V1.3 Nov, 2020

IGS-RX164GP+

Industrial advanced Layer 3 20-port managed Gigabit Ethernet switch with 16x10/100/1000Base-T(X) ports and 4x1G/10GBase-X, SFP+ socket

Features

- Support routing protocols – Static routing, RIP v1/v2, OSPF, PIM-SM, PIM-DM, VRRP
- Support TSN freature - IEEE 802.1AS for timing & Synchronization, Qav, Qat
- Support **O-Ring** (recovery time < 30ms) and MSTP(RSTP/STP compatible) for Ethernet Redundancy
- Support **O-Chain** allow multiple redundant network rings
- Provided HTTPS/SSH protocol to enhance network security
- Support SNTP client
- Support application-based QoS management
- 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 12K Bytes Jumbo Frame
- Multiple notification for warning of unexpected event
- Web-based, Telnet, Console (CLI),
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled

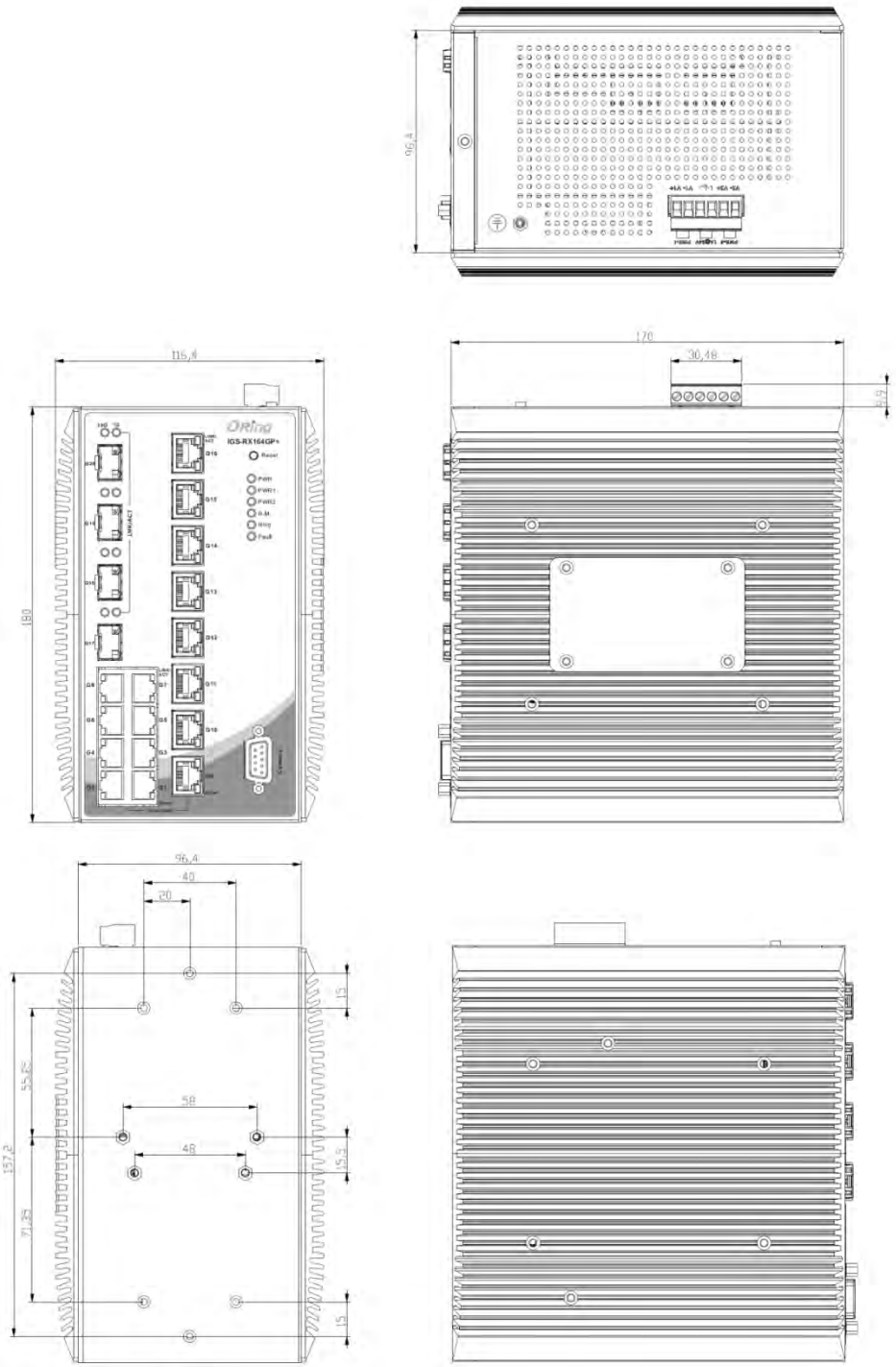
Introduction

IGS-RX164GP+ advanced Layer 3 managed redundant ring Ethernet switch with 16x10/100/1000Base-T(X) ports and 4x10GBase-X SFP ports. The IGS-RX164GP+ supports routing protocols such as static routing, RIP v1/v2, OSPF and PIM which are suitable for large scale network environment. The hardware Layer 3 switch is optimized to transmit data as fast as Layer-2 switches. With completely support of 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

- **O-Ring :** O-Ring is ORing's proprietary redundant ring technology, with recovery time of less 30 milliseconds. 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

Dimension



Specifications

ORing Switch Model	IGS-RX164GP+
Physical Ports	
10/100/1000Base-T(X) Ports in RJ45 Auto MDI/MDIX	**16**
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 802.3z 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)
MAC Table	16k
Priority Queues	8
Packet Buffer Size	16Mbit
Flash Memory	512Mbits
DRAM Size	8Gbits
Jumbo frame	Up to 12K Bytes
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 112Gbps Throughput (packet per second) : 83.32Mpps@64Bytes packet 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	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 Radius centralized password management SNMPv3 encrypted authentication and access security Web and CLI authentication and authorization IP source guard, DHCP Snooping, Dynamic ARP Inspection Https / SSH enhance network security DOS/DDOS auto prevention
Software Features	TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging IGMP Snooping Application-based QoS management Port configuration, status, statistics, monitoring, security Port mirroring DHCP Server/Client/Relay SNTP Client
Routing Protocols	Unicast Routing - Static routing, RIP v1/v2, OSPF Multicast Routing -PIM-SM, PIM-DM, Routing Redundancy -VRRP
TSN protocols	IEEE 802.1AS, Qav, Qat
Network Redundancy	O-Ring with recovery time less than 30ms O-Chain MSTP /RSTP/STP
RS-232 Serial Console Port	RS-232 in DB9 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	Green for Link/Act indicator Dual color LED for speed indicator : Green for 1000Mbps, Amber for 100Mbps, Off-light for 10Mbps
1G/10GBase-X SFP+ Port Indicator	Green for port 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, 12~48VDC on 6-pin terminal block
Power consumption (Typ.)	23 Watts
Overload current protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	IP-30, Aluminum
Dimension (W x D x H)	116.4 (W) x 170 (D) x 180 (H) mm (4.58 x 6.69 x 7.08 inches)
Weight (g)	1,530g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 75°C (-40 to167°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory Approvals	
EMC	CE EMC (EN 55024, EN 55032), EN 50121-4 (compliant), 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: Contact 8KV, Air 10KV), IEC/EN 61000-4-3 (RS: 3V), IEC/EN 61000-4-4 (EFT Power 2KV, Signal 2KV),IEC/EN 61000-4-5 (Surge: Power 4KV, Signal 4KV), IEC/EN 61000-4-6 (CS: 3V), IEC/EN 61000-4-8(PFMF))
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN60950-1
MTBF	323,539 hrs
Warranty	**5 years**

Ordering Information

IGS-RX[AA][B]-[CCC]

Code Definition	10/100/1000Base-T(X) Port Number	Additional Number	Additional Port Type
Option	**- 16:** 16 ports	**- 4:** 4 ports	**-GP+:** 10G Base-X SFP+ port

	Model Name	Description
Available Model	IGS-RX164GP+	Industrial advanced Layer 3 20-port managed Gigabit Ethernet switch with 16x10/100/1000Base-T(X) ports and 4x1G/10GBase-X, SFP+ socket

Packing List

- **IGS-RX164GP+**
- **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

- **Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices**
- **SDR/NDR series : DIN-Rail power supply**
- **SFP 1G series : 1Gbps SFP optical transceiver**
- **SFP 10G series : 10Gbps SFP optical transceiver**