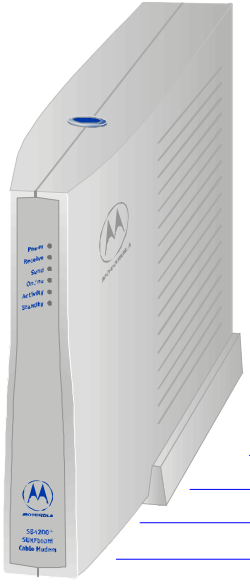
MOTOROLA

SB4200 User Guide

High-Speed Access to the Internet



SURFboard®
Cable Modem

Declaration of Conformity

We,

Motorola, Inc.
Broadband Communications Sector
6450 Sequence Drive
San Diego, CA, U.S.A.

declare under our sole responsibility that the

SURFboard Cable Modem **Model SB4200i**

to which the declaration relates is in conformity with the following standards:

EN55022	**EN55024**	**EN60950**
CISPR 22	**CISPR 24**	**IEC950 : 1991 + A1 : 1992 + A2 : 1993 + A3 : 1995 + A4 : 1996**

following the provisions of the Directive(s) of the Council of the European Union:

EMC Directive 89/336/EEC **Low Voltage Directive 73/23/EEC**

Caution

This product was qualified under test conditions that included the use of the supplied cable between system components. To be in compliance with regulations, the user must use this cable and install it properly.

Use only an ac line cord that complies with the country's product safety requirements.

To ensure regulatory and safety compliance, use only the provided Ethernet, USB, and power cables.

Copyright © 2001 by Motorola, Inc. All rights reserved. No part of the contents of this book may be reproduced or transmitted in any form or by any means without written permission of the publisher.

Motorola and the stylized M logo are registered trademarks of Motorola, Inc. All other product or service marks are the property of their respective owners.

Motorola reserves the right to revise this publication and to make changes in content from time to time without obligation on the part of Motorola to provide notification of such revision or change. Motorola provides this guide without warranty of any kind, either implied or expressed, including, but not limited, to the implied warranties of merchantability and fitness for a particular purpose. Motorola may make improvements or changes in the product(s) described in this manual at any time.

Table of Contents

Introduction 1

Top and Front Panel 2

Rear Panel 4

Before You Begin 5

Precautions 6

System Requirements 7

Installation and Configuration 9

Installation and Configuration Tasks 9

Cabling and Startup for a Single User 10

Setting Up a USB Driver in Windows 98 13

Setting Up a USB Driver in Windows 2000 and Me 18

Configuring for TCP/IP in Windows 95, 98, and Me 23

Configuring for TCP/IP in Windows 2000 26

Verifying Your IP Address in Windows 95, 98, and Me 30

Verifying Your IP Address in Windows 2000 32

Cabling for Multiple Users 33

Table of Contents (cont'd)

Troubleshooting 35

Problems and Possible Solutions 35

Removing the SB4200 Device Listing from Windows 98 38

Removing the USB Driver from Windows 98 40

Removing the SB4200 Device Listing from Windows 2000 and Windows Me 42

Removing the USB Driver from Windows 2000 and Windows Me 46

Recovery after Installation Errors with Win98_SE and Windows 98 48

Contact Us 52

Glossary 53

FAQs 55

Software License 59

Warranty Information 62

Easier!*

Always on, always connected

Faster!**

Up to 100 times faster than a phone modem

Better!***

A great choice for Internet access

Just open your browser and *surf!*

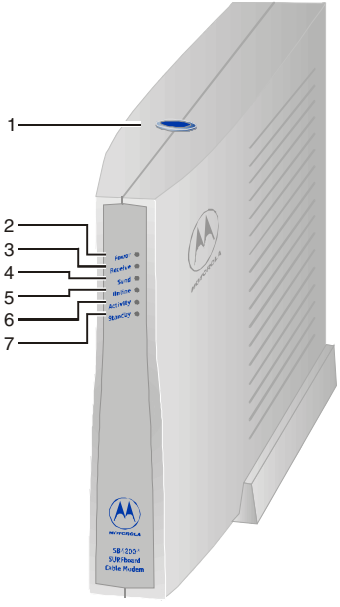
Congratulations, you have a new state-of-the-art SB4200 cable modem! This high-speed, upgradeable modem enables you to connect your home or business computer to a DOCSIS-compliant data network. The SB4200 transmits and receives data at much higher speeds than traditional telephone or ISDN modems.

It provides high-speed access to the Internet and other online services.

A Universal Serial Bus (USB) port is available for a single-user direct connection to USB-equipped computers. The standard Ethernet connection provides network service to single or multiple users.

Unlike a telephone modem, the SB4200 is always online. Just open your browser and surf.

**** Unlike analog phone modems and ISDN, you're always on, always connected.***
***** Actual speed will vary. Many network and other factors affect download speeds.***
****** SURFboard is made by the company with over 50 years of cable TV expertise.***

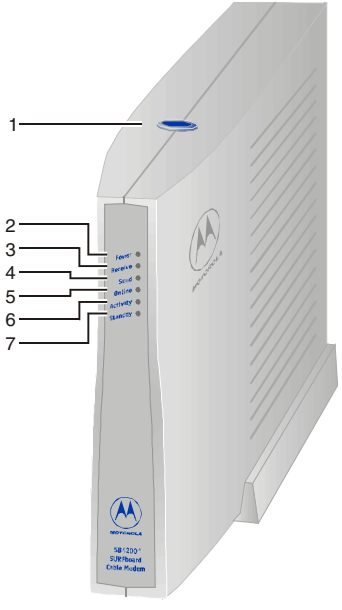


Top and Front Panel

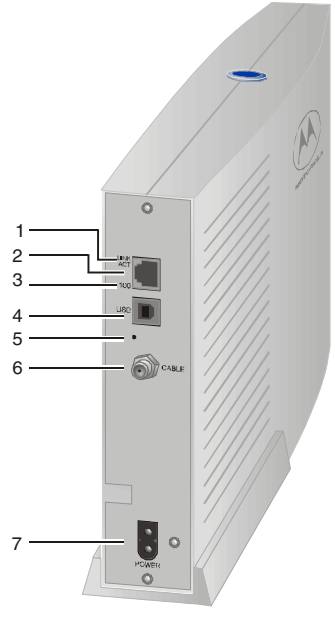
The standby button suspends your Internet service. The six front-panel lights provide information about power, communications, and errors.

	Item	Description
1	**Standby Switch**	Press this switch to disable the Ethernet and USB ports on the SB4200. No data is transmitted or received. Press this switch again to transmit and receive data. The Standby button offers added Internet security. When the standby switch is activated, all other lights turn off.
2	**Power LED**	When the light is flashing, startup diagnostics are being performed. A solid light indicates the SB4200 is powered on.
3	**Receive LED**	When the light is flashing, the SB4200 is scanning for a receive channel connection. A solid light indicates the channel connection is acquired.
4	**Send LED**	When the light is flashing, the SB4200 is scanning for the send channel connection. A solid light indicates the channel connection is acquired.

Top and Front Panel



	Item	Description
5	**Online LED**	When the light is flashing, the SB4200 is scanning for the network configuration server connection. A solid light indicates the network connection is acquired.
6	**Activity**	When the light is flashing, the SB4200 is transmitting or receiving data. When the light is off, the SB4200 is not transmitting or receiving data.
7	**Standby**	After pressing the Standby button on the top of the SB4200, the Standby light turns on indicating the Ethernet and USB ports are disabled (not receiving or transmitting data). Internet service is interrupted until the Standby button is pressed again. The Standby button offers added Internet security.



Rear Panel

The rear panel provides cabling connectors, status lights, and the power receptacle.

	Item	Description
1	**LINK/ACT**	When the light is on, the Ethernet connection is available. A blinking light indicates data is being transferred.
2		This port is the Ethernet connector that transfers data to and from your computer.
3	**100**	The light is on when a 100Base-T link is established and off when a 10Base-T link is established.
4	**USB**	This port provides a direct connection to USB equipped computers.
5	•	This is the recessed reset button.
6	**CABLE**	This port transfers data to and from the service provider.
7	**POWER**	This connector provides power to the SB4200.

Before You Begin

Power cord

10/100Base-T shielded Ethernet cable

USB cable

SB4200 User Guide CD-ROM

Before you begin the installation, check that you have:

Item	Description
Power cord	Required for connecting the SB4200 to the AC electrical outlet.
One 10/100Base-T shielded Ethernet cable	Required for connecting to the Ethernet port.
One USB cable	Required for connecting to the USB port.
SB4200 User Guide CD-ROM	Contains the User Guide and USB drivers necessary for connecting to USB port.

You need to purchase a 75-ohm coaxial cable with F-type connectors for connecting your SB4200 to the nearest cable outlet. If you have a TV attached to the cable outlet, you may need a 5-900 MHz splitter to use both the TV and the SB4200. Both the coaxial cable and the RF splitter are readily available at consumer electronic stores.

You must call your service provider to activate your service. You need to provide the media access control (MAC) address. This address is found on the SB4200 bar code label marked HFC MAC ID on the rear panel. The address format is 00:20:40:xx:xx:xx or 00:04:db:xx:xx:xx.

Precautions

- Postpone SB4200 installation until there is no risk of thunderstorm or lightning activity in the area. Avoid damaging the SB4200 with static by touching the coaxial cable connector when it is attached to the earth grounded coaxial cable TV wall outlet. Always first touch the coaxial cable connector on the SB4200 when you are disconnecting or re-connecting your USB or Ethernet cable from the SB4200 or your PC.
- Do not block the ventilation holes on the sides of the cable modem to prevent overheating the SB4200.
- Do not open the SB4200 cable modem. Refer all service to your local service provider.
- Wipe the modem with a clean, dry cloth. Never use cleaning fluid or similar chemicals. Do not spray cleaners directly on the unit or use forced air to remove dust.

System Requirements Summary

- Service Provider
- Computer
- HTML Browser
- Ethernet card or SB4200 CD-ROM containing the USB software

System Requirements

You need the following to use the SB4200 with your computer system:

Service Provider

You must sign up with a data service provider for access to the Internet and other online services. You should ask your data service provider the following questions:

- Do you have any special system requirements?
- When can I begin to use my cable modem?
- Are there any files I need to download once I'm connected?
- Do I need a user name or password to access the Internet or use Email?

Computer

Your computer must be equipped with a USB or Ethernet port and the Transmission Control Protocol/Internet Protocol (TCP/IP) to access the SB4200. The SB4200 is compatible with Microsoft®, Macintosh® and UNIX® operating systems. Computers using Windows® 95, UNIX, or Macintosh systems must use the Ethernet connection.

The Ethernet card must be installed before the SB4200. If it isn't, follow the installation instructions that came with your Ethernet card.

System Requirements

HTML Browser

Any standard HTML (web) browser works with the SB4200.

Ethernet Card or SB4200 CD-ROM Containing the USB Software

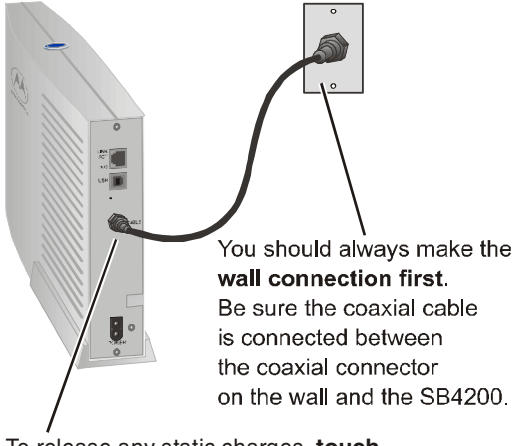
Any standard 10/100Base-T Ethernet card operates with the SB4200. This is not needed if connecting to the USB port. The Ethernet card must be installed before the SB4200. If it is not, follow the installation instructions included with your Ethernet card.

The USB connection is supported by Windows 98, Windows 2000, and Windows Me and requires special software to operate. The USB driver software files are on the CD-ROM supplied with your SB4200.

The USB drivers can be upgraded from the Internet. Check our website for information, http://www.motorola.com/broadband.

Your computer must be configured for TCP/IP and have an IP address for the SB4200 to operate. Your service provider furnishes the IP address.

Avoid damaging the SB4200 or your PC with static electricity.



You should always make the **wall connection first**. Be sure the coaxial cable is connected between the coaxial connector on the wall and the SB4200.

To release any static charges, **touch the coaxial cable connector on the modem** before connecting or disconnecting the USB or Ethernet cables.

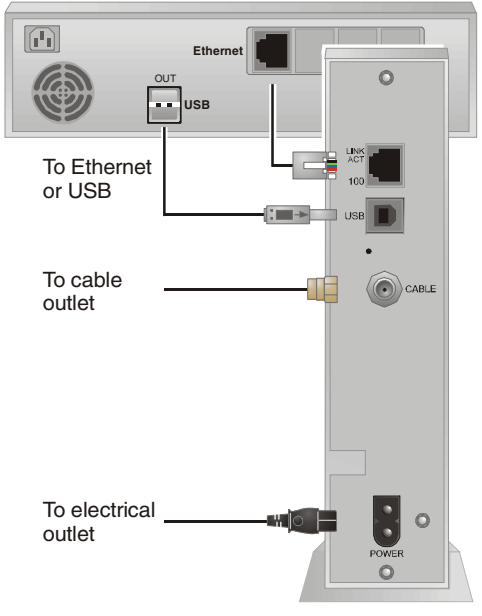
Installation

Installation and Configuration Tasks

- Install cables
- Set up USB in Windows if you are using a USB port on your PC
- Configure TCP/IP
- Verify IP address

There are two sections for USB installation:

- Windows 98
- Windows 2000 and Windows Me



Cabling and Startup for a Single User

You must allow 5 to 30 minutes to power up the first time because the SB4200 must find and lock on the appropriate channels for communications.

1. Be sure that your computer is on and the SB4200 is unplugged.
2. Connect the coaxial TV cable to the cable outlet or splitter and the other end to the SB4200 connector marked CABLE. Hand-tighten the connectors to avoid damaging them. You may need a 5-900 MHz splitter and an additional 75-ohm coaxial cable if you have a TV connected to the cable outlet.
3. Insert the SB4200 CD-ROM into your CD-ROM drive.
4. Plug the power cord into the SB4200 connector marked POWER and the other end to the electrical outlet.

Caution

Do not connect both Ethernet and USB cables to the same computer.

To turn on your SB4200, simply plug it in. It is not necessary to unplug it when not in use.

Cabling and Startup for a Single User

5 Check that the lights on the front of the SB4200 cycle through the following sequence:

- Power flashes during a self-test. When the self-test is successfully complete, the light is solid green.
- Receive flashes while the SB4200 scans for the receive channel. When the receive channel is locked, the light is solid green.
- Send flashes while the SB4200 scans for the send channel. When the send channel is locked, the light is solid green.
- Online flashes while the SB4200 is obtaining configuration information. When the configuration information is obtained, the light is solid green.

Cabling and Startup for a Single User

6 Connect your computer to the SB4200 using one of the following methods:

USB

Ensure the SB4200 CD-ROM is inserted into your CD-ROM drive. The CD-ROM must be in the drive before plugging in the USB cable.

Connect the USB cable to the SB4200 port marked USB and the other end to the USB port on the back of your computer.

For Windows 98 USB users, go to the next page.

For Windows 2000 and Windows Me USB users, go to page 18.

Ethernet

Connect the 10/100Base-T shielded Ethernet cable to the SB4200 Ethernet connector and the other end to the Ethernet jack on the back of your computer. For an Ethernet connection, skip over the USB instructions and go to "Configuring for TCP/IP."

During normal operation, the Power, Receive, Send, and Online lights are on and the Activity light flashes when transferring data between the SB4200 and your computer.

Setting Up a USB Driver in Windows 98

After plugging in the USB connector, the window on the left is displayed.

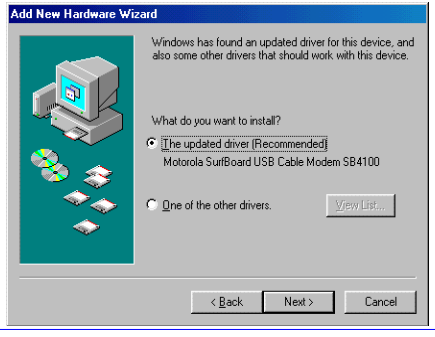
Ensure the SB4200 CD-ROM is inserted into your CD-ROM drive. The CD-ROM must be in the drive before plugging in the USB cable.

1 Click **Next**.

Setting Up a USB Driver in Windows 98

2 Be sure the text that reads “Search for the best driver for your device” is selected as displayed in the upper window on the left. Then, click **Next**, and the lower window on the left is displayed showing a location.

If your computer successfully locates the driver, proceed to step 4.



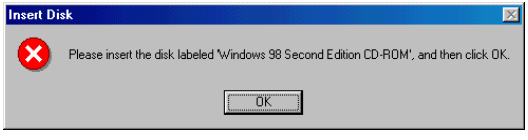
Setting Up a USB Driver in Windows 98

If your computer does not locate the driver, the previous window is displayed again. You should select **Specify a location** and type in the location of your CD-ROM drive as shown in the upper window.

3 Click **Next**.

Note: If the window on the lower left of this page is not displayed, verify that the Motorola CD-ROM is in the drive and accessible. If you still cannot find the correct driver file, then cancel the installation and remove invalid entries as described in Example 1 and/or Example 2 found under the heading called “Recovery After Installation Errors with Win98_SE and Windows 98” starting on page 48.

4 Select **The updated driver. . .** and then click **Next.**



The SB4200 uses the same driver as the SB4100.

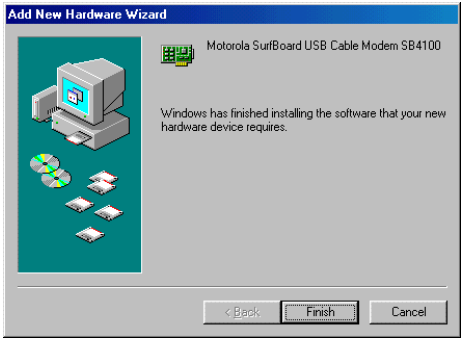
Setting Up a USB Driver in Windows 98

Note: If the window on the upper left of this page is not displayed with text stating that the NET4100.INF file was found, then verify that the Motorola CD-ROM is in the drive and accessible. If the correct driver file is still not listed, then cancel the installation and remove invalid entries as described in Example 1 and/or Example 2 found under the heading called “Recovery After Installation Errors with Win98_SE and Windows 98” starting on page 48 of this user guide.

5 After the window on the left is displayed, click **Next**.

Note: In some installations, a window with the message *Copying Files...* may display and prompt you to specify your CD-ROM drive. If this window displays, enter your CD-ROM drive letter (for example, “D:”) and then click **OK**.

6 At this point, Windows 98 may need additional system files loaded to complete the installation. These files are located on your Windows 98 CD-ROM.Be sure your Windows 98 CD-ROM is in the CD-ROM Drive and click **OK** to install System Files.



Setting Up a USB Driver in Windows 98

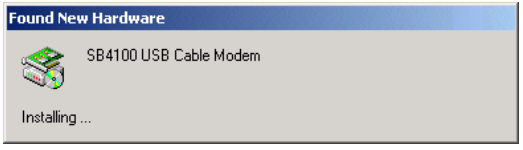
7 After all of the necessary Windows 98 files have been loaded, the upper window on the left is displayed confirming a successful installation.

8 Click **Finish** and the lower window is displayed.

9 Click **Yes** to restart your computer.

Refer to "Verifying Your IP Address in Windows 95, 98, and Me" on page 30 to verify your TCP/IP setup.

If you have any difficulties with the installation process, please follow the instructions for "Removing the USB Driver from a Windows 98" computer that begin on page 40.

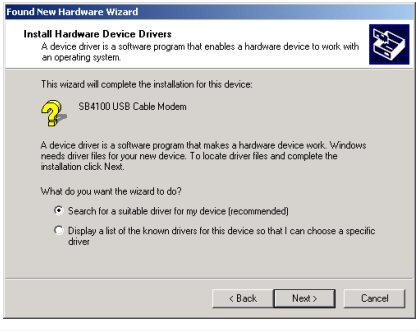


The SB4200 uses the same driver as the SB4100.

Setting Up a USB Driver in Windows 2000 and Windows Me

Ensure the SB4200 CD-ROM is inserted into your CD-ROM drive. The CD-ROM must be in the drive before plugging in the USB cable.

1 After making the USB connection, the Found New Hardware window is displayed.

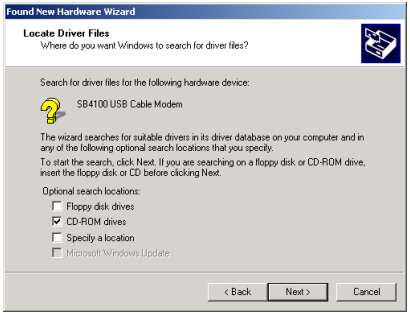


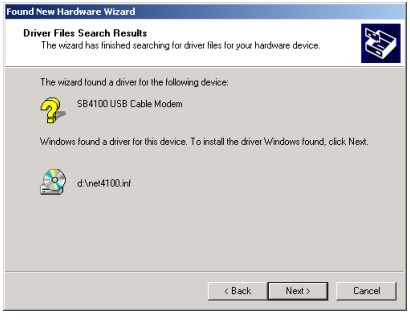
Setting Up a USB Driver in Windows 2000 and Windows Me

2 After several seconds, the Hardware Wizard window is displayed.

3 Click **Next**, and the lower window is displayed.

4 Be sure that the text that reads “Search for a suitable driver for my device” is selected and click **Next**.

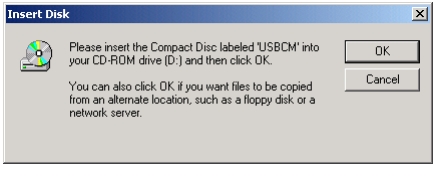


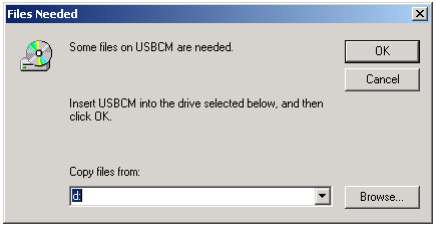


Setting Up a USB Driver in Windows 2000 and Windows Me

5 Be sure that the CD-ROM drive's box is the only one checked as illustrated in the upper window. Click **Next**, and the lower window is displayed.

6 Click **Next**.



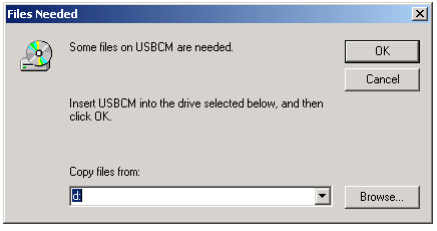


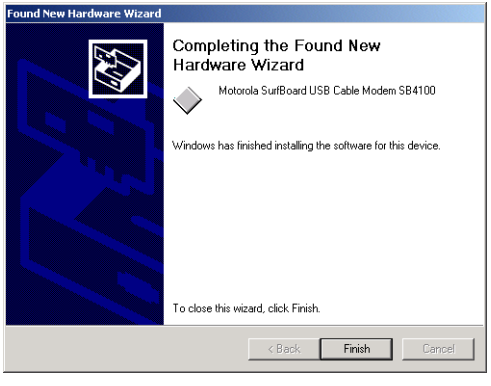
Setting Up a USB Driver in Windows 2000 and Windows Me

7 On the Insert Disk window, **D:** represents the CD-ROM drive. If D:\ is not the CD-ROM drive on your computer, enter the drive letter for your CD-ROM drive.

8 Click **OK** and the lower window on the left is displayed.

9 Select **Browse** and then locate a file called *Net4100.sys*. This file is located on the Motorola SB4200 CD-ROM root directory. Double-click the file called *Net4100.sys*.





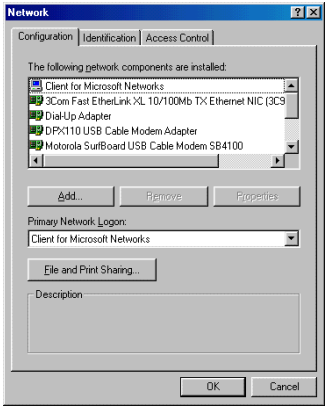
Setting Up a USB Driver in Windows 2000 and Windows Me

10 On the Files Needed window, click **OK** and the Found New Hardware Wizard window is displayed.

11 Click **Finish** to complete the installation.

If you have any difficulties with the installation process, please follow the instructions for “Removing the USB Driver from a Windows 2000 or Windows Me” computer that begin on page 46.

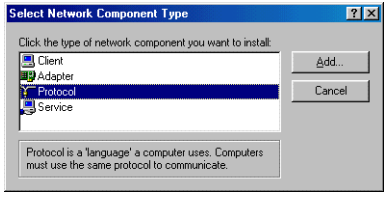
The SB4200 contains all necessary software. You don't need to configure the SB4200, but you must configure your computer for TCP/IP (software protocol developed for communication between computers) and check for an IP address. Your service provider may provide additional instructions for setting up your computer.



Configuring for TCP/IP in Windows 95, 98, and Me

The following basic instructions are for Windows 95, 98 and Me. Windows 2000 configuration instructions begin on page 26. If you are using a different operating system, refer to your user guide.

1. On the Windows Desktop, click **Start**.
2. Select **Settings** and then **Control Panel** from the pop-up menus.
3. Double-click the **Network** icon on the Control Panel window.
4. Select the **Configuration** tab on the Network window.
5. Check to see if TCP/IP has been installed for the device being used (Ethernet card or USB). If TCP/IP is displayed in the list of network components, it is installed and you can proceed to step 10. If TCP/IP is not displayed on the list, continue with step 6.
6. Click **Add.**

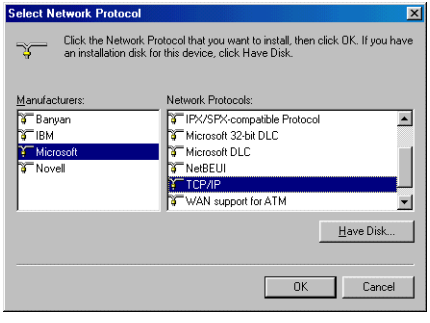


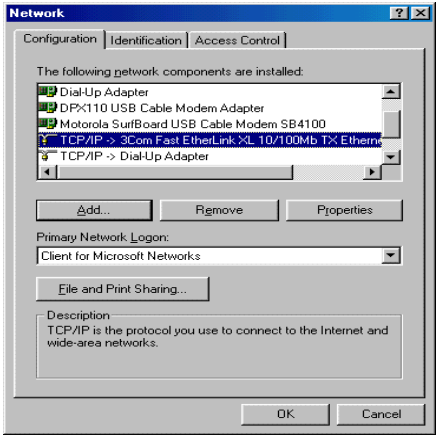
Configuring for TCP/IP in Windows 95, 98, and ME

7 Double-click the **Protocol** option on Select Network Component Type window.

8 Click **Microsoft** in the Manufacturers section and then click **TCP/IP** in the Network Protocol section of Select Network Protocol window.

9 Click **OK**.





Configuring for TCP/IP in Windows 95, 98, and Me

10 Click **TCP/IP** on the Network window. If you have more than one TCP/IP entry, choose the one associated with the Ethernet card or USB device connected to the SB4200.

11 Click **Properties**.

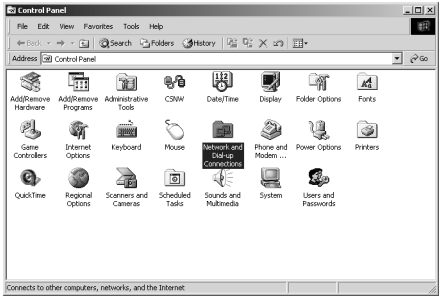
12 Select the **IP Address** tab on the TCP/IP window.

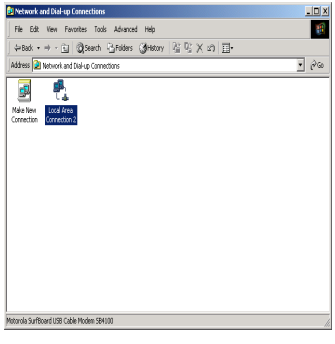
13 Click **Obtain an IP address automatically**.

14 Click **OK** to accept the TCP/IP settings.

15 Click **OK** to close the Network window.

16 Click **OK** when prompted to restart your computer and then click **OK** again.

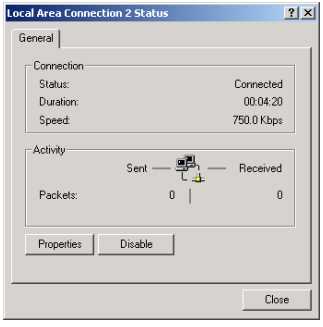


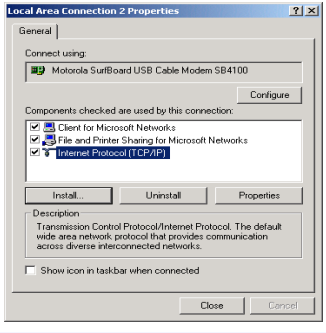


Configuring for TCP/IP in Windows 2000

The following basic instructions are for Windows 2000 users. Windows 95, 98, and Me instructions begin on page 23. If you are using a different operating system, refer to your user guide.

1. On the Windows Desktop, click **Start**.
2. Select **Settings** and then **Control Panel** from the pop-up menus.
3. Double-click the **Network** and **Dial-up Connections** icon on the Control Panel window.
4. On the Network and Dial-up Connections window, click **Local Area Connection #**. The value of this number (#) varies from system to system, but usually is 2. The Local Area Connection # Status window is displayed as shown at the top of the next page.



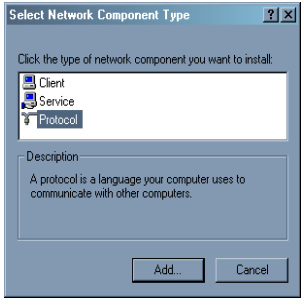


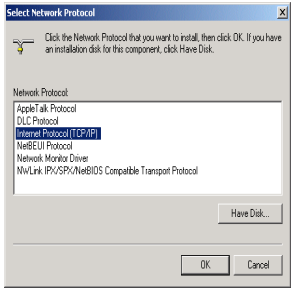
Configuring for TCP/IP in Windows 2000

5 Click **Properties** and information similar to that shown in the lower window is displayed.

6 If Internet Protocol (TCP/IP) is displayed in the list of network components, TCP/IP is installed and you can proceed to step 10. If TCP/IP is not displayed on the list, continue with step 7 by clicking **Install**. This causes the Select Network Component Type window to be displayed as shown at the top of the next page.

Configuring for TCP/IP in Windows 2000

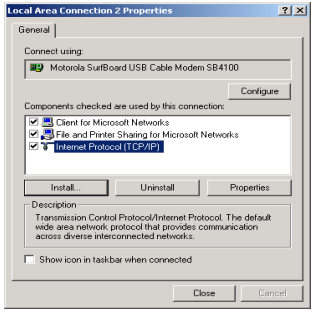


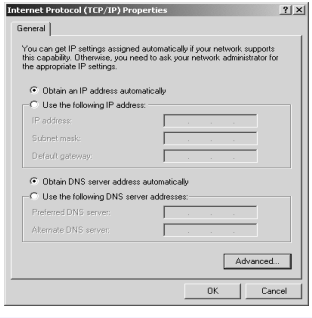


7 Click **Protocol** on the Select Network Component Type window and then click **Add**. The Select Network Protocol window is displayed similar to the example on the lower left of this page.

8 Click **Internet Protocol (TCP/IP)** in the Network Protocol section of Select Network Protocol window.

9 Click **OK** and the Local Area Connection # Properties window is re-displayed as shown at the top of the next page.





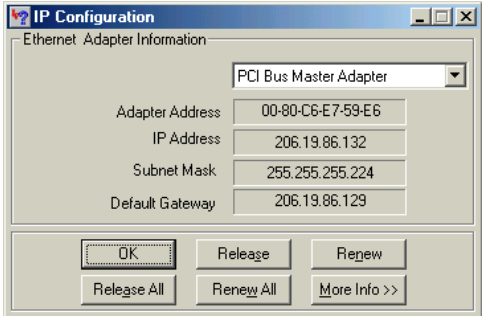
Configuring for TCP/IP in Windows 2000

10 On the Local Area Connection # Properties window, make sure a check mark is in the box next to **Internet Protocol (TCP/IP)**. Click **Properties**. The Internet Protocol (TCP/IP) Properties windows is displayed as shown on the lower left of this page. Make sure that **Obtain IP address automatically** and **Obtain DNS server address automatically** are selected.

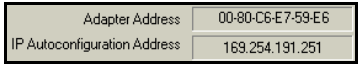
11 Click **OK** to accept the TCP/IP settings.

12 Click **OK** to close the Local Area Connection # Properties window.

13 Click **OK** when prompted to restart your computer and then click **OK** again.



The values shown for Adapter Address, IP Address, Subnet Mask, and Default Gateway on your PC will be different than those shown in the example above.



If autoconfiguration is displayed before IP Address in Windows 98, call your service provider.

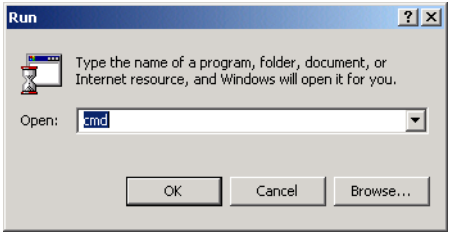
Verifying Your IP Address in Windows 95, 98, and Me

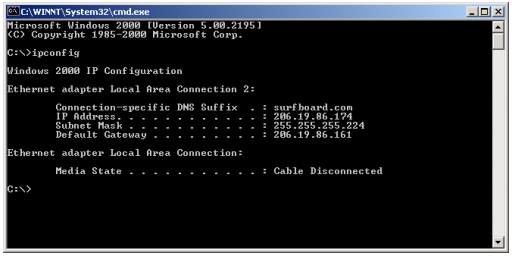
The following basic instructions are for Windows 95, 98, and Me. The instructions for verifying your IP address for Windows 2000 are found on the next page. For any other operating system, please refer to your specific operating system guide for IP address verification.

To check the IP address:

1. On the Windows Desktop, click **Start**.
2. Select **Run**.
3. Type **winipcfg.exe** and click **OK.** A window similar to the example shown on this page is displayed.
4. Select your adapter name—the Ethernet card or USB device.
5. Click **Renew**.
6. Click **OK** after the system displays an IP address.

If after performing this procedure your computer does not access the Internet, call your service provider. They will assist in your configuration.



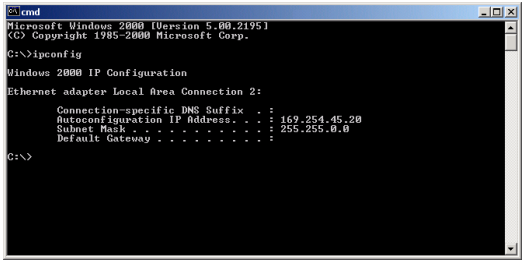


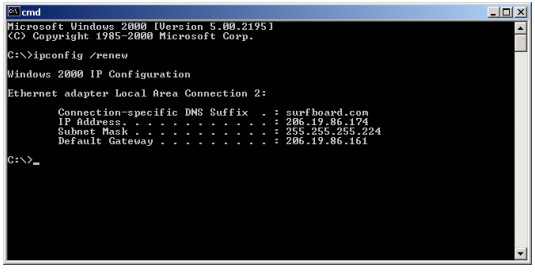
Verifying Your IP Address in Windows 2000

The following basic instructions are for Windows 2000. The instructions for verifying your IP address for Windows 95, and Me are found on the previous page. For any other operating system, please refer to your specific operating system guide for IP address verification.

To check the IP address:

1. On the Windows Desktop, click **Start**.
2. Select **Run**.
3. Type **cmd** and click **OK.** A window like the one on the upper left of this page is displayed.
4. Type **ipconfig** and press **ENTER** to display your IP configuration.
5. Type **exit** and press **ENTER** to return to the Windows operating system.





Verifying Your IP Address in Windows 2000

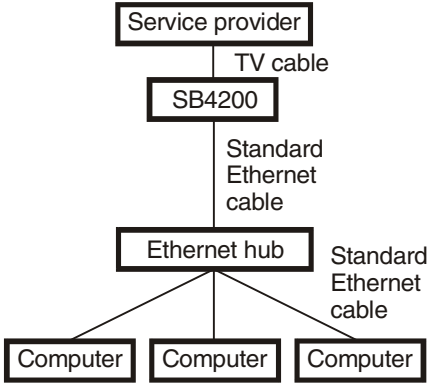
Improper connections between your PC and the SB4200 and cable network problems are indicated when you receive an Autoconfiguration IP Address. An example is displayed on the upper left of this page. Check your cabling and whether you can see your regular cable-TV channels on your television.

After verifying your cable connections and proper operation of the cable-TV system by looking at the channels on your TV, you can attempt to renew your IP address.

To renew your IP address:

1. Type **ipconfig /renew** and then press **ENTER**. If a valid IP address is displayed, then Internet access should be available.
2. Type **exit** and then press **ENTER** to return to Windows.

If after performing this procedure your computer does not access the Internet, call your service provider. They will assist in your configuration.



Cabling for Multiple Users

Your service provider must configure your modem for multiple user service. Contact your service provider for availability and instructions.

The SB4200 supports many multiple user configurations. It can easily serve as a gateway to the Internet for up to 32 users.

Ethernet

Multiple users must be connected to an Ethernet hub, which should be attached to the SB4200.

Caution

Do not connect both the Ethernet and USB cables to the same computer.

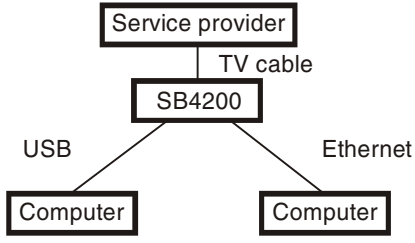
Multiple computers cannot be connected to the SB4200 through the USB port.

Cabling for Multiple Users

Multiple user configurations can include Ethernet and USB connections.

Ethernet and USB

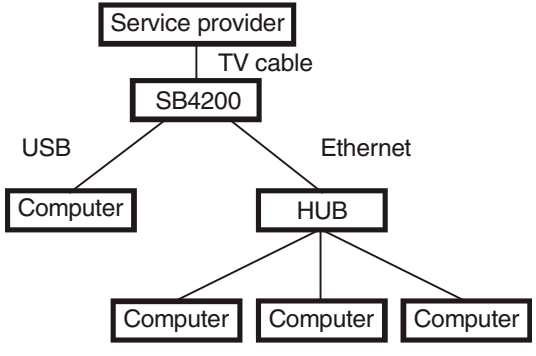
For two users on individual computers, connect the USB and Ethernet ports directly to the SB4200.



Multiple users are supported with a single user attached to the USB port and the remaining (up to 31) users connected to the Ethernet hub.

Caution

Do not connect both the Ethernet and USB cables to the same computer.



Troubleshooting

This information helps you solve a problem quickly. Before calling your service provider, try pressing the reset button on the rear panel. Resetting the SB4200 may take 5 to 30 minutes. Your service provider may need to know the status of the front-panel lights.

Problem

Green POWER light is off

Possible Solutions

- Check that the power cord is properly plugged into the wall outlet and the rear panel of the SB4200.
- Check that the electrical outlet is working.
- If the Standby LED is on, the cable modem is in Standby mode. Press the **Standby** button to reconnect Internet service.
- Press the **Reset** button.
- Call your service provider.

Troubleshooting

Problem

Cannot send or receive data

Possible Solutions

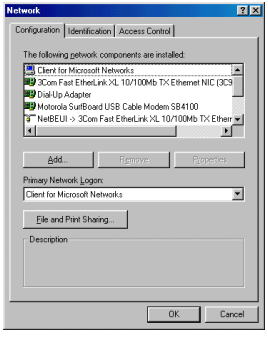
- Check the lights on the front panel. Note the first light from top to bottom that is off. This light indicates where the error occurred. If the first light that is off is:

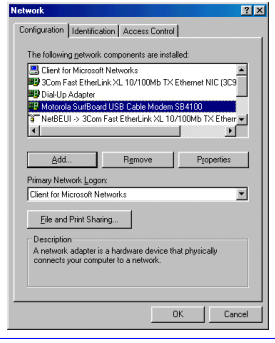
Light	Turns off under the following error condition(s):
Receive	During startup, the receive channel is not acquired. During normal operation, the receive channel is lost.
Send	During startup, the send channel is not acquired. During normal operation, the send channel is lost.
Online	During startup, the IP registration was not successful. During normal operations, the IP registration is lost.
Power	The modem may be in standby mode, press the Standby button.

- If all lights are off except the Standby LED, the cable modem is in Standby mode and you need to press the **Standby** button to reconnect to your Internet service.
- Check that your TV is working if you have cable, and that you have a clear TV picture. If you are not receiving your regular TV channels, your data service will not function.

Troubleshooting

Problem	Possible Solutions
Cannot send or receive data (cont'd)	■ Check the coaxial cable at the modem and wall outlet and hand-tighten if necessary. ■ Check the IP address (follow the steps in "Verifying Your IP Address" on page 30); call your service provider if you need an IP address. ■ Check that the USB or Ethernet cable is attached at the modem and your computer.
Cannot view User Guide CD video	■ Check that Acrobat Reader 4.0 is installed and selected.
Operating System problems related to unsuccessful installation of the SB4200 USB driver	■ Remove the USB driver using the instructions for a Windows 98 or Windows 2000/Windows Me computer that appear on the following pages.

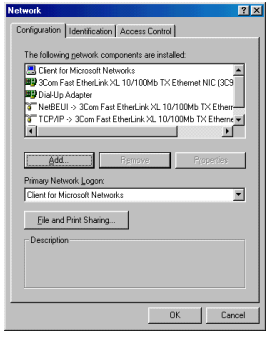


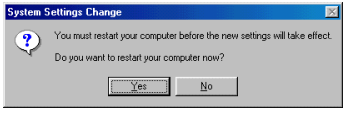


Removing the SB4200 Device Listing from Windows 98

1. On your Windows Desktop, right-click the **Network Neighborhood** icon and select **Properties**. The Network window is displayed.
2. Select **Motorola SurfBoard USB Cable Modem SB4200**, as illustrated in the lower window.

This procedure does not remove the USB driver from your system, it only removes the device listing from your system.



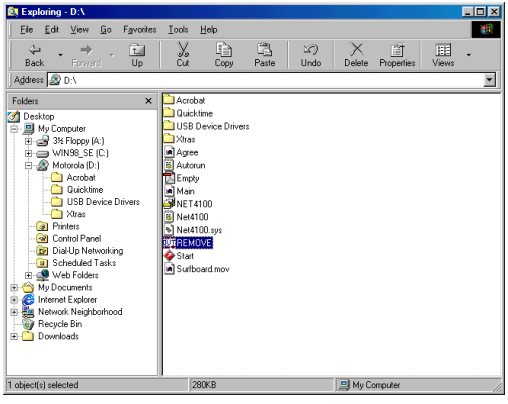


Removing the SB4200 Device Listing from Windows 98

3 Click **Remove** and the Network Dialogue window no longer displays **Motorola SurfBoard USB Cable Modem** in the list.

4 Click **OK**, and the System Settings Change window is displayed.

5 Click **No** and go to “Removing the USB Driver from Windows 98” on the next page.

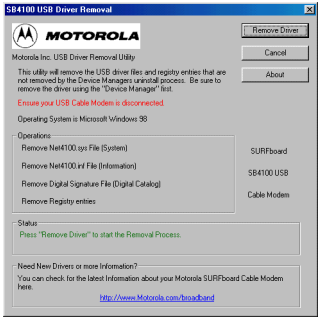


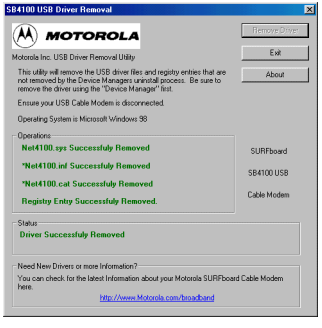
The SB4200 uses the same driver as the SB4100.

Removing the USB Driver from Windows 98

You now need to start Windows Explorer. Start Explorer by clicking **Start** and then selecting **Run.** In the Run window, type **explorer** and then click **OK.** The Exploring window is displayed as shown on the left.

1. Be sure that the USB cable has been removed from your PC or SB4200 cable modem.
2. Select your CD-ROM drive. Run the Remove utility from the Motorola SB4200 CD-ROM by double clicking the Remove icon.





Removing the USB Driver from Windows 98

The SB4200 USB Driver Removal windows are displayed on this page.

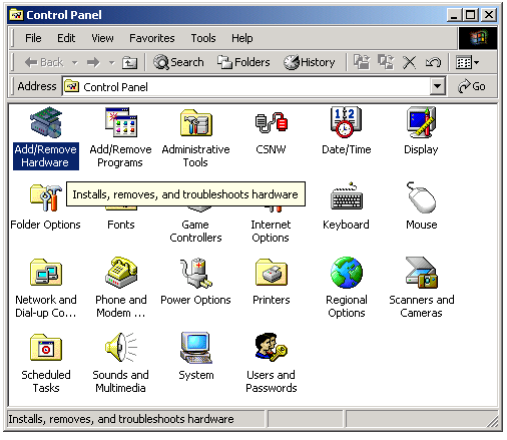
3 Click **Remove Driver**.

4 The removal of the SB4200 USB is now complete.

You may get various messages in this step, depending on the previous installation. The status messages you receive are informational only.

5 After you have removed the USB device, repeat the Windows 98 USB Installation procedure to reinstall the SB4200 with a USB device.

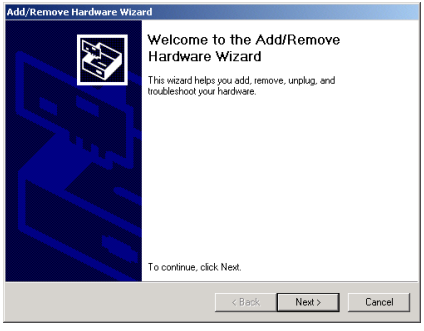
If you have problems, please contact your service provider.

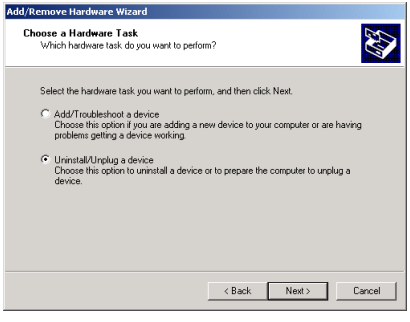


Removing the SB4200 Device Listing from Windows 2000 and Windows Me

1. From your Windows 2000 or Windows Me desktop, click **Start**.
2. Click **Settings**.
3. Click the **Control Panel** icon and the window on the left is displayed.
4. Double-click the **Add/Remove Hardware** icon. This action starts the Add/Remove Hardware Wizard as illustrated in the upper window on the next page.

This procedure does not remove the USB driver from your system, it only removes the device listing from your system.

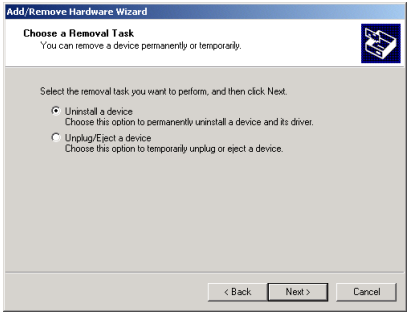


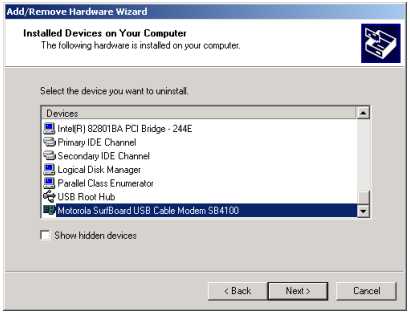


Removing the SB4200 Device Listing from Windows 2000 and Windows Me

5 Click **Next** to continue, and the Choose a Hardware Task window is displayed.

6 Select **Uninstall/Unplug a device** and click **Next**.



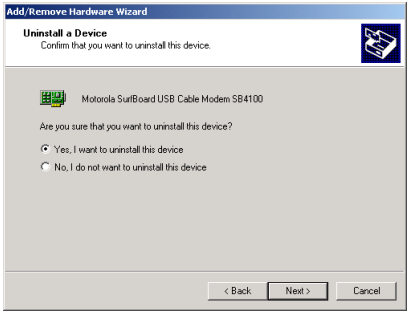


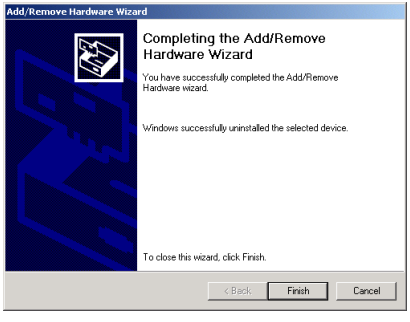
Removing the SB4200 Device Listing from Windows 2000 and Windows Me

7 Select **Uninstall a device** and click **Next.** The Installed Devices on Your Computer window is displayed.

8 If you unplugged the USB cable from the SB4200 (and saw the Unsafe Removal of a Device window), then the SB4200 will probably not be listed as illustrated in the lower window.

If the device is not listed, then click **Cancel**. If it is listed, highlight the SB4200 and click **Next**.





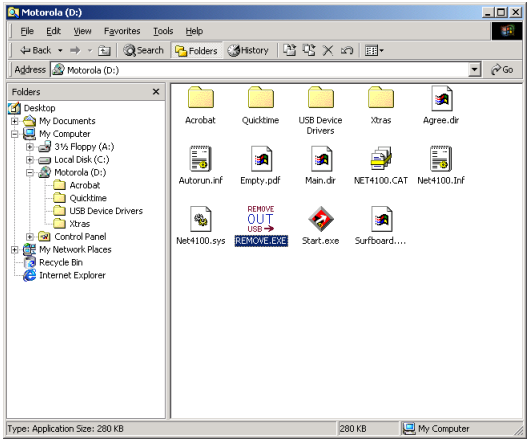
Removing the SB4200 Device Listing from Windows 2000 and Windows Me

9 On the upper window on the left, select “Yes, I want to uninstall this device” and click **Next.**

10 On the lower window, click **Finish**.

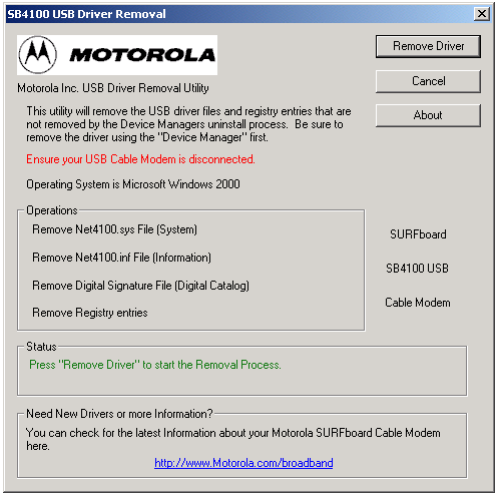
11 Close the Control Panel Window.

Removing the USB Driver from Windows 2000 and Windows Me



The SB4200 uses the same driver as the SB4100.

1. Start Windows Explorer. Click **Start** and then select Run.
2. In the Run window, type **explorer** and then click **OK**.
3. Double-click **My Computer**.
4. Double-click the **Motorola (D:)** CD Icon.
5. Double-click the **REMOVE OUT USB** Icon, as illustrated in the window on the left.



Removing the USB Driver from Windows 2000 and Windows Me

6 The window on the left is displayed. *Be sure that the USB Cable Modem is disconnected.* Click **Remove Driver.**

Depending on how the device was removed early on in the process, all of the files may not be shown as Successfully Removed and some of the files may be displayed as Not Found. If a file displays a status of Not Found, Windows 2000 or Windows Me removed the file during the Add/Remove Hardware Wizard portion of this de-installation procedure.

7 Once you have removed the USB device, repeat the Windows 2000 USB Installation procedure to reinstall the SB4200 with a USB device.

If you have problems, please contact your service provider.

The SB4200 uses the same driver as the SB4100.

Recovery After Installation Errors with Win98_SE and Windows 98

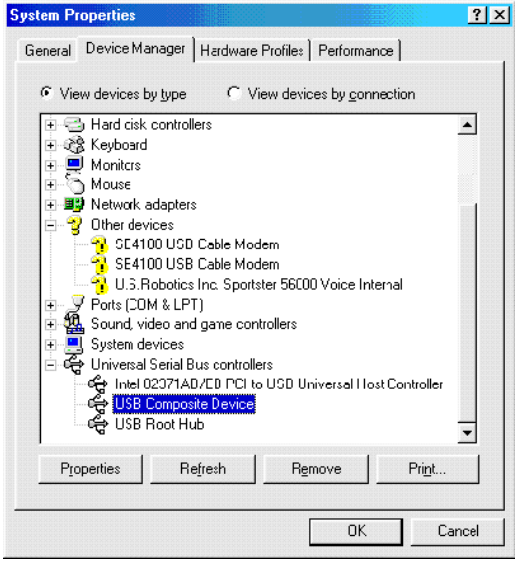
If you are unable to properly install the SB4200 USB driver or receive an error during the installation of this driver, then there may be invalid entries in the Windows Device Manager. Depending on where the error occurred, follow the procedures described in Example 1 or Example 2 on the pages that follow.

Example 1

Leave the USB cable plugged into the SB4200 and your computer.

1 From the Windows Desktop, right-click the **My Computer** icon to display a list of options.

2 Highlight and then click **Properties** at the bottom of the list, and the System Properties window is displayed.



The SB4200 uses the same driver as the SB4100.

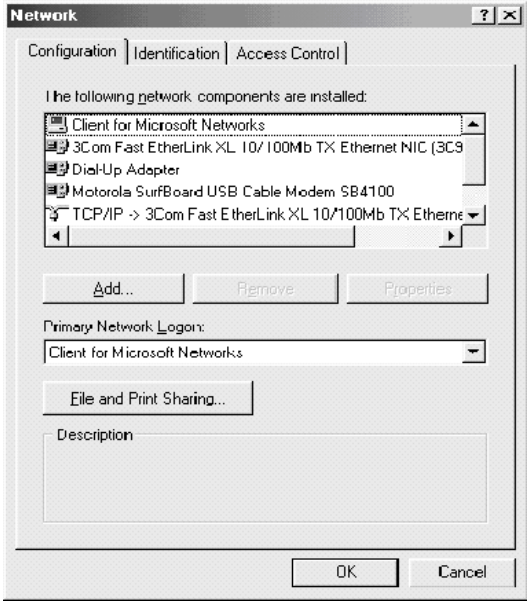
Recovery After Installation Errors with Win98_SE and Windows 98

3 On the System Properties window, click the **Device Manager** tab.

4 Expand the Universal Serial Bus controllers branch and see if there is an entry for **USB Composite Device**. Windows 98 Second Edition may also have two entries listed as **SB4100 USB Cable Modem** under **Other Devices**. Windows 98 may list two entries as **Unknown Devices** under **Other Devices**. These additional entries are automatically removed when the USB Composite Device is removed.

5 Highlight the **USB Composite Device** and click **Remove**.

EXTREMELY IMPORTANT: After removal of the USB Composite Device, remove the USB cable from the SB4200 and reboot your computer. Follow the installation instructions starting on page 10 of this User Guide to reinstall the SB4200 USB drivers.



Recovery After Installation Errors with Win98_SE and Windows 98

Example 2

The SB4200 drivers may have loaded, but no protocol was bound to the adapter. To see if this is the case:

1. Remove the USB cable from the SB4200.
2. From the Windows Desktop, right-click the **Network Neighborhood** icon to display a list of options.
3. Highlight and then click **Properties** at the bottom of the list. The Network window is displayed.
4. Click the **Configuration** tab, highlight the **Motorola Surfboard USB Cable Modem SB4100** entry, and then click **Properties**.
5. Click the **Bindings** tab. If TCP/IP is not listed, either add the protocol to the adapter or remove the entry for **Motorola Surfboard USB Cable Modem SB4100**.

To remove the entry: In the Network window, highlight **Motorola Surfboard USB Cable Modem SB4100** and then press **Remove**.

The SB4200 uses the same driver as the SB4100.

Recovery After Installation Errors with Win98_SE and Windows 98

EXTREMELY IMPORTANT: After removal of the device, restart your computer. Follow the installation instructions starting on page 10 of this User Guide to reinstall the SB4200 USB drivers.

Note: The Motorola Remove program deletes improper Windows 98, Windows 98 Second Edition, Windows ME, and Windows 2000 entries that may have occurred in the installation process. The Remove program and the latest drivers are available for download from the website ftp.surfboard.com. The files are in the following directory: pub/Downloads/SB_USB_Driver in the file called *USB Instructions.zip*.

Prior to running the Remove program, unplug the USB cable from the SB4200. The Remove program performs the same function as the removal of devices performed in Example 1 and Example 2 above.

Contact Us

For Motorola cable modem customer service, technical support, warranty claims, or questions about your Internet service connection, contact your cable service provider

For Motorola consumer cable products, education, and support:
http://www.motorola.com/broadband.

Glossary

Coaxial cable (coax)	A type of wire that consists of a center wire surrounded by insulation and then a grounded shield of braided wire. The shield minimizes electrical and radio frequency interference. The coaxial cable is the primary type of cabling used by the cable television industry and is also widely used for computer networks.
DOCSIS	The Data-Over-Cable Service Interface Specifications defines interface standards for cable modems and supporting equipment.
Expansion slot	An opening in a computer where a circuit board can be inserted to add new capabilities to the computer. Expansion slots for PCs come in half- and full-size. Half-size slots are also called 8-bit slots, and full-size slots are called 16-bit slots. PCI expansions slots are always full-size and connect directly to the PCI bus.
F-type connector	A connector used in the cable television industry that connects coaxial cable to equipment.
IP address	An identifier for a computer or device on a TCP/IP network. Networks using the TCP/IP protocol route messages based on the IP address of the destination.
MAC address	Media Access Control address. A hardware address that uniquely identifies each node of a network. The MAC address is used to forward information through a network to its final destination.

Glossary

MHz	Mega Hertz. A measure of radio frequency - millions of cycles per second. One MHz represents one million cycles per second.
PCI	Peripheral Component Interconnect. Most PCs today include a PCI bus in addition to a more general ISA expansion bus.
Splitter	A splitter is a device that divides the signal power from an input cable equally between two or more signals, each carrying a selected frequency range.
TCP/IP	Transmission Control Protocol/Internet Protocol. A set of protocols that provides the standards and rules for controlling and managing communications between networks.
VGA	Video Graphics Array. A graphics display system for PCs. All PCs made today support VGA, and possibly some other more advanced standard.

FAQs

Got a question? We've put together a list of questions customers frequently ask.

Q What is high-speed cable Internet access?

A Cable Internet access uses cable television wires instead of telephone lines to tap into the information on the Internet. It's extremely fast and affordable, and it doesn't tie up phone lines for incoming or outgoing calls and faxes.

Q How fast are cable modems?

A Cable modems offer Internet access at speeds up to 100 times faster* than a traditional phone modem. A cable modem user can experience speeds of over 1,000 Kbps. Due to network conditions, such as traffic and the speed of the site you're visiting, actual download rates may vary.

Q Can I still watch cable TV while I'm using my cable modem?

A Yes, cable television lines are capable of handling the cable TV signal as well as sending and receiving information on the Internet - at the same time.

* Actual speed will vary. Many network and other factors affect download speeds.

FAQs

Q **What is DOCSIS?**

A DOCSIS is the industry standard for cable Internet access. This standard is intended to ensure that all DOCSIS cable modems interface with all DOCSIS-compliant cable systems. Motorola's SB4200 cable modem is DOCSIS compliant.

Q **If I have a cable modem, can I still use my old 28.8 Kbps or 56 Kbps modem?**

A Sure! Although once you've experienced the speed of cable Internet access, you'll never again want to wait for traditional dial up services.

Q **I have more than one computer. Do I need more than one computer modem?**

A No, not if your computers are connected via a network. The SB4200 is capable of supporting current Internet Connection Sharing technologies. Internet Connection Sharing software enables the user to connect more PCs to the Internet by using the PC containing the SB4200 as a gateway.

Q **Do I need to change my Internet Service Provider (ISP)?**

A Currently most Internet Service Providers are not set up to handle cable Internet access. Check with your local cable company for your specific information.

FAQs

Q **Do I need to subscribe to cable TV to get cable Internet access?**

A No, but you will need to subscribe to cable Internet service. Some systems require that you subscribe to basic service before you can get Internet access and/or offer a discount when you use your own cable modem. Check with your local cable company for specific information.

Q **What does the SB4200 limited warranty cover?**

A Contact your service provider.

Q **What type of technical support is available?**

A For questions about your Internet service, connection, or cable modem call your cable service provider.

Q **What do I do if my modem stops working?**

A Refer to the *Troubleshooting* section of this User Guide. It has quick tips for diagnosing problems, as well as simple solutions. If you continue to have problems, call your cable service provider.

Software License

SOFTWARE LICENSE
MOTOROLA SOFTWARE
MOTOROLA, INC.
Broadband Communications Sector
Cable Modem Division
101 Tournament Drive
Horsham, PA 19044

IMPORTANT: PLEASE READ THIS SOFTWARE LICENSE ("LICENSE") CAREFULLY BEFORE YOU INSTALL, DOWNLOAD OR USE ANY SEPARATE APPLICATION AND/OR USB DRIVER SOFTWARE AND RELATED DOCUMENTATION ("SOFTWARE") PROVIDED WITH MOTOROLA'S CABLE MODEM PRODUCT (THE "CABLE MODEM"). BY USING THE CABLE MODEM AND/OR INSTALLING, DOWNLOADING OR USING ANY OF THE SOFTWARE, YOU INDICATE YOUR ACCEPTANCE OF EACH OF THE TERMS OF THIS LICENSE. UPON ACCEPTANCE, THIS LICENSE WILL BE A LEGALLY BINDING AGREEMENT BETWEEN YOU AND MOTOROLA. THE TERMS OF THIS LICENSE APPLY TO YOU AND TO ANY SUBSEQUENT USER OF THIS SOFTWARE.

IF YOU DO NOT AGREE TO ALL OF THE TERMS OF THIS LICENSE, (i) DO NOT INSTALL OR USE THE SOFTWARE AND (ii) RETURN THE CABLE MODEM AND THE SOFTWARE, INCLUDING ALL COMPONENTS, DOCUMENTATION AND ANY OTHER MATERIALS PROVIDED WITH THE CABLE MODEM, TO YOUR SERVICE PROVIDER FOR A FULL REFUND.

The Software includes associated media, any printed materials, and any "on-line" or electronic documentation. Software provided by third parties may be subject to separate end-user license agreements from the manufacturers of such Software.

The Software is never sold. Motorola licenses the Software to the original customer and to any subsequent licensee for personal use only on the terms of this License. Motorola and its 3rd party licensors retain the ownership of the Software.

Software License

You may:

USE the Software only in connection with the operation of the Cable Modem.

TRANSFER the Software (including all component parts and printed materials) permanently to another person, but only if the person agrees to accept all of the terms of this License. If you transfer the Software, you must at the same time transfer the Cable Modem and all copies of the Software (if applicable) to the same person or destroy any copies not transferred.

TERMINATE this License by destroying the original and all copies of the Software (if applicable) in whatever form.

You may not:

(1) Loan, distribute, rent, lease, give, sublicense or otherwise transfer the Software, in whole or in part, to any other person, except as permitted under the TRANSFER paragraph above. (2) Copy or translate the User Guide included with the Software, other than for personal use. (3) Copy, alter, translate, decompile, disassemble or reverse engineer the Software, including but not limited to, modifying the Software to make it operate on non-compatible hardware. (4) Remove, alter or cause not to be displayed, any copyright notices or startup message contained in the Software programs or documentation. (5) Export the Software or the Cable Modem components in violation of any United States export laws.

The Software is not designed or intended for use in on-line control of aircraft, air traffic, aircraft navigation or aircraft communications; or in design, construction, operation or maintenance of any nuclear facility. MOTOROLA AND ITS 3RD PARTY LICENSORS DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR SUCH USES. YOU REPRESENT AND WARRANT THAT YOU SHALL NOT USE THE SOFTWARE FOR SUCH PURPOSES.

Software License

Title to this Software, including the ownership of all copyrights, mask work rights, patents, trademarks and all other intellectual property rights subsisting in the foregoing, and all adaptations to and modifications of the foregoing shall at all times remain with Motorola and its 3rd party licensors. Motorola retains all rights not expressly licensed under this License. The Software, including any images, graphics, photographs, animation, video, audio, music and text incorporated therein is owned by Motorola or its 3rd party licensors and is protected by United States copyright laws and international treaty provisions. Except as otherwise expressly provided in this License, the copying, reproduction, distribution or preparation of derivative works of the Software, any portion of the Cable Modem or the documentation is strictly prohibited by such laws and treaty provisions. Nothing in this License constitutes a waiver of Motorola's rights under United States copyright law.

This License and your rights regarding any matter it addresses are governed by the laws of the Commonwealth of Pennsylvania, without reference to conflict of laws principles. THIS LICENSE SHALL TERMINATE AUTOMATICALLY if you fail to comply with the terms of this License.

Motorola is not responsible for any third party software provided as a bundled application, or otherwise, with the Software.

U.S. GOVERNMENT RESTRICTED RIGHTS

The Software, Cable Modem and documentation is provided with RESTRICTED RIGHTS. The use, duplication or disclosure by the Government is subject to restrictions as set forth in subdivision ©(1)(ii) of The Rights in Technical Data and Computer Software clause at 52.227-7013. The contractor/manufacturer is Motorola, Inc., Broadband Communications Sector, 101 Tournament Drive, Horsham, PA 19044.

Warranty Information

SURFboard SB4200 CABLE MODEM
Motorola, Inc., Broadband Communications Sector ("Motorola")
Cable Modem Division
101 Tournament Drive
Horsham, PA 19044

What is my warranty? A warranty for this cable modem product ("Cable Modem") and all accompanying application and USB driver software ("Application Software") is provided by Motorola to your distributor, cable operator or Internet service provider, as applicable. Please contact your cable operator or Internet service provider ("Service Provider") for details. Motorola does not warrant that any Application Software will perform error free or without bugs. Motorola's warranty shall not apply: (i) to any Cable Modem or Application Software (collectively, "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 warranty applies only to a Product that is manufactured by Motorola and identified by the General Instrument ("GI") or Motorola trademark, trade name or product identification logo affixed to the Product. MOTOROLA DOES NOT WARRANT THIS PRODUCT DIRECTLY TO YOU, THE END USER. EXCEPT AS DESCRIBED IN THIS SECTION "WARRANTY INFORMATION", THERE ARE NO WARRANTIES OR REPRESENTATIONS 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 WARRANTY AGAINST INFRINGEMENT. MOTOROLA IS NOT RESPONSIBLE FOR, AND PROVIDES "AS IS" ANY SOFTWARE SUPPLIED BY 3RD PARTIES.

Warranty Information

What additional provisions should I be aware of? Because it is impossible for Motorola 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 insure that you will receive a Product that you can use and enjoy, Motorola 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. Motorola is not responsible for problems caused by the interaction of the Product with any other software or hardware.

How long does this Limited Warranty last? Contact your Service Provider for details.

What must I do to obtain warranty service? For Motorola Cable Modem customer service, technical support, warranty claims, questions about your Internet service or connection, contact your Service Provider. ALL WARRANTIES ARE VOID IF THE PRODUCT IS 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 MOTOROLA 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 MOTOROLA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO CASE SHALL MOTOROLA'S LIABILITY EXCEED THE AMOUNT YOU PAID FOR THE PRODUCT.

Motorola's warranty is governed by the laws of the Commonwealth of Pennsylvania, excluding its conflict of laws principles and excluding the provisions of the United Nations Convention on Contracts for the International Sale of Goods.