



SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT NAME : 15W Gigabit Ethernet Module with PoE Port

PRODUCT MODEL : TSD-V131

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!

Shenzhen Tstone Technology Co.,Ltd

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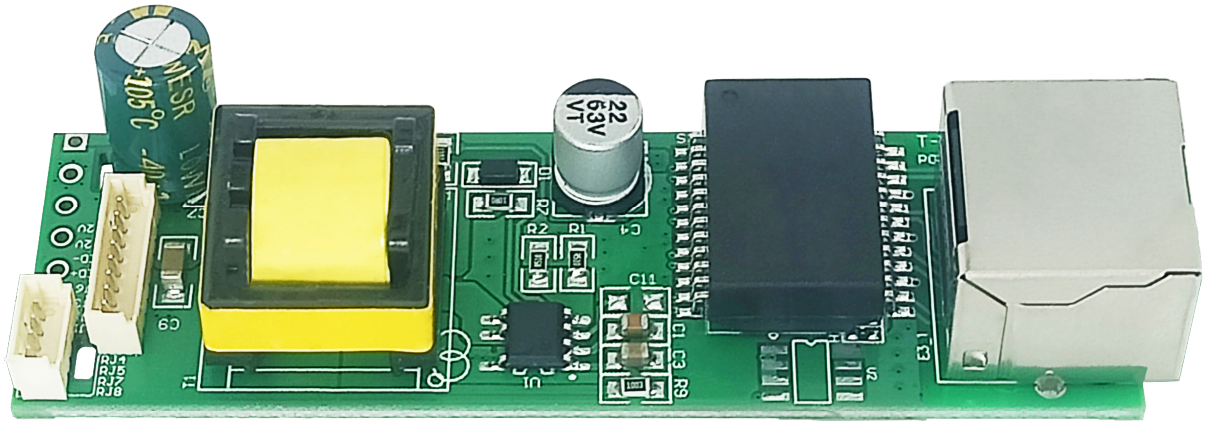
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PRODUCT: 15W Gigabit Ethernet Module with PoE Port

MODEL: TSD-V131



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) 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-V131 is a PD (Powered Device) module with an Ethernet port. This module has a maximum output power of 15W and can continuously and stably provide a DC output of 12V 1.3A for devices. The TSD-V131 can supply DC power and transmit data for IP network devices such as audio broadcasting systems and security surveillance equipment.

The TSD-V131 complies with the IEEE802.3af PoE standard protocol. By integrating the TSD-V131 module into end - devices, ordinary network devices can be endowed with PoE functionality. Users can achieve both network data and power transmission through a single Ethernet cable, eliminating the need for additional wiring.



Product Description

Interface configuration of TSD-V131

RJ45 Jack: PoE input port, accepting DC 38-56V input.

8 - Pin PH1.25mm Female Socket: Outputs data and DC 12V at 1.3A.

4 - Pin PH1.25mm Female Socket: Gigabit expansion port for data output.

Solder Pads: Multi - functional output port, providing data output and DC 12V at 1.3A.

Dimension and structure: 80 * 23 * 17 mm. PCB layout: It features a square structure with a double - layer and double - sided design, which helps reduce signal interference and improve signal integrity. Solder mask color: glossy green oil. PCB thickness: 1.6 mm, and the maximum thickness of the module is 17 mm.

The TSD-V131 has a maximum output power of 15W and complies with the IEEE802.3af PoE standard protocol. It supports 10/100/1000M adaptive transmission. It accepts a wide - range DC input of 38 - 56 V. The default output voltage is DC 12V, and other voltages can be customized upon request.

The EMC parameters of the TSD-V131 module meet the requirements of IEC 61000 - 4 - 2/3/4/5/6 standards. It is a PD module with isolation function. The module is equipped with a skeleton EE13 isolation transformer, which can prevent electrical leakage, short - circuits, and other faults, effectively enhancing the circuit's anti - interference ability. The circuit is equipped with multiple protection functions, including over - heat protection, over - voltage protection, over - load protection, and short - circuit protection. The product has obtained certifications such as CE, FCC, and RoHS. It is a best - seller in many overseas countries and regions.

Product Features

- International Standard Protocol: Complies with the IEEE802.3af PoE standard.
- EMC Compliance: Meets the requirements of IEC 61000 - 4 - 2/3/4/5/6 standards.
- Input: PoE wide - voltage DC 38 - 56V.
- Output: Data + voltage, DC 12V, maximum 1.3A.
- Transmission Rate: 10/100/1000M adaptive.



- PoE Compatibility: Fully compatible with RJ12 + RJ36 - / RJ45 + RJ78 - pin configurations.
- Material and Interface: Beige, high - temperature - resistant, flame - retardant material; vertical interface socket.
- Gigabit High - frequency PoE Filter: Ensures efficient data transmission.
- Electronic Components: Original high - precision electronic components from well - known brands, ensuring stable performance.
- Electrolytic Capacitors: High - frequency, low - resistance electrolytic capacitors to effectively reduce high - frequency losses and heat generation in the circuit.
- Isolation Transformer: EE13 bobbin isolation transformer to enhance anti - interference ability.
- Connection Wire: 80mm connection wire for convenient connection.
- Surge Protection: 4KV surge protection.
- Protection Functions: Over - heat protection, over - voltage protection, over - load protection, and short - circuit protection.
- Conversion Efficiency: Greater than 85%.
- Transistors: High - power, high - conductivity, low - impedance transistors with stable performance and low heat generation.
- PCB: High - temperature - resistant PCB made of environmentally friendly materials

Specifications

Product parameter table	
Product Name	15W Gigabit Ethernet Module with PoE Port
Product Model	TSD-V131
PoE Standard	IEEE802.3af
Input Voltage	PoE: DC 38-56V
Output	voltage DC 12V MAX1.3A (Other Voltage can be customized)
Conversion Efficiency	$\geq 85\%$
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))



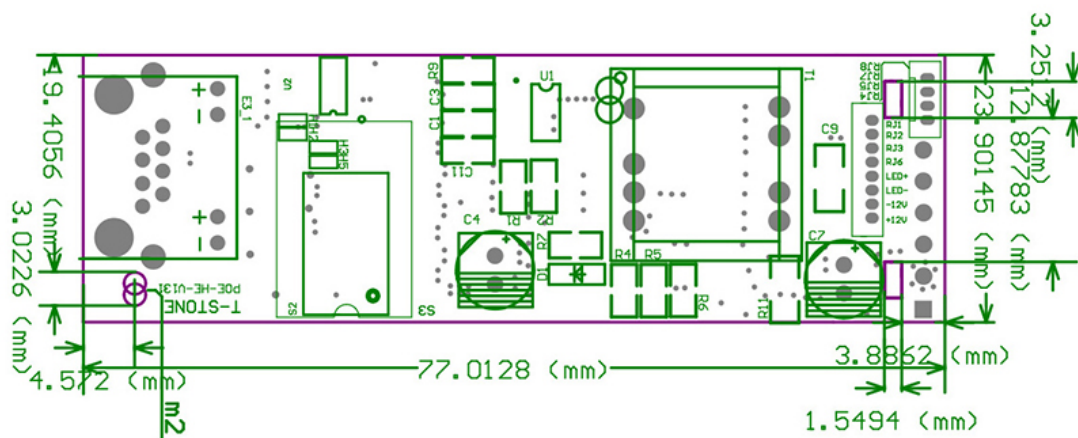
Surge Protection	4KV
Circuit Protection	overheat protection, overvoltage protection overload protection, shortcircuit protection.
LED Indicator	/
Interface	Input Port (RJ45 Jack): PoE 38V~56V IN Output Port (8Pin PH1.25mm terminal block): Data +DC 12V OUT Output Port (4Pin PH1.25mm terminal block): Data OUT Output Port (Pads): Data + DC 12V OUT
Function	/
Material	FR-4
Color	Bright green
Accessories	80mm Connecting Line
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-30~65°C For Operating -40~85°C For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 21g
Dimension	80 *23 *17mm
Package	Anti - static bubble wrap

Product Application

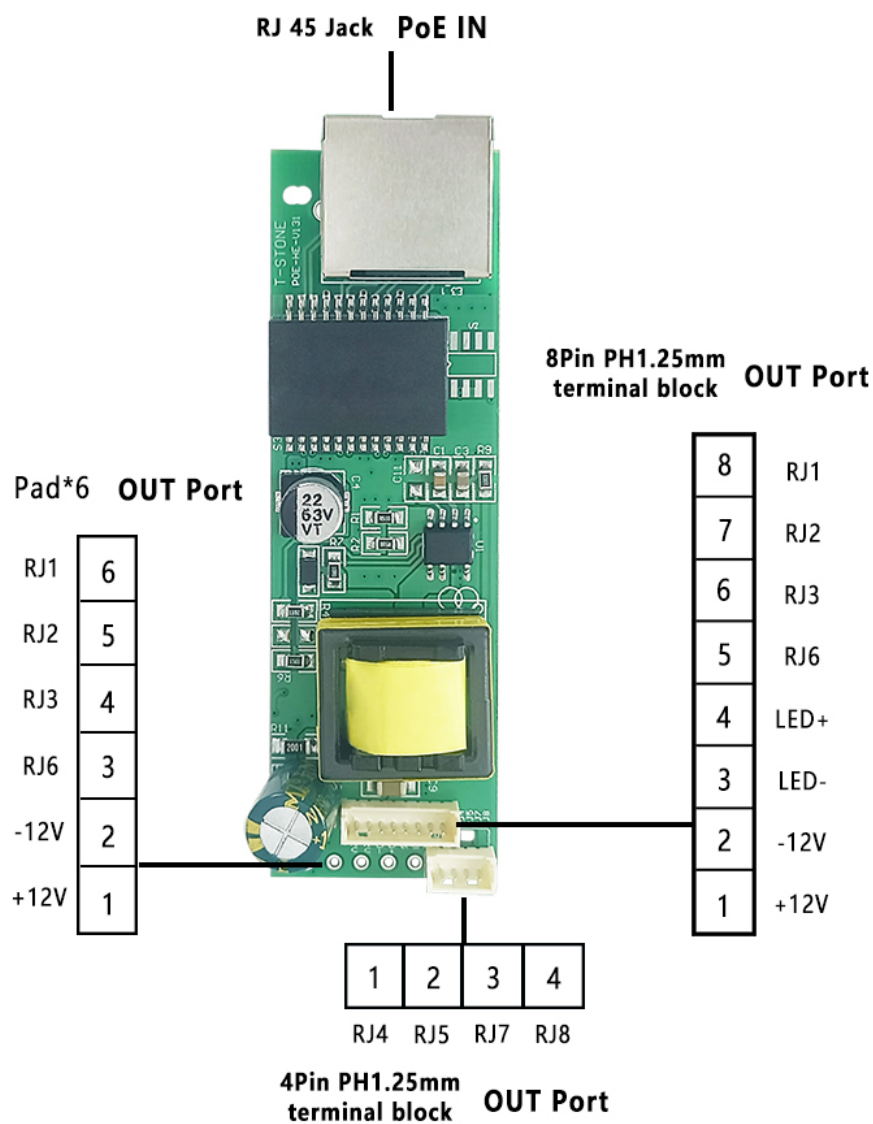
The TSD - V131 module is mainly used in IP network devices, such as wireless bridges, gateways, routers, and IP speakers. When an IP device is equipped with the TSD - V131 module, it gains PoE functionality, enabling the simultaneous transmission of network data and power through an Ethernet cable.

The module is small, lightweight, and easy to install. When integrated into IP network devices, it can effectively enhance the safety and management efficiency of the devices. Thanks to its stable operation, excellent performance, and flexible deployment, the TSD - V131 module has received unanimous praise from equipment manufacturers and end - users alike.

Dimensions



Interface Definition



Application Scenarios



IP monitoring

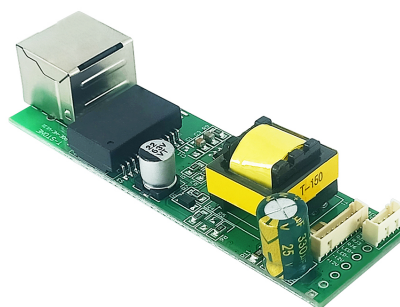
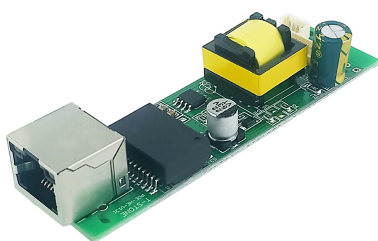
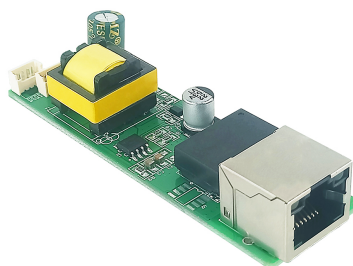
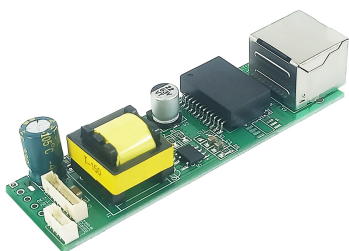
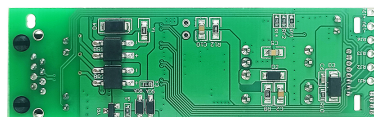
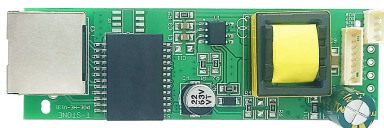


Router



Wall-mounted speaker

Product Detail



Product Package



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

MPQ: 500 PCS

N.W: 10.5 kg

G.W: 11.4 kg