



SURFboard SBX-AC1200P Network Extender

User Guide

STANDARD PN 365-095-28246 x.1

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Important Safety Instructions

Read This Before You Begin — When using your equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- Read all of the instructions listed here and/or in the user manual before you operate this device. Give particular attention to all safety precautions. Retain the instructions for future reference.
- This device must be installed and used in strict accordance with manufacturer's instructions, as described in the user documentation that is included with the device.
- Comply with all warning and caution statements in the instructions. Observe all warning and caution symbols that are affixed to this device.
- To prevent fire or shock hazard, do not expose this device to rain or moisture. The device must not be exposed to dripping or splashing. Do not place objects filled with liquids, such as vases, on the device.
- This device was qualified under test conditions that included the use of the supplied cables between system components. To ensure regulatory and safety compliance, use only the interface cables and install them properly.
- Do not overload outlets or extension cords, as this can result in a risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. They may result in a shock or fire hazard.
- Do not connect the plug into an extension cord, receptacle, or other outlet unless the plug can be fully inserted with no part of the blades exposed.
- Postpone installation until there is no risk of thunderstorm or lightning activity in the area.
- Do not use this product near water: for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.
- Do not cover the device or block the airflow to the device with any other objects. Keep the device away from excessive heat and humidity and keep the device free from vibration and dust.
- Wipe the device with a clean, dry cloth. Never use cleaning fluid or similar chemicals. Do not spray cleaners directly on the device or use forced air to remove dust.
- For added protection, unplug the device from the wall outlet and disconnect the cables to avoid damage to this device due to lightning and power surges.
- Upon completion of any service or repairs to this device, ask the service technician to perform safety checks to determine that the device is in safe operating condition.
- Do not open the device. Do not perform any servicing other than that contained in the installation and troubleshooting instructions. Refer all servicing to qualified service personnel.
- This device should not be used in an environment that exceeds 40° C (104° F).

SAVE THE ABOVE INSTRUCTIONS

Temperature Requirements

The Network Extender is capable of operating in an ambient temperature range of 0° - 40°C, without any functional performance degradation.

FCC STATEMENTS

FCC Interference Statement

This equipment 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 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 device 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 device.
- Increase the separation between the device and 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/TV 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, and (2) This device must accept any interference received, including interference that may cause undesired operation.



FCC CAUTION: Any changes or modifications not expressly approved by ARRIS for compliance could void the user's authority to operate the equipment.



IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 30cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Country Code selection feature to be disabled for products marketed to the US/CANADA Operation of this device is restricted to indoor use only.

FCC DECLARATION OF CONFORMITY

ARRIS Enterprises, Inc. 3871 Lakefield Drive, Suwanee, GA 30024, 1-215-323-1000, declares that the SURFboard SBX-AC1200P Network Extender complies with 47 CFR Parts 2 and 15 of the FCC rules as a Class B digital device.

INDUSTRY CANADA (IC) STATEMENT

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1) l'appareil ne doit pas produire de brouillage; et 2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-3 (B)/NMB-3 (B)

IC Warning:

This radio transmitter (IC: 6670A-SBXAC1200P) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

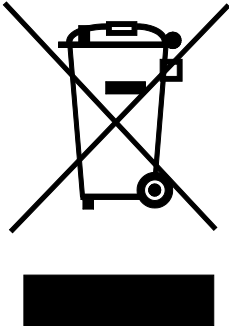
Antenna		Peak gain (dBi)		
Type	Connector	2400~2483.5MHz	5150~5250MHz	5725~5850MHz
Dipole	I-pex	3.1	3.34	2.7
Dipole	I-pex	2.85	2.37	3.44

IC Avertissement:

Le présent émetteur radio (IC: 6670A-SBXAC1200P) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Antenne		Gain de crête (dBi)		
Type	Connecteur	2400~2483.5MHz	5150~5250MHz	5725~5850MHz
Dipôle	I-pex	3.1	3.34	2.7
Dipôle	I-pex	2.85	2.37	3.44

CARING FOR THE ENVIRONMENT BY RECYCLING



When you see this symbol on an ARRIS product, do not dispose of the product with residential or commercial waste.

Recycling your ARRIS Equipment

Please do not dispose of this product with your residential or commercial waste. Some countries or regions, such as the European Union, have set up systems to collect and recycle electrical and electronic waste items. Contact your local authorities for information about practices established for your region.

Product Overview

Introduction

The SURFboard SBX-AC1200P Network Extender lets you transmit and receive data over power lines in your home. The SURFboard SBX-AC1200P Network Extender connects directly to any outlet in your home to extend and enhance your network connectivity.



About The Network Extender

The SBX-AC1200P Network Extender has the following features:

- RipCurrent™ Gigabit home networking (G.hn) transmits and receives data over your home power lines.
- Supports multiple extenders on the same network.
- Easy plug-and-play installation.
- Compatible with most routers, gateways, and cable modems.

What is RipCurrent?

SURFboard RipCurrent is a technology that allows you to set up a high-speed home network that uses existing AC wiring and outlets. There's no need to run additional cables; your devices can communicate at data rates up to 1 Gbps using the network of power lines that already exists in your home.

The SBX-AC1200P uses its power plug to connect to the power lines that already exist in your home. RipCurrent is based on G.hn Power Line Communication (PLC), which is an ITU Specification managed by the HomeGrid™ Forum. This technology allows the SBX-AC1200P to distribute all data to each of the AC power outlets in the home. With a corresponding G.hn router, your network can be extended to any room, including basements, garages, or far reaching bedrooms. Connect entertainment devices, security cameras, gaming consoles, managed appliance, anything that uses IP (Internet Protocol).

The G.hn technology is more robust than previous home power line communication implementations to give you better 'real world' throughput and stability. G.hn proves much more efficient in an environment with multiple power line networks (such as apartment buildings or office buildings) with the capability of recognizing up to 250 other networks to avoid interference. G.hn communications are encrypted using the advanced standard AES 128-bit encryption for secure transmissions.

In order to ensure the best performance of your G.hn network, we recommend that you only use 3-prong grounded outlets. A 2-prong outlet will operate sufficiently, but with a lower throughput speed.

What's in the Box?

Make sure you have the following items before proceeding:

- SURFboard SBX-AC1200P Network Extender.
- Quick Start Guide.
- Ethernet cable.
- Warranty card.

System Requirements

- Two or more wireless- or Ethernet-enabled computers, printers, smart TVs, or other devices that you want to connect.
- 120VAC home wiring.
- Two or more G.hn-capable devices, such as two SURFboard SBX-AC1200P Network Extenders, or any SURFboard Router with G.hn capability along with this SBX-AC1200P Network Extender.

About this Manual

This manual covers the SURFboard SBX-AC1200P Network Extender. The model number is on the label affixed to the back of the Network Extender.



1. QR Code.
2. MAC address.
3. Serial number.
4. Model number.

Contact Information

Please visit the ARRIS Support website <http://www.SURFboard.com/Support/SBX-AC1200P> for self-help technical support and product documentation. We can also provide technical assistance via chat and email on the support website. ARRIS Support is available by phone at 877-466-8646. Please be prepared to provide your product's model number and serial number, which can be found on the Network Extender's label.

For information on additional SURFboard products, or to purchase SURFboard products (including other RipCurrent-enabled devices), visit <http://www.surfboard.com>.

For informational videos and tutorials about this and other ARRIS products, visit the ARRIS Everywhere YouTube channel at <https://www.youtube.com/user/ARRISmarketing/featured>.

Installing the Network Extender

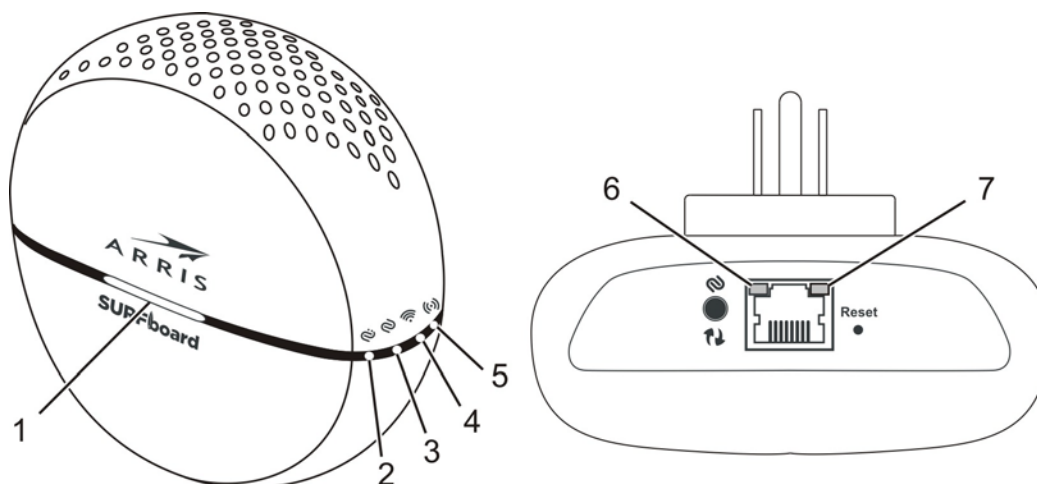


Caution: This product is for indoor use only. Do not route the Ethernet cable(s) outside of the building. Exposure of the cables to lightning could create a safety hazard and damage the product.

If you are installing a Gigabit home networking router (SURFboard or a third-party router) with your SBX-AC1200P, please refer to the Installation and Configuration documentation for your device for setup instructions.

LED Indicators

The Network Extender has the following indicators:



1. **Primary LED:** indicates the status of the device (pairing mode, normal operation, error).
2. **G.hn Link Quality LED:** indicates the signal quality of the G.hn link.
3. **G.hn Pairing LED:** indicates the logical network connection status (not connected, connecting/pairing, connected/paired) and status of data transmission.
4. **2.4 GHz Wi-Fi LED:** indicates the state of the 2.4 GHz wireless interface.
5. **5 GHz Wi-Fi LED:** indicates the state of the 5 GHz wireless interface.
6. **Ethernet 10/100 Mbps link/activity LED:** indicates the status of the 10/100 Mbps link.
7. **Ethernet 1 Gbps link/activity LED:** indicates the status of the 1 Gbps link.

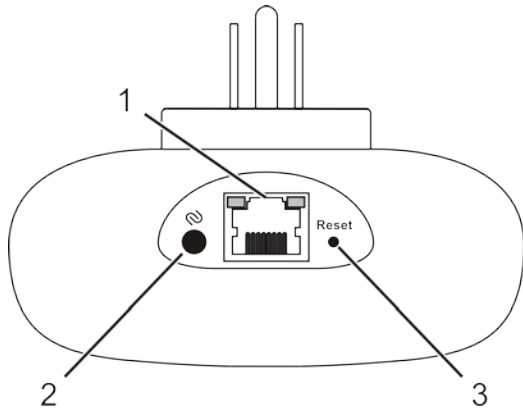
Indicator Lights for the SBX-AC1200P

The Network Extender has several LED indicator lights to assist in troubleshooting.

LED	Color/Behavior	Description
Primary LED	Solid green	Normal operation.
	Flashing amber	WPS pairing mode.
	Flashing red	Start-up mode, or error.
G.hn Link Quality	Solid green	Excellent link.
	Solid amber	Fair link.
	Solid red	Poor link.
	Flashing green	Receiving/transmitting data, excellent link.
	Flashing amber	Receiving/transmitting data, fair link.
	Flashing red	Receiving/transmitting data, poor link.
	Off	No link.
G.hn Pairing	Solid green	Secure pairing complete. Connected to G.hn network with encryption enabled.
	Flashing green	Secure pairing in progress. Trying to connect to G.hn network.
	Solid red	Non-secure pairing complete. Connected to G.hn network without encryption.
	Flashing red	Non-secure pairing in progress. Trying to connect to G.hn network.
	Off	No link.
2.4 Ghz Wi-Fi LED	Solid green	2.4 Ghz wireless interface enabled, but no activity.
	Flashing green	2.4 GHz wireless interface activity.
5 Ghz Wi-Fi LED	Solid green	5 Ghz wireless interface enabled, but no activity.
	Flashing green	5 Ghz wireless interface activity.
Ethernet 10/100 Mbps link/activity	Solid amber	10/100 Mbps Ethernet link activated, but no activity.
	Flashing amber	10/100 Mbps Ethernet activity.
Ethernet 1 Gbps link/activity	Solid green	1 Gbps Ethernet link activated, but no activity.
	Flashing green	1 Gbps Ethernet activity.

Connectors and Controls

The Network Extender has the following connectors and controls:



1. **Ethernet:** Used to connect the Network Extender with a client device such as a computer, printer, gaming console, router, and so on.
2. **G.hn Secure Pairing button:** Initiates secure pairing.



Note: If you hold the Pairing button for more than 15 seconds, the Network Extender resets its pairing defaults (that is, it loses its connection to any securely paired devices).

3. **Reset button:** Can be used either to reset the Network Extender to its factory settings or to restart the Network Extender. Use a pointed non-metallic object to press and hold this button.
 - Press and hold this button for **three to five seconds** to restart the Network Extender as if you power cycled the device.
 - Press and hold this button for **more than 10 seconds** if you want to reset the Network Extender to its factory default settings and restart the device. Any customized settings that you have set **will be lost**.

Configuring and Installing the Network Extender

In order to use Gigabit home networking (G.hn), you must have at least two G.hn devices connected to your power grid. The devices will begin to communicate with each other as soon as they detect each other over the power grid. You can add additional devices later to expand your network.

You can use the RipCurrent network by just plugging in two or more G.hn-enabled devices into the electrical outlets in your home. *However, this network will not be secure. We recommend pairing the devices to add security to the RipCurrent network.*

Once you have paired the devices, you can move them to their permanent locations throughout the house. The devices will not lose their network settings unless they are reset.

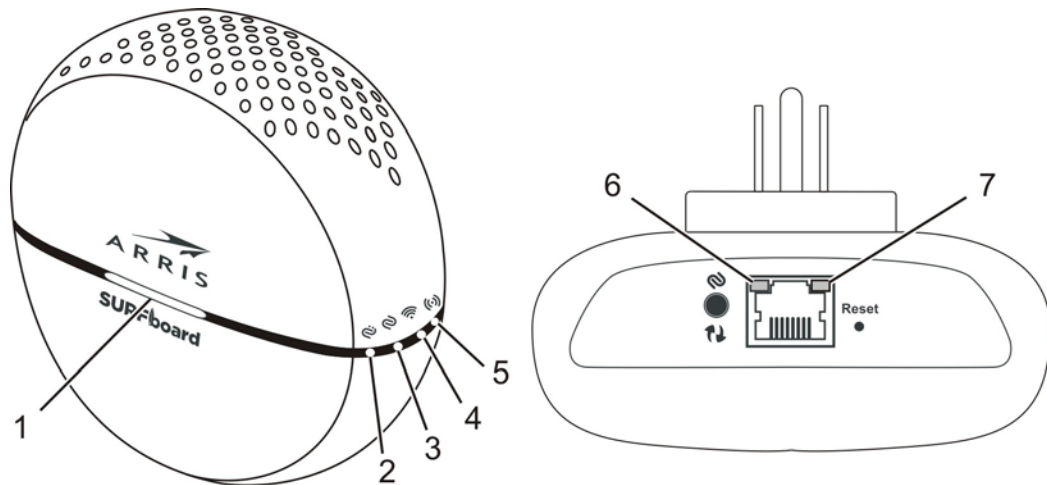
In order to create a secure network, you must securely pair the devices with each other. *Secure pairing* creates a secure connection between two or more G.hn devices on a power grid. It also allows you to help secure your local area network (LAN) by randomizing your domain name and password. Once your devices are securely paired, then devices that have not been securely paired will not be able to connect to your network. We recommend that you securely pair your devices to secure your network.



Important: If your Network Extender is not securely paired to another device, then the G.hn Pairing LED will appear red to indicate that the device is not securely paired.

Follow these steps to securely pair and install your first G.hn devices:

1. Plug in both devices in a location where you can see and easily access both devices. Power up both devices and wait for two minutes for the devices to fully boot before proceeding.
2. Press the **Pairing** button on your SBX-AC1200P to initiate pairing on your SBX-AC1200P. Hold the button for two to three seconds and *then release the button*. The Pairing LED (3 in the illustration shown below) begins to flash green.



3. Go to the second device and follow the steps required to initiate pairing on that device. (These steps may be different, depending on the model number and manufacturer of the second device.)
 - When the devices begin communicating with each other, the Pairing LED 3 on the SBX-AC1200P begins to flash green.
 - When the Pairing LED stops flashing and becomes solid green (in secure mode) or solid red (if paired without encryption), the pairing process is complete. It may take up to 60 seconds for the pairing process to complete.
4. Once the pairing process is complete, you can unplug the devices from the wall and move them to their permanent locations throughout the house. Use the enclosed Ethernet cable to connect the client device, such as a computer, TV, or game console.

Repeat these steps to add additional devices to an existing G.hn network.



Note: The Link Quality LED 2 indicates the signal quality of the G.hn link. Green indicates an excellent link, amber indicates a fair link, and red indicates a poor link. If the LED is red, you may want to move your SBX-AC1200P to a new location to see if you can improve the quality of your G.hn link.



Note: If your pairing is not successful, you can reset the G.hn settings for the Network Extender by pressing and holding the Pairing button for at least 15 seconds. Then, test your connection in unsecured mode before trying again to pair securely.



Note: If you are creating a new network, all of your devices must be set to the factory default settings before you begin. You must reset any devices that have been previously installed.

If you are adding a Network Extender to an existing network, then the Extender must be set to the factory settings, but the Router does not need to be reset. For more details, see the Quick Start Guide for your Extender.

Creating a G.hn Network with a Non-G.hn Router

If your router is not G.hn-capable, you can still create a G.hn network in your home using your SBX-AC1200P and another Network Extender. Use the enclosed Ethernet cable to attach your SBX-AC1200P to a LAN port on your router. The SBX-AC1200P will transmit data from your router over your home's electrical wiring.

You will need a second Network Extender to complete your G.hn network. Follow the instructions in [Configuring and Installing the Network Extender SBX-1000P](#) (page 15) to pair the devices securely and complete your G.hn network.

Managing Your Network Extender

Use the ARRIS SURFboard Manager app or the Network Extender Web Manager to view and monitor the configuration settings and operational status of your SBX-AC1200P.



Note: To be sure that you access the Web Manager on the correct device, please unplug all other Network Extenders on the network. Attach each unit directly and configure each one individually. See [Setting Up Unique IP Addresses](#) (page 30) for more information.

Use the ARRIS SURFboard Manager App

The ARRIS SURFboard Manager app is available for Android™ and Apple® mobile devices at no charge. You can download it on Google Play™ or from the App Store®.

The app lets you manage the SBX-AC1200P directly from your mobile devices. Use the ARRIS SURFboard Manager to view connected devices on your network, manage parental controls, and set other network parameters. Once you have connected your mobile device to the SBX-AC1200P, then you can view and manage the SBX-AC1200P either locally on the network or remotely.

The ARRIS SURFboard Manager lets you scan the QR code on your Network Extender's security label to automatically connect the Network Extender with your mobile device.

The SBX-AC1200P Quick Start Guide also includes QR codes to download this User Guide or connect to the ARRIS Everywhere YouTube channel.



Note: In order to connect your mobile device to the SBX-AC1200P using the QR code, your network must be using the default network name and Wi-Fi security password.

You can download the ARRIS SURFboard Manager on Google Play or from the App Store. Follow the instructions in the app to connect and manage your Network Extender.



Setting Up a Static IP Address

In order to use the Ethernet port on your SBX-AC1200P to view the Network Extender Web Manager, you must set up a static IP address on the computer that you will use to access the Network Extender Web Manager. Use the following procedures to set up a static address of 192.168.100.253 to the computer that you will use to access the configuration screens.



Important: When you have finished configuring your Network Extenders, you must also follow these procedures to return your computer to its original IP and subnet settings.

Setting Up a Static IP Address in Windows 7, Windows 8, or Windows 10

1. Click the **Start** menu and type **network and sharing** into the Search box.
2. Select **Network and Sharing Center** when it appears.
3. Click **Change adapter settings** from the left-side menu.
4. Right-click on your local area connection icon and select **Properties**.



Note: You may have more than one Internet connection listed here. If so, you will need to determine which adapter is your connection to the Internet.

5. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.
6. Click **Use the following IP address** and enter the following values:
 - In the IP address field, enter **192.168.100.253**.
 - In the Subnet mask field, enter **255.255.255.0**.
7. Click **OK**, and then click **OK** to close the Local Area Connection Properties window.



Important: When you have finished configuring your Network Extenders, you must also follow these procedures to return your computer to its original IP and subnet settings.

Setting Up a Static IP Address in Mac OS X

1. From the Apple menu, click **System Preferences**, and then click **Network**.
2. Click **Advanced**.
3. Click **TCP/IP**.
4. In the Configure IPv4 field, select **Manually**.
5. In the IPv4 Address field, enter **192.168.100.253**.
6. In the Subnet Mask field, enter **255.255.255.0**.
7. Click **OK**, and then click **Apply**.



Important: When you have finished configuring your Network Extenders, you must also follow these procedures to return your computer to its original IP and subnet settings.

Start the Network Extender Web Manager



Important: Before you can start the Network Extender Web Manager, you must set up a static IP address on the computer that you want to use to access the Network Extender Web Manager. See [Setting Up a Static IP Address](#) (page 18) for more information.



Important: If you access the Web Manager through the default IP address (192.168.100.254), you should unplug all of your SBX-AC1200P devices except for the one you are trying to manage. This will help to ensure that you are communicating with the correct device.



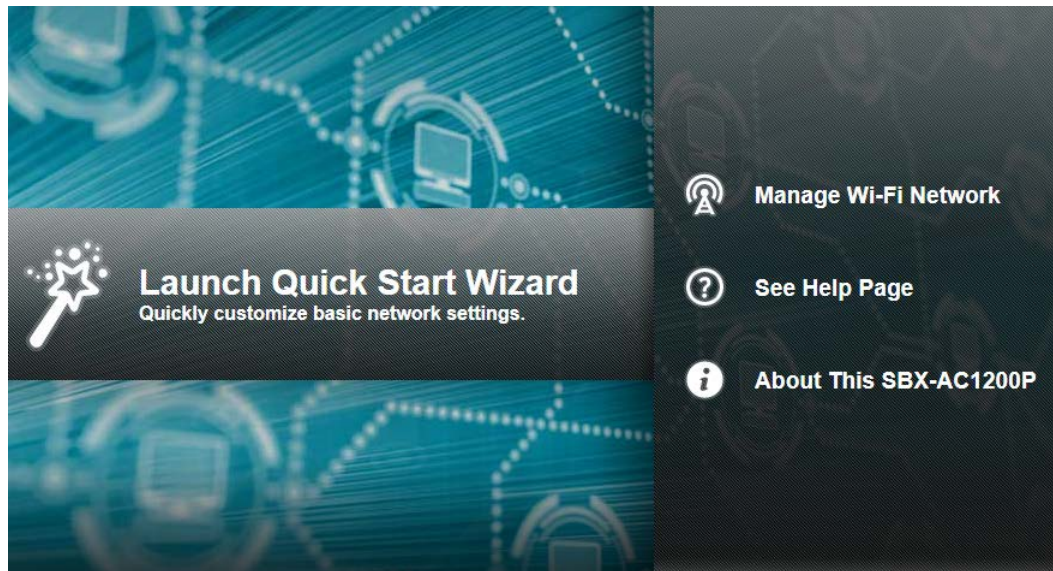
Important: If you are operating your SBX-AC1200P as a Wi-Fi Router instead of a Network Extender, then you must use Wi-Fi to access the SBX-AC1200P Web Manager. See [Operating Your SBX-AC1200P as a Router](#) (page 33) for more information.

1. Use the enclosed Ethernet cable to connect to the Ethernet port on the bottom of the Network Extender. Insert the other end of the Ethernet cable into your computer's Ethernet port.
2. Open a browser window on your computer and navigate to **http://192.168.100.254**. The login screen appears.
3. Type the default user name and password. Both entries are case-sensitive.

Username: **admin**

Password: **password**

4. Click **Login** to open the SBX-AC1200P Web Manager. The SBX-AC1200P Main Screen appears.



Note: Your default password is **password**, and it is case-sensitive. We strongly recommend that you change the login password to prevent unauthorized access. See [Change the Default User Name and Password](#) (page 28) for more information.

Network Extender Web Manager Menu Options

Main Menu Buttons

The SBX-AC1200P main menu buttons are displayed along the top of the SBX-AC1200P Web Manager screen. To display the drop-down submenu options, click the menu button.



Main Menu Links

The SBX-AC1200P main menu and related submenu option links are also displayed along the bottom of the SBX-AC1200P Web Manager screen. To open a submenu option, click the link.

HOME	STATUS	BASIC	ADVANCED	WIRELESS	HELP
	Product Information Security Router Upgrade	Setup Backup and Restore LED Control	RipCurrent™ (G.hn)	802.11 Radio Primary Network Settings Guest Network Settings Access Control Quality of Service Media Advanced	Overview About

Menu Option	Function
Home	Displays the Quick Start Wizard main screen.
Status	Provides information about the Network Extender hardware and software, MAC address, Network Extender IP address, serial number, and related information. Additional screens provide diagnostic tools and also allow you to change your Network Extender user name and password.
Basic	Configures the Network Extender IP-related configuration data, including Network Configuration, WAN Connection Type, DHCP, and DDNS.
Advanced	Controls Internet protocols which configure and monitor how the Network Extender routes IP traffic on the SBX-AC1200P.
Wireless	Configures and monitors the Network Extender wireless networking features.
Help	Provides general information to help you set up your home network.

Get Help

You can choose any of the following three options to obtain help information for any SBX-AC1200P Web Manager function. General help information is available for any SBX-AC1200P menu option when you click the **Help** button on that page.

- [Help Overview](#) (page 22).
- [Help Links](#) (page 23).
- [Field Level Help](#) (page 23).

Help Overview

General help information is available when you click **Help, Overview** on the SBX-AC1200P Main Menu.

Help - Overview

There are two ways to connect a device to the network: **wired** and **wireless**. Both have their strengths and weaknesses.

Wired Connections

Wired connections using Ethernet (also called Cat-5 cables) are easy to install and provide the fastest data connections. However, devices need to be close to the SBX-AC1200P or you need to have cables in place and the device cannot be easily moved around while you are using it.

If you can use a wire to connect the device, Ethernet is your best option. To connect a device using an Ethernet cable, plug one end of the cable into the SBX-AC1200P and the other end into the device you are connecting. That's it, you're done. No changes are needed in the SBX-AC1200P and you probably will not need to make changes to the device.

Wireless Connections

Wireless connections (also called Wi-Fi or 802.11) are flexible and more than fast enough for most of the common uses of the network, especially when 802.11n is used. The most important thing to ensure is that wireless security is enabled.

The placement of the SBX-AC1200P is also important to have the best performance. The SBX-AC1200P should be placed in as central a location within your home as possible.

The easiest way to set up the wireless network is to use the quick start wizard on the home page. This page has all of the settings that you need to set up your SBX-AC1200P.

First, select a name for your network. You should choose a name that is easy to remember but is also unique. This name is how devices know which network to join.

Second, select a passphrase that will be used to protect your wireless network from intruders and eavesdroppers. Again, this should be a unique phrase that is easy to remember but not easy for someone to guess.

You now have the wireless network set up. Next you need to put the network passphrase into each of the devices that you wish to connect to the network. Once this is done, these devices can join the network whenever they are in range of the SBX-AC1200P.

Help Links

Provides a concise list of your configuration settings with applicable links for easy access when you click **Help, About** on the SBX-AC1200P Main Menu. The link opens the related configuration screen.

Help - About This SBX-AC1200P

Your ARRIS SBX-AC1200P is one of the most advanced router available. Most common problems are easily solved by using the setup wizard and following the instructions provided on the setup pages. Occasionally you may need to call your service provider for assistance. When you do, the information displayed below will help provide a speedy resolution to your problem.

My SBX-AC1200P's serial number is **F9ERU4222100026**.

The MAC Address is **D4:04:CD:FE:F2:D7**.

The [firmware Version](#) is **1.0.0-B00**

The SBX-AC1200P has been running for **00 days 00h:12m:07s**

The [wireless radio](#) is **2.4 GHZ** and set to **enable** .

The [wireless radio](#) is **5 GHZ** and set to **enable** .

The [Wireless - Primary Network](#) 2.4 GHz SSID is **SURFboard-F2D7** and encryption type is **WPA2-PSK** .

The [Wireless - Primary Network](#) 5 GHz SSID is **SURFboard-F2D75G** and encryption type is **WPA2-PSK** .

The [guest network](#) is **disable** .

The number of [wireless client\(s\)](#) connected **0** .

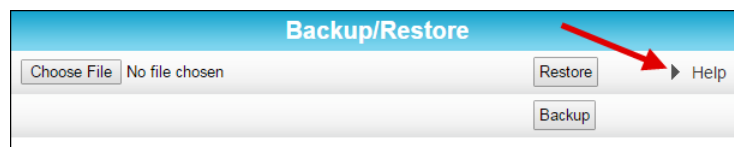
The [wireless access control](#) list for 2.4GHz is **Disable** and has **0** entries.

The [wireless access control](#) list for 5GHz is **Disable** and has **0** entries.

[Wireless QoS \(WMM\)](#) is **enable**.

Field Level Help

More specific help information is available throughout the web manager for field level help when you click **Help** located to the right of the applicable field (see sample screenshot below).



View the Network Extender Product Information

The Status Product Information screen displays general product information, including the software (or firmware) version and the current network connection status of the Network Extender.

To open the Status Product Information page:

1. Click **Status** on the SBX-AC1200P Main Menu.
2. Click **Product Information** from the Status submenu options.

3. Click the **Refresh** button (F5) in your web browser to reload the information on the screen.

Information	
Hardware Version	REV.1
Software Version	1.0.0-B00
Serial Number	F9ERU4222100026

Status	
Up Time	00 days 00h:09m:45s

Disable LEDs on the Back Panel

The Basic LED Control screen lets you disable the LEDs on the back panel of your Network Extender, if you want.

To disable the LEDs on the back panel:

1. Click **Basic** on the SBX-AC1200P Main Menu.
2. Click **LED Control** from the Basic submenu options.

3. In the LEDs field, select **Disabled**.
4. Click **Apply**.

Back Up Your Network Extender Configuration

You can save a backup copy of the current configuration settings to your local computer. You can use the backup file to restore your custom settings in the event that you made changes that you no longer want.



Caution: We highly recommend that you perform the configuration backup using the SBX-AC1200P default login username and password.

To create a backup copy of your configuration settings:

1. Click **Basic** on the SBX-AC1200P Main Menu.
2. Click **Backup and Restore** from the Basic submenu options.

3. Click **Backup** to create a backup file of your SBX-AC1200P configuration settings. Follow the on-screen prompts to save the configuration file.

Restore Your Gateway Configuration Settings



Caution: This action will delete your current SBX-AC1200P configuration settings and allow you to restore a previously saved gateway configuration.



Note: After the configuration settings are restored, the SBX-AC1200P will automatically reboot and you will have to log on using the default username (admin) and password (password).

1. Click **Basic** on the SBX-AC1200P Main Menu.
2. Click **Backup and Restore** from the Basic submenu options.
3. Click **Browse** to search for a previously saved configuration file from the Downloads folder on your computer.
4. Click **Restore**. The SBX-AC1200P will automatically reboot.

Restart Your Network Extender

At some point during operation, you may have to restart or reboot your SBX-AC1200P. This will not affect your configuration settings.

There are two methods for restarting your Network Extender:

- [Restart the Network Extender Using the Reset Button](#) (page 25)
- [Restart the Network Extender Using the Network Extender Web Manager](#) (page 25)

Restart the Network Extender Using the Reset Button

To restart the Network Extender as if you power cycled the device:

1. Insert a pointed, non-metallic object into the indented **Reset** button on the bottom of the SBX-AC1200P. See [Connectors and Controls](#) (page 15) for more information.
2. Press the button and release in three to five seconds.



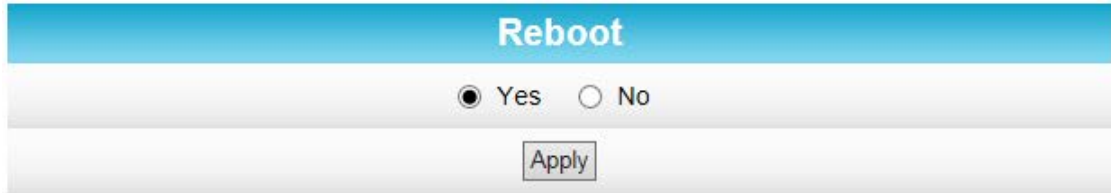
Caution: Be sure that you release the button in less than five seconds. If you hold the button for more than 10 seconds, the SBX-AC1200P resets and restores all of its factory default settings.

Restart the Network Extender Using the Network Extender Web Manager

To restart your Network Extender as if you power cycled the device:

1. Click **Status** from the configuration screen and select **Security**.

- In the Reboot section, select **Yes** and click **Apply**.



- Follow the prompts on the screen to restart your Network Extender and log back in.

Reset Your Network Extender to Factory Settings

If necessary, you can reset or restore the SBX-AC1200P configuration settings, including your password, back to the default factory settings. There are two methods for resetting the configuration on the SBX-AC1200P:

- [Reset the Network Extender Using the Reset Button](#) (page 26)
- [Reset the Network Extender Using the Network Extender Web Manager](#) (page 26)



Caution: This action will delete your current configuration settings (including your login password) and restore the configuration back to the factory defaults.



Note: After the configuration settings are restored, the Network Extender will reboot, and you will have to log on using the default login password (**password**).

Reset the Network Extender Using the Reset Button



Caution: This procedure will delete your current configuration settings (including your login password) and restore the configuration back to the factory default settings.

To reset your Network Extender to factory default settings:

- Insert a pointed, non-metallic object into the indented **Reset** button on the bottom of the SBX-AC1200P. See [Connectors and Controls](#) (page 15) for more information.
- Press and hold for at least 10 seconds, and then release.

Reset the Network Extender Using the Network Extender Web Manager

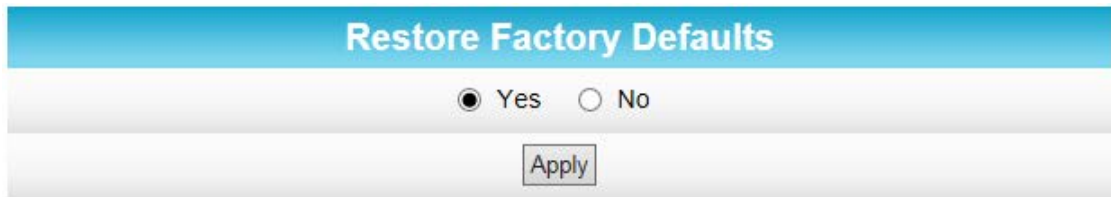


Caution: This procedure will delete your current configuration settings (including your login password) and restore the configuration back to the factory default settings.

To reset your Network Extender to factory default settings:

- Click **Status** from the configuration screen and select **Security**.

- In the Restore Factory Defaults section, select **Yes** and click **Apply**.



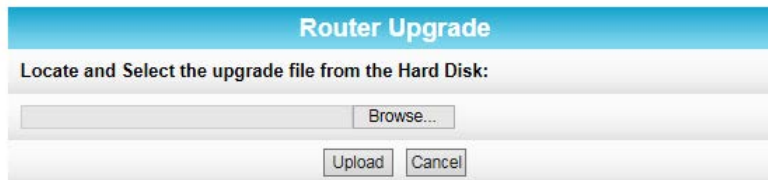
- Follow the prompts on the screen to reset your Network Extender. Do not power off the Network Extender while it is resetting. The Network Extender will automatically reboot when the reset is complete.
- Log back in using the default password (**password**).

Update Your Network Extender Firmware

You can update the firmware on your SBX-AC1200P Network Extender when ARRIS releases new firmware versions. The new firmware releases may contain updates for operational improvements or resolutions to problems. These updates will not delete or overwrite your personal user settings such as your password.

To load the new firmware release onto your SBX-AC1200P Network Extender:

- Download the latest firmware release from <http://www.SURFboard.com/Support/SBX-AC1200P>. Save the firmware file to your hard drive.
- Click **Status** from the configuration screen and select **Router Upgrade** from the drop-down menu.



- Click **Browse** to locate the new firmware file.
- Select the new firmware file and click **Open**.
- Click **Upload** to load the new firmware onto your SBX-AC1200P Network Extender.

Exit the SBX-AC1200P Web Manager

To log out and close the SBX-AC1200P Web Manager:

- Click **Logout** located in the upper right corner of the SBX-AC1200P Web Manager window.

Protecting & Monitoring Your Wireless Network

After you have successfully connected the SBX-AC1200P and your wireless devices, you should configure the network extender to protect your wireless network from unwanted and unauthorized access by any wireless devices that are within range of your wireless network. Although security for the SBX-AC1200P is already configured, you can use the SBX-AC1200P Web Manager to set the level of security and access that you want on your home network.

Prevent Unauthorized Access



Caution: To prevent unauthorized access and configuration to your wireless network, we highly recommend that you immediately change the default user name and password after connecting to the Internet and logging on to the SBX-AC1200P for the first time.

One of the most important recommendations for securing your wireless home network is to change the default administrator password on your SBX-AC1200P and other wireless devices as well. Default passwords are commonly used and shared on the Internet.

To ensure that your wireless home network is secure, it is recommended that you follow these best practices for user passwords:

- Always create a secure password or pass phrase that is not easily guessed.
- Use phrases instead of names so that it may be easier for you to remember.
- Use a combination of upper and lowercase letters, numbers, and symbols.
- Continue to change your administrator password on a regular basis.

Change the Default User Name and Password

To change the default user name:

1. Log in to the SBX-AC1200P from any web browser on the computer connected to the SBX-AC1200P.
2. Type the SBX-AC1200P Web Manager IP address, **http://192.168.100.254**, in the Address bar and then press **Enter**. The Login screen appears.
3. Type the default username and password as they appear below:
 - Username: **admin**
 - Password: **password**
4. Click **Login** to open the SBX-AC1200P Web Manager. The Status Connection screen appears.
5. Click the **Status** menu button and then click **Security** to display the Status Security screen.

6. Confirm that Change Username is displayed in the drop-down selection box.
7. Complete each field entry, but note the following:
 - All fields (for example, Current Username & Current Password) are case-sensitive.



Note: The first time that you log in, the Current Username is **admin** and the Current Password is **password**.

- Make sure **No** is selected under Restore Factory Defaults.

The 'Change Username' form features a dropdown menu at the top with 'Change Username' selected. Below the title bar are four input fields: 'Enter Current Username', 'Enter Current Password', 'Enter New Username', and 'Re-Enter New Username'. An 'Apply' button is located at the bottom of the form.

The 'Reboot' form has a title bar and two radio buttons: 'Yes' and 'No'. The 'No' radio button is selected. An 'Apply' button is positioned at the bottom.

The 'Restore Factory Defaults' form has a title bar and two radio buttons: 'Yes' and 'No'. The 'No' radio button is selected. An 'Apply' button is positioned at the bottom.

8. Click **Apply** to update your user name.

9. Click the drop-down arrow to select **Change Password**.

10. Complete each field entry, but note the following:

- All fields are case-sensitive.
- The Username is your new user name, if you changed it.
- Make sure **No** is selected for Restore Factory Defaults.
- Find a secure place to write down and keep your new user name and password.

11. Click **Apply** to update your password.

Setting Up Unique IP Addresses

In order to reach the configuration screens for a particular Network Extender, you must use an Ethernet cable to connect your computer to that Network Extender and then use a browser to navigate to **http://192.168.100.254**. This is the standard factory configuration for each Network Extender.



Note: To be sure that you access the Web Manager on the correct device, please unplug all other Network Extenders on the network. Attach each unit directly and configure each one individually.

Advanced users may want to consider setting up a unique IP address for each extender on the network. By doing so, you can connect your computer to any Network Extender in the network and then configure any Network Extender by navigating to the unique IP address for that device. The procedure to set up unique IP addresses for each Network Extender is outside the scope of this guide.

Restrict Wireless Access

You can restrict access to your wireless network based on MAC address.

To restrict access to your wireless network:

1. Click **Wireless** on the SBX-AC1200P Main Menu.
2. Click **Access Control** from the Wireless submenu options.

MAC Address	Age(s)	RSSI(dBm)	IP Addr	Host Name	Mode	Speed (kbps)
-------------	--------	-----------	---------	-----------	------	--------------

3. Select the tab for the band whose access you want to restrict.
4. In the **Selected Network** field, choose the network for which you want to restrict access.
5. In the MAC Restrict Mode field, select one of the following:
 - Select **Allow** if you want to allow access to the devices that you specify (and deny all others).
 - Select **Deny** if you want to deny access to the devices that you specify (and allow all others).
6. Use the MAC Address List fields to identify a list of devices.
7. Click **Apply**.

Prioritize Network Traffic Based on Media Type

Wi-Fi Multimedia (WMM) allows you to prioritize network traffic based on its media type. You can configure the quality of service (QoS) parameters for WMM.

To configure your quality of service parameters:

1. Click **Wireless** on the SBX-AC1200P Main Menu.

2. Click **Quality of Service** from the Wireless submenu options.

The screenshot shows a configuration interface with a light blue header bar. Below it, there are three rows of settings, each with a label on the left and a dropdown menu on the right:

- WMM Support**: On
- No-Acknowledgement**: Off
- Power Save Support**: Off

At the bottom center of the interface is an **Apply** button.

3. Choose your configuration settings, and click **Apply**.

Configure Wireless Media Settings

1. Click **Wireless** on the SBX-AC1200P Main Menu.
2. Click **Media** from the Wireless submenu options.

The screenshot shows a configuration interface for wireless media settings. At the top, there are two tabs: **2.4 GHz** (selected) and **5 GHz**. Below the tabs is a dark blue header bar with the text **2.4 GHz Wi-Fi Media Settings** and the MAC address **(20:3D:66:BA:55:C2)**. The main content area has two rows of settings, each with a label on the left, a dropdown menu in the middle, and a **Help** link on the right:

- Band Steering**: Enabled
- Airtime Fairness**: Enabled

At the bottom center of the interface is an **Apply** button.

3. Select the tab for the band whose settings you want to configure.
4. Choose your configuration settings, and click **Apply**.

Operating Your SBX-AC1200P as a Router

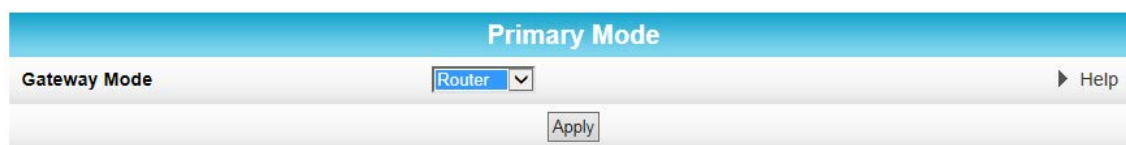
You can choose to operate your SBX-AC1200P as a Wi-Fi router instead of a Network Extender. If you do this, the Ethernet port on the bottom of the device becomes a WAN port instead of a LAN port. In other words, you will use an Ethernet cable to connect the Ethernet port on your SBX-AC1200P directly to your modem, and your SBX-AC1200P will use Wi-Fi to connect to client devices. You will also use Wi-Fi to access the Web Manager.

If you operate your SBX-AC1200P as a Wi-Fi router, you will also find additional configuration screens available in the Web Manager. This section describes those additional configuration screens.

Configure Your SBX-AC1200P To Operate as a Router

To configure your SBX-AC1200P to operate as a Router instead of a Network Extender:

1. Click **Basic** on the SBX-AC1200P Main Menu.
2. Click **Setup** from the Basic submenu options.



The screenshot shows a web interface titled "Primary Mode". Below the title is a "Gateway Mode" field with a dropdown menu currently set to "Router". To the right of the dropdown is a "Help" link. Below the dropdown is an "Apply" button.

3. In the Gateway Mode field, select **Router**.
4. Click **Apply**.



Important: Once you configure your SBX-AC1200P to operate as a Wi-Fi Router instead of a Network Extender, you can no longer use the Ethernet port to configure the SBX-AC1200P. If you want to make additional changes to the SBX-AC1200P, you will need to connect wirelessly.

Test Your Connection

The Status Diagnostics screen lets you perform a series of tests to make sure that your SBX-AC1200P is connected and displays information about the ping test parameters.

To run a ping test:

1. Click **Status** on the SBX-AC1200P Main Menu.

2. Click **Diagnostics** from the Status submenu options.

The screenshot shows a web interface for configuring a ping test. At the top, there is a blue header labeled "Select Utility" with a dropdown menu set to "Ping LAN". Below this is another blue header labeled "Ping Test Parameters". The form contains four rows of input fields: "Target" with four empty boxes for IP address; "Ping Size" with a text box containing "64" and the label "bytes"; "No. of Pings" with a text box containing "3"; and "Ping Interval" with a text box containing "1" and the label "s". At the bottom of the form are three buttons: "Start Test", "Abort Test", and "Clear Results". Below the buttons is a large empty rectangular box with a vertical scrollbar on the right side, intended for displaying test results.

3. In the Select Utility section, select the kind of test that you want to run.
4. In the Ping Test Parameters section, set the parameters that you would like to use for your test.
5. Click **Start Test** to begin the test. The results will appear in the box at the bottom of the screen.

Set Up DHCP

The Basic DHCP screen lets you manually assign IP addresses to devices on your LAN.

To configure your LAN:

1. Click **Basic** on the SBX-AC1200P Main Menu.

- Click **DHCP** from the Basic submenu options.

LAN Network Configuration			
LAN IP Address	192 . 168 . 0 . 1		▶ Help
Enable DHCP Server	<input checked="" type="checkbox"/> Enabled		▶ Help
Starting Local Address	192.168.0.2		▶ Help
Max Number of Network Devices	253		▶ Help
Lease Time	86400		▶ Help
Apply			

Reserved IP Client List		
IP Address	Name	MAC Address
Add Delete		

Attached Client List				
	IP Address	Name	MAC Address	Type
<input type="radio"/>	192.168.0.2	LP-BLEWIS-01	28:D2:44:8A:98:C5	Ethernet
Refresh Reserve				

- In the LAN Network Configuration section, choose the settings that you would like to apply to your LAN, and click **Apply**.
- In the Reserved IP Client List section, click **Add** to set up a list of IP addresses that you want to reserve.
- In the Attached Client List section, select the IP address of any clients that you want to reserve, and click **Reserve**.

Set Up Dynamic DNS

The Basic DDNS screen uses dynamic DNS to let you give your SBX-AC1200P a "friendly" name, for example, in case you are setting up a web server in the home. Most users will not need to set up dynamic DNS.

If you do need to set up dynamic DNS:

- Click **Basic** on the SBX-AC1200P Main Menu.

- Click **DDNS** from the Basic submenu options.

DDNS		
DDNS Service	Disabled	▶ Help
Username	<input type="text"/>	▶ Help
Password	<input type="text"/>	▶ Help
Host Name	<input type="text"/>	▶ Help
IP Address	0.0.0.0	▶ Help
Status	DDNS server is not enabled.	▶ Help
<input type="button" value="Apply"/>		

- In the DDNS Service field, select the DDNS service that you are using.
- In the Username field, type the username associated with the DDNS account.
- In the Password field, type the password associated with the DDNS account.
- In the Host Name field, type the "friendly" name that you want to assign to your SBX-AC1200P.
- Click **Apply** to save your changes.

Set Up Firewall Protection

You can set up firewall filters and firewall alert notifications on your wireless home network. You can also block Java Applets, Cookies, ActiveX controls, popup windows, Proxies, and website access.

To set the firewall protection level:

- Click **Firewall** on the SBX-AC1200P Main Menu.

- Click **Protection Level** from the Firewall submenu options.

- Click the Firewall Protection Setting drop-down button to select the firewall protection level.

Possible values:

- Off.
- Low.
- Medium.
- High.



Note: Selecting Off will disable firewall protection on your home network. Your computer(s) and other Ethernet-enabled devices on your network will be at risk for possible attacks from viruses and hackers.

- Use the IPv6 Firewall Protection drop-down button to turn firewall protection on or off for IPv6 connections.
- Select each Web filter that you want to set for the firewall and then click **Apply**.

Set Up Firewall Event Log Notifications

When a firewall attack is detected on your home network, a separate email alert notification is generated and a local log or report of the event is created. You can set up automatic email alert notifications for whenever a firewall attack is detected on the SBX-AC1200P.

To set up Firewall Event Log notifications:

1. Click **Firewall** on the SBX-AC1200P Main Menu.
2. Click **Local Log** from the Firewall submenu options.

Alert System				
Contact Email Address	<input type="text"/>			▶ Help
SMTP Server Name	<input type="text"/>			▶ Help
SMTP Username	<input type="text"/>			▶ Help
SMTP Password	<input type="text"/>			▶ Help
Email Alerts	<input type="checkbox"/> Enable			▶ Help
<input type="button" value="Apply"/>				
Description	Count	Last Occurrence	Target	Source
<input type="button" value="E-mail Log"/> <input type="button" value="Clear Log"/>				

3. Enter your email address in the Contact Email Address field.
4. Enter the name of the email server in the SMTP Server Name field. Check with your service or email provider.
5. Enter the user name for your email account in the SMTP Username field.
6. Enter the password for your email account in the SMTP Password field.
7. Select **Enable** in the E-mail Alerts field to allow for automatic Email alerts.
8. Click **Apply**.

Set Up Parental Controls

You can set up the following Parental Controls on your home network:

- Block access to specific Internet sites.
- Block access to specific MAC addresses.
- Set time limitations for computer usage or Internet access.



Note: Any Parental Control filters that do not include assigned ports will apply to all ports. This also applies to MAC addresses as well.

You can also link each user on your network to specified rules for login, time-access, and content filtering.

To set Parental Controls:

1. Click **Firewall** on the SBX-AC1200P Main Menu.
2. Click **Parental Control** from the Firewall submenu options.

▼

Display Filters											
Description	MAC Address	URL	Days	Time Start	Time End	Port Start	Port End	Prot	Allow/Block	Enabled	<input type="button" value="Remove All"/>

3. Follow the directions in the following sections to set up different kinds of filters.



Note: You can set up multiple filters, if necessary. For example, suppose you want to block certain websites at all times, but you also want to block all web browsing on weekdays between 2:00 and 5:00 p.m. You would follow the steps in [To Block Certain URL Addresses](#) (page 39) to set up a filter to block that website at all times. Then you would use [To Block All Web Browsing](#) (page 40) to set up a different filter to block all web browsing during the times you specify.

To Block Certain URL Addresses

1. At the top of the screen, click the drop-down box and select **Block URL**.

Add/Edit Filter

Description

MAC Address

URL

Days

EveryDay Sunday Monday Tuesday

Wednesday Thursday Friday Saturday

Time

All day

Start: (hour) (min) AM

End: (hour) (min) AM

Enabled

Display Filters

Description	MAC Address	URL	Days	Time Start	Time End	Port Start	Port End	Prot	Allow/Block	Enabled	Remove All

2. Enter a name to identify this user profile in the Description field.
3. Enter the 12-digit (hexadecimal) MAC address of the device for which you are creating Parental Controls in the MAC Address field.
4. Enter the web address of the Internet site that you want to block in the URL field.
5. Select the days of the week that you want to block access.
6. Select the time range that you want to block access.
7. In the Enabled field, select **On** or **Off** to enable or disable this Parental Control restriction.
8. Click **Apply**.

To Block All Web Browsing

1. At the top of the screen, click the drop-down box and select **Block Web Browsing**.

Add/Edit Filter

Description	<input style="width: 90%;" type="text"/>
MAC Address	<input style="width: 90%;" type="text"/>

Days

<input type="checkbox"/> EveryDay	<input type="checkbox"/> Sunday	<input type="checkbox"/> Monday	<input type="checkbox"/> Tuesday
<input type="checkbox"/> Wednesday	<input type="checkbox"/> Thursday	<input type="checkbox"/> Friday	<input type="checkbox"/> Saturday

Time

<input type="checkbox"/> All day		
Start:	<input style="width: 40px;" type="text"/> (hour)	<input style="width: 40px;" type="text"/> (min) AM <input type="button" value="v"/>
End:	<input style="width: 40px;" type="text"/> (hour)	<input style="width: 40px;" type="text"/> (min) AM <input type="button" value="v"/>

Enabled

Enabled	<input type="button" value="Off"/> <input type="button" value="v"/>
---------	---

Display Filters

Description	MAC Address	URL	Days	Time Start	Time End	Port Start	Port End	Prot	Allow/Block	Enabled	
<input type="button" value="Remove All"/>											

2. Enter a name to identify this user profile in the Description field.
3. Enter the 12-digit (hexadecimal) MAC address of the device for which you are creating Parental Controls in the MAC Address field.
4. Select the days of the week that you want to block access.
5. Select the time range that you want to block access.
6. In the Enabled field, select **On** or **Off** to enable or disable this Parental Control restriction.
7. Click **Apply**.

To Block All Internet Use

1. At the top of the screen, click the drop-down box and select **Block All Internet**.

Add/Edit Filter

Description

MAC Address

Days

EveryDay Sunday Monday Tuesday

Wednesday Thursday Friday Saturday

Time

All day

Start: (hour) (min) AM ▼

End: (hour) (min) AM ▼

Enabled Off ▼

Cancel Apply

Display Filters

Description	MAC Address	URL	Days	Time Start	Time End	Port Start	Port End	Prot	Allow/Block	Enabled	Remove All
-------------	-------------	-----	------	------------	----------	------------	----------	------	-------------	---------	------------

2. Enter a name to identify this user profile in the Description field.
3. Enter the 12-digit (hexadecimal) MAC address of the device for which you are creating Parental Controls in the MAC Address field.
4. Select the days of the week that you want to block access.
5. Select the time range that you want to block access.
6. In the Enabled field, select **On** or **Off** to enable or disable this Parental Control restriction.
7. Click **Apply**.

To Set Up a Custom Filter

1. At the top of the screen, click the drop-down box and select **Block Custom**.

Add/Edit Filter											
Description	<input type="text"/>										
MAC Address	<input type="text"/>										
URL	<input type="text"/>										
Start Port	<input type="text"/>										
End Port	<input type="text"/>										
Protocol	TCP <input type="button" value="v"/>										
Days											
<input type="checkbox"/> EveryDay	<input type="checkbox"/> Sunday	<input type="checkbox"/> Monday	<input type="checkbox"/> Tuesday								
<input type="checkbox"/> Wednesday	<input type="checkbox"/> Thursday	<input type="checkbox"/> Friday	<input type="checkbox"/> Saturday								
Time											
<input type="checkbox"/> All day											
Start:	<input type="text"/> (hour)	<input type="text"/> (min)	<input type="button" value="AM"/> <input type="button" value="v"/>								
End:	<input type="text"/> (hour)	<input type="text"/> (min)	<input type="button" value="AM"/> <input type="button" value="v"/>								
Allow/Block	Block <input type="button" value="v"/>										
Enabled	Off <input type="button" value="v"/>										
											<input type="button" value="Cancel"/> <input type="button" value="Apply"/>
Display Filters											
Description	MAC Address	URL	Days	Time Start	Time End	Port Start	Port End	Prot	Allow/Block	Enabled	<input type="button" value="Remove All"/>

2. Enter a name to identify this user profile in the Description field.
3. Enter the 12-digit (hexadecimal) MAC address of the device for which you are creating Parental Controls in the MAC Address field.
4. Enter the web address of the Internet site that you want to block in the URL field.
5. Enter the Start Port number and the End Port number, and select the Protocol that you want to use.
6. Select the days of the week that you want to block access.
7. Select the time range that you want to block access.
8. In the Enabled field, select **On** or **Off** to enable or disable this Parental Control restriction.
9. Click **Apply**.

Set Up Port Triggers

You can use Port Triggers to configure dynamic triggers to specific devices on the LAN. This allows special applications that require specific port numbers with bi-directional traffic to

function properly. Applications such as video conferencing, voice, gaming, and some messaging program features may require these special settings.



Note: If you enable the firewall and set up custom port triggers, then you must configure the firewall to allow traffic through those custom ports. See [Set Up Firewall Protection](#) (page 36) for more information.

To configure Port Triggers:

1. Click **Advanced** on the SBX-AC1200P Main Menu bar.
2. Click **Port Triggers** from the Advanced submenu options.

3. Click **Create Port Triggers** to open the Add Port Triggering Entry window.

4. Enter the starting and ending port numbers for the port to be triggered in the Trigger Start Port and Trigger End Port fields.
5. Enter the starting and ending port numbers of the Port Trigger range in the Target Start Port and Target End Port fields.
6. Select TCP, UDP, or BOTH from the Internet Protocol field.
7. Select **On** to enable IP port triggers or **Off** to disable them.
8. Click **Apply** to create your port triggers.
9. Repeat steps 3 through 8 for each additional port trigger that you want to create.

Set Up Port Forwarding

You can use Port Forwarding to set up a computer or other network device on your home network (LAN) to be accessible to computers or other remote network devices on the Internet. This allows you to open specific ports behind the firewall on your LAN to set up dedicated connections between your computer and other remote computers for online gaming or other online services. Some allowable services are predefined under the Commonly Forwarded Ports.



Note: It is recommended that you manually configure the TCP/IP settings listed below on the computer you are setting up for remote access. Otherwise, remote access to your computer will not be available on the Internet.

- IP address
- Subnet mask
- Default gateway
- DNS address (at least one)

To set up Port Forwarding:

1. Click **Advanced** on the SBX-AC1200P Main Menu bar.
2. Click **Port Forwarding** from the Advanced submenu options.

Forwarded Ports					
External IP Address & Start/End Port	Local IP Address & Start/End Port	Description	Protocol	Forwarding	Remove All

To Set Up Port Forwarding for IPv4 Addresses



Note: To map a port for IPv4, you would enter the range of port numbers that you want forwarded locally and the IP address for sending traffic to those ports. If you only want a single port specification, enter the same port number in the start and end locations for that IP address.

1. Click **Create IPv4** to view the IPv4 Entry screen.

IPv4 Entry				
External IP Address & Start/End Port	Local IP Address & Start/End Port	Description	Protocol	Enabled
<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	[TCP]	[On]
<small>0.0.0.0 is the default value (IP Address) that allows packets from any device on the internet to be forwarded to the configured ports</small>				
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>				

Forwarded Ports					
External IP Address & Start/End Port	Local IP Address & Start/End Port	Description	Protocol	Forwarding	Remove All

2. Do either of the following to set up the External IP Address:
 - Keep the IP Address set at 0.0.0.0 in the External IP Address field and then enter the port number in the Start Port field. Repeat the same port number in the End Port field. This allows incoming data traffic on the specified ports from any remote IP address.
 - Enter a specific remote IP address of your choice in the External IP Address field and then enter the specific port numbers in the Start Port and End Port fields. This allows incoming data traffic on the specified ports from only one remote IP address.



Note: To forward a range of ports, enter the first number of the port range in the Start Port field and the last number of the port range in the End Port field.

3. Do the following to set up your Local IP Address:
 - a. Enter the IP address of your local computer that you are setting up for port forwarding.
 - b. Enter the port number of your choice in the Start Port field. Repeat the same port number in the End Port field.



Note: To forward a range of ports, enter the first number of the port range in the Local Start Port field and the last number of the port range in the Local End Port field.

- c. Enter a description to name the forwarded port you are creating.
 - d. Select **TCP**, **UDP**, or **BOTH** from the Internet Protocol drop-down list.
 - e. Select **On** to enable port forwarding or **Off** to disable it.
4. Click **Apply**.

To Set Up Port Forwarding for IPv6 Addresses

1. Click **Create IPv6** to view the IPv6 Entry screen.

IPv6 Entry				
External IP Address	Local IP Address & Start/End Port	Description	Protocol	Enabled
<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/>	TCP	On
<input type="text"/> Commonly Forwarded Ports				
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>				
Forwarded Ports				
External IP Address & Start/End Port	Local IP Address & Start/End Port	Description	Protocol	Forwarding
<input type="button" value="Remove All"/>				

2. Enter the remote IP address of your choice in the External IP Address field. This allows incoming data traffic from only one remote IP address.
3. Do the following to set up your Local IP Address:
 - a. Enter the IP address of your local computer that you are setting up for port forwarding.
 - b. Enter the port number of your choice in the Start Port field. Repeat the same port number in the End Port field.



Note: To forward a range of ports, enter the first number of the port range in the Local Start Port field and the last number of the port range in the Local End Port field.

- c. Enter a description to name the forwarded port you are creating.
 - d. Select **TCP**, **UDP**, or **BOTH** from the Internet Protocol drop-down list.
 - e. Select **On** to enable port forwarding or **Off** to disable it.
4. Click **Apply**.

Set Up the DMZ Host



Caution: The gaming DMZ host is not protected by the SBX-AC1200P Network Extender firewall. It is exposed to the Internet and thus vulnerable to attacks or hacking from any computer on the Internet. Consider carefully before configuring a device to be in the DMZ.

You can configure one computer on your home network to be the DMZ Host. That computer will operate outside of the SBX-AC1200P firewall and allow remote access from the Internet to your computer, gaming device, or other IP-enabled device. The DMZ Host feature will only allow outside users to have direct access to the designated DMZ Host device and not your home network.

To create the DMZ Host:

1. Click **Advanced** on the SBX-AC1200P Main Menu bar.
2. Click **DMZ Host** from the Advanced submenu options.

DMZ Host	
DMZ Host	192.168.0. <input type="text" value="0"/> Help
<input type="button" value="Apply"/>	

3. Enter the last one to three digits (from 2 to 254) of the IP address of the computer or gaming device that you are setting up as the DMZ host.
4. Click **Apply**.

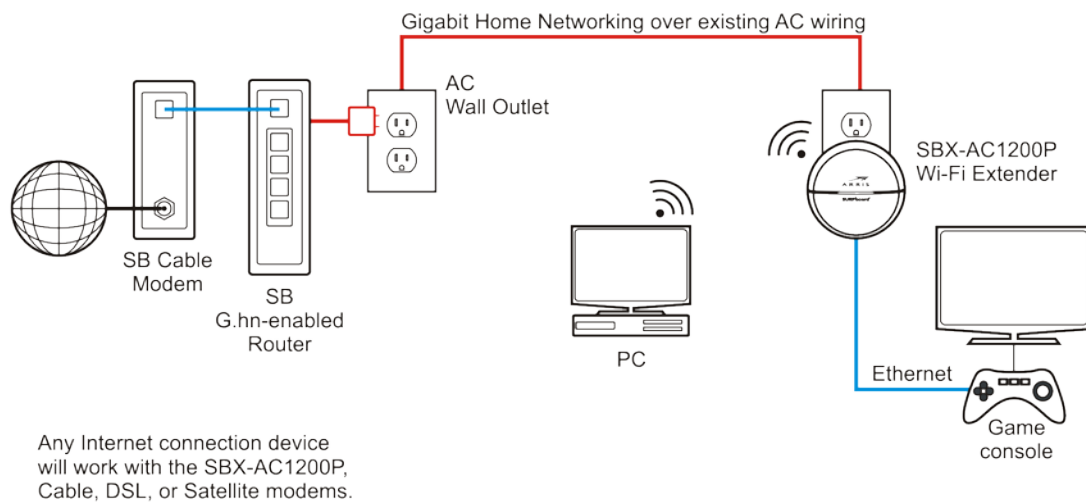


Note: Remember to reset the IP address back to 0 (zero) to close all the ports when you are finished with the needed application. If you do not reset the IP address, that computer will be exposed to the public Internet.

Installation Scenarios

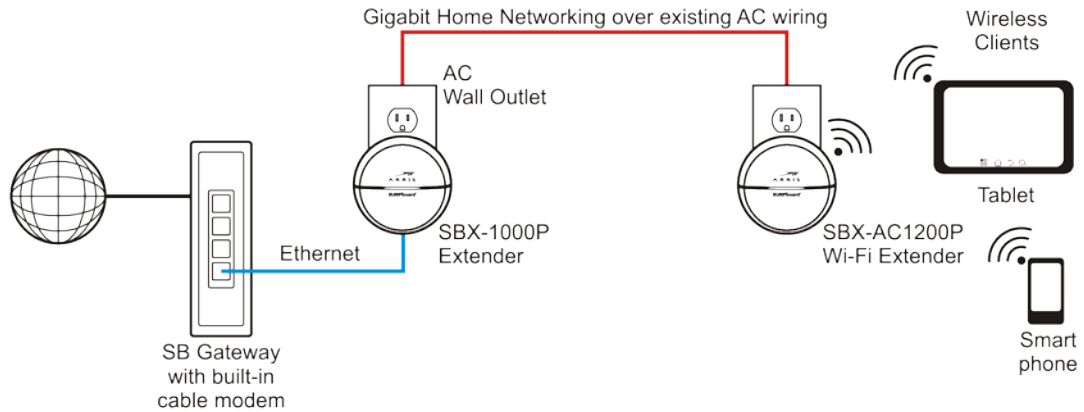
This section illustrates several different ways that the SBX-AC1200P Network Extender can be installed.

SBX-AC1200P Wireless Extender with a SURFboard G.hn-Enabled Router



Gigabit home networking throughout the house.

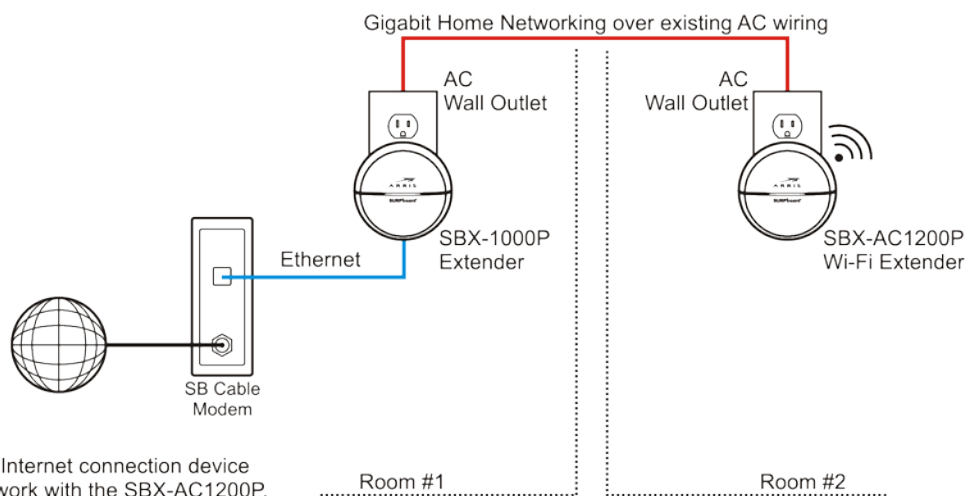
SBX-AC1200P Wireless Extender with a SURFboard Gateway and an SBX-1000P Extender



Any Internet connection device will work with the SBX-AC1200P, Cable, DSL, or Satellite modems.

Extend your current internet service to any room, including wireless connectivity.

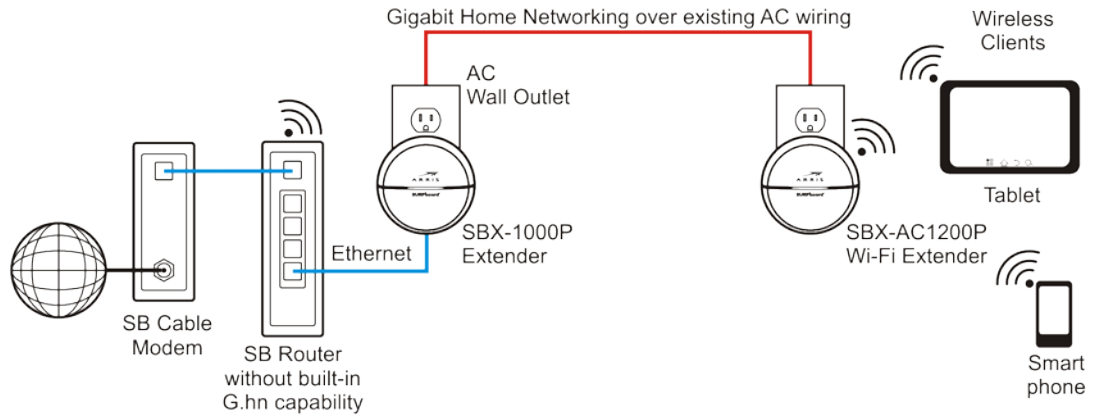
SBX-AC1200P Wireless Extender with a SURFboard Cable Modem and an SBX-1000P Extender



Any Internet connection device will work with the SBX-AC1200P, Cable, DSL, or Satellite modems.

Add wireless capability to your current DSL, cable, or satellite modem.

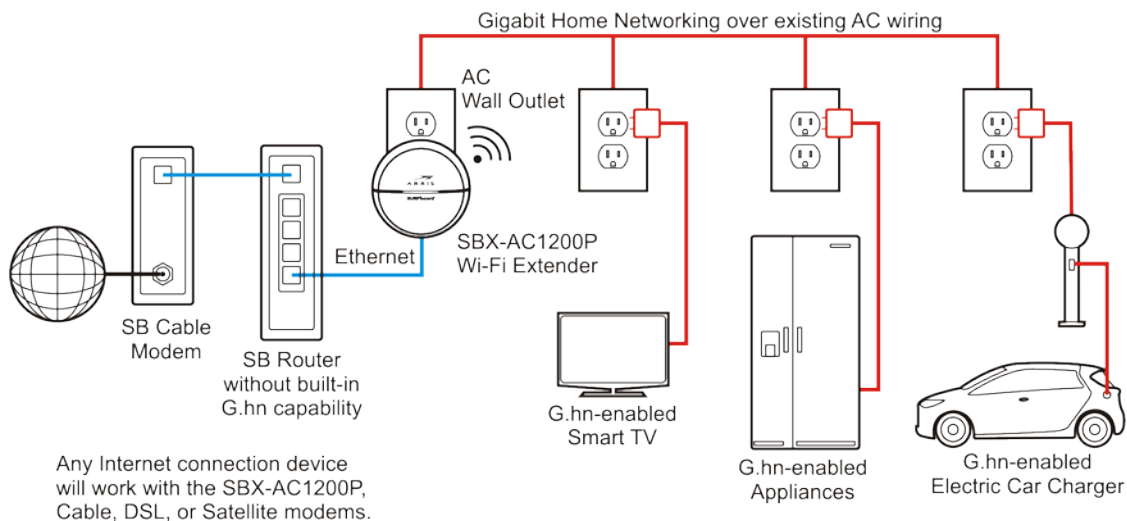
SBX-AC1200P Wireless Extender with a SURFboard Wireless Router and an SBX-1000P Extender



Any Internet connection device will work with the SBX-AC1200P, Cable, DSL, or Satellite modems.

Extend your existing wired and wireless network to any room in the house.

SBX-AC1200P Wireless Extender with a SURFboard Cable Modem and Several G.hn-Enabled Devices



Any Internet connection device will work with the SBX-AC1200P, Cable, DSL, or Satellite modems.

Use the SBX-1000P to connect your other G.hn-enabled devices to the Internet.

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