

Quick Installation Guide

RGS-R9004GP+ME-HV






Industrial Layer 3 modular rack mount Managed Gigabit Switch

Introduction

RGS-R9004GP+ME-HV is Layer-3 modular managed redundant ring Ethernet switch with 6 slots, up to 48 ports, and has 4 fixed 10G SFP+ ports. With such high port density and modular design, it makes network planning easier. 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. And support wide operating temperature from 0°C to 60°C. RGS-R9004GP+ME 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.

Package Contents




The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.


Contents	Pictures	Number
RGS-R9004GP+ME-HV		X 1
CD		X 1
Rack-mount Kit		X 2
Console Cable		X 1
QIG		X 1


Preparation

Before you begin installing the switch, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

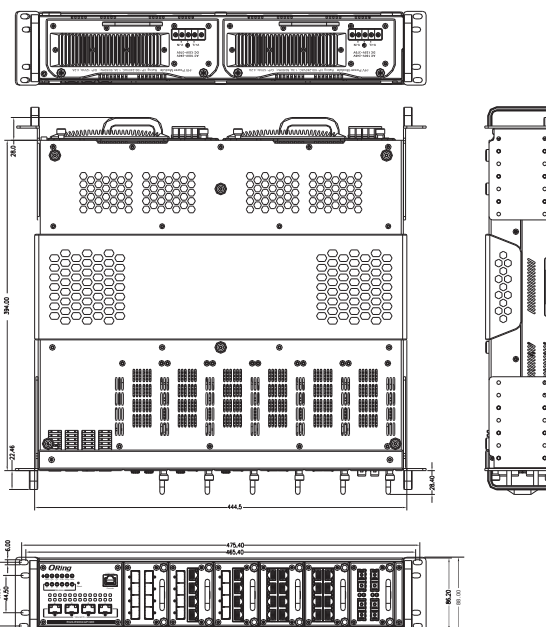
Safety & Warnings

-  **Elevated Operating Ambient:** If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
-  **Reduced Air Flow:** Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
-  **Mechanical Loading:** Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

 **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

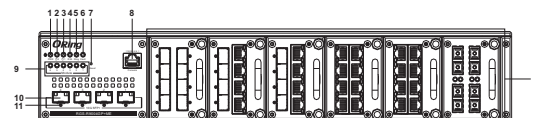
 External metal parts of this equipment are extremely hot!! Before touching the equipment, be sure to protect your hands and body from serious injury.

- **Dimension Unit =mm (Tolerance ±0.5mm)**



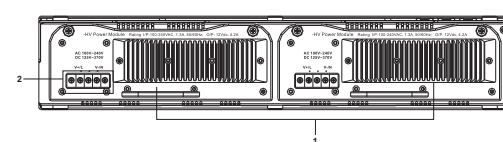
Panel Layouts

Front View



- | | | |
|--------------------|---------------------------|---------------------------------|
| 1. Power LED | 5. Ring status LED | 9. Module status LEDs |
| 2. Power2 LED | 6. Faulty relay indicator | 10. 1G/10GBase-X SFP+ ports |
| 3. Power1 LED | 7. Reset button | 11. Link/Act LED for SFP+ ports |
| 4. R.M. status LED | 8. Console port | 12. Ethernet module slots |

Rear View



1. Power input module slots
2. Terminal block

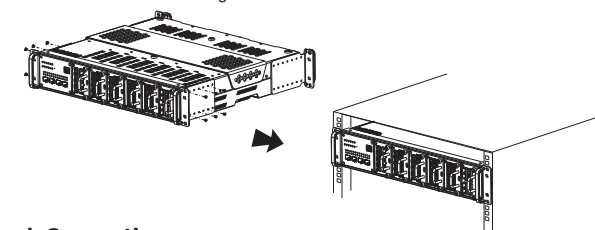
Installation

Rack-mounting

Step 1: Install left and right front mounting brackets to the switch using 6 M3 screws on each side provided with switch.

Step 2: With front brackets orientated in front of the rack, nest front and rear brackets together. Fasten together using remaining M4 screws into counter sunk holes.

Step 3: Fasten the front mounting bracket to the front of the rack.



Network Connection

The series have standard Ethernet ports. According to the link type, the switch uses CAT 3, 4, 5, 5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications:

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45
1000BASE-T	Cat. 5 / Cat. 5e 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

With 10/100BASE-T(X) cables, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data. The device also supports auto MDI/MDI-X operation. You can use a cable to connect the switch to a PC.

For pin assignments for different types of cables, please refer to the following tables.

1000 Base-T RJ-45		10/100 Base-T(X) RJ-45	
Pin Number	Assignment	Pin Number	Assignment
1	BI_DA+	1	TD+
2	BI_DA-	2	TD-
3	BI_DB+	3	RD+
4	BI_DC+	4	Not used
5	BI_DC-	5	Not used
6	BI_DB-	6	RD-
7	BI_DD+	7	Not used
8	BI_DD-	8	Not used

1000Base-T MDI/MDI-X			10/100 Base-T(X) MDI/MDI-X		
Pin Number	MDI port	MDI-X port	Pin Number	MDI port	MDI-X port
1	BI_DA+	BI_DB+	1	TD+(transmit)	RD+(receive)
2	BI_DA-	BI_DB-	2	TD-(transmit)	RD-(receive)
3	BI_DB+	BI_DA+	3	RD+(receive)	TD+(transmit)
4	BI_DC+	BI_DD+	4	Not used	Not used
5	BI_DC-	BI_DD-	5	Not used	Not used
6	BI_DB-	BI_DA-	6	RD-(receive)	TD-(transmit)
7	BI_DD+	BI_DC+	7	Not used	Not used
8	BI_DD-	BI_DC-	8	Not used	Not used

Console cable

To connect the console port to an external management device, you need an RJ-45 to DB-9 cable, which is also included in the package. Please see the table for the console port pin assignment information.

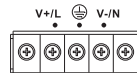
PC pin out (male) assignment	RS-232 with DB9 female connector	DB9 to RJ 45
Pin #2 RD	Pin #2 TD	Pin #2
Pin #3 TD	Pin #3 RD	Pin #3
Pin #5 GND	Pin #5 GND	Pin #5

RS-232 baud rate setting: 9600, 8, N, 1

Wiring

Power inputs

RGS-R9004GP+ME-HV supports dual 100~240VAC/125-370VDC power inputs, Power Supply 1 (PWR1) and Power Supply 2 (PWR2). The connections for PWR1 and PWR2 are located on the terminal block.



STEP 1: Remove the transparent protective cover from the terminal block

STEP 2: Insert the negative/positive DC wires into the V-/V+ terminals, respectively.

STEP 3: To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

STEP4: After wiring is completed, put the transparent cover back to the terminal block.

Grounding

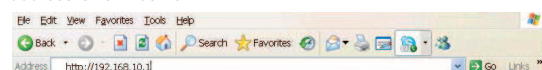
Grounding and wire routing to help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screws to the grounding surface prior to connecting devices.

Configurations

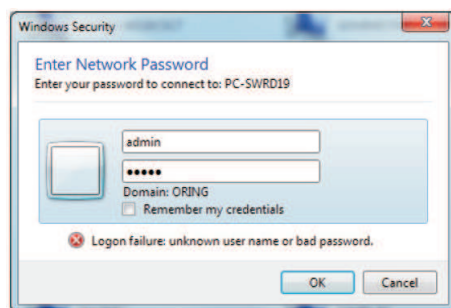
After installing the switch card, the green power LED should turn on. Please refer to the following tablet for LED indication.

LED	Color	Status	Description
PWR	Green	On	System ready
		Blinking	Upgrading firmware
PWR1	Green	On	AC power module1 activated
PWR2	Green	On	AC power module2 activated
R.M	Green	On	System running in Ring Master mode
Ring	Green	On	System running in Ring mode
		Blinking	Ring structure is broken
Fault	Amber	On	Unexpected event occurred
Module	Green	On	Module slot is connected
1G/10GBase-X SFP+ ports			
LNK/ACT	Green	On	Port is connected
		Blinking	Transmitting data

1. Launch the Internet Explorer and type in IP address of the switch. The default static IP address is **192.168.10.1**



2. Log in with default user name and password (both are **admin**). After logging in, you should see the following screen. For more information on configurations, please refer to the user manual. For information on operating the switch using ORing's Open-Vision management utility, please go to ORing website.



Resetting

To reboot the switch, press the **Reset** button for 3 seconds.

To restore the switch configurations back to the factory defaults, press the **Reset** button for 5 seconds.

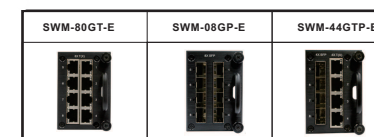
Specifications

ORing Switch Model	RGS-R9004GP+ME-HV
Physical Ports	
Slot Number	6
1G/10GBase-X with SFP+	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 802.3x 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	32K
Packet Buffer	32Mbits
Flash Memory	128Mbits
DRAM Size	512MB
Jumbo frame	Up to 9K Bytes
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	Switch latency: 7 us Switch bandwidth: 176Gbps Max. Number of Available VLANs: 4095 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 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	Hardware routing, RIP, VRRP and static routing 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 SMTP Client NTP server
Network Redundancy	O-Ring O-Chain MRP*NOTE MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
Power	
Overload current protection	Dual 100~240VAC/125-370VDC power inputs at terminal block
Power consumption(Typ.)	68.8W
Overload current protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	2U 19 inches rack mountable, IP-30
Weight (g)	5.7 kg (without module)
Dimension (W x D x H)	444.5 (W) x 422 (D) x 86.2 (H) mm (17.49 x 16.61 x 3.39 inches)
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	0 to 60°C (32 to 140°F)
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 6100-3-2, EN 6100-3-3, FCC Part 15B 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	IEC 60068-2-31
Vibration	IEC60068-2-6
Safety	EN60950-1
MTBF Warranty	412139 hours 5 years

NOTE: This function is available by request only

Optional Module



ORing

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