User Manual

ELECTRA-T24

24 Gigabit Managed PoE Switch

Installation manual introduction

The Product installation manual mainly describes ELECTRA-T24 PoE switch hardware features, installation methods, and precautions during the installation

This manual includes the following chapters:

Chapter 1: Product Introduction. Briefly describes the basic features of the switch and the appearance details.
Chapter 2: Product Installation. Guide the switch hardware installation methods and precautions.
Chapter 3: Hardware Connections. Guide the connection between switches and other devices and precautions.
Chapter 4: Technical Specifications.

NOTE:To avoid potential device damage and personal injury, read the related information in this manual before installing the device.

Agreement

The term "switch" mentioned in this manual, unless otherwise specified, refers to

24-port full Gigabit managed PoE switch, hereinafter referred to as ELECTRA-T24

Some pictures for the schematic, the product itself and pictures may be different

This icon indicates the items to be cautioned in the operation. If the operation is wrong, the equipment may be damaged and other adverse consequences.

Chapter 1 Product Introduction

1.1 Product introduction

ELECTRA-T24 is managed PoE switch for security transmission and WIFI coverage, meet the WIFI AP, IP-camera, WIFI bridge, IP phones and other types of equipment PoE power supply needs. Products using a new generation of high-performance hardware and software platforms, providing flexible, cost-effective full Gigabit access and uplink ports, support for Layer 3 routing protocols, complete security mechanisms, improved ACL / QoS strategy and rich VLAN capabilities, it is easy to manage and maintain , meet the users' requirements for network equipment easy to manage, high security and low cost. It is suitable for network access, aggregation and core applications in campus, hotel and enterprise campus.

PoE (Power over Ethernet) refers to the power over Ethernet technology. It refers to the transmission of data signals to some IP-based terminals (such as IP phones, wireless access point APs, network cameras, etc.) and also provide DC power supply technology. These devices that accept DC power supply are called powered devices (PDs)

1.2 Packing list

Open the package carefully check the following list

Commodity	Quantity	Description
PoE switch	1pcs	No
Power cord	1pcs	Optional
Bracket	2pcs	Fixed on rack mount
User manual	1pcs	Guide users to install switch

1.3 Appearance

■ Front Panel

Including indicators, RJ45 port, shortcut buttons, RST button, SFP port, CONSOLE port, as shown in Figure 1.1 below

1. Port LEDs
2. Shortcut Buttons
3. RST
4. 24 x 10/100/1000Mbps RJ45 Ports
5. 4 Gigabit SFP Ports
6. Console Port
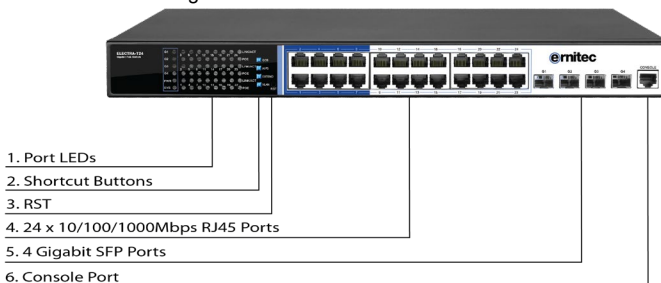
Indicators

ELECTRA-T24 The indicator working status is shown as the following table

Indicators	Title	Color	Work status	Description
POWER	Power indicator	Red	Solid	Power is normal
			Off	No power, the power switch is not turned on, power supply is abnormal
POE	POE power indicator	Red	Solid	The corresponding RJ45 port is connected to the powered device and the power supply is normal
			Off	The corresponding RJ45 port is not connected to the powered device or the power supply is abnormal
LINK/ACT	Connection indicator	Green	Blinking	A valid link is established
			Off	An invalid link is established
SYS	System indicator	Green	Blinking	System is functioning properly
			Off	System is functioning improperly Software is damaged
G1-4	SFP indicator	Green	Blinking	A valid link is established on the SFP port
			Off	An invalid link is established on the SFP port

✧ **Shortcut button**

◆ **QOS**: Improve video data processing capabilities and improve the monitoring of Caton and Mosaic phenomena in the network

◆ **CCTV**: 1-8 port rate down to 10Mbps, but the transmission distance up to 250 meters

◆ **VLAN**: Isolating ports 1-24 from each other, suppress network storms effectively and improve network performance

◆ **AI power supply**: Detect PD, power failure and restart dead equipment

✧ **RJ45 Port**

ELECTRA-T24 with24 10/100/1000Mbps PoE port，all ports support IEEE802.3af and IEEE802.3at standard
When the switch mode of operation is CCTV mode, 1-8 port can support 250 meters power supply with 10Mbps speed rate

✧ **SFP Port**

ELECTRA-T24 provide four Gigabit SFP optical ports (G1~G4), can be inserted into the Gigabit SFP module

✧ **RST Button**
✧ When the switch is powered on, press the button with the needle to release the device and enter the restarting state. When the SYS lamp restarts, the device restarts. When the switch is powered on, press and hold the button for more than 5s to release the button and enter the reset state. When SYS is re-lit, the device is reset successfully

✧ **Console port**

Console port used to connect to computer or other terminal to manage or configure the switch.

■ **Back Panel**
Including: power socket, power switch, ground terminal

1、Power Socket
2、Power Switch
3、Ground Terminal

✧ **Power socket**

A 100-240VAC 50/60 Hz power receptacle for accommodating the supplied power cord

✧ **Power switch**

Turn on/off the power switch, control the power switch

✧ **Ground terminal**

Please use the grounding wire to prevent lightning. To avoid product lightning strikes and extend product life

Chapter 2 Installation

2.1 Installation Precautions

⚠ Note：To avoid improper use of equipment damage and personal injury, please observe the following precautions

■ **Installation safety precautions**

● The power should be kept off during the installation, while wearing anti-static wrist, and to ensure well touch between anti-static wrist and skin to avoid potential safety hazard;
● The switch just work normally when it is powered by the correct power supply. Make sure that the power supply voltage matches the voltage indicated by the switch
● Before powering on the switch, make sure that the power circuit is not overloaded, which may affect the normal operation of the switch and even cause unnecessary damage
● To avoid the risk of electric shock, do not open the case while the switch is working. Do not open the case even when it is not powered
● Before cleaning the switch, unplug the switch from the power cord and do not wipe it with wet cloth. Do not wash it with liquid

◇ **Temperature and humidity**

To ensure the long-term stability working of the switch , please maintain a certain temperature and humidity environment. High or low humidity easily lead to leakage of insulation materials, deformation and even the corrosion of metal parts, the temperature is too high will accelerate the aging process of insulating materials, seriously affecting the service life of equipment. The normal operation of this series of switches and storage temperature / humidity are as follows

Environmental description	temperature	Relative humidity
Working environment	0℃~40℃	10% ~ 90% RH no condensation
Storage environment	-40℃ ~ 70℃	5% ~ 90% RH no condensation

◇ **Altitude**

Products with this logo are only for safe use in areas below 2000m altitude

◇ **Dust-proof**
Dust on the switch surface will cause electrostatic adsorption, poor contact of the metal contacts. Although the device itself has done some measures in anti-static, but when the static electricity exceeds a certain intensity, it will still cause fatal damage to the electronic components on the internal circuit board. In order to prevent static electricity from affecting the normal operation of the equipment, please note the following:
Regular dust, keep the indoor air clean;
Make sure the equipment is well grounded to ensure smooth transfer of static electricity

◇ **Electromagnetic interference**

Electromagnetic interference have an impact on the device capacitance, inductance and other electronic components by capacitive, inductive coupling, impedance coupling and other conductive, in order to reduce the adverse effects caused by electromagnetic interference, please note the following：

Power supply system to take the necessary anti-grid interference measures;
Switches should be far away from high-frequency high-power, high-current devices, such as wireless transmitters;
If necessary, take electromagnetic shielding measures

◇ **Lightning protection**
When a lightning strike occurs, a strong current will be generated in an instant cause fatal damage to electronic equipment. To achieve better lightning protection, please note the following：

Make sure the rack and the ground to maintain good contact;
Make sure the power outlet is in good contact with the earth;
Reasonable wiring, to avoid the internal sense ray;
Outdoor wiring, it is recommended to use the signal lightning protection device

✧ **Installation desk requirement**

Regardless of whether the switch is installed in a rack or on another horizontal workbench, be aware of the following:

Make sure the rack or workbench is stable, strong, and can withstand at least 5.5Kg weight;

Make sure the rack has a good cooling system, or maintain good indoor ventilation;

Make sure the rack is well grounded, the power outlet and switch are within 1.5 meters

✧ **Prepare tools for installation**

You may need to use a screwdriver during installation, electrostatic wrist strap, fiber optic cable and other tools to prepare your own

2.2 Product installation

19-inch standard rack installation

ELECTRA-T24 is designed according to the standard 19-inch rack size, you can easily install to the rack, the specific installation steps are as follows:

First, Check rack grounding and stability;

Second, Install the two L-brackets in the accessory on each side of the switch panel and secure with the screws provided in the accessory

Third, place the switch in an appropriate place in the rack and be supported by the bracket. Screw the L-shaped bracket to the guide groove fixed on both ends of the rack to ensure that the switch is stable and horizontally installed on the rack

Note:

Good grounding rack is anti-static equipment, anti-leakage, lightning protection, anti-jamming important guarantee, so to ensure that the rack ground wire properly installed;

Installation equipment within the rack from the bottom up, to avoid overload installation;

Avoid placing other heavy objects on switch to avoid accidents;

Ensure heat dissipation and air circulation.

Chapter3 Hardware connection

3.1 RJ45 port connection

Connect the RJ45 port of the switch and the corresponding network device via
cables, the POE power supply function of the switch is default enabled on the
downlink port of the switch, which can be used for IEEE802.3af or IEEE802.3at
standards powered devices such as APs, bridges, and network cameras
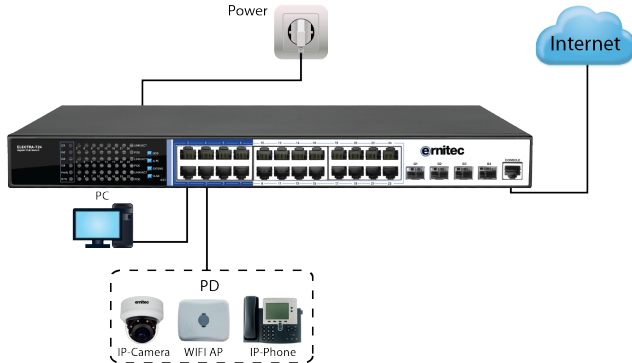
Note：

When the switch connected workstations, servers, routers or other ethernet
devices the cable length should be within 100 meters;
The Auto-MDI / MDIX ethernet interface is enabled by default. Category 5,the
standard network cable or crossover cable can be used for Ethernet connection.
Do not connect the RJ45 port to the phone line

3.2 SFP Port connection

ELECTRA-T24 SFP port only support Gigabit fiber module. Recommended use
of standard SFP module products

The process of installing a fiber module on a switch is as follows:

First, grasp the optic fiber module from the side, insert it smoothly along the SFP
port slot until the optic fiber module and switch are in close contact;

Second, confirm the Rx and Tx ports of the fiber module when connecting, insert
one end of the fiber into the Rx and Tx ports correspondingly, ensure that the Tx
and Rx ends of the interface are connected correctly and the other end of the
fiber is connected to another device;

Third, please check the corresponding indicator light status after power on. If the
light blinking that the link is properly connected, if the light is off , the link is
failure, please check the line to confirm that the corresponding equipment is
enabled.

3.3 Check before power on

Check whether the outlet power supply meets the switch specifications;

Check the power, switches, racks and other equipment have been properly grounded;

Check whether the switch and other network devices are connected properly

3.4 Device initialization

The switch automatically initializes when the power switch is turned on.

Indicator will appear the following situation:

After the power is turned on, the power indicator remains on, the other indicator is off at this time;

After about 1 second, all lights except for the power light turn on for about 35 seconds and then turn off; when the SYS light goes flashing, the system runs normally

Port LEDs indicates the connection status of each port, indicating that the switch has started to work normally

3.5 Web Login

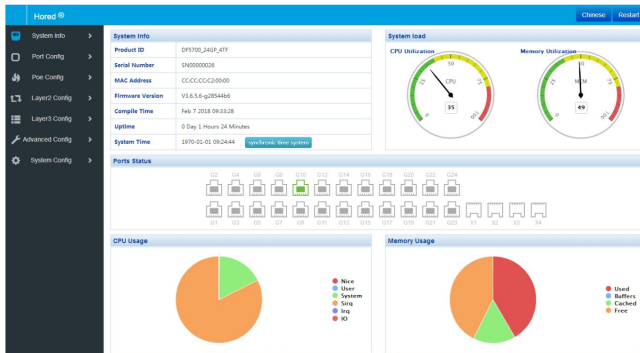**Step1**、In the normal operation of the device, connect the computer to the switch's RJ45 port by network cables
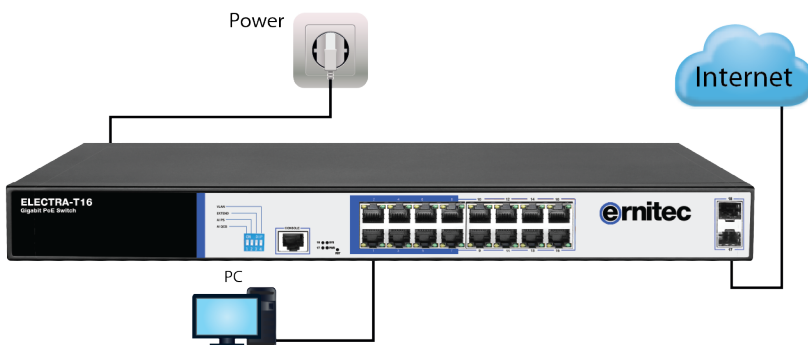
Step 2、 Manually changed the computer IP address to 192.248.254.X (X is 2 ~ 254), subnet mask is 255.255.255.0

Step3、 Open computer's browser, type 192.248.254.1 in the address box, hit the Enter key

Step4、 Enter the default username and password "admin" and then click Login

Step5、 Entered the switch web management interface successfully when you see picture as below, you can begin to configure the switch

Chapter 4 Hardware Specifications

4.1 Hardware Specifications

Network standard	IEEE 802.3: Ethernet Media Access Control (MAC) protocol IEEE 802.3i:10BASE-T Ethernet IEEE 802.3u:100BASE-TX fast Ethernet IEEE 802.3ab:1000BASE-T gigabit Ethernet IEEE 802.3z:1000BASE-X gigabit Ethernet（fiber） IEEE 802.3ae:10GBASE-SR/LR 10G Ethernet（fiber） IEEE 802.3ad: comply link aggregation standard IEEE 802.3x: flow control IEEE 802.1p: About the traffic priority of the second layer of Qos / Cos protocol (multicast filtering) IEEE 802.1q:VLAN Bridge operation IEEE 802.1d:STP spanning tree IEEE 802.1s:MSTP spanning tree IEEE 802.1w:RSTP spanning tree IEEE 802.3af IEEE 802.3at
Port	24 10/100/1000Mbps RJ45 port
	4 gigabit SFP fiber port
	1 Console port
PoE	24 10/100/1000Mbps RJ45 port support PoE
	Max 400W
	Single port max 30W
LEDs	28 Link/Act LEDs
	24 POE LEDs
	1 Power LEDs
Performance	Forwarding mode: store and forward
	Switch Volume (Full-duplex)：56Gbps
	Packet forwarding rate：41.664Mpps
	8K MAC address table
Input	100-240V/50-60Hz
Dimension (L×W×H)	440mm×320mm×44mm

4.2 Software Specifications

Shortcut function	One key VLAN	
	One key CCTV(1-8 port 250meters PoE distance)	
	One key Q0S (Video priority)	
	One key AI power supply	
Routing	Support RIP V1/V2 dynamic routing	
	Support static routing	
DHCP	Support DHCP server	
	Support DHCP reply	
	Support DHCP Snooping	
VLAN	Support 4K VLAN	
	Support 802.1Q VLAN、Port VLAN、Voice VLAN	
PoE	Support setting the PoE port priority	
	Support setting PoE power supply period	
	Support setting port power	
MAC address table	Comply the IEEE 802.1d standard	
	Support MAC address learning and aging automatically	
	Support static, dynamic, filter address table	
Safety	Based on user rating management and password protection	
	Support based on the port number, IP address, MAC address restrictions on user access	
	Icmp-echo、DoS protection	
	Support DHCP Snooping、DHCP attack protection	
	Support port security, port isolation	
Access control (ACL)	Support L2(Layer 2)~L4(Layer 4) packet filtering function	
	Support port mirroring, port redirection, flow rate limit, QoS re-marking	
Multicast	Support IGMP v1/v2 Snooping	
	Support static multicast	
	Support multicast VLAN	

QoS	Support 8 port queue
	Support port priority, 802.1p priority, DSCP priority
	Support SP、RR、WRR、WFQ Priority scheduling algorithm
Spanning Tree	Support STP(IEEE 802.1d)，RSTP(IEEE 802.1w) and MSTP(IEEE 802.1s) protocol
	Support loop protection, BPDU protection
Management and maintenance	Support WEB management（HTTP）
	Support CLI（Telnet、local serial port）
	Support SNMP V1/V2/V3，Compatible with public MIBS
	Support LLDP、RMON
	Support IP Source protection、DoS protection
	Support CPU monitor、memory monitoring
	Support system log
	Support cable testing
Multicast	Support IGMP v1/v2 Snooping
	Support static multicast
	Support Multicast VLAN

4.2 Features

➢   1-8 port support 250Meters long-distance power supply (recommended cat5e or 6 network cable)

➢   Support a key VLAN, the port 1-24 isolated from each other, which can effectively inhibit network storms, improve network performance

➢   Supports IEEE 802.3af / at standard, automatically detects and identifies devices that comply with the IEEE 802.3af / at standard and supply power to it

➢   Support Auto MDI/MDIX;

➢   Adopt store-and-forward exchange method

➢   intelligent power supply, the lowest power consumption, ensure PD power needs

➢   With power circuit protection, protect the safety of PD

➢   No configuration characteristics of the power supply is automatically supplied to the adaptive equipment;

➢   Fanless design, energy saving and environmental protection; no noise, reduce the impact on the environment

➢   Small, exquisite design

➢   Support port without link power saving function

➢   All ports have wire-speed forwarding capability

➢   Plug and play ,easy to use