

# EVIDENCE<sup>®</sup>

## User`s Manual



## Cross 4/PoE Lite

# **Cross 4/PoE Lite User's Manual**

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**8 Ports Unmanaged 10/100 Fast Ethernet Switch  
With 4 PoE Ports**

Release 1.0

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## Revision History

<b>Release</b>	<b>Date</b>	<b>Revision</b>
1.0	2009/08/27	A1

## **Caution**

Circuit devices are sensitive to static electricity, which can damage their delicate electronics. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electrical charge.

To protect your device, always:

- ⌚ Touch the metal chassis of your device to ground the static electrical charge before you pick up the circuit device.
- ⌚ Pick up the device by holding it on the left and right edges only.

## **Electronic Emission Notices**

### **Federal Communications Commission (FCC) Statement**

This equipment has been tested and found to comply with the limits for a class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

### **European Community (CE) Electromagnetic Compatibility Directive**

This equipment has been tested and found to comply with the protection requirements of European Emission Standard **EN55022/EN61000-3** and the Generic European Immunity Standard EN55024.

EMC:

EN55022(2003)/CISPR-2( 2002)	class A
IEC61000-4-2 (2001)	4K V CD, 8KV, AD
IEC61000-4-3( 2002)	3V/m
IEC61000-4-4(2001)	1KV – (power line), 0.5KV – (signal line)

# About this user's manual

In this user's manual, it will not only tell you how to install and connect your network system but show you all the functions and specifications.

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## Overview of this user's manual

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- Chapter 1 "Introduction"
- Chapter 2 "Installation"
- Appendix A



# 1. Introduction

## 1-1. Overview of Cross 4/PoE Lite

The Fast switch, an 8 port desktop Fast switch, meets the demand of bandwidth. This desktop switch seamlessly integrates with the rest of the network through its auto-negotiating and non-blocking design. To break through the bottlenecks at the core of network, the switch provides up to 1.6Gbps aggregate bandwidth and seamless migration and the most cost effective method for bringing high-speed networking to the desktop.

PoE allows power to be supplied to end devices, such as Wireless Access Points or VoIP Phones, directly through the existing LAN cables. By supplying the power endpoint, you can centralize power distribution and backup without the need to increase infrastructure. The PSE switch complies with IEEE 802.3af, its advanced auto-sensing algorithm enables providing power devices (PD) discovery, classification, current limit, and other necessary functions. It also supports high safety with short circuit protection and power-out auto-detection to PD.

## 1-2. Checklist

Before you start installing the switch, verify that the package contains the following:

- The 8-Port Fast Switch with 4 PoE
- AC Power Cord
- This User's Manual

Please notify your sales representative immediately if any of the aforementioned items is missing or damaged.

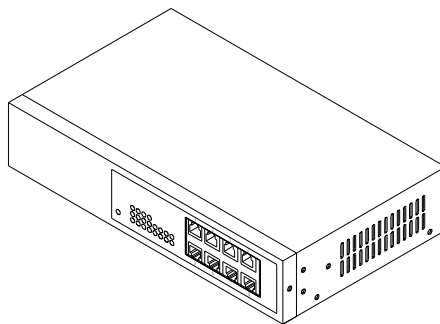


Fig. 1 the 8-Port Fast Switch with 4 PoE

### 1-3. Features

- **Key Features in the Device**

- Conforms to IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX and IEEE 802.3x flow control standards
- Supports 10/100Mbps auto-detect half/full duplex
- Supports TP interface MDI/MDI-X auto crossover
- Supports 802.3x flow control pause packet for full duplex
- Supports IEEE 802.3af compliant
- LEDs to indicate: Link/Act, Speed, Power Status and PoE activity
- Alarm contact function
- Desktop for easy installation
- RoHS Compliance
- 4 PoE ports
- Auto detect powered device and consumption levels
- Smart feature for PD on/off, PD detection, power level, PD status and power feeding priority(X)
- Automatic Fault Detection(Over/Under Voltage & Current)
- Thermal shutdown protection( $T_j > 150^{\circ}\text{C}$ )
- Fanless

### 1-4. View of



Fig. 1-1 Full View of Cross 4/PoE Lite

## 1-4-1. User Interfaces on the Front Panel

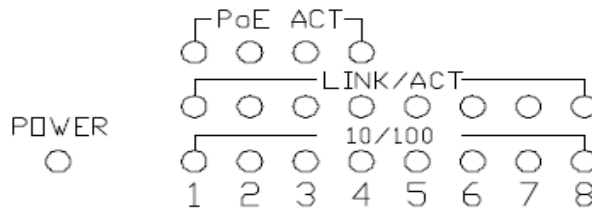


Fig. 1-2 LED of Cross 4/PoE Lite

### LED Description

There are diagnostic LEDs located on the Front panel of Cross 4/PoE Lite. These LED indicators provide administrators with real-time system status. The following table gives descriptions of the function of each LED indicator.

LED	Color	Function
Power	Green	Lit when power is on Off when no power
PoE ACT (Port 1 to 4)	Green	Lit when PoE feeding power is active Off when PoE no working
Link/ACT	Green	Lit when link up Blinks when transmitting or receiving data Off when link down
10/100Mbps	Green	Lit when 100Mbps is active Off when 10Mbps is active

# 2. Installation

## 2-1. Starting Cross 4/PoE Lite Up

This section will give users a quick start:

1. Take your Cross 4/PoE Lite out of the package box.
2. Power on the Cross 4/PoE Lite. Refer to the **Wiring the Power Inputs** section for wiring instructions. After the Cross 4/PoE Lite is powered on, the power LED on the Cross 4/PoE Lite will light up. Refer to the **LED Indicators** section for descriptions of the function of each LED indicators.
3. Connect one side of an Ethernet cable into the Cross 4/PoE Lite's TP port, while the other side is connected to the attached device. The LED will light up when the cable is correctly connected. Refer to the **LED Indicators** section for descriptions of the function of each LED indicator.
4. After all necessary connections are established, and the corresponding LED indicators all light up and indicate that each status is normal, the installation is now finished.

### 2-1-1. Hardware and Cable Installation

At the beginning, please do first:

With the plug and play design, the Fast switch is easy in installation and use. Network and port status can be easily monitored and done trouble-shooting via diagnostic LEDs. Wiring auto crossover on all ports of the switch also allows the connection to server or PC to free from cabling problems.

1. In the switch, TP port supports MDI/MDI-X auto-crossover, so both types of cable, straight-through (Cable pin-outs for RJ-45 jack 1, 2, 3, 6 to 1, 2, 3, 6 in 10/100M TP) and crossed-over (Cable pin-outs for RJ-45 jack 1, 2, 3, 6 to 3, 6, 1, 2) can be used. It means you do not have to tell from them, just plug it.
2. Use Cat. 5 grade RJ-45 TP cable to connect to a TP port of the switch and the other end is connected to a network-aware device such as a workstation or a server.
3. Repeat the above steps, as needed, for each RJ-45 port to be connected to a Fast 10/100 TP device.
4. For Fast Ethernet TP network connection
5. The grade of the cable must be Cat. 5 or Cat. 5e with a maximum length of 100 meters.
6. Insert the power cord. The embedded internal power unit using different AC power cord is available for different areas.

### PSE TP Switch with Powered Device (PD)

1. Connect the PSE switch to an AC power source.
2. Install the TP media cable to the IEEE 802.3af PD for port 1 to 4. (See Fig. 2)

**Note: It can work as a pure switch that connects to non-PoE devices.**

1. Install the media cable for network connection.
2. Port 5 to 8 are pure TP ports for non-PoE devices.

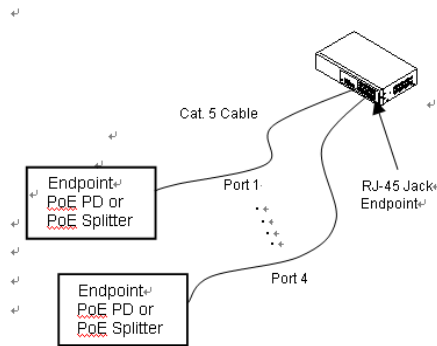


Fig. 2 PSE to PD or PoE Splitter

## 2-1-2. Cabling Requirements

To ensure a successful installation and keep the network performance good, please take a care on the cabling requirement. Cables with worse specification will render the LAN to work poorly.

### 2-1-2-1. Cabling Requirements for TP Ports

For Fast Ethernet TP network connection

- ⌚ The grade of the cable must be Cat. 5 or Cat. 5e with a maximum length of 100 meters.
- ⌚ This device supports MDI/MDI-X auto-crossover, so both types of cable, straight-through and cross-over can be used.

Straight-through cable: pin-outs for RJ-45 connector 1,2,3,6 to 1,2,3,6

Cross-over cable: pin-outs for RJ-45 connector 1,2,3,6 to 3,6,1,2

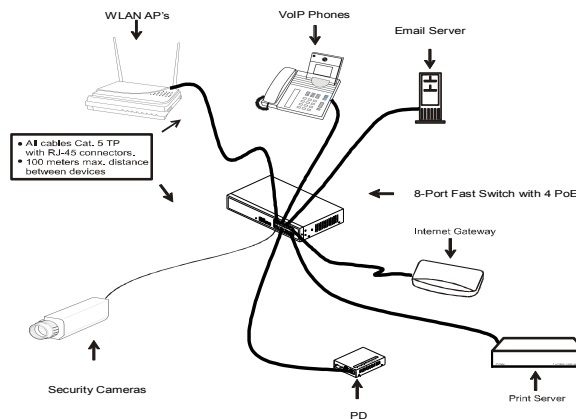


Fig. 3 Network Connection

# 3. Specifications

**Standards** : IEEE802.3/802.3u/802.3x , IEEE802.3af Power over Ethernet

**Transmission** : 10/100Mbps supports full or half duplex

**Data Transfer Rate** : PPS (packets per second)

Speed	Forwarding Rate
100Mbps	148,800 PPS
10Mbps	14,880 PPS

**MAC Address and Self-learning** : up to 1K

**Buffer Memory** : 96Kbyte on chip frame buffer

**Flow Control** : IEEE802.3x compliant for full-duplex Backpressure flow control for half-duplex

**Switching Method** : Store & forward

**Network Interface** : 8 10/100Mbps RJ-45 ports

**UTP Cable** :

10BASE-T: UTP Cat. 3, 4, 5 or up

100BASE-TX: UTP Cat. 5 or up

**PSE Power Feeding Supports** : (Port 1 to 4) "Endpoint" via TP pin 1, 2, 3, 6

**Diagnostic LEDs** :

System LED --Power

PoE LED --PoE Act (Port 1 to 4)

Per Port LED--Link/Act, 10/100Mbps

**Power Requirement** : AC Line

Voltage : 100-240V

Frequency : 50-60Hz

Consumption : Max. 4W (in case no PD device connected) or Max. 65W (with 4 x 15.4W PoE devices connected)

**Operation Temperature** : 0°C to 40°C

**Operation Humidity** : 10% to 90%

**Storage Temperature** : 0°C to 55°C

**Humidity** : 5% to 95%

**Dimensions** : 44(H) × 220(W) × 130.5(D) mm

**Complies with FCC Part 15 Class A, CE Mark Approval**

# Appendix A

## Technical Specifications

Feature	Detailed Description
<b>Standards</b>	IEEE802.3/802.3u/802.3x IEEE802.3af Power over Ethernet
<b>Transmission</b>	10/100Mbps supports full or half duplex
<b>Data Transfer Rate</b>	100Mbps/10Mbps 148800PPS/14880PPS
<b>MAC Address and Self-learning</b>	Up to 1K
<b>Buffer Memory</b>	96Kbyte on chip frame buffer
<b>Flow Control</b>	IEEE802.3x compliant for full-duplex Backpressure flow control for half-duplex
<b>Switching Method</b>	Store & forward
<b>Input voltage</b>	AC 90-240V
<b>Frequency</b>	50-60Hz
<b>Power consumption</b>	65W
<b>Operating Temperature</b>	0° to 40°C
<b>Humidity</b>	5% to 95%(non-condensing)
<b>Dimensions</b>	66(W)x148(H)x98(D)mm
<b>Weight</b>	1kg
<b>Installation</b>	Din Rail, Wall mount, Desktop
<b>Safety</b>	Comply with FCC Part 15 Class A & CE Mark Approval
<b>Warranty</b>	2 Years