GX- 1K   Hybrid E-SBC and Media Gateway

The **Nuera GX-1K Enterprise Session Border Controller (E-SBC)** and Media Gateway offers a complete connectivity solution for small-to-medium sized enterprises.

The GX-1K connects IP-PBXs to any SIP trunking service provider, scaling up to 150 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 192 voice channels in a modular 1U platform.

Vast mediation capabilities and proven interoperability

The GX-1K 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-1K provides robust protection for IP communications infrastructure, preventing Denial of Service, fraud and service theft and guarding against cyber-attacks and other service-impacting events.

Reliability

The GX-1K 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.

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
- Scalable "pay-as-you-grow" modular architecture
- 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 enables seamless migration and PSTN fallback
- Modular support for analog and digital TDM interfaces
- Perimeter defense against denial of service, fraud and eavesdropping
- VoIP quality monitoring and enforcement
- Media Processing for Transcoding, Gain Control, DTMF/Fax, etc.
- Optional Open Solution Network (OSN) server module for hosting value-added applications

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

NUERA®

GX-1K

SPECIFICATIONS

Capacities

Max. Signaling/Media Sessions	150	Max. Transcoding Sessions	96
Max. SRTP/RTP Sessions	120	Max. Registered Users	600

Telephony Interfaces

Modularity and Capacity	6 slots for hosting voice processing and PSTN termination modules (up to 192 channels)
Digital Module	Up to 6 E1 or 8 T1/J1 spans provided on trunk modules. Each module supports 1, 2, or 4 E1/T1/J1 spans, with an option of PSTN Fallback
BRI Module	Up to 20 BRI ports provided on BRI modules. Each module supports 4 BRI ports, with PSTN Fallback. Providing S/T interfaces; NT or TE termination; 2W per port (power supplied)
Analog Module	Up to 24 FXS/FXO interfaces, provided on 4 ports FXO / FXS modules, ground / loop start
Media Processing Module	Up to 4 Media Processing modules (MPM), providing additional DSP resources

Network Interfaces

Ethernet	Up to 6 GE interfaces configured in 1+1 redundancy or as individual ports

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/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: G.711a/mu, G.723.1, G.729A/B, iLBC, EVRC, AMR, G.726, G.727, GSM FR, MS GSM, GSM EFR, QCELP. Wideband: G.722
Media Processing	60 Conferencing legs (3 way or N-way), play, record to IP or PSTN using Netann (RFC4240), MSCML (RFC5022)

Voice Quality and SLA

Call Admission Control	Based on bandwidth, session establishment rate, number of connections/registrations
Standalone Survivability	Maintain local calls in the event of WAN failure
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
Media De-anchoring	Hair-pinning of local calls to avoid unnecessary media delays and bandwidth consumption
Voice Quality Monitoring	Nuera Session Experience Manager (SEM)
Test agent	Remote verification of 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)
Routing Features	Least cost routing, call forking, load balancing

OSN Server Platform

Single Chassis Integration	Embedded, Open Network Solution Platform for third-party services		
Memory	Up to 8GB RAM	Storage	HHD or SSD

Hardware Specifications

Dimensions	1U x 320mm x 345mm (HxWxD)
Weight	Approx. 5.95lb (2.7kg) installed with OSN
Mounting	Desktop or 19" mount
Power	Single power supply 100-240V, 50-60 Hz, 1.5A max. optional redundant power supply
Environmental	Operational: 0 to 40° C (32 to 104°F); Storage: -20 to 70°C (-4 to 158°F) Relative Humidity: 10 to 85% non-condensing

Regulatory Compliance

Telecommunication Standards	TIA/EIA-IS-968, TBR-4, TBR-13, and TBR-21
Safety and EMC Standards	UL60950-1; FCC 47 CFR part 15 Class B CE Mark (EN55022 Class B, EN60950-1, EN55024, EN300 386, EN61000-3-2/3-3)
Environmental Specifications	ETS 300019-2-1 Storage T1.2, ETS 300019-2-2 Transportation T2.3 ETS 300019-2-3 Operating T3.2

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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