

# **Wireless –G Range Extra USB Adapter**

## **Users Manual**

## **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*

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

### *Wireless LAN (WLAN) environment connections*

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

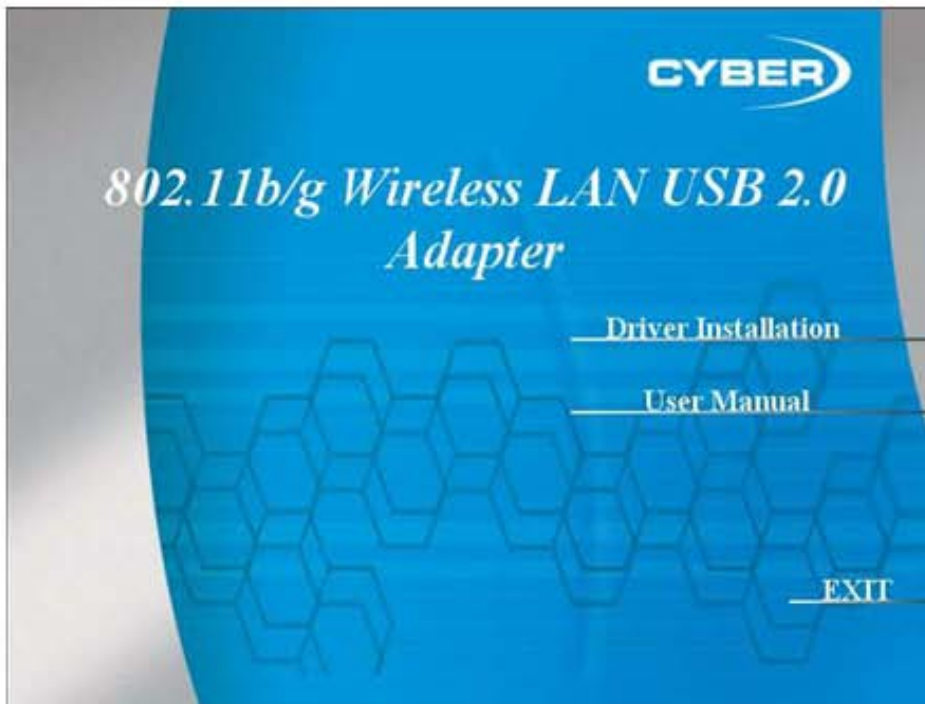
**Note1:** The following installation was operated under Windows Vista.  
(Procedures are similar for Windows 98SE/ME/2000/XP.)

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

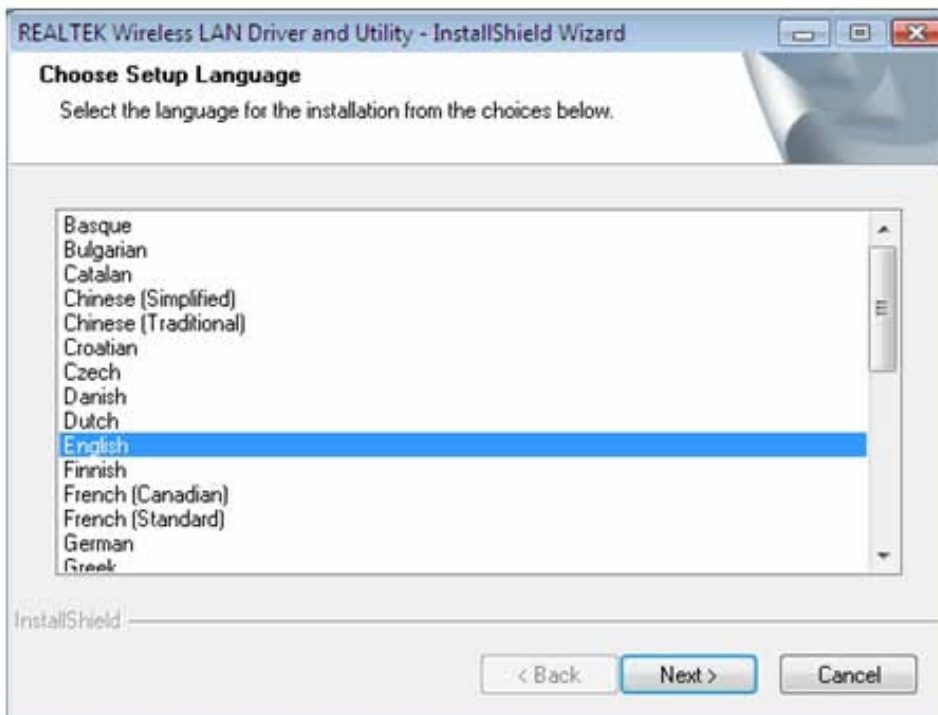
1. Do not plug the AWN-11G-USB adapter into your computer USB port before installing the software program. Insert the CD that come with this product, then auto installation window will appear on you monitor screen:
2. While the following screen pops out, click Driver Installation



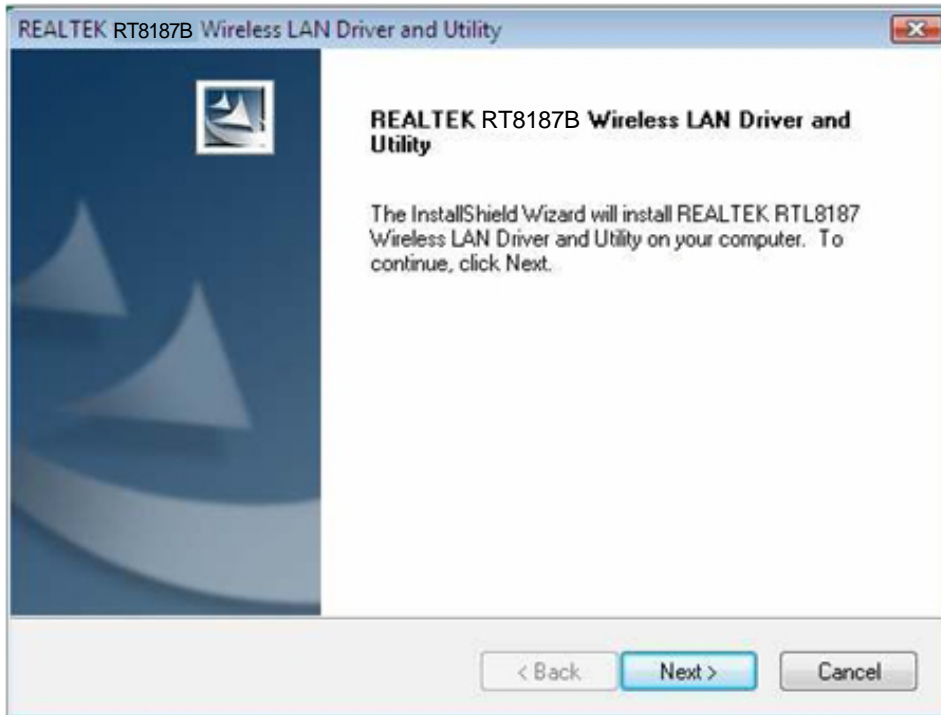
**3. Click Driver Installation**



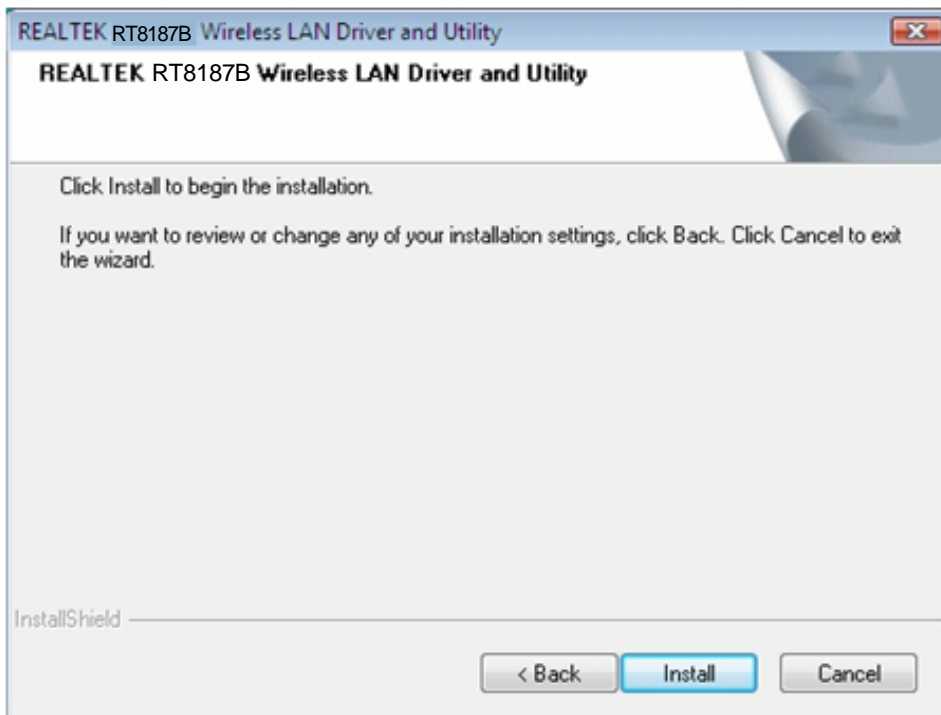
**4. Choose a set up language. Click Next to process the installation.**



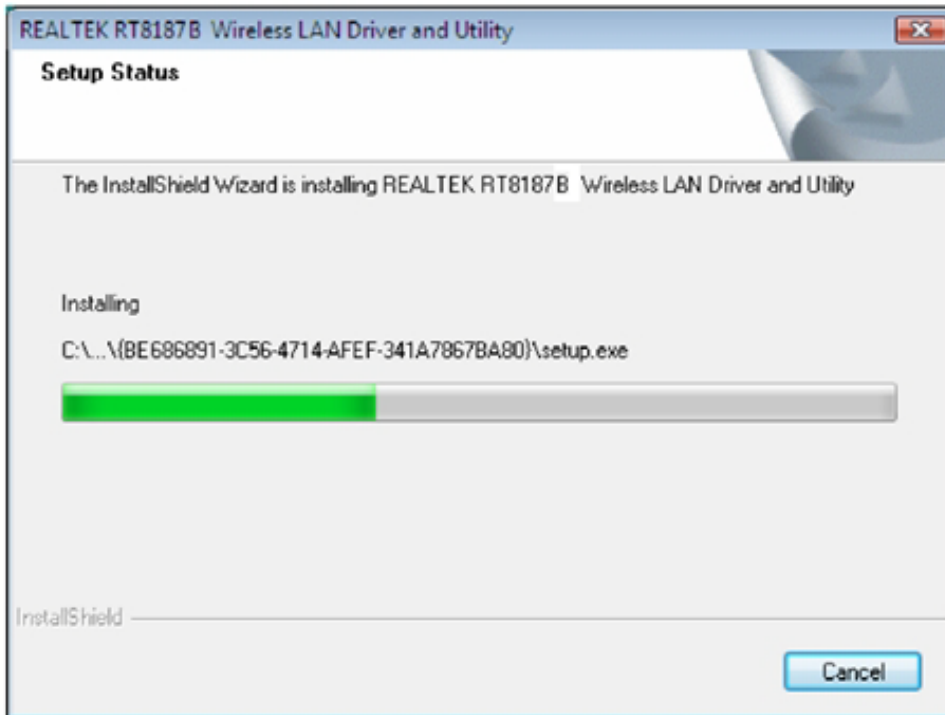
**5. Click Next at the following screen**



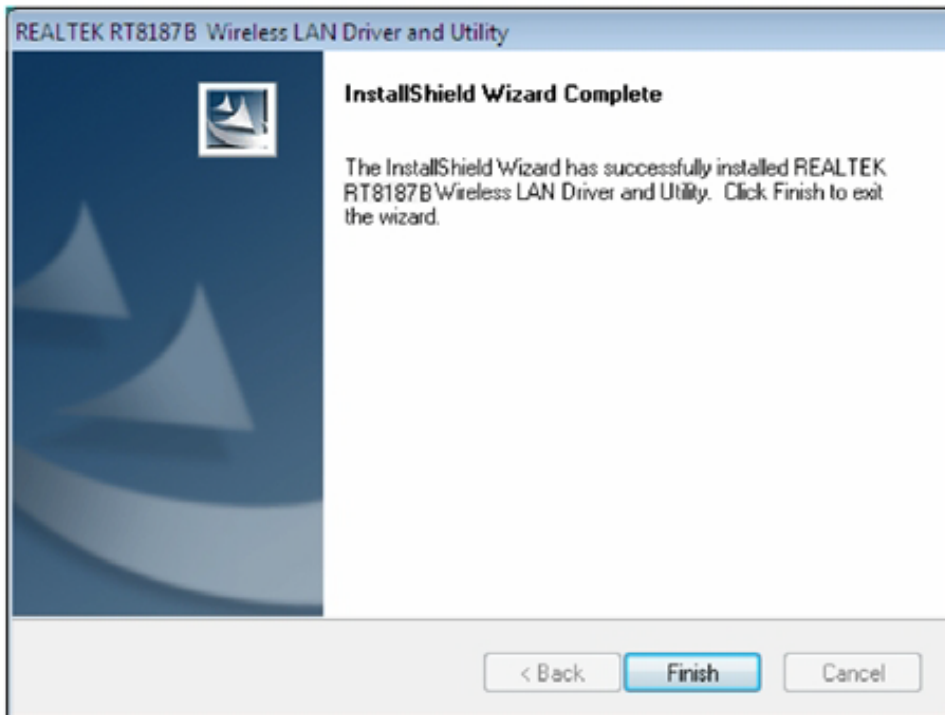
**6. Click Install at the following screen**



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

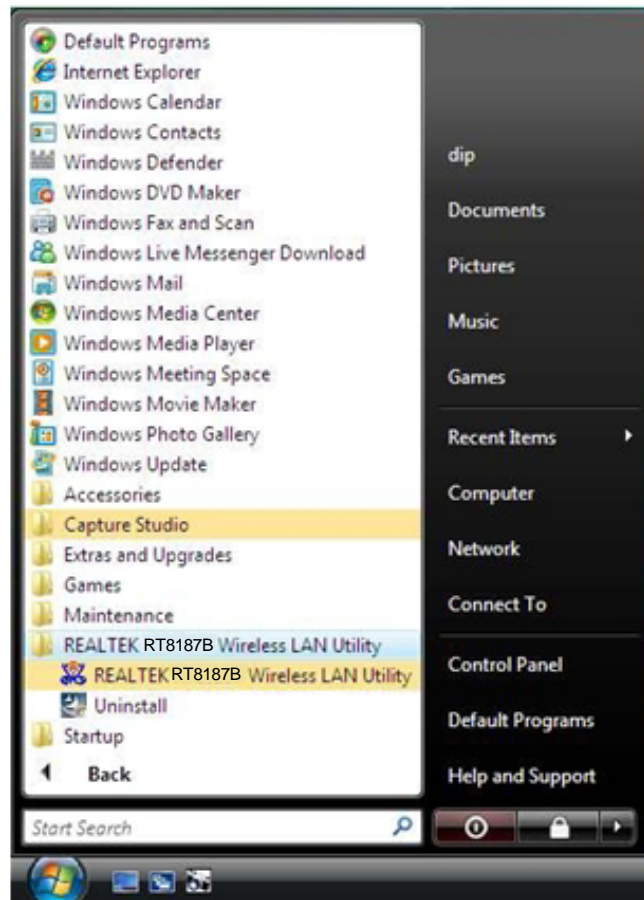


8. Click **Finish** to complete the installation





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.

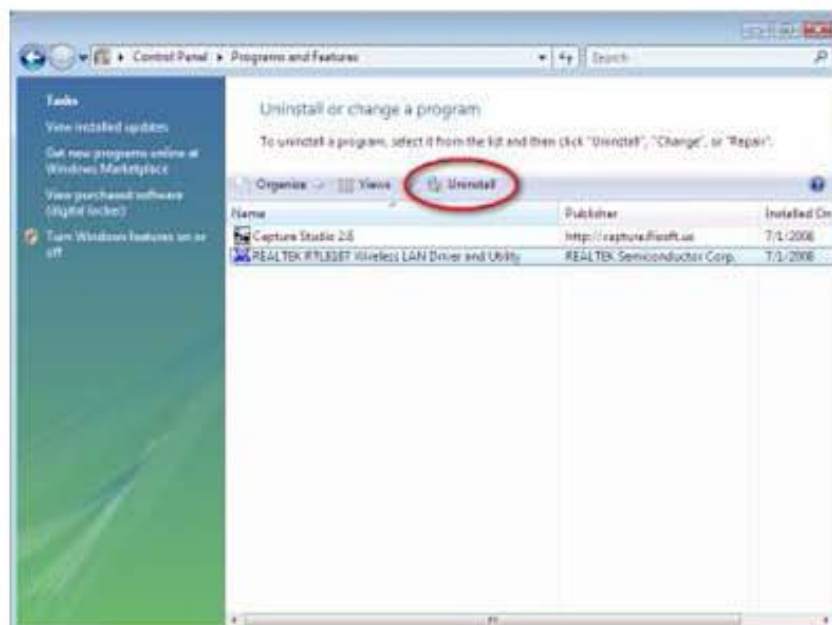
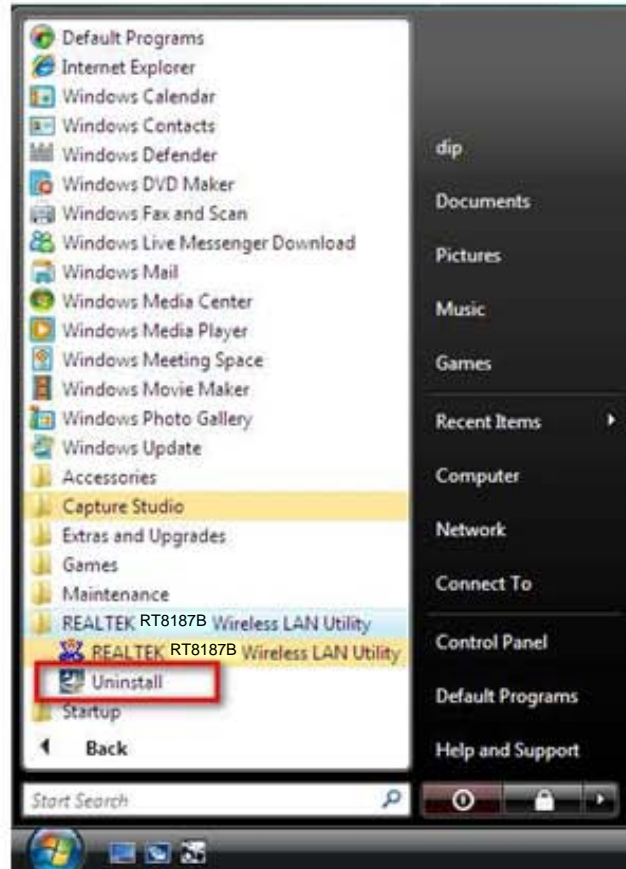


10. Insert AWN-11G-USB adapter into your computer's USB port, it will automatically detected and active the AWN-11G-USB adapter.

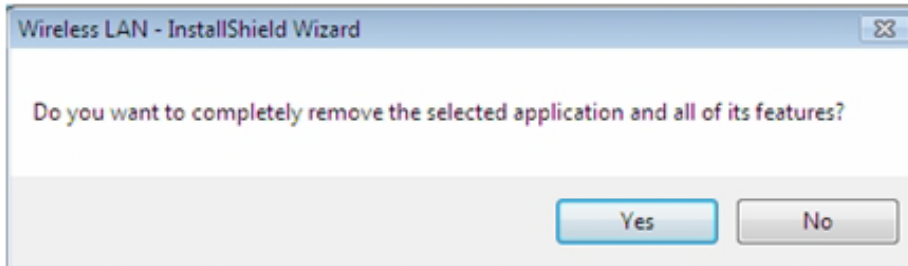
## 3.2 Uninstall

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

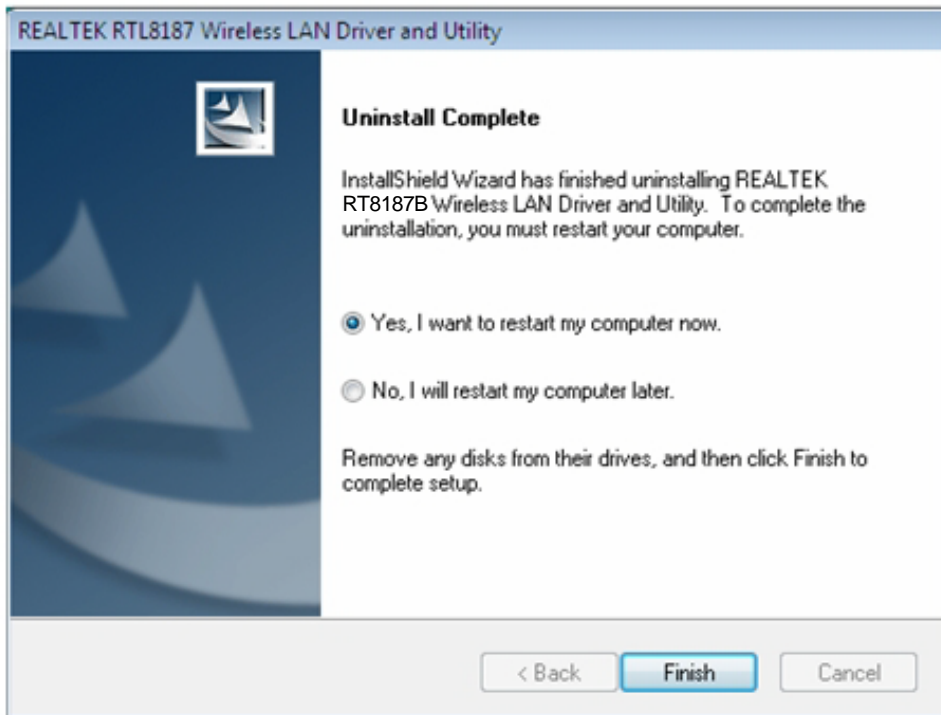
A. Uninstall the WLAN USB Adapter Driver from "Start" "All Programs" Click "Uninstall" (or "Change/Remove") to remove the driver.



**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

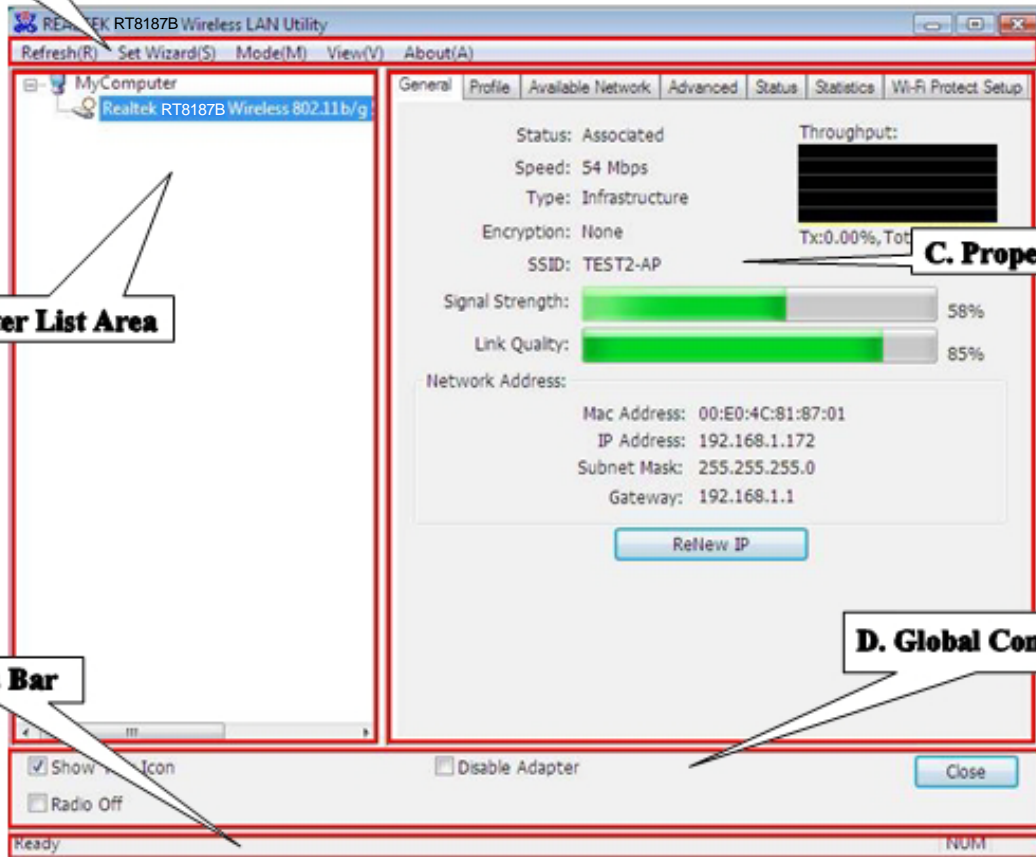
#### A. Main Menu

#### B. Adapter List Area

#### C. Properties Area

#### D. Global Control Bar

#### E. Status Bar



#### A. Main Menu

The main menu includes five submenus.

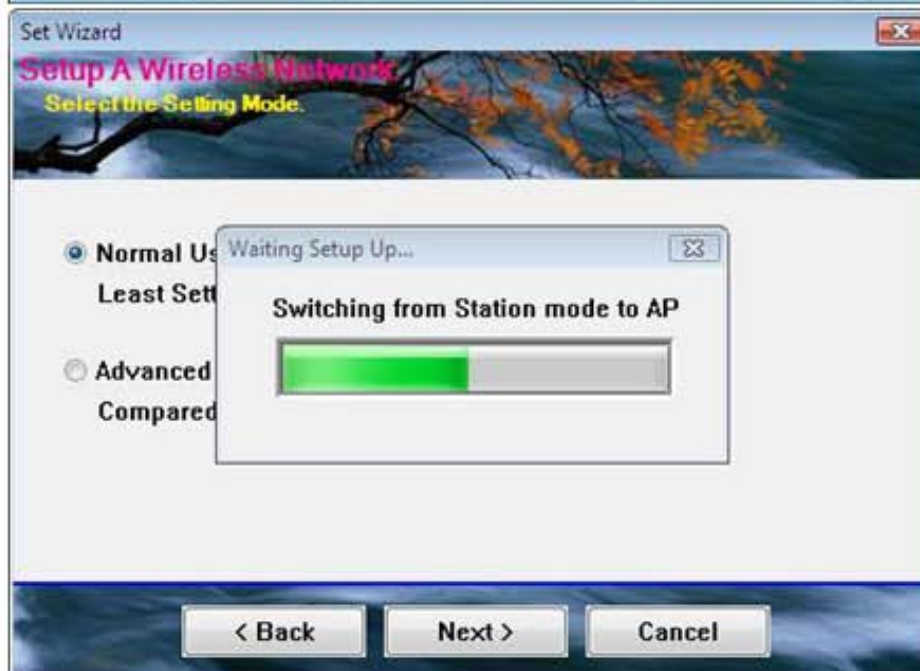
##### 1. Refresh(R)

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.

Set Wizard

**Wireless Network Properties**  
Setting AP the mode parameter.

Network Name[SSID]:

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.

Encryption:

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.

< Back   Next >   Cancel

## 2.3 Wizard-3

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

Set Wizard

**Show Setting Information**  
Confirms the parameter.

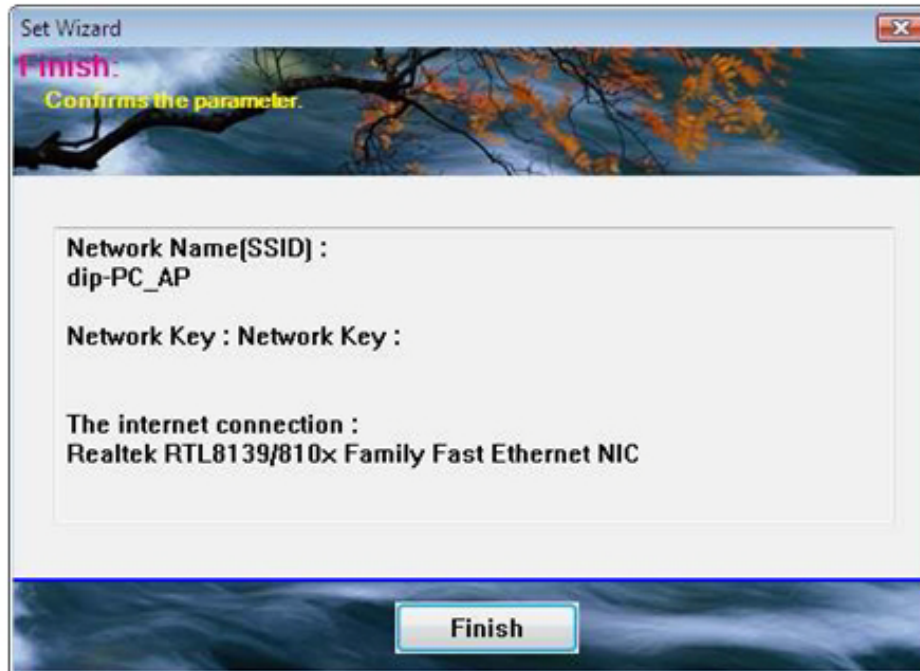
Network Name[SSID] :  
dip-PC\_AP

Network Key :

< Back   Next >   Cancel

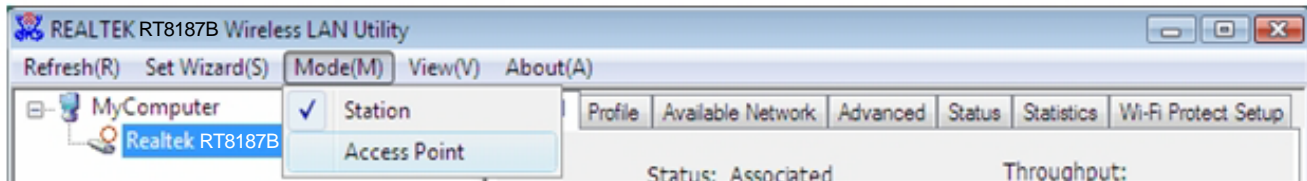
## 2.4 Wizard-4

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].

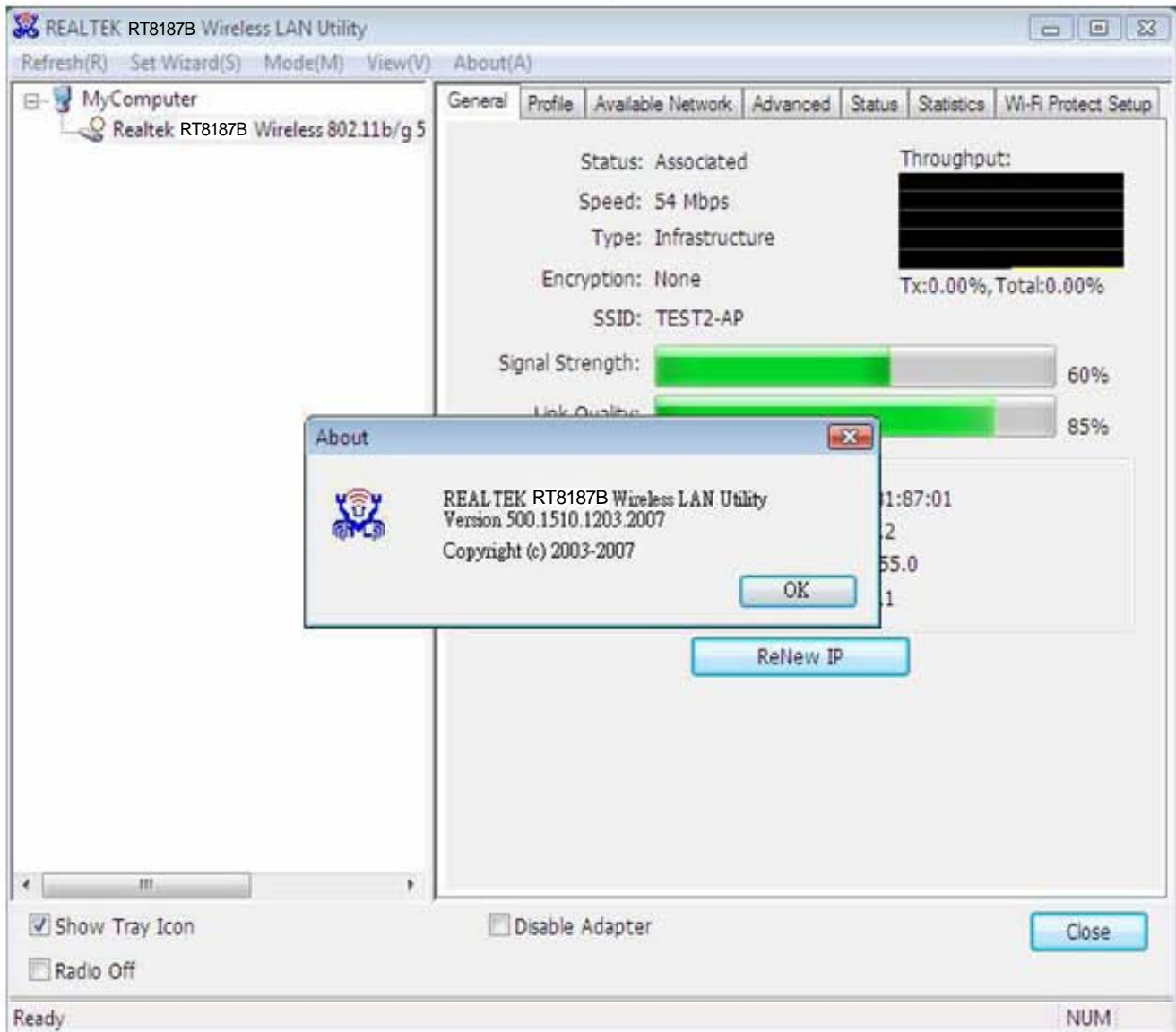


## 4. View (V)

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

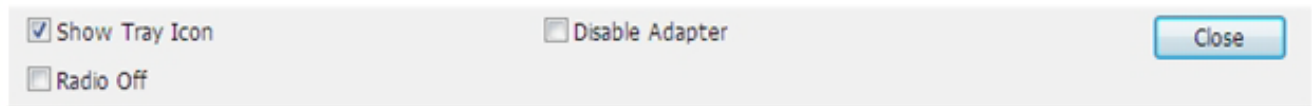
The contents of this area are dependent on current wireless configuration. The current configuration is determined on previous explanation of submenu "Mode". The more detailed contents are described in the following wireless configuration sections for both Station and AP mode

The screenshot displays the 'Properties Area' of a wireless configuration interface. It features a tabbed menu at the top with the following options: General (selected), Profile, Available Network, Advanced, Status, Statistics, and Wi-Fi Protect Setup. The main content area is divided into several sections:

- Status:** Associated
- Speed:** 54 Mbps
- Type:** Infrastructure
- Encryption:** None
- SSID:** TEST2-AP
- Signal Strength:** Represented by a green progress bar at 58%.
- Link Quality:** Represented by a green progress bar at 85%.
- Throughput:** A blacked-out area with the text 'Tx:0.00%, Total:0.00%' below it.
- Network Address:** A 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

At the bottom of the network address box, there is a blue button labeled 'ReNew IP'.

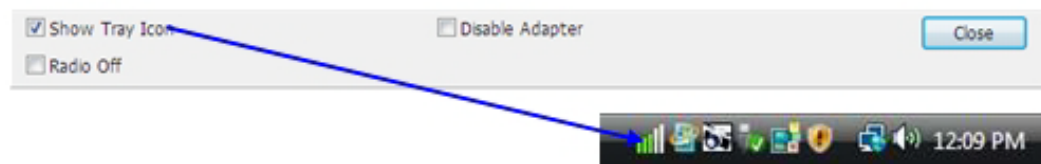
## D. Global Control Bar



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

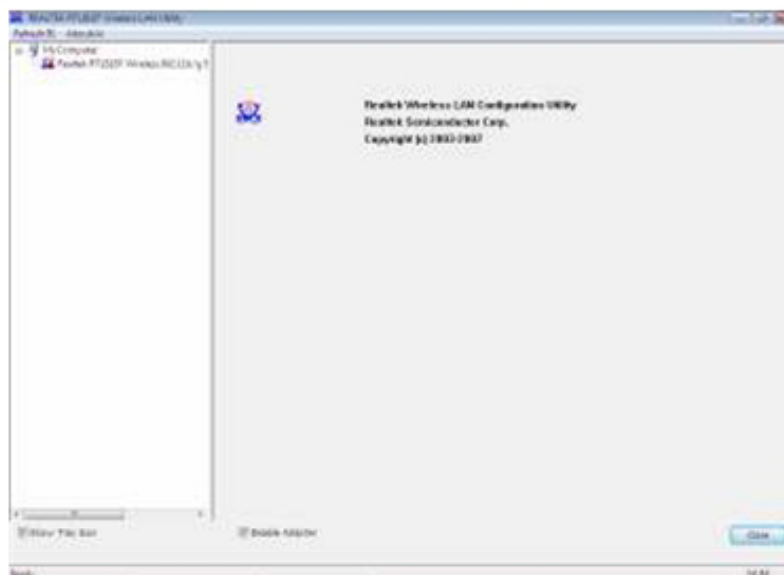


### Radio Off

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

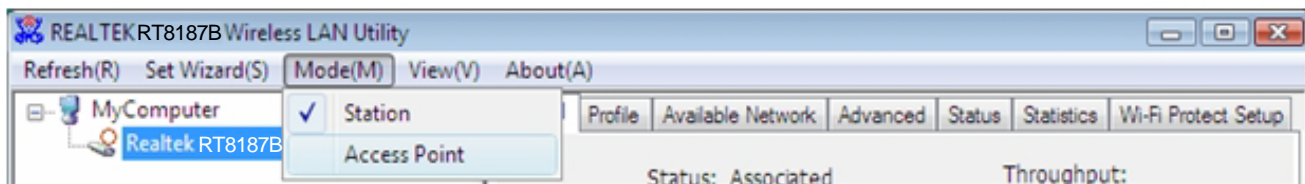
The status of the management GUI are presented in the status bar.

Ready

NUM

## 4.2 Station Mode

The following explanations focus on the properties area.

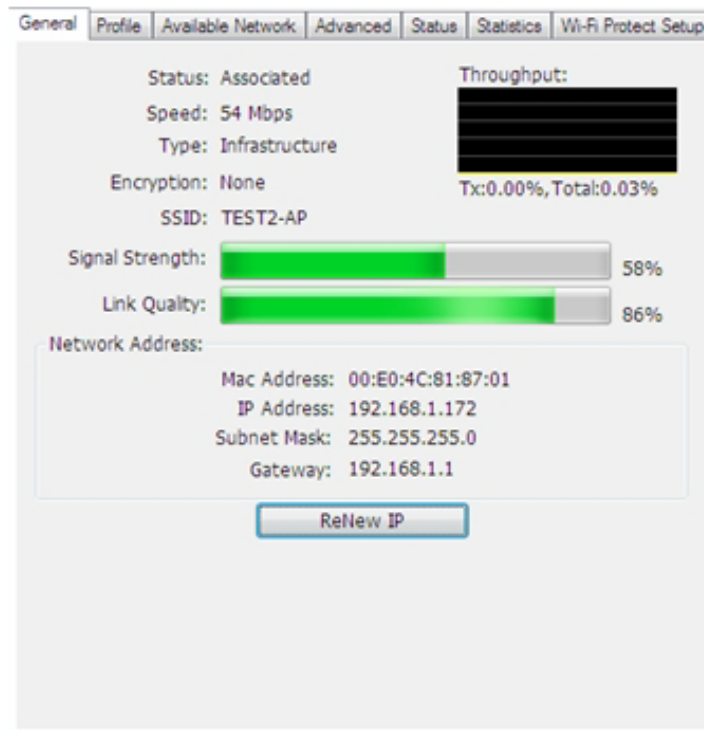


### Infrastructure and Ad-Hoc

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.

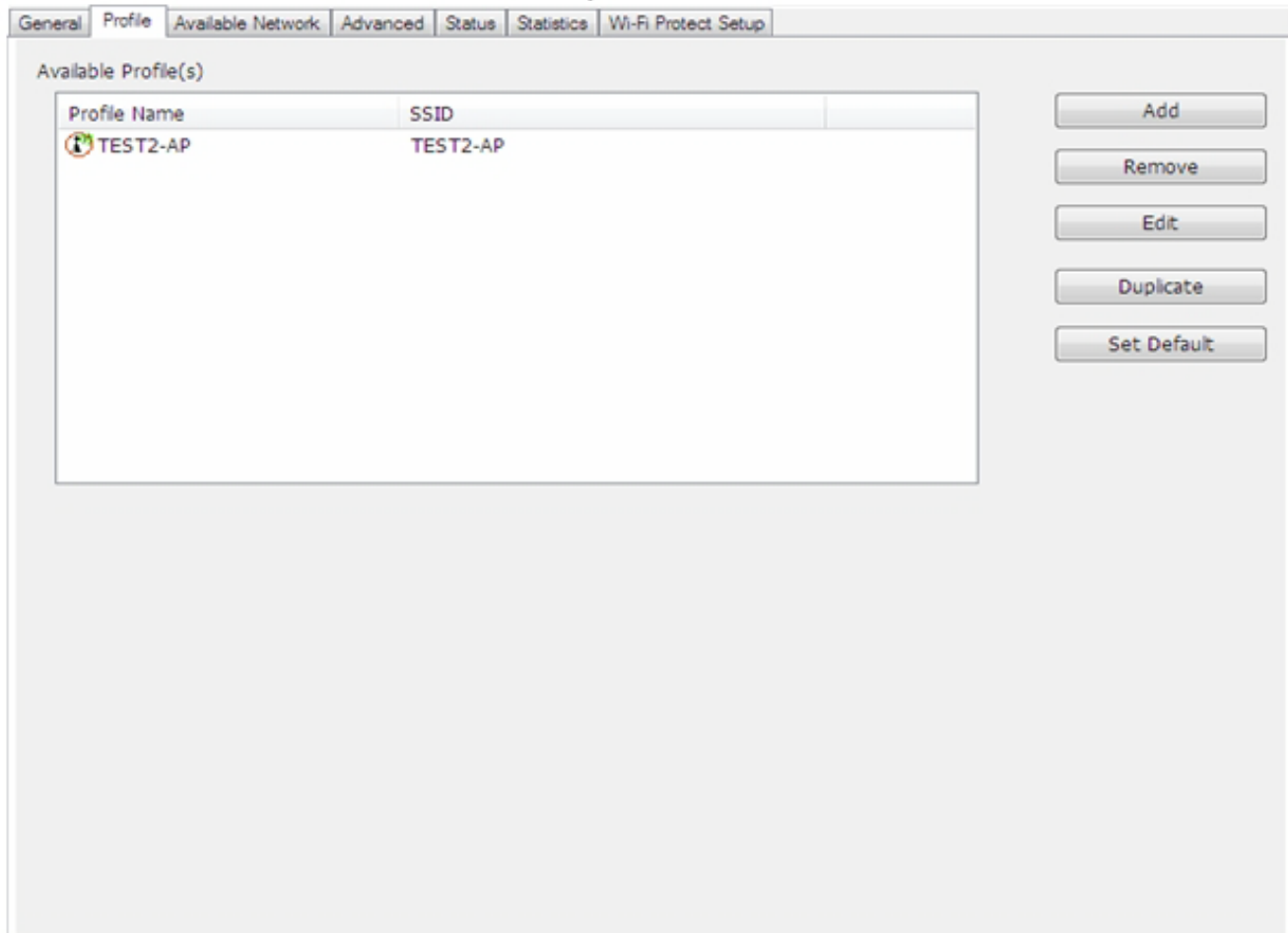
- Subnet Mask: the only valid value is 255.255.255.0
- Gateway: It comes from connected AP. Your system can not connect to internet if this field is empty.

## 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.



The screenshot shows a web interface with a tabbed menu at the top: General, Profile, Available Network, Advanced, Status, Statistics, and Wi-Fi Protect Setup. The 'Profile' tab is selected. Below the tabs, the title 'Available Profile(s)' is displayed. A table with two columns, 'Profile Name' and 'SSID', contains one entry: 'TEST2-AP' with SSID 'TEST2-AP'. To the right of the table are five buttons: 'Add', 'Remove', 'Edit', 'Duplicate', and 'Set Default'.

Profile Name	SSID
TEST2-AP	TEST2-AP

#### 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

General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup

Available Network(s)

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

General Profile Available Network **Advanced** Status Statistics Wi-Fi Protect Setup

Power Save  
 None  
 Min  
 Max

Turbo Mode  
 OFF  
 ON  
 AUTO

Wireless Mode:  
802.11g/b

Preamble Mode:  
Auto

Channel Plan:  
ETSI

Fragment Threshold: 2346  
256 ..... 2432

RTS Threshold: 2347  
0 ..... 2432

Set Defaults Apply

### 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

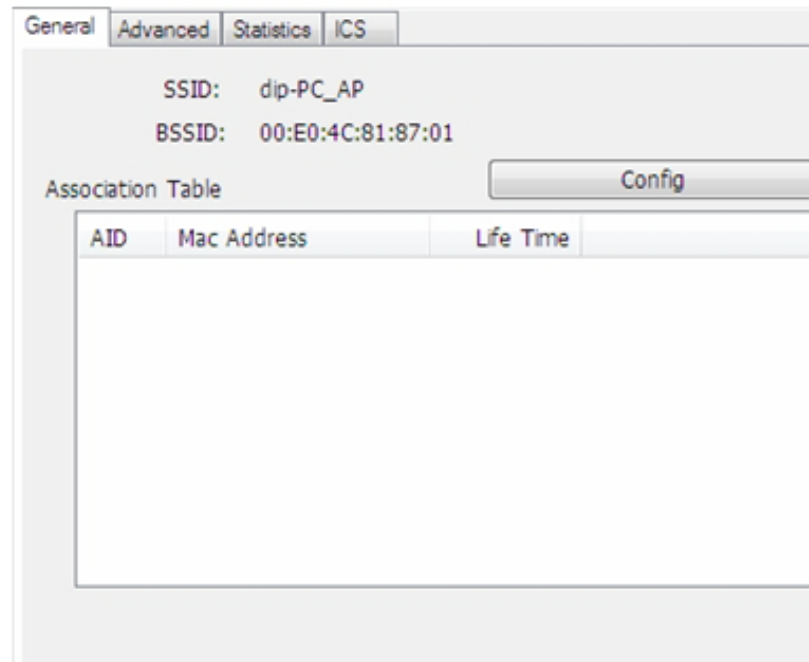
Current encryption mode



## 4.3 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', but it is currently empty.

AID	Mac Address	Life Time
-----	-------------	-----------

#### 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.

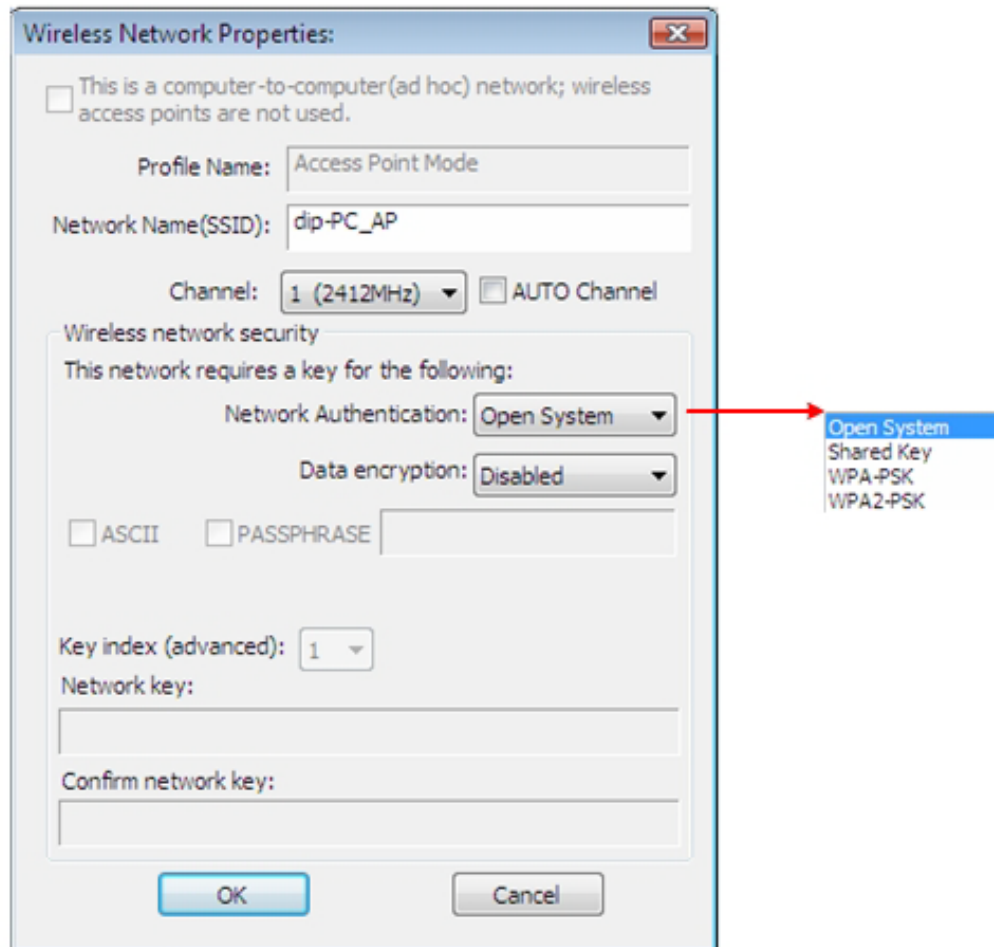
#### 6. Life Time

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.

General: Advanced Statistics ICS

General:

Beacon Interval: 100

DTIM Period: 1

Preamble Mode: Short

Long  
Short

Set Defaults Apply

### 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.



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: The manufacturer is not responsible for any radio or TV interference caused by unauthorized changes and modifications to this equipment. Such changes and modifications could void the user's authority to operate the equipment.

NOTE: 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.