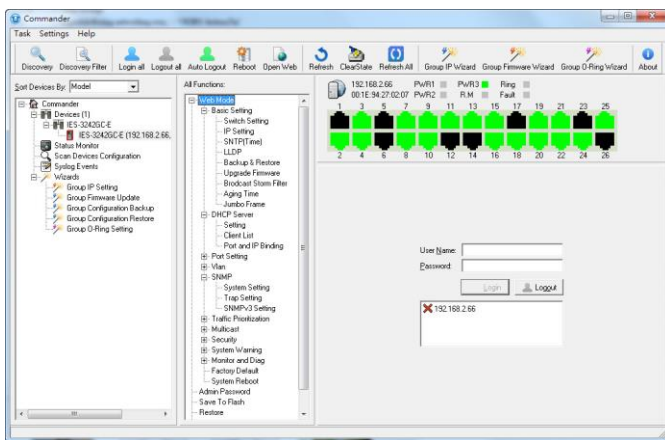
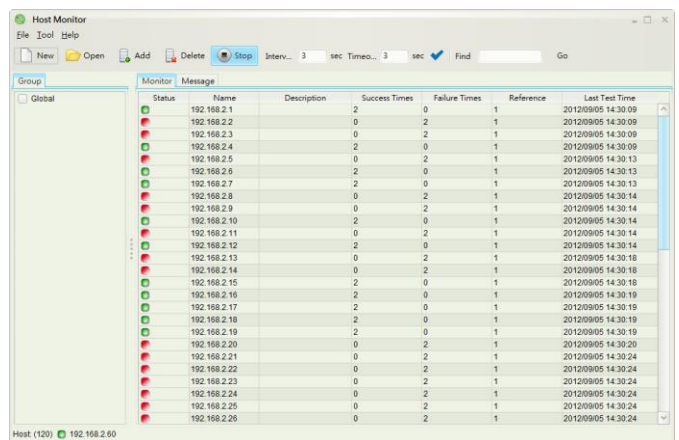


## Open-Vision

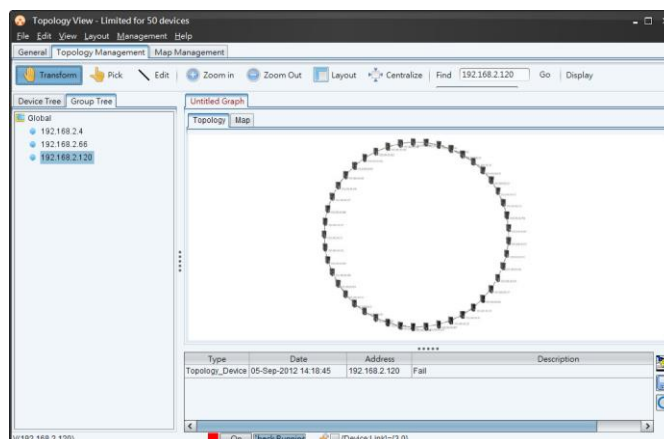
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



Host Monitor

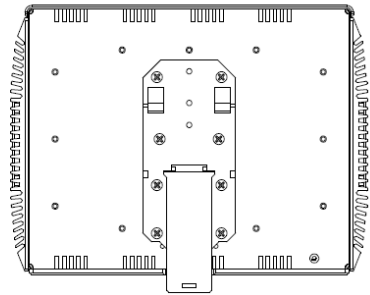
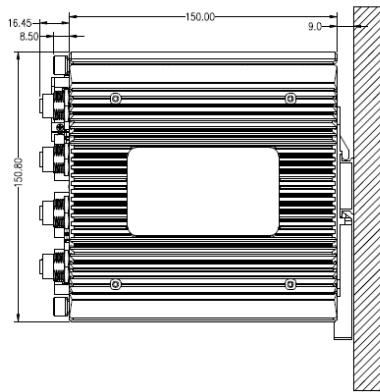
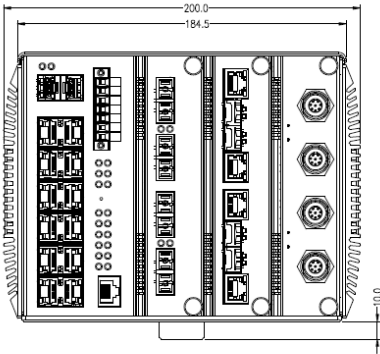
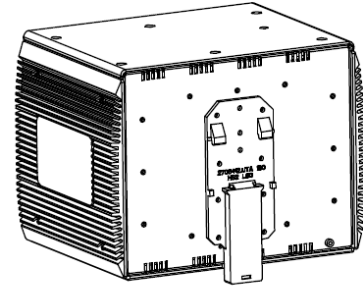
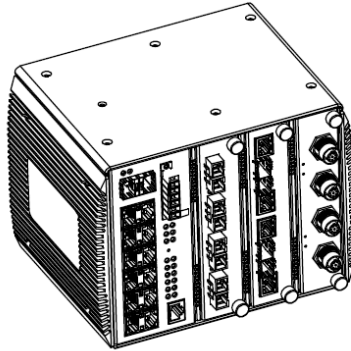
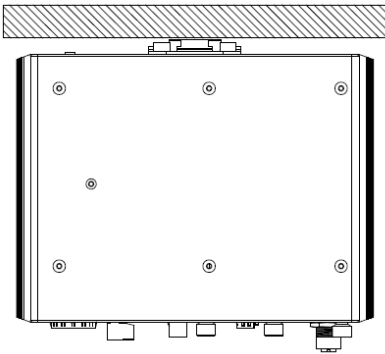


Topology View


\* All specifications are subject to change without notice.


## Dimension


Unit = mm





## Optional Switch Module


|   |   |              |
|---|---|--------------|
|  | <b>SWM-04GC-D</b>   |              |
|   | Industrial 4-port Gigabit Ethernet switch module with 4x1G combo ports. |              |
|   | Weight:   | 412g         |
|   | MTBF:   | 3,948,727hrs |


|  |   |                    |
|--|---|--------------------|
|  | <b>SWM-04GF-SS/MM-SC-D</b>  |                    |
|  | Industrial 4-port Gigabit Ethernet switch module with 4x1000Base-X ports, SS/MM mode, SC connector. |                    |
|  | Weight:   | 407g               |
|  | MTBF:   | 426,972/333,547hrs |

|  |   |                    |
|--|---|--------------------|
|  | <b>SWM-04FX-SS/MM-SC-D</b>  |                    |
|  | Industrial 4-port Gigabit Ethernet switch module with 4x100Base-FX ports, SS/MM mode, SC connector. |                    |
|  | Weight:   | 404g               |
|  | MTBF:   | 316,663/517,083hrs |

|   |  |            |
|---|--|------------|
|  | <b>SWM-40GT-M12-D</b>  |            |
|   | Industrial 4-port Gigabit Ethernet switch module with 4x10/100/1000Base-T(X) ports, M12 connector. |            |
|   | Weight:  | 462g       |
|   | MTBF:  | 628,407hrs |

|   |  |     |
|---|--|-----|
| <b>Under Development</b>  |  |     |
|  | <b>BSM-02X-D</b>   |     |
|   | Industrial bypass switch module, 4x100/1G/10GBase-X, LC connector. |     |
|   | Weight:  | TBD |
|   | MTBF:  | TBD |

|  |  |     |
|--|--|-----|
| <b>Under Development</b>   |  |     |
|  | <b>BSM-20GT-D</b>  |     |
|  | Industrial bypass switch module with 4x10/100/1000Base-T(X) ports. |     |
|  | Weight:  | TBD |
|  | MTBF:  | TBD |

|   |   |     |
|---|---|-----|
| <b>Under Development</b>  |   |     |
|  | <b>BSM-20GT-M12-D</b>   |     |
|   | Industrial bypass switch module with 4x10/100/1000Base-T(X) ports, M12 connector. |     |
|   | Weight:   | TBD |
|   | MTBF:   | TBD |

\* All specifications are subject to change without notice.

## Specifications

| ORing Switch Model                               | IGS-9122GPM  |
|--|--|
| <b>Physical Ports</b>                            |  |
| 10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX | 12   |
| 100/1000Base-X SFP Ports                         | 2  |
| Module Slot Number                               | 3 (support 4x1G combo / 4x1G Fiber / 4x100Mbps Fiber / bypass module)  |
| <b>Technology</b>                                |  |
| Ethernet Standards                               | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX and 100Base-FX<br>IEEE 802.3ab for 1000Base-T<br>IEEE 802.z for 1000Base-X<br>IEEE 802.3ae for 10Gigabit Ethernet<br>IEEE 802.3x for Flow control<br>IEEE 802.3ad for LACP (Link Aggregation Control Protocol )<br>IEEE 802.1p for COS (Class of Service)<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1D for STP (Spanning Tree Protocol)<br>IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol)<br>IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol)<br>IEEE 802.1x for Authentication<br>IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)  |
| MAC Table  | 8k   |
| Priority Queues                                  | 8  |
| Processing                                       | Store-and-Forward  |
| Switch Properties                                | Switching latency: 7 us<br>Switching bandwidth: 52Gbps<br>Max. Number of Available VLANs: 4095<br>VLAN ID Range: 1 to 4094<br>IGMP multicast groups: 128 for each VLAN<br>Port rate limiting: User Define  |
| Jumbo frame                                      | Up to 9.6K Bytes   |
| Security Features                                | Device Binding security feature<br>Enable/disable ports, MAC based port security<br>Port based network access control (802.1x)<br>MAC-based authentication<br>MAC address limit<br>VLAN (802.1Q ) to segregate and secure network traffic<br>Radius centralized password management<br>SNMPv3 encrypted authentication and access security<br>Https / SSH enhance network security<br>Web and CLI authentication and authorization<br>IP source guard  |
| Software Features                                | IEEE 1588v2 clock synchronization<br>IEEE 802.1D Bridge, auto MAC address learning/aging and MAC address (static)<br>Multiple Registration Protocol (MRP)<br>MSTP (RSTP/STP compatible)<br>Redundant Ring (O-Ring) with recovery time less than 20ms over 250 units<br>TOS/Diffserv supported<br>Quality of Service (802.1p) for real-time traffic<br>VLAN (802.1Q) with VLAN tagging<br>IGMP v2/v3 Snooping<br>IP-based bandwidth management<br>Application-based QoS management<br>DOS/DDOS auto prevention<br>Port configuration, status, statistics, monitoring, security<br>DHCP Server/Client<br>DHCP Relay<br>Modbus TCP<br>SMTP Client<br>NTP server |
| Network Redundancy                               | O-Ring<br>O-Chain  |

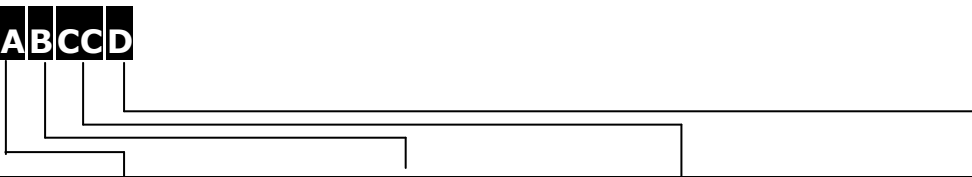
\* All specifications are subject to change without notice.

|  |   |
|--|---|
|  | MRP<br>Fast Recovery<br>MSTP (RSTP/STP compatible)  |
| RS-232 Serial Console Port               | RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1 (support DBU-01 backup unit)                                      |
| <b>LED Indicators</b>                    |   |
| System Ready 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 2  |
| 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<br>Green Blinking: Indicates that the Ring is broken.                   |
| Fault Indicator (Fault)                  | Amber: Indicate unexpected event occurred   |
| 10/100/1000Base-T(X) RJ45 Port Indicator | Green for Link/Act indicator.<br>Dual color LED for speed indicator : Green for 1000Mbps, Amber for 100Mbps, Off-light for 10Mbps |
| 100/1000Base-X SFP Port Indicator        | Green for Link/Act indicator  |
| <b>Fault Contact</b>                     |   |
| Relay                                    | Relay output to carry capacity of 1A at 24VDC   |
| <b>Power</b>                             |   |
| Redundant power input modular            | Dual 12~48VDC power inputs at terminal block  |
| Power consumption (Typ.)                 | 30W   |
| Overload current protection              | Present   |
| <b>Physical Characteristic</b>           |   |
| Enclosure                                | IP-30   |
| Weight (g)                               | 3,365g  |
| Dimension (W x D x H)                    | 184 (W) x 155 (D) x 150 (H) mm (7.24x6.1x5.9 inch)  |
| <b>Environmental</b>                     |   |
| 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  |
| <b>Regulatory Approvals</b>              |   |
| EMI                                      | FCC Part 15, CISPR (EN55022) class A, EN50121-4, EN50155(pending)   |
| 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  |
| Safety                                   | EN 60950-1  |
| <b>Warranty</b>                          | 5 years   |
| <b>MTBF</b>                              | 540,456hrs  |

\* All specifications are subject to change without notice.

## Ordering Information

**IGS-9AABCCD**



| Code Definition | 10/100/1000Base-T(X) Port Number | Additional Port Number | Additional Port Type   | Other Option       |
|-----------------|----------------------------------|------------------------|------------------------|--------------------|
| Option          | - 12: 12 ports                   | - 2: 2 ports           | -GP: Gigabit SFP ports | -M: Modular Design |

| Available Model | Model Name         | Description   |
|-----------------|--------------------|---|
|                 | <b>IGS-9122GPM</b> | Industrial modular managed Gigabit Ethernet switch with 12x10/100/1000Base-T(X) and 2x100/1000Base-X, SFP socket, 3 module extender slots |

## Optional Slot Module

| Available Model | Model Name                         | Description  |
|-----------------|------------------------------------|--|
|                 | <b>SWM-04GC-D</b>                  | Industrial 4-port Gigabit Ethernet switch module with 4x1G combo ports.                                      |
|                 | <b>SWM-04GF-SS-SC-D</b>            | Industrial 4-port Gigabit Ethernet switch module with 4x1000Base-LX, single-mode, 10Km/1310nm, SC connector. |
|                 | <b>SWM-04GF-MM-SC-D</b>            | Industrial 4-port Gigabit Ethernet switch module with 4x1000Base-SX, multi-mode, 550m/850nm, SC connector.   |
|                 | <b>SWM-04FX-SS-SC-D</b>            | Industrial 4-port Ethernet switch module with 4x100Base-FX, single-mode, 30Km/1310nm, SC connector.          |
|                 | <b>SWM-04FX-MM-SC-D</b>            | Industrial 4-port Ethernet switch module with 4x100Base-FX, multi-mode, 2Km/1310nm, SC connector.            |
|                 | <b>SWM-40GT-M12-D</b>              | Industrial 4-port Gigabit Ethernet switch module with 4x10/100/1000Base-T(X) ports, M12 connector.           |
|                 | <b>BSM-02X-D (under dev.)</b>      | Industrial bypass switch module, 4x100/1G/10GBase-X, LC connector.   |
|                 | <b>BSM-20GT-D (under dev.)</b>     | Industrial bypass switch module with 4x10/100/1000Base-T(X) ports.   |
|                 | <b>BSM-20GT-M12-D (under dev.)</b> | Industrial bypass switch module with 4x10/100/1000Base-T(X) ports, M12 connector.                            |

\* All specifications are subject to change without notice.



## Packing List

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- **IGS-9122GPM x 1**
- **ORing Tool DVD x 1**
- **Quick Installation Guide x 1**
- **Din-Rail Kit x 1**
- **Console Cable x 1**

## Optional Accessories

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- **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-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**