

About Nuera Communications

Nuera Communications, designs, manufactures & sells packet voice gateways to communication service providers worldwide. These products work over any medium (cable, wireless, copper and fiber). Nuera's ORCA (Open Reliable Communications Architecture) product portfolio of VoIP gateways, softswitches, and management systems provide telephony solutions for cable and DSL networks, international long distance networks and enterprise networks. Nuera is a leader in the broadband telephony market.

Nuera Communications Inc. Asia Pacific / Middle East Office

31 Kaki Bukit Road 3,
Techlink, #06-19
Singapore 417818
Tel: +65-6493-6688
Fax: +65-6299-4925

US Office

27 World's Fair Drive, Somerset,
New Jersey 08873, USA
Tel: +1-858-625-2400
Fax: +1-858-625-2422

Website: www.nuera.com

Contact: www.nuera.com/contact

©2010 Nuera Communications, Inc. All rights reserved. Nuera, the Nuera logo and the other trademarks noted above are trademarks and registered trademarks of Nuera Communications, Inc.

Ref. # LTRM-04016 05/09 Rev. 04



GX-800 MSBG Multi-Service Business Gateway



Benefits for Service Providers

- A highly integrated device for VoIP, Data, Security & Access, forming a single managed point of demarcation
- SIP Mediation that enables secured SIP Trunking in a variety of IP-PBX environments
- Simplified management & maintenance using a unified management tool
- Standalone Survivability
- Quality of Experience (QoE) lifecycle management solution

Benefits for SMB Customers

- "All-in-one" box reducing CAPEX and OPEX, simplifying maintenance and management
- Smooth connectivity to cloud services
- Enhanced Voice and Data Security, based on an embedded Enterprise-Class Session Border Controller and Firewall
- SIP mediation for flexible SIP Trunking service
- Multiple service provider connectivity to optimize tariff rates
- Ready for hosting IP-PBX applications and additional office Value Added Services for increased productivity

Benefits for OEM and Value Added Services Developers

- An integrated and compact platform, ready for hosting a variety of business applications
- Relieving interoperability and integration "pains" with Media Gateways, Media Servers, SBCs, Routers, etc.
- Built-in SIP-controlled media processing resources for advanced voice applications (Conferencing, Streaming, etc.)
- Embedded SIP mediation and transcoding, enabling SIP trunking services
- Enhanced Voice and Data Security

Product Highlights

- A direct evolution of the field-proven and highly interoperable GX-1K MSBG, MP and GX VoIP gateways
- Enterprise-Class Session Border Controller
- IP-to-IP Protocol normalization and Media transcoding
- Full Data security suite including Firewall, IDS/IPS, VPN & SSL
- Support wireline and wireless LAN access
- Integrated static as well as dynamic routing capabilities
- Advanced Media Processing and generic application processor
- Embedded BroadSoft PacketSmart agent for QoE lifecycle management

Nuera GX-800 MSBG is an all-in-one, Multi-Service Business Gateway solution, designed to provide converged Voice & Data services for small-to-mid size business (SMB) customers, and to form a well-managed point of demarcation for service providers. The GX-800 MSBG is based on Nuera's VoIPPerfectHD best-of-breed Media Gateway technology, integrating a variety of communication functions into a single platform to support fundamental services, such as VoIP mediation, Data Routing, WAN access, Voice & Data security, survivability, and third party value-added services applications. These services allow smooth connectivity to cloud services.

Best-of-Breed Small-to-mid-Size Enterprise Class Media Gateway

Nuera GX-800 MSBG is built upon a highly interoperable VoIP Media Gateway that can be delivered in several pre-defined configurations, supporting a single E1/T1/J1 trunk, up to 4 BRI ports (8 calls) or up to 12 analog (FXS/FXO) ports. In addition, the GX-800 MSBG provides enhanced dialing plans and voice routing capabilities along with SIP to SIP mediation, allowing business customers to enjoy the benefits of SIP Trunking services, IP Centrex connectivity, Unified Communications, as well as flexible PSTN and legacy PBX connectivity to VoIP.

LAN, Data Routing and WAN Access

Nuera GX-800 MSBG is optimized for wire-speed delivery of data and wireless services supporting up to 8 10/100 Base-TX and 4 10/100/1000 Base-T PoE LAN ports (802.3af) and an integrated WiFi (802.11a/b/g/n) Access Point. The integrated switch modules enable support for IP Phones and other PoE-powered devices. The GX-800 MSBG is equipped with a versatile WAN interface supporting 10/100/1000 copper and optical GigaBit Ethernet, and a selection of serial data transmission interfaces, providing great flexibility in connecting to Service Provider networks. Data routing capabilities are provided by static as well as dynamic routing protocols, including support for RIP, OSPF and BGP.

Session Border Controller (SBC) and Security Services

Nuera GX-800 MSBG is designed as a secured VoIP and Data platform. Enhanced Media Gateway security features include encryption schemes, such as SRTP for media, TLS for SIP control, IPSec for management, and additional features. A fully featured Enterprise-class Session Border Controller provides a secured voice network deployment, based on the embedded Back-to-Back User Agent (B2BUA). Data Security functions include integrated Stateful Firewall, IDS/IPS, and SSL for remote user access and site to site VPN.

Quality of Service (QoS) and Quality of Experience (QoE)

Nuera GX-800 supports enhanced IP Quality of Service (QoS) enforcement and Quality of Experience (QoE) Monitoring. Leveraging a BroadSoft PacketSmart embedded agent - a SaaS-based lifecycle management solution, the GX-800 enables service providers and multi-site enterprises to assess networks, certify VoIP deployments, and measure, monitor, track, and help optimize the QoE of their VoIP services. The PacketSmart solution is either offered as a public cloud service or within the customer's data center in a private cloud deployment. Nuera GX-800 also supports enhanced IP Quality of Service (QoS), including Ethernet frame tagging (802.1P), IP packet marking (Diffserv), and traffic shaping.

Survivability Services

Customers served by a centralized, SIP-based IP Centrex server or branch offices of distributed enterprises, may face service discontinuities in case of a WAN failure. The integrated SAS (Stand Alone Survivability) feature of the GX-800 enables internal office communication between SIP clients (e.g. IP Phones), along with PSTN fallback, in case of disconnection from the centralized IP Centrex server or IP-PBX.

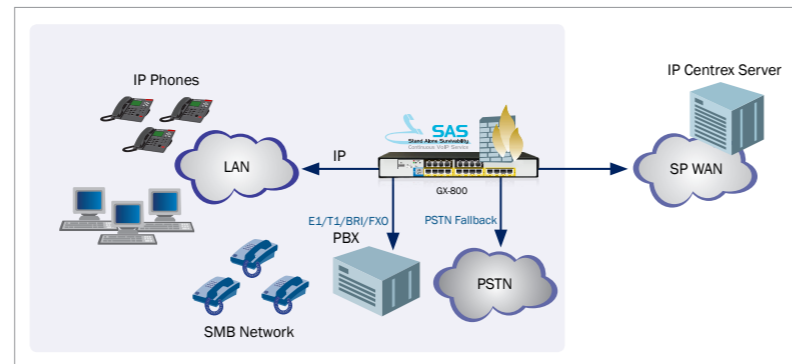
Value Added Services by an Open Platform for 3rd Party Applications

Nuera GX-800 MSBG extends the flexibility of the Multi-Service Business Gateway with the built-in Open Solution Network (OSN) server option (based on an Intel processor). Independent Software Vendors and OEM customers can utilize this integrated, general purpose server to host their own applications (e.g. IP-PBX, IVR, Call Center, Conferencing, and more). In addition, an advanced, on-board DSP Resource Farm enables the implementation of narrowband as well as wideband/High Definition VoIP (HD VoIP) media processing services, such as announcements, recording, IVR, conferencing and transcoding, all controlled by standard protocols (e.g., SIP and MSCML). Utilizing Nuera dedicated DSP resources, enables a more robust and predictable voice performance, as compared to typical software implementations, based on general purpose CPU's.

GX-800 MSBG Multi-Service Business Gateway

GX-800 MSBG in Service Provider Networks

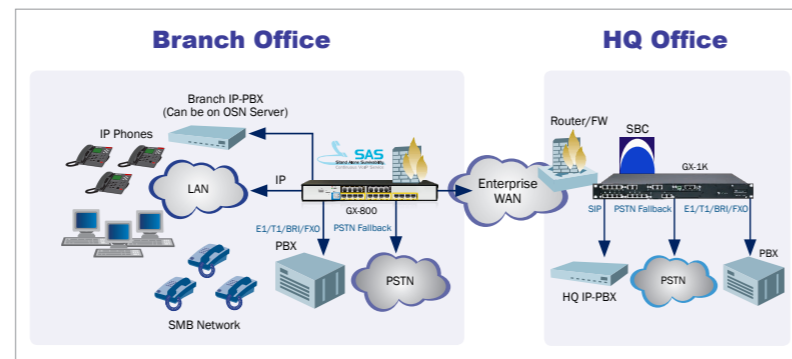
As SMB's strive to control their communication operating and equipment costs, outsourcing a Voice and Data infrastructure to a Service Provider is becoming an attractive option. The GX-800 MSBG offers service providers who are delivering hosted and managed communication services, a clear and easy-to-manage demarcation point, combining Data Routing and Security, WAN Access, Secured VoIP and the Stand Alone Survivability feature. Using the GX-800 MSBG, Service Providers' SMB customers can easily and securely consume cloud-based SaaS services.



GX-800 MSBG in Distributed Enterprise Networks

Enterprises are motivated to be more productive, efficient, and responsive to their internal users. The convergence of secured voice services, Stand Alone Survivability, Data Routing, Security and WAN Access into a branch office's unified platform, ensures a high level of investment protection, cost-optimization and support for the growing communication needs of the Enterprise.

The GX-800 can be utilized at the company's remote branches, providing a suite of services, which include secured SIP Trunking by an Enterprise-class Session Border Controller, a survivable VoIP media gateway and a cost-effective IP-PBX platform. In addition, the higher density GX-1K MSBG is a well-suited platform for converging VoIP Gateways and a Session Border Controller, thereby improving the enterprise headquarter's service level.



Target Applications

- SIP Trunking
- IP Centrex and hosted services
- IP-PBX for SMB/SOHO
- Remote connection to IP-PBX in distributed Enterprise branches
- Unified Communications mobility and Value Added Services for SMB/SOHO

Specifications

Interfaces	
PSTN Capacity	Voice interfaces: The GX-800 is equipped with up to 12 analog PSTN interfaces, 4 BRI and single E1/T1/J1 span
Digital Interfaces (Optional)	Single span E1/T1/ using RJ-48c connectors 4 BRI ports using RJ-48c connectors
Analog Interfaces (Optional)	4 ports FXO, 4 FXS ports, 8 FXS ports, 12 FXS ports or 12 FXO ports using RJ-11 connectors Option of 1 FXS Lifeline ports in case of power failure
BRI Interfaces (Optional)	4 BRI ports (8 calls), network S/T interfaces. NT or TE termination
Networking Interfaces	
WAN (Optional)	WAN interface 10/100/1000 Base-T Copper Support for T1, SHDSL*, ADSL2+*
LAN	2 configurations: 4 ports 10/100/1000Base-T plus additional 8 10/100Base-TX ports, 2 ports 10/100/1000Base-T PoE- Power-Over Ethernet on all ports is optional (Compliant to 802.3af-2003 with auto-detection Up to 15.4W per port), PoE management
WiFi* (Optional)	WiFi Access Point support for 802.11 a/b/g/n
OSN Server Platform (Optional)	
Single Chassis Integration	Embedded, open Network Solution Platform for third-party services
CPU	Intel Atom 1.6 GHz
Memory	1G RAM
Storage	SATA storage

Media Processing	
Voice Coders	G.711, G.723.1, G.729A, G.722, AMR-WB Independent dynamic vocoder selection per channel
Echo Cancellation	G.165 and G.168-2002, with 32, 64 or 128 msec tail length
Quality Enhancement	Dynamic programmable jitter buffer, VAD, CNG
DTMF/MF Tones	Packet-side or PSTN-side detection and generation, RFC 2833 compliant DTMF relay and Call Progress tones Detection and Generation
IP Transport	VoIP (RTP/RTCP) per IETF RFC 3550 and 3551, IPv6 Supported
Fax Transport	T.38 compliant (real time fax), Automatic bypass to PCM

Signaling	
Digital – PSTN Protocols	CAS: MF-R1: T1 CAS (E&M, loop start, Feature Group-D, E911CAMA), E1 CAS (R2 MFC), R1.5, numerous protocol and country variants ISDN PRI: ETSI/EURO ISDN, ANSI N12 and other variants (DMS100, 5ESS), VN3, VN4, VN6 ISDN BRI: Euro ISDN, VN4/6 or QSIG
Analog Signaling	Loop Start FXS/FXO, Caller ID, polarity reversal, distinctive ringing, visual Message Waiting Indication

Data Routing (Optional)	
	DHCP/PPPoE/L2TP/PPTP client towards WAN DHCP server towards LAN VLAN Layer 3 routing Internal layer 2 switching Static and dynamic routing (RIP1, RIP2, OSPF, BGP)

Control and Management	
Control Protocols	SIP-TCP, SIP-UDP, SIP-TLS and SIP-MSMPL*, IPv6 Supported Stand alone Survivability for service continuity
Operations & Management	Nuera' Element Management System Embedded HTTP Web Server, SNMP V2/V3 Remote configuration and software download via HTTP or HTTPS, RADIUS, Syslog (for events and alarms)

IP/VoIP Quality of Service	
	IEEE 802.1P, TOS, DiffServ labeling IEEE 802.1Q VLAN tagging RTCP-XR* (Extended Reports per RFC 3611) Shaping Policing, Queuing, Bandwidth Reservation (Optional)

Security	
Session Border Controller (SBC)	SIP Header conversion SIP Normalization Survivability IP-to-IP routing translations of various SIP transport types; UDP, TCP, TLS Translation of RTP, SRTP Support SIP trunk with multi-ITSP (Registrations to ITSPs is invoked independently) Topology hiding Call Admission Control Call Black/White list
Data Security (Optional)	IPsec ESP – Tunnel mode Encryption Authentication IKE mode – IPsec VPN IDS/IPS: - Fragmented traffic - Malformed Request - Ping of Death - Properly formed request from unauthenticated source - DDos attack - SYN flood Stateful packet inspection firewall DMZ Host Port Triggering Packet Filtering Application Layer Gateway

Hardware Specifications	
	Power Supply: Single, universal 90-260 V AC Physical Dimensions: 320mm x 345mm x 1U

Regulatory Compliance	
Safety and EMC Standards	UL60950-1, EN60950-1, CB certification including National deviations EN55024, EN55022 Class A, EN61000-3-2, EN61000-3-3, EN300 386, FCC 47 Part 15 Class A
Telecommunication Standards	TIA/EIA-IS-968, ETSI ES 203 021 (FXO interface)

*Future Release