

# Nuera Session Border Controller (SBC) Products

## GX-800

## Hybrid E-SBC and Media Gateway



### Benefits

- Fully integrated device for secured SIP trunking and PSTN access
- Hybrid SBC and Media Gateway platform lowers CAPEX and reduces space and power footprints
- Extensive interoperability and partnerships that extend across multiple vendor devices and protocol implementations
- Offers comprehensive security, interoperability and reliability
- Delivers high service performance and voice quality
- Branch office survivability in the event of a WAN outage

### Key Features

- Rich and powerful SIP normalization and routing mechanisms for seamless interoperability
- Hybrid SBC that connects to PSTN / PBX trunks for fallback and gradual enterprise migration to SIP
- Support for analog (FXO, FXS) and digital (PRI, BRI) interfaces
- Perimeter defense against denial of service, fraud and eavesdropping
- VoIP quality monitoring and enforcement
- High Availability using two box redundancy
- Media Processing for Transcoding, Gain Control, DTMF/Fax, etc.
- Optional Open Solution Network (OSN) Platform for hosting value-added applications

The Nuera **GX 800 Enterprise Session Border Controller (E-SBC)** and Media Gateway offers a complete connectivity solution for small-to-medium sized enterprises.

The GX 800 connects IP-PBXs to any SIP trunking service provider, scaling up to 250 concurrent SBC sessions. It offers superior performance in connecting any SIP to SIP environment, legacy TDM-based PBX systems to IP networks, and IP-PBXs to the PSTN, supporting up to 60 voice channels in a 1U platform.

### Vast mediation capabilities and proven interoperability

The GX 800 supports a wide range of voice coders and is capable of transcoding between narrowband and wideband voice coders, providing SIP normalization, fax handling, gain control and numerous additional media processing features. It offers certified interoperability with leading unified communications solutions and SIP trunking providers.

### Security

The GX 800 provides robust protection for the IP communications infrastructure, preventing Denial of Service, fraud and service theft and guarding against cyber-attacks and other service-impacting events.

### Reliability

The GX 800 offers active/standby high availability and maintains high voice quality to deliver reliable enterprise VoIP communications. Advanced call routing mechanisms, network voice quality monitoring and branch survivability capabilities (including PSTN fallback with E911) result in minimum communications downtime.

### Applications

- SIP trunking
- Hosted PBX & UC as a Service
- IP contact centers
- Remote and mobile worker support
- SIP mediation between UC and IP-PBX systems



## GX-800

### SPECIFICATIONS

#### Capacities

Max. Signaling/Media Sessions	250
Max. SRTP/RTP Sessions	180
Max. Transcoding Sessions	45
Max. Registered Users	800

#### Telephony Interfaces

Analog	4/8/12 FXS ports; 4/8/12 FXO ports
Digital	1/2 span E1/T1; 4/8 BRI ports, network S/T interfaces, NT or TE termination
Digital PSTN Protocols	Supporting various ISDN PRI protocols such as EuroISDN, North American NI-2, Lucent™ 4/5ESS, Nortel™ DMS-100 and others. It also supports different variants of CAS protocols, including MFC R2, E&M immediate start, E&M delay dial / start and others
Clock Source	5 ppm High Precision

#### Networking Interfaces

Ethernet	4 GE or 4 GE + 8 FE interfaces configured in 1+1 redundancy or as individual ports
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#### Security

Access Control	DoS/DDoS line rate protection, bandwidth throttling, Dynamic Blacklisting
VoIP Firewall	RTP pinhole management, Rogue RTP detection and prevention, SIP message policy
Encryption and Authentication	TLS, SRTP, HTTPS, SSH, Client/Server SIP Digest authentication, RADIUS Digest
Privacy	Topology Hiding, User Privacy
Traffic Separation	VLAN/physical interface separation for multiple Media, Control and OAM interfaces
Intrusion Detection System	Detect and mitigate VoIP attacks, prevent Theft of Service and unauthorized access.

#### Interoperability

SIP B2BUA	Full SIP transparency, mature & broadly deployed SIP stack
SIP interworking	3xx redirect, REFER, PRACK, Session Timer, Early media, Call hold, Delayed offer
Registration	Registration and authentication on behalf of an IP-PBX
Transport Mediation	SIP over UDP to SIP over TCP or SIP over TLS, IPv4 to IPv6, RTP to SRTP, V.34 Fax
Header Manipulation	Ability to add/modify/delete headers using advanced regular expressions
URI and Number Manipulations	URI User and Host name manipulations. Ingress & Egress Digit Manipulation
Signal Conversion	DTMF/RFC 2833, Inband/T.38 Fax, Packet-time Conversion, V.150.1
NAT	Local and Far End NAT traversal for support of remote workers
Transcoding and Vocoders	Coder normalization, including transcoding, coder enforcement and re-prioritization. Extensive vocoder support: Narrowband: SILK, G.711a/mu, G.723.1, G.729A/B, iLBC, AMR, G.726. Wideband: G.722, AMR-WB and SILK WB

#### Voice Quality and SLA

Call Admission Control	Based on bandwidth, session establishment rate, number of connections/registrations
Packet marking	802.1p/Q VLAN tagging, DiffServ, TOS
Intelligent Voice	Multiple queues for granular prioritization of VoIP over other non-real time traffic types, Integrated Queuing and scheduling schemes (Strict Priority, Class based Prioritization queuing, fairness)
Standalone Survivability	Maintain local calls in the event of WAN failure. Outbound calls use PSTN fallback for external connectivity (including E911)
Transparent Media	Low latency, unprocessed payload transfer
Impairment Mitigation	Packet Loss Concealment, Dynamic Programmable Jitter Buffer, Silence Suppression/Comfort Noise Generation, RTP redundancy, broken connection detection
Voice Enhancement	Transrating, RTP-XR, Acoustic echo cancellation
Media De-anchoring	Hair-pinning of local calls to avoid unnecessary media delays and bandwidth consumption
Voice Quality Monitoring	Session Experience Manager (SEM)
Redundancy	High availability with two box redundancy, active calls preserved
Quality of Experience	Access control and media quality enhancements based on QoE and bandwidth utilization
Test agent	Ability to remotely verify connectivity, voice quality and SIP message flow between SIP UAs

#### SIP Routing

Routing Methods	Request URL, IP Address, FQDN, ENUM, advanced LDAP
Advanced Routing Criteria	QoE, bandwidth, SIP message (SIP request, Coder type etc.)
Redundancy	Detect proxy failures and route to alternative proxies
Routing Features	Least cost routing, call forking, load balancing
Multiple LANs	Support for up to 12 separate LANs
SIPRec	IETF standard SIP recording interface

#### OSN Server Platform (Optional)

Single Chassis Integration	Embedded, open Network Solution Platform for third-party services		
Memory	Up to 16 GB RAM	Storage	HDD or SSD

#### Physical / Environmental

Dimensions	1U x 320mm x 345mm (HxWxD)	Weight	Approx. 5.95lb (2.7kg) loaded with OSN
Mounting	Desktop or 19" rack mount	Power	100-240V 4A 50-60 Hz
Operating Temperature	5°-40° C		

#### Regulatory Compliance

Telecommunications	TIA/EIA-IS-968 (FXO, T1) interface, ETSI ES203 021 (FXO interface), TBR-4 (ISDN over E1 interface), TBR13/13 (E1 lines), TBR-3 (BRI interface)		
Safety and EMC	IEC60950-1, UL60950-1, FCC Part 15 Class A, EN55022 Class A, EN55024, EN300 386		
Environmental Storage	ETS300019-2-1 class T1.2		
Transportation	ETS300019-2-2 class T2.3	Operating	ETS300019-2-3

### 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.

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