# Solution Overview

## Positron Solution Brief for RUCKUS

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# Introduction

The Positron Access G.hn Access Multiplexer (GAM) provides the perfect Gigabit Ethernet backbone for a managed Wi-Fi infrastructure in brownfield MDUs. The GAM provides a cost-effective alternative by repurposing the existing coax or twisted pair wiring, obviating the need for expensive fiber rewiring. By leveraging the legacy wiring infrastructure, the GAM creates the ideal link between the RUCKUS ICX switch and the in-room Wi-Fi access points.

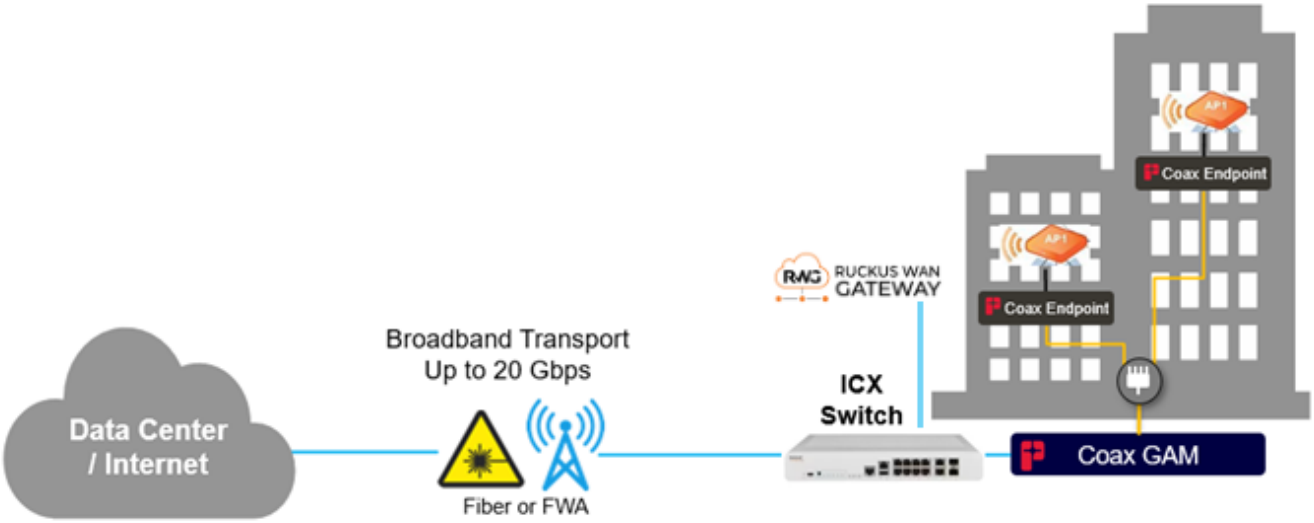


Figure 1. Simplified RUCKUS / GAM (Coax) Deployment Model

With the GAM establishing an ethernet backbone over the building's existing coax or copper, residents of an MDU can enjoy a secure, always-on, very high-speed connectivity experience across the entire property. This model ensures robust support for advanced smart-building IoT devices and features, enhancing overall connectivity and convenience for users.

## The Positron Advantages

### Faster Time to Revenue

Employing the GAM eliminates the lengthy construction time required to rewire older buildings for fiber or Cat5/6, enabling the rapid delivery of the Gigabit Ethernet infrastructure that supports the RUCKUS Wi-Fi offering.

### Shorter Time to Break-even

Significantly fewer customers need to sign up to cover the CAPEX and installation cost of the GAM.

### Eliminates Cost of Rewiring

Rewiring a building for fiber or Cat5/6 is expensive. Utilizing the existing copper or coax infrastructure substantially reduces overall project costs.

### Avoids Construction Disruption

Avoid the disruption to tenants and the removal of hotel rooms from service that is incurred when rewiring a property. Preserve the aesthetics of historic buildings and avoid disturbing hazardous materials. And sidestep the challenges of rewiring through reinforced concrete walls.

### Point-to-point over Copper or Point-to-Multipoint over Coax

For applications over the existing copper telephone pairs, each GAM port can be individually provisioned to operate over one pair or two pairs. The use of two pairs extends the reach of a Gigabit Ethernet by approximately 60%. In applications using coax cabling, each GAM port can operate in a point-to-multipoint configuration, efficiently sharing the total bandwidth among up to 16 end users.

## Integration with RUCKUS Wi-Fi

Creating a cost-effective, modern, managed Wi-Fi network throughout an older MDU or hospitality property necessitates advanced wireless technologies supported by a distribution backbone capable of driving symmetric gigabit Ethernet bandwidth several hundred to several thousand feet over the building's existing copper or coaxial wiring.

Integration of the Positron GAM's robust Gigabit Ethernet solution over legacy wiring with RUCKUS collection of Wi-Fi access points and high-performance switches and gateways provides property owners and operators a distinctive opportunity to consolidate voice, entertainment, Wi-Fi, and smart building/IoT operations onto a unified Ethernet-based network.

RUCKUS contributes unparalleled expertise and innovations to this application space, ensuring peak performance, reliability, security, and IoT flexibility. These advancements include:

- **Beamflex+** adaptive antenna technology provides twice the throughput and range as other Wi-Fi products.
- **SmartCast** automatically maximizes reliability and performance of latency-sensitive applications such as video.
- **SmartMesh** combines smart antenna arrays, sophisticated RF routing, and centralized management to increase the coverage range across several hops.
- **ChannelFly** dynamic channel technology ensures the least congested channels are allocated to users.
- **The RUCKUS IoT Suite** simplifies, secures, and supports multiple IoT technologies on a single network. In multi-tenant residential properties, this facilitates the deployment of high-value smart home applications, including keyless locks, intelligent climate control, community security, and smart light and curtain controls. In hospitality applications these benefits extend to smart and secure wireless entry solutions and improved safety and security mechanisms for staff and guests.

To support the robust wireless network edge, a strong distribution infrastructure is crucial to ensure that Gigabit speed, low latency (1ms) symmetric bandwidth can be delivered to the APs over the legacy wiring.

- The GAM's **Dynamic Transmit Allocation** reduces interference in twisted pair copper applications and optimizes bandwidth allocation in point-to-multipoint coax applications.
- **Reverse power feed** addresses locations where local AC powering of the GAM is inconvenient.
- **POE+** enables RUCKUS APs to be powered directly from Positron Endpoints, offering flexibility in the AP mounting location and allowing for hard resets.
- And **VLAN trunking** assures seamless mobility with support for RUCKUS "Dynamic PSK to VLAN mapping" across the entire MDU Gigabit Ethernet network.

## Popular Applications

The RUCKUS/Positron solution is ideal for service providers seeking to rapidly roll-out advanced managed Wi-Fi solutions while re-using the in-building wiring to maximize time to revenue and reduce OPEX. Popular applications include the following:

### Enabling Advanced Solutions

- Bulk Internet / Managed Wi-Fi
- Seamless Wi-Fi roaming
- Coordinate Wi-Fi
- IoT Integration
- IPTV / Casting

### For a Variety of Markets

- Hospitality
- Multi-dwelling Units (MDU)
- Multi-tenant Units (MTU)
- Student housing
- Campuses and military bases
- Senior Living and healthcare facilities
- Garden-style homes and apartments
- Commercial centers and malls
- RV and mobile home parks

# Summary

The Positron GAM presents a cost-effective solution suitable for diverse sites, ranging from 8-unit MDUs to expansive multi-building apartment complexes. From mom-and-pop motels to large hotels and resorts. RUCKUS and Positron have partnered to deliver a certified solution that is deployed without disruption to the building and at the lowest cost.

This partnership provides hospitality and MDU owners and operators with a comprehensive, carrier-class suite of Wi-Fi capabilities. The GAM's bandwidth distribution model extends the fiber or FWA broadband connection serving the property, creating a high-speed converged Ethernet backbone supporting a range the applications desired by both sophisticated business travelers and tech hungry families.

Converging all voice, entertainment, property-wide Wi-Fi, and smart-building IoT services securely over Ethernet delivers top-tier customer experiences with an efficient and reliable operational model.

**Visit Positron Access at: https://www.positronaccess.com/ruckus-networks/**

**Visit RUCKUS / CommScope at: https://www.ruckusnetworks.com/partners/alliance-partners/positron/**

# About Positron

Positron Access Solutions is a leading provider of carrier-grade telecommunications products, specializing in enhancing bandwidth delivery and extending reach within MDU/MTU and Hospitality buildings over the existing wiring infrastructure. Our flagship product, the Positron G.hn Access Multiplexer (GAM), offers managed, non-blocking symmetrical Gigabit bandwidth to subscribers over copper pairs or coax, achieving significantly longer distances at lower costs. With enhanced stability and reduced complexity compared to other technologies, the GAM establishes the Ethernet backbone to support the deployment of managed Wi-Fi and smart building solutions.

**RUCKUS solutions are part of CommScope's comprehensive portfolio for Enterprise environments (indoor and outdoor).**

We encourage you to visit commscope.com to learn more about:

- RUCKUS Wi-Fi Access Points
- RUCKUS ICX switches
- SYSTIMAX and NETCONNECT: Structured cabling solutions (copper and fiber)
- imVision: Automated Infrastructure Management
- Era and OneCell in-building cellular solutions
- Our extensive experience about supporting PoE and IoT

www.ruckusnetworks.com

Visit our website or contact your local RUCKUS representative for more information.



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