

*Technical and Troubleshooting*

# *Guide*



*AIRAVE 2.5+*



## **Special note for Sprint As You Go customers**

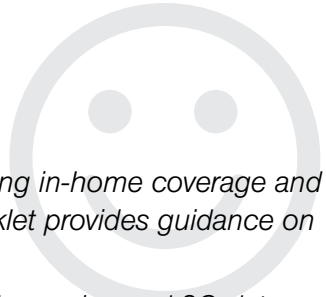
*With Sprint As You Go you can free yourself from long-term contracts and enjoy more wireless flexibility.*

*Some limitations apply, depending on your service plan and device. Data roaming may not be enabled and certain applications that are preinstalled on your device may not be available or operational. Also, to purchase other subscription-based third-party content from application stores (such as Google Play™), you will need to provide them with credit card information.*

*For more information, visit [sprint.com/asyougo](http://sprint.com/asyougo).*



# Welcome!



*Sprint is committed to developing technologies addressing in-home coverage and ensuring you have a great wireless experience. This booklet provides guidance on activating, troubleshooting, and using your AIRAVE 2.5+.*

*The AIRAVE 2.5+ provides a boosted signal for your wireless voice and 3G data services. It's like having your very own cell tower. 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. A strong signal can extend battery life and 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.*

**ReadyNow** – *For more help in getting up and running with your new device, take advantage of exclusive Ready Now resources at [sprint.com/readynow](http://sprint.com/readynow). You can even schedule a one-on-one appointment at a Sprint Store near you.*

*Visit [sprint.com/airave](http://sprint.com/airave) for the complete User Guide. There are also community forums for your device on [sprint.com](http://sprint.com).*

# Using This Guide

*This Technical and Troubleshooting Guide is designed to help you set up and use your new AIRAVE 2.5+. It's divided into four sections to help you find the information you need quickly and easily.*

**■ Get Ready** — page 6 — *Find out what you need to do before you use your AIRAVE the first time, including activating Sprint service.*

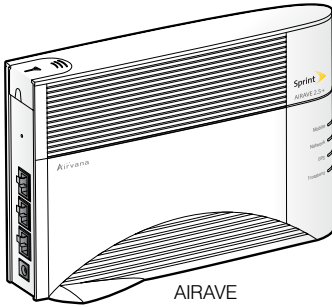
**■ Your AIRAVE** — page 9 — *Learn how your AIRAVE works and how to install your AIRAVE using a broadband cable modem and how to read the LED status lights and messages. Find out how to set up the external GPS antenna cable, PC or LAN router, and AIRAVE router to receive the best voice and data quality.*

**■ FAQs** — page 16 — *Learn the answers to frequently asked questions about Sprint AIRAVE coverage.*

**■ Tools & Resources** — page 17 — *Find useful tips for your device and discover resources and other helpful Sprint information. For additional information, visit [sprint.com/airave](http://sprint.com/airave) for the full User Guide and [sprint.com](http://sprint.com) for community forums.*

## What's in the Box

Check that these components are in the box:



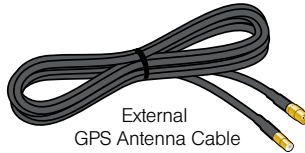
AIRAVE



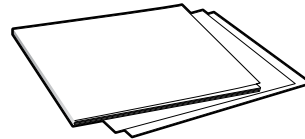
Yellow Ethernet Cord



Power  
Cord



External  
GPS Antenna Cable



Read Me First,  
Technical and Troubleshooting Guide,  
and Sprint Important Information

# Get Your Device Ready

**System requirements:** An always-on broadband Internet connection with a minimum of 800 kbps (both upstream and downstream) for voice services and 3 Mbps downstream and 1.8 Mbps upstream for data services is required for the AIRAVE to function properly.

## 1. Minimum Requirements for AIRAVE Use:

- a. Your physical address must be pre-qualified for AIRAVE coverage. If you are outside the AIRAVE coverage zone, the device will not activate. Check the AIRAVE coverage map at the resource center at [sprint.com/airave](http://sprint.com/airave).
- b. Minimum System Requirements:
  - High-Speed Internet broadband access – This includes cable or DSL as well as a fractional T1 or full T1 installed and active at the location.
  - No Satellite, WiFi, Dial-up, or wireless internet access works for the AIRAVE.

### The following is a sample listing of Satellite providers that will NOT work for the AIRAVE.:

- |                                 |                |
|---------------------------------|----------------|
| • HughesNet (formerly Direcway) | • Earthlink    |
| • Wildblue                      | • Direct TV    |
| • Skyway USA                    | • Dish Network |
| • Elite Satellite               | • MicroSAT     |
| • Starband by Spacenet          | • Teledesic    |

- AIRAVE requires an available power outlet (110 VAC)
- The AIRAVE must be within close proximity of a window for GPS signal acquisition. If a signal is not acquired (GPS LED is not a solid green), use the external GPS antenna cable. See the GPS section in this booklet for more information.

Contact AIRAVE Technical Support at **866-556-7310** if you do not meet these minimum requirements for activation.

## Get Your Device Ready

### 2. Minimum Internet Broadband Bandwidth: Test your IP Connection

The following table shows recommended bandwidth by usage type:

Usage Type	Recommended Download Speed	Recommended Upload Speed
Wireless Call	800 Kbps	800 Kbps
Wireless Data	Up to 3 Mbps	Up to 1.8 Mbps

**Note:** The bandwidth of your internet connection will affect the performance of the AIRAVE. You can test your internet connection speeds using [online tools](#).

### 3. AIRAVE Special Configurations:

- a. Log in required for ISP – Some internet providers require a log in for their users. You may be required to enter a login in ID and password to set up your AIRAVE. This is especially common for DSL customers. The online user guide provides steps for this process. Please refer to the user guide at [sprint.com/airave](http://sprint.com/airave).
- b. Set up a static IP – A dynamic IP is the default for the AIRAVE. If you need to use a static IP, Please refer to the user guide at [sprint.com/airave](http://sprint.com/airave) for instructions.
- c. AIRAVE access to Internet through a firewall – Some small office or school environments have a firewall to protect their internet users from hazards. There are specific firewall ports that must be open for the AIRAVE to connect properly to the Sprint Network. Contact AIRAVE Technical Support at **866-556-7310** to request the firewall port information.

## **Get Your Device Ready**

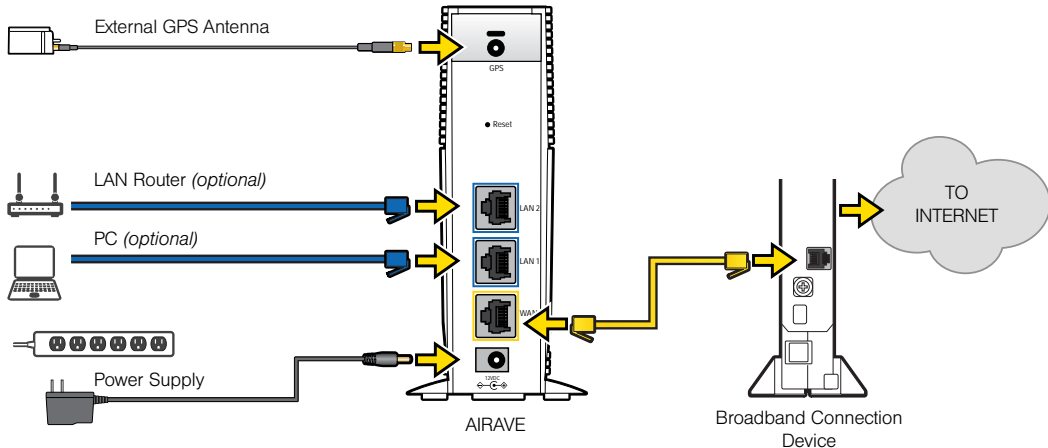
4. AIRAVE Signal Range: The signal range for the AIRAVE can be adjusted to best fit the customer's environment. There are settings for apartments, standard homes, and larger homes. The customer can contact AIRAVE Technical Support at **866-556-7310** to request a change to their AIRAVE signal strength.
5. Alternate Set-up Configuration: You may have a modem/router combination device provided by your ISP that may require a special configuration for the AIRAVE as in the following examples:
  - a. Configuring the AIRAVE behind the router – It is not recommended to configure the AIRAVE behind a personal router. Some users may want to use this configuration putting the AIRAVE behind the router. This is possible but may result in stability issues for the AIRAVE and voice quality issues.
  - b. Internet speeds configuration: Customers may notice a change in their internet upload speeds using the AIRAVE configured on their modem. Customers with a higher speed internet connection may need an adjustment on this default setting.

Contact AIRAVE Technical Support at **866-556-7310** for assistance with any of the issues noted above.



# Setup Overview

The following steps show a typical installation using a broadband cable modem. If you are using a different type of broadband connection, the steps will be similar. For detailed setup instructions, see the Read Me First insert provided in your box or online at [sprint.com/airave](http://sprint.com/airave).

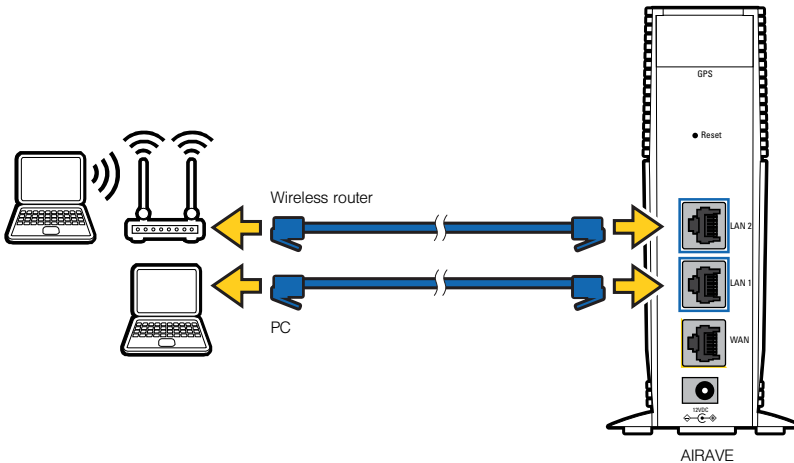


**Attention:** After installing and turning on your AIRAVE for the first time, it will go through an automated setup sequence. During this time, the device's LEDs will change color. When the Broadband, GPS, Network, and Mobile LEDs have changed to steady green, your AIRAVE is ready to use. This process may take up to two hours. For additional details about the AIRAVE 2.5+ please see the User Guide or see "Resources" in this guide.

## PC or LAN Router Setup

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

*Tip: To ensure the best voice and data quality, always connect the LAN router to your AIRAVE. Do not connect the router directly to your broadband modem or other broadband connection device.*



## Configuring AIRAVE™ 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 red	Cannot access Internet	Go to “Adding Your ISP User name and Password” in the user guide
DSL modem with built-in router	Broadband LED blinking red	Cannot access Internet	If the problem persists, contact AIRAVE Technical Support as described in “Resources”
Cable modem with built-in router	Mobile LED blinking red	Cannot make a mobile phone call through the AIRAVE	
FiOS			

## External GPS Antenna Setup

Use the external GPS antenna cable if your AIRAVE's internal antenna is not receiving a sufficient signal (indicated by a blinking red GPS LED). Connect the external GPS antenna cable to your AIRAVE's GPS connection port.

1. Remove the GPS antenna module from the back of the AIRAVE. Connect the external GPS antenna cable to the antenna module and the AIRAVE.
2. Place the external GPS antenna (tape-side down) 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.

**Note:** If the provided external GPS cable is not long enough to reach a window, there are options to purchase a longer GPS cable through vendors. Contact AIRAVE Technical Support for more information.

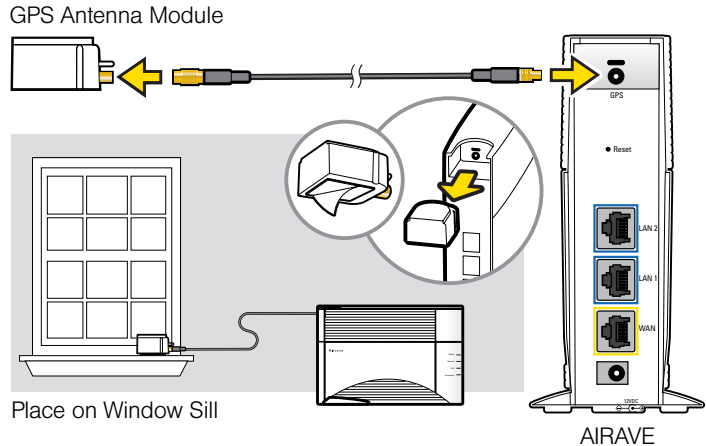
### Why does the AIRAVE™ need a GPS antenna?

The AIRAVE has a GPS antenna so that it can:

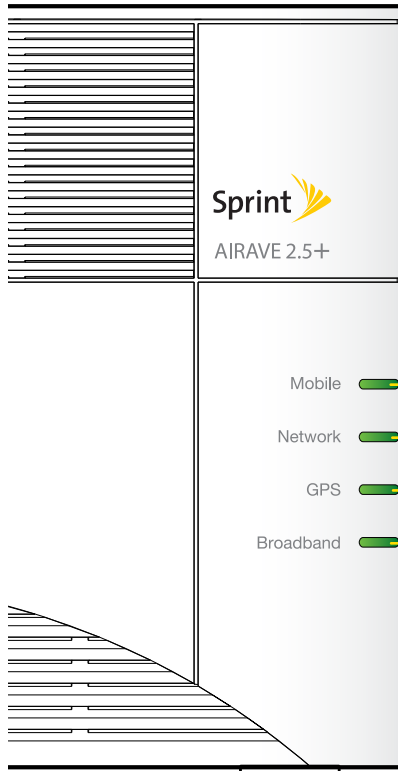
- Synchronize properly with the rest of Sprint's network.
- Determine and select the correct radio frequencies available in your area so that the AIRAVE uses the correct ones.

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

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.



# LED Status Lights



## Mobile

**Solid green:** Ready  
**Blinking red:** Not ready for service  
**Solid red:** Hardware problem  
**Off:** No power

## Network

**Solid green:** Ready  
**Blinking red:** Not ready for service  
**Solid red:** Not connected to Sprint network; call Tech Support  
**Off:** No power

## GPS

























**Solid green:** Ready  
**Blinking red:** Acquiring a GPS signal lock  
**Solid red:** GPS signal not acquired; connect external GPS cable  
**Off:** No power

## Broadband

**Solid green:** Connected to the Internet  
**Blinking red:** Attempting to acquire IP address  
**Solid red:** Check ISP to ensure internet service is working  
**Off:** No power

























# LED Status Messages

## LED Behavior – AIRAVE 2.5+ Initial Activation Pattern

Broadband	GPS	Network	Mobile	Meaning
				Initial Hardware Tests – 10-15 seconds [Unit is doing a quick system test]
				Software Loading (20-25 secs) [All LEDs off except broadband connection as unit receives a software update]
				Software loaded and services started
				AIRAVE link has been established to Sprint network
				Unit has GPS lock and internet connection to Sprint network
				All connections made and AIRAVE is ready for use

*Note: The activation pattern may repeat if loading a new software version on the AIRAVE*

## LED States – General Error/Fault Scenarios

Broadband	GPS	Network	Mobile	Meaning
				Hardware Error Detected; Call AIRAVE Tech Support
				All connections made to Sprint network but AIRAVE unable to function for wireless calls; Call AIRAVE Technical Support at 1-866-556-7310
				All connections made for internet and wireless calling; user should attach the external GPS cable
				GPS lock has been lost and AIRAVE has fallen out of sync with network; user must install external GPS cable
				Internet is working but secure connection to Sprint network is not; Call Tech Support for AIRAVE
				You have no internet connection; contact your ISP for an outage of your DSL or cable service or modem issue

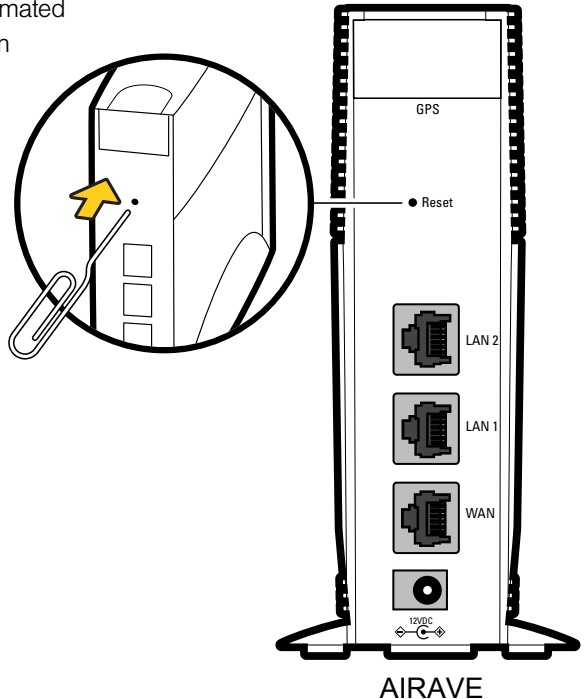
**Key** |  Solid Green |  Solid Red |  Off |  Blinking Red

## Resetting the AIRAVE

If your AIRAVE was operating properly for an extended period and the Mobile LED suddenly starts blinking red, the AIRAVE may have a problem requiring a reset. To reset the AIRAVE, push the **Reset button** for at least 10 seconds (as shown in the drawing below).

After resetting your AIRAVE, it goes through an automated setup sequence. During this time, the device's green LEDs will be solid for a few seconds, and then all LEDs will turn off until the software loads. This process may take up to 30 minutes.

After resetting the AIRAVE, if the failure persists, contact AIRAVE Technical Support at 1-866-556-7310.



**A. How does the customer know if they are within the AIRAVE coverage area and making calls on the AIRAVE?**

A short triple tone on your wireless phone before making and receiving calls indicates you are within range of the AIRAVE. In addition, you can dial \*99 on your wireless phone and a prerecorded message will confirm that you are within the AIRAVE coverage area.

**B. What happens if I have a power or Internet Service Provider outage?**

AIRAVE requires a constant power and broadband Internet connection to operate. In the event of an outage, your wireless phone will automatically try to obtain service directly from the Nationwide Sprint network if coverage is available.

**C. Can I use my high-speed modem to access the Internet and talk on the phone at the same time?**

Yes. You can use your high-speed Internet connection while using the AIRAVE. Use of your modem will not compromise the ability to make or receive calls on your wireless handset.

**D. Do wireless calls initiated on the AIRAVE continue once the user leaves the AIRAVE coverage area?**

Yes. Calls that originate on the AIRAVE automatically transfer to the Nationwide Sprint Network once you leave the AIRAVE coverage area given the strength of the signal outside your home.

**E. Does a wireless call that starts outside of the Sprint AIRAVE coverage area transfer to the Sprint AIRAVE when the user enters the coverage area?**

No. Calls that are initiated on the Nationwide Sprint Network will continue on the Nationwide Sprint Network, even though you may be within the AIRAVE coverage area.

**F. Can we use multiple AIRAVES within the same area? (e.g. same strip mall, apartment or office building?)**

Multiple AIRAVES can be deployed in the same general area (apartment complexes, strip malls) without issue. In this scenario, the AIRAVES will not interfere with one another with the correct signal range setting. AIRAVES do not work together. For example, handoff between AIRAVES is not supported. Therefore, multiple AIRAVES should not be used as a single solution to address large buildings.

*Note: More FAQs are available at [sprint.com/airave](http://sprint.com/airave).*



# Resources

## In the Box

- *Read Me First* to get you up and running.
- This *Technical and Troubleshooting Guide*.

## Online

- Visit [sprint.com/airave](http://sprint.com/airave) for the complete *User Guide*. There are also community forums for your AIRAVE 2.5+ on [Sprint.com](http://Sprint.com).
- **Ready Now** – Visit [sprint.com/readynow](http://sprint.com/readynow) for additional help to get started on your new device. You'll find more information on basic setup, activation, maximizing your device's performance, etc. Plus, you can even schedule a personalized one-on-one Ready Now appointment at a Sprint Store near you.

## From a Phone

- AIRAVE Technical Support (for activation and technical issues).  
Dial **1-866-556-7310**
- Sprint Customer Service (general customer service for non technical issues)  
Dial **1-888-211-4727**

## Activating your AIRAVE™ 2.5+ Account

- Your AIRAVE should already be activated at the time of shipping. If, after installation, you find that it is not activated, please call AIRAVE Technical Support at **1-866-556-7310**.
- Should you need to activate your AIRAVE, you will be asked to provide the following information:
  - **Primary Wireless Phone Number** (Account number)
  - **Account Password**
  - **MAC ID** of your AIRAVE, found on the sticker affixed to box label or the bottom of the device.

## Sustainability

At Sprint, environmental responsibility is more than talk. We're continuously working to reduce our carbon footprint and decrease our use of natural resources.

### So where is my user guide?

We took the full printed user guide out of the box and put it, along with expanded support resources, online for you. Less paper, more and better information. Just visit [sprint.com/support](http://sprint.com/support) from any computer to access your complete user guide and the rest of our support materials.

### What else has Sprint been doing?

Plenty. To find out just what we've been up to, use your phone to scan the QR Code\* below or visit [sprint.com/green](http://sprint.com/green) for more information.



*To scan the code, download and install a QR Code\* reader from an app store on your phone, launch the reader, and aim your phone's camera at the image.*



This guide is printed with soy inks and contains up to 70% post consumer paper.

