IEEE 802.11n Wireless Series

Wireless 1T1R USB Adapter



User Manual

Version: 2.0 Date: June 20, 2011

FCC Certifications

Federal Communication Commission Interference Statement



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

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

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

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

CE Mark Warning

€€

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 Class B for ITE, the essential protection requirement of Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility and R&TTE Directive 1999/5/EC to meet the regulation of the radio equipment and telecommunications terminal equipment.

Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information. No part of this document can be copied or reproduced in any form without written consent from the company.

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Package Contents

The following contents should be found in your box:

- > One IEEE 802.11n USB Adapter
- > One resource CD, including:
 - ♦ REALTEK 11n USB Wireless LAN Driver and Utility
 - ♦ User's Manual
 - ♦ QIG

Note:

Make sure that the package contains the above items. If any of the listed items are damaged or missing, please contact with your distributor.

Conventions:

The "Adapter" mentioned in this user guide stands for Wireless 11n USB Adapter without any explanations.

CONTENTS

Chapter	1 Introduction	
1.1	Overview of the product	.7
1.2	Application Diagram	.7
1.3	Features	.8
1.4	LED Status	.8
Chapter	2 Installation Guide for Windows	.9
	Hardware Installation	
2.2	Software Installation	
	2.2.1 Overview	.9
	2.2.2 Installation Procedures.	
Chapter	3 Management Guide	
3.1	Making a Basic Network Connection	
011	3.1.1 Select a configuration tool	
	3.1.2 To connect with Microsoft Zero Configuration tool	
3.2	Introduction to the 802.11n Wireless LAN Utility	
0.2	3.2.1 Interfaces	
	3.2.2 Available Network	
	3.2.3 Profile	
	3.2.4 General	
	3.2.5 Advanced	
	3.2.6 Status	
	3.2.7 Statistics	
• • •	3.2.8 Wi-Fi Protect Setup	
3.3		
	3.3.2 General	
	3.3.4 Statistics	
Chapter	3.3.5 ICS	
•	4 Introduction for Vista user	
4.1	Hardware Installation	
4.2	Software Installation	
	4.2.1 Overview	
4.0	4.2.2 Installation Procedures	
4.3	Management Guide	
	4.3.1 Interfaces	
	4.3.2 Available Network	
	4.3.3 Profile	
	4.3.4 General	
	4.3.5 Advanced	
	4.3.6 Status	
	4.2.7 Statistics	
	4.3.8 Wi-Fi Protect Setup	
4.4	AP mode management guide for Vista	
	4.4.1 General	
	4.4.2 Advanced	
	4.4.3 Statistics	
•	4.4.4 ICS	
•	5 Introduction for Windows 7 User	
5.1	Hardware Installation	51

5.2	Softw	vare Installation	61
	5.2.1	Overview	61
	5.2.2	Installation Procedures	61
5.3	Mana	gement Guide	63
	5.3.1	Interfaces	64
	5.3.2	Available Network	64
	5.3.3	Profile	66
	5.3.4	General	70
	5.3.5	Advanced	71
	5.3.6	Status	72
	5.2.7	Statistics	73
	5.3.8	Wi-Fi Protect Setup	74
	5.3.9	Virtual Wi-Fi	74
5.4	AP m	ode management guide for Windows 7	84
	5.4.1	General	84
	5.4.2	Advanced	87
	5.4.3	Statistics	
	5.4.4	ICS	89
Appendi	x A: Sp	pecifications	91
		ossary	

Chapter 1 Introduction

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

1.1 Overview of the product

Comply with 802.11n Standards

The IEEE 802.11n Wireless USB adapter provides users to launch IEEE 802.11n wireless network in the 2.4 GHz band, which is also compatible with IEEE 802.11b/g wireless devices.

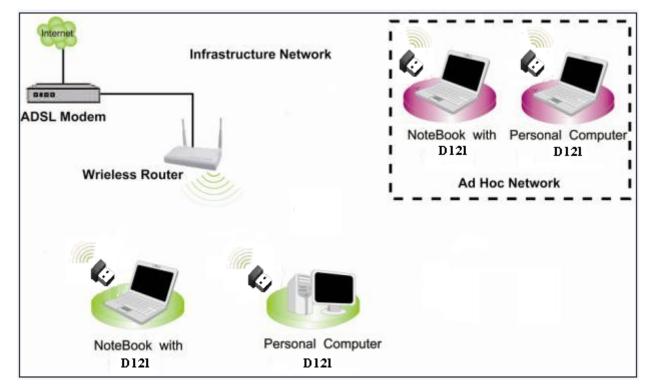
Reliable Coverage

The adapter has internal intelligent antenna providing even better wireless performance, transmission rates, stability and coverage. It includes a convenient utility for scanning available networks and saving preferred networks that users usually connected with. Your wireless communications are protected by up to 128-bit encryption, so your data stays secure.

Easy Installation and Connection

In addition, installation and use are further simplified by living up to USB's Plug and Play installation approach to connecting computer peripherals. You will not need to open the case of your computer, nor will you be required to set IRQ (Interrupt Request). So it is the simplest way to connect your computer to an Ethernet based network.

1.2 Application Diagram



1.3 Features

- Supports QoS Enhancement (WMM, WMM-PS Client mode)
- Supports wireless data encryption with 64/128-bit WPA, WPA2
- Supports frame aggregation, Power saving mechanism, channel management and co-existence
- Transmit Opportunity (TXOP) Short Inter-Frame Space (SIFS) bursting for higher multimedia bandwidth
- > Supports auto-installation and diagnostic utilities
- Supports driver for Windows 7, 2003, XP 86, XP 64, Vista 86, Vista 64, Linux, MAC

1.4 LED Status

LED Indications	Status	Working Status
	Blink green	The adapter is Radio on
Radio/ACT LED	Blink green and flashing intermittently	The adapter is already connected but is not transmitting or receiving data
	Blink green and fast flashing	The adapter is activity and transmitting of receiving data.
	Off	The adapter is Radio off

Chapter 2 Installation Guide for Windows

2.1 Hardware Installation

The installation of the adapter is very simple. You could plug the adapter directly to the USB port on your computer. The LED will light up when the adapter is installed successfully and the PC is on.

2.2 Software Installation

2.2.1 Overview

The Adapter's Setup Wizard will guide you through the Installation procedure for Windows XP. The Setup Wizard will install the REALTEK 11n USB Wireless LAN Driver and Utility. When you install the hardware prior to before installing the software, the system will prompt "Found New Hardware Wizard", click **Cancel**, and run the Setup Wizard program on the CD-ROM.

Found New Hardware Wiz	ard
	Welcome to the Found New Hardware Wizard Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). Read our privacy policy
	Can Windows connect to Windows Update to search for software? Yes, this time only Yes, now and <u>e</u> very time I connect a device No, not this <u>t</u> ime
and the second	Click Next to continue.
	< <u>B</u> ack Next > Cancel

2.2.2 Installation Procedures

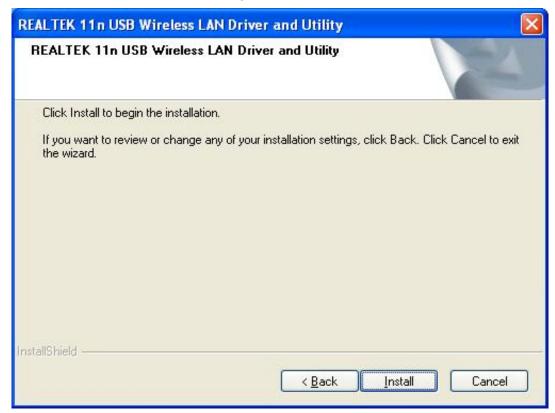
- 1. Insert the CD into your CD-Rom, and find the setup driver in the CD. Then click the setup icon to start the installation.
- 2. The language-selecting window pops up. Please select the language you use and click "Next".

hoose Setup Language Select the language for the installatio	n from the choices below.	
Basque Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch		
English Finnish French (Canadian) French (Standard) German Greek		
	< Back Next>	Can

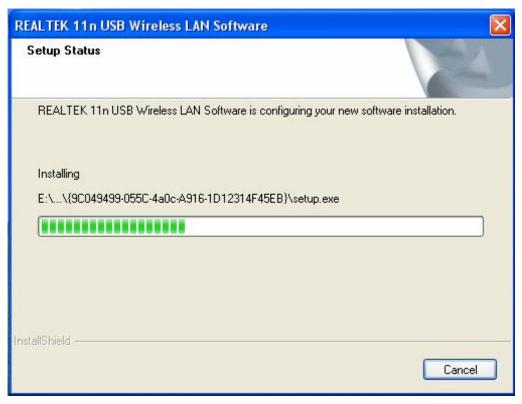
3. The welcome window pops up. Click the "Next" button to proceed.



4. Click the "Install" button to start installing.



5. Please wait while installation.



6. Please wait again while installation



Now installing REALTEK 11n USB Wireless LAN Driver

7. After all the steps above, you will see the screen below, click **Finish** to reboot the system.



Chapter 3 Management Guide

This chapter describes how to configure your Adapter for wireless connectivity on your Wireless Local Area Network (WLAN) and use the data security encryption features.

This User Guide takes Windows XP as the configuration example.

After Installing the Adapter, the Adapter's tray icon will appear in your system tray. It appears at the bottom of the screen, and shows the signal strength using color and the received signal strength indication (RSSI).

If the icon is purple, there is no connection.

If the icon is white, the network is dropping off.

If the icon is green, there is good signal strength.

If the icon is green, there is excellent signal strength.

3.1 Making a Basic Network Connection

3.1.1 Select a configuration tool

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

Note:

You could use either the software we provide or Microsoft Zero Configuration tool to configure this adapter.

3.1.2 To connect with Microsoft Zero Configuration tool

After specifying the Microsoft Zero Configuration tool to configure your wireless network, right click

on the *icon on system tray.* Select "View Available Wireless Networks" to specify your wireless network.

<u>D</u> isable	NUM	1.33
<u>S</u> tatus Repair	1	
- View Available Wireless Networks		
Change Windows Firewall settings		1
Open Network Connections		

The tool shows the available wireless networks. Select your demanding network to connect with. To connect to a wireless network, please click **Change advanced settings** to be compatible with your wireless network settings.

Choose a wireless network	
Click an item in the list below to connect to a wireless network in ran information.	ge or to get more
((p)) w241 F Security-enabled wireless network (WPA)	
((Q)) W142A	
Unsecured wireless network	0000
((Q)) ¹²³	
Unsecured wireless network	66600
((ດູ)) ^{888888test}	
Unsecured wireless network	0000
((@)) Wireless-11n-shawn	
Unsecured wireless network	6880
((Q)) WLAN-11g-GW	
Unsecured wireless network	•a00U _
	((p)) w241 ((p)) Security-enabled wireless network (WPA) ((p)) W142A Unsecured wireless network ((p)) 123 Unsecured wireless network ((p)) 88888test Unsecured wireless network ((p)) Wireless-11n-shawn Unsecured wireless network ((p)) Wireless network ((p)) Wireless network ((p)) Wireless network

3.2 Introduction to the 802.11n Wireless LAN Utility

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

3.2.1 Interfaces

After the driver installation, the icon **the following interface appears:**

will appear on your desktop. Double click this icon and

🙁 REALTEK 11n USB W	ireless LAN Utility
Refresh(<u>R</u>) Mode(<u>M</u>) Abo	at(<u>A</u>)
🖃 🦉 MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup
Realtek R TL818	
	Status: Not Associated
	Speed: N/A
	Type: N/A
	Encryption: N/A
	SSID:
	Signal Strength:
	Link Quality:
	Network Address:
	MAC Address:
	IP Address: 0.0.0.0
	Subnet Mask: 0.0.0.0
	Gateway:
	ReNew IP
<	
Show Tray Icon	Disable Adapter
Radio Off	Uisable Adapter Close Close

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

configuration window.

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

part.

- 3. Optional Table: "Show Tray Icon", "Disable Adapter", "Radio off", "Windows Zero Config"
- A. Show Tray Icon---Clicking "Show Tray Icon" and "Close" button, the management GUI will be minimized and stay on the tray icon located at the right bottom corner of Windows. If not, management GUI will shut down by only click "Close" button with unchecked condition.

- B. Disable Adapter---Disable this wireless PCI card.
- C. Radio off---It can save power while turning off the radio. While the radio is off, the links with other wireless network will be disconnected. User should be aware that while the wireless configuration is in AP mode. Radio Off will cause the sub network belonging to the AP to be disconnected with internet.
- D. Windows Zero Config---External Configuration: select this item will enables you to disable the WLAN Station Configuration Utility and indicates that the station driver is to be configured with Windows XP's built-in Zero Configuration Utility. This item is only displayed on windows XP systems.

3.2.2 Available Network

This network lists the available wireless networks. The Utility connects to a wireless network with best signal strength automatically. You can refresh the connecting network by clicking on the network name and click the **Refresh** button. In the center of the Utility windows, you will see detail information of each network.

🧟 REALTEK 11n USB W	fireless LAN Utility
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	ut(<u>A</u>)
🖃 🚽 MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup
Keallek K ILOIO	Available Network(s)
	SSID Channel Encryption Network Authentication Signal 1
	yerenfeng 1 WEP Unknown 76% IE
	I ³⁰ W142C-Travel_Ro 6 WEP Unknown 26% Ir I ³⁰ ZuniConnect 8 TKIP/AES WPA Pre-Shared Key/ 44% Ir
	 Image: Second state Image: Second state<
	Image: Construction of the second construction of the secon
	🖓 W235_Test 11 None Unknown 26% Ir
	Refresh Add to Profile
	Double click on item to join/create profile.
<	
Show Tray Icon Radio Off	Disable Adapter Close Close
	Windows Zero Config

Available Network Information:

Items	Information

SSID	The name of the IEEE 802.11 wireless network. This field has a
	maximum limit of 32 characters.
Channel	Display current channel in use.
Encryption	Shows the encryption mode in use. There are total 4 modes: None, WEP, TKIP and AES.
Network Authentication	Shows the authentication mode in use.
Signal	This percentage shows the strength of the signal.
	The type of network and the station currently connected are shown
	here.
The type The type Type Type or wirele	The options include :
Туре	• Infrastructure - All wireless clients will connect to an access point
Network Authentication Signal	or wireless router.
	• Ad-Hoc - Directly connecting to another computer, for peer-to-peer
	communication, using wireless network adapters on each computer,
	such as two or more wireless adapters.
BSSID	The IEEE MAC address of locally-managed, generating from a 46
	random code.
Support Rates	Show current rate

Note:

1) An Infrastructure network contains an Access Point or wireless router. All the wireless devices or clients will connect to the wireless router or access point.

2) An Ad-Hoc network contains only clients, such as laptops with wireless desktop adapters. All the adapters must be in Ad-Hoc mode to communicate.

3.2.3 Profile

1. Add a new profile:

(1) Selecting an available network in the "**Available Network**" function then click the **Add to Profile** button., or double click the network name. You could also add a new profile quickly by clicking the **Add** button in the "**Profile**" function.

Note: If the network you add to profile is not encrypted, "Unsecured network" window will pop up, then Click "OK".



(2) It displays "Wireless Network Properties" dialog box. This profile page allows users to save different wireless settings, which helps users to get access to wireless networks at home, office or other wireless network environments quickly.

Profile Name: RTK 11n AP	802.1x configure	
Network Name(SSID): RTK 11n AP	EAP TYPE :	
	GTC	Y
	Tunnel : Privision Mode :	
This is a computer-to-computer(ad hoc) network; wireless access points are not used.	~	Y
Channel: 11 (2462MHz) 🗸	Username :	
Wireless network security		
This network requires a key for the following:	Identity :	
Network Authentication: Open System 🛛 💌		
Data encryption: Disabled 🗸 🗸	Domain :	
	Password :	
Key index (advanced): 1	Certificate :	_
Network key:		. 4
	PAC : Auto Select PAC	
Confirm network key:		-

In this dialog box, there are some items:

Items	Information
Profile Name	Identifies the configuration profile .This name must be unique. Note that the profile names are not case-sensitive. (You can enter the Profile name by "Add", but you could only use the default name by "Add to profile".
Network Name(SSID)	The IEEE 802.11n wireless network name, using default name defined by system. This field has a maximum limit of 32 characters.

Country	Channel Range	Country	Channel Range
SPAIN	CH1 ~ CH11	FRANCE	CH1 ~ CH13
CANADA	CH1 ~ CH11	JAPAN	CH1 ~ CH14
ETSI	CH1 ~ CH13	ISRAEL	CH1 ~ CH13

(3) Channel (Country Region Code): six countries to choose. Country channel list:

(4) Wireless Network Security

A. Network Authentication

There are 7 types supported: Open System, Shared Key, WPA-PSK, WPA2-PSK, and WPA 802.1X, WPA2 802.1X, WEP 802.1X. Please select a type from the drop down list. Select the Security tab in the screen above. To define the security mode, select the desired security mode as follows.

Profile Name: RTK 11n AP	802.1x configure	
Network Name(SSID): RTK 11n AP	EAP TYPE :	
	GTC	Y
	Tunnel : Privision Mode :	
This is a computer-to-computer(ad hoc) network; wireless access points are not used.		×
Channel: 11 (2462MHz) 👻	Username :	
Wireless network security		
This network requires a key for the following:	Identity :	
Network Authentication: Open System 🛛 👻		
Data encryption: Open System	Domain :	
WPA-PSK		
ASCII PASSPHRASE WPA2-PSK WPA 802.1X	Password :	
WPA2 802.1X WEP 802.1x		
Key index (advanced):	Certificate :	
Network key:		~
	PAC : Auto Select PAC	
Confirm network key:		-

- **Open System:** enable an adapter to attempt authentication regardless of its WEP settings. It will only associate with the access point if the WEP keys on both the adapter and the access point match.
- **Shared-key:** only allows the adapter to associate with access points that have the same WEP key.
- 802.1x: This item appears while the environment is set to an open authentication with WEP encryption. The section is also available in WPA and WPA2 authentication types.

- Preshared Key (PSK): This is the shared secret between AP and STA. For WPA-PSK, WPA2-PSK and WPA-NONE authentication mode, this field must be filled with characters longer than 8 and less than 32 lengths. The following dialog appears if you have input invalid values.
- **WEP Key:** Only available when using WEP encryption algorithm. The key must match AP's key. Only using the same cryptographic key to access the computer, the internet can storage, and decryption the information from other computer.
- B. Data Encryption:

	There are 4 types supported: Disabled, WEP, TKIP and AES. The available encryption selection will differ from the authentication type you have chosen, the result is shown below:AuthenticatioAvailable Encryption Selection n
Data encryption	Open System Disabled, WEP Shared Key , WEP 802.1X WEP
	WPA-PSK, WPA2-PSK, and WPA TKIP, AES 802.1X, WPA2 802.1X

Note: Select different Security Options, the configurations are different; you can select the appropriate security option and configure the exact key as your need.

- **TKIP:** "Temporary Key Integration communication Protocol", it provide each packet's key mixture, message integration and key reconstruction mechanism. TKIP can use with personal or the enterprise network validation.
- AES: "Advanced Encryption Standard", it is a new method that the wireless transmission of privacy protection. AES encryption methods is more careful than TKIP.

(5) Finish the configuration, then click "OK", that network has been added to the profile.

🤽 REALTEK 11n USB Wireless LAN Utility			
Refresh(<u>R)</u> Mode(<u>M</u>) View(<u>\</u>	/) About(<u>A</u>)		
🖃 💡 MyComputer	General Profile Available	e Network Advanced Status St	atistics Wi-Fi Protect Setup
Realtek RTL818	Available Profile(s)		
	Profile Name	SSID	Add
	RTK 11n AP	RTK 11n AP	
			Remove
			Edit
			Duplicate
			Set Default
	<		
< >			
Show Tray Icon		Disable Adapter	Close
Ready			NUM

Profile List: The list shows all the profiles you have added before.

Buttons: You can click on these buttons to Add a new profile, Remove, Edit, Duplicate or Set Default an old profile.

3.2.4 General

🤽 REALTEK 11n USB W	fireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	ut(<u>A</u>)	
🖃 🦻 MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup	
Realtek R TL818		
	Status: Associated	
	Speed: Tx:30 Mbps Rx:30 Mbps	
	Type: Infrastructure	
	Encryption: None	
	SSID: RTK 11n AP	
	Signal Strength: 44%	
	Link Quality:	
	99%	
	Network Address:	
	MAC Address: 00:E0:4C:81:76:00	
	IP Address: 192.168.10.104 Subnet Mask: 255.255.255.0	
	Gateway: 192.168.10.1	
	Gateway, 152.100.10.1	
	ReNew IP	
🔽 Show Tray Icon	Disable Adapter	Close
🗌 Radio Off	🗌 Windows Zero Config	

In this window, there are some items as following:

Items	Information
Status	Currently connection status.
Speed	Show current transmit rate and receive rate.
Туре	Network type in use.
Encryption	Encryption type in use.
SSID	The name of the IEEE 802.11 wireless network. This field has a maximum limit of 32 characters.
Signal Strength	Receive signal strength.
Link Quality	Display connection quality based on signal strength.
Network Address	A. MAC Address: The MAC address of the wireless network adapter.
Address	B. IP Address: IP address of current connection.

C. Subnet Mask: Subnet mask of current connection.
D. Gateway: Gateway of current connection.

3.2.5 Advanced

This screen below allows you to make advanced configuration for the profile. Please refer to the following chart for definitions of each item.

🧏 REALTEK 11n USB W	fireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	ut(<u>A</u>)	
🖃 🦉 MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup	
	Preamble Mode Fragment Threshold 2347 Auto 256 2432 Channel Plan RTS Threshold 2346	
<	Set Defaults Apply	
Show Tray Icon Radio Off	Disable Adapter	Close

1. Preamble Mode

The length of CRC blocks in the frames during the wireless communication. Select the options from the drop list : (1) Long (2)Short (3)Auto.

2. Channel Plan

The selected Channel: FCC, IC, ETSI, Spain, France, MKK, MKK1, Israel, TELEC, Default. (Note: The choose between channels function is not allowed in USA.)

3. Threshold

(1) Fragment Threshold

This value should remain at its default setting of 2347. If you experience a high packet error rate,

you may slightly increase your fragmentation threshold within the value range of 256 to 2432. Setting the fragmentation threshold too low may result in poor performance.

(2) RTS Threshold

Request To Send threshold. This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 0 and 2432 are recommended.

3.2.6 Status

The Status tab contains general information about the program and its operations. The current Status tab needn't any configurations.

🧟 REALTEK 11n USB Wireless LAN Utility		
Refresh(<u>R)</u> Mode(<u>M)</u> Abov	at(<u>A</u>)	
MyComputer Realtek RTL818	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup	
	ManufacturerREALTEKNDIS Driver Version1006.1.713.2010Short Radio HeaderNoEncryptionDisabledAuthenticateOpen SystemChannel SetFCCMAC Address00:E0:4C:81:76:00Data Rate (AUTO)Tx:30 Mbps Rx:30 MbpsChannel (Frequency)11 (2462 MHz)StatusAssociatedSSIDRTK 11n APNetwork TypeInfrastructurePower Save ModeNoneAssociated AP MAC00:E0:4C:81:96:CCUp Time (hh:mm:ss)0:32:59	
<		
 ✓ Show Tray Icon ☐ Radio Off 	 Disable Adapter Windows Zero Config 	

The following table describes the items found on the Status screen.

Items	Information
Manufacturer	The name of manufacturing this product.
NDIS Driver Version	The version of Network Driver Interface Specification.

Encryption	Here displays the encryption type the device is using.
Authenticate	This shows whether the server based authentication is used.
Channel Set	Appears the country you use.
MAC Address	The MAC address of the wireless network adapter.
Data Rate(Auto)	Show current transmit rate and receive rate.
Channel Frequency	Shows the channel in use (1~14).
Status	Current connection status.
SSID	The SSID of the wireless system.
Network Type	The type of network and the station currently connected are shown
	here. The options include : Infrastructure, Ad Hoc
	The power save mode have three mode, as follows :
	• Max - Selects maximum mode to let the access point buffer
	incoming messages for the Adapter. The Adapter will detect the
	access point if any messages are waiting periodically.
Power Save Mode	• Min – Min mode uses minimum when retrieving a large number of
	packets, then switches back to power save mode after retrieving
	the packets.
	• None - Turns power saving off, thus powering up the Wireless
	USB Adapter continuously for a short message response time.
Associated AP MAC	The MAC Address of associated AP.
Up Time	Record life time.

3.2.7 Statistics

Statistics page displays the detail counter information based on 802.11 MIB counters. This page translates the MIB counters into a format easier for user to understand. It show receiving and transmitting statistical information about the following receiving and transmitting diagnostics for frames received by or transmitted to the wireless network adapter.

REALTEK 11n USB Wireless LAN Utility					
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	at(<u>A</u>)				
🖃 🚽 MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup				
Realtek R TL 818					
	Counter Name Value				
	Tx OK 104				
	Tx Error 0 Rx OK 258				
	Rx Packet Count 258				
	Rx Retry 1				
	Rx ICV Error 0				
	Reset				
🗹 Show Tray Icon	🔄 Disable Adapter	Close			
🔲 Radio Off	Windows Zero Config				

Items	Information
тх ок	Successfully transmitted frames numbers.
TX Error	Frames numbers transmitting with error.
RX OK	Successfully received frames numbers.
Rx Packet Count	The packets of receiving frames.
RX Retry	Frames numbers re-receiving.
RX ICV Error	Integrity Check Value receiving with error.
Reset Counter	Reset counters to zero.

3.2.8 Wi-Fi Protect Setup

The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. This adapter supports the configuration setup using PIN configuration method or PBC configuration method. If the wireless card supports Wi-Fi Protected

Setup (WPS), you can establish a wireless connection between wireless card and router using either Push Button Configuration (PBC) method or PIN method.

🧟 REALTEK 11n USB W	fireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abor	ut(<u>A</u>)	
MyComputer Realtek R TL818	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup	
	Wi-Fi Protected Setup (WPS)	
	An easy and secure setup solution for Wi-Fi network	
	Pin Input Config (PIN) After pushing the PIN button.Please enter the PIN code into your AP.	
	PIN Code: 46492630	
	Pin Input Config (PIN)	
	Push Button	<u> </u>
	After pushing the PBC button.Please push the physical button on your AP or visual button on the WPS config page.	
	Push Button Config (PBC)	
✓ Show Tray Icon Radio Off	 Disable Adapter Windows Zero Config 	Close

Here we will introduce two ways to configure the QSS

(QSS is known as rapid security settings, by pressing the wireless router and wireless card on the QSS button to automatically set up WPA2 secure connection level without the router or network adapter management software to conduct the cumbersome interface settings, greatly simplifying the operation of the wireless security settings.)

Pin Code: 8-digit numbers. It is randomly generated from system

1. PIN method

Click the button "Pin Input Config (PIN)", and then come to the following figure.



Wi-Fi Protected Setup - S	elect AP
WPS AP Name	WPS AP MAC
W235_Test W142C-Travel_Router ZuniConnect RTK 11n AP 802	00:00:00:00:00:13 00:08:54:9C:A3:FB 00:25:9C:09:C0:CB 00:E0:4C:81:96:CC 20:10:10:29:10:26
<	
Select	Refresh

Click the button "Yes", you can select one of the AP.

When the following interface pops up, double click the Internet WEB browser icon on your desktop screen. Type the IP address of you selected Router/AP into the URL and press "Enter", and then you can enter the configuration.

Please enter the WPS (Wi-Fi) configuration page, type the PIN code of adapter and click confirm button to build WPS connection.

Wi-Fi Protected Setup - PIN method	×
Wi-Fi Protected Setup - PIN method	
Please enter the following PIN code into your AP .	
PIN Code: 79694964	
Status : Initial WPS	
<u>C</u> ancel	
Cancel	

When the "General" window appears, WPS is configured successfully.

REALTEK 11n USB W	Wireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	out(<u>A</u>)	
Burkeh DTL 010	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup	
. Realtek RTL818	Status: Associated Speed: Tx:36 Mbps Rx:36 Mbps Type: Infrastructure Encryption: WEP SSID: W142a-switch_Router Signal Strength: 58% Link Quality: 96%	
<	Network Address: MAC Address: 00:E0:4C:81:76:00 IP Address: 192.168.100.100 Subnet Mask: 255.255.255.0 Gateway: 192.168.100.1	
Show Tray Icon Radio Off	Disable Adapter Close	

2. PBC (Push Button Configuration) method

After pushing the PBC button, please push the physical button on your AP or visual button on the WPS config page, then come to the following figure.

Vi-Fi	Protected Setup - PBC method	
	Wi-Fi Protected Setup - PBC method	
	If there is more then one AP on the PBC mode,there will be [Session Overlap].Please using PIN method or wait for a while push the button again.	
(Status : Initial WPS	
C	Complete :	
_		_
1	Push Button Config (PBC)	

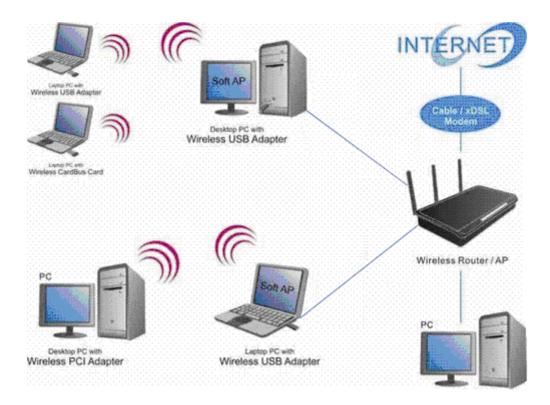
🤽 REALTEK 11n USB W	Fireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	ut(<u>A</u>)	
🖃 🦞 MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup	
	Available Profile(s)	
	Profile Name SSID Add	
	W142a-switch_R W142a-switch_Router	
	Remove	
	Edit	
	Duplicate	
	Set Default	
<		
Show Tray Icon	Disable Adapter	Close
Radio Off	Windows Zero Config	

When WPS is configured successfully, the available profile(s) is changed.

3.3 AP mode management guide for Windows XP

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

3.3.1 Software Access Point (Soft AP) Application



3.3.2 General

To use this adapter as an access point, please click the "Mode" on **Functional menu** and select "Access Point".

REALTE	K 11n USE	B Wirel	ess L	AN Util	ity				
Refresh(R)	Mode(<u>M</u>)	View(<u>V</u>)	About	:(<u>A</u>)					
🖃 闍 MyC	 Station Access P 		eneral	Profile	Available Network	Status	Statistics	Wi-Fi Protect Setup	

Then switch from station mode to AP:

Waiting Setup Up	
Switching from Station mode to AP mode	

At the same time, you will find that the icon on the system tray is changed.



🤽 REALTEK 11n USB W	fireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	ut(<u>A</u>)	
MyComputer Realtek R TL818	General Advanced Statistics ICS	
	SSID: eng7_AP	
	BSSID: 00:E0:4C:81:76:00	
	Association Table	
	AID MAC Address Life Time	
	Config	
Show Tray Icon	Disable Adapter	Close
🗌 Radio Off		

Please refer to the following information about this AP-mode utility.

Items	Information
SSID	AP name of user type.
BSSID	The IEEE MAC address of locally-managed, generating from a 46 random code.
AID	Raise value by current connection.
MAC Address	The station MAC address of current connection.
Life Time (mm:ss)	Record life time.

Click the "Config" button, then you can configure the wireless network properties. This page provides overall configuration to this adapter.

Wireless Network Prope	erties:	×
Profile Name:	Access Point Mode	
Network Name(SSID):	eng7_AP	
This is a computer-to access points are not	p-computer(ad hoc) network; wireless t used.	
Channel:	1 (2412MHz) 💉	
- Wireless network secu This network requires	irity a key for the following:	
Netw	rork Authentication: Open System 🛛 💌	
	Data encryption: Disabled	
	SPHRASE	
Key index (advanced) Network key:	: 1 💌	
Confirm network key:		
ОК	Cancel	

SSID: AP name of user type.

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

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

Cancel: Cancel the above changes.

OK: Apply the above changes.

A. Network Authentication

Select the Security tab in the screen above. To define the security mode, select the desired security mode as follows. There are 4 types supported: Open System, Shared Key, WPA-PSK, WPA2-PSK. Please select a type from the drop down list.

B. Data Encryption:

	There are 4 types supported: Disabled, WEP, TKIP and AES. The available encryption selection will differ from the authentication type you	
Data encryption	Aute chosen, the result is shown below: Authenticatio Available Encryption Selection n Open System Open System Disabled, WEP Shared Key , WEP 802.1X WEP	
	WPA-PSK, WPA2-PSK, and WPA TKIP, AES 802.1X, WPA2 802.1X	

Note: Select different Security Options, the configurations are different; you can select the appropriate security option and configure the exact key as your need.

3.3.3 Advanced

REALTEK 11n USB W	ireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) View((V) About(<u>A</u>)	
🖃 🚽 MyComputer	General Advanced Statistics ICS	
	General Beacon Interval	
	DTIM Period:	
	Preamble Mode	
	Short Cong Long Short	
	Set Defaults Apply	
Show Tray Icon	Disable Adapter	Close
Ready		NUM

ltems	Information

Beacon Interval	Beacon frequency spacing.
DTIM Period	Delay transmission indicator map (DTIM) is enabled for power management of the client. If any client power management is enabled, the DTIM should be retained for 1 (the default). Support this parameter range from 1 to 255.
Preamble Mode	Select the options from the drop list, (Long / Short).
Set Defaults	Setting the default value of General.
Apply	Apply the above changes.

3.3.4 Statistics

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

🧟 REALTEK 11n USB W	ireless LAN Utility	
Refresh(<u>R)</u> Mode(<u>M</u>) Abo	ut(<u>A</u>)	
🖃 😼 MyComputer	General Advanced Statistics ICS	
Realtek R TL 818		
	Counter Name	Value
	Tx OK	981
	Tx Error Rx OK	691
	Rx Packet Count	691
	Rx Retry	333
	Rx ICV Error	0
		Devel
		Reset
Show Tray Icon	Disable Adap	iter Close
Radio Off	_	

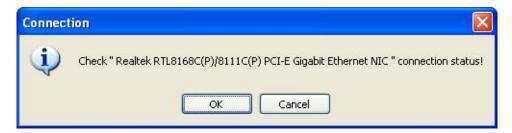
Items	Information
ТХ ОК	Successfully transmitted frames numbers.
TX Error	Frames numbers transmitting with error.

RX OK	Successfully received frames numbers.
Rx Packet Count	The packets of receiving frames.
RX Retry	Frames numbers re-receiving.
RX ICV Error	Integrity Check Value receiving with error.
Reset Counter	Reset counters to zero.

3.3.5 ICS

	ut(<u>A</u>)	
MyComputer Realtek RTL8188	General Advanced Statistics IC	CS
	Setting Internet Connectio	n Sharing (ICS)
	ConnName	Device Name
		SiS190 100/10 Ethernet Device
	Decal Area Connecti	Realtek RTL8139/810x Family Fast Ethernet NIC WAN Miniport (PPPOE)
	<	
	Public Network	
	Public Network	Apply
	Public Network	Apply
Show Tray Icon		Apply Disable Adapter Close

In this function, you can set the device sharing with Internet. Click the button "Apply", and then Prompt box pops up.



Select "OK". When the connection is successful, you will find that the tray "Local Area Connection" has been changed.

S Network Connections			
File Edit View Favorites Tools	Advanced Help		A.
🜀 Back - 🕥 - 🏂 🔎 See	arch 😥 Folders 🛄 🔹		
Address 🔇 Network Connections			💌 🋃 Go
Network Tasks Create a new connection Set up a home or small office network Change Windows Firewall settings	LAN or High-Speed Internet	Wireless Network Connection 43	

Chapter 4 Introduction for Vista user

4.1 Hardware Installation

The installation of the Adapter is very simple. You could plug the Adapter directly to the USB port on your computer. The LED will light up when the Adapter is installed successfully and the PC is on.

4.2 Software Installation

4.2.1 Overview

The Adapter's Setup Wizard will guide you through the Installation procedure for Vista. The Setup Wizard will install the REALTEK 11n USB Wireless LAN Driver and Utility. When you install the hardware prior to before installing the software, the system will prompt "Found New Hardware Wizard", click **Cancel**, and run the Setup Wizard program on the CD-ROM.

4.2.2 Installation Procedures

1. Insert the CD into your CD-Rom, and find the setup driver in the CD. Then click the setup icon to start the installation.

2. The language-selecting window pops up. Please select the language you use and click "Next".

Choose Setup Language Select the language for the installation fr	om the choices below.	124
Basque Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch		E
English Finnish French (Canadian) French (Standard) German Greek		-
tallShield	< <u>B</u> ack Next	> Cancel

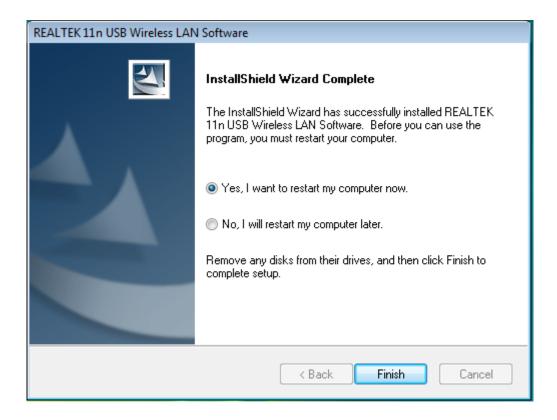
3. The welcome window pops up. Click the "Next" button to proceed.

EALTEK 11n USB Wireless LAN Driver and Utility	×
REALTEK 11n USB Wireless LAN Driver and Utility	N
Click Install to begin the installation.	
If you want to review or change any of your installation settings, click Back. Click Canc the wizard.	el to exit
nstallShield	ancel

4. Please wait again while installation



5. After all the steps above, you will see the screen below, Select "Yes" or "No" to reboot the system, then click Finish.



4.3 Management Guide

This chapter describes how to configure your Adapter for wireless connectivity on your Wireless Local Area Network (WLAN) and use the data security encryption features.

After Installing the Adapter, the Adapter's tray icon will appear in your system tray. It appears at the bottom of the screen, and shows the signal strength using color and the received signal strength indication (RSSI).

4.3.1 Interfaces

After the driver installation, the icon the following interface appears:

will appear on your desktop. Double click this icon and

- 🚽 MyComputer	General	Profile	Available	Network	Advanced	Status	Statistics	Wi-Fi Protect Setu	di
Realtek RTL818		22	Status:	Not As	sociated				
			Speed:	N/A					
			Type:	N/A					
		Er	ncryption:	N/A					
			SSID:						
		Signal S	Strength:						
		Lin	k Quality:						
				617					
	Matur	ork Addr							
	Merma	OLK WOOL	622:						
	Netwo	UIK AUUI	20032 1222-1222						
	Mermi		MAC Ad		0.0.0				
	netw		MAC Ad	dress: 0					
	Netwo		MAC Ad IP Ad Subnet	dress: 0					
	netwo		MAC Ad IP Ad Subnet	dress: 0 Mask: 0					
	netwo		MAC Ad IP Ad Subnet	dress: 0 Mask: 0					
	NELW		MAC Ad IP Ad Subnet	dress: 0 Mask: 0					
	NELW		MAC Ad IP Ad Subnet	dress: 0 Mask: 0	.0.0.0				
	Netwo		MAC Ad IP Ad Subnet	dress: 0 Mask: 0	.0.0.0	ew IP			
	Netwo		MAC Ad IP Ad Subnet	dress: 0 Mask: 0	.0.0.0	ew IP			
Show Tray Icon	Netwi		MAC Ad IP Ad Subnet	dresst 0 Mask: 0 away:	.0.0.0				

Note:

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

configuration window.

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

this part.

3. Optional Table : "Show Tray Icon", "Disable Adapter", "Radio off",.

4.3.2 Available Network

This network lists the available wireless networks. The Utility connects to a wireless network with best signal strength automatically. You can refresh the connecting network by clicking on the network name and click the **Refresh** button. In the center of the Utility windows, you will see detail

information of each network.

MyComputer	General Profile	Available Network	Adva	anced	Status	Statistics	Wi-Fi Protect Setup		
Realtek RTL818	Available Network(s)								
	SSID	Cha	annel	Encry	ption	Network	Authentication	Signal	•
	L ¹⁰ 20101109	0418	1	None	1	Unknow	n	46%	1
	I ⁹ TW-4F		1	WEP		Unknow	n	60%	1
	1 ⁹⁾ Mini-Route	r	6	None		Unknow	n	46%	1
	I ^{II} logitecgam	neuser	6	WEP		Unknow	n	44%	1
	1 ⁹⁾ W440A		10	TKIP		WPA2 P	re-Shared Key	46%	1
	IRIS I		11	WEP		Unknow	n	42%	1
		I ^N RTK 11n AP 11 None Unknown		48%	1				
	1"W235_Te	st	11	None Unknown		n	58%	1	
	•	111							٢

Available Network Information:

ltems	Information
SSID	The name of the IEEE 802.11 wireless network. This field has a maximum limit of 32 characters.
Channel	Display current channel in use.
Encryption	Shows the encryption mode in use. There are total 4 modes: None, WEP, TKIP and AES.
Network Authentication	Shows the authentication mode in use.
Signal	This percentage shows the strength of the signal.
Туре	The type of network and the station currently connected are shown here. The options include : Infrastructure & Ad-Hoc
BSSID	The IEEE MAC address of locally-managed, generating from a 46 random code.

Support Rates	Sł
---------------	----

how current rate.

Note:

1) An Infrastructure network contains an Access Point or wireless router. All the wireless devices or clients will connect to the wireless router or access point.

2) An Ad-Hoc network contains only clients, such as laptops with wireless desktop adapters. All the adapters must be in Ad-Hoc mode to communicate.

4.3.3 Profile

1. Add a new profile:

(1) Selecting an available network in the "Available Network" function then click the Add to **Profile** button, or double click the network name. You could also add a new profile quickly by clicking the Add button in the "**Profile**" function.

Note: If the network you add to profile is not encrypted, "Unsecured network" window will pop up, then Click "OK".

Unsecured	l network	×
1	You are connecting to the unsecured network " RTK 11n AP ". Information sent over this network is not encrypted and might be visible to other people.	н
	OK	:el

(2) It displays "Wireless Network Properties" dialog box. This profile page allows users to save different wireless settings, which helps users to get access to wireless networks at home, office or other wireless network environments quickly.

Items	Information
Profile Name	Identifies the configuration profile . This name must be unique. Note that the
	profile names are not case-sensitive.
Network	The IEEE 802.11n wireless network name, using default name defined by
Name(SSID)	system. This field has a maximum limit of 32 characters.

In the following dialog box, there are some items:

Wireless Network Properties:
This is a computer-to-computer(ad hoc) network; wireless access points are not used.
Profile Name: RTK 11n AP
Network Name(SSID): W142a-switch_Router
Channel: 1 (2412MHz) v
Wireless network security
This network requires a key for the following:
Network Authentication: Open System
Data encryption: Disabled 🔹
ASCII PASSPHRASE
Key index (advanced): Network key:
Confirm network key:
OK <u>C</u> ancel

(3). Channel (Country Region Code): six countries to choose. Country channel list:

Country	Channel Range	Country	Channel Range
SPAIN	CH1 ~ CH11	FRANCE	CH1 ~ CH13
CANADA	CH1 ~ CH11	JAPAN	CH1 ~ CH14
ETSI	CH1 ~ CH13	ISRAEL	CH1 ~ CH13

(4) Wireless Network Security

A. Network Authentication

Select the Security tab in the screen above. To define the security mode, select the desired security mode as follows. There are 7 types supported: Open System, Shared Key, WPA-PSK, WPA2-PSK, and WPA 802.1X, WPA2 802.1X, WEP 802.1X, Please select a type from the drop down list



- **Open System:** enable an adapter to attempt authentication regardless of its WEP settings. It will only associate with the access point if the WEP keys on both the adapter and the access point match.
- **Shared-key:** only allows the adapter to associate with access points that have the same WEP key.
- 802.1x: This item appears while the environment is set to an Open authentication with WEP encryption. Mark the checkbox to make the section available. The section is also available in WPA and WPA2 authentication types.
- Preshared Key(PSK): This is the shared secret between AP and STA. For WPA-PSK, WPA2-PSK and WPA-NONE authentication mode, this field must be filled with characters longer than 8 and less than 32 lengths. The following dialog appears if you have input invalid values.
- **WEP Key:** Only available when using WEP encryption algorithm. The key must match AP's key. Only using the same cryptographic key to access the computer, the internet can storage, and decryption the information from other computer.
- B. Data Encryption:

	There are 4 types supported: Disabled, WEP, TKIP and AES. The available encryption selection will differ from the authentication type you
Data encryption	Authenticatio Available Encryption Selection n Open System Disabled, WEP
	Shared Key , WEP 802.1X WEP WPA-PSK, WPA2-PSK, and WPA TKIP, AES 802.1X, WPA2 802.1X WEP

Note: Select different Security Options, the configurations are different; you can select the appropriate security option and configure the exact key as your need.

• TKIP: "Temporary Key Integration communication Protocol", it provide each packet's key

mixture, message integration and key reconstruction mechanism. TKIP can use with personal or the enterprise network validation.

- **AES:** "Advanced Encryption Standard", It is a new method that the wireless transmission of privacy protection. AES encryption methods provides more careful than TKIP.
- (5) Finish the configuration, and then click "OK", that network has been added to the profile.

MyComputer	General	Profile	Available	Network	Advanced	Status	Statistics	WI-Fi Protect Setu	p
- S Realtek RTL818	Availat	ole Prof	ile(s)						
	and a second	e Nam		SSID				Add	
	(C)R	TK 11n	AP	RTK :	lin AP			Remove	L.
								Edit	
								Duplicate	1
								Set Defa	ıt
	٠					•			
III +				🕅 Disa	ble Adapte	r			Close

Profile List: The list shows all the profiles you have added before.

Buttons: You can click on these buttons to Add a new profile, Remove, Edit, Duplicate or Set Default an old profile.

4.3.4 General

- MyComputer	General Profile Available Network Advanced Status S	itatistics Wi-Fi Protect Setup
Realtek RTL818	Status: Associated	
	Speed: Tx:150 Mbps Rx:30 Mbps	
	Type: Infrastructure	
	Encryption: None	
	SSID: RTK 11n AP	
	Signal Strength:	46%
	Link Quality:	91%
	Network Address:	
	MAC Address: 00:E0:4C:81:76:00	
	IP Address: 169.254.97.140	
	IP Address: 169.254.97.140 Subnet Mask: 255.255.0.0	
	IP Address: 169.254.97.140	
	IP Address: 169.254.97.140 Subnet Mask: 255.255.0.0]
« <u>m</u> ,	IP Address: 169.254.97.140 Subnet Mask: 255.255.0.0 Gateway: 0.0.0.0	

In this window, there are some items as following:

Items	Information
Status	Currently connection status.
Speed	Show current transmit rate and receive rate.
Туре	Network type in use.
Encryption	Encryption type in use.
SSID	The name of the IEEE 802.11 wireless network. This field has a maximum
3310	limit of 32 characters.
Signal	
Strength	Receive signal strength.
Link Quality	Display connection quality based on signal strength.
Network	A. MAC Address : The MAC address of the wireless network adapter.

Address	В.	IP Address: IP address of current connection.
	C.	Subnet Mask: Subnet mask of current connection.
	D.	Gateway: Gateway of current connection.

4.3.5 Advanced

This screen below allows you to make advanced configuration for the profile. Please refer to the following chart for definitions of each item.

MyComputer	General Profile Available Netw	ork Advanced	Status	Statistics	Wi-Fi Protec	t Setup	
Realtek RTL818							
	Preamble Mode		256		Threshold		2432
	Channel Plan			RTS	Threshold	2432	2152
	FCC •		0			0	2432
	Set Defaults			A	pply		
Show Tray Icon Radio Off	0	Disable Adapte	r,				Close

1. Preamble Mode

The length of CRC blocks in the frames during the wireless communication. Select the options from the drop list : (1) Long (2)Short (3)Auto.

2. Channel Plan

The selected country: FCC, IC, ETSI, Spain, France, MKK, MKK1, Israel, TELEC, Default. (Note: The choose between channels function is not allowed in USA.)

3. Threshold

(1) Fragment Threshold

This value should remain at its default setting of 2347. If you experience a high packet error rate, you may slightly increase your fragmentation threshold within the value range of 256 to 2432. Setting the fragmentation threshold too low may result in poor performance.

(2) RTS Threshold

Request To Send threshold. This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 0 and 2432 are recommended.

4.3.6 Status

The Status tab contains general information about the program and its operations. The current Status tab needn't any configurations.

MyComputer		m = + +		A REAL PROPERTY AND	Status	10 at 10	MALE D D
Realter NI Loto	General	Profile	Available Network	Advanced	Judius	Statistics	Wi-Fi Protect Setup
	12	Manufad				REALTE	
			iver Version				713.2010
	12		adio Header			No	
		Encrypt				Disabled	
	57	Authen				Open S	ystem
		Channel	2000 C			FCC	
		MAC Ad					C:81:76:00
			te (AUTO)				Mbps Rx:30 Mbps
	8	Channel	(Frequency)			11 (246	52 MHZ)
	3	Status				Associat	ted
	1	SSID				RTK 11	n AP
		Networ	k Type			Infrastru	ucture
			Save Mode			None	
			ed AP MAC				C:81:96:CC
	1	Up Time	(hh:mm:ss)			2:07:20)
Show Tray Icon				ble Adapte			

The following table describes the items found on the Status screen.

Items	Information
Manufacturer	The name of manufacturing this product.
NDIS Driver Version	The version of Network Driver Interface Specification.
Encryption	Here displays the encryption type the device is using.

Authenticate	This shows whether the server based authentication is used.
Channel Set	Appears the country of you use.
MAC Address	The MAC address of the wireless network adapter.
Data Rate(Auto)	Show current transmit rate and receive rate.
Channel Frequency	Shows the channel in use (1~14).
Status	Current connection status.
SSID	The SSID of the wireless system.
Network Type	The type of network and the station currently connected are shown
	here. The options include : Infrastructure, Ad Hoc
Power Save Mode	The power save mode have three mode: Max, Min, None
Associated AP MAC	The MAC Address of associated AP.
Up Time	Record life time.

4.3.7 Statistics

Statistics page displays the detail counter information based on 802.11 MIB counters. This page translates the MIB counters into a format easier for user to understand. It show receiving and transmitting statistical information about the following receiving and transmitting diagnostics for frames received by or transmitted to the wireless network adapter.

MyComputer	General Pr	ofile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup
S Realtek RTL818							
	ſ	-					
	Counter Name						Value
	Tx OK					320	
		Tx Error Rx OK					42
	Rx Packet Count					42	
		Rx R					5
		Rx I	CV Error				0
	1	-					
			[Re	set		
			1	9 (13			

ltems	Information
ТХ ОК	Successfully transmitted frames numbers.
TX Error	Frames numbers transmitting with error.
RX OK	Successfully received frames numbers.
Rx Packet Count	The packets of receiving frames.
RX Retry	Frames numbers re-receiving.
RX ICV Error	Integrity Check Value receiving with error.
Reset Counter	Reset counters to zero.

4.3.8 Wi-Fi Protect Setup

The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. This adapter supports the configuration setup using PIN

configuration method or PBC configuration method. If the wireless card supports Wi-Fi Protected Setup (WPS), you can establish a wireless connection between wireless card and router using either Push Button Configuration (PBC) method or PIN method.

Here we will introduce two ways to configure the QSS

(QSS is known as rapid security settings, by pressing the wireless router and wireless card on the QSS button to automatically set up WPA2 secure connection level without the router or network adapter management software to conduct the cumbersome interface settings, greatly simplifying the operation of the wireless security settings.)

Pin Code: 8-digit numbers. It is randomly generated from system

	bout(<u>A</u>)
MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup
Contante riterio	Wi-Fi Protected Setup (WPS)
	An easy and secure setup solution for Wi-Fi network
	Pin Input Config (PIN) After pushing the PIN button.Please enter the PIN code into your AP.
	PIN Code: 11653189
	Pin Input Config (PIN)
	Push Button
	After pushing the PBC button.Please push the physical button on your AP or visual button on the WPS config page.
	Push Button Config (PBC)
Show Tray Icon	Disable Adapter Close

1. PIN method

Click the button "Pin Input Config (PIN)", and then come to the following figure.



Click the button "Yes", you can select one of the AP. Also, you can click these buttons by "Refresh / Select / Cancel" for any change.

/142a-switch_Router	00:E0:4C:81:96:C1
	00.20.40.01.90.01
PS2a3b0e96b1	00:E0:4C:81:96:B1
SS	00:E0:4C:81:96:B1

When the following interface pops up, double click the Internet WEB browser icon on your desktop screen. Type the IP address of you selected Router/AP into the URL and press "Enter", and then you can enter the configuration.

Please enter the WPS (Wi-Fi) configuration page, type the PIN code of adapter and click confirm

button to build WPS connection.



When the "General" window appears, WPS is configured successfully.

Refresh(R) Mode(M) Abo	General Profile	Available Network Status: Associ Speed: Tx:54 Type: Infrast cryption: None	ated Mbps Rx:24		Statistica	Wi-Fi Protect	Setup
		Status: Associ Speed: Tx:54 Type: Infrast	ated Mbps Rx:24		Statistics	Wi-Fi Protect	Setup
		SSID: W142 trength:	a-switch_Roi	uter			48% 48%
	Network Addr	MAC Address: IP Address: 1 Subnet Mask: 2	92.168.100	.101 .0			
 m → ✓ Show Tray Icon 		Ds	ReNe able Adapter				Close

2. PBC (Push Button Configuration) method

After pushing the PBC button, Please push the physical button on your AP or visual button on the WPS config page, then come to the following figure.

Vi-Fi P	rotected Setup - PBC method		- X
	Wi-Fi Protected Setup - PBC m	ethod	
	If there is more then one AP on the [Session Overlap].Please using PIN while push the button again.		
	Status : AP Sitesurvey		
c	omplete :		
	Push Button Config (PBC)	Cancel	- A

Please enter the WPS (Wi-Fi) configuration page of your desired router/AP, and then start PCB connection.

4.4 AP mode management guide for Vista

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

4.4.1 General

To use this adapter as an access point, please click the "Mode" on **Functional Menu** and select "Access Point".

Refresh(R)	Mode(M))View(V)	About(A)		
🖃 💡 MyC	Statio	on	dvanced	Statistics	ICS
ંું F	✓ Acce	ss Point	- Charlester		

Then switching from station mode to AP: At the same time, you will find that the icon on the system tray is changed.



Please refer to the following information about this AP-mode utility.

MyComputer	General A	tvanced	Statistics	ICS		
			SSID: d	qa-B1_A	>	
		E	BSSID: 0			
	A IA	ssociatio	n Table	55	Life Time	
			(Config	
Show Tray Icon	73 		103	Disable /	Adapter	Close

Items	Information
SSID	AP name of user type.
BSSID	The IEEE MAC address of locally-managed, generating from a 46 random code.
AID	Raise value by current connection.
MAC Address	The station MAC address of current connection.
Life Time (mm:ss)	Record life time.

Click the "Config" button, then you can configure the wireless network properties. This page provides overall configuration to this adapter.

access points are no		
Profile Name:	Access Point Mode	
Network Name(SSID):	dqa-B1_AP	
Channel:	1 (2412MHz) ▼	
Wireless network sec	urity	
This network requires		2.7.1
Netw	ork Authentication:	Open System
	Data encryption:	Disabled
ASCII PAS	SPHRASE	
Key index (advanced) Network key:	1 7	

SSID: AP name of user type.

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

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

Cancel: Cancel the above changes.

OK: Apply the above changes.

A. Network Authentication

Select the Security tab in the screen above. To define the security mode, select the desired security mode as follows. There are 4 types supported: Open System, Shared Key, WPA-PSK, WPA2-PSK. Please select a type from the drop down list.

B. Data Encryption:

	There are 4 types supported: Disabled, WEP, TKIP and AES. The available encryption selection will differ from the authentication type you
	have chosen, the result is shown below: Authenticatio Available Encryption Selection n Authentication
Data encryption	Open System Disabled, WEP Shared Key , WEP 802.1X WEP
	WPA-PSK, WPA2-PSK, and WPA TKIP, AES 802.1X, WPA2 802.1X

Note: Select different Security Options, the configurations are different; you can select the appropriate security option and configure the exact key as your need.

4.4.2 Advanced

🚜 REALTEK 11n USB Wire	eless LAN Utility	- • •
Refresh(<u>R</u>) Mode(<u>M</u>)	View(V) About(A)	
MyComputer Realtek RTL81	General Advanced Statistics ICS	
	Set Defaults Apply	
< <u> </u>	F	
Show Tray Icon Radio Off	Disable Adapter	Close
Ready		NUM
Items	Information	

Beacon Interval	Beacon frequency spacing.
DTIM Period	Delay transmission indicator map (DTIM) is enabled for power management of the client. If any client power management is enabled, the DTIM should be retained for 1 (the default). Support this parameter range from 1 to 255.
Preamble Mode	Select the options from the drop list, (Long / Short).
Set Defaults	Setting the default value of General.
Apply	Apply the above changes.

4.4.3 Statistics

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

- WyComputer - Realtek RTL818	General Advanced Statistics ICS	
-	Counter Name	Value
	Tx OK	1976
	Tx Error	0
	Rx OK	0
	Rx Packet Count	0
	Rx Retry	0
	Rx ICV Error	0
		Reset

Items	Information
ТХ ОК	Successfully transmitted frames numbers.
TX Error	Frames numbers transmitting with error.

RX OK	Successfully received frames numbers.
Rx Packet Count	The packets of receiving frames.
RX Retry	Frames numbers re-receiving.
RX ICV Error	Integrity Check Value receiving with error.
Reset Counter	Reset counters to zero.

4.4.4 ICS

and the second se	pout(A)	
MyComputer Sealtek RTL818	General Advanced Statistics ICS	
	Setting Internet Connection Sharing (ICS)	
	ConnName Device Name	
	Local Area Connection Realtek PCIe GBE Family Controller	
	×m.	•
	Public Network	
	Apply	
Show Tray Icon	Disable Adapter	Close

In this function, you can set the device sharing with Internet. Click the button "Apply", Prompt box pops up.



Select "OK", then the Internet connection is sharing.

Chapter 5 Introduction for Windows 7 User

5.1 Hardware Installation

The installation of the Adapter is very simple. You could plug the Adapter directly to the USB port on your computer. The LED will light up when the Adapter is installed successfully and the PC is on.

5.2 Software Installation

5.2.1 Overview

The following Setup Wizard will guide you through the Installation procedure for Windows 7. The Setup Wizard will install the REALTEK 11n USB Wireless LAN Driver and Utility. When you install the hardware before installing the software, the system will prompt "Found New Hardware Wizard" on your screen, click Cancel, and run the Setup Wizard program on the CD-ROM.

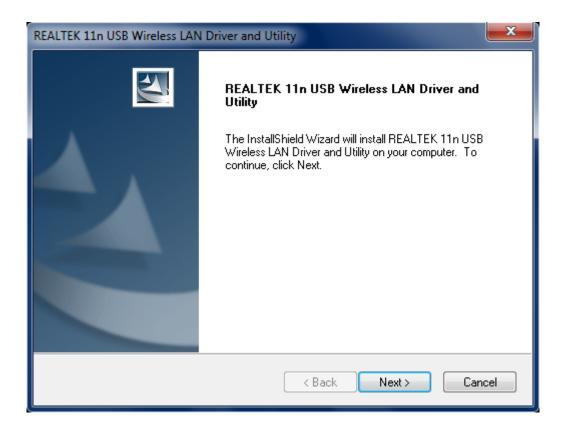
5.2.2 Installation procedures

1. Insert the CD into your CD-Rom, and find the setup driver in the CD. Then click the setup icon to start the installation.

2. The language-selecting window pops up. Please select the language you use and click "Next".

REAI	ALTEK 11n USB Wireless LAN Software - InstallShield Wizard	. 🗆	x
C	Choose Setup Language Select the language for the installation from the choices below.		4
Insta	Basque Bulgarian Catalan Chinese (Simplified) Chinese (Traditional) Croatian Czech Danish Dutch English Finnish Firench (Canadian) French (Standard) German Greek		
	< Back Next :	Cano	el

3. The welcome window pops up. Click the "Next" button to proceed.



4. Click the "Install" button to start installing.

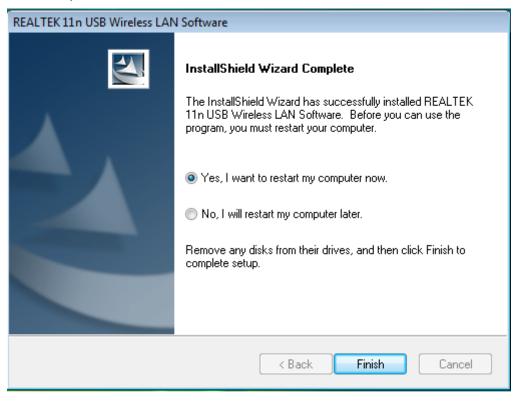
R	EALTEK 11n USB Wireless LAN Driver and Utility	
	REALTEK 11n USB Wireless LAN Driver and Utility	
	Click Install to begin the installation.	
	If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
Ir	nstallShield Cancel	_

5. Please wait again while installation



Now installing REALTEK 11n USB Wireless LAN Driver

6. After all the steps above, you will see the screen below, Select "Yes" or "No" and then click Finish to complete the setup..



5.3 Management Guide

This chapter describes how to configure your Adapter for wireless connectivity on your Wireless Local Area Network (WLAN) and use the data security encryption features.

After Installing the Adapter, the Adapter's tray icon will appear in your system tray. It appears at the bottom of the screen, and shows the signal strength(the icon will change its color) and the received signal strength indication (RSSI).

5.3.1 Interfaces



After the driver installation, the icon the following interface appears:

will appear on your desktop	. Double click this icon and

REALTEK 11n USB Wirele	ss LAN Utility
Refresh(R) Mode(M) Al	bout(A)
B-S MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup Virtual WiFi Status: Not Associated Speed: N/A Type: N/A Type: N/A SSID: SSID: Signal Strength: Image: Comparison of the setup o
< m >	Network Address: Realtek RTL8188CU Wireless LAN 802.11n USB 2.0 Network Adapter MAC Address: IP Address: 0.0.0.0 Subnet Mask: 0.0.0.0 Gateway: Microsoft Virtual WiFi Miniport Adapter #2 IP Address: 0.0.0.0 Subnet Mask: 0.0.0.0 Gateway: ReNew IP
Show Tray Icon Radio Off	Disable Adapter Virtual WiFi allowed

- 1. **Functional Buttons** : on top of the window. You can click each button to access each configuration window.
- 2. **Configuration Column** : Center of the Utility window. Make your changes for each function in this part.
- 3. Optional Table : "Show Tray Icon", "Disable Adapter", "Radio off" and "Virtual WiFi allowed".

5.3.2 Available Network

The above picture shows you the available wireless network lists. The Utility will connect to a wireless network with best signal strength automatically. You can refresh the connecting network by clicking on the network name and click the **Refresh** button. In the center of the Utility windows, you

REALTEK 11n USB Wireless LAN Utility - - × Refresh(R) Mode(M) About(A) General Profile Available Network Advanced Status Statistics WI-Fi Protect Setup Virtual WIFI Available Network(s) SSID Channel Encryption Network Authentication Signal 1º 201011090418 1 None Unknown 58% I TW-4F 62% 1 WEP Unknown I 119 RT305x_AP 70% 6 None Unknown I 10 TKIP 10 W440A WPA2 Pre-Shared Key 46% I RTK 11n AP 11 None Unknown 46% I 70% I 1) W235_Test 11 None Unknown 4 ъ Refresh Add to Profile Note Double click on item to join/create profile. Show Tray Icon Disable Adapter Close Virtual WiFi allowed Radio Off

will see detail information of each network.

Available Network Information:

Items	Information					
SSID	The name of the IEEE 802.11 wireless network. This field has a maximum limit of 32 characters.					
Channel	Display current channel in use.					
Encryption	Shows the encryption mode in use. There are total 4 modes: None, WEP, TKIP and AES.					
Network Authentication	Shows the authentication mode in use.					
Signal	This percentage shows the strength of the signal.					
Туре	The type of network and the station currently connected are shown					

	here.
	The options include : Infrastructure & Ad-Hoc
BSSID	The IEEE MAC address of locally-managed, generating from a 46 random code.
Support Rates	Show current rate.

Note:

1) An Infrastructure network contains an Access Point or wireless router. All the wireless devices or clients will connect to the wireless router or access point.

2) An Ad-Hoc network contains only clients, such as laptops with wireless desktop adapters. All the adapters must be in Ad-Hoc mode to communicate.

5.2.3 Profile

1. Add a new profile:

(1) Selecting an available network in the "Available Network" function then click the Add to **Profile** button, or double click the network name. You could also add a new profile quickly by clicking the Add button in the "**Profile**" function.

Note: If the network you add to profile is not encrypted, the following "Unsecured network" window will pop up, then Click "OK".



(2) It displays "Wireless Network Properties" dialog box. This profile page allows users to save different wireless settings, which helps users to get access to wireless networks at home, office or other wireless network environments quickly.

Wireless Network Properties:
This is a computer-to-computer(ad hoc) network; wireless access points are not used.
Profile Name: RTK 11n AP
Network Name(SSID): RTK 11n AP
Channel: 11 (2462MHz) -
Wireless network security
This network requires a key for the following:
Network Authentication: Open System 🔻
Data encryption: Disabled
ASCII PASSPHRASE
Key index (advanced): 1
Confirm network key:
OK <u>C</u> ancel

In the following dialog box, there are some items:

Items	Information
Profile Name	Identifies the configuration profile .This name must be unique. Note that the
	profile names are not case-sensitive.
Network	The IEEE 802.11n wireless network name, using default name defined by
Name(SSID)	system. This field has a maximum limit of 32 characters.

(3). Channel (Country Region Code): six countries to choose. Country channel list:

Country	Channel Range	Country	Channel Range
SPAIN	CH1 ~ CH11	FRANCE	CH1 ~ CH13
CANADA	CH1 ~ CH11	JAPAN	CH1 ~ CH14
ETSI	CH1 ~ CH13	ISRAEL	CH1 ~ CH13

(4) Wireless Network Security

A. Network Authentication

Select the Security tab in the screen above. To define the security mode, select the desired security

mode as follows. There are 7 types supported: Open System, Shared Key, WPA-PSK, WPA2-PSK, and WPA 802.1X, WPA2 802.1X, WEP 802.1X, and you can select a type from the drop down list if you click the button beside "Network Authentication".

- **Open System:** enable an adapter to attempt authentication regardless of its WEP settings. It will only associate with the access point if the WEP keys on both the adapter and the access point match.
- **Shared-key:** only allows the adapter to associate with access points that have the same WEP key.
- **802.1x:** This item appears while the environment is set to an Open authentication with WEP encryption. Mark the checkbox to make the section available. The section is also available in WPA and WPA2 authentication types.
- Preshared Key(PSK): This is the shared secret between AP and STA. For WPA-PSK, WPA2-PSK and WPA-NONE authentication mode, this field must be filled with characters longer than 8 and less than 32 lengths. The following dialog appears if you have input invalid values.
- WEP Key: Only available when using WEP encryption algorithm. The key must match AP's key. Only using the same cryptographic key to access the computer, the internet can storage, and decryption the information from other computer.
- B. Data Encryption:

	There are 4 types supported: Disabled, WEP, TKIP and AES. The available encryption selection will differ from the authentication type you					
	have chosen, the result is shown below:					
	Authenticatio Available Encryption Selection					
Data encryption	n					
	Open System Disabled, WEP					
	Shared Key , WEP 802.1X WEP					
	WPA-PSK, WPA2-PSK, and WPA TKIP, AES					
	802.1X, WPA2 802.1X					

Note: Select different Security Options, the configurations are different; you can select the appropriate security option and configure the exact key as your need.

- **TKIP:** "Temporary Key Integration communication Protocol", it provide each packet's key mixture, message integration and key reconstruction mechanism. TKIP can use with personal or the enterprise network validation.
- AES: "Advanced Encryption Standard", It is a new method that the wireless transmission of

privacy protection. AES encryption methods provides more careful than TKIP.

(5) Finish the configuration, and then click "OK", that network has been added to the profile.

- g MyComputer	General	Profile	Available I	Network:	Advanced	Status	Statistics	WI-Fi Protect Setup	Virtual WiF
- SRealtek RTL818	Available Profile(s)								
	Profile Name SSID						Add		
	(₿R)	CRTK 11n AP RTK 11n AP					Remove		
								Edit	
								Duplicate	
							Set Default		
	•					•			
-m+									

Profile List: The list shows all the profiles you have added before.

Buttons: You can click on these buttons to Add a new profile, Remove, Edit, Duplicate or Set Default an old profile.

5.3.4 General

⊟- Some MyComputer Realtek RTL818	General	Profile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup	Virtual WiFi
			Status: Associ	ated				
	Speed: Tx:150 Mbps Rx:30 Mbps							
	Type: Infrastructure							
	Encryption: None							
	SSID: RTK 11n AP							
	Signal Strength:							54%
		Lin	k Quality: 💼				7	9%
			MAC Address: IP Address: (Subnet Mask: (.0.0.0	:76:00			
	Gateway:							
	Microsoft Virtual WiFi Miniport Adapter #2 IP Address: 0.0.0.0							
			IP Address: 0 Subnet Mask: 0					
			Gateway:	.0.0.0				
				ReN	ew IP			
- m- +								
Show Tray Icon			Annual Control of Cont	able Adapte tual WIFI allo				Close

In this window, there are some items as following:

Items	Information
Status	Currently connection status.
Speed	Show current transmit rate and receive rate.
Туре	Network type in use.
Encryption	Encryption type in use.
SSID	The name of the IEEE 802.11 wireless network. This field has a maximum limit of 32 characters.
Signal Strength	Receive signal strength.
Link Quality	Display connection quality based on signal strength.
Network	5. MAC Address : The MAC address of the wireless network adapter.

Address	6. IP Address : IP address of current connection.
	7. Subnet Mask : Subnet mask of current connection.
	8. Gateway : Gateway of current connection.

5.3.5 Advanced

This screen below allows you to make advanced configuration for the profile. Please refer to the following chart for definitions of each item.

efresh(R) Mode(M) Al		1		-		o	
B- 9 MyComputer Realtek RTL818	General Profile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup	Virtual WiFi
	Preamble Mo			256		Threshold 2432	2432
	Channel Plan FCC	•		0		Threshold 2432	2432
		et Defaults			A	pply	
<u>.m</u> +							

1. Preamble Mode

The length of CRC blocks in the frames during the wireless communication. Select the options from the drop list: (1) Long (2)Short (3)Auto.

2. Channel Plan

The selected Channel: FCC, IC, ETSI, Spain, France, MKK, MKK1, Israel, TELEC, Default. (Note: The choose between channels function is not allowed in USA.)

3. Threshold

(1) Fragment Threshold

This value should remain at its default setting of 2347. If you experience a high packet error rate,

you may slightly increase your fragmentation threshold within the value range of 256 to 2432. Setting the fragmentation threshold too low may result in poor performance.

(2) RTS Threshold

Request To Send Threshold. This value should remain at its default setting of 2346. If you encounter inconsistent data flow, only minor modifications to the value range between 0 and 2432 are recommended.

5.3.6 Status

The Status tab contains general information about the program and its operations.

REALTEK 11n USB Wirele	ess LAN Utility
Refresh(R) Mode(M) Al	bout(A)
MyComputer Sealtek RTL818	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup Virtual WiFi
	ManufacturerREALTEKNDIS Driver Version1006.1.713.2010Short Radio HeaderNoEncryptionDisabledAuthenticateOpen SystemChannel SetFCCMAC Address00:E0:4C:81:76:00Data Rate (AUTO)Tx:150 Mbps Rx:30 MbpsChannel (Frequency)11 (2462 MHz)StatusAssociatedSSIDRTK 11n APNetwork TypeInfrastructurePower Save ModeNoneAssociated AP MAC00:E0:4C:81:96:CCUp Time (hh:mm:ss)2:07:20
4 m +	
Show Tray Icon Radio Off	Disable Adapter

The following table describes the items found on the Status screen.

Items	Information
Manufacturer	The name of manufacturing this product.
NDIS Driver Version	The version of Network Driver Interface Specification.
Encryption	Here displays the encryption type the device is using.
Authenticate	This shows whether the server based authentication is used.

Channel Set	Appears the country you use.
MAC Address	The MAC address of the wireless network adapter.
Data Rate(Auto)	Show current transmit rate and receive rate.
Channel Frequency	Shows the channel in use (1~14).
Status	Current connection status.
SSID	The SSID of the wireless system.
Network Type	The type of network and the station currently connected are shown here. The options include : Infrastructure, Ad Hoc
Power Save Mode	The power save mode have three mode: Max, Min, None
Associated AP MAC	The MAC Address of associated AP.
Up Time	Record life time.

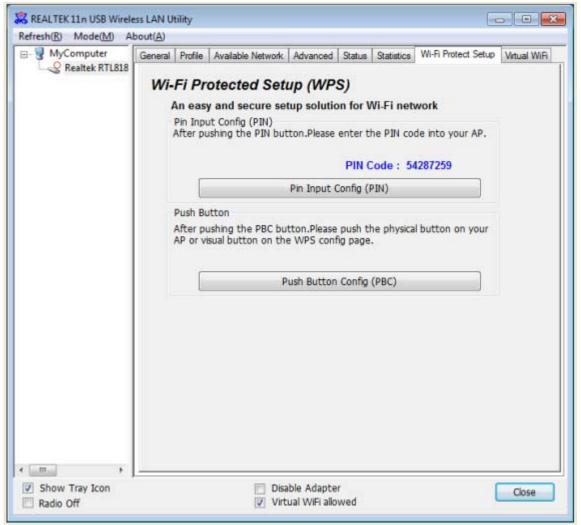
5.3.7 Statistics

Statistics page displays the detail counter information based on 802.11 MIB counters. This page translates the MIB counters into a format easier for user to understand. It show receiving and transmitting statistical information about the following receiving and transmitting diagnostics for frames received by or transmitted to the wireless network adapter.

	bout(A)				1		1	T.
MyComputer	General	Profile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup	Virtual WiFi
		Cou	nter Name				Value	
		Tx	ж				648	
		Tx i	Error				1	
		Rx (132	
		1000	acket Count				132	
			letry CV Error				21	
		1001	CV EITOI				U	
		-						
		_				_		
						_		
				Re	set			

Items	Information
ТХ ОК	Successfully transmitted frames numbers.
TX Error	Frames numbers transmitting with error.
RX OK	Successfully received frames numbers.
Rx Packet Count	The packets of receiving frames.
RX Retry	Frames numbers re-receiving.
RX ICV Error	Integrity Check Value receiving with error.
Reset Counter	Reset counters to zero.

5.3.8 Wi-Fi Protect Setup



The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. This adapter supports the configuration setup using PIN configuration method or PBC configuration method. If the wireless card supports Wi-Fi Protected Setup (WPS), you can establish a wireless connection between wireless card and router using either Push Button Configuration (PBC) method or PIN method.

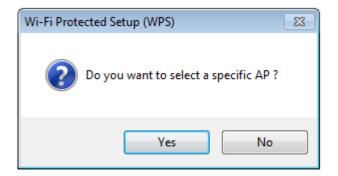
Here we will introduce two ways to configure the QSS

(QSS is known as rapid security settings, by pressing the wireless router and wireless card on the QSS button to automatically set up WPA2 secure connection level without the router or network adapter management software to conduct the cumbersome interface settings, greatly simplifying the operation of the wireless security settings.)

Pin Code: 8-digit numbers. It is randomly generated from system

(1) PIN method

Click the button "Pin Input Config (PIN)", and then come to the following figure.

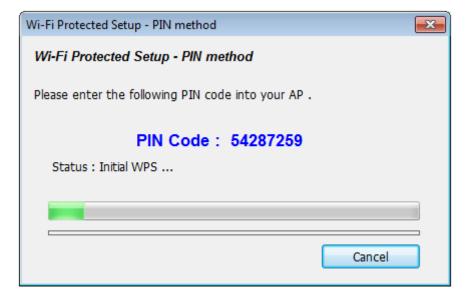


Click the button "Yes", you can select one of the AP.

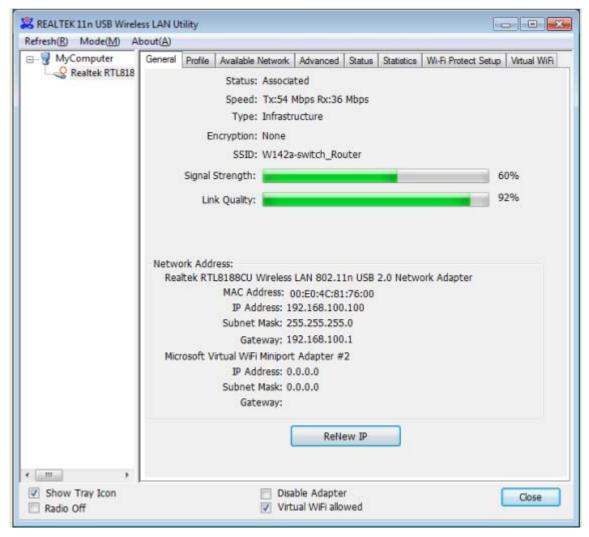
W	/i-Fi Protected Setup - Select	AP	X
	WPS AP Name	WPS AP MAC	c
	201011090418	20:10:10:29:10:26	
	W142a-switch_Router	00:E0:4C:81:96:C1	
	TW-4F	00:08:54:9A:79:23	
	WBR-6011	00:11:6B:44:8F:18	
	W235_Test	00:00:00:00:00:13	
	RTK 11n AP	00:E0:4C:81:96:CC	
			_
	•		•
	Re	fresh	
	Select	<u>C</u> ance	

When the following interface pops up, double click the Internet WEB browser icon on your desktop screen. Type the IP address of you selected Router/AP into the URL and press "Enter", and then you can enter the configuration.

Please enter the WPS (Wi-Fi) configuration page, type the PIN code of adapter and click confirm button to build WPS connection.

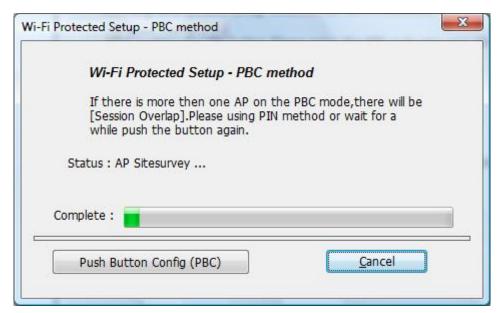


When the "General" window appears, WPS is configured successfully.



2. PBC (Push Button Configuration) method

After pushing the PBC button, Please push the physical button on your AP or visual button on the WPS config page, then come to the following figure.



Please enter the WPS (Wi-Fi) configuration page of your desired router/AP, and then start PCB connection.

5.3.9 Virtual WiFi

Click the check box of "Virtual WiFi disallowed" at the bottom of the window to activate Virtual WiFi. Virtual WiFi, abbreviated to VWiFi, is a software layer that abstracts the wireless LAN card hardware into multiple virtual adapters. The software handles the connections of each adapter to ensure every adapter has an opportunity to connect to their respective networks limited by time. And you act as if you have multiple WLAN hardware adapters working independently.

Realtek RTLB18 Virtual WFI Soft AP Virtual WFI SoftAP Status Status: Started SSID: DQA-81-16550 BSSID: 00:E0:4C:81:76:00 Association Table AID MAC Address Life Time Config Setting Internet Connection Sharing (ICS)		General	Profile	Available Network	Advanced	Status	Statistics	Wi-E Protect Set in	Virtual WiFi
Vitual WFI SoftAP Status Status: Started SSID: DQA-81-16550 BSSID: 00:E0:4C:81:76:00 Association Table AID MAC Address Life Time Config					hardnoed	Gidige	Statistica	mininet outp	
Status: Started SSID: DQA-81-16550 BSSID: 00:E0:4C:81:76:00 Association Table AID MAC Address Life Time Config Setting Internet Connection Sharing (ICS)									
SSID: DQA-81-16550 BSSID: 00:E0:4C:81:76:00 Association Table AID MAC Address Life Time Config		v	rtual W						
BSSID: 00:E0:4C:81:76:00 Association Table AID MAC Address Life Time Config Setting Internet Connection Sharing (ICS)					Second and				
Association Table AID MAC Address Life Time Config Config Setting Internet Connection Sharing (ICS)				1209926 B 701		10			
AID MAC Address Life Time					:40:81:70:0	0			
Config			Assoc	ation Table					
Setting Internet Connection Sharing (ICS)			AID	MAC Address		Life Ti	me		
Setting Internet Connection Sharing (ICS)									
Setting Internet Connection Sharing (ICS)									
Setting Internet Connection Sharing (ICS)									
Setting Internet Connection Sharing (ICS)									
Setting Internet Connection Sharing (ICS)									
Setting Internet Connection Sharing (ICS)									
Setting Internet Connection Sharing (ICS)									
									-
					c	onfig			
					c	onfig			ŝ
			Setting	Internet Connect					2
			Setting	Internet Connect					
			Setting	Internet Connect					
			Setting	Internet Connect					
			Setting	Internet Connect					
-m			Setting	Internet Connect					
			Setting	Internet Connect					
	Show Tray Icon		Setting			(ICS)			Close

Items	Information
SSID	The name of connected IEEE 802.11 wireless network. This field
	has a maximum limit of 32 characters.
BSSID	a locally administered MAC address of the wireless network
20012	generated from a 64-bit random number
Association Table	It is the list of joined stations to this adapter
AID	Association ID
Mac Address	It is the six two-digit numbers that assemble the MAC address of
Mac Address	respected joined station
	It is the timer that counts down from 10 minutes whenever the
Life time	adapter connects the station successfully. If an STA associated to
	SW adapter does not have any interaction with the adapter in 10
	minutes, it will be disassociated from the Infra-structure BSS
config	A dialog of this adapter is shown for configuration modification

Click config button and the network properties interface pops up. You can key in the network key to set up the security accessing authority and click OK to finish the configuration.

Wireless Network Properti	es:	×
Profile Name: H	IOSTED_NETWOR	RK_PROFILE
Network Name(SSID):	QA-B1-16550	
Window websels and the		
Wireless network securit	·	·
This network requires a	-	
Network	Authentication:	WPA2-PSK 👻
1	Data encryption:	AES -
Network key:		
*************	************	*************
Confirm network key:		
**************	************	*************
ОК		<u>C</u> ancel

The other connecter can share the same network by typing in the network key. In this way the connecter is connected to the adapter.

REALTEK 11n USB Wirele	ess LAN Utility	×
Refresh(R) Mode(M) Al	bout(A)	
B- B MyComputer	General Profile Available Network Advanced Status Statistics Wi-Fi Protect Setup Virtual	WiFi
Realtek RTL818	Start Virtual WiFi Soft AP	
	Virtual WIFI SoftAP Status	
	Status: Started	
	SSID: DQA-81-16550	
	BSSID: 00:E0:4C:81:76:00	
	Association Table	
	AID MAC Address Life Time	
	1 00:08:54:9A:79:11 19:32	
	Config	
	Setting Teleparts Generating Charles (1991)	
	Setting Internet Connection Sharing (ICS)	
Chan Tau Isaa		
Show Tray Icon Radio Off	Disable Adapter Oliver Virtual WIFI allowed	e
	T TI SUG TITI SUCTOR	

Setting Internet Connection Sharing(ICS)

1. Click the checkbox of ICS, a box asks for waiting will pop up, and "Auto Select Public Network" is enabled automatically.

	bout(A)	Le vi		Las		1 -		3.6.4.1.1.36.07
MyComputer				Advanced	Status	Statistics	Wi-Fi Protect Setup	Virtual WiF
Concentration of the	2 s	tart Virt	ual WiFi Soft AP					
	v	irtual W	Fi SoftAP Status					
			Status: Starte	ed				
			SSID: DQA-	81-16550				
			BSSID: 00:E0	:4C:81:76:0	00			
		Assoc	ation Table					
		AID	MAC Address		Life Ti	me		
	Settin	g Intern	et Connection Sha	ring (ICS)			83	
	Wa	inting S	etup Up					
							-	
				0	onfig			
			<u> </u>					
					inere b			
			Internet Connecti		(1CS)			
			Internet Connecti Select Public Net		(ICS)			
	1		Select Public Net		(ICS)			
	Sha	Auto ared net	Select Public Net	work		2.0 Netv	vork Adapter	*
	Sha	Auto ared net	Select Public Net	work s LAN 802.1	In USB	2.0 Netv	vork Adapter	*
	Sha	Auto ared net	Select Public Net	work s LAN 802.1		2.0 Netv	vork Adapter	*
	Sha	Auto ared net	Select Public Net	work s LAN 802.1	In USB	2.0 Netw	vork Adapter	Ŧ

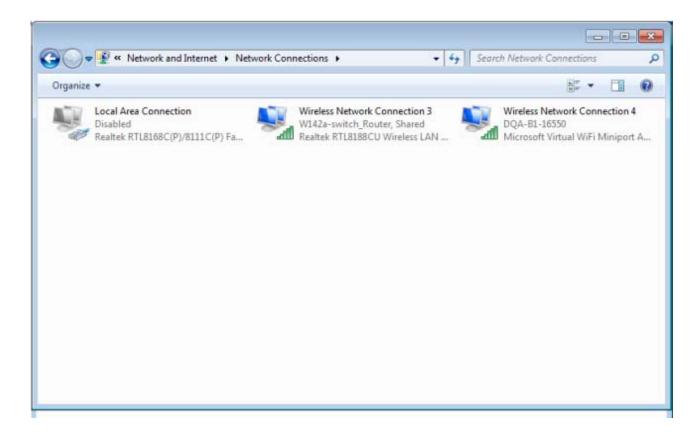
2. If you want to select the "Shared network" manually, you can enable "Auto Select Public Network" and choose the "Shared network" you want by the drop-down list as follow:

	bout(A)							
MyComputer	General	Profile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup	Virtual WiFi
Realtek RTL818	S S	tart Virt	ual WiFi Soft AP					
	v	irtual Wi	FI SoftAP Status					
			Status: Starte	d				
			SSID: DQA-E	31-16550				
			BSSID: 00:E0	:4C:81:76:0	00			
		Associ	ation Table					
	Ĩ.	AID	MAC Address		Life Ti	me		
		1140						
	-			C	onfig			
		Setting	Internet Connecti					
			Internet Connecti	on Sharing				
	Į	Auto	Select Public Net	on Sharing				
	Sha	Auto ared net	Select Public Network:	on Sharing work	(ICS)	2.0 Netu	uork Adapter	
	Sha Re	Auto ared net altek RT	Select Public Net	on Sharing work	(ICS)			.20)
	Sha Re Re	Auto ared net altek RT	Select Public Network: Work: [L8188CU Wireless	on Sharing work LAN 802.1 (P) Family	(ICS) L1n USB PCI-E GI	gabit Ethe	met NIC (NDIS 6	.20)
	Sha Re Re	Auto ared net altek RT	Select Public Network: Work: [L8188CU Wireless L8168C(P)/81110	on Sharing work LAN 802.1 (P) Family	(ICS) L1n USB PCI-E GI	gabit Ethe	met NIC (NDIS 6	.20)
III +	Sha Re Re	Auto ared net altek RT	Select Public Network: (L8188CU Wireless L8168C(P)/81110 L8188CU Wireless	on Sharing work LAN 802.1 (P) Family	(ICS) IIn USB PCI-E GI In USB	gabit Ethe	met NIC (NDIS 6	.20)

3. After selecting the shared network, click the button "Apply", and then Prompt box pops up.



4. Select "OK". When the connection is successful, you will find that the tray "Local Area Connection" has been changed.



5.4 AP mode management guide for Windows 7

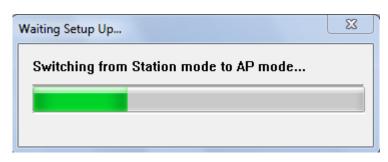
If you wish to share the Internet access with the wireless stations in your environment, you can configure this wireless adapter as a software access point (Soft AP). In this mode, this wireless adapter becomes the wireless access point that provides local area network and Internet access for your wireless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

5.4.1 General

To use this adapter as an access point, please click the "Mode" on **Functional Menu** and select "Access Point".

Refresh(R)	Mo	de(M)	View(V)	Abou	t(A)		_
🖃 😽 MyC		Static	on		Ivanced	Status	Statistics
े	1	Acce	ss Point				

At this time a box pops up:



EN

to

*

Then switching from station mode to AP: At the same time, you will find that the icon on the system

8:25 AM

tray is changed form

3/12/2010 8:41 AM EN 🔺 🤌 🔯 ail 🌗 3/12/2010

🍖 🚜 🚯

Please refer to the following information about this AP-mode utility.

MyComputer	General Advanced Statistics ICS	
	SSID: dqa-b1_AP	
	BSSID: 00:E0:4C:81:76:00 Association Table	
	AID MAC Address Life Time	
		÷
	Config	
-m. +		

Items	Information
SSID	AP name of user type.
BSSID	The IEEE MAC address of locally-managed, generating from a 46 random code.

AID	Raise value by current connection.
MAC Address	The station MAC address of current connection.
Life Time (mm:ss)	Record life time.

Click the "Config" button, then you can configure the wireless network properties. This page provides overall configuration to this adapter.

Wireless Network Properties:
This is a computer-to-computer(ad hoc) network; wireless access points are not used.
Profile Name: Access Point Mode
Network Name(SSID): dqa-b1_AP
Channel: 1 (2412MHz) *
Wireless network security
This network requires a key for the following:
Network Authentication: Open System 🔻
Data encryption: Disabled
ASCII
Key index (advanced): 1 v
Confirm network key:
OK <u>C</u> ancel

SSID: AP name of user type.

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

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

Cancel: Cancel the above changes.

OK: Apply the above changes.

A. Network Authentication

Select the Security tab in the screen above. To define the security mode, select the desired security mode as follows. There are 4 types supported: Open System, Shared Key, WPA-PSK, WPA2-PSK. Please select a type from the drop down list.

B. Data Encryption:

	There are 4 types supported: Disabled, WEP, TKIP and AES. The available encryption selection will differ from the authentication type you
Data encryption	Authenticatio Available Encryption Selection n Open System Open System Disabled, WEP Shared Key , WEP 802.1X WEP
	WPA-PSK, WPA2-PSK, and WPA TKIP, AES 802.1X, WPA2 802.1X

Note: Select different Security Options, the configurations are different; you can select the appropriate security option and configure the exact key as your need.

5.4.2 Advanced

🚜 REALTEK 11n USB Wire	eless LAN Utility	
Refresh(<u>R</u>) Mode(<u>M</u>)	View(<u>V</u>) About(<u>A</u>)	
MyComputer Realtek RTL81	General Advanced Statistics ICS Beacon Interval IOO IOO IOO DTIM Period: 1 Preamble Mode Iong Long • • •	
	Set Defaults Apply	
< <u> </u>	P	
Show Tray Icon	Disable Adapter	Close
Ready		NUM
Items	Information	

Beacon Interval	Beacon frequency spacing.
DTIM Period	Delay transmission indicator map (DTIM) is enabled for power management of the client. If any client power management is enabled, the DTIM should be retained for 1 (the default). Support this parameter range from 1 to 255.
Preamble Mode	Select the options from the drop list, (Long / Short).
Set Defaults	Setting the default value of General.
Apply	Apply the above changes.

5.4.3 Statistics

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

B- MyComputer	eneral Advanced Statistics ICS	
	Counter Name	Value
	Тх ОК	1976
	Tx Error	0
	Rx OK	0
	Rx Packet Count	0
	Rx Retry	0
	Rx ICV Error	0
		Reset
		Reset

Items	Information
ТХ ОК	Successfully transmitted frames numbers.
TX Error	Frames numbers transmitting with error.

RX OK	Successfully received frames numbers.
Rx Packet Count	The packets of receiving frames.
RX Retry	Frames numbers re-receiving.
RX ICV Error	Integrity Check Value receiving with error.
Reset Counter	Reset counters to zero.

5.4.4 ICS

efresh(R) Mode(M) A	bout(<u>A</u>)	
- 💡 MyComputer - 🕹 Realtek RTL818	General Advanced Statistics ICS Setting Internet Connection Sharing (ICS)	
	ConnName Device Name	
	Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-	E Gigabit E
	•	,
	Public Network	
	Apply	
Show Tray Icon Radio Off	Disable Adapter	Close

Click the button "Apply", then a dialogue box appears and asks for checking the connection status appears.



Select "OK", then the Internet connection is sharing.

Realtek RTLB18 Setting Internet Connection Sharing (ICS) ConnName Device Name Local Area Connection Realtek RTLB168C(P)/8111C(P) Family PCI-E Gigabit Public Network Local Area Connection Realtek RTLB168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply		bout(A)	
Setting Internet Connection Sharing (ICS) ConnName Device Name Local Area Connection Reatek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Uncel Area Connection Reatek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply		General Advanced Statistics ICS	
ConnName Device Name Conal Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Public Network Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply	Realtek RTL818	Setting Internet Connection Sharing (ICS)	
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Public Network			
Public Network Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply		Clocal Area Connection Realter RTL8168C(P)/8111C(P) Pamily I	PCI-E GIGADIC E
Public Network Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply			
Public Network Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply			
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Public Network Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply		4	
Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth Apply			
Local Area Connection Realtek RTL8168C(P)/8111C(P) Family PCI-E Gigabit Eth			
		Public Network	
Apply III +		Local Area Connection Realtek RTI 8168C(P)/8111C(P) Family PCI-F	Ginabit Ethe
		Local tion contraction includes in contract, Montract, M	- organic core
		Apply	
Chan Tree Los	1		
Radio Off	how Tray Icon	Disable Adapter	Close

Appendix A: Specifications

Standard
IEEE 802.11n draft 2.0, IEEE 802.11g, IEEE 802.11b
Interface
Complies with USB 2.0
Security
64/128-bit WPA , WPA2
Receiver Sensitivity
802.11n Typical -68 dBm
802.11g Typical -73 dBm
802.11b Typical -84 dBm
Channel
USA 11, Europe 13
Transmit Power
16 dBm typically @ 802.11b
14 dBm typically @ 802.11g
13 dBm typically @ 802.11n
Network Data Rate
802.11b: 1,2,5.5 and 11 Mbps
802.11g: 6,9,12,18,24,36,48 and 54 Mbps
802.11n: up to 150 Mbps
Range Coverage
Indoor 35~100 meters
Outdoor 100~300 meters
Temperature
Operating: 0°C ~ 40°C (32°~104°F)
Storage: -20°C ~ 70°C (-4°~158°F)
Humidity
Operating: 10% ~ 90% RH, non-condensing
Storage: 5%~90% RH, non-condensing
Emission

FCC, CE, VCCI Class B

Appendix B: Glossary

- 802.11b The 802.11b standard specifies a wireless product networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.
- 802.11g specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.
- 802.11n 802.11n builds upon previous 802.11 standards by adding MIMO (multiple-input multiple-output). MIMO uses multiple transmitter and receiver antennas to allow for increased data throughput via spatial multiplexing and increased range by exploiting the spatial diversity, perhaps through coding schemes like Alamouti coding. The Enhanced Wireless Consortium (EWC) was formed to help accelerate the IEEE 802.11n development process and promote a technology specification for interoperability of next-generation wireless local area networking (WLAN) products.
- Ad-hoc Network An ad-hoc network is a group of computers, each with a Wireless Adapter, connected as an independent 802.11 wireless LAN. Ad-hoc wireless computers operate on a peer-to-peer basis, communicating directly with each other without the use of an access point. Ad-hoc mode is also referred to as an Independent Basic Service Set (IBSS) or as peer-to-peer mode, and is useful at a departmental scale or SOHO operation.
- DSSS (Direct-Sequence Spread Spectrum) DSSS generates a redundant bit pattern for all data transmitted. This bit pattern is called a chip (or chipping code). Even if one or more bits in the chip are damaged during transmission, statistical techniques embedded in the receiver can recover the original data without the need of retransmission. To an unintended receiver, DSSS appears as low power wideband noise and is rejected (ignored) by most narrowband receivers. However, to an intended receiver (i.e. another wireless LAN endpoint), the DSSS signal is recognized as the only valid signal, and interference is inherently rejected (ignored).
- Infrastructure Network An infrastructure network is a group of computers or other devices, each with a Wireless Adapter, connected as an 802.11 wireless LAN. In infrastructure mode, the wireless devices communicate with each other and to a wired network by first going through an access point. An infrastructure wireless network connected to a wired network is referred to as a Basic Service Set (BSS). A set of two or more BSS in a single network is referred to as an Extended Service Set (ESS). Infrastructure mode is useful at a corporation scale, or when it is necessary to connect the wired and wireless networks.
- **SSID** A Service Set Identification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate

with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name. *See also* Wireless Network Name and ESSID.

- WEP (Wired Equivalent Privacy) A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard. To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.
- **Wi-Fi** A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see http://www.wi-fi.net), an industry standards group promoting interoperability among 802.11b devices.
- WLAN (Wireless Local Area Network) A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.
- WPA (Wi-Fi Protected Access) A wireless security protocol use TKIP (Temporal Key Integrity Protocol) encryption, which can be used in conjunction with a RADIUS server