



# SURFboard® SBV5122

## Digital Voice Modem

IP telephony converges with cable data service in one convenient package

### HIGHLIGHTS

- Easy to use and simple to set up
- Plug-and-play installation
- Front-panel, easy-to-read operational status LEDs for power, data activity, and voice status
- Intuitive, built-in Web-based diagnostics for quick and easy troubleshooting
- Up to two lines (RJ-11) of full featured telephone service
- 10/100 Base-T Ethernet (RJ-45) for high-speed data access

### Unlock the potential of telephone service over your broadband cable connection.

The Motorola SURFboard SBV5122 Digital Voice Modem is based on Motorola's proven cable modem experience. Using industry standard signaling protocols, the SBV5122 provides high-speed Internet access and up to two lines of primary line voice-over-IP (VoIP) telephone service over cable's broadband connection to the home. The SBV5122's two telephone lines are terminated in two RJ-11 connectors. In addition, its integrated cable modem connects to a computer through a 10/100Base-T (RJ-45) Ethernet data port.

The SURFboard SBV5122 Digital Voice Modem is an intelligent way to communicate by converging voice and data on one network. The SBV5122 enables:

- One infrastructure for communication services
- One bill for voice and data services
- Simultaneous use of phone lines and high-speed data services
- Support for a variety of CLASS features provided today by the telephone company (caller ID, call waiting, call forwarding, etc.)

As part of Motorola's broadband family of telephony products, the SBV5122 combines voice and data on one network, in one product. By combining multiple services in one unit, consumers can enjoy an efficient solution that offers many advantages over competing technologies.

## Specifications

### HIGHLIGHTS, CONT.

- Support for CLASS services (caller ID, call waiting, three-way calling, etc.)
- Automatic fax modem processing, including support for T.38 protocol
- SNMP and TFTP support for remote configuration and monitoring
- DOCSIS® 1.0-, 1.1-, and 2.0 based; PacketCable™ 1.5 based and 2.0 compatible
- Network Call Signaling (NCS) and Session Initiation Protocol (SIP) support
- Configurable to meet multiple telco market standards (ETSI harmonized impedance, 600 Ohms)
- G.711 and other low-rate vocoder support
- Support for 16 Service IDs (SIDs) allows for future enhanced features
- Energy Star Compliant

GENERAL	
Cable Interface	F-connector, female, 75 Ω
Network interface	Ethernet 10/100Base-T
Data protocol	TCP/IP
Dimensions (H x D x W)	18.68 cm x 15.60 cm x 3.80 cm (7.35 in x 6.14 in x 1.50 in)
Power	3 W (nominal)
Input power	105 to 125 VAC, 60 Hz North America; 100 to 240 VAC, 50/60 Hz outside North America
Operating temperature	0 °C to +40 °C (32 °F to +104 °F)
Storage temperature	-30 °C to +70 °C (-22 °F to +158 °F)
Operating humidity	0 to 95% R.H. (non-condensing)
Compliance	FCC, UL Listed (US & Canada), ICES-003, CE, Energy Star, ROHS Compliant

DOWNSTREAM	
Modulation	64 or 256 QAM
Maximum data rate*	38 Mbps (256 QAM at 5.361 Msym/s)
Bandwidth	6 MHz
Symbol rates	64 QAM 5.069 Msym/s, 256 QAM 5.361 Msym/s
Operating level range	-15 to 15 dBmV
Frequency range	88 to 860 MHz (edge to edge)
Input impedance	75 Ω (nominal)

UPSTREAM	
Modulation	8***, 16, 32***, 64***, 128*** QAM or QPSK
Maximum channel rate**	30 Mbps
Bandwidth	200 kHz, 400 kHz, 800 kHz, 1.6 MHz, 3.2 MHz, 6.4*** MHz
Symbol rates	160, 320, 640, 1280, and 2560 and 5120*** ksym/s
Operating level range	
A-TDMA	8 to 54 dBmV (32 QAM, 64 QAM), 8 to 55 dBmV (8 QAM, 16 QAM), 8 to 58 dBmV (QPSK)
S-CDMA	8 to 53 dBmV (all modulations)
Output impedance	75 Ω (nominal)
Frequency range	5 to 42 MHz (edge to edge)

TELEPHONY	
Line type	2-wire
Hook state signaling	Loop start
Maximum line length (one-way)	500 ft (AWG 26/0.4 mm @ 65 °C)
DTMF level sensitivity range	0 and -20 dBm
Speech coding	64 kbps PCM, μ-law or A-law companding; supports G.711 and other low-rate vocoders
Line termination	Configurable based on market needs
Loss plan	Receive (D/A) 4 dB; transmit (A/D) 2 dB (configurable based on market needs)
Loss plan tolerance (one-way)	±1 dB
60/50 Hz loss	>20 dB (referenced to off-hook loss at 1004 Hz)
Ringing wave form	Quasi-trapezoidal
Ringing crest factor	1.2 < CF < 1.6

\*When comparing download speeds with a traditional 28.8k analog modem. Actual speeds will vary, and are often less than the maximum possible. Upload and download speeds are affected by several factors including, but not limited to, network traffic and services offered by your cable operator or broadband service provider, computer equipment, type of service, number of connections to server, and availability of Internet router(s).

\*\*Actual data throughput will be less due to physical layer overhead (error correction coding, burst preamble, and guard interval).

\*\*\*With A-TDMA or S-CDMA enabled Cable Modem Termination System (CMTS).

Certain features may not be activated by your service provider, and/or their network settings may limit the feature's functionality. Additionally, certain features may require a subscription. Contact your service provider for details. All features, functionality, and other product specifications are subject to change without notice or obligation.

Your service provider, not Motorola, is responsible for the provision of Voice-over-IP (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.

Important: Be aware that you will not be able to make any calls using this VoIP device if your broadband connection is not functioning properly or you lose electrical power.



Motorola, Inc. 101 Tournament Drive, Horsham, Pennsylvania 19044 U.S.A. [www.motorola.com](http://www.motorola.com)

MOTOROLA, the Stylized M Logo and SURFboard are registered in the U.S. Patent and Trademark Office. All other product or service names are the property of their respective owners. DOCSIS is a registered trademark and PacketCable is a trademark of Cable Television Laboratories, Inc. © Motorola, Inc. 2008. All rights reserved.