



MODEL  
**SBG900**



Using the latest DOCSIS 2.0 Advanced Time Division Multiple Access (A-TDMA) and Synchronous Code Division Multiple Access (S-CDMA) technology, Motorola's Wireless Cable Modem Gateway, the SBG900, combines an industry-leading SURFboard® cable modem, an IEEE 802.11g wireless access point, and an advanced firewall into one, compact product. It's the perfect networking solution for the home, home office, or small business — users can create a custom network to share a single broadband connection, files, networked printers and peripherals, with or without wires. Cost-effective and efficient, the SBG900 eliminates the need for three separate products and allows users to maximize the potential of their existing resources. The SBG900 also offers enhanced network security for both wired and wireless users.

### Features

- Integrated, DOCSIS 2.0-based, SURFboard cable modem
- Router with single 10/100Base-T fast Ethernet port
  - Auto-MDIX cross over cable detection
- IEEE 802.11g wireless access point
- Advanced firewall
  - Stateful Packet Inspection (SPI)
  - Intrusion Detection
  - Denial of Service (DoS) Attack Prevention
- Network up to 253 PCs<sup>2</sup> (Full Class “C” Network)
- VPN pass-through (IPSec, PPTP, L2TP)
- Optional Accessories
  - Motorola WN825G wireless PC Card for laptops
  - Motorola WE800G wireless Ethernet bridge
  - Motorola WPCI810G wireless PCI adapter for desktops
- Companion Products
  - Motorola BR700 4-port Ethernet router

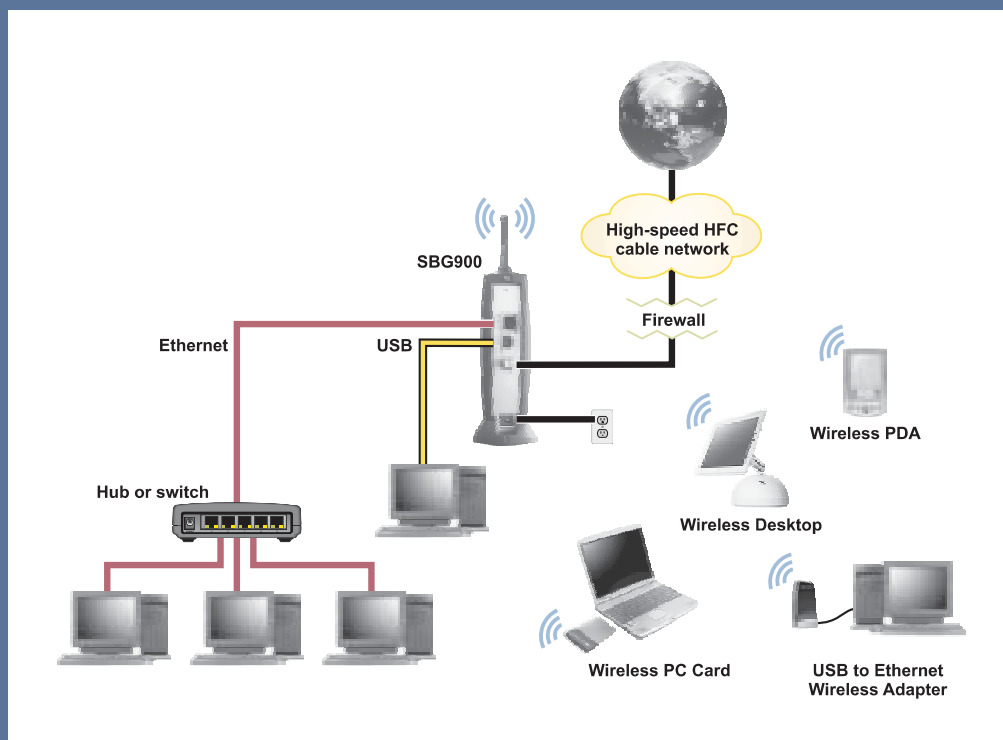
The integrated Motorola SURFboard cable modem incorporates the latest DOCSIS 2.0 A-TDMA and S-CDMA technologies to provide up to three times greater upstream capacity than DOCSIS 1.0/1.1 systems. Packed with power, the cable modem is interoperable and backward compatible with DOCSIS 1.0 and 1.1 for a fast and timely transition - operators can deploy today without a service interruption. The Motorola SURFboard is flexible and allows operators to maximize their current infrastructure investments and also offer additional cost-effective services, all at the same time.

The Motorola SBG900 merges the advantages of the SURFboard cable modem with the mobility of a wireless LAN (WLAN). It includes an integrated IEEE 802.11g access point that allows users (with optional accessories) to roam around the home or small business and remain connected to the network. Now subscribers can place computers and peripherals where

they're convenient, not just where there's an available connection.

The SBG900 offers an array of competitive advantages by providing superior transmission power with high-gain antennas. The SBG900's adjustable output power can be configured, allowing just the right amount of signal to fill the required area without bleed-over to other homes or businesses.

Finally, Motorola's SBG900 is secure. It includes an advanced firewall that helps protect the network from hackers and other outside interference while allowing desired data to pass through with ease. The firewall embedded in the gateway provides commercial-class protection through built-in Denial of Service attack prevention, Stateful Packet Inspection, and Intrusion Detection. The firewall also allows VPN tunnel protocols to pass through, hiding the network from the outside world.



*AN SBG900 provides high-speed Internet access, networking, and security for a home or small office LAN.*



*The Wireless Cable Modem Gateway delivers:*

- *the speed of a DOCSIS 2.0 cable modem*
- *the mobility of a wireless LAN and the simplicity of "No New Wires" technology*
- *the security of a firewall*

*It offers the efficiency of shared resources and provides the network that consumers want.*

# 3 functions

## SYSTEM ACCESSORIES



**Motorola WE800G  
802.11g Wireless Ethernet Bridge**

Connects laptops, desktop computers, and game consoles to the network.



**Motorola BR700  
802.11g Ethernet Broadband Router**

- 4-port Full Duplex 10/100 Base-T Ethernet Switch and Router
- Internet Sharing
- Printer Sharing



**Motorola WPC1810G  
802.11g Wireless PCI Adapter**

Connects desktop PCs to the wireless network.



**Motorola WN825G  
802.11g Wireless Notebook Adapter**

Connects laptops to the wireless network so users can roam in, or around, the home and small office and remain connected.

## Wireless

Standards Compliance	IEEE 802.11g 802.11b DSSS 802.11g OFDM
RF Frequency Range	
North America	11 channels with center frequencies from 2.412 to 2.462 GHz.
Japan	Up to 14 channels with center frequencies from 2.412 to 2.4835 GHz.
Data Rate and Modulation Types	1 Mbit/s DBPSK 2 Mbit/s DQPSK 5.5 Mbit/s CCK 6 Mbit/s OFDM 9 Mbit/s OFDM 11 Mbit/s CCK 12 Mbit/s OFDM 18 Mbit/s OFDM 24 Mbit/s OFDM 48 Mbit/s OFDM 54 Mbit/s OFDM
Number of channels	Europe = 13 Spain = 2 France = 4 US = 11 Japan = 14
Transmit Power	+17 dBm (EIRP)
Receive Sensitivity	-65 dBm at 54 Mbps

## Router

Ethernet Standards Compliance	IEEE 802.3, IEEE 802.3u
Protocols Supported	RIPv2
Number of Uplink Ports	1

## Electrical

Input Voltage Range	100 – 240 VAC, 50 – 60 Hz
Power Consumption	+9 Watts

## Environmental

Operating Temp	0° C – 40° C, -150 to 10000 ft
Storage Temp	-30° C to 80° C
Humidity	5 to 95% (non-condensing)
Mechanical Antenna	1 external, non-removeable antenna 1 internal antenna
LED Indicators	Power, Receive, Send, Online, PC Activity, Wireless
Interfaces	1 DC Power, 1 F-Type, 1 RJ-45, 1 USB

## General

Cable Interface	F-Connector, female, 75 $\Omega$
CPE Network Interface	USB, Ethernet 10/100Base-T (auto sensing)
Data Protocol	TCP/IP
Dimensions	6.69" H x 1.77" W x 5.9" L (without antenna) 8.66" H x 1.77" W x 5.9" L (with antenna)
Weight	15 ounces (Unit Only)

## Downstream

Modulation	64 or 256 QAM
Maximum Data Rate <sup>1</sup>	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 $\Omega$ (nominal)
Frequency Range	88 to 860 MHz

## Upstream

Modulation	8 <sup>4</sup> , 16, 32 <sup>4</sup> , 64 <sup>4</sup> , 128 <sup>4</sup> QAM or QPSK
Maximum Data Rate <sup>3</sup>	30 Mbps
Bandwidth	200 kHz, 400 kHz, 800 kHz, 1.6 MHz, 3.2 MHz, 6.4 <sup>4</sup> MHz
Symbol Rates	160, 320, 640, 1280 and 2560 and 5120 <sup>4</sup> 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 $\Omega$ (nominal)
Frequency Range	5 to 42 MHz (edge to edge)

<sup>1</sup>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).

<sup>2</sup>Check with your local cable operator to determine the number of connections allowed and associated service charges.

<sup>3</sup>Actual speeds will vary. Maximum speeds of 30 Mbps are only attainable with A-TDMA or S-CDMA technology.

<sup>4</sup>With A-TDMA or S-CDMA enabled CMTS.