RGS-R9004GP+ME-HV

Industrial Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, High-voltage power inputs

Features

- Supports **O-Ring** (recovery time < 30ms) and MSTP(RSTP/STP compatible) for Ethernet Redundancy
- **O-Chain** allow multiple redundant network rings
- Support standard IEC 62439-2 **MRP***NOTE (Media Redundancy Protocol) function
- Support Modbus TCP protocol
- VLAN unaware: Supports priority-tagged frames to be received by specific IEDs
- Provided HTTPS/SSH protocol to enhance network security
- Supports SMTP client and NTP server protocol
- Supports IP-based bandwidth management
- Supports application-based QoS management
- Supports Device Binding security function
- Supports DOS/DDOS auto prevention
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Supports SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Supports port mirror function to monitor port data
- Support ACL, TACACS+ and 802.1x User Authentication for security
- Supports 9.6K Bytes Jumbo Frame
- Multiple notification for warning of unexpected event
- Web-based ,Telnet, Console (CLI), and Windows utility (**Open-Vision**) configuration
- Support LLDP Protocol
- Support loop guard to solve Ethernet loop issue
- Rigid IP-30 housing design
- Modular design makes network planning easy
- Supports Layer 3 static routing, RIP, VRRP function
- Supports redundant power inputs with optional voltage range
- 19 inches rack mountable design

***NOTE: This function is available by request only**

Introduction

RGS-R9004GP+ME-HV is Layer-3 modular managed redundant ring Ethernet switch with 6 slots, up to 48 ports, and has 4 fixed 10G SFP+ ports. With such high port density and modular design, it makes network planning easier. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 30ms) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. And support wide operating temperature from 0 ℃ to 60 ℃ . RGS-R9004GP+ME can also be managed centralized and convenient by Open-Vision, as well as the Web-based interface, Telnet and console (CLI) configuration. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber Ethernet

- **O-Ring :** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 30 milliseconds and up to 250 nodes. The O-Ring redundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.
- **O-Chain :** O-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, O-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. O-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology.

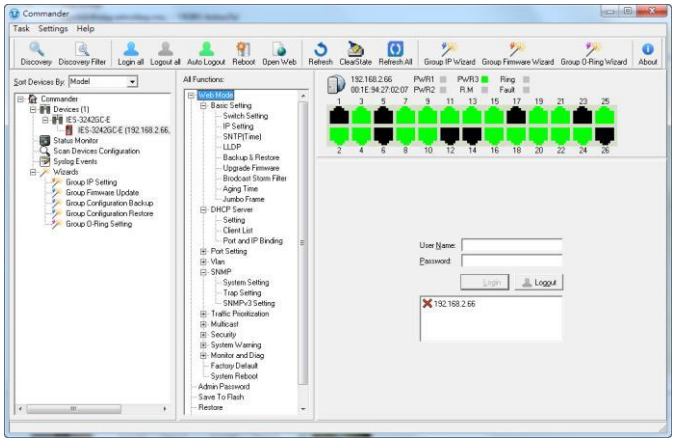
* All specifications are subject to change without notice.

- **MRP : Media Redundancy Protocol (MRP)** *NOTE is a data network protocol standardized by the IEC 62439-2. It allows rings of Ethernet switches to overcome any single failure with recovery time much faster than achievable with Spanning Tree Protocol.
- **IP-based Bandwidth Management :** The switch provide advanced IP-based bandwidth management which can limit the maximum bandwidth for each IP device. User can configure IP camera and NVR with more bandwidth and limit other device bandwidth.
- **Application-Based QoS :** The switch also support application-based QoS. Application-based QoS can set highest priority for data stream according to TCP/UDP port number.
- **Device Binding Function :** ORing special Device Binding function can only permit allowed IP address with MAC address to access the network. Hacker cannot access the IP surveillance network without permission. It can avoid hacker from stealing video privacy data and attacking IP camera, NVR and controllers.
- **Advanced DOS/DDOS Auto Prevention :** The switch also provided advanced DOS/DDOS auto prevention. If there is any IP flow become big in short time, the switch will lock the source IP address for certain time to prevent the attack. It's hardware based prevention so it can prevent DOS/DDOS attack immediately and completely.
- **Modbus TCP :** This is a Modbus variant used for communications over TCP/IP networks.
- **IEEE 802.3az Energy-Efficient Ethernet :** This is a set of enhancements to the twisted-pair and backplane Ethernet family of networking standards that will allow for less power consumption during periods of low data activity. The intention was to reduce power consumption by 50% or more.
- **Modular Design:** Modular design can make network planning easy and allow greater flexibility by letting you install other Ethernet/Optical fiber module

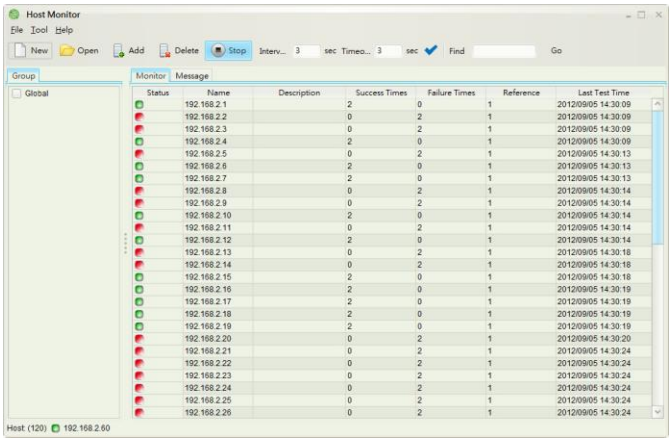
***NOTE: This function is available by request only**

Open-Vision

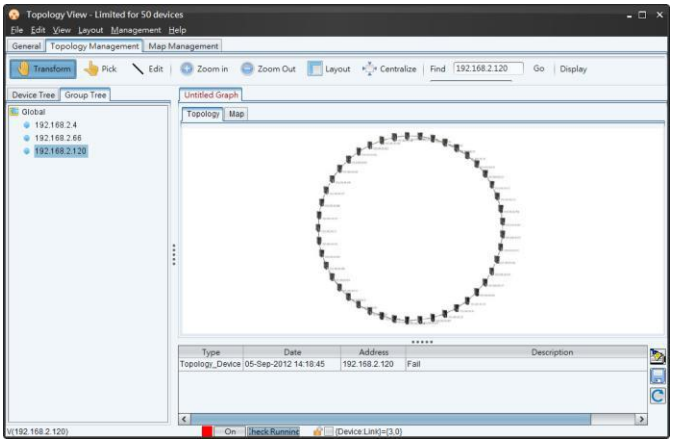
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



Host Monitor



Topology View

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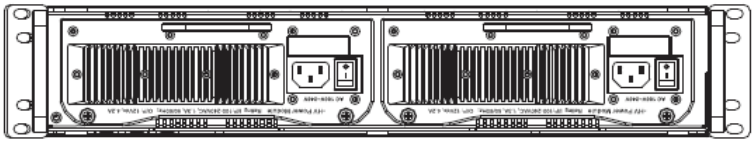
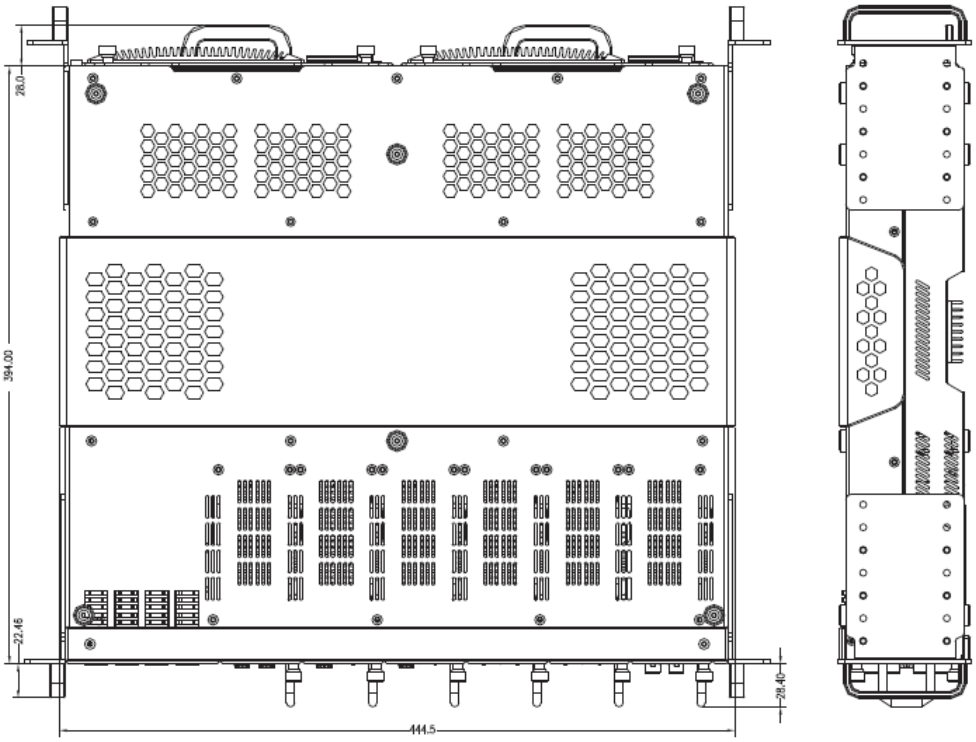
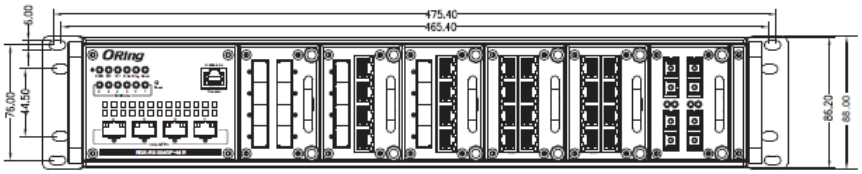
Dimensions

Unit =mm (Tolerance ±0.5mm)







Specifications

ORing Switch Model	RGS-9004GP+ME-HV
Physical Ports	
Slot Number	6
1G/10Gbase-X with SFP+	4
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	32K
Packet buffer	32Mbits
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 176Gbps Throughput (packet per second) : 130.94Mpps@64Bytes packet Max. Number of Available VLANs: 4095 VLAN ID Range: VID 1 to 4094 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Define
Jumbo frame	Up to 10K Bytes
Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security MAC-based authentication(802.1x) Guest VLAN Web and CLI authentication and authorization IP source guard
Software Features	Hardware routing, RIP , VRRP and static routing IEEE 802.1D Bridge, auto MAC address learning/aging and MAC address (static) Multiple Registration Protocol (MRP) STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 30ms TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging IGMP Snooping IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client NTP server Modbus TCP
Network Redundancy	O-Ring O-Chain MRP*NOTE MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1 **(support backup unit)**

***NOTE: This function is available by request only**

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LED Indicators	
Power Indicator (PWR)	Green : Indicates that the system ready. The LED is blinking when the system is upgrading firmware
Power Indicator (PWR1 / PWR2)	Green: Power LED x 2e
Ring Master Indicator (R.M.)	Green: Indicates that the system is operating in O-Ring Master mode
O-Ring Indicator (Ring)	Green: Indicates that the system operating in O-Ring mode Green Blinking: Indicates that the Ring is broken.
Fault Indicator (Fault)	Amber: Indicate unexpected event occurred
Module Indicator	Green: LED x 6. Indicate the module is connected to device.
Fault contact	
Relay	None
Reset Function	
Reset Button	< 5 sec: System reboot, > 5 sec: Factory default
Power	
Redundant Input power	Dual 100~240VAC/125~370VDC power inputs
Power consumption (Typ.)	68.8W
Overload current protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	2U 19 inches rack mountable, IP-30
Dimension (W x D x H)	444.5 (W) x 422 (D) x 86.2 (H) mm 17.49 (W) x 16.61 (D) x 3.39 (H) inches
Weight (g)	5.8 kg (without module)
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	0° to 60°C
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
EMC	CE EMC (EN 55024, EN 55032), EN50121-4 (compliant), FCC Part 15 B
EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A
EMS	EN 55024 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8 (PFMF), IEC/EN 61000-4-11 (DIP)
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN 62368-1
MTBF	412139 hrs
Warranty	5 years

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Ordering Information

RGS-R9AA B CC+ DD-EE

Code Definition	*Slot Number*	1G/10GBase-X SFP Port Number	Additional Port Type	Module Serial	Power supply type
Option	***-6:*** *6 Slot*	**-4:** 4 ports	**-GP+:** 10Gigbit SFP soket	**-ME:** Module E	**-HV:** High Voltage 100~240V

	Model Name	Description
Available Model	*RGS-R9004GP+ME-HV_US*	Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, high-voltage power inputs, US power cord
	RGS-R9004GP+ME-HV_EU	Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, high-voltage power inputs, EU power cord
	RGS-R9004GP+ME-HV_UK	Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, high-voltage power inputs, UK power cord
	RGS-R9004GP+ME-HV_AU	Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, high-voltage power inputs, AU power cord
	RGS-R9004GP+ME-HV_JP	Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, high-voltage power inputs, JP power cord
	RGS-R9004GP+ME-HV_CN	Industrial Layer-3 modular rack mount managed Gigabit Ethernet switch with 4x 1G/10GBase-X, SFP+ socket, and 6x 8-port slots, high-voltage power inputs, CN power cord

Packing List
- *RGS-R9004GP+ME-HV x 1*
- *Rack-mount Kit x 1*
- *ORing Tool CD x 1*
- *Quick Installation Guide x 1*
- *Console Cable x 1*

Optional Accessories
- Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices
- SFP100 series : 100Mbps SFP optical transceiver
- SFP 1G series : 1Gbps SFP optical transceiver
- DR/SDR/DRP Series DIN-Rail power supply

Optional Module

SWM-80GT-E

Industrial 8-port Gigabit Ethernet switch module with 8x10/100/1000Base-T(X) ports

SWM-08GP-E

Industrial 8-port Gigabit fiber module with 8x100/1000Base-X, SFP socket

SWM-44GTP-E

Industrial 8-port Gigabit Ethernet switch module with 4x10/100/1000Base-T(X) and 4x100/1000Base-X, SFP socket

RPM-100HV-ME

100W Rack mount 12VDC/8.5A Power Supply Module with universal 100 to 240VAC input for RGS-R9004GP+ME-HV

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