NETRONIX
振曜科技股份有限公司

Wireless 802.11n USB Adapter

User's Guide

W423B

Federal Communication Commission Interference 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 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.

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.

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

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

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

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

CE Mark Warning

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN 60950-1: 2001
  Safety of Information Technology Equipment

- EN 50392: 2004
  Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz)

- EN 300 328 V1.6.1 (2004-11)
  Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

- EN 301 489-17 V1.2.1 (2002-08) and EN 301 489-1 V1.5.1 (2004-11)
  Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For

detailed information the end-user should contact the national spectrum authority in France.

$C\epsilon$ 0560 $\bigcirc$

cs Česky [Czech]	*[Jméno výrobce]* tímto prohlašuje, že tento *[typ zařízení]* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede *[fabrikantens navn]* erklærer herved, at følgende udstyr *[udstyrets typebetegnelse]* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt *[Name des Herstellers]*, dass sich das Gerät *[Gerätetyp]* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab *[tootja nimi = name of manufacturer]* seadme *[seadme tüüp = type of equipment]* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, *[name of manufacturer]*, declares that this *[type of equipment]* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente *[nombre del fabricante]* declara que el *[clase de equipo]* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *[name of manufacturer]* ΔΗΛΩΝΕΙ ΟΤΙ *[type of equipment]* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente *[nom du fabricant]* déclare que l'appareil *[type d'appareil]* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente *[nome del costruttore]* dichiara che questo *[tipo di apparecchio]* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *[name of manufacturer / izgatavotāja nosaukums]* deklarē, ka *[type of equipment / iekārtas tips]* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lietuvių [Lithuanian]	Šiuo *[manufacturer name]* deklaruoja, kad šis *[equipment type]* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart *[naam van de fabrikant]* dat het toestel *[type van toestel]* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *[isem tal-manifattur]*, jiddikjara li dan *[il-mudel tal-prodott]* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *[gyártó neve]* nyilatkozom, hogy a *[... típus]* megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *[nazwa producenta]* oświadcza, że *[nazwa wyrobu]* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*[Nome do fabricante]* declara que este *[tipo de equipamento]* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*[Ime proizvajalca]* izjavlja, da je ta *[tip opreme]* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*[Meno výrobcu]* týmto vyhlasuje, že *[typ zariadenia]* spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	*[Valmistaja = manufacturer]* vakuuttaa täten että *[type of equipment = laitteen tyyppimerkintä]* tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar *[företag]* att denna *[utrustningstyp]* står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

TABLE OF CONTENTS

Overview

Thank you for purchasing this product. Read this chapter to know about your IEEE 802.11n Wireless USB Adapter.

Unpacking Information

Before getting started, please verify that your package includes the following items:

1.   IEEE 802.11n Wireless USB Adapter
2.   One Utility/ Manual CD

Introduction to the IEEE 802.11n Wireless USB Adapter

The IEEE 802.11n Wireless USB adapter provides users to launch IEEE 802.11n wireless network at 300 Mbps in the 2.4GHz band, which is also compatible with IEEE 802.11b/g wireless devices at 11/54 Mbps. You can configure this adapter with ad-hoc mode to connect to other 2.4GHz wireless computers, or with Infrastructure mode to connect to a wireless AP or router for accessing to Internet. This adapter includes a convenient Utility for scanning available networks and saving preferred networks that users usually connected with. Security encryption can also be configured by this utility.
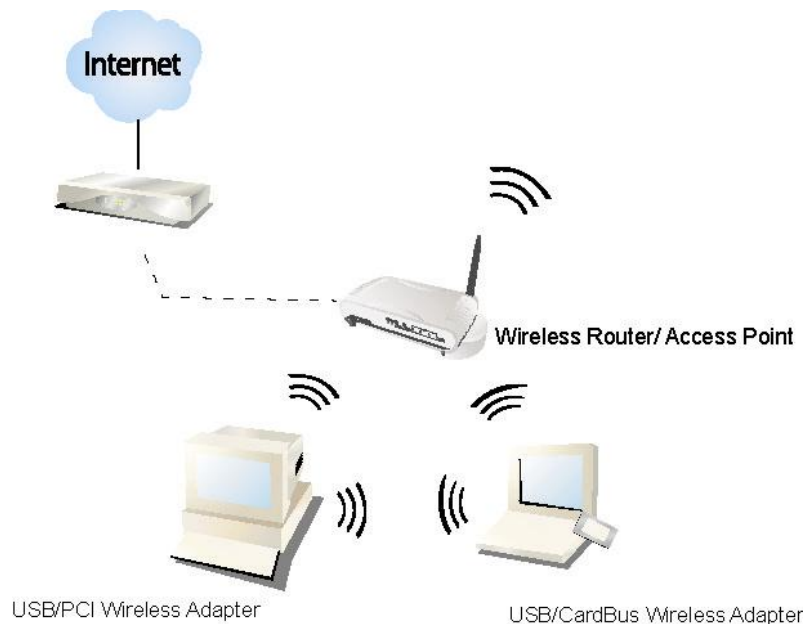
Key Features

• Complies with IEEE 802.11n/b/g wireless standard	• Supports driver for Windows 2000, XP 32/64, Vista 32/64, Linux (2.4.x/2.6.x), and Mac (10.3.x/10.4.x).
• 2.4GHz Frequency band, MIMO 2T2R	• Supports QoS: WMM, WMM-PS
• Complies with Universal Serial Bus Rev. 1.1 and 2.0 specifications.	• Supports wireless data encryption with 64/128-bit WEP, WPA, WPA2
• High Speed transfer data rate up to 300 Mbps	• Supports Multiple BSSID
• Supports auto-installation.	

Installation Guide

Software Installation

Note:

• For Linux or Mac driver installation guide, please refer to the instruction in **/Driver/Linux** or **/Driver/Mac** in the CD-Rom.

• The following driver installation guide uses Windows XP as the presumed operation system. The procedures and screens in Windows 2000 and Vista are familiar with Windows XP.

1. Insert this product to your computer. The system finds the newly installed device automatically. Click **Cancel** to close this window.

2. Insert the CD-Rom that came with this product to your CD-Rom drive. The menu window pops up automatically. Please click the **Driver** button of this product.

    Note: If the CD-Rom fails to auto-run, please click on **My Computer**> **your CD-Rom drive**> **(folder of this product)**> **Driver** then double-click the **Setup** icon to start this menu.

3. Select if you are going to configure your wireless network with this device or with Microsoft Zero Configuration tool.

Note: This can be changed after installing this software.
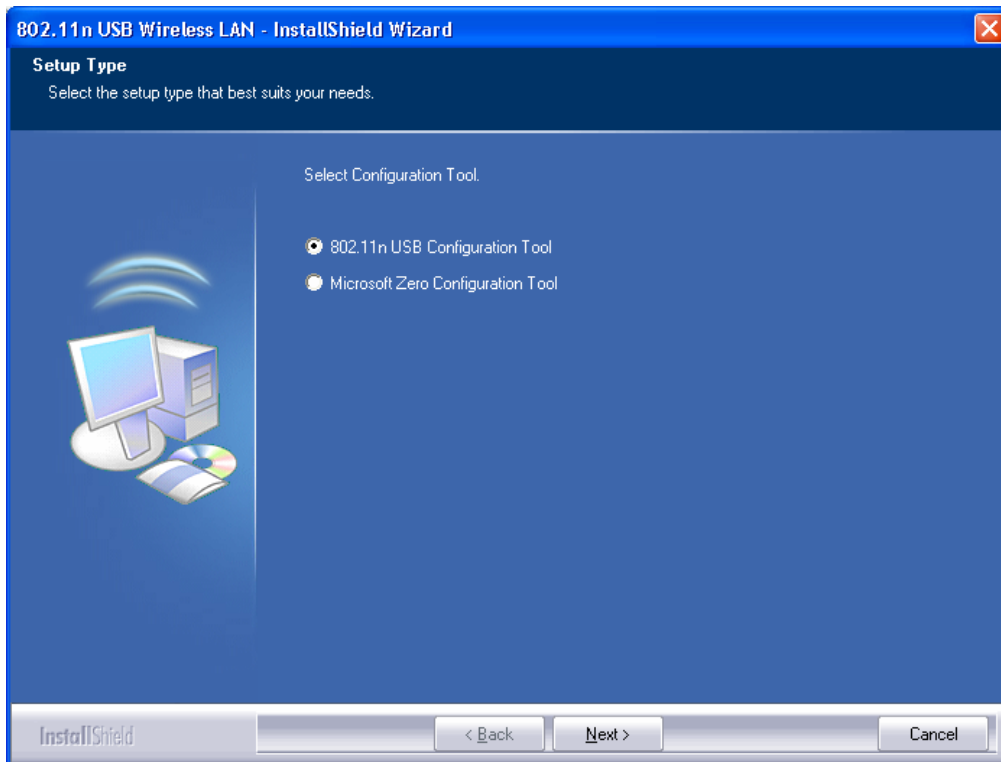
4. Select to optimize this adapter in WiFi mode or performance mode.

Note: The performance mode is only available while connecting to a TX Burst supported AP. Users that uses the AP without TX Burst please select WiFi mode (standard mode).
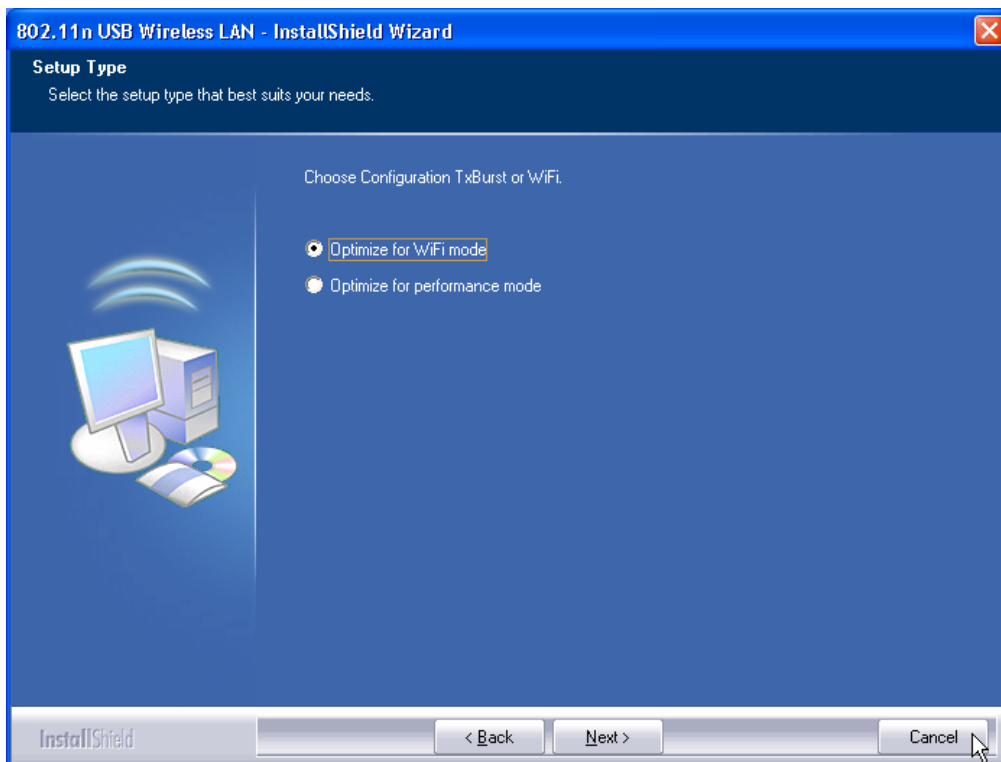
5. Click the **Install** button to start installing.
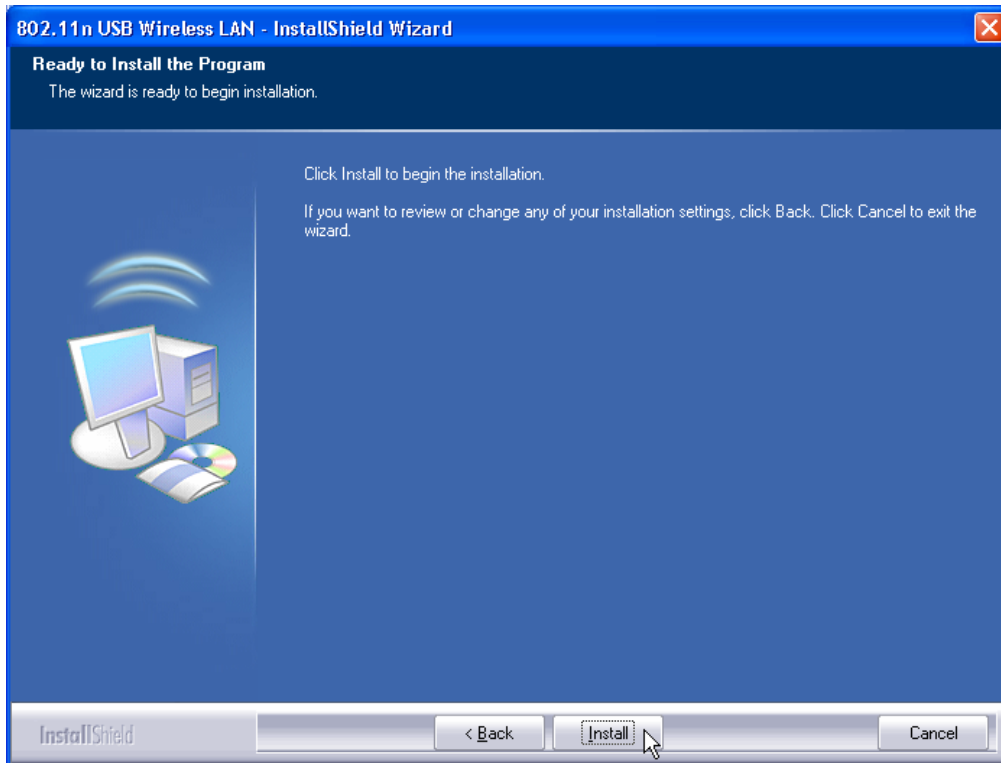
6. Click the **Finish** button to complete installation.
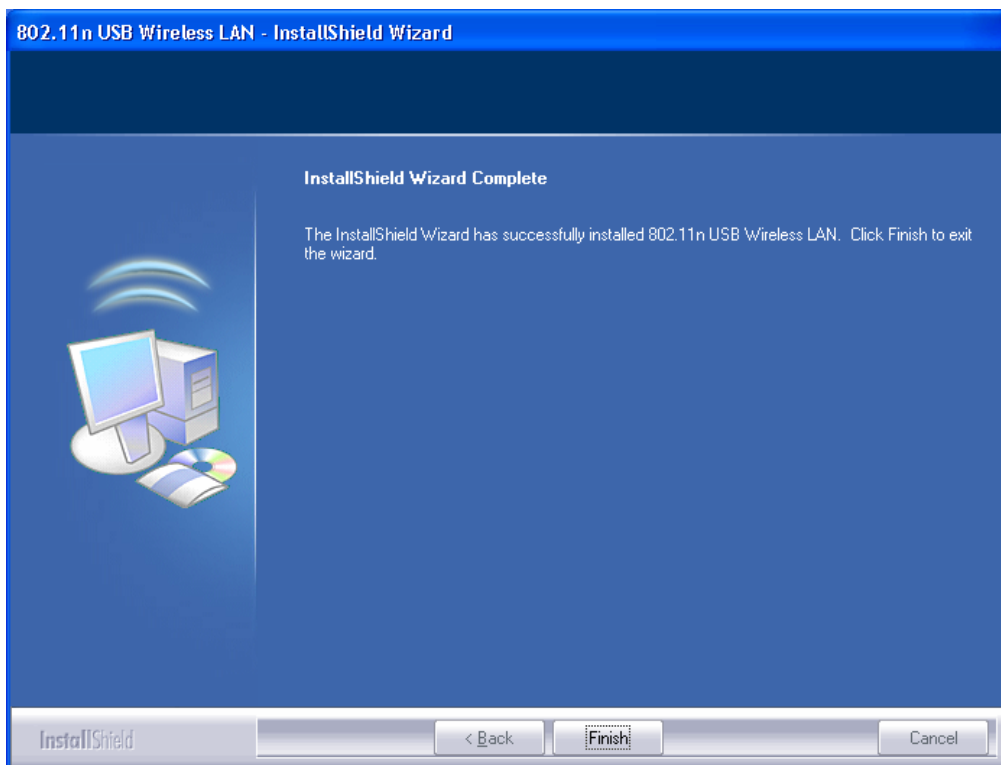
Management Guide

Read this chapter to understand the management interface of the device and how to manage the device.

Making a Basic Network Connection

Select a configuration tool

In the following instruction for making a network connection, we use the Utility we provide to configure your wireless network settings.

Note: You could use either the software we provide or Microsoft Zero Configuration tool to configure this adapter. To switch between the two configuration tools, please right click on the icon on system tray to select.
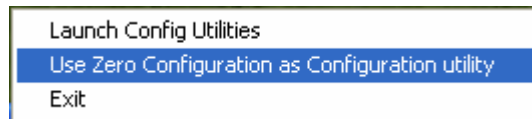
To connect with Microsoft Zero Configuration tool

After specifying the Microsoft Zero Configuration tool to configure your wireless network, right click on the icon on system tray. Select **View Available Wireless Networks** to specify your wireless network.
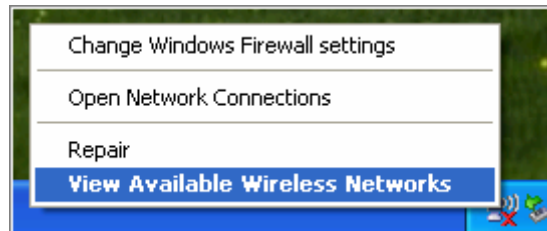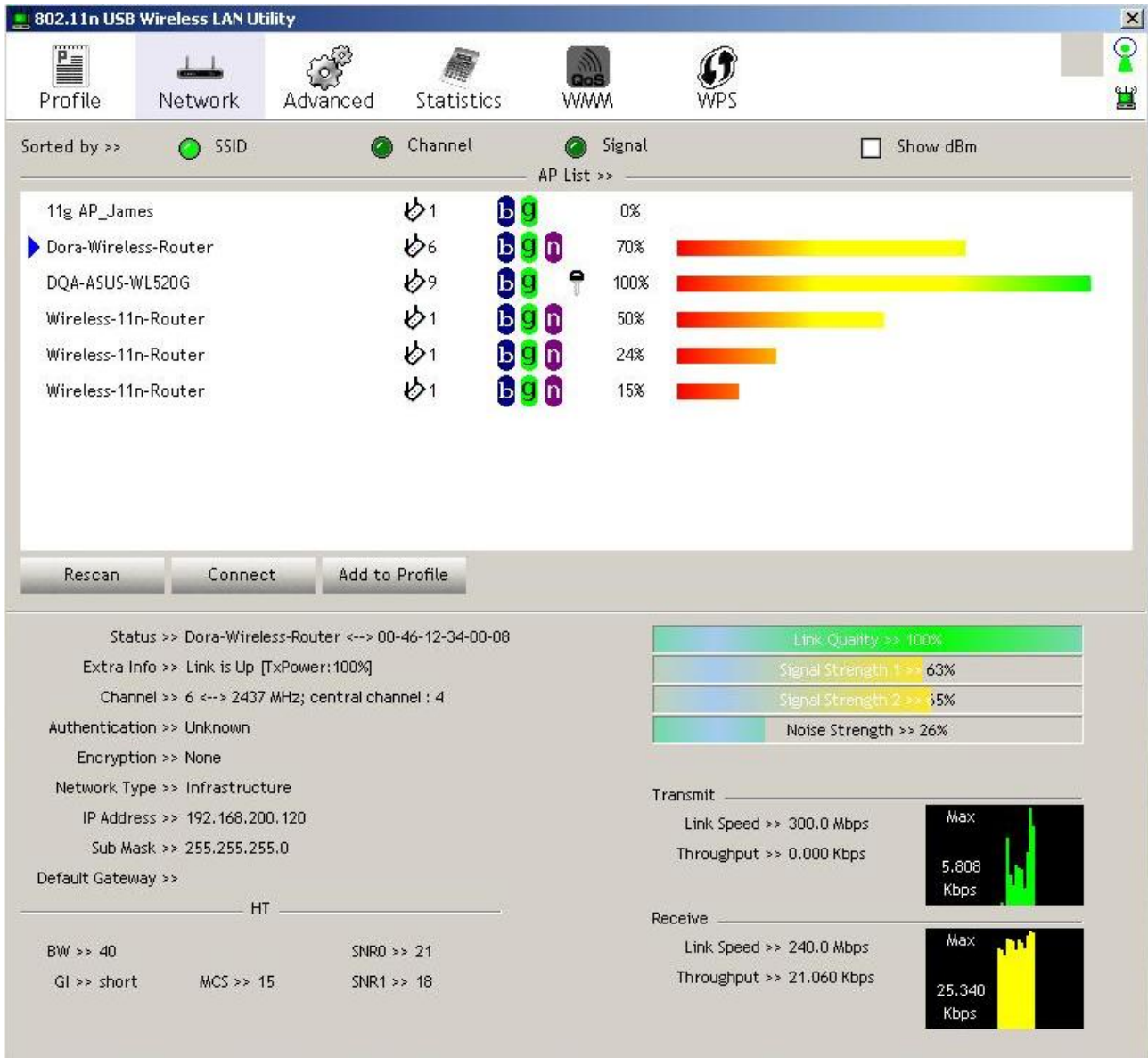
The tool shows the available wireless networks. Select your demanding network to connect with. To connect to a wireless network with more security settings, please click **Change advanced settings** to be compatible with your wireless network security settings.
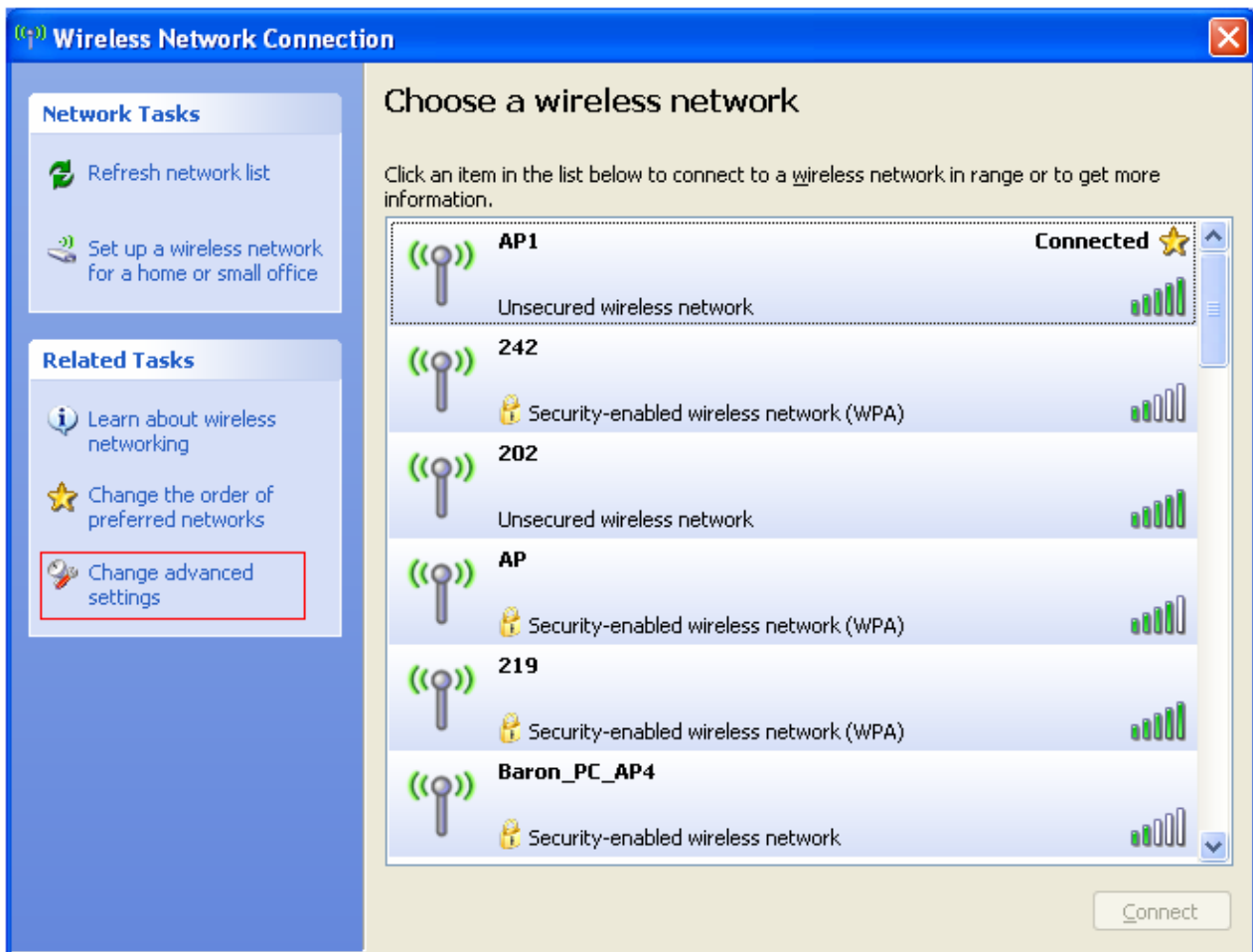
To connect with 802.11n Wireless LAN Utility

We provide this Utility for users to connect to a wireless network easily. It provides more information and configuration for this adapter. As default, the Utility is started automatically upon starting your computer and connects to a connectable wireless network with best signal strength. Right click on the ⌬ icon and select **Launch Config utilities** if the Utility does not start.

Please refer to the following chapters to get information regarding to the functions of this Utility.

Introduction to the 802.11n Wireless LAN Utility

Note: The Utility in Windows Vista, Linux and Mac are different from the following.

- For instructions on using the Utility included in Windows Vista please refer to the instruction in
  Appendix.
- For instructions on using the Utility included in Linux please refer to the instruction in
  /Driver/Linux/readme.txt in the CD-Rom.
- For instructions on using the Utility included in Mac please refer to the instruction in
  /Driver/Mac/readme.txt in the CD-Rom.

Interfaces

This Utility is basically consisted of three parts:

1. Functional buttons: on top of the window. You can click each button to access each configuration window.

   Note: Click ![icon] on the top right window to enable/disable wireless connection status.
   Click ![icon] to show the wireless information.

Profile	Network	Advanced	Statistics	WMM	WPS

2. Configuration column: Center of the Utility window. Make your changes for each function in this part.

3. Status information: bottom of the utility window. Shows the connection status and system information.

Information
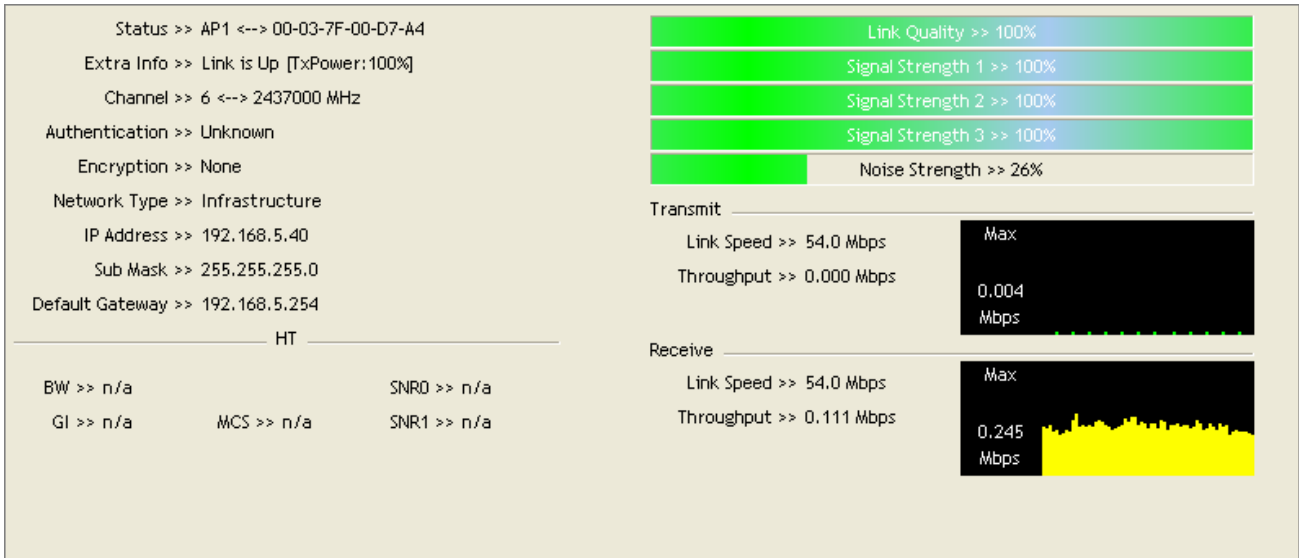
Items	Information
Status	Shows the connecting status. Also shows the SSID while connecting to a valid network.
Extra Info	Display link status in use.
Channel	Display current channel in use.
Authentication	Authentication mode in use.
Encryption	Encryption type in use.
Network Type	Network type in use.
IP Address	IP address of current connection.
Sub Mask	Subnet mask of current connection.
Default Gateway	Default gateway of current connection.
Link Speed	Show current transmit rate and receive rate.
Throughput	Display transmit and receive throughput in Mbps.
Link Quality	Display connection quality based on signal strength and TX/RX packet error rate.
Signal Strength 1	Receive signal strength 1, user can choose to display as percentage or dBm format.
Signal Strength 2	Receive signal strength 2, user can choose to display as percentage or dBm format.
Signal Strength 3	Receive signal strength 3, user can choose to display as percentage or dBm format.
Noise Strength	Display noise signal strength.
HT	Display current HT status in use, containing BW, GI, MCS, SNR0, and SNR1 value.

Profile

This profile page allows users to save different wireless settings, which helps users to get access to wireless networks at home, office or other wireless network environments quickly.
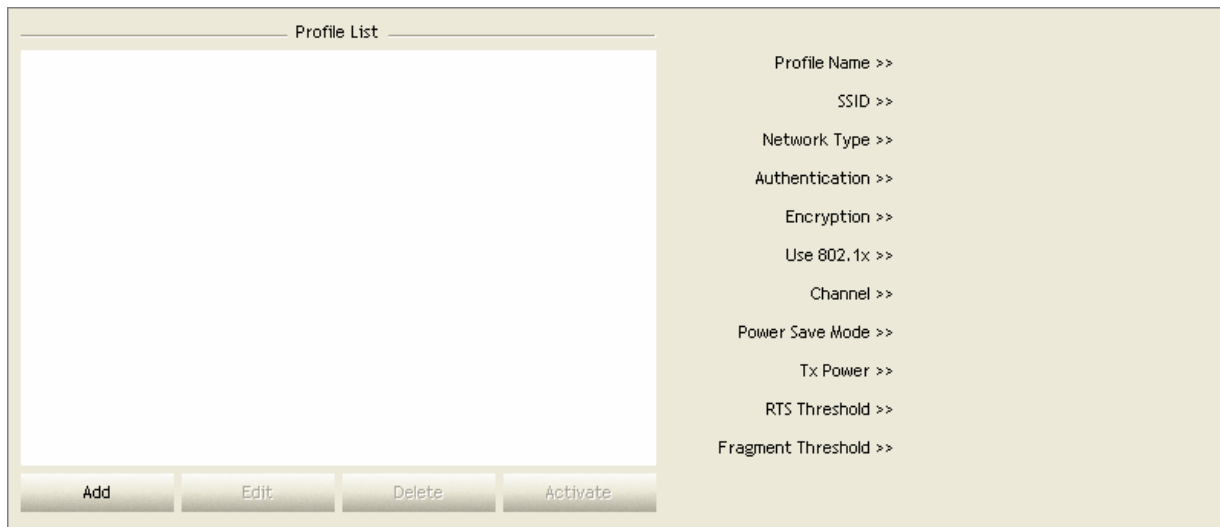
To add a new profile:

1. Click the **Add** button. The add profile window pops up.
    Note: you could also add a new profile quickly by selecting an available network in the **Network** function then click the **Add to Profile** button.
2. Fill in information for this profile in the system config section:
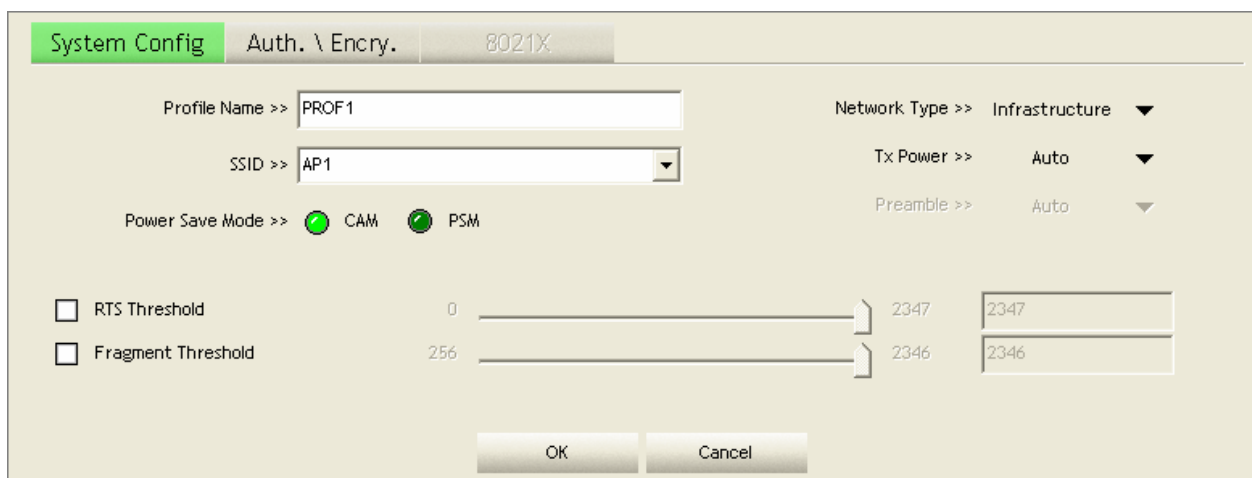
Items	Information
Profile Name	Choose a name for this profile, or use default name defined by system.
SSID	Fill in the intended SSID name or use the drop list to select from available Aps.
Power Save Mode	Choose from CAM (Constantly Awake Mode) or PSM (Power Saving Mode).
Network Type	There are two types, infrastructure and 802.11 Ad-hoc modes. Under Ad-hoc mode, you could also choose the preamble type; the available preamble type includes auto and long. In addition to that, the channel field will be available for setup in Ad-hoc mode.
RTS Threshold	For adjusting the RTS threshold number by sliding the bar or key in the value directly. The default value is 2347.
Fragment Threshold	Adjust the Fragment threshold number by sliding the bar or key in the value directly. The default value is 2346.

3. Select an encryption type and fill in the corresponding wireless network information:

Items	Information
Authentication Type	There are 7 types of authentication modes supported by Utility including open, Shared, LEAP, WPA and WPA-PSK, WPA2 and WPA2-PSK.
Encryption Type	For open and shared authentication mode, the selection of encryption type are None and WEP. For WPA, WPA2, WPA-PSK and WPA2-PSK authentication mode, the encryption type supports both TKIP and AES.
802.1x	Use 802.1x to make WPA and WPA2 certification. This functions only works when connecting to a WPA and WPA2 supported device.
WPA Pre-shared Key	This is the shared secret between AP and STA. For WPA-PSK and WPA2-PSK authentication mode, this field must be filled with character longer than 8 and less than 32 length.
WEP Key	Only valid when using WEP encryption algorithm. The key must matched AP's key.

4. Specify the 802.1x information if you are using the 802.1X certification method.

Users that do not use this function or connecting to an open-wireless network please skip this part.

Items	Information
EAP method	To select an EAP method.
Tunnel Authentication	Select a Tunnel authentication mode.
Session Resumption	Select to enable this function or unmark it to disable.

ID \ PASSWORD

Items	Information
Authentication ID / Password	The identity, password and domain name for server. Only "EAP-FAST" and "LEAP" authentication can be key in domain name. Blank space can be key in domain name.
Tunnel ID / Password	Identity and Password for server.

Client Certification

Items	Information
Use Client certificate	Client certificate for server authentication.

EAP Fast

Items	Information
Allow unauthenticated provision mode	Mark to enable unauthenticated provision mode.
Use protected authentication credential	Mark to use protected authentication credential.

Server Certification

Items	Information
Use Certificate chain	Mark the checkbox to enable using certification chain.
Allow intimidate certificates	Mark to allow intimidates certification
Server name	Enter an authentication sever root.

Network

This network lists the available wireless networks. The Utility connects to a wireless network with best signal strength automatically. You can change the connecting network by clicking on the network name and click the **Connect** button. To see detail information of each network, please double click on each item to pop up the information window.

Items	Information
SSID, Channel and Signal buttons	Click each button to sort the listing networks by SSID, channel and Signal strength.
Show dBm	Mark the checkbox to show the signal strength in dBm.
Rescan	To rescan available wireless networks.
Connect	Click this button to connect to a designated network.
Add to Profile	Click this button to add a network to profile after selecting a network.

Statistics

Statistics page displays the detail counter information based on 802.11 MIB counters. This page translates the MIB counters into a format easier for user to understand.

Items	Information
Use Client certificate	Client certificate for server authentication.
Frames Transmitted Successfully	Frames successfully sent.
Frames Retransmitted Successfully	Successfully retransmitted frames numbers.
Frames Fail To Receive ACK After All Retries	Frames failed transmit after hitting retry limit.
RTS Frames Successfully Receive CTS	Successfully receive CTS after sending RTS frame.
RTS Frames Fail To Receive CTS	Failed to receive CTS after sending RTS.
Restart Counter	Reset counters to zero.

Items	Information
Use Client certificate	Client certificate for server authentication.
Frames Received Successfully	Frames received successfully.
Frames Received With CRC Error	Frames received with CRC error.
Frames Dropped Due To Out-of-Resource	Frames dropped due to resource issue.
Duplicate Frames Received	Duplicate received frames.

WMM

This page allows users to activate the WMM function for this device. Please note that this function only works while connecting to a WMM compatible device.

Items	Information
Use Client certificate	Client certificate for server authentication.
WMM Enable	Enable Wi-Fi Multi-Media.
WMM - Power Save Enable	Enable WMM Power Save. Please enable WMM before configuring this function.
Direct Link Setup Enable	Enable DLS (Direct Link Setup). Please enable WMM before configuring this function.

WPS

WPS Configuration: The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. This adapter supports the configuration setup using PIN configuration method or PBC configuration method through an internal or external Registrar.

Items	Information
Use Client certificate	Client certificate for server authentication.
WPS AP List	Display the information of surrounding APs with WPS IE from last scan result. List information includes SSID, BSSID, Channel, ID (Device Password ID), and Security-Enabled.
Rescan	Click to rescan the wireless networks.
Information	Display the information about WPS IE on the selected network. List information include Authentication Type, Encryption Type, Config Methods, Device Password ID, Selected Registrar, State, Version, AP Setup Locked, UUID-E and RF Bands.
PIN Code	8-digit numbers. It is required to enter PIN Code into Registrar using PIN method. Each Network card has only one PIN Code of Enrollee.
Config Mode	Enrollee or an external Registrar.
Table of Credentials	Display all of credentials got from the Registrar. List information includes SSID, MAC Address, Authentication and Encryption Type. If STA Enrollee, credentials are created as soon as each WPS success. If STA Registrar, Utility creates a new credential with WPA2-PSK/AES/64Hex-Key and doesn't change until next switching to STA Registrar.
Detail	Information about Security and Key in the credential.
Connect	Command to connect to the selected network inside credentials.
Rotate	Command to connect to the next network inside credentials.
Disconnect	Stop WPS action and disconnect this active link. And then select the last profile at the Profile Page of Utility if exist. If there is an empty profile page, the driver will select any non-security AP.
Delete	Delete an existing credential. And then select the next credential if exist. If there is an empty credential, the driver will select any non-security AP.
PIN	Start to add to Registrar using PIN configuration method.
PBC	Start to add to AP using PBC configuration method.
WPS associate IE	Send the association request with WPS IE during WPS setup. It is optional for STA.
WPS probe IE	Send the probe request with WPS IE during WPS setup. It is optional for STA.
Progress Bar	Display rate of progress from Start to Connected status.
Status Bar	Display currently WPS Status.

Note: When you click PIN or PBC, please don't do any rescan within two-minute connection. If you want to abort this setup within the interval, restart PIN/PBC or click Disconnect to stop WPS action.

Appendix

Introduction to the configuration utility for Vista Users

This utility helps Vista users to configure the wireless network. Please refer to the following sections for introduction.

Profile

This profile page allows users to save different wireless settings, which helps users to get access to wireless networks at home, office or other wireless network environment quickly.

To add a new profile:

1. Click the **Add** button. The add profile window pops up.
   Note: you could also add a new profile quickly by selecting an available network in the **Site Survey** function then click the **Add to Profile** button.

2. Fill in the information of this wireless network and its relative security settings. Please note that the information should be corresponding to the wireless network you are connecting to.

Items	Information
Deleting profile	Click the **Delete** button to delete the selected profile.
Editing profile	Click the **Edit** button to pop up the profile-setting page for users to edit the existing profile.
Activating profile	Click the **Activate** button to activate the selected profile.

Link Status

This Link status shows the information about the connecting. Please refer to the following chart for definition.
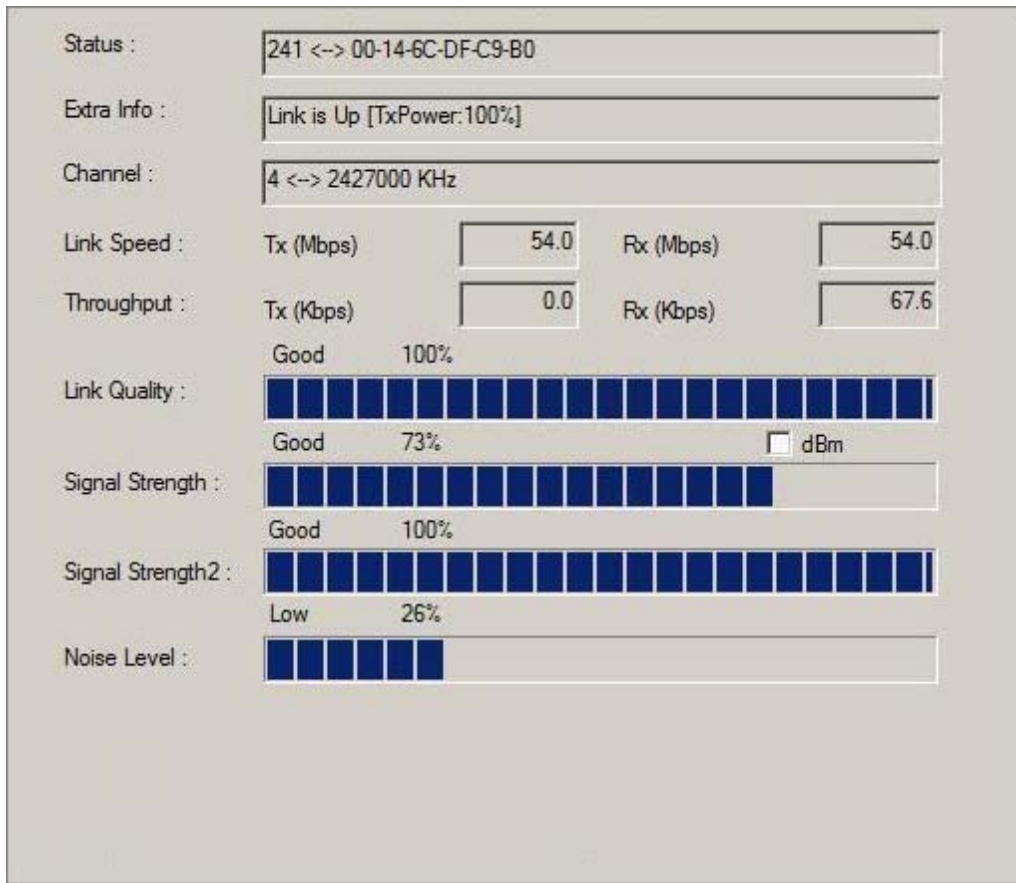
Items	Information
Status	Display current connection status.
Extra Info	Display link status and current channel in use.
Link Speed	Display current transmitting and receiving rates
Throughput	Display transmitting and receiving throughputs.
Link Quality	Display connecting quality based on signal strength and TX/RX packet error rate.
Signal Strength	Display receiving signal strength either in percentage or dBm format.
Noise Level	Display noise signal strength.

Site Survey

This page shows the available wireless networks within the coverage of this network adapter. You could check the status of wireless network around your computer or add a network into your profile.

SSID	BSSID	Phy	Signal	▲ C...	Encryption	Authentic...	Network ▲
202	00-0F-F7-EB-25-60	G	91%	1	None	Unknown	Infrastruc
219	00-06-25-49-B1-76	G	65%	1	TKIP	WPA	Infrastruc
221-WEP_...	00-14-1C-15-EE-80	G	65%	1	TKIP	WPA	Infrastruc
jan-bb	00-0C-43-28-60-02	N	100%	1	None	Unknown	Infrastruc
arscadre	00-0C-43-28-70-11	N	100%	1	None	Unknown	Infrastruc
243	00-14-A5-80-6A-01	N	65%	1	None	Unknown	Infrastruc
ClaudeAP	00-0C-76-6F-C5-97	G	76%	1	TKIP	WPA-PSK	Infrastruc
99	00-0F-CC-0B-AC-A0	G	55%	1	TKIP;AES	WPA-PS...	Infrastruc
132	00-E0-B8-76-19-6E	G	91%	2	None	Unknown	Infrastruc

Connected <--> 202   Rescan   Add to Profile

Items	Information
SSID	Name of the network.
BSSID	AP MAC address or random numbers generated for IBSS.
Phy Type	Phy Type of the network.
Signal	Signal strength of the network.
Channel	The channel in use.
Encryption	Encryption algorithm. The supported algorithms are WEP, TKIP, AES, and Not Use.
Authentication	Authentication mode. The supported modes are Unknown, WPA-PSK, WPA2-PSK, WPA and WPA2.
Network Type	Infrastructure or Ad-Hoc.
Rescan	Click the rescan button to perform re-scanning.
Add to profile	Select a network then push the Add to Profile button to bring up the profile-setting to add a wireless network profile.

Statistics

This page provides the statistics about the connection of this adapter.
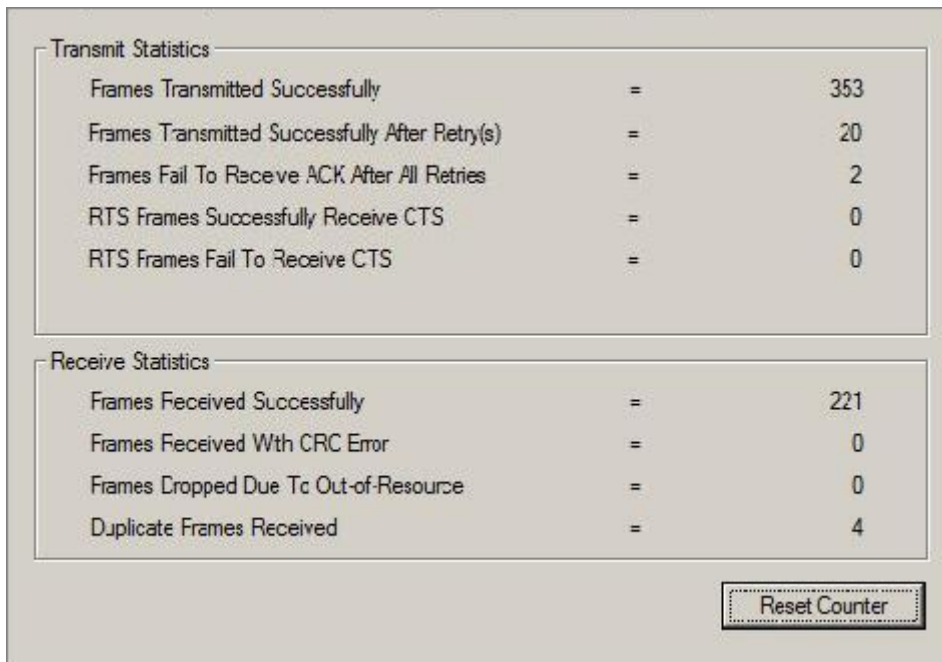
Items	Information
Frames Transmitted Successfully	Frames sent successfully.
Frames Transmitted Successfully After Retry	Frames sent successfully with retry.
Frames Fail To Receive ACK After All Retries	Frames transmitted failed after hitting the retrying limit.
RTS Frames Successfully Receive CTS	CTS frames received successfully after sending RTS frames.
RTS Frames Fail To Receive CTS	The missing CTS frames after sending RTS frames.
Frames Received Successfully	Frames received successfully.
Frames Received With CRC Error	Frames received with CRC error.
Frames Dropped Due To Out-of-Resource	Frames dropped due to insufficient resource.
Duplicate Frames Received	Duplicate frames received.

WPS Configuration

This page provides users to connect this adapter to a WPS (Wi-Fi Protected Setup) AP. Those available WPS supported AP are listed on the upper column. Select the AP that you want to connect to and click the **Connect** button to activate.

WPS Associate IE:
If the "WPS Associate IE" option is checked, station sends a association request with WPS IE during WPS setup.

WPS Probe IE:
If the "WPS Probe IE" option is checked, station probes a request with WPS IE during WPS setup.

Re-scanning:
Click the **Rescan** button to perform the re-scanning.

WPS AP Information:
Click the **WPS information** button to bring up the WPS capable AP information dialog window. The window shows the information including:

Authentication Type:
There are three types of supported authentication modes including Open, Shared, WPA-PSK and WPA modes.

Encryption Type:
For Open and Shared authentication modes, the available encryption types are None and WEP. For WPA, WPA2, WPA-PSK and WPA2-PSK authentication modes, the available encryption types are TKIP and AES.

Config Methods:
This attribute contains the config methods supported and enabled by the selected Registrar.

Device Password ID:
Device Password ID indicates the method or identifies the specific password that the selected Registrar intends to use.

Selected Registrar:
Selected Registrar indicates if the user has recently activated a Registrar to add an Enrollee.

State:
This attribute is used to indicate the current configuration state. This attribute is either "Un-configured" or "Configured".

Version:
This attribute is the specified WPS version.

AP Setup Locked:
AP Setup Locked indicates if AP has entered a setup locked state.

UUID-E:
UUID-E is universally unique identifier (UUID) generated by the Enrollee.

RF Bands:
RF Bands indicate the available RF bands.

Configure WPS profiles:
The user can configure WPS profiles with either PIN method or PBC method.

PIN Method:
Step 1: The Registrar enters the pin code generated by station.
Step 2: Push the **PIN** button.

PBC Method:
Push the **PBC** button within 2 second while the Registrar pushes the button.

Manage WPS profiles:
The received WPS profiles are listed in the lower frame, and the listed WPS profile attributes are SSID, MAC address, authentication type, and encryption type.

WPS profile detail information:
Selecting a profile then pushing the "Detail" button brings up the WPS profile.

This profile shows information including:

Connect with WPS profile:
Clicking the **Connect** button will connect to AP with the selected WPS profile.

Rotate WPS profiles:
If there are more than two WPS profiles, clicking the **Rotate** button will rotate to next profile and connect to AP with this profile. If the connection can't be established successfully, station will perform the WPS profile rotation repeatedly.

Disconnect from WPS AP:
Click the **Disconnect** button to stop the WPS connection.

Delete WPS profile:
Click the **Delete** button to delete the selected WPS profile.

SSID: AP name of user type. User also can select [Use Mac Address] to display it.

1. **Wireless Mode:** Select wireless mode. 802.11 B/G mix, 802.11B only, 802.11A only, 802.11G only, 802.11 B/G/N mix and 802.11 A/N mix mode are supported. When wireless card is 802.11N, system default is 802.11 B/G/N mix; Otherwise system default is 802.11 B/G mix (802.11 B/G/N mix selection item only exists for B/G/N adapter).

2. **Wireless Protection:** Auto, on, and off. System default is auto.

    a. Auto: STA will dynamically change as AP announcement.

    b. On: Always send frame with protection.

    c. Off: Always send frame without protection.

3. **Beacon (ms):** The time between two beacons. System default is 100 ms.

4. **TX Power:** Manually force the AP transmits power. System default is 100%.

5. **TX Rate:** Manually force the Transmit using selected rate. Default is auto.

6. **Idle Time:** Manually force the Idle Time using selected value. Default is 300.

7. **Channel:** Manually force the AP using the channel. System default is channel 1.

8. **Use Mac Address:** Use MAC address of used wireless card to be AP name. System default is APX (X is last number of Mac Address).

9. **Security Setting:** Authentication mode and encryption algorithm used within the AP. System default is no authentication and encryption.

10. **No forwarding among wireless clients:** No beacon among wireless client, clients can share information each other. System default is no forwarding.

11. **Hide SSID:** Prevent this AP from recognized in wireless network. This is disabled as default.

12. **Allow BW40 MHz:** Allow BW40 MHz capability.

13. **Default:** Use system default value.

14. **Apply:** Apply the above changes.

Security Setting

This page pops up after clicking the **Security Settings** button. Please follow the instructions below:

Items	Information
1. Authentication Type	Select to be open or WPA-PSK system.
2. Encryption Type	Select an encryption type from the drop list.
3. WPA Pre-shared Key	A shared string between AP and STA. For WPA-PSK authentication mode, this field must be filled with character longer than 8 and less than 32 length.
4. Group Rekey Interval	Only valid when using WPA-PSK encryption algorithm. The key will change compliance with seconds or beacon that user set.
5. WEP Key	Only valid when using WEP encryption algorithm. The key must match the key on AP. There are several formats to enter the keys. a. Hexadecimal (40bits): 10 Hex characters. b. Hexadecimal (128bits): 32Hex characters. c. ASCII (40bits): 5 ASCII characters. d. ASCII (128bits): 13 ASCII characters.

Access Control

This function filters users to use this device by designating MAC address. Please refer to the following chart for introduction.

Items	Information
1. Access Policy	Choose a method to process access control from the drop list to determine the MAC addresses that you designated are allowed to access the AP or not.
2. MAC Address	Add allowed (or denied) MAC addresses to the MAC address list.
3. Access List	Display all Mac Addresses that you designated.
4. Delete	Delete Mac addresses that you selected.
5. Remove All	Remove all Mac address in [Access List].
6. Apply	Apply changes.

MAC Table

This page displays the station detail information of current connection.

Items	Information
MAC Address	The station MAC address of current connection.
AID	Raise value by current connection.
Power Saving Mode	Check if the connected station supports power saving.

Event Log

Record Soft AP all event time and message.

Items	Information
Event Time (yy/mm/dd-hh:mm:ss)	Record event time.
Message	All event messages.

Statistics

Statistics page displays the detail counter information based on 802.11 MIB counters.

1. Transmit Statistics

Items	Information
Frames Transmitted Successfully	Frames that successfully sent.
Frames Fail To Receive ACK After All Retries	Frames that failed to transmit after hitting retry limit.
RTS Frames Successfully Receive CTS	Counts of CTS that successfully received after sending RTS frame.
RTS Frames Fail To Receive CTS	Counts of CTS that fail to be received after sending RTS frame.
Frames Retransmitted Successfully	Successfully retransmitted frames numbers.

2.Recieve Statistics

Items	Information
Frames Received Successfully	Frames received successfully.
Frames Received With CRC Error	Frames received with CRC error.
Frames Dropped Due To Out-of-Resource	Frames dropped due to resource issue.
Duplicate Frames Received	Duplicate received frames.

3. Reset Counters: Reset counters to zero.

Product Specification

Standard

IEEE 802.11n draft 2.0, IEEE 802.11b, IEEE 802.11g

Interface

USB rev1.1/2.0

Antenna

Antenna gain: 2 dBi

Antenna type: Printing Anttena

LED indication

Link/Act (Green)

Security

64/128-bit WEP, WPA, WPA2

Receiver Sensitivity

802.11b-88dBm, 802.11g-85dBm, 802.11n -65dBm

Channel

USA 11, Taiwan 11 , Europe 13

Transmit Power

802.11b :14.13mW
802.11g :13.80mW
802.11n 20MHz: 14.00mW
802.11n 40MHz: 13.37mW

Transfer rate

02.11b: 11/ 5.5/ 2/ 1Mbps

802.11g: 54/ 48/ 36/ 24/ 18/ 12/ 9/ 6Mbps

Draft 802.11n (20MHz): 144.4/130.0/115.5/86.6/ 72.2/65.0/57.8/43.3/28.9/21.7/14.4/7.2Mbps

Draft 802.11n (40MHz): 300/ 270/ 240/ 180/150/135/120/90/60/45/30/15Mbps

Range Coverage

Indoor 35~100 meters
Outdoor 100~300 meters

Operating Temperature

-10~70C

Operating Humidity

10% ~ 90% (non-condensing)

Emission

FCC Class B, CE
FCC Part 15.247 for US (2.412~2.462 MHz)
ETS 300 328 for Europe (2.400~2483.5 MHz)
NCC LP0002 for Taiwan (2.412~2.462MHz)