SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT NAME : DC 5V/9V/12V Multi-voltage output PoE Module

PRODUCT MODEL : TSD-V100

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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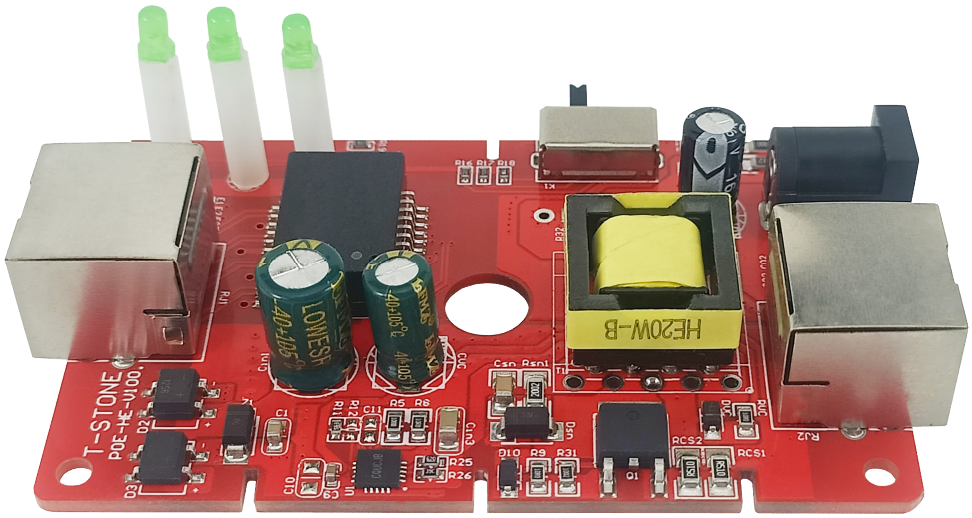


What Is PoE

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 l0M BASE-T and 100M BASE-T. IEEE80 2.3af/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) Pin 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

The TSD - V100 is a Powered Device (PD) module that supports the international standard IEEE802.3af protocol. The module inputs a standard PoE signal of 38 - 56V. After being processed by the internal circuit, it can provide data transmission and DC power supply for terminal devices.

The TSD - V100 has a maximum output power of 15W. When installed on network devices such as IP phones, network cameras, and wireless access points (APs), it can provide PoE power supply support for traditional low - power network devices.

Product Description

Interface Configuration of TSD - V100

RJ45 Ethernet Port: Inputs PoE power supply with a voltage range of 38 - 56V.

RJ45 Ethernet Port: Outputs data signals.

5.5 * 2.1mm DC Female Socket: Outputs an adjustable voltage of 12V/9V/5V in three levels.

The overall product dimensions are 86.5 * 50 * 23mm, and the maximum height of the module is 23mm. The PCB size is 80 * 50 * 1.5mm. The screw hole specification is M2 * 4. The center - to - center distance between the holes is 73mm (along the long side) and 43mm (along the short side). The PCB color is bright red. The overall layout of the PCB is in a square structure. The input (RJ45 Ethernet port) and output ports (RJ45 Ethernet port and DC socket) are located on both sides of the PCB board, and each is about 1 - 2mm longer than the PCB board. A toggle switch is installed on the module to adjust the output voltage.

The TSD - V100 has a maximum output power of 15W and complies with the IEEE802.3af PoE standard protocol. The module is equipped with a gigabit PoE high - frequency filter and supports 10/100/1000M adaptive transmission rates. The TSD - V100 can input a wide - voltage DC of 38 - 56V and provides three output voltages for users: DC 12V 1.5A / DC 9V 2A / DC 5V 3A. Users can flexibly select the output voltage by adjusting the toggle switch.

An isolation transformer is designed on the TSD - V100, making it a PD module with isolation function. The module circuit is equipped with protection functions against lightning strikes, short - circuits, overloads, and high temperatures. The product has obtained certifications such as CE, FCC, and RoHS. Its EMC parameters meet the requirements of the IEC 61000 - 4 - 2/3/4/5/6 standards. It is a best - seller in many countries and regions around the world.

Product Features

- Complies with the international IEEE 802.3af PoE standard protocol.
- Input: PoE wide - voltage DC 38 - 56V.
- Output: data + Voltage DC 12V MAX 1.5A / 9V MAX 2A / 5V MAX 3A.

- Adaptive transmission rate of 10/100/1000M.
- Fully compatible with RJ12 + RJ36 - / RJ45 + RJ78 -.
- 4KV surge protection.
- Over - heat protection, over - voltage protection, overload protection, and short - circuit protection.
- Conversion efficiency greater than 85%.
- EMC complies with the requirements of IEC 61000 - 4 - 2/3/4/5/6 standards.
- Equipped with high - precision electronic components from well - known brands.
- High - frequency PoE filter for 1000M networks, enabling stable data transmission.
- High - frequency low - impedance electrolytic capacitors.
- High - power, high - conductivity, low - impedance transistors with stable performance and low heat generation.
- High - temperature - resistant PCB made of environmentally friendly materials

Specifications

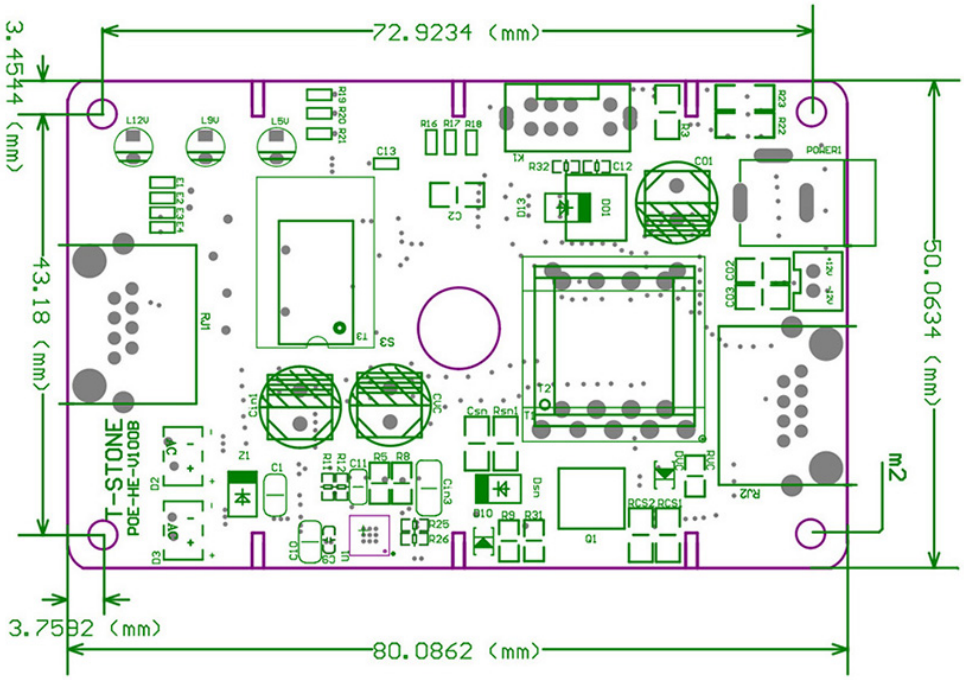
Product parameter table	
Product Name	DC 5V/9V/12V multi-voltage output PoE module
Product Model	TSD-V100
PoE Standard	IEEE802.3af
Input Voltage	PoE: DC38-56V
Output	DC 12V MAX1.5A / 9V MAX2A / 5V MAX3A
Conversion Efficiency	≧85%
PoE Pin	PoE：RJ12+ RJ36- / RJ45+ RJ78- Fully compatible
Conversion Mode	Isolated
Data Rate	10/100/1000M Adaptive transmission speed
Transmission Distance	100 meters(Category 5e Cable (Cat5e))
Surge Protection	4KV
Circuit Protection	over - heat protection, over - voltage protection overload protection, and short - circuit protection.
LED Indicator	Green LED Indicator*3

Interface	PoE Port (RJ45 Jack) : PoE 38V~56V IN Output Port (RJ45 Jack) : Data OUT Output Port (DC Socket) : DC 12V/9V/5V OUT
Function	/
Material	FR-4
Color	Bright red
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-30～65℃ For Operating -40～85℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 33g
Dimension	86.5*50*23mm
Package	Anti - static expanded polyethylene (EPE)

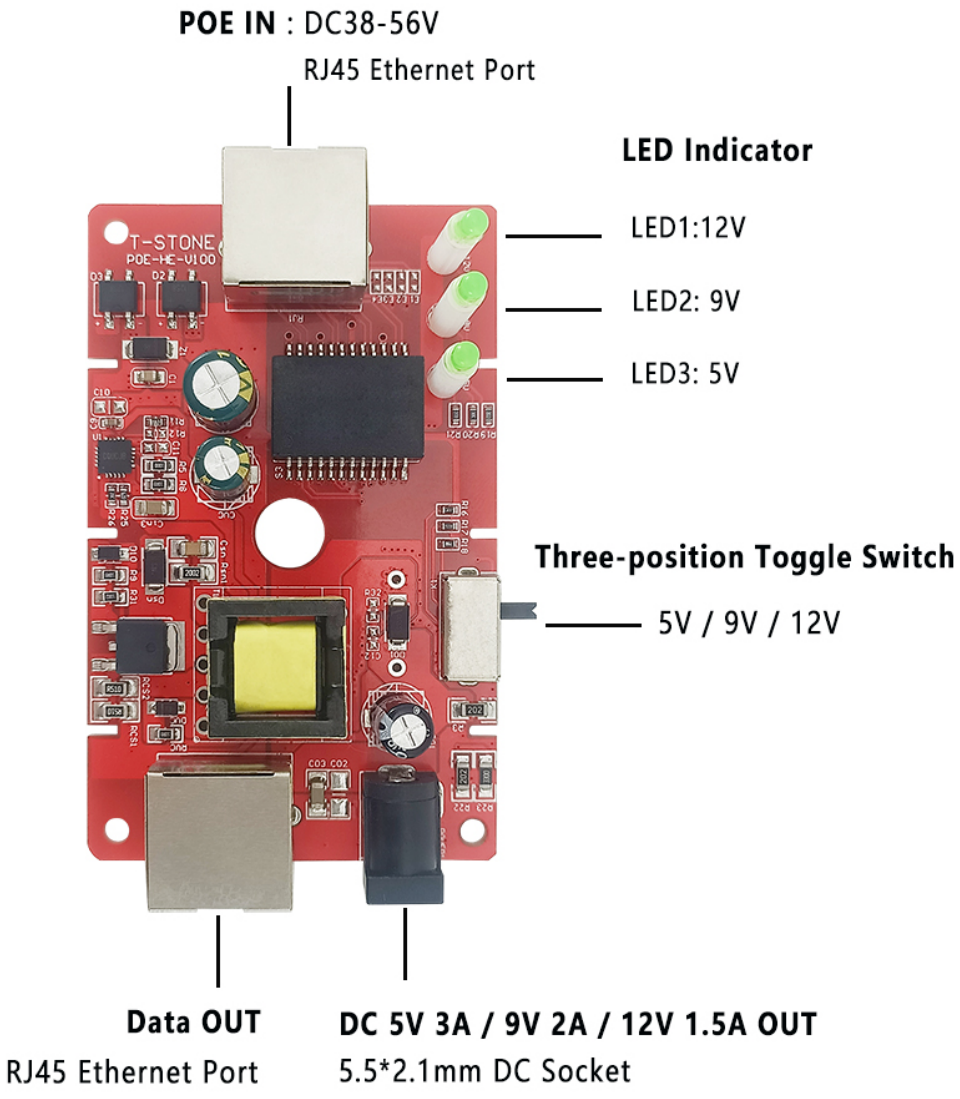
Product Application

The TSD - V100 outputs data and power signals respectively through the RJ45 Ethernet port and the DC socket. Users can directly connect it to traditional network devices during use, providing power and data support for the devices. The output voltage of the TSD - V100 is flexibly adjustable. Users only need to adjust the toggle switch to obtain three commonly - used voltage levels, meeting various voltage requirements of users. This effectively enhances the safety of devices and management efficiency. The TSD - V100 is of reliable quality and offers flexible output, which has won unanimous praise from equipment manufacturers and end - users alike.

Dimensions


72.9234 (mm)
3.4544 (mm)
43.18 (mm)
50.0634 (mm)
3.7592 (mm)
80.0862 (mm)
T-STONE
POE-HE-V100B
m2

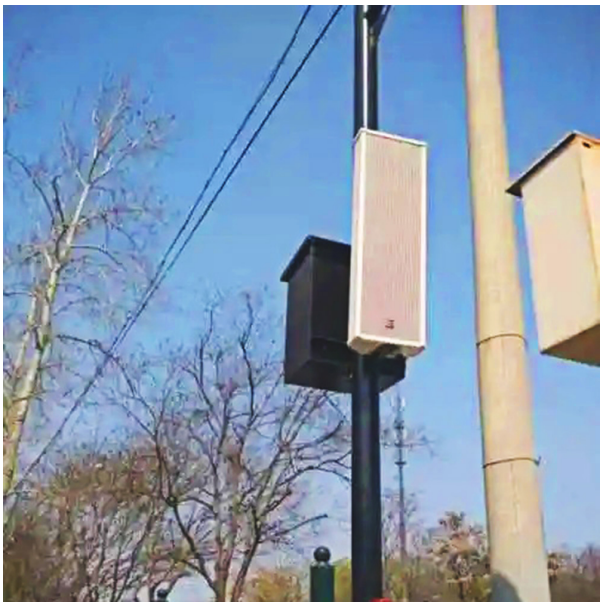
Interface Definition



Application Scenarios

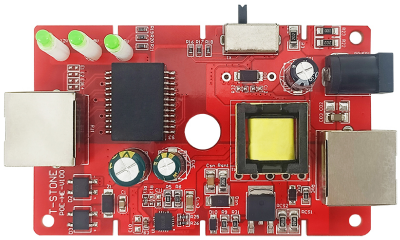
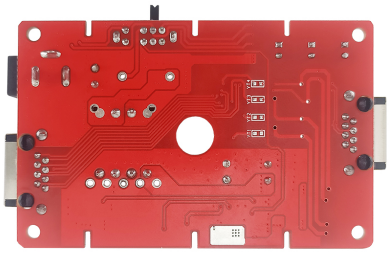
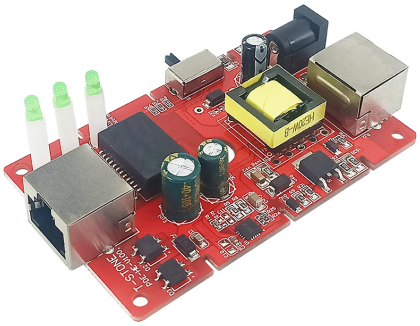
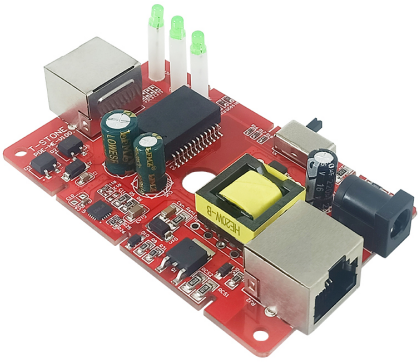
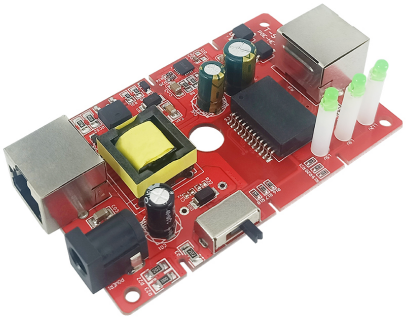
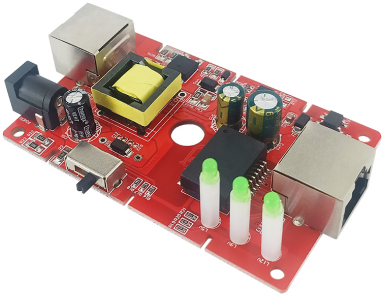
IP Telephone

IP monitoring

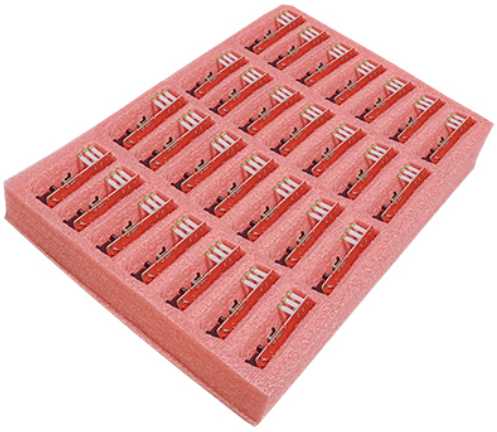


Outdoor speaker

Product Detail

Product Package



Package Size: 41*29*32 cm (L*W*H)

MPQ: 140 PCS

N.W: 4.6 kg

G.W: 5.5 kg