



SURFboard® SBV5122 Digital Voice Modem

IP telephony converges with cable data service in one convenient package

HIGHLIGHTS

- Easy to set up and use
- Network Call Signaling (NCS) and Session Initiation Protocol (SIP) Support
- Support for 16 Service IDs (SIDs) allows for future enhanced features
- Up to two lines (RJ-11) of full featured telephone service
- 10/100 Base-T Ethernet (RJ-45) for high-speed data access
- Support for CLASS services (caller ID, call waiting, three-way calling, etc.)
- Automatic fax modem processing, including support for T.38 protocol (NCS)
- DOCSIS® 1.0-, 1.1-, and 2.0 based; PacketCable™ 1.5 based and 2.0 compatible

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.



In addition to delivering high-quality gateways to its customers, Motorola is also committed to helping its customers reduce their environmental footprint. We approach this in several ways: improving the environmental profile of our products, running our operations in a safe and energy-efficient manner and helping our customers to be greener when they use our products.

Motorola's SURFboard portfolio of customer premises equipment (CPE) helps service providers lower their energy consumption, thereby helping them reduce their carbon footprint. Motorola has a global commitment to be part of the solution to climate change, and has worked for years to continually improve our environmental profile. We are in step with our customers and their increasing interest in partnering with a company that helps them reduce their environmental impact, while offering compelling products to help them grow their eco-conscious customer base.

Motorola is working to make products with a reduced environmental impact. In the development of our next-generation SURFboard portfolio of customer premises equipment, we have focused on energy efficiency, lead-free manufacturing, and packaging / recycling enhancements. Depending on models and market, our units are ENERGY STAR qualified and compliant with European Code of Conduct regulations. In addition, the devices and power supplies are lead-free and RoHS compliant. Finally, all new SURFboard CPE use environmentally friendly package designs. The CPE are available in single bulk pack boxes that eliminate the use of suspension plastic and reduce box size, thereby reducing waste and transport costs. Motorola's SURFboard modem's packaging is 100% recyclable and is marked with standard recycling codes to make it easier for our customers to identify recycling opportunities.

Specifications

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	100 to 240 VAC, 50 to 60 Hz
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 MHz to 1 GHz (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

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