

Quick Installation Guide

CPGS-9080-C

Industrial CompactPCI Managed Ethernet Switch

Introduction

Oring's CPGS-9080-C series are managed Ethernet switch cards on a highly integrated 3U Compact PCI card form factor. Featuring eight 10/100/1000Base-T(X) ports, the CPGS-9080-C series are fully compliant with the EN50155 standard, and are ideal for harsh industrial applications, such as factory automation, vehicle, and railway applications. Since the switch card is hot swappable, you do not need to turn off the system power during installation.

Package Contents

The CPGS-9080-C series are 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 |
|---------------|----------|--------|
| CPGS-9080-C | | X 1 |
| Console Cable | | X 1 |
| CD | | X 1 |
| QIG | | X 1 |

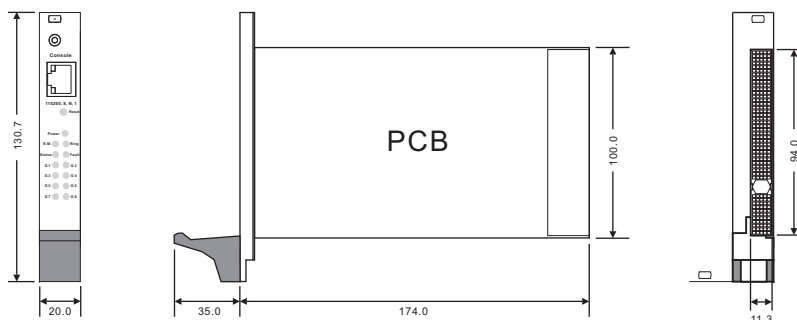
Preparation

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.

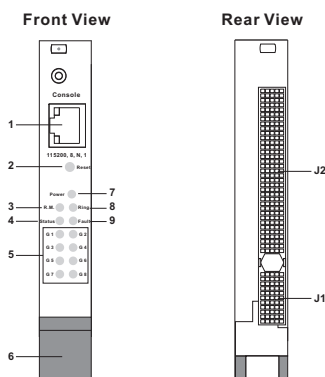
Safety & Warnings

- 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.

Dimension



Panel Layouts



1. Console port
2. Reset button
3. R.M. status LED
4. System status LED
5. G1-G8 port status LEDs
6. Ejection lever
7. Power status LED
8. Ring status LED
9. Fault LED

Network Connection

The switch card uses the CPCI connector for network connection. Please refer to the tablet below for cable types and specifications.

| Cable | Type | Max. Length | Connector |
|------------|----------------------|--------------------|--------------------------------------|
| 10Base-T | Cat. 3, 4, 5 100-ohm | UTP 100 m (328 ft) | 8-pin Female CPCI A-coding connector |
| 100Base-TX | Cat. 5 100-ohm UTP | UTP 100 m (328 ft) | 8-pin Female CPCI A-coding connector |
| 1000Base-T | Cat. 5e,6 | UTP 100 m (328 ft) | 8-pin Female CPCI A-coding connector |

Console Port Pin Definition

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

| PC (male) pin assignment | RS-232 with DB9 (female) pin assignment (RJ45-DB9 cable) | RJ45 pin assignment |
|--------------------------|--|---------------------|
| PIN#2 Rx/D | PIN#2 Rx/D | PIN#2 Rx/D |
| PIN#3 Tx/D | PIN#3 Tx/D | PIN#3 Tx/D |
| PIN#5 GND | PIN#5 GND | PIN#5 GND |

Backplane Pin Definition

The tablet below provides information of each pin on the backplane of the card. Please refer to the table for the pin assignment of each serial port.

| 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 | | | | | | | | |

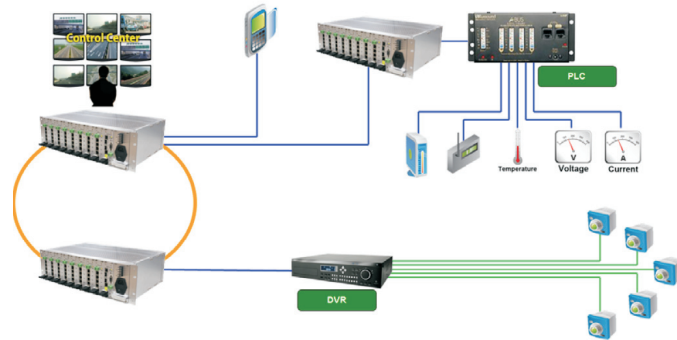


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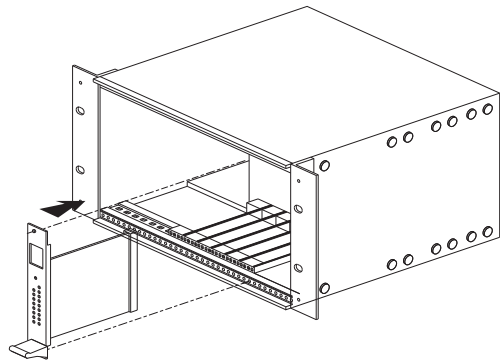
Application



Installation

Follow the steps below to install the card to the CPCI chassis.

1. Remove the metal cover plate on the back of an available CPCI slot.
2. Insert the card into the slot and use the bracket screws to secure it firmly in place.
3. Fasten the card with the chassis.
4. Connect the card to the desired network devices.



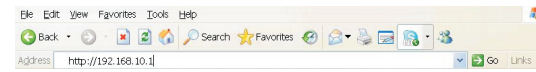
Configurations

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

| LED | Color | Status | Description |
|--------|-------|----------|--|
| Power | Green | On | DC power on |
| G1-G8 | Green | On/Blink | Port is linked / act |
| R.M | Green | On | Operating as Ring Master |
| Ring | Green | On | Operating in Ring mode |
| Status | Green | On | Ethernet link on |
| Fault | Amber | On | Faulty indication (power failure or port malfunctioning) |

Follow the steps to set up the card:

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 2-3 seconds. To restore the switch configurations back to the factory defaults, press the **Reset** button for 5 seconds.

Specifications

| ORing Switch Model | CPGS-9080-C |
|---|--|
| Physical Ports | 8-port with CompactPCI interface |
| 10/100/1000Base-T(X) Ports Auto MDI/MDIX | |
| 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 addresses |
| Priority Queues | 4 |
| Processing | Store-and-Forward |
| Switch Properties | Switch latency: 7 us Switch bandwidth: 16Gbps 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 | IEEE 1588 PTP clock synchronization IEEE 802.1D Bridge, auto MAC address learning/aging and MAC address (static) Media Redundancy Protocol (MRP) Multiple VLAN Registration Protocol (MVRP) RSTP/MSTP (IEEE 802.1w/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 Voice VLAN IGMP v2/v3 Snooping IP-based bandwidth management Application-based QoS management DOS/DDoS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/snooping DHCP Relay Modbus TCP DNS client proxy ARP inspection SMTP Client |
| 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. Baud rate setting: 9600bps, 8, N, 1 |
| LED Indicators | |
| Power Indicator | Green: Power LED x1 |
| Status Indicator | Green: System status indicator |
| R.M. Indicator | Green: Indicate system operated in O-Ring Master mode |
| Ring Indicator | Green: Indicate system operated in O-Ring mode |
| Fault Indicator | 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.) | 6.2 Watt |
| Overload current protection | Present |
| Physical Characteristic | |
| Dimension (W x D x H) | 20.0(W)x130.7(H)x209.0(D) mm (0.79x5.15x8.23 inch.) |
| Weight (g) | 224g |
| 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 |



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