

MOTOROLA SBG6580

SERIES DOCSIS® 3.0 WIRELESS GATEWAY

FEATURES

- Plug-and-play installation
- Wi-Fi pairing button for easy Wi-Fi Protected Setup™ (WPS) Wi-Fi connection
- Supports standard internet browser software
- Front panel LEDs indicate status and simplify troubleshooting
- User-friendly online diagnostics and configuration
- 1 GHz-capable tuners
- Supports IPv4 and IPv6 to expand network addressing capabilities
- Versatile and Convenient
- Backwards compatible to 802.11a/b/g
- Backwards compatible to DOCSIS/EuroDOCSIS 1.x and 2.0
- Integrated 802.11n Wi-Fi access point, 2 x 2 MIMO antenna array
- Switched onboard radios: 2.4 or 5 GHz
- Four one-gigabit Ethernet ports enable flexible, highspeed connectivity with Auto Negotiate and Auto MDIX
- Compatible with Windows®, Macintosh®, and Unix® computers
- Support for multicast IP services



PRODUCT SPECIFICATIONS

GENERAL

Cable Interface

F-Connector, female 75 Ω

Network Interface

Four One-Gigabit (10/100/1000) Ethernet ports

Wi-Fi Interface

802.11n Wi-Fi (backwards compatible with 802.11a/b/g)

Dimensions

6.6 in x 1.9 in x 6.8 in (167 cm x 50 cm x 171.7 cm)

Regulatory

RoHS compliant, FCC, UL listed (U.S. and Canada), Industry Canada, CE, Underwriters Laboratory Environmental Certification, CoC compliant, MEPS Compliant

DOCSIS/EuroDOCSIS 3.0 certified (interoperable with DOCSIS/EuroDOCSIS 1.0, 1.1, and 2.0)



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PRODUCT SPECIFICATIONS

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 32 MHz Capture windows

Maximum Theoretical Data Rate

DOCSIS

343.072 Mbps (8 channels) / 42.884 (single channel)
@ 256 QAM at 5.36 Msym/s

EuroDOCSIS

EuroDOCSIS 444.928 Mbps (8 channels) / 55.616
(single channel) @ 256 QAM at 6.952 Msym/s

Bandwidth

DOCSIS

≤ 48 MHz

EuroDOCSIS

≤ 64 MHz

Symbol Rate

DOCSIS

64 QAM 5.057 Msym/s; 256 QAM 5.361 Msym/s

EuroDOCSIS

64 QAM 6.952 Msym/s; 256 QAM 6.952 Msym/s

Operating Level Range

–15 to 15 dBmV

Bonded Channel RF

Level Tolerance

10dBmV

Input Impedance

75 Ω (nominal)

Frequency Range

DOCSIS and EuroDOCSIS 108 to 1002 MHz
(edge to edge)



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PRODUCT SPECIFICATIONS

DOWNSTREAM

Frequency Plan

EuroDOCSIS

Annex A

DOCSIS

Annex B

J-DOCSIS

Annex D

Security

DOCSIS 3.0 Security (BPI+, EAE, 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, optional 256 QAM
DOCSIS 3.0 Security (BPI+, EAE, SSD)

Maximum Channel Rate

DOCSIS

131.072 Mbps (4 channels) / 32.768 Mbps (single channel): @ 128 QAM at 6.4 MHz

EuroDOCSIS

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/EuroDOCSIS

TDMA

Pmin to +57 dBmV (32 QAM, 64 QAM)

Pmin to +58 dBmV (8 QAM, 16 QAM)

Pmin to +61 dBmV (QPSK)

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PRODUCT SPECIFICATIONS

UPSTREAM CONT.

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 (two 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), EuroDOCSIS and optional DOCSIS 5 to 65 MHz (edge to edge)



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PRODUCT SPECIFICATIONS

UPSTREAM CONT.

Compatibility

PC: 90496, Pentium, or later; Windows Vista™, 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 wireless access point

NETWORK

Gateway

DHCP, NAT, VPN tunneling; static routing and dynamic IP routing (RIPv1, RIPv2); SPI firewall with DoS protection and intrusion prevention; port, packet, and URL keyword filtering; full suite of ALGs; UPnP IGD 1.0; L2TPv3, L2VPN, eRouter

Wi-Fi LAN

802.11a/b/g/n Wi-Fi, WDS bridging, 802.11e WMM admission control, QoS

Power Management

802.11e WMM power save/U-APSD (Unscheduled-Automatic Power Save Delivery)

802.11i Security

Default security enabled: WPA-PSK WEP-64/128, WPA, WPA2, TKIP, AES, 802.1x, 802.11i (pre-authentication)

Wi-Fi Pairing

User-friendly Wi-Fi protected setup (WPS) for connection with WPS compatible device

Regulatory Domains

To include US, Canada, ETSI, World

Receiver Sensitivity

> -90 dBm at 11 Mbps;
> -74 dBm at 54 Mbps