SonicWall® SonicWave 621

Quick Start Guide

Regulatory Model Number:
APL68-108

SONICWALL®

For more information, visit https://www.SonicWall.com/legal/.

Legend

WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT, NOTE, TIP, MOBILE, or VIDEO: An information icon indicates supporting information.

To access the Support Portal, go to https://www.SonicWall.com/support.

SonicWave 621 Quick Start Guide
Updated - August 2022
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1 Introduction

This *SonicWall® SonicWave 621 Quick Start Guide* provides instructions for basic installation and configuration of SonicWall SonicWave 621 wireless access points.

The SonicWall SonicWave 621 is a ceiling-mountable wireless access point suitable for indoor single-unit or multi-unit deployments. It is plenum rated for installation within an enclosed space such as an attic. It can also be mounted on a wall or deployed on a shelf, table, or desktop. Power over Ethernet (PoE) should be provided to power the SonicWave 621.

2 SonicWave 621 Hardware Overview

SonicWave 621

SonicWave 621 Hardware Components

Component	Description
2.4GHz and 5GHz radios	Dual radios provide: • 802.11b/g/n/ac/ax • DFS (Dynamic Frequency Selection) SonicWave 621 complies with FCC rules to detect and avoid interfering with radar signals in DFS bands. • 2x2 MU-MIMO
2.5GBE LAN port	1 Ethernet 10/100/1000/2500 LAN port for wired connection to a SonicWall network security appliance
USB port	1 USB 2.0 port
Scanning radio	Dedicated third scanning radio
Antennas	6 internal (2.4Ghz x 2 / 5Ghz x 2 / Scan Radio x 1 / BLE x1)
Power source	802.3at PoE (standard, PoE device sold separately) Optional DC 12V power adapter, sold separately

SonicWave 621 Hardware Components

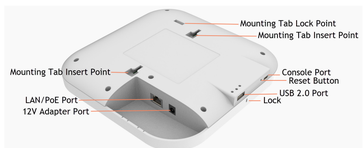
Component	Description
Chassis	Rectangle 119mm x 214mm x 34mm Plenum rated
Kensington security slot	For use with a Kensington locking cable to prevent theft
Operating temperature	0° to 40°C

3 SonicWave 621 Ports

The back of the SonicWave 621 provides a **LAN/POE** port where the PoE Ethernet cable connects the access point with the PoE injector or PoE-enabled switch, which connects to your SonicWall network security appliance.

A 12V power connection is also provided on the back of the unit, where you can plug in a 12V adapter (sold separately) to power the device.

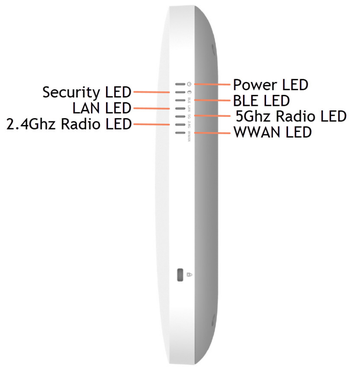
SonicWave 621 Back



When the access point is installed, the back panel is attached to the ceiling or to a wall or other flat surface.

The side panel of the SonicWave 621 has the LED indicators and the USB port.

SonicWave 621 LEDs



You can insert a 3G/4G USB modem into the USB port to create a mobile wireless (MiFi) hotspot. See the *SonicOS/X* Administration documentation for information about the MiFi Extender feature. You can also use the USB port with a USB security clamp.

For information about the LEDs, see the SonicWave 621 LED Activity section.

4 Checking Package Contents

Before you begin the setup process, verify that your package contains the following items:

- SonicWave 621 appliance
- Mounting plate, screws and anchors
- CAT5e cable
- *SonicWall SonicWave 621 Quick Start Guide*
- *Safety, Environmental, and Regulatory Information* document

Package Contents

If any items are missing from the package, contact SonicWall Technical Support at: https://www.SonicWall.com/support/contact-support.

NOTE: The PoE device for powering the SonicWave 621 is sold separately and is not included in the package.

5 Deployment Requirements

SonicOS/X Firmware

SonicWall SonicWave 621 access points are centrally managed by SonicWall network security appliances running the following versions of SonicOS/X:

- SonicOS/X 7.1.x or higher

Power Source

Use a 802.3at compliant PoE injector or a PoE enabled switch to provide power to each SonicWave 621.

Internet Connectivity

An active Internet connection is required for your SonicWall network security appliance to download the latest SonicWave 621 firmware.

Gigabit Ethernet Connectivity

The SonicWave 621 requires a 2.5 Gigabit connection to the SonicWall network security appliance to take full advantage of the SonicWave 621 data throughput capability.

6 Deployment Considerations

Physical placement of the SonicWave 621 wireless access point has a measurable effect on who can and cannot access your wireless signal. If too many users are serviced by a single access point, maximum transfer rates are reached and that access point may become a bottleneck for the whole system.

A site survey can help find the optimum wireless access point placement, but you can find usable locations without it.

RF barriers can be circumvented by deploying multiple access points. Determining how to circumvent RF barriers can be a challenging part of the placement process, but RF barriers can also be used beneficially in an attempt to block signals where you do not want coverage. The 5 GHz frequency is more sensitive to RF barriers. A wall that allows a 2.4 GHz wireless network to operate can block a 5 GHz one.

Common RF Barrier Types

Barrier Type	RF Signal Blocking
Glass, wood, drywall, cube partitions	Low
Floors and outer walls, aquariums (brick/marble/granite/water)	Medium
Concrete, security glass, wire mesh, stacked books/paper	High
Metal partitions, desks, reinforced concrete	Very High

Access points should be kept clear of Radio Frequency (RF) interference sources. RF interference from home, office, and medical equipment is a common challenge in wireless deployments.

When considering RF interference sources, most cell/wireless phones and Bluetooth devices utilize the 2.4 GHz frequency. As such, they should not cause significant interference with wireless networks operating in the 5 GHz frequency.

Common Sources of RF Interference

Interference Source	Possible Range	Bands Affected
2.4 GHz phones	100 feet	2.4 GHz (802.11 b/g/n)
Bluetooth devices	30 feet	2.4 GHz (802.15)
Microwave oven	10 - 20 feet	2.4 and 5 GHz, depending on shielding
Scientific and medical equipment	Short distance, varies	2.4 and 5 GHz, depending on shielding

Different frequency bands provide varying signal strength and quality over different distance ranges. Signals in the 2.4 GHz range tend to pass through physical barriers better and carry farther than those in the 5 GHz range, but they do not provide as high a data rate. Signals in the 5 GHz range provide faster data rates for better throughput, but the signal attenuates faster and is best suited for open spaces.

SonicWave 621 Channel Widths, Max Data Rates, Range

802.11 (x)	Frequency / MIMO	Channel Width	Max Data Rate	Range (Radius)
802.11a	5 GHz	20 MHz	54 Mbps	90ft/25m
802.11b	2.4 GHz	20 MHz	11 Mbps	120ft/35m
802.11g	2.4 GHz	20 MHz	54 Mbps	120ft/35m
802.11n	2.4 or 5 GHz MIMO	20 or 40 MHz	300 Mbps	300ft/90m
802.11ac	5 GHz MU-MIMO	20 / 40 / 80 MHz	866 Mbps	120ft/35m
802.11ax	2.4 or 5 GHz MU-MIMO	20 / 40 / 80 MHz	1200 Mbps	150ft/45m

To allow multiple separate wireless networks in a shared space, the RF medium is divided into channels. The number of channels is regulated and varies by country. For devices using 5 GHz (802.11a/n/ac/ax), there are up to 23 discrete channels.

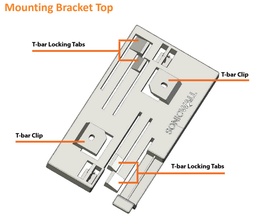
For devices using the 2.4 GHz range (802.11b/g/n), the wireless space is limited to a maximum of 13 *overlapping* channels. As a result of these overlapping channels, 2.4 GHz technology provides only a total of three discrete channels.

7 Installing the Mounting Bracket

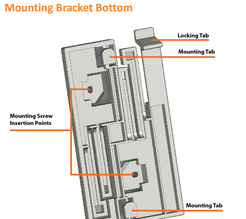
The SonicWave 621 comes with a mounting bracket so it can be mounted on the ceiling or other flat surface. This section describes how to attach the mounting bracket to the ceiling or an indoor wall.

The mounting bracket provides two pairs of T-bar locking tabs that support two ceiling T-bar widths: 15/16 inch and 9/16 inch.

Mounting Bracket Top



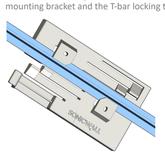
Mounting Bracket Bottom



To attach the mounting bracket to the ceiling using T-bar clips:

1 Press the top side of the mounting bracket against the ceiling tile T-bar so that the T-bar locking tabs on the mounting bracket are depressed.

2 Rotate the mounting bracket so the ceiling T-bar slides into the T-bar clips on the mounting bracket and the T-bar locking tabs click into place.



To attach the mounting bracket to the ceiling or to a wall using screws:

1 Place the top side of the mounting bracket against the ceiling or wall and mark the locations for the two screw insertion points.

2 Drill starter holes at the marked locations. For a wood wall, use a drill bit that fits the provided screws. For drywall, use a drill bit that fits the anchors.

3 For drywall, screw in the anchors.

4 Place the mounting bracket against the wall with the holes lined up on the marks or anchors.

5 Using the provided screws and a screwdriver, securely attach the mounting bracket to the ceiling or wall.

8 Configuring the Firewall for Wireless Access

This section provides instructions for configuring SonicOS/X on your SonicWall network security appliance to connect your SonicWave 621 to the WLAN zone and manage it as a Layer 2 device. This includes:

- Configuring the SonicWave Provisioning Profile for radio frequency, mode, authentication type
- Configuring the Network Interface to which the SonicWave 621 connects
- Configuring the WLAN Zone for trust, security, and SonicWave provisioning profile

Configuring the SonicWave Provisioning Profile

SonicWave provisioning profiles include all of the settings that can be configured on a SonicWave 621 access point. The profile is then selected when you configure the wireless zone (WLAN by default). When your SonicWave 621 connects to that zone, it is automatically provisioned with the profile settings.

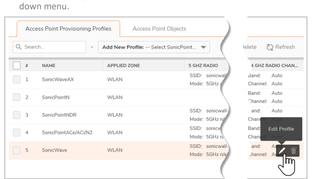
To configure the SonicWave provisioning profile:

1 Log into your SonicWall firewall as an administrator (default: *admin / password*).

2 Navigate to the **DEVICE | External Controllers | Access Points > Settings** page.

3 In the **Access Point Provisioning Profiles** section, do one of the following:

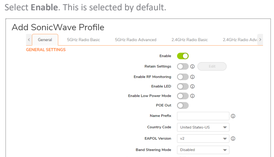
- To modify the default **SonicWave** profile, click the **Edit Profile** icon after hovering in the **SonicWave** row.
- To create a new profile, select **SonicWave Profile** from the **Add New Profile** drop-down menu.



The **Add/Edit SonicWave Profile** dialog displays.

General screen settings:

1 Select **Enable**. This is selected by default.



2 To turn on the LEDs for SonicWaves using this provisioning profile, select **Enable LED**. The LEDs are turned off by default.

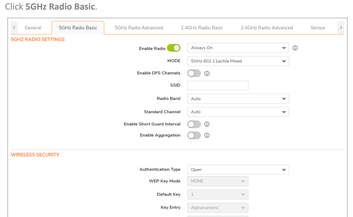
3 If adding a new profile, type a simple, descriptive name into the **Name Prefix** field to assist in identifying the SonicWave in this zone. This is the name of the provisioning profile. Each provisioned SonicWave is named with this prefix followed by a unique number. Optionally change the **Name Prefix** if editing the default SonicWave profile.

4 Verify the **Country Code** for the area of operation.

5 Accept the defaults or configure the remaining options as necessary.

Radio Basic Settings:

1 Click **5GHz Radio Basic**.



2 Select **Enable Radio**. This is selected by default.

3 Select a **MODE** or use the default.

4 Type a short, descriptive name into the **SSID** field. This is the access point name that appears in clients' lists of available wireless connections.

5 Under **Wireless Security**, select the **Authentication Type** for your wireless network. SonicWall recommends using ***WPA2*** as the authentication type if all client devices support it.

PSK uses a passphrase for authentication, **EAP** uses an Enterprise RADIUS server.

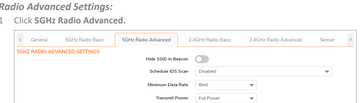
6 Select the **Cipher Type**. When using WPA and WPA2, SonicWall recommends ***AES*** for maximum security if all client devices support it.

7 Fill in the fields specific to the authentication type that you selected. The remaining fields change depending on the selected authentication type.

8 Click **2.4GHz Radio Basic** and repeat Step 2 through Step 7.

Radio Advanced Settings:

1 Click **5GHz Radio Advanced.**



2 For most advanced options, the default settings give optimum performance.

3 Optionally select the **Hide SSID in Beacon** checkbox.
The SSID refers to the access point name that appears in clients' lists of available wireless connections. Hiding the SSID provides additional security because it requires the user to know the access point name before connecting.
4 Click **2.4GHz Radio Advanced** and repeat Step 3.
5 When finished configuring all options, click **OK**.

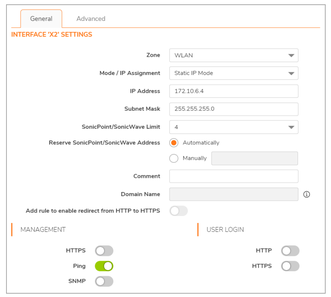
For information about configuring the other options and screens in the **Add/Edit SonicWave Profile** dialog, see the *SonicOS/X Administration* documentation.

Configuring the Network Interface

Each SonicWave or group of SonicWaves must be connected to a physical network interface that is configured in a wireless zone. SonicOS/X provides a standard wireless zone (WLAN) that can be applied to any available interface.

To configure the network interface in SonicOS/X:

1 Navigate to the **NETWORK | System > Interfaces** page and click the **Edit this interface** icon by hovering over the interface to which your SonicWave connects.

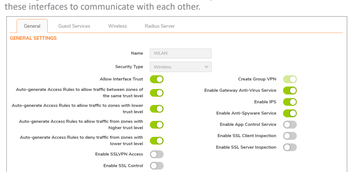


2 Select **WLAN** or another (custom) wireless zone from the **Zone** drop-down menu. The default wireless zone is **WLAN**.
3 Select **Static IP Mode** for the **Mode/IP Assignment**.
4 In the **IP Address** field, type in any private IP address that does not interfere with the IP address range of any other interfaces on the appliance. Wireless clients are assigned an IP address in this subnet.
5 Enter a **Subnet Mask**. The default is 255.255.255.0.
6 Select a non-zero number for **SonicPoint/SonicWave Limit**. If **0** is selected, no access points can be discovered on this interface.
7 Use the default settings or select appropriate settings for the other fields and click **OK**.

Configuring the WLAN Zone

To configure the WLAN zone in SonicOS/X:

1 Navigate to **OBJECT | Match Objects > Zones** page, click the **Edit** icon in the WLAN row.
2 On the **General** screen, select the **Allow Interface Trust** option to automate the creation of Access Rules to allow traffic to flow between the interfaces within the zone, regardless of the interfaces to which the zone is applied.
For example, if the WLAN zone has both the X2 and X3 interfaces assigned to it, selecting **Allow Interface Trust** creates the necessary access rules to allow hosts on these interfaces to communicate with each other.



3 Select the checkboxes to enable security services on this zone. Minimally, you would select **Enable Gateway Anti-Virus Service**, **Enable IPS**, and **Enable Anti-Spyware Service**. If your wireless clients are all running SonicWall Client Anti-Virus, select **Enable Client AV Enforcement Service**.
4 In the **Guest Services** screen, optionally configure guest Internet access. For information about Guest Services, see the *SonicOS/X Administration* documentation.
5 In the **Wireless** screen under **SonicPoint/SonicWave Settings**, select the desired provisioning profile from the **SonicWave Provisioning Profile** drop-down menu. If you added a new profile in Configuring the SonicWave Provisioning Profile, select it here.
6 Select **Only allow traffic generated by a SonicPoint/SonicWave** to allow only traffic from SonicWall wireless access points to enter the WLAN zone interfaces, providing maximum security.
7 When finished, click **Save**.

You are now ready to connect your SonicWave 621 to your SonicWall network security appliance as described in the following sections.

9 Installing the SonicWave 621

This section describes how to connect the PoE and network cables and then attach the SonicWave 621 to the mounting bracket.

The SonicWave 621 connects to a WLAN zone interface on your SonicWall network security appliance. The access point is powered through Power over Ethernet (PoE), with the PoE device positioned between the SonicWave 621 and the firewall. SonicWall recommends using CAT5e Ethernet cables to connect the devices.

CAUTION: **An 802.3at compliant PoE injector or PoE enabled switch is required to provide power to each SonicWave 621.**
To maintain power to the SonicWave 621, the maximum length of CAT5e cable from the PoE device to the SonicWave 621 is 100 meters (333 feet).

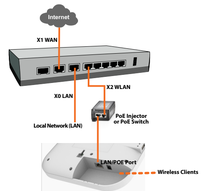
To connect the SonicWave 621 to PoE and the network:

1 Using an Ethernet cable, connect the **Data in** port on the PoE Injector to an existing WLAN zone interface on the firewall or to an unused interface to be configured later in SonicOS/X.
2 Using a second Ethernet cable, connect the **Data and Power Out** port on the PoE injector to the **LAN/POE** port on your SonicWave 621.
Refer to your *PoE Installation Guide* for more information.
3 Plug the power cord of the PoE Injector into an appropriate power outlet.
4 Wait up to two minutes for the **LAN LED** on the SonicWave 621 to illuminate. This indicates an active connection.

To attach the SonicWave 621 to the mounting bracket:

1 Line up the two mounting tab insert points on the back of the SonicWave 621 with the mounting tabs on the mounting bracket.
2 Insert the mounting tabs into the SonicWave 621 and slide the access point down until the locking tab on the bracket clicks into place on the SonicWave.

Connecting the SonicWave 621



10 Verifying SonicWave Operation

To verify that the SonicWave is provisioned and operational:

1 Log into your SonicWall firewall as an administrator (default: *admin / password*).
2 Navigate to the **DEVICE | External Controllers > Access Points > Settings** page.
3 In the **Access Point Objects** table, the **Status** column displays the SonicWave 621 status. It might display ***Initializing***, ***Updating Firmware***, ***Writing Firmware***, and ***Rebooting***. After rebooting, the **Status** should display ***Operational***.
If the **Status** displays ***Operational (Not Licensed)*** and does not change to ***Operational*** soon, contact SonicWall Support for assistance with licensing the SonicWave.
4 Connect a client device to the SonicWave by selecting the appropriate access point name (SSID).
5 Ensure that the client device is not connected to any other network connections (wired LAN, 3G/4G WWAN).
6 In a browser, enter "https://www.SonicWall.com/" in the address bar and press **Enter**. The SonicWall website should display. If you are unable to browse to a website, refer to Troubleshooting Tips.

11 Troubleshooting Tips

When the SonicWave 621 is connected to a SonicWall network security appliance, the two units perform an encrypted exchange, and an entry for the SonicWave 621 is automatically created in the **SonicPoint/SonicWave Objects** table. Navigate to the **DEVICE | External Controllers > Access Points > Settings** page in SonicOS/X.

If the entry does not appear in the table within five minutes of connecting the SonicWave 621:

- Make sure the SonicWave 621 is connected to an interface that is configured as part of a wireless zone. Either the default WLAN zone or a custom zone with type set to "wireless" is required.
- Ensure that the SonicWave 621 is properly connected with an Ethernet cable to an 802.3at compliant PoE device.
- If an 802.3at compliant PoE injector is being used, verify that the SonicWave 621 is connected to the PoE port labeled **Data & Power Out**.
- If the SonicWave 621 has an entry in the table, but reboots frequently or seems non-functional:
  - Verify that your PoE switch/injector is 802.3at compliant and rated to deliver sufficient power to each PoE port. 802.3at compliant PoE devices do not provide sufficient power to properly run current generation 802.11 devices.
  - Click **Synchronize Access Points** on the **DEVICE | External Controllers > Access Points > Settings** page to force SonicOS/X to download a new SonicWave firmware image from the SonicWall back-end server.

If the SonicWave becomes unresponsive or seems erratic, you can use the **Reset** button to reset the SonicWave to factory default settings or put it into SafeMode. Use a narrow, straight object, like a straightened paper clip to press the **Reset** button.

- To reboot the SonicWave with factory default settings, press **Reset** for three seconds until three LEDs begin to flash slowly. If the SonicWave is connected to your firewall, it reboots again after the provisioning profile settings are applied.
- To reboot the SonicWave into SafeMode, press **Reset** for eight seconds until three LEDs begin flashing at a medium rate.

See the LED Pattern for Reset Button Hold Durations and LED Pattern in SafeMode tables for more information.

TIP: SafeMode allows you to log into the SonicWave directly at 192.168.1.20 (default: *admin/password*) to manually update the firmware in rare situations when other troubleshooting fails. Contact SonicWall Support for assistance.

12 SonicWave 621 LED Activity

The SonicWave 621 LEDs provide essential status information about the access point.

Power LED

LED Color	Description
Off	No power
Blue	Power is on

Security LED

LED Color	Description
Green	All security services licensed
Blinking Yellow	Security services license expired. Security services monitored by this LED: Gateway Anti-Virus, Intrusion Prevention, Anti-Spyware

Bluetooth Low Energy (BLE) LED

LED Color	Description
Green	On: Bluetooth has paired successfully. Blinking: Bluetooth is ready for pairing.
Off	Bluetooth is not paired.

LAN LED

LED Color	Description
Off	No link
Solid Yellow	Link established at 1 Gbps or 2.5 Gbps
Blinking Yellow	Active traffic at 1 Gbps
Solid Green	Link established at 100 Mbps or 10 Mbps
Blinking Green	Active traffic at 100 Mbps or 10 Mbps

5 GHz Radio LED

LED Color	Description
Off	5 GHz radio is off
Solid Green	5 GHz radio is on
Blinking Green	Active traffic on 5 GHz radio

2.4 GHz Radio LED

LED Color	Description
Off	2.4 GHz radio is off
Solid Green	2.4 GHz radio is on
Blinking Green	Active traffic on 2.4 GHz radio

LED Pattern During Firmware or SafeMode Bootup

LEDs	LED Color	Description
LAN	Green - Heartbeat	The three LEDs blink simultaneously in a heartbeat pattern while booting is in progress: On - On - Off
5 GHz Radio	Green - Heartbeat	
2.4 GHz Radio	Green - Heartbeat	

LED Pattern for Reset Button Hold Durations

LEDs	LED Color	Description
LAN	Blinking Green	The three LEDs blink simultaneously at a slow or medium rate: • Slow blink – Press Reset button 3 sec • Med blink – Press Reset button 8 sec
5 GHz Radio	Blinking Green	
2.4 GHz Radio	Blinking Green	

LED Pattern in SafeMode

LEDs	LED Color	Description
LAN	Green - Flow	The three LEDs turn on serially (one by one) and then turn off serially in a flow pattern while the SonicWave 621 is in SafeMode.
5 GHz Radio	Green - Flow	
2.4 GHz Radio	Green - Flow	

NOTE: The LEDs are disabled by default. You can enable them in the SonicWave provisioning profile or individual SonicWave entry in SonicOS/X on the firewall.