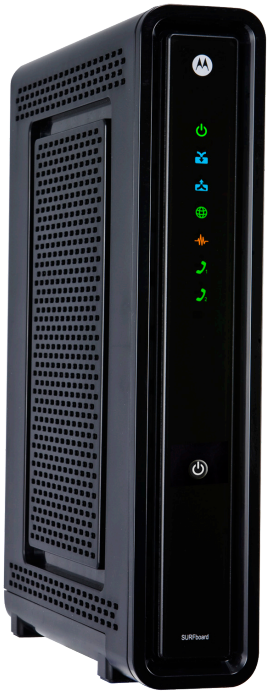

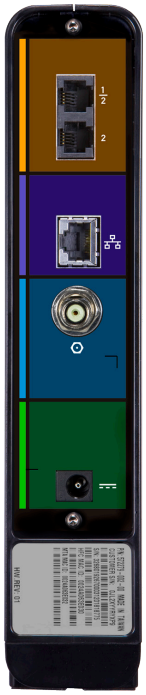

Highlights

Compatible with Windows®, Macintosh®, and UNIX® computers.

DOCSIS 3.0-based featuring:

- Channel bonding of up to eight downstream channels and four upstream channels increasing downstream data rates of well over 300 Mbps in DOCSIS mode and upstream data rate of 120 Mbps.
- Supports IPv4 and IPv6 to expand network addressing capabilities
- Enhanced security: supports AES traffic encryption

Remote or Local configuration, monitoring, and management.

Supports NBBS Management, including remote User Interface.

Remotely configurable and monitorable using SNMP and TFTP.

Front panel Energy Conservation Switch, for the user to disable power when the device is not being used.

SURFboard® SBV6240

DOCSIS® 3.0 Digital Voice Modem

Strengthen your broadband leadership – count on Motorola's SBV6240 to help you deliver innovative, ultra broadband IP voice and data services to your premium customers, all while minimizing service interruption due to power outages via an optional, field-replaceable Lithium-ion battery back-up.

High Value and Increased Data Rates

Motorola's easy-to-use SBV6240 SURFboard Digital Voice Modem with Lithium-ion battery back-up unlocks the potential of offering innovative high-bandwidth data, up to two lines of IP telephony and multimedia services to customers. It is DOCSIS 3.0-based and PacketCable™ 1.5 / 2.0 ready. Utilizing the power of DOCSIS 3.0, the SBV6240 enables channel bonding of up to eight downstream channels and four upstream channels, which allows an operator to offer their customers advanced multimedia services with data rates of well over 300 Mbps in DOCSIS mode.

The SBV6240 supports all DOCSIS 3.0 features, including channel bonding, IPv6 and Advanced Encryption services and uses an optional, field-replaceable Lithium-ion battery to provide Voice-over-IP (VoIP) subscribers with primary line reliability.

With Motorola's SURFboard digital voice modems, high-speed Internet access and IP-based telephony is always at your fingertips – always on and always connected. The SBV6240 is the ideal competitive solution for the high-end residential user, the small home office owner, and the medium to large business enterprise.

ECOMOTO™

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.

Fast, Convenient, Reliable

The SURFboard SBV6240 Digital Voice Modem uses industry-standard signaling protocols to provide high-speed Internet access and up to two lines of VoIP telephone service over cable's broadband connection to the home.

With 1 Gigabit Ethernet data connectivity 10/100/1000Base-T and two RJ-11 connectors, the SBV6240 is an intelligent, flexible, and convenient way to converge voice and data on one network and one device.

EASY TO SETUP AND USE

- An all-in-one solution for secure voice and data services
- Plug-and-play installation
- Front panel LEDs indicate status and simplify troubleshooting
- Multi-language user guides
- Supports standard internet software
- User-friendly online diagnostics

EFFICIENT

- Stylish and space saving enclosure
- Offers innovative high-bandwidth data and multimedia services to customers
- Backwards compatible to DOCSIS 1.x and 2.0
- PacketCable™ 1.5 / 2.0 ready

ADVANCED SERVICES READY

- DOCSIS 3.0-based
- Channel bonding of up to 8 downstream and 4 upstream channels
- 1 GHz capable tuners
- Supports IPv4 and IPv6 to expand network addressing capabilities

TELEPHONY

- Up to two lines (RJ-11) of full-featured telephone service
- Automatic fax modem processing
- Support for CLASS services (caller ID, call waiting, three-way calling, etc.)
- Support for G.711, G.729 and other low-rate vocoder support
- Network Call Signaling (NCS) and Session Initiation Protocol (SIP) support
- Configured to meet multiple telco market standards. ETSI harmonized impedance, 600Ω

VERSATILE AND CONVENIENT

- Support for up to 16 dedicated, and another 16 best effort, Service IDs (SIDs) allows for future enhanced features
- Support for Wide-band Audio
- Compatible with Windows®, Macintosh® and UNIX® computers.
- GigE (RJ-45) data port enables flexible, high-speed connectivity with Auto Negotiate and Auto MDIX

RELIABLE AND SECURE

- Battery Option for Digital Voice service back up in the event of primary power failure
- Enhanced security: supports Advanced Encryption Services (AES) traffic encryption
- Remotely configurable and monitorable using SNMP and TFTP
- Support for GR909 test suite. Allows remotely diagnosing and troubleshooting wiring problems at the customer premises

DATA SHEET
SURFboard SBV6240 DOCSIS 3.0 Digital Voice Modem

Highlights

Ability to provision and manage IP multicast

GigE (RJ-45) data port with Auto Negotiate and Auto MDIX

Dual Color Front Panel LEDs indicate status and simplify troubleshooting

User-friendly online diagnostics

Remotely configurable and monitorable using SNMP and TFTP

Specifications

Cable Interface	75 Ω F-connector
CPE Network Interface	10/100/1000Base-T Ethernet (RJ-45) Data Protocol TCP/IP
Dimensions	5.7 in H x 5.7 in W x 1.5 in D (146 mm x 146 mm x 38 mm)
Power	21W (nominal)
Input Power	
North America	105 to 125 VAC, 60 Hz
Outside North America	100 to 240 VAC, 50 to 60 Hz
Regulatory	UL listed (U.S. and Canada), RoHS compliant, ENERGY STAR V2 , COC V3, Compliant per the "Code of Conduct on Energy Consumption of Broadband Equipment"

ENVIRONMENTAL

Operating Temperature	32 °F to 104 °F (0 °C to 40 °C)
Storage Temperature	–22 °F to 158 °F (–30 °C to 70 °C)
Operating Humidity	5 to 95% R.H. (non-condensing)

BATTERY

Type	Replaceable, Lithium-ion, Single piece construction (Optional)
Options	2-Cell, 4-Cell

DOWNSTREAM

Modulation	64 or 256 QAM
Downstream Channel Capture	Two independent 48 MHz Wideband Tuners
Maximum Theoretical Data Rate*	
DOCSIS	343.072 Mbps (8 channels) / 42.884 (single channel) @ 256 QAM at 5.36 Msym/s
Bandwidth	
DOCSIS	≤ 48 MHz/2
Symbol Rate	
DOCSIS	64 QAM 5.057 Msym/s; 256 QAM 5.361 Msym/s
Operating Level Range	–15 to 15 dBmV
Bonded Channel RF Level Tolerance	10dBmV
Input Impedance	75 Ω (nominal)
Frequency Range	DOCSIS 108 to 1002 MHz (edge to edge), Optional 91 to 1002 MHz (edge to edge)
Frequency Plan	
DOCSIS	Annex B
J-DOCSIS	Annex B, modified for Japan Frequencies
Security	DOCSIS 3.0 Security (BPI+, EAE, AES, and SSD)
Network Management	SNMP v2 & v3
Provisioning	Supports IP addressing using IPv4 and/or IPv6 (dual stack)

UPSTREAM

Modulation		QPSK and 8, 16, 32, 64, 128 QAM
Maximum Channel Rate		
DOCSIS		131.072 Mbps (4 channels) / 32.768 Mbps (single channel): @ 128 QAM at 6.4 MHz
Channel Width		200 kHz, 400 kHz, 800 kHz, 1.6 MHz, 3.2 MHz, 6.4** MHz
Symbol Rates		160, 320, 640, 1280, 2560, 5120** ksym/s
Operating Level Range		Level range per channel (Multiple Transmit Channel mode disabled, or only Multiple Transmit Channel mode enabled with one channel in the TCS)
DOCSIS		
	TDMA	
		Pmin to +57 dBmV (32 QAM, 64 QAM)
		Pmin to +58 dBmV (8 QAM, 16 QAM)
		Pmin to +61 dBmV (QPSK)
	S-CDMA	
		Pmin to +56 dBmV (all modulations), where:
		Pmin = +17 dBmV, 1280 kHz modulation rate
		Pmin = +20 dBmV, 2560 kHz modulation rate
		Pmin = +23 dBmV, 5120 kHz modulation rate
Level range per channel (two channels in the TCS)		
	TDMA	Pmin to +54 dBmV (32 QAM, 64 QAM)
		Pmin to +55 dBmV (8 QAM, 16 QAM)
		Pmin to +58 dBmV (QPSK)
	S-CDMA	Pmin to +53 dBmV (all modulations), where:
		Pmin = +17 dBmV, 1280 kHz modulation rate
		Pmin = +20 dBmV, 2560 kHz modulation rate
		Pmin = +23 dBmV, 5120 kHz modulation rate
Level range per channel (three or four channels in the TCS)		
	TDMA	Pmin to +51 dBmV (32 QAM, 64 QAM)
		Pmin to +52 dBmV (8 QAM, 16 QAM)
		Pmin to +55 dBmV (QPSK)
	S-CDMA	Pmin to +53 dBmV (all modulations), where:
		Pmin = +17 dBmV, 1280 kHz modulation rate
		Pmin = +20 dBmV, 2560 kHz modulation rate
		Pmin = +23 dBmV, 5120 kHz modulation rate
Output Impedance		75 Ω (nominal)
Frequency Range		DOCSIS 5-42 MHz (edge to edge), optional DOCSIS 5 to 65 MHz (edge to edge)

Specifications

*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 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. DOCSIS 3.0 modem capabilities are dependant on the services available through the CMTS. Please verify with your CMTS vendor their specific DOCSIS 3.0 implementation roadmap.

SYSTEM COMPATIBILITY	
Compatibility	PC: 90496, Pentium, or later; Windows Vista®, Windows 7, 2000,or XP or Linux® with Ethernet connection (older versions of Windows, although not specifically supported, will work with this cable modem) Macintosh: Power PC or later; OS 9 or higher, Ethernet connection UNIX: Ethernet connection Home Networking: Ethernet router or Wi-Fi access point

TELEPHONY	
Line Type	2-wire
Hook State Signaling Loop start	
Maximum Loop Length	1000 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 ± dB (one-way)	
60/50 Hz Loss>20dB (referenced to off-hook loss at 1004 Hz)	
Ringing Wave Form	Sinusoidal Balanced Tracking mode 55 Vrms/48Vdc Trapezoidal Balanced Tracking mode 55 Vrms/48Vdc Sinusoidal Unbalanced Tracking 46 Vrms/70Vdc Sinusoidal Balanced Fixed mode 55Vrms/48Vdc
Ringing Crest Factor 1.2<CF<1.6	
Ring Trip (maximum) 200 mS with 300 W termination	

Pb-free

RoHS COMPLIANT

ENERGY STAR

Powered by an ENERGY STAR® qualified adapter for a better environment

MOTOROLA

www.motorola.com

365-095-14255 x.1 04/10