G9 Converged Media Gateways

Enable any-to-any switching across wireless, wireline, access, core, TDM, and IP networks.

Product Description

The G9 Converged Gateway, part of Ribbon's innovative media gateway portfolio, provides protocol, interface, security, signaling, and media processing support across all wireless and wireline, access and core, and IP and TDM environments, with simultaneous, any-to-any switching for enhanced flexibility and cost-effectiveness.

A powerful IP trunking gateway for mobile operators, the G9 supports wireless solutions spanning GSM, UMTS, CDMA, and satellite networks in 2G, 3G, and 4G/LTE architectures. In IMS networks, the G9 is a versatile IP media processing node supporting IMS Media Gateway, multimedia Media Resource Function Processor, and Border Gateway functions. In wireline networks, the G9 supports Class 4/IP Tandem/IP Trunking and Class 5/subscriber solutions, as well as global applications such as Peering and IPX. In converged networks, the G9 provides advanced solutions for Fixed Mobile Convergence/femtocells and IP-to-IP multimedia transcoding.   Deployed globally in many Tier 1 networks, the carrier-grade G9 is highly interoperable, providing scalable VoIP and multimedia processing in conjunction with Ribbon's C3 and C20 Call Session Controllers, partner IMS cores and other call control platforms, giving operators the flexibility to converge disparate networks together using a single, cohesive next-generation gateway.

G9 Media Gateway's Features
   - **Networks**
   - Multi-network convergence: wireless + wireline, core + access, IP to IP, TDM to IP, TDM to TDM, FMC/femtocells.
   - 2G GSM, 3G UMTS, CDMA, IMS Lite/IMS/VoLTE, 4G/LTE, FMC/Femto, UMA/GAN, TDM, IP, PSTN, PLMN.

   - **Protocol, Interfaces, Interoperability**
   - 2G/3G/IMS -- AoIP, Iu/IP, Mb/IP, Nb/IP; Femto UMA/GAN, Iuh; Signaling - ALCAP, RANAP, BSSAP, MFR2, PRI, NFAS, TBCT, MF CAS, V5.2, GR-303, SS7 MTP; Control - H.248 text and binary, EGCP, Mn, Mc, Mp, Ia, Virtual Media Gateway to 34 controllers, SCTP, SIGTRAN M3UA; IUA, ARP, ping/traceroute.

- Open standards-based; compliant with ANSI, ETSI, ITU IETF, 3GPP, 3GPP2, and TISPAN standards; supports worldwide variants; extensive, network-proven interoperability with leading call control, feature, access network, and CPE platforms.

- **Voice Quality Enhancements**
- Advanced VQE for VoIP and TDM, including G.169, Automatic Level Control, Adaptive Noise Reduction, Acoustic Echo Cancellation, Voice Activity Detection, Silence Insertion/ Detection, Comfort Noise Generation, Packet Loss Concealment, Adaptive Jitter Buffer, TFO/TrFO, WB-AMR.
- Hybrid Echo Cancellation supports ITU-T G.164, G.165, G.168, and echo tail to 128ms.

- **Integrated Features**
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- High-capacity signaling gateway supports up to 200 SS7 linksets with TDM (MTP2/3/3b), and M3UA interfaces, and SS7-SS7 interworking and routing; Overload control.
- Lawful Intercept, including CALEA and other national variants; E911; Operator Services.
- Media Resource Function Processor/MRFP with open Mp interface, digit collection, tones, announcements, conference bridging, high scale IP-to-IP transcoding and media adaptation.

- Per session fi rewall and gate control, NAT learning and traversal, ACL, rate limiting, resource allocation, bandwidth reservation, measurements-based CAC, usage metering, NAPT-PT with IPv4/IPv6 interworking.
- Routing and QoS including ARP, RTCP bandwidth modifi ers, RTCP-XR with per call reporting.
- IWF/Interworking Function for Circuit Switched Data/CSD.
- NNSF/NAS Node Selection Function for GSM A-Flex.
- Transcoder-Free and Tandem-Free Operation.

- **Capacities**
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- DS0s: T1 - 15,840; E1 - 19,800; DS3 - 40,320; OC3 - 96,768; STM-1 - 90,720 w/FPS.
- IP: 4 - 8 Gigabit Ethernet.
- Signaling Gateway: 512 LSL links, 20 HSL links; SS7: 200 linksets; M3UA: 15,000 MSU/second.

- **Dimensions**
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- HxWxD: 15U, 26.25" x 17.38" x 18.50"; 66.68 x 44.15 x 47.00 cm.
- Weight: 80 lbs chassis only.

- **Redundancies**
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- Field-replaceable hardware; in-service hardware and software upgrades.
- GbE load-sharing, VLAN tagging.
- 1:N, 1:1, N+1, 1+1 load sharing, and Facility Protection, depending on card type.
- Redundant power, control, cooling, and clocking.

- **Management**
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- Ribbon Element Management System.
- Supports all G9, C20 and C3 configurations.
- Full FCAPS functionality.
- User-friendly GUI (Unix or Windows) and CLI.
- Multi-node management.
- Northbound interface: SNMP, CLI, TCP/IP, Telnet, SFTP/TFTP/ FTP, XML, SSH, IPDR/CDR, RADIUS, AAA.
- Highly Scalable – up to 100 clients, 20 per station.
- Client is platform-agnostic.