# IEEE 802.11a/b/g/n Wireless Series

# Long-Range USB Adapter



# **User Manual**

Version: 2.0 Date: January 13, 2009

# **FCC Certifications**

#### **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.

#### **IMPORTANT NOTE:**

#### FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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

# **CE Mark Warning**

# €€

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 Class B for ITE, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

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# Overview

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

# **Unpacking Information**

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

- 1. IEEE 802.11a/b/g/n Wireless USB Adapter.
- 2. One Utility/ Manual CD.

## Introduction to the IEEE 802.11a/b/g/n Wireless USB Adapter

The IEEE 802.11a/b/g/n Wireless USB adapter provides users to launch IEEE 802.11a/b/g/n wireless network at 150 Mbps in the 2.4GHz/5.8GHz band, which is also compatible with IEEE 802.11a/b/g wireless devices at 11/54 Mbps. You can configure this adapter with ad-hoc mode to connect to other 2.4GHz/5.8GHz 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.



#### **Application Diagram**

# **Key Features**

- Complies with IEEE 802.11a/b/g/n/b/g wireless standards
- 2.4GHz/5.8GHz frequency band, MIMO 1T2R
- Complies with USB 2.0
- High speed transfer data rate up to 150 Mbps
- Supports auto-installation

- Supports wireless data encryption with 64/128-bit WEP, WPA, WPA2, TKIP, AES
- Supports QoS: WMM, WMM-PS
- Supports multiple BSSID
- Supports driver for Windows 2000, XP 32/64, Vista 32/64, Linux (2.4.x/2.6.x), and Mac (10.4.x/10.5.x) Power PC & PC

# **Installation Guide**

## **Software Installation**

#### Note:

- For Linux or Mac driver installation guide, please refer to the instruction in <u>/Driver/Linux/README</u> or <u>/Driver/Mac/README</u> 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. 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 install the driver and wireless utility; or install the driver only.

802.11n Wireless LAN - Ins	stallShield Wizard	
Setup Type Select the setup type that best	t suits your needs.	
	Choose to install Install driver and 802.11n WLAN Utility Install driver only	
InstallShield	< <u>B</u> ack <u>N</u> ext > Canc	el

4. 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.

802.11n Wireless LAN - Ins	stallShield Wizard	
Setup Type Select the setup type that best	t suits your needs.	
	Select Configuration Tool.	
	<ul> <li>802.11n Configuration Tool</li> <li>Microsoft Zero Configuration Tool</li> </ul>	
InstallShield	< Back Next >	Cancel

5. Click the **Install** button to start installing.

802.11n Wireless LAN - Insta	allShield Wizard	×
Ready to Install the Program The wizard is ready to begin inst	allation.	
	Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit t wizard.	he
<b>Install</b> Shield	< Back Install Cancel	

6. Click the **Finish** button to complete installation.

802.11n Wireless LAN - Insta	IIShield Wizard
	InstallShield Wizard Complete
	The InstallShield Wizard has successfully installed 802.11n Wireless LAN. Click Finish to exit the wizard.
InstallShield	<back cancel<="" finish="" td=""></back>

# **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.

Launch Config Utilities	
Use Zero Configuration as Co	nfiguration utility
Switch to AP Mode	5.991 - 1.0
Exit	

#### 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 802.11a/b/g/n 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 and with no security setting. Right click on the  $\blacksquare$  icon in the system ray 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.

Profile	Lee Network	ر Advanced	Statistics	www.	() WPS	Radio on/off	About
Sorted by >>	SSID	<b>@</b> c	hannel	) Signal List >>		Show dBm	
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Wireless 11n Router		106	<b>BGB</b>	52%			
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## Introduction to the 802.11a/b/g/n Wireless LAN Utility

**Note:** The Utility in Linux and Mac are different from the following.

#### Interfaces

This Utility is basically consisted of three parts:

Profile Hermite   Network Advanced   Sorted by >>   Sorted by >>   Sorted by >>   Sorted by >>   MIS-6F-AP   Wireless_11n_Router   Wireless_11n_Router   Status >>   Wireless_11n_Router   Status >>   Wireless_11n_Router   Extra Info >>   Link Sub [TxPower:100x]   Channel >>   Status >>   Wireless_10   Status >>   Wireless_10   Noise Strength >>   Status >>   Mif-derss >>   0.0.0   Sub Mask >>   0.0.0			-01		1000 110			
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Sub Mask >>         0.0.0.0         Throughput >>         5,536           Default Gateway >>         HT         Receive         Kbps           HT         Link Speed >> 90.0 Mbps         Max           BW >>n/a         SNR0 >> n/a         HT	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >>	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure	Router lower:100%] lz; central char	nnel : 8	Transmit —	Link ( Signal Si Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26% Max	
Default Gateway >>     Kbps	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >>	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0	Router rower: 100%) iz; central char	nnel : 8	Transmit — Link Speed >	Link ( Signal Si Noise S > 1.0 Mbps	Quality >> 90% trength 1 >> 57% Strength >> 26%	
HT HT Keceive HT Keceive HT Keceive HT Keceive HT Keceive Kece	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >>	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0	Router rower: 100%) Iz; central char	nnel : 8	Transmit — Link Speed > Throughput >	Link ( Signal Si Noise S > 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26%	
BW >>n/a SNRO >> n/a SNRO >> n/a	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0	Router rower: 100%) iz; central char	nnel : 8	Transmit — Link Speed > Throughput >	Link ( Signal Si Noise S > 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5.536 Kbps	
BW >>n/a SNRO >> n/a	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0	Router rower: 100%) Iz; central char	nnel : 8	Transmit — Link Speed > Throughput > Receive —	Link ( Signal Si Noise S > 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% strength >> 26% Max 5.536 Kbps	
	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0	Router rower: 100%) Iz; central char	nnel : 8	Transmit — Link Speed > Throughput > Receive — Link Speed >	Link ( Signal Si Noise S > 1.0 Mbps >> 0.000 Kbps >> 90.0 Mbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5.536 Kbps Max	
Throughput >>41.160 Kbps 49.296	Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >> BW >>n/a	Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0 HT	Router hower:100%] iz; central char	nnel : 8	Transmit — Link Speed > Throughput > Receive — Link Speed >	Link ( Signal Si Noise S > 1.0 Mbps > 0.000 Kbps >> 90.0 Mbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5.536 Kbps Max	

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

**Note:** Click **Y** to enable/disable wireless connection status.

- **2. Configuration Column:** Center of the Utility window. Make your changes for each function in this part.
- **3. Link Status Information:** bottom of the utility window. Shows the connection status and system information.

#### Link Status Information

Status >>	Wireless_11n_Router	Link Quality >> 84%
Extra Info >>	Link is Up [TxPower: 100%]	gnal Strength 1 >> 34%
Channel >>	6 <> 2437 MHz; central channel : 8	Noise Strength >> 26%
Authentication >>	Open	
Encryption >>	NONE	
Network Type >>	Infrastructure	Transmit
IP Address >>	192, 168, 1, 150	Link Speed >> 1.0 Mbps
Sub Mask >>	255.255.255.0	Throughout >> 0.768 Kbps
Default Gateway >>	192,168,1,1	Kbps
	HT	Receive Max
DW LLE (S		Link Speed >> 54.0 Mbps
DW >>11/a	210KD >> U/9	Throughput >>24 996 Kbps 27,252

#### A. Network Information:

Items	Information
Status	Show the connecting status. Also shows the SSID while connecting to a
Status	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.

**B. HT:** Display current HT status in use, containing BW, GI, MCS, SNR0, and SNR1 value.

#### C. Link Quality and Strength Bar:

Item	S			Info	ormation			
Link Qu	ality	Display con error rate.	nnection qu	ality based	d on signa	l strength and	TX/RX p	acket
Signal Stre	ength 1	Receive sig	gnal streng	th 1.				
Noise Str	ength	Display no	ise signal s	trength.				
User can choos dBm checkbox.	e to display	Signal and	l Noise Stre	ngth as pe	ercentage	or dBm forma	it by ma	rk the
Profile	Lee Network	Advanced	Statistics	Gos WMM	<b>Ø</b> WPS	Radio on/off	About	
Sorted by >>	🙆 SSID	🥥 Cha	nnel 🥥	Signal		Show dBm		

#### **D. Statistics:**

Items	Information
Link Speed	Show current transmit rate and receive rate.
Throughput	Display transmit and receive throughput in Mbps.

#### 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.



- **A. Profile List:** The list shows all the profiles you have added before.
- **B. Buttons:** You can click on these buttons to add a new profile, edit, delete or activate an old profile.

**Note:** For Vista user, there are extra **Import** and **Export** buttons in this feature. Click on these buttons to import or export the selected profile.

**C. Profile Information:** While you select a profile in the profile list, you can see the profile information shows on here.

Items	Information				
Profile Name	The name of the selected profile.				
SSID	The SSID of the wireless system.				
Network Type	Shows Infrastructure / Ad-hoc to indicate the network type of the selected profile.				
Authentication	Shows the authentication mode in use. There are total 8 modes: Open, Shared, LEAP, WPA, WPA-PSK, WPA2, WPA2-PSK and WPA-NONE.				
Encryption	Shows the encryption mode in use. There are total 4 modes: None WEP, TKIP and AES.				
Use 802.1x	Shows Yes/No to indicate whether the selected profile use the 802.1 feature or not.				
Tx Power	Shows the transmit power in use. There are total 7 types: Auto, 100 75%, 50%, 25%, 10% and Low.				
<b>Channel</b> Shows the channel in use (1~14) for Ad-Hoc mode.					
Power Save Mode	de Shows the power save mode in use. Two selections: CAM (Constantly Awake Mode) and PSM (Power Saving Mode).				
RTS Threshold	Shows the RTS threshold value in use.				
Fragment Threshold	Shows the fragment threshold in use.				

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.

Profile Name >> PROF1		Network Type >>	Infrastructure	•
SSID >>		. Tx Power >>	Auto	•
		Preamble >>	Auto	*
Power Save Mode >> 🛛 🚫 CAM	PSM			
Power Save Mode >> 🔘 CAM	Ø PSM	<b></b>	2347	

2. There are three tabs on the window:



Settings for: Profile Name, SSID, Network Type, Tx Power, Preamble, Power Save Mode, RTS Threshold, and Fragment Threshold.

Settings for: Authentication, Encryption, Preshared Key, and WEP Key.

Settings for: EAP Method, Tunnel Authentication, and Session Resumption. For different EAP Method, you also have to configure different require of ID/Password, Client Certificate, or Server Certificate.

Please follow the steps below to fill in the information gradually.

ystem Config Auth. \ Encr	<b>y.</b> 802,1x			
Profile Name >> PROF1		Network Type >>	Infrastructure	•
		Tx Power >>	Auto	•
SSID >>	<u> </u>			
SSID >> Power Save Mode >>		Preamble >>	Auto	•
SSID >> Power Save Mode >> OCA	.м 🥏 РЅМ	Preamble >>	Auto	•

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.				
<b>Network Type</b> There are two types, infrastructure and 802.11 Ad-hoc modes Ad-hoc mode, you could also choose the preamble type; the a preamble type includes auto and long. In addition to that, the field will be available for setup in Ad-hoc mode.					
Tx Power	Transmit power, the amount of power used by a radio transceiver to send the signal out.				
PreambleTwo selections: Auto, and Long Preamble. This can only be Ad -hoc mode.					
Channel	Channel in use for Ad-Hoc mode.				
Power Save Mode	<b>Je</b> Choose from CAM (Constantly Awake Mode) or PSM (Power S Mode).				
<b>RTS Threshold</b>	For adjusting the RTS threshold number by sliding the bar or key in the value directly. The default value is 2347.				
<b>Fragment Threshold</b> Adjust the Fragment threshold number by sliding the bar or ke value directly. The default value is 2346.					

System Config

## 4. In Auth. \Encry.

#### section, select an encryption type and fill in the corresponding wireless

#### network information:

Authentication >>	Open	•	Encryption >>	WEP	•	Use 802.1X
Preshared Key >>		Γ				
Wep Кеу						
🚫 Key#1	Hex	• [				
<b>@</b> Key#2	Hex	• [				
🙆 Key#3	Hex	• [				
Key#4	Hex	<b>•</b> [				-

Information
For Windows 2000 User There are 7 types supported: Open, Shared, LEAP, WPA, WPA-PSK, WPA2, WPA2-PSK, and WPA-NONE <sup>1</sup> . Please select a type from the drop down list. For Vista User There are 7 types supported: Open, Shared, WPA, WPA-PSK, WPA2, WPA2-PSK, and CCKM. Please select a type from the drop down list.
For Windows 2000 User         There are 4 types supported: None, WEP, TKIP and AES.         The available encryption selection will differ from the authentication type you have chosen, the result is shown below: <b>Authentication Available Encryption Selection</b> Open NONE, WEP         Shared WEP         LEAP (no selection)         WPA/WPA2/WPA-PSK       TKIP, AES         WPA2-PSK/WPA-NONE       TKIP, AES         For Vista User         There are 6 types supported: None, WEP, TKIP, AES, TKIP (MFP) and AES (MFP).         The available encryption selection will differ from the authentication type you have chosen, the result is shown below:         Authentication Available Encryption Selection         Open NONE, WEP       Shared WEP         WPA/WPA-PSK/ WPA2-PSK       TKIP, AES         WPA/ WPA-PSK/ WPA2-PSK         WPA/ WPA-PSK/ WPA2-PSK         WPA2 TKIP, AES         WPA2       TKIP, AES         WPA2 WPA2-PSK / WPA2-PSK

 $<sup>^1\,</sup>$  WPA-NONE is only available in Ad-hoc mode.

	This checkbox a	appears while the	environment is set	to an Open authe	ntication
Use 802.1x	with WEP encry	ption. Mark the ch	eckbox to make the	802,1x	section
	available. The authentication 1	802.1x	section is also ava	ailable in WPA an	nd WPA2
Preshared Key	This is the shar WPA-NONE auth than 8 and less invalid values.	red secret betwee hentication mode, than 32 lengths.	en AP and STA. For this field must be fil The following dialog	WPA-PSK, WPA2- lled with character appears if you ha	PSK and rs longer ive input
	Invalid WPA Pre-Sha	ared key, WPA-PSK used	field should use 8-63 ASCII (	characters or 64 Hex ch	haracters.
WEP Key	Only available v key. Select Hex if you have inpu Invalid WEP Key 1 le	when using WEP e <sup>1</sup> or ASCII <sup>2</sup> to set ut invalid values. angth. WEP Key should b	ncryption algorithm. up the key value. Th e 10 or 26 hex digits e 5 or 13 ascii characters	The key must ma le following dialog	atch AP's appears

 <sup>&</sup>lt;sup>1</sup> Hexadecimal digits consist of the numbers 0-9 and the letters A-F.
 <sup>2</sup> ASCII (American Standard Code for Information Interchange) is a code for representing English letters as numbers from 0-127.

 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.

A	B	Ç
System Config Auth. \ Encry.	802.1x	
EAP Method >> PEAP	Tunnel Authentication >>	EAP-MSCHAP v2    EAP-MSCHAP v2
ID \ PASSWORD Clien	t Certificate Server (	Certificate
Authentication ID / Password		
Identity >>	Password >>	Domain Name >>
Tunnel ID / Password		
Tunnel ID >>	Tunnel Password >>	
	ок	Cancel

#### A. EAP Method:

**For Windows 2000 User:** There are total 5 modes: PEAP, TLS/Smart Card, TTLS, EAP-FAST, and MD5-Challenge.

For Vista User: There are total 4 modes: PEAP, TLS/Smart Card, EAP-FAST, and LEAP.

Please select an EAP method from the drop down list.

Items	Information
ΡΕΑΡ	Protect Extensible Authentication Protocol. PEAP transport securely authenticates data by using tunneling between PEAP clients and an authentication server. PEAP can authenticate wireless LAN clients using only server-side certificates, thus simplifying the implementation and administration of a secure wireless LAN.
TLS/Smart Card	Transport Layer Security. Provides for certificate-based and mutual authentication of the client and the network. It relies on client-side and server-side certificates to perform authentication and can be used to dynamically generate user-based and session-based WEP keys to secure subsequent communications between the WLAN client and the access point.
TTLS	Tunneled Transport Layer Security. This security method provides for certificate-based, mutual authentication of the client and network through an encrypted channel. Unlike EAP-TLS, EAP-TTLS requires only server-side certificates.
EAP-FAST	Flexible Authentication via Secure Tunneling. It was developed by Cisco. Instead of using a certificate, mutual authentication is achieved by means of a PAC (Protected Access Credential) which can be managed dynamically by the authentication server. The PAC can be supplied (distributed one time) to the client either manually or automatically. Manually, it is delivered to the client via disk or a secured network distribution method. Automatically, it is supplied as an in-band, over the air, distribution. For tunnel authentication, only support "Generic Token Card" authentication.
MD5- Challenge	Message Digest Challenge. Challenge is an EAP authentication type that provides base-level EAP support. It provides for only one-way authentication - there is no mutual authentication of wireless client and the network.
LEAP	Light Extensible Authentication Protocol is an EAP authentication type used primarily by Cisco Aironet WLANs. It encrypts data transmissions using dynamically generated WEP keys, and supports mutual authentication.

**B. Tunnel Authentication:** The tunnel authentication will differ from the EAP method you have chosen, the result is shown below:

For Windows 2000 User:

EAP Method	Tunnel Authentication
PEAP	EAP-MSCHAP v2 , EAP-TLS/Smart Card, Generic Token Card
TLS/Smart Card	(no selection)
TTLS	CHP, MS-CHAP, MS-CHAP-V2, PAP, EAP-MD5
EAP-FAST	Generic Token Card
MD5-Challenge	(no selection)

#### For Vista User:

EAP Method	Tunnel Authentication
PEAP	EAP-MSCHAP v2 , EAP-TLS/Smart Card, Generic Token Card
TLS/Smart Card	(no selection)
EAP-FAST	(no selection)
LEAP	(no selection)

**C. Session Resumption:** Mark to enable this function or unmark it to disable.

After doing the above settings, please click on the tabs below. There are several tabs on the window, please fill in the information gradually.

System Config Aut	h. \ Encry. 802.1x
EAP Method >> PE	AP  Tunnel Authentication >> EAP-MSCHAP v2  Session Resumption
ID \ PASSWORD	Client Certificate Server Certificate ← Click on these tabs
Authentication ID / P	assword
Identity >>	Password >> Domain Name >>
Tunnel ID / Password	
Tunnel ID >>	Tunnel Password >>
	OK Cancel
	Settings for: Authentication ID/Password Tunnel ID/Password and
ID \ PASSWORD	Password Mode <sup>1</sup> .
Client Certificate	Settings for using the Client Certificate function or not.
Server Certificate	Settings for using the Server Certificate function or not.
EAP-FAST	Setting for EAP-FAST method.
	Settings for Single Sign On. Note: This tab only appears in Vista
550	system.

<sup>&</sup>lt;sup>1</sup> Password mode is only available in EAP-FAST method.

#### ID \ PASSWORD

AP Method >> EAP-FAST	▼ Tunnel Authentication >> Generic Token Card ▼ Session Resumption
ID \ PASSWORD	EAP-FAST
Authentication ID / Password	I
Identity >>	Password >> Domain Name >>
Tunnel ID / Password	
Tunnel ID >>	Tunnel Password >>
Password Mode >> (	Soft Token O Static Password

Items	Information
Authentication ID / Password	The identity, password and domain name for server. Only
	"EAP-FAST" and "LEAP" authentication can be keyed in
	domain name. Blank space can be keyed in domain name.
Tunnel ID / Password	Identity and Password for server.
Password Mode	Select the power save mode.
	For Windows 2000 User
	There are two selections: Soft Token and Static Password.
	For Vista User
	There are four selections: Soft Token, Static Password,
	Windows Logon and Prompt User.

#### **Client Certificate**

EAP Method >> PEAP	<ul> <li>Tunnel Auther</li> </ul>	ntication >> EAP-MSCHAP v2	<ul> <li>Session Resumption</li> </ul>
ID \ PASSWORD	Client Certificate	Server Certificate	
🚺 Use Client ce	rtificate		•
	Issued To >>		
	Issued By >>		
	Expired On >>		
	Friendly Name >>		

Items	Information
Use Client certificate	Client certificate for server authentication.
Use my smart card	Client certificate for server authentication.

#### **Server Certificate**

EAP Method >>   PEAP   ▼	Tunnel Authentication >> EAP-M:	SCHAP v2 🔍 🔻	Session Resumption
ID \ PASSWORD Client (	Certificate Server Certifica	ate	
📶 Use certificate chain	- Any Trusted CA -		<b>•</b>
	🔲 Allow intermidiate certifi	icates	
	Server name >>		
	Construction Server name must match		
	🖉 Domain name must end in	specified name	

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.

#### **EAP Fast**

	EAP-FAST	<ul> <li>Tunnel Authentication &gt;&gt;</li> </ul>	Generic Token Card	Session Resumption
ID \ PASS\	VORD	EAP-FAST		
	<ul> <li>Allow unauth</li> </ul>	nenticated provision mode		
	Use protect	ed authentication credential	Remove	Import
	File Path >>			

Items	Information
Allow unauthenticated provision mode	During the PAC can be provisioned (distributed one time) to the client automatically. It only supported "Allow unauthenticated provision mode" and use "EAP-MSCHAP v2" authentication to authenticate now. It causes to continue with the establishment of the inner tunnel even though it is made with an unknown server. Mark to enable unauthenticated provision mode.
Use protected authentication credential	Use protected authentication credential: Using PAC, the certificate can be provided to the client manually via disk or a secured network distribution method. Mark to use protected authentication credential.

#### 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.

Station Model								
Profile	Left Network	ر Advanced	Statistics	WAWA	<b>Ø</b> WPS	Radio on/off	About	
Sorted by >>	SSID	<b>(</b> ) cr	hannel ( Ar	Signal		Show dBm	B	
MIS-6F-AP		101	B 9 fi 7	31%			_	
Wireless_11n_Router		106	Bgn	52%				
		1.00						
Rescan	Add to Profile	, ci	onnect	C				
Rescan	Add to Profile	. Ci	onnect	3				
Rescan	Add to Profile	e Ci	onnect	0				
Rescan	Add to Profile	e Ci	onnect	2				-
Rescan	Add to Profile	е С	onnect	3	Link			2
Rescan Status >>	Add to Profile Wireless_11n_	e Co Router	onnect	3	Link	Quality >> 90%		
Rescan Status >> Extra Info >>	Add to Profile Wireless_11n_ Link is Up [TxP	Router	onnect	•	Link Signal S	Quality >> 90% trength 1 >> 57%		
Rescan Status >> Extra Info >> Channel >>	Add to Profile Wireless_11n_ Link is Up [TxP	Router	onnect	•	Link Signal S Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26%		
Rescan Status >> Extra Info >> Channel >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH	Router Power: 100%] 12; central char	onnect	•	Link Signal S Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26%		
Rescan Status >> Extra Info >> Channel >> Authentication >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open	Router Power: 100%] Hz; central char	onnect		Link Signal S Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26%	_	
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE	Router Power: 100%] Hz; central char	onnect		Link Signal S Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26%	_	
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure	Router Power: 100%] 12; central char	onnect nnel : 8	C	Link Signal S Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26%		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0	Router Power: 100%] Hz; central char	onnect nnel : 8	Transmit — Link Speed :	Link : Signal S Noise S > 1.0 Mbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0	Router Power: 100%] 12; central char	onnect	Transmit — Link Speed :	Link Signal S Noise S	Quality >> 90% trength 1 >> 57% Strength >> 26%		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.00 0.0.00	Router Power: 100%] 12; central char	onnect	Transmit — Link Speed : Throughput	Link Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26%		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0	Router Power: 100%] Hz; central char	onnect	Transmit — Link Speed : Throughput	Link Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5. 536 Kbps		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Add to Profile Wireless_11n_ Link is Up [TXP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.00	Router Power: 100%) Hz; central char	onnect	Transmit — Link Speed : Throughput	Link Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5, 536 Kbps		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0	Router Power: 100%] Hz; central char	onnect	Transmit — Link Speed : Throughput Receive —	Link ( Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5,536 Kbps Max		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >>	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0	Router Power: 100%] Hz; central char	onnect	Transmit — Link Speed : Throughput Receive — Link Speed	Link ( Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps >> 90.0 Mbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5.536 Kbps Max		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >> BW >>n/a	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0 HT	Router Power: 100%] Hz; central char	onnect nnel : 8 /a	Transmit — Link Speed : Throughput Receive — Link Speed	Link Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps >> 90.0 Mbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5.536 Kbps Max		
Rescan Status >> Extra Info >> Channel >> Authentication >> Encryption >> Network Type >> IP Address >> Sub Mask >> Default Gateway >> BW >>n/a	Add to Profile Wireless_11n_ Link is Up [TxP 6 <> 2437 MH Open NONE Infrastructure 0.0.0.0 0.0.0.0 HT	Router Power: 100%] Hz; central char	onnect nnel : 8 /a	Transmit — Link Speed Throughput Receive — Link Speed Throughput	Link Signal S Noise S >> 1.0 Mbps >> 0.000 Kbps >> 90.0 Mbps >> 41.160 Kbps	Quality >> 90% trength 1 >> 57% Strength >> 26% Max 5.536 Kbps Max 49.296		

- **A. Sorted by:** Click each button to sort the listing networks by SSID, channel and Signal strength.
- B. Show dBm: Mark the checkbox to show the signal and noise strength in dBm, unmark to show in percentage.



**C. Buttons:** You can click on these buttons to add a new profile, edit, delete or activate an old profile.

Items	Information
Rescan	To rescan available wireless networks.
Connect	To connect to a designated network.
Add to Profile	To add a network to profile after selecting a network.

#### Advanced

This page provides advanced configurations to this adapter. Please refer to the following chart for definitions of each item.

Wireless mode >>	2.4G 💌	nab	ole CCX (Cisco Compatible eXtensions) Turn on CCKM	
Enable TX Burst     Enable TCP Windo     Fast Roaming at     Show Authenticat     Select Your	w Size -70 dBm ion Status Dialog Country Region Code		Enable Radio Measurements Non-Serving Channel Measurements limit 250 ms(0-2000)	
Apply	0: CH1-11	<b>_</b>		-

Items	Information
Wireless mode	Select wireless mode. 2.4G/5.8G is supported.
Enable TX Burst	Select to enable connecting to a TX Burst supported device.
Enable TCP Window Size	Mark the checkbox to enable TCP window size, which help
East Boaming at dBm	Mark the checkbox to enable fact reaming. Specify the
rast Roanning at ubin	transmit power for fast roaming.
Show Authentication Status	Mark the checkbox to show "Authentication Status Dialog"
Dialog	while connecting to an AP with authentication.
	Authentication Status Dialog displays the process about
	802.1 x authentications.
Select Your Country Region Code	Eight countries to choose. Channel list:
	1 ~ 11 channels (North America)
	1 ~ 13 channels (General Europe)
	1 ~ 14 channels (Japan)
	IEEE802.11a
	4 Channels (Japan)
	19 Channels (Europe)
	13 Channels (USA)
Enable CCX (Cisco Compatible	Select to enable CCX. This function can only be applied
extensions)	when connecting to a Cisco compatible device.
Turn on CCKM	Mark to enable CCKM.
Enable Radio Measurements	Mark to enable channel measurement every 0~2000 milliseconds.
Non-Serving Channel	Mark to revise the channel measurement.
Measurements limit	

**Note:** For Vista user, click on the CCX button to do more configuration. Please refer to <u>CCX</u> for more information.



#### **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.

ransmit Receive			
Frames Transmitted Successfully	=	120	
Frames Retransmitted Successfully	=	14	
Frames Fail To Receive ACK After All Retries	=	0	
RTS Frames Successfully Receive CTS	.Ħ	0	
RTS Frames Fail To Receive CTS	=	0	

Reset Counter

Items	Information
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.
<b>RTS Frames Fail To Receive CTS</b>	Failed to receive CTS after sending RTS.
Reset Counter	Reset counters to zero.

ransmit Receive			
Frames Received Successfully	=	11	
Frames Received With CRC Error	=	333	
Frames Dropped Due To Out-of-Resource	=	0	
Duplicate Frames Received	=	0	

Reset Counter

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.		
Reset Counter	Reset counters to zero.		

#### 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.

WMM Setup Status			
WMM >> Enabled	Power Save >> Enabled	Direct Link	>> Enabled
WMM Enable			
WMM - Power Sa	ve Enable		
AC_BK	AC_BE AC_VI	AC_VO	
🗖 Direct Link Setu			
MAC Address >>		out Value >> 🛛 🗛 sec	
			Apply
			Tear Down

Items	Information
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.
MAC Address	Fill in the blanks of Direct Link with MAC Address of STA.
Timeout Value	Time of automatically disconnect after some seconds. The value is integer. The integer must be between 0~65535. It represents that it always connects if the value is zero. Default value of Timeout Value is 60 seconds.
Apply / Tear Down	After fill in the "MAC Address" and "Timeout Value", click "Apply" button to save your configuration. The result will appear in the following "DLS Status" blanks. To remove the configuration, please select the configuration in the blanks and then click "Tear Down" button.

#### **Steps to enable Direct Link Setup function:**

- 1. Click the "Direct Link Setup Enable" checkbox.
- 2. Change to "Network" function. Add an AP that supports DLS features to the Profile.
- 3. Fill in the blanks of Direct Link with MAC Address of STA. The STA must conform to these two conditions:
  - Connect with an AP that supports DLS features.
  - Ensure that DLS is enabled
- 4. Fill in the Timeout Value and then click
- Apply
- 5. After configuring the DLS successfully, the MAC address and Timeout Value are displayed in the "DLS Status".

WMM >> Enabled	Power Save >> Disabled			Direct Link >> Enabled
WMM Enable				
WMM - Power Save Er	hable			
AC_BK	AC_BE	AC_VI	AC_VO	
Direct Link Setup End	able			
MAC Address >>	00 c0 ca 28 60 00	Timeout Value >:	> 600 sec	Apply
	00-C0-CA-28-60-00		600	Tear Down
			DLS Status	

6. If you want to disconnect Direct Link Setup, select the list in "DLS Status" and then click on the

Tear Down button.

January 13, 2009 / Version: 2.0

#### WPS

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.

ID : Wireless_11n_Router Information Pin Code
ID : Wireless_11n_Router Information
Pin Code ————————
26391502 Renew
2 WPS Profile List Config Mode
Enrollee
Detail
Connect.
13 PIN 15 WPS Associate IE 18 Progress >> 0% Rotate
14 PBC 16 WPS Probe IE Disconnect
17 Auto Export Profile
Delete

Iter	ns	Information
1.	WPS AP List	Display the information of surrounding APs with WPS IF from last scan
		result. List information includes SSID. BSSID. Channel. ID (Device
		Password ID), and Security-Enabled.
2.	WPS Profile	Display all of credentials got from the Registrar. List information includes
	List	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.
3.	Rescan	Click to rescan the wireless networks.
4.	Information	Display the information about WPS IE on the selected network. List
		information includes Authentication Type, Encryption Type, Config
		Methods, Device Password ID, Selected Registrar, State, Version, AP Setup
_	<u></u>	Locked, UUID-E and RF Bands.
5.	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. Click on the
_	Caudia Mada	Renew button to renew the PIN code.
6.	Config Mode	Enrollee or an external Registrar.
7.	Detail	Information about Security and Key in the credential.
8.	Connect	Command to connect to the selected network inside credentials.
9.	Rotate	Command to connect to the next network inside credentials.
10.	Disconnect	Stop WPS action and disconnect this active link. And then select the last
		prome at the Prome Page of Otility if exists. If there is an empty prome
1 1	Export Brofilo	Click the "Expert Profile" button will expert the WPS profile
12	Delete	Click the Export Prome button will export the wes prome.
12.	Delete	there is an empty credential, the driver will select any pon-security AP
13	DTN	Start to add to Registrar using PIN configuration method
14.	PBC	Start to add to AP using PBC configuration method
15.	WPS	Send the association request with WPS IF during WPS setup. It is optional
	associate IE	for STA.
16.	WPS probe IE	Send the probe request with WPS IE during WPS setup. It is optional for
		STA.
17.	Auto	Select the AP automatically.
18.	Progress Bar	Display rate of progress from Start to Connected status.
19.	Status Bar	Display currently WPS Status.

The following description divides into four parts:

- A. WPS Information on AP
- **B.** Example of Adding to Registrar Using PIN Method
- C. Example of Adding to Registrar Using PIN Method
- D. Example of Configuring a Network/AP Using PIN or PBC Method

A. WPS Information on AP: On Network AP list, double click on the AP then you can see the information appears below.

📕 Station Model							
Profile	LLL Network A	dvanced.	Statistics	www.	Ø WP:	) 💡 S Radio on/off	About
Sorted by >>	SSID	🙆 Ch	annel	) Signal		Show dBm	
MIS-6F-AP Wireless_11n_Rout	ter	じ1 じ6		42% 47% 47%			
Rescan	Add to Profile	Co	nnect				
General	WPS	(	CCX	802.11n	_		
	Authentication Type >	> Unknown			State >>	Configured	
	Encryption Type >	> None			Version >>	1.0	
	Config Methods >	> Unknown		AP Setu	p Locked >>		
	Device Password ID >	>			UUID-E >>	2880288028801880A8800	00854E2DB00
	Selected Registrar >	> Unknown			RF Bands >>	0x01 (2.4GHz)	
			Cla	92C			

Items	Information
Authentication Type	There are three authentication modes supported by this utility. They are
	open, Shared, WPA-PSK and WPA system.
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.
Config Methods	Correspond to the methods the AP supports as an Enrollee for adding
	external Registrars. (a bitwise OR of values)
<b>Device Password ID</b>	Indicates the method or identifies the specific password that the selected
	Registrar intends to use. APs in PBC mode must indicate 0x0004 within
	two-minute Walk Time.
Selected Registrar	Indicates if the user has recently activated a Registrar to add an Enrollee.
	The values are "TRUE" and "FALSE".
State	The current configuration state on AP. The values are "Unconfigured"
	and "Configured".
Version	WPS specified version.
AP Setup Locked	Indicates if the AP has entered a setup locked state.
UUID-E	The universally unique identifier (UUID) element generated by the
	Enrollee. This is a 16 byte value.
RF Bands	Indicates all the RF bands available on the AP. A dual-band AP must
	provide it. The values are "2.4GHz/5.8GHz" and "5GHz".

#### **B. Example of Adding to Registrar Using PIN Method**

The user obtains a device password (PIN Code) from the STA and enters the password into the Registrar. Both the Enrollee and the Registrar use PIN Config method for the configuration setup. Please follow the step below.

- 1. Select "Enrollee" from the Config Mode drop-down list.
- 2. Click "Rescan" to update available WPS APs.

		WPS AP List				
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1	<u>^</u> R	escan	
ID : Unknown	AP1-WPS	00-C0-CA-90-2E-27	1		rmation	
ID : Unknown	arvint-2860AP	00-C0-CA-28-60-60	3	P	in Code	
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	9 🔽 64893	1945 Renew	
		WPS Profile List		Contre	g Mode	
				Enroll	ee 🔽	
					oppost	
				in the second second	Jimeor	
				F	lotate	
				Dis	connect	
PIN	WPS Associate IE	Progress >> 0%		Expo	ort Profile	
PBC	WPS Probe IE	WPS status is disconnected			)elete	
	- Automatically select the	AP				

3. Select an AP (SSID/BSSID) that STA will join to.

ID : Unknown	AP1-WPS	00-C0-CA-90-2E-27		T	Rescan
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1		Information
ID : Unknown	arvint-2860AP	00-C0-CA-28-60-60	3		Pin Code
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	7 🗸	64893945 Renev
		WPS Profile List			Config Mode
					Enrollee 🔽
					Detail
					Connect
					Rotate
					Disconnect
<u>P</u> IN	WPS Associate IE	Progress >> 0%			Export Profile
PBC 🔽	WPS Probe IE	wPS status is disconnected			Delete
		1			
	Automatically select the	AP			

- 4. Click "PIN" to enter the PIN.
- 5. Enter the PIN Code of the STA into the Registrar when prompted by the Registrar.

ID : Unknown	AP1-WPS	00-C0-CA-90-2E-27	1	7 🐴	Rescan
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1		Information
ID : Unknown	arvint-2860AP	00-0C-43-28-60-60	3		Pin Code
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	9 🗸	64893945 Renev
		WPS Profile List			Config Mode
					Enrollee 🗸
					Detail
					Connect
					Rotate
					Disconnect
<u>P</u> IN	WPS Associate IE	Progress >> 5%			Export Profile
P <u>B</u> C	WPS Probe IE Start P	IN connection - AP1-WPS			Delete
Contract of the Contract of the Contract	·				

#### Note:

- Allow of an exchange between Step 4 and Step 5.
- If you use Microsoft Window Connection Now as an External Registrar, you must start PIN connection at STA first. After that, search out your WPS Device name and MAC address at Microsoft Registrar. Add a new device and enter PIN Code of STA at Microsoft Registrar when prompted.
- 6. The result should appear as the image below.

		WPS AP List			
ID : Unknown	AP1-WPS	00-C0-CA-90-2E-27	1	9 📤	Rescan
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1		Information
ID : Unknown	arvint-2860AP	00-C0-CA-28-60-60	3	• • •	Pin Code
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	9 🗸	64893945 Renew
		WPS Profile List			Config Mode
					Enrollee 🔽
					Detail
					Connect
					Rotate
					Disconnect
PIN	WPS Associate IE	Progress >> 60 <mark>%</mark>			Export Profile
P <u>B</u> C	WPS Probe IE	PIN - Sending M3			Delete
	Automatically select the	a AP			

7. Configure one or more credentials. Then connect successfully.

ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1	<u>^</u>	Rescan
ID : Unknown	arvint-2860AP	00-C0-CA-28-60-60	3	9 =	Information
ID : Unknown	WinceWps	00-C0-CA-E3-D7-8B	7		Pin Code
ID : Unknown	AP1-WPS	00-C0-CA-90-2E-27	1	9 🗸	64893945 Renew
		WPS Profile List			Config Mode
AP1-WPS		9			Enrollee 🗸 🗸
					Detail
					Connect
					Rotate
					Disconnect
<u>P</u> IN	WPS Associate IE	Progress >> 100%			Export Profile
P <u>B</u> C	WPS Probe IE	PIN - Get WPS profile successfully.			Delete
	Automatically select the	AP			

8. Click "Detail." You can see the figure below.

ssid >>	AP1-WPS		-
BSSID >>	, 00-C0-CA-28-60-04		
Authentication Type >>	WPA-PSK	Encryption Type	>> TKIP
Key Length >>	64	Key Index	>> Key#1
Key Material >>	*****	******	
	Show Password		
		OK Cancel	

#### C. Example of Adding to the Registrar Using the PBC Method

The PBC method requires the user to press a PBC button on both the Enrollee and the Registrar within a two-minute interval called the Walk Time. If there is only one Registrar in PBC mode, the PBC mode selected is obtained from ID 0x0004, and is found after a complete scan. The Enrollee can then immediately begin running the Registration Protocol.

If the Enrollee discovers more than one Registrar in PBC mode, it MUST abort its connection attempt at this scan and continue searching until the two-minute timeout.

**Note:** Before you press PBC on STA and candidate AP. Make sure all APs aren't PBC mode or APs using PBC mode have left their Walk Time. The user can configure WPS profiles with either PIN method or PBC method.

Please follow the steps below.

1. Select "Enrollee" from the Config Mode drop-down list.

		WPS AP List			
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1	^	Rescan
ID : Unknown	AP1-WPS	00-C0-CA-90-2E-27	1		Information
ID : Unknown	arvint-2860AP	00-C0-CA-28-60-60	3	• <b>-</b>	Pin Code
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	9 💌	64893945 Renew
		WPS Profile List			Config Mode
					Enrollee 🗸 🗸
				I	Detail
					Connect
					Rotate
					Disconnect
PIN	WPS Associate IE	Progress >> 0%			Export Profile
PBC	WPS Probe IE	WPS status is disconnected			Delete
	Automatically select the	AP			

- 2. Click PBC to start the PBC connection.
- 3. Push the PBC on AP.

Note: Allow time for an exchange between Step 2 and Step 3.

		WPS AP List			
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1	^	Rescan
ID : 0x0004	AP1-WPS	00-C0-CA-90-2E-27	1	9	Information
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	•	Pin Code
ID : Unknown	WinceWps	00-C0-CA-E3-D7-8B	7	9 💌	64893945 Renew
		WPS Profile List			Config Mode
					Enrollee 🔽
					Detail
					Connect
					Rotate
					Disconnect
<u>P</u> IN	WPS Associate IE	Progress >> 0%			Export Profile
PBC	WPS Probe IE	Start PBC connection			Delete
	Automatically select the	e AP			

4. The progress bar as shown in the figure below indicates that scanning progress.

		WPS AP List			
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1	^	Rescan
ID : Unknown	arvint-2860AP	00-C0-CA-28-60-60	3	9	Information Pin Code
ID : Unknown	default	00-C0-CA-4A-0A-6B	6	T	64893945 Renew
ID : Unknown	WinceWps	00-C0-CA-E3-D7-88	7	T 💌	Config Mode
		#15116186 Else			Eprollee
					Detail
					Connect
					Rotate
					Disconnect
PIN	WPS Associate IE	Progress >> 10%			Export Profile
					Delete
P <u>B</u> C	WPS Probe IE	PBC - Scanning AP			
1	Automatically select the	AP			-

5. When one AP is found, join it.

		WPS AP List				
ID : Unknown	AP1-WPS	00-C0-CA-90	D-2E-27 1	9	Rescan	
ID : Unknown	arvint-2860AP	00-C0-CA-2	8-60-60 3	9	Informati	on
ID : Unknown	link	00-C0-C4-0	5-0B-96 10		Pin Code	-
					64893945 R	enew
		WPS Profile List			Config Mode	
					Enrollee	*
					Detail	
					Connect	1
					Rotate	
					Disconne	ot
<u>P</u> IN	WPS Associate IE	Proş	gress >> 15%		Export Pro	file
PBC	WPS Probe IE	PBC - Begin associating to WPS A	Р		Delete	
Г	Automatically select the	e AP				

6. Check WPS Information on the available WPS APs.

General WPS CCX	
Authentication Type >> WPA-PSK	State >> Configured
Encryption Type >> TKIP	Version >> 1.0
Config Methods >> 0x0088	AP Setup Locked >> Unknown
Device Password ID >> 0x0004	UUID-E >> Unknown
Selected Registrar >> TRUE	RF Bands >> Unknown
	ОК

7. Configure and receive one or more credential(s). Then connect successfully. The result will be displayed as it is in the figure below.

	·	WPS AP List			
ID:0×0004	AP1-WPS	00-C0-CA-90-2E-27	1	9 🐴	Rescan
ID : Unknown	Ubicom_Sample	00-C0-CA-28-60-20	1		Information
ID : Unknown	default	00-C0-CA-4A-0A-6B	6		Pin Code
ID : Unknown	WinceWps	00-C0-CA-E3-D7-8B	7	9 💌	64893945 Renew
		WPS Profile List			Config Mode
AP1-WPS		<b>O</b>			Enrollee 🔽
					Detail
					Connect
					Rotate
					Disconnect
<u>P</u> IN	WPS Associate IE	Progress >> 100%			Export Profile
PBC	WPS Probe IE PBC - Ge	et WPS profile successfully.			Delete
	Automatically select the AP				-

#### D. Example of Configuring a Network/AP Using PIN or PBC Method

- WPS AP List e ID: ClaudeWpsAP 00-C0-CA-E3-D7-8B Rescan 1 e Information ID : Unknown AP1-WPS 00-C0-CA-90-2E-27 1 Pin Code 64893945 Rent WPS Profile List Config Mode Registrar f ExRegNW286004 Detail Connect Rotate Disconnect Export Profile 🔼 WPS Associate IE <u>PIN</u> Progress >> 0% WPS Probe IE P<u>B</u>C WPS status is disconnected Automatically select the AP
- 1. Select "Registrar" from the Config Mode drop-down list.

2. Enter the details of the credential and change configurations (SSID, Authentication, Encryption and Key) manually if needed.

SSID >>	ExRegNW286004		
BSSID >>	00-00-00-00-00		
Authentication Type >>	WPA2-PSK	Encryption Type >>	AES
Key Length >>	5	Key Index >>	1
Key Material >>	*****	*****	
	Show Password		
	ок	Cancel	

- 3. If the PIN configuration is setup, enter the PIN sent from the Enrollee.
- 4. Start PIN or PBC. The following procedures are as similar as section PIN Enrollee Setup or PBC Enrollee Setup.

5. If your AP Enrollee has been configured before the WPS process, the credential you set in advance will be updated to the AP itself. Otherwise, after a successful registration, the AP Enrollee will be re-configured with the new parameters, and the STA Registrar will connect to the AP Enrollee with these new parameters.

		W	PS AP List			
ID :	ClaudeWpsAP		00-C0-CA-E3-D7-8B	1	-	Rescan
ID :	arvint-2860-W	/PSAP	00-C0-CA-28-60-60	6		Information Pin Code 64893945 Renew
		WPS Profile List				Config Mode
ExRegNW286004			9			Registrar 🗸
-						Detail
						Connect
						Rotate
						Disconnect
<u>P</u> IN	WPS Associate IE		Progress >> 100%			Export Profile
PBC	WPS Probe IE	PIN - Get WPS	profile successfully.			
	Automatically select	the AP				

#### ССХ

This page is available for **Vista user only**. It provides CCX configurations to this adapter. Please refer to the following chart for definitions of each item.

Enable Radio Measurements	CAC >>	ADD IS(D	Precile PROF4		Set
Non-Serving Channel Measurements limit		Select	-file		Diagnose
250 ms(0-2000)	- Information of	selected pro			
NetworkEAP	PION	CLD >>	Windows 11a Doute		
Enable RF Roaming	Diagnosis		wireless_1111_Route	1	
_ Enable CAC(Tolerance)	Diagnosis	capable >>	NU		

Items	Information				
Enable CCX (Cisco Compatible	Select to enable CCX. This function can only be applied				
extensions)	when connecting to a Cisco compatible device.				
Turn on CCKM	Mark to enable CCKM.				
Enable Radio Measurements	Mark to enable channel measurement every 0~2000 milliseconds.				
Non-Serving Channel	Mark to revise the channel measurement.				
Measurements limit					
Network EAP	Enable the NetwrokEAP authentication algorithm.				
Enable RF Roaming	Enable RF roaming function				
Enable CAC (Tolerance)	Enable the call admission control				
CAC	There are four selections: ADDTS (Directly send TS), DELTS,				
	and RESET. Select an item from the drop down list and then				
	click on the Set button.				
Diagnosis	Select a profile which the user wants to diagnose, and then				
	click on the Diagnose button to perform the test.				

#### Radio On/Off

Click on the button to enable/disable wireless connection status.



## AP mode management guide for Windows 2000/XP/Vista

If you wish to share the Internet access with the wireless stations in your environment, you can configure this wireless adapter as a software access point (Soft AP). In this mode, this wireless adapter becomes the wireless access point that provides local area network and Internet access for your wireless stations.

To use this adapter as an access point, please right click the  $\blacksquare$  icon on system tray and select **Switch to AP mode**. Please refer to the following introduction and information about this AP-mode utility.



**Note:** In windows XP, it provides WPA support at hotfix Q815485. However; you have to make sure that hotfix Q815485 (require XP SP1 installed) has been installed in your system before you can start using WPA features. You can check the installation of hotfix in add/remove software page under control panel.

👪 Add or Re	move Programs		
-	Currently installed programs:	Show upgates Sort by: Name	
Change or Remove Programs	ISI Windows XP Hotfix - KB824146 ISI Windows XP Hotfix - KB825119 ISI Windows XP Hotfix - KB828035		
Add New Programs	<ul> <li>Windows XP Hotfix (SP2) Q328310</li> <li>Windows XP Hotfix (SP2) Q329170</li> <li>Windows XP Hotfix (SP2) Q329441</li> </ul>		
Add/Remove Windows Components	15 Windows XP Hottix (SP2) Q810565 15 Windows XP Hottix (SP2) Q810577 15 Windows XP Hottix (SP2) Q810833 15 Windows XP Hottix (SP2) Q811493	🛃 Windows XP Hotfix (SP2) Q815485	
Set Program Access and Defaults	Windows XP Hottix (SP2) Q814033           Windows XP Hottix (SP2) Q815021           Windows XP Hottix (SP2) Q815485           Windows XP Hottix (SP2) Q815485		
	39 Augoost VL Hours (213) (613638		

# Software Access Point (Soft AP) Application



#### Config

This page provides overall configuration to this adapter. Please find the following items for identification to each field.

Config Access C	ontrol   Mac Table   Event	t Log   Statistics   About
SSID	SoftAP-00	Channel 1 💌 7
Wireless Mode	2.4G	<li> <ul> <li></li></ul></li>
Country Region	n Code D: CH1-11	No forwarding among wireless clients Hide SSID ✓ Allow BW 40 MHz
Beacon (ms)		100
TX Power	100 %	•
Idle time(60 - 360	00)(s)	300
		13 14 15
		Default Cancel Apply

- **1. SSID:** AP name of user type. User also can select [Use Mac Address] to display it.
- **2.** Wireless Mode: Select wireless mode. 2.4G/5.8G is supported.

#### 3. Country Region Code: eight countries to choose. Country channel list:

	Classification	R	ang	je
0:	FCC (Canada)	CH1	~	CH11
1:	ETSI	CH1	~	CH13
2:	SPAIN	CH10	~	CH11
3:	FRANCE	CH10	~	CH13
4:	МКК	CH14	~	CH14
5:	MKKI (TELEC)	CH1	~	CH14
6:	ISRAEL	CH3	~	CH9
7:	ISRAEL	CH5	~	CH13

**Note:** Country Region code is not support for Vista.

- 4. Beacon (ms): The time between two beacons. System default is 100 ms.
- **5. TX Power:** Manually force the AP transmits power. System default is 100%.
- 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:** If there is no beacon among the wireless clients, they can't share information with each other.
- **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. Cancel: Cancel the above changes.
- **15. Apply**: Apply the above changes.

#### **Security Setting**

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

s	ecurity Setting		
0	Authentication Type	Open   Encryption Type   WEP	2
3	WPA Pre-shared-Key		
4	Group Rekey Interval	60 10 seconds	
	) (on Kou		
P	Wep Ney	Hev	
	V● Key#1		
	C Key#2	Hex	
	C Key#3	Hex	
	⊂ Key#4	Hex	
	* WEP 64 Bits E WEP 128 Bits E	ncryption: Please Keyin 10 HEX characters or 5 ASCII characters * ncryption: Please Keyin 26 HEX characters or 13 ASCII characters	
	[	OK Cancel	

- 1. Authentication Type: Select to be open, shared, WPA-PSK, WPA2-PSK, or WPA PSK/WPA2-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 lengths.
- **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.

Config Access Control Mac Table Event Log Statistics About
1 Access Policy Disable
2 MAC Address Access List
Add
4 Delete
5 Remove All
6 Apply

- **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.

MAC Address       AID       Power Saving Mode       Status         Image: Status       Image: Status       Image: Status       Image: Status       Image: Status     <	Со	onfig Access Control Mac Table Event Log Statistics About			
		MAC Address	AID	Power Saving Mode	Status
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Items	Information			
MAC Address	The station MAC address of current connection.			
AID	Raise value by current connection.			
Power Saving	Check if the connected station supports power			
Mode	saving.			
Status	The connection status.			

### Event Log

Record Soft AP all event time and message.

Config Access Control Mac Table Ev	vent Log Statistics About
Event Time (yy/mm/dd- hh:mm:ss)	Message
2007 / 11 / 22 - 14 : 34 : 32	Restart Access Point
2007 / 11 / 22 - 14 : 34 : 33	Restart Access Point
2007 / 11 / 22 - 14 : 35 : 14	Restart Access Point
	Clear
<b>T4</b>	To Course the second
Event Time (yy/mm/dd-hh	i:mm:ss) Record event time.
Message	All event messages.

#### Statistics

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

Config Access Control Mac Table Event Log Sta	tistics About	
Transmit Statistics		
Frames Transmitted Successfully	=	779
Frames Fail To Receive ACK After All Retries	=	13
RTS Frames Successfully Receive CTS	=	0
RTS Frames Fail To Receive CTS	=	0
Frames Transmitted Successfully After Retry	=	779
2 Receive Statistics		
Frames Received Successfully	=	22
Frames Received With CRC Error	= 1	5091
Frames Dropped Due To Out-of-Resource	=	0
Duplicate Frames Received	=	0
	3	RESET COUNTERS

#### **1. Transmit Statistics**

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

#### 2. Receive Statistics

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

3. Reset Counters: Reset counters to zero.