

## GX-2K



- Deliver competitive, complete, best-of-breed media gateway functionality featuring highest voice quality
- Meet the demands of converged, wireless, wireline, cable broadband access and fixed-mobile converged VoIP networks from a single media gateway platform
- Increase flexibility with a media gateway that supports a wide variety of call control protocols and scales down to meet the demand of enterprises and small carrier POPs
- Integrate 3G and 2G packet-enabled media gateway functionality into an end-to-end system solution
- Meet the needs for VoIP Trunking, IP Centrex, and VoIP Access Gateway markets with a right-sized and cost-effective media gateway
- Deploy globally with a rich offering of PSTN interfaces and signaling
- React quickly to dynamic market requirements

The **GX-2K** VoIP Gateway is the cost-effective, entry-level member in the Nuera family of market-ready, standards-compliant, media gateway systems. Designed for wireline, wireless, cable, broadband access and fixed-mobile-convergence networks, the GX-2K is intelligently packaged in a stackable 1U chassis designed for enterprises or for smaller locations in the carrier network market. The GX-2K is the right-sized solution for small-scale needs. Incorporating the leading Voice over Packet technology, the GX-2K enables Network Equipment Providers (NEPs) and System Integrators (SIs) rapid time-to-market and reliable cost-effective deployment of next-generation networks. The GX-2K is based on the VolPerfect™ architecture, underlying best-of-breed core media gateway technology for all of its products.

### Deploy Right-Sized Solution

The GX-2K VoIP Gateway matches the density requirements for smaller locations while meeting Network Service Providers' demands for scalability. The compact GX-2K VoIP Gateway scales from 1 to 16 E1/T1/J1 spans in a 1U chassis and provides a best-of-breed mediation solution for enterprise as well as carrier locations.

### Create Flexible Products and Services

The GX-2K VoIP Gateway system enables NEPs and SIs to immediately address opportunities that utilize a myriad of legacy circuit-switched infrastructure features and functionalities. The GX-2K can communicate with PBXs, PSTN, local IP Radio Access Networks, and centralized Mobile Switching Center (MSC) servers to enable complete 2G and 3G enterprise solutions. The GX-2K allows superior deployment flexibility for these solutions which include Softswitches, Cable Call Management Systems (CMS), Media Terminal Adaptors (MTAs), PacketCable solutions and Broadband Wireless Local Loop (WLL) Base Stations (WiFi, WiMax). The GX-2K extends the flexibility of the Mediant Media Gateway family with additional deployment options - made available by providing smaller size and finer granularity of the digital trunk scalability options. The GX-2K's open platform offers NEPs the option to add one Single Board Computer (SBC) to run complementary applications within the Mediant chassis.

### Benefit from Extensive Gateway Experience

Nuera is one of the world's leading providers of packet-enabled new voice infrastructure network technologies. Nuera's commitment to innovation yields consistently high-quality voice processing products that are flexible, intelligent and comprehensive.

### GX-2K Features

- NEBS Level 3 certified
- Multiple density options
- Field-proven, high voice quality
- Open, scalable architecture
- SIGTRAN Backhauling (SS7: M2UA/M3UA, PRI: IUA)
- SS7 and TDM peer-to-peer tunneling over IP
- Wide support of PSTN protocol termination (PRI, CAS/MFCR2)
- Packet telephony standards compliant
- UMTS-compliant (IMS) version available
- CDMA-compliant version available
- GSM-compliant version available
- Flexible deployment options
- Small footprint
- Expansion slot for Application Processor

# GX-2K

## Specifications

### Capabilities

Capacity	<b>VoIP LBRs:</b> Up to 30, 60, 120, 240 or 480 independent, simultaneous Wireline LBR VoIP voice calls <b>GSM/UMTS:</b> Up to 60, 120, 240 or 480 independent, simultaneous GSM/UMTS and Wireline LBR VoIP voice calls <b>CDMA:</b> Up to 24, 48, 96, 180 or 360 independent, simultaneous CDMA & Wireline LBR VoIP voice calls
PSTN (TDM)	1, 2, 4, 8 or 16 E1/T1/J1 spans
Voice Coders	<b>VoIP:</b> G.711, G.723.1, G.726/7, G.729A/B, GSM-FR, NetCoder <b>CABLE:</b> G.711, G.723.1, G.726/7, G.729A/B, G.728 <sup>1</sup> , G.729E <sup>1</sup> <b>GSM/UMTS:</b> GSM-FR, GSM-EFR, AMR (8 rates) & VoIP Coders. <b>CDMA:</b> EVRC, QCELP 8k, QCELP 13k & VoIP Coders Independent dynamic vocoder selection per channel (within each group)
Echo Cancellation	G.165 and G.168 compliant, 32, 64 or 128 <sup>1</sup> tail length
Fax Support	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
Quality Enhancement	Dynamic programmable jitter buffer, VAD, CNG, 802.1p/Q VLAN tagging, DiffServ, voice quality monitoring, G.729B
Application Processor	Single Board Computer using optional Sun SBC

### Signaling & Transport

PSTN	<b>PSTN protocol termination</b> <b>CAS</b> MF-R1: Wink Start, delay dial, immediate start, FGB, FGD, E911 CAMA MFC/R2 numerous country variants Unique script for each county variant, enabling maximum flexibility of the entire state machine of each CAS protocol <b>ISDN</b> ISDN PRI: ETSI EURO ISDN, ANSI N12, DMS Switch, 5ESS Switch, Japan INS1500, QSIG Basic Call, Australian Telecom, New Zealand Telecom, Hong Kong Variant, Korean MIC and others, VN 3, 4, 6 (French variant)
SIGTRAN	PRI LAPD links termination, IUA/SCTP, DUA SS7 MTP2 links termination, M2UA/SCTP (for backhauling to MGC or peer-to-peer tunneling) SS7 MTP3 links termination, M3UA/SCTP SS7 and TDM Tunneling application, using M2UA over SCTP/IP
IP Transport	IETF RFC 3550, RFC 3551 RTP/RTCP Transport, TCP, UDP, SCTP

### Media Gateway Control & Management

Control Protocols	SIP, H.323, MEGACO (H.248), and MGCP
TPNCP API Supported OS	Windows™ NT/2000/XP, Linux™, Solaris™ on Intel™/Sparc™
Operations Management	User friendly GUI via Embedded Web Server, Centralized Element Management System, SNMP v2, Remote configuration and software download via TFTP & Boot, HTTP, Syslog (for events, alarms and CDRs)
Security	IPSEC <sup>1</sup> – for control protocols and for Management Interfaces HTTPS, SRTP, TLS, Telnet SSL, IP access list, Radius Login

### Interfaces

Ethernet	Dual Redundant 10/100 BASE-T Ethernet ports via 2 RJ-45 connectors on RTM
Telephony Interface	16 E1/T1/J1 using dual 50-pin Telco connectors on RTM or up to 8 E1/T1/J1 spans using RJ-48c connectors

### Hardware Specifications

Power Supply	Single universal 90-260 V AC or dual-redundant AC or single -48 V DC
Physical	1U high, 19-inch wide rack mount

### Regulatory Compliance

Telecommunication Standards	FCC part 68 TBR4 and TBR13
Safety and EMC Standards	UL60950, FCC part 15 Class A, CE Mark (EN55022 Class A, EN60950, EN55024, EN300 386)
Environmental	NEBS Level 3: GR - 63-Core (DC-powered model), GR -1089-Core Type 1 & 3, ETS300 019

<sup>1</sup> Reduced channel capacity

### 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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