RGS-92222GCP-NP Series

Managed Cyber-hardened 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X), 2xGigabit combo and 2x100/1000Base-X, SFP

Features

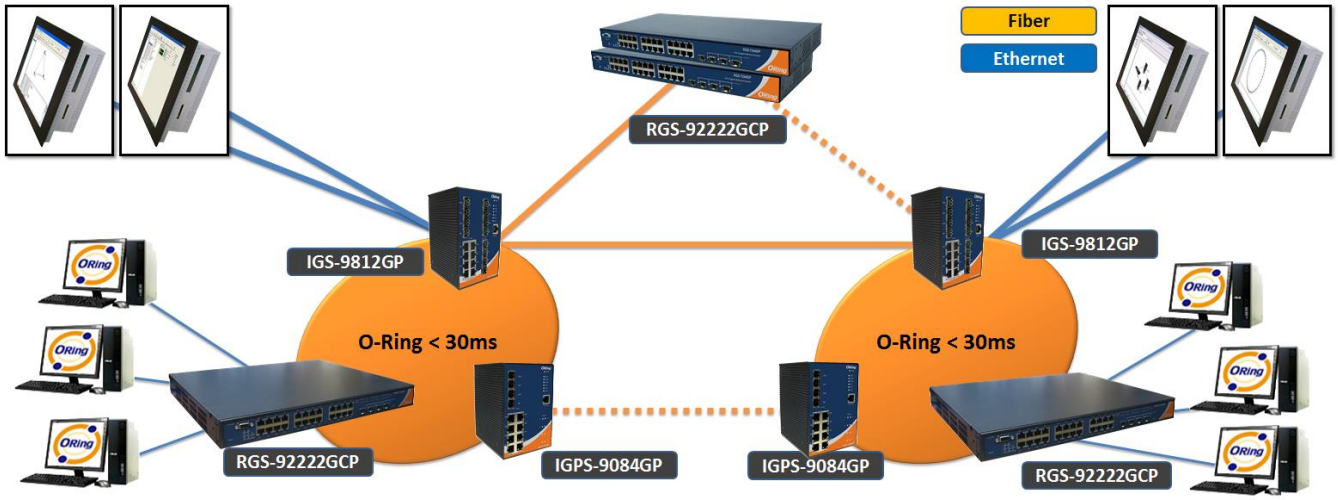
- Developed according to IEC 62443-4-1 and certified with the IEC 62443-4-2 industrial cybersecurity standards.
- Support **O-Ring** (recovery time < 30ms over 250 units of connection) and MSTP(RSTP/STP compatible) for Ethernet Redundancy
- **O-Chain** allow multiple redundant network rings
- Support standard IEC 62439-2 **MRP**(Media Redundancy Protocol) function
- 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 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 and 802.1x User Authentication for security
- Support 9.6K Bytes Jumbo Frame
- SFP socket support DDM function
- Multiple notification for warning of unexpected event
- Support **backup unit device DBU-01** for quickly backup/restore configuration
- Web-based ,Telnet, Console (CLI), and Windows utility (**Open-Vision**) configuration
- Support LLDP Protocol
- Support Full-Duplex mode
- 19 inches rack mountable design

Introduction

RGS-92222GCP-NP series are Gigabit managed redundant ring Ethernet switch with 22x10/100/1000Base-T(X) copper ports and 2xGigabit combo ports and 2x100/1000Base-X SFP ports. These switches support Ethernet Redundancy protocol, **O-Ring** (recovery time < 30ms over 250 units of connection), Open-Ring, O-Chain, MRP, Fast Recovery and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. RGS-92222GCP-NP series 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 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.
- **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.

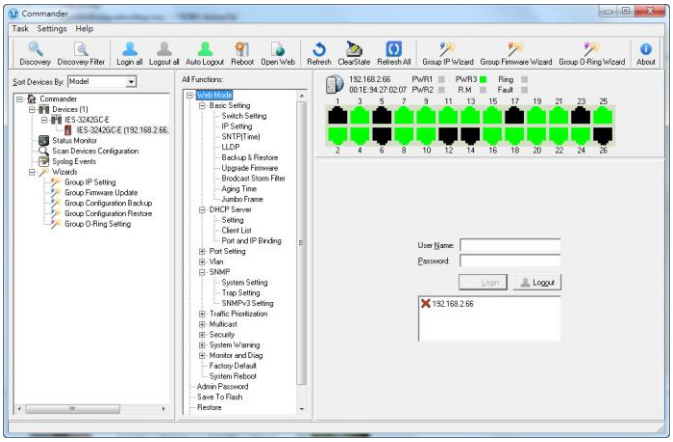
***NOTE: This function is available by request only**



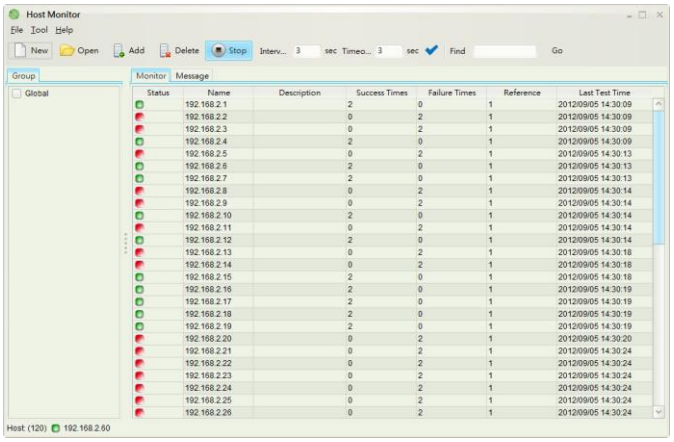
Network connection

Open-Vision

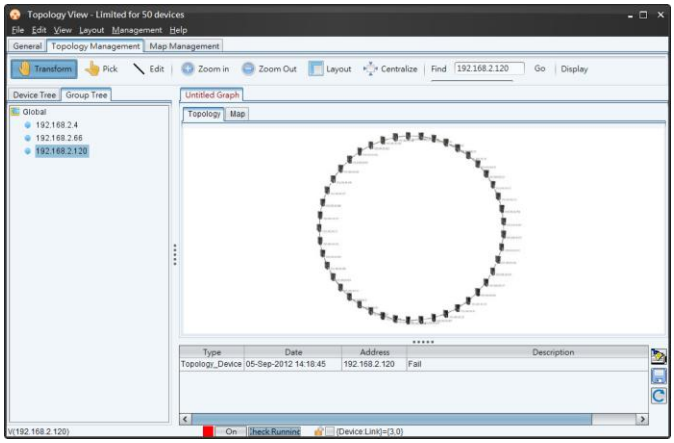
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



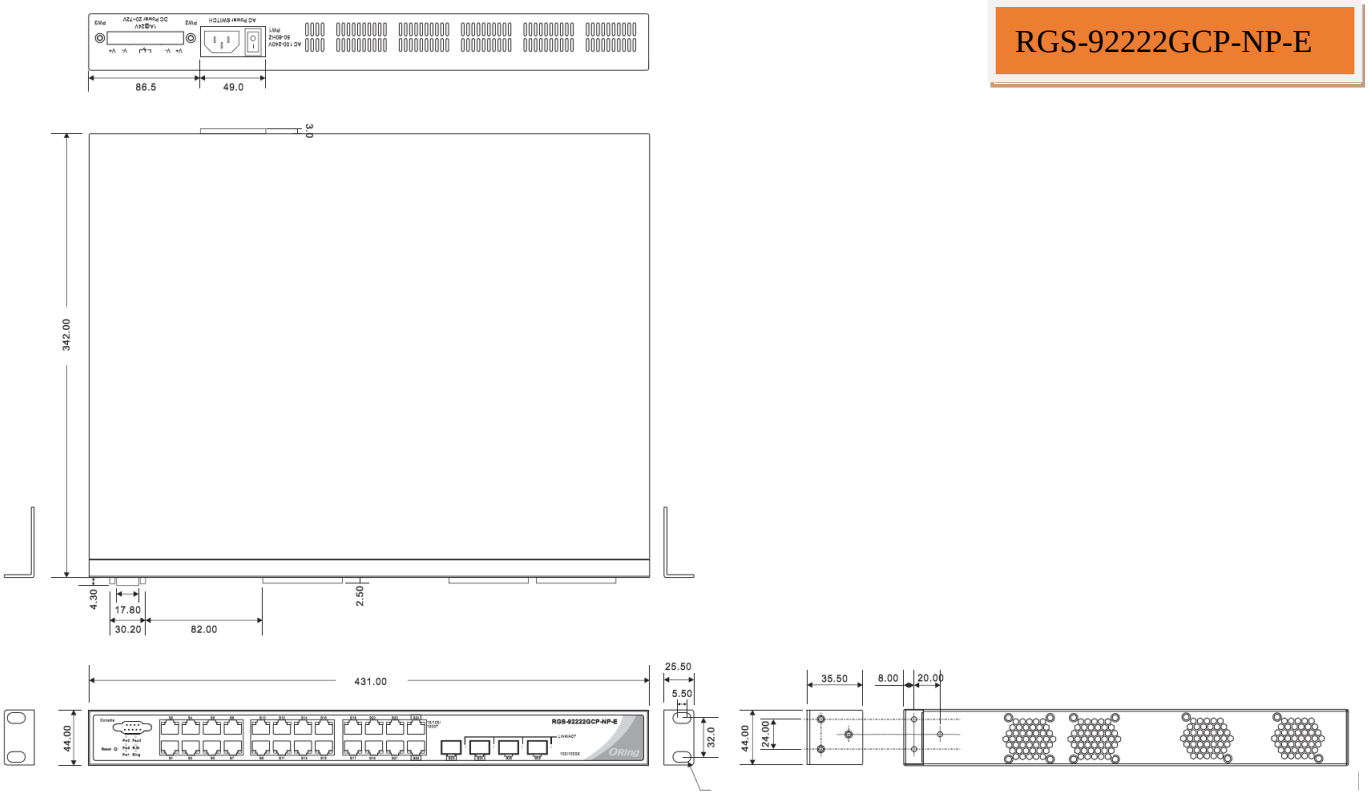
Host Monitor



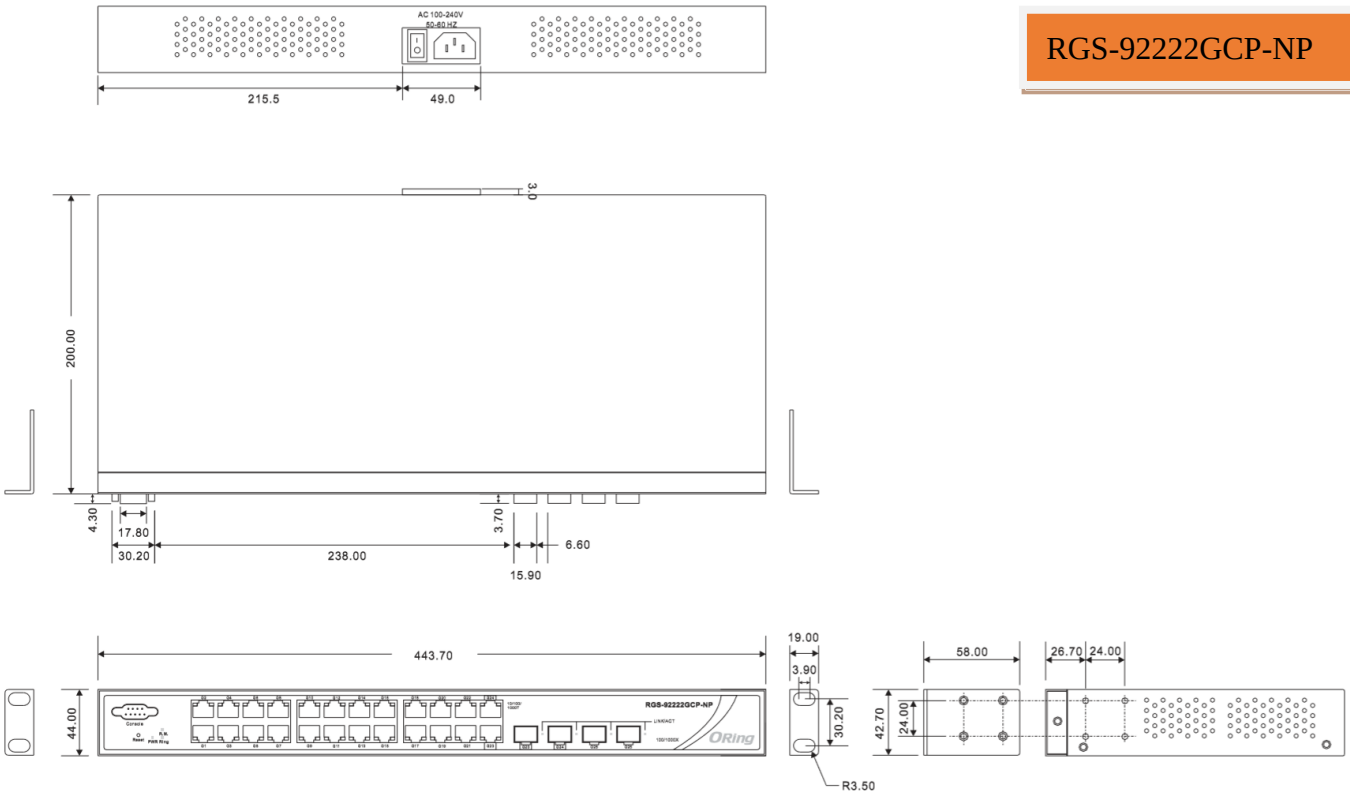
Topology View

Dimension

RGS-92222GCP-NP-E



RGS-92222GCP-NP



Specifications

ORing Switch Model	RGS-92222GCP-NP	RGS-92222GCP-NP-E
Physical Ports		
10/100/1000Base-T(X) with Ports in RJ45 Auto MDI/MDIX	**22**	
Gigabit Combo port with 10/100/1000Base-T(X) and 100/1000Base-X SFP ports	**2**	
100/1000Base-X with SFP port	**2**	
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 802.3x 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	8k	
DRAM Size	128MB	
Flash memory	128Mb	
Priority Queues	8	
Processing	Store-and-Forward	
Switch Properties	Switching latency: 7 us Switching bandwidth: 52Gbps Max. Number of Available VLANs: 4095 VLAN ID Range : VID 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) MAC-based authentication MAC address limit 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 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 over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic (4 different priority) 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 Port-based VLAN, overlapping VLAN IP and MAC Binding VLAN Port trucking (up to 10 sets) DHCP Server/Client DHCP Relay Modbus TCP	

	GVRP DNS client proxy SMTP Client SNTP server	
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	Green : Power indicator	Green LED x 3 : Power indicator for AC and DC
Ring Master Indicator	Green : Indicates that the system is operating in O-Ring Master mode	
O-Ring Indicator	Green : Indicates that the system operating in O-Ring mode Green Blinking : Indicates that the Ring is broken.	
Fault Indicator	None	Amber : Indicate unexpected event occurred
10/100/1000Base-T(X) RJ45 Port Indicator	Green for Link/Act indicator. Dual color LED for speed indicator : Green for 1000Mbps, Amber for 100Mbps, Off-light for 10Mbps	
100/1000Base-X SFP Port Indicator	Green for port Link/Act.	
Fault contact		
Relay	None	Relay output to carry capacity of 1A at 24VDC
Power		
Power Input	100 ~ 240VAC with power cord	100~240VAC with power cord, and dual 48VDC (36 ~ 72VDC) power inputs at 6-pin terminal block
Power consumption (Typ.)	22Watts	23Watts
Overload current protection	Present	
Reverse Polarity Protection	Not Present	Present on DC only
Physical Characteristic		
Enclosure	19 inches rack mountable	
Dimension (W x D x H)	443.7 x 200 x 44mm (17.47 x 7.87 x 1.73 inch)	431 x 342 x 44mm (17 x 13.46 x 1.73 inch)
Weight (g)	2850 g	4360 g
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-40 to 75°C (-40 to 167°F)	
Operating Humidity	5% to 95% Non-condensing	
Regulatory approvals		
Industrial Cybersecurity	IEC 62443-4-1, IEC 62443-4-2	
EMI	FCC Part 15, CISPR (EN55032) 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

RGS-9AABCDDD-NP-E

Code Definition	10/100/1000Base-T(X) Port Number	Gigabit Combo Port Number	Additional Port Number	Additional Port Type	Model Type
Option	**- 22:** 22 ports	**- 2: 2** ports	**- 2: 2** ports	**-GCP:** Gigabit Combo ports and Gigabit SFP ports	**-E:** enhanced model with dual DC inputs and Relay output

	Model Name	Description
Available Model	**RGS-92222GCP-NP_US**	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, US power cord
	RGS-92222GCP-NP_UK	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, UK power cord
	RGS-92222GCP-NP_EU	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, EU power cord
	RGS-92222GCP-NP_JP	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, JP power cord
	RGS-92222GCP-NP-E_US	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, enhanced version, US power cord
	RGS-92222GCP-NP-E_UK	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, enhanced version, UK power cord
	RGS-92222GCP-NP-E_EU	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, enhanced version, EU power cord
	RGS-92222GCP-NP-E_JP	Industrial 26-port rack mount managed Gigabit Ethernet switch with 22x10/100/1000Base-T(X) , 2xGigabit combo ports and 2x100/1000Base-X, SFP socket, enhanced version, JP power cord

Packing List

- **RGS-92222GCP-NP/-E 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**
- **SFP100M series : 100Mbps SFP optical transceiver**
- **SFP 1G series : 1Gbps SFP optical transceiver**
- **DR-45 series : 45 Watts DIN-Rail power supply**
- **DR-75 series : 75 Watts DIN-Rail power supply**
- **DR-120 series : 120 Watts DIN-Rail power supply**