

## A cost-effective and highly reliable IP telephony gateway that combines high-density media gateway, SS7 signaling, and media server elements in a single reliable and scalable chassis

The BHG 2500 leverages extensive research and development in the BHG family of IP telephony and brings to market a new level of capacity and availability based on the latest technology for carrier-scale and reliable IP media processing. It includes VoIP gateway blades (SIP and H.323), media gateway blades (for converting between PSTN and converged packet networks), and SS7 blades for interconnecting with the legacy signaling network.

### AN INVESTMENT WITH A SUPERIOR RETURN

The Clarent BHG 2500 is a scalable, affordable, and highly reliable universal gateway capable of delivering media gateway, SS7 signaling, and media server capabilities in a space saving chassis. When combined with the Clarent Class 4 Call Manager (C4CM), Clarent Class 5 Call Manager (C5CM), and Clarent Command Center, the BHG 2500 provides a cost-effective platform for building and expanding a robust IP telephony network that ensures a superior ROI.

### ROLE IN THE PSTN ACCESS SOFTSWITCH

The BHG 2500 serves as the scalable media and signaling gateway component of the PSTN Access Softswitch solution. By providing media gateway and signaling functionality via blades, and by placing other functions such as call control, routing, and rating in separate network elements, the BHG 2500 offers greater scalability and availability for the network, which decreases the total cost of ownership.

### ROLE IN THE EDGE ACCESS SOFTSWITCH

The BHG 2500 serves as a key component in the Edge Access Softswitch, as SIP and H.323 VoIP Gateway blades provide access to business phone and enhanced supplementary services for use in consumer and enterprise applications.

### EXTRAORDINARY FLEXIBILITY

The BHG 2500 supports several types of blades, adding versatility to your deployment. Blades can be used in any combination to create a chassis tailored exactly to the functionality and capacity your network requires.

### EXCELLENT VOICE QUALITY

BHG 2500 media gateway and media server blades provide crystal clear, toll-quality voice transmission through industry standard codecs, G.168 echo cancellation, and silence suppression with both comfort noise generation and voice activity detection.

### RELIABILITY

The BHG 2500 includes hot-swappable blades and redundant hot-swappable power supplies. Each of the two power supplies on the chassis is capable of powering the entire chassis, so the BHG 2500 can continue to provide full service in the unlikely event of a power supply failure. The power supplies and blades can be replaced in an operational unit without interrupting network services provided by other components installed on the chassis.

### EASY CONFIGURATION AND MANAGEMENT

The BHG 2500 can be deployed, configured, and managed remotely. At a component level, the installed blades offer SNMP-based management using various industry standard SNMP MIBs (MIB-2, RTP, trunk), web-based configuration, management, and monitoring options.



### BHG 2500-AC, BHG 2500H-AC, BHG-2500-DC AND BHG 2500H-DC

- » Heavy-duty steel
- » Rack or shelf mountable
- » 4 cPCI slots
- » Dimensions: Height - 2U; Width - 19 inches/48.3 cm
- » Weight: bare chassis 11 lbs/5 kg, loaded chassis 14 lbs/6.4 kg

#### Capacity

- » BHG 2500
  - With a maximum capacity of 4 blades any combination of the following: up to 2 TP-1610 16 span blades, any number of other TP-1610 4 and 8 span blades, and any number of SS7 5601 SS7 signaling blades
- » BHG 2500H
  - Up to 2 TP-6310 Telephony/Gateway blades, or
  - One TP-6310 Telephony/Gateway blade and one SG5601 SS7 Signaling blade

#### Temperature

- » Operating: 0° to 35° C (32° to 95° F)
- » Non-operating: 10° to 70° C (14° to 158° F)

#### Humidity

- » Operating humidity 10 to 90% non-condensing

#### Altitude

- » 300 to +4,000 meters



### Regulatory - Compliance and Agency

**Approval** This Equipment complies with or has obtained Regulatory Agency approval at least against the following standards:

#### BHG 2500-AC

- » EMC
  - Emission (Class A)
    - FCC CFR 47 Part 15
  - EN 55022:1998 + Amendments 1 and 2
  - Immunity: EN 55024:1998 + Amendments 1 and 2
- » Safety
  - IEC 60950-1:2000
  - EN 60950-1:2001
  - UL 60950-1
  - CSA C22.2 - N° 60950-1
- » Telecom - Digital
  - FCC Part 68, TIA/EIA/IS-968
  - IC CS-03 Part 2 and Part 6
  - TBR 004
  - TBR 012
  - TBR 013
  - BHG 2500H-AC and BHG 2500H-DC
- » EMC
  - Emission (Class A)
    - FCC CFR 47 Part 15
    - EN 55022:1998 + Amendments 1 and 2
  - Immunity: EN 55024:1998 + Amendments 1 and 2
- » Safety
  - IEC 60950-1:2000
  - EN 60950-1:2001
  - UL 60950-1
  - CSA C22.2 - N° 60950-1
- » Telecom - Digital
  - ANSI T1.404 G.707, G.825, G.957

#### TP-1610 AND TP-6310 GATEWAY BLADES (SIP AND H.323)

##### Features

- » Transports SIP and H.323 media and signaling traffic over IP networks
- » Uses packet communications and voice compression to use bandwidth effectively
- » Performs DTMF detection, generation and relay
- » Supplies echo cancellation and silence suppression to enhance call quality
- » Interoperates with third-party media gateways

##### Telephony Interfaces

- » TP-1610: T1 or E1 (120 or 75 ohms)
- » TP-6310: STM-1/OC3 or T3

##### PSTN Signaling

- » E1 MFC/R1 and MFC/R2
- » T1 CAS Robbed-bit signaling
- » ISDN - NI2, ETSI (Euro ISDN), 4ESS, 5ESS, DMS 100, Hong Kong, Korean, Australian & others
- » NFAS support for NI2, 4ESS, and 5ESS

##### Ethernet Connection

- » Two 10/100 BaseT Ethernet ports (RJ-45)

##### Capacity

- » 4, 8, or 16 T1/E1 spans per blade (TP-1610)
- » 1 STM-1/OC3 or 3 T3 per blade (TP-6310)

##### Voice / Data / Fax

- » Universal ports: voice, fax and modem support on all ports
- » Codecs: G.729 (A), G.723 (H/L), G.726, G.711 (u-law/alaw)

- » DTMF via RFC 2833, out of band relay, and transparent
- » T.38 fax and G.711 fax bypass modes
- » G.711 modem bypass (V.21, V.22, V.23, Bell, V.32, V.34 protocols supported)
- » G.168 echo cancellation
- » Silence suppression with support for Voice Activity Detection and Comfort Noise Generation

##### Call Control

- » SIP or H.323

##### Management and Control

- » SNMP V2: Standard MIB-2, RTP MIB, Trunk MIB, Enterprise MIB
- » Embedded Web server for configuration, TDM and VoIP monitoring
- » Remote configuration and software download via TFTP and BootP

#### TP-1610 AND TP-6310 TELEPHONY BLADES

##### Features

- » A full telephony gateway solution that occupies a single cPCI chassis slot within the BHG 2500 chassis
- » Enables voice, modem and fax traffic to be transmitted over IP networks
- » Uses packet communications & voice compression to effectively utilize bandwidth resources
- » Performs DTMF detection, generation and relay
- » Supplies echo cancellation and silence suppression to enhance call quality
- » Acts as the switching matrix for IP telephony calls
- » Supports transparent SS7 E1/T1 trunks
- » Supports SS7 channel grooming and link establishment with the SG5601 SS7 signaling blade via the BHG 2500 H.110 bus
- » Supports carrying SS7 links over IP using SIGTRAN

##### Telephony Interfaces

- » TP-1610: T1 or E1 (120 or 75 ohms)
- » TP-6310: STM-1/OC3 or T3

##### PSTN Signaling

- » E1 MFC/R1 and MFC/R2
- » T1 CAS Robbed-bit signaling
- » ISDN - NI2, ETSI (Euro ISDN), 4ESS, 5ESS, DMS 100, Hong Kong, Korean, Australian & others
- » NFAS support for NI2, 4ESS, and 5ESS

##### Ethernet Connection

- » Two 10/100 BaseT Ethernet ports (RJ-45)

##### Capacity

- » 4, 8, or 16 T1/E1 spans per blade (TP-1610)
- » 1 STM-1/OC3 or 3 T3 per blade (TP-6310)

##### Voice / Data / Fax

- » Universal ports: voice, fax and modem support on all ports
- » Codecs: G.729 (A), G.723 (H/L), G.726, G.711 (u-law/a-law)
- » DTMF via RFC 2833, out of band relay, and transparent
- » T.38 fax and G.711 fax bypass modes
- » G.711 modem bypass (V.21, V.22, V.23, Bell, V.32, V.34 protocols supported)
- » G.168 echo cancellation
- » Silence suppression with support for Voice Activity Detection and Comfort Noise Generation

##### Call Control

- » MGCP
- » AudioCodes TPNCP

##### Management and Control

- » Browser-based configuration via the Clarent Element Management System (CEMS)
- » SNMP V2: Standard MIB-2, RTP MIB, Trunk MIB, Enterprise MIB
- » Embedded Web server for configuration, TDM and VoIP monitoring
- » Remote configuration and software download via TFTP and BootP

#### SG5601 SS7 BLADE

##### Features

- » A full SS7 signaling gateway solution that occupies a single cPCI chassis slot within the BHG 2500 chassis
- » Facilitates SS7 point code conservation
- » SSP and STP configurations
- » Supports multiple destination SSPs
- » F-link grooming with the TP-1610 or TP-6310 telephony blade via the BHG 2500 H.110 bus
- » Supports A-links
- » Supports up to 16 SS7 links per blade
- » Active/active SS7 redundancy solution providing load sharing as well as load balancing for routes, links, and chassis

##### Ethernet Connection

- » IP Interfaces: two 10/100 BaseT Ethernet ports (RJ-45), 1 private Ethernet interface connecting redundant platforms

##### Platform

- » Operating System: Linux-based

##### Telephony Interfaces

- » T1 or E1 (120 or 75 ohms)

##### Capacity

- » SS7 Links and Linksets: 4, 8, or 16 per SS7 blade
- » SS7 Routes and Routesets: 256 routes/64 routesets
- » Virtual Point Codes: 50

##### Call Control

- » SS7 Protocols: MTP 2/3 (ITU, ANSI, China), SCCP, China TUP/ISUP/ANSI ISUP
- » SIGTRAN Protocols: M2PA, M3UA

##### Management and Control

- » Management interface: Web interface, SNMP, Command line interface

## CONTACT

1725 BRECKINRIDGE PLAZA  
DULUTH, GA 30096  
TEL / 678 924 2449  
EMAIL / HARRY.STRIBOS@VIASAT.COM



6155 EL CAMINO REAL CARLSBAD - CALIFORNIA 92009  
TEL / 760 476 2200 FAX / 760 795 1046 WWW.VIASAT.COM