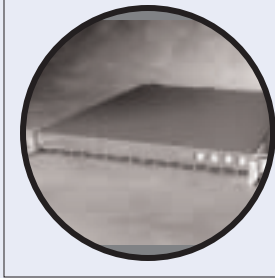


BNG 6000



Broadcast Network Gateway™

BNG 6000

Product Description

Harmonic broadcast products feature a compact design, full MPEG-2 compliance and the endorsement of major service providers worldwide. The Broadcast Network Gateway™ (BNG) family of products offers digital turn-around, remote QAM-RF modulation, IP adaptation, and full DVB SimulCrypt scrambling capability in a compact one rack unit (RU) chassis. The small footprint and highly integrated functionality provide operators a cost-effective solution with reduced space requirements, fewer components and a more elegant network management architecture.

The BNG 6000 family leverages years of IP technology development and thousands of systems deployed in live networks. The BNG allows operators to transport services across an IP network and at the remote headend to transport services as standard MPEG-2 over the HFC network.

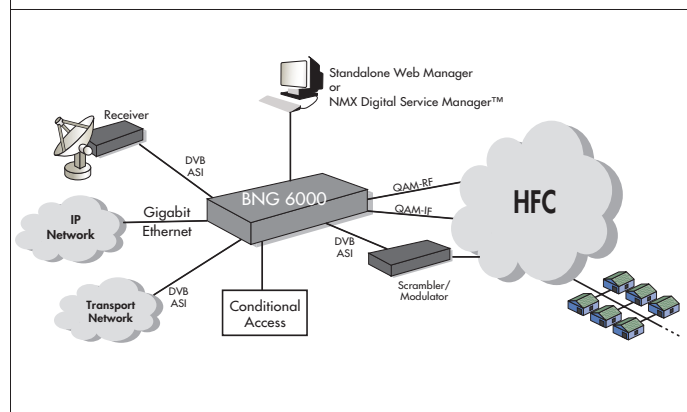
The BNG is a robust DVB SimulCrypt scrambler, which has been integrated with all major CAS vendors, and has been successfully integrated in Cable, DBS and MMDS systems worldwide. The BNG Scrambler is a software add-on to the BNG system, and provides full scrambling for up to 5 CAS vendors simultaneously, on each of the BNG's outputs.

The BNG plays a central role in the Passage™ initiative, an innovative technology that allows best of breed conditional access systems (CAS) and set top boxes to co-exist with legacy proprietary cable systems. The BNG Passage Processor gives cable operators, who have until now been locked into proprietary systems, the freedom to add standard DVB systems to the network, in coexistence with the proprietary set-top boxes and systems in place.

The BNG can be configured and monitored using a web browser or as part of a complete solution managed by Harmonic's NMX Digital Service Manager™.

Based on the industry's most widely implemented standards, Harmonic broadcast systems are easy to expand and upgrade. Delivering over 30,000 QAM channels

Typical Configuration



worldwide, Harmonic provides a solid foundation of outstanding performance and proven service.

Features

- Compact 1 RU unit chassis
- Advanced MPEG over IP (GbE) capability
- Highly integrated: QAM modulation, RF Upconverter, IP Adaptation and Scrambling
- DVB SimulCrypt compliant

Product Series

- BNG 61xx: provides QAM modulation and/or RF upconversion
- BNG 62xx: provides ASI output interfaces
- BNG 63xx: provides Gigabit Ethernet output interfaces

Inputs

ASI

170 Mbps

BNC connector, 75 Ω

188 byte TS packets

MPEG-2 SPTS and MPTS

GbE

Standard Gigabit Ethernet input interface (IEEE802.3z)

Redundant 1 + 1 port configuration

Full line rate support (400 Mbps MPEG packets)

SFP connector¹

MPEG-2 SPTS (188 byte TS packets)

Up to 128 MPEG-2 streams

IP multicast

IP/UDP

IGMP

Outputs

ASI

160 Mbps

BNC connector, 75 Ω

188 byte TS packets

MPEG-2 SPTS and MPTS

GbE

Standard Gigabit Ethernet input interface (IEEE802.3z)

Redundant 1 + 1 port configuration

Full line rate support (400 Mbps MPEG packets)

SFP connector¹

MPEG-2 SPTS (188 byte TS packets)

Up to 128 MPEG-2 streams

IP multicast

IP/UDP and RTP

IGMP

QAM-IF

F-type, 75 Ω connector

6 MHz (at 44 MHz center)

ITUT-Annex B

QAM 64, 256

Power level 30 dBmV

QAM-RF

F-type, 75 Ω connector

Frequency range 50-860 MHz

6 MHz or 8 MHz bandwidth options

ITUT-Annex B or DVB support

QAM 64, 128, 256

Power level 50-61 dBmV

Return loss 12 dB (on channel)

Control Interfaces

Ethernet	Management and CAS 100BaseTX (connector RJ-45)
Serial Port	RS232
Protocols	HTTP DVB SimulCrypt Telnet
Management	Harmonic's NMX Digital Service Manager Web based management

Processing

Pass Through (PAS)	TS mapping from input to output DVB tables pass-through PCR restamping
Re-Multiplexing (RMX)	PID remapping PCR restamping PSI/SI extraction and insertion Multicasting Routing any input to any output
Scrambling (SCR)	CAS subsystems integration DVB Simulcrypt PSI/SI Processing

RMX Operation mode includes PAS capabilities and SCR Operations mode includes RMX capabilities.

Mechanical

Input Voltage	100-240 VAC (Line frequency: 50-60 Hz)
<u>Typical Power Consumption</u>	
BNG 6102	100 W
BNG 6104	120 W
BNG 6202	80 W
BNG 6301	80 W
<u>Dimensions</u>	
BNG 6102 & BNG 6104	1.75" H x 18.2" W x 23" D 4.45 cm H x 46.2 cm W x 58 cm D
BNG 6202 & BNG 6301	1.75" H x 18.2" W x 15.7" D 4.45 cm H x 46.2 cm W x 40 cm D
Mounting	19", 1 rack unit high
Front Panel LED	Power, alarm and I/O status
<u>Weight</u>	
BNG 6102 & BNG 6104	15 lbs / 6.8 kg
BNG 6202 & BNG 6301	8.8 lbs / 4.0 kg

Environmental²

Operating Temperature Range:	32° to 122°F / 0° to 50°C
Storage Temperature Range:	-40° to +158°F / -40° to 70°C
Relative Humidity:	Maximum 90% non-condensing
Safety and Emission ³	

Ordering Options³

<u>Product Ordering Information</u>	
BNG 6102 Interfaces	4 ASI to 2 QAM-RF and 2 QAM IFIF
BNG 6104 Interfaces	1 x GbE and 2 x ASI ⁶ to 4 x QAM-RF 4 x ASI to 4 x QAM-RF
BNG 6202 Interfaces	4 x ASI to 2 x ASI
BNG 6301 Interfaces	2 x ASI to 1 x GbE

Notes:

- Choice of 850nm, and 1310nm, ordered separately.
- Emission
FCC Part 15 subpart B, Class A
EN 55022/CISPR 22 Class A
EN 61000-3-2:1995 + A1:1997 + A2:1998
EN 61000-3-3:1995
Immunity: EN50082-1:1997
Safety
EMC compliant to EU directive 89/336/EEC and 47CFR part 15, subpart B
Safety compliant to low voltage directive 72/23/EEC and 50083-1 standard
- Contact Harmonic for specific product configurations and availability.
- Excluding BNG 6301 and BNG 6102 with QAM-IF interface.

All product and application features and specifications are subject to change at Harmonic's sole discretion at any time and without notice.



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