

SonicWall™ SonicWave 432e and SonicWave 432i

Getting Started Guide

Regulatory Model Numbers:

APL43-0C2 (SonicWave 432e)

APL43-0C3 (SonicWave 432i)



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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.

Introduction

In this Guide

This *Getting Started Guide* provides instructions for basic installation and configuration of the SonicWall™ SonicWave 432e and SonicWave 432i wireless access points in single-unit or multi-unit wireless deployments.

For the latest product documentation, visit <https://www.sonicwall.com/en-us/support/technical-documentation>.

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SonicWave 432e Wireless Overview

The SonicWave 432e is part of the next evolutionary generation in wireless access points after the SonicWall SonicPoint ACe.

The SonicWave 432e provides physical layer enhancements for higher throughput with a maximum data rate of 1730Mbps for 5GHz and 800Mbps for 2.4 GHz. To achieve this, the SonicWave 432e uses:

- More antennas—four antennas for the 5 GHz radio, and four more for the 2.4 GHz radio
- Wider channels—80 MHz-wide channels for the 802.11ac radio module, while continuing to support 20/40 MHz channels. This allows for dynamic per packet negotiation of channel widths so that when there is interference, the SonicWave can temporarily fall back to 40 or 20MHz channels.
- More spatial streams—4X4 multiple-input and multiple-output, (MU-MIMO) for the 802.11ac radio module, where the capacity of a radio link is multiplied using multipath propagation.

SonicWave 432i Wireless Overview

The SonicWave 432i is part of the next evolutionary generation in wireless access points after the SonicWall SonicPoint ACi.

The SonicWave 432i provides physical layer enhancements for higher throughput with a maximum data rate of 1730Mbps for 5GHz and 800Mbps for 2.4 GHz. To achieve this, the SonicWave 432i uses:

- Wider channels—80 MHz-wide channels for the 802.11ac radio module, while continuing to support 20/40 MHz channels. This allows for dynamic per packet negotiation of channel widths so that when there is interference, the SonicWave can temporarily fall back to 40 or 20MHz channels.
- More spatial streams—4X4 multiple-input and multiple-output, (MU-MIMO) for the 802.11ac radio module, where the capacity of a radio link is multiplied using multipath propagation.

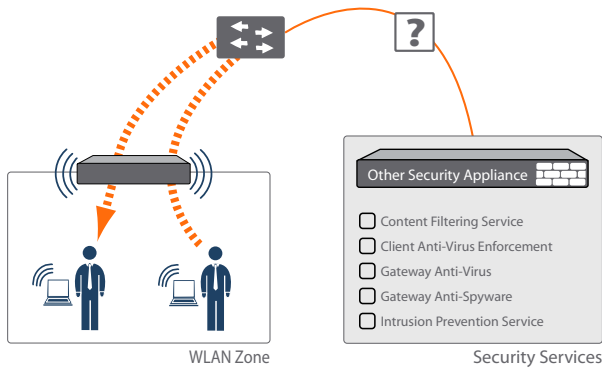
SonicWall Wireless Firewalling

When a wireless device uses a SonicWall SonicWave 432e or SonicWave 432i wireless access point to communicate with a

wireless device on another subnet or on a completely different network, traffic between the devices is forced to traverse the SonicWall network security appliance. This traversal enables security services to be enforced by SonicOS.

Standard practice for wireless firewalls (where one wireless client is communicating with another) bypasses many of the critical security services. The following illustration shows the standard practice for wireless firewalleding.

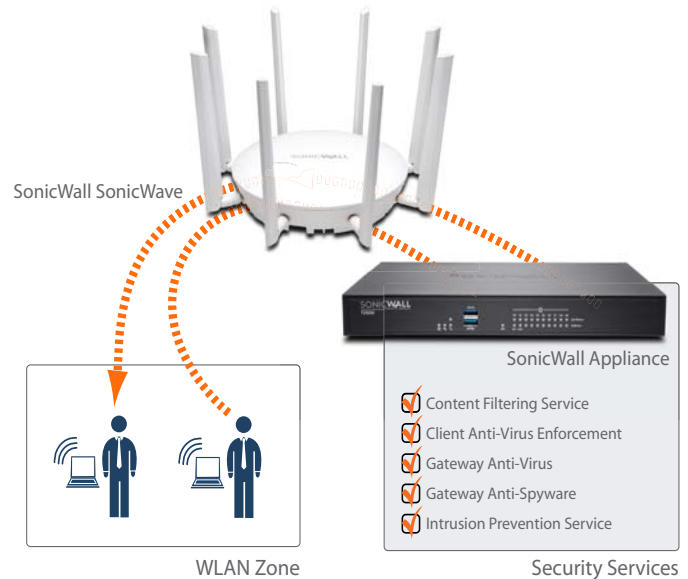
Standard Wireless Firewalleding



Many security products on the market share this potential vulnerability when two users connected by a common hub or wireless access point wish to exchange data.

SonicWall addresses this security shortcoming by managing the SonicWave access points from the network security appliance. This allows complete control of the wireless space, including zone enforcement of security services and complete firewalleding capabilities.

Secure Wireless Firewalleding



Frequency Bands and Channels

Currently five standards for 802.11 wireless network types have been widely adopted: a, b, g, n, and ac. 802.11n and 802.11ac are the newest and highest capacity standards, but older client devices might not be able to utilize the newer standards.

Wireless Standards

802.11 (x)	Frequency Standard	Maximum Data Rate
802.11a	5 GHz	54 Mbps
802.11b	2.4 GHz	11 Mbps
802.11g	2.4 GHz	54 Mbps
802.11n	2.4 GHz and 5 GHz	450 Mbps
802.11ac	5 GHz + MU-MIMO	2.34 - 3.47 Gbps

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.

Strengths and Weaknesses of 5 GHz and 2.4 GHz Signals

	5 GHz	2.4 GHz
Strength	Higher speed, more channels	Longer range, stronger signal penetration
Weakness	Limited penetration of walls, client compatibility	More sources of interference

Refer to [Radio Frequency Barriers](#) and [RF Interference](#) on page 18 for detailed information about RF barriers and interference.

To allow multiple separate wireless networks in a shared and confined space, the RF medium is divided into channels. For devices in the 5 GHz range (802.11a/n/ac), this means the possibility of 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 14 *overlapping* channels. As a result of these overlapping channels, 2.4 GHz technology provides only a total of three discrete channels.

802.11 Signal Comparison Chart

802.11 Signal Characteristics

	802.11a	802.11b	802.11g	802.11n	802.11ac
# of Channels in USA	23	11	11	11	21
# of Channels in EU	23	13	13	13	16
# of Channels in Japan	15	14	14	14	19
Frequency Band	5 GHz	2.4 GHz	2.4 GHz	2.4/5 GHz	5 GHz
Max. Data Rate	54 Mbps	11 Mbps	54 Mbps	800 Mbps (For 4X4 MU-MIMO)	1.7 Gbps (For QAM-64, MU-MIMO 4X4, and 80 MHz channels)
Radius (Range)	90ft/25m	120ft/35m	120ft/35m	300ft/90m	120ft/35m

NOTE: Although 802.11b/g/n standards provide between 11 and 14 channels, only three of those channels are fully discrete (non-overlapping) channels.

Initial Setup

This section provides a basic checklist of materials, hardware information, and describes how to connect and configure physical aspects of the SonicWall SonicWave 432e and SonicWave 432i including LEDs, antennas, cabling, placement, and mounting.

- [Check Package Contents](#) on page 12
- [Deployment Requirements](#) on page 12
- [SonicWave 432e and SonicWave 432i Available Ports/Status LEDs](#) on page 13
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Check Package Contents

Before continuing, ensure that your SonicWave 432e or SonicWave 432i package contains the following materials:

SonicWave 432e or SonicWave 432i Appliance Checklist

- SonicWave 432e (external antennas) or the SonicWave 432i (internal antennas) appliance
- Antennas: SonicWave 432e (8), or SonicWave 432i (0)
- Mounting hardware
- CAT5e cable
- SERI Guide
- Getting Started Guide

i **NOTE:** The SonicWave 432i is designed with internal antennas.

Any Items Missing?

If any of the items corresponding to your product are missing from the package, contact Technical Support at: <https://www.sonicwall.com/support/contact-support>. A listing of the most current support documents are available online at: <https://www.sonicwall.com/support/technical-documentation>

Deployment Requirements

SonicOS Firmware

- SonicWall SonicWave 432e and SonicWave 432i access points are centrally managed by SonicWall network security appliances running the following versions of SonicOS:
 - SonicOS 6.5 or higher

Power Source

- Use a multi-gigabit 802.3at compliant PoE injector or a PoE switch to provide power to each SonicWave 432e or SonicWave 432i.

Internet Connectivity

- An active Internet connection is required for your firewall to download the latest SonicWave firmware.

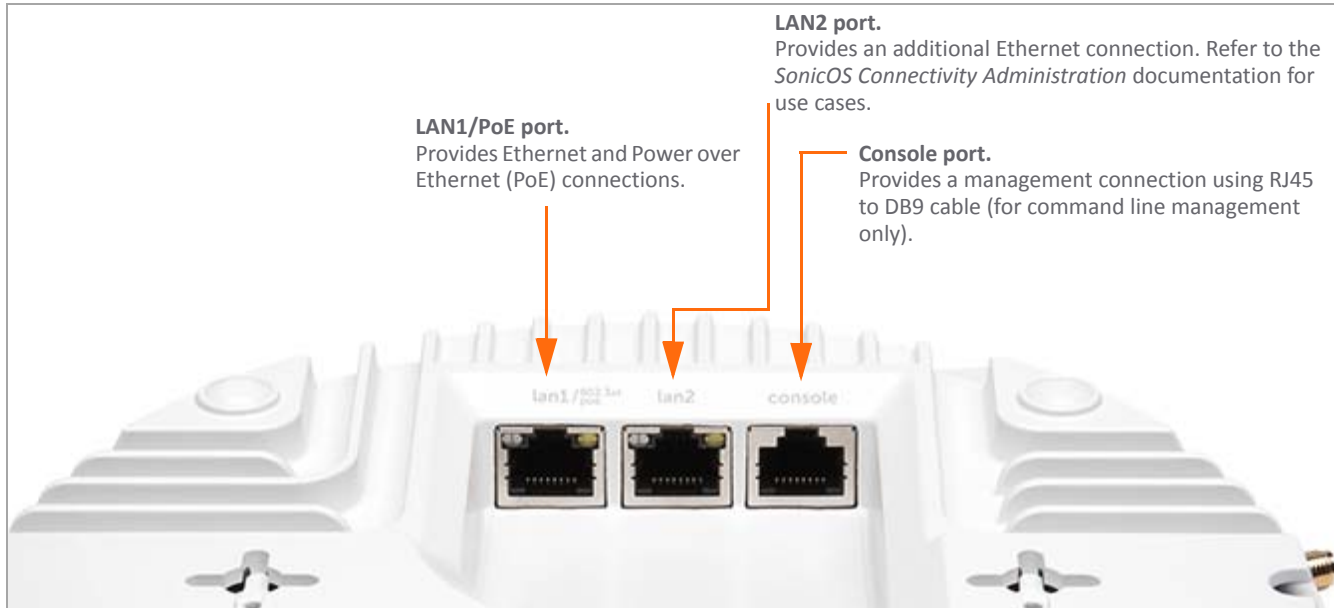
Gigabit Ethernet Connectivity

- The SonicWave 432e or SonicWave 432i hardware requires more bandwidth than a 1 Gigabit Ethernet connection can handle. SonicWall recommends connecting your SonicWave (through a PoE device) to a 2.5 Gb interface to take full advantage of the SonicWave 432e or SonicWave 432i data throughput capability.

See [Product Safety and Regulatory Information](#) on page 33.

SonicWave 432e and SonicWave 432i Available Ports/Status LEDs

Available Ports



Status LEDs

LED (5G)

- On (solid green, 5 GHz radio link)
- Blinking green (5 GHz radio activity)

LED (2.4G)

- On (solid green, 2.4 GHz radio link)
- Blinking (2.4 GHz radio activity)

LED (lan1)

- On (solid yellow or green, Ethernet link)
- Blinking yellow (2.5G Ethernet activity)
- Blinking green (1G/100M Ethernet activity)

LED (Tool)

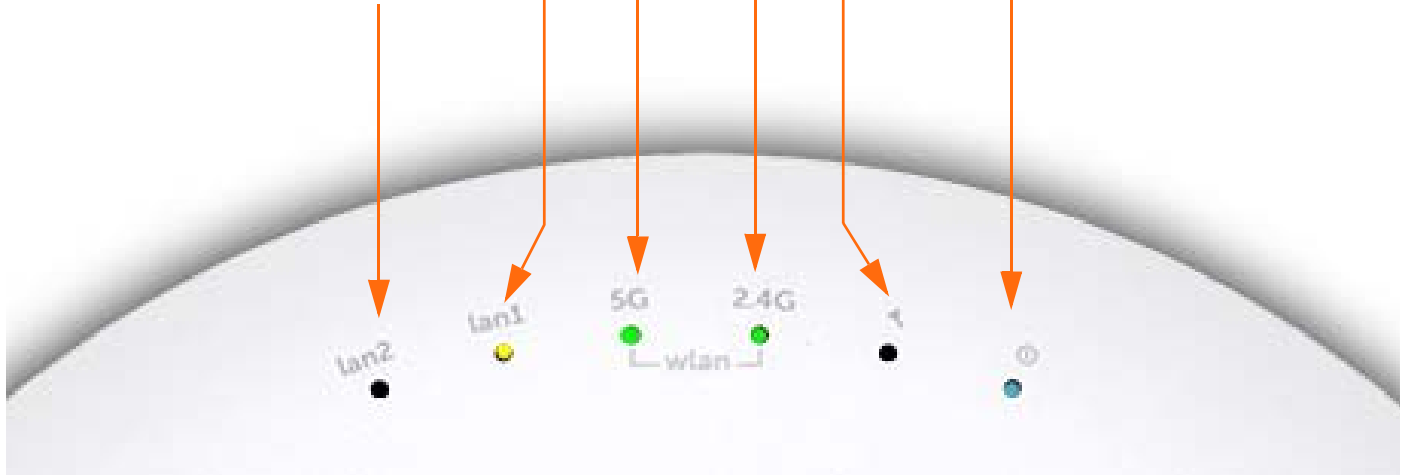
- On (solid yellow, error)
- Blinking (safe mode)

LED (lan2)

- On (solid yellow or green, Ethernet link)
- Blinking yellow (1G Ethernet activity)
- Blinking green (10/100M Ethernet activity)

LED (Power)

- On (solid blue, power)
- Blinking (booting/FW upgrade)



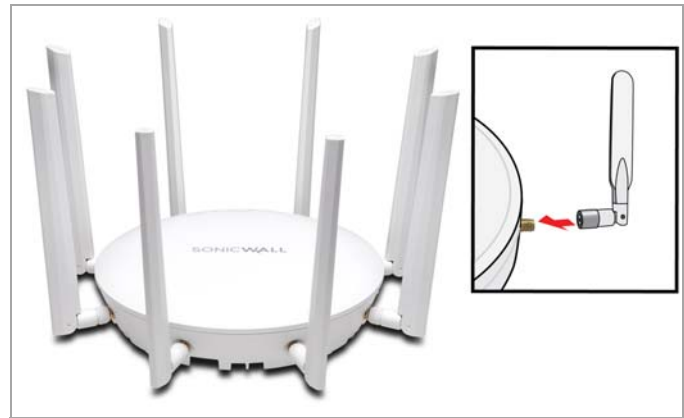
Installing SonicWave 432e Antennas

To install the antennas on your SonicWave 432e:

- 1 Remove all eight antennas from their bags and place one on each connector.
- 2 Carefully finger-tighten the fittings.
- 3 Adjust the antennas upright for optimal reception.

For optimal wireless coverage, the SonicWave 432e antennas should be oriented vertically. The circular design of the SonicWave aides in creating a strong multi-directional wireless signal pattern. In most cases, leaving the antennas straight up (as shown in the illustration) provides the best overall coverage.

i **TIP:** There might be a “dead” zone directly underneath the SonicWave 432e when it is mounted on a ceiling with the antennas oriented vertically. You can mitigate this by slightly angling the antennas.



⚠ CAUTION: Only antennas provided by SonicWall are authorized for use with the SonicWave 432e. Be aware of the regulations in your region before using other antennas.

Connecting Ethernet Cables

The SonicWave 432e or SonicWave 432i are powered through Power over Ethernet (PoE), and should be cabled with CAT5e Ethernet cabling.

When using PoE, a SonicWall 802.3at compliant midspan PoE line injector (sold separately), or an 802.3at compliant switch is required to power each SonicWave 432e or SonicWave 432i.

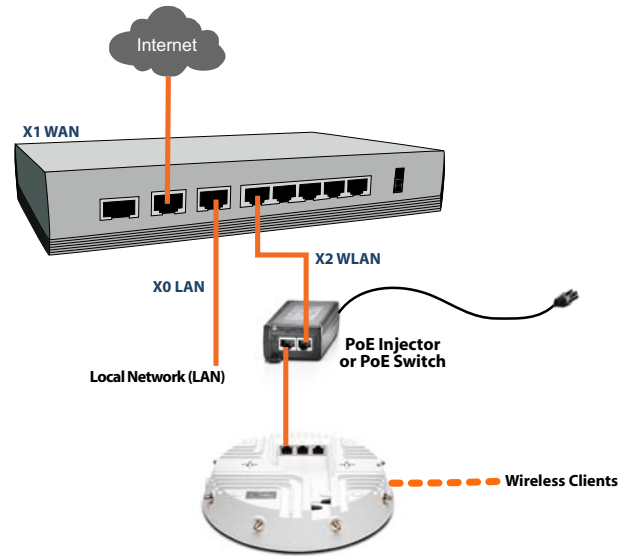
To connect PoE to a SonicWave 432e or SonicWave 432i

- 1 Using an Ethernet cable, connect the **Data in** port on the SonicWall PoE Injector to an existing WLAN zone interface on the firewall or to an unused interface to be configured later in SonicOS.
- 2 Using a second Ethernet cable, connect the **Data and Power out** port on the SonicWall PoE injector to the **LAN1/PoE** port on your SonicWave 432e or SonicWave 432i.

IMPORTANT: Be sure cables are connected correctly.

- 3 Plug the power cord of the SonicWall PoE injector into an appropriate power outlet.
- 4 Wait for the **LAN1** LED on the SonicWave 432e or SonicWave 432i to illuminate. This indicates an active connection.

See [Product Safety and Regulatory Information](#) on page 33.



CAUTION: A multi-gigabit 802.3at compliant PoE injector or PoE-capable switch is required to provide power to each SonicWave 432e or SonicWave 432i.

To maintain power to the SonicWave 432e or SonicWave 432i, the maximum length of CAT5e cable from the 802.3at PoE injector to the SonicWave 432e or SonicWave 432i is 100 meters (333 feet).

Wireless Access Point Placement Considerations

Physical placement of the SonicWave 432e or SonicWave 432i wireless access point has a measurable effect on who can and cannot access your wireless signal.

Access points should be kept clear of Radio Frequency (RF) interference sources. RF barriers can be circumvented by deploying multiple access points.

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

Considerations include:

- **Number of Access Points Versus User Density** – 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.
- **Bandwidth** – How much data is moving upstream and downstream for a given type of user?
- **Ethernet Cabling** – Where are you running the powered Ethernet (PoE) cable to and how are you securing that cable? Are you using a multi-gigabit 802.3at compliant PoE injector or switch to power all access points?

To maintain power to the SonicWave 432e or SonicWave 432i, the recommended maximum length of CAT5e cable from the 802.3at PoE injector to the SonicWave 432e or SonicWave 432i is 100 meters (333 feet).

- **Hubs / Switches** – Your wireless deployment has to tie back into your network security appliance and LAN resources. Consider where your key networking devices are deployed and how they will connect efficiently with your wireless appliances. What speed is needed for your Ethernet connection to accommodate the number of access points you are installing? A Gigabit Ethernet interface is recommended when connecting a SonicWave 432e or SonicWave 432i to your SonicWall network security appliance.
- **Legacy Clients** - Older laptops and mobile devices may not support 802.11ac. Although clients with 802.11a/g/b hardware are supported by the SonicWall SonicWave 432e and SonicWave 432i, the presence of these legacy clients within range of your wireless network could affect the connection speed of your 802.11ac clients.

For example, an 802.11b device authenticated to the SonicWave 432e or SonicWave 432i could limit all clients connected to that radio to 802.11b data rates.

Radio Frequency Barriers

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
Open air	Very Low
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

RF Interference

RF interference from home, office, and medical equipment is a common challenge in wireless deployments.

When considering RF interference sources, remember that most cell/wireless phones and Bluetooth devices only 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 (802.11 b/g/n)
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

Mounting the SonicWave 432e and SonicWave 432i

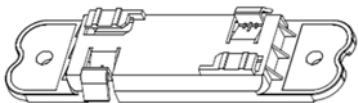
You can mount your SonicWave 432e and SonicWave 432i to a wall or ceiling, or you can simply set it on a flat surface.

For safety tips when mounting the SonicWave 432e and SonicWave 432i, see [Product Safety and Regulatory Information](#) on page 33.

Mounting using Ceiling Brackets

The mounting kit includes a large ceiling bracket.

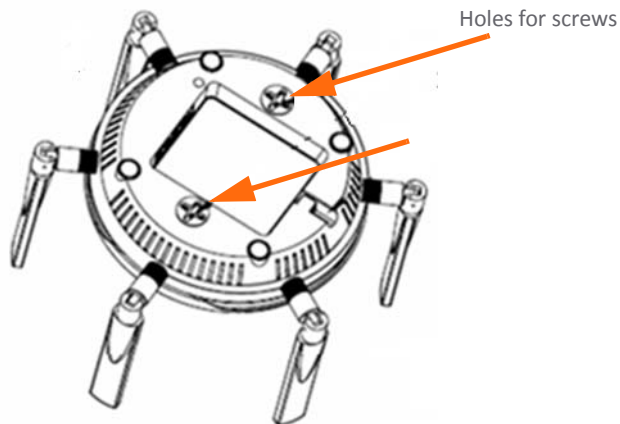
Large Ceiling Bracket



The underside of the SonicWave 432e and SonicWave 432i has two insertion points where you can insert the provided screws to help secure the bracket. You can use these insertion points

to attach the large bracket to the SonicWave 432e and SonicWave 432i.

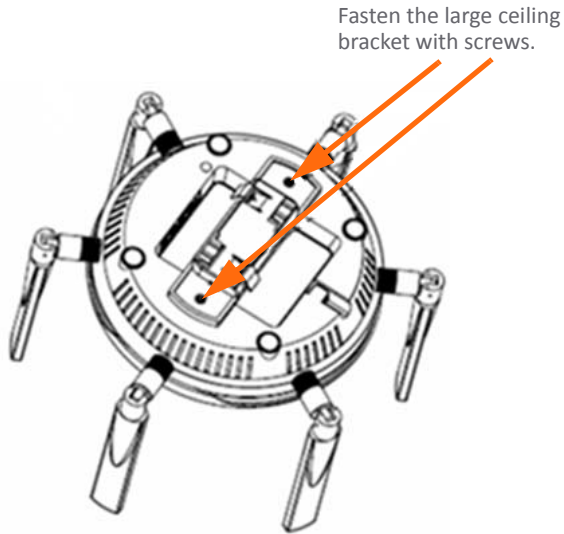
NOTE: Products may differ from illustrations.



To mount the SonicWave 432e or SonicWave 432i to a crossbar between ceiling panels using the large bracket:

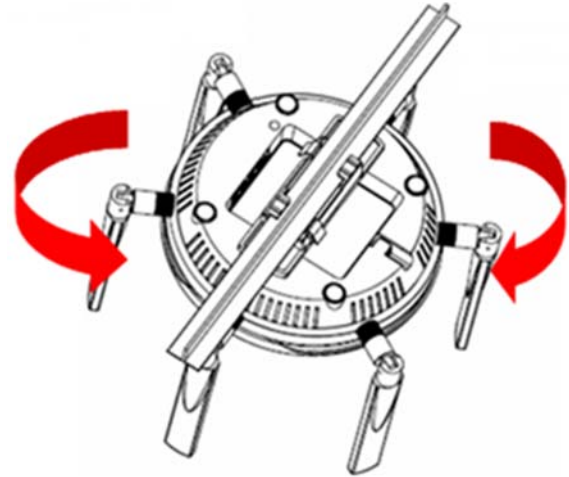
- 1 Use the two provided screws to attach the large bracket to the underside of the SonicWave.

i | **NOTE:** Products may differ from illustrations.



- 2 Supporting the SonicWave in one hand, position the edge clips of the bracket over the edge of the ceiling crossbar and rotate the SonicWave *counterclockwise* (to

the left when looking up at it) until the bracket is securely attached to the crossbar.

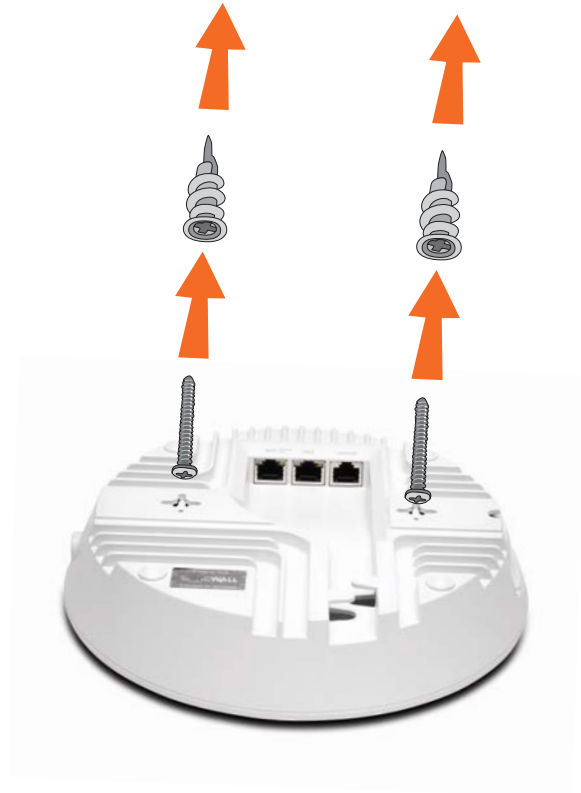


To remove the SonicWave 432e or SonicWave 432i from the ceiling crossbar, rotate it *clockwise* (to the right when looking up at it) until the bracket detaches from the crossbar.

Mounting using Anchor Screws

To mount the SonicWave 432e or SonicWave 432i using anchor screws:

- 1 On the mounting surface, mark the location to make two screw holes. The marks should be horizontally parallel to each other.
- 2 Screw the anchor screws into the ceiling tile or drywall to their full depth.
- 3 Insert the screws into the anchors, and screw them in deep enough to leave minimal space between the screw heads and the wall surface.
- 4 Supporting the SonicWave in your hands, securely fit the underside slots of the SonicWave onto the screw heads.



Configuring SonicOS for Wireless Access

This section provides instructions for configuring SonicOS on your SonicWall network security appliance to connect your SonicWave 432e or SonicWave 432i to the WLAN zone and manage it as a Layer 2 device. For more advanced configurations, including Layer 3 management of your SonicWave 432e or SonicWave 432i on a LAN zone, refer to the *SonicOS Connectivity Administration* documentation available on the Support Portal.

- [Configuring SonicOS for SonicWave 432e or SonicWave 432i](#) on page 23
- [Verifying SonicWave Operation](#) on page 28
- [Troubleshooting Tips](#) on page 29

Configuring SonicOS for SonicWave 432e or SonicWave 432i

You only need to complete three simple configuration tasks in SonicOS to prepare your SonicWave 432e or SonicWave 432i to provide secure wireless access.

- 1 Configure the network interface to which the SonicWave 432e or SonicWave 432i is connected.
- 2 Configure the WLAN zone for trust and security services.
- 3 Configure the SonicWave 432e or SonicWave 432i profile for the desired radio frequency, mode, and authentication type.

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 provides a standard wireless zone (WLAN) which can be applied to any available interface.

To configure the network interface in SonicOS:

- 1 Log into SonicOS as an administrator (default: admin / password).
- 2 In the **MANAGE** view, navigate to the **System Setup | Network > Interfaces** page and click **Configure** for the interface to which your SonicWave is connected.
- 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.
- 5 Enter a **Subnet Mask**. The default is 255.255.255.0.
- 6 Use the default settings or select appropriate settings for the other fields and then click **OK**.

CAUTION: Allowing **Management** and **User Login** to the appliance from a wireless zone can pose a security threat if you or your users have not set strong passwords.

SonicOS 6.5 Interface Settings

The screenshot shows the 'Interface 'X12' Settings' dialog box in SonicOS 6.5. It has two tabs: 'General' (selected) and 'Advanced'. The settings are as follows:

- Zone: WLAN
- Mode / IP Assignment: Static IP Mode
- IP Address: 172.203.28.2
- Subnet Mask: 255.255.255.0
- SonicPoint/SonicWave Limit: 128
- Reserve SonicPoint/SonicWave Address: (empty field)
- Options: Automatically, Manually
- Comment: SonicWave
- Management: HTTPS, Ping, SNMP, SSH
- User Login: HTTP, HTTPS
- Add rule to enable redirect from HTTP to HTTPS

At the bottom, there is a 'Ready' status bar and three buttons: 'OK', 'CANCEL', and 'HELP'.

Configuring the WLAN Zone

To configure the WLAN zone in SonicOS:

- 1 In the **MANAGE** view on the **System Setup | Network > Zones** page, click the **Edit** icon in the **Configure** column of the **WLAN** row.

- 2 On the **General** page, under **General Settings**, 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.

The screenshot shows the 'General Settings' window for a zone named 'WLAN'. The 'Security Type' is set to 'Wireless'. The following options are checked:

- Allow Interface Trust
- Auto-generate Access Rules to allow traffic between zones of the same trust level
- Auto-generate Access Rules to allow traffic to zones with lower trust level
- Auto-generate Access Rules to allow traffic from zones with higher trust level
- Auto-generate Access Rules to deny traffic from zones with lower trust level
- Enable Client AV Enforcement Service
- Enable Client CF Service
- Enable SSLVPN Access
- Create Group VPN
- Enable SSL Control
- Enable Gateway Anti-Virus Service
- Enable IPS
- Enable Anti-Spyware Service
- Enable App Control Service

The status bar at the bottom shows 'Ready' and buttons for 'OK' and 'CANCEL'.

- 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** page, optionally configure guest Internet access. For information about Guest Services, see the *SonicOS Connectivity Administration* documentation.
- 5 In **Wireless** under **SonicPoint/SonicWave Settings**, select **Only allow traffic generated by a SonicPoint/SonicWave** to allow only traffic from SonicPoint/SonicWaves to enter the WLAN zone interfaces, providing maximum security.
- 6 When finished, click **OK**.

Configuring the SonicWave 432e or SonicWave 432i Settings


When a SonicWave 432e or a SonicWave 432i are initially connected to an interface, the firewall uses a default provisioning profile to create a SonicWave 432e or SonicWave 432i entry. It can take up to five minutes for the entry to be created.

You can modify the SonicWave 432e or SonicWave 432i entry to configure the access point name, radio frequency mode, authentication type, and other settings specific to your SonicWave 432e or SonicWave 432i.

i **TIP:** For deployments of multiple SonicWaves that need the same provisioning settings, you can create a custom provisioning profile in the upper section of **Connectivity | Access Points > Base Settings** page in the **MANAGE** view. In **System Setup | Network > Zones** page, you can edit the WLAN zone and specify this profile on the **Wireless** page. Any SonicWaves connecting to an interface in the WLAN zone can then be provisioned with the assigned profile.

You might want to use the new **Floor Plan View** and **Topology View** features as well. See the *SonicOS Connectivity Administration* documentation for more information.

To modify the SonicWave 432e or SonicWave 432i entry in SonicOS:

- 1 In the **MANAGE** view, navigate to the **Connectivity | Access Points > Base Settings** page.
- 2 In the **SonicPoint/SonicWave Objects** table, click the **Edit** icon  in the row for the SonicWave 432e or SonicWave 432i entry you wish to modify.

General page settings:

- 1 On the **General** page, select **Enable SonicWave**.
- 2 In the **Name** field, optionally type in a new name for this SonicWave 432e or SonicWave 432i. The existing name is assigned by the provisioning profile based on the name prefix in the profile with a unique number appended.

This is the access point name that appears in clients' lists of available wireless connections.
- 3 Verify the **Country Code** for the area of operation.
- 4 Configure the remaining options as necessary. For more information, see the *SonicOS Connectivity Administration* documentation.

Radio 0 Basic / Radio1 Basic Settings:

- 1 Click **Radio 0 Basic**, or **Radio 1 Basic**.

The configuration is very similar for both Radio 0 Basic and Radio 1 Basic. The main differences are the radio frequencies:

Radio	Frequency	Default Mode
Radio 0	5 GHz	5GHz 802.11ac/n/a Mixed
Radio 1	2.4 GHz	2.4GHz 802.11n/g/b Mixed

- 2 Select **Enable Radio**.
- 3 Select a **Mode** or use the default.
- 4 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.

i **TIP:** *PSK* uses a personal passphrase for authentication, *EAP* uses an Enterprise RADIUS server.

- 5 Select the **Cipher Type**. When using WPA and WPA2, SonicWall recommends **AES** for maximum security.
- i** **NOTE:** Older client devices might not support AES.
- 6 Fill in the fields specific to the authentication type that you selected. The remaining fields change depending on the selected authentication type.

- 7 Optionally, under **ACL Enforcement**, select **Enable MAC Filter List** to enforce Access Control by allowing or denying traffic from specific devices. Select a MAC address object group from the **Allow List** or **Deny List** to automatically allow or deny traffic to and from all devices with MAC addresses in the group. The **Deny List** is enforced before the **Allow List**.

Virtual Access Point Encryption Settings:

i **NOTE:** This section displays only if a VAP was selected from the Radio 0 Basic/1 Virtual AP Group drop-down menus in the **Virtual Access Point Settings** section of the **General** page.

The **Virtual Access Point Encryption Settings** section of both **Radio 0 Basic** and **Radio 1 Basic** are the same for the **802.11n Radio**.

Radio 0 Advanced / Radio1 Advanced Settings

- 1 Click **Radio 0 Advanced** or **Radio 1 Advanced**.

The configuration is very similar for Radio 0 Advanced and Radio 1 Advanced. For most advanced options, the default settings give optimum performance. For a full description of the fields on this page, see the *SonicOS Connectivity Administration* documentation.

- 2 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.

- 3 When finished configuring all options, click **OK**.

Sensor page

On the Sensor page, enable or disable **Wireless Intrusion Detection and Prevention (WIDP) mode**.

i | **NOTE:** If this option is selected, Access Point or Virtual Access Point(s) functionality is disabled automatically.

- 1 Select **Enable WIDP sensor** to have the SonicWave operate as a dedicated WIDP sensor. This option is not selected by default.
- 2 From the drop-down menu, select the schedule for when the SonicWave operates as a WIDP sensor or select **Create new schedule...** to specify a different time; default is **Always on**.

Verifying SonicWave Operation

To verify that the SonicWave is provisioned and operational, in the **MANAGE** view, navigate to the **Connectivity | Access Points > Base Settings** page in SonicOS. In the **SonicPoint/SonicWave Objects** table, the **Status** column displays the SonicWave 432e or SonicWave 432i status. It should say **Operational**.

To verify Internet connectivity through the SonicWave:

- 1 Connect a client device to the SonicWave by selecting the appropriate access point name (SSID).
- 2 Ensure that the client device is not connected to any other network connections (wired LAN, 3G/4G WWAN).
- 3 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](#).

Troubleshooting Tips

When the SonicWave 432e or SonicWave 432i is connected to a SonicWall network security appliance, the two units perform an encrypted exchange, and an entry for the SonicWave 432e or SonicWave 432i is automatically created in the **SonicPoint/SonicWave Objects** table. In the **MANAGE** view, navigate to the **Connectivity | Access Points > Base Settings** page in SonicOS.

If the entry does not appear in the table within five minutes of connecting the SonicWave 432e or SonicWave 432i:

- Make sure the SonicWave 432e or SonicWave 432i 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 432e or SonicWave 432i is properly connected with an Ethernet cable to an 802.3at compliant PoE device or to the supplied power adaptor.
- If an 802.3at compliant PoE injector is being used, verify that the SonicWave 432e or SonicWave 432i is connected to the PoE port labeled **Data & Power Out**.

If the SonicWave 432e or SonicWave 432i 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. 802.3af compliant PoE devices do not provide sufficient power to properly run current generation 802.11 devices. A multi-gigabit 802.3at compliant PoE injector or switch is required to power the SonicWave 432e or SonicWave 432i over Ethernet.
- Click **Synchronize Access Points** on the **Connectivity | Access Points > Base Settings** page in **MANAGE** view to force SonicOS to download a new SonicWave firmware image from the SonicWall back-end server.

Support and Product Registration

This section provides information about registering your SonicWall SonicWave 432e and SonicWave 432i, requirements for receiving technical support, and other online support and training options.

- [Registration and Support](#) on page 31
- [Online Support and Training](#) on page 32

Registration and Support

All SonicWave 432e or SonicWave 432i wireless access points include an initial subscription to SonicWall 24x7 Support.

SonicOS automatically registers your SonicWave 432e or SonicWave 432i on MySonicWall, if connected to the Internet. It could take up to 24 hours for your SonicWave 432e or SonicWave 432i to be automatically registered.

Optionally, you can manually register the SonicWave 432e or SonicWave 432i on MySonicWall by logging into your account at: <http://www.MySonicWall.com>.

The SonicWave 432e or SonicWave 432i is also associated in MySonicWall with the registered SonicWall network security appliance to which it is connected. See the Associated Products section at the bottom of the appliance Service Management page in MySonicWall.

For the access point to operate, and to receive technical support, your SonicWave 432e or SonicWave 432i must have a current “Activation and Support” license.

i | **IMPORTANT:** If the license expires, the access point will cease to function until the license is renewed.

Online Support and Training

SonicWall offers a variety of online support and training options for your convenience.

- **Customer Support**

SonicWall offers telephone, email and Web-based support to customers who have a valid Warranty or who purchased a Support Contract. Review our Warranty Support Policy for product coverage. SonicWall also offers a full range of consulting services to meet your needs.

For more information, visit: <https://www.sonicwall.com/support>

- **Knowledge Base**

The Knowledge Base allows users to search for SonicWall documents by browsing the knowledge base, searching for keywords, or using full-text search.

For more information, visit: <https://www.sonicwall.com/support/knowledge-base-category>

- **Training**

SonicWall offers an extensive sales and technical training curriculum. SonicWall Training provides the E-Training, instructor-led training, custom training, technical certification, and uses authorized training partners.

For more information, visit: <https://www.sonicwall.com/support/sonicwall-training-certification>

- **Related Documentation**

- *SonicOS Connectivity Administration* documentation
- SonicOS Release Notes, available on MySonicWall
- SonicOS Configuration or Deployment Guides

For more information, visit: <https://www.sonicwall.com/support/technical-documentation>

Product Safety and Regulatory Information

This section provides product safety and regulatory information.

- [Safety Instructions for the SonicWave 432e and SonicWave 432i Appliances](#) on page 34
- [Sicherheitsanweisungen](#) on page 35
- [EU and EFTA](#) on page 36
- [Simplified EU/CE Declaration of Conformity](#) on page 38

Products with “UL 2043” printed on their product labels are within the limit specified in the “UL 2043 Standard for Fire Test for Heat and Visible Smoke Release for Discrete Products Installed in Air-Handling Spaces” (Plenum). Applies only when powered through PoE. The PoE power supply is not covered the by the UL 2043 evaluation of this Access Point.

i **NOTE:** Additional regulatory notifications and information for this product can be found online at: <https://www.sonicwall.com/support/technical-documentation>

SonicWave 432e and SonicWave 432i complies with FCC U-NII New Rules.

Regulatory Model/Type	Product Name
APL43-0C2	SonicWave 432e
APL43-0C3	SonicWave 432i

Safety Instructions for the SonicWave 432e and SonicWave 432i Appliances

- [Installation Requirements](#) on page 34

- [Cable Connections](#) on page 35
- [Power Supply Information](#) on page 35

Installation Requirements

WARNING:

The following conditions are required for proper installation:

- Mount in a location away from direct sunlight and sources of heat. A maximum ambient temperature of 104° F (40° C) is recommended.
- Route cables away from power lines, fluorescent lighting fixtures, and sources of noise such as radios, transmitters, and broadband amplifiers
- Ensure that no water or excessive moisture can enter the unit.
- Allow unrestricted airflow around the unit and through the vents on the side of the unit. A minimum of 1 inch (25.44mm) clearance is recommended.
- Consideration must be given to the connection of the equipment to the supply circuit and that the effect of overloading the circuits has minimal impact on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings must be used when addressing this concern.

- This equipment is not intended for use at workplaces with visual display units, in accordance with §2 of the German ordinance for workplaces with visual display units. To avoid incommoding reflections at visual display workplaces, this device must not be placed in the direct field of view.

Cable Connections

WARNING:

All Ethernet and RS232 (Console) cables are designed for intra-building connection to other equipment. Do not connect these ports directly to communication wiring or other wiring that exits the building where the appliance is located.

Power Supply Information

This product's power is provided by the Ethernet cable plugged in to the "LAN" port, this is called "Power over Ethernet" or "PoE." The PoE source should only be UL listed marked "Class 2" or "LPS" with an output rated 48 VDC, minimum 0.6 A, Tma: minimum 40 degrees C.

Sicherheitsanweisungen

- [Anforderungen an die Installation](#) on page 35
- [Verwarnung Kabelverbindungen](#) on page 36
- [Informationen zur Stromversorgung](#) on page 36

Anforderungen an die Installation

Verwarnung:

Für eine ordnungsgemäße Montage sollten die folgenden Hinweise beachtet werden:

- Wählen Sie für die Montage einen Ort, der keinem direkten Sonnenlicht ausgesetzt ist und sich nicht in der Nähe von Wärmequellen befindet. Die Umgebungstemperatur darf nicht mehr als 40 °C betragen.
- Führen Sie die Kabel nicht entlang von Stromleitungen, Leuchtstoffröhren und Störquellen wie Funksendern oder Breitbandverstärkern.
- Das im Lieferumfang enthaltene bzw. die im Lieferumfang enthaltenen Netzkabel sind nur für die Verwendung in bestimmten Ländern und Regionen zugelassen. Überprüfen Sie bitte vor der Verwendung

eins Netzkabels, ob es für die Verwendung in Ihrem Land oder Ihrer Region zugelassen ist und den geforderten Normen entspricht.

- Stellen Sie sicher, dass das Gerät vor Wasser und hoher Luftfeuchtigkeit geschützt ist.
- Stellen Sie sicher, dass die Luft um das Gerät herum zirkulieren kann und die Lüftungsschlitze an der Seite des Gehäuses frei sind. Hier ist ein Belüftungsabstand von mindestens 26 mm einzuhalten.
- Prüfen Sie den Anschluss des Geräts an die Stromversorgung, damit der Überstromschutz sowie die elektrische Leitung nicht von einer eventuellen Überlastung der Stromversorgung beeinflusst werden. Prüfen Sie dabei sorgfältig die Angaben auf dem Aufkleber des Geräts. Überlasten Sie nicht den Stromkreis.
- Dieses Gerät ist nicht zur Verwendung an Arbeitsplätzen mit visuellen Anzeigegeräten gemäß § 2 der deutschen Verordnung für Arbeitsplätze mit visuellen Anzeigegeräten vorgesehen. Um störende Reflexionen am Bildschirmarbeitsplatz zu vermeiden, darf dieses Produkt nicht im unmittelbaren Gesichtsfeld platziert werden.

Verwarnung Kabelverbindungen

Alle Ethernet- und RS232-C-Kabel eignen sich für die Verbindung von Geräten in Innenräumen. Schließen Sie an die Anschlüsse der SonicWall keine Kabel an, die aus dem Gebäude herausgeführt werden, in dem sich das Gerät befindet.

Informationen zur Stromversorgung

Die Stromversorgung durch das Ethernet-Kabel in die "LAN"-Anschluss angeschlossen vorgesehen ist, wird dies als "Power over Ethernet" oder "PoE." Dieses Produkt darf nur in Verbindung mit einem für den Europäischen Markt genehmigten und mit dem Logo „LPS.“ Ausgang: 48 VDC Gleichspannung, mind. 0,6 A, mindest TMA mindestens 40° Grad C, betrieben werden.

EU and EFTA

This SonicWall appliance contains radio equipment to provide 2.4 GHz and 5 GHz RLAN/WLAN. To maintain Radio Equipment Directive 2014/53/EU compliance, use only SonicOS software and accessories provided with this appliance and by SonicWall.

Diese SonicWall Appliance enthält Funkanlagen zur Bereitstellung von RLAN/WLAN im Frequenzbereich von 2,4 GHz und 5 GHz. Verwenden Sie zur Einhaltung der Funkanlagenrichtlinie 2014/53/EU (Radio Equipment Directive – RED) ausschließlich SonicOS Software und Zubehör, das mit dieser Appliance und von SonicWall bereitgestellt wird.

To maintain safe exposure levels to electromagnetic fields, place appliance a minimum of 50 cm from all persons and domestic animals.

Zur Einhaltung unbedenklicher Expositionswerte durch elektromagnetische Felder sollte sich die Appliance mindestens 50 cm von Personen und Haustieren entfernt befinden.



This SonicWall wireless appliance is restricted to indoor use.

Diese SonicWall Appliance ist auf die Nutzung in Innenräumen beschränkt.

SonicWave 432e (RM: APL43-0C2) RF Transmitter Bands and Power

Frequency Band	Maximum Radio-Frequency Power Transmitted
MHz	dBm EIRP
2412 - 2472	19.48
5180 - 5240	22.35
5260 - 5320	Not enabled in the current SonicWave software.
5500 - 5700	Not enabled in the current SonicWave software.

SonicWave 432i (RM: APL43-0C3) RF Transmitter Bands and Power

Frequency Band	Maximum Radio-Frequency Power Transmitted
MHz	dBm EIRP
2412 - 2472	18.84
5180 - 5240	19.89
5260 - 5320	Not enabled in the current SonicWave software.
5500 - 5700	Not enabled in the current SonicWave software.

Simplified EU/CE Declaration of Conformity

A “Declaration of Conformity” in accordance with the directives and standards has been made and is on file at: SonicWall International Limited, City Gate Park, Mahon, Cork, Ireland.

Hereby, SonicWall Inc. declares that the radio equipment type 2.4 GHz and 5 GHz RLAN/WLAN is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following Internet address: <https://www.SonicWall.com/Support>

Hierbij verklaar ik, SonicWall Inc., dat het type radioapparatuur 2.4 GHz and 5 GHz RLAN/WLAN conform is met Richtlijn 2014/53/EU.

De volledige tekst van de EU-conformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: <https://www.SonicWall.com/Support>

Hiermit erklärt SonicWall Inc., dass der Funkanlagentyp 2.4 GHz and 5 GHz RLAN/WLAN der Richtlinie 2014/53/EU entspricht.

Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: <https://www.SonicWall.com/Support>

Le soussigné, SonicWall Inc., déclare que l'équipement radioélectrique du type 2.4 GHz and 5 GHz RLAN/WLAN est conforme à la directive 2014/53/UE.

Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: <https://www.SonicWall.com/Support>

С настоящото SonicWall Inc. декларира, че този тип радиосъоръжение 2.4 GHz and 5 GHz RLAN/WLAN е в съответствие с Директива 2014/53/ЕС.

Цялостният текст на ЕС декларацията за съответствие може да се намери на следния интернет адрес: <https://www.SonicWall.com/Support>

Tímto SonicWall Inc. prohlašuje, že typ rádiového zařízení 2.4 GHz and 5 GHz RLAN/WLAN je v souladu se směrnicí 2014/53/EU.

Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: <https://www.SonicWall.com/Support>

Hermed erklærer SonicWall Inc., at radioudstyrstypen 2.4 GHz and 5 GHz RLAN/WLAN er i overensstemmelse med direktiv 2014/53/EU.

EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: <https://www.SonicWall.com/Support>

Με την παρούσα ο/η SonicWall Inc., δηλώνει ότι ο ραδιοεξοπλισμός 2.4 GHz and 5 GHz RLAN/WLAN πληροί την οδηγία 2014/53/ΕΕ.

Το πλήρες κείμενο της δήλωσης συμμόρφωσης ΕΕ διατίθεται στην ακόλουθη ιστοσελίδα στο διαδίκτυο: <https://www.SonicWall.com/Support>

Por la presente, SonicWall Inc. declara que el tipo de equipo radioeléctrico 2.4 GHz and 5 GHz RLAN/WLAN es conforme con la Directiva 2014/53/UE.

El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: <https://www.SonicWall.com/Support>

Käesolevaga deklareerib SonicWall Inc., et käesolev raadioseadme tüüp 2.4 GHz and 5 GHz RLAN/WLAN vastab direktiivi 2014/53/EL nõuetele.

ElI vastavusdeklaratsiooni täielik tekst on kättesaadav järgmisel internetiaadressil: <https://www.SonicWall.com/Support>

SonicWall Inc. vakuuttaa, että radiolaitetyypin 2.4 GHz and 5 GHz RLAN/WLAN on direktiivin 2014/53/EU mukainen.

EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: <https://www.SonicWall.com/Support>

SonicWall Inc. ovime izjavljuje da je radijska oprema tipa 2.4 GHz and 5 GHz RLAN/WLAN u skladu s Direktivom 2014/53/EU.

Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: <https://www.SonicWall.com/Support>

SonicWall Inc. igazolja, hogy a 2.4 GHz and 5 GHz RLAN/WLAN típusú rádióberendezés megfelel a 2014/53/EU irányelvnek.

Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: <https://www.SonicWall.com/Support>

Il fabbricante, SonicWall Inc., dichiara che il tipo di apparecchiatura radio 2.4 GHz and 5 GHz RLAN/WLAN è conforme alla direttiva 2014/53/UE.

Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: <https://www.SonicWall.com/Support>

Aš, SonicWall Inc., patvirtinu, kad radijo įrenginių tipas 2.4 GHz and 5 GHz RLAN/WLAN atitinka Direktivą 2014/53/ES.

Visas ES atitikties deklaracijos teksto prieinamas šiuo interneto adresu: <https://www.SonicWall.com/Support>

Ar šo SonicWall Inc. deklarē, ka radioiekārta 2.4 GHz and 5 GHz RLAN/WLAN atbilst Direktīvai 2014/53/ES.

Pilns ES atbilstības deklarācijas teksts ir pieejams šādā interneta vietnē: <https://www.SonicWall.com/Support>

B'dan, SonicWall Inc., niddikjara li dan it-tip ta' tagħmir tar-radju 2.4 GHz and 5 GHz RLAN/WLAN huwa konformi mad-Direttiva 2014/53/UE.

It-test kollu tad-dikjarazzjoni ta' konformità tal-UE huwa disponibbli f'dan l-indirizz tal-Internet li ġej: <https://www.SonicWall.com/Support>

SonicWall Inc. niniejszym oświadcza, że typ urządzenia radiowego 2.4 GHz and 5 GHz RLAN/WLAN jest zgodny z dyrektywą 2014/53/UE.

Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: <https://www.SonicWall.com/Support>

Prin prezenta, SonicWall Inc. declarã cã tipul de echipamente radio 2.4 GHz and 5 GHz RLAN/WLAN este în conformitate cu Directiva 2014/53/UE.

Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: <https://www.SonicWall.com/Support>

SonicWall Inc. týmto vyhlasuje, že rádiové zariadenie typu 2.4 GHz and 5 GHz RLAN/WLAN je v súlade so smernicou 2014/53/EÚ.

Úplné EÚ vyhlásenie o zhode je k dispozícii na tejto internetovej adrese: <https://www.SonicWall.com/Support>

SonicWall Inc. potrjuje, da je tip radijske opreme 2.4 GHz and 5 GHz RLAN/WLAN skladen z Direktivo 2014/53/EU.

Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: <https://www.SonicWall.com/Support>

Härmed försäkrar SonicWall Inc. att denna typ av radioutrustning 2.4 GHz and 5 GHz RLAN/WLAN överensstämmer med direktiv 2014/53/EU.

Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: <https://www.SonicWall.com/Support>



NOTE: Additional regulatory notifications and information for this product can be found online at: <https://www.sonicwall.com/support/technical-documentation>

SonicWall Support

Technical support is available to customers who have purchased SonicWall products with a valid maintenance contract and to customers who have trial versions.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. To access the Support Portal, go to <https://www.sonicwall.com/support>.

The Support Portal enables you to:

- View knowledge base articles and technical documentation
- View video tutorials
- Access MySonicWall
- Learn about SonicWall professional services
- Review SonicWall Support services and warranty information
- Register for training and certification
- Request technical support or customer service

To contact SonicWall Support, visit <https://www.sonicwall.com/support/contact-support>.

SonicWave 432e and SonicWave 432i Getting Started Guide
Updated - September 2017
232-004036-51 Rev A



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