# User guide

## Verizon 5G Home Wi-Fi Extender

VRE3000

verizon

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# 1

# Product Overview

**Verizon VRE3000**

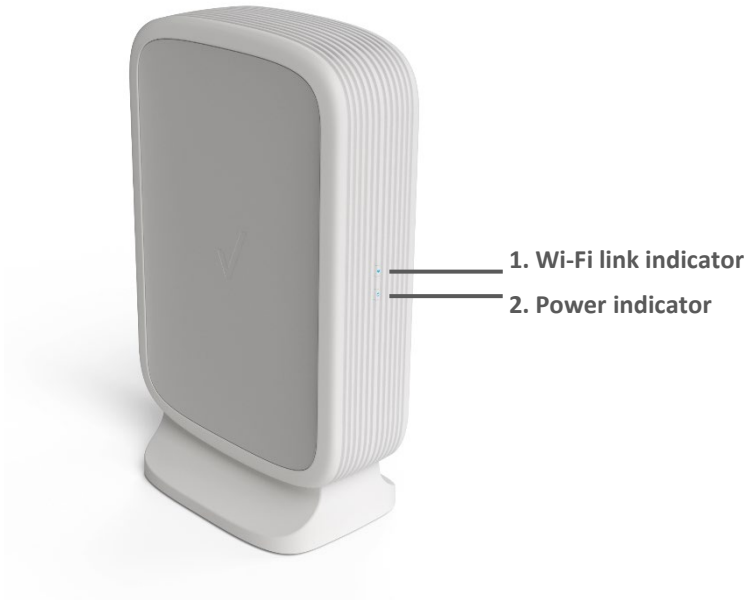
**Components and Indicators**

# Verizon VRE3000

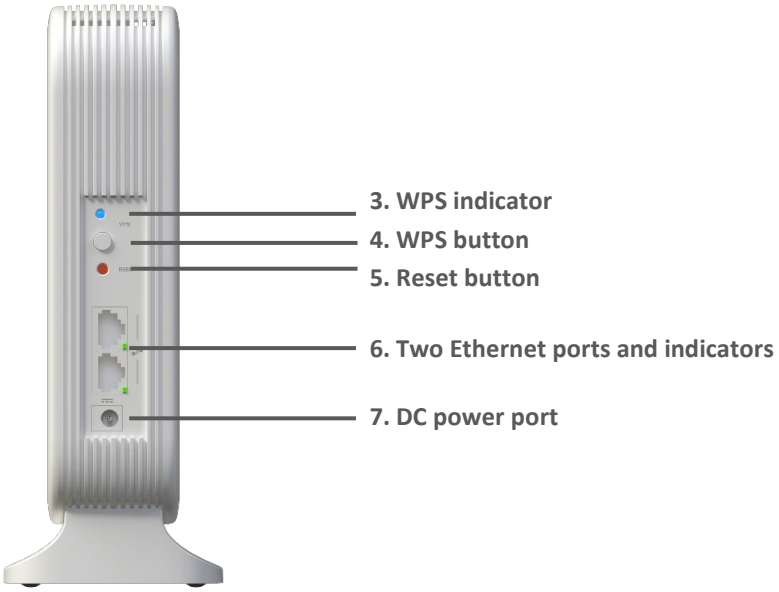
Your Verizon VRE3000 is a tri-band Wi-Fi extender which works like a bridge between a Wi-Fi router and Wi-Fi-capable devices (e.g., mobile phones, tablets, laptops, etc.) connected to your Wi-Fi network.

# Components and Indicators

### Front View




### Rear View



**1. Wi-Fi link indicator:** Indicates 5 GHz connection to network router.

**2. Power indicator:** Shows if the Extender is on or off.

**3. WPS indicator:** Shows when Wi-Fi Protected Setup (WPS) is active.

**4. WPS button:** Use this button to connect your Wi-Fi Extender to your WPS-enabled Wi-Fi router to extend the network. After setup, you can also use the WPS button to connect WPS-enabled Wi-Fi devices to the extended network.

**5. Reset button:** Press this button to reset the Wi-Fi Extender to factory default settings: Press and hold for at least 10 seconds until the Power indicator turns off. The Wi-Fi Extender will return to its default settings. It can take around 1 minute to turn back on.

**6. Two Ethernet ports:** Use these 2 Gigabit Ethernet RJ-45 LAN ports to connect LAN devices.

**7. DC power port:** Connect the power adapter that came in the package to the DC power connector.

## LED Indicator States

| LED | STATE | DESCRIPTION |
|---|---|---|
| **Wi-Fi link indicator** | Blinking | Not connected to a Wi-Fi router/ Ready for setup/ Other error |
| | Solid Blue | 5 GHz connection with the Wi-Fi router is connected. |
| **Power indicator** | Blinking | Rebooting/ Starting up/ Software update. |
| | Solid Blue | Power On |
| | Off | Power Off |
| **WPS indicator** | Blinking | Slow flash: WPS setup is available for 2 minutes then it times out.<br>Fast flash: WPS setup failed. |
| | Solid Blue | Solid for 20 seconds, then turns off: Successful WPS setup. |
| | Off | WPS setup not in process. The light is off most of the time. |
| **Ethernet indicator** | Solid Green | An Ethernet device is connected to the Ethernet port. |

Note: Devices and software are constantly evolving—the screen images and icons you see here are for reference only.

# 2

# Package Content

## The package includes two parts within one box:

- Verizon VRE3000 Wi-Fi Extender
- Power Adapter (12V/2A)

Note: Your Wi-Fi Extender should only be serviced by a Verizon-authorized technician. Tampering with the device may cause damage and void the warranty.

# 3

# Getting Started

## Setting Up the Wi-Fi Extender

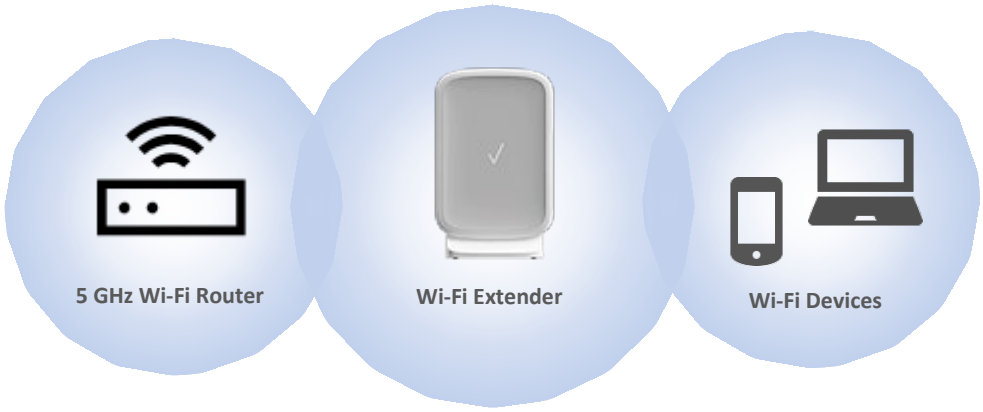
# Setting Up the Wi-Fi Extender

Your VRE3000 Wi-Fi Extender is designed to work with routers that have the 5 GHz Wi-Fi band (Band-1: 5150MHz ~ 5250MHz). Before you begin, make sure that your Wi-Fi router has this band. (Check your router's user guide, if you're not sure.)

## Step 1. Position your Wi-Fi Extender and Connected Device

Place your Wi-Fi Extender near your home Wi-Fi router. This will ensure that it's close enough to connect to the router's Wi-Fi network. (If you plan on connecting with WPS, place the Extender so that you can reach both devices easily.)

You'll also want the computer (or tablet) that you'll be using during setup nearby as well. It will need to connect to your Extender's Wi-Fi network during setup, or be close enough to be connected with an Ethernet cable.




**Recommended placement**

**Devices too far apart**

## Step 2. Plug in your Wi-Fi Extender

Now that your Extender is in position, connect the DC power adapter to the DC power port on the Extender. Then plug it into an electrical outlet. The power indicator on the Extender will blink while it starts up. When it's solid blue it's ready to proceed.

Note: If you have used this Extender before and want to start fresh, press and hold the reset button for 10 seconds to restore the Extender to its factory default settings. During reset, the Extender will turn off and on again. Wait until the power indicator stops blinking and turns solid blue before moving to step 3.

## Step 3. Connect your Wi-Fi Extender to your router

There are 2 ways to connect your Extender to your router:

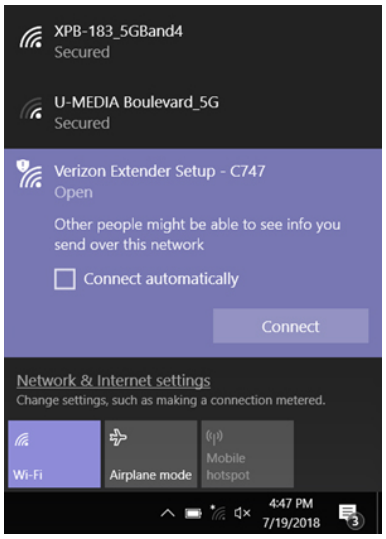
- Use a Wi-Fi-connected computer or tablet (Recommended)
- Use a computer connected to the Extender with an Ethernet cable

### *Use a Wi-Fi-connected computer or tablet*

Note: Before you begin, you may want to make sure that your computer or tablet is set to connect automatically to your home router's Wi-Fi network. This will ensure a seamless transition when your Extender begins extending your home Wi-Fi network.

1. Go to your computer or tablet's list of available Wi-Fi networks and connect to your Extender's Wi-Fi network (SSID): ***Verizon Extender Setup – XXXX***.

Note: The XXXX is last four characters of the Extender's MAC address. You can find your Extender's full **Default Network Name** on the sticker on the bottom of your Extender.




2. On your connected device, open a web browser and enter:
   - **http://verizonre** (Windows and Android)
   - **http://verizonre.local** (Mac OS X or iOS)
   - Or try **http://192.168.0.250**

3. The browser will show the Extender's Setup Wizard. Follow the onscreen steps to complete setup.

***Use a computer connected to the Extender with an Ethernet cable***

You can also connect your computer to one of the Extender's two Ethernet ports with an Ethernet cable.

Once you've connected your computer, open a web browser and enter:

- **http://verizonre** (Windows and Android)
- **http://verizonre.local** (Mac OS X or iOS)
- Or try **http://192.168.0.250.**

The browser will show the Extender's Setup Wizard. Follow the onscreen steps to complete setup.

## Step 4. Find the Best Location for Your Wi-Fi Extender with the Extender Placement Tool

Now that your Extender is connected to your router's Wi-Fi network, you can move it to increase the range of your network. Your Extender's Admin website has a tool to help you find the best location.

1. If you haven't already, make sure the device you'll use to visit the Admin website is connected to your extended network.

2. If you've just completed the Setup Wizard, you can tap **Admin Website** on the **Setup complete!** screen and sign in.

   If not, open a web browser and go to one of the addresses below. (You'll also find these URLs on the label on the bottom of your Extender.) Then sign in.

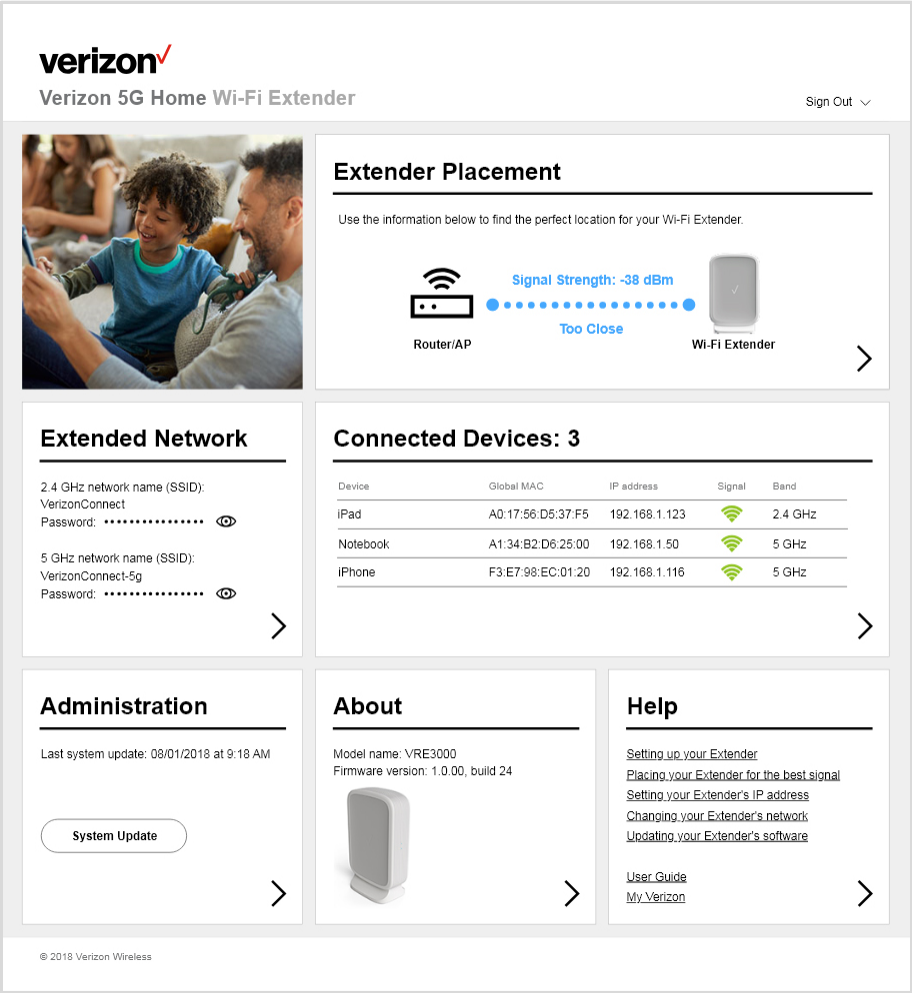
   - **http://verizonre** (Windows and Android)
   - **http://verizonre.local** (Mac OS X or iOS)

   Note: If you have trouble connecting to the Admin website, try this:
   1. Disconnect the device from the extended network.
   2. Move the device closer to the Wi-Fi Extender.
   3. Reconnect to the network.

   (See *Q2. What can I do if I cannot access the Extender's Admin website?* in the Troubleshooting section for more information.)

   For security, it's recommended that you change your Admin password at this point.

3. After you've signed in, you'll see the Admin website's Dashboard. The Extender placement card on the Dashboard will tell you if your Extender is too close, too far, or perfectly placed. Click the **>** on the card for more information.


verizon
Verizon 5G Home Wi-Fi Extender
Sign Out
Extender Placement
Use the information below to find the perfect location for your Wi-Fi Extender.
Signal Strength: -38 dBm
Too Close
Router/AP
Wi-Fi Extender
Extended Network
2.4 GHz network name (SSID):
VerizonConnect
Password:
5 GHz network name (SSID):
VerizonConnect-5g
Password:
Connected Devices: 3
Device Global MAC IP address Signal Band
iPad A0:17:56:D5:37:F5 192.168.1.123 2.4 GHz
Notebook A1:34:B2:D6:25:00 192.168.1.50 5 GHz
iPhone F3:E7:98:EC:01:20 192.168.1.116 5 GHz
Administration
Last system update: 08/01/2018 at 9:18 AM
System Update
About
Model name: VRE3000
Firmware version: 1.0.00, build 24
Help
Setting up your Extender
Placing your Extender for the best signal
Setting your Extender's IP address
Changing your Extender's network
Updating your Extender's software
User Guide
My Verizon
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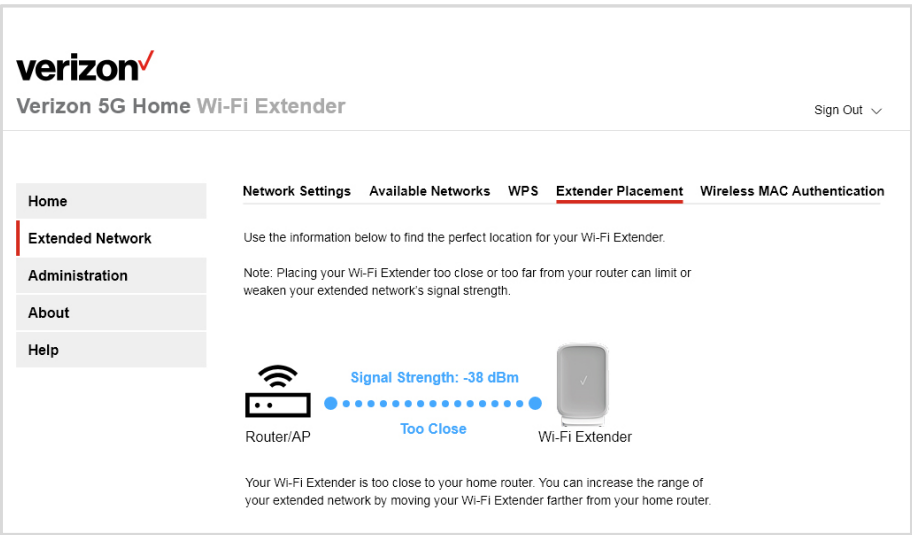
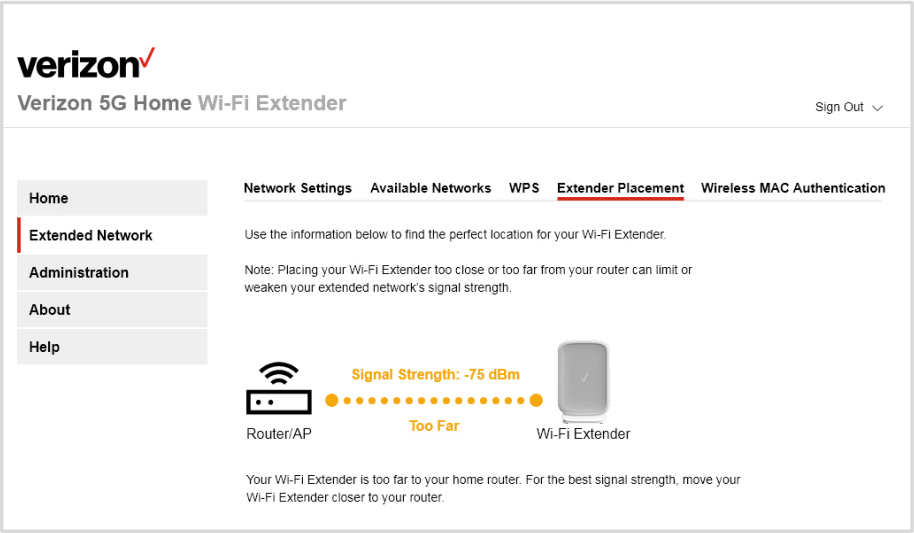
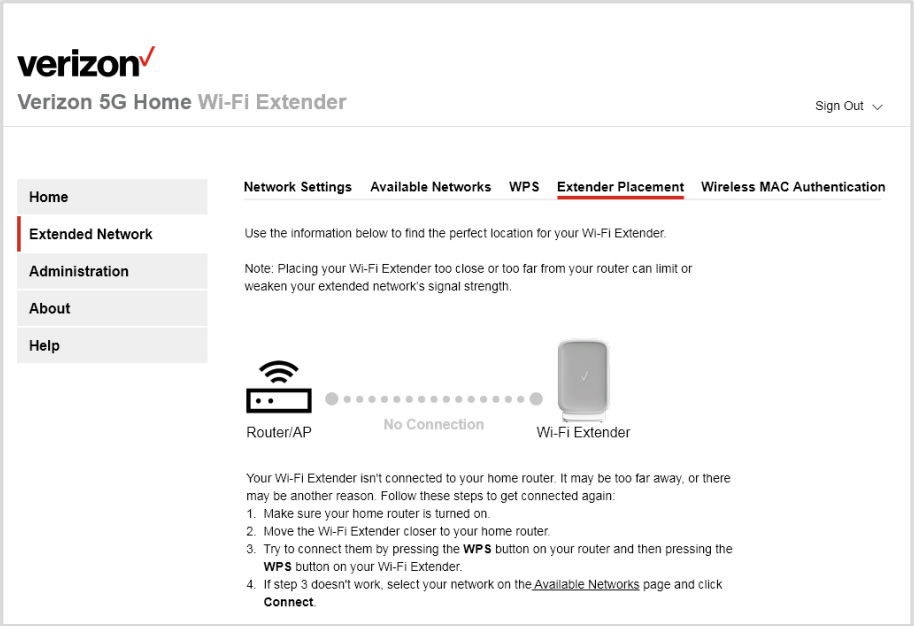

verizon
Verizon 5G Home Wi-Fi Extender
Sign Out
Home
Extended Network
Administration
About
Help
Network Settings
Available Networks
WPS
Extender Placement
Wireless MAC Authentication
Use the information below to find the perfect location for your Wi-Fi Extender.
Note: Placing your Wi-Fi Extender too close or too far from your router can limit or weaken your extended network's signal strength.
Signal Strength: -38 dBm
Too Close
Router/AP
Wi-Fi Extender
Your Wi-Fi Extender is too close to your home router. You can increase the range of your extended network by moving your Wi-Fi Extender farther from your home router.

4. If your Extender placement isn't perfect, unplug the Wi-Fi Extender and move it to a location about halfway between your Wi-Fi router and an area where you've had a poor Wi-Fi connection in the past. Check the Extender Placement screen again and follow the onscreen instructions to adjust your Extender's location as needed.




Note: If you've placed the Extender so far from your router that it can't connect, the Extender Placement tool will show "No Connection" and the Wi-Fi Link indicator on the Extender will blink. For more information, see the Troubleshooting section of this guide.




## Step 5. Manage Your Wi-Fi Extender Settings

Now that your Extender is in the perfect location, you can also use the Admin website to get information about your Extender — like which Wi-Fi devices are connected to it — and to manage your Extender's settings.

Go to Chapter **4 Wi-Fi Extender Settings** to learn more.

# 4

# Wi-Fi Extender Settings

Using the Admin Website

Frequently Used Wi-Fi Extender Settings

# Using the Admin Website

Use your Wi-Fi Extender's Admin website to get information about Extender status and manage your Extender's settings.

## Signing In to the Admin Website

To access the Admin website, your computer or tablet needs to be connected to the Extender either through the Wi-Fi network or the with an Ethernet cable.

Open a web browser and go to one of the addresses below. Then sign in.

- **http://verizonre** (Windows and Android)
- **http://verizonre.local** (Mac OS X or iOS)

Note: If you have trouble connecting to the Admin website, try this:
1. Disconnect the device from the extended network.
2. Move the device closer to the Wi-Fi Extender.
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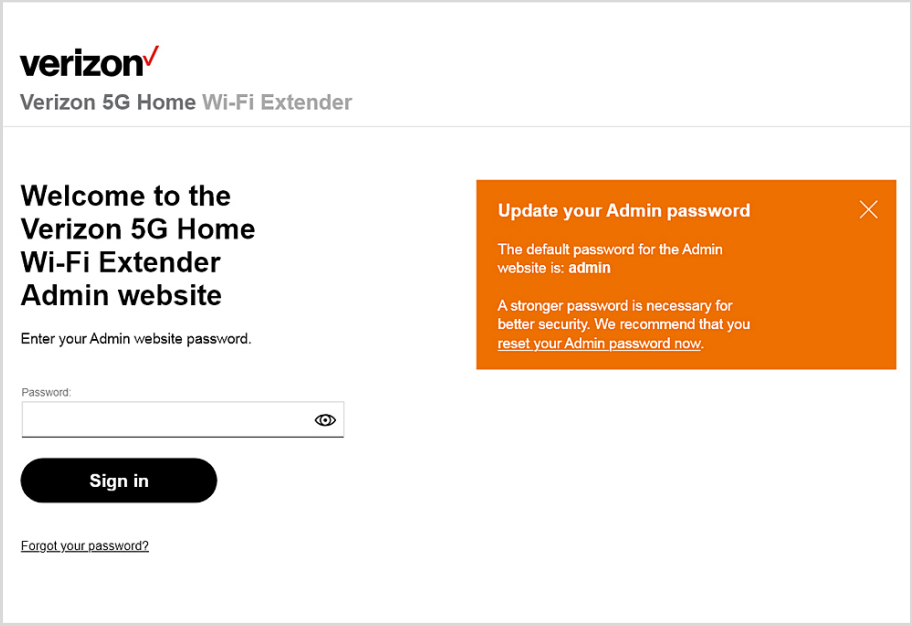
(See *Q2. What can I do if I cannot access the Extender's Admin website?* in the Troubleshooting section for more information.)



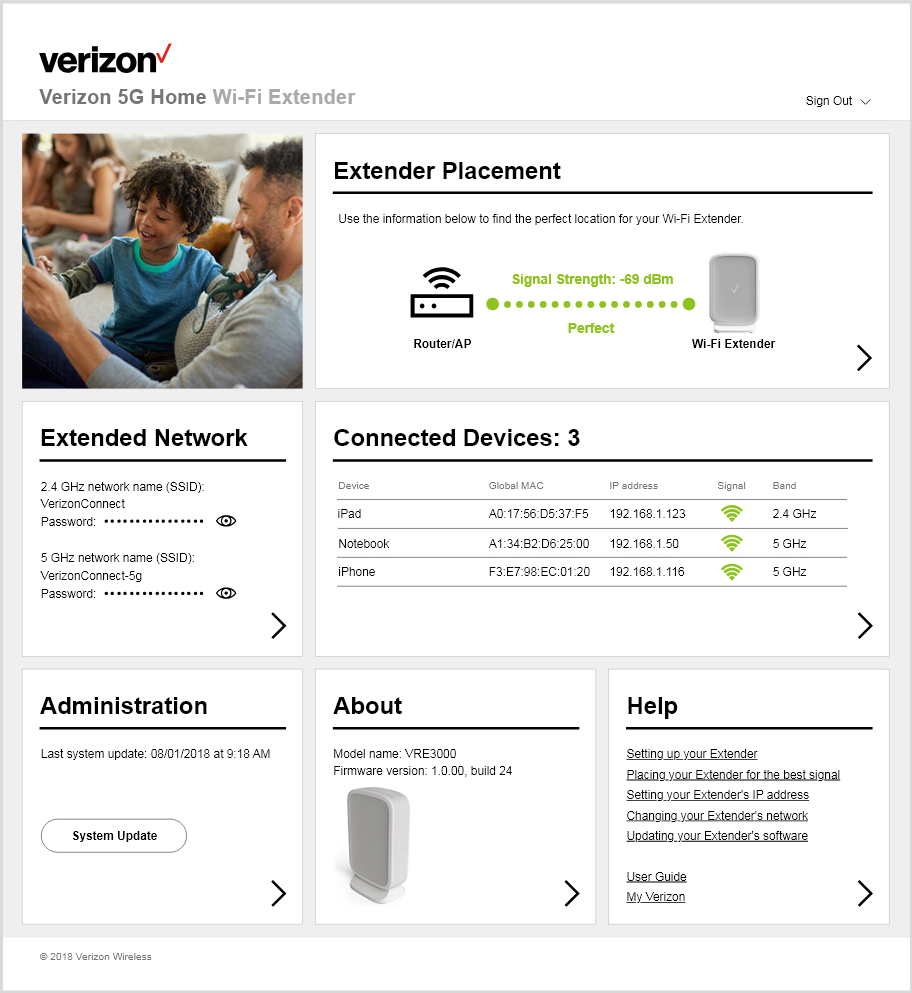

Note: If the password wasn't changed after setup, the password is still the default password: "admin".

## The Dashboard

From the Dashboard on the Admin website's Home screen, you can see information on:

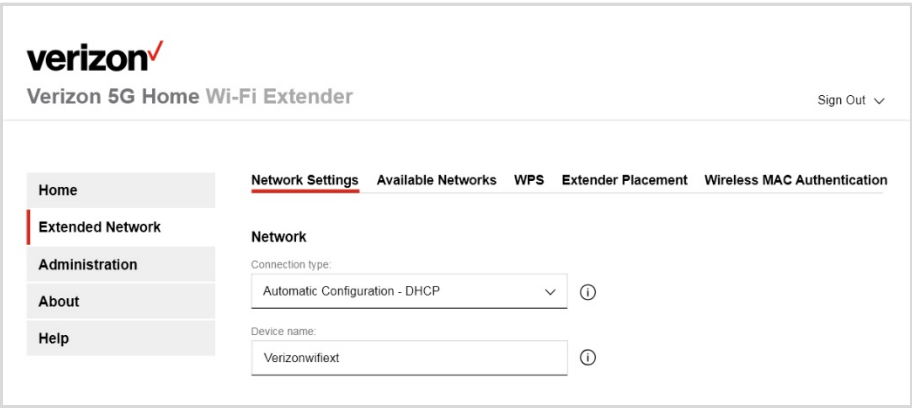
- Extender placement
- The extended network's network names and passwords
- Connected devices
- System updates (in the Administration card)

- Model name and firmware version (in the About card)
- Links to Help topics, the User Guide, and My Verizon (in the Help card)




## Navigation

From the Dashboard, tap the **>** in any card in to go to the screen for that topic. From other pages, tap the topic in the side bar.



# Frequently Used Wi-Fi Extender Settings

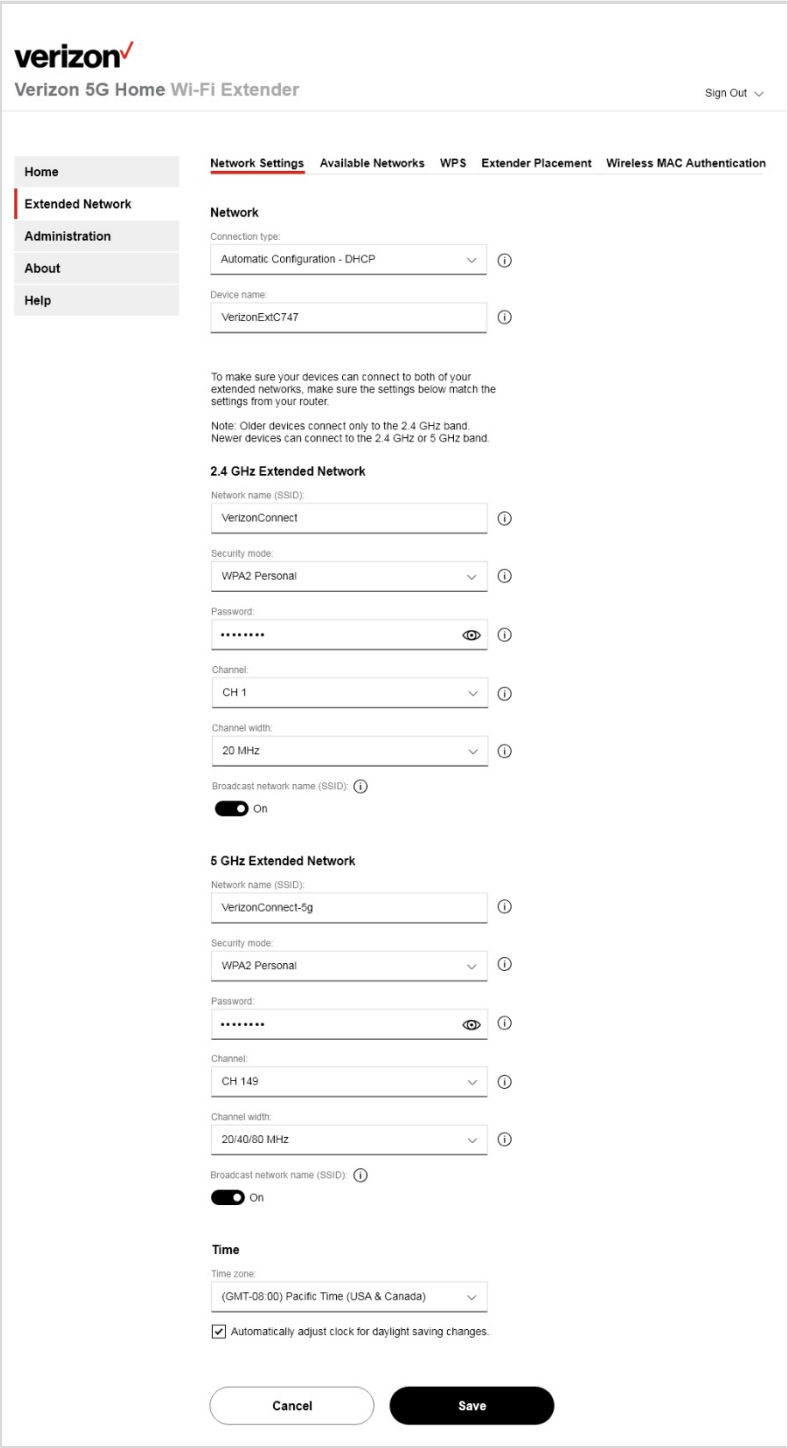
## Extended Network Settings

The VRE3000 Wi-Fi Extender supports 2.4 GHz and 5 GHz Wi-Fi networks.

From the Dashboard, click the **>** in the **Extended Network** card.

The Extended Network screen is divided into 5 tabs:

1. Network Settings
2. Available Networks
3. WPS
4. Extender Placement
5. Wireless MAC Authentication




### *Managing the Extender's IP Address*

You can change the type of connection between the Wi-Fi Extender and the Wi-Fi Router (DHCP or Static IP).

1. Go to **Extended Network** > **Network Settings**.
2. Under **Network**, in the **Connection Type** field, select:
   - **Automatic Configuration –DHCP** to have your Wi-Fi Extender's IP address assigned by your Wi-Fi router

   or
   - **Static IP** to use a fixed address to connect to the internet.
3. Click **Save**.

### *Changing the Wi-Fi Extender's Name*

You can change the name of your Wi-Fi Extender to make it easier to find in a list of devices. The default device name is VerizonExtXXXX, where XXXX is the last four characters of the default MAC address.

1. Go to **Extended Network** > **Network Settings**.
2. Under **Network**, enter the new **Device name**.
3. Click **Save**.

### *Changing the Extended Network Names and Passwords*

1. Go to **Extended Network** > **Network Settings**.
2. Scroll down. Here you'll find information for both the 2.4 GHz and 5 GHz extended networks. From here you can change the **Network name (SSID)** and **Password** fields, as well as **Security mode**, **Channel** and **Channel width**, for each extended network.
3. Click **Save**.

Note: Wi-Fi devices will disconnect from the extended network when the network name and password are changed. To avoid interruptions in the connection when moving between the router's Wi-Fi network and the extended network, it's recommended that the network names and passwords of both networks match.

### *Turning Off the SSID Broadcast*

You can turn off **Broadcast network name (SSID)** so that the name of the extended network won't appear in the list of available networks of nearby Wi-Fi devices. To connect to your network, others will have to know the network name (SSID) and enter it manually into their Wi-Fi Settings along with the password.

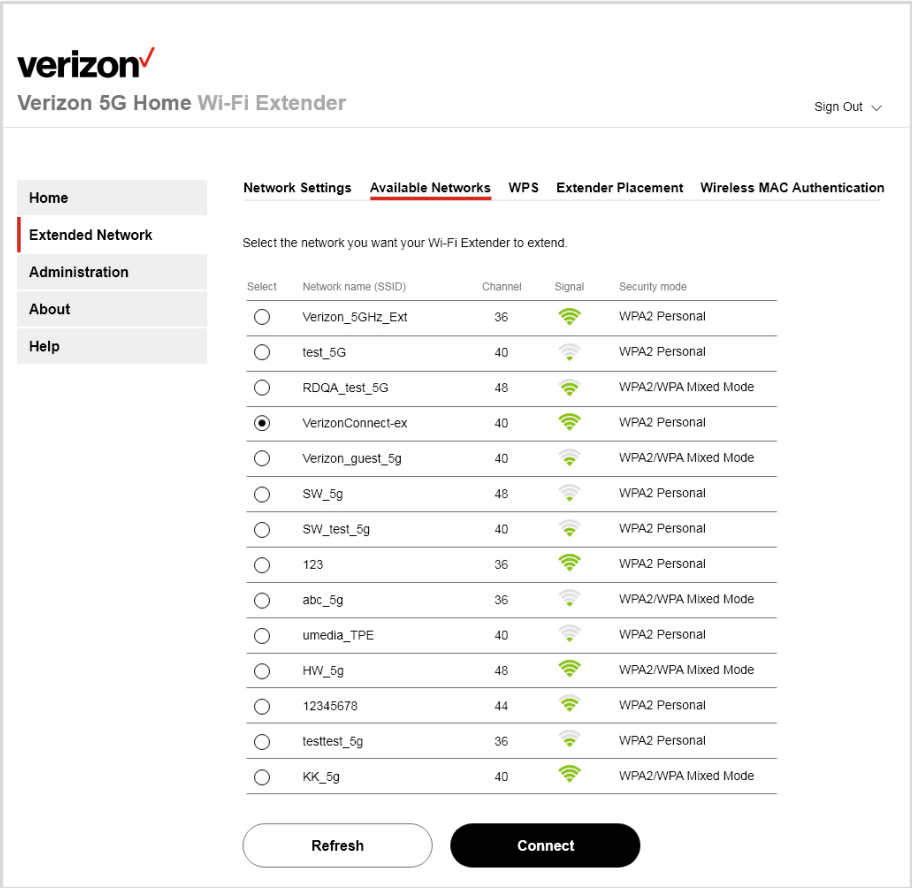
1. Go to **Extended Network** > **Network Settings**.
2. Scroll down. Here you'll find information for both the 2.4 GHz and 5 GHz extended networks. Each network has its own **Broadcast network name (SSID)** switch. Click each one to turn it **Off**.
3. Click **Save**.

Note: If the router is broadcasting the network name, it will still be detectable to other devices. Consult your router's user guide for information on turning off your router's Broadcast network name (SSID) setting.

### *Selecting a Network to Extend*

If your Extender becomes disconnected from your router's network, or if you want to change which network it's extending, you can choose one from the list of available networks.

1. Go to **Extended Network > Available Networks**. (You may need to wait while the Extender scans for available networks.)
2. Follow the onscreen instructions. You can connect with WPS or select a network from the list and connect using a password.

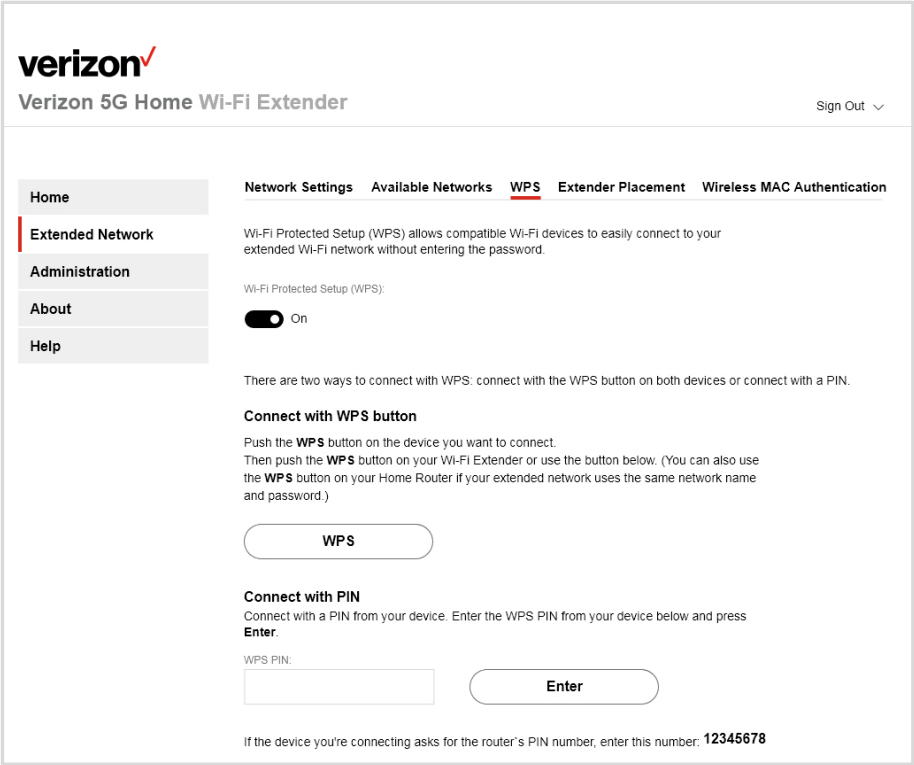



### *Connecting Devices to the Extended Network with WPS*

Wi-Fi Protected Setup (WPS) allows compatible Wi-Fi devices to easily connect to your extended Wi-Fi network without entering the password.

1. From the **Extended Network** screen, tap the **WPS** tab.
2. Turn on **Wi-Fi Protected Setup (WPS)**.
3. Follow the onscreen instructions to **Connect with WPS button** or **Connect with PIN**.

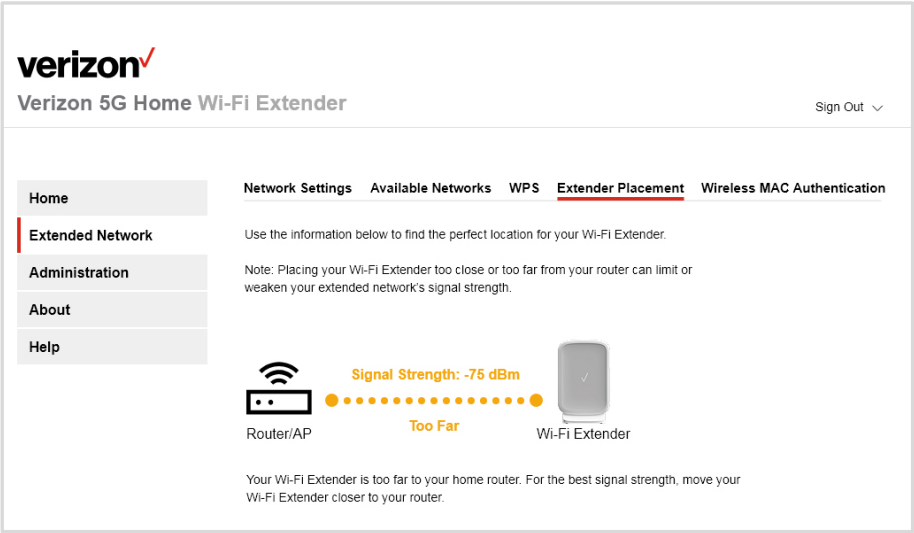
Note: If your device asks for a PIN number, you'll find that on this screen as well.



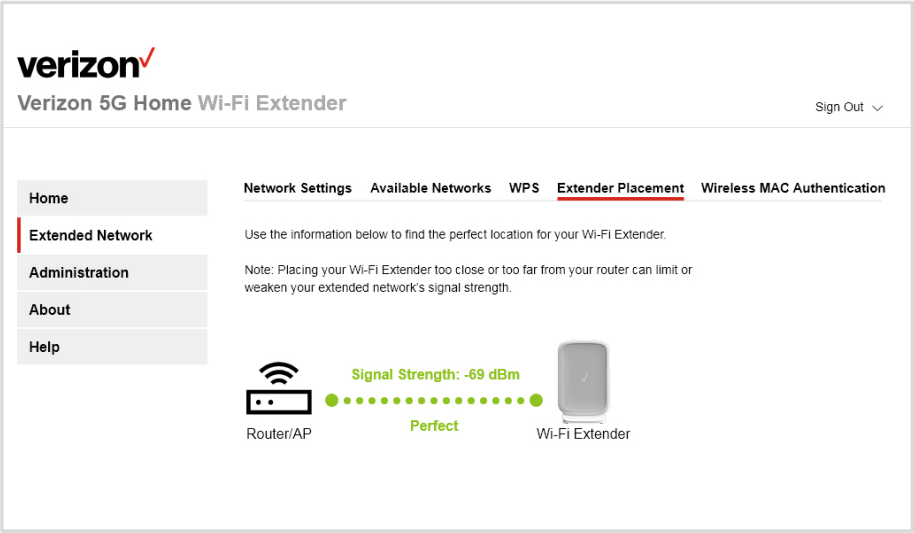

### *Finding the Best Location for your Wi-Fi Extender*

To get the best coverage for your extended network, you need to place your Wi-Fi Extender far enough from your router to extend coverage, but close enough to have a strong signal. The Extender Placement tool in the Admin website can help you do that.

1. From the **Extended Network** screen, tap the **Extender Placement** tab.
2. The tool will tell you if your Extender is too close, too far, or perfectly placed.



3. If your Extender placement isn't perfect, follow the onscreen instructions about how to improve its location. Repeat as needed until it's perfect.

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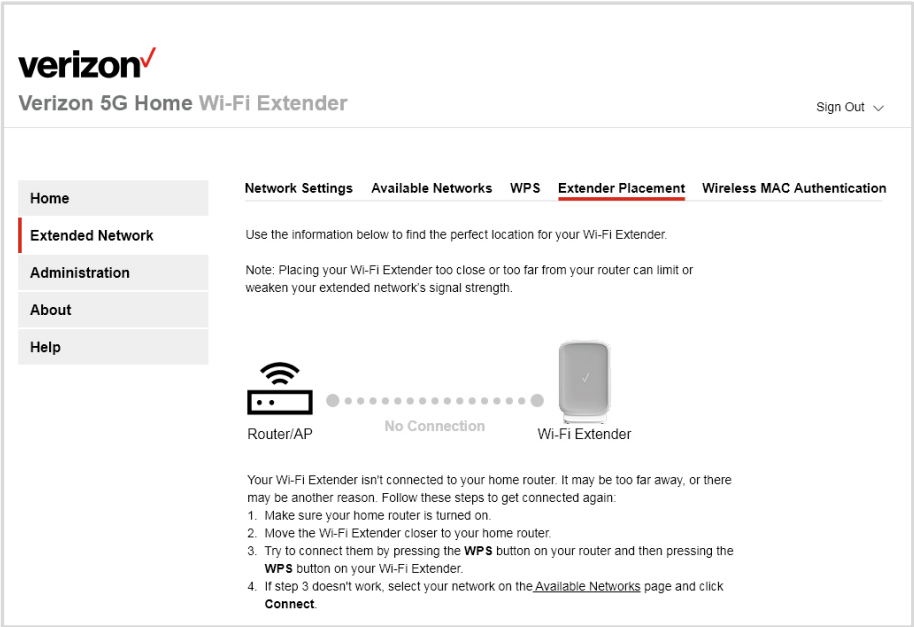
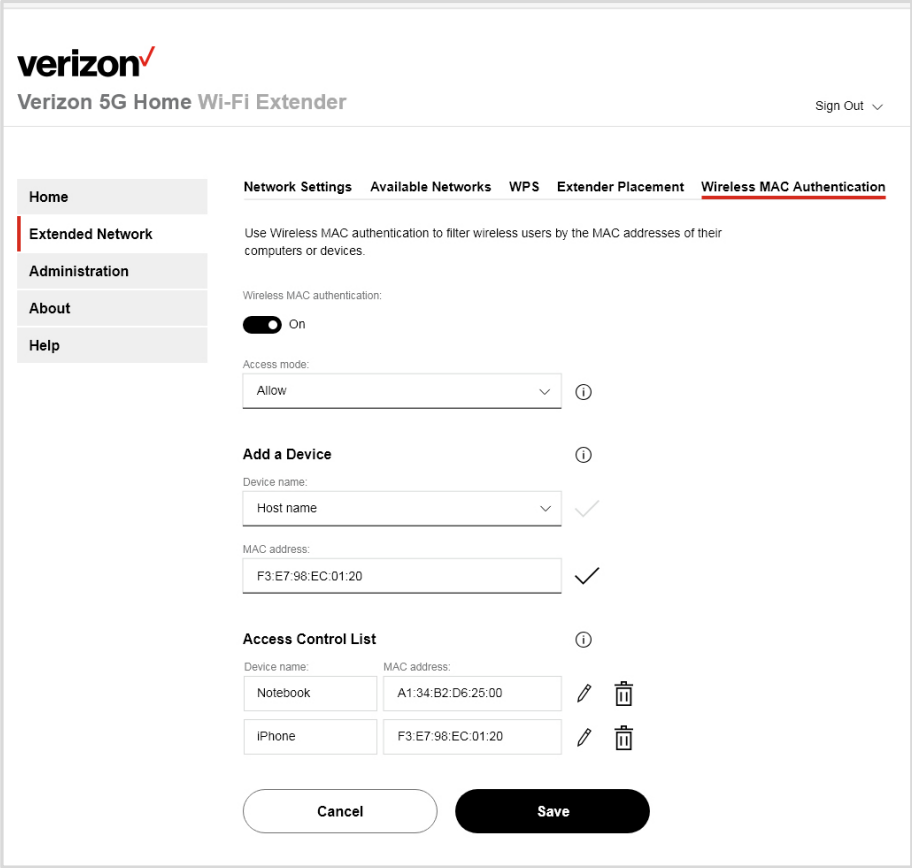


### *Controlling Access with Wireless MAC Authentication*

Wireless MAC authentication can be used to block or allow wireless users by the MAC addresses of their computers or devices.

1. Go to **Extended Network** > **Wireless MAC Authentication**.
2. Turn on **Wireless Mac authentication**.
3. Under Access mode, select **Allow** to let only selected devices connect, or select **Deny** to prevent selected devices from connecting.
4. Add or remove devices from the Access Control List.
5. Click **Save**.



## Administration Settings

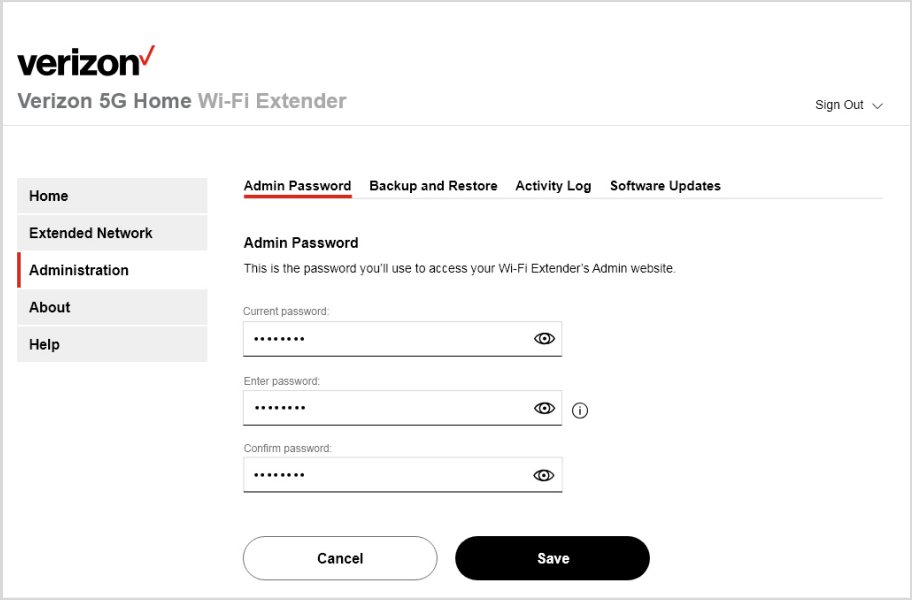
From the Dashboard, click the **>** in the **Administration** card or click **Administration** in the side bar.
The Administration screen is divided into 4 tabs:

1. Admin Password
2. Backup and Restore
3. Activity Log
4. Software Updates

### *Changing the Admin Password*

For better security, we recommend you change the Admin password from the default password.
Note: The factory default sign in password is “admin”.

1. Go to **Administration > Admin Password**
2. Enter the **Current password**.
3. Enter and confirm the new password.
4. Click **Save**.




### *Backing up your Extender’s Settings and Restoring Them*

You can create a backup file of your Extender’s settings and save it to your computer. Later, if you have to reset your Extender’s settings, you can restore them from the saved file.

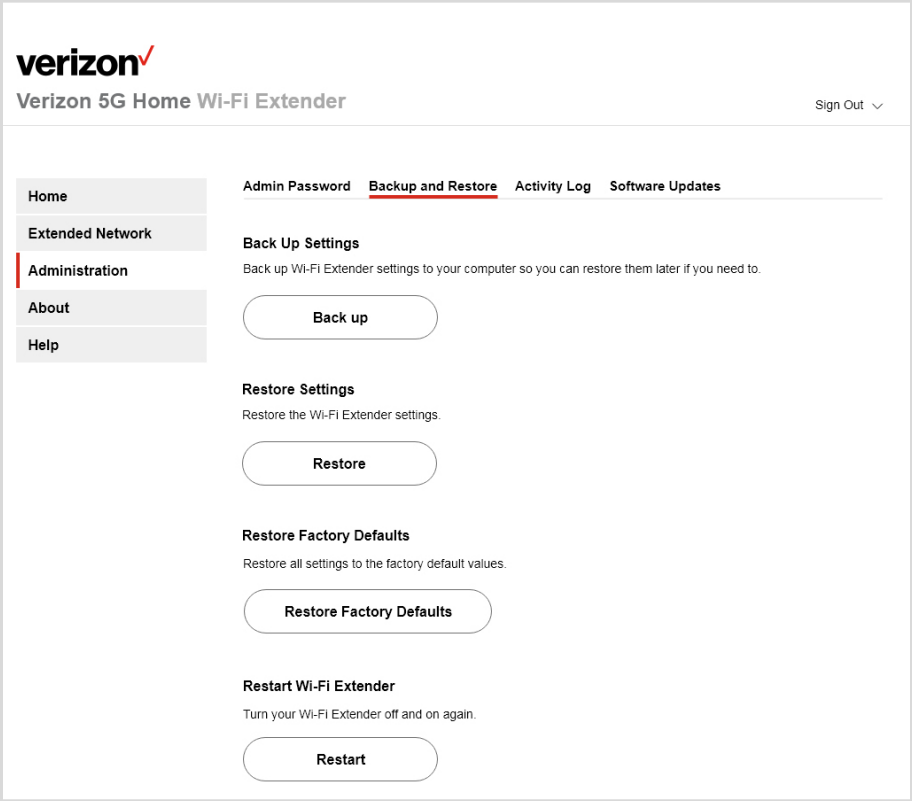
1. Go to **Administration > Backup and Restore**.
2. Click **Back up** and follow the instructions to save a backup file to your computer.

From this same page you can also click:

- **Restore Settings** to restore the Wi-Fi Extender backup settings from the file on your computer.
- **Restore Factory Defaults** to restore all settings to the default values. This will erase all settings on your Wi-Fi Extender. Devices connected to your extended network may become disconnected.

Note: You can also Restore Factory Settings by pressing the **Reset** button on the Extender and holding for 10 seconds.

- **Restart** to turn the Extender off and on again.

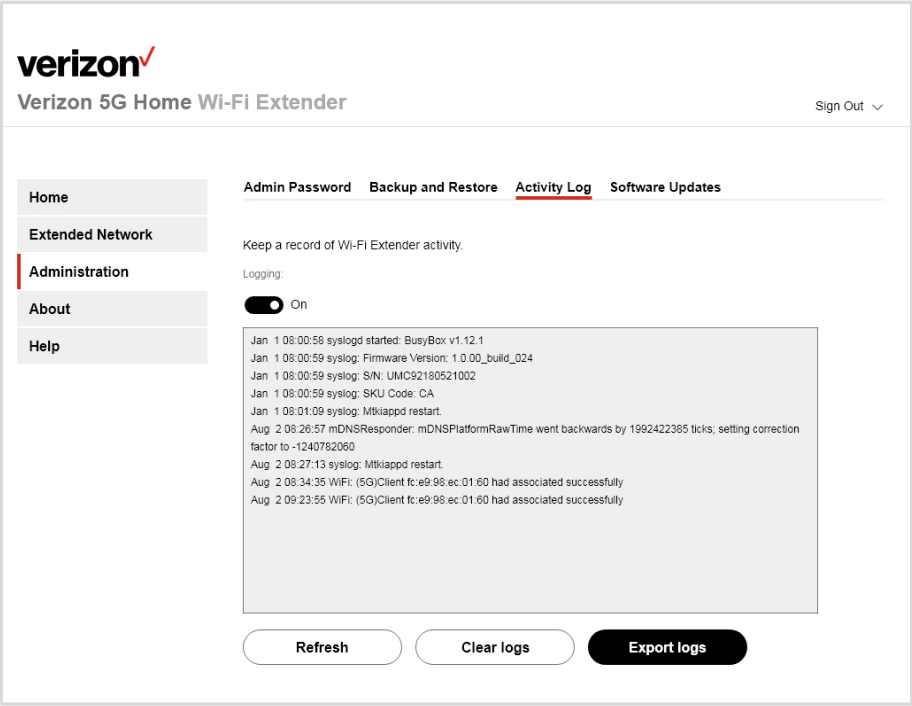



### *Using Activity Logs*

You can keep and download a record of Extender activity.

Go to **Administration > Activity Log**

- To keep a record of Extender activity, turn on **Logging**.
- To download the log, click **Export**.

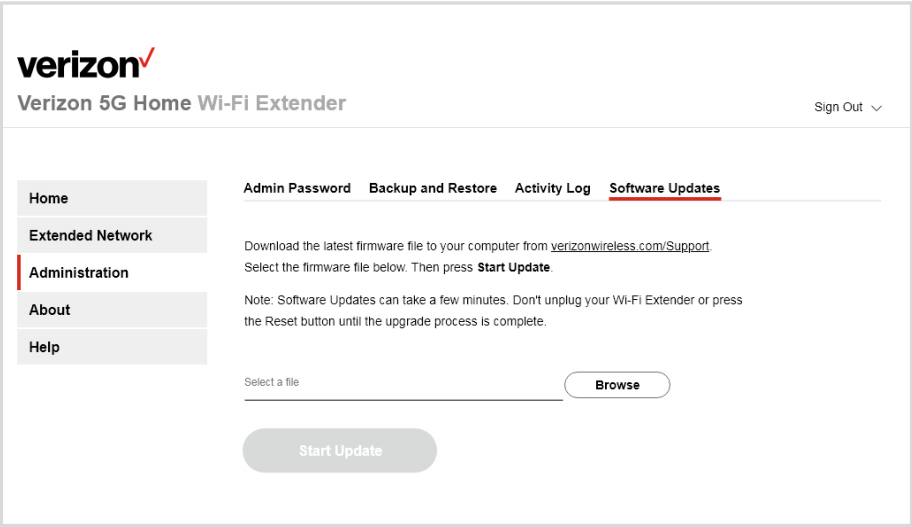



### *Getting Software Updates for Your Extender*

Periodically, you'll want to check for available updates for your Extender.

1. Go to **Administration > Software Updates**
2. Follow the onscreen instructions to download the update to your computer and update the Extender.

Note: Software updates can take a few minutes. Don't unplug your Wi-Fi Extender or press the Reset button until the upgrade process is complete.

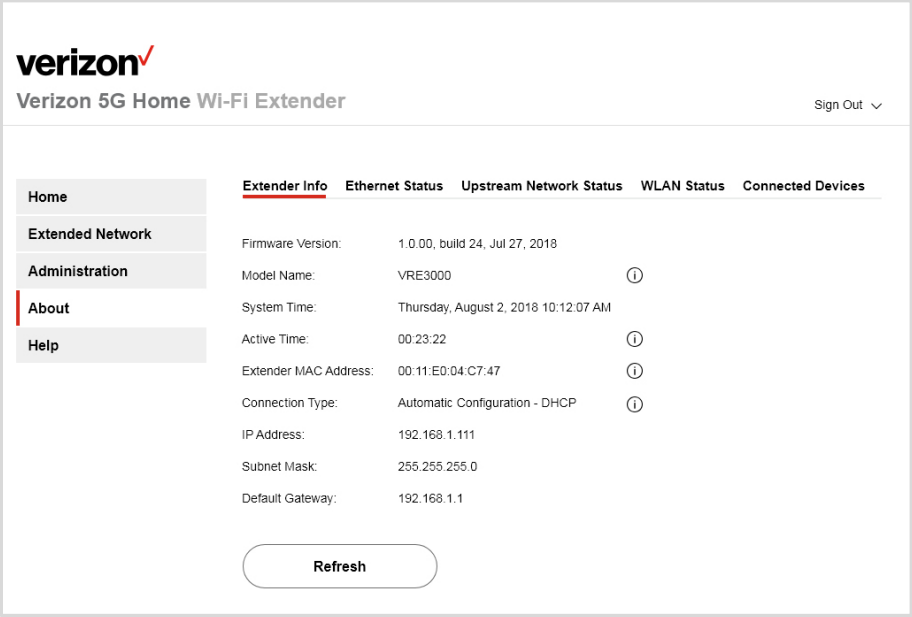


## The About Screen

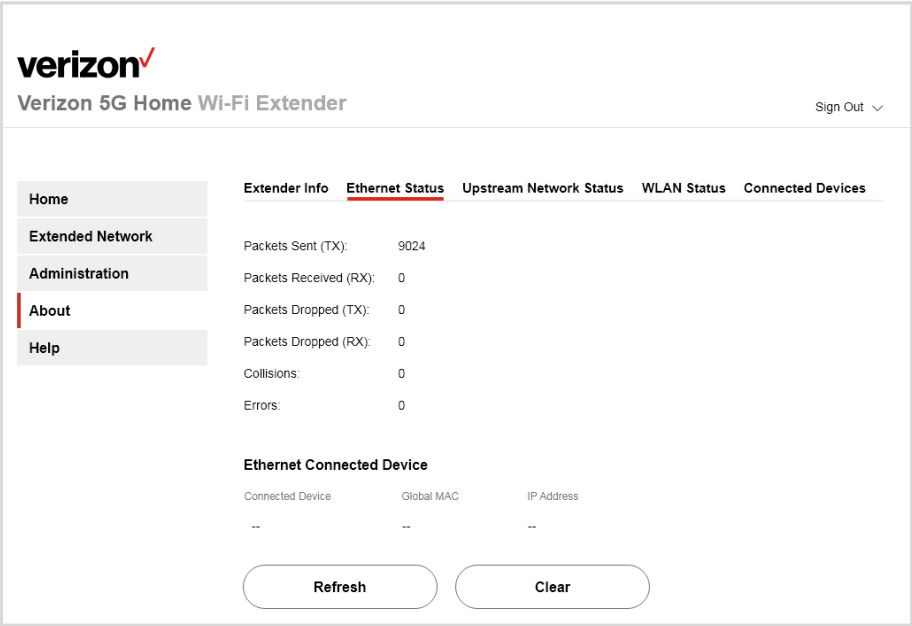
From the Dashboard, click the **>** in the **About** card or click **About** in the side bar.

The About screen is divided into 5 tabs of information about your Extender, its status, and devices connected to the extended network:

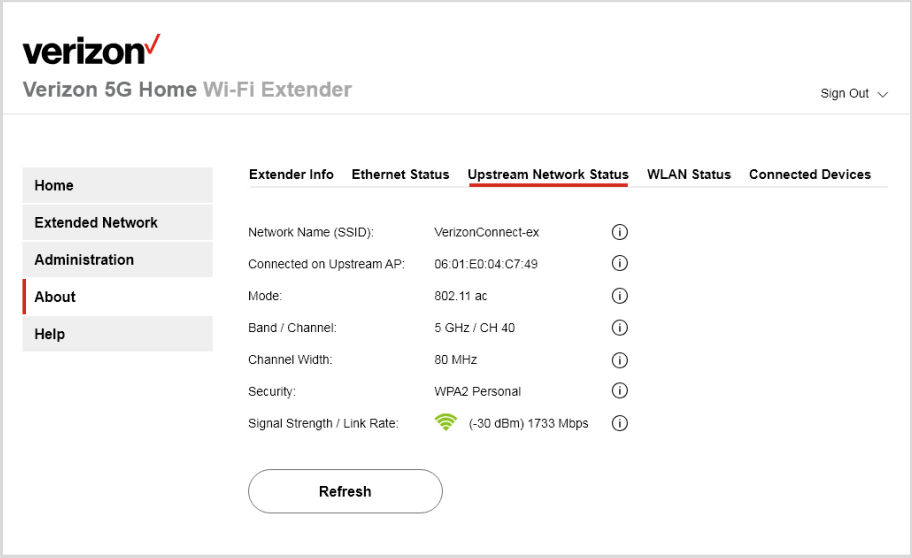
1. Extender Info



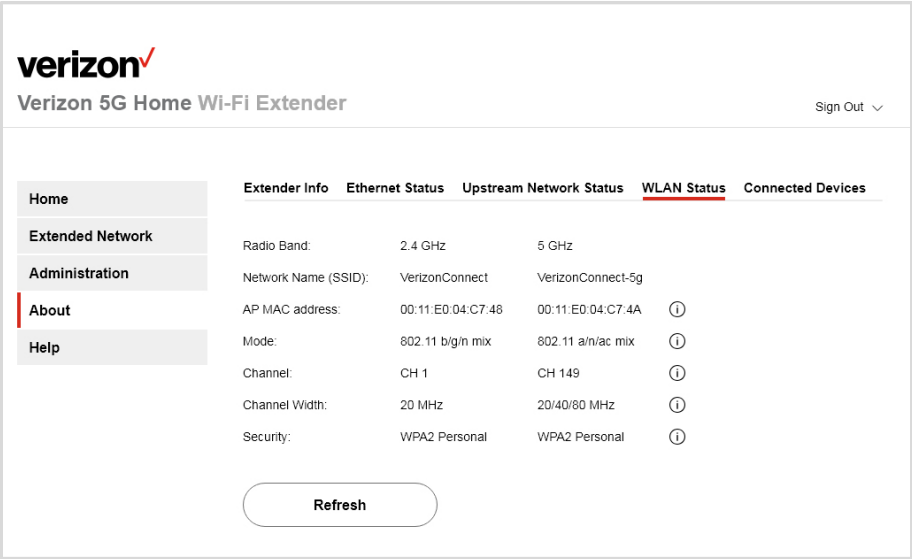

2. Ethernet Status



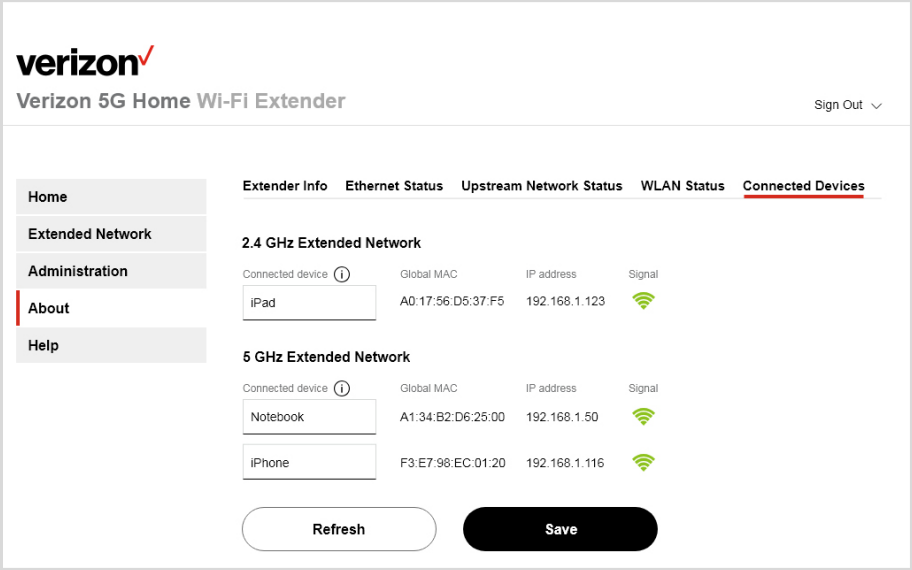
3. Upstream Network Status




4. WLAN Status



5. Connected Devices

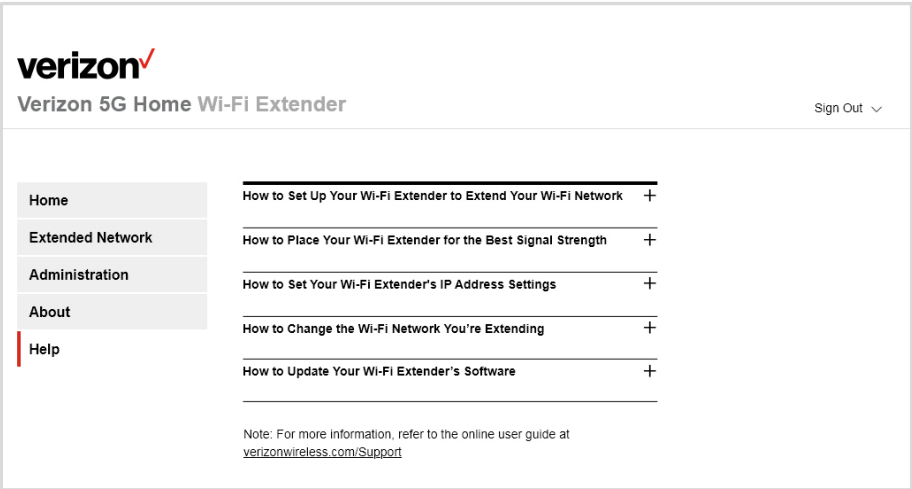



Note: You can rename connected devices on the **Connected Devices** screen to make them easier to identify.

## The Help Screen

From the Dashboard, click the **>** in the **Help** card or click **Help** in the side bar.

From here you'll find instructions on a variety of Help topics and a link to **verizonwireless.com/Support**.



# 5

# Troubleshooting

## Frequently Asked Questions

# Frequently Asked Questions

### *Q1. How do I know if my computer or tablet is directly connected to the Wi-Fi Extender?*

- **If your Extender hasn't been connected to router yet, or has recently been reset:** You can check your computer or tablet's Wi-Fi settings to see if it's connected to the Extender's default Wi-Fi network. You'll find the **Default Network Name** on the sticker on the bottom of the Extender.

- **If your Extender has been connected to a router:** Make sure your device is connected to the extended network. Then follow the instructions in Chapter 4 Wi-Fi Extender Settings: Using the Admin Website: Signing In to the Admin Website. If you're able to connect to the Admin website, your device is connected to the Extender.

### *Q2. What can I do if I cannot access the Extender's Admin website?*

1. Make sure you're connected to the correct Wi-Fi network:
   - If your Extender isn't connected to a router or has been reset, connect to the Default Network listed on the sticker on the bottom of the Extender.
   - If your Extender is connected to a router, connect to the extended network. (Usually this will have the same network name and password as your router's network.)

2. Check your connection:
   - **If your computer or tablet is connected via Wi-Fi:**
     a. Disconnect the device from the Wi-Fi network.
     b. Move the device closer to the Wi-Fi Extender.
     c. Reconnect to the network.
   - **If you're using a computer connected via an Ethernet cable to the Wi-Fi Extender:** Make sure that the cable is connected at both ends.

### *Q3. What can I do if I forgot my Admin password?*

- If you haven't changed the default Admin password, it's **admin**.
- If you changed the password and forgot it, the only way to access the Admin website is to reset your Extender to Factory Default Settings. (See Q4.)

Note: Returning your Extender to factory default settings will erase all settings on your Wi-Fi Extender. Devices connected to your extended network may become disconnected.

### *Q4. How do I reset my Wi-Fi Extender to its factory default settings?*

**To reset your Extender from the Extender itself:**

1. Press the **Reset** button on the back of your Extender for at least 10 seconds until the **Power** indicator turns off.

2. The Extender will reset to factory default settings and turn back on again.

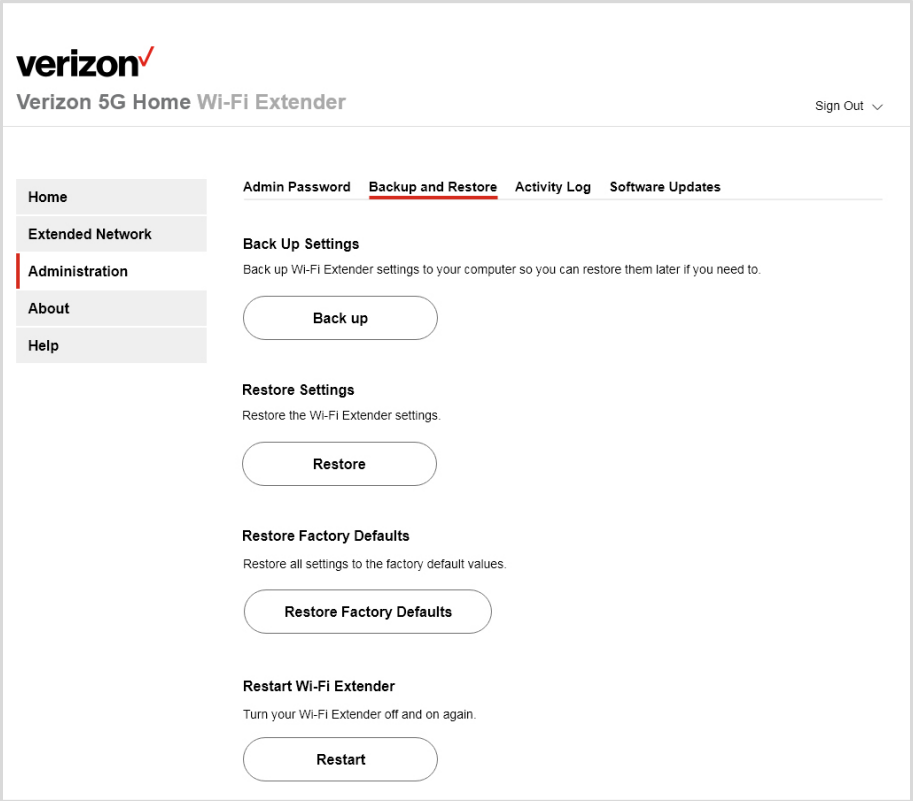
**To reset your Extender from the Admin website:**

1. Go to **Administration > Backup and Restore**.
2. Click **Restore Factory Defaults**.

Both of these options will erase all the settings on your Wi-Fi Extender. Devices connected to your extended network may become disconnected.

Note: Before resetting your Extender, you may want to back up your settings, so you can restore them later.

1. From the Admin website, go to **Administration > Backup and Restore**.
2. Click **Back up** and follow the instructions to save a backup file to your computer.
3. Reset your Extender following the steps above.
4. When you're ready to restore your settings, come back to **Administration > Backup and Restore.**
5. Click **Restore Settings** to restore the Wi-Fi Extender backup settings from the file on your computer.




## *Q5. Why can't I connect my Wi-Fi Extender to my router using WPS?*

Your VRE3000 Wi-Fi Extender is designed to work with routers that have the 5 GHz Wi-Fi band (Band-1: 5150MHz ~ 5250MHz). Before you begin, make sure that your Wi-Fi router has this band. One way to check is to see if its network name (SSID) ends with "-5g". (Check your router's user guide, if you're not sure.)

Also, some routers do not support WPS.

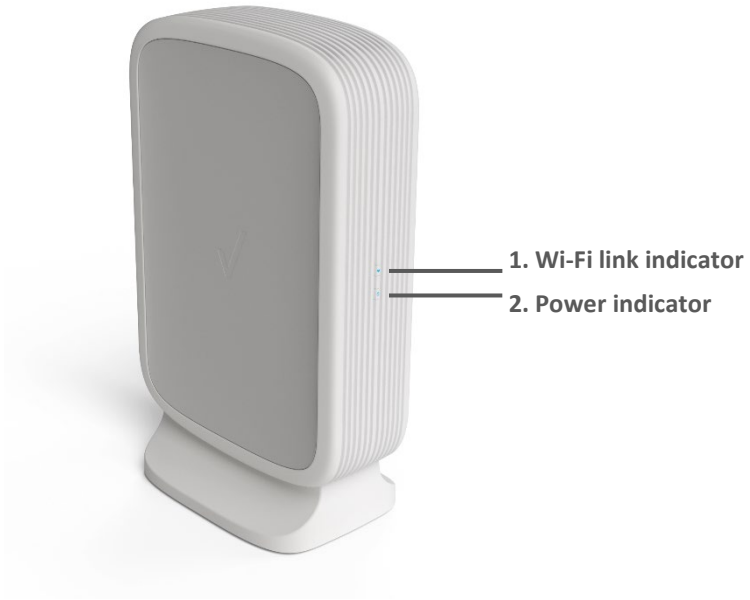
But don't worry. If your router does have the 5 GHz band, but doesn't have WPS, it's still easy to connect. If you're connecting a router for the first time (or have recently reset your Extender) connect to the Admin website and follow the instructions in the Setup Wizard to connect manually.

Or in the Admin website, go to **Extended Network** > **Available Networks** to select and connect to your router's Wi-Fi network.

## *Q6. I'm connected to the extended network. Why don't I have an internet connection?*

If your device is connected to the extended network, but doesn't have an internet connection, follow these steps to troubleshoot the problem:

1. Make sure your Wi-Fi Extender is connected to the Wi-Fi router. Look at the Wi-Fi Link indicator. If the light is solid blue, you have a connection. If it's blinking. Move to step 2.




2. Check to see if your Wi-Fi router or modem has internet connection. If it doesn't, restart your router or modem.
3. If the problem persists, check your modem ISP connection and restart the modem. (For wireless modems, make sure the modem is connected to the wireless network. For wired modems, check the cables connected to your modem.)
4. If your router still doesn't have an internet connection, contact your ISP (Internet Service Provider) for assistance.

## *Q7. How do I know if my Wi-Fi Extender is connected to the Wi-Fi Router?*

The quickest way is to look at the Wi-Fi Link indicator:

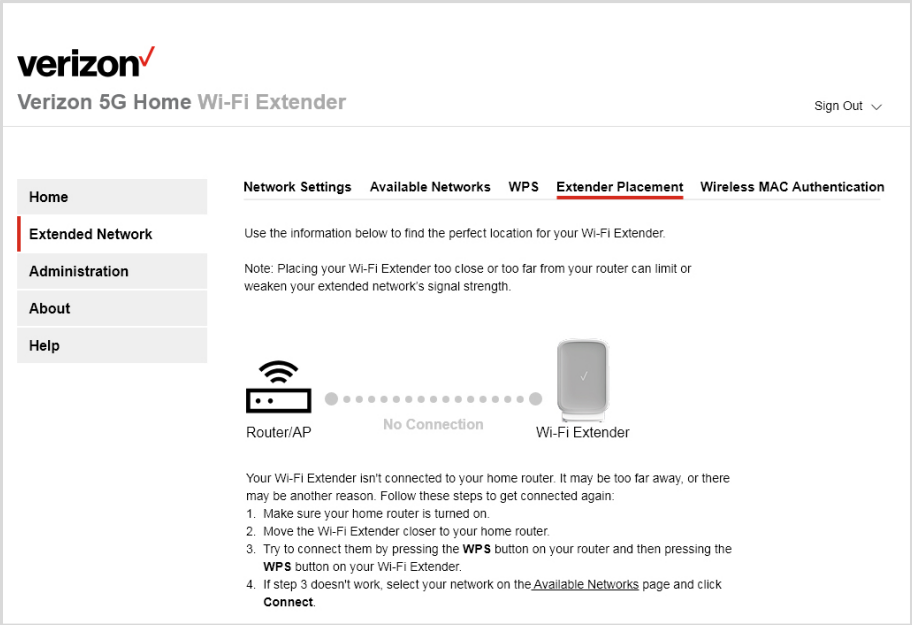
- If it's solid blue, your Extender is connected to your W-Fi router.

- If it's flashing, either the Wi-Fi router isn't avaliable or the Wi-Fi Extender has been reset to default settings. You can check your Wi-Fi device's list of available networks. If you see the Extender's default network name, **Verizon Extender Setup - XXXX**, it hasn't connected to a router yet (or has been reset to factory default settings.) Follow the instructions in the Getting Started section of this guide to connect your Extender to your router.

Note: You can see the full **Default Network Name** on the sticker on the bottom of your Extender.

If your Extender has already connected to a router, but you think it's lost the connection or you want to check the quality of the connection, you can check the Extender Placement tool.

1. Sign in to the Extender's Admin website. On your computer or tablet, open a web browser and enter:
   - **http://verizonre** (Windows and Android)
   - **http://verizonre.local** (Mac OS X or iOS)
2. You'll see the Extender Placement tool in the Dashboard. Tap the **>** in the Extender Placement card for more information, including steps to follow if the tool says **No connection**.




Note: For more information on connecting your Wi-Fi Extender to your Router, go to chapter 3 Getting Started.

## *Q8. Can the Wi-Fi Extender's Network Names (SSIDs) be the same as that of my existing Wi-Fi Router?*

Yes. It's recommended that your Extender's 2.4 GHz and 5 GHz extended networks' network names be the same as your router's network names. This will enable you to move between your router's network and the extended network's coverage areas without having to switch manually or becoming disconnected.

To manage your Extender's network names, from the Admin website, go to **Extended Network** > **Network Settings**.

Note: Don't forget to scroll down and click **Save** when you're done.

# 6

# Product Spec. and Regulatory Information

Product Specifications

Regulatory Information

# Product Specifications

## Hardware Feature

**Wired Interface**

Two 10/100/1000 gigabit Ethernet ports by RJ45 connectors, with auto MDIX sensing, for connecting Ethernet-capable client devices to the home wireless network.

**Wireless Interface**

- IEEE 802.11ac wireless interface, backward compatible with 802.11a/n
- IEEE 802.11b/g/n wireless interface
- Tri-band concurrent (2.4 GHz and 2 x 5 GHz)
- 6 x internal antennas
- Wi-Fi Protected Setup (PIN and PBC)

**I/O Interface**

- 1 x DC-Jack
- 2 x 10/100/1000 Gigabit Ethernet ports by RJ45 connectors
- 2 x Buttons (Reset, WPS)
- 3 x LED (WPS, Power, Wi-Fi)

**Power Supply Specification**

| Characteristic | Specification |
|---|---|
| Type | External, switching, barrel jack |
| Input Voltage | 100-240 V |
| Input Frequency Range | 50~60Hz |
| Output Voltage / Current | DC 12V/2A |
| Efficiency Level | 6 |
| CEC compliant | Yes, Level 6 |

## Internal Antenna Specification

2x2 dual band antenna (2.4 GHz and 5 GHz band)
4x4 single band antenna (5 GHz band)

## Firmware Feature List

- http Browser-based GUI for user configuration
- Setup Wizard with WPS or connect manually
- Available Networks for user choosing upstream
- Configuration backup and restore

- DHCP server for easy device setup
- IPv6 pass through support
- Wireless Security (WPA-Personal and WPA2-Personal)
- Upgradeable Firmware from GUI
- 802.11k roaming support
- Automatically choose better 5 GHz as dedicated backhaul link
- Support DFS channels for both AP and STA mode (future supporting)
- Wireless MAC Authentication
- Dual Image for fail-safe update
- Smart WPS process for both upstream link and client
- NTP with Time zone, daylight saving
- Extender Placement
- NetBIOS/mDNS/URL domain name for web connection
- URL redirection while no uplink connection
- Activity Log
- Only signed image is allowed for FW update

## Operational and Environmental Requirement

- Operational Temperature: 0$^{o}$ C to 40$^{o}$ C (32$^{o}$ F to 104$^{o}$ F)
- Storage Temperature: -20$^{o}$ C to 60$^{o}$ C (-4$^{o}$ F to 140$^{o}$ F)
- Operational Humidity: 10% to 80% relative humidity, non-condensing
- Storage Humidity: 5% to 90% non-condensing

## Certification/Regulation Requirement

- FCC
  - 5150 MHz to 5250 MHz
  - 5260 MHz to 5320 MHz
  - 5500 MHz to 5700 MHz
  - 5725 MHz to 5850 MHz
- UL 60950-1
- 802.11ac and 802.11a/b/g/n Wi-Fi certification (AP mode)
- WPS certification

# Regulatory Information

### Federal Communications Commission (FCC) Statement

**This device is intended for indoor use only.**

15.21

**You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.**

15.105(b)

This equipment has been tested and found to be within 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 environment. This equipment 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 equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

**This device complies with Part 15 of the FCC Rules.**

**Operation is subject to the following two conditions:**

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

**FCC RF Radiation Exposure Statement:**

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

**Allowed maximum gain (dBi), including antenna cable loss**

| Frequency Band | Antenna gain (dBi, including cable loss) |
|---|---|
| 2.4 GHz | 2.9 dBi |
| 5 GHz (low band) | 3.4 dBi |
| 5 GHz (high band) | 3.8 dBi |

End user product of external antennas available from vendors specified by the equipment supplier. Please contact the equipment supplier for end user antenna and connector recommendations

***RF Exposure Content***

### FCC Equipment Authorization ID: SI5VRE3000

This device is authorized for use in mobile applications. At least 20 cm (8 in) of separation between the user's body must be maintained at all times.