



Wireless –G Range Extra USB Adapter

Users Manual

Model # AWN-11G-USB

USING THIS DOCUMENT

This document provides detail user guide for Advantek Networks
AWN-11G-USB, Wireless-G USB Adapter operation and set-up instructions.

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Chapter 1: Introduction

Thank you for purchasing Advantek Networks AWN-11G-USB, Wireless-G USB Adapter. AWN-11G-USB is a perfect combination of both performance and cost-effective solutions. We hoped that you can enjoy both the freedom of wireless technology and reliability of this product at the same time.

Our AWN-11G-USB provides a full compatibility of all the IEEE 802.11 b/g protocols that passes the Wi-Fi tests; and ensures the interoperability of these standards. With AWN-11G-USB on hand, it means you can connect to the internet wireless world without any difficulty.

AWN-11G-USB also equip with full security option setting from the 64/128bits WEP encryptions, second generation WPA-PSK encryption, to the most advanced WPA2-AES encryption. WPA2 is the latest security standard currently approved by Wi-Fi standards.

Saving mode, Adhoc wireless Lan, Wake-on-Lan (WOL) and other exciting features are also included in the AWN-11G-USB. This user manual will guide you through these exciting features in the following chapters and we believed that you will enjoy the performance and ease of use on our AWN-11G-USB.

Chapter 2: Specifications

Host system connections

Interface	Fully complies with USB 2.0 or 1.1
USB data transfer rate	USB high speed (480Mbps), and full speed (12Mbps)

Wireless LAN (WLAN) environment connections

WLAN Interface	Multimode features
	Fully complies with IEEE 802.11 b/g specifications
WLAN transfer rate	802.11b: DQPSK with data scrambling capability to provide data rate of 1,2,5.5 and 11Mbps
	802.11g :A high-speed Fast Fourier
	Transform(FFT)/Inverse Fast Fourier Transform(IFFT)
	provide data rate of 6,9,12,18,24,36,48 and 54Mbps
WLAN Frequency Band	2.4 ~ 2.497 GHz ((Industrial Scientific Medical Band)
Operation Channel	Channel 1 ~ 11
Coverage Area	Indoors:100m with straight path Outdoor: 300m
Compatibility	Fully compatible to IEEE 802.11 b/g devices
Security	Hardware-based IEEE 802.11i encryption/decryption engine, including 64-bit/128-bit WEP, TKIP, and AES
Antenna	Detachable dipolar antenna
LED present (Green/Red light)	On: link is on
	Off: link is off
	Quick blinking: data transfer
	Slow blinking with 5 times: scan wireless connections
Wake-on-WLAN	Wake up system by wireless LAN(AP mode)

SYSTEM REQUIREMENT

Windows Operating System: Windows 98SE, ME, 2000, XP 32/64 bit, Vista 32/64 bit.

PACKAGE CONTENTS

- Wireless LAN USB Adapter
- Antenna
- Installation CD
- User's Manual

Chapter 3: Installation / Uninstall

Warning! Do not cover or block the airflow to the adapter. The adapter will reach a high temperature during use.

3.1 Installation

Before you proceed with the installation, please notice the following descriptions.

Note1: The following installation was operated under Windows Vista.
(Procedures are similar for Windows 98SE/ME/2000/XP.)

Note2: If you have installed another wireless adapter driver & utility before, please remove the previous ID and version first before installing this device.

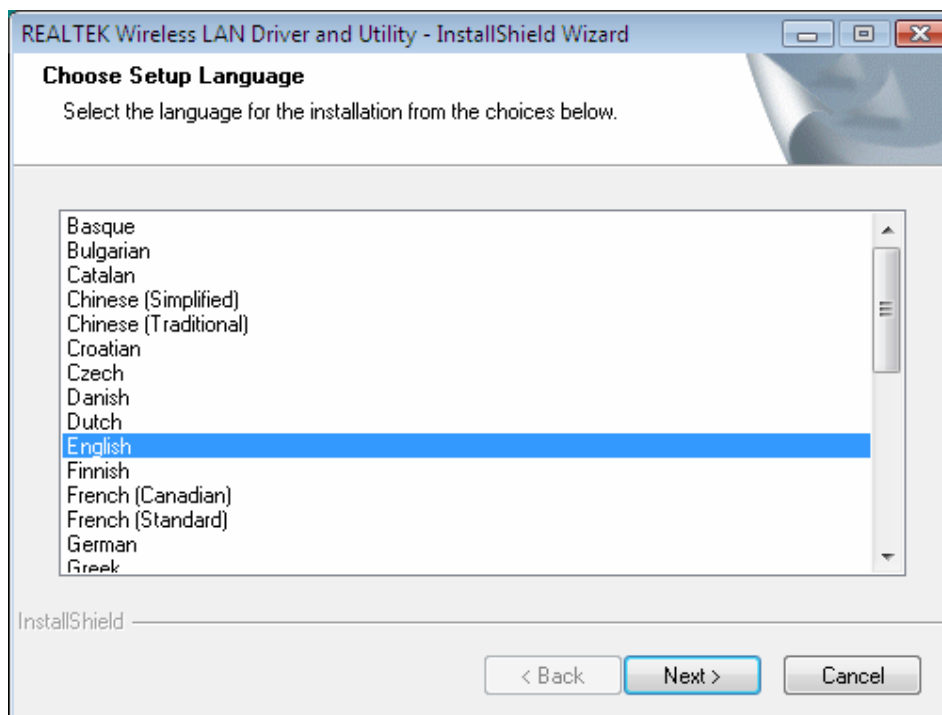
1. Do not plug the AWN-11G-USB adapter into your computer USB port before installing the software program. Insert the CD that come with this product, then auto installation window will appear on you monitor screen:
2. While the following screen pops out, click Driver Installation



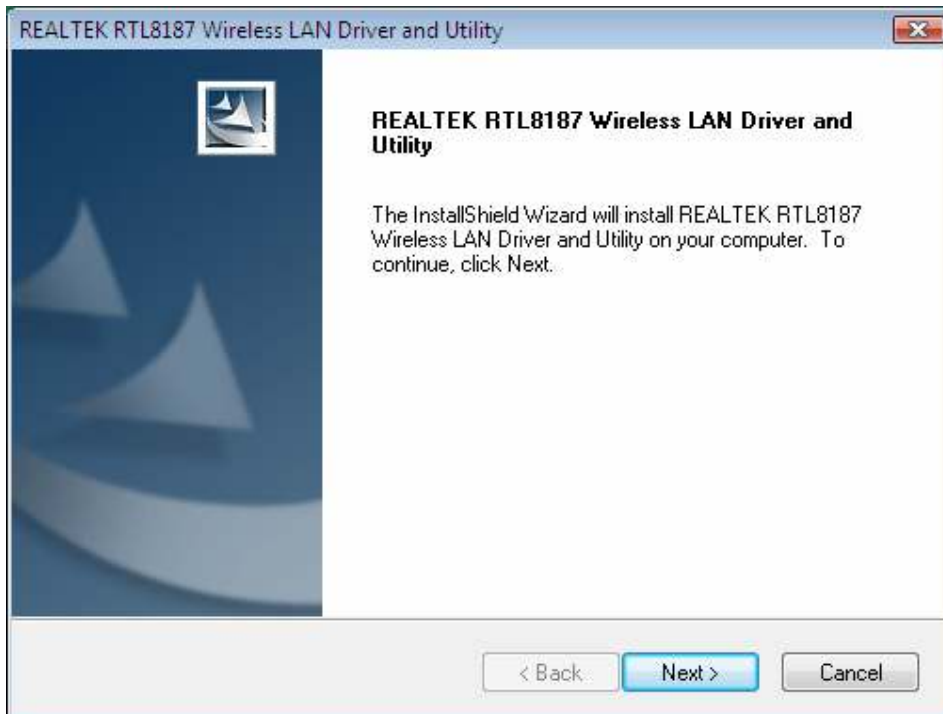
3. Click Driver Installation



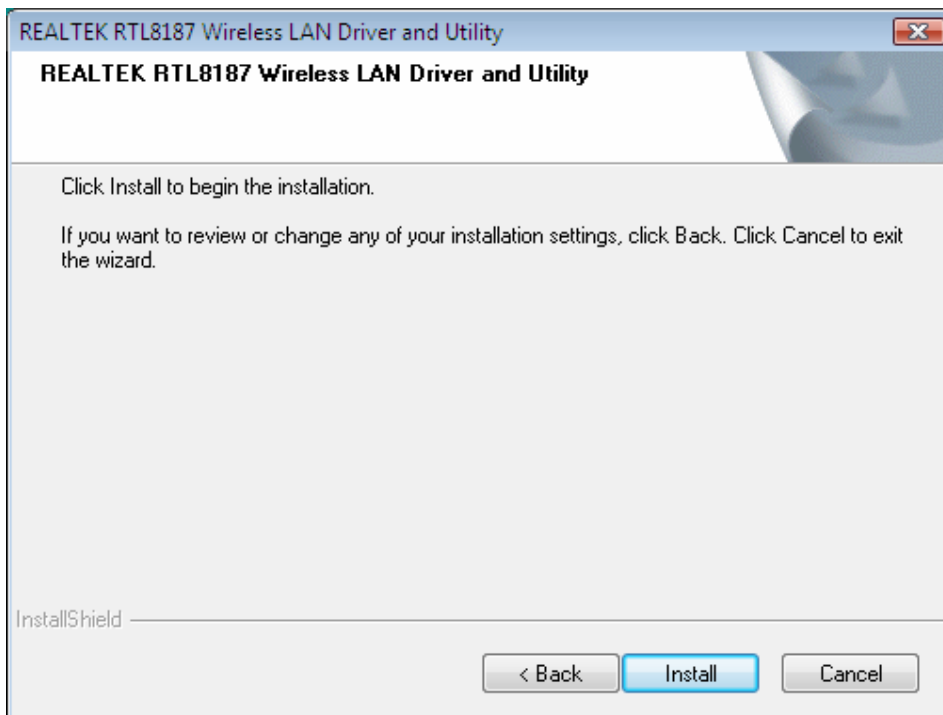
4. Choose a set up language. Click Next to process the installation.



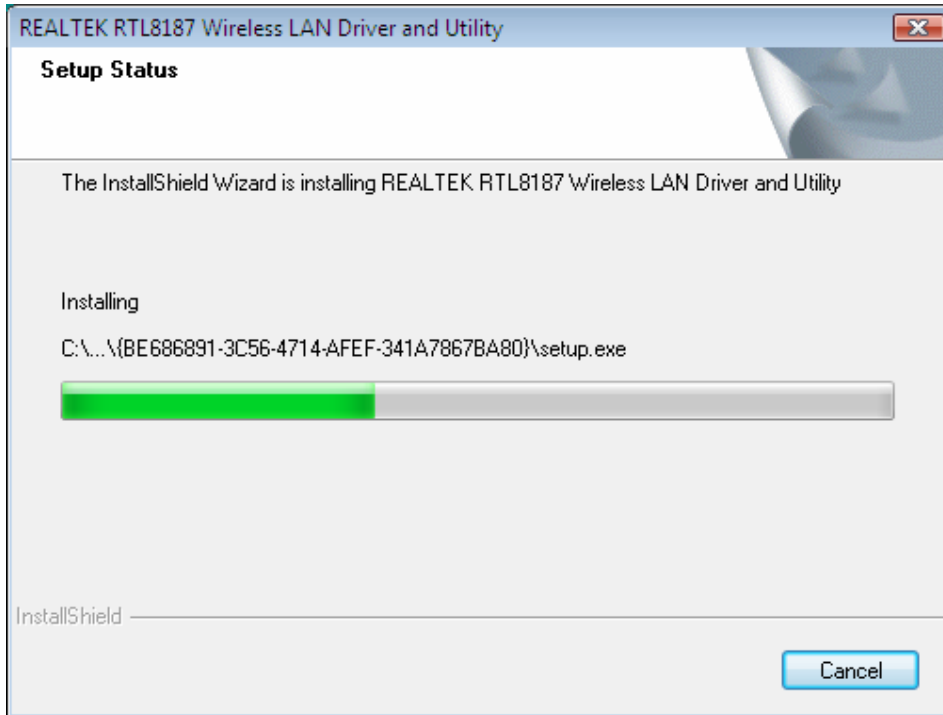
5. Click **Next** at the following screen



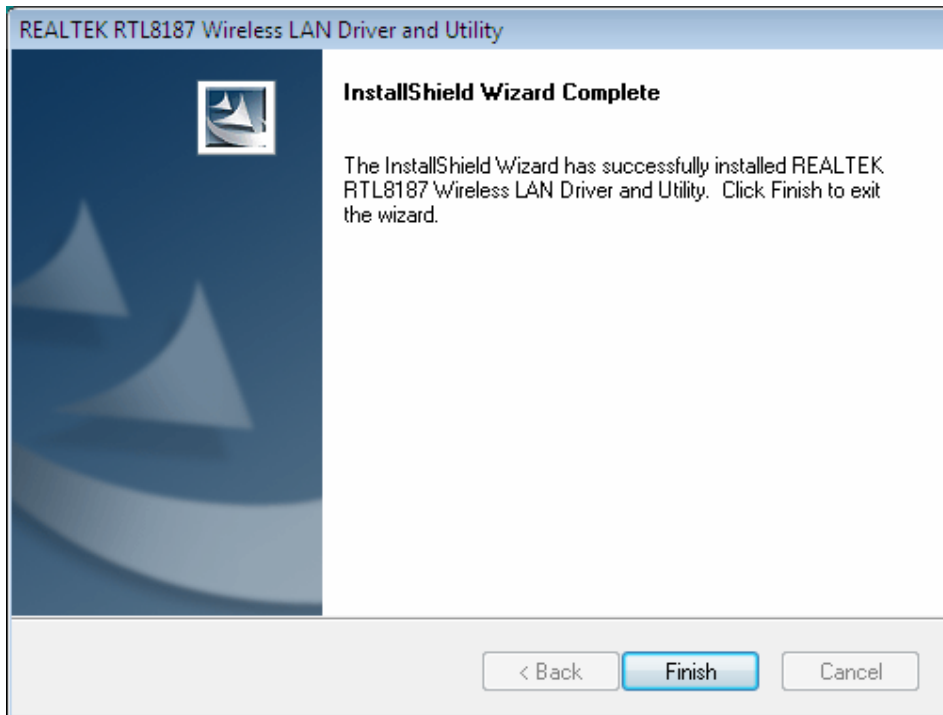
6. Click **Install** at the following screen



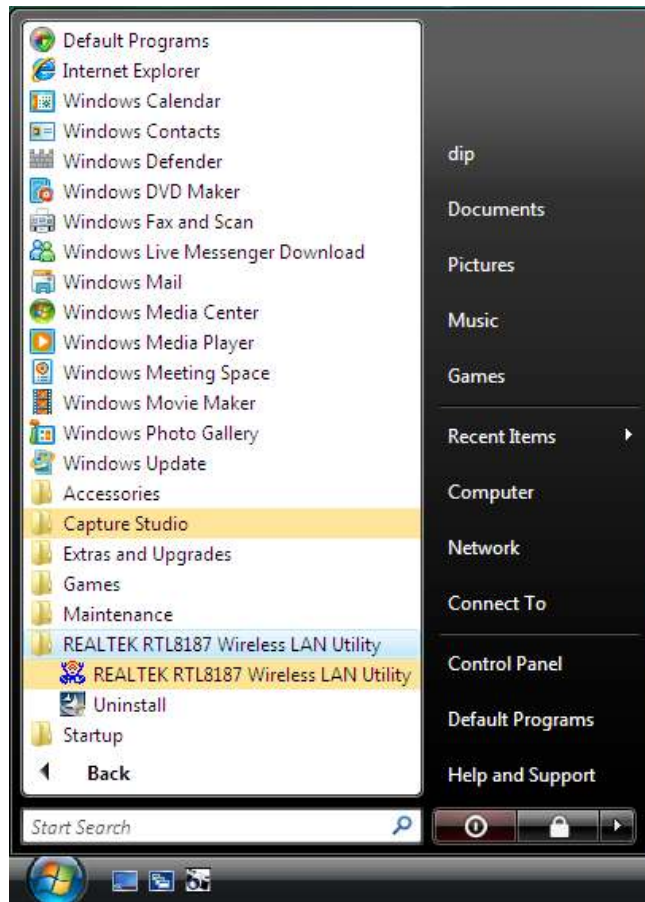
7. The system starts software installation of the AWN-11G-USB adapter.



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



9. After click **Finish** to complete the installation, under Windows Vista <ALL Programs> menu, you will find the ID name of REALTEK USB wireless LAN Utility program installed.

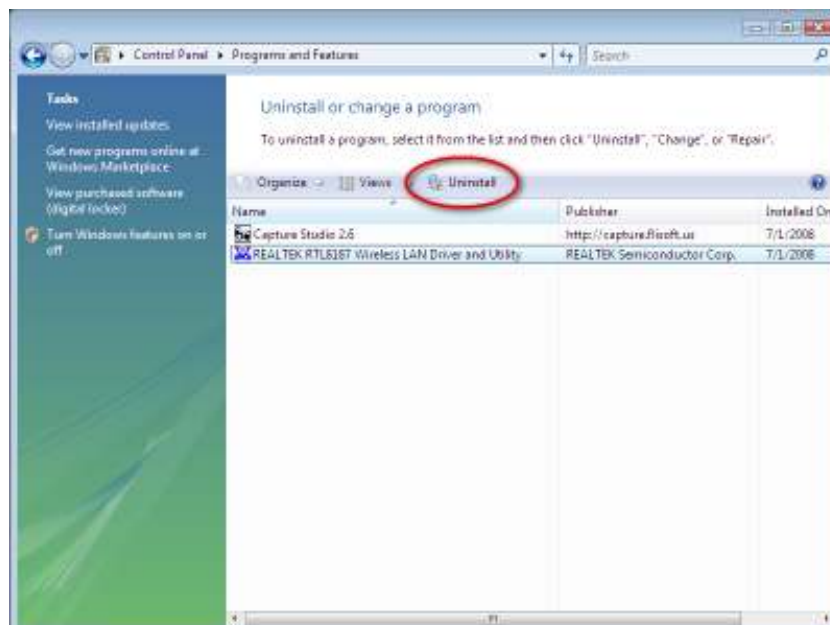
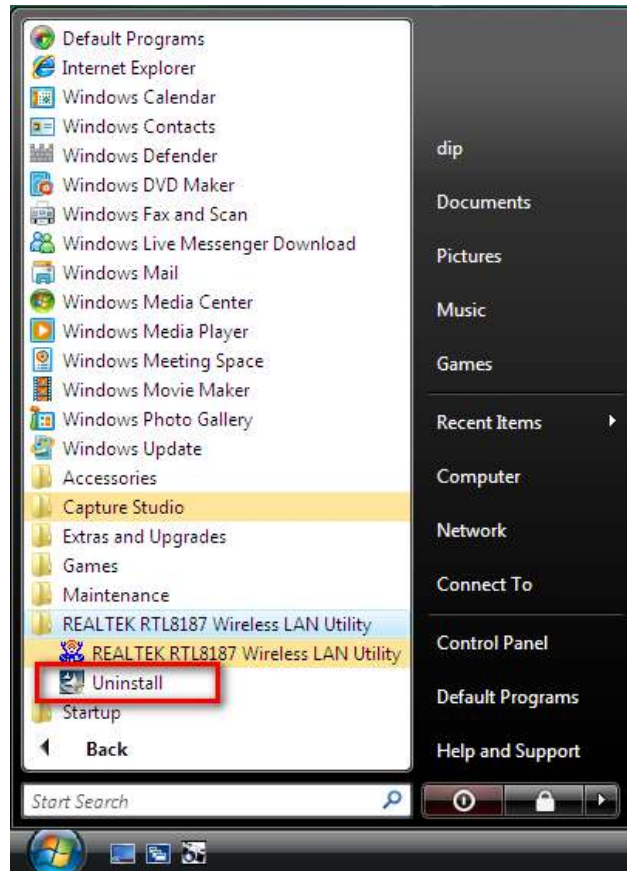


10. Insert AWN-11G-USB adapter into your computer's USB port, it will automatically detected and active the AWN-11G-USB adapter.

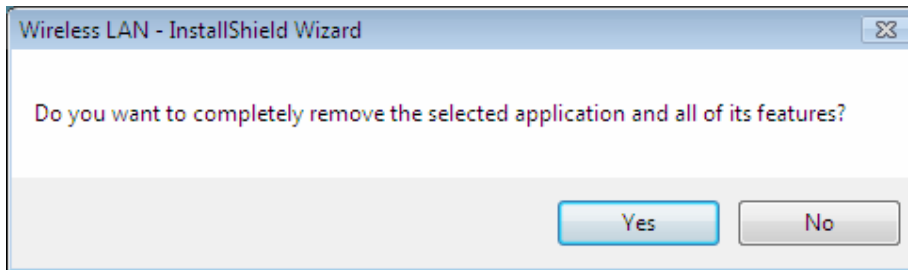
3.2 Uninstall

From “Wireless Network Driver and Utility” or “Control Panel” ”Change or Remove Programs”.

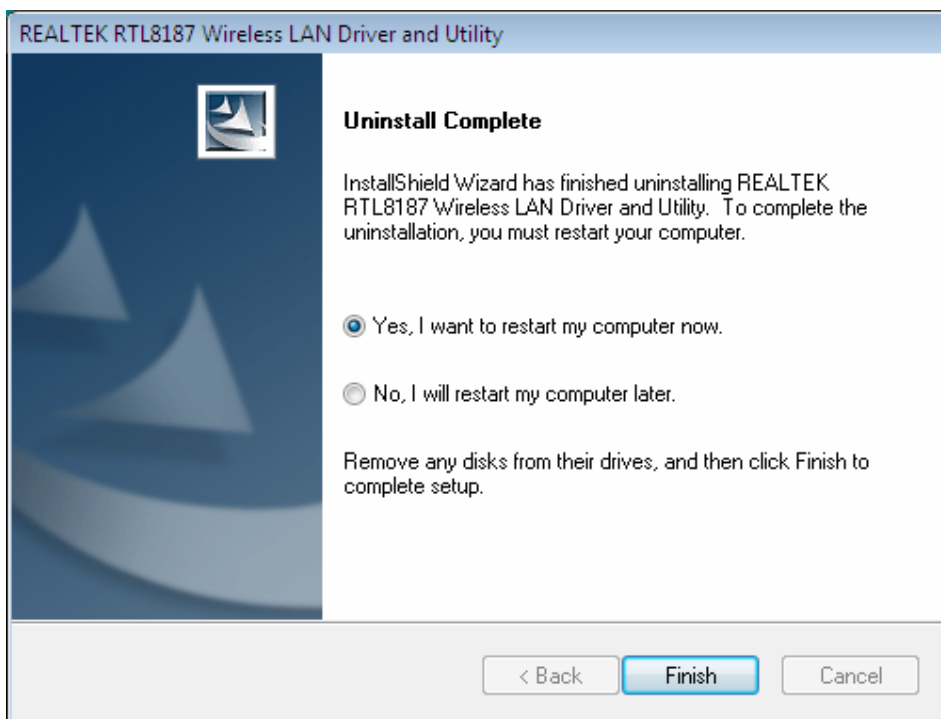
- A. Uninstall the WLAN USB Adapter Driver from “Start” “All Programs” Click “Uninstall” (or “Change/Remove”) to remove the driver.



B. Click **Yes** if you want to remove the driver.



C. Click **Finish** to complete the uninstall



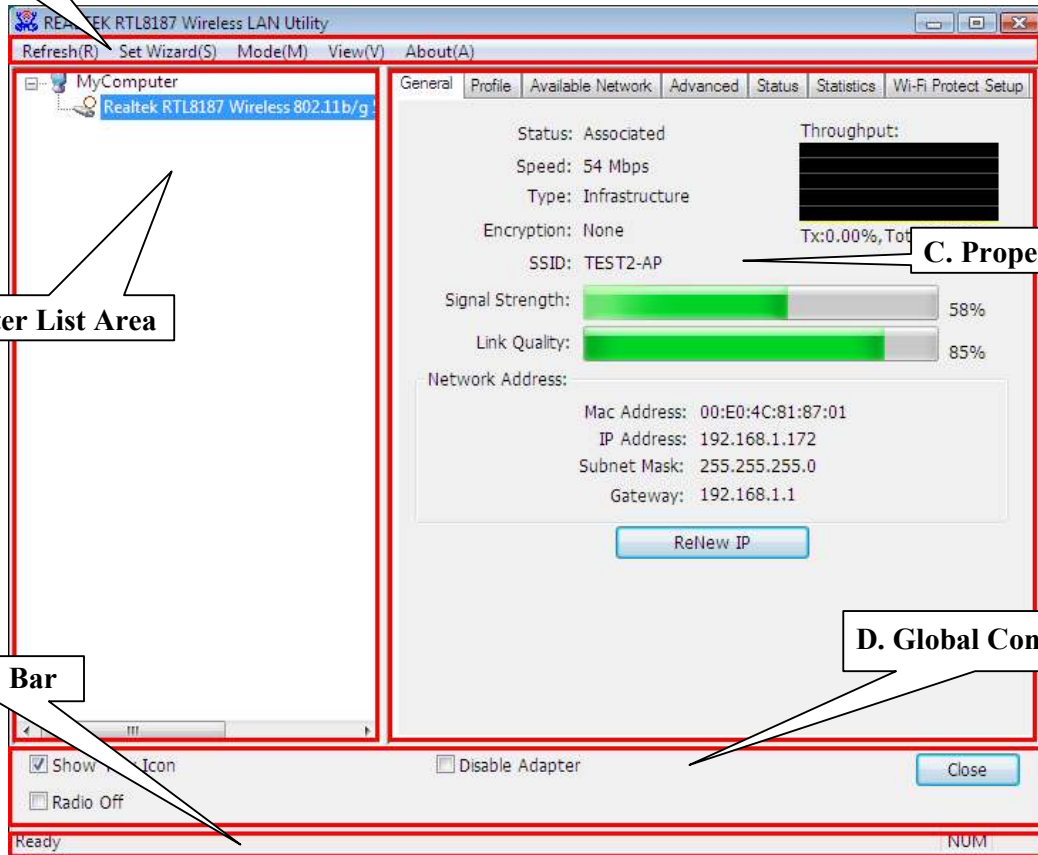
Chapter 4: Wireless LAN Management Program

4.1 Introduction of Main Window

A. Main Menu

B. Adapter List Area

E. Status Bar



D. Global Control Bar

C. Properties Area

A. Main Menu

The main menu includes five submenus.

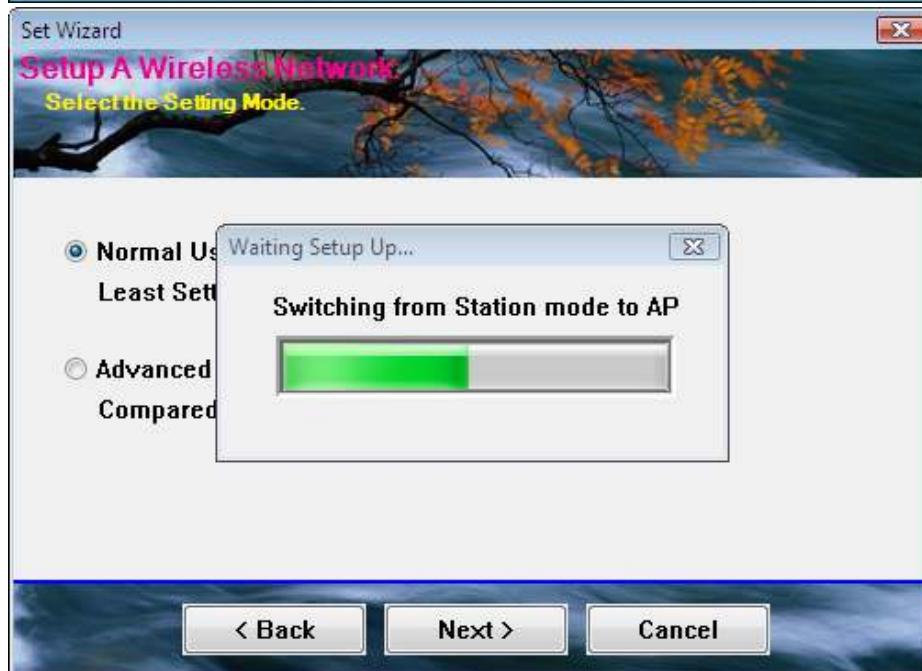
1. Refresh(R)

When clicking the refresh menu, you can update and re-enumerate the contents of adapter list area.

2. Set Wizard(S)

2.1 Wizard-1

Click **Set Wizard(S)** menu to enter operation wizard. Click **AP**: Setup a wireless network. Next to continue. Cancel to leave wizard



2.2 Wizard-2

User defines wireless network Name [SSID] (less than 32 characters). You may skip wireless security setting, but we strongly recommend you to setup wireless security to avoid invalid users. Click “**Back**” if you want to go previous. Click “**Next**” to continue. “**Cancel**” to close wizard.



The screenshot shows a window titled "Set Wizard" with a close button in the top right corner. The main heading is "Wireless Network Properties" in pink, with a sub-heading "Setting AP the mode parameter." in yellow. Below this, there is a text input field for "Network Name(SSID):" containing the text "dip-PC_AP". Underneath the input field is a paragraph of text: "The SSID can be discovered by network sniffing. By default, the SSID is part of the packet header for every packet sent over the WLAN." Below the text is a dropdown menu for "Encryption:" currently set to "Disabled". Another paragraph of text follows: "Wired Equivalent Privacy - makes 802.11b wireless LANs more secure. WEP is a protocol that adds security to wireless local area networks (WLANs) based on the 802.11b standard." At the bottom of the window are three buttons: "< Back", "Next >", and "Cancel".

2.3 Wizard-3

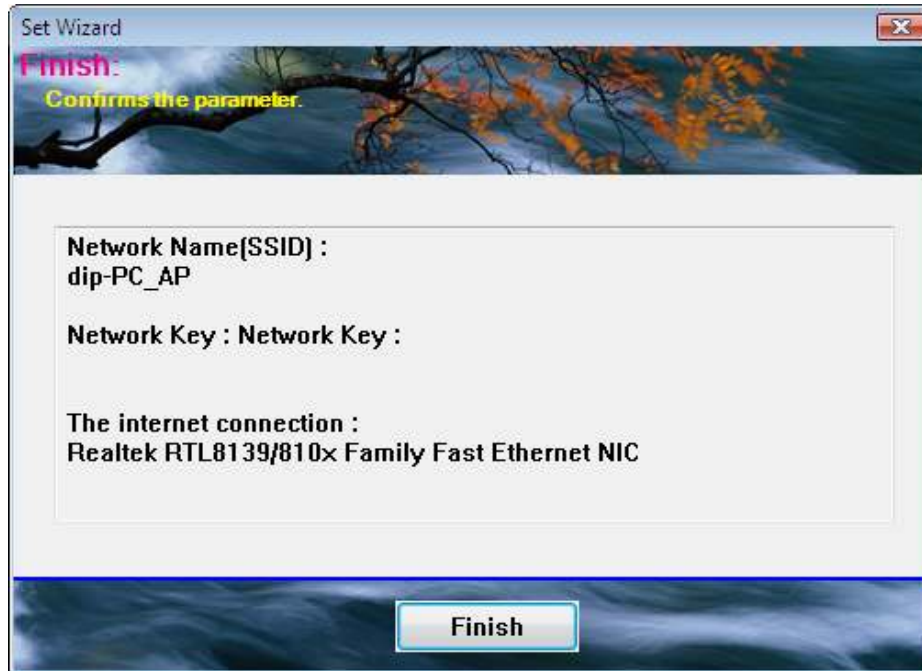
This page shows SSID & Security settings “**Back**” to go previous screen “**Next**” to continue. “**Cancel**” to close wizard.



The screenshot shows a window titled "Set Wizard" with a close button in the top right corner. The main heading is "Show Setting Information" in pink, with a sub-heading "Confirms the parameter." in yellow. Below this, there is a text area containing the text "Network Name(SSID) : dip-PC_AP" and "Network Key :". At the bottom of the window are three buttons: "< Back", "Next >", and "Cancel".

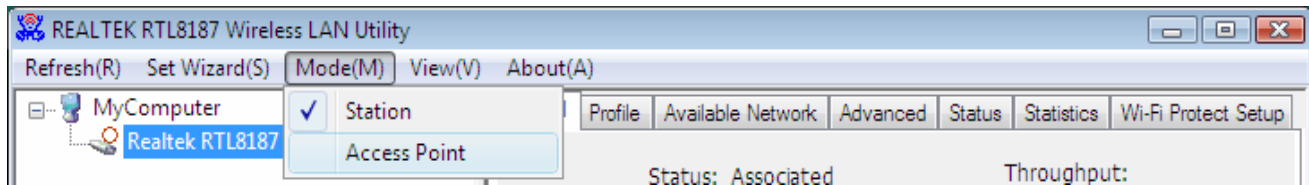
2.4 Wizard-4

Show all settings under AP mode. Click “**Finish**” to complete wizard setup.



3. Mode (M)

Wireless configuration is quickly switched to be either [Station] or [AP].

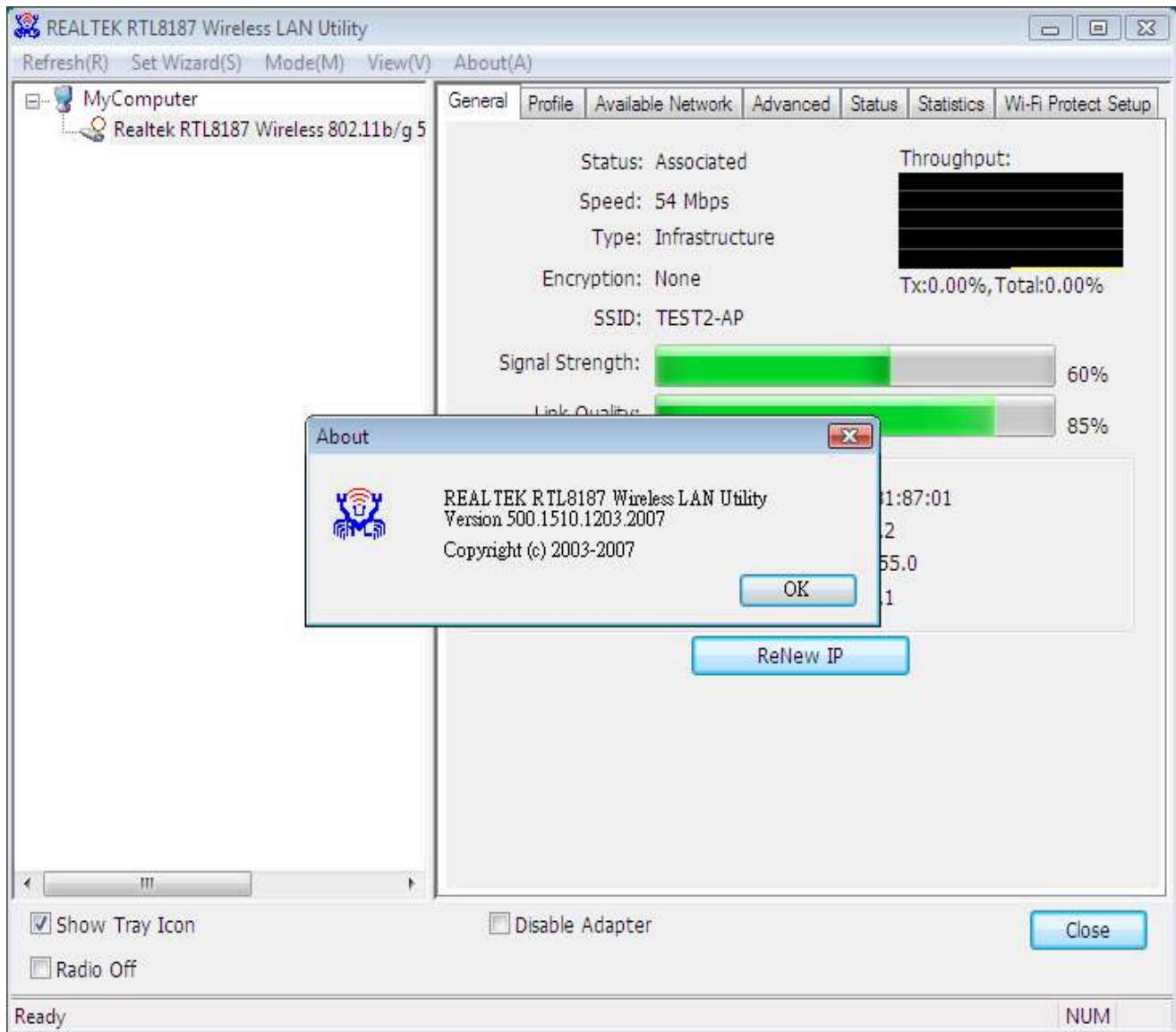


4. View (V)

Enable/disable the presence of E. Status Bar. Without the check mark (v) the E. Status Bar will be hidden.

5. About (A)

Click the “About” to show the about dialog. The application version and license information are shown in the about dialog.



B. Adapter List Area

All connected adapters on this system with multiple adapter installations are displayed in this area. It is easy for users to change the selected adapter by one click. The contents of properties area are dependant on wireless configuration that the selected adapter is set up. If only single adapter is installed on the system, then only one adapter is allow to be selected.



C. Properties Area

The contents of this area are dependent on current wireless configuration. The current configuration is determined on previous explanation of submenu "Mode". The more detailed contents are described in the following wireless configuration sections for both Station and AP mode

The screenshot displays a window with several tabs: General, Profile, Available Network, Advanced, Status, Statistics, and Wi-Fi Protect Setup. The 'Status' tab is active, showing the following information:

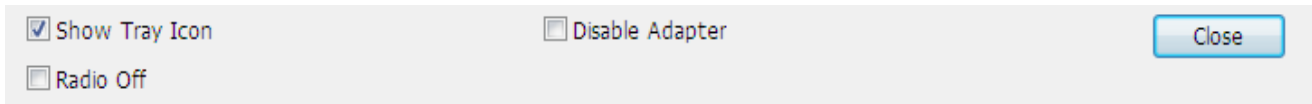
- Status: Associated
- Speed: 54 Mbps
- Type: Infrastructure
- Encryption: None
- SSID: TEST2-AP
- Throughput: Tx:0.00%, Total:0.00%
- Signal Strength: 58% (represented by a green bar)
- Link Quality: 85% (represented by a green bar)

Below this information, a 'Network Address' section is shown in a light gray box, containing:

- Mac Address: 00:E0:4C:81:87:01
- IP Address: 192.168.1.2
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.1.1

A 'ReNew IP' button is located at the bottom of the network address section.

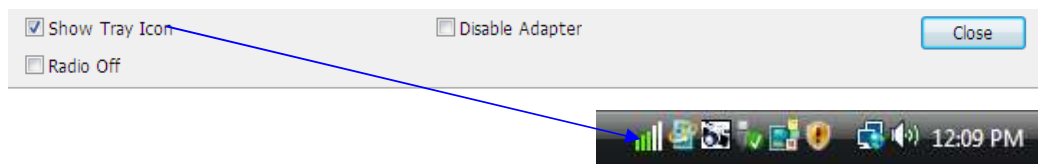
D. Global Control Bar



Each control item on this bar affects the adapter or management GUI directly. Following are the available selections:

Show Tray Icon

Checking "**Show Tray Icon**" and clicking "**Close**" button, the management GUI will be minimized and stay on the tray icon located at the right bottom corner of Windows. If not, management GUI will shut down while clicking "**Close**" button with unchecked condition

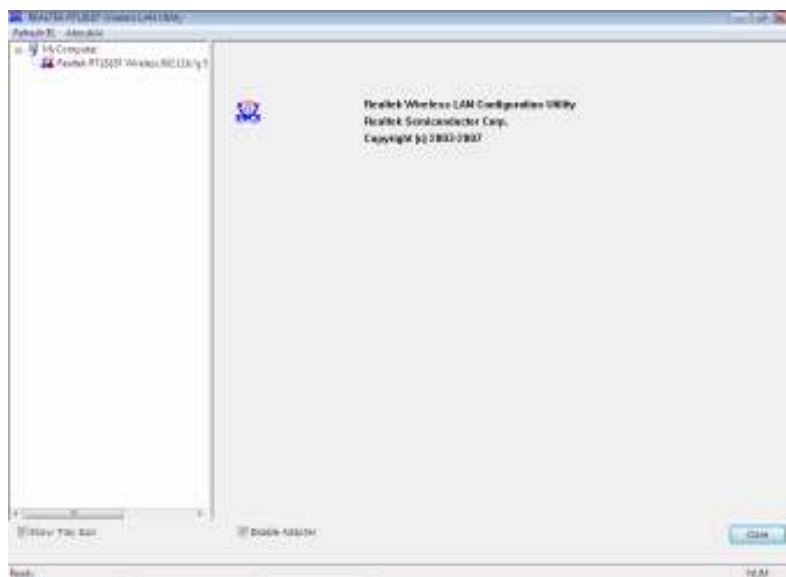


Radio Off

Turn off the radio to save power. While the radio is off, the links with other wireless network will be disconnected. User should be aware that while the wireless configuration is in AP mode. The radio off will cause the sub network belonging to the AP to be disconnected with internet/intranet.

Disable Adapter

Stop wireless USB device.



E. Status Bar

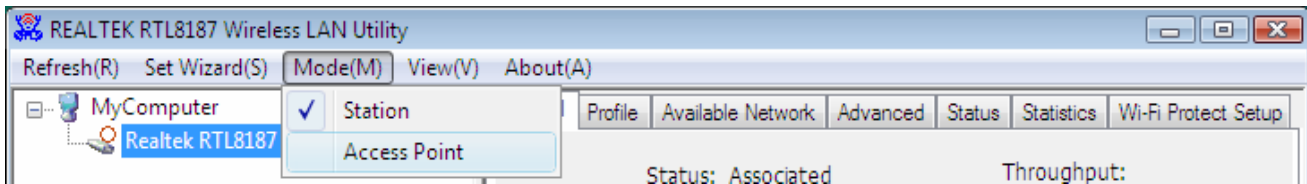
The status of the management GUI are presented in the status bar.

Ready

NUM

4.2 Station Mode

The following explanations focus on the properties area.

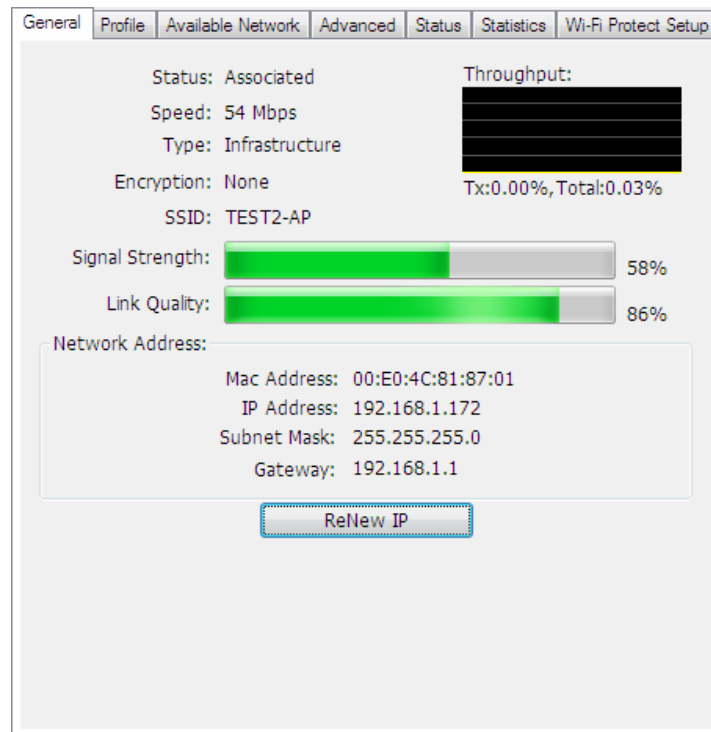


Infrastructure and Ad-Hoc

With both Infrastructure and Ad-Hoc types, the properties should look like the picture above. Six property pages present different information of current wireless network status. Please read the following explanations before you reviewing these pages, it will help you to understand the wireless environment around the system. It is easy to switch to property pages just by clicking left button of mouse on the title of each page. The following six sections describe detailed information of each page.

A. General Page

This page provides the general information of this adapter.



1. Status

The status of station connection to Router or AP.

2. Speed

Current transition speed in Mbps.

3. Type

Current wireless LAN configuration type.

4. Encryption

Current encryption mode used.

5. SSID

Name of wireless network.

6. Signal Strength

The average signal quality of packets received from wireless network.

7. Throughput Diagram

Current throughput, including transmission (Tx) and total traffic (Total).

8. Network Address

Mac Address: six two-digital number of this Wireless LAN USB adapter

IP Address: assigned network address by DHCP server or self-definition in four three-digital number format.

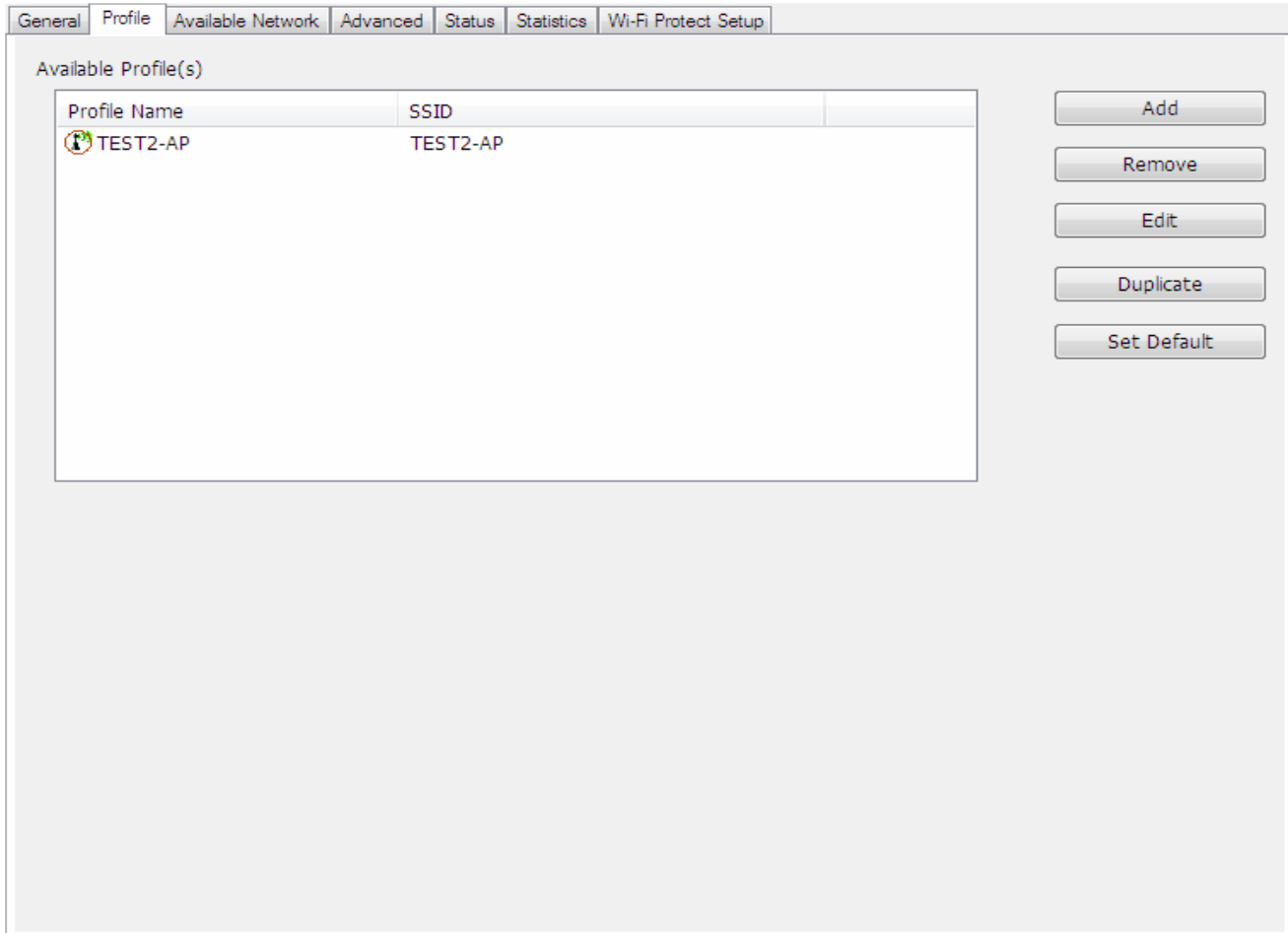
- Subnet Mask: the only valid value is 255.255.255.0
- Gateway: It comes from connected AP. Your system can not connect to internet if this field is empty.

B. Profile Page

This page provides profiles management such as add, remove, edit and duplicate just by pressing the corresponding button.

Available Profile(s)

The list box shows all the created profiles.



1. Add

Add a new profile for AP or IBSS (Ad-Hoc mode).

2. Remove

Remove the selected profile.

3. Edit

Edit contents of selected profile.

4. Duplicate

Make copy of selected profile.

5. Set Default

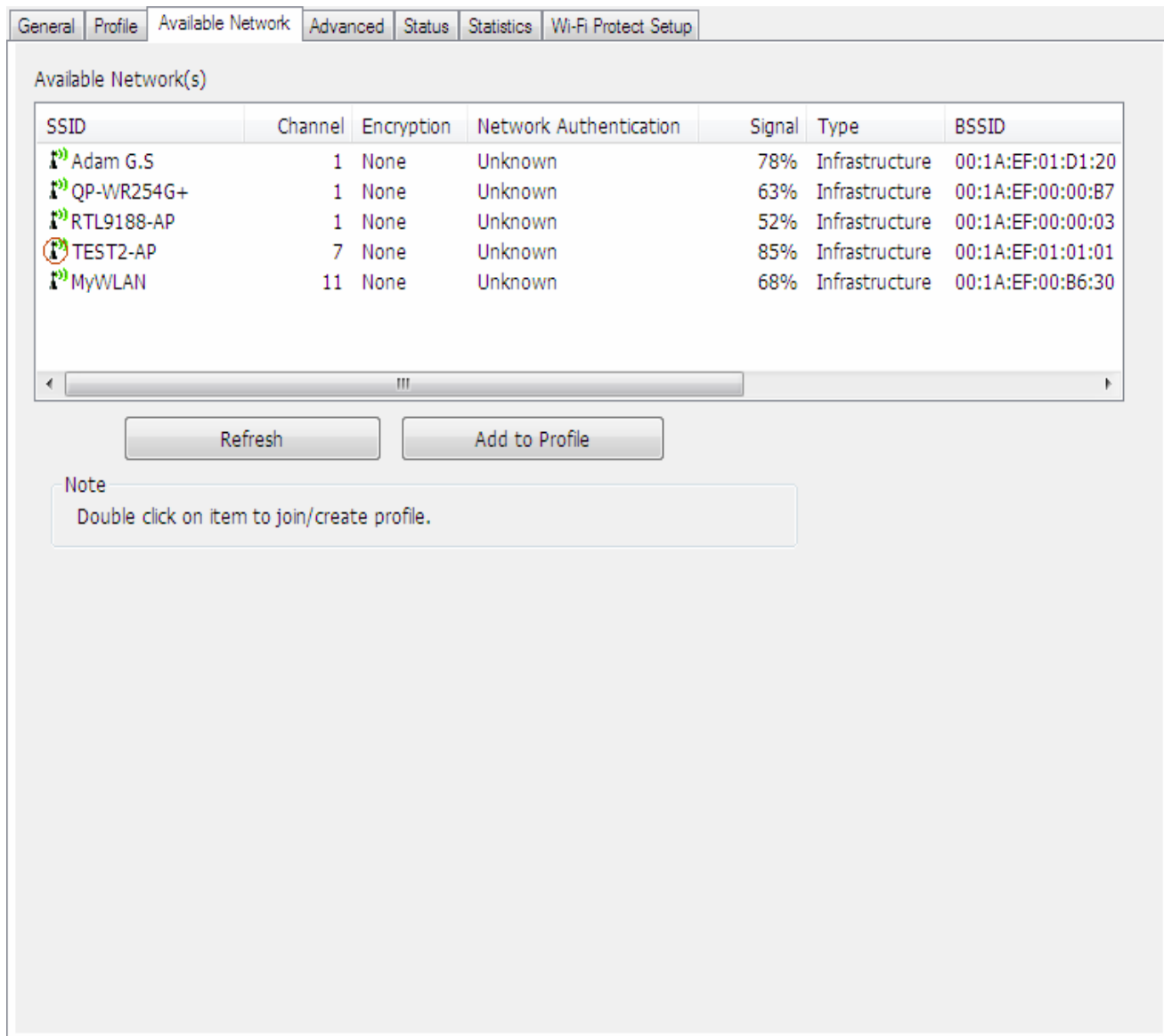
Set the selected profile as default selection.

6. Available Network Page

This page presents all BSS, including AP and IBSS, around this system. You can pick any one of these network connections.

C. Available Network(s)

Show network connection around this system



SSID	Channel	Encryption	Network Authentication	Signal	Type	BSSID
Adam G.S	1	None	Unknown	78%	Infrastructure	00:1A:EF:01:D1:20
QP-WR254G+	1	None	Unknown	63%	Infrastructure	00:1A:EF:00:00:B7
RTL9188-AP	1	None	Unknown	52%	Infrastructure	00:1A:EF:00:00:03
TEST2-AP	7	None	Unknown	85%	Infrastructure	00:1A:EF:01:01:01
MyWLAN	11	None	Unknown	68%	Infrastructure	00:1A:EF:00:B6:30

Refresh Add to Profile

Note
Double click on item to join/create profile.

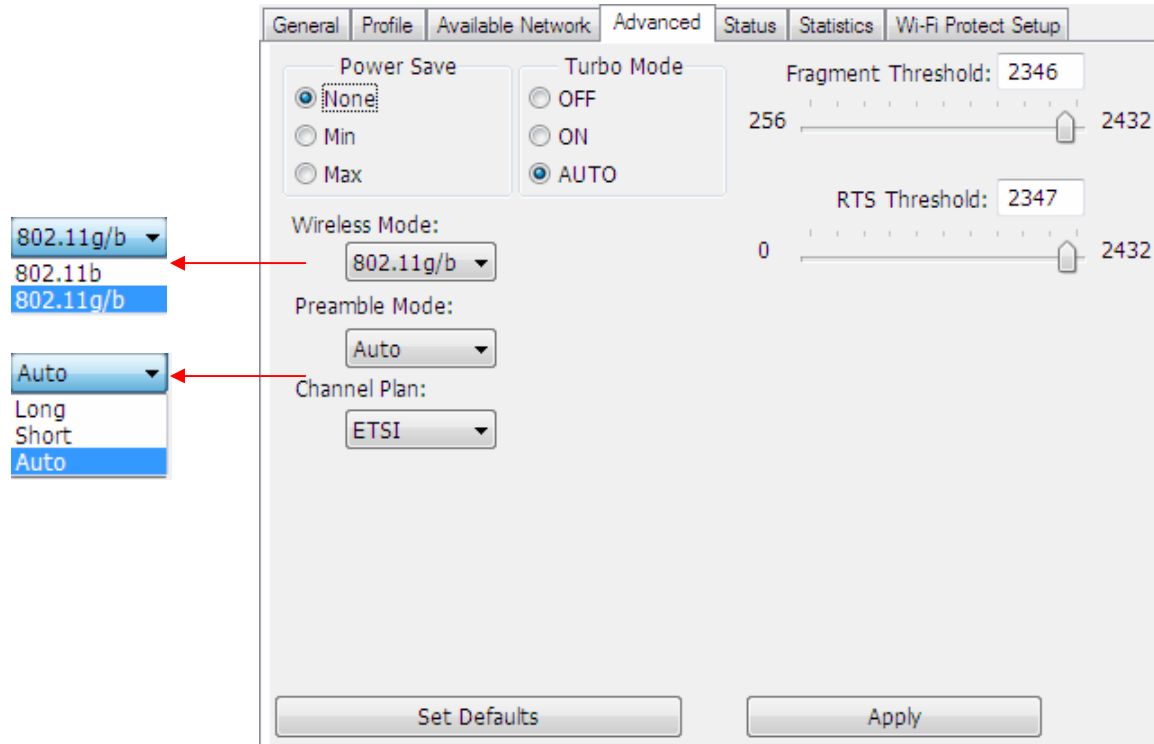
1. Refresh

Rescan network connection around this system.

2. Add to Profile

Create profile for selected network connection and add it to profile list.

D. Advanced Page



1. Power Save

None: without power save function.

Min: wake up more frequently to receive packets.

Max: wake up less frequently to receive packets.

2. Wireless Mode

802.11b

802.11g/b

3. 802.11b Preamble Mode

Long: higher quality but with lower performance than preamble short mode.

Short: Normal quality but with higher performance than preamble long mode.

Auto: use the preamble mode of current.

4. Fragment Threshold

This indicates the threshold of fragment length. Higher threshold will increase data transfer rate and better performance with good signal quality. However; in a poor signal quality environment, data throughput might be worse on high fragment threshold than lower fragment threshold setting.

5. RTS Threshold

Threshold of Request-To-Send mechanism. The RTS frame will not send out until the packet size over threshold.

6. WOL (Wake On LAN)

The wake-on-LAN is applied for remote control purpose. You could wake up a system through network packets. For Wireless LAN USB Adapter, only the same adapter on another system could wake it up. Input MAC Address: the six two-digit numbers of Wireless LAN USB Adapter on target system.

Wake Up: click this button to wake it up.

7. Set Defaults

Restore the default value to be current settings.

8. Apply

Apply the current settings to GUI.

E. Status Page

General	Profile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup
Manufacturer	Realtek					
NDIS Driver Version	6.1304.1119.2007					
Short Radio Header	Yes					
Encryption	Disabled					
Authenticate	Open					
Channel Set	ETSI					
MAC Address	00:E0:4C:81:87:01					
Data Rate (AUTO)	54 Mbps					
Channel (Frequency)	7 (2442 MHz)					
Status	Associated					
SSID	TEST2-AP					
Network Type	Infrastructure					
Power Save Mode	None					
Associated AP MAC	00:1A:EF:01:01:01					
Up Time (hh:mm:ss)	1:19:47					

1. NDIS Driver Version

Driver version

2. Short Radio Header

Yes

3. Encryption

Current encryption mode

4. Authenticate

Authentication state

5. Channel Set

Selected channel plan currently

6. MAC Address

MAC address of this adapter

7. Data Rate

Wireless LAN transition speed

8. Channel (Frequency)

Current channel number

9. Status

Wireless network status

10. SSID

Name of connecting AP

11. Network Type

Indicate current network configuration type

12. Power Save Mode

Current setting power save mode

13. Associated AP MAC

MAC address of connecting AP

14. Up Time

Total connection time

F. Statistics Page

You could watch the Tx/Rx status of current wireless connection. This page shows a statistic analysis of packet transition.

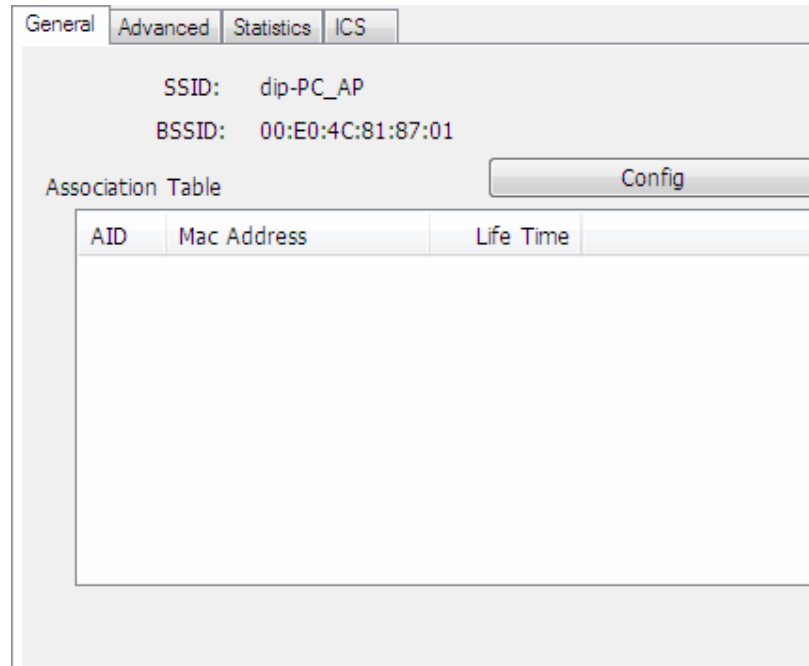
Counter Name	Value
Tx OK	153
Tx Error	0
Rx OK	1086
Rx Packet Count	1086
Rx Retry	2
Rx ICV Error	0

Reset

4.3 AP Mode

A. General Page

This page provides general information of this AP, including name, MAC address and list of joined stations.



The screenshot shows a web interface for AP configuration. At the top, there are four tabs: 'General' (selected), 'Advanced', 'Statistics', and 'ICS'. Below the tabs, the SSID is 'dip-PC_AP' and the BSSID is '00:E0:4C:81:87:01'. There is a 'Config' button to the right. Below this is an 'Association Table' section with a 'Config' button. The table has three columns: 'AID', 'Mac Address', and 'Life Time'. The table is currently empty.

1. SSID

The name of this AP.

2. BSSID

Six two-digit numbers of the MAC address of this AP.

3. Association Table

It is the list of joined stations to this AP.

4. AID (Association ID)

The AID field is a value assigned by an AP during association that represents 16-bit ID of a station. It is a unique value assigned by AP.

5. MAC address

It is the six two-digit numbers that assemble the MAC address of respected joined station.

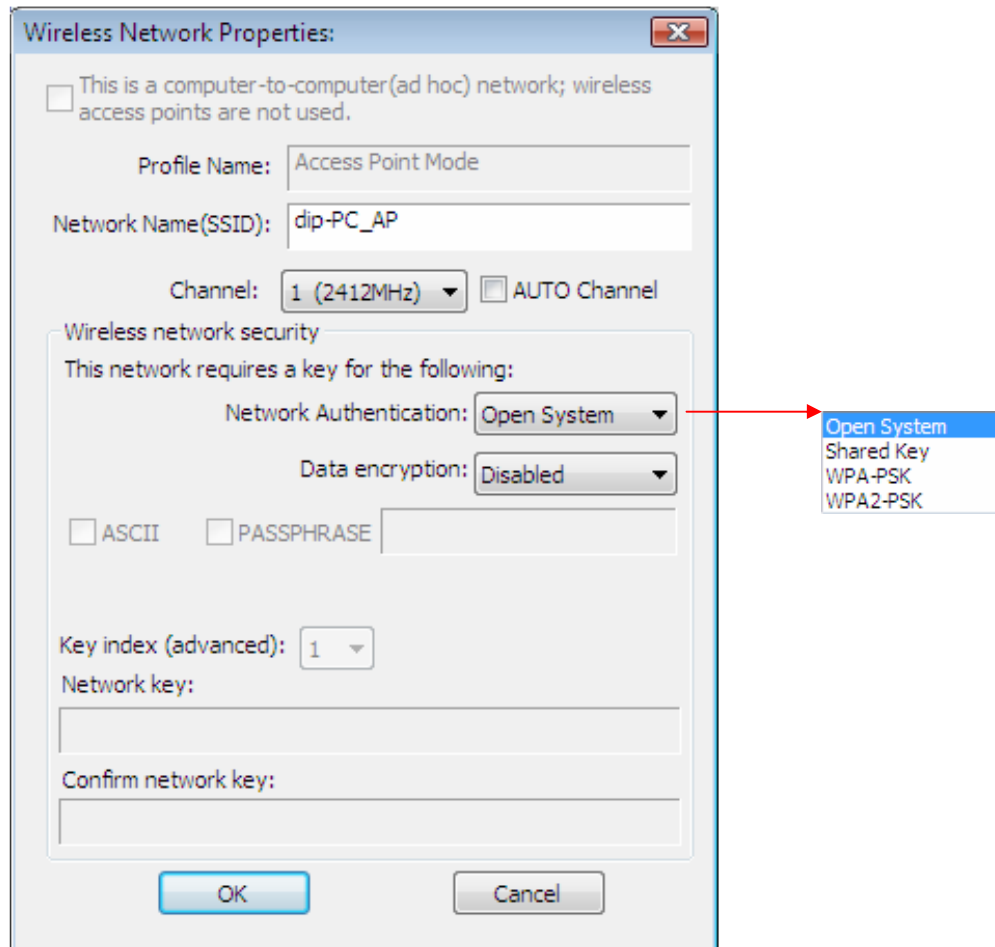
6. Life Time

It is the timer that counts down from 10 minutes whenever the AP connects the

station successfully. If an STA associated to SW AP does not have any interaction with the AP in 10 minutes, it will be disassociated from the Infra-structure BSS.

7. Config

A dialog of this AP is shown for configuration modification.



7.1 Network Name (SSID)

Name of the AP searchable by other wireless nodes. The length of SSID should be shorter than 32 characters.

7.2 Channel

Select the wireless channel within current channel plan.

7.3 Network Authentication & Data Encryption

There are three types of authentication:

- Open System

It is combined with data encryption type to be WEP or to be disabled.

Encryption ~ disabled: you decide to open this AP to every one without network authentication.

Encryption ~ WEP: you decide to setup the basic data encryption with a defined network key.

- Shared Key + WEP

You decide to apply both authentication and data encryption to prevent unauthorized login.

- WPA-PSK + TKIP & WPA2-PSK + TKIP

The most advanced authentication and data encryption that provide the best security protection.

7.4 ASCII/ PASSPHRASE

The most advanced authentication and data encryption that provide the best security protection.

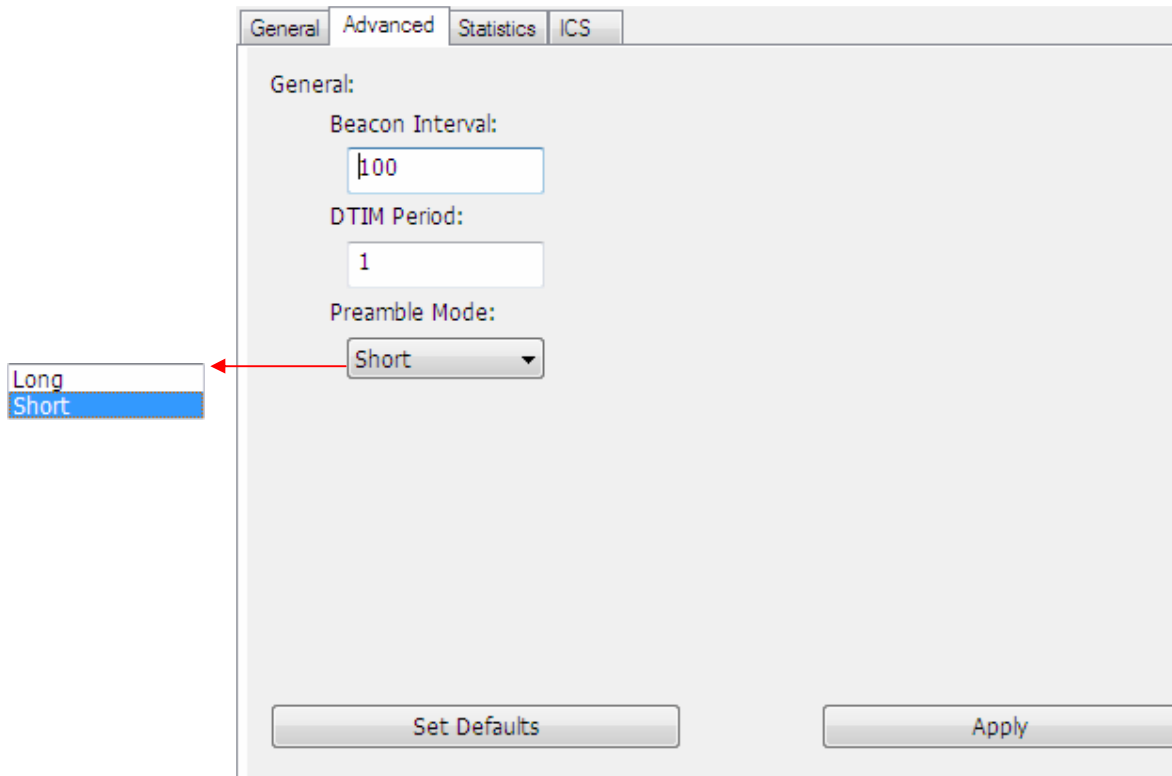
- ASCII: You should provide either 5 or 13 ASCII characters on Network key edit box.
- PASSPHRASE: You could input words on Network Key edit box.
 - 64 bits: The generated pass key is 64-bit to be complied with data packets.
 - 128 bits: The generated pass key is 128-bit to be complied with data packets.
- Hexadecimal: While both ASCII and PASSPHRASE are not checked, you should input hexadecimal number in the network key box. For example, 10 digits hex number for 64-bit WEP or 26 digits hex number for 128-bit WEP.

7.5 Key index (1 ~4)

At most four key index to represent the opposite network key.

B. Advanced Page

Users could setup the advanced characteristics of network packet for transmission on this page.



1. Beacon Interval

This field indicates the interval between each beacon that this AP sends out in unit of TU (1024 micro-seconds).

2. DTIM Period

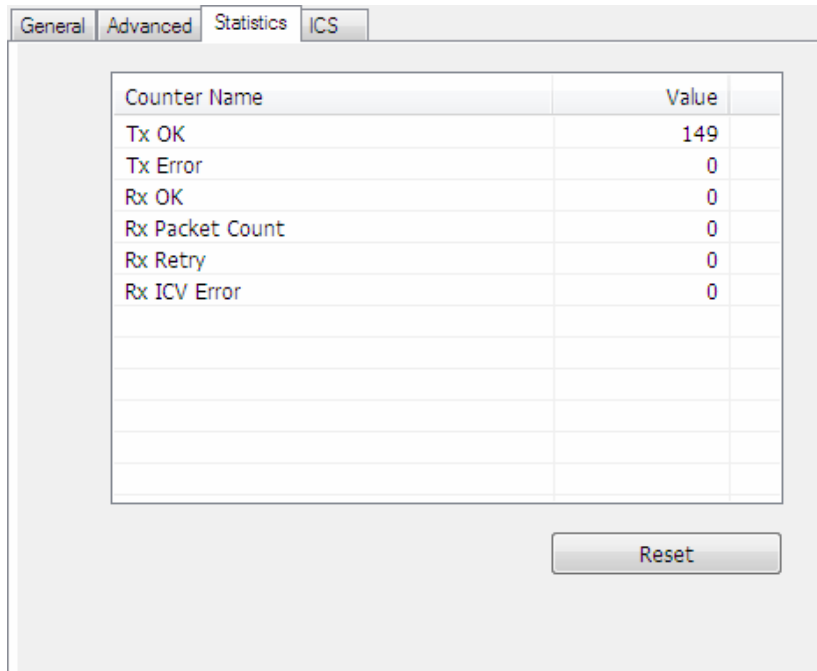
The DTIM Period field is the number of Beacon intervals between successive DTIMs.

3. Preamble Mode

- Long: higher quality but with lower performance than preamble short mode.
- Short: Normal quality but with higher performance than preamble long mode.
- Auto: select the proper preamble mode by current signal frame information.

C. Statistics Page

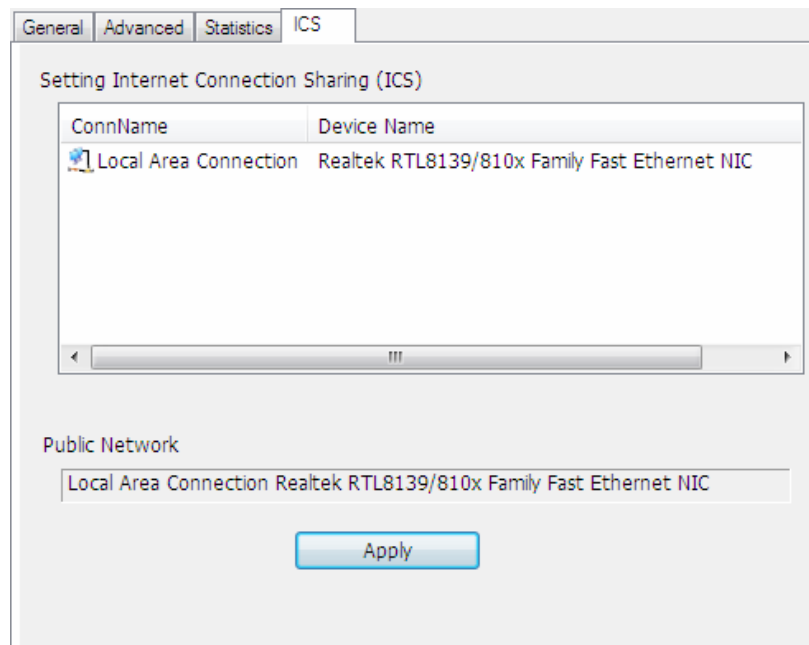
The Tx/Rx status of current wireless connection is shown. A statistic analysis of packet transition is listed.



Counter Name	Value
Tx OK	149
Tx Error	0
Rx OK	0
Rx Packet Count	0
Rx Retry	0
Rx ICV Error	0

Reset

D. ICS Page



Setting Internet Connection Sharing (ICS)

ConnName	Device Name
Local Area Connection	Realtek RTL8139/810x Family Fast Ethernet NIC

Public Network

Local Area Connection Realtek RTL8139/810x Family Fast Ethernet NIC

Apply

1. ConnName

List all network connections to this system. You can pick up one from the listed item(s) whose network domain you would want to connect to.

2. Select

Make the desired network connection to public network.

3. ICS

Internet Connection Sharing. It enables this AP to create the domain to share this internet/intranet network connection.

4. Firewall

Security setting that blocks unauthorized users from gaining access to a computer network, or prevents them from monitoring transfers of information to and from the network.

5. Apply

Execute the current settings.