SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT NAME : 12W PoE Module

PRODUCT MODEL : V151

BRAND : TST (OEM/ODM)

DATE : 2025 / 04 / 24

DRAWING			CUSTOMER APPROVE
DESIGNED	CHECKED	APPROVED	
Yannick	Youtrong	Mark	
DATE	2025 / 04 / 24		Please return the visa after confirmation, thank you!

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PRODUCT: 12W PoE module

MODEL: V151

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. 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 V151 is an active PoE module. Its power supply mode is fully compatible with RJ12+ RJ36-/ RJ45+ RJ78-. The conversion ratio exceeds 85%. V151 follows the IEEE802.3af POE standard protocol. The V151 module is responsible for processing the POE signal and converting it to output a DC12V current and internet signal to supply IP devices.

Product Description

Input port: Horizontal RJ45 female socket * 1.Input voltage: DC wide voltage ranging from 38 to 56V.Output port: Vertical 8Pin PH1.25 female socket * 1. Output voltage: DC12V.Output current: Max1A.

Structure size: 77.1mm*23mm*16.9mm. PCB: double-layer board, H=1.6mm.Surface painting: bright green. Overall layout: square structure, the maximum thickness is 16.9mm. The module is double-side-designed. The tall and short components are designed on two sides of the board, resulting in high space utilization.

The V151 complies with the IEEE802.3af POE standard protocol. Its maximum output power is 12W(IEEE802.3af class 3). It supports wide-voltage input of DC38-56V, and the default output voltage is DC12V. Other voltages can be customized. The effective transmission distance is 100 meters, and it supports 24/7 non-stop operation.

The V151 uses a high-temperature-resistant and flame-retardant interface. The circuit design is equipped with protection functions such as lightning protection, short-circuit protection, overload protection, and high-temperature protection. Its EMC parameters comply with the IEC 61000-4-2/3/4/5/6 standards. It adopts an isolated design and is equipped with a high-power pure copper isolation transformer,which is equipped with a metal shell and can effectively avoid the common-ground problem. The product has obtained certifications such as CE, FC, and RoHS, and is highly favored by a lot of consumers.

Product Features

- IEEE802.3af POE standard protocol and handshake recognition function
- Input: wide POE voltage DC38-56V
- Output: DC12V max1A(Other voltages can be customized)
- RJ12+ RJ36- / RJ45+ RJ78- Fully compatible
- Ultra-thin design, easy installation
- 4KV surge suppression
- Overheat protection, overvoltage protection, overload protection, short circuit protection
- The conversion ratio exceeds 85%
- EMC parameters comply with IEC 61000-4-2/3/4/5/6 standards
- Big brand high-precision electronic components with high parameter accuracy and low error rate
- High power, high conductivity, low impedance transistor with stable performance and low heat generation
- Big brand capacitors feature high frequency, low resistance, strong energy storage capabilities and low energy losses
- Big brand original IC with stable performance
- High temperature resistant and environmentally friendly PCB material
- Adopt pure copper pin connectors to avoid bad contact
- Pure copper transformer features a long service life and strong anti-interference ability
- High-temperature-resistant and flame-retardant interface
- Isolation design to avoid common-ground problem

Specifications

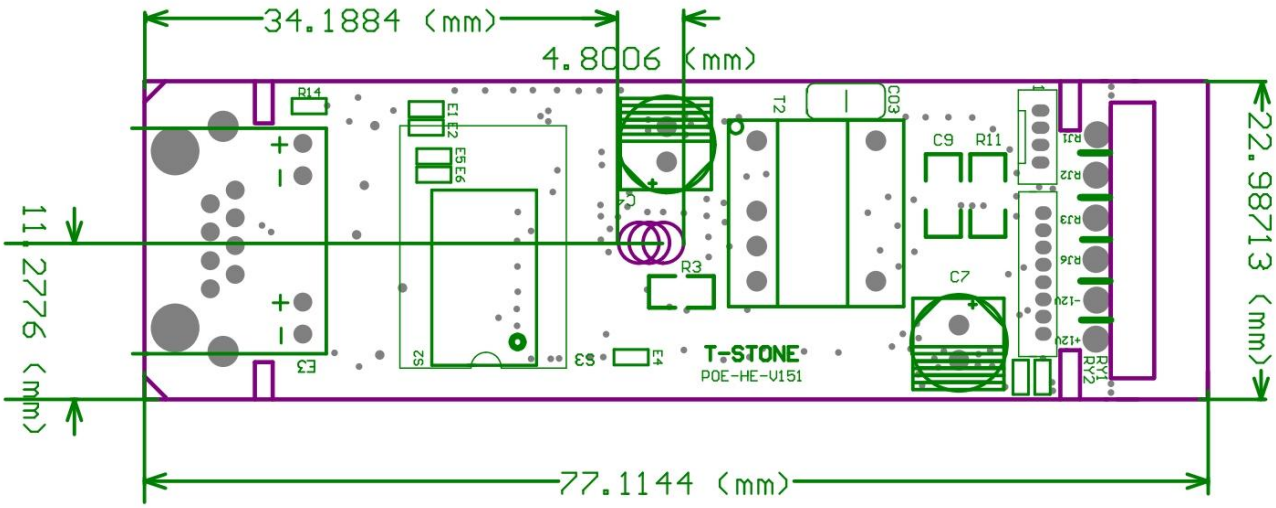
Items	Specifications
Product Name	12W PoE module
Product Model	V151
PoE Standard	IEEE802.3af
Input	POE: DC38-56V
Output	DC12V max1A
Conversion Efficiency	≧85%
PoE Pin	RJ12+ RJ36- / RJ45+ RJ78- Fully compatible
Conversion Mode	Isolated
Data Rate	10M/100M
Transmission Distance	100 meters(Category 5e Ethernet cable)
Surge Protection	4KV
Circuit Protection	Overload Protection Overheating Protection Overvoltage Protection Short circuit Protection
LED Indicator	/
Interface	Input Port: RJ45 female socket * 1 Output Port: Vertical 8Pin PH1.25 female socket * 1
Function	/
Material	FR-4
Color	Bright green
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-20～80℃ For Operating -30～80℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 17g
Dimension	77.1mm*23mm*16.9mm
Package	Anti-static pearl cotton

Product Applications

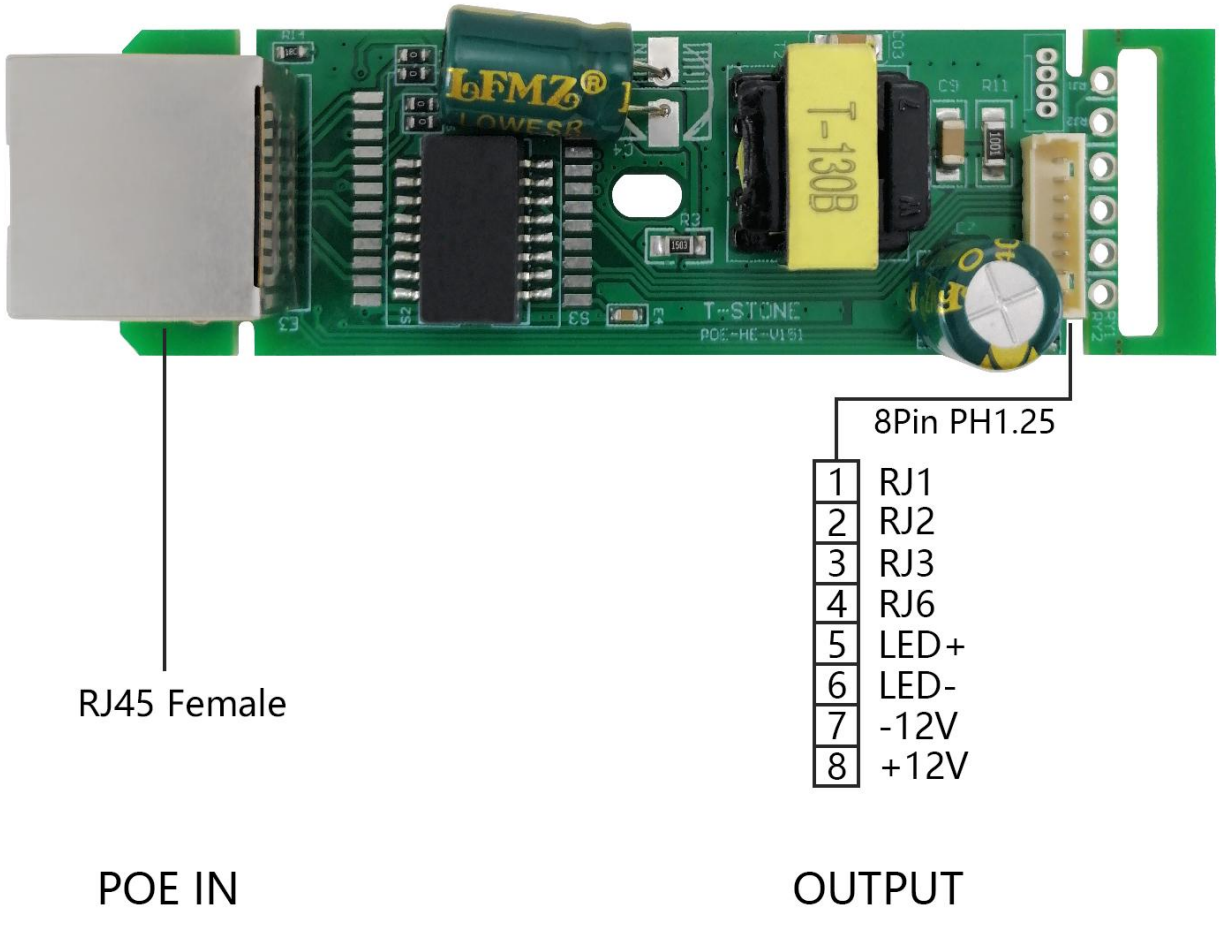
V151 is mainly used in industry products such as broadcasting audio systems, commercial display billboards, wireless APs, etc.

The application of the V151 module has greatly simplified the wiring process of the installation equipment, reducing the installation cost and construction difficulty. It has significantly decreased the difficulty of centralized power supply. Only centralized power supply to the switch is required, with a concentrated power supply range, which is easy to manage and has a low cost. V151 performs well in fields such as broadcasting, commercial displays, wireless access points (APs), etc., and has received unanimous praise from manufacturers and end users.

Dimensions


34.1884 (mm)
4.8006 (mm)
22.98713 (mm)
11.2776 (mm)
77.1144 (mm)
T-STONE
POE-HE-V151

Interface Definition



Application Scenarios

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td></td><td>Wireless AP</td></tr>
<tr><td></td><td>  </td></tr>
<tr><td>Commercial Display Billboards</td><td>Broadcast Audio System</td></tr>
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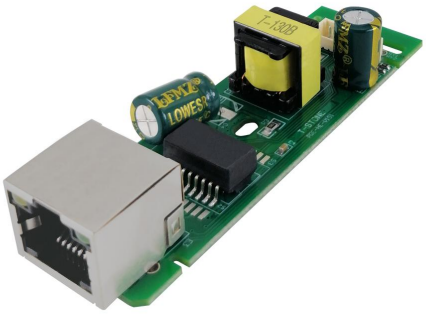
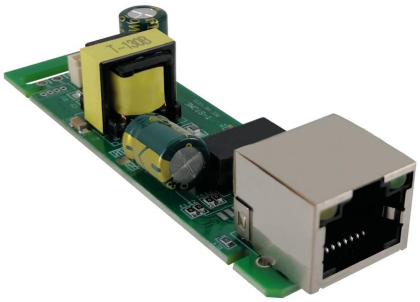
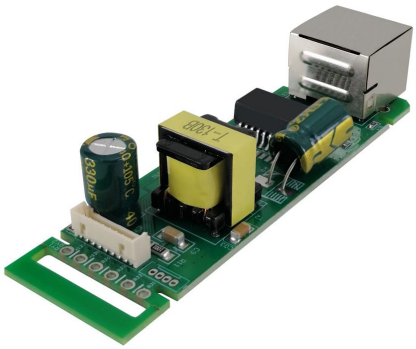
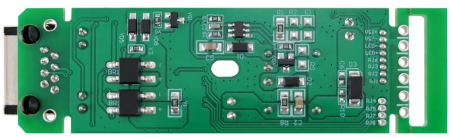
Product Detail

Product Package

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

MPQ: 300PCS

N.W: 5.1kg

G.W: 6.1kg