

# RXG OVERVIEW

## REVENUE EXTRACTION GATEWAY



### HIGHLY INTEGRATED SOLUTION

- Performs functions of B-RAS (BNG), B/OSS and N/EMS in a single server
- Simplifies configuration with dozens of pre-programmed use cases

### FASTER NETWORK INSTALLATIONS

- Turn-key solution dramatically reduces labor to install, configure and maintain components
- Accelerate and scale your commercial networking business.

### AGILITY & AUTOMATION

- Easily configure and automate network functions, driven by your Property Management System (PMS).
- Exceed the expectations of commercial customers in MDU, Hospitality, Retail, Education and Large Public Venue markets.

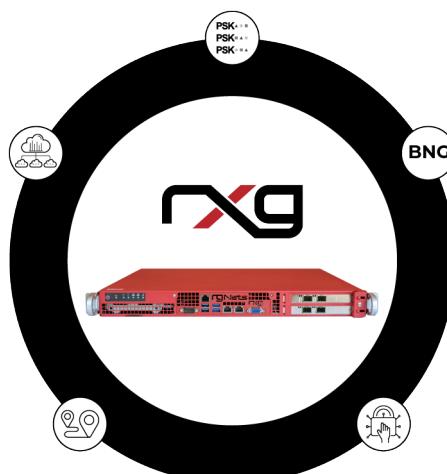
### VALUED FEATURES

- Flexible micro segmentation for MDU and Hospitality applications.
- Native SD-WAN supports neutral host, dynamic path selection, bandwidth aggregation, service chaining, content filtering and a stateful firewall.
- Fleet Manager remotely manages large populations of rXg's.

The rXg (revenue eXtraction gateway) is the ultimate platform for your Enterprise border and service provider edge. By combining a powerful, comprehensive set of network services into a single unified platform, the rXg is purpose built to deliver complete connectivity, robust security and efficient management.

The rXg may be ordered pre-installed on a broad spectrum of Dell hardware. Dell VEPs are ideal for small office, branch office, and remote office enterprise installations. Service providers use Dell VEPs as multi-access edge compute customer premises equipment for smaller scale deployments. Dell PowerEdge servers are perfect for medium to large enterprises as well as managed service providers deployments at MDUs, MTUs and LPVs.

Whether your private network serves a single Enterprise office, a leading hospitality chain with thousands of distributed venues, or millions of Internet service subscribers scattered across a continent, the rXg by RG Nets is purpose built to meet the constantly growing demands of modern networks, ready to scale with the success of your business.



- Routing
- SD-WAN
- Traffic Shaping
- L7 Firewall with IPS and IDS
- Content Filter
- Analytics Engine
- WAN Optimization and Caching
- VPN Concentrator
- Persistent NAC and AAA engine
- Marketing Integration
- NMS / EMS
- Location Engine
- Infrastructure Management
- RESTful API
- IoT Hub Concentrator
- Hypervisor

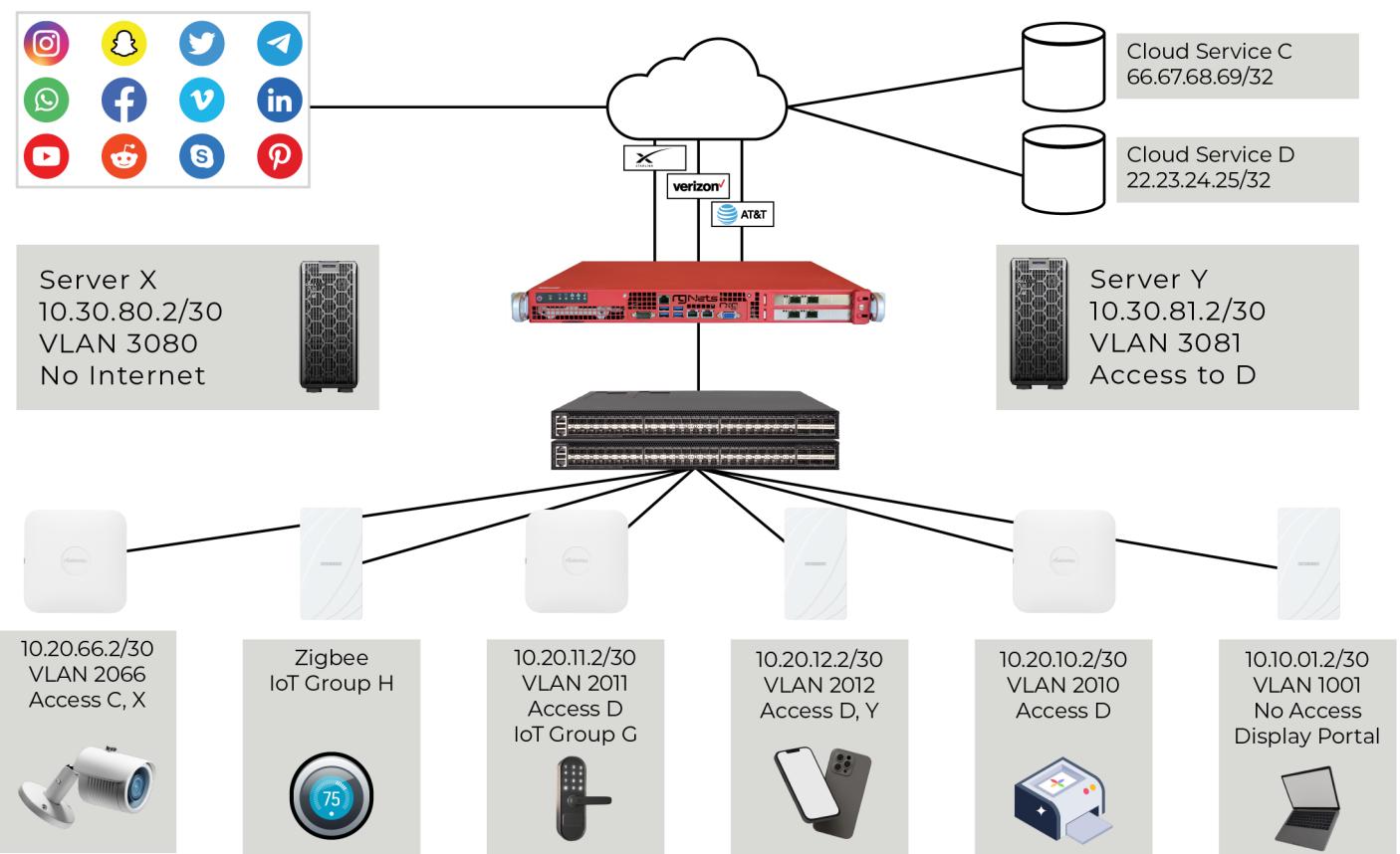
# rXg for Enterprise

Enterprise networks are becoming increasingly complex and challenging to secure. With the proliferation of internet-connected devices and remote work, the threat landscape is constantly evolving, making it essential to adopt a robust security approach. The rXg is a solution that provides network operators with the necessary tools to implement a secure Zero Trust Network Architecture (ZTNA).

The rXg is an ideal solution for BYOD enterprise and sponsored guest environments. It provides a secure and reliable network infrastructure that allows guests to connect their personal devices to the enterprise network without compromising network security. With rXg, IT administrators can create a separate guest network that is isolated from the corporate network, ensuring that sensitive data remains secure. The rXg also offers advanced authentication and access control features, including support for social media logins and SMS-based authentication, making it easy for guests to connect to the network. Additionally, rXg provides a customizable splash page that allows enterprises to showcase their brand and communicate important information to guests. With its flexible and scalable architecture, rXg is an excellent choice for organizations that want to provide a seamless, secure, and user-friendly guest networking experience.

By leveraging the rXg's tightly integrated network services, enterprises can build a strong first line of defense against cyber threats. The rXg can help Enterprise networks, specifically by providing Routing with SD-WAN and traffic shaping, Micro-segmentation focused Network Access Control (NAC), Unified Threat Management (UTM) with workload analysis, Application layer firewall with Deep Packet Inspection (DPI), and a Zero Trust Model.

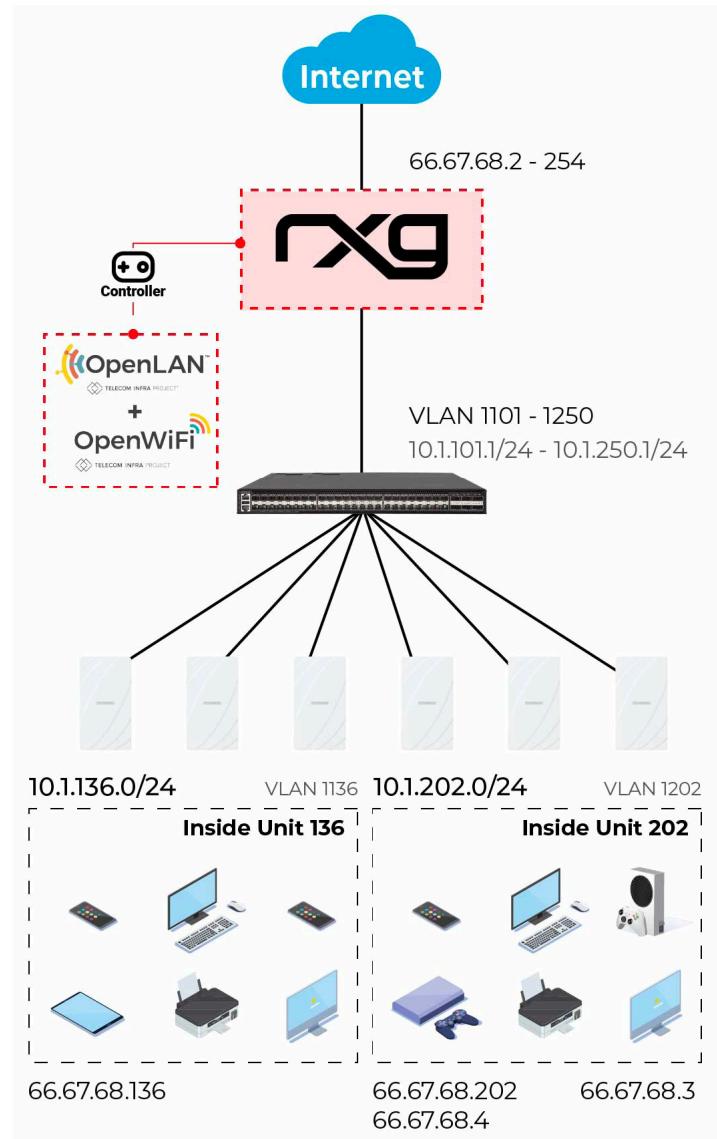
- Provides tightly integrated network services needed for a secure Zero Trust Network Architecture (ZTNA).
- Offers routing with SD-WAN and traffic shaping to ensure efficient and secure network traffic.
- Includes micro-segmentation-focused Network Access Control (NAC) and Unified Threat Management (UTM) for comprehensive security.
- Has an application layer firewall with Deep Packet Inspection (DPI) to identify and block potential threats.
- Enables the implementation of a micro-segmented network architecture, ensuring that each device is on a unique VLAN and subnet, with individual control of privileges and containment of any potential breaches.



# rXg for Service Providers

In the fast-paced telecommunications industry, rapid deployment of services to customers is critical, and Operations Support Systems (OSS) and Business Support Systems (BSS) play a pivotal role in ensuring a seamless customer experience. With rXg, service providers can take advantage of a super agile B/OSS that combines both OSS and BSS functions in a comprehensive solution. The rXg streamlines processes and enhances efficiency, from order capture, customer management, billing to network inventory management and operations. As a result, service providers can manage their operations with ease, deploy new services faster, and deliver unparalleled customer experiences. Embrace the power of integration with rXg to take advantage of a wealth of advanced features that can help you take your operations to the next level.

- Provides cutting-edge network management capabilities that enable service providers to easily monitor, manage, and optimize network performance in real-time. This results in streamlined network configurations, quick issue resolution, and enhanced productivity.
- Revolutionizes the subscriber experience with its fully automated subscription process. It eliminates the need for operator intervention, resulting in fast and seamless activation of services that enhance subscriber satisfaction.
- Offers unparalleled flexibility and integration capabilities when it comes to billing. It can work seamlessly with existing billing systems, including over two hundred credit card payment gateways, property management systems, and facility management systems. rXg's flexible and scalable billing solutions streamline billing processes, increase revenue, and improve customer satisfaction.
- Is designed to be flexible and adaptable to a wide range of business models. It supports non-traditional business models found in lesser developed countries where the population may not have access to traditional banking systems. rXg's flexible payment solutions allow local representatives to collect payments in any form they are willing to accept, making it easier for service providers to reach new markets and expand their customer base.



# SPECIFICATIONS

rXg Features	Summary	Description
<b>Routing</b>	NAT, cgNAT, BGP, RIP, PPPoE, GIF, GRE, VLAN, VXLAN, BiNAT, dynamic BiNAT, BNG	High performance, multiprotocol routing platform designed to be a service provider B-RAS and/or enterprise border gateway.
<b>Core Network Services</b>	DHCP, DNS, dynDNS	Completely configurable DHCP server. Full integration with end-user management to enable simplified option passing to end-user devices and fixed assignment of addresses. Full DNS server with full primary and secondary zone control. Dynamic DNS clients to ease remote access and operational
<b>Traffic Shaping</b>	Rate limiting, bursts, guarantees, equalization	Specifically designed for subscriber self provisioning and premium service upsell scenarios. Guarantee an operator specified minimum bandwidth to certain end-users on a per-user basis. Enforce usage quotas over the end-user population using an operator specified time scale. Enables operator to control consumption of bandwidth over long range time scales (e.g., 5 GB per month) while allowing higher instantaneous speeds. Automated zero intervention provisioning of quota additions purchased via integrated captive portal. Hard packet prioritization guarantees that packets from operator specified end-users are forwarded before any others. Several levels of operator configurable priority.
<b>Billing System</b>	Zero operator intervention end-user multi-tier self-provisioning billing system	Bill end-users for tiered levels of access and premium services either recurring or one time via a several methodologies, including: Credit card processing engine supporting over thirty payment gateways. Fully integrated into the captive portal web application and internal end-user database, enabling zero operator intervention for end-user self provisioning. Single and multiple use coupon code generator and management. Easy implementation and operation of alternative direct and reseller revenue models (e.g., pre-paid, micro-payment, bulk payment, etc.). Zero cost service support. Specific support that simplifies management of networks designed with zero direct revenue generation (e.g., session intercession by MAC address, authorization via shared password, etc.) Support for non-traditional banking systems and barter.
<b>Web Experience Manipulation</b>	HTTP Payload rewriting, HTTP request rewriting with and without SSL decryption	Complete control over the end-user world wide web experience with specific support for advertising and premium service revenue generation mechanisms such as: <ul style="list-style-type: none"><li>Periodically redirect web requests to specially designed interstitial advertising templates delivered via the captive portal mechanism.</li><li>Arbitrarily rewrite any or all web pages that end-users experience. Inject advertising, insert banners, communicate operator service messages inline with the end-user web experience.</li><li>Simplified integration of pre and post authentication captive portal advertising with integrated payload rotation services</li></ul>
<b>Portals</b>	Fully customizable end-user, guest, tenant, venue and operator portals.	Integrated database for local credential storage. Simple and effective management of end-user credentials via a local SQL database with a responsive web application GUI. External database connectivity for credential challenge and response (e.g., via RADIUS, WISPr, etc.). Integrate with other AAA mechanisms to reduce credential management overhead. Extensible framework built using Ruby on Rails, eRuby, XML and JSON.

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<b>High availability and cluster topology</b>	rXgs can be clustered for redundancy and HA failover.	rXg can be deployed in separate instances in HA or in clusters for network redundancy
<b>RADIUS</b>	RADIUS NAS, Support for PVLANS, RADIUS realms, Proxy RADIUS servers, 802.1X (EAP-TLS/TTLS/PEAP)	RADIUS server with full integration into internal database. Enables operators to use the captive portal web application as a centralized billing and end-user management system with third-party authentication mechanisms
<b>Onboarding/VRG</b>	Support for Guest, BYOD, headless device and secure resident device onboarding with or without certificates. Custom onboarding portals.	rXg provides the ability to create custom onboarding portals for all devices as well as the Virtual Residential Gateways (VRG). VRG gives users the ability to control their virtual network just as they would with a home Wi-Fi router.
<b>Flexible micro segmentation for MDU/MXU, and Hospitality networks</b>	Server for dynamic PVLANS, DPSK generation and coordination	rXg provides micro segmentation with the use of PVLANS and VRG. This not only makes the network flexible and secure but allows a user to have their VRG follow them throughout the network.
<b>VPN/IPSEC</b>	Native Open VPN and IPSEC	rXg supports site to site VPN and serve as an Open VPN server for site to site and site to client connectivity, as well as serving as an IPSEC server with IPSEC tunneling.
<b>SD-WAN</b>	Native SD-WAN	rXg's SD-WAN feature supports dynamic path selection through its combination of link failover, bandwidth aggregation, and application affinity. Aggregate several uplinks to achieve the equivalent throughput of a single large link. Leverage multiple cost effective DSL and cable modem uplinks to acquire large volumes of bandwidth at a low monthly recurring cost. Automatically failover between uplinks. Detect uplink status and manages pools of uplinks. Optionally designate certain uplinks as backup-only to support shadow leased line, satellite or WWAN backup scenarios. Relate uplink pools to groups of end-users. Enable operators to offer premium services based on routing policy such as business and VPN customers access to high performance leased lines while sending residential customers and bulk traffic to low cost DSLs and cable modem. Simultaneously utilize a diverse array of uplink carriers. Enables operators to work with as many carriers as desired without cross carrier configuration. Avoid complex, problematic and costly peering arrangements and special routing protocols. All carrier diversity is handled inside the gateway.
<b>Virtual machine hosting</b>	rXg as a virtual hosting platform.	rXg can be used as a platform to host other VMs, either for other rXg's for clustering or things such as IoT servers or VM DVR deployments, even Microsoft Windows machines for testing. No need for an external VM server.
<b>PMS integration</b>	Native support for most major PMS systems.	rXg supports integration with property management systems for back office operational support.
<b>Fleet Manager</b>	Allows operators to manage, upgrade and monitor multiple rXg's from a single dashboard.	Fleet Manager is a suite of applications designed to remotely manage, configure, upgrade and report on the health of large population of rXg's. An essential feature for chains of hotels who have deployed similar configurations in many locations

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<b>Custom Policy</b>	Role-based AAA policy enforcement engine	rXg can create and track custom policies such as captive portal, content filtering, event triggers, interstitial redirection, packet filters, packet forwards, payload redirect, persistent caching, traffic shaping, uplink control. Fully automated enforcement of per-user policies with a broad spectrum of target identification and policy template options including: Identify and assign roles to end-users through nearly any mechanism imaginable, including but not limited to credential capture via portal, IP address, subnet, VLAN, MAC address, etc. Identify and group applications by server IP address, source port(s), destination port(s) and signature. One-click assignment of policy templates to end-user roles, application groups and authenticated databases of end-users. Fully automated enforcement of per-user policy over a dynamic end-user population.
<b>Unified Threat Management</b>	The rXg consolidates multiple security features like firewall, intrusion prevention, antivirus, and content filtering into one platform.	Specific features and bias for expanding operator revenue generation opportunities such as: Stateful firewall to dynamically alter packet filtering based on end-user group, IP address, MAC address, and/or known applications. Full integration with billing engine enables operators to use filtering policy as an enabler of premium service offerings. Intrusion protection system to quickly identify, isolate and temporarily or permanently penalize, quarantine or black-hole abusive end-users. Fully integrated with all available end-user communication vectors including but not limited to captive portal interstitial redirection and message injection via payload rewriting.
<b>Deployment Options</b>	Bare metal and Virtualized	rXg can be deployed as a VM or bare metal install, as a standalone server or clustered system.
<b>Location-Based Services</b>	Way-finding, crowd management at LPVs, direct advertisement/promotion based upon end user location	
<b>Neutral Host</b>	Allow a (private network) operator to offer a choice of uplink ISPs to an end-user population that is connecting over a single, unified active Ethernet distribution.	End-users can connect to the network via a captive portal and choose their internet service provider through Neutral Host Access.
<b>Microsegmentation Automation</b>	Configure thousands of VLANs on the rXg with one click and use your PMS for PSK generation	Microsegmented networks puts every unit or home on its own VLAN allowing DPSK capabilities.

# SKUs

SKU	Description
<b>MICRO Subscription</b>	
RXG-MICRO	rXg Base Micro Subscription License
RXG-CPL-MICRO	rXg Micro Control Plane License 198 Pack
RXG-FML-MICRO	Fleet Manager Micro Subscription License
RXG-F-500-MICRO	Micro rXg Subscription License 500Mbps Upgrade
RXG-F-1G-MICRO	Micro rXg Subscription License 1Gbps Upgrade
RXG-F-5G-MICRO	Micro rXg Subscription License 5Gbps Upgrade
RXG-POLICY-100-MICRO	rXg Subscription License 100 Policy Upgrade
RXG-POLICY-250-MICRO	rXg Subscription License 250 Policy Upgrade
RXG-LTF-MICRO	rXg Micro License Transfer Fee
<b>Standard Subscription</b>	
RXG-SUB	rXg Base Subscription License
RXG-SUB-LEG	rXg Subscription License Legacy Conversion
RXG-POLICY-100	rXg Subscription License 100 Policy Upgrade
RXG-POLICY-250	rXg Subscription License 250 Policy Upgrade
RXG-POLICY-500	rXg Subscription License 500 Policy Upgrade
RXG-FML-SUB	Fleet Manager Subscription License
RXG-LTF	rXg License Transfer Fee
<b>Extra Small Support Options (99-500 SUL)</b>	
RXG-SUB-XS-B	rXg Extra Small Subscription License Basic OSS
RXG-SUB-XS-E	rXg Extra Small Subscription License Enhanced OSS
RXG-SUB-XS-M	rXg Extra Small Subscription License Managed OSS
<b>Small Support Options (501-1,000 SUL)</b>	
RXG-SUB-SM-B	rXg Small Subscription License Basic OSS
RXG-SUB-SM-E	rXg Small Subscription License Enhanced OSS
RXG-SUB-SM-M	rXg Small Subscription License Managed OSS
<b>Medium Support Options (1,001-5,000 SUL)</b>	
RXG-SUB-MD-B	rXg Medium Subscription License Basic OSS
RXG-SUB-MD-E	rXg Medium Subscription License Enhanced OSS
RXG-SUB-MD-M	rXg Medium Subscription License Managed OSS
<b>Large Support Options (5,001-10,000 SUL)</b>	
RXG-SUB-LG-B	rXg Large Subscription License Basic OSS
RXG-SUB-LG-E	rXg Large Subscription License Enhanced OSS
RXG-SUB-LG-M	rXg Large Subscription License Managed OSS

SKU	Description
<b>Extra Large Support Options (10,001-16,000 SUL)</b>	
<b>RXG-SUB-XL-B</b>	rXg Extra Large Subscription License Basic OSS
<b>RXG-SUB-XL-E</b>	rXg Extra Large Subscription License Enhanced OSS
<b>RXG-SUB-XL-M</b>	rXg Extra Large Subscription License Managed OSS
<b>Extra Extra Large Support Options (16,001+ SUL)</b>	
<b>RXG-SUB-XXX-B</b>	rXg Extra Extra Large Subscription License Basic OSS
<b>RXG-SUB-XXX-E</b>	rXg Extra Extra Large Subscription License Enhanced OSS
<b>RXG-SUB-XXX-M</b>	rXg Extra Extra Large Subscription License Managed OSS
<b>Bandwidth Unlock Addons</b>	
<b>RXG-F-1G</b>	Annual Subscription License upgrades rXg throughput to 1 Gbps per interface. Minimum 100 SUL required per deployment.
<b>RXG-F-5G</b>	Annual Subscription License upgrades rXg throughput to 5 Gbps per interface. Minimum 250 SUL required per deployment.
<b>RXG-F-10G</b>	Annual Subscription License upgrades rXg throughput to 10 Gbps per interface. Minimum 500 SUL required per deployment.
<b>RXG-F-25G</b>	Annual Subscription License upgrades rXg throughput to 25 Gbps per interface. Minimum 1000 SUL required per deployment.
<b>RXG-F-40G</b>	Annual Subscription License upgrades rXg throughput to 40 Gbps per interface. Minimum 2500 SUL required per deployment.

## About RG Nets

RG Nets is the premium provider of gateways and centralized-authentication appliances designed to manage, provision, and protect revenue-generating networks. Our mission is to create tools that are so good, we would use our own money to buy them.

[www.rgnets.com](http://www.rgnets.com)

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

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