

# BEWARD

SAFETY & SECURITY

## User's Manual

**16-/24-Port 10/100TX 802.3at PoE +**

**2-Port 10/100/1000T + 1-Port shared**

**1000X SFP Desktop Switch**

**► ST-1621HP / ST-2421HP**

## 1. Package Contents

Thank you for purchasing BEWARD 16-/24-Port 10/100TX 802.3at PoE + 2-Port 10/100/1000T + 1-Port shared 1000X SFP Desktop Switch, ST-1621HP or ST-2421HP. “**802.3at PoE+ Switch**” mentioned in this Guide refers to the ST-1621HP or ST-2421HP.

Open the box of the 802.3at PoE+ Switch and carefully unpack it. The box should contain the following items:

- ◆ **The 802.3at PoE+ Switch x 1**
- ◆ **User's Manual x 1**
- ◆ **Screws x 8**
- ◆ **Rubber Feet x 4**
- ◆ **Rack-mounting Brackets x 2**
- ◆ **Power Cord x 1**
- ◆ **SFP Dust-proof Cap x 1**

If any of these pieces are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

## 2. Hardware Introduction

### 2.1 Front Panel

The front panel of the 802.3at PoE+ Switch consists of 16/24 auto-sensing 10/100BASE-TX RJ45 ports, 2 auto-sensing 10/100/1000BASE-T RJ45 ports and 1 1000BASE-X SFP port. The LED Indicators are also located on the front panel of the 802.3at PoE+ Switch.

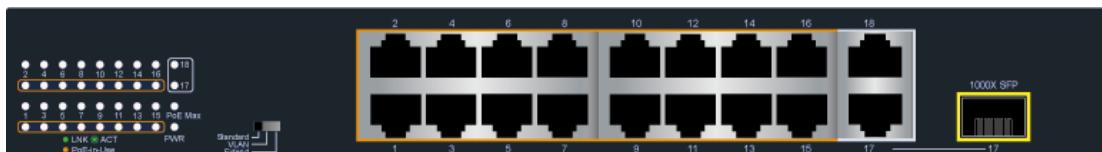


Figure 2-1: ST-1621HP Switch Front Panel



Figure 2-2: ST-2421HP Switch Front Panel

### 2.2 LED Indicators

#### ■ System

LED	Color	Function
PWR	Green	<b>Lights</b> to indicate the Switch has power.
PoE (max.)	Green	<b>Off</b> to indicate the PoE power is less than 80% of total power. <b>Lights</b> to indicate the PoE power is above 80%.

#### ■ Per 10/100BASE-TX Port

LED	Color	Function
10/100 LNK/ACT	Green	<b>Lights</b> to indicate the link through that port is successfully established. <b>Blinks</b> to indicate that the Switch is actively sending or receiving data over that port.
PoE in Use	Amber	<b>Lights</b> to indicate the port is providing PoE DC in-line power.

#### ■ Per 10/100/1000BASE-T Port

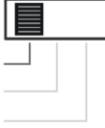
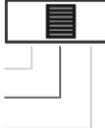
LED	Color	Function
10/100/1000 LNK/ACT	Green	<b>Lights</b> to indicate the link through that port is successfully established. <b>Blinks</b> to indicate that the Switch is actively sending or receiving data over that port.

#### ■ 1000BASE-X SFP Port

LED	Color	Function
1000 LNK/ACT	Green	<b>Lights</b> to indicate the link through that port is successfully established at 1000Mbps. <b>Blinks</b> to indicate that the Switch is actively sending or receiving data over that port.

## 2.3 Multiple Functions of DIP Switch

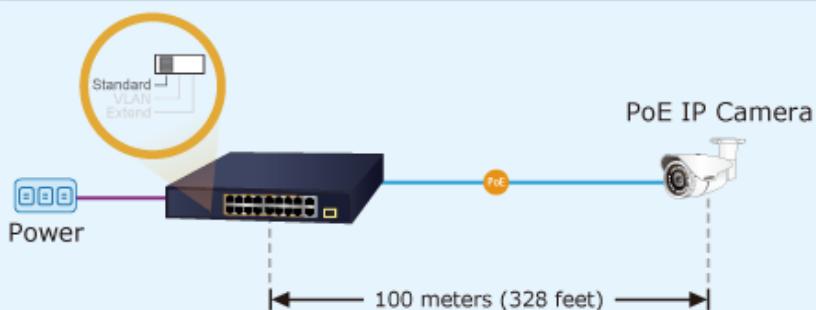
The front panel of the 802.3at PoE+ Switch provides one DIP switch for **Standard**, **VLAN** or **Extend** mode selection. The detailed descriptions are shown in the following table.

DIP Switch Mode	Function
	This mode makes the 802.3at PoE+ Switch operate as a <b>general switch</b> and all PoE+ ports operate at 10/100Mbps auto-negotiation. All ports can communicate with one another.
	This mode makes the 802.3at PoE+ Switch operate as a <b>VLAN isolation</b> switch and  <b>For ST-1621HP:</b> 1. Ports 1 to 16 will isolate respectively. 2. Ports 1 to 16 can only communicate with ports 17~18 (uplink ports) and SFP port 17.  <b>For ST-2421HP:</b> 1. Ports 1 to 24 will isolate respectively. 2. Ports 1 to 24 can only communicate with ports 25~26 (uplink ports) and SFP port 26
	This mode makes the 802.3at PoE+ Switch operate as a <b>Long Reach PoE</b> switch and 1. Ports 1 to 8 support farthest transmission distance of up to 250 meters 2. Ports 1 to 8 have a data rate of 10Mbps 3. All ports can communicate with one another.

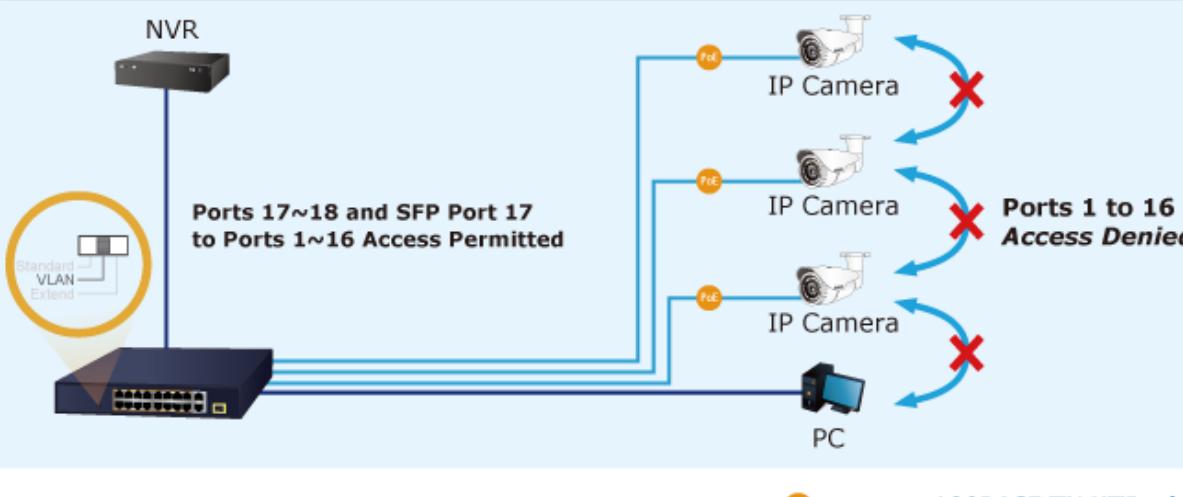


Please select a DIP switch mode before powering on the 802.3at PoE+ Switch.

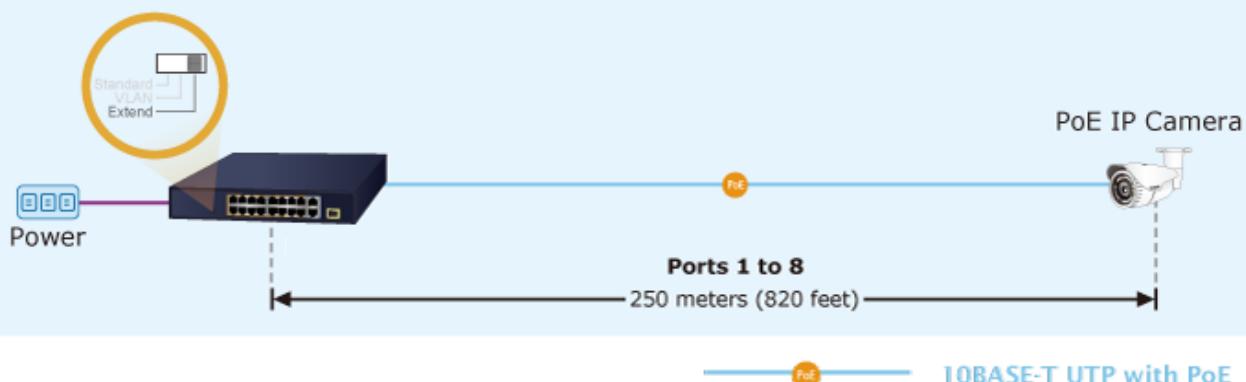
### Standard Mode (default)



### VLAN Isolation Mode



### Extend Mode



## 2.4 Rear Panel

The rear panel of the 802.3at PoE+ Switch indicates an AC power socket, which accepts input power from 100 to 240V AC, 50-60Hz, 5A.



Figure 2-3: Switch Rear Panel

### ■ AC Power Receptacle

#### Power Notice:

The device is a power-required device, which means it will not work till it is powered. If your networks should be active all the time, please consider using UPS (uninterrupted power supply) for your device. It will prevent you from network data loss or network downtime.

#### Power Notice:

In some areas, installing a surge suppression device may also help to protect your 802.3at PoE+ Switch from being damaged by unregulated surge or current to the 802.3at PoE+ Switch or the power adapter.

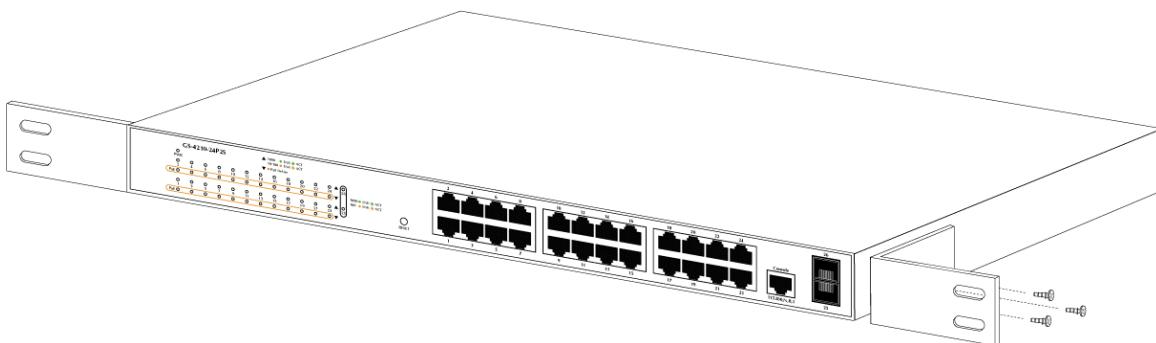
## 3. Hardware Installation

### 3.1 Rack Mounting

To install the 802.3at PoE+ Switch in a 19-inch standard rack, follow the instructions described below.

**Step 1:** Place your 802.3at PoE+ Switch on a hard flat surface, with the front panel positioned towards your front side.

**Step 2:** Attach a rack-mount bracket to each side of the 802.3at PoE+ Switch with supplied screws attached to the package. Figure 3-1 shows how to attach brackets to one side of the 802.3at PoE+ Switch.



**Figure 3-1:** Attaching the Brackets to the 802.3at PoE+ Switch.

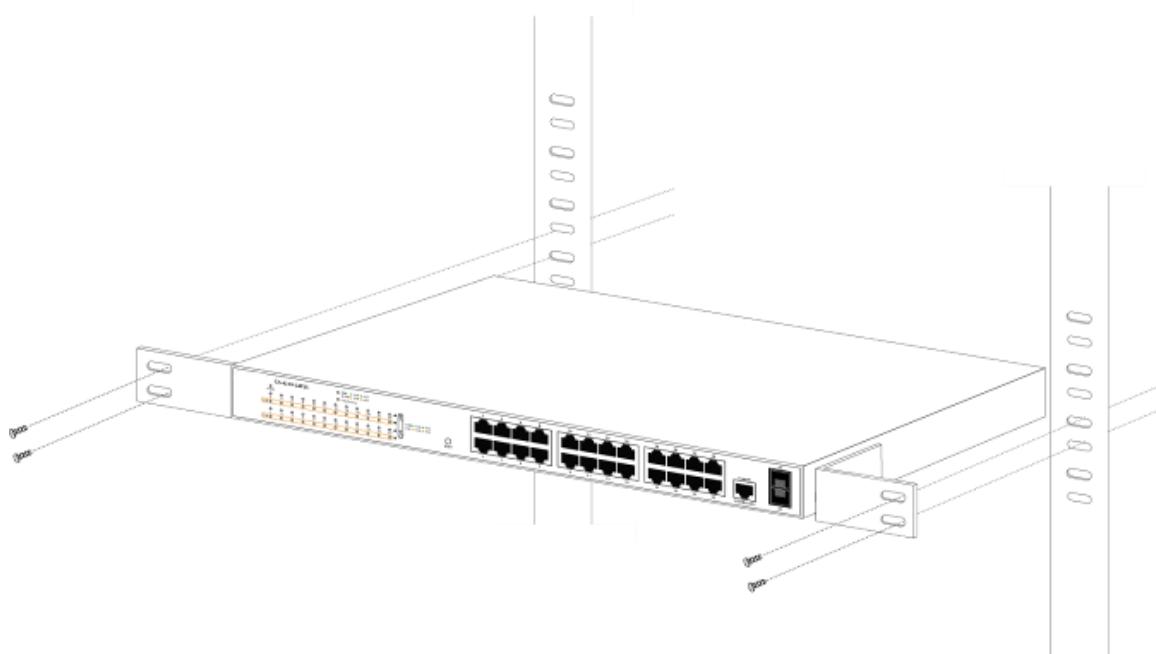


You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate the warranty.

**Step 3:** Secure the brackets tightly.

**Step 4:** Follow the same steps to attach the second bracket to the opposite side.

**Step 5:** After the brackets are attached to the 802.3at PoE+ Switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 3-2.



**Figure 3-2:** Mounting the 802.3at PoE+ Switch in a Rack

**Step 6:** Connect your 802.3at PoE+ Switch to 802.3af/802.3at complied PDs and other network devices.

- A. Connect one end of a standard network cable to the 10/100/1000BASE-T RJ45 ports on the front panel of the 802.3at PoE+ Switch.
- B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers, etc.

**Step 7:** Supply power to the 802.3at PoE+ Switch.

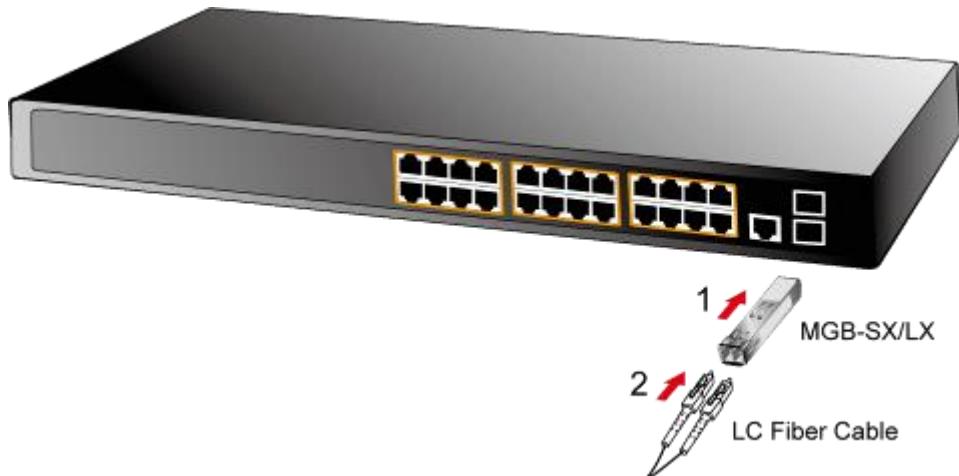
- A. Connect one end of the power cable to the 802.3at PoE+ Switch.
- B. Connect the power plug of the power cable to a standard wall outlet.

When the 802.3at PoE+ Switch receives power, the power LED should remain solid Green.

### 3.2 Installing the SFP Transceiver

The sections describe how to insert an SFP transceiver into an SFP port of the 802.3at PoE+ Switch.

The SFP transceivers are hot-pluggable and hot-swappable. You can plug in and out the transceiver to/from any SFP port without having to power down the 802.3at PoE+ Switch, as [Figure 3-3](#) shows.



**Figure 3-3:** Plugging In the SFP Transceiver



It is recommended to use BEWARD SFP on the 802.3at PoE+ Switch. If you insert an SFP transceiver that is not supported, the 802.3at PoE+ Switch will not recognize it.

1. Before we connect the 802.3at PoE+ Switch to the other network device, we have to make sure both sides of the SFP transceivers are with the same media type, for example, 1000BASE-SX to 1000BASE-SX; 1000BASE-LX to 1000BASE-LX.
2. Check whether the fiber-optic cable type matches with the SFP transceiver requirement.
  - To connect to **1000BASE-SX** SFP transceiver, please use the **multi-mode** fiber cable with one side being the male duplex LC connector type.
  - To connect to **1000BASE-LX** SFP transceiver, please use the **single-mode** fiber cable with one side being the male duplex LC connector type.

## 4. Product Specifications

Model	ST-1621HP	ST-2421HP
<b>Hardware Specifications</b>		
10/100BASE-TX RJ45 Port with 802.3af/802.3at PoE+ Injector	16	24
10/100/1000BASE-T RJ45 Port	2 (Port-17 shared with SFP port)	2 (Port-26 shared with SFP port)
1000BASE-X SFP/mini-GBIC Slot	1 (shared with Port-17)	1 (shared with Port-26)
DIP Switch	Selectable operation mode ■ Standard ■ VLAN ■ Extend	
Dimensions (W x D x H)	280 x 180 x 44 mm (1U height)	
Enclosure	Metal	
Weight	1800g	1870g
Power Requirements	100~240V AC, 50/60Hz, 5A max.	
Power Consumption/Dissipation	Max. 207 watts/706 BTU	Max. 217 watts/740 BTU
Thermal Fan	1	
ESD Protection	Contact discharge of ±6KV DC, Air discharge of ±8KV DC	
Surge Protection	Differential Mode ±4KV, Common Mode ±6KV	
Installation	Desktop or rack-mount installation	
LED	<b>System</b> Power (Green), PoE Max. (Green) <b>RJ45 Interfaces</b> 10/100/1000 LNK / ACT (Green), PoE-in-Use (Amber) <b>SFP Interfaces</b> 1000 LNK / ACT (Green)	
<b>Switching</b>		
Switch Architecture	Store-and-Forward	
Switch Fabric	7.2Gbps/non-blocking	8.8Gbps/non-blocking
Switch Throughput@64bytes	5.36Mpps	6.5Mpps
MAC Address Table	16K entries	
Jumbo Frame	16K bytes	
Flow Control	IEEE 802.3x pause frame for full duplex; back pressure for half duplex	
<b>Power over Ethernet</b>		
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE	
PoE Injector Ports	16	24
PoE Power Supply Type	End-span: 1/2 (+), 3/6 (-)	
PoE Power Output	Per port 55V DC, 600mA. max. 32 watts	
PoE Power Budget	185 watts	
Number of PDs, 7 watts	16	24
Number of PDs, 15.4 watts	12	12
Number of PDs, 30 watts	6	6
<b>Standards Conformance</b>		
Regulatory Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3z Gigabit SX/LX IEEE 802.3x flow control and back pressure IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3az Energy-Efficient Ethernet	
<b>Environment</b>		
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5~ 95% (non-condensing)	
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

## 5. Customer Support

Thank you for purchasing BEWARD products. If you need more support information, please contact BEWARD support team.

Support team mail address:

[support@beward.ru](mailto:support@beward.ru)

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