RGPS-R9244GP+-P

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> ## Industrial Layer-3 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1G/10GBase-X, SFP+ socket, power supply included

Features

- Supports Layer 3 routing, RIP and static routing function
- Support **O-Ring** (recovery time < 30ms over 250 units of connection) 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
- 24 port P.S.E. fully compliant with IEEE802.3at standard, provide up to 30 Watts per port
- Support PoE scheduled configuration and PoE auto-ping check function
- Support hardware IEEE 1588v2 clock synchronization
- Support IPV6 new internet protocol version
- Support Modbus TCP protocol
- Support IEEE 802.3az **Energy-Efficient Ethernet** technology
- Provided HTTPS/SSH protocol to enhance network security
- Support SMTP client
- Support IP-based bandwidth management
- Support application-based QoS management
- Support Device Binding security function
- Support DOS/DDOS auto prevention
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Support SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Support ACL, TACACS+ and 802.1x User Authentication for security
- Supports 9.6K Bytes Jumbo Frame
- SFP socket support DDM function
- Multiple notification for warning of unexpected event
- Web-based ,Telnet, Console (CLI), and Windows utility (Open-Vision) configuration
- Support LLDP Protocol
- 19 inches rack mountable design

Introduction

RGPS-R9244GP+-P is Layer-3 Gigabit managed redundant ring PoE Ethernet switch with 24x10/100/1000Base-T(X) IEEE802.3at P.S.E. ports and 4x1G/10GBase-X SFP+ ports. The switch support Ethernet Redundancy protocol, **O-Ring** (recovery time < 30ms over 250 units of connection) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. RGPS-R9244GP+-P also support Power over Ethernet, a system to transmit electrical power up to **30 watts**, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each RGPS-R9244GP+-P switch had 24x10/100/1000Base-T(X) P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device (switch or hub for instance) that will provide power in a PoE connection. And RGPS-R9244GP+-P support wide operating temperature from -20°C to 60°C. RGPS-R9244GP+-P 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 PoE Ethernet application.

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

- **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 r edundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.

- **Open-Ring** : Open-Ring is an enhanced redundant technology that makes ORing's switches compatible with other vendor's proprietary redundant ring technologies. It enables ORing's switches to form a single ring with other vendor's switch. In cases where the ring is setup using proprietary technology, ORing offers a compatibility service where ORing can make its switches compatible with your particular network requirements.

- **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.

- **MRP**[*NOTE] : Media Redundancy Protocol (MRP) 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.
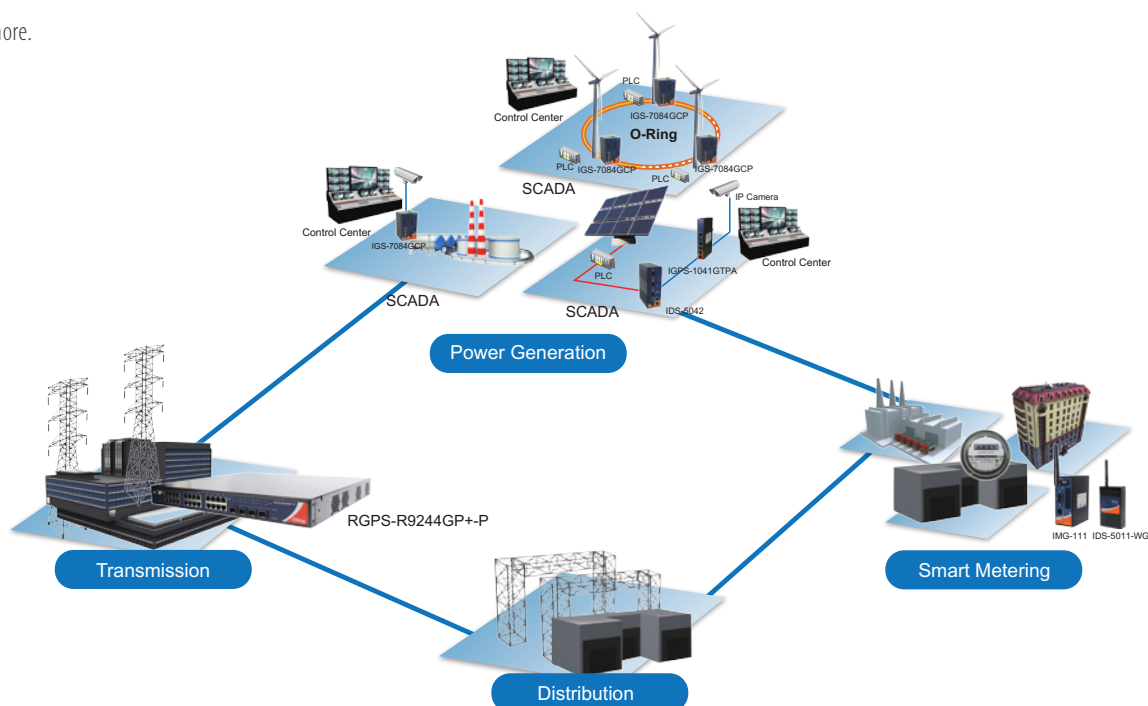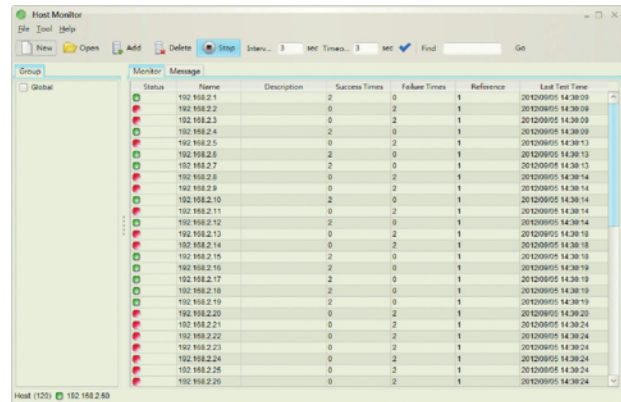
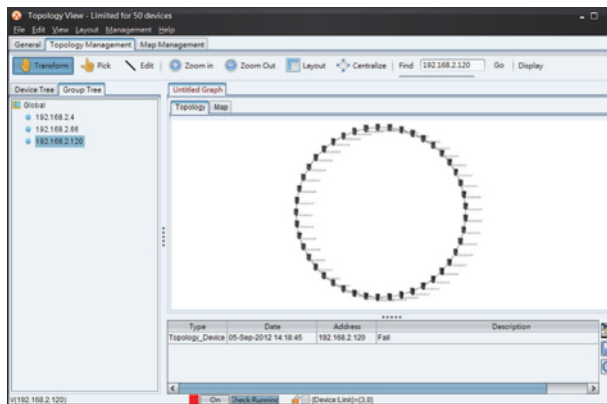***NOTE: This function is available by request only**

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.
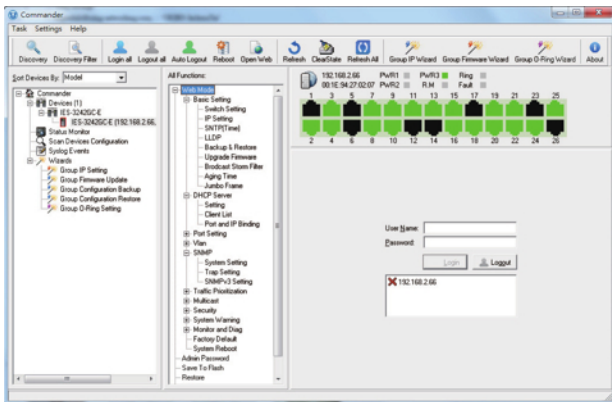
Commander

Host Monitor

Topology View

PoE Pin Definition

10/100Base-T(X) P.S.E. RJ-45 Port	
RJ-45 Pin Definition	
Pin No.	Description
#1	TD+ with PoE Power input +
#2	TD- with PoE Power input +
#3	RD+ with PoE Power input -
#6	RD- with PoE Power input -

1000Base-T P.S.E. RJ-45 Port	
RJ-45 Pin Definition	
Pin No.	Description
#1	BI_DA+ with PoE Power input +
#2	BI_DA- with PoE Power input +
#3	BI_DB+ with PoE Power input -
#4	BI_DC+
#5	BI_DC-
#6	BI_DB- with PoE Power input -
#7	BI_DD+
#8	BI_DD-

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Industrial Ethernet Switch

Dimensions
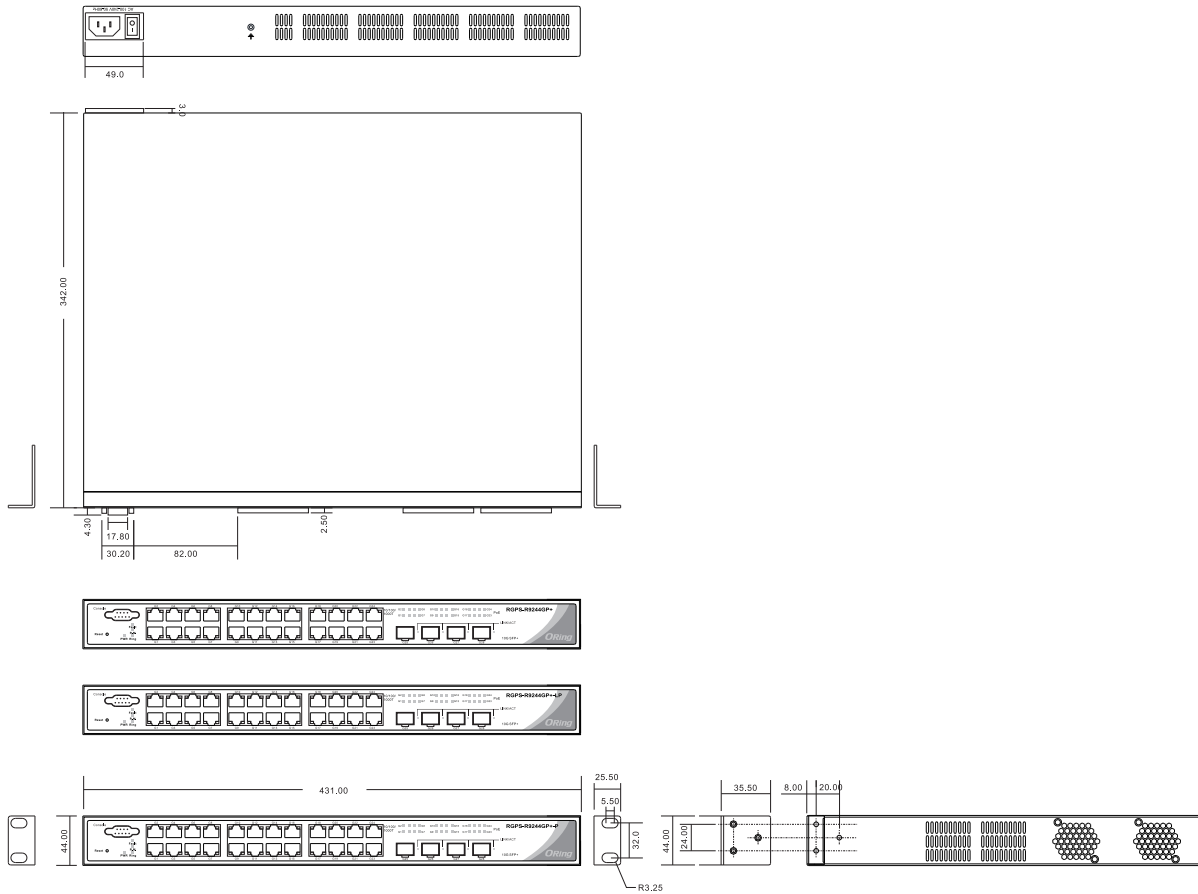
(Unit=mm)

Specifications

ORing Switch Model	RGPS-R92244GP+-P
Physical Ports	
10/100/1000Base-T(X) with P.S.E. Ports in RJ45 Auto MDI/MDIX	24
1G/10GBase-X with SFP+ port	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.z for 1000Base-X
	IEEE 802.3ae for 10Gigabit Ethernet
	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)
	IEEE 802.3at PoE specification (up to 30 Watts per port for P.S.E.)
	    -20 ~ 55°C : PoE output 720W Max.
	    55 ~ 60°C : PoE output 360W Max.

MAC table	8K
Priority queues	8
Processing	Store-and-Forward

ORing Designed for Rugged Excellence

Industrial Ethernet Switch

Industrial Media Converter

Industrial Device Server

Industrial Wireless Access Point

Industrial Cellular VPN Router

Industrial M2M Gateway

Accessories

Network Management Software

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Industrial Ethernet Switch

Switch properties	Switching latency : 7 μs Switching bandwidth : 52Gbps Max. Number of Available VLANs : 4095 VLAN ID Range : 1 to 4094 IGMP multicast groups : 256 for each VLAN Port rate limiting : User Define
Jumbo frame	Up to 9.6K Bytes
Security features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) Single 802.1x and Multiple 802.1x MAC-based authentication QoS assignment Guest VLAN MAC address limit TACACS+ VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security Web and CLI authentication and authorization Authorization (15 levels) IP source guard
Software features	Hardware routing, RIP and static routing IEEE 1588v2 clock synchronization IEEE 802.1D Bridge, auto MAC address learning/aging and MAC address (static) Multiple Registration Protocol (MRP) MSTP (RSTP/STP compatible) Redundant Ring (O-Ring) with recovery time less than 30ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging IGMP v2/v3 Snooping IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client DHCP Relay Modbus TCP SMTP Client
Network redundancy	O-Ring O-Chain MRP***NOTE** MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in DB-9 connector with console cable. 115200bps, 8, N, 1
LED Indicators	
Power indicator (PWR)	Green : Power indicator
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
10/100/1000Base-T(X) RJ45 Port Indicator	Dual color LED for Speed/Link/Act indicator ~ Green : 1000Mbps Link/Act Amber : 10/100Mbps Link/Act
100/1000Base-X SFP Port Indicator	Green for port Link/Act.
PoE Indicator	Green : PoE enabled LED x 24
Fault contact	
Relay	None
Power	
Input power	100~240VAC with power socket
Power supply	1000 Watts power supply included
Power consumption (Typ.)	37 Watts (P.D. not included)
Overload current protection	Present
Reverse Polarity Protection	Not Present

*NOTE: This function is available by request only

Physical Characteristics	
Enclosure	19 inches rack-mountable
Dimensions (W x D x H)	431 (W) x 342 (D) x 44 (H) mm (16.97 x 13.47 x 1.73 inch)
Weight (g)	6520 g
Environmental	
Storage temperature	-40 to 85℃ (-40 to 185℉)
Operating temperature	-20 to 60℃ (-4 to 140℉)
Operating humidity	5% to 95% Non-condensing
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD) EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free fall	IEC60068-2-32
Vibration	IEC60068-2-6
Warranty	5 years

Ordering Information

RGPS-R9 AA B CCC - P

Code Definition	10/100/1000Base-T(X) P.S.E. Port Number	Additional Port Number	Additional Port Type
Option	**- 24:** 24 ports	**- 4:** 4 ports	**-GP+:** 1G / 10GBase-X, SFP+ socket

	Model Name	Description
Available Model	RGPS-R9244GP+-P_US	Industrial Layer-3 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1G/10GBase-X, SFP+ socket, high watts power supply included, US power cord
	RGPS-R9244GP+-P_EU	Industrial Layer-3 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1G/10GBase-X, SFP+ socket, high watts power supply included, EU power cord
	RGPS-R9244GP+-P_UK	Industrial Layer-3 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1G/10GBase-X, SFP+ socket, high watts power supply included, UK power cord
	RGPS-R9244GP+-P_JP	Industrial Layer-3 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1G/10GBase-X, SFP+ socket, high watts power supply included, JP power cord

Packing List
- RGPS-R9244GP+-P
- Rack-Mount Kit
- Power Cable
- ORing Tool CD
- Quick Installation Guide
- Console Cable

Optional Accessories (Can be purchased separately)
- Open-Vision M500, Powerful Network Management Windows Utility Suite, 500 IP devices
- SFP1G series, 1Gbps SFP optical transceiver
- SFP10G series : 10GMbps SFP optical transceiver

Industrial
Ethernet Switch

Industrial
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Device Server

Industrial Wireless
Access Point

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VPN Router

Industrial
M2M Gateway

Accessories

Network
Management Software