



SURFBOARD[®] SB6141

CABLE MODEM

Count on Motorola's SURFboard DOCSIS[®] 3.0 Cable Modem to deliver innovative, ultra-broadband data service.

High Value and Increased Data Rates

Motorola's easy-to-use SB6141 SURFboard DOCSIS 3.0 Cable Modem unlocks the power of high-speed data. Utilizing the power of DOCSIS 3.0, the SB6141 enables channel bonding of up to eight downstream channels and four upstream channels, which enables advanced multimedia services with data rates of over 300 Mbps for received data and over 100 Mbps when sending data.

With Motorola's cable modems, high-speed Internet access is always at your fingertips – always on and always connected. The SB6141 is the ideal solution for the high-end residential user, the small home office owner, and the medium to large business enterprise.

Highlights

- Compatible with Windows[®], Macintosh[®], and UNIX[®] computers
- DOCSIS 3.0 certified
- Backwards compatible to DOCSIS 2.0
- Capable of downloading at speeds up to 8 times faster than DOCSIS 2.0
- DOCSIS 3.0 compatible, featuring:
 - Channel bonding of up to eight downstream channels and four upstream channels increasing data rates of over 300 Mbps for received data and over 100 Mbps when sending data
 - Supports IPv4 and IPv6 to expand network addressing capabilities
 - Enhanced security: supports AES traffic encryption
- IP multicast support
- GigE (RJ-45) data port with Auto Negotiate and Auto MDIX
- User-friendly online diagnostics
- Includes an internal filter to eliminate potential interference from MoCA signals' intermodulation beats
- Online assistance for easy network set-up
- Motorola support options via phone, chat, or e-mail



General Specifications

Cable Interface	75 Ω F-connector
CPE Network Interface	10/100/1000Base-T Ethernet (RJ-45)
Data Protocol	TCP/IP
Dimensions	5.24 in H x 5.24 in W x 1.65 in D (133 mm x 133 mm x 42 mm)
Power	9W (nominal)
Input Power	
North America	105 to 125 VAC, 60 Hz
Outside North America	100 to 240 VAC, 50 to 60 Hz

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)

Downstream

Modulation	64 or 256 QAM
Capture Bandwidth	Dual 96 MHz Capture windows
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
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	108 to 1002 MHz (edge to edge)
Frequency Plan	
DOCSIS	Annex B
Security	DOCSIS 3.0 Security (BPI+, EAE, SSD)
Network Management	SNMP v2 & v3
Provisioning	Supports IP addressing using IPv4 and/or IPv6 (dual stack)
MoCA Interference Rejection	1 GHz Low Pass filter at tuners input



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	5-42 MHz (edge to edge)
Compatibility	PC: Windows Vista™, 2000, XP, 7, Windows 8 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 wireless access point

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, the capacity of, and the services offered by, your cable service provider or broadband service provider, network traffic, computer equipment, type of server, 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).

Certain features may not be activated by the service provider, and/or their network settings may limit the feature's functionality. Additionally, certain features may require a subscription.

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

