User Manual

ON-PS3016S
16 Port L2 Managed PoE Switch

Installation manual introduction

The Product installation manual mainly describes ON-PS3016S 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
16-port 10/100Mbps managed PoE switch, hereinafter referred to as ON-PS1016S

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

Due to product version upgrades or other reasons, the contents of this document may be updated from time to time. Unless otherwise agreed, this document is for guidance only. All statements, information and suggestions in this document do not constitute any form of guarantee.

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

ON-PS3016S 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 10/100Mbps access and gigabit uplink ports, support Layer 2 management, 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)
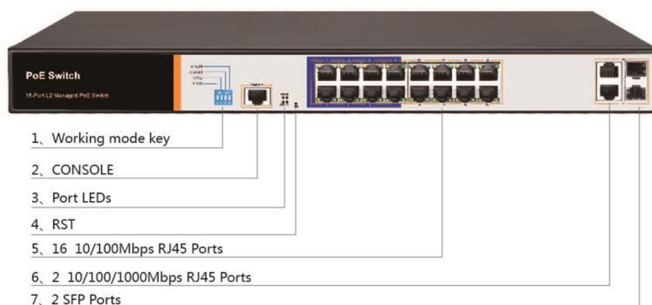
1.2 Packing list

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 below

  1、Working mode key
  2、CONSOLE
  3、Port LEDs
  4、RST
  5、16 10/100Mbps RJ45 Ports
  6、2 10/100/1000Mbps RJ45 Ports
  7、2 SFP Ports

- **Indicators**

  ON-PS3016S The indicator working status is shown as the following table

Indicators	Title	Color	Work status	Description
PWR	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	Yellow	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	A link is not established
SYS	System indicator	Green	Blinking	System work well
			Off	System error, software is damaged

- ✧ **Shortcut button**
    - ◆ **AI QoS**: Improve video data processing capabilities and improve the monitoring of Caton and Mosaic phenomena in the network

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

    - ◆ **Ai VLAN**: Isolating ports 1-6 from each other, suppress network storms effectively and improve network performance

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

- ✧ **RJ45 Port**
    ON-PS3016S support 16x 10/100Mbps PoE port, all ports support IEEE802.3af and IEEE802.3at standard .In addition ON-PS3016S also provides two 10/100/1000Mbps adaptive RJ45 port as the uplink port, with SFP1, SFP2 form a Combo port. At the same time Combo port two ports can only use one. Two Combo port shared 17, 18 Indicator light

- ✧ **SFP Port**
    ON-PS3016S provide 2 Combo Gigabit SFP optical ports (SFP1, SFP2), 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, ground terminal

1、Ground Terminal

2、Power Socket

◇ **Power socket**

Connect the power cable to the switch ON-PS3016S with an AC power supply of 100-240V to 50/60Hz

◇ **Ground terminal**

Use a wire ground to prevent lightning strikes. To avoid lightning strikes on the product and extend the life of the product

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

ON-PS3016S is designed according to the standard 19-inch rack size, you can

easily install to the rack, the specific installation steps are as follows:

1) Check rack grounding and stability；

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

3) 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
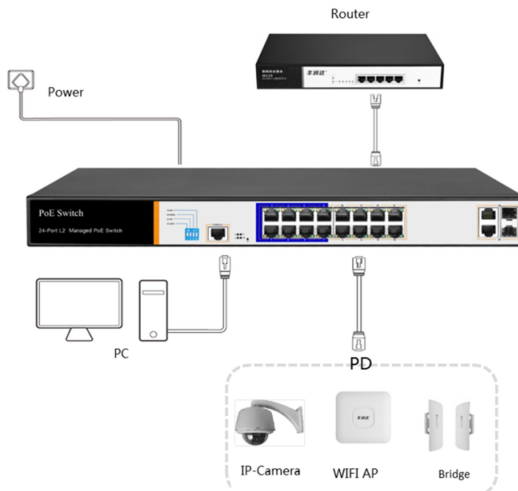
> ⚠ **Note：**
> Good grounding rack is anti-static equipment, anti-leakage, lightning protection, anti-jamming important guarantee, so to ensure that the rack ground wire properly installed;
> Installation equipment within the rack from the bottom up, to avoid overload installation;
> Avoid placing other 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

3.2 SFP Port connection

ON-PS3016S 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
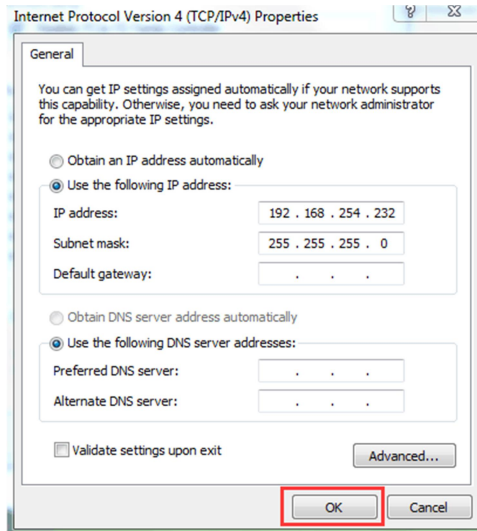normally

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
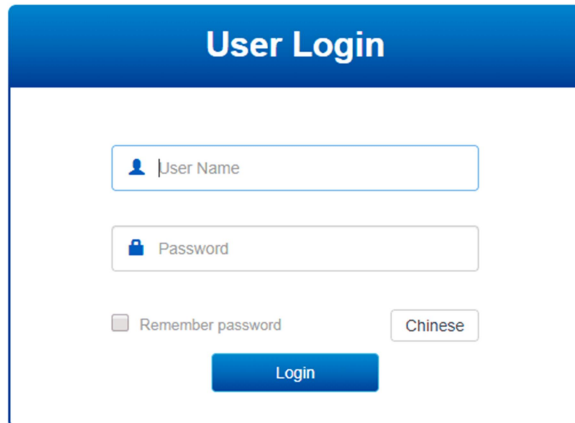RJ45 port by network cables

Step 2、 Manually changed the computer IP address to 192.168.254.X (X 为 2~254)，subnet
mask is255.255.255.0

Step3、 Open computer's browser, type 192.168.254.1 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

Standard	IEEE 802.3i IEEE 802.3u IEEE 802.3x IEEE 802.3ab IEEE 802.3af IEEE 802.3at
Port	16 10/100Mbps RJ45 port
	2 10/100/1000Mbps RJ45 port
	2 Gigabit SFP port
	1 Console port
PoE	16 10/100 Mbps RJ45 port support PoE+ power
	Total max power 150W
	Single max power 30W
indicators	18 Link/Act indicator
	16 PoE indicator
	1 SYS indicator
	1 Power indicator
Performance	Forwarding mode: store and forward
	Backplane bandwidth：7.2Gbps
	Packet forwarding rate：5.36Mpps
	Support 8K MAC address table depth
Lightning protection	6KV

Input Power	100-160V/50-60Hz	
Size（L×W×H)	440mm×178mm×44mm	

4.2Software Specifications

Protocol 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 802.3ad:Standard method for performing link aggregation IEEE 802.3x:flow control IEEE 802.1p:LAN Layer 2 QoS/Cos protocol for traffic priority (multicast filtering) IEEE 802.1q:VLAN IEEE 802.1d:STP Spanning tree IEEE 802.1s:MSTP Spanning tree IEEE 802.1w:RSTP Spanning tree IEEE 802.3af IEEE 802.3at
Shortcut function	One key AI VLAN
	One key AI Extend(1-8 port 250meters PoE distance)
	One key AI PoE
	One key Q0S (Video priority)
DHCP	Support DHCP Snooping
VLAN	Support 4K VLAN
	Support 802.1Q VLAN、MAC VLAN ,IP VLAN
	Voice VLAN
MAC address table	Comply the IEEE 802.1d standard
	Support MAC address learning and aging automatically

	Support static, dynamic, filter address table
Safety	Password protection
	Support based on the port number, IP address, MAC address restrictions on user access
	Support HTTPS、SSL V3、TLS V1、SSH V1/V2
	Support IP-MAC-PORT ternary binding
	Support ARP protection, IP source protection, DoS protection
	Support DHCP Snooping、DHCP attack protection
	Support 802.1X certificated、AAA
	Support port security, port isolation
	Support CPU protection
PoE management	Support PoE power limit
	Support PoE chip status view
	Support setting PoE port priority
	Support setting PoE power supply time period
Access control (ACL)	Support L2 (Layer 2) ~ L4 (Layer 4) packet filtering
	Support port mirroring, port redirection, flow rate limiting, QoS re-marking
Quality of Service (QoS)	Support 8 port queue
	Support port priority, 802.1p priority, DSCP priority
	Support SP、RR、WFQ Priority scheduling algorithm
Spanning Tree	Support STP(IEEE 802.1d),RSTP(IEEE 802.1w) and MSTP(IEEE 802.1s) protocol
	Support loop protection, root bridge protection, TC protection, BPDU protection, BPDU filtering
Multicast	Support IGMP v1/v2 Snooping

	Support fast leave mechanism	
	Support multicast VLAN	
	Supports multicast filtering, packet statistics, and unknown multicast discards.	
Storm suppression	Support multicast suppression	
	Support broadcast suppression	
	Support unknown unicast suppression	
Link aggregation	Support static aggregation	
	Support dynamic aggregation	
	Support IP, MAC, and hybrid load balancing modes	
	Supports up to 32 aggregation groups	
IPv6	Support IPv6 Ping、IPv6 Tracert、IPv6 Telnet	
	Support IPv6 SSH 、IPv6 SSL	
Management and maintenance	Support WEB network management (HTTP, HTTPS, SSL V3)	
	Support CLI (Telnet, SSH V1/V2, local serial port)	
	Support SNMP V1/V2/V3	
	Support LLDP、RMON	
	Support ARP protection, IP source protection, DoS protection	
	Support CPU monitoring, memory monitoring	
	Support system log, grading warning	
	Support Ping, Tracert detection, cable detection	