IGPS-9822DGP+

Industrial 12-port Layer2 Managed Gigabit PoE Ethernet switch with 8x10/100/1GBase-T(X) P.S.E ports and 2x100/1G/2.5GBase-X + 2x1G/10GBase-X, SFP+

Features

- Support 8-ports IEEE 802.3af/at compliant PoE and total power budget is 240W with maximum 30W per port
- 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***NOTE (Media Redundancy Protocol) function
- Support 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 and NTP 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, TACACS+, RADIUS and 802.1X User Authentication for security
- Support 10K Bytes Jumbo Frame
- Syslog/SNMP Trap notification for warning of unexpected event
- Support DBU-01 backup unit device to quickly backup/restore configuration
- Web-based ,SNMP v1/v2c/v3, Telnet, Console (CLI), and Windows utility (Open-Vision) configuration
- Support UPnP(Universal Plug ad Play Protocol)
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled

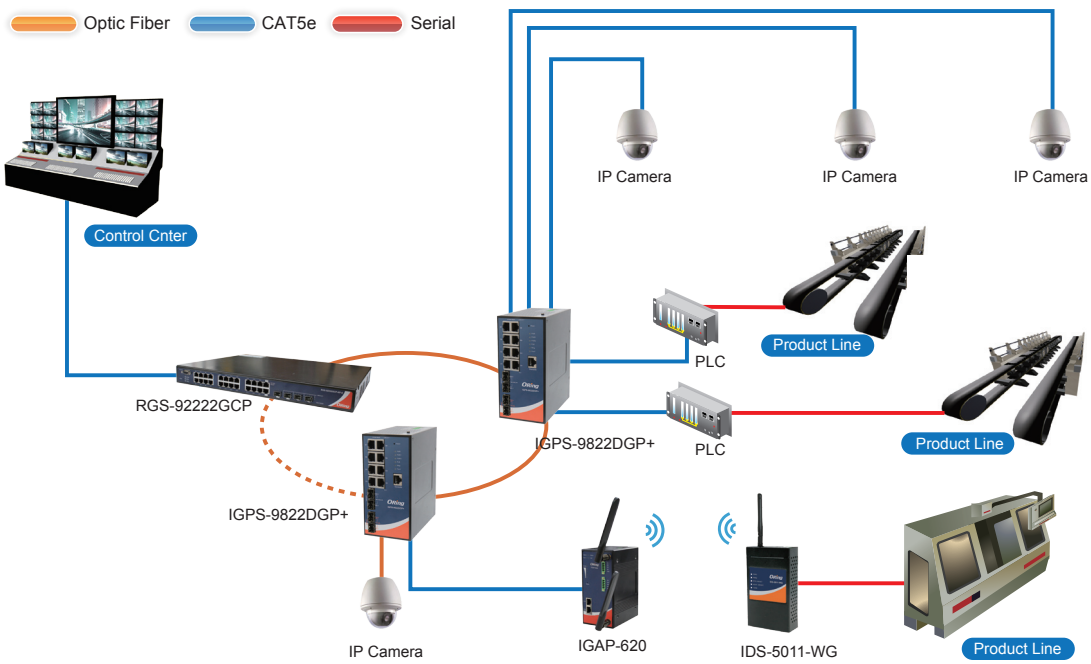
IPv6 READY | 2.5G | 10G | Full | O-Ring | O-Chain | Redundant PWR | -20~60°C Temperature | RoHS Lead Free | CE | FC

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

Introduction

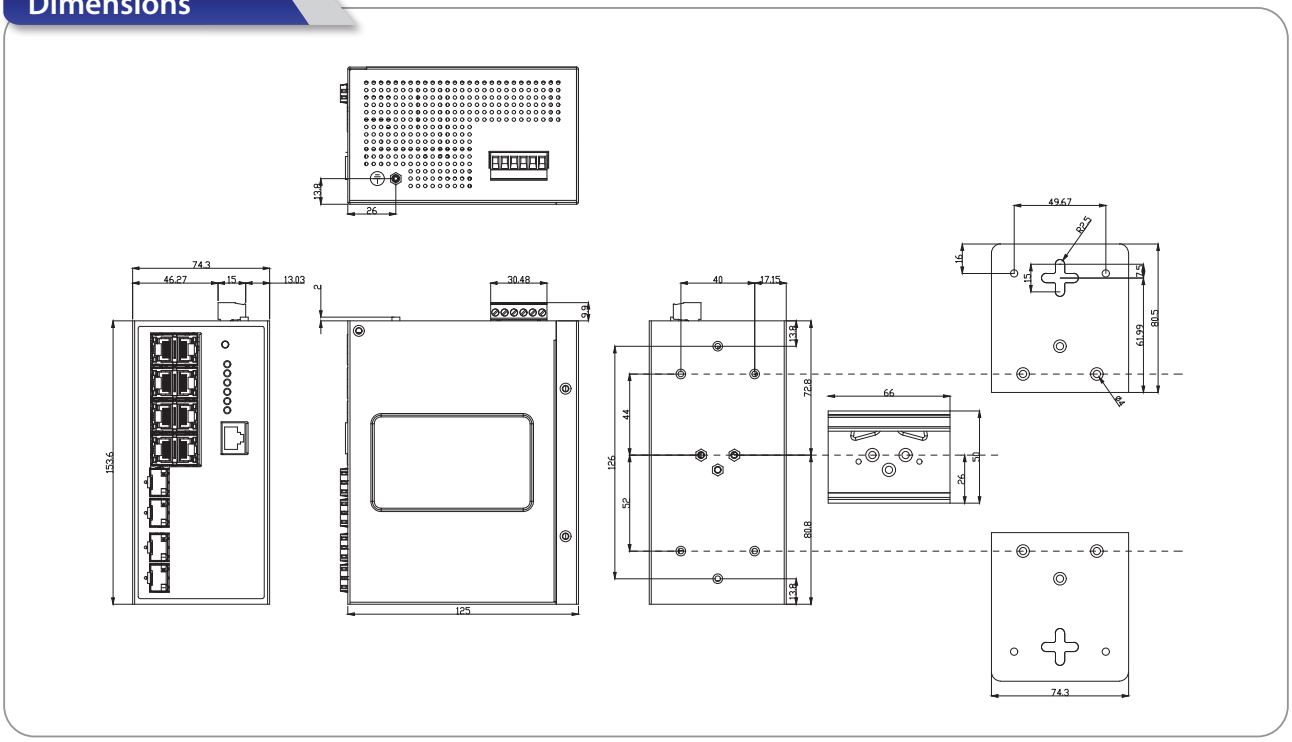
IGPS-9822DGP+ is managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) P.S.E ports and 2x 100/1G/2.5GBase-X + 2x 1G/10GBase-X SFP ports. The switch support Ethernet Redundancy protocol, O-Ring (recovery time < 30ms) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. IGPS-9822DGP+ 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 IGPS-9822DGP+ switch has 8x10/100/1000Base-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 support wide operating temperature from -20°C to 60°C. IGPS-9822DGP+ can also be managed centralized and convenient by Open-Vision, Except 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.
- **IEEE 1588v2 Technology :** The IEEE 1588v2 technology can fulfill precision time synchronization requirements for protection and control applications.
- **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

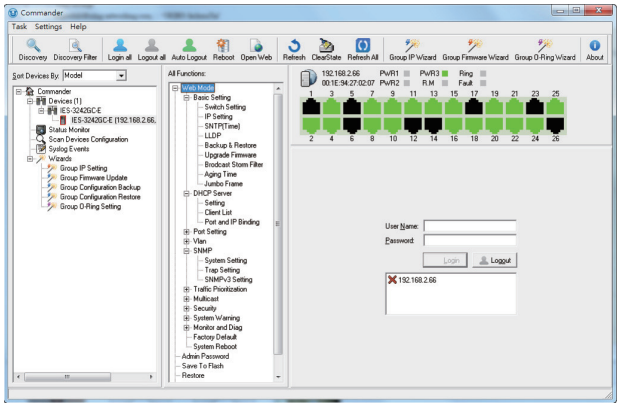
Dimensions



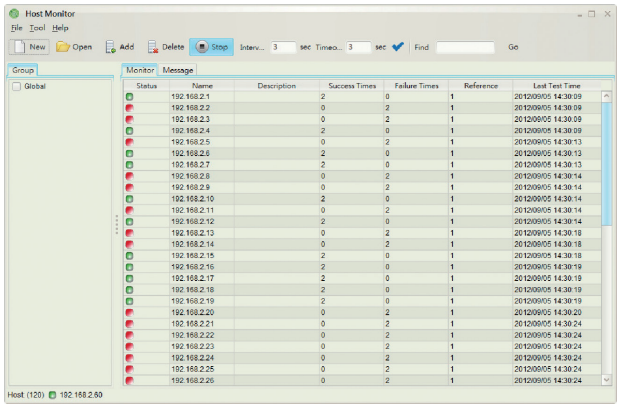
(Unit=mm)

Open-Vision

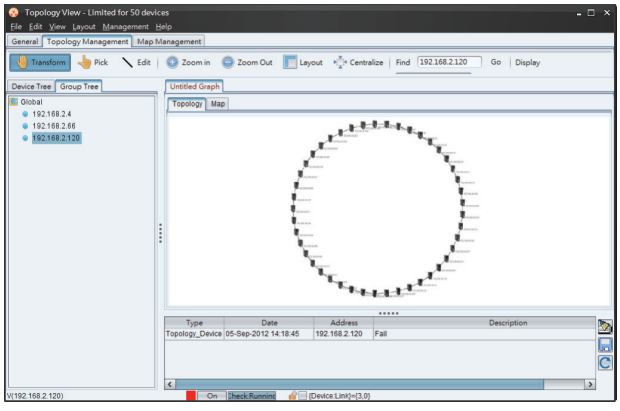
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



Host Monitor



Topology View

Specifications

ORing Switch Model	IGPS-9822DGP+
Physical Ports	
10/100/1000Base-T(X) with Ports in RJ45 Auto MDI/MDIX	**8**
100/1G/2.5GBase-X with SFP port	**2**
1G/10GBase-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 802.3z 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 802.1d for STP (Spanning Tree Protocol) 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 802.3af/at PoE specification
MAC Table	32k
Priority Queues	8
Processing	Store-and-Forward
Packet Buffer	32Mbits
Switch Properties	Switching latency: 7 us Switching bandwidth: 66Gbps Throughput (packet per second) : 49.1Mpps@64Bytes packet Max. Number of Available VLANs: 4096 VLAN ID Range : VID 0 to 4095 IGMP multicast groups: 64 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/TACACS+ centralized password management SNMPv3 encrypted authentication and access security HTTPS / SSH / SSL enhance network security DOS/DDOS auto prevention IP Source Guard
Software Features	Redundant Ring (O-Ring) with recovery time less than 30ms 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 Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP NTP server/client UPnP
QoS	TOS/Diffserv supported CoS Application based QoS IP based bandwidth management
Network Redundancy	O-Ring O-Chain MRP***NOTE** STP/RSTP/MSTP (IEEE 802.1 d/w/s)

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

PoE management	PoE configuration PoE Status PoE Scheduling(turn on/off the PoE device) Auto-Ping check(Reboot PDs if there is no responses)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
LED indicators	
Power Indicator (PWR)	Green : Power LED x 3
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 (Upper)	Dual color LED: Green for 1000Mbps Link/Act indicator. Amber for 100Mbps Link/Act indicator, OFF for 10Mbps Link/Act
PoE Indicator RJ45 Port (Lower)	Amber : PoE enable
1G/2.5GBase-X SFP Port Indicator	Green LED for Link/Act
1G/10Gbase-X SFP Port Indicator	Green LED for Link/Act
Fault contact	
Relay	Relay output to carry capacity of 1A at 24VDC
Reset Function	
Reset Button	< 5 sec: System reboot, > 5 sec: Factory default
Power	
Redundant Input power	Dual DC inputs 50~57VDC on 6-pin terminal block
Power consumption (Typ.)	19 Watts
Total PoE power budget	240W max, 30W per port
Overload current protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	74.3 (W) x 125 (D) x 153.6 (H) mm (2.93 x 4.92 x 6.05 inches)
Weight (g)	1078 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-20 to 60°C (-14 to140°F) at 2.5G/10G SFP -40 to 75°C (-40 to 167°F) at full Gigabit
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
EMC	CE EMC (EN 55024, EN 55032), 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	EN60950-1
MTBF	497728 hrs
Warranty	5 years

Ordering Information

IGPS-9ABCDDE

Code Definition	10/100/1000Base-T(X) Port Number	Additional 1 Port Number	Additional 2 Port Number	Additional 1 Port Type	Additional 2 Port Type
Option	**- 8:** 8 ports	**- 2:** 2 ports	**- 2:** 2 ports	**-DG:** 1G/2.5G SFP ports	**- P+:** 10G SFP+ ports

	Model Name	Description
Available Model	IGPS-9822DGP+	Industrial 12-port layer2 managed Gigabit PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E ports and 2x100/1G/2.5GBase-X+2x1G/10GBase-X, SFP+ socket

Packing List

- IGPS-9822DGP+ x 1
- DIN-Rail Kit x 1
- ORing Tool CD x 1
- Wall-mount Kit x 2
- Quick Installation Guide x 1
- Console Cable x 1

Optional Accessories (Can be purchased separately)

- Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices
- DBU-01 : backup unit device
- SFP100 series : 100Mbps SFP optical transceiver
- SFP 1G series : 1Gbps SFP optical transceiver

Mouser Electronics

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ORing:

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