

GX-8K



- **IMS ready, carrier-grade, High-Density VoIP Media Gateway**
- **Cost-effective Media Gateway, scalable up to 16,000 protected VoIP channels**
- **Ready for all-IP networks using integrated IP-To-IP and transcoding applications**
- **Enables true convergence between multiple carrier networks on a single media gateway platform**
- **Provides high voice quality, supporting a wide range of low bit-rate to wideband high-definition voice coders**
- **Provides rich PSTN interfaces and signaling, supporting all industry standard control protocols**
- **Offers advanced security suite for enterprise and VoIP carrier networks, complying with U.S. Department of Defense security requirements**
- **Deployed globally at Tier 1, 2 and 3 service providers and large enterprise networks by leading OEMs and system integrators**

The **GX-8K** VoIP Media Gateway is a scalable, IMS-ready, standards-compliant, high channel density system for wireline, wireless, cable, broadband access and Fixed-Mobile-Convergence networks.

Carrier-Grade High Availability

The GX-8K offers robust architecture meeting service providers' stringent requirements for high availability. This high availability architecture is based on cost-effective N+1 redundancy of the processing blades and load sharing of fans and power supplies.

Multiservice Media Gateway

The GX-8K Media Gateway provides extensive support for regional PSTN interfaces, broad voice coder options, Signaling Gateway Interworking, control protocols and advanced security features, enabling multiservice deployment flexibility for a variety of customers (ILECs, IOCs, CLECs, MSOs, large Enterprises and contact centers).

The GX-8K can be used for backhauling TDM over IP, part of class 4 & 5 TDM switch replacements, IP interconnection, IP service node, IP Centrex Applications and as a PacketCable gateway. In the wireless/cellular space, the GX-8K is ideal for UMA and Femtocell applications. The GX-8K allows Network Equipment Providers (NEPs) and Independent Software Vendors (ISVs) to immediately address opportunities for these services due to its advanced deployment flexibility.

High Level of Scalability

The GX-8K is a modular platform which can scale up to 16,000 protected channels, allowing customers to begin with a low capacity entry point and later extend to a higher capacity by increasing the number of processing blade modules.

All-IP Evolution

With the introduction of Next Generation networks, there is a growing demand for IP to IP transcoding in peering, access and Fixed-Mobile-Convergence scenarios. The GX-8K has the flexibility to primarily be installed as a classic VoIP Media Gateway, and in parallel accommodate the growing demand of IP peering as PSTN interfaces are gradually being phased out.

True Network Convergence on a single platform

The GX-8K offers a high voice quality ranging from low-bit rate to wideband coders. This enables true network convergence between mobile/wireless networks and fixed line, cable and broadband networks on a single media gateway platform.

Broad PSTN Interfaces Options and Protocols

The GX-8K provides the flexibility to be globally deployed, interfacing with all popular PSTN interfaces, including E1, T1, J1, DS3 and OC3/STM1.

Advanced Security Suite

With the advent of VoIP, security has become a mandatory requirement. The GX-8K addresses service providers and large enterprises security concerns, offering advanced security capabilities which include Interface Separation, SRTP for media, IPSec for control, OAM and TLS and PKI for SIP.

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Specifications

Capabilities	
Capacity	Up to 16,000 protected VoIP/GSM/UMTS channels
Voice Coders	High Definition Voice Coders: G.722, G.722.2 (Wide Band AMR), G.729.1 ((Wideband G.729) ,EVRC Wireline: G.711, G.722, G.723.1, G.726/7, G.729A/B, EG.711, MS GSM, iLBC GSM/UMTS: GSM-FR, GSM EFR, AMR, AMR-WB CDMA: EVRC, EVRC-B, QCELP 8k, QCELP 13k Cable: G.711, G.726/7, G.723.1, G.728, G.729E, G.729A/B, iLBC Independent dynamic vocoder selection per channel (within each group) Not all coders can be used simultaneously. Some coders will result in channel density degradation
Echo Cancellation	G.165 and G.168 compliant
Fax Support	Fax/Modem Detection Control, T.38 (IP) compliant Group 3 fax relay and fax bypass (automatic fallback to G.711) support
DTMF	Packet side or PSTN side detection and generation, RFC 2833 compliant
Voice Over Packet Capabilities	Call progress tones, VAD, CNG, Dynamic programmable jitter buffer, DTMF detection and generation, E911 CAS support
Signaling	
PSTN	ISDN PRI, SS7/MTP2/3, CAS, MFC-R2, MF-R1, V5.22
SIGTRAN	<ul style="list-style-type: none">• ISDN-IUA/SCTP• SS7- M2UA/SCTP, M3UA/SCTP• SS7
IP Transport	IETF RFC 3550, RFC 3551 RTP/IP Transport, TCP, UDP CDMA: IETF RFC 2658 and RFC 3558 RTP/UDP/IP UMTS: Nb IP User Plane and IPBCP over Mc per 3GPP
Media Gateway Control Protocols	MGCP (RFC 3435), TGCP, MEGACO (H.248, RFC 3015), SIP (RFC 3261) 3GPP: CS Mc - TS 29.232, IMS Mn - TS 29.332
Security	<ul style="list-style-type: none">• SRTP,• Public Key Infrastructure Certificate for TLS• IPsec (ESP) with IKE pre-shared key for secure Management with EMS/NMS/OSS and Control with MGC• AES - 128 (Rijndael) cipher algorithm, in CBC mode for Media Security (RTP/RTCP) for packet cable• SSH Protocol Version 2 for secure Telnet and SFTP Server transfers• Firewall - for controlled IP access to Media Gateway Blades
Maintenance	
Management	Element Management System, SNMP v2 over IPSEC/SNMP v3, Command Line Interface (CLI)
Maintainability	All shelf modules are hot swappable, including boards, power supplies, fans
Redundancy Scheme	System Controller and Ethernet Switch blades: 1+1 Power supplies: N+1 Load Shared Media Gateway blades (including PSTN interfaces): N+1 Optical Interfaces (PSTN): 1+1, APS protected
Hardware Specifications	
Interfaces	PSTN: Up to 8 x OC-3/STM-1 Optical ports, each 1+1 APS protected, or up to 24 x T3 (DS-3) Copper Coax ports or up to 252 E1/T1/J1 spans IP: Dual Redundant 100/1000 BASE-T (aggregated) Ethernet ports, with Multi-VLAN Interfaces support (OAM, Control, Media) Clock Synchronization: BITS/SETS (GR-1244 Stratum-3 and G.813 compliant), line synchronization (via STM-1/OC-3 link or DS1 trunk)
Enclosure	21-slot, 12U cPCI chassis
Dimensions (HxWxD)	533 mm x 483 mm x 480 mm (21 x 19 x 18.9 inches)
Weight	Approx 60 lbs. (27 kgs.), unloaded Approx. 88 lbs. (40 kgs.), fully loaded
Mounting	Per EIA Standard RS-310-C in 19-inch rack
Midplane	<ul style="list-style-type: none">• PICMG 2.16 cPCI Packet Switching Backplane (cPSB)• PICMG 2.1 cPCI hot swap specification• PICMG 2.0 cPCI specification
Power	-48 V DC Dual Feed, with 3 DC Power modules
Cooling	Replaceable fan trays & filters
Regulatory Compliance	
Telecommunication Standards ³	FCC part 68 TBR4 and TBR13
Safety and EMC Standards	<ul style="list-style-type: none">• UL60950 • FCC part 15 Class A• CE Mark (EN55022 Class A, EN60950, EN55024, EN300 386)
Environmental ³	NEBS Level 3: GR-63-Core, GR-1089-Core, Type 1 & 3, ETS300 019

¹ Reduced channel capacities

² Future releases

³ Designed to meet – formal approval pending

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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