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SB6183: Troubleshoot Internet Connection

Information

Question   How do I troubleshoot Internet connection issues with my SB6183?

If Internet connection issues with the SB6183 arise, troubleshooting may resolve the issue, or may provide insight as to what is causing the issue. This document provides helpful information for troubleshooting Internet connection issues with the SB6183.

The following troubleshooting steps are to be followed in sequence:

1. Check the physical connection
2. Verify the LEDs
3. Power Reset
4. Factory Reset
5. Verify the cable signal

Answer

NOTE: If the solutions provided in this document do not resolve the issue, please contact the cable operator for assistance.

Check the physical connection

1. Verify that the SB6183 power cord is connected from the power port of the SB6183 to the power outlet.
2. Verify that the coaxial cable is connected from the cable port of the SB6183 to the cable outlet.
3. Verify that the Ethernet cable is connected from the Ethernet port on the SB6183 to the Ethernet port on the computer.
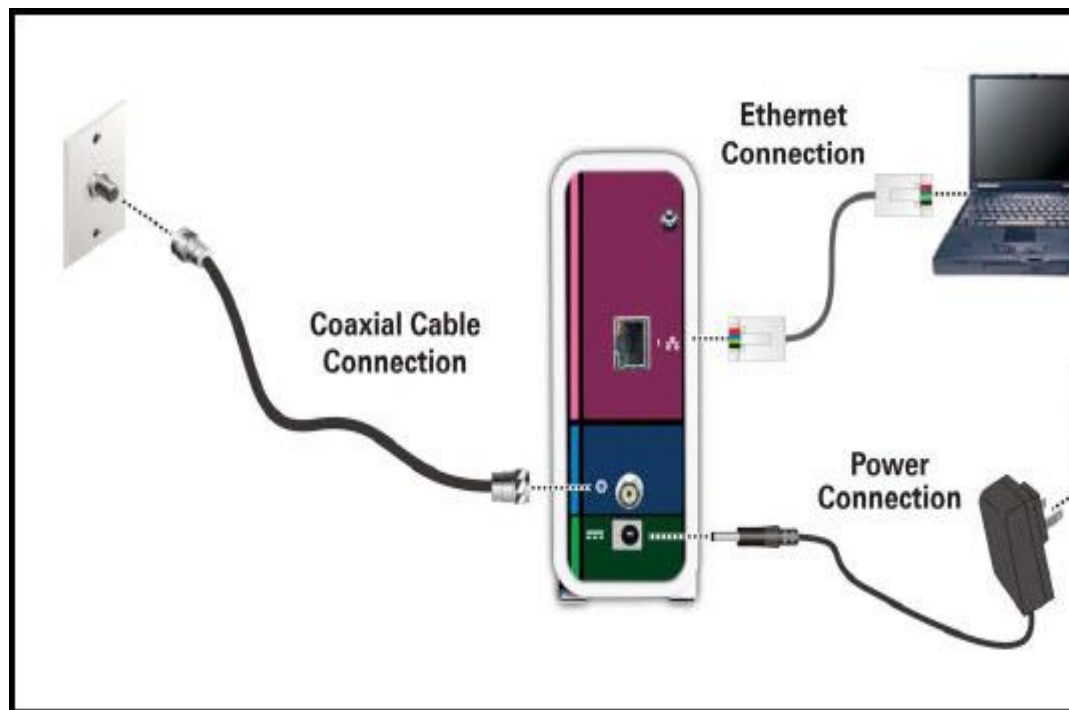
Verify the LEDs

With the proper setup, the **Online** LED should be solid green. If this is not the behavior that the SB6183 is displaying, please refer to this table for more information regarding LED behavior.

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 los
SEND	FLASHING	Upstream send channel cannot be acquired	Upstream channel is lost
ONLINE	FLASHING	IP registration is unsuccessful	IP registration is lost

Power Reset

1. Shutdown the computer.
2. Unplug the cable modem from the AC wall outlet and wait one minute.
3. Plug the cable modem into the wall outlet.
4. Wait until the Power, Receive, Send, and Online LEDs are solid.
5. Restart the computer.

Factory Reset

1. Disconnect the coaxial cable.

2. Power cycle the unit by disconnecting the power cord for 10 seconds, then reconnect the power cord.

3. Launch a web browser, such as Internet Explorer, Firefox, or Safari. Enter http://192.168.100.1 into the address box. The **Status** page will appear.

Status

The statuses listed show the connection state of the cable modem. They are used by your service provider to e operation of the cable modem.

Startup Procedure

Procedure	Status	Comment
Acquire Downstream Channel		In Progress
Connectivity State	In Progress	Not Synchronized
Boot State	In Progress	Unknown
Configuration File	In Progress	

Downstream Bonded Channels

Channel	Lock Status	Modulation	Channel ID	Frequency	Power	SNR	Corrected	Unco
1	Locked	unknown	0	952000000 Hz	-44.1 dBmV	0.0 dB	0	0

Upstream Bonded Channels

Channel	Lock Status	US Channel Type	Channel ID	Symbol Rate	Frequency

Current System Time: --- --- -- --:--:-- ----

4. Click the Configuration link on top. The **Configuration** page will appear.

5. Click the Restore Factory Defaults button (as shown below).

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Configuration

Cable modem SB6183 will automatically connect to the network. When the cable modem successfully connects to it will remember the frequency.

Configuration	
Downstream Frequency (Hz)	0
Upstream Channel ID	0
Downstream Frequency Plan	North America ▼
	Reboot

Restore Factory Defaults

Note:
Resetting the cable modem to its factory default configuration will remove all stored parameters learned by the cable mo prior initializations. The process to get back online from a factory default condition could take from 5 to 30 minutes. Pleas the cable modem User Guide for details on the power up sequence.

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6. When asked, **Do you want to proceed?,** click the OK button. The modem will reset to it's factory state, and will go through the initialization process.

Configuration

Cable modem SB6183 will automatically connect to the network. When the it will remember the frequency.

The page at 192.168.100.1 says

This action requires re-initialization o modem. This process could take from minutes. Do you want to proceed?

OK

Configuration	
Downstream Frequency (Hz)	0
Upstream Channel ID	0
Downstream Frequency Plan	North America

Reboot

Restore Factory Defaults

Note:
Resetting the cable modem to its factory default configuration will remove all stored parameters learned by the cable mo prior initializations. The process to get back online from a factory default condition could take from 5 to 30 minutes. Pleas the cable modem User Guide for details on the power up sequence.

STATUS   PRODUCT INFORMATION   EVENT LOG   ADDRESSES   CONFIGURATION   HELP

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7. Connect the coaxial cable to the modem.

   NOTE: The initialization process may take 5 to 30 minutes.

Verify the cable signal

1. Launch a web browser, such as Internet Explorer, Firefox, or Safari. Enter http://192.168.100.1 into the address box. The **Status** page will appear.

2. In the **Downstream Bonded Channels** section, verify **Power** levels are within the acceptable range of **- 15 dBmV** to + **15 dBmV** for each downstream channel.

Downstream Bonded Channels

Channel	Lock Status	Modulation	Channel ID	Frequency	Power	SNR	Corrected	Un
1	Locked	QAM256	1	705000000 Hz	0.0 dBmV	47.4 dB	0	0
2	Locked	QAM256	2	711000000 Hz	0.1 dBmV	47.4 dB	0	0
3	Locked	QAM256	3	717000000 Hz	0.2 dBmV	47.4 dB	0	0
4	Locked	QAM256	4	723000000 Hz	0.1 dBmV	47.4 dB	0	0
5	Locked	QAM256	5	741000000 Hz	-0.2 dBmV	46.4 dB	0	0
6	Locked	QAM256	6	747000000 Hz	0.1 dBmV	46.4 dB	0	0
7	Locked	QAM256	7	753000000 Hz	0.2 dBmV	46.5 dB	0	0
8	Locked	QAM256	8	759000000 Hz	-0.1 dBmV	46.4 dB	0	0

3. In the **Downstream Bonded Channels** section, identify
the **Modulation** and **Power** to find verify **SNR** levels are within the acceptable
range for each downstream channel.

Acceptable SNR Levels (dB):
If **QAM64**, **SNR** should be 23.5 dB or greater.
If **QAM256** and **DPL**(-6 dBmV to +15 dBmV) **SNR** should be 30 dB or greater.
If **QAM256** and **DPL**(-15 dBmV to -6 dBmV) **SNR** should be 33 dB or greater.

Downstream Bonded Channels

Channel	Lock Status	Modulation	Channel ID	Frequency	Power	SNR	Corrected	Un
1	Locked	QAM256	1	705000000 Hz	0.0 dBmV	47.4 dB	0	0
2	Locked	QAM256	2	711000000 Hz	0.1 dBmV	47.4 dB	0	0
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6	Locked	QAM256	6	747000000 Hz	0.1 dBmV	46.4 dB	0	0
7	Locked	QAM256	7	753000000 Hz	0.2 dBmV	46.5 dB	0	0
8	Locked	QAM256	8	759000000 Hz	-0.1 dBmV	46.4 dB	0	0

4. In the **Upstream Bonded Channels** section, identify the number
of **Channels**, **Type**, **Symbolic Rate** to find verify **Upstream Power** levels are
within the acceptable range for each upstream channel.

Acceptable Upstream Power Levels (dBmV):

Upstream Bonded Channels

Channel	Lock Status	US Channel Type	Channel ID	Symbol Rate	Frequency
1	Locked	ATDMA	49	5120 Ksym/sec	30700000 Hz
2	Locked	TDMA and ATDMA	50	2560 Ksym/sec	18500000 Hz
3	Locked	ATDMA	51	5120 Ksym/sec	23300000 Hz
4	Locked	TDMA and ATDMA	52	2560 Ksym/sec	35500000 Hz

Upstream Transmit Power Level

Channel	US Channel Type	Symbol Rate	Acceptable US Power Level
Single	TDMA	1280 Ksym/sec	+61 dBmV to 45 dBmV
	ATDMA	2560 Ksym/sec	+58 dBmV to 45 dBmV
		5120 Ksym/sec	+57 dBmV to 45 dBmV
Two	TDMA	1280 Ksym/sec	+58 dBmV to 45 dBmV
	ATDMA	2560 Ksym/sec	+55 dBmV to 45 dBmV
		5120 Ksym/sec	+54 dBmV to 45 dBmV
Three or more	TDMA	1280 Ksym/sec	+55 dBmV to 45 dBmV
		2560 Ksym/sec	+52 dBmV to 45 dBmV
	ATDMA	5120 Ksym/sec	+51 dBmV to 45 dBmV

5. Refresh the page at least twice to identify variations in **SNR**, **Downstream Powe**r, and **Upstream Power**.

   NOTE: If the either of the signal levels are outside of the acceptable range, power cycle or factory reset the modem.

6. Contact the cable provider to adjust the signal level to the acceptable level range.

Acceptable Signal Levels

Recommended Max Downstream Power Level (DPL)		Recommended Min Downstream Power Level (DPL)	
+15 dBmV		-15 dBmV	
Downstream Signal to Noise Ratio (SNR)			
Modulation	**Downstream Power Level**	**Acceptable DS SNR**	
64 QAM	n/a		
	23.5 dB or greater		
256 QAM	-6 dBmV to +15 BmV	30 dB or greater	
	-6 dBmV to -15 dBmV	33 dB or greater	

Upstream Transmit Power Level				
Channel	US Channel Type	Symbol Rate	Recommended Max US Power Level	Recommended Min US Power Level
Single	TDMA	1280 Ksym/sec	+61 dBmV	45 dBmV
	ATDMA	2560 Ksym/sec	+58 dBmV	45 dBmV
		5120 Ksym/sec	+57 dBmV	45 dBmV
Two	TDMA	1280 Ksym/sec	+58 dBmV	45 dBmV
	ATDMA	2560 Ksym/sec	+55 dBmV	45 dBmV
		5120 Ksym/sec	+54 dBmV	45 dBmV
Three or more	TDMA	1280 Ksym/sec	+55 dBmV	45 dBmV
	ATDMA	2560 Ksym/sec	+52 dBmV	45 dBmV
		5120 Ksym/sec	+51 dBmV	45 dBmV