Wireless-G USB Dongle

User Manual

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1. Introduction 1.1 The Wireless-G USB Dongle

The Wireless-G USB Dongle installs in most desktop or notebooks and lets you put your computer almost anywhere in the building, without the cost and hassle of running network cables. Now you don't have to drill holes in your walls and climb through the attic or cellar to get connected to the network. Once you're connected, you can keep in touch with your e-mail, access the Internet, use instant messaging to chat with friends, and share files and other resources such as printers and network storage with other computers on the network.

The Wireless-G USB Dongle connects you with Wireless-G networks at an incredible 54Mbps! And for added versatility, it can also interoperate with all the 11Mbps Wireless-B (802.11b) products found in homes, businesses, and public wireless hotspots around the country. And in either mode, your wireless communications are protected by up to 256-bit encryption, so your data stays secure.

So don't hassle with running cables through your house - get your notebook connected the easy way with the Wireless-G USB Dongle.

1.2 Key Features

- Investment Protection: 5 Times Faster and Interoperate with Existing Wireless-B Equipment Seamlessly
- 64/128-bit WEP and Advanced 256-bit WPA (Wi-Fi Protected Access) Encryption Provides Maximum Wireless Security
- Ease of Use: Simple Installation with the Help of the Simple Setup Wizard
- Compatible with Windows 98SE/ME/2000/XP

2. Planning Your Wireless Network

2.1 Network Topology

A wireless local area network (WLAN) is exactly like a regular local area network (LAN), except that each computer in the WLAN uses a wireless device to connect to the network. Computers in a WLAN share the same frequency channel and SSID, which is an identification name for wireless devices.

2.2 AD-Hoc versus Infrastructure Mode

An Ad-Hoc wireless LAN is a group of computers, each equipped with one WLAN adapter, connected as an independent wireless LAN. Computers in a specific Ad-Hoc wireless LAN must be configured to share the same radio channel.



The adapter provides access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an infrastructure configuration. A group of PC adapter/ card users and an Access Point can compose a Basic Service Set (BSS). Each PC adapter/card in a BSS can talk to any computer in the wired LAN infrastructure via the Access Point.



3. Getting to Know the Wireless-G USB Dongle

Wireless-G USB Dongle will be installed into your PC or Notebook like any other USB adapter using the USB port.

ACT LED Green. The ACT LED will blink when the Dongle transfers or receives data.

4. Installing Driver, Configuration Utility and Hardware for Windows 98SE/ME/2000/XP

4.1 For Windows XP/2000

4.1.1 Hardware Installation

- 1-To install the Wireless-G USB Dongle in a Desktop or Notebook:
 - Select an available USB port on the notebook or Desktop PC
 - Insert the Wireless-G USB Dongle into the USB port
- 2-Windows will automatically detect the Dongle. In Windows XP, you will see Fig 4-1. Please click "Cancel". Fig 4-2 is the screen in Windows 2000. Please click "Cancel"

Found New Hardware Wiz	ard
	Welcome to the Found New Hardware Wizard This wizard helps you install software for: 802.11g WLAN USB Dongle
	If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do?
	 Install the software automatically (Recommended) Install from a list or specific location (Advanced)
	Click Next to continue.
	< <u>B</u> ack <u>N</u> ext > Cancel
	Fig 4-1



Fig 4-2

3- Run the Auto Driver/Utility/ Installation

Insert the setup CD into your CD-ROM driver. Unless you have deactivated the auto-run feature of Windows, the screen in Fig 2-1 should appear automatically. If the screen doesn't appear automatically, you can access the installation by clicking the "Start" button and choose "Run". In the drop-down box type D:\setup.exe (where D: is the letter of your CD-ROM drive). Alternately, double-click "My Computer" and double-click the "Setup.exe" icon in the folder that appears.



Fig 4-2

4- Click Install Wireless-G USB Dongle Driver and Utility. Click "Next>". (Fig 4-3)

RALINK Wireless Network Ca	rd Setup	X
Welcome to the Install of Wir Please select one of install optic	esless LAN Adapter ons bellow.	
Ralink	RT2500 USB Wireless LAN Card Setup will install the wireless network driver and its utilities on your system. Easy Install Install the Wireless Lan driver and its utilities automatically.	
InstallShield	Cancel	
4	Fig 4-3	

5- If your use Windows XP, you will see Fig 4-4. Please click **"Continue Anyway"**. If you use Windows 2000, you will see the Fig 4-5. Please click **"Yes"**





Fig 4-5

6- Then select the country Region. (Fig 4-6)

untry	Channel Select	
Se	lect Country	
	Select your location country now:	
	United States of America - (1-11)	-
	1	
	ОК	

Fig 4-6

7- Click Finish on the Setup Page.(Fig 4-7)

RALINK Wireless Network Ca	ard Setup
	Setup has finished installing RT2500 USB Wireless LAN Card Setup is almost complete.
Ralink	Click Finish to complete RT2500 USB Wireless LAN Card Setup.
InstallShield	K <u>B</u> ack Finish Lancel

Fig 4-7

8- Please reboot the computer after the installation of drivers and utility.

4.2 For Windows 98SE/ME

4.1.1 Hardware Installation

- 1- To install the Wireless-G USB Dongle in a Desktop or Notebook:
- · Select an available USB port on the notebook or desktop PC
- Insert the Wireless-G USB Dongle into the USB port
- 2- Windows will automatically detect the Dongle. (Fig 4-8) Please click "Cancel"

Add New Hardware Wiza	ard
	Windows has found the following new hardware: 802.11g WLAN USB Dongle Windows can automatically search for and install software that supports your hardware. If your hardware came with installation media, insert it now and click Next. What would you like to do? Matter would you like to do? Automatic search for a better driver (Recommended) Specify the location of the driver (Advanced)
	<u> ≪ B</u> ack Next > Cancel

Fig 4-8

3- Run the Auto Driver/Utility/ Installation

Insert the setup CD into your CD-ROM drive. Unless you have deactivated the auto-run feature of Windows, the screen in Fig 2-1 should appear automatically. If the screen doesn't appear automatically, you can access the installation by clicking the "Start" button and choose "Run". In the drop-down box provide type D:\setup.exe (where D: is the letter of your CD-ROM drive). Alternately, double-click "My Computer" and double-click the "Setup.exe" icon in the folder that appears.





Install Wireless-G Cardeus PC Card Driver and Utility

Install Wireless-G MiniPCI module Driver and Utility

Install Wireless-G PCI An apter Driver a sublity

Install Wireless-G USB Dongle Driver and Utility

Explore CO-ROM

View User Guide

_ [] ×

EXIT

Fig 4-9

4- Click Install Wireless-G USB Dongle Driver and Utility. Click "Next>". (Fig 4-10)

RALINK Wireless Network Co	ard Setup	×
Welcome to the Install of W Please select one of install op	irestess LAN Adapter ions bellow.	
Ralink	RT2500 USB Wireless LAN Card Setup will install the wireless network driver and its utilities on your system. Easy Install Install the Wireless Lan driver and its utilities automatically.	
InstallShield	< <u>B</u> ack <u>N</u> ext > Cancel	

Fig 4-10

5- You will see the following page. (Fig 4-11)



Fig 4-11



Fig 4-11

7- When you see Fig 4-11, the 802.1x utility has installed successfully. Please click "**Cancel**" to continue driver installation. Then select the country Region. (Fig 4-12)

Country (Channel Select
Sel	ect Country
	Select your location country now:
	United States of America - (1-11)
	OK

Fig 4-12

8- Upon clicking "OK", you will see the following screen. Click OK on (Fig 4-13).



Fig 4-13



Fig 4-14

10- Please reboot the computer after the installation of drivers and utility is completed.

5. Using the Configuration Utility for 98SE/ME/2000/XP

5.1 Overview

The wireless Configuration Utility can be used to check link information, search for available wireless networks, or to create profiles that hold different configuration settings.



The utility is divided into six parts: **Profile, Link Status, Site Survey, Statistics, Advance, and About.** You should change all your configuration settings for your Wireless-G USB Dongle by using this utility and not with the Network Properties section in your Control Panel.

5.3 Profile

The Profile screen (Fig 5-2) lets you save different configuration profiles for different network setups.

Profile Name	SSID	Channel	Authentication	Encryption	Network Typ
WLAN	WLAN	Auto	Open	None	Infrastructure
-					
<					
bbά		Delete	Edit	1	Activate

Profile Name – Connection profile name.

SSID – The Wireless unique name of the profile.

Channel - The channel which the wireless network devices are set on.

Authentication – The Authentication method used in this profile.

Encryption – The Encryption type used for this profile.

Network Type – The Network type used for this profile.

Add- Click the Add button to create a new profile. Please refer the "5.4 Create a New Profile".

Delete - Click the Delete button to delete a profile.

Edit- Select a profile, and click the Edit button to change an existing profile.

Activate- To activate a specific profile, select the profile, and click the Activate button.

5.4 Create a New Profile 1- Enter the Profile Name.

Add Profile	
Profile Name PROF1	SSID
System Configuration Authentication & Secu	rity
Power Saving Mode	
CAM (Constantly Awake Mode)	C Power Saving Mode
Network Type	
RTS Threshold	2312 2312
Fragment Threshold 256 '	2312 2312
	CANCEL
(<u></u>	

- 2- Fill the following information.
 - **SSID:** Enter the SSID for the wireless network.
 - **Network Type:** There are two wireless modes.
 - (A) Infrastructure This mode allows wireless and wired networks to communicate through an access point.
 - (B) Ad Hoc This mode allows wireless-equipped computers to communicate directly with each other.
- 3- Setup the Security Configuration

) //PA Break and Kaus	
DOVE HIE DEVIDATED IN EUL	
-Wep Key	
🕼 Key#1 Hex 💌	
C Key#2 Hex 💌	
C Key#3 Hex 👻	
C Key#4 Hex 💌	

A. If encryption is not required; please click "OK" to save the profile.

For configuring encryption, please follow the steps below:

B. WEP

- Select Authentication type: Open System or Shared Key.
 Select the key number that will be used

- a. Enter the key
 b. Click "OK" to save the profile. Please see the Fig 5-5.

Authenticaion Type :	Shared Use 802.1x 802.1x Setting		
Encryption :	WEP -		
WPA Preshared Key : Wep Key			
C Key#3 Hex			

C. WPA

- Select Authentication type: WPA
 Select Encryption type: TKIP or AES. Please see the Fig 5-6

Authenticaion T	уре :	WPA	-	802.1x 9	Setting
Encryption :		AES			-
WPA Preshared	d Key:				
└ ^{₩ep Key} ──			La cassie		
	Hex	<u>~</u>	abcde12345		
C Key#2	Hex	<u></u>			
C Key#3	Hex	Ŧ			
C Key#4	Hex	Ψ			

3. Click "802.1x Setting" button. Please see the Fig 5-7

ertification CA Ser	rver	
Authenticaion Ty	ype PEAP	
Identity	Password	<u> </u>
Use Client cer	rtificate	
Issued To :		
Issued By :		
Expired On :		
Friendly Name :		More
Tunneled Authen	tication	
Protocol	EAP-MSCHAP v2	
11000001		
Identity	Password	
Identity	Password	

Fill all the information which you wan to use. If you want to use CA server, please click
 "CA Server" page. Please see the Fig 5-8

Certifi	cation CA Server	
F	Use certificate chain	
C	ertificate issuer :	
-	Any Trusted CA -	1
Г	Allow intermidiate certificates	
s F	erver name :	
6	Server name must match exactly	
C	Domain name must end in specified name	
	OK Cancel Apply	Ĥ

5. Fill the information which you want to use. Please click "OK" to save the profile.

D. WPA-PSK

- Select Authentication type: WPA-PSK
 Select Encryption type: TKIP or AES
 Enter the Key
 Click "OK" to save the profile. Please see the Fig 5-9

Authenticaion Type :		WPA-PSK 💌			Ix Setting	
Encryption :	Encryption :		ТКІР			
WPA Preshared	d Key:	123456789	abdksdfejripdslkfwefnla	dnfeknfkenfjunjn.s	nfjns123m	
└ [₩] ер Кеу			L. Langer			
	Hex	<u>*</u>	abcde12345			
C Key#2	Hex	Ψ.				
C Key#3	Hex	Ŧ				
C Key#4	Hex	<u></u>				

5.5 Link Status

The Link Status (Fig 5-10) provides the link information of the Wireless-G USB Dongle.

When in Infrastructure Mode, **Status** will display the connection statistics for the network segment that you are on.

The Channel field shows the channel which the wireless network devices are currently using.

The Link Speed: Tx(Mbps) field shows the transfer rate in megabits per second. Rx(Mbps) field shows the receive rate in megabits per second.

The **Throughput (Kbps)** field is the amount of data moved successfully form one place to another in a given time period.

The **Link Quality** field will display a bar indicating percentage, between 0 and 100 percent.

The **Signal Strength** field will display a bar indicating percentage, between 0 and 100 percent.

Profile Link Status Si	te Survey Statistic	s Advance A	bout		
Status :	WLAN <> 00-08-A1-73-A0-51			Channel :	6
Extra Info :	Link is Up				
Link Speed :	Tx (Mbps)	54.0	Rx (Mbps)		24.0
Throughtput :	Tx (Kbps)	8.5	Rx (Kbps)		14.3
Link Quality :	Good 100				
	Normal 68	8		∏ dBm	
Signal Strength :					
Noise Level :	Low 36%				
				ОК	He

5.6 Site Survey

The site survey page displays a list of all infrastructure and ad-hoc networks available for connection. (Fig 5-11)

SSID	BSSID	Sig	C	Encry	Authent	Network 1
WLAN	00-08-A1-73-A0	83%	6	None	Unknown	Infrastruc
han1976	00-90-4B-1C-4C	83%	11	WEP	Unknown	Infrastruc
-						
		_	1	-	1	

Fig 5-11 Site Survey

Information:

- SSID Service Set ID of the Wireless Network.
- BSSID MAC Address of the Wireless Network.
- Signal Signal Strength status.
- Channel The Channel Wireless Network devices are using.
- Encryption Encryption type.
- Authentication Authentication type used.
- Network Type Wireless Network mode
- **Rescan** Click the **Rescan** button to search for wireless networks.
- Connect Select one of the networks on the list, and click the Connect button. Please note that if the wireless network has encryption enabled, you can't connect. If you want to connect you must add a profile in the Profile Tab.

Add Profile – If you click this button, the Profile screen (Figure 5-4) will appear.

5.7 Statistics

The Statistics screen (Shown in Fig 5-7) provides information about the Transmit Statistics and Receive Statistics. You can reset counters if you need, otherwise click **OK**.

rofile Link Status Site Survey Statistics Advance A	bout	
Transmit Statistics		
Frames Transmitted Successfully	=	1319
Frames Transmitted Successfully Without Retry	=	1210
Frames Transmitted Successfully After Retry(s)	=	109
Frames Fail To Receive ACK After All Retries	=	1
RTS Frames Successfully Receive CTS	=	0
RTS Frames Fail To Receive CTS	₹	0
Receive Statistics		
Frames Received Successfully	=	1227
Frames Received With CRC Error	=	887
Frames Dropped Due To Out-of-Resource	=	0
Duplicate Frames Received	=	4
		Reset Counte
	[ок н

5.8 Advance

The Advanced screen (Fig 5-8) allows you to set Wireless Mode, Ad hoc wireless mode, TX BURST, B/G Protection, Tx Rate and Antenna On/Off.

R Configuration Utility - Rt2500USB			
Profile Link Status Site Survey Statistics	Advance About		1
Wireless mode 802.11 B/G mix			
Ad hoc wireless mode 802.11 B only	•		
Tx BURST	B/G Protection	Auto	•
	Tx Rate	Auto	•
Γ Tix turbo rate			
Use short slot time			
Turn off RF		Ap	bly
		ОК	Help
Fig 5-8	Advance		

5.9 About The About screen shows release dates as well as driver/utility versions and the MAC/IP address of the card.

Profile	guration Utility - R	eu Statistics A	tvance About		
1 Ione	R	WWW.RAL	NKTECH.COM		
	(c) Copyright 2002,	Ralink Technolog	y, Inc. All rights reser	ved.	
	RaConfig Version :	1.0.0.0	Date : 05-2	25-2004	
	Driver Version :	1.2.0.0	Date: 07-1	16-2004	
	IP Address :	192.168.62.51	NIC MAC Address	00-11-22-33-44-5F	
	Sub Mask :	255.255.255.0	Default Gateway :	192.168.62.1	
				ОКН	lelp
		Fig 5-9 4	About		