# IEEE 802.11n Wireless PCI Card

WP72RL1

# **User's Manual**

#### FCC Warning

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.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

#### FCC Caution:

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.

#### **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 a minimum distance of about eight inches (20cm) between the radiator and your body.

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

## Revision History

Revision V1. History 1st release

All brand and product names mentioned in this manual are trademarks and/or registered trademarks of their respective holders.

# **CE 0984** (!)

E=9.67977 V/m is the maximum E-Field strength when safety distance between the EUT and human body is maintained at least 20cm, which is below 61V/m as required in Annex III table 2 of EC Council Recommendation (1999/519/EC). This proves that the unit complies with the EN 62311 for RF exposure requirement.

Is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2004/108/EC), Low-voltage Directive (2006/95/EC), the procedures given in European Council Directive 99/5/EC and 2004/104/EC.

The equipment was passed. The test was performed according to the following European standards:

- EN 300 328 V.1.7.1
- EN 301 489-1 V.1.8.1 / EN 301 489-17 V.2.1.1
- EN 62311
- EN 60950-1

#### **Regulatory statement (R&TTE)**

- European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835GHz;
- In France, the equipment must be restricted to the 2.4465-2.4835GHz frequency range and must be restricted to indoor use.

Operation of this device is subjected to the following National regulations and may be prohibited to use if certain restriction should be applied.

D=0.020m is the minimum safety distance between the EUT and human body when the E-Field strength is 61V/m.

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## 1. Introduction

Thank you for purchasing this high-speed wireless network card! Excepting common wireless standards 802.11b/g, this wireless network card is also able to access 802.11n wireless networks - data transfer rate is 150Mbps, and that's three times faster than 802.11g wireless network! With easy-to-install PCI interface - a very common expansion port of computers - plug this wireless network card into any empty PCI slot of your computer, just that simple!

This product is made in ISO9001 approved factory and complies with FCC part 15 regulations and CE approval.

#### 1.1 Features

- High-efficiency antenna expands the scope of your wireless network.
- High-speed data transfer rate Up to 150Mbps.
- WMM function: control the bandwidth required for different applications.
- Work with IEEE 802.11b/g/n wireless devices.
- Supports major encryption methods like WEP, WPA, and WPA2 encryption.
- WPS configuration You don't need an experienced computer technician to help you to get connected. Utilizing the software program of the card, you can get your computer connected by pushing a button or entering an 8-digit code. Pressing the button on the network card, the WPS connection can be activated as well.
- PCI interface you can get it installed on your computer in just few seconds!

#### 1.2 Familiar with your new wireless network card



#### 1. Antennas

One 2dBi dipole antenna is enclosed with the PCI card. Please secure the antenna to Reverse SMA connector of the card.

2. Link & Active LED Definitions

LED	Light Status	Description
Link	On	Link to a wireless access point
LINK	Off	Radio is switched to off
Active	Blinking	Transferring / receiving data
	Off	No wireless activity

#### **1.3 Package Contents**

Before you starting to use this wireless network card, please check if there's anything missing in the package, and contact your dealer of purchase to claim for missing items:

- One PCI Wireless Network Card
- One 2dBi Dipole Antennas
- One CD-ROM (Drivers / Utility/User Manual)



#### 1.4 Before you start

You must have the requirements as follow,

- A computer with an available PCI slot
- At least a 300MHz processor and 32MB memory
- Windows 2000/XP/Vista or Windows 7 operation system
- A CD-ROM drive
- At least 100MB of available disk space.
- Wireless PCI Adapter properly installed

#### 1.5 Hardware Installation

STEP1: Turn off your computer and remove its cover

**STEP2:** Insert the PCI wireless network card into an available PCI slot firmly. Please refer to the illustration below:



**STEP3**: Secure this card to the rear of the computer chassis and replace the cover. **STEP4**: Install the antenna on the wireless network card, and make sure the antenna is securely installed. To improve radio reception, please adjust antenna to the proper position.



**STEP5:** Turn on the computer.

## 2. Installation Procedure

Note: If you have installed the Wireless Adapter driver & utility before,

please uninstall the old version first.

**STEP1:** The **Found New Hardware Wizard** below will appear after the WLAN adapter is installed. Please click **Cancel** to continue.



(For Windows Vista)



(For Windows XP)

(For Windows 2000)

**STEP2:** Insert Installation CD into CD-ROM drive, windows below will appear. Click **Install Driver & Utility** to begin device driver installation.



**STEP3:** Please read the following license agreement. Use the scroll bar to view the rest of this agreement. Select **I accept the terms of the license agreement** and click **Next** to continue.

Ralink Wireless LAN - InstallShie	eld Wizard	×
License Agreement Please read the following licen	se agreement carefully.	
Ralink	ALINK Wireless Utility for Windows 2000/XP/Vista/Win7 Copyright (C) RALINK TECHNOLOGY, CORP. All Rights Reserved. Thank you for purchasing RALINK Wireless product! SOFTWARE PRODUCT LICENSE The SOFTWARE PRODUCT is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The SOFTWARE PRODUCT is licensed, not sold. 1. GRANT OF LICENSE. This End-User License Agreement grants you the following rights:Installation and Use. You may install and use an unlimited number of copies of the SOFTWARE PRODUCT: provided that each copy shall be a true and complete copy, including all copyright and trademark notices, and shall be accompanied by a copy of this EULA. Copies of the SOFTWARE PRODUCT: provided that each copy shall be a true and complete copy, including all copyright and trademark notices, and shall be accompanied by a copy of this EULA. Copies of the SOFTWARE PRODUCT: may be distributed as a standalone produce or included with your own product. Print I go not accept the terms of the license agreement	
InstallShield	< <u>B</u> ack <u>N</u> ext > Car	cel

STEP4: Choose Install driver and Ralink WLAN Utility and click Next to continue.

Ralink Wireless LAN - InstallShiel	d Wizard
Setup Type Select the setup type that best :	suits your needs.
	Choose to install
	<ul> <li>Install driver and Ralink WLAN Utility.</li> <li>Install driver only</li> </ul>
Ralink	
InstallShield	< Back Next > Cancel

STEP5: In <u>Windows XP</u>, there is a Windows Zero Configuration Tool for you to setup wireless adapter. You can choose to configure the adapter through the Microsoft Zero Configuration Tool or the Ralink Configuration Tool. It is recommended to choose the Ralink Configuration Tool for the adapter. Click Next to continue.

Ralink Wireless LAN - Insta	allShield Wizard	
Setup Type Select the setup type that bes	st suits your needs.	
	Select Configuration Tool  Finalink Configuration Tool  Microsoft Zero Configuration Tool	
Ralink		
Instalished	<u> </u>	Cancel

**STEP6**: Click **Install** to begin the installation.



**STEP7**: Please wait for a while during the Wireless LAN adapter is configuring your new software installation.

Ralink Wireless LAN - InstallShiel	d Wizard	×
Setup Status		
	The InstallShield Wizard is installing Ralink Wireless LAN	
Ralink	Installing C:\Windows\SYSTEM32\RaCertMgr.dll	
InstallShield		ance

**STEP8:** After the setup wizard has successfully installed wireless LAN, click **Finish** to exit the wizard.

Ralink Wireless LAN - InstallShield	Wizard
	InstallShield Wizard Complete
Ralink	The InstallShield Wizard has successfully installed Ralink Wireless LAN. Click Finish to exit the wizard.
InstaliShield	< Back Cancel

The Configuration Utility appears as an icon on the system tray of Windows while the

adapter is running. You can open the utility by double-click on the icon.

Right-click the icon, there are some items for you to operate the configuration utility,

- Launch Config Utilities → Select this option to open the Configuration Utility tool.
- Use Zero Configuration as Configuration utility (<u>Available on</u> <u>Windows XP only</u>) → Select this option to use Windows XP built-in wireless configuration utility (Windows Zero Configuration) to configure to card.
- Switch to STA+AP Mode (Available on Windows 7) → Select this option to change to AP mode.
- Switch to AP Mode (Available on Windows Vista/XP/2000 only) → Select this option to change to AP mode.
- Open Diagnostic Testing Mode <u>(Available on Windows</u> <u>Vista/XP/2000 only</u>) → To check network connection status.
- **Exit**  $\rightarrow$  Select **Exit** to close the Configuration Utility tool.



## 3. Wireless Network Configuration Utility

#### 3.1 RaUI Wireless Utility & Windows Zero Configuration (WZC)

The Configuration Utility is a powerful application that helps you to configure the Wireless LAN adapter and monitor the link status and statistics during the communication process.

When the adapter is installed, the configuration utility will be displayed automatically. This adapter will auto connect to wireless device which has better signal strength and no wireless security setting.

In **Windows XP**, it provides wireless configuration utility named "Windows Zero configuration" which provides basic configuration function for Ralink Wireless NIC, Ralink's Utility (RaUI) provides WPA supplicant functionality. To make it easier for user to select the correct utility, RaUI will let user make the selection when it first runs after windows XP boots.

RaUI can co-exist with **WZC** (Windows Zero Configuration). When coexisting with WZC, RaUI only provides monitoring function, such as link status, network status, statistic counters, advance feature status, WMM status and WPS status. It won't interfere with WZC's configuration or profile functions. Please see below picture: To select WZC or RaUI



If "Use Zero Configurations as Configuration utility" is selected, please continue on the section. Below picture shows that the RaUI status when WZC is active as main control utility.

RaUI										
Profile	Network	Advanced	Stat	istics			() WPS	Sso	ta ccx	Į.
Sorted by >>	OI22	O Che	mel	45	o s	ignal		Show dBm		
alex_test_3.5G		61			•	42N				
ASUS_n13		01		i ā		78N			-	
default		10 11		ň	49	52%				
00000000		10 11		ň	64	63%	-			
Properts Wireless		p.	n i	ň	•	37%				
testints		13 2		ň		65%				
WOELON ETD C		14.			14	1000	_			-
##S1498U-1P_34	IAGE	Q 1	9.	a w	47	10075				-
Rescan	Add to Profil	ie Co	nect	1						
Status : Extra Info Channel : Authentication : Encryption : Network Type	<ul> <li>WRS14WL_FT</li> <li>LHK H: Up (7)</li> <li>1 &lt;-&gt; 2412 W</li> <li>WPA2-P5K</li> <li>AES</li> <li>Infrastructu</li> <li>40 2 3 32</li> </ul>	<ul> <li>e-&gt; 00-06-4F-1</li> <li>Power +&gt;:10000</li> <li>Pfz; central chare</li> </ul>	2-34-5A 1el 1 3			Tracomit Link Speed ++	<ul> <li>135.0 Allaps</li> <li>1.216 Kbps</li> </ul>	Max 2,550		
IP Address : Sub Mask :	> 255.255.255.	0				and the second sec				
IP Address : Sub Mask : Default Gateway :	<ul> <li>142.168.3.24</li> <li>255.255.255.</li> <li>192.168.3.1</li> <li>HT</li> </ul>	0				Receive	> 1.0 Mbps	Kbps Max		
IP Address : Sub Mask : Default Gateway : BW >> 40	++ 142.168.3.24 ++ 255.255.255. ++ 192.168.3.1 HT	0 9460 ** 27				Receive	> 1.0 Mbps	Hops Max		

When activating WZC, there are couple different on RaUI status compare to the without WZC running:

- (1) **Profile** button will be gray, profile function is removed since the NIC is controlled by WZC.
- (2) The **connect** and **add profile** function will be gray. The reason is same as the first difference.

#### [Use WZC to configure wireless NIC]

**STEP1:** Right-click Ralink configuration utility icon and select "Use Zero Configuration as Configuration Utility".



STEP2: Right-click the network connection icon in the task bar.

	Change Windows Firewall settings
	Open Network Connections
	Repair
1.50	View Available Wireless Networks
	👷 😯 🎉 🕵 💽 💟 🔍 💌 3:36 AM

**STEP3:** All wireless access point in proximity will be display here. If the access point you want to use is not display here, please try to move your computer closer to the access point, or you can click "**Refresh Network List**" to rescan access points. Click the access point you wan to use if it's shown, then click "**Connect**".



**STEP4:** If the access point is protected by encryption, you have to input its security key or passphrase here. It must match the encryption setting on the access point.

Wireless Network Cor	nnection	×
The network 'WR514VN_F key). A network key helps Type the key, and then d	FTP_Server' requires a network key (also called a WEP key of s prevent unknown intruders from connecting to this networ lick Connect.	or WPA k.
Network <u>k</u> ey:	•••••	
Confirm network key:		

**STEP5**: When you see the "**Connected**" message, the connection between your computer and wireless access point is successfully established.

etwork 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 rar	nge or to get more
Set up a wireless network for a home or small office	(( <b>n</b> ))	WR514VN_FTP_Server	Connected 🧙
elated Tasks		You are currently connected to this network. To discor network, click Disconnect.	nect from this
Learn about wireless networking			
Change the order of preferred networks	((ဓူ))	default	
Change advanced	U	Unsecured wireless network	UDDae
settings	((0))	pronets_testlab	
	. [.	📅 Security-enabled wireless network (WPA2)	
	((Q))	Pronets Wireless	
	(( <b>°</b> ))	Pronets Wireless	

STEP6: If you want to modify information about AP, click "Change advanced settings"



STEP7: Choose "Wireless Networks" tab.

eral Wireless Networks	dvanced
Use Windows to configure r	ny wireless network settings
Available <u>n</u> etworks:	or find out more information
about wireless networks in ra	nge, click the button below.
	View Wireless Networks
Preferred networks: Automatically connect to ava below:	ilable networks in the order listed
Preferred networks: Automatically connect to ava below: WR514VN_FTP_Serve	ilable networks in the order listed r (Automa Move up Move down
Preferred networks: Automatically connect to avai below: WR514VN_FTP_Serve <u>Add</u> <u>R</u> emove	ilable networks in the order listed r (Automa Move up Move down

STEP8: Click "Properties" and then click "OK" button.

ssociation	Authentication	Connection	
Network <u>n</u> a	me (SSID):	WR514VN_FTP_Server	
Conne	ect even if this n	etwork is not broadcasting	
- Wireless r	network key —		
This netw	ork requires a ke	ey for the following:	
Network	Authentication:	WPA2-PSK	~
<u>D</u> ata enc	ryption:	AES	~
Network <u>I</u>	≤ey:	•••••	
C <u>o</u> nfirm n	etwork key:	*****	
Key inde <u>x</u>	(advanced)	1 0	
The k	ey is provided fo	r me automatically	
This is a	computer-to-cor	r me automatically nputer (ad hoc) network; w ed	reless

**STEP9:** After filling appropriate value, click "**OK**" button. And the status will prompt up as below.

Wireless Network Connection (WR514VN_FTP_Server)
Speed: 135.0 Mbps
Signal Strength: Excellent
Status: Connected
📰 😯 🚯 🕨 🕵 😕 🛄 🦁 3:31 AM

**STEP10:** Click the Ralink's icon will bring up RaUI main window. User can find the surrounding APs in the list. The current connected AP will also show with the green icon indicated as below screen. User may user the available tab to configure more advanced features provided by Ralink's wireless NIC.

चण										
Profile	LL Network	ر Advanced	Stat	) istics	10	www.	<b>Ø</b> WPS	SSO SSO	CCX	Q
Sorted by >>	SSID	O Cha	annel		Signal	nal		Show dBr	ı	
alex_test_3.5G		101	<b>B</b>		e List 22	42%				
ASUS_n13		10 1	15	i n	2.9	78%				
default		12 11		i n	4	52%				
		11			4	63%				
Propets Wireless		45.6			-	37%				
tectlab		د د <u>ب</u>			•	45%				
		V 2			10	400%				
	1									
Status ;	>> WR514VN_F1	r., <> 00-06-4F-1	2-34-5A				Link Q Signal Str	uality >> 98% ength 1 >> 180%		
Status > Extra Info >	>> WR514VN_F1	<> 00-06-4F-1 < Power >>:100%]	2-34-5A				Link Q Signal Str	uality >> 98% ength 1 >> 180%	-	
Status > Extra Info > Channel >	<ul> <li>&gt;&gt; WR514VN_F1</li> <li>&gt;&gt; Link is Up [7:</li> <li>&gt;&gt; 1 &lt;&gt; 2412 &amp;</li> </ul>	( <> 00-06-4F-1 < Power >>:100%) AHz; central chani	12-34-5A nel : 3				Link Q Signal Sti	uality >> 98% ength 1 >> 100%		
Status » Extra Info » Channel » Authentication »	<ul> <li>&gt;&gt; WR514VN_F1</li> <li>&gt;&gt; Link is Up [T;</li> <li>&gt;&gt; 1 &lt;&gt; 2412 &amp;</li> <li>&gt;&gt; WPA2-PSK</li> </ul>	( <> 00-06-4F-1 < Power >>:100%) AHz; central chanr	2-34-5A nel : 3				Link Q Signal Str	uality >> 98% ength 1, >> 100%		
Status > Extra Info > Channel > Authentication > Encryption >	<ul> <li>&gt;&gt; WR514VN_F1</li> <li>&gt;&gt; Link is Up [T;</li> <li>&gt;&gt; 1 &lt;&gt; 2412 Å</li> <li>&gt;&gt; WPA2-PSK</li> <li>&gt;&gt; AES</li> </ul>	( <> 00-06-4F-1 < Power >>:100%) AHz; central chanr	12-34-5A nel : 3			Transmit	Link Q SignaliStr	uality >> 98% ength 1 >> 100%		
Status > Extra Info > Channel > Authentication > Encryption > Network Type >	<ul> <li>&gt;&gt; WR514VN_F1</li> <li>&gt;&gt; Link is Up [7:</li> <li>&gt;&gt; 1 &lt;&gt; 2412 Å</li> <li>&gt;&gt; WPA2-PSK</li> <li>&gt;&gt; AES</li> <li>&gt;&gt; Infrastructu</li> </ul>	( <> 00-06-4F-1 < Power >>:100%) AHz; central chanr re	2-34-5A nel : 3			Transmit — Link Speed >:	Link Q Signal Str > 135.0 Mbps	uality >> 98% ength 1 >> 180% Max		
Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address >	<ul> <li>&gt;&gt; WR514VN_FT</li> <li>&gt;&gt; Link is Up [7:</li> <li>&gt;&gt; 1 &lt;&gt; 2412 &amp;</li> <li>&gt;&gt; WPA2-PSK</li> <li>&gt;&gt; AES</li> <li>&gt;&gt; Infrastructu</li> <li>&gt;&gt; 192.168.3.2!</li> </ul>	re	2-34-5A nel : 3			Transmit Link Speed >: Throughput >	Link Q Signal Str > 135.0 Mbps > 0.000 Kbps	uality >> 98% ength 1 >> 180% Max 1.140		
Status > Extra Info ; Channel > Authentication > Encryption > Network Type > IP Address > Sub Madress >	<ul> <li>&gt;&gt; WR514VN_FT</li> <li>&gt;&gt; Link is Up [T;</li> <li>&gt;&gt; 1 &lt;&gt; 2412 Å</li> <li>&gt;&gt;&gt; WPA2-PSK</li> <li>&gt;&gt;&gt; AES</li> <li>&gt;&gt;&gt;&gt; Infrastructu</li> <li>&gt;&gt;&gt; 192.168.3.25</li> <li>&gt;</li></ul>	re 5.00	2-34-5A nel : 3			Transmit — Link Speed >: Throughput >	Link Q Signal Str > 135.0 Mbps > 0.000 Kbps	uality >> 98% ength 1 >> 100% Max 1.140 Kbps		
Status > Extra Info ; Channel > Authentication > Encryption > Network Type > IP Address > Sub Mask > Default Gateway >	<ul> <li>&gt;&gt; WR514VN_FT</li> <li>&gt;&gt; Link is Up [T;</li> <li>&gt;&gt; 1 &lt;&gt; 2412 Å</li> <li>&gt;&gt;&gt; WPA2-PSK</li> <li>&gt;&gt;&gt; AES</li> <li>&gt;&gt;&gt; Infrastructu</li> <li>&gt;&gt;&gt; 192.168.3.2!</li> <li>&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;</li> <li>192.168.3.1</li> <li>HT</li> </ul>	r <> 00-06-4F-1 < Power >>:100% MHz; central chan MHz; central chan re 5 .0	2-34-5A nel : 3			Transmit — Link Speed >: Throughput > Receive —	Link Q Signal Str > 135.0 Mbps > 0.000 Kbps	uality >> 98% ength 1 >> 100% Max 1.140 Kbps Max		
Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address > Sub Mask > Default Gateway >	<ul> <li>&gt;&gt; WR514VN_FT</li> <li>&gt;&gt; Link is Up [T:</li> <li>&gt;&gt; 1 &lt;&gt; 2412 Å</li> <li>&gt;&gt;&gt; WPA2-PSK</li> <li>&gt;&gt; AES</li> <li>&gt;&gt; Infrastructu</li> <li>&gt;&gt;&gt; 192.168.3.21</li> <li>&gt;&gt;&gt; 192.168.3.1</li> <li>HT</li> </ul>	<pre> &lt;&gt; 00-06-4F-1 &lt; Power &gt;&gt;:100% AHz; central chan re 5 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0</pre>	12-34-5A nel : 3		1	Transmit — Link Speed >: Throughput > Receive — Link Speed >	Link Q Signal Str > 135.0 Mbps > 0.000 Kbps > 1.0 Mbps	uality >> 98% ength () >> 100% Max 1.140 Kbps Max	The second s	

#### 3.2 Start RaUI Utility

When starting RaUI, system will connect to the AP with best signal strength without setting profile or matching profile setting. It will issue a scan command to wireless NIC. After two seconds, the AP list will updated with the result of BSS list scan. The AP list include most used fields, such as SSID, network type, channel used, wireless mode, security status and signal percentage. The arrow icon indicates the connected BSS or IBSS network.

👍 RaUI							
P	Letwork	Advanced	Statistics	wmm	<b>Ø</b> WPS	CCX	Radio on/off
	Pro	file List					
PROF1	WR514VN FT	P Server	ę	b	Profile Name >>	PROF1	
×			ų	~	SSID >>	WR514VN_FTP	_s
					Network Type >>	Infrastructure	•
					Authentication >>	WPA2-PSK	
					Encryption >>	AES	
					Use 802.1x >>	NO	
					Tx Power >>	Auto	
					Channel >>	Auto	
					Power Save Mode >>	CAM	
Add Edit	Delete	Import	Export Acti	vate Fr	RTS Threshold >> agment Threshold >>	n/a n/a	
Add Edit	Delete	Import	Export Acti	vate Fr	RTS Threshold >> agment Threshold >>	n/a n/a	
Add Edit Status >	Delete	Import T <> 00-06-4F-1	Export Acti 2-34-5A	vate Fr	RTS Threshold >> agment Threshold >> Link Qu	n/a n/a ality >> 92%	
Add Edit Status >	Delete > WR514VN_F	Import T., <> 00-06-4F-1	Export Acti	vate Fr	RTS Threshold >> agment Threshold >> Link Qu Signal Stre	n/a n/a ality >> 92% angth 1 >> 99%	_
Add Edit Status > Extra Info >	Delete <ul> <li>WR514VN_F1</li> <li>Link is Up [7:</li> <li>1 cm2 2412 J</li> </ul>	Import T <> 00-06-4F-1 x Power >>:100%]	Export Acti	vate Fr	RTS Threshold >> agment Threshold >> Link Qu Signal Stra	n/a n/a ality >> 92% angth 1 >> 99%	
Add Edit Status > Extra Info > Channel > Authentication >	Delete  WR514VN_FT  Link is Up [T: 1 <> 2412 / WP42-P5K	Import T., <> 00-06-4F-1 x Power >>:100%] WHz; central chann	Export Acti	vate Fr	RTS Threshold >> agment Threshold >> Link Qu Signal Stre	n/a n/a ality >> 92% angth 1 >> 99%	
Add Edit Status > Extra Info > Channel > Authentication > Forcrution >	Delete  WR514VN_FT  Link is Up [T: 1 <> 2412 / WPA2-PSK > AFS	Import T., <> 00-06-4F-1 x Power >>:100%] WHz; central chann	Export Acti	vate Fr	RTS Threshold >> agment Threshold >> Link Qu Signal Stre	n/a n/a wality >> 92%	
Add Edit Status > Extra Info > Channel > Authentication > Encryption > Network Type >	Delete WR514VN_FT Link is Up (T: 1 <> 2412 / WPA2-PSK AE5 Infrastructu	Import T., <> 00-06-4F-1 x Power >>:100%] MHz; central chann ure	Export Acti	Transmit -	RTS Threshold >> agment Threshold >> Link Qu Signal Stre	n/a n/a wality >> 92% ength 1 >> 99%	
Add Edit Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address >	Delete  WR514VN_FT  Link is Up (T: 1 <> 2412 / WPA2-P5K AE5 Infrastructu 192.168.3.22	Import T., <> 00-06-4F-1 x Power >>:100%] MHz; central chann ure 5	Export Acti	vate Fr Transmit – Link Speed	RTS Threshold >> agment Threshold >> Link Qu Signal Stru >> 135.0 Mbps	n/a n/a ality >> 92% ength 1 >> 99%	
Add Edit Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address > Sub Mask >	Delete           WR514VN_FT           Link is Up [T:           1 <> 2412 /           WPA2-P5K           AES           Infrastructu           192.168.3.22           255.255.255	Import T., <> 00-06-4F-1 x Power >>:100%] MHz; central chann are 5	Export Acti	Vate Fr Transmit – Link Speed Throughput	RTS Threshold >> agment Threshold >> Link Qu Signal Stri >> 135.0 Mbps t >> 0.000 Kbps	n/a n/a ality >> 92% ength 1 >> 99% Max 24,568	
Add Edit Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address > Sub Mask > Default Gateway >	Delete           WR514VN_FT           Link is Up [T:           1 <> 2412 /           WPA2-PSK           AE5           Infrastructu           192.168.3.2!           255.255.255           192.168.3.1	Import T <> 00-06-4F-1 x Power >>:100%] MHz; central chann ure 5	Export Acti	Transmit – Link Speed Throughput	RTS Threshold >> agment Threshold >> Link Qu Signal Stre >> 135.0 Mbps t >> 0.000 Kbps	n/a n/a ality >> 92% ength 1 >> 99% Max 24.568 Kbps	
Add Edit Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address > Sub Mask > Default Gateway >	Delete  WR514VN_FT  Link is Up [T: 1 <> 2412 / WPA2-P5K AES Infrastructu 192.168.3.2! 255.255 192.168.3.1 HT	Import T., <> 00-06-4F-1 x Power >>:100%] WHz; central chann ure 5 .0	Export Acti 2-34-5A nel : 3	Transmit – Link Speed Throughpul Receive – Link Speed	RTS Threshold >> agment Threshold >> Link Qu Signal Stre >> 135.0 Mbps t >> 0.000 Kbps d >> 1.0 Mbps	n/a n/a ality >> 92% angth 1 >> 99% Max Aax	
Add Edit Status > Extra Info > Channel > Authentication > Encryption > Network Type > IP Address > Sub Mask > Default Gateway > BW >> 40	Delete  WR514VN_FT  Link is Up [T: 1 <> 2412 / WPA2-P5K AES Infrastructu 192.168.3.2! 255.255 192.168.3.1 HT	Import T., <> 00-06-4F-1 x Power >>:100%] WHz; central chann ure 5 .0 SNR0 >> n/a	Export Acti	Transmit – Link Speed Receive – Link Speed	RTS Threshold >> agment Threshold >> Link QL Signal Stri >> 135.0 Mbps t >> 0.000 Kbps d >> 1.0 Mbps	n/a n/a ality >> 92% angth 1 >> 99% Max 24.568 Kbps Max	

There are three sections in RaUI. These sections are briefly described as below.

- Button Section: Include Profile page, Network page, Advanced page, Statistics page, WMM page, WPS page, SSO page, CCX Page, About button, Radio On/Off button and Help button.
- ➔ Button Section



#### ■ Function Section: Corresponding button

#### ➔ Profile Page



### ➔ Network Page

R+ F	RaUI							<b></b>
4	LLL Network	ر Advanced	Statistics	wmm	<b>Ø</b> WPS	Radio on/off	About	🕜 Help
_	Sorted by >>	🥥 SSID	🖉 Char	nnel 🖉 S	iignal >>		Show dBm	
			<b>b</b> 2	6909	86%			
	default		11	B 9 D	100%			
	Default_WLAN		🖒 11	🕒 🧕 🚺 🚯	65%			
	Pronets Wireless		6	🕒 🧕 🗊 🕈	65%			
	ррр		6 	📙 🧕 🗍 💔	96%			
	WR514VN_FTP_Se	erver	- 1 - C	🕒 g 🕕 🕈	100%			
100	Rescan	Add to Profile	Con	nect				_

#### ➔ Advanced Page

R+ RaUI								x
Part Network	کی Advanced	Statistics	aos WMM	<b>Ø</b> WPS	Radio on/off	About	🕜 Help	
Wireless mode >>	2.4G	•						
Selec	t Your Country Re	gion Code						
2,4GHz >>	0: CH1-11		-					
Enable TX Burst	t dow Size t 70 dBm							
Apply			_				_	•

## ➔ Statistics Page

R+ RaU	I							×
<b></b>	Network	Advanced	Statistics	() WPS	Radio on/off	About	🕜 Help	
	Transmit	Receive						_
	Frames 1	Fransmitted Succe	ssfully	=	2610			
	Frames F	Retransmitted Succ	cessfully	-	2188			
	Frames F	Fail To Receive ACM	After All Retries	=	65			
Re	eset Counter							

## → WMM Page

R+ RaU	I							<b>— X</b>
4	Network	ر Advanced	Statistics	wmm	<b>Ø</b> WPS	Radio on/off	About	🕜 Help
- WN	W Setup Status – WMM >> E	inabled	Power Save >	> Disabled		Direct	Link >> Disabled	I
	MW 🔁	M Enable						
		WMM - Power Save	Enable					
		AC_BK	AC_BE	AC_VI		AC_VO		
		Direct Link Setup I	Enable					
		MAC Address >>			Timeout Valu	ie >> 60 sec		
		1		, ,		,		
							A	pply
							Tea	r Down
							104	
		_		_				

## → WPS Page

R+ RaUI									x
↓ ↓ Network	ر Advanced	Statistics	wmm	<b>W</b> PS	Radio on/o	off	About	🕜 Help	
		WP	S AP List					_	
ID :	ррр		00-06-	4F-6F-8E-E8	6	-		Rescan Information	
ID :	Default_V	WLAN	00-E0-	4C-86-70-01	11			Pin Code	1
		WPS F	rofile List					Config Mode	1
								Enrollee 💌	
								Detail	
								Connect	
<u>P</u> IN				Progress >>	0%			Rotate	
PBC								Disconnect	
								Export Profile	1
								Delete	

→ SSO Page (available on Windows XP & 2000 OS)

Profile	↓ <b></b> Network	Advanced	) Statistics	www.	<b>Ø</b> WPS	<b>B</b> Sso	ra ccx	
Enable SSO I	Feature	Enable Persiste	ent Connection					
🖉 Use ID and	Password in Winlogor							
Ø Use ID and	Password in Profile							
Prompt ID	and Password Dialog							
Profile List (o	nly support LEAP or E	AP-FAST authentica	ition)					
		Select Profile >>		· ·		Apply	6	
			1.2					
-Informa	ation of selected prof	11e						
_ Inform	ation of selected prof	rofile Name >>						
- Inform	ation of selected prof	rofile Name >> SSID >>						

→ CCX Page (available on Windows Vista, XP & 2000 OS)



### ➔ About Page

R+ RaUI									×
	Profile	Network	ر Advanced	Statistics	with the second	() WPS	Radio on/off	About	•
		(c) (	Copyright 2009, F	talink Technology, I	nc. All rights res	erved.			
		RaConfi	g Version >>	3.1.4.0	1	Date >>	12-10-2009		
		Drive	r Version >>	3.0.11.0	1	Date >>	12-10-2009		
		DL	L Version >>	1.0.4.0	1	Date >>	12-10-2009		
		EEPRO/	W Version >>	0.1	Firmware Ver	rsion >>	0.25		
		Phy	_Address >>	00-1F-1F-82-80-7	D				
				WWW.RAL	INKTECH.COM				
									-

 Status Section: Include Link Status, Authentication Status, AP's information, Configuration and retrying the connection when authentication is failed.

→ Link Status

Status >>	WR514VN_FT <> 00-06-4F-12-34-5A	Link Quality >> 95%
		Signal Strength 1 >> 100%
Extra Info >>	Link is Up [Tx Power >>:100%]	
Channel >>	1 <> 2412 MHz; central channel : 3	
Authentication >>	WPA2-PSK	
Encryption >>	AES	Transmit
Network Type >>	Infrastructure	Link Speed >> 135.0 Mbps
IP Address >>	192.168.3.39	Throughout an 0,000 l/her
Sub Mask >>	255.255.255.0	1hroughput >> 0.000 Kbps 35.536
Default Gateway >>	192.168.3.1	Receive
	HT	Link Speed >> 1.0 Mbps
BW >> 40	SNR0 >> 21	
GI >> long MC	5>> 7 SNR1 >> n/a	Throughput >> 55.612 Kbps 121.236 PC 1417 Kbps

#### ➔ Authentication Status

Card Name >> Ralink 8	02.11n Wireless LAN Card	Connected by manual
16:37:25.062	Starting network connection	
16:37:25.171	Network is connecting	
16:37:25.281	PEAP Authenticating	
16:37:28.375	Wireless client is authenticated.	

### → AP's Information

General	WPS	802.11n	
SSID >	WR514VN_FT	P_Server	
MAC Address >	00-06-4F-12-	34-5A	Signal Strength >> 100%
Authentication Type >	WPA-PSK+WP	A2-PSK	
Encryption Type >	TKIP+AES		Legacy Supported Rates (Mbps): 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54
Channel >	1 <> 2412 M	Hz	802.11n Max. Supported Rates (Mbps): 72.2
Network Type >	Infrastructui	e	5357 V 14 V 41 V
Reacon Interval >	100		

Card Name >> Ralink 802.11n Wireless LAN Card Profile Name >> PROF1 Message >> Invalid identity or password	→ Retry the Connection					
OK Cancel	Card Name >> Ralink 802.11n Wireless LAN Profile Name >> PROF1 Message >> Invalid identity or password	l Card	ldentity > Password >	>		
OK       Cancel               Configuration          System Config       Auth. \ Encry.         B02.1x         Profile Name >>         PROF2         SSID >>         Default_11N         Tx Power >>         Auto         Preamble >>         Auto						
Configuration      System Config Auth. \ Encry. 802.1×      Profile Name >> PROF2     SSID >> Defaut_11N     Tx Power >> Auto     Preamble >> Auto     Preamble >> Auto		ОК	Cancel			
System Config     Auth. \ Encry.     802:1×       Profile Name >>     PROF2     Network Type >>     Infrastructure       SSID >>     Default_11N     Image: Tx Power >>     Auto       Preamble >>     Auto     Image: Preamble >>       Power Save Mode >>     CAM     PSM	→ Configuration					
Profile Name >> PROF2 Network Type >> Infrastructure  SSID >> Default_11N  TX Power >> Auto Preamble >> Auto Preamble >> Auto	System Config Auth. \ Encry. 802.1	tx.				
Power Save Mode >> O CAM O PSM	Profile Name >> PROF2 SSID >> Default_11N		Network Type >> Tx Power >> Preamble >>	Infrastructure Auto	•	
	Power Save Mode >> O CAM PS	5M	\$ 2247	00.07		
Image: String string         Diagnosis Capable           Fragment Threshold         256           2346         2346	Fragment Threshold 256		] 2347	2346	] Diagnosis Capable	

At the mean time of starting RaUI, there is also a small Ralink icon appears within windows taskbar as below. You may double click it to bring up the main menu if you selected to close RaUI menu earlier. You may also use mouse;s right button to close RaUI utility.

• 😼 (R4) att 🐠

→→ Ralink icon in system tray.

- Besides, the small icon will change color to reflect current wireless network connection status. The status indicates as follow:
  - $\rightarrow$   $\mathbb{R}_{+}$  -- indicate Connected and Signal Strength is Good.
  - → 124 -- indicate Connected and Signal Strength is Normal
  - → K -- indicate Wireless NIC is not connected yet
  - → K -- indicate Wireless NIC is not detected
  - ightarrow -- indicate Connected and Signal Strength is Weak

#### 3.3 Profile

Profile can book keeping your favorite wireless setting among your home, office, and other public hot-spot. You may save multiple profiles, and activate the correct one at your preference.

		Profil	le List				
	PROF1	WR514VN_FTP	_Server		96	Profile Name >> PROF1	
2					17 I.	SSID >> WR514VN_FTP_S	
						Network Type >> Infrastructure	
						Authentication >> WPA2-PSK	
						Encryption >> AES	
						Use 802.1x >> NO	
						Tx Power >> Auto	
						Channel >> Auto	
						Power Save Mode >> CAM	
						RTS Threshold >> n/a	
Add	d Edit	t Delete	Import	Export	Activate	Fragment Threshold >> n/a	

#### [Definition of each field]

Profile Name: Name of profile, preset to PROF\* (\* indicate 1,2,3,...)

**SSID:** AP or Ad-Hoc name

Network Type: Network's type, including infrastructure and Ad-Hoc.

Authentication: Authentication mode

Encryption: Encryption Type

Use 802.1x: Whether or not use 802.1x feature

**Tx Power:** Transmit power, the amount of power used by a radio transceiver to send the signal out.

Channel: channel in use for Ad-Hoc mode

**Power Save Mode:** Choose from CAM (Constantly Awake Mode) or Power Saving Mode.

**RTS Threshold**: User can adjust the RTS threshold number by sliding the bar or key in the value directly.

**Fragment Threshold:** User can adjust the Fragment threshold number by sliding the bar or key in the value directly.

#### [Icons and buttons]

Add

- ►→ indicate connection is successful on currently activated profile
- ► → indicate connection is failed on currently activate profile
- ℰ → indicate network type is infrastructure mode

✓ → indicate network type is Ad-Hoc

I → indicate security-enabled wireless network

→ Add a new profile



#### 3.3.1 Add/Edit Profile

There are 3 methods to open Profile Editor form:

- → You can open it from "Add to Profile" button in Site Survey function
- → You can open it form "Add" button in Profile function
- → You can open it from "Edit" button in Profile function

Profile Na	me >> PROF1				Network Type >>	Infrastructure	•
55	SID >> AP1			-	Tx Power >>	Auto	•
Power Save Mc	ide >> 🚫 CAM	PSM			Preamble >>	Auto	*
RTS Threshold		0			2347	2347	
Fragment Thresho	ld	256			] 2346	2346	
rstem Config	Auth. \ Encry.	80.	<b>ок</b> 21%	Cancel			
/stem Config Authentication >>	Auth. \ Encry.	80	OK 21% Encryption >>	Cancel		302.1X	
rstem Config Authentication >> WPA Preshared K	Auth. \ Encry. Open	80	OK 21% Encryption >>	Cancel		302. 1X	
ystem Config Authentication >> WPA Preshared K	Auth. \ Encry. Open ey >>	80	OK	Cancel	ء ٦	302. 1X	
vstem Config Authentication >> WPA Preshared K ep Key Key#1	Auth. \ Encry. Open ey >> Hexadecimal	₹ 	OK 21% Encryption >>	Cancel		302. 1X	
/stem Config Authentication >> WPA Preshared K ep Key Key#1 Key#2	Auth. \ Encry. Open ey >> Hexadecimal Hexadecimal	€	OK 21% Encryption >>	Cancel	9	302.1X	
/stem Config Authentication >> WPA Preshared K ep Key Key#1 Key#2 Key#3	Auth. \ Encry. Open ey >> Hexadecimal Hexadecimal Hexadecimal	- B0	OK 21) Encryption >>	Cancel	3	302. 1X	

**Profile Name:** User can chose name for this profile, or use default name defined by system.

**SSID**: User can key in the intended SSID name or use pull down menu to select from available APs.

**Power Save Mode:** Choose from CAM [Constantly Awake Mode] or Power Saving Mode.