SonicWALL Long Range Dual Band Wireless Card  $User's\ Guide$ 



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# SonicWALL Long Range Dual Band Wireless Card User's Guide

**Table 1: Version History** 

Version	Date	Notes
1	April 20, 2004	This document was created.
2	April 20, 2004	Added Windows Wizard diagrams.
3	April 29, 2004	Incorporated technical review comments.
4	May 6, 2004	Updated SonicWALL Client Utility diagrams.
5	May 17, 2004	Incorporated final technical review comments.

This document describes SonicWALL Long Range Dual Band Wireless Card package contents and stepby-step procedures to configure your wireless card, setup the SonicWALL Client Utility, and connect to the network.

This document contains the following sections:

- "Introduction" on page 1
- "Installing the Drivers and SonicWALL Client Utility" on page 4
- "Using the SonicWALL Client Utility" on page 9
- "Uninstallation" on page 21
- "Troubleshooting" on page 23

## Introduction

The SonicWALL Long Range Dual Band Wireless Card is a PC Card that fits in any 32-bit Cardbus PC Card Standard V7.1 Type II slot. The Wireless Card has an LED indicator and an integrated built-in diversity antenna.

### **Package Contents**

- One wireless card
- One installation CD
- One Quick Start Installation Guide document

#### **System Requirements**

The following are the minimum system requirements in order to use the SonicWALL Long Range Dual Band Wireless Card.

- PC/AT compatible computer with a 32-bit Cardbus PC Card Standard V7.1 Type II slot
- Windows 98SE/ME/2000/XP operating system
- 300 MHz or higher processor
- 32 MB or greater memory

### **Product Registration**

Registering your SonicWALL Long Range Wireless Cards at mySonicWALL.com (www.mysonicwall.com) allows you to receive any new driver updates. Your SonicWALL wireless security appliance must be registered before registering your SonicWALL Long Range Dual Band Wireless Cards.

## **Features and Benefits**

This section provides a list of wireless features, information on wireless interoperability, and security.

#### **Wireless Features**

The SonicWALL Long Range Dual Band Wireless Card includes the features highlighted in Table 2.

#### Table 2: Wireless Features

Features	Benefits
2.4GHz IEEE 802.11b/g standard compliant 5GHz IEEE 802.11a standard compliant	Fully interoperable with IEEE 802.11a/b/g compliant products
Up to 54Mbps and 108Mps (in 802.11a and Turbo G mode) high-speed data rates	Capable of handling heavy data payloads such as MPEG video streaming
WPA-PSK, WPA-EAP and 152-bit WEP Data Encryption with support for TKIP and AES	Powerful data security
Dynamic Frequency Selection (DFS) support	Provides flexible selection of the best frequency to allow mobility among all existing IEEE 802.11a/b/g networks
Transmission Power Control (TPC) support	Offers flexibility to adjust RF output power
Multi-country Roaming (802.11d) support	Automatically adjusts regulatory domain to operate in different countries

#### Interoperability

The SonicWALL Long Range Dual Band Wireless Card is WiFi certified to ensure wireless interoperability with other WiFi certified devices.

#### Security

The following security support is included:

- WPA-PSK (Pre-Shared Key) and WPA-EAP (Extensible Authentication Protocol) including EAP-TLS and EAP-PEAP
- WiFiSec (IPSec VPN) using SonicWALL's Global Security Client
- Wired Equivalent Privacy (WEP) encryption, operating with 64 bit, 128 bit or 152 bit encryption
- AES-CCM Encryption support
- Support for Windows 802.1X supplicants

## **Wireless LAN Solutions**

The following list describes example applications of wireless LANs:

- Office networks Business users need a cost-effective, easy and quick installation in an office network.
- **Training/educational facilities** Training sites at corporations and students at universities use wireless connectivity to ease access to information, information exchanges, and learning.
- Wireless extensions to Ethernet networks Network managers in dynamic environments can minimize the overhead caused by moves, extensions to networks, and other changes with wireless LANs.
- **Wired LAN backup** Network managers implement wireless LANs to provide backup for missioncritical applications running on wired networks.
- Access to environments requiring real-time information Doctors/nurses, point-of-sale employees, and warehouse workers can access real-time information while dealing with patients, serving customers and processing information.

- **Frequently changing environments** Show rooms, meeting rooms, retail stores, and manufacturing sites where the workplace is frequently being rearranged.
- Difficult-to-wire environments There are many situations where wires cannot easily be laid. Historic buildings, older buildings, open areas and across busy streets make the installation of LANs either impossible or very expensive.
- **Temporary workgroups** Consider situations in parks, athletic arenas, exhibitions, disaster-recovery, temporary office and construction sites where you need a temporary WLAN established and removed.

## **Deployment Scenarios**

This section provides deployment scenarios to help you understand how wireless LAN products work together to create a wireless network. Refer to the following deployment scenarios:

- Ad-hoc (or peer-to-peer) for departmental or office LANs
- Infrastructure for Enterprise LANs

#### Ad-Hoc (Peer-to-Peer)

The ad-hoc (peer-to-peer) mode is the simplest network configuration that supports several computers equipped with SonicWALL Long Range Dual Band Wireless Cards to form a wireless network. In ad-hoc mode, each client is peer-to-peer and would only have access to the resources of the other client. In ad-hoc mode, the client does not require an access point.



#### **Infrastructure Mode**

The infrastructure mode requires the use of an access point (AP). In infrastructure mode, wireless communication between two computers is transferred through the AP. The AP can standalone or be wired to an Ethernet network. If an AP is used in standalone mode, the AP can extend the range of independent wireless LANs by acting as a repeater to effectively double the distance between wireless stations. The figure below illustrates a network in infrastructure mode.



## Installing the Drivers and SonicWALL Client Utility

This section describes how to install the drivers and SonicWALL Client Utility for Windows 98SE/ME/ 2000/XP.

## **Before You Begin**

During the installation, Windows 98SE/ME/2000/XP may need to copy systems files from its installation CD. Therefore, you may need a copy of the Windows installation CD available before installing the drivers. On many systems, instead of a CD, the necessary installation files are archived on the hard disk in C:\WINDOWS \OPTIONS\CABS directory.

#### Installing the SonicWALL Long Range Dual Band Wireless Card Drivers

This section provides step-by-step procedures to install the SonicWALL driver and Client Utility. Do not insert the wireless card until after the driver installation is complete.

Perform the following steps below in order to install the SonicWALL Long Range Dual Band Wireless Card drivers:

- Insert the CD-ROM that was provided to you in this package. The setup should run automatically. If the setup does not run automatically, then you must manually select the Setup.exe file from the CD-ROM drive.
- 2. Once the setup begins you will see the Install Shield Wizard, as the image depicts below.



 Click on the Next button to continue. The Install Wizard will then let you select a destination folder for the utility and drivers. Click on the Browse button and specify another folder, or click on the Next button to use the default folder.

InstallShield Wizard
SonicWALL Driver and Client Utility
Setup will install SonicWALL Long Range Dual Band Wireless Network Adapter Driver & Client Utility in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder
Destination Rider
C:\\SonicWALL\SonicWALL ABG Client Utility Browse
InstallShield
< Back Next > Cancel

4. The Install Wizard will then allow you to select a Program Folder. Select one from the list, or click on the **Next** button to use the default program folder.

InstallShield Wizard	×
SonicWALL Driver and Client Utility	1
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.	
Program Folders:	
SonicWALL	
Existing Folders:	
Accessories Administrative Tools Dell Accessories PrintMe Internet Printing Snaglt 7 Startup WinZip	
InstallShield < Back Next > Cance	

5. The Install Wizard will then inform you that it has enough information to begin the installation process. Click on the **Next** button to continue.

InstallShield Wizard			×
SonicWALL Driver and Client Utility			X
Setup has enough information to start copying t change any settings, click Back. If you are sati copying files.	he program files. sfied with the se	If you want to re ttings, click Next	view or to begin
Current Settings:			
Win98ME2KXP Drivers SonicWALL Client Utility			Ă
×			ا
InstallShield			
	< Back	Next >	Cancel

6. The Install Wizard will then begin to copy the files to your computer, as the image depicts below.

InstallShield Wizard	×
Setup Status	
SonicWALL Long Range Dual Band Wireless Network Adapter Driver & Client Utility Setup is performing the requested operations.	
Installing:	
C:\\SonicWALL ABG Client Utility\Manual\whgdata\whlstfl8.htm	
39%	
InstallShield	_
Cancel	

7. Click on the **Finish** button. The first part of the installation is complete.

InstallShield Wizard	
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed SonicWALL Long Range Dual Band Wireless Network Adapter Driver & Client Utility. Click Finish to exit the wizard.
	< Back Finish Cancel

8. Gently insert the SonicWALL Long Range Dual Band Wireless Card into the CardBus Type II slot of your PC. Windows will automatically detect the SonicWALL Long Range Dual Band Wireless Card and display the **Found New Hardware Wizard**, as the image depicts below.

Found New Hardware Wizard					
	Welcome to the Found New Hardware Wizard				
	This wizard helps you install software for:				
	SonicWALL Long Range Dual Band Wireless Network Adapter				
	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.				
	< Back Next > Cancel				

 Select the Install the software automatically (Recommended) radio button, and then click on the Next button to continue. If you are using Windows XP, you will see a message regarding Windows Logo Testing, click on the Continue Anyway button to continue.

Hardware	Installation
1	The software you are installing for this hardware: SonicWALL Long Range Dual Band Wireless Network Adapter has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
	Continue Anyway STOP Installation

10. The setup will then begin to copy the necessary files. After the copying is completed you will see the final screen of the installation procedure, Completing the Found New Hardware Wizard window. The installation of the SonicWALL Long Range Dual Band Wireless Card is now complete. Click on the **Finish** button.

## Using the SonicWALL Client Utility

This section describes the features of the SonicWALL Long Range Dual Band Wireless Card and its configuration process. After a successful installation, a **SonicWALL Client Utility** program group will be added to the Programs menu.

To launch the SonicWALL Client Utility, click **Start > Programs > SonicWALL Client Utility > SonicWALL Client Utility**. The SonicWALL Client Utility icon will appear in the system tray each time your computer is restarted.



Right-click on the SonicWALL Client Utility icon in the system tray and then click on **Open Client Utility...**, as the image depicts below.

Open SonicWALL Client Utility	
SonicWALL Client Utility Help	
Select Profile	•

The SonicWALL Client Utility appears. The SonicWALL Client Utility contains five tabs, each tab is described in detail in the following sections.

- Current Status
- Profile Management
- Site Survey
- Diagnostics
- Driver Information

lient Utility				? ×
SONICWALL	Long R	ange Dual Wire	Band less Card	<u>j</u>
Current Status Profile Management	Site Survey   Diagnosti	cs Driver Information		
SONICWALD	Profile Name: Network Type: Network SSID: Associated BSSID: Current Mode: Current Channel: Link Status: Encryption Type:	SonicWALL Access Point SonicWALL 00-02-6F-BE-F0-0F 5 GHz 54 Mbps 64 Connected Off	IP Address: IP NetMask: Gateway: DNS Server: Host Name: Release	169.254.1.199 255.255.0.0 10.50.128.52 Iphillips-7852 Renew

## **Current Status**

The first tab displays the **Current Status**. The Current Status tab provides the following current status information:

- Profile Name The current name of the selected configuration profile.
- **Network Type** The current type of wireless network that is either Access Point or Ad hoc.
- Network SSID The wireless network instance (SSID) that the device is currently connected to.
- Current Mode The current wireless mode is the frequency and data rate that has been selected.
- **Current Channel** Specifies the current channel that the SonicWALL Long Range Dual Band Wireless Card is connected to or scanning on.
- Link Status The link can be either connected or disconnected to an Access point or other wireless client.
- Encryption Type Describes whether or not the wireless traffic is encrypting.
- IP Address The current IP address of the SonicWALL Long Range Dual Band Wireless Card.
- Gateway The IP address of the Gateway (access point) connecting the device.
- **DNS Server** The IP address of the Domain Name System (DNS) server used for DNS naming resolution.
- · Host Name: The name of the computer running the SonicWALL Client Utility.

SonicWALL Client Utility				<u>? ×</u>
SONICWALL	Long R	ange Dual Wire	Band less Card	
Current Status Profile Management	Site Survey   Diagnosti	ics Driver Information		
SONICWALL	Profile Name: Network Type: Network SSID:	SonicWALL Access Point SonicWALL	IP Address: IP NetMask: Gateway: DNG Course	169.254.1.199 255.255.0.0
SIGNAL STRENGTH:EXCELLENT	Current Mode: Current Channel: Link Status: Encryption Type:	5 GHz 54 Mbps 64 Connected	Host Name:	Iphillips-7852
	Link Quality:	94%		Advanced

## **Advanced Status**

Click on the **Advanced** button to view more details about the status. You will then see the following window.



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The **Advanced Status** window displays the following information:

- Transmit Power Level Provides current setting of Radio output power.
- Associated BSSID Shows the MAC address of the associated Access Point.
- Power Save Mode The type of Power Savings that is configured on the device
- Frequency The current frequency that the Wireless device is connected to or is scanning on.
- Transmit Rate The transmit rate (Mbps) for the current connection for the wireless driver.
- **Receive Rate** The receive rate (Mbps) for the current connection for the driver.

Click on the OK button to close this window and return to the Current Status tab.

## **Profile Management**

The second tab displays the **Profile Management**. The Profile Management tab allows you to configure several different user defined policies. This tab is used to create a new profile, modify and existing profile, remove an existing profile, or activate an existing profile. Each profile can be configured to match the appropriate settings of a unique wireless network.

#### Adding or Modifying a Configuration Profile

To add a new configuration file, click on the **New** button. To modify or remove a configuration profile, select the configuration from the Profile list and click the **Modify** or **Remove** button.

😽 SonicWALL Client Utility				<u>? ×</u>
SONICWALL	Lo	ng Range Dua Wi	al Band reless Ca	ard
Current Status Profile Management Sit	e Survey	Diagnostics Driver Information	n]	
SONICWALL	Profile	Home WLAN SonicWALL Corporate Olivea's SonicPoint SonicWALL Documentatio	n Lab	New Modify Remove
SIGNAL STRENGTH:EXCELLENT	)etails	Network Type: Security Mode: Network Name 1 (SSID1): Network Name 2 (SSID2): Network Name 3 (SSID3):	Access Point Disabled SonicPoint 1 SonicPoint 2 Lab access point	

Another window will then appear displaying three tabs: **General**, **Security**, and **Advanced**. Each tab is described below.

#### General

The first tab displayed is the General tab.

Profile Management	2	? ×
General Security Advanced		
	Profile Name:	wireless
SONICWALL	Network Nam	es
	SSID1:	wireless
11.	SSID2:	
	SSID3:	
SIGNAL STRENGTH: EXCELLENT		
		OK. Cancel

In the General tab, you can specify a new profile name and SSID.

- **Profile Name** Enter a name for this profile. This can be any name that you may associate with your network.
- SSID1 Enter the SSID of the network. The SSID is a unique name shared among all points in your wireless network. The SSID must be identical for all points in the network, and is case-sensitive. Click on the OK button to save the changes.

#### Security

The second tab displayed is the **Security** tab. Here you can specify and configure the security method that is used by your network. There are five types of security methods available:

- **WPA-EAP** (WiFi Protected Access Extensible Authentication Protocol) Provides WPA with 802.1X RADIUS authentication.
- **WPA-PSK** (WiFi Protected Access Pre-Shared Key) Provides support for both Passphrass (8-63 characters) and Hexadecimal (64 characters) keys.
- WEP (Wired Equivalent Privacy) Provides the ability for setting of all four WEP keys. The WEP selection also allows for setting of a unique key, which is used with higher forms of encryption such as AES.
- **None** Use this mode when there is no security authentication or encryption is currently enabled on your Wireless LAN network.

Configuration for each security method is described below.

Profile Management				? ×
General Security Advanced				
4	Set Security Met	nod		
SONICWALL	© WPA-EAP	WPA EAP Type	TLS	<u>_</u>
	C WEP			
山, 旦	None     Configure	]		
SIGNAL STRENGTH: EXCELLENT				
			ОК	Cancel

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#### WPA-EAP

WPA (Wi-Fi Protected Access) was designed to improve upon the security features of WEP (Wired Equivalent Privacy). WPA provides improved data encryption through the Temporal Key Integrity Protocol (TKIP), which scrambles the keys using a hashing algorithm and by adding an integrity-checking feature to ensure that the keys have not been tampered.

EAP (Extensible Authentication Protocol) is an extension to the PPP protocol that enables a variety of authentication protocols to be used. It passes through the exchange of authentication messages, allowing the authentication software stored in a server to interact with its counterpart in the client.

If your network uses **WPA-EAP**, select that radio button. You must then select an **EAP** type from the dropdown list. The two options available are: TLS and PEAP.

Before you enable WPA-EAP type TLS or PEAP authentication, your network devices must meet the following requirements:

- You must have a valid Windows username and password, and the password cannot be blank.
- The appropriate certificate must be installed on your computer. TLS requires both a Certificate Authority (CA) certificate and a user certificate. PEAP requires only a CA certificate.

Profile Management		? ×
General Security Advanced		
SONICIAL STRENGTH: EXCELLENT	Set Security Method WPA-EAP WPA EAP Type TLS WPA-PSK WEP None Configure	
	ОКС	ancel

#### WPA-EAP Using TLS

**TLS** (Transport Layer Security) is an IETF standardized authentication protocol that uses PKI (Public Key Infrastructure) certificate-based authentication of both the client and authentication server.

Select **TLS** from the drop-down list, and then click on the **Configure** button. The SonicWALL Client Utility will then search your computer for any certificates. If you do not have any certificates, you will see the following message, requiring you to select another WPA-EAP option.



Click on the **OK** button.

#### WPA-EAP Using PEAP

**PEAP** (Protected Extensible Authentication Protocol) is a protocol developed jointly by Microsoft, RSA Security, and Cisco Systems for transmitting authentication data, including passwords over a 802.11 wireless network. PEAP authenticates wireless LAN clients using only server-side digital certificates by creating an SSL/TLS tunnel between the client and the authentication server. The tunnel then protects the subsequent user authentication exchange.

Select **PEAP** from the drop-down list, and then click on the **Configure** button. You will then see the following window.

Define Certificate	<u>? ×</u>
	Server Properties
SONICWALL	User Information for MS-CHAPV2
	User Name:
	Password:
	Confirm Password:
STORAGE STRENGTH EACELLENT	Advanced Configuration OK Cancel

Provide the following information for user authentication:

- Server Properties: select a server name from the drop-down list.
- User Name: enter the user name.
- **Password**: enter the password.
- Confirm Password: re-type the password for confirmation purposes.

Click on the OK button, or click on the Advanced Configuration button to specify a server or login name.

After clicking on the Advanced Configuration button, you will see the following window.

Advanced Configuration	2	<u>? ×</u>
SONICWALL		
	🔽 Specific Server or Domain	
	🔽 Login Name	
SIGNAL STRENGTH: EXCELLENT		OK Cancel
		Cancer

Provide the following optional information:

- **Specific Server or Domain** (Optional) Place a check in this box and enter the server or domain name.
- Login Name (Optional) Place a check in this box and enter the login name.

#### WPA-PSK

**WPA–PSK** (Pre-shared Key) is used in a Pre Shared Key mode that does not require an authentication server. Access to the Internet and the rest of the wireless network services is allowed only if the pre-shared key of the computer matches that of the Access Point. This approach offers the simplicity of the WEP key, but uses stronger TKIP encryption.

Profile Management				<u>?</u> ×
General Security Advanced	le le			
	Set Security Met	hod		
SONICWALL	C WPA-EAP © WPA-PSK C WEP	WPA EAP Type	PEAP	<b>•</b>
	C None Configure	]		
	<u></u>		ОК	Cancel

If your network uses **WPA-PSK**, select that radio button, and then click on the **Configure** button. You will then see the following window.

Define WPA PSK	<u> </u>
SONICWALL	Enter your WPA Passphrase. The minimum length is 8 characters.
L»	<u> </u>
SIGNAL STRENGTH: EXCELLENT	OK Cancel

Enter the WPA pass-phrase in the text box. The pass-phrase must be a minimum of 8 characters. This is the password shared between the Access Points and the Clients. Click on the **OK** button when completed.

#### WEP

**WEP** does not require an authentication server. Access to the Internet and the rest of the wireless network services is allowed only if the pre-shared key of the computer matches that of the Access Point.

Profile Management		<u>? ×</u>
General Security Advanced	R	
SONICWALL	Set Security Method	<b>.</b>
L» 📃	© WEP © None Configure	
SIGNAL STRENGTH: EXCELLENT		
	OK	Cancel

If your network uses **WEP**, select that radio button, and then click on the **Configure** button. You will then see the following window.

fine Pre-Shared	Keys	?
SONICWALL		Key Entry Method
50111	Enter your pre-shared keys below and then select the default key using the radio buttons to the left.	<ul> <li>Hexadecimal (0-9, A-F)</li> <li>ASCII Text (all keyboard characters)</li> </ul>
C Per-User Key		64 bit (enter 10 digits)
C Shared Key 1		64 bit (enter 10 digits)
O Shared Key 2		64 bit (enter 10 digits)
O Shared Key 3		64 bit (enter 10 digits)
O Shared Key 4		64 bit (enter 10 digits)
		OK Cancel

Provide the following information for the key entry:

- Hexadecimal (0-9, A-F): select this radio button if you would like to use hexadecimal characters as the Pre-shared Key.
- **ASCII Text (all keyboard characters)**: select this option if you would like to use ASCII text as the Pre-shared Key.
- Per-User Key: enter a per-user key, and then select an encryption type from the drop-down list:
  - 64 bit encryption (10 digits)
  - 128 bit encryption (26 digits)
  - 152 bit encryption (32 digits)

• Shared Key 1-4: enter the shared key and then select an encryption type from the drop-down menu. Click on the OK button to continue.

#### None

If your network does not use any type of security select the **None** radio button and then click on the **OK** button.

Profile Management			<u>? ×</u>
General Security Advanced			
	Set Security Meth	nod	
SONICWALL	© WPA-EAP © WPA-PSK © WEP	WPA EAP Type TLS	
SIGNAL STRENGTH: EXCELLENT	None     Configure	]	
		OK	Cancel

#### Advanced

The third tab displayed is the Advanced tab. Here you can configure details about an Access Point or Ad Hoc network configuration. Each advanced setting field is described below.

• **Power Save Mode** - Allows you to minimize power utilized by the SonicWALL Long Range Dual Band Wireless Card.

Warning: Setting Power Save Mode to enabled (Normal or Maximum) may cause the user to experience an extended connection delay of up to one minute.

- **Network Type** Allows you to configure the SonicWALL Long Range Dual Band Wireless Card as either an Ad hoc or Access Point type network.
- **802.11b Preamble** Allows setting the preamble support to match up with the specified wireless network.
- Transmit Power Level Allows you to modify the power output of the radio.

Warning: Setting this to any other value except for 100% will decrease range of your SonicWALL Long Range Dual Band Wireless Card.

• Wireless Mode Setting - The wireless mode settings allow you to specify which wireless frequency and data rate the wireless network is operating at. If all selections are chosen, the SonicWALL Long Range Dual Band Wireless Card will automatically search all frequencies an data rates for wireless networks that match up to the profile settings.

**Note**: The Turbo G and 5Ghz 108 Mbps modes should be chosen only if the client is associated to a SonicPoint.

 Wireless Mode when starting Ad Hoc setting - The "Wireless Mode When Starting Ad Hoc Setting" allows you to determine the type of ad hoc network to be started.

**Note**: This setting will only take effect if there are no other ad hoc networks with the same SSID currently operating within range. If existing ad hoc networks with the same SSID are currently operating, then the SonicWALL Long Range Dual Band Wireless Card will connect using the frequency and data rate provided by the exiting ad hoc network.

#### Infrastructure Mode Configuration

General       Security       Advanced         Power Save Mode:       Nor         SONICIPATION       Network Type:       Acc         802.11b       Preamble:       Image: Comparison of the second	
Power Save Mode:       Nor         Network Type:       Acc         802.11b Preamble:       Image: Comparison of the second	
Network Type:       Acc         802.11b Preamble:       Image: Comparison of the second	
SUNICWALL       Network Type:       Acc         802.11b Preamble:       Image: Comparison of the second sec	- Drive
802.11b Preamble: <ul> <li>Transmit Power Level:</li> <li>100</li> <li>Wireless Mode</li> <li>Wireless Mode</li></ul>	
Transmit Power Level:     100       Wireless Mode     Wireless Mode When Starting       Image: 5 GHz 108 Mbps     Image: 5 GHz 108 Mbps       Image: 5 GHz 54 Mbps     Image: 5 GHz 108 Mbps       Image: 24 GHz 11 Mbps     Image: 5 GHz 54 Mbps	Short & Long 🔘 Long Only
Wireless Mode     Wireless Mode When Startin       Image: 5 GHz 108 Mbps     Image: 5 GHz 108 Mbps       Image: 5 GHz 54 Mbps     Image: 5 GHz 54 Mbps       Image: 24 GHz 11 Mbps     Image: 5 GHz 54 Mbps	
Image: 5 GHz 108 Mbps           Image: 5 GHz 54 Mbps           Image: 2 4 GHz 11 Mbps           Image: 5 GHz 54 Mbps	Ad Hoc Network
▼ 5 GHz 54 Mbps         ○ 5 GHz 103 Mbps           ▼ 2.4 GHz 11 Mbps         ○ 5 GHz 54 Mbps	
2.4 GHz 11 Mbps	
	Channel: Auto 🔽
2.4 GHz 54 Mbps	
🗖 Turbo G	

Provide the following information to configure a connection to an access point:

- Power Save Mode Select a power save mode from the drop-down list.
- Network Type Select Access Point from the drop-down list.
- 802.11b Preamble Select Short & Long or Long Only.
- Transmit Power Level Select a power level from the drop-down list.
- Wireless Mode Setting Place a check in this box if you would like to user the available frequencies. Click on the OK button to continue.

#### Ad Hoc Configuration

Profile Management		<u>? ×</u>
General Security Advanced		
	Power Save Mode:	Normal
SONICWALL	Network Type:	Ad Hoc 💌
	802.11b Preamble:	C Short & Long 💿 Long Only
	Transmit Power Level:	100%
Wireless Mode	Wireless Mode When S	tarting Ad Hoc Network
<ul> <li>✓ 5 GHz 108 Mbps</li> <li>✓ 5 GHz 54 Mbps</li> <li>✓ 2.4 GHz 11 Mbps</li> <li>✓ 2.4 GHz 54 Mbps</li> <li>✓ Turbo G</li> </ul>	<ul> <li>5 GHz 108 Mb</li> <li>5 GHz 54 Mbp</li> <li>2.4GHz 54/111</li> </ul>	ps s Chennel: <mark>Auto V</mark> Mbps
		OK Cancel

Provide the following information to configure an ad hoc configuration:

- Network Type: select Ad Hoc from the drop-down list.
- 802.11b Preamble: select Short & Long or Long Only.
- Transmit Power Level: select a power level from the drop-down list.
- Wireless Mode: place a check in this box if you would like to use the available frequencies.
- Wireless Mode when Starting Ad Hoc Network: select a frequency and data rate radio button.
- Channel: select a channel number from the drop-down list, or set the channel to auto.

## **Site Survey**

The third tab displays the **Site Survey**. The Site Survey tab allows you to view a list of all available wireless networks that are within range of the SonicWALL Long Range Dual Band Wireless Card. Each wireless network entry displays the SSID, encryption settings, signal strength level, channel and wireless mode information. You can create a new profile by highlighting the wireless network you want to create a profile for and clicking on the **Activate** button.

SonicWALL Client Utility	Long Ra	nge Dual Ba Wireles	and ss Card	× S
Current Status Profile Management	Site Survey Diagnostics	Driver Information		
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SIGNAL STRENGTH:EXCELLENT	A SonicWALL SonicWALL SonicWALL Sonicwall	111 32 db 111 32 db 112 24 dB 112 24 dB 113 20 Activate	1 240 1 240 64 5GH 11 240 11 240 Refresh	iHz 54 Mbps iHz 54 Mbps iz 54 Mbps iHz 11 Mbps IHz 11 Mbps

The Signal Strength column displays signal strength display units in percentage or decibels (dB). Click on the **Refresh** button to refresh the display.

### **Diagnostics**

The fourth tab displays the **Diagnostics**. The Diagnostics tab displays the current data statistics for both receive and transmit. Additional statistics can be displayed by using the **Advanced Statistics** button.



#### **Advanced Statistics**

Click on the **Advanced Statistics** button to view more detailed statistics. The Advanced Statistics Information tab contains more statistics about the network interface card. Click the **OK** button to continue.



## **Driver Information**

The fifth tab displays the **Driver Information**. The Driver Information tab contains general information about the network interface card (the wireless network adapter) and the network driver interface specification (NDIS) driver. The **Driver Information** tab provides the following details about the driver:

- Card Name The name of the wireless network adapter.
- MAC Address The MAC address of the wireless network adapter.
- Driver The driver name and path of the wireless network adapter driver.
- Driver Version The version of the wireless network adapter driver.
- Driver Date The creation date of the wireless network adapter driver.



## Uninstallation

If the SonicWALL Long Range Dual Band Wireless Card installation is unsuccessful for any reason, the best way to solve the problem may be to completely uninstall the SonicWALL Long Range Dual Band Wireless Card and its software and repeat the installation procedure again.

This section provides a step-by-step procedure to uninstall your SonicWALL Long Range Dual Band Wireless Card software.

Warning: To avoid potential conflicts during the uninstallation of the drivers, we recommend you disable any resident anti-virus or spyware software.

Perform the following steps to uninstall the SonicWALL Client Utility.

1. Click on Start > Programs > SonicWALL Client Utility > Uninstall Driver & Client Utility.



The InstallShield Wizard displays.

2. Click on the Remove radio button, and click on the Next button.



3. At the Confirm Uninstall window, click on the **OK** button to proceed with the uninstallation. The Windows InstallShield Wizard will begin removing the SonicWALL Long Range Dual Band Network Adapter drivers and SonicWALL Client Utility program from your system.

Confirm Uninstall		×
Do you want to completely remove the selected application and all of its components?		
ОК	Cancel	

4. You have completed the uninstallation. If you plan on re-installing SonicWALL Long Range Dual Band Network Adapter drivers and SonicWALL Client Utility program, accept the default setting of "Yes, I want to restart my computer now." And click on the Finish button to restart your computer.

InstallShield Wizard	
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed SonicWALL Long Range Dual Band Wireless Network Adapter Driver & Client Utility. Before you can use the program, you must restart your computer. Yes, I want to restart my computer now. No, I will restart my computer later.
	Complete setup.

## Troubleshooting

This section provides troubleshooting solutions to common installation problems.

Symptom	Solution
Windows does not detect the SonicWALL Long Range Dual Band Wireless Card when installed.	Verify that the SonicWALL Long Range Dual Band Wireless Card is properly inserted into the PC Card slot.
	Check whether or not the computer has a Plug and Play BIOS.
	Windows 98SE/ME/2000/XP may not detect the card if a previous installation was interrupted or cancelled before it finished installing the card. Remove the previous installation and perform the installation again.
Driver fails to load.	A resource conflict may exist.
	For Windows 98SE/ME/2000/XP, use the Device Manager to resolve any resource conflicts.
	A device conflict under Windows 98SE/ME/ 2000/XP may be related to the SonicWALL Long Range Dual Band Wireless Card.
	For Windows 98SE/ME/2000/XP, use the computer properties to identify the used I/O port addresses and IRQ values.
Device conflict on a Windows Operating System	If there is a device conflict, select alterna- tive settings for I/O Base Address or IRQ values. If you know which device is causing the conflict, you can change the I/O address or IRQ instead of the PC Card.
No resource conflicts were detected, but the wireless station does not attach to the network.	Verify that the SSID of the SonicWALL Long Range Dual Band Wireless Card matches that of the access point. Use Network Configuration Properties in the Control Panel to modify the SSID.
	Verify that the Network Mode of the Son- icWALL Long Range Dual Band Wireless Card is configured correctly.

Nonfunctioning LED on the SonicWALL Long Range Dual Band Wireless Card	<ul> <li>The SonicWALL Long Range Dual Band Wireless Card is not powered on. The cause may be:</li> <li>No Driver loaded or installed.</li> <li>Card - Driver mismatch, which prevent- ed the driver from loading.</li> <li>Device conflict, which prevented the driver from loading.</li> <li>Actions:</li> <li>Verify that a driver is installed for the SonicWALL Long Range Dual Band Wireless Card.</li> <li>Determine if a conflict exists with another device.</li> </ul>
Weak or intermittent signal	If your signal is weak, change the direction of the antenna slightly. If necessary, move your notebook computer a few inches to find a better signal. Use the Link Quality and Signal Strength display in the Client Utility to determine the best location and orientation for a network connection.

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