



Quick Installation Guide

ICS-4040

Industrial Lite-Managed Switch Card

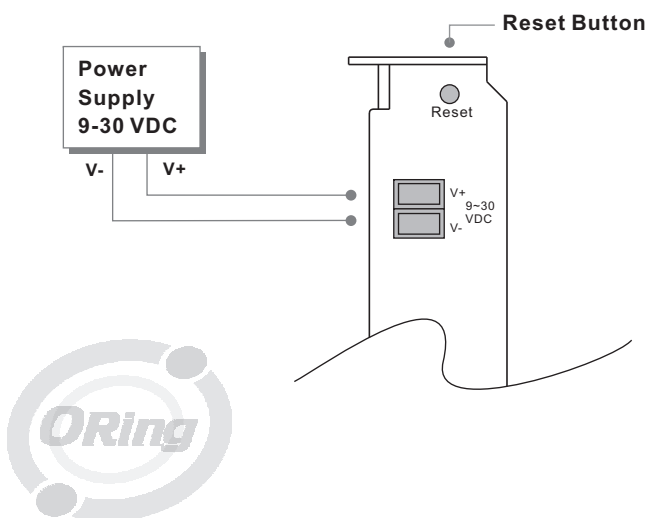
Introduction

ICS-4040 is a lite-managed redundant ring Ethernet switch with PCI-Bus interface 4x10/100Base-T(X) ports. **ICS-4040** could be installed on any IPC motherboard with PCI socket to make the IPC/embedded system able to communication with other Ethernet devices redundantly. Meanwhile, the network could feature Ethernet network redundancy by the fastest redundant ring protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring and the standard redundant protocols, such as RSTP/STP (IEEE 802.1w/D). Accordingly, the mission-critical communications could be protected from network any interruptions or malfunctions. Further, **ICS-4040** features an external redundant DC power inputs. Hence, even if the IPC motherboard fails, the data transmission could bypass the failed IPC motherboard and the network will still work properly. Therefore, **ICS-4040** is the best solution to IPC/embedded system to feature Ethernet network redundancy.

Features

- > 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
- > Provide Fast recovery technology for Ethernet multi-redundancy
- > Support STP/RSTP standard redundant protocol
- > Supports 4x10/100 Base-T(X) ports
- > SNMP v1/v2c/v3 support for secure network management
- > Support LLDP (Link Layer Discovery Protocol)
- > Configurable by Web-based and Windows utility (Open-Vision)
- > Event notification through Syslog, Email, and SNMP trap
- > Complied with PCI Bus specification, Rev 2.2

Power Connection Guide



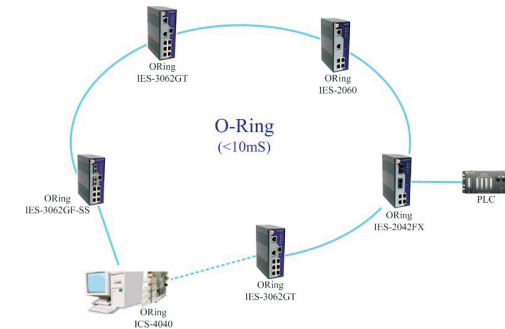
Specifications

ORing Switch Model	ICS-4040
Physical Ports	
10/100/1000 Base-T(X) Ports in RJ45 Auto MDI/MDIX	4
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T, IEEE 802.3u for 100Base-T(X) IEEE 802.3x for Flow control IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	1024 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching bandwidth: 1.0Gbps VLAN: Port Based
Security Features	Enable/disable ports VLAN to segregate and secure network traffic SNMPv3 encrypted authentication and access security
Software Features	STP/RSTP (IEEE 802.1D/w) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units Port configuration, status, statistics, monitoring, security DHCP Client
Network Redundancy	O-Ring Open-Ring Fast recovery STP RSTP
LED indicators	
Power/Ready Indicator	Green: Ready LED x 1
Fault Indicator	Red: Indicate unexpected event occurred
10/100Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for O-Ring port indicator
DIP-switch function	
1: ON 2: ON	Ethernet redundant mode change to O-Ring mode
1: ON 2: OFF	Ethernet redundant mode change to Fast recovery mode
1: OFF 2: ON	Ethernet redundant mode change to RSTP mode
1: OFF 2: OFF	Disable Ethernet redundant mode
Fault contact	
Relay	Relay output to carry capacity of 1A at 24VDC (Optional)
Power	
Input Power	PCI bus powered and 1 x 9~30VDC on 2-pin terminal block
Power consumption(Typ.)	3.5 Watts
Reverse polarity protection	Present
Overload current protection	Present on terminal block
Physical Characteristic	
Dimension (W x D x H)	121(H) X 100(W) mm (4.76 x 3.94 inch)
Weight (g)	100 g
Environmental	
Operating Temperature	-10 to 60°C (14 to 140°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory approvals	
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
Warranty	3 years

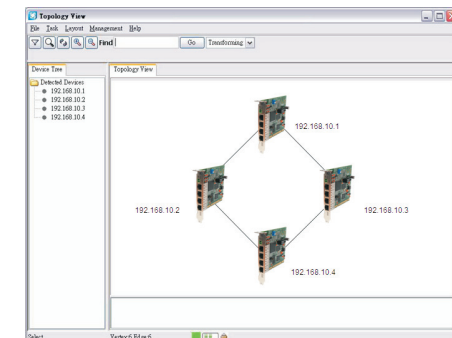
Open-Vision

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

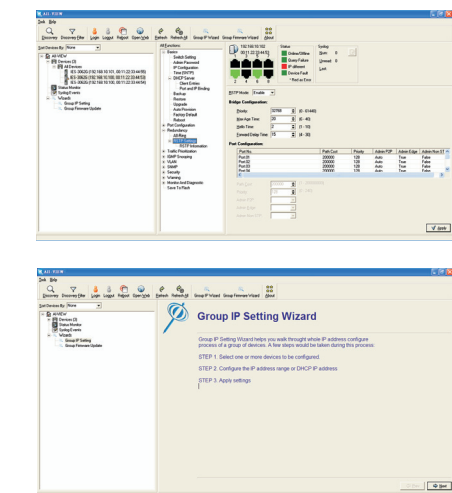
Network connection



Topology View



Monitoring and Configuration interface



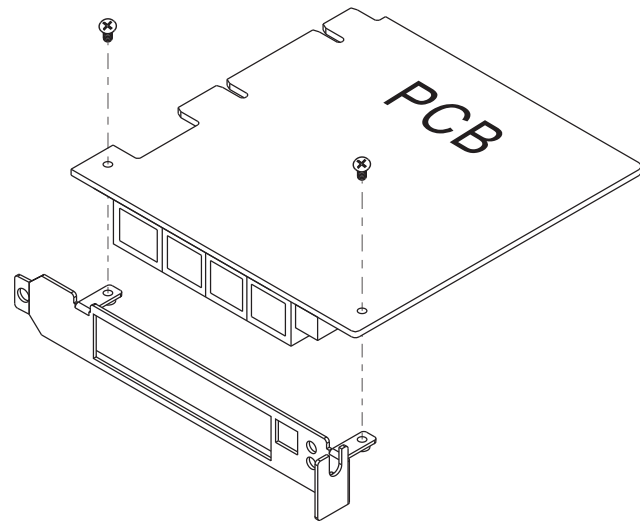


Quick Installation Guide

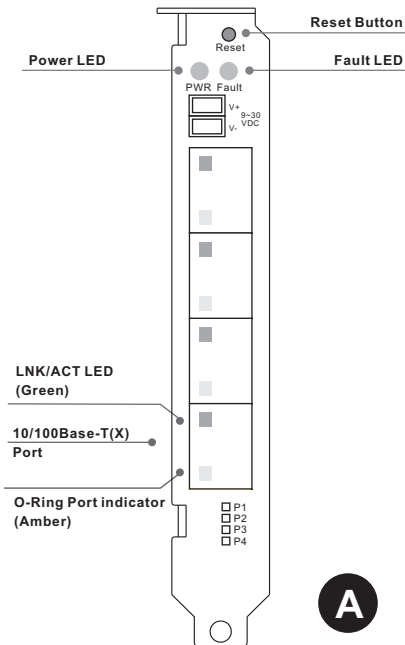
ICS-4040

Industrial Lite-Managed Switch Card

Installation



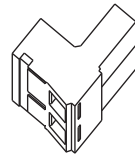
Front Panel



A

Accessory

① 2-Pin Terminal block



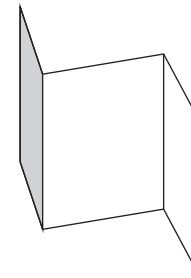
② Dust Cover (RJ-45)



③ CD



④ QIG



Packing list

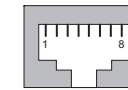
Model name	Front Panel	Model Description	Accessory
ICS-4040	A	Industrial 4-port lite-managed PCI Ethernet switch card with 4x10/100Base-T(X)	① X 1, ② X 4, ③ X 1, ④ X 1

Communication Connections

10/100Base-T(X) Ethernet Port Connection

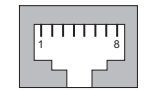
RJ45 (8-pin, MDI) Port Pinouts

Pin	Single
1	Tx+
2	Tx-
3	Rx+
6	Rx-

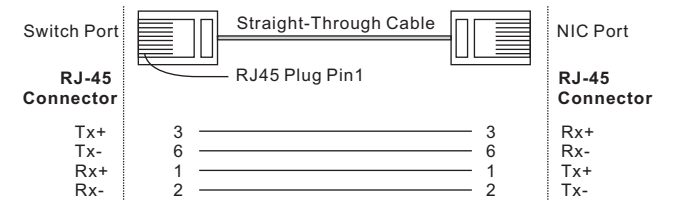


RJ45 (8-pin, MDI-X) Port Pinouts

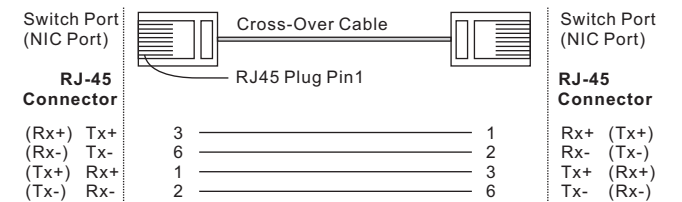
Pin	Single
1	Rx+
2	Rx-
3	Tx+
6	Tx-



RJ45 (8-pin) to RJ45 (8-Pin) Straight-Through Cable Wiring



RJ45 (8-pin) to RJ45 (8-Pin) Cross-Over Cable Wiring



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