



Verso Clarent BHG™ 2500 Universal Gateway

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 Verso's 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), media server blades (for IP voice mail, unified messaging, and other applications), and SS7 blades for interconnecting with the legacy signaling network.

An investment with a superior return

The Verso 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 Verso's 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, while media server blades provide support for Verso's IP-based Voice Mail and Unified Messaging solutions.

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.

It's easy to learn more

For more information about the BHG 2500 and what it can do for your IP network, just call, email, or visit us online.

Toll-free: +1.866.829.8776 (U.S. and Canada only)

Outside the U.S. and Canada: +1.678.589.3500

E-mail: sales@verso.com

www.verso.com

Verso Clarent BHG™ 2500 Universal Gateway

Technical Specifications

BHG 2500-AC and BHG-2500-DC Chassis

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

Power

- BHG 2500-AC dual power supplies. 100-240 VAC, 4A, 50-60 Hz
- BHG 2500-DC dual power supplies. -48VDC, 7A

Capacity

- 4 cPCI slots which can house up to 4 blades.
- Any combination of blades can be used with the following maximums: up to 4 SIP or H.323 VoIP Gateway blades, 4 TP-1610 Telephony blades, 4 IPM-1610 Media Server blades or 2 SG5601 SS7 Signaling blades

Temperature

- Operating: 0 to 45 C (32 to 113 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 Verso Equipment complies with or has obtained Regulatory Agency approval at least against the following standards:

- 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
 - HKTA2015
 - HKTA2028

SIP and H.323 VoIP Gateway Blade

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 Clarent legacy gateways, BHG 1000s, BHG 8000s and third-party media gateways

Telephony Interfaces

- T1 or E1 (120 or 75 ohms)

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

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 Telephony Blade

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

- T1 or E1 (120 or 75 ohms)

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

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

SG5600 and SG5601 SS7 Blades

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 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

IPM-1610 Media Blade

Features

- A full media server solution that occupies a single cPCI chassis slot within the BHG 2500 chassis
- Media Server for the Verso Voice Mail Solution
- Playback and recording of messages for voice mail
- Codec transcoding (G711u, G711a, G.729, G.723)
- DTMF detection and playback support

Ethernet Connection

- Three 10/100/1000 Base Ethernet ports

Capacity

- Available in the following capacities: 60, 120 or 240 channels per blade

Media

- Codecs: G.729 (A), G.723 (H/L), G.726, G.711 (u-law/ a-law)
- DTMF via RFC2833, out of band relay, and transparent
- G.168 echo cancellation with support of 30 msec, 60 msec, 128 msec tail lengths
- Silence suppression with support for Voice Activity Detection and Comfort Noise Generation

Call Control

- MGCP
- SIP

Management and Control

- SNMP V2: Standard MIB-2, RTP MIB, Enterprise MIB
- Embedded web server for monitoring as well as configuration
- Remote configuration and software download via TFTP and BootP
- Audio Provisioning Server (APS) that provides standard audio prompts to the IPM-1610 media blade. The APS runs on a standalone SUN V120 machine running a Solaris 8 2/02 operating system



Worldwide Headquarters: Verso Technologies • 400 Galleria Parkway • Suite 200 • Atlanta, GA. USA. 30339

Tel: +1.678.589.3500 • Toll-Free 1.866.829.8776 • E-mail: sales@verso.com • www.verso.com

Specifications are subject to change without prior notification.

©Copyright Verso Technologies, Inc. 1997-2006. All rights reserved.

No part of this publication, including text, examples, diagrams, or icons, may be reproduced, transmitted, disclosed or translated in any form or by any means, electronic, mechanical, manual, optical or otherwise, for any purpose, without prior written permission of Verso Technologies, Inc. Information in this publication is subject to change without prior notification. Verso Technologies, Inc. may have patents or pending patents applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this publication. The furnishing of this document does not give you license to these patents, trademarks, copyrights, or other intellectual property.

Trademarks
Clarent, Clarent logo, Clarent Announcement Server (AS), Clarent BHG 1000, Clarent BHG 2500, Clarent BHG 8000, Clarent OpenAccess, Clarent Command Center, Clarent Connect, Clarent Connect Proxy, Clarent Connect Clearinghouse, Clarent CPQ, Clarent Database, Clarent Domain Controller, Clarent Element Management System (CEMS), Clarent Extender Director SDK, Clarent Gateway, Clarent Gatekeeper, Clarent Class 4 Call Manager (C4CM), Clarent Class 5 Call Manager (C5CM), Clarent Multipoint Signaling Server (MPSS), Clarent ThroughPacket, I-Master, NetAuditor, NetPerformer, NetSpective, PowerCell, SkyPerformer and ACTView are trademarks or registered trademarks of Verso Technologies, Inc. in the United States and other jurisdictions. All other trademarks, registered trademarks and service marks are the property of their respective owners. CLA_2500_BD_0606