# NextG High Power USB WiFi Adapter

This manual walks though the steps of setting up the NextG High Power USB WiFi Adapter from quick start followed by detailed explanation of what each parameter does.

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# 2. Quick Start

#### 2.1 Installation and Device Connection

Install the CD-ROM software driver before you plug in the USB adapter to you PC or laptop computer. This avoids the USB adapter being recognized by another existing WiFi software driver which might not be fully compatible with the original software driver.

Before making any device and cable connection to the computer, you have to install the CD software driver and utility from fresh.

Insert the CD-ROM into the CD/ DVD drive of your computer.

As soon as the AutoPlay window appears, double click "SETUP.EXE" to install the software driver. If the AutoPlay window does not pop up, you could also go to the CD/DVD drive under "My Computer" and double click the SETUP icon.

Reboot your computer.

Once completed, you could plug in the USB adapter to any spare USB port of your computer using the USB2.0 cable supplied in the kit.

# 1. Scanning the WiFi Signal – A Quick Guide

## <u>1.1 RALINK WIRELESS UTILITY (RaUI) OR WINDOWS ZERO</u> <u>CONFIGURATION (WZC)</u>

As the title suggests, two types of wireless utilities are possible. The Windows Zero Configuration provides the basic wireless networking configuration whose user interface is consistent across various Windows Operating Systems from XP, VISTA to Windows 7; and the more sophisticated RaLink Wireless Utility with the WPA supplicant functionality.

As soon as Windows starts, you could find the RaUI icon at the lower right hand corner of the computer screen. Right-click RaUI allows you to toggle between RaUI and WZC.



RaUI can work in parallel with WZC. When WZC is active, RaUI provides only the monitoring function, such as showing the link stats, network status, statistic counters, advance feature status, WMM status and WPS status. It won't interfere with WZC's configuration or profile functions.

Launch Config Utilities	Launch Config Utilities
Use Zero Configuration as Configuration utility	Use RaConfig as Configuration utility
Exit	Fxit

#### 1.2 Working with WZC

Go to Section 1.3 if you want to use RaUI instead.

When WZC is activated, the RaUI screen becomes:

(i) The Profile button turns grey. The profile function is removed since the NIC (i.e. Network Interface Card) is now being controlled by WZC.

(ii) The Connect and Add Profile functions turn grey.

🛱 RaUI						
Profile	LLL Network	Advanced	Statistics	www.	<b>Ø</b> WPS	Radio On/
Sorted by >> (	SSID	🥝 Channe	l 🖉	) Signal		🔲 Show
Shiang 2860AP		<b>1</b> 1		81%		
 aaa		<b>Å</b> 3	Ba e	55%		
AlbertY-200		- - ₩26		76%		
AD		v> v⊳1		55%		
		بې لەر		1009		
API		وي. بلا		700%		
АРРА		60 to 10	D D U	/0%		
asus		<b>1</b> 1	<b>DQ</b>	81%		
Broadcom		<b>1</b> 1	P G	81%		
Buffalo 54		<b>1</b> 1	D g	76%		
Cobra		<b>6</b> 6	🛛 🔁 🕤 🕤	34%		
Rescan	Add to Profile	Connect				
Status >>	AP1 <> 00-03-7F-0	)0-D7-A4			Link Q	uality >> 100%
Extra Info >>	Link is Up [TxPower	r:100%]			Signal Str	ength 1 >> 100%
Channel >>	6 <> 2437000 MHz	2			Signal Str	ength 2 >> 100%
Authentication >>	Unknown				Signal Str	ength 3 >> 100%
Encryption >>	None				Noise St	trength >> 26%
ID Address >>				Transmit		May
Sub Mask >>	255.255.255.0			Link Speed >>	54.0 Mbps	max
Default Gateway >>	192.168.5.254			mroughput >>	. 0.000 wpb2	0.104
	HT			Deceive		MDps
BW >> n/a		SNR0 >> n/a		Link Speed >>	54.0 Mbps	Max
GI >> n/a	MCS >> n/a	SNR1 >> n/a		Throughput >>	0.098 Mbps	35.746 Mbps

#### 1.2.1 Configuration of NIC by using WZC

Before you connect to any wireless network, the status prompt pops up like this:



Right click the Network Connection icom in the task bar, and select "View Available Wireless Networks:



A new window pops up showing the list of AP available for connection.

( <sup>(†))</sup> Wireless Network Connect	ion	X
Network Tasks	Choose a wireless network	
🛃 Refresh network list	Click an item in the list below to connect to a <u>w</u> ireless network in range or to get more information.	
Set up a wireless network for a home or small office	((p)) RalinkInitialAP	^
Related Tasks	((စု)) <sup>AP1</sup>	
Learn about wireless networking	Unsecured wireless network	
Change the order of preferred networks	Contract of the security-enabled wireless network (WPA)	
Change advanced settings	((p)) 99 Unsecured wireless network	
	(( <b>o</b> )) APPA	
	Unsecured wireless network	
	Contract of the security-enabled wireless network	~
	⊆onnec	:t

You may either double click the AP or highlight it with the mouse pointer followed by clicking "Connect Anyway".

<sup>(9)</sup> Wireless Network Connect	tion	×
Network Tasks	Choose a wireless network	
😴 Refresh network list	Click an item in the list below to connect to a <u>w</u> ireless network in range or to get more information.	
Set up a wireless network for a home or small office	((p)) RalinkInitialAP Unsecured wireless network	
Related Tasks Wireless	Network Connection	Ň
Learn about wir networking     Change the ord     You     You	u are connecting to the unsecured network "AP1". Information sent er this network is not encrypted and might be visible to other people. ) this network,	
<ul> <li>preferred netw</li> <li>Change advance settings</li> </ul>	Cancel	
	Security-enabled wireless network (WPA)	0
	((p)) <sup>99</sup>	
	((p)) APPA	. ~
		ect

( <sup>a))</sup> Wireless Network Connect	ion	
Network Tasks	Choose a wireless network	
🛃 Refresh network list	Click an item in the list below to connect to a <u>w</u> ireless network in range o information.	r to get more
Set up a wireless network for a home or small office	((ရာ)) AP1	Connected 👷 🛆
	Unsecured wireless network	
Related Tasks	((Q)) <sup>242</sup>	
<li>Learn about wireless</li>	📕 😚 Security-enabled wireless network (WPA)	•00U
networking	((Q)) <sup>202</sup>	
Change the order of preferred networks	Unsecured wireless network	
🌮 Change advanced	((Q)) AP	
settings	🛛 🥂 Security-enabled wireless network (WPA)	
	((Q)) <sup>219</sup>	
	Becurity-enabled wireless network (WPA)	
	((Q)) Baron_PC_AP4	
	🖡 Security-enabled wireless network	e8000 🗸
		⊆onnect

If you want to update the AP attributes, click "Change Advanced Settings".

((†)) Wireless Network Connecti	on			
Network Tasks	Choose	e a wireless network		
💋 Refresh network list	Click an iter information	n in the list below to connect to a <u>w</u> ireless network in ran <u>;</u> ,	ge or to get more	
Set up a wireless network for a home or small office	((ဓူ))	((ရာ)) AP1 Connected 👷 📤		
	U	Unsecured wireless network	= <u>1000</u>	
Related Tasks	((ရ))	E Sequeity apphled wireless potwerk (WDA)		
Learn about wireless networking	((0))	202	6000	
Change the order of preferred networks		Unsecured wireless network		
Change advanced	((ဓ္))	AP	-0	
	U	😚 Security-enabled wireless network (WPA)	-88U	
	((Q))	219		
	((0))	6 Security-enabled wireless network (WPA) Baron_PC_AP4	6000	
	""	😚 Security-enabled wireless network	e8000 🧹	
	<u></u>			

Then choose the "Wireless Networks".

L Wireless Network Connection Prope	rties 🛛 ? 🔀
General Wireless Networks Advanced	
Use Windows to configure my wireless netw	ork settings
Available <u>n</u> etworks:	
To connect to, disconnect from, or find out m about wireless networks in range, click the bu	ore information utton below.
View Wi	ireless Networks
Preferred networks: Automatically connect to available networks in below:	n the order listed
Y APT (Automatic)	Move <u>up</u>
	Move <u>d</u> own
<u>A</u> dd <u>R</u> emove Properti Learn about <u>setting up wireless network</u> <u>configuration</u> .	es Ad <u>v</u> anced
Сок	Cancel

AP1 properties
Association Authentication Connection
Network <u>n</u> ame (SSID): AP1
Wireless network key
This network requires a key for the following:
Network Authentication:
Data encryption: Disabled
Network <u>k</u> ey:
Confirm network key:
Key inde <u>x</u> (advanced): 1
This is a computer-to-computer (ad hoc) network; wireless access points are not used
OK Cancel
(🖓 Wireless Network Connection is now connected 🗵



# 1.3 Working with RaUI

When RaUI is active, a small RaUI icon appears at the lower right hand corner of the screen.



Click on it to bring up the RaUI main window and you may see a list of AP picked up by the antenna. Each row contains the SSID, network type, channel used, wireless mode, security status and signal strength.

🛱 RaU	I						
	Profile	LLL Network	Advanced	Statistics	www.	<b>Ø</b> WPS	P Radio On/
Sorted	by >>	🥥 SSID	🖉 Chann	el (	Signal		Show
Shi	iang 2860AD		<b>ا</b> لم		.151 >>		
	Tallg_2000HP						
999			💞 3 . h. :	D U	T 55%		
Albe	ertY-200		6	р <mark>а</mark>	76%		
AP			<b>1</b>	Ъ <mark></mark>	9 55%		
AP1			<b>6</b> 6	<mark>ь д</mark>	100%		
APP	PA		<b>6</b>	6 <mark>9 n</mark>	70%		
asus	s		<b>1</b> 1	Вg	81%		
Bro	adcom		11	<b>Bq</b>	81%		
Buff	falo 54		<b>1</b> 1	ßă	76%		
Cob	ora		<b>\$</b> 6	b g	9 34%		
	Rescan	Add to Profile	Conne	ect			
	Status >>	AP1 <> 00-03-7F-0	00-D7-A4			Lini	< Quality >> 100%
	Extra Info >>	Link is Up [TxPowe	r:100%]			Signa	Strength 1 >> 60
	Channel >>	6 <> 2437000 MH;	z			Signal	Strength 2 >> 10
Auth	hentication >>	Unknown				Signa	l Streng <mark>th 3 &gt;&gt; 5</mark> 0
	Encryption >>	None				Nois	e Strength >> 26:
Net	twork Type >>	Infrastructure			Tran	ismit	
	IP Address >>	192.168.5.113				Link Speed >> 54.0	Mbps
	Sub Mask >>	255.255.255.0			1	hroughput >> 0.00	10 Mbps
Defau	ult Gateway >>	192.168.5.254					
		HT			Rece	eive	
BW	>> n/a		SNR0 >> n/a			Link Speed >> 54.0	) Mbps
GI	>> n/a	MCS >> n/a	SNR1 >> n/a		I	hroughput >> 0.01	4 Mbps

Simply highlight the AP and click "Connect". If the AP is encrypted, you shall then be asked to enter the password for authentication.

Once connected, a small blue arrow appears on the left of the AP.

How does the RaUI icon represent the various network statuses? Here are the clues:

- Connected and signal strength is Good.
- Connected and signal strength is Normal.
- X Not Connected.
- Wireless NIC not detected.
- B Connected but signal strength is Weak.

# 2. Advanced RaUI Features

Consists of:

PROFILE NETWORK ADVANCED STATISTICS WMM WPS RADIO ON/OFF

## 2.1 PROFILE

A place to save your favorite wireless networks for one-click connection.

Profile List		
	Profile Name >>	
	<pre>SSID &gt;&gt;</pre>	
	Network Type >>	
	Authentication >>	
	Encryption >>	
	Use 802.1x >>	
	Channel >>	
	Power Save Mode >>	
	Tx Power >>	
	RTS Threshold >>	
	Fragment Threshold >>	
Add Edit Delete Activate		

Profile Name: Default is PROF1 SSID: AP or Ad-Hoc name Network Type: Infrastructure or Ad-Hoc Authentication: Open, WPA/PSK, WPA2/PSK Encryption: None, WEP, AES, TKIP USB802.1x: NO or In use Tx Power: Auto or Adjustable % Channel: Auto or Specific channel

RTS Threshold: Data packet size which exceeds the Request To Send (RTS) Threshold will be sent out. Larger packet size favors data transmission whilst small pack size lowers the latency for real time traffic (voice and video).

Fragment Threshold: Longer data fragment increases data throughput performance with good signal quality. The opposite is true to keep shorter data fragment in poor signal quality to maintain an optimal data throughput.

## 2.1.1 Example to Add a PROFILE

#### Click "Add" under PROFILE

RaUI						
Profile	Left Network	کی Advanced	Statistics	NVMM	<b>Ø</b> WPS	Radio On/
	Profil	e List				
					Profile Name	: >>
					SSIE	) >>
					Network Type	9 >>
					Authenticatior	۱>>
					Encryption	1 >>
					Lice 802 1	
					Charge	1
					Channe	122
				Po	wer save mode	; >>
					Tx Power	r >>
					RTS Threshold	1>>
	-			Frag	nent Threshold	1>>
Add	Edit	Delete	Activate			
Status		00-D7-A4			Lin	k Quality >> 100
Extra Info	>> Link is Up [TxPowe	er:100%]			Signa	al Strength 1 >> (
Channel	>> 6 <> 2437000 MH	Iz			Sign	al Strength 2 >>
Authentication	>> Unknown				Signa	al Strength 3 >> 2
Encryption	>> None				Noi	se Strength >> 0
Network Type	>> Infrastructure			Transmit		
IP Address	>> 192.168.5.60			Link	Speed >> 54.	D Mbps
Sub Mask	>> 255.255.255.0			Thro	ughput >> 0.0	00 Mbps
Default Gateway	>> 192.168.5.254					
	HI			Receive		
				Liek	Speed >> 54 (	D Mbpc
BW >> n/a		SNRO >> n/a		LIIK	. opeca oqu	n winh?

The Add Profile page will then pop up.

🙀 RaUI					
Profile	rk Advanced	Statistics	www.	Ø WPS	Radio On/
F	Profile List		_		
				Profile Name :	>>
				SSID :	>>
				Network Type :	>>
				Authentication	>>
				Encryption :	>>
				Use 802.1x :	>>
				Channel :	>>
			Po	wer Save Mode :	>>
				Tx Power :	>>
				RTS Threshold :	>>
Add Edit	Delete	Activate 1021X			
Profile Name >> F	PROF1		-	Network T	Vpe >> Infras:
SSID >>		•		Tx Po	wer>> A
, Power Save Mode >> (	🔵 CAM 🖉 PSM			Prear	nble >> A
RTS Threshold	° –				17 2347
Fragment Inreshold	256 _			] 234	10 2346
		ок	Cancel		

The default Profile Name is PROF1 which you may change to a different name. Now move the mouse to the SSID pull down menu and select the AP from an active list.

Profile       Network       Advanced       Statistics       WWW       WPS       Radio Or         Profile List       Profile List       Profile Name >>       SSID >>       SSID >>         Network       Type >>       Authentication >>       Encryption >>       Use 802.1x >>       Channel >>         Add       Edit       Delete       Activate       Profile Name >>       RTS Threshold >>         Add       Edit       Delete       Activate       Progenet Threshold >>       Profile Name >>         SSID >>       SSID >>       SSID >>       Network Type >>       Network Type >>       Network Type >>         Add       Edit       Delete       Activate       Profile Name >>       Profile Name >>       Profile Name >>         SSID >>       SSID >>       SSID >>       Tx Power >>       RTS Threshold       Preamble >>         Power Save Mode >>       SSID >>       SSID >>       Tx Power >>       Preamble >>       D00C43680016       Preamble >>         Power Save Mode >>       AbertY-200       D00C43680016       Preamble >>       D00C43680016       Preamble >>         Power Save Mode >>       AbertY-200       D00C43680016       D0104890222A       D00C43680016       Preamble >>         ChardeAP       Cobra	14 Ral	11						
Profile List       Profile Name >>         SSID >>       Network Type >>         Authentication >>       Encryption >>         Use 802.1x >>       Channel >>         Channel >>       Power Save Mode >>         Tx Power >>       RTS Threshold >>         System Config       Auth. \ Encry.       80211x         Profile Name >>       PROF1       Network Type >>         Stid >>	•	Profile	Lange Strengthered	ر Advanced	Statistics		Ø WPS	Radio On
Add       Edit       Delete       Activate         Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       8021%         Profile Name >>       RTS Threshold >>         Stop >>			Profile	e List				
SID >> Add Edit Delete Activate Profie Name >> PROF1 SSID >> Power Save Mode >> SSID >> Add Edit Delete Activate Profie Name >> PROF1 Network Type >> Infr SSID >> Power Save Mode >> SSID >> Power Save Mode >> SSID >> Profie Name >> PROF1 Network Type >> Infr SSID >> Power Save Mode >> SSID >> Profie Name >> PROF1 Network Type >> Infr SSID >> Power Save Mode >> SSID >> Promer Save Mode >> SSID >> Promote Save Mode >> SSID >> SSID >> SSID >> Promote Save Mode >> SSID >> Promote Save Mode >> SSID >> SSI							Profile Name	:>>
Network Type >>         Authentication >>         Encryption >>         Use 802.1x >>         Channel >>         Power Save Mode >>         Tx Power >>         Add       Edit         Delete       Activate         System Config       Auth. \ Encry.         8021X       Profile Name >>         Profile Name >>       PROF1         Network Type >>       Infr         SSID >>       Shiang_2860AP         AlbertY-200       0004368016         APA       0014A549742F         O007404D0C7E       AP         O0024308016       Preamble >>         Progenet Threshold       Belkin_N1_Wireless_281111         Broadcom WPS       00149802E7A         O000740602C597       2347         2346       2346							SSID	>>
Add Edit Delete Activate  Add Edit Delete Activate							Network Type	. >>
Addremdeation >> Encryption >> Use 802.1x >> Channel >> Power Save Mode >> Tx Power >> RTS Threshold >> Fragment Threshold >> System Config Auth. \ Encry. 8021X Profile Name >> PROF1 Network Type >> Infr SSID >> Power Save Mode >> Power Save Mode >> Profile Name >> PROF1 Network Type >> Infr SSID >> Power Save Mode >> AbertY-200 AP1 0007404D0C7E AP1 00007404D0C7E AP1 0007404D0C7E AP1 000776076077 AP1 000776077077 AP1 0007760777 AP1 0007760777 AP1 0007760777 AP1 0007760777 AP1 0007760777 AP1 0007777 AP1 00077777 AP1 0007777777777777777777777777777777777								
Add       Edit       Delete       Activate         Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       8021X         Profile Name >>       PROF1       Network Type >>         Silb >>						1	Authentication	1 >>
Add       Edit       Delete       Activate         Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       802.1%         Profile Name >>       PROF1       Network Type >>       Infr         SsiD >>       Image: 2860AP       000C43666016       Preamble >>         Power Save Mode >>       Shiang_2860AP       000C43666016       Preamble >>         AlbertY-200       Image: 2860AP       000C43666016       Preamble >>         AlbertY-200       00037F0007A4       Preamble >>       Preamble >>         AP       000148549F42F       000148549F42F       2347       2347         Belkin_M1_Wireless_281111       00018002E2DA       P1       2346       2346         Broadcom/WPS       00118902E2DA       P1       2346       2346         ClaudeAP       000766FC597       000A795C08BD       2346       2346							Encryption	>>
Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       8021X         Profile Name >>       PROF1       Network Type >>       Infr         SSID >>       Image: Spring_2860AP       000C43686016       Preamble >>         Power Save Mode >>       Appa       000C43686016       Preamble >>       Preamble >>         Power Save Mode >>       Appa       000C43686016       Preamble >>       Preamble >>       2347       2347         Image: RTS Threshold       APPA       00144549F42F       001485428111       000C4368016       Preamble >>       2346       2346         Image: RTS Threshold       APPA       00148549F42F       2347       2346       2346       2346         Image: RTS Threshold       Belkin_N1_Wireless_281111       000C4368016       Image: RTS Threshold       Image: RTS							Use 802.1×	:>>
Add       Edit       Delete       Activate         Add       Edit       Delete       Activate         System Config       Auth. 1 Encry.       80211X         Profile Name >>       PROF1       Network Type >>       Infr         SSID >>							Channe	>>
Add       Edit       Delete       Activate         Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       8021X         Profile Name >>       PROF1       Network Type >>       Infr         SSID >>						Po	wer Save Mode	>>
Add       Edit       Delete       Activate       RTS Threshold >>         Add       Edit       Delete       Activate       Pragment Threshold >>         System Config       Auth. \ Encry.       8021X         Profile Name >>       PROF1       Network Type >>       Infr         SSID >>       Image: Config Con							Tx Power	· >>
Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       8021X.         Profile Name >>       PROF1       Network Type >>       Infr         SSID >>       Image: Shiang_2860AP       000C43686016       Preamble >>       Preamble >>         Power Save Mode >>       Shiang_2860AP       000C43686016       Preamble >>       Preamble >>         Abbert Y-200       0007404D0C7E       Preamble >>       2347       2347       2347         RTS Threshold       Belkin_N1_Wireless_281111       000C43281111       000C43281111       2346       2346         Pragment Threshold       Broadcom       001485092E27       000C766FC597       000766FC597       2346       2346         ClaudeAP       Cobra       00075008D       000766FC597       000766FC597       000766FC597       000766FC597							RTS Threshold	>>
Add       Edit       Delete       Activate         System Config       Auth. \ Encry.       8021X         Profile Name >>       PROF1       Network Type >>         SSID >>						Frag	nent Threshold	>>
Profile Name >> PROF 1 Network Type >> Infr   SSID >>	Sy	<sup>Add</sup> /stem Config	Edit Auth. \ Er	Delete	Activate 021X			
Profile Name >>       PROF1       Network Type >>       Intr         SSID >>		Due Gle N				_	51-4	Turners and
SID >>		Profile N	vame >>  PROF	I			Network	Type >> Infra
Power Save Mode >>			SSID >>		•		Tx F	'ower >>
AP1       00037F00D7A4         RTS Threshold       APPA       0014A549F42F         Belkin_N1_Wireless_281111       000C43281111       2347         Fragment Threshold       Broadcom       001018902EDA       2346         BroadcomWPS       001018902E27       2346       2346         ClaudeAP       000C766FC597       000A795C08BD       000A795C08BD		Power Save ≬	Wode >> Albert	g_2860AP Y-200		000C436860 00AA2E82EB9 0007404D0C	16 <u> Pre</u> 9E 7E	amble >>
BroadcomWPS 001018902E27 ClaudeAP 000C766FC597 Cobra 000A795C08BD		RTS Threshold	AP1 APPA Belkin	_N1_Wireless_281	111	00037F00D7/ 0014A549F42 000C4328111 00104890255	2F 23 11	347 2347
DennisAP 000C43102718	L	T - Laguent miezi	Claude Cobra Dennis	comWPS BAP SAP		001018902E2 001018902E2 000C766FC5 000A795C088 000C431027	27 97 3D 18	2340

Suppose that you have chosen AP1 to save the profile, you could now highlight it and click "Activate" to connect.

👫 RaU	]						
4			<u> </u>		Qos	Ø	
	Profile	Network	Advanced	Statistics	AA)AAA(	AAb2	Radio Un/
		Profil	e List		_		
PRO	F1	AP1		6		Profile Name	>> PROF1
						SSID	>> AP1
						Network Type	>> Infrastructu
						Authentication	>> Open
						Encryption	>> None
						Use 802.1x	>> NO
						Channel	>> 1
					Po	wer Save Mode	>> CAM
						Tx Power	>> Auto
						RTS Threshold	>> 2347
					Frag	ment Threshold	>> 2346
-	Add	Edit	Delete	Activate			
	Status >> A	\P1 <> 00-03-7F-	00-D7-A4			Link	Quality >> 100%
	Extra Info >> I	ink is Up (TxPowe	r:100%]			Signal	Strength 1 >> 10
	Channel >> 6	5 <> 2437000 MH	z			Signal	Strength 2 >> 10
Auti	hentication >> (	Open				Signal	Strength 3 >> 10
	Encryption >> N	NONE				Noise	e Strength >> 26
Ne	twork Type >> I	nfrastructure			Transmi	t	
	Sub Wark >> 1	192,100,5,00 255 255 255 0			Link	<pre>Speed &gt;&gt; 54.0</pre>	Mbps
Defau	It Gateway >> 1	192.168.5.254			Thro	ughput >> 0.00	0 Mbps
		HT			Deserve		
БW	>> p(a				Receive	Speed >> 54.0	Mbps
GI	>> n/a >> n/a	MCS >> n/a	SNR1 >> n/a		Thro	ughput >> 0.03	3 Mbps

### 2.2 Network

A list of AP picked up by the antenna.

Sorted by >>	O SSID	Channe	L AP I	) Signal	Show
_Shiang_2860AP		<b>1</b> /211	<b>B90</b>	81%	
aaa		💐 З	- <mark></mark>	55%	
AlbertY-200		<b>1</b> /26	- <mark>6</mark> 9 (	76%	
AP		<b>1</b> /21	<b>bg</b> '	55%	
AP1		<b>6</b> 6	b g	100%	
APPA		<b>1</b> /26	B 🛛 🗊	70%	
asus		<b>1</b> /2	<mark>B</mark> 9	81%	
Broadcom		11	B g	81%	
Buffalo 54		<b>1</b> 1	B <mark>9</mark>	76%	
Cobra		<b>1</b> /26	- <mark>6</mark> 9 - '	34%	
Rescan	Add to Prot	ïle Conne	ct		

SSID: Name of Wireless Network Network Type: Infrastructure or Ad-Hoc Channel: Specific Channel in use Wireless Mode: 802.11b, 802.11g or 802.11n Security-Enable: The type of Encryption in use Signal: Strength in %.

To connect to an AP, simply highlight it, followed by clicking the "Connect" button.

If the intended network has encryption other than "Not Use", the RaUL will bring up the security page which allows the user to enter the password to complete the connection.

When you double click the AP, you can see the AP's detailed information under the buttons of "General", "WPS", "CCX" and "802.11n".

15 RaUI						
Profile	e Network	Advanced	Statistics	Gos WWW	<b>Ø</b> WPS	Radio On/
Sorted by >>	SSID	🥝 Channe	l 🥝	) Signal		Show
132		<i>b</i> 2	R a	100%		
202		<u>ю</u> 1		70%		
213		<b>1</b> 1		29%		
215		1/26	i di a	44%		
219		<b>1</b>	Ba e	81%		
243		<b>b</b> ∕5	Bg e	100%		
_Shiang_2860	AP	11	<b>B</b> g <b>n</b>	91%		
AP		101	Bg P	50%		
AP1		6	Bgn	100%		
APPA		<b>1</b> /26	B g fi	91%		
Rescan	Add to Prof	ile Connec	t			
Genera	il VVPS	5 C(	CX	802.11n		
	CCID ++ 404	10				
	SSID >> APT		_			
	MAC Address >> 00-	03-7F-00-D7-A4		Sig	hal Strength >>	» 100%
Authe	ntication Type >> Unk	nown	_ Su	upported Rates (M	bps)	
Er	ncryption Type >> Nor	ie	1,	2, 5.5, 11, 6, 12, 3	24,36,9,18,4	48,54
	Channel >> 6 <	> 2437000 KHz				
	Network Type >> Infi	astructure				
В	eacon Interval >> 100					
			0	ĸ		
				n,		

#### 2.2.1 Network - General

The General information contains AP's SSID, MAC address, authentication type, encryption type, channel, network type, beacon interval, signal strength and supported rates (Mbps).

The Beacon Interval specifies the duration between beacon packets. Access Points broadcast Beacons or Traffic Indication Messages (TIM) in order to synchronize wireless networks. The default setting of 100 should be ideal for most situations. In a "noisy" environment - one with much interference - decreasing the Beacon Interval may improve network performance. In very remote locations (with few wireless nodes) this value may be increased.

#### 2.2.2 Network - WPS

Wi-Fi Protected Setup (WPS) is a standard for easy and secure establishment of a wireless home network, created by the Wi-Fi Alliance and officially launched on January 8, 2007.

The goal of the WPS protocol is to simplify the process of configuring security on wireless networks, and so it was first named 'Wi-Fi Simple Config'. The protocol is meant to allow home users who know little of wireless security and may be intimidated by the available security options to configure Wi-Fi Protected Access, which is supported by all Wi-Fi certified devices.

The standard achieves its goal by putting much emphasis into usability and security, and the concept is implemented through four usage models that enable a user to establish a home network.

So, to add a new device to the Network the user can have up to the following two choices: PIN Method, in which a PIN (Personal Identification Number) has to be read from either a sticker on the new wireless client device (STA) or a display, if there is one, and entered at the "representant" of the Network, either the wireless access point (AP) or a Registrar of the Network, cf below the Protocol Architecture.

This is the mandatory baseline model, every Wi-Fi Protected Setup certified product must support it. PBC Method, in which the user simply has to push a button, either an actual or virtual one, on both the AP (or a Registrar of the Network) and the new wireless client device (STA).

Support of this model is mandatory for APs and optional for STAs.

This page addresses the common scenario involving an Infrastructure Network. The support of ad hoc networks (IBSS) are not supported by WPS.

The WPS information contains the authentication type, encryption type, config methods, device password ID, selected registrar, state, version, AP setup locked, UUID-E and RF bands.

Authentication Type - There are three types of authentication modes supported by RaConfig: OPEN, SHARED, WPA-PSK and WPA system.

Encryption Type – For OPEN and SHARED authentication mode, the selection of encryption type are NONE, WEP. For WPA, WPA2, WPA-PSK and WPA2-PSK authentication mode, the encryption type supports both TKIP AND AES.

Config Methods – This corresponds to the methods the AP supports as an Enrollee for adding external Registrars.

Value	Hardware Interface
0x0001	USBA (Flash Drive)
0x0002	Ethernet
0x0004	Label
0x0008	Display
0x0010	External NFC Token
0x0020	Integrated NFC Token
0x0040	NFC Interface
0x0080	Push Button
Ox0100	Keypad

Device Password ID – This indicates the method or indentifies password that the selected Registrar intends to use. AP in PBC mode must indicate 0x0004 within two minutes.

Value	Description
0x0000	Default (PIN)
0x0001	User-specified
0x0002	Rekey
0x0003	Display
0x0004	Push Button (PBC)
0x0005	Registrar-specified
0x0006-0x000F	Reserved

Selected Registrar – This 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 "Un-configured" and "Configured".

Version - WPS specified version.

AP Setup Locked - This indicate if the AP has entered a setup locked state.

UUID-E - The universally unique identifier (UUID) element generated by the Enrollee, a 16 bytes value.

RF Bands – This indicates all RF bands available on the AP. A dual-band AP must provide it. The values are "2.4GHz" and "5GHz".

#### 2.2.3 Network – CCX [Cisco Compatible Extensions]

The Cisco Compatible Extensions program for Wi-Fi tags allows customers with a Cisco Unified Wireless Network and a Cisco Location solution to benefit from the latest innovation and technology advancements offered by Cisco's technology partners. This program offers improved consistency and interoperability among Cisco's Compatible Extensions technology partners.

The CCX information contains CCKM, Cmic and Ckip.

CCKM, CMIC and CKIP are Cisco proprietary protocols for Aironet 350.

#### 2.2.4 Network - 802.11n

The 802.11n button appears only for AP supporting it.

The box contains debugging information for internal RaLink engineer use.

## 2.3 ADVANCED

Wireless mode >>	802.11 A/B/G/N mix 💌	Enable CCX (Cisco Compatible eXtensions)
		Turn on CCKM
		Enable Radio Measurements
Enable TX Burs	t	Non-Serving Channel Measurements limit 250
Enable TCP Wi	ndow Size	
Fast Roaming a	at -70 dBm	
Show Authenti	cation Status Dialog	
Select	Your Country Region Code	
11 B/G >>	0: CH1-11	
11 A >>	7: CH 36,40,44,48,52,56,60,64,100 💌	
Apply		

Wireless Mode – default with 802.11b/g/n mix at 2.4GHz

Enable Tx Burst: RaLink's proprietary frame burst mode.

Enable TCP Window Size - Select to enhance throughput under a low-noise environment.

Fast Roaming at: The threshold of Tx power to switch from one AP to another.

Select Your Country Code – Eight countries to choose. Default at O: CH1-11. (the 11A box shows up only for A/B/G adapter).

Enable CCX (Cisco Compatible Extension) - On/Off.

## 2.4 STATISTICS

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

#### 2.4.1 Transmit Statistics

Transmit Receive	
Frames Transmitted Successfully	=
Frames Retransmitted Successfully	=
Frames Fail To Receive ACK After All Retries	=
RTS Frames Successfully Receive CTS	-
RTS Frames Fail To Receive CTS	-
Reset Counter	

Frames Transmitted Successfully - Frames successfully sent.

Frames Fail To Receive ACK After All Retries - Frames failed transmit after reaching the 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.

Frames Retransmitted Successfully – Successfully retransmitted frame numbers.

Reset Counter - Back to zero.

#### 2.4.2 Receive Statistics

Transmit	Receive
Frames Received Su	uccessfully
Frames Received W	ith CRC Error
Frames Dropped Du	ie To Out-of-Resource
Duplicate Frames R	eceived
Denot Country	
Reset Counter	

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 - Back to zero.

#### 2.5 WWM

WMM Setup Status WMM >> Enabled	Power Save >> Disab	led		Direct Lin
WMM Enable				
WMM - Power Save B	Inable			
AC_BK	AC_BE	AC_VI	AC_VO	
Direct Link Setup Er	nable			
MAC Address >>		Timeout Valu	e >> 60 sec	Ap
				Tear

WWM Enable – Enable to handle the QoS (Quality of Service) latency sensitive WiFi Multimedia (Audio, Video) traffic.

Power Save Enable – Enable WWM power saving in accordance to the various Multimedia IP traffic.

- AC\_BK Backgound (Latency insensitive) IP traffic,
- AC\_BE Best effort (Low latency) IP traffic.
- AC\_VI Video (real time) IP traffic.
- AC\_VO Voice (real time) IP traffic.

Enable Link Setup (DLS) Enable – This allows secured connection to an AP supporting DLS. Simply enter the MAC address in the box which is also registered in the AP. The timeout value ranges from 0 to 65536 seconds. O means always on. Default is 60 second.

# 2.6 WPS

RaUI							
	Profile	Jaa Network	کی Advanced	Statistics	WWW	Ø WPS	Radio O
-				WPS AF	, List		
	ID : Unknown	Al	P1-WPS		00-10-18-90-2E-27		7 ^
	ID : Unknown	U	bicom_Sample		00-0C-43-28-60-20	1	=
	ID : Unknown	а	rvint-2860AP		00-0C-43-28-60-60	3	-
	ID : Unknown	d	efault		00-18-02-4A-0A-6B	6	9
				WPS Prot	ile List		
		WPS Ass	ociate IE	W/PS status is disco	Progress >> 0%		
	<u>P</u> IN P <u>B</u> C	WPS Assi WPS Pro	ociate IE be IE ically select the A	WPS status is disco	Progress >> 0%		
	₽IN PBC Status >> AF	WPS Assu WPS Pro Automat	Dociate IE	WPS status is disco P	Progress >> 0%	Link	Quality ≥> 9
	PIN PBC Status >> AF Extra Info >> Liu Channel >> 6	WPS Assuer     WPS Pro     WPS Pro     Automat     Automat     Automat     Sup [TxPower    > 2437000 MH	ociate IE be IE cally select the A ically select the A :00-D7-A4 er:100%]	WPS status is disco P	Progress >> 0% nnected	Link Signal Signal	Quality >> 9 Strength 1 >
Auth	<u>P</u> IN P <u>B</u> C Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W	WPS Assi     WPS Pro     Automat     Automat     Automat     Sup [TxPowe    > 2437000 MH PA	ociate IE be IE cally select the A ically select the A :00-D7-A4 :r:100%] Iz	WPS status is disco	Progress >> 0%	Link Signal S Signal S	Quality >> 9 Strength 1 > Strength 2 + Strength 3 >
Auth	EIN PEC Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W Encryption >> TK	WPS Assu WPS Pro Automat Automat Automat Automat (1 <> 00-03-7F- nk is Up [TxPowe <> 2437000 MH PA (IP+AES	Dociate IE be IE ically select the A 00-D7-A4 er:100%] Iz	WPS status is disco "P	Progress >> 0%	Link Signal S Signal S Signal S Noise	Quality >> 9 Strength 1 >> Strength 2 >> Strength 3 >> Strength >>
Auth	<u>P</u> IN P <u>B</u> C Status >> AF Extra Info >> Lii Channel >> 6 hentication >> W Encryption >> TK twork Type >> In	WPS Assu WPS Pro Automat Automat Automat Automat (IP+AES frastructure	ociate IE   be IE   ically select the A :00-D7-A4 :r:100%] Iz	WPS status is disco	Progress >> 0% nnected	Link Signal S Signal S Noise	Quality >> 9 Strength 1 >> Strength 2 >: Strength 3 >> Strength >>
Auth	EIN PEC Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W Encryption >> TK twork Type >> In IP Address >> 15	WPS Assu WPS Pro Automat Automat (1 <> 00-03-7F- nk is Up (T×Powe (T×Powe (1P+AES) frastructure (2, 168, 2, 8)	be IE   ically select the A 00-D7-A4 er:100%] Iz	WPS status is disco P	Progress >> 0% nnected	Link Signal S Signal S Signal S Noise eed >> 54.0 /	Quality >> 9 Strength 1 > Strength 2 > Strength 3 > Strength >> Strength >>
Autr	<u>P</u> IN P <u>B</u> C Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W Encryption >> TK twork Type >> In IP Address >> 15 Sub Mask >> 25	WPS Assu WPS Pro Automat 21 <> 00-03-7F- nk is Up [TxPowe <> 2437000 MH PA (IP+AES frastructure 22.168.2.8 35.255.255.0	be IE   ically select the A 00-D7-A4 er:100%] Iz	WPS status is disco	Progress >> 0% nnected Transmit Link Spo Through	Link Signal S Signal Signal S Noise eed >> 54.0 / put >> 0.000	Quality >> 9 Strength 1 > Strength 2 >: Strength 3 > Strength >> Wbps I Kbps
Auth	EIN PEC Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W Encryption >> Tk twork Type >> In IP Address >> 15 Sub Mask >> 25 Jlt Gateway >> 15	<ul> <li>WPS Assi</li> <li>WPS Pro</li> <li>Automat</li> <li>Automat</li> <li>&lt;&gt; 00-03-7F-</li> <li>nk is Up [T×Powe</li> <li>&lt;&gt; 2437000 MH</li> <li>PA</li> <li>(IP+AES</li> <li>frastructure</li> <li>(2, 168, 2, 8)</li> <li>(5, 255, 255, 0)</li> <li>(2, 168, 2, 254)</li> </ul>	be IE be IE cally select the A ically select the A :00-D7-A4 ar:100%] Iz	WPS status is disco	Progress >> 0% nnected Transmit Link Sp Through	Link Signal S Signal S Noise eed >> 54.0 / put >> 0.000	Quality >> 9 Strength 1 >> Strength 2 >> Strength 3 >> Strength >> Wbps Kbps
Auth Net	<u>P</u> IN P <u>B</u> C Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W Encryption >> TK twork Type >> In IP Address >> 15 Sub Mask >> 25 Jlt Gateway >> 15	WPS Assu WPS Pro Automat Automat (1 <> 00-03-7F- nk is Up [TxPowe <> 2437000 MH PA (IP+AES frastructure (2.168.2.8 (5.255.255.0 (2.168.2.254) HT	be IE be IE cally select the A	WPS status is disco	Progress >> 0% nnected Transmit Link Sp Through Receive	Link Signal S Signal Signal S Noise eed >> 54.0 / put >> 0.000	Quality >> 9 Strength 1 >> Strength 2 >: Strength 3 >> Strength >> Wbps I Kbps
Auth Net Defau	EIN PEC Status >> AF Extra Info >> Liu Channel >> 6 hentication >> W Encryption >> TK twork Type >> In IP Address >> 15 Sub Mask >> 25 JIt Gateway >> 15 >> n/a	<ul> <li>WPS Assi</li> <li>WPS Pro</li> <li>Automat</li> </ul>	ociate IE be IE cally select the A ically select the A :00-D7-A4 er:100%] Iz SNR0 >> n/a	WPS status is disco	Progress >> 0% nnected Transmit Link Sp Through Receive Link Sp	Link Signal 3 Signal 3 Noise eed >> 54.0 / put >> 0.000	Quality >> 9 Strength 1 >> Strength 2 >> Strength 3 >> Strength >> Wbps Kbps

WPS Configuration – The primary goal of WiFi Protected Setup (WiFi Simple Configuration) is to simplify the security setup and management of WiFi networks. Ralink STA as an Enrollee or external Registrar supports the configuration setup using PIN configuration method or PBC configuration method through an internal or external Registrar.

WPS AP List – Display the information of surrounding APs with WPS IE from last scan result. List information includes SSID, BSSID (Mac address of SSID), Channel, ID (Device Password ID), Security-Enabled status.

Rescan – Update the AP picked up by the adapter.

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 Locked, UUID-E and RF bands.

PIN Code – 8 digit numbers. It is required to enter PIN Code into Registrar using PIN method. When STA is Enrollee, you can use "Renew" button to regenerate a new PIN code.

Config Method – Correspond to the methods the AP supports as an Enrollee for adding an external Registrar.

Table of Credentials - Display all of credentials got from the Registrar. List information include SSID, MAC Address, Authentication and Encryption Type. If STA Enrollee, credentials are created as soon as each WPS success. If STA Registrar, RaUI creates a new credential with WPA2-PSK/AES/64Hex-Key and doesn't change until next switching to STA Registrar.

Control items on credentials:

Detail - Information about Security and Key in the credential.

Connect - Command to connect to the selected network inside credentials. The active selected credential is as like as the active selected Profile. Rotate - Command to rotate 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 RaUI if exist. If there is an empty profile page, the driver will select any non-security AP.

Export Profile - Export all credentials to Profile.

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. If STA Registrar, remember that enter PIN Code read from your Enrollee before starting PIN.

PBC - Start to add to AP using PBC configuration method.

\*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 press Disconnect to stop WPS action.

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.

Automatically select the AP - Start to add to AP by using to select the AP automatically in PIN method.

# 2.7 CCX (Cisco Compatible eXtensions)

CCX works with Cisco WiFi device. Consult Cisco proprietary protocols for Aironet 350 to fill in the corresponding value.

# 2.8 Radio On/OFF

Toggles On/Off to temporally disable the adapter.

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

End of Manual.