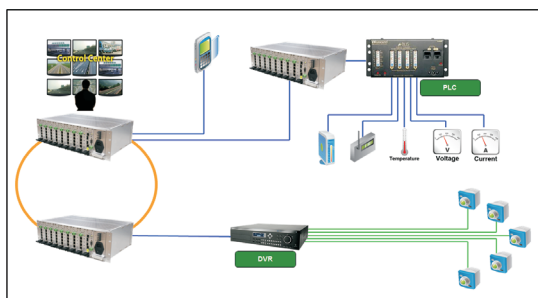


# Quick Installation Guide

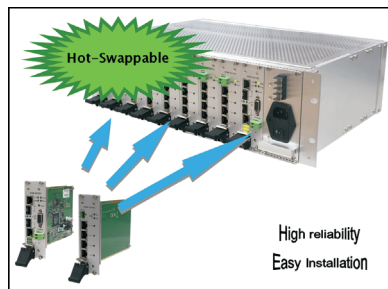
## Introduction

ORing's CompactPCI series Ethernet switches are designed for industrial applications, such as factory automation, vehicle, and railway applications. **CPS-3080-C** is a CompactPCI interface managed Redundant Ring Ethernet switch with 8x10/100Base-T(X) ports in CompactPCI socket which is specifically designed for the toughest and fully compliant with EN50155 requirement. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-Chain and MSTP/RSTP/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. Another Open-Ring technology is also supported which can applied for other vendor's proprietary ring. 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. CPS-3080-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 console (CLI) configuration, **CPS-3080-C** can also be managed centralized and conveniently by Open-Vision. Therefore, the switch is one of the most reliable choices for rolling stock and highly-managed Ethernet application.

### Network connection



### Hot-Swappable



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FC CE

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# CPS-3080-C

## Specifications

<b>ORing Switch Model</b>	<b>CPS-3080-C</b>
<b>Physical Ports</b>	
10/100 Base-T(X) Ports Auto MDI/MDIX	<b>8-port with CompactPCI Interface (PICMG 2.0 compatible)</b>
<b>Technology</b>	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.3x for Flow control 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	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 1.6Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define
Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMPV1/V2c/V3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 10ms 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 for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support Modbus TCP
Network Redundancy	O-Ring Open-Ring O-Chain MRP STP/RSTP/MSTP
Warning / Monitoring System	Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. Baud rate setting: 9600bps, 8, N, 1
<b>LED Indicators</b>	
Power Indicator (Power)	Green: Power LED x 1
R.M. Indicator (R.M.)	Green: Indicate system operated in O-Ring Master mode
O-Ring Indicator (Ring)	Green: Indicate system operated in O-Ring mode
Fault Indicator (Fault)	Amber: Indicate unexpected event occurred
10/100Base-T(X) Port Indicator	Green for port Link/Act
<b>Power</b>	
Input Power	CompactPCI bus powered
Power consumption(Typ.)	6 watts
Overload current protection	Present
<b>Physical Characteristic</b>	
Dimension (W x D x H)	20(W)x187(D)x119.7(H) mm (0.79x7.36x4.71 inch.)
Weight (g)	160 g
<b>Environmental</b>	
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

## Industrial CompactPCI Managed Ethernet Switch

<b>Regulatory Approvals</b>	
EMI	FCC Part 15, CISPR (EN55022) class A
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
<b>Warranty</b>	5 years

## Features

- > Leading EN50155 compliant Ethernet switch for rolling stock application
- > Supports 3U and 4HP CompactPCI form factor and hot swapping
- > PICMG 2.0 specification compatible
- > Support 8x10/100Base-T(X) ports on CompactPCI sockets
- > World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10ms over 250 units of connection)
- > 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
- > STP/RSTP/MSTP supported
- > Supports Auto Negotiation Speed
- > Support PTP Client (Precision Time Protocol) clock synchronization
- > IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- > Port Trunking for easy of bandwidth management
- > SNMP v1/v2c/v3 support for secure network management
- > RMON for traffic monitoring
- > Support LLDP (Link Layer Discovery Protocol)
- > Port lock to prevent access from unauthorized MAC address
- > Event notification through Syslog, Email, SNMP trap, and Relay Outputpin)
- > Windows utility (Open-Vision) support centralized management and configurable by Web-based ,Telnet, Console (CLI)

## Functional Block





SWITCH CARD INDUSTRIAL

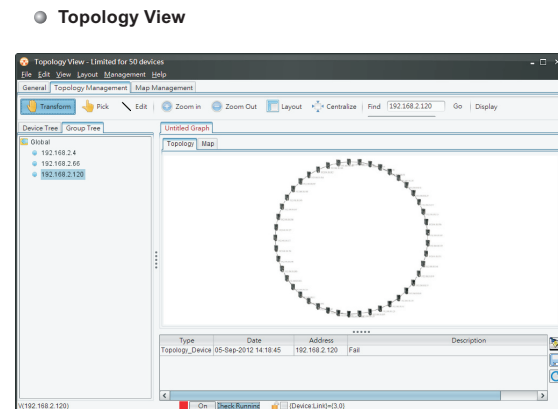
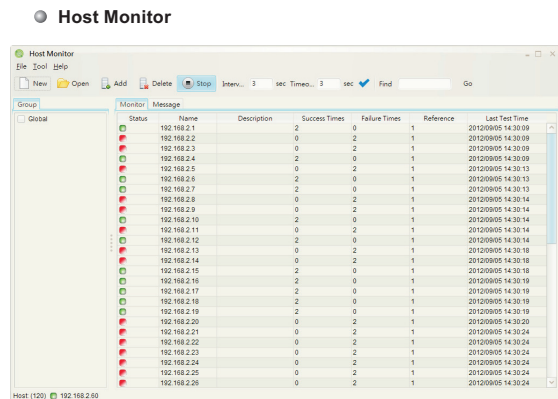
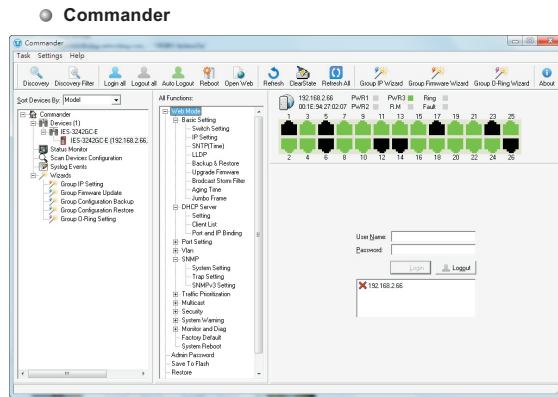
# Quick Installation Guide

# CPS-3080-C

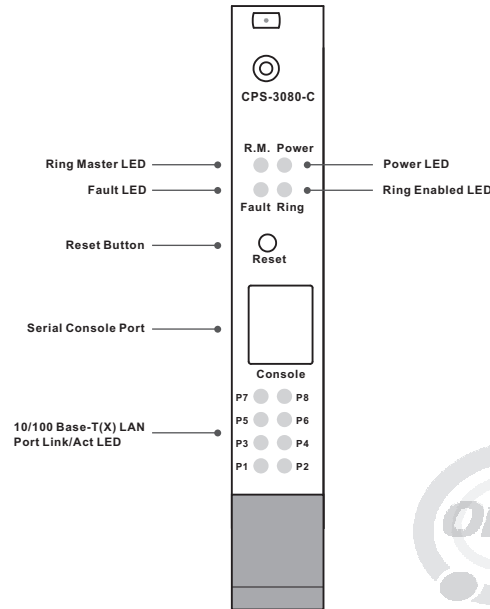
# Industrial CompactPCI Managed Ethernet Switch

### 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.



### Front Panel



### Console Port Pin Definition

PC (male) pin assignment	RS-232 with DB9 (female) pin assignment (RJ45 to DB9 cable)	RJ 45 pin assignment
Pin #2 RxD	Pin #2 TxD	Pin #2 TxD
Pin #3 TxD	Pin #3 RxD	Pin #3 RxD
Pin #5 GND	Pin #5 GND	Pin #5GND

### Backplane Pin Definition

Pin	Z	A	B	C	D	E	F	
22	GND	NC	STxD	NC	NC	SRxD	GND	J2/P2
21	GND	NC	NC	NC	NC	NC	GND	
20	GND	LED5_0	LED5_1	GND	LED7_0	LED7_1	GND	
19	GND	LED4_0	LED4_1	GND	LED6_0	LED6_1	GND	
18	GND	LED1_0	LED1_1	GND	LED3_0	LED3_1	GND	
17	GND	LED0_0	LED0_1	GND	LED2_0	LED2_1	GND	
16	GND	P8_RX+	P8_RX-	GND	NC	NC	GND	
15	GND	P8_TX+	P8_TX-	GND	NC	NC	GND	
14	GND	P7_RX+	P7_RX-	GND	NC	NC	GND	
13	GND	P7_TX+	P7_TX-	GND	NC	NC	GND	
12	GND	P6_RX+	P6_RX-	GND	NC	NC	GND	
11	GND	P6_TX+	P6_TX-	GND	NC	NC	GND	
10	GND	P5_RX+	P5_RX-	GND	NC	NC	GND	
9	GND	P5_TX+	P5_TX-	GND	NC	NC	GND	
8	GND	P4_RX+	P4_RX-	GND	NC	NC	GND	
7	GND	P4_TX+	P4_TX-	GND	NC	NC	GND	
6	GND	P3_RX+	P3_RX-	GND	NC	NC	GND	
5	GND	P3_TX+	P3_TX-	GND	NC	NC	GND	
4	GND	P2_RX+	P2_RX-	GND	NC	NC	GND	
3	GND	P2_TX+	P2_TX-	GND	NC	NC	GND	
2	GND	P1_RX+	P1_RX-	GND	NC	NC	GND	
1	GND	P1_TX+	P1_TX-	GND	NC	NC	GND	
25	GND	+5V	NC	NC	+3.3V	+5V	GND	J1/P1
24	GND	NC	+5V	5V(VIO)	NC	NC	GND	
23	GND	+3.3V	NC	NC	+5V	NC	GND	
22	GND	NC	GND	+3.3V	NC	NC	GND	
21	GND	+3.3V	NC	NC	NC	NC	GND	
20	GND	NC	GND	5V(VIO)	NC	NC	GND	
19	GND	+3.3V	NC	NC	GND	NC	GND	
18	GND	NC	GND	+3.3V	NC	NC	GND	
17	GND	+3.3V	NC	NC	GND	NC	GND	
16	GND	NC	GND	5V(VIO)	NC	NC	GND	
15	GND	+3.3V	NC	NC	GND	NC	GND	
14								
13								
12								
11	GND	NC	NC	NC	GND	NC	GND	
10	GND	NC	GND	+3.3V	NC	NC	GND	
9	GND	NC	GND	NC	GND	NC	GND	
8	GND	NC	GND	5V(VIO)	NC	NC	GND	
7	GND	NC	NC	NC	GND	NC	GND	
6	GND	NC	GND	+3.3V	NC	NC	GND	
5	GND	NC	NC	NC	GND	NC	GND	
4	GND	NC	NC	5V(VIO)	NC	NC	GND	
3	GND	NC	NC	NC	+5V	NC	GND	
2	GND	NC	+5V	NC	NC	NC	GND	
1	GND	+5V	-12V	NC	+12V	+5V	GND	
Pin	Z	A	B	C	D	E	F	

### Accessory



### Packing list

Model name	Model Description	Accessory
CPS-3080-C	3U CompactPCI EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X)	① X 1, ② X 1, ③ X 1