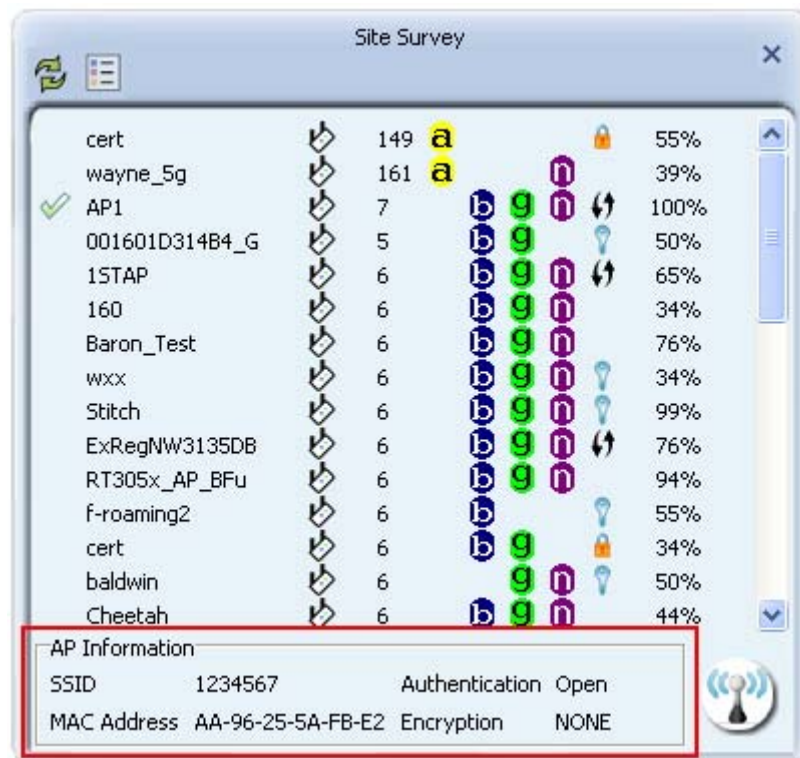
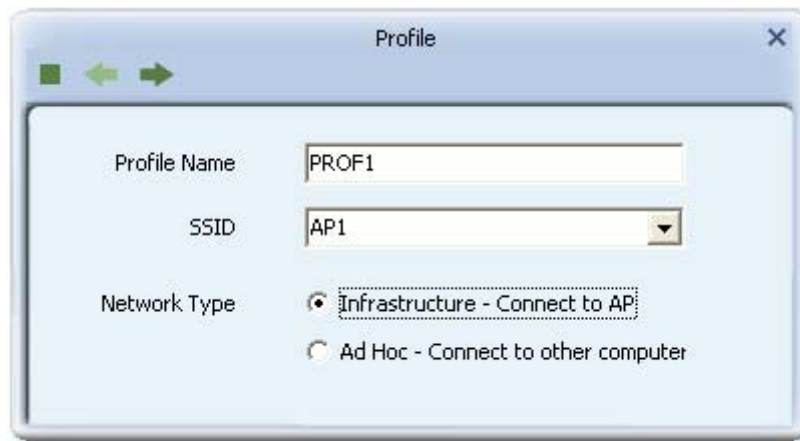


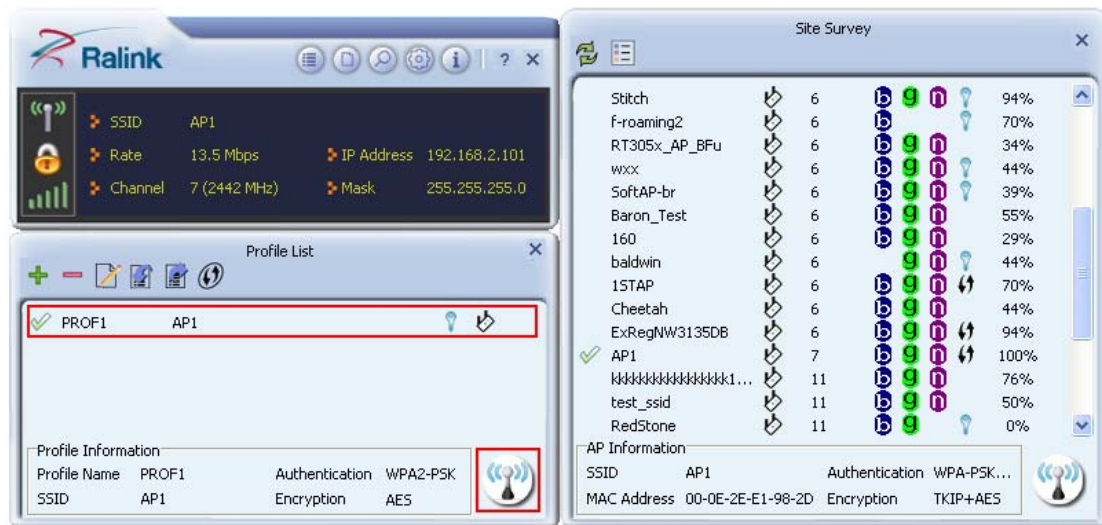
Figure 2-3-1-2 General information about the Access Point

2.3.2 Example on Adding Profile in Network

- Select the AP from the list on the Network tab

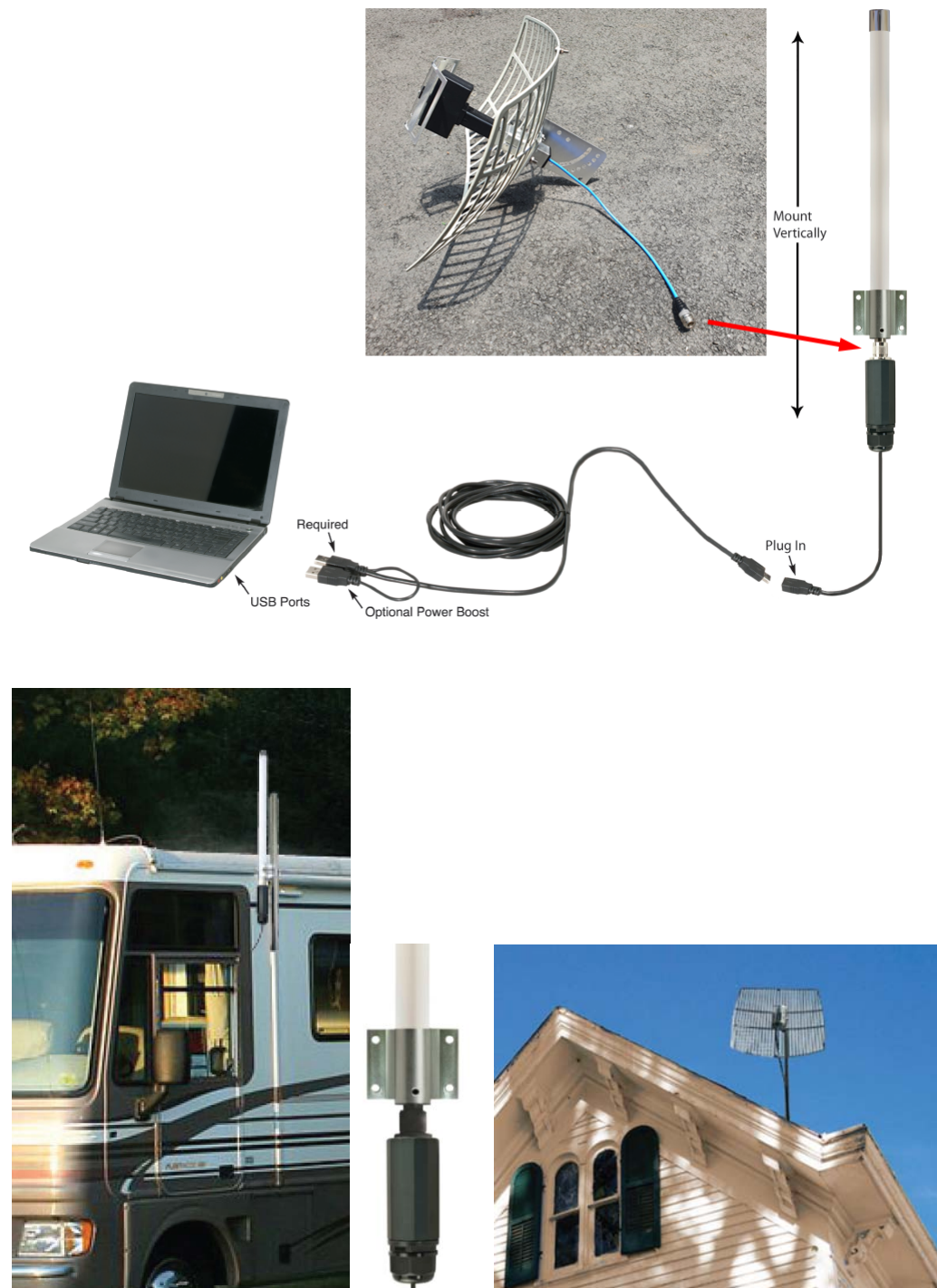


- Next, you will see the new profile in the profile list. Click "Activate"



3. Physical Installation

3.1 Please check below picture to install.



4. Appendix

4.1 Acknowledgements

The above settings are used in the test platform by Mediatek technology corp. Users can set the function in accordance with their AP.

Acknowledgements:

"This product includes software developed by MDC and its licensors. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product includes cryptographic software written by Eric Young (ey@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Information to Users

According to the FCC Part 15.19, 15.21, and 15.105 rule, for this EUT, the instructions or operation manual furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

FCC Caution

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.

NOTE 1: 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE 3: This device must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.