RGPS-9244GP-LP-HV

Industrial 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1G Base-X, SFP+ socket

PRELIMINARY

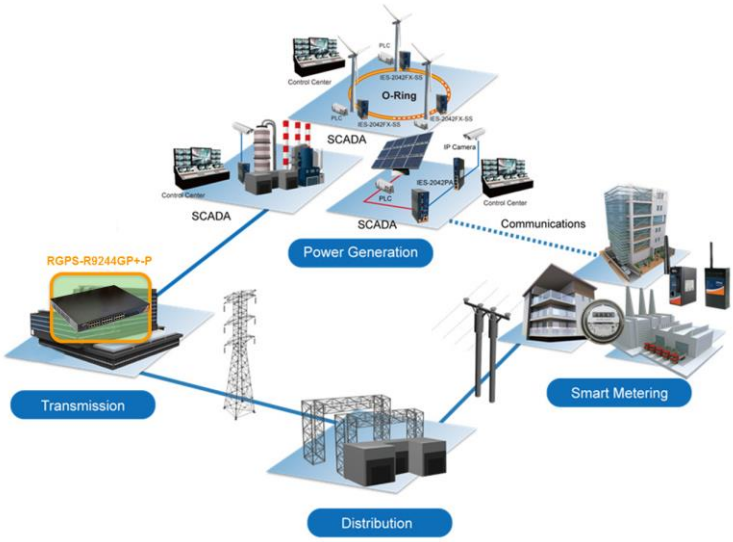
Features

- Support **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 (**Media Redundancy Protocol) function
- 24 port P.S.E. fully compliant with IEEE802.3at standard, provide up to 30 Watts per port
- Support PoE on/off scheduled configuration
- Support PoE alive check and auto reboot fuction
- 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 and SNTP server protocol
- 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 and 802.1x User Authentication for security
- Support 10K Bytes Jumbo Frame
- SFP socket support DDM function
- Multiple notification for warning of unexpected event
- Support **DBU-01** backup unit device to quickly backup/restore configuration
- Web-based ,Telnet, Console (CLI), and Windows utility (**Open-Vision**) configuration
- Support LLDP Protocol
- 19 inches rack mountable design

Introduction

RGPS-9244GP-LP-HV is Layer 2 Gigabit managed redundant ring PoE Ethernet switch with 24x10/100/1000Base-T(X) IEEE802.3at P.S.E. ports and 4x1GX SFP+ ports. The switch support 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. RGPS-9244GP-LP-HV series 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-9244GP-LP-HV series switch has 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-9244GP-LP-HV series support wide operating temperature from -40℃ to 60℃. Besides the Web-based interface, Telnet and console (CLI) configuration, RGPS-9244GP-LP-HV series can also be managed centralized and convenient by Open-Vision. Therefore, the switch is one of the most reliable choice for highly-managed and Fiber PoE Ethernet application.

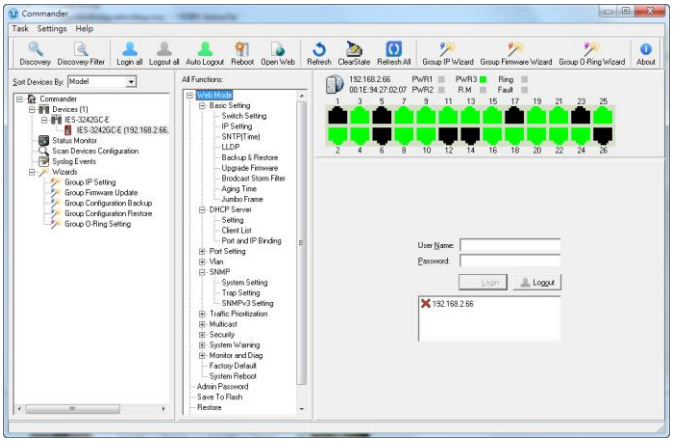
- **O-Ring :** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 30 milliseconds and up to 250 nodes. The O-Ring redundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.
- **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.
- **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.
- **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.



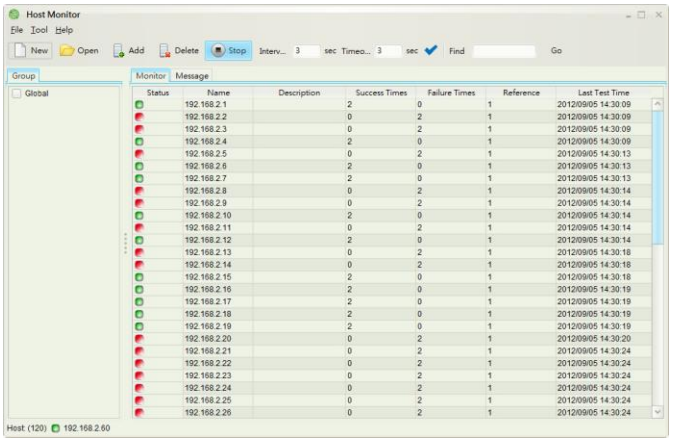
Network connection

Open-Vision

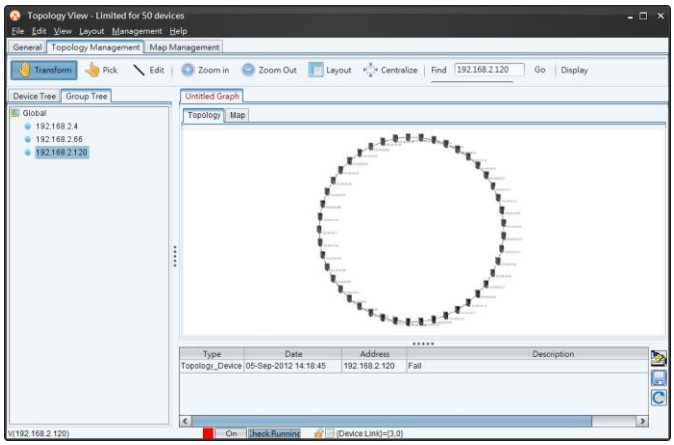
ORing switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



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-

Specifications

ORing Switch Model	RGPS-9244GP-LP-HV
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.)
MAC Table	32k
Packet Buffer	32Mbits
Flash Memory	128Mbits
DRAM Size	1Gbits
Jumbo frame	Up to 10K Bytes
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 128Gbps 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
Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) MAC-based authentication (802.1x) VLAN (802.1Q) to segregate and secure network traffic SNMPv3 encrypted authentication and access security Https / SSH enhance network security Web and CLI authentication and authorization IP source guard
Software Features	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 TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging IGMP v2/v3 Snooping Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/ Relay Modbus TCP NTP server SMTP Client
Network Redundancy	O-Ring O-Chain MRP*Note Fast Recovery

	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 Link/Act/Speed indicator ~ Green (1G Link/Act) / Amber (10/100M Link/Act)
1G/10GBase-X SFP+ Port Indicator	Green for port Link/Act.
PoE Indicator	Green : PoE enabled LED x 24
Fault contact	
Relay	24V/1A
Power	
Power input	Dual 100~240VAC with AC socket
Power supply	500Watts x 2
Power consumption (Typ.) (PoE output not included)	49Watts
Max PoE output	300Watts (-20℃~50℃) 240Watts (50℃~60℃)
Physical Characteristic	
Enclosure	19 inches rack mountable
Dimension (W x D x H)	431 (W) x 392 (D) x 44 (H)mm
Weight (g)	TBD
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-20 to 60°C (-4 to 140°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
EMC	CE EMC (EN 55035, EN 55035), FCC Part 15 B
EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A
EMS	EN 55035 (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	IEC 60068-2-27
Free Fall	IEC 60068-2-31
Vibration	IEC 60068-2-6
MTBF	TBD
Warranty	5 years

Ordering Information

RGPS-9AABCCC-DD

Code Definition	10/100/1000Base-T(X) P.S.E. Port Number	Additional Port Number	Additional Port Type	Power Supply Type
Option	**- 24:** 24 ports	**- 4: 4** ports	**-GP+:** 1G / 10GBase-X, SFP+ socket	**-LP-HV**: Dual 500Watts power supply

	Model Name	Description
Available Model	**RGPS-9244GP-LP_HV_EU**	Industrial 28-port managed Gigabit PoE Ethernet switch with 24x10/100/1000Base-T(X) P.S.E. and 4x1GBase-X, SFP+ socket, Dual power supply included, EU power cord

Packing List

- **RGPS-9244GP-LP-HV x 1**
- **ORing Tool CD x 1**
- **Quick Installation Guide x 1**
- **Rack-mount Kit x 1**
- **Power Cable x 1**
- **Console Cable x 1**

Optional Accessories

- **Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices**
- **DBU-01 : backup unit device**
- **SFP1G series : 1GMbps SFP optical transceiver**
- **SFP10G series : 10GMbps SFP optical transceiver**