ARRIS

Global Knowledge Services

SURFboard™

SURFboard® SBV2402 Internet & Voice cable modem

for Xfinity® customers

user guide

March 2019

Copyright 2019, ARRIS Enterprises, LLC. All rights reserved.

ARRIS copyrights and trademarks

© 2019 ARRIS Enterprises, LLC. All rights reserved.

No part of this publication may be reproduced in any form or by any means or used to make any derivative work (such as translation, transformation, or adaptation) without written permission from ARRIS Enterprises LLC. (“ARRIS”). ARRIS reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of ARRIS to provide notification of such revision or change.

ARRIS, SURFboard, and the ARRIS logo are all trademarks of ARRIS Enterprises, LLC. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks or the names of their products. ARRIS disclaims proprietary interest in the marks and names of others.

ARRIS provides this guide without warranty of any kind, implied or expressed, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. ARRIS may make improvements or changes in the product(s) described in this manual at any time.

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

Patent notice

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

Table of Contents

1. **Safety and regulatory information** 5
   - Important safety instructions 5
   - FCC statements 6
   - Caring for the environment by recycling your ARRIS equipment 8

2. **Getting started** 9
   - About your new SBV2402 9
   - In the box 9
     - Additional items needed (not included) 10
   - System requirements 11
   - Contact information 12

3. **Product overview** 13
   - Front panel 13
   - Rear panel 14
   - Telephony modem label 15

4. **Installing the telephony modem** 16
   - Choose an installation location 16
   - Connect the SBV2402 to your client device 17
     - Connect your telephone 18
   - Wall mount the SBV2402 19
     - Tools and materials 19
     - Location 19
   - Establish an Internet connection 19

5. **Using the telephony modem** 21
   - Indicator lights for the SBV2402 21
     - Wiring problems 21
     - Patterns: normal operation 21
     - Patterns: startup sequence 22

6. **Using the telephony modem web manager** 23
   - SBV2402 web manager menu links 23
   - View the SBV2402 network connection status 23
     - Status screen 23
     - HW/FW versions screen 24
     - Event log screen 25
     - Registration status (CM state) 25

7. **Troubleshooting** **27**
Solutions 27
The SBV2402 is plugged in, but the power light is off 27
I cannot access the internet 27
I cannot access the internet (Ethernet) 28
I can get on the internet, but everything is slow 28
I do not have a dial tone when I pick up the phone 28
Contact ARRIS consumer support 29

8. **Warranty information** **30**

9. **Glossary** **32**

Safety and regulatory information

Read all safety and regulatory information before installing your telephony modem and setting up your home network connection. This ARRIS telephony modem complies with the applicable requirements for performance, construction, labeling, and information when used as outlined below:

Important safety instructions

This ARRIS telephony modem complies with the applicable requirements for performance, construction, labeling, and information when used as outlined below:

CAUTION

- **Potential equipment damage**
  Potential loss of service
  Connecting the telephony modem to existing telephone wiring should only be performed by a professional installer. Physical connections to the previous telephone provider must be removed and the wiring must be checked; there must not be any voltages. Cancellation of telephone service is not adequate. Failure to do so may result in loss of service and/or permanent damage to the telephony modem.

- **Risk of shock**
  Mains voltages inside this unit. No user serviceable parts inside. Refer service to qualified personnel only!
- **Risk of explosion**
  The telephony modem is designed to be connected directly to a telephone.
  - Connecting the to the home's existing telephone wiring should only be performed by a professional installer.
  - Do not use product near water (i.e., wet basement, bathtub, sink or near a swimming pool, etc.), to avoid risk of electrocution.
  - Do not use the telephone to report a gas leak near the leak.
  - The product shall be cleaned using only a damp, lint-free, cloth. No solvents or cleaning agents shall be used.
  - Do not use spray cleaners or aerosols on the device.
  - Avoid using and/or connecting the equipment during an electrical storm, to avoid risk of electrocution.
  - Do not locate the equipment within 6 feet (1.9 m) of a flame or ignition source (i.e. heat registers, space heaters, fireplaces, etc.).

- Use only the AC power adapter (if provided) and power cord included with the equipment.
- Equipment should be installed near the power outlet and should be easily accessible.
- The shield of the coaxial cable must be connected to earth (grounded) at the entrance to the building in accordance with applicable national electrical installation codes. In the U.S., this is required by NFPA 70 (National Electrical Code) Article 820. In the European Union and in certain other countries, CATV installation equipotential bonding requirements are specified in IEC 60728-11, *Cable networks for television signals, sound signals and interactive services*, Part 11: Safety. This equipment is intended to be installed in accordance with the requirements of IEC 60728-11 for safe operation.
- If the equipment is to be installed in an area serviced by an IT power line network, as is found in many areas of Norway, special attention should be given that the installation is in accordance with IEC 60728-11, in particular Annex B and Figure B.4.
- In areas of high surge events or poor grounding situations and areas prone to lightning strikes, additional surge protection may be required (i.e. PF11VNT3 from American Power Conversion) on the AC, RF, Ethernet and Phone lines.
- When the telephony modem is connected to a local computer through Ethernet cables, the computer must be properly grounded to the building/residence AC ground network. All plug-in cards within the computer must be properly installed and grounded to the computer frame per the manufacturer's specifications.
- Ensure proper ventilation. Position the telephony modem so that air flows freely around it and the ventilation holes on the unit are not blocked.
- Do not mount the telephony modem on surfaces that are sensitive to heat and/or which may be damaged by the heat generated by the telephony modem, its power supply, or other accessories.

SAVE THESE INSTRUCTIONS

FCC statements

FCC interference statement

This equipment has been tested and found to comply with the requirements for a Class B digital device under Part 15 of the Federal Communications Commission (FCC) rules. These requirements are intended to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and 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.

The operation of this equipment is subject to the following two conditions: (1) This equipment or device cannot cause harmful interference and (2) this equipment or device must accept any interference, including interference that may cause some unwanted operation of the equipment.

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.

CAUTION

Any changes or modifications to this equipment not expressly approved by ARRIS could void the user's authority to operate the equipment.

FCC declaration of conformity

ARRIS Enterprises, LLC, 3871 Lakefield Drive, Suwanee, GA 30024, declares that the SURFboard DOCSIS 3.0 telephony modem-SBV2402 complies with 47 CFR Parts 2 and 15 of the FCC rules as a Class B digital device.

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 12 inches (30 centimeters).

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.

Caring for the environment by recycling your ARRIS equipment

Please do not dispose of this product or any included electronic accessories, i.e., power supply or battery, with your residential or commercial waste. ARRIS devices may be disposed of through the ARRIS Product Recycling program, further described at corporateresponsibility.arrisi.com/phoenix.zhtml. You may also contact your local community authorities for information regarding where you may dispose of your ARRIS devices.

Getting started

Welcome to the next generation of the SURFboard® ultra-high-speed DOCSIS 3.0® internet & voice cable modem for Xfinity customers. Get ready to experience the Internet's express lane! Whether you are streaming media, downloading new software, checking your email, or talking on the telephone, the SBV2402 brings it all to you faster and more reliably. All while providing high-quality Voice over IP telephone service.

The SBV2402 provides an Ethernet connection for use with either a single computer or home/office Local Area Network (LAN). In addition, the SBV2402 provides two separate lines of telephone service.

About your new SBV2402

The SURFboard SBV2402 is DOCSIS 3.0 compliant with the following features:

- **Speed**: much faster than dialup or ISDN service; up to eight times faster than DOCSIS 2.0 cable modems.
- **Connectivity**: supports Ethernet connection.
- **Flexibility:** provides two lines of telephone service as well as high-speed data.
- **Compatibility:**
  - Data services: DOCSIS 3.0 compliant and backward-compatible with DOCSIS 2.0 or 1.1; supports tiered data services (if offered by your service provider).
  - Telephony services: Packet Cable™ 2.0 compliant.

In the box

Before installing your SBV2402, check that the items listed in the following table are included in the SBV2402 box. If any items are missing, please call ARRIS technical support at **1-877-466-8646** for assistance.

Table 1. SBV2402 package contents

Item	Description
SBV2402 Internet & Voice cable modem	High-speed DOCSIS 3.0 telephony cable modem with two voice-over-IP (VoIP) telephone lines
Power cord	Power supply for an electrical wall outlet connection
Ethernet cable	Standard category 5e (CAT5e) or higher network cable
Software License & Warranty Card	Contains safety and regulatory information, software license, and warranty for the telephony cable modem.
Support Information Card	Provides contact information for obtaining technical support assistance with any issues you may have with your SURFboard device.
SBV2402 Quick Start Guide	Provides information for installing the telephony cable modem and setting up your home network.

Additional items needed (not included)

The following items are needed to install your SBV2402. They are not included in the SBV2402 box and must be purchased separately, if needed.

- **Coaxial cable (coax)**: round cable with a connector on each end.

This cable is needed if one is not already connected to a cable wall outlet. You can purchase a coax cable from any electronics retailer and many discount stores. Make sure the cable you choose has screw-on connectors on both ends. The coax cable should be long enough to reach from your SBV2402 to the nearest cable outlet.

Note: *For best performance, use a high-quality RG-6 type coaxial cable and minimize or eliminate splitters between the cable jack and your SBV2402.*

- **Phone cable:** a standard telephone cable with standard phone connectors (RJ11 type) on both ends.

Phone cables are available for purchase from any electronics retailer and many discount stores.

- **RF splitter (optional)**: provides an extra cable connection by splitting a single outlet into two outlets.
  You may need a splitter if you have a TV already connected to the cable outlet that you want to use. You can buy a splitter from any electronics retailer and most discount stores. You may also need a short coax cable (with connectors) to connect the RF splitter to the cable outlet and then connect the SBV2402 and TV to the splitter.

Note: *Using several splitters in a line may deteriorate the quality of your television display, telephone, and/or internet connection.*

- **Wall-mounting hardware** (optional): if you want to wall-mount the SBV2402, you will need to obtain two drywall anchors or wood screws.
- **Information packet**: your service provider should provide a packet containing information about your home network and telephone service and how to set them up. Read this information carefully and contact your service provider if you have any questions.

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 8.1
  - Windows 7 Service Pack 1 (SP1)

Note: *Although older versions of Microsoft Windows operating systems are no longer specifically supported, they should still function with this model.*

- Mac OS 10.4 or later
- UNIX
- Linux

Contact information

For technical support, FAQs, product documentation, and additional ARRIS product information:

- Visit the ARRIS support website: www.arris.com/selfhelp
- Call ARRIS technical support: **1-877-466-8646**

Product overview

Front panel

Table 2. SBV2402 front panel LEDs

LED icon	Description
POWER	**Blinking**: not applicable; LED does not blink. **On (solid)**: power is properly connected with the SBV2402 power cord.
US/DS	**Blinking**: scanning for upstream (send data) and downstream (receive data) channel connection. **On (solid)**: upstream and downstream channels are connected.
ONLINE	**Blinking**: scanning for an Internet connection. **On (solid)**: SBV2402 is connected to your home network.
Tel1	**Blinking**: telephone line 1 is either off-hook or a call is in progress. **On (solid)**: telephone service for line 1 is connected and activated; on-hook.
Tel2	**Blinking**: telephone line 2 is either off-hook or a call is in progress. **On (solid)**: telephone service for line 2 is connected and activated; on-hook.

Rear panel

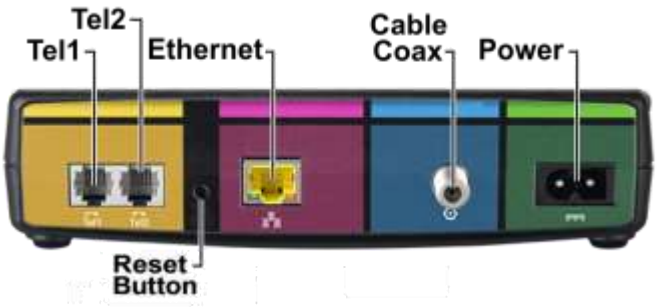


Table 3. SBV2402 rear panel ports & connectors

Port	Description
Reset button	Recessed button can be used to either reboot the SBV2402 or reset the SBV2402 configuration settings. The **Reset** button is recessed to prevent accidental resets. **Reboot (or restart) the telephony modem** 1. Insert the end of a small pointed non-metallic object with a narrow tip into the **Reset** opening on the back of your SBV2402. 2. Press and hold the indented **Reset** button for three to four seconds only. 3. Remove the small object from the **Reset** opening. **Reset the telephony modem configuration** Resets the SBV2402 configuration back to the factory default settings: 1. Insert the end of a small pointed non-metallic object with a narrow tip into the **Reset** opening on the back of your SBV2402. 2. Press and hold the indented **Reset** button for 10 seconds or until the front panel LEDs flash. 3. Remove the small object from the **Reset** opening.
Tel 1 **Tel 2**	Two telephony ports for RJ-11 cable connections: ■ VoIP connection for a single or two-line telephone ■ VoIP connection for a single-line telephone

Port	Description
Ethernet	One-gigabit Ethernet port for RJ-45 network cable connection: ■ **Green**: LED is ON - Indicates a data transfer rate of one gigabit per second ■ **Green**: LED is blinking - Indicates data traffic is in progress ■ **Amber**: LED is ON - Indicates a data transfer rate of less than one gigabit per second ■ **Amber**: LED is blinking - Indicates data traffic is in progress.
CABLE	Coaxial cable connector
Power port	100 - 240 VAC Power connector **WARNING!** To avoid any damage to the SBV2402, only use the power cord provided in the SBV2402 box.

Telephony modem label

The telephony modem label is located on the bottom of your SBV2402. It contains the specific telephony modem information that you may need when contacting your service provider or ARRIS technical support (page 12).

To receive Internet service, contact your service provider for assistance. You may have to provide the following information listed on the telephony modem label:

- Telephony modem Model name (**SBV2402**)
- Telephony modem MAC address (**HFC MAC**)
- Telephony modem Serial number (**SN**)

Installing the telephony modem

Caution: This device 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.

Before starting the installation, make sure of the following:

- You have all the Additional items needed (not included) (page 10).
- You have Establish an Internet connection (page 19)
- Cable, phone, and power outlets are available near the computer.

  If a cable outlet is not conveniently located, your service provider can install a new one.

Choose an installation location

There are several factors to consider when choosing a location to install your SBV2402:

- Choose a location in your home where your SBV2402 and computer are preferably near existing cable, phone, and electrical wall outlets.

  If a cable outlet is not conveniently located, check with your service provider to install one.

  CAUTION
  Risk of equipment damage
  Only qualified installation technicians should connect your SBV2402 to house wiring. Incumbent telephone service must be physically disconnected at the outside interface box before making any connections.

- Is an AC outlet available nearby? For best results, the outlet should not be switched and should be close enough to your SBV2402 that extension cords are not required.
- Is a cable jack available? For best performance, keep the number of splitters between the jack and cable drop to a minimum.

  Each splitter attenuates (reduces) the signal available to your SBV2402. Multiple splitters can slow down your Internet connection and also affect your telephone service.

- Can you easily run cables between your SBV2402 and telephones?
- If you are connecting devices to an Ethernet port, can you easily run cables between your SBV2402 and those devices?

- If you want to mount your SBV2402 on a wall, does the location provide a solid surface for a secure attachment?

  For best results when mounting your SBV2402 on drywall, position it so that at least one of the screws are fastened to a stud. This should prevent your SBV2402 from possibly pulling out of the wall in the future.

- If you want to install your SBV2402 on a desk, is there enough space on either side to keep the vents clear? Blocking the vents may cause your SBV2402 to overheat.

Connect the SBV2402 to your client device

WARNING

Risk of injury or equipment damage

Connecting your SBV2402 to the home's existing telephone wiring should only be performed by a professional installer. Physical connections to the previous telephone provider must be removed and the wiring must be checked; there must not be any voltage. Cancellation of telephone service is not adequate. Failure to do so may result in loss of service and/or permanent damage to your SBV2402.

Before installing your SBV2402:

- Check with your service provider (or local cable company) to ensure broadband cable service is available in your area.

  ***Note**: When contacting your service provider, you may need your SBV2402 information listed on the telephony modem label on the bottom of your SBV2402 (see Telephony modem label (page 15).*

- Check that you have all the items you need to install your SBV2402, see Additional items needed (not included) (page 10).
- Choose a location in your home where your computer and SBV2402 are preferably near existing cable, phone, and electrical wall outlets.

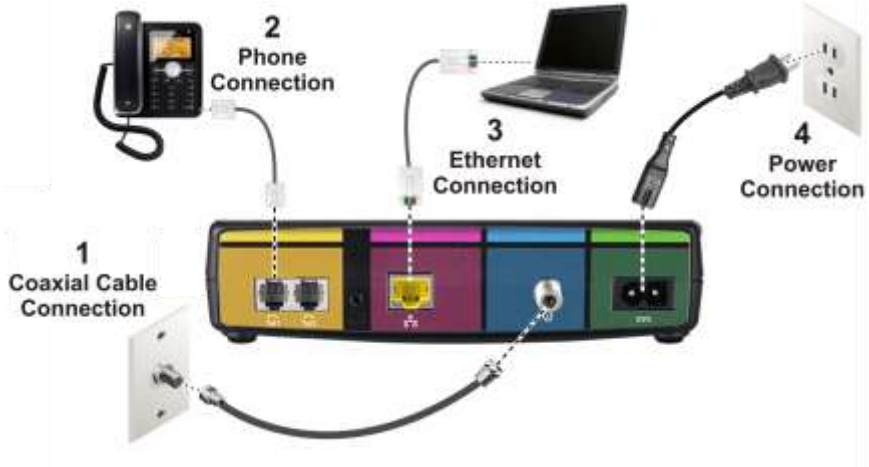
  If a cable outlet is not conveniently located, your service provider can install one.

  CAUTION

  Risk of equipment damage

  Only qualified installation technicians should connect your SBV2402 to house wiring. Incumbent telephone service must be physically disconnected at the outside interface box before making any connections.

- You have the option to mount your SBV2402 on the wall or place it on a desk, table, or any other flat surface; see Wall mount the telephony modem (page 19) for more information.



1. Check that a coaxial cable is already connected to a cable wall outlet or an RF splitter (not included).
2. Connect the other end of the coaxial cable to the **Cable** connector on the rear of your SBV2402.

   Use your hand to tighten the connectors to avoid damaging them.
3. Connect the Ethernet cable (included) to the **Ethernet** port on your client device.
4. Connect the other end of the Ethernet cable to the **Ethernet** port on the rear of your SBV2402.
5. Connect the power cord (included) to the **Power** port on the rear of your SBV2402.
6. Plug the other end of the power cord into an electrical wall outlet that is not controlled by a wall switch.

   ***Note**: This automatically powers ON your SBV2402.*

Connect your telephone

If you are migrating your current XFINITY service from an existing device, your current phone service and phone number will be transferred to your SBV2402 when the installation is finished. Please note, that if you do not currently have telephony service from Comcast, call **1-800-Xfinity** (**1-800-934-6489**) to set up an account that includes telephony service.

1. Connect a telephone cord (not included) to the **TEL LINE** port on your telephone.
2. Connect the other end of the telephone cord to the **TEL 1** port on the rear of your SBV2402.

   ***Note**: Use the **Tel1** port to connect a two-line telephone. Then, contact a VoIP service provider to activate your Telephony service.*
3. **Optional**: For a second telephone, connect a telephone cord of a single-line telephone to the **TEL 2** port on the rear of your SBV2402.

***Note**: For an Alarm System connection with a single telephone line, connect the Alarm Panel to the **Tel2** port. If both telephone lines are providing telephony services, use an RJ-31X adapter (not included) on the **Tel1** port.*

4. Check that your telephone has a dial tone.

Wall mount the SBV2402

You can either mount your SBV2402 on a wall or place it on any flat surface such as a desk or table. For wall-mounting, make sure the SBV2402 front panel indicators are facing upward (vertical) or to the side (horizontal).

Tools and materials

Make sure you have the following tools and additional items before proceeding:

- For mounting on dry wall:
  - two 1/4” (6 mm) drywall anchors (not included)
  - two #6 x 1.5” (38.1 mm) self-tapping panhead screws (not included)
  - a drill with 1/4” (6 mm) bit (not included)
- For mounting on plywood or studs: two #6 x 1.5” (38.1 mm) self-tapping panhead wood screws (not included)
- Screw driver (flat-blade or Phillips, depending on what kind of screws you use).
- Transparent tape (not included) for temporarily securing the mounting template to the wall.

Location

Always position your SBV2402:

- Within proximity to an AC outlet. The power cord must reach the AC outlet without stretching it and without using extension cords.
- Near a cable outlet (to avoid long cable runs).

Establish an Internet connection

Although your client device may already be configured to automatically connect to the Internet, you should still perform the following connectivity test to check that your devices were installed properly and are successfully connected to your home network.

1. Power ON your client device (e.g., laptop) connected to your SBV2402, if it is turned off, and then log on.
2. Check the front panel LEDs on your SBV2402.

During startup, the **Power** and **US/DS** (Upstream/Downstream) LEDs will FLASH and then light up SOLID blue.

***Note**: If you are a current Comcast voice subscriber and purchased the SBV2402, please visit **xfinity.com/activate** before calling Comcast or ARRIS. If there is an issue with the activation, please call Comcast at **1-800-Xfinity** (**1-800-934-6489**) to activate your SBV2402. Make sure you have your Comcast Xfinity account number, account phone number, and login information (your email address or user name and password).*

***Note**: If you are a new voice subscriber with Comcast, continue with the following steps to set up your new Xfinity telephony service account and activate your SBV2402.*

3. Click or type **xfinity.com/activate** to open the Xfinity Activation page.
4. Follow the online instructions to enter your Xfinity account number and phone number.
5. Enter the following information to set up your online Xfinity login account and network login information:
   - XFINITY account login name
   - XFINITY account password
   - Network name
   - Network password
6. To check for Internet connectivity, open a web browser (Internet Explorer, Google Chrome, Firefox, or Safari) on your computer or laptop.
7. Click **www.surfboard.com** or type a valid URL of your choice in the address bar and press **Enter**.

   The ARRIS SURFboard website or your selected website should open. If the website fails to open, please call Comcast Customer Support at **1-855-OK-BEGIN** (**1-855-652-3446**) to set up your Internet service or activate your SBV2402.

Using the telephony modem

This chapter describes the controls and features available on your SBV2402 and covers basic troubleshooting procedures.

Indicator lights for the SBV2402

The SBV2402 LED indicator lights can be helpful when troubleshooting.

Wiring problems

If your SBV2402 begins flashing all its lights for more than 10 seconds, this indicates a problem with the telephone wiring — the red and green wires may be shorted (touching), or there may be undesired voltage on the lines. If this pattern persists for more than 10 seconds, disconnect the telephone lines from your SBV2402, replace the telephone cable, or contact a wiring technician for assistance.

Patterns: normal operation

The following table shows light patterns during normal operation:

Mode	Power	US/DS	Online	Tel 1 / Tel 2
AC power	On	**On** = connected to the Internet (ultra-high speed) **Flash** = not connected to the Internet	**On** = Internet avail **Off** = Internet not available	**On** = on-hook **Flash** = off-hook **Off** = disabled

Mode	Power	US/DS	Online	Tel 1 / Tel 2
No AC power	Off	Off	Off	Off
Firmware upgrade	On	Flash	On	(normal operation)

Patterns: startup sequence

There are two SBV2402 light patterns that display during each phase of the startup sequence:

- Telephony startup sequence
- Cable modem startup sequence

Telephony startup sequence

Power, US/DS, Online	Telephone 1	Telephone 2	Description
Off	Off	Off	No power to modem
Flash	Flash	Flash	Power-on self-test
On	Flash	Off	Retrieving telephone network information
On	Off	Flash	Retrieving telephone network information
On	Flash	Flash	Activating telephone service

Cable modem startup sequence

DS/US	Online	Description
Flash	Off	Downstream or upstream search
On	Flash	Downstream and upstream found; retrieving setup information from service provider
On	On	Ready for service

Chapter 6

Using the telephony modem web manager

The SBV2402 web manager is available to view and monitor your SBV2402 operational status and network configuration settings.

SBV2402 web manager menu links

The SBV2402 main menu links and related submenu option links are displayed along the top of the SBV2402 web manager screen. Click on the main menu link to view any of the other available screens.

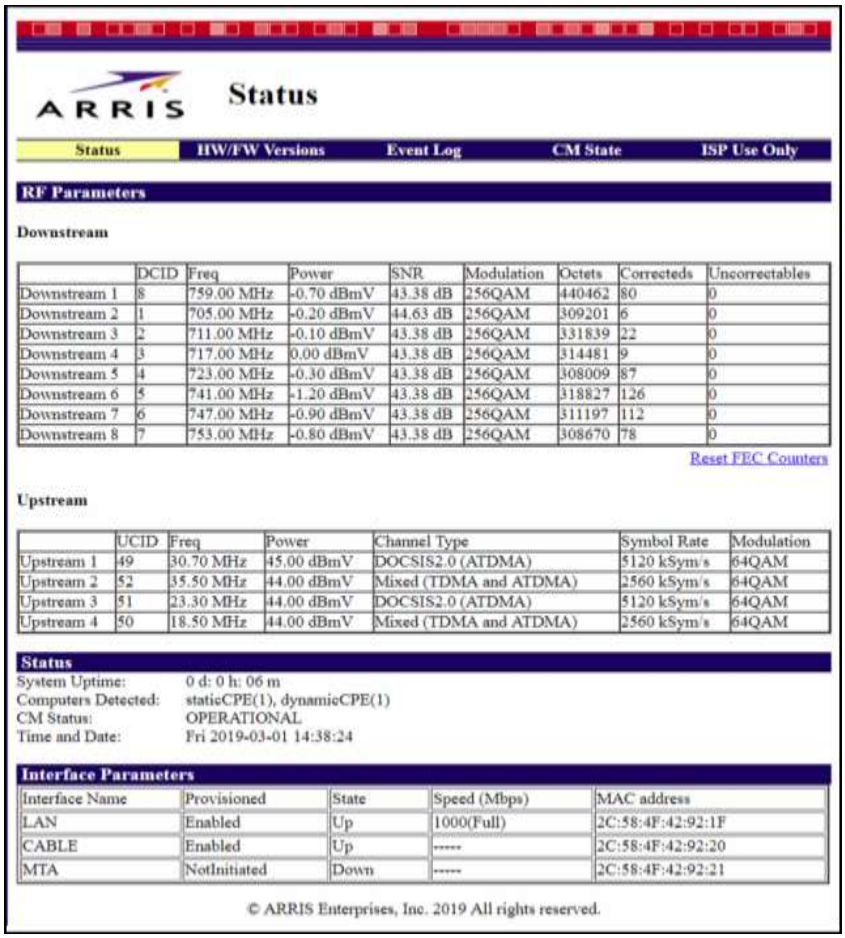
View the SBV2402 network connection status

Use the SBV2402 web manager to view and monitor the network configuration settings and operational status of your SBV2402. To open the SBV2402 web manager:

1. Open a web browser (such as Internet Explorer, Google Chrome, Firefox, or Safari) on the client device connected to your SBV2402.
2. Type **192.168.100.1** in the address bar and then press **Enter** to open the SBV2402 web manager. The Status screen opens.

Status screen

The Status screen shows the current status of the upstream and downstream channels for your SBV2402, including the MAC addresses for various ports.



ARRIS

Status

Status | HW/FW Versions | Event Log | CM State | ISP Use Only

RF Parameters

Downstream

	DCID	Freq	Power	SNR	Modulation	Octets	Correcteds	Uncorrectables
Downstream 1	8	759.00 MHz	-0.70 dBmV	43.38 dB	256QAM	440462	80	0
Downstream 2	1	705.00 MHz	-0.20 dBmV	44.63 dB	256QAM	309201	6	0
Downstream 3	2	711.00 MHz	-0.10 dBmV	43.38 dB	256QAM	331839	22	0
Downstream 4	3	717.00 MHz	0.00 dBmV	43.38 dB	256QAM	314481	9	0
Downstream 5	4	723.00 MHz	-0.30 dBmV	43.38 dB	256QAM	308009	87	0
Downstream 6	5	741.00 MHz	-1.20 dBmV	43.38 dB	256QAM	318827	126	0
Downstream 7	6	747.00 MHz	-0.90 dBmV	43.38 dB	256QAM	311197	112	0
Downstream 8	7	753.00 MHz	-0.80 dBmV	43.38 dB	256QAM	308670	78	0

Reset FEC Counters

Upstream

	UCID	Freq	Power	Channel Type	Symbol Rate	Modulation
Upstream 1	49	30.70 MHz	45.00 dBmV	DOCSIS2.0 (ATDMA)	5120 kSym/s	64QAM
Upstream 2	52	35.50 MHz	44.00 dBmV	Mixed (TDMA and ATDMA)	2560 kSym/s	64QAM
Upstream 3	51	23.30 MHz	44.00 dBmV	DOCSIS2.0 (ATDMA)	5120 kSym/s	64QAM
Upstream 4	50	18.50 MHz	44.00 dBmV	Mixed (TDMA and ATDMA)	2560 kSym/s	64QAM

Status

System Uptime: 0 d: 0 h: 06 m
Computers Detected: statieCPE(1), dynamieCPE(1)
CM Status: OPERATIONAL
Time and Date: Fri 2019-03-01 14:38:24

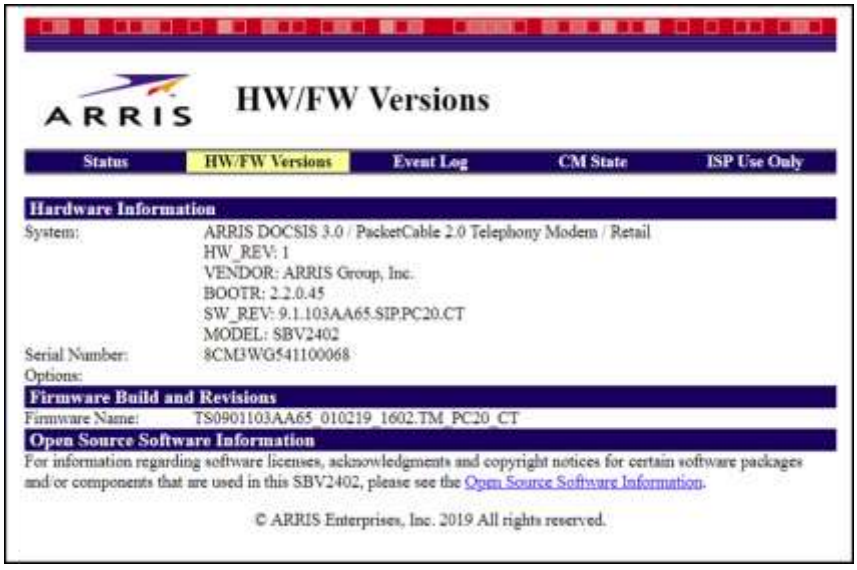
Interface Parameters

Interface Name	Provisioned	State	Speed (Mbps)	MAC address
LAN	Enabled	Up	1000(Full)	2C:58:4F:42:92:1F
CABLE	Enabled	Up	-----	2C:58:4F:42:92:20
MTA	NotInitiated	Down	-----	2C:58:4F:42:92:21

© ARRIS Enterprises, Inc. 2019 All rights reserved.

HW/FW versions screen

The HW/FW versions screen includes release and model information for the SBV2402 hardware and firmware. This information includes the serial number for your SBV2402.



ARRIS

HW/FW Versions

Status | HW/FW Versions | Event Log | CM State | ISP Use Only

Hardware Information

System: ARRIS DOCSIS 3.0 / PacketCable 2.0 Telephony Modem / Retail
HW_REV: 1
VENDOR: ARRIS Group, Inc.
BOOTR: 2.2.0.45
SW_REV: 9.1.103AA65.SIP.PC20.CT
MODEL: SBV2402
Serial Number: 8CM3WG541100068
Options:

Firmware Build and Revisions

Firmware Name: TS0901103AA65_010219_1602.TM_PC20_CT

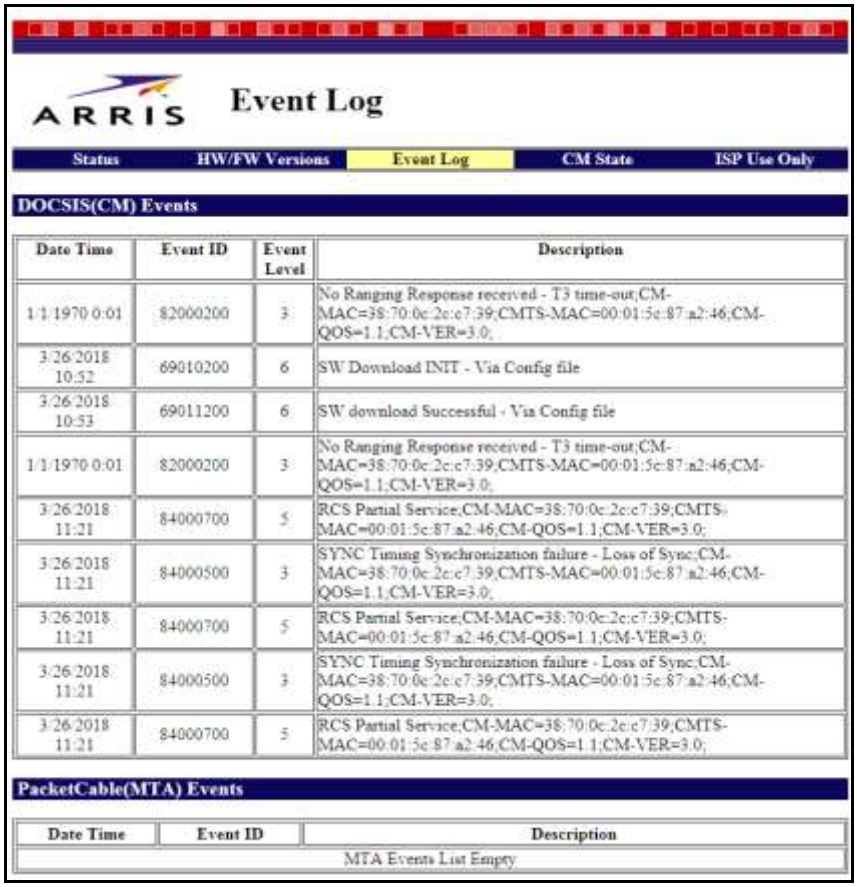
Open Source Software Information

For information regarding software licenses, acknowledgments and copyright notices for certain software packages and/or components that are used in this SBV2402, please see the Open Source Software Information.

© ARRIS Enterprises, Inc. 2019 All rights reserved.

Event log screen

The Event Log screen includes a list of events that were detected by your SBV2402, including the date and time of the event, event ID, and event level.



ARRIS **Event Log**

Status | HW/FW Versions | Event Log | CM State | ISP Use Only

DOCSIS(CM) Events

Date Time	Event ID	Event Level	Description
1/1/1970 0:01	82000200	3	No Ranging Response received - T3 time-out;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;
3/26/2018 10:52	69010200	6	SW Download INIT - Via Config file
3/26/2018 10:53	69011200	6	SW download Successful - Via Config file
1/1/1970 0:01	82000200	3	No Ranging Response received - T3 time-out;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;
3/26/2018 11:21	84000700	5	RCS Partial Service;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;
3/26/2018 11:21	84000500	3	SYNC Timing Synchronization failure - Loss of Sync;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;
3/26/2018 11:21	84000700	5	RCS Partial Service;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;
3/26/2018 11:21	84000500	3	SYNC Timing Synchronization failure - Loss of Sync;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;
3/26/2018 11:21	84000700	5	RCS Partial Service;CM-MAC=38:70:0c:2c:c7:39;CMTS-MAC=00:01:5c:87:a2:46;CM-QOS=1.1;CM-VER=3.0;

PacketCable(MTA) Events

Date Time	Event ID	Description
MTA Events List Empty		

Registration status (CM state)

The Registration Status screen shows the current operating status of your SBV2402 with regards to DOCSIS and telephony connections.

ARRIS

Registration Status

Status	HW/FW Versions	Event Log	CM State	ISP Use Only

CM State: Docsis-Downstream Scanning

Docsis-Downstream Scanning	In Progress
Docsis-Downstream Ranging	Not Started
Docsis-Upstream Ranging	Not Started
Docsis-DHCP	Not Started
Docsis-TFTP	Not Started
Docsis-Data Reg Complete	Not Started
Telephony-DHCP	Not Started
Telephony-TFTP	Not Started
Telephony-Reg with Call Server	Not Started
Telephony-Reg Complete	Not Started

TOD State:

Time of Day	Not Provisioned

BPI State:

BPI Status	-----

DHCP Attempts to obtain CM IP Address:

IPv4 Attempt(s)	0
IPv6 Attempt(s)	0

Power Supply Telemetry:

Battery Operation Status	Battery Serial Number	Battery Part Number
BATTERY MISSING	-----	-----

Battery Test State: Not Currently Under Battery Test

Troubleshooting

Solutions

- The SBV2402 is plugged in, but the power light is off
- I cannot access the Internet
- I cannot access the Internet (Ethernet)
- I can get on the Internet, but everything is slow
- I don't have a dial tone when I pick up the phone
- Contact ARRIS consumer support

The SBV2402 is plugged in, but the power light is off

- Check all power connections. Is the power cord plugged in firmly at both ends?
- If you plugged the power cord into a power strip, make sure the strip is switched on.
- Try to plug the power cord into a different outlet. If the outlet is controlled by a wall switch, make sure the switch is on.
- Finally, check the fuse or circuit breaker panel.

I cannot access the internet

The first time you power up your SBV2402 may take over 30 minutes to establish a connection, especially if there are many people online. Always leave your SBV2402 plugged into an AC power outlet and connected to the cable system.

Check the front panel lights:

- The **Power** and **Online** lights should be on.
- The **Link** light should either be on or blinking.
- If the **Power** light blinks for more than 30 minutes, call your service provider for assistance.

Check your cable connections. Connectors should be tight. The coax cable should not be pinched, kinked, or bent sharply—any of these can cause a break or short in the cable (you may have to replace the cable). If you have one or more splitters between your SBV2402 and a CATV outlet, remove the splitters and connect your SBV2402 directly to the outlet.

Proceed to the Ethernet solution, if necessary.

I cannot access the internet (Ethernet)

If you are using a hub, is the hub turned on?

Are you using the right type of Ethernet cable? Use the supplied cable for direct connection to a computer; use a cross-over cable for connection to a hub.

Press the **Reset** button on the back of the SBV2402.

I can get on the internet, but everything is slow

If the website you are visiting is very popular, that site may be having trouble servicing all the requests. If other sites download quickly, wait for a few minutes and try again. Usage during peak hours may also affect the connection speed. Also, other communications on the LAN may slow down the connection.

I do not have a dial tone when I pick up the phone

For telephone service to be functional on your SBV2402, the service must have been purchased from your service provider and configured on your SBV2402. The following steps should help in identifying the source of the problem:

1. Is the Power LED lit?
    - If not, check to make sure your SBV2402 is plugged into an electrical wall outlet and the outlet has power. Use only the external AC power adapter (if provided) and power cord included with the device.
    - If the LED is lit, proceed with the next step.
2. Is the Online LED lit?
    - If not, check the coax cable connection between the SBV2402 and the wall. Ensure they are connected tightly. If they are and you do not have a dial tone, contact your service provider.
    - If the Online LED is lit, go to the next step.
3. Is the Telephone (Tel 1 or Tel 2) LED lit?
    - If not, phone service has not been set up on that telephone line. Contact your service provider.
    - If it is blinking, there is a phone off hook somewhere in the house. Find the phone and hang it up.
    - If it is lit, proceed with the next step.
4. Is the phone plugged directly into your SBV2402?
    - Make sure the phone is plugged into the **Tel 1** port for line 1 or the **Tel 2** port for line 2 on the back of your SBV2402.
    - If the phone is connected, try connecting a different phone.

      Make sure the new phone is a working phone.

- If a known working phone is used and you still do not have a dial tone, try a different phone cable. If a new phone and cable do not restore the dial tone, call your service provider for assistance.

5. Is the SBV2402 plugged into a wall outlet?

   - If so, unplug the phone connector at the back of your SBV2402 and plug in a known working phone. If you now have dial tone, the problem is with the house wiring. Contact your service provider or a qualified wiring technician to correct the house wiring. If you still do not have dial tone, contact your service provider.

Contact ARRIS consumer support

For technical support, FAQs, product documentation, and additional ARRIS product information:

- Visit the ARRIS Support website: www.arris.com/selfhelp
- Call: **1-877-466-8646**
- Email: ARRIS technical support
- SBV2402 product information: shop.surfboard.com/categories/xfinity-subscribers.html

Warranty information

SURFboard SBV2402 Internet & Voice cable modem

ARRIS Enterprises, LLC ("ARRIS")

Retail purchasers: If you purchased this Product directly from ARRIS or from an authorized ARRIS retail reseller, ARRIS warrants to you, the original end user customer, that (A) the Product, excluding Software, will be free from defects in materials and workmanship under normal use, and (B) with respect to Software, (i) the media on which the Software is provided will be free from defects in material and workmanship under normal use, and (**ii**) the Software will perform substantially as described in its documentation. This Limited Warranty to you, the original end user customer, continues (**A**) for Software and the media upon which it is provided, for a period of ninety (**90**) days from the date of purchase from ARRIS or an authorized ARRIS reseller, and (B) for the Product (excluding Software), for a period of two (**2**) years from the date of purchase from ARRIS or from an authorized ARRIS reseller. To take advantage of this Limited Warranty or to obtain technical support, you must call the ARRIS toll-free telephone number **1-877-466-8646**. Technical support charges may apply. ARRIS' sole and exclusive obligation under this Limited Warranty for retail sales shall be to repair or replace any Product or Software that does not meet this Limited Warranty. All warranty claims must be made within the applicable Warranty Period.

Cable operator or service provider arrangements. If you did not purchase this Product directly from ARRIS or from an ARRIS authorized retail reseller, ARRIS does not warrant this Product to you, the end-user. A limited warranty for this Product (including Software) may have been provided to your cable operator or Internet Service Provider ("Service Provider") from whom you obtained the Product. Please contact your Service Provider if you experience problems with this Product.

General information. The warranties described in this Section shall not apply: (**i**) to any Product subjected to accident, misuse, neglect, alteration, Acts of God, improper handling, improper transport, improper storage, improper use or application, improper installation, improper testing or unauthorized repair; or (**ii**) to cosmetic problems or defects which result from normal wear and tear under ordinary use, and do not affect the performance or use of the Product. ARRIS' warranties apply only to a Product that is manufactured by ARRIS and identified by ARRIS owned trademark, trade name or product identification logos affixed to the Product. ARRIS does not warrant to you, the end user, or to anyone else that the Software will perform error free or without bugs.

ARRIS IS NOT RESPONSIBLE FOR, AND PROVIDES "AS IS" ANY SOFTWARE SUPPLIED BY 3RD PARTIES. EXCEPT AS EXPRESSLY STATED IN THIS SECTION ("WARRANTY INFORMATION"), THERE ARE NO WARRANTIES OF ANY KIND RELATING TO THE PRODUCT, EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THE WARRANTY AGAINST INFRINGEMENT PROVIDED IN THE UNIFORM COMMERCIAL CODE. Some states do not allow for the exclusion of implied warranties, so the above exclusion may not apply to you.

What additional provisions should I be aware of? Because it is impossible for ARRIS to know the purposes for which you acquired this Product or the uses to which you will put this Product, you assume full responsibility for the selection of the Product for its installation and use. While every reasonable effort has been made to ensure that you will receive a Product that you can use and enjoy, ARRIS does not warrant that the functions of the Product will meet your requirements or that the operation of the Product will be uninterrupted or error-free.

ARRIS IS NOT RESPONSIBLE FOR PROBLEMS OR DAMAGE CAUSED BY THE INTERACTION OF THE PRODUCT WITH ANY OTHER SOFTWARE OR HARDWARE. ALL WARRANTIES ARE VOID IF THE PRODUCT IS OPENED, ALTERED, AND/OR DAMAGED.

THESE ARE YOUR SOLE AND EXCLUSIVE REMEDIES for any and all claims that you may have arising out of or in connection with this Product, whether made or suffered by you or another person and whether based in contract or tort.

IN NO EVENT SHALL ARRIS BE LIABLE TO YOU OR ANY OTHER PARTY FOR ANY DIRECT, INDIRECT, GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF INFORMATION OR ANY OTHER PECUNIARY LOSS), OR FROM ANY BREACH OF WARRANTY, EVEN IF ARRIS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO CASE SHALL ARRIS' LIABILITY EXCEED THE AMOUNT YOU PAID FOR THE PRODUCT.

These matters are governed by the laws of the State of Georgia of the United States of America, without regard to conflict of laws principles and excluding the provisions of the United Nations Convention on Contracts for the International Sale of Goods and the Uniform Computers Information Transactions Act.

Retail purchasers only. If you purchased this product directly from ARRIS or from an ARRIS authorized retail reseller, please call the ARRIS toll-free phone number, **1-877-466-8646** for warranty service or technical support. Technical support charges may apply. For online technical support, please visit www.arris.com/selfhelp.

Cable operator or service provider arrangements. If you did not purchase this Product directly from ARRIS or from an ARRIS authorized retail reseller, please contact your Service Provider for technical support.

Glossary

No problem

Amp-hour

A measure of battery capacity. For example, a 1.0Ah battery can nominally supply one ampere of current for one hour.

C

Category 5e (cat5e)

A high-quality cable used for gigabit ethernet (1000Base-T) connections. When purchasing ethernet cables, always look for a category 5e cable or higher.

Coaxial cable (coax)

A thin wire used to connect your television and SBV2402 to the cable TV system. You can buy coax from any electronics retailer and many discount stores.

CPE

Customer premise equipment. This is the equipment that is plugged into the SBV2402; typically, a computer or hub.

Cross-over

An ethernet cable used to connect two hubs (or a hub and a cable modem) together. Also, some ethernet hubs may have built-in cross-over on one or more ports, which eliminates the need for a cross-over cable.

D

DHCP

Dynamic host configuration protocol. An IP protocol used to provide an IP address and location of services (such as DNS and TFTP) needed by a device connecting to the network. DHCP allows the service provider to configure your computer's networking software for you.

DNS

Domain name service (server). An IP service that associates a domain name (such as www.example.com) with an IP address.

DOCSIS

Data over cable system interface specification. The interoperability standards used for data communications equipment on an HFC network.

Downstream

In an HFC network, the direction from the head-end to the subscriber. Some older cable documentation may refer to this as the forward path.

E

EMTA

Embedded multi-media terminal adapter. An MTA device that is integrated with a cable modem.

Ethernet

A standard method of connecting two or more computers to a local area network (LAN).

Event

An informational message used for monitoring network status.

F

F-connector

The type of connector used on a coaxial RF cable. There are two common types of F connectors: slip-on and screw-on. Use coax cables with screw-on connectors to connect your SBV2402.

Firewall

A hardware or software device that prevents unauthorized access to a private network from the internet. The SBV2402 provides a built-in firewall.

G

Gateway

The device, usually a router, that connects devices on a given IP subnet to other IP subnets.

H

Headend

The “central office” in an HFC network. The headend houses both video and data equipment. In larger cable networks, a “master” headend often feeds several “remote” headends to provide distributed services.

HTTP

Hypertext transfer protocol. A set of rules for transferring text, graphic, and multi-media files on the internet.

Hub

A box with several ethernet connectors. Ethernet hubs provide a common point of contact for all connected devices.

I

IP address

A number assigned to your computer by your service provider, used to identify your computer to other systems on the Internet.

ISDN

Integrated services digital network. A digital telephony standard that provides communication speeds about twice as fast as standard dialup.

L

LAN

Local area network. A network that allows computers in a single location (such as a building) to communicate with one another.

LED

Light emitting diode. A semi-conductor diode that emits light when current is passed through it.

M

MAC address

Media access control address. A number that uniquely identifies any device connected to a network. Your service provider uses your SBV2402 MAC address to authorize internet access.

P

Protocol

A set of rules and formats that determines the communication behavior of network entities at a given layer.

Proxy

A device or program that stands in between a server (for example, a web site) and a client (your browser), providing a way to relieve some of the burden from the server. For example, your service provider may have a web proxy that keeps copies of popular web pages; the proxy can send you those pages instead of fetching them directly from the web site, resulting in faster page loading and less network congestion.

R

RF

Radio frequency. Some literature refers to coax as “RF cable” and the connectors as “RF connectors.”

RJ-11

A standard 2 conductor modular connector. It is commonly used in North America for connecting telephones.

RJ-45

A standard 8-conductor modular connector commonly used on Ethernet cable. An RJ-45 connector looks like a wide RJ-11 (telephone) connector.

S

Splitter

A small box with three cable connectors: one input and two outputs. You may need a splitter if you have a TV already connected to the cable outlet that you want to use for your SBV2402.

You can buy a splitter from any electronics retailer and most discount stores.

Switched outlet

A power outlet that may be turned on and off using a wall switch. Usually intended for lamps. Avoid plugging your computer or SBV2402 into a switched outlet to avoid disruptions.

T

TCP/IP

Transmission control protocol/internet protocol. The protocols used to facilitate communications across one or more connected networks.

TDMA

Time division multiple access. A method used by DOCSIS-compliant cable modems for sending upstream data with minimal interference.

U

Upstream

The path from a subscriber device to the headend. Some older cable documentation may refer to this as the return path or reverse path.

Corporate Headquarters
ARRIS · Suwanee · Georgia · 30024 · USA
www.arris.com