

# SBG6700-AC

## DOCSIS 3.0 Wireless Gateway



### Product Overview

The ARRIS SBG6700-AC Wireless Gateway helps service providers deliver innovative, ultra-broadband services to their subscribers' homes. Easy to setup and use, the SBG6700-AC's advanced feature set includes DOCSIS 3.0 channel bonding in a cost effective package, with the ARRIS engineered quality and performance delivering the speed and reliability demanded by today's smart home applications. Equipped with such features as a Wi-Fi pairing button and user-friendly, online configuration and diagnostics, the SBG6700-AC is as easy to setup as it is to use. It's an effective way for service providers to increase customer satisfaction, while launching multi-service packages that can help migrate subscribers to higher-revenue offerings.

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## FEATURES

### Wi-Fi Services Ready

- Dual Concurrent Radios, 802.11n on the 2.4 GHz band with 2x2 antenna array, and 802.11ac on the 5 GHz band with 3x3 antenna array
- Usable throughput of over 1600 Mbps
- MIMO Antennas provide enhanced performance

### Easy to Setup and Use

- 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, multicolor, LEDs indicate status and simplify troubleshooting
- Enhanced User Interface

### Advanced Services Ready

- DOCSIS 3.0
- Channel bonding of up to eight downstream and four upstream channels; capable of WAN / LAN data rates of over 340 Mbps in DOCSIS and 450 Mbps in EuroDOCSIS in the received (downstream) data stream and over 100 Mbps in the send (upstream) data stream
- 1 GHz-capable tuner
- Best-in-class RF Immunity, built into ARRIS Touchstone products since 2006, protects against potential service impacting interference
- Use of full downstream bandwidth to capture up to eight DOCSIS channels for bonding
- Spectrum Analyzer capability for local and remote troubleshooting, as well as proactive system reviews
- Supports IPv4 and IPv6 to expand network addressing capabilities
- Versatile and Convenient
- Integrated 2.4 802.11n and 5 GHz 802.11ac Wi-Fi access point, concurrent radios
- Backwards compatible to 802.11a/b/g
- 2x2 and 3x3 MIMO antenna arrays offer cost-effective performance benefits for wireless LAN (WLAN) access points
- Two-gigabit Ethernet ports enable flexible, high-speed connectivity with Auto Negotiate and Auto MDIX
- Support for multicast IP services
- 8 SSIDs per radio
- Support for multiple public and/or private SSIDs and Operator flexibility in Wi-Fi networks and services
- MoCA reject filter ensures care-free operation in environments also supporting a MoCA network

### Reliable and Secure

- WEP/ WPA/WPA2 Wi-Fi security
- Advanced firewall with Stateful Packet Inspection, DoS protection and intrusion prevention
- Remote configuration and monitoring from the headend using SNMP, TFTP, and TR069
- Secure Technician Access using GUI with log-in privileges, CLI with TACACS+
- Enhanced security: supports AES traffic encryption

### Provider Benefits

- Increase customer satisfaction with additional wireless throughput, reach, range, and robustness
- Reduce customer touch points with improved Wi-Fi capability
- Increase services flexibility by offering multi-service packages and migrating customers to higher-revenue/margin Wi-Fi offerings
- The ability to leverage the ARRIS Consumer Support information and experience

## SPECIFICATIONS

### General Specifications

Cable Interface	F-Connector, female 75 Ω
Network Interface	Two one-gigabit (10/100/1000) Ethernet ports

2.4 and 5 GHz Wi-Fi Interfaces	802.11n and 802.11ac Wi-Fi (also certified for 802.11a/b/g)
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Dimensions (H x W x L)	5.0 x 2.1 x 5.0 in (127 x 51 x 127 mm)
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Regulatory	RoHS compliant, FCC, UL listed (U.S. and Canada), Industry Canada, VCCI, JATE
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DOCSIS 3.0	BCM3383G
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### Input Power

North America	105 to 125 VAC, 60 Hz
Outside North America	100 to 240 VAC, 50 to 60 Hz
Power Management	802.11e WMM power save/U-APSD (Unscheduled-Automatic Power Save Delivery), 802.3az EEE

### 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)

### DOCSIS Downstream

Modulation	64 or 256 QAM
Capture Bandwidth	Full bandwidth capture window 88 MHz – 1002 MHz
Maximum PHY Rate	DOCSIS: 343.072 Mbps (8 channels) / 42.884 (single channel) @ 256 QAM at 5.36 Msym/s EuroDOCSIS: 444.928 Mbps (8 channels) / 55.616 (single channel) @ 256 QAM at 6.952 Msym/s
Symbol Rate	64 QAM 5.057 Msym/s; 256 QAM 5.361 Msym/s
Operating Level Range	-15 to 15 dBmV (DOCSIS), -17 to +13 dBmV (EuroDOCSIS 64 QAM), -13 to +17 dBmV (EuroDOCSIS 256 QAM)
Frequency Range	108 – 1002 MHz (edge to edge) Optional 88 MHz – 1002 MHz (edge to edge)
Frequency Plans	DOCSIS Annex B EuroDOCSIS Annex A
Security	DOCSIS 3.0 Security (BPI+, EAE, SSD)
Network Management	SNMP v2 & v3, TR-69, SSH
Provisioning	IPv4 IPv6 (dual stack) DS Lite

### DOCSIS Upstream

Modulation	QPSK and 8, 16, 32, 64, 128, 256 QAM
Maximum PHY Rate @256 QAM at 6.4 MHz	122.8 Mbps: 4 channels 30.72 Mbps: single channel 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)

**SPECIFICATIONS (continued)**

**DOCSIS Upstream (continued)**

TDMA Single Channel	Pmin to +57 dBmV (32 QAM, 64 QAM) Pmin to +58 dBmV (8 QAM, 16 QAM) Pmin to +61 dBmV (QPSK)
S-CDMA Single Channel	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 2 Channels	Pmin to +54 dBmV (32 QAM, 64 QAM) Pmin to +55 dBmV (8 QAM, 16 QAM) Pmin to +58 dBmV (QPSK)
S-CDMA 2 Channels	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 3-4 Channels	Pmin to +51 dBmV (32 QAM, 64 QAM) Pmin to +52 dBmV (8 QAM, 16 QAM) Pmin to +55 dBmV (QPSK)
S-CDMA 3-4 Channels	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
Frequency Range	5-42 MHz (edge to edge), optional 5 to 65 MHz (edge to edge) optional 5 to 85 MHz (edge to edge)

**SPECIFICATIONS (continued)**

**Compatibility**

PC	Windows XP, Windows 7, Windows 8, (older versions of Windows, although not specifically supported, will work with this cable modem), UNIX, Linux®
Macintosh	Power PC or later; OS 10 or higher
Home Networking	Ethernet router and wireless access point

**Network**

Gateway	DHCP, NAT, DNS, VPN tunneling, GRE 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, DLNA
WLAN	802.11a/b/g/n /ac Wi-Fi, WDS bridging, 802.11e WMM admission control, QoS, QoS per Interface, Beamforming
Radios	5 GHz, 3x3 MIMO antenna array 2.4 GHz, 2x2 MIMO antenna array Factory option for 802.11ac for 5 GHz radio
Security	Default = security enabled WPA2, WPA-PSK, WEP 64/128, WPA, TKIP, AES, 802.1x, 802.11i (pre-authentication)
Wi-Fi Pairing	WPS 2.0
Regulatory Domains	US, Canada, ETSI, World

**Management**

FCB Spectrum Analyzer capability	
SNMP	SNMPv3
TR069	TR069, TR098, TR181
CLI	TACACS+, Radius, Authentication
GUI	Admin and root users access HTML based user interface supports Google Translate for multiple language translations

**Note:** Specifications are subject to change without notice.



## ADDENDUM A - Next Generation Gateways Compared to Current Product Offering

### Hardware Capability Compare to SBG6580

Feature	SBG6580	SBG700-AC
Chipset	BCM3380G	BCM3383G
WiFi Chipset	BCM43224/8	BCM43227, BCM43228
Tuner(s)	2 x 32 MHz	FCB 108-1002 MHz
Flash memory	SPI 16 MB	SPI 16 MB
RAM	DDR2 64 MB	DDR3 128 External
External	External	Internal
Maximum power required	24 W	18 W
MoCA	No	No
Radios	Dual switched	Dual concurrent
SSIDs	8	16 (8 per radio)
2.4 GHz		
Output	+17 dBm	+17 dbm
Antenna array	2 x 2 MIMO	2 x 2 MIMO
Total output	+21 dBm	+21 dBM
5.0 GHz		
Output	+16 dBm	+16 dBm
Antenna array	2 x 2 MIMO	3 x 3 MIMO
Total output	+20 dBm	+20 dBm
Beamforming	No	Yes
4-port GigE switch	Yes	No, two GigE ports integrated into product
Multi-color LED	Yes	Yes
SCTE40 compliance	Yes	Yes
Enhanced RF immunity	Yes	Yes

### Superior Performance Capability Compare to SBG6580

Operation	SBG6580	SBG700-AC
WiFi throughput	300 Mbps	900 Mbps
Spatial streams	2	5

Wi-Fi throughput, reach, and range are factors that are greatly impacted by the operating environment, and the connected client capabilities. Please contact ARRIS for additional test information.

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High-Speed Cable Modems

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