G5

# Line Access Gateway

**About 40,000 TDM switches, serving over 800 million lines globally, are still in operation despite the fact that many are beyond their designed lives. These aging systems pose serious customer, outage, and financial risk to operators, and they are not capable of providing new, advanced IP services nor are they tied to mobile and broadband services. Ribbon Communications' innovative G5 Line Access Gateway resolves the problems associated with aging TDM switches and enables revenue growth by linking TDM customers to mobile, broadband, and SIP-based IMS services.**

Part of Ribbon's Media Gateway product line, the G5 is custom-designed to replace TDM switches. It provides standard access interfaces for terminating copper pair in a very dense, green technology footprint. Pairs are simply rehomed from the old TDM switch line frames to G5 line cards. In conjunction with Ribbon's G9 Converged Gateway or G6 Universal Gateway that support trunks and other forms of special access, operators can connect lines on G5 gateways to Ribbon's C20 Call Controller or Cisco/Broadsoft and Alianza IP-based call control. Not only does this eliminate line and trunk frames, but the entire TDM switch can be gracefully shut down and scrapped, and new services can be delivered to subscribers.

## Smart Choice for Access Replacement

The G5 is part of Ribbon's Media Gateway product line for replacing archaic TDM switches and is inherently tied to an operator's broadband plans. Where operators have no broadband plant, they may choose to deploy MSANs or FTTx. Where they have existing broadband plant, they can deploy G5 Line Access Gateways to avoid the eventual demise of their TDM switches. This approach minimizes CapEx and avoids service disruption. In addition, the lines terminating in the G5 are now able to connect into IP call control, making TDM access no longer a legacy technology but simply another means of accessing the SIP services cloud and mobility.

## Carrier Density and Resilience

A single G5 shelf supports up to 768 TDM lines and 2,304 subscribers per 3-chassis frame. Even large offi ces of 20,000 lines requiring over 5000 square feet of floor space can be reduced to a few simple frames of space. The line card drives full length (1930 ohm) loop lengths, and the gateway supports carrier class availability and resilience including optional support for full Emergency Stand Alone (ESA) should call control be interrupted.

The G5 is also NEBS 3 and OSMINE compliant, meeting carrier physical and operational environments. The platform provides a power profi le of about 0.25 watts per subscriber – dramatically lower than most other line access equipment.

The G5 may be deployed in a Central Offi ce frame line-up, or in a temperature-hardened outside plant cabinet. It also includes full capabilities for mechanized line testing and centralized management. As a world leader in network transformation, Ribbon also provides a full set of professional services and tools to assist in the design and implementation of the solution.

## System Features

- Carrier Grade (99.999%) availability
- High-density analog line termination
- Fault Tolerant software architecture
- Metallic Line Test Support
- Modular expandability and upgradability
- Full CO length POTS serving length (1930 Ω)
- VoIP migration ready
- Hot swappable plug-in cards
- Field upgradeable software
- Automatic network clock synchronization
- Continuous background system audits

## Switch and DIC Interface Standards

- GR-303-CORE
- IEEE 802.3ab
- ANSI T1.403
- GR-499-CORE
- GR-1244-CORE
- RSTP
- SIP (RFC 3261)
- H.248
- DSCP
- SNMP
- VoIP G.711, G.729A, G.729AB (10,20,30ms packetization)

## Environmental/Physical

- Shelf Dimensions:
- Height: 15.75 inches (9U)
- Width: 23 inches
- Depth: 12 inches
- Ambient operating temperature: -40 to +65° C
- Storage temperature: -40° to 70° C
- Operating relative humidity: up to 90% (non-condensing)
- Hot-swappable cards
- In-System temperature monitoring

## Power

- Dual redundant power feeds.
- DC: -42.75 V to –60.0 V, 214 Watts
- GR-513-CORE
- ANSI T1.315-2001
- Power quality monitoring

## Safety and Regulatory

- NEBS level-3 (GR-63-CORE, GR-1089-CORE)
- Emissions Compliance: FCC, 47 CFR § 15, Subpart B, Class A
- Compliant to RUS, 7 CFR § 1755.522

## Management

- Web Browser-based GUI
- Command Line Interface (CLI)
- TL1
- OSMINE Support
- Persistent provisioning
- Recording of system events
- Alarm Contact Closures: 2 inputs and 3 outputs
- RS-232 and 10/100 Base-T management interfaces

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