SURFboard® SBV4200 VoIP Cable Modem

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intelligence everywhere™

The Motorola SURFboard SBV4200 VoIP Cable Modem is based on the SURFboard SB4200 Cable Modem and Motorola's proven cable modem experience. By utilizing industry-standard signaling protocols, the SBV4200 provides high speed Internet access and telephone service over cable lines directly to a consumer's home. Its advanced architecture allows for Internet connection speeds that are unsurpassed in the market place, making it capable of handling current and future DOCSIS functions.

The SBV4200 supports two telephone lines that are terminated in two RJ-11 connectors. In addition, the SBV4200 offers industry-leading connection speeds to the Internet via an integrated cable modem that connects to a computer through either a 10/100Base-T Ethernet connection or a USB data port. The SBV4200 is remotely upgradeable via SNMP and TFTP configuration and firmware downloads. As part of Motorola's broadband family of telephony products, it is capable of converging 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.

IP Telephony converges with cable data service in one, convenient package.

FEATURES INCLUDE:

- Supports all standard DOCSIS 1.1 cable modem features
- Two lines of telephone service (RJ-11 jacks)
- 10/100Base-T Ethernet (RJ-45) high speed data port
- USB port
- DC powering via wall transformer or Uninterruptible Power Supply (UPS)
- Compatible with PacketCable and ETSI standards
- SNMP and TFTP configuration and firmware downloads from headend
- Automatic fax/modem processing
- Standby function provides increased data security by disabling Ethernet and the USB ports
- Supports G.711 and low-rate vocoders
- Telco interface configures to meet multiple market standards
  – ETSI harmonized impedance
  – 600 Ω impedance
- Global safety approvals:
  – FCC
  – UL
  – CE
  – CB

GENERAL SPECIFICATIONS

Downstream

Demodulation:	64 or 256 QAM
Maximum Data Rate:*	38 Mbps
Bandwidth:	6 MHz
Symbol Rate:	64 QAM 5.069 Msym/s
Symbol Rate:	256 QAM 5.361 Msym/s
Operating Level Range:	-15 to +15 dBmV
Input Impedance:	75 Ω (nominal)
Frequency Range:	88 to 860 MHz

Upstream

Modulation:	16 QAM or QPSK
Maximum Data Rate:	10 Mbps
Bandwidth:	200 kHz, 400 kHz, 800 kHz,1.6 MHz, 3.2 MHz
Symbol Rates:	160, 320, 640, 1280 and 2560 ksym/s
Operating Level Range:	+8 to +55 dBmV (16QAM) +8 to +58 dBmV (QPSK)
Output Impedance:	75 Ω (nominal)
Frequency Range:	5 to 42 MHz (edge to edge)

General

Cable Interface:	F-Connector, female, 75 Ω
CPE Network Interface:	USB, Ethernet 10/100Base-T (auto sensing)
Data Protocol:	TCP/IP
Dimensions:	7.2" H x 2.0" W x 7.8" L
Input Power:	12 VDC

Environmental

Operating Temperature:	0˚ to 40˚ C
Storage Temperature:	-30˚ to 80˚ C
Operating Humidity:	5 to 95% R.H. (non-condensing)

Telephony

Line Type:	2 Wire
Hook State Signaling:	Loop start
Maximum Line Length (One-way):	500 feet (AWG 26/0.4 mm @ 65° C)
Off Hook Threshold (Line Seizure):	Rdc ≤ 1000 Ω
On Hook Threshold (Line Release):	Rdc ≥ 10000 Ω
Rdc DC Supervisory Range:	Rdc ≥ 450 Ω
DTMF Level Sensitivity Range:	0 And -20 dBm
Speech Coding:	64 kbps PCM, u-law or A-law companding, support for G.711 plus other low-rate CODECs
Line Termination:	Configurable based on market needs
Loss Plan:	Receive (D/A) 4 dB/transmit (A/D) 2 dB
Loss Plan Tolerance (One-way):	+/- 1 dB
60/50 Hz Loss (Referenced To Off Hook Loss At 1004 Hz):	> 20 dB
Ringing Wave Form:	Quasi-trapezoidal
Ringing Crest Factor:	1.2 ≤ CF ≤ 1.6
Ring Trip (Maximum):	200 mS with 300 Ω termination

CONVERGENT COMMUNICATIONS

The Motorola SURFboard SBV4200 VoIP Cable Modem is the intelligent way to communicate converging voice and data on one network.

- One bill for voice and data services creating new opportunities for bundled pricing
- Consolidation of operational support systems
- Improved bandwidth utilization
- One infrastructure for communications services
- Simultaneous usage of phone lines and high speed data services
- All CLASS services provided today by the phone company

* When compared to traditional 28.8k analog modems. 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 server, number of connections to server, and availability of Internet router(s).

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