SURFboard® SBG6900-AC

Wireless Cable Modem & Router

User Guide

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The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

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Safety and Regulatory Information

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 provided power and interface cables and install them properly.
- Different types of cord sets may be used for connections to the main POWER supply circuit. Use only a main line cord that complies with all applicable device safety requirements of the country of use.
- Installation of this device must be in accordance with national wiring codes and conform to local regulations.
- Operate this device only from the type of power source indicated on the device's marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- 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.
- Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords where they are attached to plugs and convenience receptacles, and examine the point where they exit from the device.
- Place this device in a location that is close enough to an electrical outlet to accommodate the length of the power cord.
- Place the device to allow for easy access when disconnecting the power cord of the device from the AC wall outlet.
- 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.
- Place this device on a stable surface.
- Avoid damaging the cable modem with static by touching the coaxial cable when it is attached to the earth-grounded coaxial cable-TV wall outlet.

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- Always first touch the coaxial cable connector on the cable modem when disconnecting or reconnecting the Ethernet cable from the cable modem or user's PC.
- It is recommended that the customer install an AC surge protector in the AC outlet to which this device is connected. This is to avoid damaging the device by local lightning strikes and other electrical surges.
- 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 104º F (40º C).

SAVE THE ABOVE INSTRUCTIONS

Note to CATV System Installer — This reminder is provided to call the CATV system installer's attention to Article 820.93 and 820.100 of the National Electric Code, which provides guidelines for proper grounding and, in particular, specifies that the Coaxial cable shield shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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 receiving antenna.
- 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.

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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 Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. To comply with the FCC RF exposure compliance requirements, the separation distance between the antenna and any person's body (including hands, wrists, feet and ankles) must be at least 28 cm (11 inches).

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter except those already approved in this filing.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destinations. The firmware setting is not accessible by the end user.

INDUSTRY CANADA (IC) STATEMENT

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

- This device may not cause interference, and
- This device must accept any interference, including interference that may cause undesired operation of the device.

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

In Canada, RLAN devices are restricted from using the 5600-5650 MHz frequency band.

CAUTION: To reduce the potential for harmful interference to co-channel mobile satellite systems, use of the 5150-5250 MHz frequency band is restricted to indoor use only.

High power radars are allocated as primary users (meaning they have priority) of 5250-5350 MHz and 5650-5850 MHz frequency bands. These radars could cause interference and/or damage to License Exempt–Local Area Network (LE-LAN) devices.

IC RADIATION EXPOSURE STATEMENT

IMPORTANT NOTE: This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

AVIS D'INDUSTRIE CANADA (IC)

Cet appareil est conforme à la réglementation RSS-210 d'Industrie Canada. Son utilisation est assujettie aux deux conditions suivantes :

- Cet appareil ne doit pas causer d'interférences et
- Cet appareil doit accepter toute interférence reçue, y compris les interférences causant un fonctionnement non désiré.

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

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Au Canada, les appareils de réseau local sans fil ne sont pas autorisés à utiliser les bandes de fréquence 5600-5650 MHz.

AVERTISSEMENT: afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux, les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur.

Les radars à haute puissance sont définis en tant qu'utilisateurs principaux (c.-à-d. prioritaires) des bandes de fréquences 5250-5350 MHz et 5650-5850 MHz. Ces radars peuvent causer de l'interférence ou des dommages susceptibles de nuire aux appareils exempts de licence–réseau local (LAN-EL).

DÉCLARATION DE IC SUR L'EXPOSITION AUX RAYONNEMENTS

NOTE IMPORTANTE: cet équipement est conforme aux limites d'exposition aux rayonnements établies par IC pour un environnement non contrôlé. Cet équipement doit être installé et utilisé de manière à maintenir une distance d'au moins 20 cm entre la source de rayonnement et votre corps.

WIRELESS LAN INFORMATION

This device is a wireless network product that uses Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency-Division Multiple Access (OFDMA) radio technologies. The device is designed to be interoperable with any other wireless DSSS and OFDMA products that comply with:

- The IEEE 802.11 Standard on Wireless LANs (Revision B, Revision G, and Revision N), as defined and approved by the Institute of Electrical Electronics Engineers
- The Wireless Fidelity (Wi-Fi) certification as defined by the Wireless Ethernet Compatibility Alliance (WECA).

Restrictions on the Use of Wireless Devices

In some situations or environments, the use of wireless devices may be restricted by the proprietor of the building or responsible representatives of the organization. For example, using wireless equipment in any environment where the risk of interference to other devices or services is perceived or identified as harmful.

If you are uncertain of the applicable policy for the use of wireless equipment in a specific organization or environment, you are encouraged to ask for authorization to use the device prior to turning on the equipment.

The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this product, or the substitution or attachment of connecting cables and equipment other than specified by the manufacturer. Correction of the interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user.

The manufacturer and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from failing to comply with these guidelines.

Note: The use of the 5150-5250 MHz frequency band is restricted to Indoor Use Only.

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SECURITY WARNING: This device allows you to create a wireless network. Wireless network connections may be accessible by unauthorized users. For more information on how to protect your network, see Change the Default User Name and Password for instructions or visit the ARRIS Support website at www.arris.com/consumer.

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.

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1 Getting Started

Introduction

The ARRIS SURFboard® SBG6900-AC Wireless Cable Modem & Router is an all-in-one high performance wireless DOCSIS® 3.0 cable modem and four-port router. It provides high-speed Internet access for your computer and other wireless network devices on your home or small business network. The SBG6900-AC also includes a Wi-Fi Pairing option for quick and easy wireless connections for your WPS-enabled (Wi-Fi Protected Setup) wireless devices.

This guide provides a product overview and instructions for installing and configuring the SBG6900-AC. It also includes procedures for setting up secure wireless network connections and managing your SBG6900-AC and network configurations.

In The Box

Before installing the SBG6900-AC, check that the following items are included in the box. If any items are missing, please contact your service provider for assistance.

Table 1: SBG6900-AC Package Contents

Item		Description
SBG6900-AC Wireless Cable Modem & Router		High-speed DOCSIS 3.0 cable modem, wireless access point, and four-port router
Power Cord		Provides power to the SBG6900-AC through an electrical outlet connection
Ethernet Cable		Standard Category 5 (or higher) cable for connecting your network devices to the network
Software License & Regulatory Card		Contains the software license, warranty, and safety information for the SBG6900-AC

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Item		Description
SBG6900-AC Quick Start Guide		Provides basic information for installing the gateway to get it up and running on your home network

Additional Items Needed (Not Included)

The following items are not included in the product box and must be purchased separately.

- Coaxial (coax) cable, if one is not already connected to a cable wall outlet
- RF splitter (for additional coaxial cable connections, such as a set-top box or Smart TV)

System Requirements

- High-speed Internet access account
- Web browser access –Internet Explorer, Google Chrome, Firefox, or Safari
- Compatible operating systems:
  - Windows® 10
  - Windows 8
  - Windows 7, Service Pack 1 (SP1)
  - Windows Vista™, SP2 or later
  - Windows XP, SP 3

  Note *Microsoft no longer supports Windows XP. However, the SBG6900-AC should still function without any problems.*

  - Mac® 10.4 or higher
  - UNIX®
  - Linux®

Contact Information

For technical support and additional ARRIS product information:

- Visit the ARRIS Support website: www.arris.com/consumer
- Call ARRIS Technical Support: 1-877-466-8646

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2 Product Overview

Front Panel

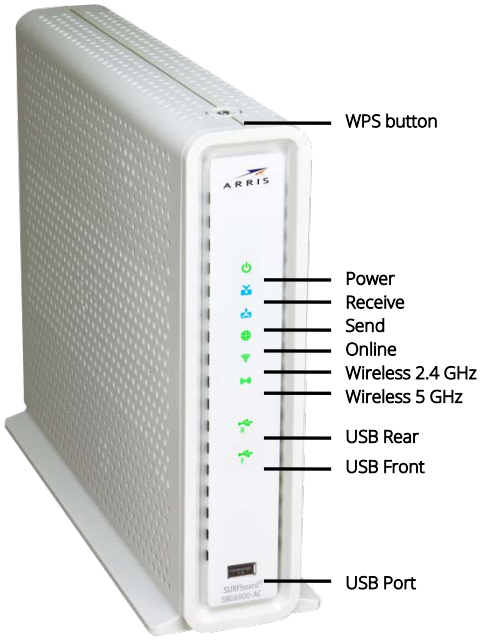

Figure 1 – SBG6900-AC Front View

Table 2: SBG6900-AC Front Panel LEDs & Port

LED Icon	Flashing	On
WPS Button	Not applicable — no LED on button. ***Note**: The **Wireless** LED will flash **Amber** to indicate the WPS pairing process is in progress.*	Not applicable — no LED on button. See Wi-Fi Protected Setup (WPS) for more information.
POWER	Not applicable — icon does not flash.	**Green**: Power is properly connected.
RECEIVE	Scanning for an downstream (receive) channel connection.	**Green**: Non-bonded downstream channel is connected. **Blue***: High-speed Internet connection with bonded downstream channels.

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LED Icon	Flashing	On
 SEND	Scanning for an upstream (send) channel connection	**Green**: Non-bonded upstream channel is connected. **Blue***: High-speed Internet connection with bonded upstream channels.
 ONLINE	Scanning for an Internet connection.	**Green**: Startup process is completed and the SBG6900-AC is connected to your home network
 WIRELESS	**Green**: Wi-Fi enabled with encrypted wireless data activity. **Amber**: WPS Pairing process is underway between the SBG6900-AC and a WPS-enabled wireless device.	**Green**: Any of the following applies: • **2.4 GHz** wireless connection is made between the SBG6900-AC and another Wi-Fi enabled wireless device on your home network; such as a Wi-Fi telephone, printer, tablet, laptop, etc. • The WPS Pairing process between the SBG6900-AC and WPS-enabled wireless device was successful. • The WPS Pairing process either failed or did not complete after two minutes. **Amber**: Flashes during the wireless pairing process and lights up SOLID **green** after five seconds or less.
 WIRELESS	**Green**: Wi-Fi enabled with encrypted wireless data activity. **Amber**: Wi-Fi enabled with unencrypted wireless data activity.	**Green**: Any of the following applies: • **5 GHz** wireless connection is made between the SBG6900-AC and another Wi-Fi enabled device on your home network; such as a Wi-Fi telephone, printer, tablet, laptop, etc. • The WPS Pairing process between the SBG6900-AC and WPS-enabled wireless device was successful. • The WPS Pairing process either failed or did not complete after two minutes. **Amber**: Flashes during the wireless pairing process and lights up SOLID **green** after five seconds or less.

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LED Icon	Flashing	On
USB **Front & Rear**	**Green**: Data activity in progress.	**Green**: USB connection is made between the SBG6900-AC and a computer or other USB device.
USB Port	USB 2.0 port connection to your computer or other USB device	

*Note: * indicates DOCSIS 3.0 operation (high-speed Internet access) which may not be available in all locations. Check with your service provider for availability in your area.*

Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS) is a wireless network setup option that provides a quick solution for setting up a secure wireless network connection for any WPS-enabled wireless device, such as a computer, tablet, gaming device, or network printer. WPS automatically configures your wireless network connections and sets up wireless security. See Use the SBG6900-AC WPS Pairing Button for more information.

Rear Panel

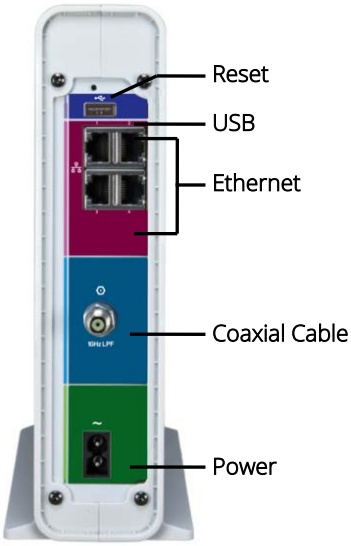

Figure 2 – SBG6900-AC Rear View

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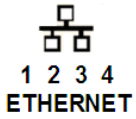
Table 3: SBG6900-AC Rear Panel Ports & Connectors

Port	Description
Reset Button	Recessed button used to reboot the gateway or reset the gateway factory settings. • To reboot (or restart) the gateway, press the indented **Reset** button once using the end of a paper clip or other small object with a narrow tip, and then release. • To reset the gateway configuration back to the factory default settings, press and hold the recessed Reset button for 15 seconds using the end of a paper clip or other small object with a narrow tip, and then release. See Reset Your Gateway Settings for more information on an alternative method to reset the gateway settings using the SBG6900-AC Web Manager. **WARNING!** Resetting the SBG6900-AC to factory defaults will also delete any custom gateway configurations, including your user passwords and other security settings. You should back up the gateway configuration files before resetting the gateway. See Back Up Your Gateway Configuration for more information.
	USB 2.0 port connection to your computer or other USB device
	Four one-gigabit Ethernet ports for RJ-45 cable connections • **Green** LED is ON - Indicates a data transfer rate of one gigabit per second • **Amber** LED is ON - Indicates a data transfer rate of less than one gigabit per second
	Coaxial cable connector
	100 - 240VAC Power connector **WARNING!** To avoid any damage to your SBG6900-AC, only use the power cord provided in the box.

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Gateway Label

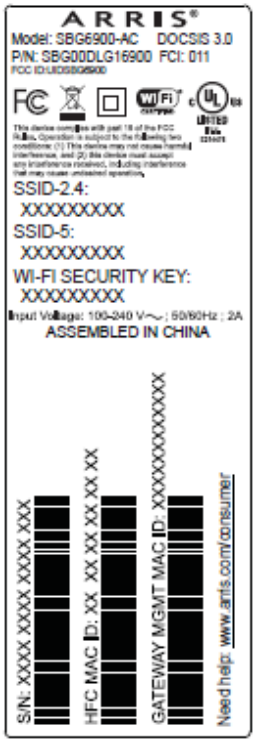

Figure 3 – SBG6900-AC Gateway Label

The gateway label is located on the bottom of the SURFboard SBG6900-AC. It contains specific gateway ID information that you may need when contacting your service provider or ARRIS Technical Support.

To receive Internet service, you will have to contact your service provider for assistance. You may need to provide the following information listed on the gateway label:

- Gateway model name (SBG6900-AC)
- Gateway MAC address (HFC MAC ID)
- Gateway serial number (S/N)

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3 Installing the Gateway

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.

Pre-Installation Considerations

Before installing the SBG6900-AC:

- Check with your service provider to ensure broadband cable service is available in your area.

  To set up a wireless network, you will need a high-speed Internet connection provided by an Internet service provider.

  Note: When contacting your service provider, you may have to provide the gateway information listed on the gateway label located on the bottom of your SBG6900-AC (see Gateway Label).

- Choose a location in your home where your computer and gateway are preferably near existing cable and electrical wall outlets.

Connect the Gateway to Your Computer

Note: The following installation procedure covers the wired Ethernet connection process so that you can confirm that the SBG6900-AC was properly installed and can connect to the Internet.

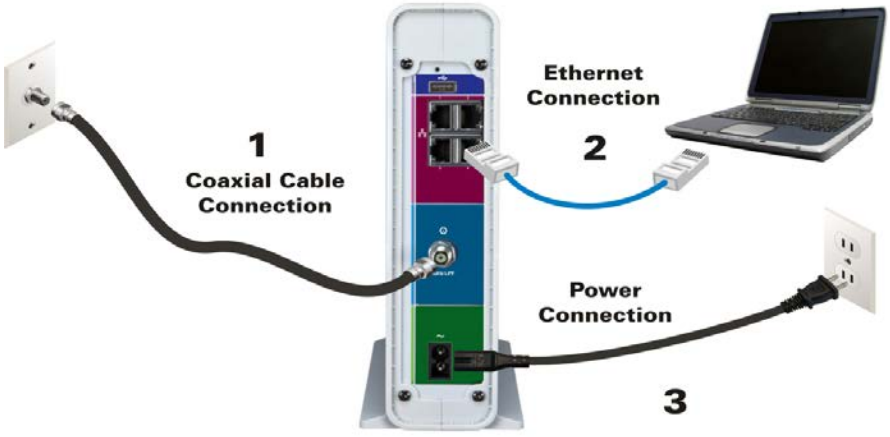

Figure 4 - SBG6900-AC Connection Diagram

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1. Check that a coaxial cable is already connected to a cable wall outlet or RF splitter (optional).
2. Connect the other end of the coaxial cable to the **Cable** connector on the SBG6900-AC.

   Use your hand to tighten the connectors to avoid damaging them.
3. Connect the Ethernet cable (included) to an available **Ethernet** port on the SBG6900-AC.
4. Connect the other end of the Ethernet cable to the **Ethernet** port on your computer.

   Optional: Repeat steps 3 and 4 for each additional computer or other Ethernet-enabled device (up to four) that you want to install as a wired connection on your home network.
5. Connect the power cord (included) to the **Power** port on the rear of the SBG6900-AC.
6. Plug the other end of the power cord into an electrical wall outlet.

   Note: *This automatically powers ON your SBG6900-AC.*

Establish and Verify Network Connectivity

Although your computer may already be configured to automatically access the Internet, you should still perform the following connectivity test to check that your gateway and computer were connected properly:

1. Power ON the computer connected to the SBG6900-AC, if it is turned off, and then log on.
2. Contact your service provider to activate (provision) the SBG6900-AC. You may have to provide the **HFC MAC ID** listed on the Gateway Label.

   Note: *Your service provider may allow for automatic activation which will automatically launch a special website when you open a web browser.*
3. After the SBG6900-AC is activated, open a web browser (such as Internet Explorer, Google Chrome, Firefox, or Safari) on your computer.

   If the special website did not open, continue with step 4. If it opened, proceed to step 5.
4. Type a valid URL (such as www.surfboard.com) in the address bar and then press **Enter**.

   The ARRIS SURFboard website should open. If it did not open, do one of the following:
   - See Troubleshooting Solutions for more information.
   - Contact your service provider for assistance.

     Note: Do not *attempt to change the network options on your computer to access the Internet.*
5. Check that the **Power, Receive, Send**, and **Online** front panel LEDs on the SBG6900-AC light up in sequential order. See Front Panel for additional LED status information.
   - If all four LEDs did not light up solid and you also do not have an Internet connection, you may have to contact your service provider to reactivate the SBG6900-AC or check for signal issues.
   - If you still cannot connect to the Internet, your SBG6900-AC may be defective. Please contact your service provider for assistance.
6. After the SBG6900-AC is activated, open a web browser (for example, Internet Explorer, Google Chrome, Firefox, or Safari) on the computer connected to the SBG6900-AC.

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4 Setting Up a Wireless Network Connection

ARRIS recommends that you first verify that your computer can connect to the Internet using an Ethernet connection before configuring your wireless network.

You must already have access to a high-speed Internet service in your home before you can set up a wireless network connection or connect wireless devices to the SBG6900-AC. Also, make sure the SBG6900-AC and your computer are connected through an Ethernet connection.

Choose one of the following options to set up your wireless network connection:

- Launch the SBG6900-AC Quick Start Wizard
- Set Up a Wireless Network Using Your Computer
- Use the SBG6900-AC WPS Pairing Button

After setting up your wireless network connection, check that the connection was set up properly. See Test Your Wireless Network Connection for more information.

Launch the SBG6900-AC Quick Start Wizard

The SBG6900-ACQuick Start Wizard is a six-step application to help you quickly configure the default wireless network settings on your SBG6900-AC. It configures your wireless network name (SSID), Wi-Fi Security key (network password), and Wi-Fi Security code.

> ***IMPORTANT NOTE**: The quick start wizard uses the default settings already configured for your SBG6900-AC to help you quickly set up your wireless home network. However, the wizard will only let you change the wireless network name (SSID) and Wi-Fi Security key (network password). After completing the wizard and getting your SBG6900-AC connected to the Internet, you will be able to make additional network configuration changes to further customize your wireless home network and connect your wireless devices. See Configuring Your Wireless Network for more information.*

1. Open a web browser (such as Internet Explorer, Google Chrome, Firefox, or Safari) on the computer connected to the SBG6900-AC.
2. Type the default LAN IP address, **`http://192.168.0.1,`** in the Address bar and then press **Enter**. The gateway Login screen displays (see Figure 5).
3. Type the default user name and password shown below. Both entries are case-sensitive.

   Username: admin

   Password: password

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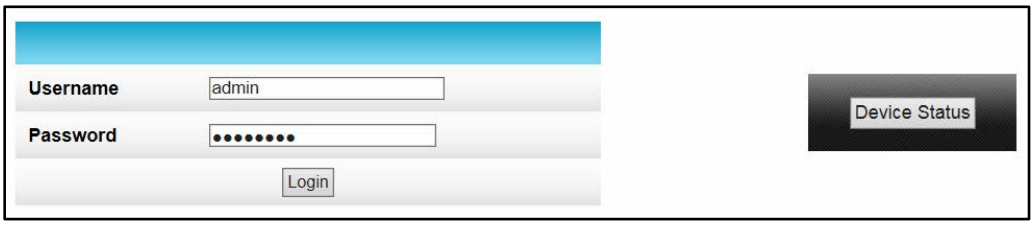

Figure 5 – Gateway Login Screen

Note The Device Status button provides a quick view of the current SBG6900-AC configuration settings and network connection status without having to login to the SBG6900-AC Web Manager (see View Your Gateway Status and Network Connection for more information).

4. Click **Login** to open the SBG6900-AC Web Manager. The Launch Quick Start Wizard screen displays.

   Note If the default user name and password are not working, your service provider may have to set up alternate login credentials. Please contact your service provider or call ARRIS Technical Support for assistance.

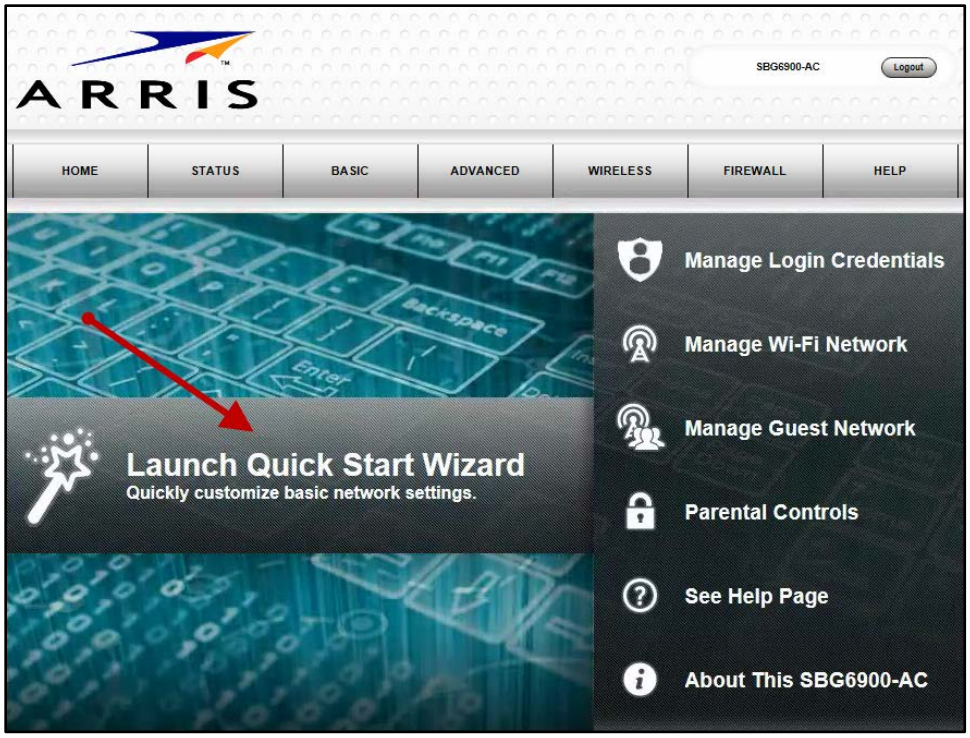

Figure 6 – SBG6900-AC Quick Start Wizard Opening Screen

5. Click Launch Quick Start Wizard to start the wizard. The Welcome screen displays.

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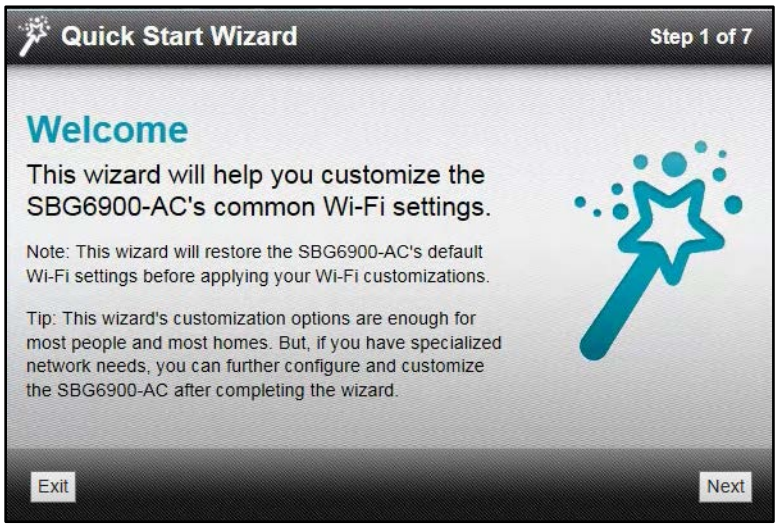

Figure 7 – SBG6900-AC Quick Start Wizard Welcome Screen

6. Click **Next** to open the Wi-Fi Network Name & Passphrase screen.

Figure 8 – SBG6900-AC Quick Start Wizard-Step 2 of 7 Screen

7. Do one of the following to set up your wireless network name in the Network Name (SSID) field:
   - Keep the default network name or SSID (listed on the SBG6900-AC Gateway label).
   - Enter a name of your choice for your wireless network. Your new network name must contain from one to 32 alphanumeric characters.

   Note *You have the option to customize your wireless network name (SSID) after connecting to your wireless network for the first time. However, you must use the default SSID listed on the gateway label when installing the SBG6900-AC for the first time. See* *Change Your Wireless Network Name (SSID)* *for more information.*

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8. Do one of the following to set up your wireless network password in the **Passphrase / Wi-Fi Security Key** field:
   - Keep the default passphrase or Wi-Fi Security key (listed on the SBG6900-AC Gateway label).
   - Enter a new password of your choice for your wireless network password.

   The passphrase or Wi-Fi Security key is the sign-on access code for your wireless network. The access code must contain from eight to 64 characters consisting of any combination of letters, numbers, and symbols. It should be as unique as possible to protect your wireless network and deter hackers or unauthorized access to your wireless network.

   Note *ARRIS recommends that you change the default Wi-Fi Security Key to a more secure wireless password to protect your wireless network from unauthorized access. See* *Prevent Unauthorized Access* *for more information.*
9. Click **Next** to open the 2.4GHz & 5GHz Networks screen.

Figure 9 – SBG6900-AC Quick Start Wizard-Step 3 of 7 Screen

This screen displays the two Wi-Fi frequency bands (**2.4 GHz** and **5 GHz**) available on the SBG6900-AC. The wizard will configure the default **2.4 GHz** frequency band. See Change the Wireless Channel to change the Wi-Fi frequency range.

Note *The 2.4 GHz frequency range is recommended for backward compatibility purposes because older wireless devices cannot connect to 5 GHz frequencies.*

10. Click **Next** to open the Wi-Fi Security Configuration screen.

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Figure 10 – SBG6900-AC Quick Start Wizard-Step 4 of 7 Screen

The wizard configures **WPA2-PSK** (highest wireless network security level) as the default wireless security code for your wireless home network. See Set Up Your Primary Wireless Network to change the wireless security code.

11. Click **Next** to open the User Security Configuration screen.

Figure 11 – SBG6900-AC Quick Start Wizard-Step 5 of 7 Screen

This screen lets you change the current (or default) login user name and password for logging on to the SBG6900-AC to access the SBG6900-AC Web Manager.

Note *You must select each checkbox to activate the field to enter your new username and password because otherwise the fields are disabled. The* ***Next*** *button is disabled, if the user name or password was not entered correctly. Make sure to repeat the same username and password in their respective fields.*

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- Select the Change Username checkbox and then enter your new user name in both fields.
- Select the Change Password checkbox and then enter your new password in both fields.

12. Click **Next** to open the Review Settings screen and view your wireless network settings.

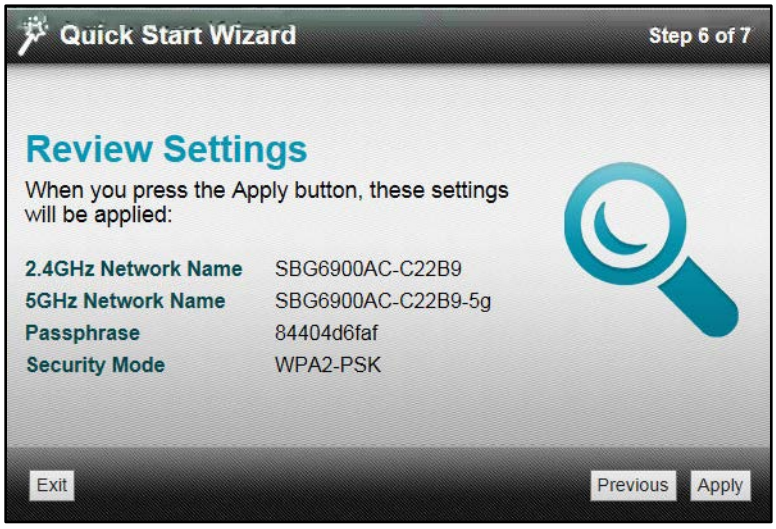

Figure 12 – SBG6900-AC Quick Start Wizard-Step 6 of 7 Screen

- Click **Apply** to accept the wireless network settings and open the Settings Applied screen.

  - or –

  Click **Previous** to go back and change your wireless network name (Network Name (SSID) and/or wireless network password (Passphrase / Wi-Fi Security Key).

  Wait for your wireless network settings to be saved. When complete, the Settings Applied screen will open.

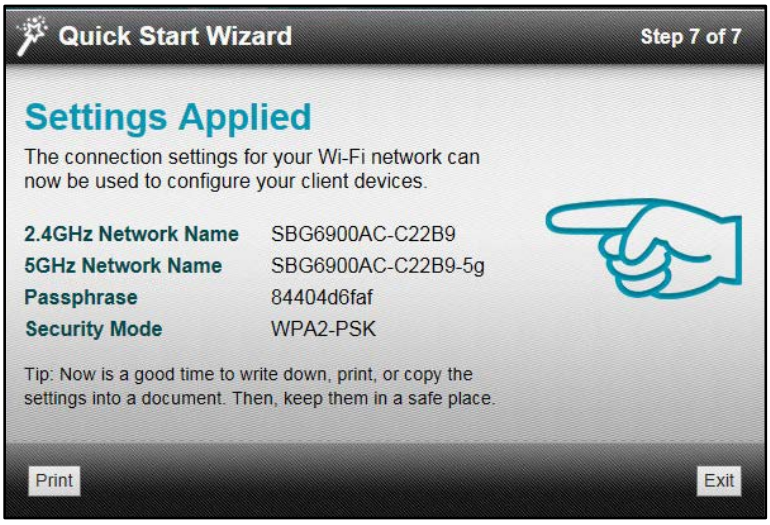

Figure 13 – SBG6900-AC Quick Start Wizard-Step 7 of 7 Screen

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13. Click **Exit** to close the Quick Start Wizard.

    Note You can either click Print for a printout of your current wireless network settings or write down the network settings for future reference. This can be helpful for later use when logging onto your wireless network or changing your wireless network settings.

Set Up a Wireless Network Using Your Computer

Use one of the following options to create your wireless network:

- Quick Connect Using the Windows Taskbar
- Connect Using the Windows Control Panel

Note The steps for setting up a wireless network may differ slightly depending on the Windows operating system running on your computer. The steps used here apply to Windows 7.

Quick Connect Using the Windows Taskbar

1. From the Windows taskbar (see below), click the **Wireless Link** icon to open the list of available wireless networks (see Figure 15).

   Note Move your cursor over the icon to display its name. If the Wireless Link icon is not visible, click the Show hidden icons button shown below.

Figure 14 – Windows Taskbar Icons

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Figure 15 – Sample Available Wireless Networks Window

2. Locate and then left-click on the default SBG6900-AC wireless network name or SSID (for example, SBG6900AC-xxxxx) from the Wireless Networks list.

   Note xxxxx represents the unique SSID for your SBG6900-AC.

   The default SSID is also listed on the gateway label on the bottom of your SBG6900-AC.

Figure 16 – Select Wireless Network Window

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Note: You have the option to customize your wireless network name or SSID after setting up your wireless network connection for the first time. However, you must use the default SSID listed on the gateway label when installing your gateway. See Change Your Wireless Network Name (SSID) for more information.

3. Select **Connect automatically** to set up your wireless devices to automatically connect to your wireless home network when they are powered on.
4. Click **Connect** to open the Connect to a Network window.

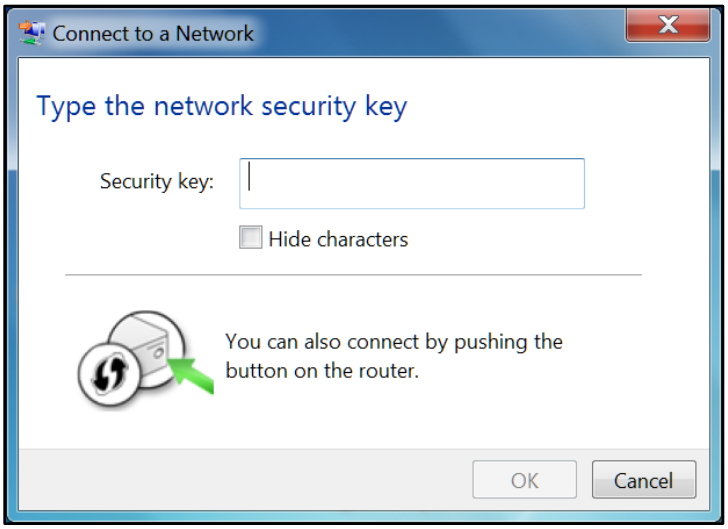

Figure 17 – Network Connection Window

5. Enter the default Wi-Fi Security Key code (listed on the SBG6900-AC gateway label) in the **Security key** field.

   Note: If you have previously changed your wireless network security key code or password using the SBG6900-AC Web Manager, enter that password here.
6. Select **Hide characters** and then click OK to encrypt (or hide) your network Security key (or network password).

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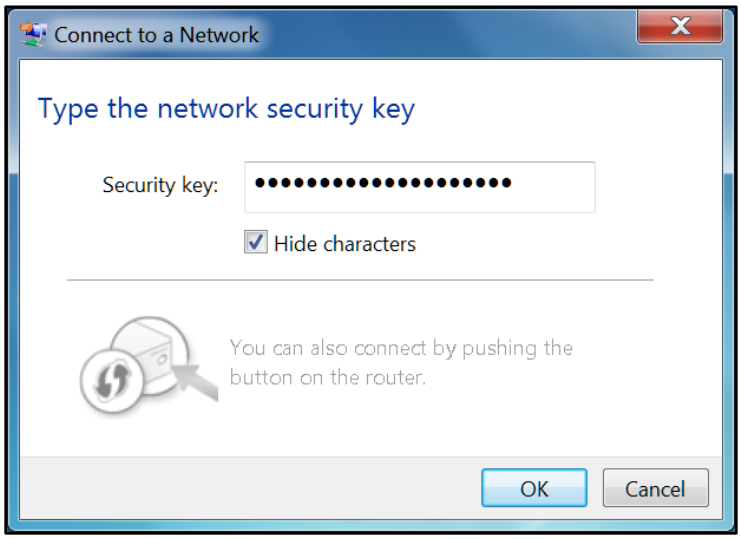

Figure 18 – Network Connection-Create Network Password Window

Connect Using the Windows Control Panel

1. From the Windows taskbar, click **Start** button and then click **Control Panel**.
2. Click **Network and Sharing Center** to open the Network and Sharing Center window.

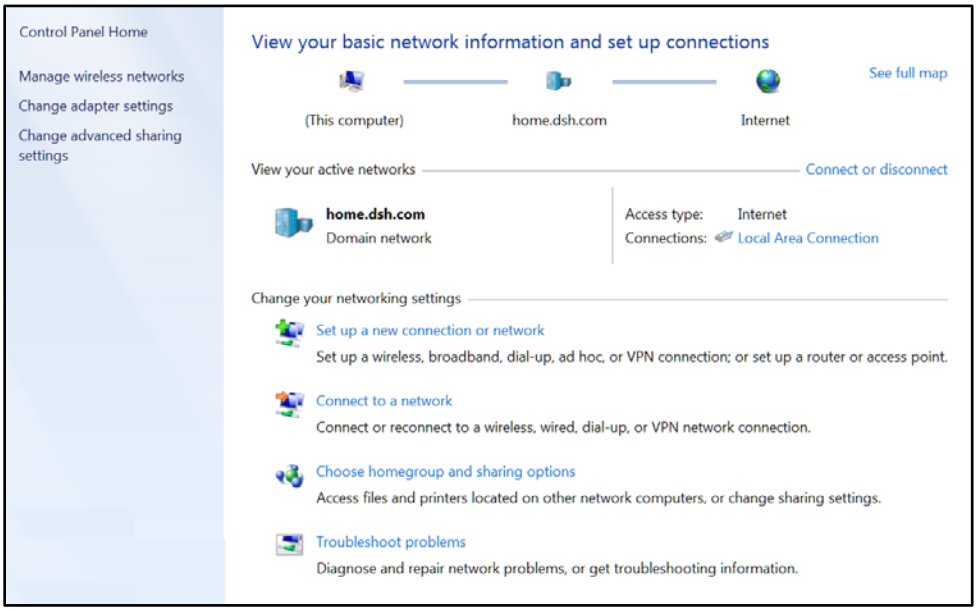

Figure 19 – Control Panel-Network and Sharing Center Window

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3. Click **Manage wireless networks** under Control Panel Home to open the **Manage Wireless Networks** window.
4. Click **Add** to open the **Manually Connect to a Wireless Network** window.

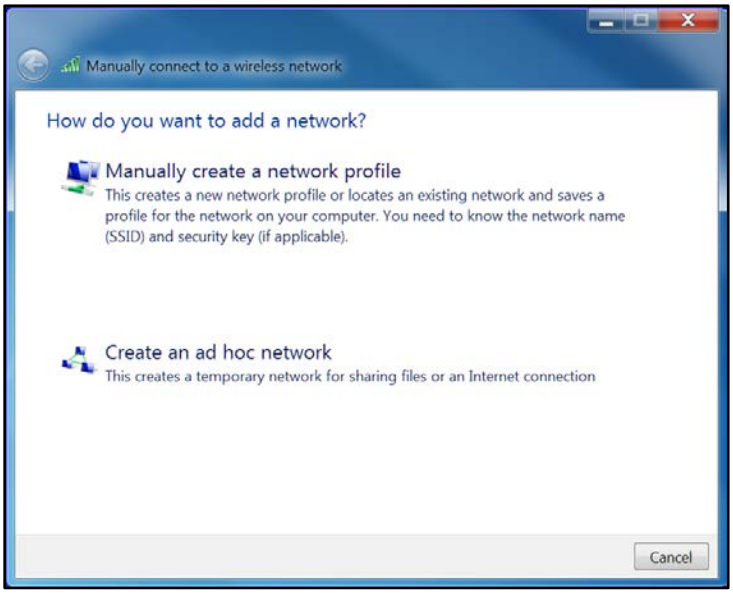

Figure 20 – Manually Connect to a Wireless Network Window

5. Click **Manually create a network profile** to open another Manually Connect to a Wireless Network window.

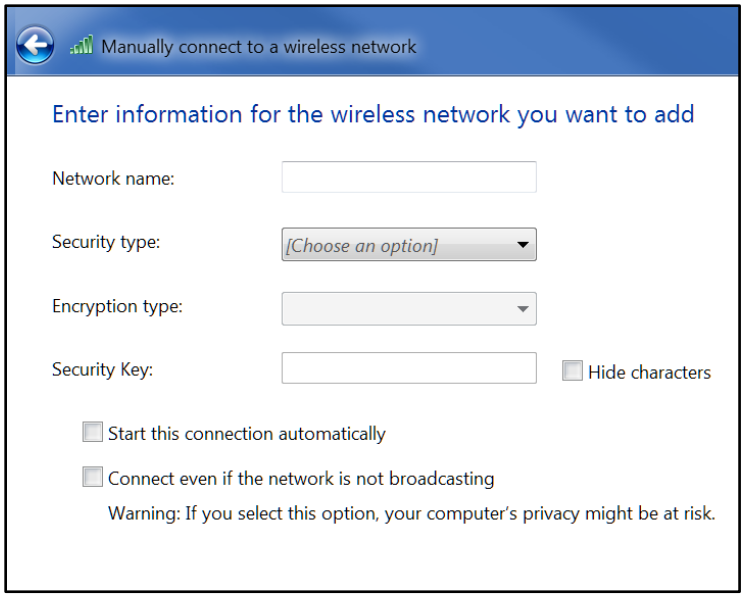

Figure 21 – Manually Connect to a Wireless Network Window

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6. Enter the ARRIS wireless network name or SSID (SBG6900AC-xxxxx) for your SBG6900-AC in the **Network name** field.

   The SSID name is located on the gateway label on the bottom of your SBG6900-AC.

   Note: You have the option to change your wireless network name (or SSID) after completing your initial wireless network connection. See Change Your Wireless Network Name (SSID) for more information.

7. Select the wireless Security level for your wireless network from the **Security type** drop-down list.

   Note: ARRIS recommends the WPA2-Personal wireless security level. It is the highest security level available and also the default security level for the SBG6900-AC.

8. Select the password encryption type from the **Encryption type** drop-down list. This is used for securing your wireless network.
   - TKIP – Temporal Key Integrity Protocol
   - AES – Advanced Encryption Standard (recommended). AES is the default encryption type for the SBG6900-AC.

9. Enter a Security code or passphrase for your wireless network password in the **Security Key** field.

   You can use the WI-FI Security Key listed on the SBG6900-AC gateway label or create your own personal password.

   Note: Remember to use a unique combination of letters, numbers, and characters to create a more secure password. See Prevent Unauthorized Access for more information.

10. Select **Hide characters** to prevent your Security Key or password from displaying in the field.
11. Select **Start this connection automatically** so that your wireless devices will automatically connect to your wireless network upon login.
12. Click **Next** to complete the wireless network setup.

    The Successfully added <*Network name*> message for your new wireless network displays.

13. Click Close to exit.

Use the SBG6900-AC WPS Pairing Button

The WPS Pairing button automatically connects your WPS-enabled wireless devices to your wireless home network using the default SBG6900-AC SSID (network name) and Wi-Fi Security Key (network password) listed on the gateway label. See Set Up WPS on Your Wireless Network for more information.

Note: To use the WPS Pairing button option, your computer hardware must support WPS and also have WPA security compatibility.

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1. Power ON your gateway and other WPS-enabled wireless devices that you want to connect to your wireless network.
2. Press and hold the **WPS** button located on the top of the SBG6900-AC for five to 10 seconds and then release.

Figure 22 – SBG6900-AC WPS Pairing Button

3. If applicable, press the **WPS** button on your WPS-enabled computer or other WPS-enabled wireless device.
4. Repeat step 3 for each additional WPS-enabled wireless device that you want to connect to your wireless network.

Test Your Wireless Network Connection

Perform the following connectivity test to check that your SBG6900-AC and other wireless devices are connected to your wireless home network:

1. If the wireless devices successfully connected to the wireless network, disconnect the Ethernet cable from your computer and SBG6900-AC.
2. Open a web browser on your computer.
3. Type a valid URL (such as **`www.surfboard.com`**) in the address bar and then press **`Enter`**.

   If the website did not open, please call ARRIS Technical Support for assistance.

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5 Using the Gateway Web Manager

Use the SBG6900-AC Web Manager to view and monitor the configuration settings and operational status of your SBG6900-AC. You can also configure your network connections and wireless security settings. See Protecting & Monitoring Your Wireless Network for more information.

Note: If you did not purchase your gateway from a retail store, you may notice a few blocked configuration settings in the SBG6900-AC Web Manager that cannot be modified. This may be due to some restrictions set up by your service provider to prevent unauthorized changes to certain configuration parameters.

Start the Gateway Web Manager

Note: You must use the default user name and password (listed below) to log in to the SBG6900-AC Web Manager for the first time. For network security purposes, ARRIS recommends that you change the gateway default user name and password after logging onto the Internet and the SBG6900-AC for the first time. See Change the Default User Name and Password for more information.

1. Open any web browser on the computer connected to the SBG6900-AC.
2. Type **192.168.0.1** in the Address bar for the Gateway Web Manager IP address and then press **Enter**. The Gateway Login screen displays.
3. Type the default user name and password. Both entries are case-sensitive.

   Username: admin

   Password: password

   Note: You must enter the default user name and password to log onto the SBG6900-AC Web Manager for the first time.

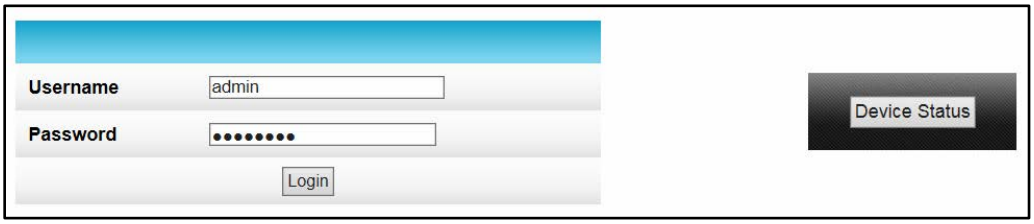

Figure 23 – Gateway Login Screen

4. Click **Login** to open the SBG6900-AC Web Manager. The SBG6900-AC Main Screen displays (see Figure 24).

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Note: If the default user name and password are not working, your service provider may have set up alternate log in credentials. Please contact your service provider or call ARRIS Technical Support for assistance.

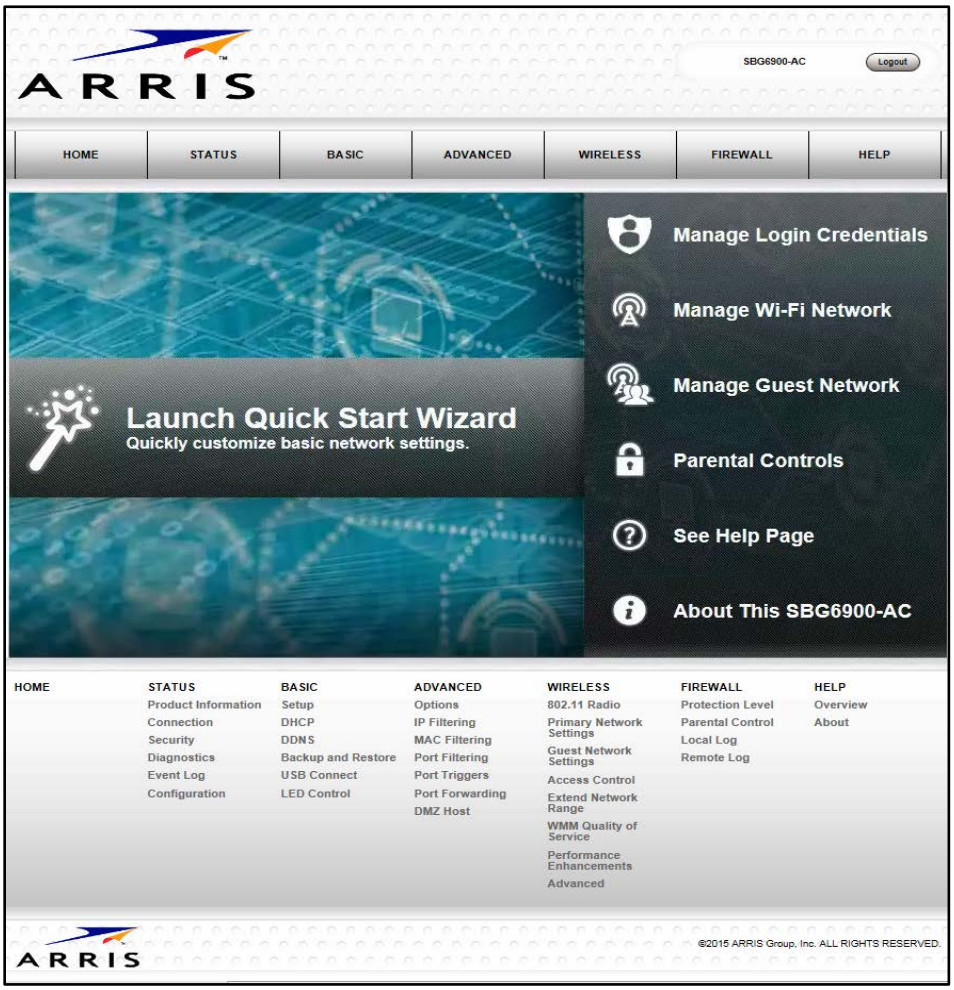

Figure 24 – SBG6900-AC Web Manager Main Screen

Note: The Login Alerts screen will display if you logged in using the default user name and password (see Figure 25). ARRIS recommends changing your username and password for network security. See Change the Default User Name and Password for more information.

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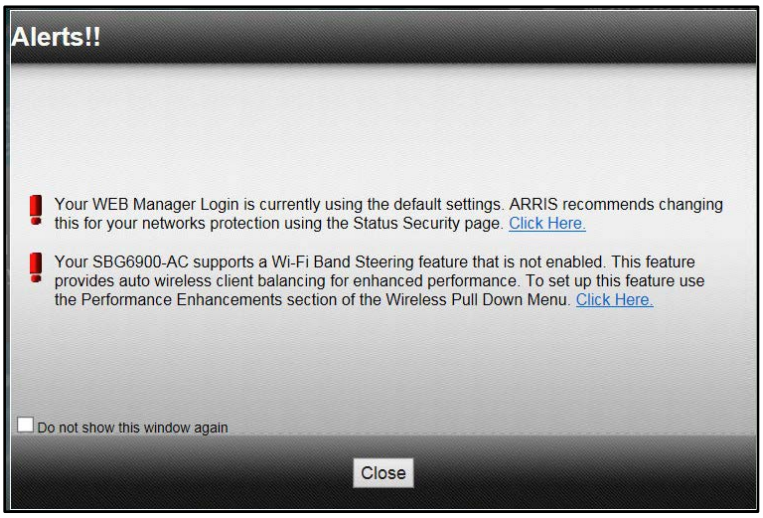

Figure 25 – Login Alerts Screen

5. Click **Close** to close the window. -AC Web Manager. The SBG6900-AC Main Screen displays (see Figure 24).

Gateway Web Manager Menu Options

Main Menu Buttons

The SBG6900-AC main menu buttons are displayed along the top of the SBG6900-AC Web Manager screen. To display the drop-down submenu options, click the menu button.

Figure 26 – SBG6900-AC Web Manager Main Menu Buttons

Main Menu Links

The SBG6900-AC main menu and related submenu option links are also displayed along the bottom of the SBG6900-AC Web Manager screen. To open a submenu option, click on the link.

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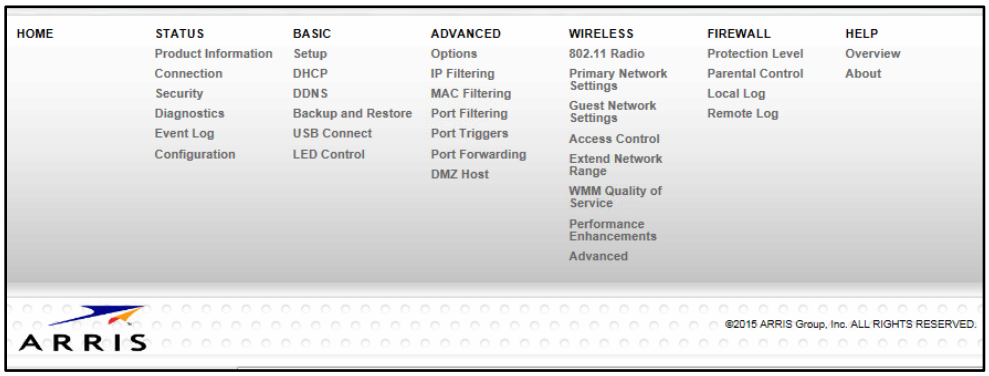

Figure 27 – SBG6900-AC Web Manager Main Menu Links

Table 4: SBG6900-AC Web Manager Main Menu Options

Menu Option	Function
Home	Returns to the SBG6900-AC Launch Quick Start Wizard main screen.
Status	Provides information about the gateway hardware and software, MAC address, gateway IP address, serial number, and related information. Additional pages provide diagnostic tools and also allow you to change your gateway user name and password.
Basic	Configures the gateway IP-related configuration data, including Network Configuration, WAN Connection Type, DHCP, and DDNS.
Advanced	Configures and monitors how the gateway routes IP traffic on your home network.
Wireless	Configures and monitors the gateway wireless network security settings.
Firewall	Configures and monitors the gateway firewall and other network security controls.
Help	Provides general information to help you set up and configure your home network.

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Get Help

The following three options are available to obtain help information for setting up and configuring your home network using the SBG6900-AC Web Manager.

- Overview Help
- Help Links
- Field Level Help

Overview Help

Provides general help information for setting up your home network and customizing some of the default network settings.

- Click **Help** on the SBG6900-AC Main Menu bar and then click **Overview** .

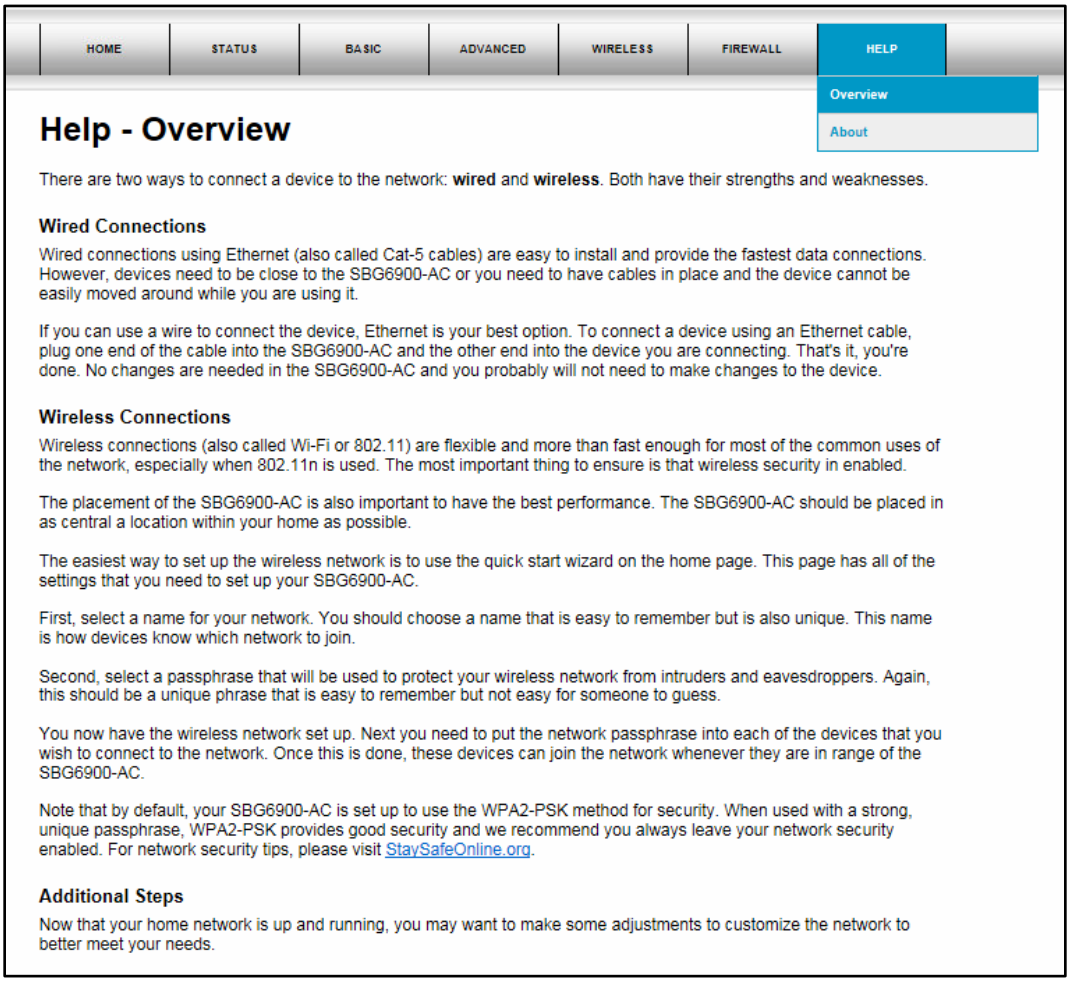

Figure 28 – Help Overview Screen

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Help Links

Provides a concise list of your gateway network configuration settings with applicable links for easy access.

- Click **Help** on the SBG6900-AC Main Menu bar and then click **About** from the drop-down list. Each link opens the related network configuration screen.

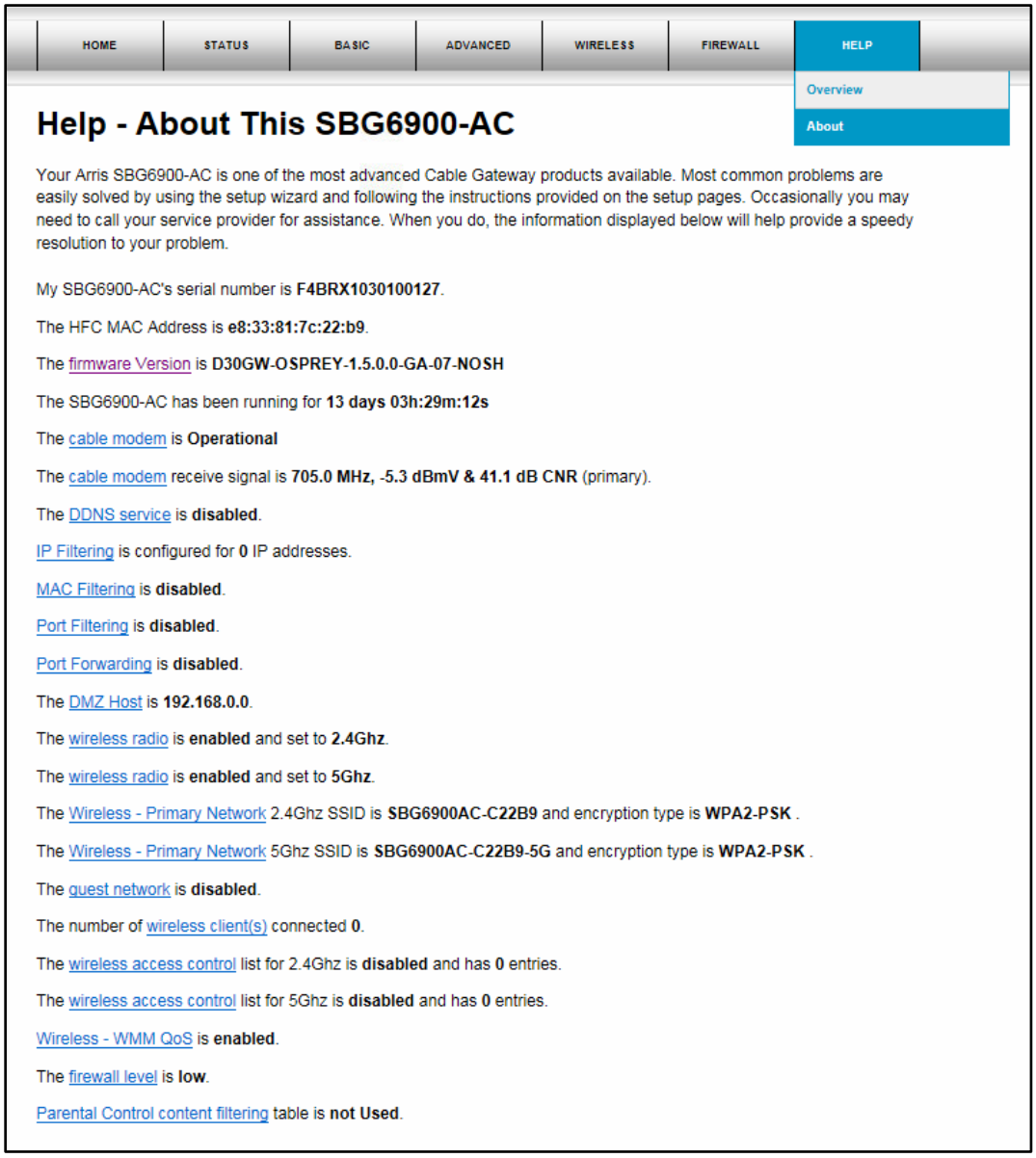

Figure 29 – Help Links Screen

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Field Level Help

Provides help information for various fields and commands throughout the SBG6900-AC Web Manager.

- Click **Help** located to the right of the applicable field to open the help window.

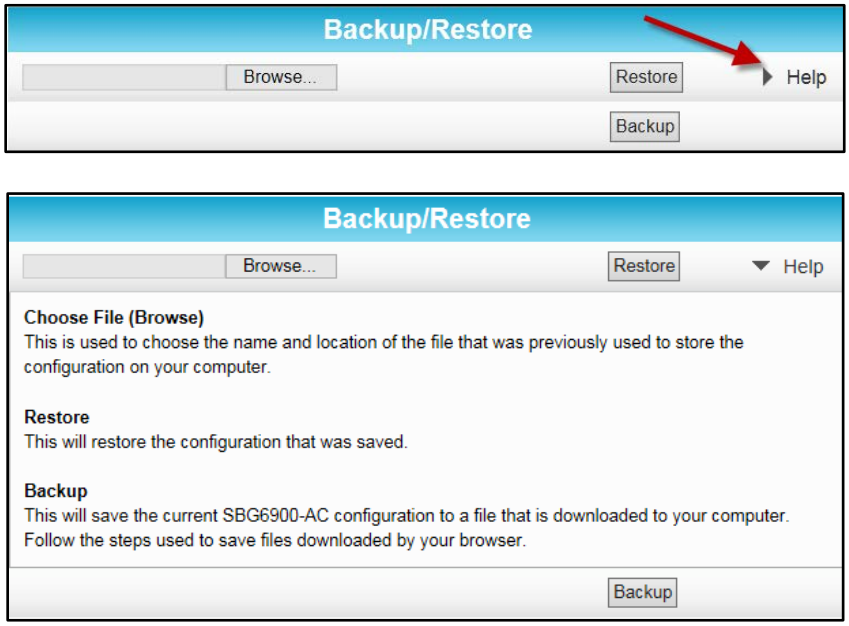

Figure 30 – Field Level Help Screens

Exit the SBG6900-AC Web Manager

To log out and close the SBG6900-AC Web Manager:

- Click **Logout** located in the upper right corner of the screen above the SBG6900-AC Main Menu buttons.

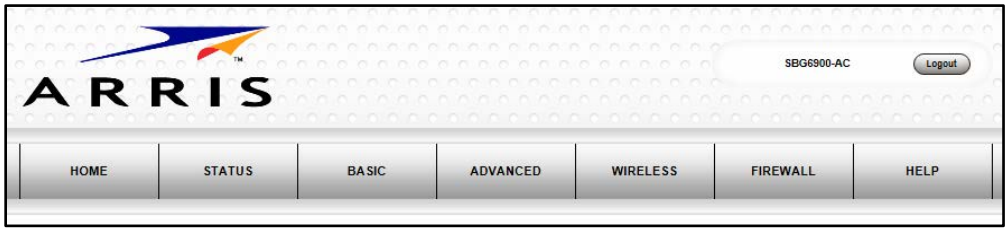

Figure 31 – SBG6900-AC Web Manager Logout Button

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6 Configuring Your Wireless Network

The SBG6900-AC supports a secure method for setting up multiple wireless access points on your home network. This enables you to designate a secondary network as your guest network for family members, friends, or visitors without giving them access to your files or other devices on your primary network.

Set Up Your Primary Wireless Network

1. Open a web browser and log onto the SBG6900-AC to open the SBG6900-AC Web Manager. See Start the Gateway Web Manager for more information.
2. Click **Wireless** on the SBG6900-AC Main Menu bar.
3. Click **Primary Network Settings** from the Wireless submenu options.

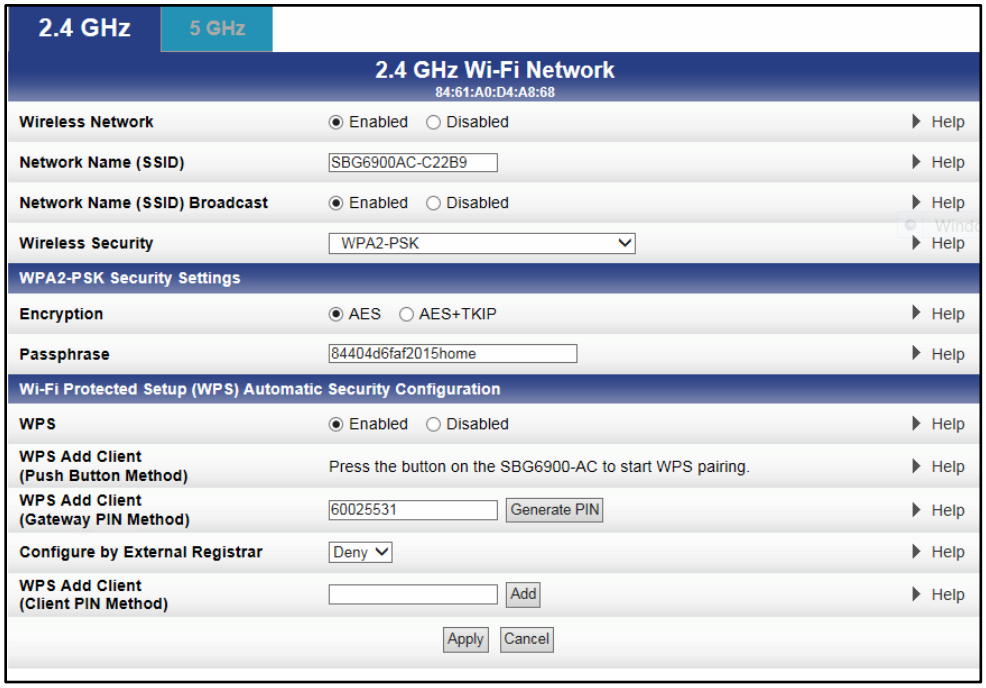

Figure 32 – 2.4 GHz Primary Wireless Network Screen

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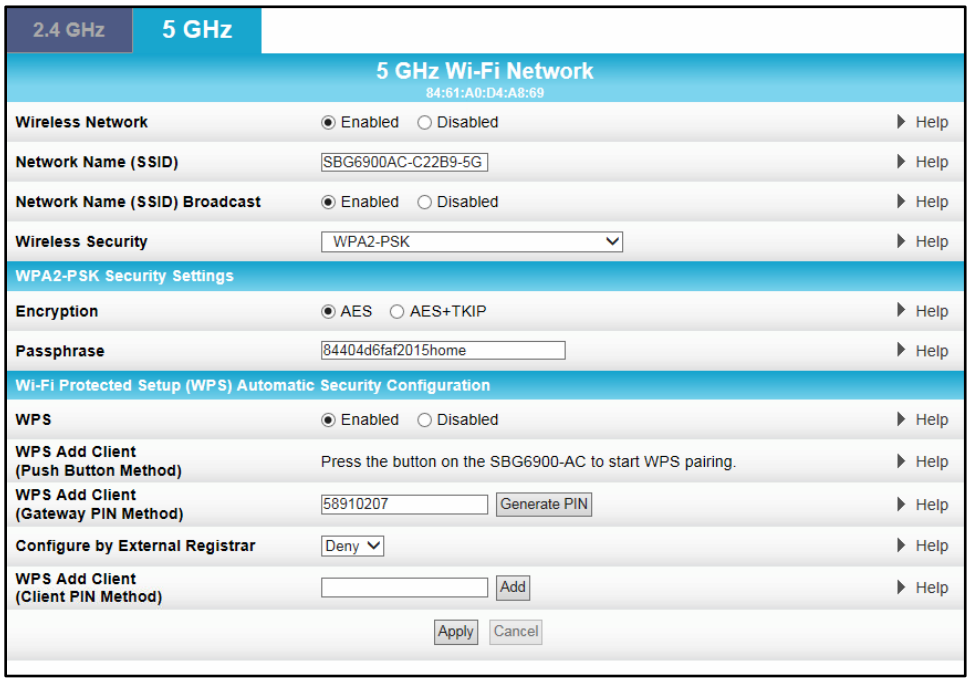

Figure 33 – 5 GHz Primary Wireless Network Screen

4. Click the **2.4 GHz** or **5 GHz** tab to select the wireless frequency range for your wireless network.
5. Select **Enabled** or **Disabled** in the Wireless Network field to turn ON or OFF wireless networking on your home network.
6. Do one of the following to set the network name for your wireless network in the Network Name (SSID) field:
   - Keep the default network name listed in the field (also listed on your gateway label).
   - Enter a different name for your primary network.

   The wireless network name must be different from any other network name on your home network. You can use any combination of letters (lowercase and uppercase), numbers, and/or special characters (symbols); 32 characters maximum.
7. Select **Enabled** or **Disabled** in the Network Name (SSID) Broadcast field to turn On or Off showing your SSID as an available network.

   When SSID Broadcast is enabled, your SSID is visible to wireless clients that are within range of your home network to connect to it.

   When SSID broadcast is disabled, your SSID is not visible to unauthorized wireless clients.
8. Select one of the following **Wireless Security** modes for your wireless gateway from the Security Mode drop-down list:
   - **WPA2-PSK**: Wi-Fi Protected Access version 2 with Pre-Shared Key. Provides the best security for your network (recommended).

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- **WPA2-PSK + WPA-PSK**: combination Wi-Fi Protected Access version 2 with Pre-Shared Key and Wi-Fi Protected Access with Pre-Shared Key
- **Unencrypted**: network security is not set for your wireless network. This allows access to your wireless network without a Wi-Fi Security key.
- **WPA-PSK**: combination Wi-Fi Protected Access with Pre-Shared Key and Wi-Fi Protected Access with Pre-Shared Key
- **WPA2 (Enterprise)**: Wi-Fi Protected Access version 2 provides additional network security and requires a user name and password for network logon
- **WPA2 + WPA (Enterprise)**: combination Wi-Fi Protected Access version 2 and Wi-Fi Protected Access provides additional network security and requires a user name and password for network logon

9. Choose the **Encryption** type for your wireless network in the Encryption field:
   - **AES** – Advanced Encryption Standard: Provides the strongest encryption (recommended).
   - **AES+TKIP** – Advanced Encryption Standard and Temporal Key Integrity Protocol: Allows both AES and TKIP-capable clients to connect to your wireless network.
10. Enter your wireless network password in the Passphrase field.

    You can use any combination of letters, numbers, and/or special characters.
11. Click **Apply** or continue with WPS Automatic Security Configuration to set up WPS on your home network to connect your WPS-enabled wireless devices. See **Set Up WPS on Your Wireless Network** below for more information.

Set Up WPS on Your Wireless Network

1. Open the SBG6900-AC Web Manager. See Start the Gateway Web Manager for more information.
2. Click **Wireless** on the SBG6900-AC Main Menu bar.
3. Click **Primary Network Settings** from the Wireless submenu options.
4. Click the **2.4 GHz** or **5 GHz** tab to select the wireless frequency range for your wireless network.
5. Scroll down to the Wi-Fi Protected Setup (WPS) Automatic Security Configuration section.

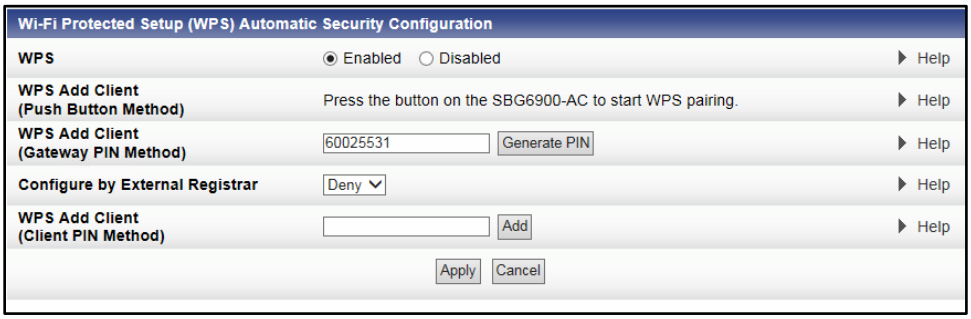

Figure 34 – WPS Setup Screen

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6. Select **Enabled** in the WPS field to turn ON the Wi-Fi Protected Setup (WPS) network security on your home network and then continue with step 2.

   - or -

   Select **Disabled** in the WPS field to turn OFF the Wi-Fi Protected Setup (WPS) network security on your home network and then proceed to step 3 to finish.
7. Select one of the following WPS Pairing methods to add or pair your WPS-enabled wireless devices to your wireless home network:
   - **Push Button** – Press the WPS button on the SBG6900-AC to start the WPS pairing process with the WPS-enabled wireless device you are connecting to your network.

     Repeat for each additional WPS-enabled wireless device.
   - **Gateway PIN**, do the following:
     1) Enter the PIN number listed in the box or click **Generate PIN** to create a new numeric PIN (password) to log onto your wireless home network.
     2) Select **Allow** or **Deny** (recommended) in the Configure by External Registrar field to set the Gateway PIN method for setting up WPS on the SBG6900-AC.

        Note *The Gateway PIN method is not recommended. It should be disabled to protect your wireless network from possible attacks, e.g., viruses and hackers.*
   - **Client PIN** – Enter the PIN number (password) for your WPS-enabled wireless device in the box and then click **Add**.
8. Click **Apply**, when done.

Set Up a Guest Wireless Network

1. Open a web browser and log onto the SBG6900-AC to open the SBG6900-AC Web Manager. See Start the Gateway Web Manager for more information.
2. Click **Wireless** on the SBG6900-AC Main Menu bar.
3. Click **Guest Network Settings** from the Wireless submenu options (see Figure 35).
4. Click the **2.4 GHz** or **5 GHz** tab to select the wireless frequency range for your guest network.
5. Select the guest network from the Selected Guest Network drop-down list.
6. Select **Enabled** or **Disabled** in the Guest Network field to turn ON or OFF the selected wireless guest network.
7. Do one of the following to set the network name for your guest network in the Guest Network Name (SSID) field:
   - Keep the default guest network name (also listed on your gateway label).
   - Enter a different name for your guest network.

   The wireless network name must be different from any other network name on your home network. You can use any combination of letters (lowercase and uppercase), numbers, and/or special characters (symbols); 32 characters maximum.

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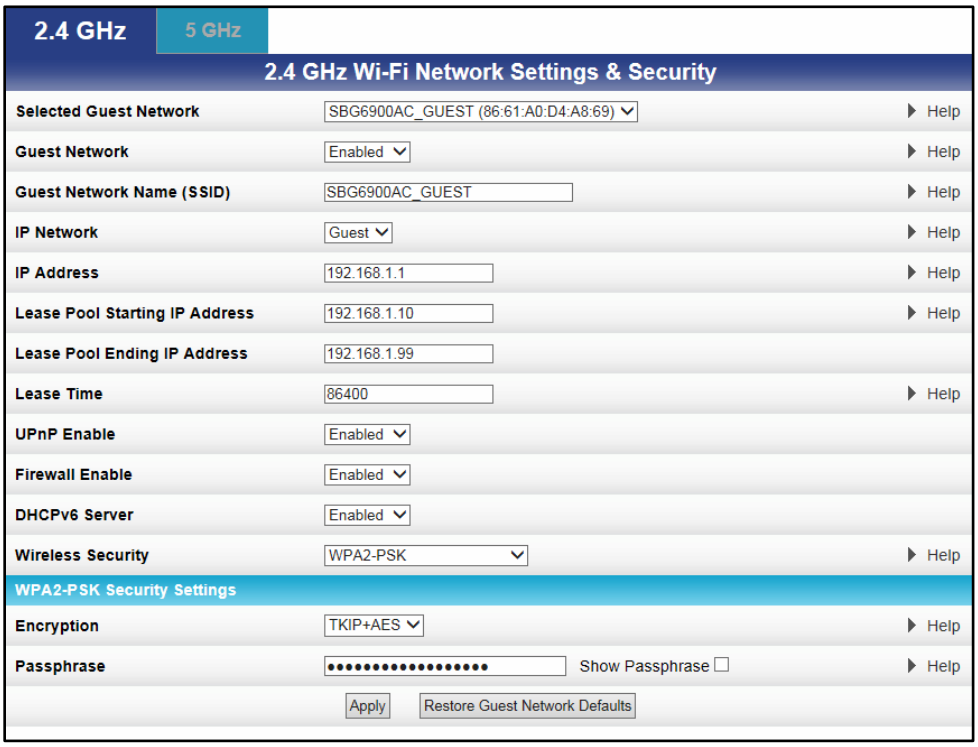

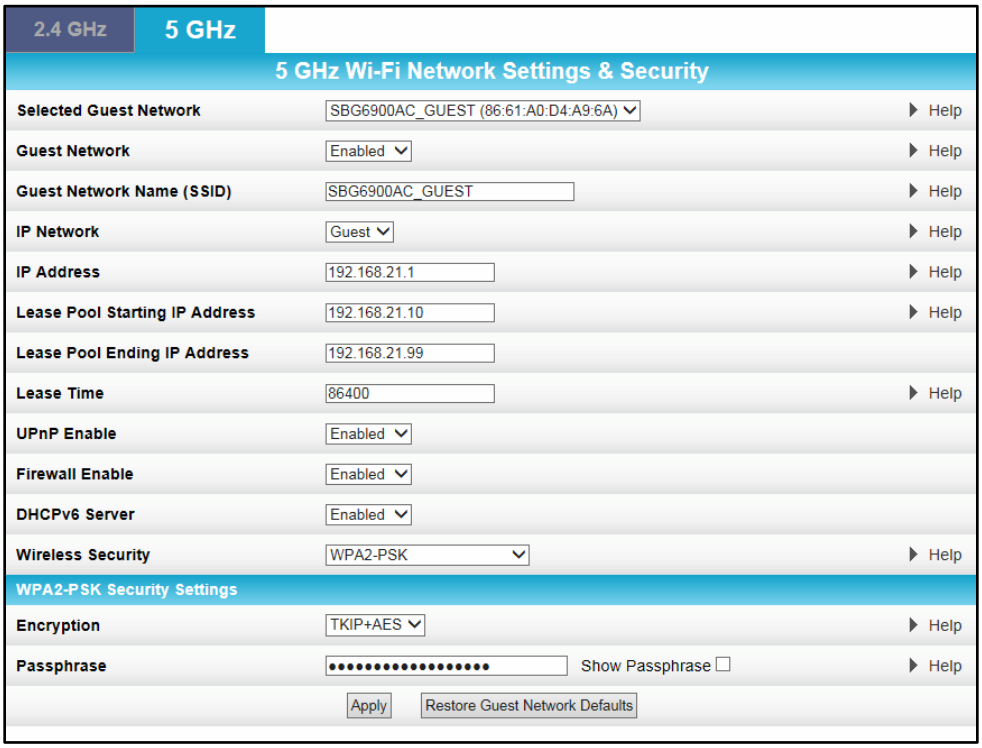

Figure 35 – 2.4 GHz & 5 GHz Wireless Guest Network Screens

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8. Select the guest network from the Selected Guest Network drop-down list.
9. Select **Enabled** or **Disabled** in the Guest Network field to turn ON or OFF the selected wireless guest network.
10. Keep the default guest network name or enter a new name of your choice for your guest network in the Guest Network Name (SSID) field.
11. Select **LAN** or **Guest** from the IP Network drop-down list.
    - **LAN** – Configures the guest network to be part of your primary network and allow guest users to connect to your primary network
    - **Guest** – Configures the guest network to only allow access to a specific network and not your primary network
12. Enter the IP address for the SBG6900-AC on the Guest network in the IP Address field.
13. Enter the first IP address of the range of IP addresses for the guest network lease pool in the Lease Pool Starting IP Address field. These are IP addresses that the SBG6900-AC assigns to devices on your guest network.
14. Enter the last IP address of the range of IP addresses for the guest network lease pool in the Lease Pool Ending IP Address field.
15. Enter the amount of time (in seconds) that an IP address will be available to a device on your guest network in the Lease Time field.
16. Select **Enabled** or **Disabled** in the UPnP (Universal Plug and Play) Enable field to allow or block any network devices, such as computers, smart phones, tablets, gaming devices, or printers to automatically connect to your home network.
17. Select **Enabled** or **Disabled** in the Firewall Enable field to turn ON or OFF the gateway firewall.
18. Select **Enabled** or **Disabled** in the DHCPv6 Server field to allow the DHCP server to send leases to the guest network clients from the guest network lease pool you specified earlier.

    Note *If the DHCP server is disabled, you must assign static IP addresses to the guest network STAs.*
19. Select one of the following wireless network security options for your wireless network from the Wireless Security drop-down list:
    - **WPA2-PSK**: Wi-Fi Protected Access version 2 with Pre-Shared Key (recommended)
    - **WPA2-PSK + WPA-PSK**: combination Wi-Fi Protected Access version 2 with Pre-Shared Key and Wi-Fi Protected Access with Pre-Shared Key
    - **WPA-PSK**: Wi-Fi Protected Access with Pre-Shared Key, standard encryption
    - **Unencrypted**: Turns off network security
    - **WPA2 + WPA (Enterprise)**: combination Wi-Fi Protected Access version 2 and Wi-Fi Protected Access provides additional network security and requires a user name and password for network logon
    - **WPA2 (Enterprise)**: Wi-Fi Protected Access version 2 provides additional network security and requires a user name and password for network logon

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20. Choose the wireless network encryption type in the Encryption field:
    - **AES** – Advanced Encryption Standard: Provides the strongest encryption (recommended)
    - **TKIP+AES** –Temporal Key Integrity Protocol and Advanced Encryption Standard: Allows both AES and TKIP-capable clients to connect to your wireless network
21. Enter any combination of characters and letters for the wireless guest network password in the Passphrase field.
22. Select **Show Passphrase** to display your password while you type.
23. When done, deselect **Show Passphrase** so that your password will not be visible.
24. Click **Apply**, when done.

Change Your Wireless Network Name (SSID)

The SSID (Service Set Identification) is the wireless network name assigned to your SBG6900-AC wireless primary and guest networks. The default SSID which is listed on the gateway label is automatically populated in the network configuration screens. A list of SSIDs of available wireless networks in close proximity of your home (for example, neighbors or local businesses) will display when you or someone else in your home attempt to establish a wireless network connection. For security purposes and quick recognition of your wireless network, ARRIS recommends that you change the default SSID. You should also consider changing the default wireless network password (see Prevent Unauthorized Access for more information).

Note *When you change the SSID, any wireless devices that are already connected to your wireless network will be disconnected from the network. The wireless devices will have to be reconnected to the wireless network using the new SSID.*

Do the following to change your wireless network name or SSID:

1. Open a web browser and log onto the SBG6900-AC to open the SBG6900-AC Web Manager. See Start the Gateway Web Manager for more information.
2. Click **Wireless** on the SBG6900-AC Main Menu bar.
3. Click **Primary Network Settings** from the Wireless submenu options to open the Wi-Fi Network screen.
4. Click the **2.4 GHz** or **5 GHz** tab to select the wireless frequency range for your home network.
5. Select **Enabled** in the Wireless Network field to turn ON wireless networking on your home network.
6. Delete the default or current network name in the Network Name (SSID) field and then enter a new name for your wireless network.

   The network name can contain any combination of up to 32 alphanumeric characters.

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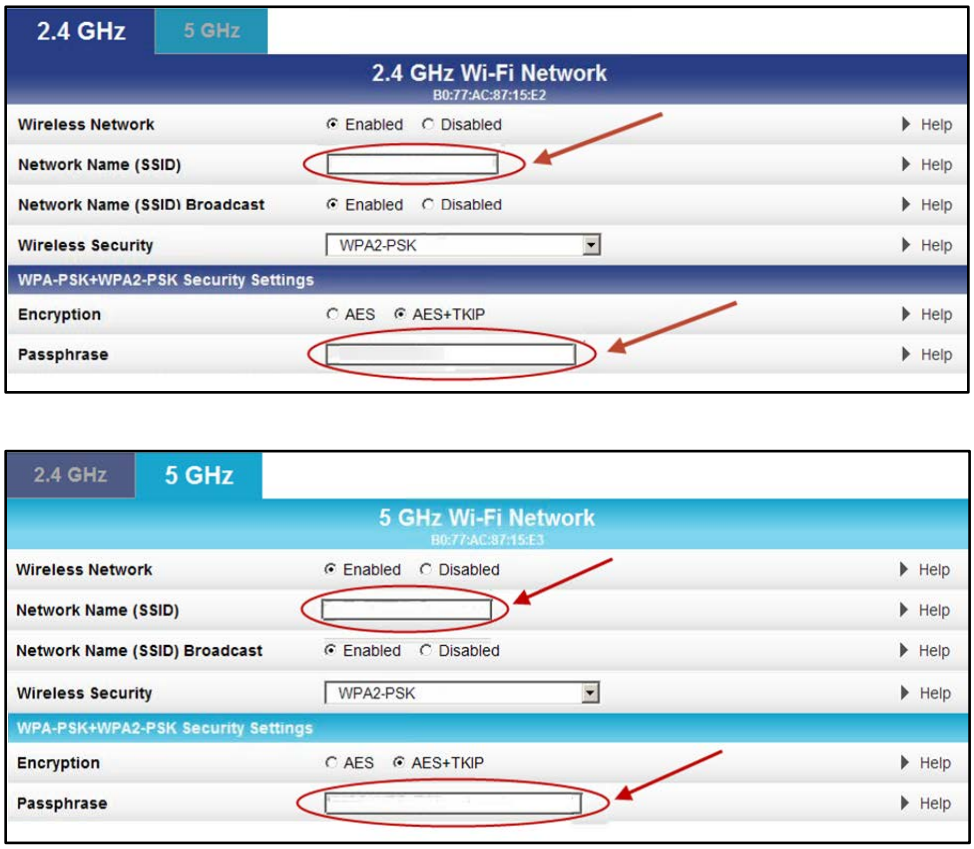

Figure 36 – Change Your Network Name (SSID) and Password Screens

7. Select **Enabled** or **Disabled** in the Wireless Network Name (SSID) Broadcast field to make your SSID visible or to hide it from outside wireless clients seeking a wireless network connection.
8. Delete your current wireless network password (passphrase) in the Passphrase field and then enter a new password for access to your wireless network. See Prevent Unauthorized Access for more information.
9. Click **Apply** at the bottom of the screen.

Change the Wireless Channel

Network interference may occur at any time when using a wireless network connection. This may be caused by other wireless access points that are using the same wireless channel as your SBG6900-AC and are also operating within close proximity in your home. When experiencing wireless network interference, changing the wireless channel on the SBG6900-AC can improve network connectivity (or signal strength) and avoid network interference. By default, your SBG6900-AC is set on **Channel 1**.

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Do the following to change the wireless channel on the SBG6900-AC:

1. Open a web browser and log onto the SBG6900-AC to open the SBG6900-AC Web Manager. See Start the Gateway Web Manager for more information.
2. Click **Wireless** on the SBG6900-AC Main Menu bar.
3. Click **802.11 Radio** from the Wireless submenu options to open the Wireless 802.11 Radio screen.

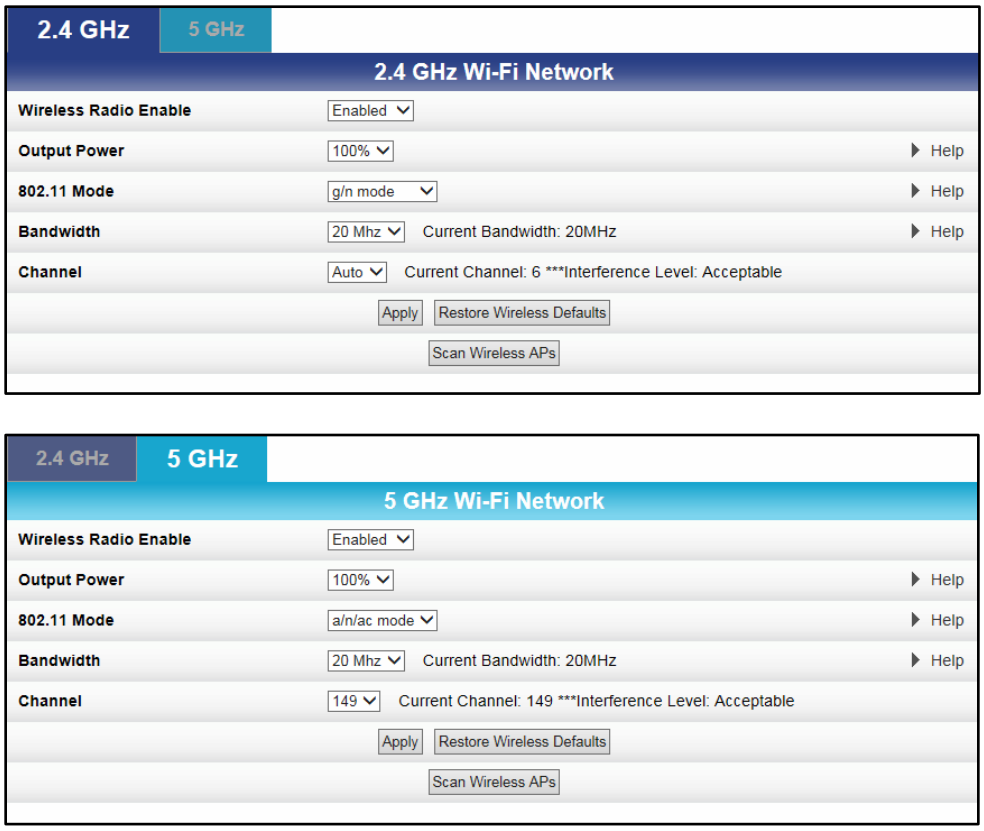

Figure 37 – 2.4 GHz & 5 GHz Wireless 802.11 Radio Screens

4. Click the **2.4 GHz** or **5 GHz** tab to select the wireless frequency range for your wireless home network.
5. Select **Enabled** from the Wireless Radio Enable drop-down list to turn ON the Wi-Fi Radio on the SBG6900-AC.
6. Select a channel number from the Channel drop-down list that is different from the channel number listed as the Current Channel.

   Note *ARRIS recommends to use Channel 6 or 11, if it is not listed as the Current Channel. In the Wi-Fi spectrum, there are multiple channels that overlap and thus degrade wireless network performance. Channels 1, 6, and 11 are used for better network performance and stability because they do not overlap.*
7. Click **Apply**.

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7 Protecting & Monitoring Your Wireless Network

After you have successfully connected the SBG6900-AC and your wireless devices, you should configure the SBG6900-AC to protect your wireless network from unwanted and unauthorized access by any wireless devices within range of your wireless home network. Although security for the SBG6900-AC is already configured, you can use the SBG6900-AC Web Manager to set the level of security and access that you want to allow on your wireless home network.

This chapter will step you through several options that you can use to further protect your wireless home network and meet your specific networking needs.

Prevent Unauthorized Access

To prevent unauthorized access and configuration to your wireless network, ARRIS recommends that you immediately change the default user name and password after logging on to the SBG6900-AC and connecting to the Internet 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 SBG6900-AC 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, you should follow these best practices for creating 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.

Note *If your service provider supplied the SBG6900-AC gateway, you may not have the necessary user privileges to change the log in user name.*

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Change the Default User Name and Password

To change the default user password:

1. Log in to the SBG6900-AC from any web browser on the computer connected to the SBG6900-AC.
2. Type the Gateway Web Manager IP address, **`http://192.168.0.1`**, in the Address bar and then press **`Enter`**. The SBG6900-AC Login screen displays.
3. Type the default user password in the Password field as it appears below:
   - Username: admin
   - Password: password
4. Click **Login** to open the SBG6900-AC Web Manager. The SBG6900-AC Main screen displays.

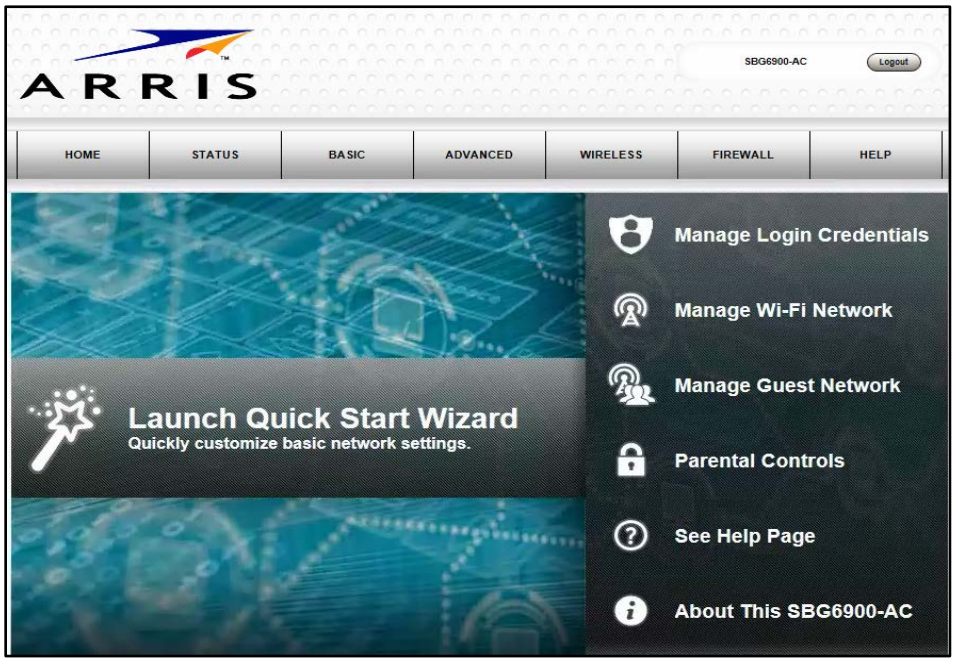

Figure 38 – SBG6900-AC Web Manager Main Screen

5. Click the Status menu button and then click Security from the Status submenu options to display the Status Security screen.
6. Check that Change Username is displayed in the drop-down selection box at the top of the screen.

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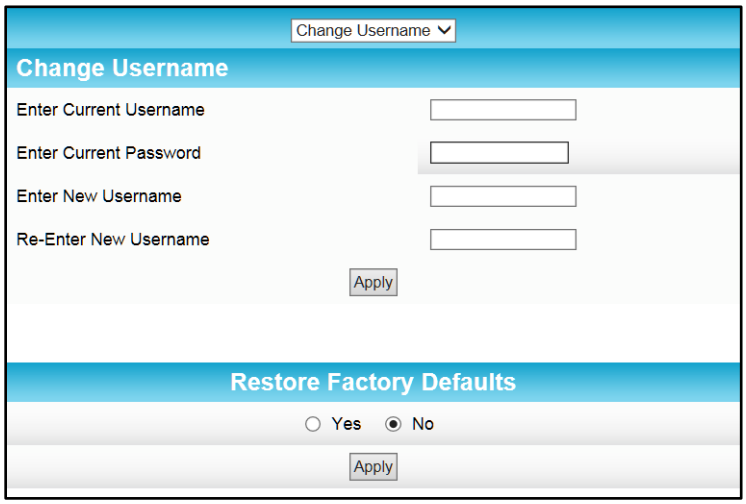

Figure 39 – Status Security-Change User Name Screen

7. Complete each field entry, but note the following:
   - All fields (for example, Current Username & Current Password) are case-sensitive.

     *Note: For first time logons, the current username is **admin** and the current password is **password**.*
   - Make sure **No** is selected under **Restore Factory Defaults**.
8. Click **Apply** to update your user name.
9. Click **Change Username** drop-down arrow at the top of the screen to display **Change Password**.

Figure 40 – Change User Password Screen

10. Enter your new user name in the Enter Username field.

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11. Complete all three password field entries, but note the following suggestions for your new password:
    - Refer to the best practices for creating a user password outlined on the previous page, see Prevent Unauthorized Access.
    - All three Password fields are case-sensitive.

      *Note: For first time logons, the Current Password is the default password (**password**).*
    - Find a secure place to write down and store your new user name and password.
    - Make sure **No** is selected for **Restore Factory Defaults**.
12. Click **Apply** to update your user password.

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:

1. From any web manager screen, do one of the following to open the Firewall Protection Level screen (see Figure 41).
    - Click the **Firewall** menu button on the SBG6900-AC menu bar and then click **Protection Level**.
    - Click the **Firewall-Protection Level** menu link at the bottom of the screen.

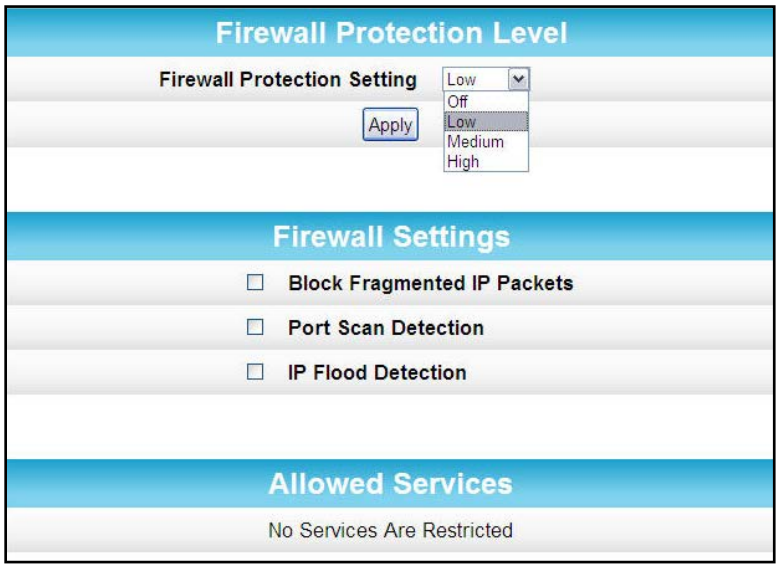

Figure 41 – Firewall Protection Level Screen

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2. Click the Firewall Protection Setting drop-down button to select one of the following firewall protection levels:
   - Off - No security, highest risk
   - Low - Common security, higher risk
   - Medium - Safer configuration, modest risk
   - High - Safest configuration, highest security

   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.
3. Select each Web filter from the Firewall Settings list that you want to set for the firewall.
4. Click Apply.

Set Up Parental Control

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

- Allow or block access to specific Internet sites.
- Allow or 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 specific rules for login, time-access, and content filtering.

To set Parental Controls:

1. From any screen, do either of the following:
   - Click the Firewall-Parental Control menu link at the bottom of the screen.
   - Click the Firewall menu button on the SBG6900-AC Main Menu and then click **Parental Control** (see Figure 42).

   Note Before setting up any Parental Control filters, you must first set the time zone on your SBG6900-AC for your current location.

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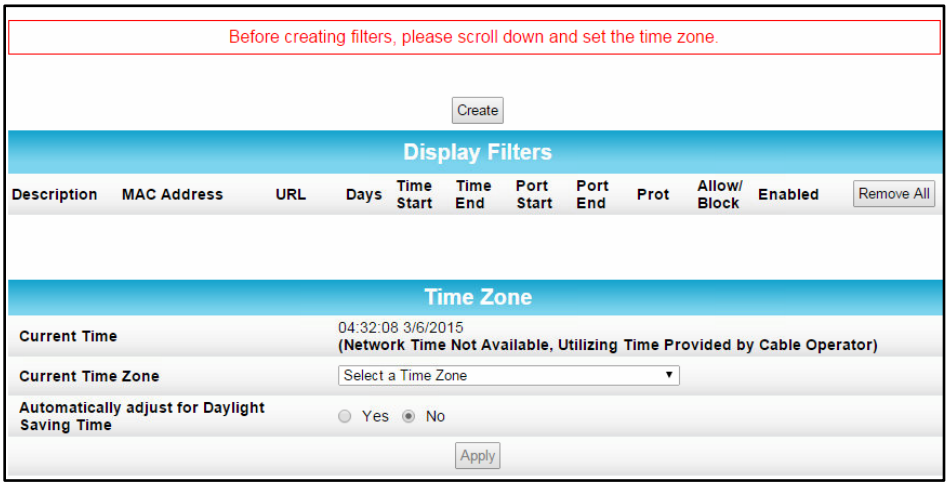

Figure 42 – Parental Control-Change Time Zone Screen

2. Click **Current Time Zone** drop-down button to select your time zone location.
3. Select **Yes** or **No** to automatically adjust the time on your SBG6900-AC for Daylight Saving Time.
4. Click **Apply** to set the time zone.
5. Click **Create** to continue setting up Parental Controls.

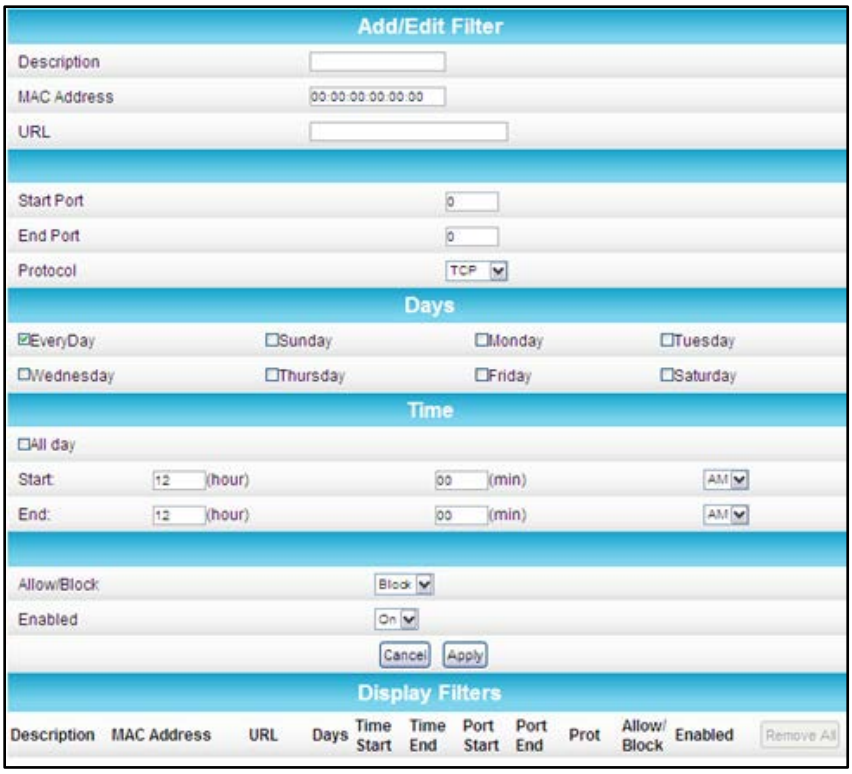

Figure 43 – Firewall Parental Control Screen

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6. Enter a name for the user profile that you want to create in the Description field.
7. Enter the 12-digit (hexadecimal) MAC address of the device for which you are creating Parental Controls in the MAC Address field.
8. Enter the web address of the Internet site that you want to block or access in the URL field.
9. Enter the Starting port number of the in the Start Port field.
10. Enter the Ending port number of the in the End Port field.
11. Select **TCP**, **UDP**, or **BOTH** from the Internet Protocol drop-down list.
12. Select the days of the week that you want to allow the selected user to access the Internet.
13. Select the time range that you want to allow the selected user to access the Internet.
14. Select to **Allow** or **Block** Internet access for the time and days you set previously.
15. Select **On** or **Off** in the Enabled field to enable or disable this Parental Control restriction.
16. Repeat steps 2 thru 15 for each additional Parental Control filter that you want to set up.
17. Click **Apply**, when done.

Set Up IP Filtering

You can use IP Filtering to configure Internet access restrictions on specific network devices on your home network using their IP addresses. You will have to create IP address filters that contain the starting and ending IP address range of each device for which you want to block Internet access.

To configure IP filters:

1. Click **Advanced** on the SBG6900-AC Main Menu bar.
2. Click **IP Filtering** from the Advanced submenu options.

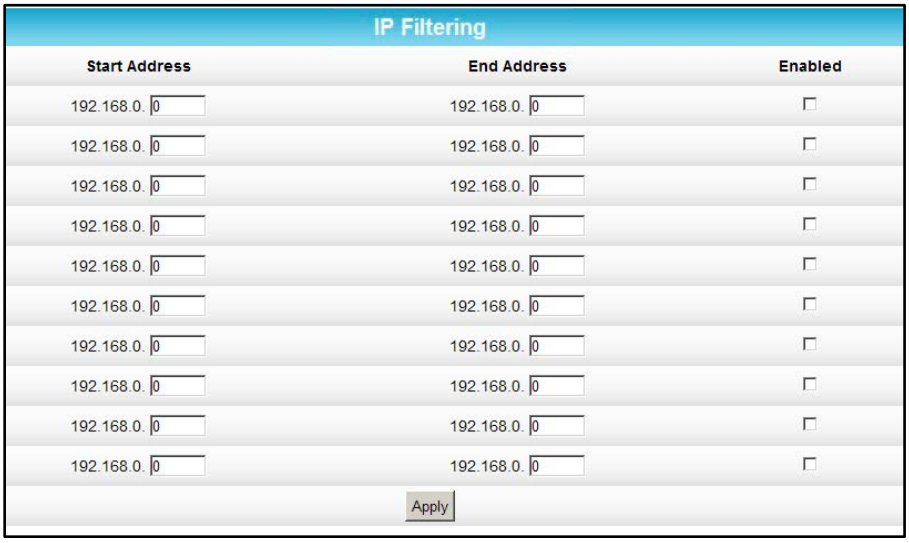

Figure 44 – Set Up IP Filters Screen

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3. Enter the least significant byte of the starting IP address for the range you are setting up in the Start Address field.
4. Enter the least significant byte of the ending IP address for the range you are setting up in the End Address field.
5. Select **Enabled** to activate the IP address filter.
6. Repeat steps 3 thru 5 for each additional range of IP addresses that you want to block Internet access.
7. Click **Apply** to create your IP filters.

Set Up MAC Filtering

MAC filtering allows you to define up to twenty Media Access Control (MAC) address filters to prevent computers from sending outgoing TCP/UDP traffic to the WAN via their MAC addresses. This is useful because the MAC address of a specific NIC card never changes, unlike its IP address, which can be assigned via the DHCP server or hard-coded to various addresses over time.

To configure MAC filters:

1. Click **Advanced** on the SBG6900-AC Main Menu bar.
2. Click **MAC Filtering** from the Advanced submenu options.

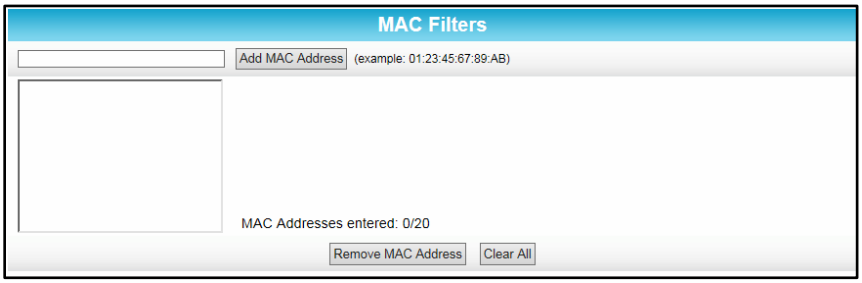

Figure 45 – Set Up MAC Filters Screen

3. Enter the MAC address for the computer you want to block.
4. Enter the least significant byte of the starting IP address for the range you are setting up.
5. Click **Add MAC Address**.
6. Repeat steps 3 through 5 to add up to 20 MAC addresses.
7. Click on the MAC address in the MAC Address list that you want to delete and then click **Remove MAC Address** button.
8. Repeat for each MAC Address that you want to remove from the list.
9. Click **Clear All** button to delete all MAC addresses from the address list.

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Set Up Port Filtering

Port filtering allows you to define port filters to prevent all devices from sending outgoing TCP/UDP traffic to the WAN on specific IP port numbers. By specifying a starting and ending port range, you can determine what TCP/UDP traffic is allowed out to the WAN on a per-port basis.

Note: The specified port ranges are blocked for ALL computers, and this setting is not IP address or MAC address specific. For example, if you wanted to block all computers on your home network from accessing HTTP sites (or web surfing), you would create the following port filter.

- *Set Start Port to 80*
- *Set End Port to 80*
- *Set Protocol to TCP*
- *Select Enabled*

To configure Port filters:

1. Click Advanced on the SBG6900-AC Main Menu bar.
2. Click Port Filtering from the Advanced submenu options.
3. Enter the starting port number of the Port Filtering range in the Start Port field.
4. Enter the ending port number of the Port Filtering range in the End Port field..
5. Select TCP, UDP, or BOTH from the drop-down Protocol list.
6. Select Enabled to activate the selected IP port filters. Otherwise, leave unchecked.

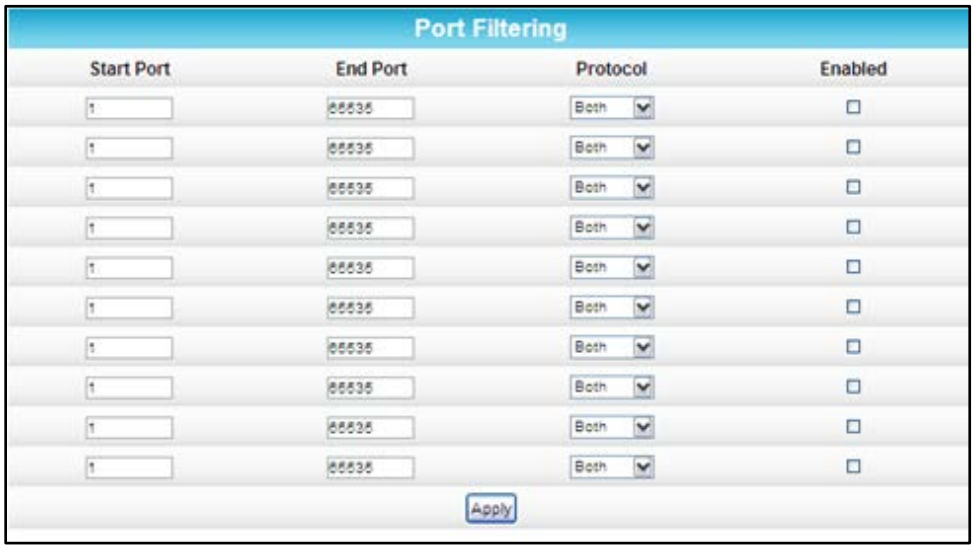

Figure 46 – Advanced Port Filtering Screen

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Set Up Port Triggers

You can use Port Triggers to configure dynamic triggers to specific devices on your home network. 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 set the firewall protection level to* ***Low*** *or* ***Off*** *to allow traffic through the custom ports. See Set Up Firewall Protection for more information.*

To configure Port Triggers:

1. Click **Advanced** on the SBG6900-AC Main Menu bar.
2. Click **Port Triggers** from the Advanced submenu options.

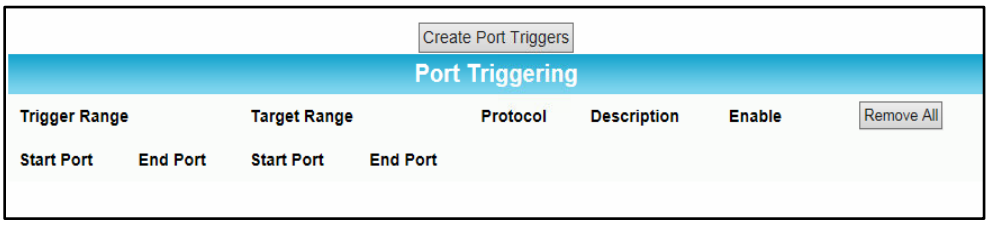

Figure 47 – Create Port Triggers Screen

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

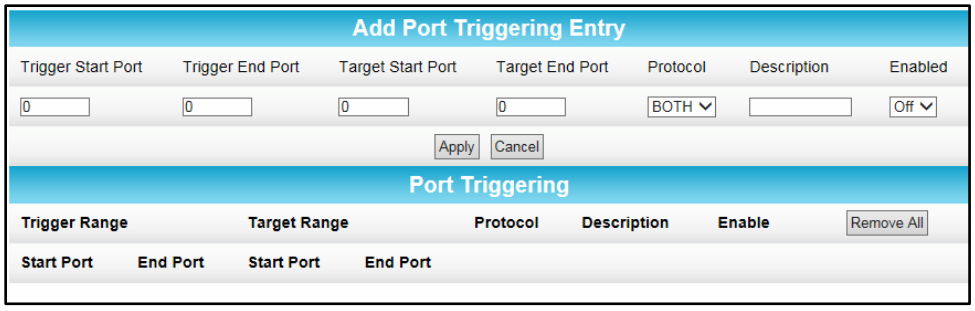

Figure 48 – Advanced Port Triggers Screen

4. Enter the starting port number for the port to be triggered in the Trigger Start Port field.
5. Enter the ending port number for the port to be triggered in the Trigger End Port field.
6. Enter the starting port number of the Port Trigger range in the Target Start Port field.
7. Enter the ending port number of the Port Trigger range in the Target End Port field.
8. Select **TCP**, **UDP**, or **BOTH** from the Internet Protocol drop-down list.
9. Enter a unique name in the Description field for that port.
10. Select **On** to enable IP port triggers or **Off** to disable them.

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11. Click **Apply** to create your port triggers.
12. Repeat steps 3 thru 11 for each additional port trigger 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.

Port forwarding allows you to open specific ports behind the firewall on your home network 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. See Figure 51 for a list of commonly used port numbers.

***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. Log in to the SBG6900-AC Web Manager.
2. Click **Advanced** on the SBG6900-AC Main Menu bar.
3. Click **Port Forwarding** from the Advanced submenu options.

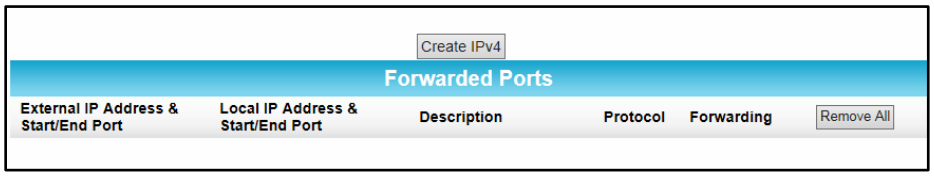

Figure 49 – Create Forwarded Ports Screen

4. Click **Create IPv4** button to open the Port Forwarding IPv4 Entry window.

   ***Note** To map a port, 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.*

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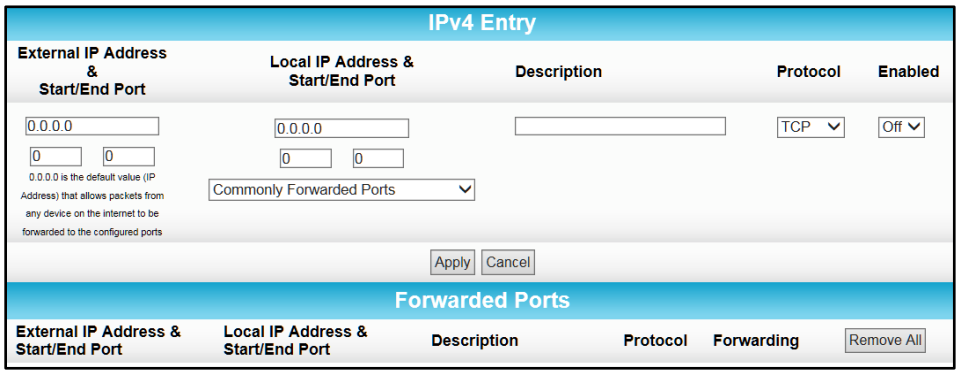

Figure 50 – Create Forwarded Ports Screen or Advanced Port Forwarding Screen

5. 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 (select a specific port from the Commonly Forwarded Ports drop-down list or see Figure 51 for the list).

     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 and End Port fields (select a specific port from the Commonly Forwarded Ports drop-down list or see Figure 51 for the list).

     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.*
6. 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 (select a specific port from the Commonly Forwarded Ports drop-down list or see Figure 51 for the list).

      ***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.*
7. Enter a description to name the forwarded port you are creating.
8. Select TCP, UDP, or BOTH from the Internet Protocol drop-down list.
9. Select On to enable port forwarding or Off to disable it.
10. Click **Apply**.
11. Click Add to insert the service in the Port Forwarding table.

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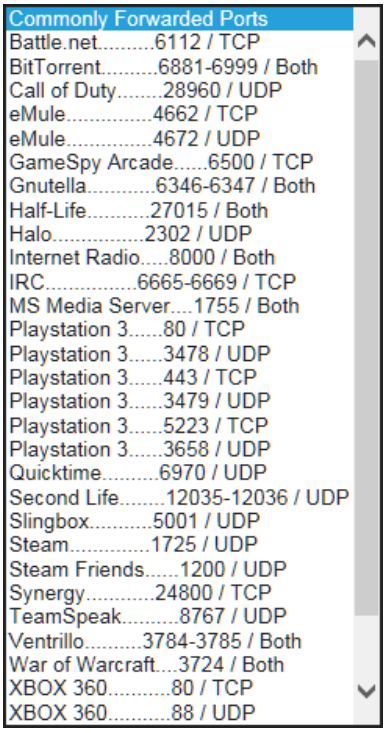

Figure 51 – Commonly Used Forwarded Ports List

Note To map a port, 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.

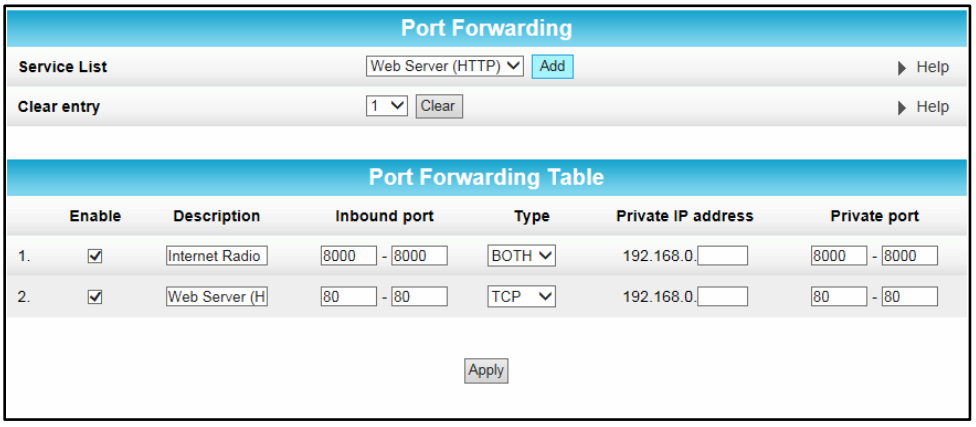

Figure 52 – Forwarded Ports Screen

12. Select or deselect the **Enable** checkbox to turn on or off port forwarding for the selected service on that port.
13. **Optional step**: Enter a new name in the Description field to change the name for the server you are creating.

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14. Select **BOTH**, **UDP**, or **TCP** from the Internet protocol Type drop-down list.
15. Do either of the following to set up the Private IP address:
    - Enter a specific remote IP address of your choice in the Private IP address field.
    - Enter the specific port numbers in the Private port field.
    - 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 and last numbers of the port range in the Private port field.
16. Repeat steps 3 through 8 for each additional port.
17. Click **Apply** when done.

Set Up the DMZ Host

WARNING! The gaming DMZ host is not protected by the SBG6900-AC gateway 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. That computer will operate outside of the SBG6900-AC firewall and allow remote access from the Internet to your computer, gaming device, or other IP-enabled device. The DMZ feature will only allow outside users to have direct access to the designated DMZ device and not your home network.

To create the DMZ Host:

1. Log in to the SBG6900-AC Web Manager.
2. Click **Advanced** on the SBG6900-AC Main Menu bar.
3. Click **DMZ Host** from the Advanced submenu options.

Figure 53 –DMZ Host Settings Screen

4. 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.
5. 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.*

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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 SBG6900-AC. See Local Log for more information.

To set up Firewall Event Log notifications:

1. Log in to the SBG6900-AC Web Manager.
2. Click **Firewall** on the SBG6900-AC Main Menu bar.
3. Click **Local Log** from the Firewall submenu options.

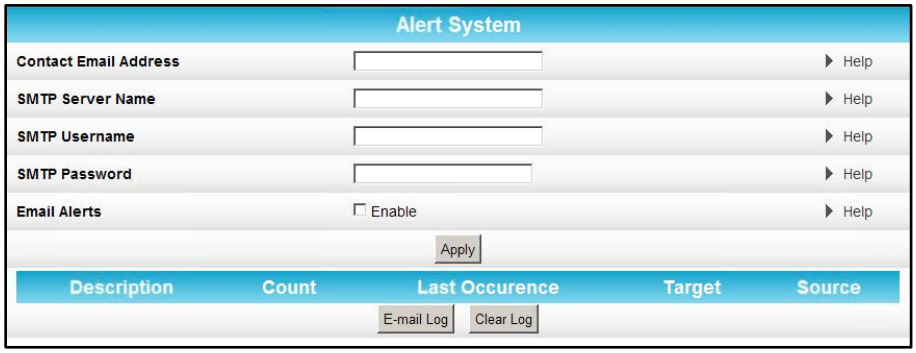

Figure 54 – Set Up Firewall Local Log Screen

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

Store Remote Firewall Logs

You can store firewall attack reports or logs on a computer in your home, so that multiple instances can be logged over a period of time. You can select individual attack or configuration items to send to the SysLog server, so that only the items of interest will be monitored.

***Note**: The SysLog server must be on the same network as the Private LAN behind the Configuration Manager (typically **192.168.0.x**).*

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To store remote Firewall logs:

1. Log in to the SBG6900-AC Web Manager.
2. Click **Firewall** on the SBG6900-AC Main Menu bar.
3. Click **Remote Log** from the Firewall submenu options.

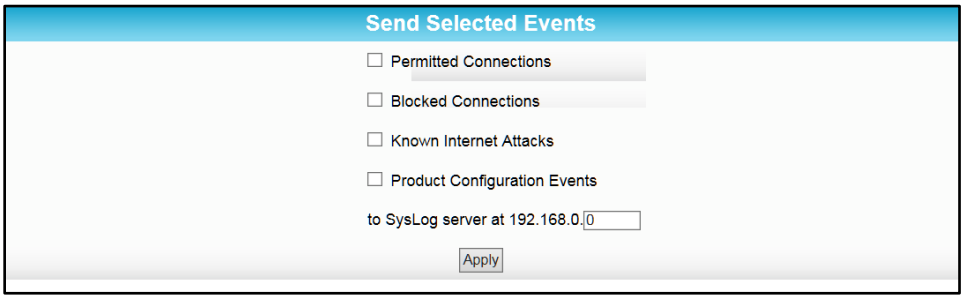

Figure 55 – Firewall Remote Log Screen

4. Select all desired event types that you want to monitor. This will activate the SysLog monitoring feature.
5. Enter the last digits from **10** to **254** of the SysLog server's IP address.

   Note *Normally, the IP address of this SysLog server is hard-coded so that the address always agrees with the entry on this page.*
6. Click **Apply**.

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8 Managing Your Gateway and Connected Networks

View the Gateway Status Using the Device Status Button

You can use the Device Status button on the SBG6900-AC Login screen to obtain a quick view of the current configuration and network connection status of your SBG6900-AC without having to login to the SBG6900-AC Web Manager.

1. Open any web browser on the computer connected to the SBG6900-AC.
2. Type the default LAN IP address, **192.168.0.1**, in the address bar and then press **Enter**. The gateway Login screen displays.

Figure 56 – Device Status Button

3. Click Device Status button to open the SBG6900-AC Device Status screen.

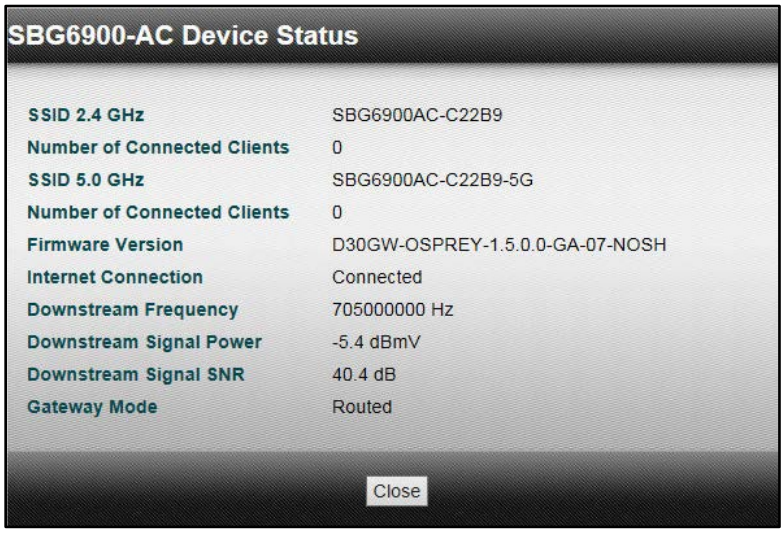

Figure 57 – Device Status Screen

4. Click Close to exit.

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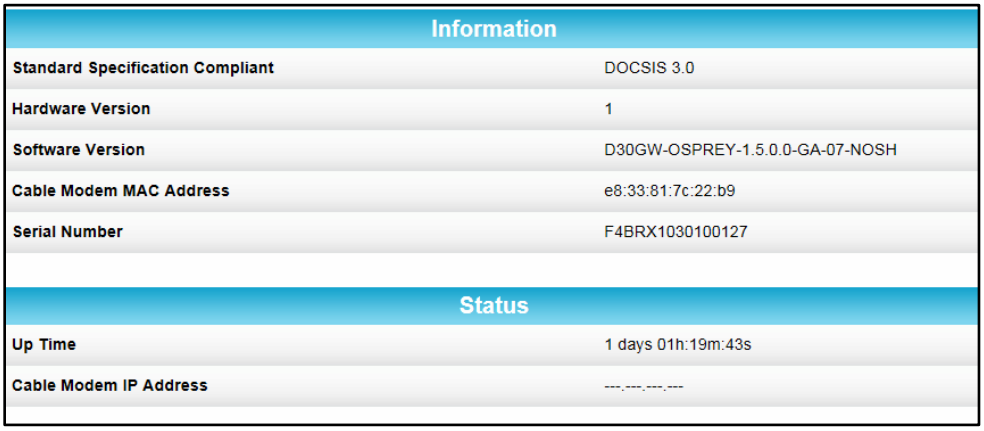
View the Gateway Product Information

The Status Product Information screen displays general product information, including the software (or firmware) version and the current network connection status of the SBG6900-AC.

To open the Utilities System Information screen:

1. Log in to the SBG6900-AC Web Manager and then click **Status** on the SBG6900-AC Main Menu.
2. Click **Product Information** from the Status submenu options.
3. Click the **Refresh** button (**F5**) in your web browser to update the information on the screen.



Information	
Standard Specification Compliant	DOCSIS 3.0
Hardware Version	1
Software Version	D30GW-OSPREY-1.5.0.0-GA-07-NOSH
Cable Modem MAC Address	e8:33:81:7c:22:b9
Serial Number	F4BRX1030100127
Status	
Up Time	1 days 01h:19m:43s
Cable Modem IP Address	---.---.---.---

Figure 58 – Status – Product Information Screen

View the Gateway Network Connection Status

The Status Connection screen displays information about the RF upstream and downstream channels, including downstream channel frequency, upstream channel ID, and upstream and downstream signal power and modulation.

This screen also displays IP lease information including the current IP address of the cable modem, the duration of both leases, the expiration time of both leases, and the current system time from the DOCSIS time server.

To open the Status Connection screen:

1. Log in to the SBG6900-AC Web Manager.
2. Click **Status** on the SBG6900-AC Main Menu.
3. Click **Connection** from the Status submenu options.

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Startup Procedure

Procedure	Status	Comment
Acquire Downstream Channel		Locked
Connectivity State	OK	Operational
Boot State	OK	Operational
Configuration File	OK	
Security	Enabled	BPI+
DOCSIS Network Access Enabled	Allowed	

Downstream Bonded Channels

Channel	Lock Status	Modulation	Channel ID	Frequency	Power	SNR	Corrected	Uncorrectables
1	Locked	QAM256	1	705000000 Hz	-5.3 dBmV	40.6 dB	0	0
2	Locked	QAM256	2	711000000 Hz	-5.3 dBmV	40.5 dB	0	0
3	Locked	QAM256	3	717000000 Hz	-5.5 dBmV	40.3 dB	0	0
4	Locked	QAM256	4	723000000 Hz	-5.4 dBmV	40.2 dB	0	0
5	Locked	QAM256	5	729000000 Hz	-5.7 dBmV	40.1 dB	0	0
6	Locked	QAM256	6	735000000 Hz	-5.5 dBmV	40.2 dB	0	0
7	Locked	QAM256	7	741000000 Hz	-5.5 dBmV	40.2 dB	0	0
8	Locked	QAM256	8	747000000 Hz	-5.4 dBmV	40.2 dB	0	0

Upstream Bonded Channels

Channel	Lock Status	US Channel Type	Channel ID	Symbol Rate	Frequency	Power
1	Locked	ATDMA	3	5120 Ksym/sec	23300000 Hz	47.8 dBmV
2	Locked	ATDMA	1	5120 Ksym/sec	30700000 Hz	47.8 dBmV
3	Locked	TDMA and ATDMA	2	2560 Ksym/sec	18500000 Hz	47.5 dBmV
4	Locked	TDMA and ATDMA	4	2560 Ksym/sec	35500000 Hz	47.8 dBmV

Figure 59 – Status - Connection Screen

View the Gateway System Event Logs

You can use the Event Log screen to view the list of activity, events, and alerts detected on your SBG6900-AC. The information recorded in the system event log may be helpful to your service provider to diagnose and correct any problems that may occur with your SBG6900-AC.

To open the Status Event Log screen:

1. Log in to the SBG6900-AC Web Manager.
2. Click **Status** on the SBG6900-AC Main Menu.
3. Click **Event Log** from the Status submenu options.

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Time	Priority	Description
Tue Jun 30 08:11:22 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Tue Jun 30 07:56:17 2015	Notice (6)	WiFi Interface [wl0] set to Channel 1 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Tue Jun 30 07:33:56 2015	Error (4)	DHCP RENEW WARNING - Field invalid in response v4 option;CM-MAC=e8:33:81:7c:22:b9;CMTS-MAC=00:30:b8:c6:3a:20;CM-QOS=1.1;CM-VER=3.0;
Tue Jun 30 04:40:20 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Tue Jun 30 00:54:16 2015	Notice (6)	WiFi Interface [wl0] set to Channel 1 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 22:38:36 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 22:23:29 2015	Notice (6)	WiFi Interface [wl0] set to Channel 1 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 21:38:15 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 20:37:54 2015	Notice (6)	WiFi Interface [wl0] set to Channel 11 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 19:33:56 2015	Error (4)	DHCP RENEW WARNING - Field invalid in response v4 option;CM-MAC=e8:33:81:7c:22:b9;CMTS-MAC=00:30:b8:c6:3a:20;CM-QOS=1.1;CM-VER=3.0;
Mon Jun 29 18:52:23 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 18:07:07 2015	Notice (6)	WiFi Interface [wl0] set to Channel 1 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 17:52:00 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 17:06:43 2015	Notice (6)	WiFi Interface [wl0] set to Channel 11 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 15:06:07 2015	Notice (6)	WiFi Interface [wl0] set to Channel 6 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 14:50:59 2015	Notice (6)	WiFi Interface [wl0] set to Channel 11 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 12:50:24 2015	Notice (6)	WiFi Interface [wl0] set to Channel 1 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 11:50:07 2015	Notice (6)	WiFi Interface [wl0] set to Channel 11 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 08:49:15 2015	Notice (6)	WiFi Interface [wl0] set to Channel 1 (Side-Band Channel:N/A) - Reason:INTERFERENCE
Mon Jun 29 08:19:04 2015	Notice (6)	WiFi Interface [wl0] set to Channel 11 (Side-Band Channel:N/A) - Reason:INTERFERENCE

Figure 60 – Status – Event Log Screen

4. Click the **Refresh** button (**F5**) on your computer to update and view the latest system log information.

   Note To print the system log on your connected (wired or wireless) printer, click ***Ctrl P*** *and follow the steps you normally use for printing.*

Back Up Your Gateway Configuration Settings

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

ARRIS highly recommends that you perform the gateway configuration backup using the SBG6900-AC default login username and password.

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To create a back up copy of your gateway settings:

1. Click **Basic** on the SBG6900-AC Main Menu.
2. Click **Backup and Restore** from the Basic submenu options.

Figure 61 – SBG6900-AC Backup and Restore Screen

3. Click **Backup** and then click **OK** at the "Select 'Save' when prompted" message. The following message will display:

4. Click **Save** to create a backup file of your SBG6900-AC configuration on your computer. The GatewaySettings.bin download has completed message will display.

   Note: GatewaySettings.bin *is the default file name for your backup configuration file.*

5. Click **Open** or **Open folder** to open the configuration file or click **View downloads** to display a list of your configuration files in the Downloads folder on your computer.

Restore Your Gateway Configuration Settings

WARNING! This action will delete your current gateway configuration settings and allow you to restore a previously saved gateway configuration.

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

1. Click **Basic** on the SBG6900-AC Main Menu.
2. Click **Backup and Restore** from the Basic submenu options.
3. Click **Browse** to search for a previously saved gateway configuration file from the Downloads folder on your computer.
4. Click the configuration file you want to restore and then click **Open**.
5. Click **Restore**. The message, "This action requires a reboot." will display.
6. Click **OK**. The gateway will automatically reboot and the gateway configuration settings will be reset.

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Reset Your Gateway Configuration Settings

At any time, you can reset the SBG6900-AC gateway configuration settings, including your user name and password back to the default factory settings. There are two methods available for resetting the gateway configuration settings on the SBG6900-AC:

- Reset Gateway Using the Reset Button
- Reset Gateway Using the SBG6900-AC Web Manager

WARNING! This process also deletes any custom gateway configurations you may have already created. We recommend that you create a backup copy of your gateway configuration before resetting the gateway. See Back Up Your Gateway Configuration for more information.

Reset Gateway Using the Reset Button

To reset the gateway configuration back to the factory default settings:

1. Insert the end of a paper clip (or other small object with a narrow tip) into the indented **Reset** button on the rear of the SBG6900-AC.

Figure 62 – SBG6900-AC Reset Button

2. Press and hold for 15 seconds and then release.

Note *For network security purposes, ARRIS recommends that you change the gateway default password. See Change the Default Password for more information.*

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Reset Gateway Using the Web Manager

From the SBG6900-AC Web Manager, do the following to open the Status Security screen:

1. Click **Status** on the SBG6900-AC Main Menu.
2. Click **Security** from the Status submenu options.

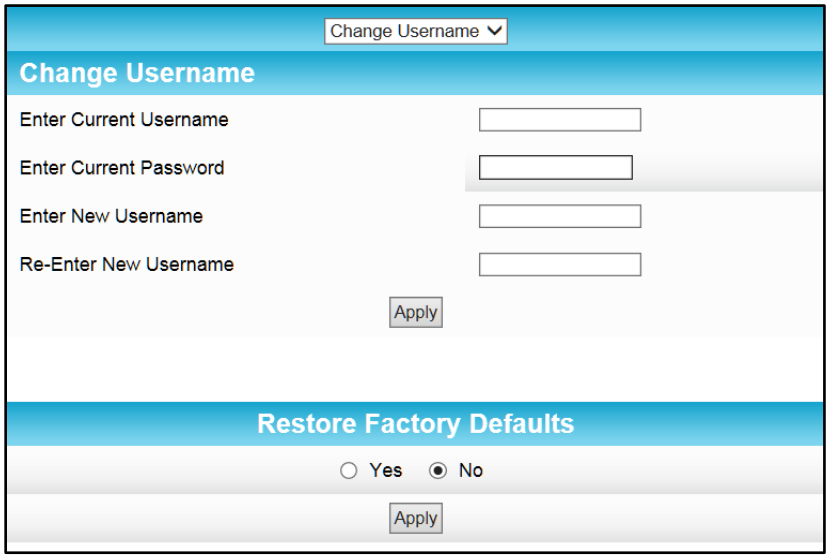
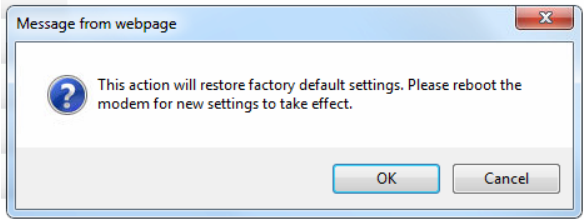


Figure 63 – Restore Factory Defaults Screen

3. Select Yes under Restore Factory Defaults.
4. Click Apply to reset the default username and password, and restore the original gateway configuration. The following message will display:



5. Click OK.
6. Click **Status** on the SBG6900-AC Main Menu.
7. Click **Configuration** from the Status submenu options to display the Status Configuration screen.
8. Click Reboot.
9. Log back in using the default username and password.
   - Username: admin
   - Password: password

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WARNING! Resetting the SBG6900-AC will delete your current gateway configuration settings (including any custom user names and/or passwords) and restore the gateway configuration back to the factory defaults.

Set Up Your USB Storage Device

The SBG6900-AC has one USB 2.0 port that can only be used to connect a USB hard drive or flash drive. The removable USB storage device will be available to all the computers or other network devices connected to your home network. This allows you to share various types of text and graphic files, as well as multimedia content (videos, music, photos) with family, friends, and other users (local or remote) on your home network.

1. Check that your USB device is properly connected to the front or rear USB port and powered on.

   The USB LED on the front panel should light up solid green.
2. Log in to the SBG6900-AC Web Manager.
3. Click **Basic** on the SBG6900-AC Main Menu.
4. Click **USB Connect** from the Basic submenu options.

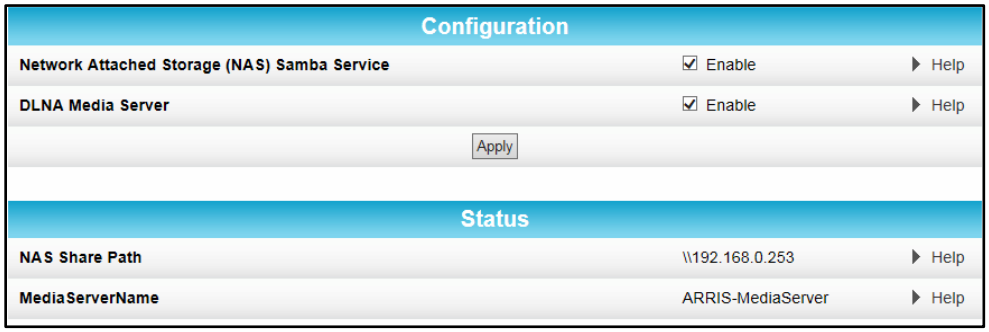

Figure 64 – SBG6900-AC USB Connect Screen

5. Select **Enable** in the Network Attached Storage (NAS) Samba Service field to enable your connected USB device on your home network.
6. Select **Enable** in the DLNA Media Server field to make your connected USB device accessible to the other devices on your home network.
7. Click Apply.

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Troubleshooting Tips

If the solutions listed in this section do not solve your problem, contact your service provider for assistance.

You may have to reset the SBG6900-AC configuration to its default factory settings if the gateway is not functioning properly.

Your service provider may ask for the status of the LEDs as described in Front Panel LED Icons and Error Conditions.

Solutions

Table 5: Troubleshooting Solutions

Gateway Problem	Possible Solution
Power LED Icon is OFF	• Check the power connection between the gateway and electrical wall outlet. • If the gateway is plugged into a power strip, check the power strip to make sure it is switched ON. • Check that the electrical wall outlet is working and that it Is not controlled by a light switch. If so, disconnect the gateway power cord from the wall outlet and connect it to another electrical outlet that is not controlled by a light switch.
Cannot Access the Internet	• Check that all cable and power connections on the gateway and computer are properly connected. • Check that the **Power**, **Online**, and **Wireless** LEDs on the gateway front panel are lit (solid). • If none of the above solutions resolves the problem, contact your service provider or call ARRIS Technical Support at **1-877-466-8646** for assistance.
Cannot Send or Receive Data	• Check each end of the coaxial cable connection on the gateway and cable outlet. Hand tighten, if necessary. • Check the Ethernet cable to make sure it is properly connected to the gateway and computer. • On the gateway front panel, check the status of the LED icons and refer to Front Panel LED Icons and Error Conditions to identify the problem.

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Gateway Problem	Possible Solution
Cannot Send or Receive Data (continued)	• If you have cable television, check your television to ensure your cable service is operating properly. • Check the IP address. Call your service provider if you need an IP address. • If none of the above solutions resolve the problem, contact your service provider or call ARRIS Technical Support at **1-877-466-8646** for further assistance.
Wireless Devices cannot Send or Receive Data	• Check that the **Wireless** LED on the gateway front panel is lit (solid). • Check that the coaxial cable connections are connected properly, then check your IP address. If the problem still persists, check the **Wireless Security** setting on the Wireless Primary Network Settings screen. If you enabled the **WPA** Wireless Security mode and configured a passphrase (wireless network password) on the gateway, be sure each affected wireless client has the identical passphrase. If this does not resolve the problem, check if the wireless client supports the type of WPA security configured on the gateway.

Front Panel LED Icons and Error Conditions

The SBG6900-AC front panel LED icons provide status information for the following error conditions:

Table 6: SBG6900-AC Front Panel LED Icons and Error Conditions

LED Icon	Status	If, During Startup:	If, During Normal Operation
POWER	OFF	Gateway is not properly plugged into the electrical wall outlet	Gateway is unplugged
RECEIVE	FLASHING	Downstream receive channel cannot be acquired	Upstream channel is los
SEND	FLASHING	Upstream receive channel cannot be acquired	Downstream channel is los
ONLINE	FLASHING	IP registration is unsuccessful	IP registration is lost

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LED Icon	Status	If, During Startup:	If, During Normal Operation
	OFF	Wireless is disabled or wireless device is not detected.	Wireless device is not connected to the network.
	OFF	Wireless is disabled or wireless device is not detected	Wireless device is not connected to the network.
 **Rear & Front**	OFF	USB device is not detected	USB device is not connected

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B

Warranty Information

SURFboard SBG6900-AC Wireless Cable Modem & Router

ARRIS Enterprises, Inc. (“ARRIS”)

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