IEEE 802.11g Wireless PCI Adapter

User's Guide

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 or 802.11g 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 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

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PRODUCT SPECIFICATION	

Overview

Thank you for purchasing this product. Read this chapter to know about your IEEE 802.11g Wireless PCI Adapter.

Unpacking informationx

Before getting started, please verify that your package includes the following items:

- 1. IEEE 802.11g Wireless PCI Adapter]
- 2. One Quick Installation Guide
- 3. One Utility/ Manual CD

Introduction to the IEEE 802.11g Wireless PCI Adapter

The IEEE 802.11g Wireless PCI adapter provides users to launch IEEE 802.11g wireless network at 54 Mbps in the 2.4GHz frequency, which is also compatible with IEEE 802.11b wireless devices at 11Mbps. You can configure this adapter with ad-hoc mode to connect to other 2.4GHz wireless computers or with Infrastructure mode to connect to a wireless AP or router for accessing to Internet. This adapter includes a convenient Utility for scanning available networks and saving preferred networks that users usually connected with. Security encryption can also be configured by this utility.



Key Features

- Complies with IEEE 802.11b/g wireless Support Wake-on-LAN(WOL) function • standard and remote wake-up
- Complies with PCI revision 2.2 and PCI power management revision 2.1
- High Speed transfer data rate up to 54 Mbps
- Support turbo mode for 72 Mbps data ٠ rate
- Support wireless data encryption with 64/128-bit WEP, WPA (TKIP with IEEE 802.1x) and AES functions.

- Equips one external detachable dipole antenna
- Support driver for Windows 98se, Me, ٠ 2000 and XP.
- Supports auto-installation and diagnostic ٠ utilities.

Installation Guide

Hardware Installation

- 1. Turn off your computer.
- 2. Unplug the power cord of your computer from outlet.
- 3. Remove the cover of your computer.
- 4. Install the adapter into a PCI socket.
- 5. Secure this adapter to the back panel of your computer with the included screw.
- 6. Replace the cover.
- 7. Plug the power cord to the outlet and turn your computer on.

Software Installation

Driver and Utility Installation

Note: The following driver installation guide uses Windows XP as the presumed operation system. The procedures and screens in Windows 98se, 2000 are familiar with Windows XP.

- 1. Insert the CD-Rom that came with this product to your CD-Rom drive. Double click your CD-ROM drive icon to access this CD.
- 2. Double click the **CI Driver Utility** folder and then select the **TL8185** folder. Double click the keep icon to start driver installation.

3. The language-selecting window pops up. Please select the language you use and click **OK**.

2	Select the language for this installation from the choices below
	Terrare and the second
	English

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

REALTEK Wireless Network	Utility
	Welcome to the InstallShield Wizard for REALTEK Wireless Network Utility The InstallShield® Wizard will install REALTEK Wireless Network Utility on your computer. To continue, click Next.
	<back next=""> Cancel</back>

5. Please wait while installation.

Now searching for Hardware and installing Drivers
50 <mark>%</mark>

- Click the "Finish" button to complete driver and utility installation. (Note: Windows 98 users please skip to step 9)
- 7. If you are using Windows 98se, the system may ask for the driver CD. Please click the Browse button. Select your CD-ROM Drive then select PCI Driver Utility→rtl8185→Win98 to browse the driver. After installing the driver, restart your computer to activate the driver.

Making a Basic Network Connection

Before You Start

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

Note: For Windows XP users to configure your wireless network using this Utility, please perform the following procedures to disable your native Windows XP wireless support (Wireless Zero Configuration Service)

- Double click the sicon on your system tray, which located at the lower-right corner of your desktop.
- 2. Click the "Advanced" Button



 Uncheck the "Use Windows to configure my wireless network settings" Checkbox and click "OK"

7.0	Witeless	IN ELWORKS	Advan	iced	
Use	Windows	to configur	e ny wi	eless netv	work settings
To co	nnect to	orke: an available	networ	k, click Co	onfigure.
1 0	Jefault				Configure
					Betresh
Prefer	red netwo ratically c	orks: onnect to a	vailable	networks	in the order listed
Prefer Autor below	red netwo latically c	orks: onnect to a	valable	networks	in the order listed
Prefer Autor below	red netwo	onnect to a	valable	rietworks	in the order listed
Ptelen Autor below	red netwo natically c	orks: onnect to a	valable	networks Propert	in the order listed Move up Move down
Prefer Autor below	red netwo natic ally c (dd.	orks: ormect to a Remo	vaiable ve	networks Propert	in the order listed Move up Move down les

Ad-Hoc Mode

An Ad-Hoc mode wireless network connects two computers directly without the use of a router or AP. It is also know as a peer-to-peer network. For example, we can install this wireless adapter to two computers respectively. The communication between the two computers is an Ad-Hoc mode network.



To use this adapter in Ad-Hoc Mode

- 1. Double click the disk top.
- 2. Click the Available Network button to scan available wireless network adapters. Double click on the network adapter that you are going to connect to.

COIL	Cł	nan	Encryp	it Ne	twork /	Authenticati
Deff		1	None	Un	known	12
* VVLAN-	110-044	11	None	Un	known	.0
and and the						>
<						- 5247
<			Г	Pofroch		dd to Drofilo

3. Click the OK button to confirm that you are connecting to an open wireless network.



4. Click OK to add this network into the profile list.

Note: This example is an open wireless network. If you are going to connect to a Wireless adapter with security protection, you will have to configure the encryption settings in this profile to be corresponding to the other wireless adapter.

Wireless network prope	rties			
Profile Name: Jeff's Laptop				
Network Name(SSID): Jeff	1			
This is a computer-to-con access points are not use	nputer(ad hoc) network; wireless ed. Channel 1 (2412MHz) 💙			
Wireless network security		802.1x config	jure	
This network requires a key	/ for the following:	EAP TYPE :	MDS	
Network Authentication:	Open System	Tunnel :		~
Data encryption:	Disabled	Username :		
ASCII Passphra	se	Identity :		
Key Length: 64	Dits 😽	Password :		
Network key:		Certificate :		~
Confirm network key:				
Key index (advanced): 1				
OK	Cancel			

Infrastructure mode

An Infrastructure Mode network contains at least one wireless client and one wireless AP or router. This client connects to Internet or intranet by communicating with this wireless AP.



To use this adapter in Infrastructure Mode:



- 1. Double click the 2^{16} icon on your desktop.
- 2. Click the Available Network button to scan available Access points. Double click on the AP that you are going to connect to.

Available Network(s)

SSID	Chan	Encrypt	Network Authenticati
🕻 WLAN-11b-GW	1	None	Unknown
i default N	11	None	Unknown
45			
(<)	j		>

3. Click the OK button to confirm that you are connecting to an open wireless network.



4. Click **OK** to add this network into the profile list.

Note: This example is an open wireless network. If you are going to connect to an AP with security protection, you will have to configure the encryption settings in this profile to be corresponding to your AP.

Wireless network properties		
Profile Name: default Network Name(SSID): default This is a computer-to-computer(ad hoc) network; wireless access points are not used. Channel 11 (246201Hz)		
Wireless network security	802.1× config	igure
This network requires a key for the following:	EAP TYPE :	MD5
Network Authentication:	Tunnel :	
Data encryption: Disabled	Username :	
ASCII Passphrase	Identity :	
Key Length: 64 Bits	Password :	
Network key:	Certificate :	
Confirm network key:		
Key index (advanced): 1		
OK Cancel		

Management Guide

Read this chapter to understand the management interface of the device and how to manage the device.

Introduction to the Wireless LAN Utility

Starting the Wireless LAN Utility

Double click the shortcut on your desktop. The Wireless LAN Utility pops up. You may click on the tabs above to configure this adapter. The checkboxes below provide the following functions:

Show Tray Icon	Check this checkbox to show the utility icon on your system tray, which is in the notification area at the lower-right corner of the windows desktop. You may also uncheck it to remove the utility icon from system tray.
Windows Zero Config	Uncheck this checkbox to use native Windows XP wireless support (Wireless Zero Configuration Service) instead of using this utility to configure your wireless network.
Radio Off	Check this checkbox to prevent this adapter form transmitting or receiving signals. Uncheck it to communicate.
Disable Adapter	Check this checkbox to disable this wireless adapter. Uncheck it to enable this adapter again.

General

After starting the utility, the general page pops up This **General** tab provides the information of your current wireless network connection. You may click the **Renew** button to refresh those listed information.

REALTEK Wireless LAN	litily			
Refresh Mode(M) View(V) H	lp(H)			
Healtek RTL8187 W	General Profile Available No	twork Advanced	Status Statistics E	asy Config
	Status: Assoc	iated	Throughput:	
	Speed: 54 M	ops		
	Type: Infra:	tructure		
	Encryption: None		Tx:0.00%.Tota	:0.02%
	SSID: defau	lt		
	Signal Strength:			00%
				90%
	Network Address			
	Mac Address 00:El	1.40.01.07.01		
	TD Address: 00.Et	1.40.01.07.01		
	Subnet Mask: 255.2	255.0.0		
	Gateway: 10.10	1.10.254		
		RENEW		
< >				
Show Tray Icon	lows Zero Config 🛛 🔲 Radi	o Off 🛛 🗌 Dis	able Adapter	Close
Ready				NUM

Status:	Check if the device associated to target network.
Speed:	The current connection speed
Туре:	Infrastructure mode or Ad-Hoc mode.
Encryption:	The performing encryption mode for connecting to current network profile.
SSID:	The SSID (network name) of the connected wireless network.
Signal Strength:	Indicated the signal strength detected by this adapter.
Network Address:	Shows the current IP addresses settings for this adapter.

Profile

The **Profile** tab lists the preferred connections. You can click the buttons beside the list to do configurations to each connection.

🕱 REALTEK Wireless LAN Uitily 📃 🗖 🔀							
Refresh Mode(M) View(V) Help(H)							
🖃 🛄 My Computer	General Profile Available Network Advanced Status Statistics Easy Config						
Realcek K I 18187 W	Available Profile(s)						
	Profile Name SSID Add						
	P default default						
	Remove						
	Edit						
	Duplicate						
	Set Default						
< >							
Show Tray Icon 🗌 Wind	dows Zero Config 🛛 Radio Off 🔹 Disable Adapter 🔹 Close						
Ready	NUM						

Add	Click this button to add a connection profile for this adapter.
-----	---

Remove	To remove a connection	profile,	click this	profile (on the	profile
	list and click this button	to delete	e it.			

- **Edit** To modify the configurations for a profile, click this profile on the profile list and click this button to edit.
- **Duplicate** To make a copy of a profile, click the profile that going to be copied, and click this button to copy it.
- Set DefaultTo select a profile as your default wireless connection, click this
profile on the list and click this button. You may also double click
on each profile to select it as your default wireless connection.

Available Network

🙁 Wireless LAN Uitily - RtWLAN 📃 🗖 🖾								
Refresh Mode(M) View(Y) Help(H)								
My Computer Realtek RTL8185 547	General Profile Available Network Advanced Status Statistics Easy Config Available Network(s)							
	SSID Chan Encrypt Network Authenticati							
	✓ LAS Free Airport 1 WEP Unknown Ŷ default 11 None Unknown							
	Refresh Add to Profile Note: Double click on item to join/create profile.							
<u> </u>								
Show Tray Icon Windows Zero Config Radio Off Disable Adapter								
Ready	NUM							

This available tab lists the reachable wireless network of this adapter.

Refresh

Click this button to rescan available networks around the adapter.

Add to Profile To add an available to your profile list, select a available network and click this button to add.

Status

This tab shows the current connection status of this adapter.

🙁 Wireless LAN Uitily - RtWLAN 📃 🗖 🔀								
Refresh Mode(M) View(V) Help(H)								
My Computer	General	Profile	Available Network	Advanced	Status	Statistics	Easy Config	
	General Profile Available Network Manufacturer NDIS Driver Version Short Radio Header Encryption Authenticate Channel Set MAC Address Data Rate Channel (Frequency) Status SSID Network Type Power Save Mode Associated AP MAC Associated AP IP Up Time (hh:mm:ss)			= Realto = 5,104 = No = Disabl = Open = FCC = 54 Mi = 11 (2 = Assoc = defau = Infras = None = 00:08 = = 0:03;				
<u> ()</u>								
Show Tray Icon Wind	ows Zero	Config	Radio Off	Disa	able Ad	apter	Close	
Ready							NUM	

Statistics

Wireless LAN Uitily - RtWLAN Refresh Mode(M) View(V) Help(H) 🖃 🛄 My Computer General Profile Available Network Advanced Status Statistics Easy Config Realtek RTL8185 54 Counter Name Value TX OK 633 Tx Error 0 Tx Retry 2 0 0 Tx Beacon OK Tx Beacon Error Rx OK 893 Rx Retry Rx CRC Error(0-500) 000 Rx CRC Error (500-1000) Ō Rx CRC Error(>1000) Rx ICV Error 0 Reset < > Close Show Tray Icon Windows Zero Config Radio Off Disable Adapter NUM Ready

See this tab to show the transmission activity record.

Product Specification

Standard

IEEE 802.11g, IEEE 802.11b

Interface

PCI Interface

Security

64/128-bit WEP, WPA (TKIP with IEEE 802.1x), AES

Receiver Sensitivity

54Mbps OFDM, 10%PER, -68dBm

11Mbps CCK, 8%PER, -86dBm

1Mbps BPSK, 8%PER, -92dBm

Cannel

USA 11, Europe 13, Japan 14

Data Rate

802.11b: 1, 2, 5.5 and 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54Mbps

Transmit Power

16dBm~18dBm

Range Coverage

Indoor 35~100 meters

Outdoor 100~300meters

LED indicator

Link(Green)

Operating Temperature

0-40 °C (32 - 104 °C)

Operating Humidity

10% ~ 90% (non-condensing)

Dimension

152 x 122x 22 mm

Emission

FCC Part 15.247 for US, ETS 300 328 for Europe