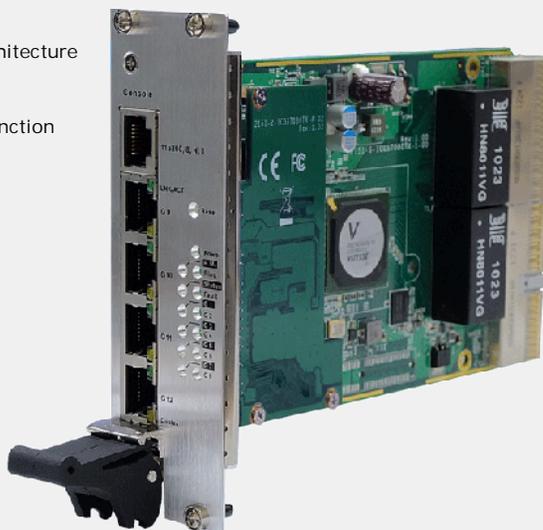


3U CompactPCI EN50155 12-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) in CompactPCI socket, and 4x10/100/1000Base-T(X) in RJ-45 connector

Features

- Leading EN50155 compliant Ethernet switch for rolling stock application
- Supports 3U and 8HP CompactPCI form factor and hot swapping
- PICMG 2.0 specification compatible
- Support 8x10/100/1000Base-T(X) ports on CompactPCI sockets and 4x10/100/1000Base-T(X) ports on copper ports
- Support Jumbo frame up to 9.6K Bytes
- Supports O-Ring (recovery time < 30ms over 250 units of connection), MSTP/RSTP/STP (IEEE 802.1s/w/D) for Ethernet Redundancy
- Open-Ring support the other vendor's ring technology in open architecture
- O-Chain allow multiple redundant network rings
- Support standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- Supports 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
- Supports SMTP client
- Supports IP-based bandwidth management
- Supports application-based QoS management
- Supports Device Binding security function
- Supports DOS/DDOS auto prevention
- Supports SSH/Https security function
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Supports SNMP v1/v2c/v3, RMON and 802.1Q VLAN Network Management
- Support ACL, TACACS+ and 802.1x User Authentication for security
- Multiple notification for warning of unexpected event
- Windows utility (Open-Vision) support centralized management and configurable by Web-based interface, Telnet and Console (CLI)
- Support LLDP Protocol
- Support hot-swappable technology

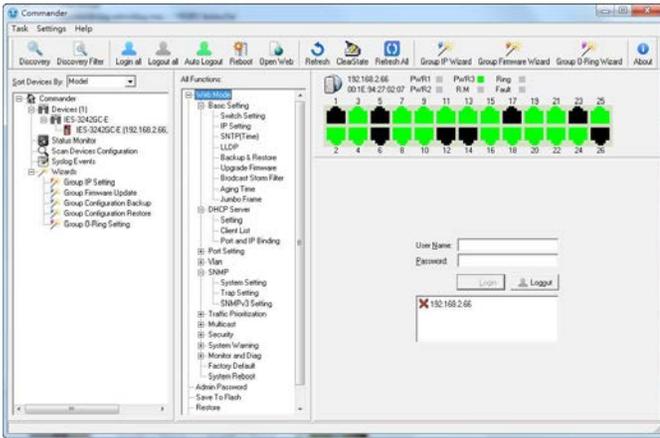


Introduction

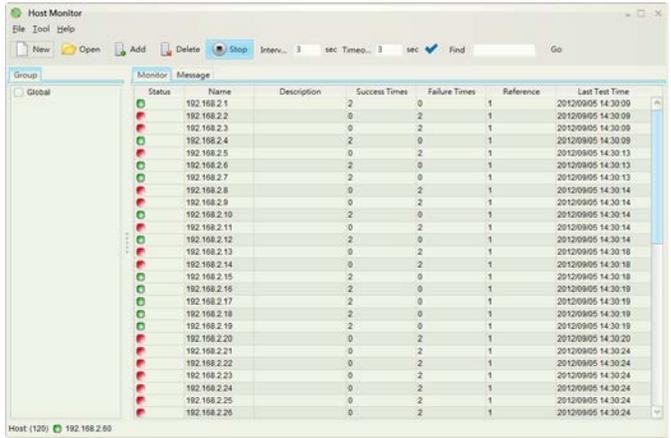
ORing's CompactPCI series Ethernet switches are designed for industrial applications, such as factory automation, vehicle, and railway applications. CPGS-9120-C is CompactPCI managed redundant ring Ethernet switch with 12x10/100/1000Base-T(X) ports in CompactPCI socket which is specifically designed for the toughest and fully compliant with EN50155 requirement. The switch support Ethernet Redundancy protocol, O-Ring (recovery time < 30ms over 250 units of connection) and MSTP (RSTP/STP compatible) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. CPGS-9120-C supports wide operating temperature from -40 °C to 70 °C which can fulfill most of the requirement of operation environment. Except the Web-based interface, Telnet and

Open-Vision

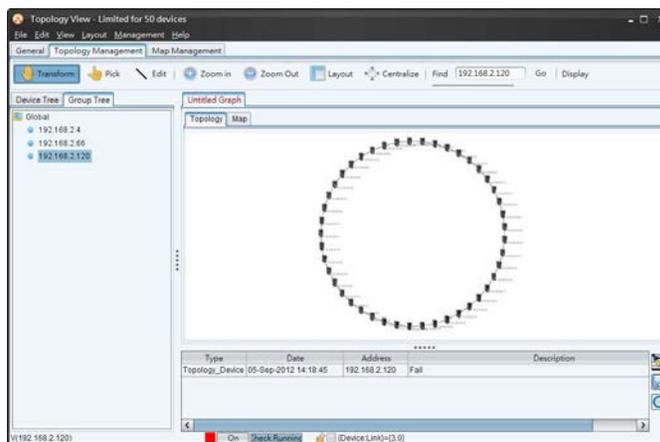
ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.



Commander



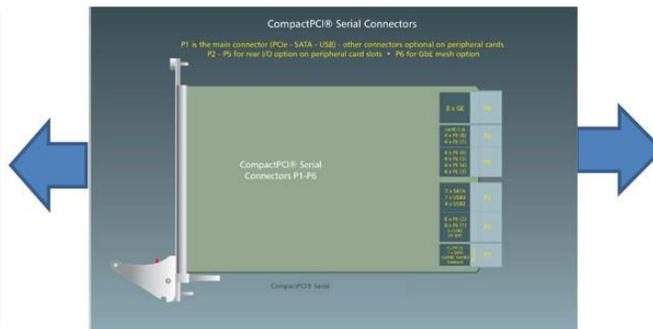
Host Monitor



Topology View

I/O Functional

- ◆ Console Port I/O
- ◆ 4-port Gigabit I/O
- ◆ LED indicator



- ◆ 8-port Gigabit I/O
- ◆ Power input

Specifications

ORing Switch Model	CPGS-9120-C
Physical Ports	
10/100/1000Base-T(X) Ports Auto MDI/MDIX	12-port (8-port with CompactPCI interface, 4-port with RJ-45 connector) (PICMG 2.0 compatible)
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree 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
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 24Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 128 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) VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) 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 VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP
Network Redundancy	O-Ring Open-Ring O-Chain MRP MSTP (STP / RSTP compatible)
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 115200bps, 8, N, 1
LED indicators	
Power indicator (Power)	Green : Power LED x 1
Status Indicator (STA)	Green : Ethernet status indicator
R.M. indicator (R.M)	Green : indicate system operated in O-Ring Master mode
Ring indicator (Ring)	Green : indicate system operated in O-Ring mode
Fault indicator (Fault)	Amber : Indicate unexpected event occurred
10/100/1000Base-T(X) port indicator	Green for port Link/Act.

Power	
Power Input	CompactPCI bus powered (12VDC)
Power Consumption (Typ.)	7.5 Watts
Overload Current Protection	Present
Physical Characteristic	
Dimension (W x D x H)	40 (W) x 209 (D) x 130.7 (H)mm (1.58 x 8.23 x 5.15 inch)
Weight (g)	330 g
Environmental	
Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 70°C (-40 to 158°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
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	EN60950-1
Warranty	5 years

Ordering Information

CPGS-9AAB-C

Code Definition	10/100/1000Base-T(X) Port Number	Additional Port Number	CompactPCI Version
Option	- 12: 12 ports	- 0: 0 port	- C: PICMG 2.0 specification

Available Model	Model Name	Description
	CPGS-9120-C	3U CompactPCI EN50155 12-port managed Gigabit Ethernet switch with 8x10/100/1000Base-T(X) in CompactPCI socket, and 4x10/100/1000Base-T(X) in RJ-45 connector

Packing List

- CPGS-9120-C x 1
- ORing Tool CD x 1
- Quick Installation Guide x 1
- Console Cable x 1



Optional Accessories

- Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices