



SURFboard[®] SBV5222v2

Digital Voice Modem with Integrated Battery Backup

IP telephony converges with cable data service in one convenient package.

Highlights

- Plug-and-play installation
- Front-panel, easy-to-read LEDs for power, data activity, voice, and battery status
- Intuitive, built-in Web-based diagnostics for quick and easy troubleshooting
- Up to two lines of full featured telephone service
- High-speed 10/100Base-T Ethernet (RJ-45) data access
- Support for CLASS services (caller ID, call waiting, three-way calling, etc.)
- Automatic fax modem processing
- SNMP and TFTP support for remote configuration and monitoring
- DOCSIS[®] 2.0 and PacketCable[™] 1.5-certified Interoperable with DOCSIS 1.0 and 1.1 and PacketCable 1.0; compatible with PacketCable 2.0

Fast, Convenient, Reliable

The next-generation Motorola SURFboard SBV5222v2 Digital Voice Modem with field-replaceable Lithium-ion battery backup uses industry-standard signaling protocols to provide 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. With 10/100Base-T Ethernet and optional USB network connectivity and two RJ-11 telephony ports, the SBV5222v2 is an intelligent, flexible, and convenient way to converge voice and data on one network. The SBV5222v2 integrated field-replaceable Lithium-ion battery backup minimizes the likelihood that a consumer will lose telephone service during a power outage.

A Single Solution for Intelligent Convergence

The SBV5222v2 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, including caller ID, call waiting, and call forwarding

As part of Motorola's broadband family of telephony products, the SBV5222v2 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.

DATA SHEET

SURFboard SBV5222v2 Digital Voice Modem

Highlights, Cont

- Integrated, field-replaceable Lithium-ion batteries, which can provide backup power during a power outage
- Network Call Signaling (NCS) and Session Initiation Protocol (SIP) support. Field-upgradeable software
- Support for GR-909 test suite
- Allows remotely diagnosing and troubleshooting wiring problems at the customer premises
- Configurable to meet multiple telco market standards: ETSI harmonized impedance, 600 Ω
- Support for G.711, G.729, and other low-rate vocoders
- Support for up to 16 Service IDs (SIDs) allows for future enhanced features

Specifications

GENERAL

| | |
|-------------------|--|
| Cable Interface | F-connector, female, 75 Ω |
| Network Interface | USB (optional), 10/100Base-T Ethernet |
| Data Protocol | TCP/IP |
| Dimensions | 9.2 in x 1.5 in x 6.1 in (23.84 cm x 3.81 cm x 15.49 cm) |

POWER

| | |
|---------------|-----------------------------|
| Power | 3 W (nominal) |
| Input | |
| North America | 105 to 125 VAC, 60 Hz |
| Elsewhere | 100 to 240 VAC, 50 to 60 Hz |

ENVIRONMENTAL

| | |
|-----------------------|---|
| Operating Temperature | 0 °C to 40 °C (22 °F to 104 °F) |
| Storage Temperature | |
| Without battery | -30 °C to 70 °C (-22 °F to 158 °F) |
| With battery | -10 °C to 60 °C (-14 °F to 140 °F) |
| | Store replacement batteries at 25 °C for optimal storage life |
| Operating Humidity | 0 to 95% R.H. (non-condensing) |

DOWNSTREAM

| | |
|-----------------------|---|
| Modulation | 64 or 256 QAM |
| Max. 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 |
| Input Impedance | 75 Ω (nominal) |

UPSTREAM

| | |
|-----------------------|---|
| Modulation | 8***, 16, 32***, 64***, 128*** QAM or QPSK |
| Max. 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, 2560, and 5120*** ksym/s nnn |
| 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-CD MA | 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 Loop Length | 500 ft (AWG 26/0.4 mm @ 65 °C) |
| DTMF Level Sensitivity Range | 0 to -20 dBm |
| Speech Coding | 64 kbps PCM, μ -law or A-law companding; supports G.711 and low-rate vocoders; T.38 support |
| 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 | ± 1 dB (one-way) |
| 60/50 Hz Loss | >20 dB (referenced to off-hook loss at 1004 Hz) |
| Ring Wave Form | Quasi-trapezoidal |
| Ring Crest Factor | 1.2 < CF < 1.6 |
| Ring Trip (maximum) | 200 ms with 300 Ohm termination |



All features, functionality, and other product specifications are subject to change without notice or obligation.

*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. Battery back-up times may vary based on many factors, including the battery age, charging state, storing conditions, and operating temperature, as well as by factors such as data activity and length of active telephone calls.



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