



## SPECIFICATION FOR APPROVAL

CUSTOMER : \_\_\_\_\_

PRODUCT NAME : 25W High-power PoE Converter

PRODUCT MODEL : PD2401H / PD2401HG / PD2401H-2.5G

BRAND : TST (OEM/ODM)

DATE : 2024 / 06 / 26

DRAWING			CUSTOMER APPROVE
DESIGNED	CHECKED	APPROVED	
VANNE	YOUTRONG	Mark	
DATE	2024 / 06 / 26		Please return the visa after confirmation, thank you!

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**PRODUCT: 25W High-power PoE Converter****MODEL: PD2401H / PD2401HG / PD2401H-2.5G**

## What Is PoE

POE (Power Over Ethernet) refers to the technology that can transmit data signals for some IP-based terminals (such as IP phones, wireless LAN access point APs, IP cameras, etc.) without any changes to the existing Ethernet Cat.5 cabling infrastructure, and can also provide DC power supply for such devices.

A complete POE system consists of two parts: Power Sourcing Equipment (PSE) and Powered Device (PD). The PSE device is the device that powers the Ethernet client device and is also the manager of the entire POE (Power-over-Ethernet) process. The PD device is the PSE load that receives the power supply, that is, the client device of the POE system. Based on the IEEE 802.3af/at standard, the two establish information about the connection status, device type, power consumption level and other aspects of the



PD of the power receiving device, and use this as the basis for PSE to supply power to the PD through Ethernet.

## The Principle of POE

The standard Category 5 cable has four twisted pairs, but only two pairs are used in 10M BASE-T and 100M BASE-T. IEEE802.3af/at allows two uses: (1) When the idle pin is used for power supply, pins 4 and 5 are connected as the positive pole, and pins 7 and 8 are connected as the negative pole. (2) Pins 1 and pin 2 are connected as the positive pole, and pin 3 and 6 are connected as the negative pole.

## The Advantages of POE

1. Save labor and material costs. Compared with the traditional wiring method of weak current engineering, POE only needs to install a network cable to make the IP equipment work normally. In many cases, POE is more advantageous in the places where it is difficult to deploy AC power. As the number of network devices in the system increases, the use of POE eliminates the need for local power supply for the equipment, which will greatly reduce deployment costs and simplify their manageability.
2. Easy to install and manage. Customers can autonomously and securely mix PoE devices and legacy devices within the system, and can coexist with existing Ethernet cables. PoE devices are compatible with the management system of existing network devices and can share the management platform with existing network devices.
3. Good security. The Power Sourcing Equipment (PSE) in a PoE system will only supply power to the Powered Device (PD) that needs to be powered. Only when the Device that needs to be powered is connected and the protocol is successfully identified, the power supply equipment will have a voltage output and supply power to the powered device, thus eliminating the risk of leakage and short circuit on the line.

## Product Introduction

PD2401H-2.5G is a 25W high-power 2.5G POE Converter, which is a conversion device that converts 48V-56V POE signal into 24V POE signal.



In a POE system, the PSE equipment acts as a power supply equipment and is responsible for providing POE signals to the PD device. PSE equipment includes POE Switch, POE Injector, POE Power Supply, POE Combiner, POE Midspan and other PSE equipment. PSE equipment provides POE signal voltage 48V-56V, 24V, 12V-15V and other voltages, among which 48-56V and 24V are more commonly used. Therefore, according to the difference in POE signal voltage, there are 48-56V PD devices and 24V PD devices on the market, two PD devices that support different voltages respectively. These two PD devices will encounter compatibility problems when they work in a same POE system. In this case, PD2401H-2.5G POE Converter can convert the 48-56V POE signal into 24V POE signal for 24V PD devices, and easily solve the compatibility problem of 24V PD devices in 48V POE system.

25W High-power 2.5G POE Converter is a series of products, the series contains three models:

PD2401H: 25W High Power 100 Mbit POE Converter

PD2401HG: 25W High Power Gigabit POE Converter

PD2401H-2.5G: 25W High Power 2.5G POE Converter

## Product Description

The PD2401H-2.5G has a POE input port and a POE output port. The POE input port is connected to the 48V PSE equipment and is responsible for receiving 48V-56V POE signals. The POE output port is connected to the 24V PD device and is responsible for output 24V POE signals to the 24V PD device, such as various 24V POE wireless Bridges and wireless Access Points.

The input port and output port of PD2401H-2.5G are designed with RJ45 female head, which is convenient for customers to connect and plug the network cable. It uses a 21CM tail line to extend the outlet, so that the outlet can be arbitrarily bent, folded or perforated, increasing the flexibility of installation. It is designed with two POE indicator lights, which is convenient to judge the working status of POE converter. The shell is made of high temperature and environmental protection ABS plastic material, with matte black color, the overall beautiful appearance.

PD2401H-2.5G conforms to IEEE802.3AF/AT POE standard protocol, and the maximum conversion power is 25.5W. It has a data transfer rate of 2.5G and is compatible with 10M/100M/1000M adaptive tra



nsmission. It has a conversion efficiency of more than 90% and an effective transmission distance of 100 meters. Support POE signal wide voltage input DC38-56V, stable output 24V POE signal after conversio n. The PD2401H-2.5G supports 48-56V Active POE and 48-56V Passive PoE inputs and outputs 24V Pas sive PoE signals.

PD2401H-2.5G motherboard adopts high efficiency and low noise design solution, and is compatible with a variety of protection circuits, which effectively reduces the energy conversion loss and clutter interf erence, improves the work efficiency, and enhances the stability of the system. The EMC parameters of t he products meet the requirements of IEC 61000-4-2/3/4/5/6 standards, and the products have been certifie d by FC, CE, ROHS and other standards, and are sold well in more than 100 countries and regions arou nd the world.

## Product Features

- IEEE802.3af/at POE international standard protocol and handshake recognition function
- Input: wide POE voltage DC38-56V
- Both Active PoE and Passive PoE inputs are supported
- Input support RJ12+ RJ36- / RJ45+ RJ78- full compatibility
- Output: 24V Passive PoE signal, and support to customize other voltage of the PoE output signal
- Output POE signal power pin RJ45+ RJ78-
- 10M/100M/1000M/2.5G adaptive transmission speed
- Small size, less space, easy to install
- The 21CM tail line extends the outlet, so that the outlet can be bent and folded or through the wall, and the installation is more flexible
- 4KV surge protection
- With overheat protection, overvoltage protection, overload protection, short circuit protection
- The conversion efficiency is over 90%
- EMC complies with IEC 61000-4-2/3/4/5/6 standards
- High temperature resistant and environmentally friendly ABS plastic shell



## Specifications

Items	Specifications		
Product Name	25W High-power 2.5G POE Converter		
Product Model	PD2401H	PD2401HG	PD2401H-2.5G
PoE Standard	IEEE802.3af/at		
Input Voltage	POE: DC38-56V (Active PoE and Passive PoE)		
Output	POE: DC24V Passive PoE (Other Voltage can be customized)		
Conversion Efficiency	≥90%		
PoE Pin	Input: RJ12+ RJ36- / RJ45+ RJ78- Fully compatible Output: RJ45+ RJ78-		
Conversion Mode	/		
Data Rate	10M/100M Adaptive	10M/100M/1000M Adaptive	10M/100M/1000M/2.5G Adaptive
Transmission Distance	100 meters		
Surge Protection	4KV		
Circuit Protection	Short-circuit Protection Overcurrent Protection Overvoltage Protection Overheating Protection		
LED Indicator	2* POE Indicators		
Interface	1* POE Input Port (RJ45 femal head) 1* POE Output Port (RJ45 femal head)		
Material	ABS plastic material		
Color	Matte black		
Accessories	Waterproof four-piece set		
EMC	IEC 61000-4-2/3/4/5/6		
Temperature	-20~60°C For Operating -30~80°C For Storage		
Humidity	RH95% MAX (Non-condensation)		
Weight	N.W: 64g G.W: 74g		



Dimension	Product Dimension: 89mm*31mm*26mm + 210mm (tail cable) Packing Dimension: 185mm*46mm*31mm
Package	White Carton or Plastic Bag

## Product Applications

With the wide application of POE technology in weak current engineering, the compatibility problem of various POE devices is more and more, which needs to be solved urgently. PD2401H-2.5G POE converter easily solves the compatibility problem of different voltage POE devices, and let them work normally in the same POE system and be compatible with each other. For example, the PD2401H-2.5G POE converter has been widely used and performed well in 24V POE CPE and wireless AP systems, making them compatible with 48V POE systems and normal work.

The installation position of the PD2401H-2.5G POE converter is relatively free and flexible. It can be installed near the PSE equipment, such as in the same cabinet with the POE switch. It can also be installed near the PD device in the same position. Of course, it also supports the middle line installation, and can be installed in any position between the PSE device and the PD device.

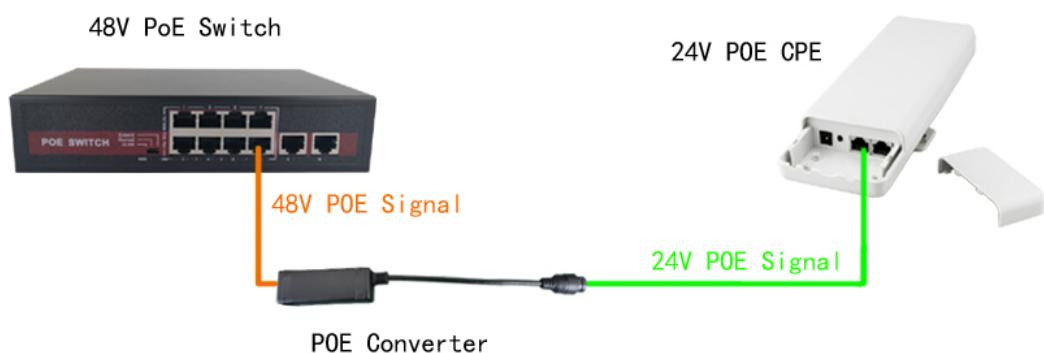
PD2401H-2.5G POE converter outputs 24V Passive PoE signal with power pin RJ45+ RJ78-. The 24V POE signal does not have handshake recognition function, so it can only be used by 24V PD devices, and the converter can not be connected to other voltage PD devices or non-POE IP devices.

**Dimensions**

Interface Definition



## Application topology



### Application Scenarios



CPE



WIFI AP



深圳市拓视盾科技有限公司  
Shenzhen Tstone Technology Co.,Ltd



WIFI Router

**Product Detail**

## Product Package



Package 1

White Carton

Package Size: 185\*46\*31mm (L\*W\*H)



Package 2

Plastic Bag

Package Size: 25\*7\*31mm (L\*W\*H)



Package List	
Items	Quantity
PoE Converter	1
Waterproof four-piece set	1
Operation Manual	1