# 3.2.5 WPS Configuration

The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simply the security setup and management of Wi-Fi Networks.

SSID	BSSID	Channe	I ID	Authentic	Encryption	
morry_test Default_11N	00-06-4F-5B-13-2F 00-06-4E-33-44-66	3		Unknown	None	Rescan
Dennas_The	50 00 41 55 44 65			C. P. P. P. M.	The re-	WPS Information
						Pin Code 67043347 Renew
						Config Mode Enrollee
					-	
SSID	1	Authenticatio	on	Encryption		Detail
						Connect
						Rotate
						Disconnect
						Import Profile
+ [			_		-	Delete
PIN	WPS Associate II	εΓ				
000	THE WORD BALL	5	UDC states	in and used		

**WPS Associate IE:** If the "WPS Associate IE" option is checked, station will send the association request with WPS IE during WPS setup.

**WPS Probe IE:** If the "WPS Probe IE" option is checked, station will send the probe request with WPS IE during WPS setup.

### [Display WPS capable AP information]

The WPS capable AP information is listed in the upper frame, and the display AP's characters are SSID, BSSID, current operating channel, device password ID, authentication type, and encryption type.

Re-Scanning: Clicking "re-scan" button performs the re-scanning action.

WPS AP Information: Clicking the WPS information" button brings up the WPS capable AP information dialog.

Authentication Type: there are three type of supported authentication modes, and there are Open, Shared, WPA-PSK and WPA modes.

- Encryption Type: For Open & Shared authentication modes, the available encryption types are None and WEP. For WPA, WPA2, WPA-PSK and WPA2-PSK authentication modes, the available encryption types are TKIP and AES.
- Config Methods: This attributes contains the config methods supported and enabled by the selected Registrar.
- Device Password ID: Device Password ID indicates the method or identifies the specific password that the selected Registrar intends to use.
- Selected Registrar: Selected Registrar indicates if the user has recently activated a Registrar to add an Enrollee.
- State: This attribute is used to indicate the current configuration state. This attribute is either "Un-Configured" or "Configured".
- Version: This attribute is the specified WPS version.
- AP Setup Locked: AP Setup Locked indicates if AP has entered a setup locked state.
- UUID-E: UUID-E is the universally unique identifier (UUID) generated by the Enrollee.
- **RF-Bands:** RF Bands indicate the available RF bands.

### [Configure WPS Profiles]

The user can configure WPS profile with either PIN method or PBC method.

- PIN Method:
  - Step 1  $\rightarrow$  The Registrar enters the pin code generated by station.

Step 2  $\rightarrow$  Click the "PIN" button.

PBC Method:

Step 1  $\rightarrow$  Click the "PBC" button within 2 second while the Registrar clicks the button.

#### [Manage WPS Profiles]

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

- WPS profile detail information: Selecting a profile then clicking the "Detail" button brings up the WPS profile detail information dialog.
- Connect with WPS Profile: Clicking the "Connect" button will connect to AP with the select WPS profile.
- Rotate WPS profile: If there are more than two WPS profiles, clicking the "Rotate" button will rotate to next profile and connect to AP with this profile. If the connection can't be made successfully, station will perform the WPS profile rotation repeatedly.
- Disconnect from WPS AP: Clicking the "Disconnect" button will stop the WPS

connection.

Delete WPS profile: Clicking the "Delete" button will delete the selected WPS profile.

# 3.2.6 QoS

The QoS Page of RaConfig. It involves **"WMM Enable"**, **"WMM – Power Save Enable**" and **"DLS setup Enable**".

Ralink Wireless Utility	x
Profile   Link Status   Site Survey   Statistics   WPS Configuration QoS   About	
WMM Enable	
WMM - Power Save Enable Setting	
Direct Link Setup Enable     Apply	
Direct Link	
MAC Address :	
Transf Malana Transfer and Annual Annual	
Appy	
MAC Address Times t	
International In	
Tear Down	
ОК Нер	

# Configure to enable Wi-Fi Multi-Media

If you want to use **"WMM – Power Save"** or **"Direct Link"**, you must enable WMM. The setting method of enabling WMM indicates as follows:

Step1: Click "WMM Enable"

Step2: Click "Apply".

Ralink Wireless Utility Profile   Link Status   Ste Survey   Statistics   WPS Configuration   QoS	About ]
	Apply
WMM - Power Save Enable	Setting
🔽 Direct Link Setup Eneble	Apply
Direct Link	
Direct Link Setup	
10-C - A00 488	
Timeout Value : 60 sec	Apply
- DLS Status	
MAC Address Timeout	
	TextDown
e +	
	OK Help

**Step3:** Change to **"Site Survey Page"**. And add an AP that supports WMM features to a Profile. The result will look like the below figure in Profile page.

	2210	Channel	Authentication	Encryption	Network Ty
PROF1	WLAN_OW	Auto	WPA POK	THOP	History
PROF2	WMM	Auto	Open	None	Infrastructur
					and the second se

## **Enable WMM – Power Save**

A MWW	Enable			Apply	
<u></u>	WMM - Power Save	Enable		Setting	
	Direct Link Setup Er	able		Apply	
1	Direct Link	0			
	MAC Address :	Γ·Γ	· [ · [		
	Tonera d Value -			Annh	
	- DI S Statua	00 000	·		
	MAC Addre	55	Timeout		
	<			Tear Down	

Step1: Click "WMM - Power Save Enable". And Click "Setting ... " button.

Step2: After clicking "Setting..." button, show "Power Save Setting" dialog. Please select which ACs you want to enable. Then click "Apply" button. The setting of enabling WMM – Power Save is successfully.



# Enable DLS (Direct Link Setup)

Step1: Click "Direct Link Setup Enable". And Click "Apply" button

Raink Wireless Utility	×
Profile   Link Status   Site Survey   Statistics   WPS Configuration CoS   About	
IF WMM Enable Apply	
WMM - Power Save Enable Setting	
Prest Link Setup Enable	
Direct Link Direct Link Setup	
MAC Address :	
Timeout Value : 60 sec Apply	
OLS Status	
MAC Address Timeout	
TearDown	
1 · · · · · · · · · · · · · · · · · · ·	
ОК	Help

**Step2:** Change to "**Site Survey Page**". And add an AP that supports DLS features to a Profile. The result will look like the below figure in Profile page.

Profile Name PROF2	WPA WPA	Auto	Authentication WPA	TKIP	Network Type Infrastructure
PROF1 PROF3	DLS	Auto	Open	None	Infrastructure

## The Setting of DLS indicates as follow:

**1.** Fill in the blanks of Direct Link with **MAC Address** of STA. The STA must conform to two conditions as follow:

**Step1:** Connect with the same AP that support DLS features.

**Step2:** Have to enable DLS.

one i ne sere	Sile Survey   Statistica   WPS Configuration 14	IC3  Rbout
I⊉ WMM	Erable	Acole
E	WMM - Power Seve Enable	Setting .
P	Deep Link Setup Enable	Apple
	Deect Link	
	Direct Link Setup	100 100 100
	100 - pc - jes -	1/2 - 1/4 - 1/8
	Timeout Value : Soc	Apply
	DLS Status	
	MAC Address Timeout	
		Tear Down
	4 La	

 Timeout Value represents that it disconnect automatically 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

Direct Link Setup	
MAC Addems : 00 + 00 - 43 Timeout Value : 00 - 43 DLS Status	3 + [25 + [73 + [18 
AC Addess Tree	tear Down

<ol> <li>Cli</li> </ol>	k "Apply"	' button.	The	result	will le	ook l	ike	the	below	figure.
-------------------------	-----------	-----------	-----	--------	---------	-------	-----	-----	-------	---------

Ralink Wireless Utility				×
Profile   Link Status   Site Sur	way   Statistics   WPS Config	guration QoS	About	
P WMM Enable			Apply	
WMM - Po	ower Save Enable		Setting	
P Direct Uni	setup Enable		Apply	
	nn Link Setup Address : 00 - 00 nut Value : 20 sec Ratus UAC Address 0-00C-43-25-73-18	· 43 · 25	- 73 - 18 Apply Tear Down	
			ОК	Help

# Describe "DLS Status" as follow:

- As the up figure, after configuring DLS successfully, show MAC address of the opposite side and Timeout Value of setting in "DLS Status". In "DLS Status" of the opposite side, it shows MAC address of myself and Timeout Value of setting.
- 2. Display the values of "DLS Status" to "Direct Link Setup" as follow:

Step1: In "DLS Status", select a direct link STA what you want to show it's values in "Direct Link Setup".

Ralink Wireless Utility	
Profile   Link Status   Site Survey   Statistics   WPS Configuration Q	oS About
VWMM Enable	Apply
WMM - Power Save Enable	Setting
P Direct Link Setup Enable	Apply
Direct Link Direct Link Setup MAC Address :	Apply
MAC Address         Timeout           00-0C-43-25-73-18         600           <	Tear Down



Ralink Wireless Utility		×
Profile   Link Status   Site Survey   Statistics   WPS Configuration QoS	About	
🔽 WMM Enable	Apply	
WMM - Power Save Enable	Setting	
P Direct Link Setup Enable	Apply	
Direct Link		
MAC Address : 00 - 0C - 43 - 25	5 - 73 - 18	
Timeout Value : 600 sec	Apply	
- DLS Status		
MAC Address Timeout		
00-00-43-25-73-16 600		
	Tear Down	
r		
	OK	Help

3. Disconnect Direct Link Setup as follow:

Step1: Select a direct link STA.

Ralink Wireless Utility	
Profile   Link Status   Site Survey   Statistics   WPS Configuration CoS	About
F WMN Enable	Apply
WMM - Power Save Enable	Setting
P Direct Link Setup Enable	Apply
Direct Link. Setup           MAC Address           Timeout Value :           600           DLS Status           MAC Address           MAC Address	5 - 73 - 18 Apply
	OK Help

**Step2**: Click "**Tear Down**" button. The result will look like the below figure.

Ralink Wireless Utility		
Profile   Link Status   Site Survey   Statistics   WPS Conf	Iguration QoS	About
17 WMM Enable		Apply
WMM - Power Save Enable		Setting
P Direct Link Setup Enable		Apply
Direct Link Setup MAC Address : 00 - 00 Timeout Value : 500 sec	· 43 · 2	25 - 73 - 18 Apply
-DLS Status		
MAC Address	Timeout	
e		TearDown
		UK Hep

# 3.2.7 About

In the **"About"**, you can click the hyperlink to connect the website for the information of the wireless chipset vendor and review basic information about the Utility such as the RaConfig Version, Driver Version, EEPROM Version, IP Address, Sub Mask, and Default Gateway.

Ralink Wirele	ess Utility atus   Ste Survey	Statistics   WPS Co	onfiguration   QoS	About	×
	R		V RALINKTECH COM		
	(c) Copyright 2007.	Ralink Technology	, Inc. All rights reserved	d.	
	RaConfig Version :	1.0.18.0	Date :	09-14-2007	
	Driver Version :	2.1.0.0	Date :	08-15-2007	
	EEPROM Version	134.0	Firmware Versio	n: 0.4	
	IP Address :	192.168.10.47	Phy_Address :	00-06-4F-55-88-77	
	Sub Mask :	255 255 255 0	Default Gateway :	192.168.10.1	
				ОК	Help

# 3.2.8 How to Manage Windows Profile

Windows profile manager can be reached via connection icon on the task bar or control panel.

# [via Network icon]

Step 1: Right-click connection icon on the task bar, then click "Network and Sharing Center"



## Step 2: Select "Manage wireless networks"

Taska       Network and Sharing Center       View full map         Manage network       View full map       View full map         Set up a connection or network       View full map       View full map         Manage network connection       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         View full map       View full map       View full map         Access       Local and briemet       Connection (WLAN, SW)       View matatus         Starting and Discovery       On       View       View         Public folder sharing       OH       View       View         Public folder sharing       OH       View       View         Password protected sharing       OH       View       View         N	Network and Int	emet + Network and Sharing Cent	er • 47 Search	
Connect to a retwork         Manage wention network         Set up a connection or network         Manage metwork connection         Diagnase and repair         WLAN_SW (Private network)         Connection         WLAN_SW (Private network)         Connection         Access         Local and Internet         Connection         Wireless Network Connection (WLAN_SW)         Were status         @ Signal strength: Very good         Disconnect         Private retwork discovery         Network discovery         Public folder sharing         Off (no privates installed)         Private staring         Private staring         Off (no privates installed)         Password protected sharing         On         Password protected sharing         On         Password protected sharing         On         Password protected sharing         On	Tasks View computers and devices	Network and Sharing C	enter	View full map
Congresse and repair       Contornion         Access       Local and Internet         Connection       Wireless Network Connection (WLAN_SW)       View status         eff Signal strength: Very good       Disconnect         B       Starting and Discovery       On         Network discovery       On       V         File sharing       OH       V         Public folder sharing       OH       V         Printer sharing       OH (no printers installed)       V         Very straining       OH (no printers installed)       V	Connect to a network Manage winifest network Set up a connection or network Manage network connections	WDWME-PC (This computer		() Internet
Access     Local and Internet       Connection     Wireless Network Connection (WLAN_SW)     View status       If Signal strength: Very good     Disconnect       B     Sharing and Discovery     ID       Network discovery     ID     Image: Connection (WLAN_SW)       File sharing     OH     Image: Connection (WLAN_SW)       Public folder sharing     OH     Image: Connection (WLAN_SW)       Password protected sharing     OH (no printers installed)     Image: Connection (WLAN_SW)       Media sharing     OH     Image: Connection (WLAN_SW)     Image: Connection (WLAN_SW)	Diagnose and repair	a WLAN_SW (Private netwo	uk)	Customize
Connection     Wireless Network Connection (WLAN_SW)     View status       If Signal strength: Very good     Disconnect       If Sharing and Discovery     If On       Network discovery     If On       File sharing     OH       Public folder sharing     OH       Printer sharing     OH (Inc printers installed)       Person protected sharing     Oh       Media sharing     OH		Access	Local and Internet	
Image: Signal strength: Very good       Disconnect         Image: Signal strength: Very good       Image: Signal strength: Very good       Image: Signal strength: Signal strength: Very good         Image: Signal strength: Si		Connection	Wireless Network Connection (WLAN_SW)	View status
Image: Staring and Discovery       Image: On         Network discovery       Image: On         File sharing       Image: OH         Public folder sharing       Image: OH         Printer sharing       Image: OH         Persword protected sharing       Image: OH         Image: Oppose       Media sharing         Image: Oppose       Image: Oppose		-	😹 Signal strength: Very good	Disconnect
Network discovery <ul> <li>On</li> <li>File sharing</li> <li>OH</li> <li>Public folder sharing</li> <li>OH</li> <li>Public folder sharing</li> <li>OH</li> <li>OH<td></td><td>B Sharing and Discovery</td><td></td><td></td></li></ul>		B Sharing and Discovery		
File sharing     © OH       Public folder sharing     © OH       Primter sharing     © OH       Primter sharing     © OH       Password protected sharing     © On       Interest Options     Media sharing     © OH		Network discovery	e On	۲
Public folder sharing     © DH       Printer sharing     © OH(no printers installed)       Password protected sharing     © On       Media sharing     © OH		File sharing	e 08	9
Printer sharing     © Off (no printers installed)       Possword protected sharing     © On       Medie sharing     © Off		Public folder sharing	e off	
Persword protected sharing         On         Image: Control of the sharing         On           Internet Options         Media sharing         Image: Options         Image: Options </td <td></td> <td>Printer sharing</td> <td>Off (no printers installed)</td> <td></td>		Printer sharing	Off (no printers installed)	
Internet Options Media sharing @ DH	Seealan	Password protected sharing	@ On	۲
		Media sharing	9 DH	

**Step 3:** Right-click the mouse to bring up the profile manage menu.

0 A44	Renove	Move up 🕐 Adapter properties	💲 Profile types 😳 Network and Sharing Center	
Metwork	abc	Security: WPA-Enterprise	Type: Any supported	Automatically con
-	ecc	Security: WSP	Type Joy supported	Automatically cost
i.	1	Security Unincured	Type: Any supported	Automatically parts
-	WEAN SW	Security With Percent	Type: Any supported	Automatically con-

# [via Control Panel]

Step 1: Select "Control Panel" on start menu.







Step 3: Select "Manage Wireless network".

Tasks View convertient and distant	Network and Sharing Co	enter	
Connect to a retwork Merson version nation by Set up a correction of retwork Manage network corrections	what as a compute	et WGANLSW	Ves ful mip – Original Statement
Condition wang sadires	IN WLAN, SW (Private netwo	4)	Custornia
	Access	Local and Internet	
	Connection	Wireless Network Connection (WLAN, SVI)	Vev statue
		disgnal strength: Excellent	Oscorrect
	Sharing and Discovery		
	Network discovery	# De:	
	File sharing	+ 0#	0
1000	Public folder sharing	e oe	
- / /	Printer sharing	· Off (no printers installes)	
11 12 1	Passwerd protected sharing	# Q#	9
	Media sharing	+ 08	0
	Show me all the filer and tolde Show me all the shared netwo	es fain shaing A folders on this computer	

**Step 4:** Right-click the mouse to bring up the profile managing menu.

00	· Cont	noi Panel + Mi	etage Wiveless Networks	Network Course	+ [ 49 ] [ Search	1
Wind can a	love tries to co due add or rem	nnect to these r eve network pro	where the order late where the order late	d helow. To change	r the order, drag a retwork up or do	ours in the list. You
ê 144	the Beneve	· Move up	P Adapter properties	A Frofile types	Setwork and Sharing Center	
helwork	r you can view	and modify (4)				
-	ebc		multy WPA-Estopsise	2564	Ary supported	Summarically con-
-	666	5	ecutity. WEP	7944	Arg supported	Automatically con-
-	1	3	coality: Unincialed	7)pe	Any supported	Automatically $\cos_{\pi}$
-	WLANLTW	1.0	enanty WPA-Personal	Type	Ary supported	Adventically can-
4		Properties				
		Remove netwo	ork:			
		Rename				
	_	Nove up				
1.1	WLANCSW	Security hote:	WEAPCSW WPA-Personal	Mide Automatic	ally connect	
-		Fladio type:	Any supported			

# 4. Troubleshooting

This chapter provides solutions to problems usually encountered during the installation and operation of the adapter.

## 1. Symptom:

The LED is Off.

# **Possible Remedy:**

Make sure the Wireless adapter is inserted properly. Otherwise, please contact your vendor.

## 2. Symptom:

The LED is always on not blinking.

## **Possible Remedy:**

Make sure that you have installed the driver from the attached CD.

## 3. Symptom:

The LED is blinking but the Wireless adapter icon does not appear in your icon tray.

#### **Possible Remedy:**

Make sure that you have installed the Utility from the attached CD.

### 4. Symptom:

The Wireless adapter is linking, but can't share files with others.

#### **Possible Remedy:**

Make sure the File and printer-sharing function is enabled.

# 5. Symptom:

Slow or unstable performance.

## **Possible Remedy:**

Try to change the channel of the communicating group or move your device closer to the communicating device.

## 6. Symptom:

Can't find the utility icon in the taskbar when plug in the Wireless adapter.

## **Possible Remedy:**

You could enable the function by click the icon of Start  $\rightarrow$  All Programs  $\rightarrow$  Ralink Utility.

## 7. Symptom:

No wireless signal.

#### **Possible Remedy:**

Move the antennas of the access point or wireless router into an L shape (one vertically, and one horizontally). Click on the Refresh button on the Site Survey screen. If the computer still does not see the Access Point, and then try to move your Access Point closer to the computer. Then click on the Refresh button again. If the computer still does not see the Access Point, move all things that may cause interference with the wireless signal.

#### 8. Symptom:

If you still cannot get a wireless connection of the network.

#### **Possible Remedy:**

Step 1- Turn the computer off

- Step 2- Turn the Access Point off
- Step 3- Turn the Access Point on
- Step 4- Wait 30 seconds
- Step 5- Turn the computer back on
- Step 6- Using the Utility reconnect to the Access Point:
- Step 7- Double click on the bar graph icon in the system tray
- Step 8- Select the Site Survey Link
- Step 9- Highlight the SSID of your wireless network and click connect
- Step 10- Click OK if all the settings are correct

#### 9. What is the IEEE 802.11g standard?

802.11g is the new IEEE standard for high-speed wireless LAN communications that provides for up to 54 Mbps data rate in the 2.4 GHz band. 802.11g is quickly becoming the next mainstream wireless LAN technology for the home, office and public networks. 802.11g defines the use of the same OFDM modulation technique specified in IEEE 802.11a for the 5 GHz frequency band and applies it in the same 2.4 GHz frequency band as IEEE 802.11b. The 802.11g standard requires backward compatibility with 802.11b.

#### The standard specifically calls for:

**A.** A new physically layer for the 802.11 Medium Access Control (MAC) in the 2.4 GHz frequency band, know as the extended rate PHY(ERP(. The ERP adds OFDM as a mandatory new coding scheme for 6, 12, and 24 Mbps (mandatory speeds), and 18, 36, 48, 54 Mbps (optional speeds). The ERP includes the modulation schemes found in 802.11b including CCK for 11 and 5.5 Mbps and Barker code modulation for 2 and 1 Mbps.

**B.** A protection mechanism called RTS.CTS that governs how 802.11g devices and 802.11b devices interoperate.

#### 10. What does IEEE 802.11 feature support?

The product supports the following IEEE 802.11 functions:

- -- CSMA/CA Plus Acknowledge Protocol
- -- Multi-Channel Roaming
- -- Automatic Rate Selection
- -- RTS/CTS Feature
- -- Fragmentation
- -- Power Management

#### 11. What is Ad-Hoc?

An Ad-Hoc integrated wireless LAN is a group of computers, each has a Wireless LAN adapter, Connected as an independent wireless LAN. Ad-Hoc wireless LAN is applicable at a departmental scale for a branch or SOHO ope ration.

#### 12. What is Infrastructure?

An integrated wireless and wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

#### 13. What is BSS ID?

A specific Ad hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSS ID.

#### 14. What is WEP?

WEP is Wired Equivalent Privacy, a data privacy mechanism based on a 40 bit shared key algorithm, as described in the IEEE 802.11 standard.

## 15. What is TKIP?

TKIP is a quick-fix method to quickly overcome the inherent weaknesses in WEP security, especially the reuse of encryption keys. TKIP is involved in the IEEE 802.11i WLAN security standard, and the specification might be officially released by early 2003.

## 16. What is AES?

AES (Advanced Encryption Standard), a chip-based security, has been developed to ensure the highest degree of security and authenticity for digital information, wherever and however communicated or stored, while making more efficient use if hardware and/or software than previous encryption standards. It is also included in IEEE 802.11i standard.

Compare with AES, TKIP is a temporary protocol for replacing WEP security until manufacturers implement AES at the hardware level.

#### 17. Would the information be intercepted while transmitting on air?

WLAN features two-fold protection in security. On the hardware side, as with Direct Sequence Spread Spectrum technology, it has the inherent security feature of scrambling. On the software side, WLAN series offer the encryption function (WEP) to enhance security and Access Control. Users can set it up depending upon their needs.

If you have any troubles to configure or setup this WLAN adapter, please feel free to contact us.

Before contacting us, make sure collect following information. Submit complete detailed information of your problem will help us to provide you accurate answers.

Model Name: Serial Number: PC Settings: Other: