Installation Guide

SBV5422SURFboard®
2-Line Digital Voice Modem with Integrated DECT 6.0 Cordless Phone Base Station

MOTOROLA

SBV5422

SURFboard®
Digital Voice Modem

- Power
- Downstream
- Upstream
- Online
- Link
- Telephone 1
- Telephone 2
- Voice Mail 1
- Voice Mail 2
- Battery

For Placement Only

Table of Contents

Safety and Regulatory information

Important Safety Instructions

When using your telephone 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.

- Do not place this product on an unstable surface, such as a table, shelf, or stand. The product may fall, causing serious damage.

- This device was qualified under test conditions that included the use of the supplied cables between systems 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 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.

- 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.

- Only put the handset of your telephone next to your ear when it is in normal talk mode.

- Postpone installation until there is no risk of thunderstorm or lightning activity in the area.

- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning. For added protection for this device during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power surges.

- 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.

- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

- Disconnect the TNV circuit connector before removing the cover.

- Disconnect TNV circuit connector(s) before disconnecting power.

- Do not use the telephone to report a gas leak in the vicinity of the leak.

- CAUTION: To reduce the risk of fire, use only No. 26 AWG or larger UL listed or CSA certified telecommunication line cord, or national equivalent.

- 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.

- Never push objects of any kind into this product through slots in the base or handset. They may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock.

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

- Slots and openings in the back or bottom of the base unit and handset are provided for ventilation. To protect them from overheating, these openings must not be blocked byplacing the product on a soft surface such as a bed, sofa, or rug. This product should never be placed near or over a radiator or heat register. This product should not be placed in any area where proper ventilation is not provided.

- Unplug this product from the wall outlet and refer servicing to an authorized service facility under the following conditions:

  — When the power supply cord or plug is damaged or frayed.

  — If liquid has been spilled onto the product.

  — If the product has been exposed to rain or water.

  — If the product does not operate normally by following the operating instructions.

  — Adjust only those controls that are covered by the operating instructions, as improper adjustment of other controls may result in damage and often requires extensive work by an authorized technician to restore the product to normal operation.

  — If the product has been dropped and the base and/or handset has been damaged.

  — If the product exhibits a distinct change in performance.

- Wipe the base unit with a clean, dry cloth. Use a damp cloth to clean the handset. Never use cleaning fluid or similar chemicals. Never spill pour liquids into the device. Do not spray cleaners directly on the device or use forced air to remove dust.

- 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 50°C.

SAVE THESE 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.

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, please visit the Motorola and Recycling website **www.motorola.com/recycle** for additional information.

Safety Requirements for the SBV5422 Lithium-Ion Battery

You must properly handle the SBV5422 lithium-ion rechargeable battery to ensure your safety. Improper handling can cause leakage, heat, smoke, explosion, or fire resulting in damage to the equipment or the user.

- Use the SBV5422 battery only in the SBV5422 Digital Voice Modem.

- CAUTION: Risk of explosion if battery is replaced by the incorrect type. Use only Motorola approved batteries, Motorola part number 515757-001 and 538043-001. Dispose of used batteries according to the instructions.

- Do not use the battery where static electricity is generated.

- Do not heat the battery or discard into a fire. Keep the battery away from high-temperature locations.

- Properly discard the battery if it exhibits an abnormal condition, such as heat, odor, color, or a change in shape. When discarding, place insulated tape over the battery terminals.

- The battery should be stored out of the reach of children.

- Do not store the battery close to metal objects.

- If the battery leaks fluid and you touch it, immediately wash your hands. If the fluid gets into your eye, do not rub the eye. Rinse with water and immediately seek medical care. Left untreated, the battery fluid could cause damage to the eye.

- Ensure that the battery does not receive any strong impacts, such as dropping or striking with a hard object.

- At the end of battery life, the SBV5422 battery must be disposed of properly and may need to be recycled. Contact your local recycling center for proper disposal methods.

- Do not expose the battery to ultrasonic energy.

- Do not disassemble, modify, or attempt to repair the battery.

- Before installation, the battery should not be subjected to temperatures below –10 ℃ or above 60 ℃ (14 ℉ to 140 ℉). After initial customer usage (initially charged above shipping charge state), the battery should not be subjected to temperatures outside the operating temperature range:
  — Battery Pack External Exposure Operating Temperature Range:

  — Charging: 0.0 ℃ to 45.0 ℃ (0 ℉ to 113 ℉)

  — Discharging: –10.0 ℃ to 60.0 ℃ (14 ℉ to 140 ℉)

Important VoIP Service Information

Please contact your Internet Service Provider (ISP) and/or your local municipality for additional information on making emergency calls using VoIP service in your area.

When using this VoIP device, you CANNOT make any calls, including an emergency call, and emergency location services (where supported) WILL NOT be available, under the following circumstances:

- Your broadband ISP connection goes down, is lost, or otherwise fails.

- You lose electrical power.

- You have changed the physical address of your VoIP device, and you did not update or otherwise advise your VoIP service provider of this change.

- There are delays in making your location information available in or through the local automatic location information database.

Note: Your service provider, not Motorola, is responsible for the provision of VoIP telephony services through this equipment. Motorola shall not be liable for, and expressly disclaims, any direct or indirect liabilities, damages, losses, claims, demands, actions, causes of action, risks, or harms arising from or related to the services provided through this equipment.

REGULATORY INFORMATION

FCC Compliance Class B Digital Device

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.

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 installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna (that is, the antenna for radio or television that is "receiving" the interference).

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

This handset is hearing aid compatible.

FCC RF Radiation Exposure Statement

The installation of the base unit should allow at least 20 centimeters (approximately 8 inches) between the base and persons to be in compliance with the FCC RF exposure guidelines. For body worn operation, the portable part (handset) has been tested and meets FCC RF exposure guidelines.

This device must not be co-located or operating in conjucntion with any other antenna or transmitter. The changes or modifications not expressly approved by Motorola, Inc. for compliance could void the user's authority to operate the equipment.

Industry Canada (IC)

This Class B digital device complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Privacy of communications may not be ensured when using this telephone.

FCC Declaration of Conformity

Motorola, Inc., Home and Networks Mobility, 101 Tournament Drive, Horsham, PA 19044, 1-215-323-1000, declares that this equipment complies with 47CFR Parts 2 and 15 of the FCC Rules as a Class B digital device.

Introduction

The Motorola SBV5422 SURFboard 2-Line Digital Voice Modem with an integrated DECT 6.0 cordless base station provides high-speed access to the Internet and other online services, with VoIP connections for up to two telephone lines. Your system supports up to five cordless handsets, and offers a potential plug-and-play home alarm connection (RJ-31x).

Before You Start...

Please read and understand the Safety and Regulatory Information at the beginning of the manual before attempting to install this product.

Make sure your compute meets the requirements listed below:rements

Your computer must meet the following requirements:

- Pentium class or better processor

- Windows$^®$ 2000, Windows XP, Windows Vista™, Macintosh$^®$, UNIX$^®$, or Linux$^®$ operating system with operating system CD-ROM available (You must have the latest version of your operating system installed with all current service packs and patches.)

Signing Up for Service

You must sign up with a cable provider to access the Internet and other online services.

To activate your service, call your local cable provider.

To receive data service, you need to provide the MAC address printed on the bar code label marked HFC MAC ID on the back of the cable modem. You can record it here:

00 : _____ : _____ : _____ : _____ : _____

To receive telephone service, you need to provide the MAC address printed on the bar code label marked MTA MAC ID on the back of the cable modem. You can record it here:

00 : _____ : _____ : _____ : _____ : _____

You should ask your cable provider the following questions:

- Do you have any special system requirements?

- When can I begin using my SBV5422?

- Are there any files I need to download after I am connected?

- Do I need a user name or password to access the Internet or use e-mail?
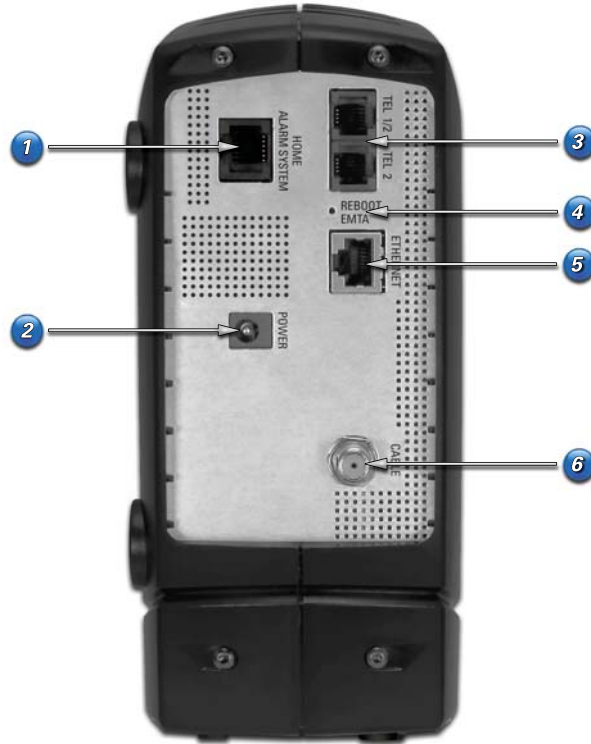
SBV5422 Front Panel Overview

Your SBV5422 transmits and receives data much faster than traditional dial-up or DSL (digital subscriber line) modems. Enjoy surfing the Web without long wait periods, and unlike a dial-up modem, your SBV5422 is always online. Just open your browser and surf.

Use your high-speed, upgradeable SBV5422 to connect one or more computers to the Internet.

Key	Light	Flashing	On
1	**Power**	Startup diagnostics in progress	Digital voice modem powered on
2	**Downstream**	Scanning for a receive channel connection	Downstream channel connected
3	**Upstream**	Scanning for a send channel connection	Upstream channel connected
4	**Online**	Scanning for a network connection	Startup process completed
5	**Link**	Transmitting or receiving data	A device, such as a computer or hub, is connected to the Ethernet connector on the back panel
6	**Telephone 1**	Line 1 is connected and activated Telephone 1 is off-hook (in use)	Line 1 is connected and activated Telephone 1 is on-hook (not in use)
7	**Telephone 2**	Line 2 is connected and activated Telephone 2 is off-hook (in use)	Line 2 is connected and activated Telephone 2 is on-hook (not in use)
8	**Voicemail 1**	Voicemail Present on Line 1	N/A
9	**Voicemail 2**	Voicemail Present on Line 2	N/A
10	**Battery**	Battery not fully charged or AC power not present	Normal condition indicating that AC power is present and the battery is in good condition

SBV5422 Rear Panel Overview

The rear panel provides cabling connectors and the power receptacle:

Key	Item	Description
1	**HOME ALARM SYSTEM**	Provides the connection to an existing home alarm system using a RJ-31X connector. **The factory places a sticker over this port. Remove the sticker only when you are ready to use the port to install a home alarm system. Never insert any other devices into the Home Alarm System port.**
2	**POWER**	Provides AC power to the digital voice modem.
3	**TEL 1/2, TEL 2**	Telephone ports provide connections for two telephone lines. **Currently, the SBV5422 only supports Motorola Handsets**
4	**ETHERNET**	Provides the connection to Ethernet-equipped computers using a cable terminated with an RJ-45 connector.
5	**REBOOT EMTA**	If you experience a problem, you can push this recessed button to reset the digital voice modem (see "Front-Panel Lights and Error Conditions" on page xxix). Resetting may take some time (5 to 30 minutes) because the digital voice modem must find and lock on the appropriate communications channels.
6	**CABLE**	Provides the connection to the coaxial cable outlet.

SBV5422 Telephone Features

Feature availability is determined by your handset model, and also by your telephone service provider. A standard two-wire telephone connection for voice, fax, and telephone modem operation

Re-dial number	Caller ID	Telephony Devices for the Disabled (TDD)
Speed dial	Caller ID block	Operator barge-in
Call forwarding	Three-way calling	Standard call progress signals
Call hold and mute	Voice mail	Dial-tone stutter
Call return	On hook, off hook detection	Call waiting
Dial-tone busy	Fast-busy stutter dial-tone call waiting	

NOTE: The system does not support pulse-dial equipment.

SBV5422 VoIP Telephone Service

Your SBV5422 has an embedded cordless telephone system. Connect a standard telephone to Telephone Line 1. If you wish to use to the cordless handsets provided with the system, it is not necessary to connect the phone lines.

You can connect up to two standard telephone lines using your SBV5422, supporting:

- Local and long-distance calling

- Standard telephone feature support.

- Telephone modem and fax support

- HTML diagnostic page

- Software upgrades over the network to provide new or improved services

SBV5422 Handset Overview

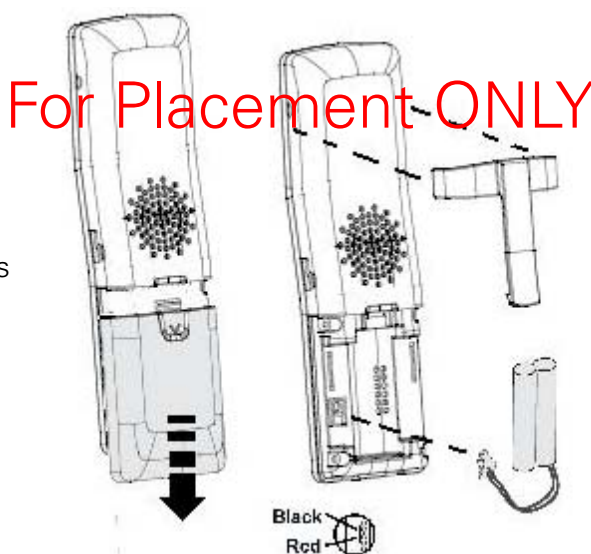| 1	LCD Display	11	Intercom / Menu Key
2	MUTE Key	12	Microphone
3	Phonebook Key	13	Phone Off Key
4	Call Log / Redial Key	14	Curson and Volume Keys
5	Browser Home Key	15	Headset Jack (2.5mm)
6	Left Soft Key	16	Delete / Cancel Key
7	Right Soft Key	17	Add Pause in Number
8	Phone On / Flash	18	Format Key (change phone number format (7, 10, or 11)
9	Enter Key (middle button)	19	Handset Charger
10	Speakerphone Key	20	Charge LED (charging when LED is green)

Installation and Configuration

Before you begin the installation, you must first install the battery in your digital voice modem. Please read "Safety Requirements for the SBV5422 Lithium-Ion Battery" on page vii before proceeding.

NOTE: It may take up to 12 hours to fully charge the battery. After installing the battery, immediately place the handset in the charger.
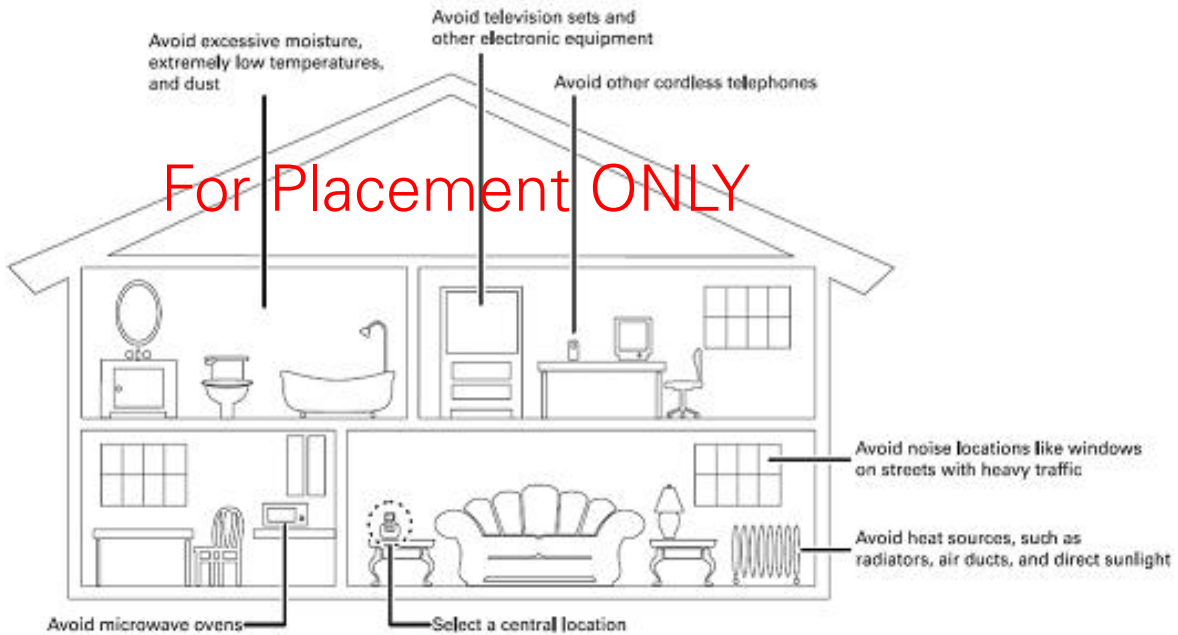
Handset Battery Installation

1   Remove any stickers or inserts, if present.
2   Remove the battery door by pressing down on the indentation and sliding downward.
3   Plug the battery connector into the receptacle. (Make sure the black wire is toward the top.)
4   Insert the battery into the battery compartment.
5   Replace the battery door.
6   Attach the belt clip (optional).

SBV5422 Battery Installation

1   Place the SBV5422 on its side and remove the battery cover on the bottom.
2   Slide the battery into the battery compartment until it is fully seated. The battery is keyed so that it cannot be installed incorrectly. Make sure that the pull-tab on the battery is accessible and does not prevent the battery cover from closing properly.
3   Re-install the battery cover with the locking tabs seated downward, and then push the cover forward.

Selecting a Location for Your Handset

Avoid excessive moisture, extremely low temperatures, and dust

Avoid television sets and other electronic equipment

Avoid other cordless telephones

For Placement ONLY

Avoid noise locations like windows on streets with heavy traffic

Avoid heat sources, such as radiators, air ducts, and direct sunlight
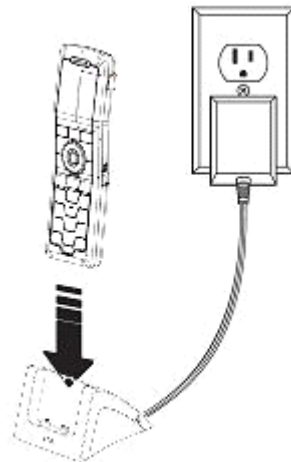
Avoid microwave ovens

Select a central location

Connecting the Handset Charger and Charging the Handset Battery

1. Insert the power cord into the bottom of the charger.
2. Plug the power cord into an electrical outlet.
3. Place the base on a sturdy surface.

   The handset charger does not require a phone line.

To charge the battery, place the handset in the charger's handset cradle. The initial battery charge time is 10-12 hours. After the initial charge, a maintenance charge of eight hours should be sufficient. Be sure to place the handset in its charger when not in use to insure maximum daily performance.
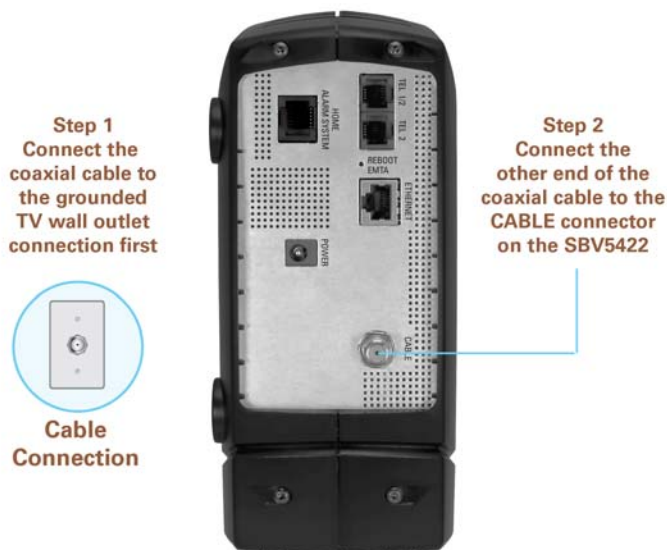
   If your handset displays a **LOW BATTERY** message or the handset appears inactive, (the LCD is blank and does not activate when you press the keys), charge the handset.

Cabling and Startup for a Single User

Allow some time (5 to 30 minutes) to power up the first time because the SBV5422 must find and lock on the appropriate channels for communications. Be sure your computer is on and the SBV5422 is unplugged.

1 Connect one end of the coaxial cable to the cable outlet or splitter.

2 Connect the other end of the coaxial cable to the CABLE connector on the SBV5422. Hand-tighten the connectors to avoid damaging them.

3 Connect the DC power connector to the SBV5422.

4 Plug the AC power cord into the connector on the SBV5422 and an AC electrical outlet. This turns on the SBV5422. You do not need to unplug it when not in use.

5 SBV5422Connect the Ethernet cable to the Ethernet connector on the SBV5422. Connect the other end to the Ethernet port on your computer.

6 Perform the procedures for "Configuring TCP/IP" on page 11.

7 To connect the telephone line, plug a phone wire into the appropriate telephone connector.

CAUTION!!! The Home Alarm System (RJ31X) and Ethernet portals are very similar. NO device, other than a home alarm system with a RJ31X connector should ever be plugged into the Home Alarm System port.

Cabling for Multiple Computers

The SBV5422 supports several multiple-user configurations. Along with an optional hub or router, it can serve as an Internet gateway for up to 31 computers.

Not all service providers support multiple-user service. For information about multiple-user service, contact your cable provider.
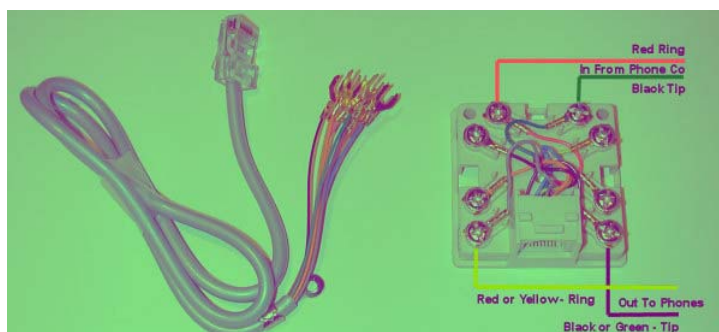
SBV5422Home Alarm System Configuration (Optional)

Most home alarm systems are wired to traditional telephone service. Home owners can rewire their alarm systems from traditional phone service to VOIP by moving a cable from one jack to another jack.
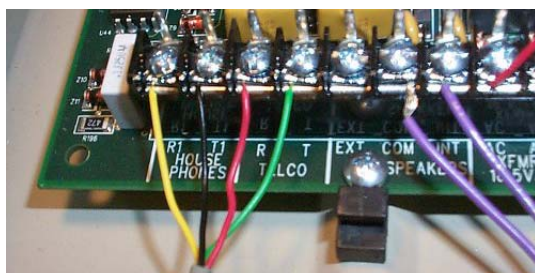
1 Purchase a RJ31X cable and RJX31X connector (not included).

2 Locate where the traditional phone service enters the house.

3 Mount the RJ31X connector to the wall. Place the device close to where the telephone service enters the house.

4 Splice in the telephone service to the wall mounted RJ31X as shown in the diagram below.

5 Wire the RJ31X cable to alarm panel.

6 Plug the RJ31X cable into wall mounted RJ31X connector.

Configuring TCP/IP

The SBV5422 contains all required software. You do not need to configure the SBV5422, but you must be sure that your computer is configured for TCP/IP (a protocol for communication between computers). Perform one of the following:

- "Configuring TCP/IP in Windows 2000" on page 12

- "Configuring TCP/IP in Windows XP" on page 13

- Windows Vista: To configure TCP/IP, please consult Windows help.

- Follow the instructions in your Macintosh or UNIX user manual

After configuring TCP/IP, perform one of the following to verify the IP address:

- "Verifying the IP Address in Your Windows OS" on page 14

- Follow the instructions in your Macintosh or UNIX user manual

Your cable provider may provide additional instructions to set up your computer.

Configuring TCP/IP in Windows 2000

1 Open the **Control Panel** (click Start, select **Settings** and then **Control Panel)**.

2 Double-click the **Network and Dial-up Connections** icon.

3 Double-click **Local Area Connection** *number*. The value of *number* varies from system to system.

4 Click **Properties**.

If Internet Protocol (TCP/IP) is in the list of components, TCP/IP is installed. You can skip to step 8.

If Internet Protocol (TCP/IP) is not in the list, click **Install**.

5 Click **Protocol** on the Select Network Component Type window and click **Add**.

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

7 Click **OK**.

8 Select **Internet Protocol (TCP/IP)** in the Local Area Connection *number* Properties window.

9 Click **Properties** to view the Internet Protocol (TCP/IP) Properties window.

10 Select **Obtain IP address automatically** and **Obtain DNS server address automatically**. Click **OK** to accept the TCP/IP settings, and close the window.

You will need to restart your computer to change the settings.

After completing the TCP/IP configuration, go to "Verifying the IP Address in Your Windows OS" on page 14.

Configuring TCP/IP in Windows XP

1 Open the **Control Panel**.

2 Click **Network and Internet Connections**.

3 Click **Network Connections** to display the LAN or high-speed Internet connections. Skip to step 5.

4 If a Classic view similar to below is displayed, click **Network Connections** to display the LAN or high-speed Internet connections.

5 Right-click your network connection. If more than one connection is displayed, be sure to select the one for your network interface.

6 Select **Properties** from the pop-up menu. The Local Area Connection Properties window is displayed:

7 Select **Internet Protocol (TCP/IP)** and click **Properties** to display the Internet Protocol (TCP/IP) Properties window:SBV5422

8 Be sure **Obtain IP address automatically** and **Obtain DNS server address automatically** are selected. Click **OK** to accept the TCP/IP settings.

9 Click **OK** to close the TCP/IP Properties window.

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

When you complete the TCP/IP configuration, go to "Verifying the IP Address in Your Windows OS" on page 14.

Verifying the IP Address

The following subsections describe verifying an IP address. Perform the appropriate procedure for your Windows version:

• "Verifying the IP Address in Your Windows OS" on page 14

• Windows Vista: To verify the TCP/IP configuration, please consult Windows help.

• For a Macintosh or UNIX system, refer to your user guide.

Verifying the IP Address in Your Windows OS

To check the IP address:

1 On the Windows Desktop, click *Start*.

2 Select **Run**. The Run window is displayed.

3 Type **cmd** and click **OK**.

4 Type **ipconfig** and press **Enter** to display your IP configuration. A display similar to the one shown below indicates a normal configuration:

If an Autoconfiguration IP Address is displayed as in the window below, there is either an incorrect connection between your PC and the SBV5422 or cable network problems. SBV5422

Check:

— Your cable connections

— Whether you can see cable TV channels on your television

— After successfully verifying your cable connections and proper cable TV operation, you can renew your IP address.

Renewing Your IP Address

To renew your IP address:

1 On the Windows Desktop, click **Start**.

2 Select **Run**. The Run window is displayed.

3 Type **cmd** and click *OK*.

4 Type **ipconfig /renew** and press **Enter**. If a valid IP address is displayed, as shown below, Internet access should be available.

5 Type **exit** and press **Enter** to return to Windows.

If after performing this procedure your computer cannot access the Internet, call your cable provider for help.

Wall Mounting the SBV5422

If you mount your SBV5422 on the wall, you must:

- Locate the unit as specified by the local or national codes governing residential or business cable TV and communications services.

- Follow all local standards for installing a network interface unit/network interface device (NIU/NID).

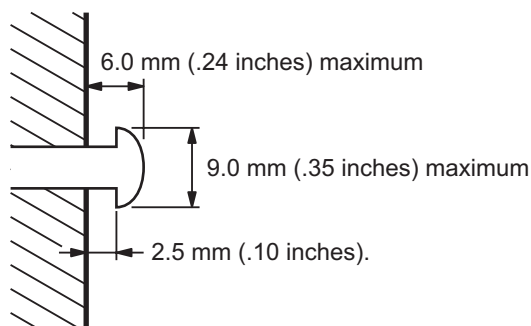*When using the wall mount on drywall or similar material, use anchors for added stability.*

To mount your SBV5422 on the wall:

1 If present, remove the four rubber chassis feet on the bottom of the SBV5422.

2 Print the "Wall Mounting TemplateSBV5422" on page 16 at 100% scale. Measure the printed template with a ruler to ensure that it is the correct size as indicated on the template.

3 Use a center punch to mark the center of the holes.

4 On the wall, locate the marks for the mounting holes.

5 See step 7 for recommended mounting hardware size. Drill holes to a depth and diameter appropriate for the size and type of hardware you have selected.

6 If necessary, install an anchor in each hole.

Use M4 x 38 mm (#8 x 1 1/2 inch) screws with a flat underside and maximum screw head diameter of 9.0 mm (0.35 inches) to mount the SBV5422.

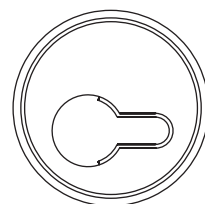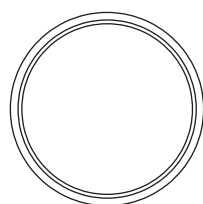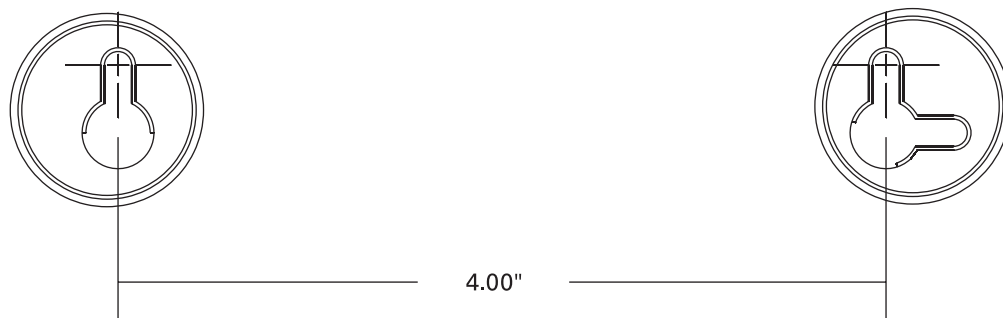Screw in each screw until the head protrudes from the wall, as shown below:

— There must be at least 2.5 mm (.10 inches) between the wall and the underside of the screw head.

6.0 mm (.24 inches) maximum

9.0 mm (.35 inches) maximum

2.5 mm (.10 inches).

Note: The image shown above demonstrates mounting the SBV5422 onto a wood surface.

7 Place the SBV5422 so the keyholes are above the mounting screws.

8 Slide the SBV5422 down so it stops against the top of the keyhole opening.

Wall Mounting Template *SBV5422*

4.00"

Troubleshooting

If the solutions listed here do not solve your problem, contact your cable provider. Before calling your service provider, try pressing the reboot button on the rear panel or unplugging and plugging in the SBV5422 power cord. Resetting the SBV5422 may take 5 to 30 minutes.

SBV5422Front-Panel Lights and Error Conditions

If a telephone line is properly connected and the telephone line LED remains off, the line has not been set up for service. Contact your service provider. For more information about the LEDs, see "SBV5422 Front Panel Overview" on page 2.

Contact Us

If you need assistance while working with your SBV5422, contact your cable provider. For more information about customer service, technical support, or warranty claims, see the *Regulatory, Safety, Software License, and Warranty Information* card provided with the SBV5422.

For information about Motorola consumer cable products, education, and support, visit http://broadband.motorola.com/consumers/support.

Frequently Asked Questions

Q What is high-speed cable Internet access?

A Cable Internet access uses cable television wires instead of telephone lines to connect to the Internet. It is extremely fast and affordable and does not tie up telephone lines for incoming or outgoing calls and faxes.

Q What is Voice-over-Internet Protocol (VoIP)?

A VoIP uses cable television wires instead of traditional telephone lines to provide voice and fax service.

Q How fast is a SBV5422?

A A cable modem offers Internet access at speeds up to 100 times faster than a traditional phone modem. Network conditions, such as traffic volume and the speed of the sites you visit, can affect download speeds.

Q Can I still watch cable TV while using my SBV5422?

A Yes, your cable TV line can carry the TV signal while you surf the Internet and talk on the phone.

Q If I have a SBV5422, can I still use my old 28.8 Kbps or 56 Kbps modem?

A Yes! 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 SBV5422?

A No, not if your computers are connected on a network. The SBV5422 supports current Internet connection sharing technologies to enable you to connect up to 31 computers to the Internet using a single SBV5422.

Q **Do I need to change my Internet service provider (ISP)?**

A A broadband connection is required for high-speed Internet access and VoIP telephone service available with your SBV5422. Contact your cable company for your specific information.

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 SBV5422. Check with your local cable company for specific information.

Q **What technical support is available?**

A For questions about your Internet service, connection, or SBV5422, contact your cable provider.

Q **What do I do if my SBV5422 stops working?**

A Use the information in this section to diagnose and resolve simple problems. If you continue to have problems, contact your cable provider or Motorola as described on the previous page.

Glossary

coaxial cable (coax)	A type of wire consisting of a center wire surrounded by insulation and a grounded shield of braided wire. The shield minimizes electrical and radio frequency interference.
DOCSIS	The CableLabs Data-Over-Cable Service Interface Specification defines interface standards for cable modems and supporting equipment.
download	To copy a file from one computer to another. You can use the Internet to download files from a server to your home PC. A DOCSIS digital voice modem downloads its configuration from a server during start-up.
downstream	In a network, downstream describes the direction of data received by your computer from the Internet.
Ethernet	The most widely used type of local area network (LAN). The most commonly installed Ethernet networks are called 10Base-T. 10Base-T provides transmission speeds up to 10 megabits per second (Mbps), usually over twisted-pair wire. Fast Ethernet (100Base-T) provides transmission speeds up to 100 Mbps.
Euro-DOCSIS	The European version of the DOCSIS standard.
expansion slot	An opening in a computer where a circuit board can be inserted to add new capabilities.
F-type connector	A connector used to connect coaxial cable to equipment.
IP address	An Internet Protocol address is an identifier for a computer or device on a TCP/IP network. Networks using TCP/IP route messages based on the destination IP address. Your cable provider assigns your digital voice modem an IP address to provide a continuous Internet connection.
MAC address	The Media Access Control Address uniquely identifies each device that can be connected to an Ethernet network. It is permanently written to read-only memory (ROM) at the factory and printed on the rear panel of your SURFboard Digital Voice Modem. You need to provide the MAC address to your cable provider.
MHz	Mega Hertz. A measure of frequency - millions of cycles per second. One MHz means one million cycles per second.
PBX	A private branch exchange is a private telephone network usually used within a business. Users of the PBX share a certain number of outside lines for making telephone calls external to the PBX.
PSTN	The public switched telephone network is the traditional circuit-switched, voice-oriented telephone network originally invented by Alexander Graham Bell. It is sometimes referred to as plain old telephone service (POTS).
RJ-11	The most common type of connector for household phones.
RJ-45	The most common type of connector for Ethernet networks.
RJ-31X	The most common type of connector for home alarm systems.
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 is a set of standards and rules for communication between networks.
upstream	In a network, upstream describes the direction of data sent from your computer to the Internet.

UPS   An uninterruptible power supply provides a battery backup to enable voice service to continue for some time during a power outage.

VoIP   Voice over Internet Protocol is a method to exchange voice, fax, and other information over the Internet. Voice and fax have traditionally been carried over traditional telephone lines using a dedicated circuit for each line. VoIP enables calls to travel as discrete data packets on shared lines.

Software License

SBV5422 Digital Voice Modem

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