

## National Instruments deploys Out-of-Band Remote Infrastructure Management to remote offices worldwide

### SUMMARY



**Industry:**  
Manufacturing

**Customer Profile:**

Since 1976, National Instruments has equipped engineers and scientists with tools that accelerate productivity, innovation, and discovery. NI's graphical system design approach provides an integrated software and hardware platform that simplifies development of any system that needs measurement and control. Engineers and scientists use this platform from design to production in multiple industries, advanced research, and academia.

**Objective:**

- ▶ Deploy cellular out-of-band solutions to remote offices throughout the world to improve uptime
- ▶ Provide secure remote access to Cisco, Juniper, and Citrix networking equipment
- ▶ Utilize wireless connectivity in a global implementation using both CDMA & GSM technologies

**Management Solution:**

Opengear ACM5004-G/GV remote infrastructure management gateways

**Results:**

- ▶ Reduced downtime while fortifying business continuity to remote offices from a centralized location
- ▶ Consolidated IT overhead with reduced on site visits and service calls

### CHALLENGES

With more than 6,300 employees spread across 40 nations, National Instruments (NI) is making a positive impact on the world through their technology, talent, and the work of its customers. The continued success of NI is driven, in part, by the effectiveness of regional global office locations.

National Instruments remote locations rely on 24x7 network uptime to sustain global operations and services. However, many of these locations are not staffed with IT personnel and a solution was needed to enhance and modernize National Instruments remote management solution in order to fortify business continuity and reduce downtime. More broadly, the IT department at NI wanted to reduce operating costs, reduce on site visits, and simplify the remote management of global offices. The right solution would employ cellular GSM & CDMA out-of-band capabilities to securely access remote offices and provide complete remote visibility to network engineers and IT resources at the Austin, Texas, headquarters.

Globally National Instruments was challenged with finding a solution that could:

- ▶ Increase availability to management interfaces on Cisco & Juniper stacks and switches
- ▶ Provide secure out-of-band management to offices without IT staff using cellular GSM & CDMA connectivity
- ▶ Reduce overhead, increase visibility, and maximize resources

As a result, National Instruments selected the Opengear ACM5004-G/GV Remote Infrastructure Management (RIM) gateway to enable its central support team to perform reliable and secure remote management of NI's IT assets distributed across the world.

“One of our California offices already had the Opengear device in place, and when we implemented a WAN optimization solution on the network, it caused fragmented connectivity to our main office. We were able to remotely connect to the Opengear device and troubleshoot remote to diagnose the issue, without having to send someone from our office in Austin to California.”

- Craig Langerman  
Network Engineer, National Instruments

## Business Continuity on a Global Scale

Global companies such as Network Instruments require secure and dependable access to their distributed network of devices spread throughout the world. Maintaining continuity of the business operations and processes is vital to success in a competitive market. Network Instruments selected the Opengear ACM5004-G/GV RIM gateway as a key component for an out-of-band initiative, targeted at enhancing reliability and uptime of its distributed network infrastructure located throughout the world.

## Worldwide Cellular Out-Of-Band Connectivity

The ACM5004-G/GV RIM gateways provide Network Instruments the most advanced GSM & CDMA cellular features on the market today for proactive out-of-band management of their business critical network infrastructure. Secure out-of-band access to distributed IT equipment has been crucial for enterprise customers to eliminate the need for onsite remote IT staff or service calls to handle outages. Not only does this save travel costs, but out-of-band access also reduces recovery time in the event of unplanned outages to ensure remote site productivity

The ACM5004-G/GV RIM gateways reduce the complexity found in traditional dial-in out-of-band applications where international dialing costs and restrictions prevent ease of access. Equipped with built-in failover capability, the ACM5004-G/GV RIM gateways automatically switch from primary wired connections to wireless mobile broadband network during primary service outages and automatically fail back without interruption to service.

Network Instruments now has 24x7 access to remote offices even when the cellular carrier has assigned private non-routable IP addresses to the ACM5004-G/GV. The ACM5004-G/GV RIM gateways can be configured to initiate the out bound connection from the remote office using our Call Home feature, OpenVPN and IPsec VPN connections to the central IT team located in Austin, Texas.

## Secure remote access to Cisco & Juniper equipment

Network Instruments recently implemented a WAN optimization solution on the network and found it fragmented connectivity to between the main office and a remote office in California. Troubleshooting and diagnostics were not available over a fragmented network connection and access to the serial console interface on the Cisco equipment became critical. Thankfully, Network Instruments had recently installed the Opengear ACM5004-G/GV at this location and were able to remotely troubleshoot and resolve WAN issues via the serial console interface without having to send someone on site. The Opengear solution empowers Network Instruments to perform operations such as:

- ▶ Bare metal and systems provisioning
- ▶ Restore network connectivity after a switch misconfiguration
- ▶ Cisco IOS recovery from ROMmon
- ▶ Hard power cycle to recover a locked server or device

The Opengear ACM5004-G/GV is equipped with 4 RS232 Cisco compatible RJ45 serial ports for easy, quick connectivity to both Juniper and Cisco management ports. This pinout eliminates the need for adapters or dongles and uses a straight through CAT5 patch cord to target Cisco and Juniper devices. Network Instruments can securely monitor, manage and log all data from remote locations using the serial interfaces embedded within the ACM5004-G/GV. Also included are expanded serial console management features such FTP/TFTP storage for running configurations, embedded AJAX terminal, pattern-match alerting and event notification to help reduce downtime and expedite problem resolution.

## Prepared for the future with a virtual remote presence

The virtual remote presence and control capabilities of the Opengear ACM5004-G/GV installed at the network edge drastically reduces the costs associated with physical on site visits, and eliminates the process overheads of raising a trouble ticket, scheduling resources and validating the fix, required to service traditional remote hands requests.

The Opengear ACM5004-G/GV solution offers Network Instruments the peace of mind of maintaining total control over their remote network infrastructure, securely, from anywhere in the world.

“It offers a broad feature set, and ensures always-on network connectivity for National Instruments, while allowing our IT resources to be used for higher-level IT initiatives instead of onsite remote office support.”

- Craig Langerman  
Network Engineer, National Instruments

## Key Features: Opengear ACM5004-G/GV

- ▶ Automated remote monitoring and management of Cisco and Juniper equipment
- ▶ Secure cellular Out-Of-Band access for dependable remote management
- ▶ 3G GSM & CDMA Cellular, Heartbeat Monitor with Automatic Failover
- ▶ Enterprise grade security compliance with data center access and security policies

## About Opengear:

Opengear Data Center Infrastructure Management (DCIM) and Remote Infrastructure Management (RIM) appliances secure and simplify remote monitoring, access and control of critical IT & network, and Operations Technology (OT) & industrial control systems. Opengear smart appliances integrate next-generation automation and true out-of-band management technologies, ensuring our customers maintain complete control over critical infrastructure - wherever, whenever.

Opengear is privately with offices in USA, UK and Australia. For more information, please visit [www.opengear.com](http://www.opengear.com).

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