#### **User Guide**

Sprint ARAVE access point

www.sprint.com

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To find this user guide in Spanish, please visit <a href="https://www.sprint.com">www.sprint.com</a> and click <a href="mailto:Support>Phones">Support>Phones</a> & Devices.

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#### Introduction

This User Guide introduces you to the SPRINT® AIRAVE™ Access Point service and all its features. It's divided into four sections:

- Getting Started (page 1)
- Using Your AIRAVE™ Access Point (page 13)
- Troubleshooting (page 19)
- Safety Information (page 27)

Throughout this guide, you'll find tips and techniques that help you make the most of your new device and service. The Table of Contents and Index also help you quickly locate specific information.

It is important that you read each section and note any special requirements. However, if you'd like to get right to a specific feature, simply locate that section in the Table of Contents and go directly to that page. Follow the instructions in that section, and you'll be ready to use your AIRAVE in no time.

Note: Because of updates in device software, this printed guide may not be the most current version for your AIRAVE.

Visit <a href="https://www.sprint.com">www.sprint.com</a> and sign on to My Sprint to access the most recent version of the user guide.

WARNING: Please read the safety information on pages 28 and 29 to learn about how to safely use your device. Failure to read and follow the safety information in this user guide may result in serious bodily injury, death, or property damage.

# Section 1 Getting Started

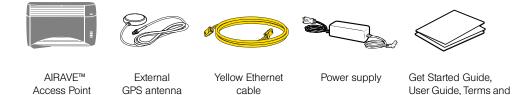


#### In This Section:

- Check What's in the Box (page 2)
- Setup at a Glance (page 3)
- Setting up Your AIRAVE™ Access Point (page 4)
- Setting Up Optional Components (page 7)
- Configuring AIRAVE™ Access Point's Router (page 9)
- Adding Your ISP User Name and Password (page 10)

#### Check What's in the Box

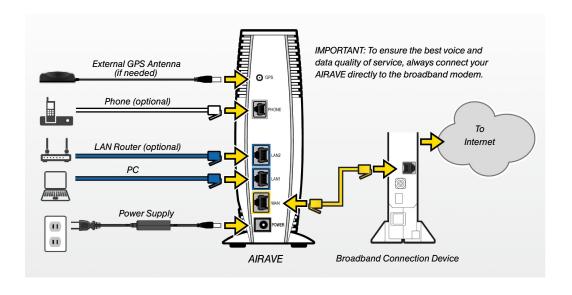
#### Ensure that the following items are in the box:



Conditions of Service

Tip: See the Get Started guide for detailed illustrations on setting up your AIRAVE.

#### Setup at a Glance



#### Setting up Your AIRAVE™ Access Point

1. Disconnect the power from all devices on your network.

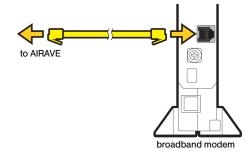
Note: This includes your cable or DSL modem and router.

Place your AIRAVE close to a window and in a central location. For best results, place the AIRAVE in an elevated location, such as the top of a bookshelf or tall cabinet.

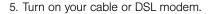
Note: In large homes, the external GPS antenna can be used to allow the AIRAVE to be placed in a more central location. This allows the AIRAVE to provide even coverage throughout the home.

Connect one end of the yellow Ethernet cable to an available LAN port on your broadband modem.



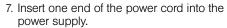


4. Connect the other end of the Ethernet cable to your AIRAVE's yellow WAN port.

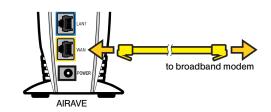


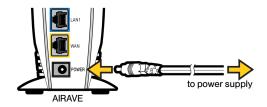
Important: Wait a couple of minutes for the cable or DSL modem to fully initialize before continuing.

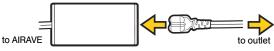
6. Plug the power supply connector into the black power port on your AIRAVE.



8. Plug the other end into an available electrical outlet.









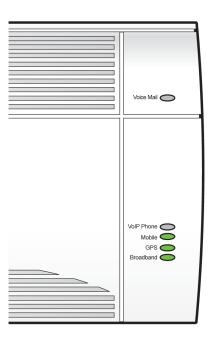
#### When is Your AIRAVE Ready for Use?

After installing and turning on your AIRAVE for the first time, AIRAVE goes through an automated setup sequence. During this time, the device's LEDs will change color. This process may take up to 2 hours.

When the Broadband, GPS, and Mobile LEDs are solid green, your AIRAVE is ready for use.

Note: For a summary of LED status indicators, see "LED Quick Reference" (page 21). For complete descriptions of LED states, see "Using LEDs" (page 22).

Tip: You will hear three short beeps when placing or answering calls on your wireless phone if you are within range of the AIRAVE.

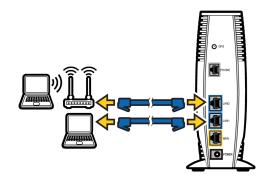


#### Setting Up Optional Components

#### PC or LAN Router Setup

Connect any devices that you have, such as a PC or a LAN router, to the AIRAVE's blue LAN ports.

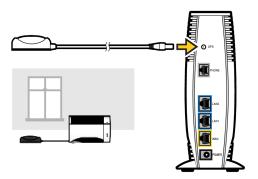
Tip: To ensure the best voice and data quality of service, always connect the LAN router to your AIRAVE. Do not connect it to the broadband connection device.



#### External GPS Antenna Setup

If the GPS LED does not turn solid green after 30 minutes, connect the external GPS antenna to your AIRAVE.

Place the external GPS antenna horizontally on a flat surface as close to a window as possible. The antenna works best in an open area where it can easily pick up signals.



#### VolP Phone Setup

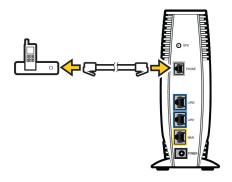
Connect your analog telephone to the AIRAVE's gray phone port. (The VoIP Phone LED will light up solid green if there is a working phone service connection.)

Note: Sprint VoIP service may not be available in your area when you get your AIRAVE.

Please check www.sprint.com frequently for availability updates.

Note: The AIRAVE supports only Sprint's VoIP service. There may be an additional charge to your account for this service. See "Using an Analog Telephone" (page 17) for more information.

Tip: The VoIP service requires an accurate service address to operate. If you move the device to another address, update your service address by logging into your account on <a href="https://www.sprint.com">www.sprint.com</a>.



#### Configuring AIRAVE™ Access Point's Router

Your AIRAVE contains a built-in router. Usually, you can plug your AIRAVE into your broadband connection device, such as a cable modem, DSL modem or FiOS (a high-speed, fiber optic broadband Internet service), without performing any additional steps. However, you may need to configure the built-in router to work with your ISP modem or connection device.

The following table lists typical ISP setups and actions to take so that the built-in router works with your existing ISP setup.

Broadband connection device	LED display pattern	Symptom	Action to take
Cable modem	Broadband and Mobile solid green	Not applicable (working properly)	Not applicable
DSL modem	Broadband LED blinking green	Cannot access Internet	Go to "Adding Your ISP User Name and Password" (page 10).
DSL modem with router	Broadband LED blinking amber	Cannot access Internet	See "FAQ" (page 25). If the problem persists,
Cable modem with router	Mobile LED blinking green	Cannot make a mobile or VoIP phone call through	contact Customer Support as described in "Getting Help" (page 26).
FiOS		the AIRAVE	

#### Adding Your ISP User Name and Password

If you are using a DSL modem and your device cannot connect to the Internet, you may need to enter your Internet service provider (ISP) account user name and password so that the AIRAVE can connect to the Internet.

Tip: Before you begin, obtain your ISP user name and password. Contact your ISP if you do not have this information.

- 1. Ensure that your PC is networked with the AIRAVE.
- 2. Enter the following IP address in your Web browser:

#### 192.168.17.1

The login dialog box appears.



3. Enter "admin" in both the User name and Password boxes and click **OK**.

4. Click the Setup tab on the Router status page menu bar. Click WAN Settings.



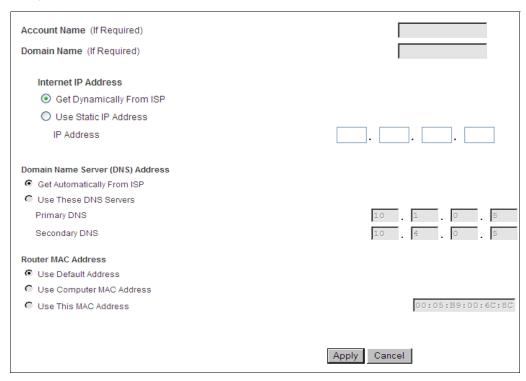
5. Ensure that Yes (PPPoE) is selected.



6. Enter your ISP user name in the Login box (overwrite "Guest") and your password in the Password box. Click **ok**.

Login Guest
Password

7. Accept the defaults in other fields on the screen and click **Apply**.



When the Broadband LED turns solid green (stops blinking), your Internet connection is available. If the LED is not solid green, contact Customer Support as described in "Getting Help" (page 26).

# Section 2 Using Your AIRAVE™ Access Point



#### In This Section:

- How the AIRAVE™ Access Point Works (page 14)
- Using an Analog Telephone (page 17)
- Using the External GPS Antenna (page 18)
- Maintenance (page 18)

#### How the AIRAVE™ Access Point Works

The AIRAVE™ Access Point is a *femtocell*, a personal base station with a radio unit that is similar to a cell tower radio. The base station uses a low-power antenna to transmit voice and data cellular signals in your home or small office.

Base stations give you better cellular coverage, which means a stronger signal and improved voice quality. Also, data applications on smartphones, such as mobile email devices, work faster.

The AIRAVE connects to Sprint's network through your broadband Internet connection. Outgoing calls go from the AIRAVE over a secure connection to Sprint's network; incoming calls reverse this route.

If you have subscribed to Sprint's Voice over the Internet Protocol (VoIP) phone service, you can use the Analog Telephone Adapter (ATA) component in the AIRAVE. This component converts a telephone message to a digital message and sends it over the Internet.

#### Your Broadband Connection Speed

The AIRAVE supports up to six simultaneous voice calls, data sessions, or any combination of both.

Note: "Voice calls," as used above, refers to calls made on wireless phones. Calls made on an analog phone using the optional VoIP voice service are independent of and not subject to the wireless voice call limit.

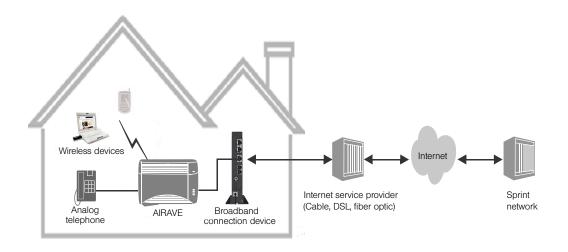
The AIRAVE can support data sessions of up to 3 Mbps downstream and 1.8 Mbps upstream.

The AIRAVE's actual transmission speed is only as fast as your maximum broadband connection speed. Internet congestion, the number of users on your provider's network, and other factors can decrease your actual broadband connection speed. Individual bandwidth needs vary per customer. Sprint recommends a minimum of 300 kbps (both upstream and downstream) for voice services and 3 Mbps downstream and 1.8 Mbps upstream for data services.

The following table shows recommended bandwidth by usage type:

Usage Type	Recommended Download Speed	Recommended Upload Speed
VolP Telephone Service	100 kbps	100 kbps
Wireless Call	40 kbps per call	40 kbps per call
Wireless Data	Up to 3 Mbps per session	Up to 1.8 Mbps per session

#### How Calls and Data Go Over the Internet



#### Using an Analog Telephone

If you are subscribed to Sprint's VoIP (voice over the Internet protocol) phone service, you can use the Analog Telephone Adapter (ATA) component in the AIRAVE. This component converts a telephone message to a digital message and sends it over the Internet. With this service, you can plug a standard analog telephone into the gray phone port on the AIRAVE.

Alternatively, you can plug your AIRAVE directly into a telephone wall jack. To do so, you must:

- Cancel your landline service. If you have not canceled your landline service and you plug a
  telephone line from your AIRAVE directly into a telephone jack in the wall, your device's phone
  service will not work.
- Disconnect an existing line from the landline provider. Failure to do so could cause voltage to be sent
  to the wall jack, causing unreliable service through your AIRAVE's VoIP phone port.

#### Sprint VolP Service Features

Sprint VoIP service includes many of the features you may already have on your Sprint phone, such as:

• **Voicemail** — Automatically transfers all unanswered calls to your voicemail. You can call in to your voicemail by pressing the pound key (#) twice on your analog phone.

Note: The first time you call your voicemail, you will be prompted to create a passcode and to record your name announcement and greeting.

- Call Forwarding Lets you forward all your incoming calls to another phone by pressing \*72 on your analog phone, entering the area code and phone number to which you want to forward your calls, and pressing the TALK button.
- Caller ID Shows you the incoming caller's name and phone number (if available). Requires a phone that supports caller ID display.
- Call Waiting Alerts you to incoming calls while you are on another call and to switch from one
  caller to the other. Requires a flash or call waiting key.
- Dial Out Services Allows you to use devices such as fax machines and digital voice recorders (DVRs) with your AIRAVE.

#### Using the External GPS Antenna

Use the external GPS antenna if your AIRAVE's internal antenna does not work (indicated by a green slow blinking GPS LED). Connect the external GPS antenna to your device's GPS connection port.

If you use the optional external GPS antenna:

- Place the GPS antenna horizontally on a flat surface as close to a window as possible. The antenna works best in an open area where it can easily pick up signals.
- Do not place the GPS antenna:
  - Outdoors; it is not weatherproof.
  - Behind large, heavy objects such as furniture; doing so could affect the signal.

Tip: In large homes, the external GPS antenna can be used to allow the AIRAVE to be placed in a more central location, allowing for even more coverage throughout the house.

#### Maintenance

With normal use, your AIRAVE is maintenance-free. Follow the recommendations below to ensure that it runs optimally.

#### Ventilation

Your AIRAVE has ventilation slots that work best if you don't block the flow of air to them. Keep your device at least 2 inches (5 cm) from walls and other surfaces to ensure proper air flow.

#### Cleaning

Dust your AIRAVE occasionally to keep air vents clear of debris. Do not use liquid cleaners.

# Section 3 **Troubleshooting**



#### In This Section:

- Troubleshooting Installation Problems (page 20)
- LED Quick Reference (page 21)
- Using LEDs (page 22)
- FAQ (page 25)
- Getting Help (page 26)

#### Troubleshooting Installation Problems

During the installation, if your Broadband LED is blinking green and never changes to solid green, reversing the order of turning on the AIRAVE and your cable or DSL modem can often resolve this problem. To reverse the order, follow these procedures:

- 1. Unplug all cables and power cords from all devices. You can unplug devices in any order.
- Connect all Ethernet and GPS cables as described in "Setting up Your AIRAVE™ Access Point" (page 4).

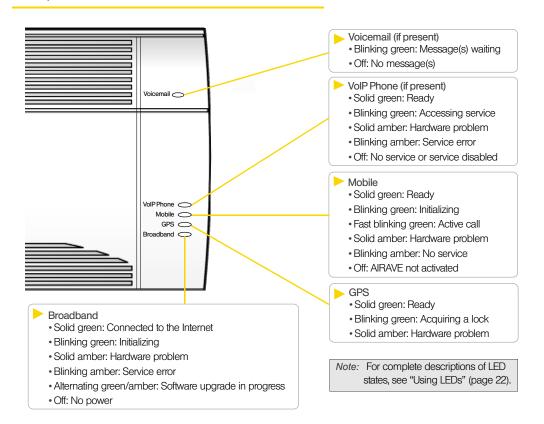
Important: Do not connect any power cords at this point in the procedure.

- 3. Plug the AIRAVE into an electrical outlet.
- 4. Wait 4 minutes.
- 5. Plug your cable or DSL modem into an electrical outlet.

Tip: You may want to consult your cable or DSL modem documentation for any special procedures for connecting a device directly to your cable or DSL modem.

If the Broadband LED continues blinking green and never changes to solid green, call Customer Support as described in "Getting Help" (page 26).

#### LED Quick Reference



#### Using LEDs

Use the LEDs to troubleshoot your device.

LED	Display pattern	Action to take
Voicemail	Blinking green	None. There is a message for your VoIP phone.
	Off	None. There is no message.
VolP Phone	Solid green	None. Ready.
	Blinking green	Wait. Accessing service.
	Solid amber	Hardware problem. Call Customer Support as described in "Getting Help" (page 26).
	Blinking amber	Service error. Plug the telephone line into a phone and restart your device by turning the power off and on. If this problem persists, call Customer Support as described in "Getting Help" (page 26).
	Off	No service or VoIP service has not been activated. To activate VoIP service, contact Customer Support as described in "Getting Help" (page 26).

LED	Display pattern	Action to take
Mobile	Solid green	None. Ready.
	Fast blinking green	None. Active call.
	Blinking green	Wait. Your device is initializing.
	Solid amber	Hardware problem. Call Customer Support as described in "Getting Help" (page 26).
	Blinking amber	No service. Restart the device by turning the power off and on. If this problem persists, call Customer Support as described in "Getting Help" (page 26).
	Off	AIRAVE is not activated. Call Customer Support as described in "Getting Help" (page 26).
GPS	Solid green	None. GPS is ready.
	Blinking green	<ul> <li>GPS is trying to acquire a lock. Perform the following steps if the GPS LED does not turn solid green within 30 minutes:</li> <li>If you have not already done so, connect the external GPS antenna to your device.</li> <li>If the external GPS antenna is already connected, move it to a different location, as close to a window as possible.</li> <li>If this problem persists, call Customer Support as described in "Getting Help" (page 26).</li> </ul>
	Solid amber	Restart the device by turning the power off and on. If this problem persists, call Customer Support as described in "Getting Help" (page 26).

LED	Display pattern	Action to take
Broadband	Solid green	None. Connected to the Internet.
	Blinking green	Wait. Accessing Internet connection.
	Alternating blinking green and amber	Wait. Software upgrade in progress.
	Solid amber	Hardware problem. Call Customer Support as described in "Getting Help" (page 26).
	Blinking amber	<ul> <li>Service error. Failed to acquire the Internet connection.</li> <li>Check if your broadband modem or broadband router has a problem. Reset your broadband connection device. If the problem with the broadband device persists, contact your Internet service provider (ISP).</li> <li>Ensure that the AIRAVE's router is correctly configured to access the Internet service. See "Configuring AIRAVE™ Access Point's Router" (page 9).</li> <li>Restart the device by turning the power off and on.</li> <li>If this problem persists, call Customer Support as described in "Getting Help" (page 26).</li> </ul>
	Off	The LED is not working or the unit has no power. If this problem persists, call Customer Support as described in "Getting Help" (page 26).
All	Solid Amber	The AIRAVE cannot pass a hardware self-test. Call Customer Support as described in "Getting Help" (page 26).

#### FAQ

#### Why does the AIRAVE™ Access Point need a GPS antenna?

The AIRAVE has a GPS antenna so that it can:

- Synchronize properly with the rest of Sprint's network.
- Determine and select the correct radio frequencies available in your area so that the AIRAVE uses the correct ones.

#### Why does the AIRAVE™ Access Point need an external GPS antenna?

Your device needs the external antenna only when the internal GPS antenna cannot lock on to sufficient satellite signals. The external antenna lets the AIRAVE lock on to the greatest number of satellites.

### What happens to the AIRAVE™ Access Point if there is a power outage or if you lose Internet access?

The AIRAVE needs both a broadband Internet connection and a constant power supply to work. During a power outage your wireless phone or device will immediately switch to the Sprint network.

#### Can you move the AIRAVE™ Access Point to another location?

Yes, you can move your device to another location within the Sprint network. However, to move your device to a different address, you must first update your service address by logging into your account on <a href="https://www.sprint.com">www.sprint.com</a>.

#### How do I know if my phone is connecting through the AIRAVE?

By dialing \*99 on your wireless phone, an audio message will confirm if you are in range of the AIRAVE. Also, you will hear three short beeps on your wireless phone before making and receiving calls.

#### Getting Help

If you need help with your AIRAVE, contact Sprint Customer Service.

- 1-866-556-7310 (for activation and technical issues)
- 1-888-211-4727 (for billing and other questions)

# Section 4 Safety Information



#### In This Section:

- General Precautions (page 28)
- Warning of 911 Limitations (page 29)
- FCC Information (page 29)

#### General Precautions

- Dust the AIRAVE occasionally to keep air vents clear of debris. Do not wash it.
- The AIRAVE has ventilation slots that work best if you don't block them. Keep the AIRAVE at least 2 inches (5 cm) from walls and other surfaces to ensure proper air flow.
- Do not operate the AIRAVE in an extremely dusty or humid environment.
- Avoid placing the AIRAVE near radiators or other heating sources.
- Avoid locating the AIRAVE where it could be exposed to direct sunlight for prolonged periods.
- Do not connect the AIRAVE to a power strip containing an excessive number of other devices.
- Although your AIRAVE is quite sturdy, it is a complex piece of equipment and can be broken. Avoid dropping, hitting, bending, or sitting on it.
- Do not immerse the AIRAVE in water or get it wet. If your device does get wet, unplug it immediately until it dries.
- Do not allow children to play with the AIRAVE. They could hurt themselves and others or damage the
  device.

Note: For the best care of your AIRAVE, only Sprint-authorized personnel should service your device and accessories. Failure to do so may be dangerous and void your warranty.

### Marning of 911 Limitations

911 service may be limited or not available outside Sprint's wireless network coverage areas. Interconnected VoIP service may be limited by comparison to traditional 911 service. Such circumstances may include, but are not limited to: relocation of the equipment, broadband connection failure, loss of electrical power, delays in availability of your registered location information, and/or other technical problems. You may not be able to place a 911 call during software updates to the device.

Not all public safety answering points have location-based E911 technology. Always be prepared to report your location to the 911 operator when placing an emergency call.

Mobile phones operate using radio signals which cannot guarantee connection in all conditions.

Tip: Unregistered or unauthorized users can make emergency 911 calls using the AIRAVE.

#### FCC Information



#### FCC Radiation Exposure Statement

This device complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

- This device should be installed and operated such that a minimum separation distance of 8 inches (20 cm) is maintained between the radiator (antenna) and the user's or nearby person's body at all times.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

For more information, see the publication *Femtocells and Health* at <a href="http://www.femtoforum.org">http://www.femtoforum.org</a> or visit the FCC website at <a href="http://www.femtoforum.org">www.fec.gov</a>.

#### FCC Part 15

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antennas of other devices.
- Increase the separation between the AIRAVE and other device receivers.
- Connect the AIRAVE into an outlet on a circuit different from that to which the other device receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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