User Guide

Motorola SURFboard®

SB6182 DOCSIS® 3.0 Cable Modem

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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.
- 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 40° C (104° F).

SAVE THE ABOVE INSTRUCTIONS

Note to CATV System Installer — This reminder is provided to call the CATV system installer's attention to Section 820.93 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.

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 Motorola for compliance could void the user's authority to operate the equipment.

FCC DECLARATION OF CONFORMITY

Motorola Mobility, LLC, 101 Tournament Drive, Horsham, PA 19044, 1-215-323-1000, declares that the SURFboard SB6182 DOCSIS 3.0 Cable Modem complies with 47 CFR Parts 2 and 15 of the FCC rules as a Class B digital device.

INDUSTRY CANADA (IC) STATEMENT

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CARING FOR THE ENVIRONMENT BY RECYCLING

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

Recycling your Motorola 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. If collection systems are not available, call Motorola Customer Service for assistance. Please visit www.motorola.com/recycle for instructions on recycling.

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1 Getting Started

The Motorola SURFboard® SB6182 DOCSIS® 3.0 Cable Modem provides high-speed access to the Internet and other online services. You can use the high-speed cable modem to directly connect your computer in your home or business to the Internet through an Ethernet connection.

This guide provides a product overview and instructions for installing and configuring the SB6182.

In the Box

Before installing the modem, check that the following items are included in the box with the modem. If any items are missing, please contact Motorola Broadband Technical Support at **1-877-466-8646**.

ITEM		DESCRIPTION
Power Supply		Provides power to the modem using an electrical outlet
10/100/1000 Base-T Ethernet Cable		Standard Category 5, or higher, cable for connecting to the network
Software License & Regulatory Card		Contains software license, warranty, and safety information for the modem
SB6182 Install Sheet		Provides basic information for connecting the modem

Minimum System Requirements

The SB6182 is compatible with the following operating systems:

- Windows® 7
- Windows Vista™, Service Pack 1 or later
- Windows XP, Service Pack 2 or later
- Mac® 10.4 or later
- UNIX®
- Linux®

Contact Information

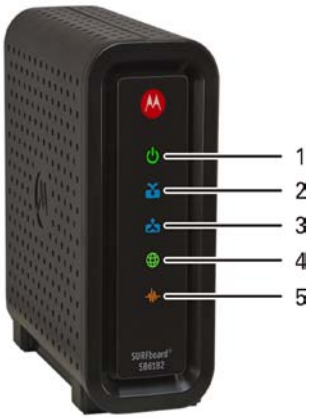
For technical support or additional Motorola product information, please visit the Motorola Support website at **www.motorola.com/us/support**.

Motorola Broadband Technical Support is also available at **1-877-466-8646**. When you call, you will need the following information located on the modem product label on the bottom of the modem:

- Modem model number
- Modem serial number

2 Product Overview

Front Panel

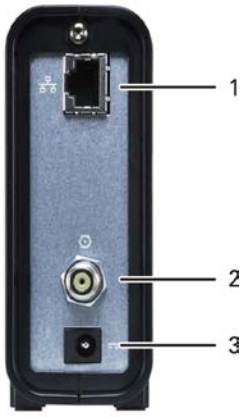


	LED ICON	FLASHING	ON
1	POWER	Not applicable — icon does not flash	**Green**: Power is properly connected
2	RECEIVE	Scanning for a downstream (receive) channel connection	**Green**: Non-bonded downstream channel is connected **Blue***: High-speed Internet connection with bonded downstream channels
3	SEND	Scanning for an upstream (send) channel connection	**Green**: Non-bonded upstream channel is connected **Blue***: High-speed Internet connection with bonded upstream channels
4	ONLINE	Scanning for an Internet connection	**Green**: Startup process completed
5	LINK	Transmitting or receiving data on Ethernet port	**Amber**: A device, computer, or hub is connected to the Ethernet (10Base-T) or Fast Ethernet (100Base-T) port **Blue***: High-speed Gigabit Ethernet (1000Base-T) connection from the SB6182 to your computer

***** *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.*

***Note**: To increase the bandwidth available for receiving and transmitting data, your service provider may also implement bonded channels for RECEIVE and SEND channel connections. The LINK icon turns blue when a high-speed Gigabit Ethernet (GigE) connection is made.*

Rear Panel



	PORT NAME	DESCRIPTION
1	ETHERNET	Ethernet port for an RJ-45 network cable connection Green LED indicates a data connection is made
2	CABLE	Coaxial cable connector
3	POWER	+12VDC Power connector

Modem Label

The SB6182 modem label is located on the bottom of the modem. It contains specific modem ID information that may be needed when contacting your service provider.

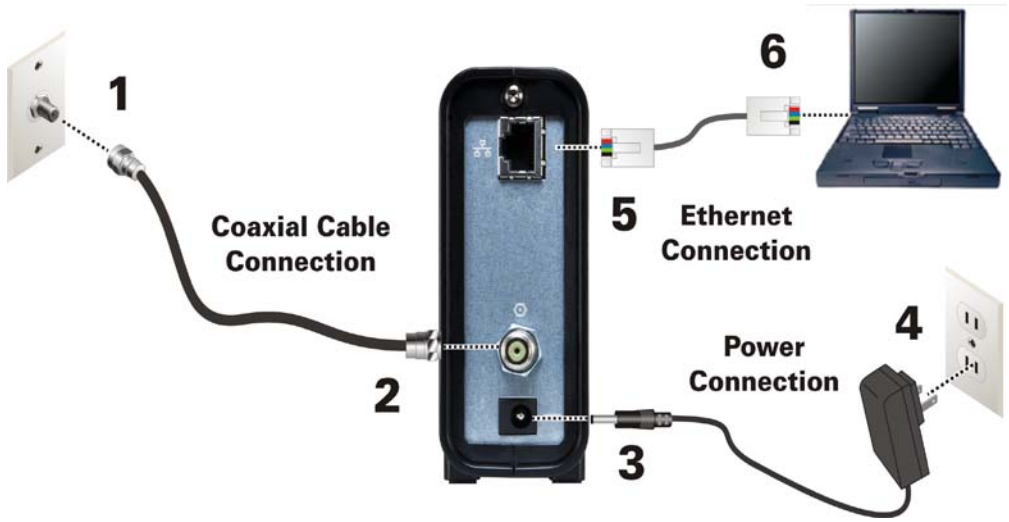
To receive Internet access, you may have to provide the MAC address (**HFC MAC ID**) and serial number located on the modem label to your Internet service provider.

3 Installing the Modem

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

Connecting to a Computer

Before installing the modem, choose a location where the computer and modem are preferably near existing cable and electrical wall outlets. Also, make sure your computer is powered OFF.



1. Verify that the coaxial cable is connected to a cable outlet or splitter.
2. Connect the other end of the coaxial cable to the Cable connector on the modem.

   Hand-tighten the connectors to avoid damaging them.
3. Plug the power cord into the Power port on the modem.
4. Plug the other end of the power cord into an electrical outlet. This automatically powers ON the modem.
5. Connect the Ethernet cable to the Ethernet port on the modem.
6. Connect the other end of the Ethernet cable to the Ethernet port on your computer.

   The modem may automatically activate when you power ON your computer. If not, contact your service provider for assistance.

Testing the Modem Connections

Perform the following modem connectivity test to verify that all the components were connected properly:

1. Power ON your computer and then log in.
2. Check that the POWER, RECEIVE, SEND, and ONLINE front panel LEDs on the modem light up in sequential order. See Front Panel for additional LED status information.

   ***Note**: The ONLINE LED should light up after the modem is provisioned (activated).*

   If an LED did not light up, contact your service provider for assistance.
3. Open a web browser on your computer, such as Internet Explorer, Firefox, Google Chrome, or Safari.
4. Type a valid URL (**www.motorola.com**) in the address bar and click or press **Enter**. If the web page did not open, see Troubleshooting Solutions for more information or contact your service provider.

4 Connecting to the Internet

After installing the modem, you may have to set up your computer and other network devices to connect to the Internet. To do this, you may have to enable the network options on your computer to automatically obtain an IP address and DNS server address. Follow the steps in this section for your operating system.

IMPORTANT! Your computer may already be configured to automatically connect to the Internet. If so, **do not** perform any of the steps in this section.

Configuring TCP/IP for Windows 7

1. Click **Start** and then select **Network, Properties**.
2. Click **Network and Internet** to open the Network and Internet window.
3. Click **Network and Sharing Center** to open the Network and Sharing Center window.
4. Click **Change adapter settings** to open the Network Connections window.
5. Right-click the network connection for your network interface.
6. Select **Properties** to open the Local Area Connection Properties window.
7. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties** to open the Internet Protocol Properties window.
8. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.
9. Click **OK** to save the TCP/IP settings and close the Internet Protocol Version 4 (TCP/IPv4) Properties window.
10. Click **Close** to close the Local Area Connection Properties window.
11. Close the remaining windows and exit the Control Panel.

When you complete the TCP/IP configuration, go to Verifying the IP Address in Windows 7.

Configuring TCP/IP for Windows Vista

1. Click **Start** and then right-click **Network**.
2. Click **Network and Internet** to open the Network and Internet window.
3. Click **Network and Sharing Center** to open the Network and Sharing Center window.
4. Click **Manage Network Connections**.
5. Right-click the Local Area Connection you want to configure (if more than one is listed).
6. Click **Properties** to open the Connection Properties window.
7. Click **Continue**, if prompted for administrator permission.
8. Click **Networking** tab.
9. Select ***Internet Protocol Version4 (TCP/IPv4)*** and then click **Properties**.
10. Select ***Obtain an IP address automatically*** and ***Obtain DNS server address automatically***.
11. Click **Advanced**. Use the following table to verify the Advanced TCP/IP Settings.

IP SETTINGS TAB	DNS TAB	WINS TAB
• DHCP Enabled listed IP address box • Default modems box is empty • Automatic metric is selected	• DNS server addresses box is empty • Append primary and connection specific DNS suffixes is selected • Append parent suffixes of the primary DNS suffix is checked • Register this connection's addresses in DNS is checked • Append these DNS suffixes (in order) is not selected	• WINS addresses box is empty • Enable LMHOSTS lookup is checked • Default: Use NetBIOS setting from the DHCP server is selected

12. Click **OK.**
13. Click **Alternate Configuration** and verify that ***Automatic private IP address*** is selected.
14. Click **OK.** A prompt to restart your computer will display.

Configuring TCP/IP for Windows XP

1. Click **Start , Control Panel**.
   - or -
2. Click **Start**, **Settings**
3. Click **Network and Internet Connections** or **Network Connections** (will vary according to settings).
4. Click **Local Area Connection**.
5. Click **Properties** to open the Local Area Connection Properties window.
6. Select ***Internet Protocol (TCP/IP)*** and then click **Properties**.
7. Select ***Obtain an IP address automatically*** and ***Obtain DNS server address automatically***.
8. Click **OK** to save the TCP/IP settings.
9. Click **OK** to exit.

Renewing the IP Address in Windows 7 or Vista

1. Click **Start** and then click **Start Search**.
2. Type **cmd** and then right-click on **cmd.exe** from the drop-down list.
3. Select ***Run as administrator.***
4. Type **ipconfig/renew** and press **Enter**. A new IP address for your computer will display.
5. Type **exit** and press **Enter** to return to Windows.

If you still cannot access the Internet, contact your Internet Service Provider.

Renewing the IP Address in Windows XP

1. Open a command prompt window:
   Click **Start**, **All Programs**, **Accessories**, **Command Prompt**.
   - or -
   Click **Start**, **Run,** type **cmd**, and then click **OK.**
2. Type **ipconfig /renew** and press **Enter**. A new IP address for your computer will display.
3. Type **exit** and then press **Enter** to return to Windows.

If you still cannot access the Internet, contact your Internet Service Provider.

Verifying the IP Address in Windows 7 or Vista

1. Click **Start** and then click **All Programs**.
2. Click **Accessories**.
3. Click **Run** to open the Run window.
4. Type **cmd** and then click **OK** to open a command prompt window.
5. Type **ipconfig** and then press **Enter** to display the IP Configuration.

Verifying the IP Address in Windows XP

1. Open a command prompt window:
   Click **Start**, **All Programs**, **Accessories**, **Command Prompt**.
   - or -
   Click **Start**, **Run,** type **cmd**, and then click **OK.**
2. Type **ipconfig** and press **Enter** to display the IP configuration.

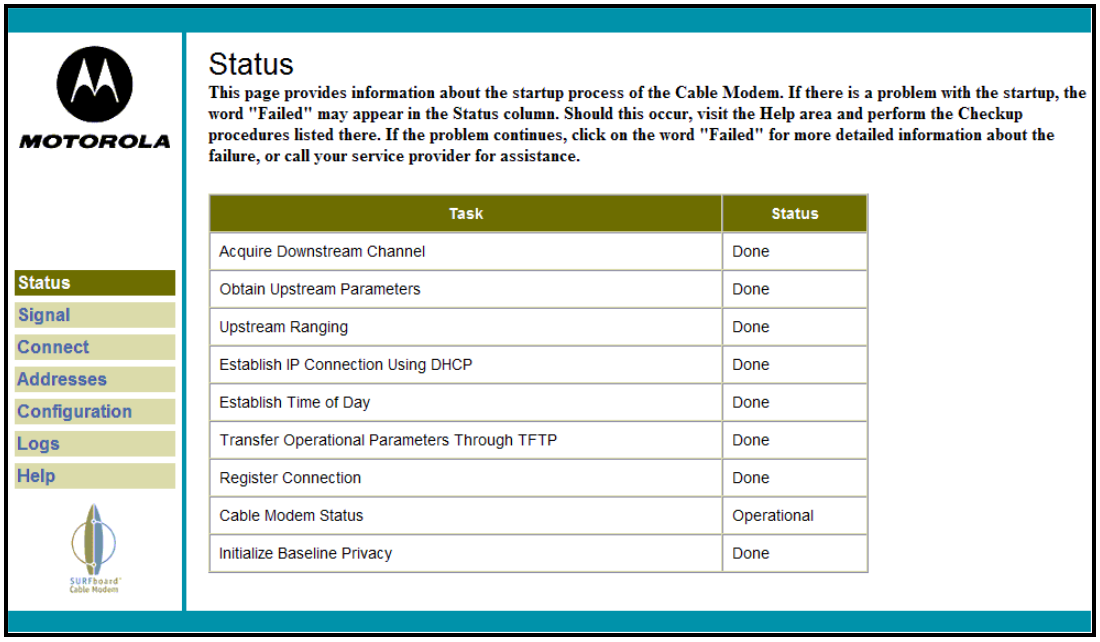
5 Monitoring the Modem

Use the SB6182 Modem Configuration Manager to view the various configuration settings and operational status of the modem.

Starting the Modem Configuration Manager

1. Open any web browser on a computer connected to the modem.
2. In the Address bar, type **http://192.168.100.1** for the Modem Configuration Manager IP address, and then press **Enter**. The following Status page displays when you first log ON.

   ***Note**: If you cannot access the HTML pages in the Modem Configuration Manager, please contact your service provider for assistance.*

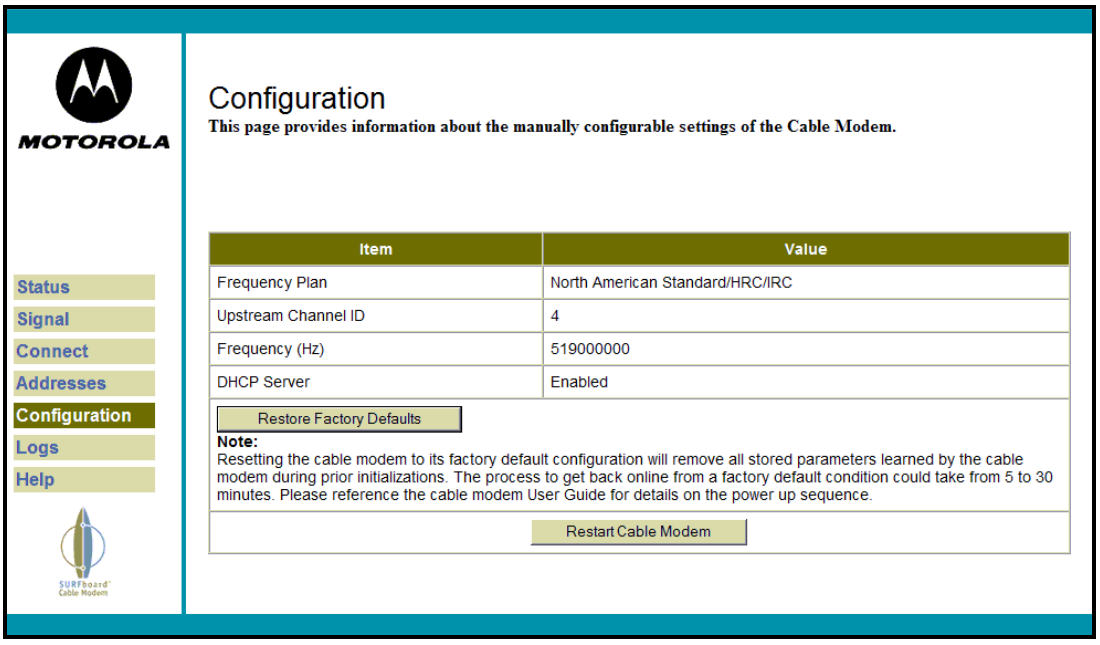


Restoring the Modem Settings

If necessary, you can reset the SB6182 modem configuration to its original factory settings.

WARNING: This will delete all of your current modem configuration settings.

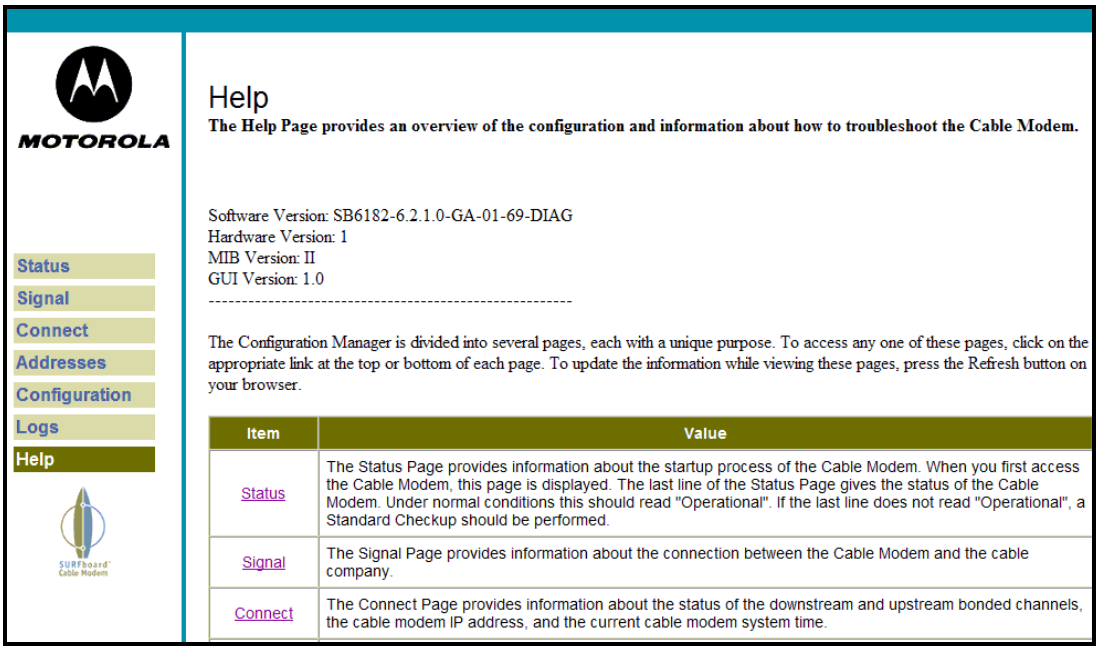
1. Click **Configuration** from the side menu bar.



2. Click **Restore Factory Defaults**.
3. Click **Restart Cable Modem**.

Getting Help

To retrieve help information for any status information page, click **Help** from the side menu bar.



6 Troubleshooting

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

You may have to reset the SB6182 modem configuration to its original factory settings if the modem 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 1 – Troubleshooting Solutions

MODEM PROBLEM	POSSIBLE SOLUTION
POWER LED Icon is OFF	• Check the power connection on the modem and to the electrical outlet. • Check that the electrical outlet is working (is the outlet controlled by a light switch?).
Cannot Send or Receive Data	• Check each end of the coaxial cable connection on the modem and cable outlet. Hand tighten, if necessary. • Check the Ethernet cable to make sure it is properly connected to the modem and computer. • On the front panel, check the status of the LED icons and refer to Front Panel LED Icons and Error Conditions to identify the problem. • If you have cable television, check your television to ensure your cable service is operating properly. • Check the IP address. Follow the steps for verifying the IP address for your operating system in Verifying Your IP Address in Windows 7 or Vista or Verifying Your IP Address in Windows XP. Call your service provider if you need an IP address. • If none of the above resolves the problem, contact your service provider for further assistance.

Front Panel LED Icons and Error Conditions

The SB6182 front panel LED icons provide status information for the following error conditions:

Table 2 – Front Panel LED Icons and Error Conditions

LED ICON	STATUS	IF, DURING STARTUP:	IF, DURING NORMAL OPERATION
POWER	OFF	Modem is not properly plugged into the electrical outlet	Modem is unplugged
RECEIVE	FLASHING	Downstream receive channel cannot be acquired	Downstream channel is lost
SEND	FLASHING	Upstream send channel cannot be acquired	Upstream channel is lost
ONLINE	FLASHING	IP registration is unsuccessful	IP registration is lost
LINK	OFF	No connected device is detected	Device is disconnected

Warranty Information

SURFboard SB6182 DOCSIS 3.0 Cable Modem
Motorola Mobility, LLC ("Motorola")

Retail Purchasers: If you purchased this Product **directly** from Motorola or from an authorized Motorola retail reseller, Motorola 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 Motorola or an authorized Motorola reseller, and (B) for the Product (excluding Software), for a period of one (1) year from the date of purchase from Motorola or from an authorized Motorola reseller. To take advantage of this Limited Warranty or to obtain technical support, you must call the Motorola toll-free phone number **1-877-466-8646**. Technical support charges may apply. Motorola's 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 Motorola or from a Motorola authorized retail reseller, Motorola 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. Motorola's warranties apply only to a Product that is manufactured by Motorola and identified by Motorola owned trademark, trade name or product identification logos affixed to the Product. Motorola does not warrant to you, the end user, or to anyone else that the Software will perform error free or without bugs.

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Retail Purchasers Only. If you purchased this Product **directly** from Motorola or from a Motorola authorized retail reseller, please call the Motorola toll-free number, **1-877-466-8646** for warranty service or technical support. Technical support charges may apply.

Cable Operator or Service Provider Arrangements. If you **did not** purchase this Product directly from Motorola or from a Motorola authorized retail reseller, please contact your Service Provider for technical support.

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