



SURFboard SBX-1000P Network Extender

User Guide

STANDARD PN 365-095-28247 x.4

April 2017

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Patent Notice

Protected under one or more of the following U.S. patents: <http://www.arris.com/legal>
Other patents pending.

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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

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.

FCC DECLARATION OF CONFORMITY

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

INDUSTRY CANADA (IC) STATEMENT

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

CARING FOR THE ENVIRONMENT BY RECYCLING YOUR ARRIS EQUIPMENT

Please do not dispose of this product or any included electronic accessories, i.e., power supply or battery, with your residential or commercial waste. ARRIS devices may be disposed of through the ARRIS Product Recycling program, further described on the Corporate Responsibility page of the ARRIS website. Go to <http://www.arris.com>, scroll to the bottom of the page, and click Corporate Responsibility.

You may also contact your local community authorities for information regarding where you may dispose of your ARRIS devices.

Product Overview

Introduction

The SURFboard SBX-1000P Network Extender lets you transmit and receive data over power lines in your home. The SURFboard SBX-1000P Network Extender connects directly to any outlet in your home to extend and enhance your network connectivity.



About The Network Extender

The SBX-1000P 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-1000P 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-1000P 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-1000P Network Extender.
- Quick Start Guide.
- Ethernet cable.
- Warranty card.

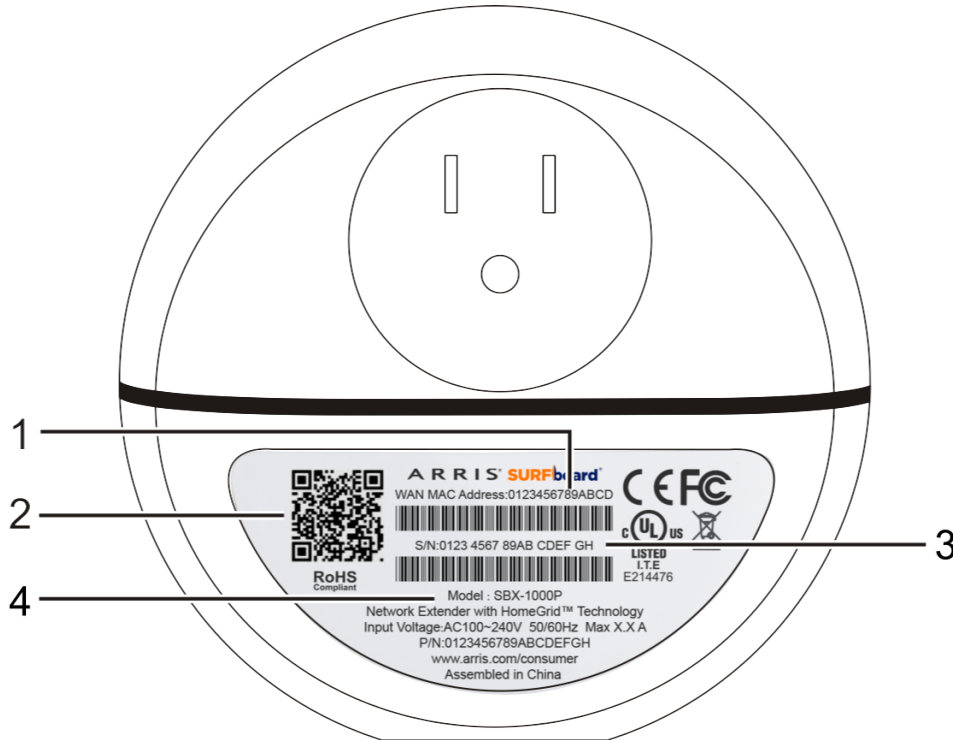
System Requirements

- Two or more 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-1000P Network Extenders, or any SURFboard Router with G.hn capability with a SBX-1000P Network Extender.

About this Manual

This manual covers the SURFboard SBX-1000P Network Extender. The model number is on the label affixed to the back of the Network Extender.



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

Contact Information

Please visit the ARRIS Support website <http://www.SURFboard.com/Support/SBX-1000P> 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

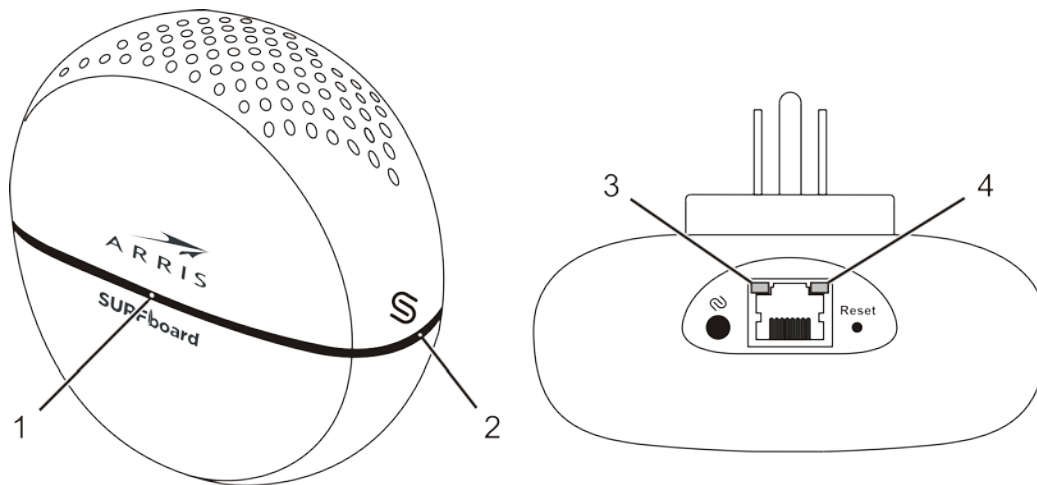


Caution: This product is for indoor use only. Do not route the Ethernet cable(s) outside of the building. Exposure of the cables to lightning could create a safety hazard and damage the product.

If you are installing a Gigabit home networking router (SURFboard or a third-party router) with your SBX-1000P, please refer to the Installation and Configuration documentation for your device for setup instructions.

LED Indicators

The Network Extender has the following indicators:



1. **G.hn Link Quality LED:** indicates the signal quality of the G.hn link and status of data transmission.
2. **G.hn Pairing LED:** indicates the logical network connection status (not connected, connecting/pairing, connected/paired).
3. **10/100 Mbps LED:** indicates the status of the Ethernet 10/100 Mbps link.
4. **1 Gbps LED:** indicates the status of the 1 Gbps link.

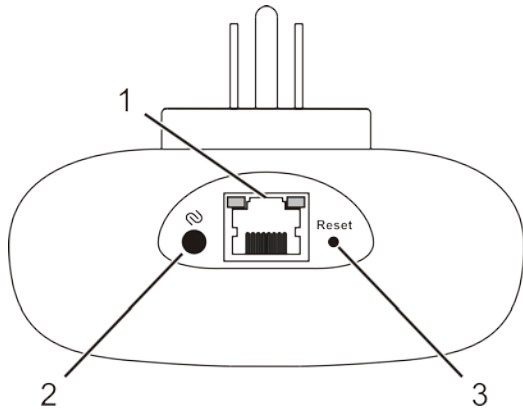
Indicator Lights for the SBX-1000P

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

LED	Color/Behavior	Description
G.hn Link Quality	Solid green	Excellent link (at least 80 Mbps).
	Flashing green	Receiving/transmitting data, excellent link.
	Solid amber	Good link (between 40 Mbps and 80 Mbps).
	Flashing amber	Receiving/transmitting data, good link.
	Solid red	Fair link (less than 40 Mbps).
	Flashing red	Receiving/transmitting data, fair link.
	Off	No link.
G.hn Pairing	Solid green	Pairing complete (encrypted). Connected to G.hn network with encryption enabled.
	Flashing green	Pairing in progress (encrypted). Trying to connect to G.hn network.
	Solid red	Connection complete (unencrypted). Connected to G.hn network without encryption.
	Flashing red	Connection in progress (unencrypted). Trying to connect to G.hn network.
	Off	No link.
Ethernet 10/100 Mbps link/activity	Solid amber	10/100 Mbps link activated, but no activity.
	Flashing amber	10/100 Mbps activity.
Ethernet 1 Gbps link/activity	Solid green	1 Gbps link activated, but no activity.
	Flashing green	1 Gbps 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 Pairing button:** Press and hold this button for three to five seconds to create an encrypted network to connect with other G.hn devices.



Note: If you hold the Pairing button for more than 10 seconds, the Network Extender resets its pairing defaults (that is, it loses any encrypted connection that it may have with other 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.

Pairing Devices Over an Encrypted Connection (Advanced)

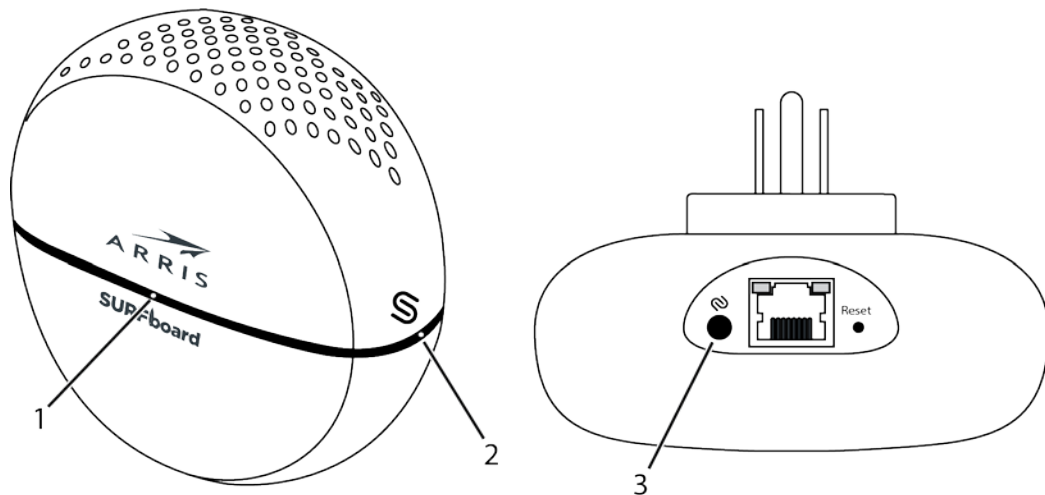
To increase security, you can choose to pair the devices with each other over an encrypted connection. This step creates an encrypted network between two or more G.hn devices on a power grid. It also helps you to secure your local area network (LAN) by randomizing your domain name and password. Once your devices are paired over an encrypted connection, then any devices that have not been paired will not be able to connect to your network.



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

Follow these steps to create an encrypted connection 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 15 seconds for the devices to fully boot before proceeding.
2. Press the **G.hn Pairing** button (**3** in the illustration shown below) on your Network Extender to initiate pairing on your Network Extender. Hold the button for two to three seconds. The Pairing LED (**2**) 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 **2** on the Network Extender begins to flash green.
 - When the Pairing LED stops flashing and becomes solid green (for an encrypted connection) or solid red (for an unencrypted connection), 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 to 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 1 indicates the signal quality of the G.hn link. Green indicates an excellent link, amber indicates a good link, and red indicates a fair link. If the Link Quality LED is red, you may want to move your Network Extender 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 10 seconds. Then, test your connection in unencrypted mode before trying to pair again.

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-1000P and another Network Extender. Use the enclosed Ethernet cable to attach your SBX-1000P to a LAN port on your router. The SBX-1000P 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. Ideally, you should connect an SBX-1000P to your router to transmit data over your home's electrical wiring, and then install an SBX-AC1200P in a dead zone to extend your WiFi network into that area. Follow the instructions in [Configuring and Installing the Network Extender](#) (page 15) to connect the devices and complete your G.hn network.

Managing Your Network Extender

Use the Network Extender Web Manager to view and monitor the configuration settings and operational status of your SBX-1000P. You can also configure your network connections and security settings. See *Protecting and Monitoring Your Network* (page 25) for more information.



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 27) for more information.

Setting Up a Static IP Address

In order to use the Ethernet port on your SBX-1000P 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.

Finding the Device ID and MAC Address

On your SURFboard RipCurrent router, go to the RipCurrent (G.hn) screen to view the Device ID, MAC address, and physical transmission and receiving speeds (Mbps) for your Network Extender.

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 17) 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-1000P devices except for the one you are trying to manage. This will help to ensure that you are communicating with the correct device.

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.

- Open a browser window on your computer and navigate to <http://192.168.100.254>. The login screen appears.

The screenshot shows a login interface with a blue header containing the word 'Login'. Below the header, there is a 'Password' label followed by a text input field. Underneath that is a 'Show Password' label with an unchecked checkbox. At the bottom of the form is an 'Apply' button.

- Type the default password and click **Apply**. The entry is case-sensitive.



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 [Changing the Login Password](#) (page 27) for more information.

View the Network Extender Product Information

The Status - Device screen provides product information, including the serial number, MAC address, and firmware version.

To open the Status Device screen, click **Status** from the configuration screen.

STATUS - Device

Hardware Information	
Device Name	SBX1000P
Device Description	HomeGrid
Device Manufacturer	Arris
Serial Number	F5TRUK211300002
MAC Address	3c:df:a9:d9:53:48
HW Version	2_0

Software Information	
FW Version	SBX1000P-1.0.0-B04
System Uptime	93 sec

View the Network Extender Network Settings

You can use the Basic - IP screen to view and change the IP address assigned to this device.

To open the Basic - IP screen, click **Basic** from the configuration screen and select **IP** from the drop-down menu.

BASIC - IP

IPv4 Configuration	
IPv4 Address	<input type="text" value="192.168.100.254"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
<input type="button" value="Apply"/>	

Set Up Multicast Configuration

You can use the Advanced - Multicast screen to view and change the multicast settings for your SBX-1000P Network Extender.

To open the Advanced - Multicast screen, click **Advanced** from the configuration screen and select **Multicast** from the drop-down menu.

ADVANCED - Multicast

Multicast Configuration*	
IGMP Snooping	<input type="text" value="YES"/>
MLD Snooping	<input type="text" value="NO"/>
MLD and IGMP cannot be enabled at the same time	
IGMP Multicast Allow Ranges	<input type="text" value="NO"/>

IGMP Multicast Allow Ranges*	
Minimum IP Address	Maximum IP Address
<input type="text" value="224"/> . <input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/>	<input type="text" value="239"/> . <input type="text" value="254"/> . <input type="text" value="255"/> . <input type="text" value="255"/>
<input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="0"/>	<input type="text" value="0"/> . <input type="text" value="0"/> . <input type="text" value="255"/> . <input type="text" value="255"/>
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View the Advanced Configuration Settings

Use the Advanced - Configuration screen to view and change configuration information such as the language of the configuration screens and the login password for your network.

To open the Advanced - Configuration screen, click **Advanced** from the configuration screen and select **Configuration**.

Language	
Language	English ▼
Apply	

Broadcast Supression	
Broadcast XPUT Limit (Mbps)	1
Apply	

Device Reboot	
Reboot	

Factory Reset to Default*	
Password	<input type="text"/>
*Warning! Current configuration will be lost	
Apply	

Change Login Password	
Enter New Password	<input type="text"/>
Re-enter New Password	<input type="text"/>
Show Password	<input type="checkbox"/>
Apply	

LEDs	
LEDs	On ▼
Apply	

Update Your Network Extender Firmware

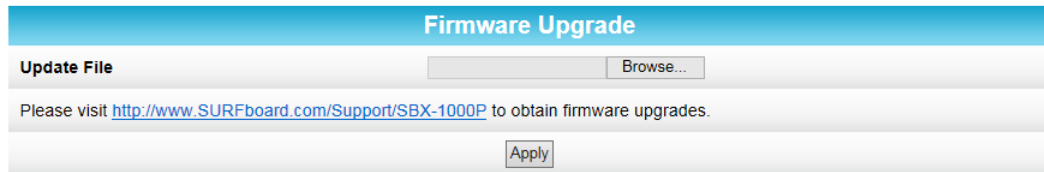
You can update the firmware on your SBX-1000P Network Extender when ARRIS releases new firmware versions. The new firmware releases may contain updates for operational improvements or resolutions to problems. These updates will not delete or overwrite your personal user settings such as your password.

You can download the latest firmware release from <http://www.SURFboard.com/Support/SBX-1000P>. To load the new firmware release onto your SBX-1000P Network Extender:

1. Download the latest firmware release and save the firmware file to your hard drive.

2. Click **Basic** from the configuration screen and select **Firmware Upgrade** from the drop-down menu.

BASIC - Firmware Upgrade



3. Click **Browse** to locate the new firmware file.
4. Select the new firmware file and click **Open**.
5. Click **Apply** to load the new firmware onto your SBX-1000P Network Extender.

Restart Your Network Extender

At some point during operation, you may have to restart or reboot your SBX-1000P. 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 22)
- [Restart the Network Extender Using the Network Extender Web Manager](#) (page 22)

Restart the Network Extender Using the Reset Button

To restart your 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-1000P. See [Connectors and Controls](#) (page 14) for more information.
2. Press the button and release in three to five seconds.



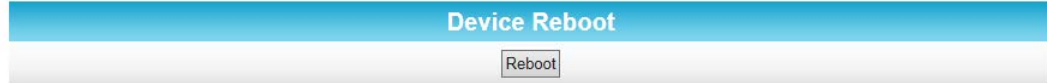
Caution: Be sure that you release the button in less than five seconds. If you hold the button for more than 10 seconds, the SBX-1000P resets and restores all of its factory default settings.

Restart the Network Extender Using the Network Extender Web Manager

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

1. Click **Advanced** from the configuration screen and select **Configuration**.

2. Click **Reboot** from the Device Reboot section of the screen.



3. 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-1000P configuration settings, including your password, back to the default factory settings. There are two methods for resetting the configuration on the SBX-1000P:

- [Reset the Network Extender Using the Reset Button](#) (page 23)
- [Reset the Network Extender Using the Network Extender Web Manager](#) (page 23)



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:

1. Insert a pointed, non-metallic object into the indented **Reset** button on the bottom of the SBX-1000P. See [Connectors and Controls](#) (page 14) for more information.
2. 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:

1. Click **Advanced** from the configuration screen and select **Configuration**.
2. In the Factory Reset to Default section, type your login password and click **Apply**.



Note: The default password is **password** (lower case).

A screenshot of a web interface titled "Factory Reset to Default*". It features a light blue header bar with the title. Below the header is a white form with a "Password" label on the left and an empty text input field on the right. Underneath the input field is a warning message: "*Warning! Current configuration will be lost". At the bottom of the form is a small button labeled "Apply".

3. 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.
4. Log back in using the default password (**password**).

Exit the SBX-1000P Web Manager

To log out and close the SBX-1000P Web Manager:

- Click **Logout** button located in the upper right corner of the SBX-1000P Web Manager screen.

Protecting and Monitoring Your Network

Setting Up Custom Security

The SURFboard SBX-1000P Network Extender uses a default level of security when you set up your G.hn network. This level of security is sufficient in most situations. However, you may want to set up custom security if:

- you are concerned that physical access to the Pairing button might compromise your security (for example, if you are a small business or an adapter is being used in public area where there is a lack of security).
- you need to set up more than one separate network in a household or common area to avoid pairing mistakes.
- you are using your SURFboard Network Extender with an extender from another manufacturer.

Note: In situations where more than one G.hn network is set up in the same area, the networks will coordinate and share bandwidth, but security remains isolated.

If you need to set up custom security, you must first set up a static IP address on the computer that you will use to configure the Network Extender. Then, you will need to define custom security values for each extender in your network.

Defining Custom Security Values

On the RipCurrent page, the Domain Name and Pairing Password work together to establish the keys for network security. By default, the Domain Name is HomeGrid until the device is paired, and the Pairing Password is blank. After the device is paired using the G.hn Secure Pairing button, the Domain Name and Network Password will contain random characters.

If you add custom values to the Domain Name and Pairing Password fields, then the device will only pair with other devices if the values in those fields match exactly.



Important:

Once you have entered custom security values for the Domain Name and Pairing Password fields, you do not need to press the Pairing button to initiate the pairing process. However, you **will** need to enter the same Domain Name and Pairing Password on any additional devices that you wish to be a part of this G.hn network.

Before you complete these steps, you must set up a static IP address on your computer. For more information, see [Managing Your Network Extender](#) (page 17).

Follow these steps to define custom security values:

1. Plug in both devices in a location where you can see and easily access both devices. Power up both devices and wait until all of the LEDs become solid.
2. Use the enclosed Ethernet cable to connect to the Ethernet port on the bottom of the first device. Insert the other end of the Ethernet cable into your computer's Ethernet port.
3. Open a browser window on your computer and navigate to **http://192.168.100.254**.
4. Type your password in the Password field and click **Apply**.



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 [Changing the Login Password](#) (page 27) for more information.

5. Click the **RipCurrent** tab.

BASIC - RipCurrent

Basic Settings	
MAC Address	3c:df:a9:d9:53:1a
RipCurrent Node	2
Domain Name	<input type="text" value="bXfuliNCZQn4o3qtj3PjF1wnCUUC"/>
Pairing Password	<input type="text" value="85bUafyXFkve"/>
Node Type*	END_POINT
<input type="button" value="Apply"/>	

RipCurrent Profile	
RipCurrent Profile	<input type="text" value="PLC 50MHz with MIMO"/>
<input type="button" value="Apply"/>	

Connected G.hn Nodes			
RipCurrent Node	MAC Address	Phy Tx (Mbps)	Phy Rx (Mbps)
1	3c:df:a9:d9:53:48	318	386

6. On the Basic - RipCurrent screen, enter the Domain Name and Pairing Password that you want to assign to this device. Then click **Apply**.



Important: The Pairing Password cannot be longer than 12 characters.



Important: Make note of the Domain Name and Pairing Password values that you use. You will need to enter these values again for every device that you add to this network.

7. Repeat steps 2 through 6 with the second device and any additional devices that you may have. Be sure to enter the same Domain Name and Network Password values that you entered for the first device.



Note: Once you have entered custom security values for the Domain Name and Pairing Password fields, you do not need to press the Pairing button to initiate the pairing process. The devices will discover each other and begin to pair automatically.

- When the devices discover each other, the Pairing LEDs will begin to flash green.
 - When the Pairing LEDs stop flashing and become solid green, the pairing process is complete.
8. 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.

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.

Changing the Login Password

The default password is "password" (lower case). You should change the login password to something other than the default password.

Perform the following steps to change the password.

1. Access and log into the configuration interface.
2. Click the **Advanced** tab, then click **Configuration**.

3. In the Change Login Password section, enter the new password in both the Enter New Password field and the Re-enter New Password field.

Change Login Password	
Enter New Password	<input type="text"/>
Re-enter New Password	<input type="text"/>
Show Password	<input type="checkbox"/>
<input type="button" value="Apply"/>	



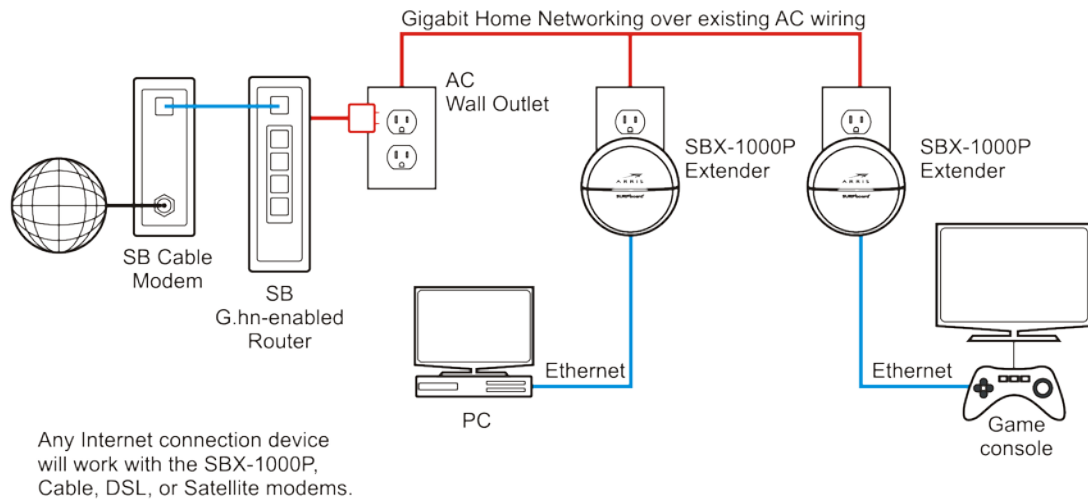
Note: Passwords are case-sensitive. Valid characters are the numbers 0 to 9, the letters a through z (both upper and lower case), and printable special characters (such as \$, !, ?, &, #, @, and others.)

4. Click **Apply**.
5. Record the new password here: _____

Installation Scenarios

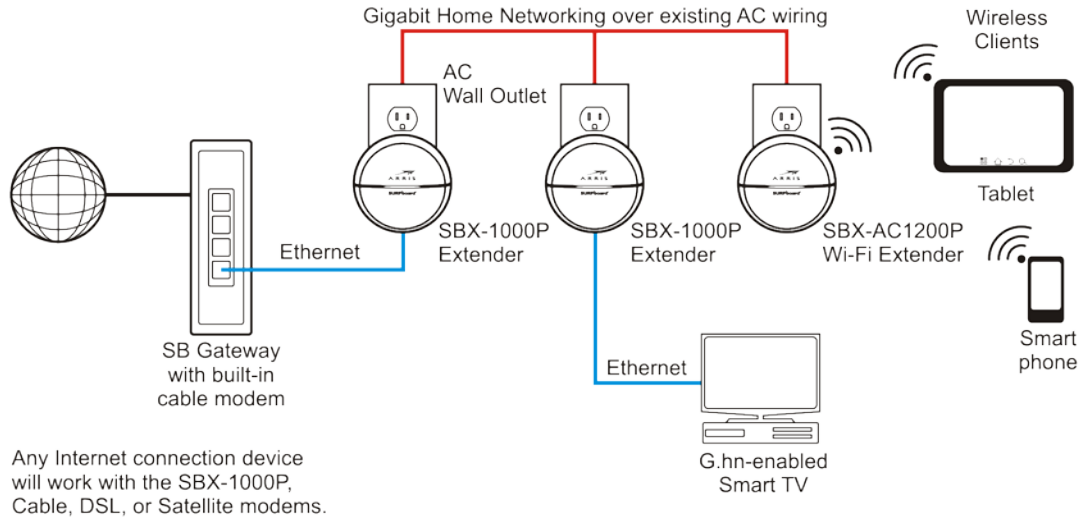
This section illustrates several different ways that the SBX-1000P Network Extender can be installed.

Two SBX-1000P Extenders with a SURFboard G.hn-Enabled Router



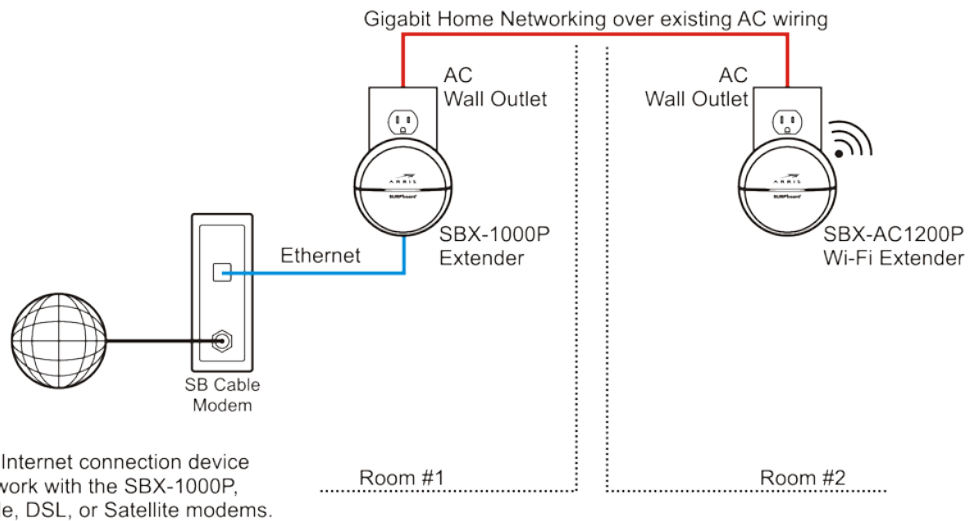
Gigabit home networking throughout the house.

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



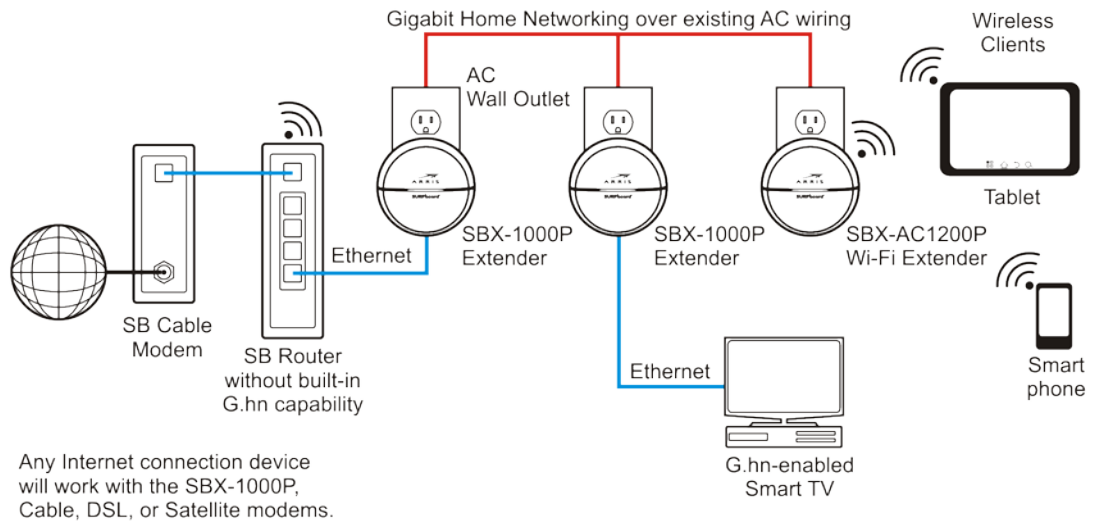
Extend your current internet service to any room, including wireless connectivity.

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



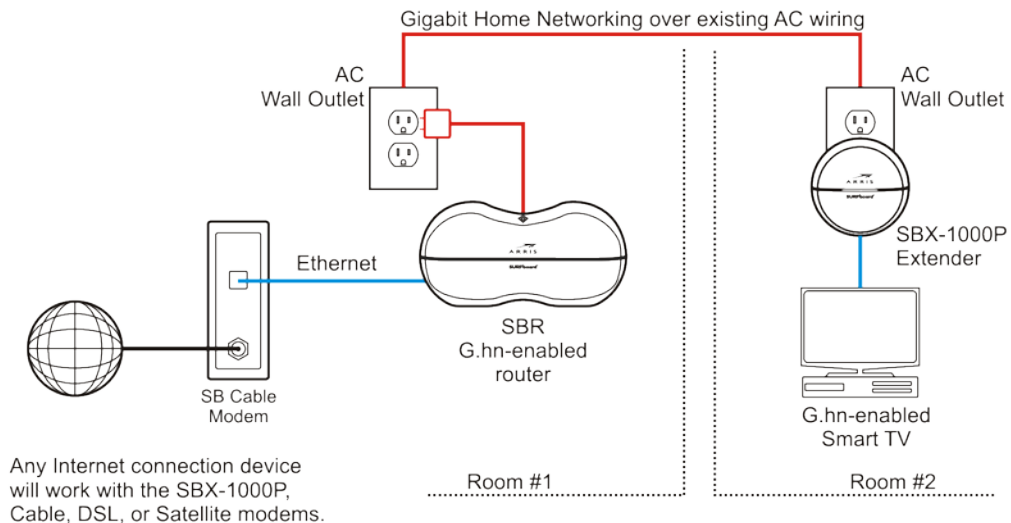
Add wireless capability to your current DSL, cable, or satellite modem.

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



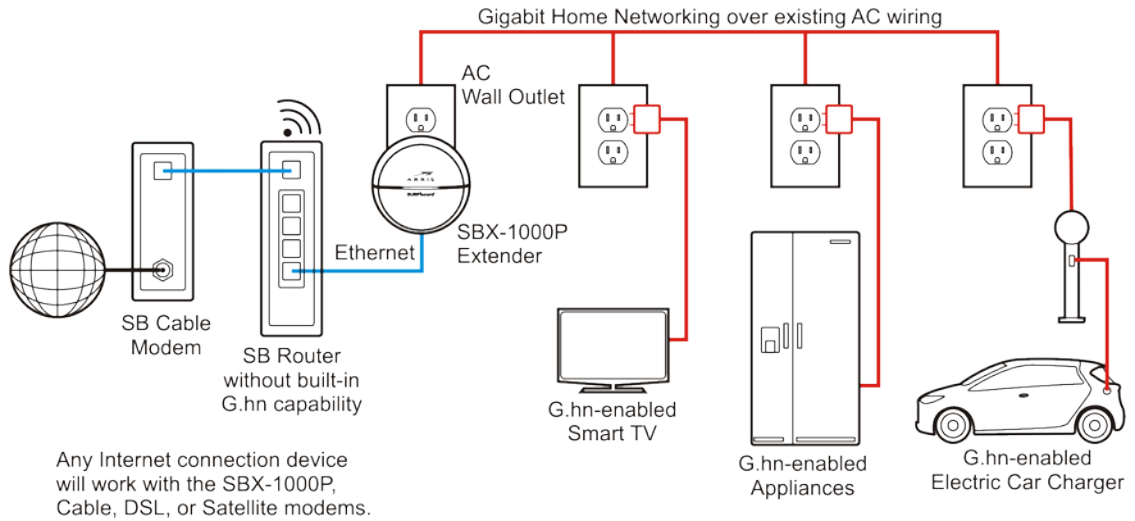
Extend your existing wired and wireless network to any room in the house.

SBX-1000P Extender with a SURFboard Cable Modem and a SURFboard G.hn-Enabled Router



The SBX-1000P allows you to move your wireless router away from your current Internet connection device to a more convenient location.

SBX-1000P Extender with a SURFboard Cable Modem and Several G.hn-Enabled Devices



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

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