SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT NAME : Ultra-thin 30W PoE Module for Commercial Displays

PRODUCT MODEL : V202C

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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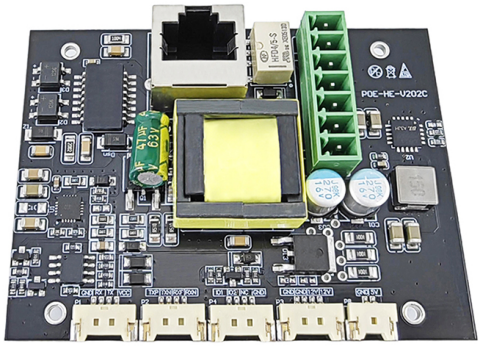
PRODUCT: Ultra-thin 30W PoE module for commercial displays

MODEL: V202C



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 V202C is a 30W high-power commercial display PD module that complies with the IEEE802.3af/at PoE standard protocol and has a maximum output power of 30W.

When your commercial display device is integrated with the V202C module, it can directly receive PoE signals and function normally.

Product Description

The TSD-V202C module features a vertical RJ45 port for PoE input, P8 (2-pin 1.25 ultra-thin terminal blocks): DC 5V 4A output, P3 (4-pin 1.25 ultra-thin terminal blocks): DC 12V 2.5A output. Two voltages are dynamically allocated for output, with a combined maximum power of 30W. P1 (4-pin 1.25 ultra-thin terminal blocks): serial port, P2 (4-pin 1.25 ultra-thin terminal blocks): data output, P4 (4-pin 1.25 ultra-thin terminal blocks): I/O port. A vertical Phoenix terminal block (7 pins, 3.8 in) serves as an RS485 function port.

The V202C module measures 76 x 56.5 x 16 mm, with screw holes measuring 2.3 mm x 4 mm in diameter. The PCB is a four-layer, 1.6 mm thick board with a glossy black finish. Its overall layout features a square structure with a single-sided, ultra-thin design, with components concentrated on one side for easy assembly.

The V202C complies with IEEE802.3af/at PoE standards, offering a maximum output power of 30W and a maximum output power of 15.4W. It also features an adaptive transmission rate of 10/100Mbps. It supports a wide voltage input range of DC38-56V, with a default dual-voltage output of DC12V and DC5V; other voltages are customizable. The module integrates PoE, RS485, relays, serial ports, I/O ports, and dual-voltage outputs.

The V202C, equipped with a high-power isolation transformer, is an isolated PD module specifically designed for commercial displays. Its circuitry features protection against lightning strikes, overloads, high temperatures, and short circuits. Its EMC parameters meet IEC 61000-4-2/3/4/5/6 standards. The product has obtained CE, FC, and RoHS certifications and is sold in over 100 countries and regions worldwide.

Product Features

- IEEE802.3af/at POE international standard protocol and handshake recognition function
- Input: wide POE voltage DC38-56V
- Output: dual voltage DC12V MAX2.5A and DC5V MAX4.0A output at the same time
- 10M/100M adaptive transmission speed
- RJ12+ RJ36- / RJ45+ RJ78- Fully compatible
- Integrated RS485 function, relay function, serial port, IO port and other functions

- Vertical interface, ultra-thin design, easy installation
- 4KV surge protection
- With overheat protection, overvoltage protection, overload protection, short circuit protection
- The conversion efficiency is over 85%
- EMC complies with IEC 61000-4-2/3/4/5/6 standards
- Big brand high precision electronic components, high parameter accuracy, low error rate
- High power, high conduction and low impedance transistor, stable performance and low heat
- Big brand original IC, stable performance
- High temperature resistant environmental protection PCB material
- Adopt pure copper pin connector to avoid bad contact

Specifications

Items	Specifications
Product Name	ultra-thin 30W PoE module for commercial displays
Product Model	V202C
PoE Standard	IEEE802.3af/at
Input Voltage	POE: DC38-56V
Output	dual voltage DC12V MAX2.5A and DC5V MAX4.0A (Other Voltage can be customized)
Conversion Efficiency	≧85%
PoE Pin	RJ12+ RJ36- / RJ45+ RJ78- Fully compatible
Conversion Mode	Isolated
Data Rate	10M/100M Adaptive
Transmission Distance	100 meters
Surge Protection	4KV
Circuit Protection	Short-circuit Protection Overcurrent Protection Overvoltage Protection Overheating Protection
LED Indicator	/

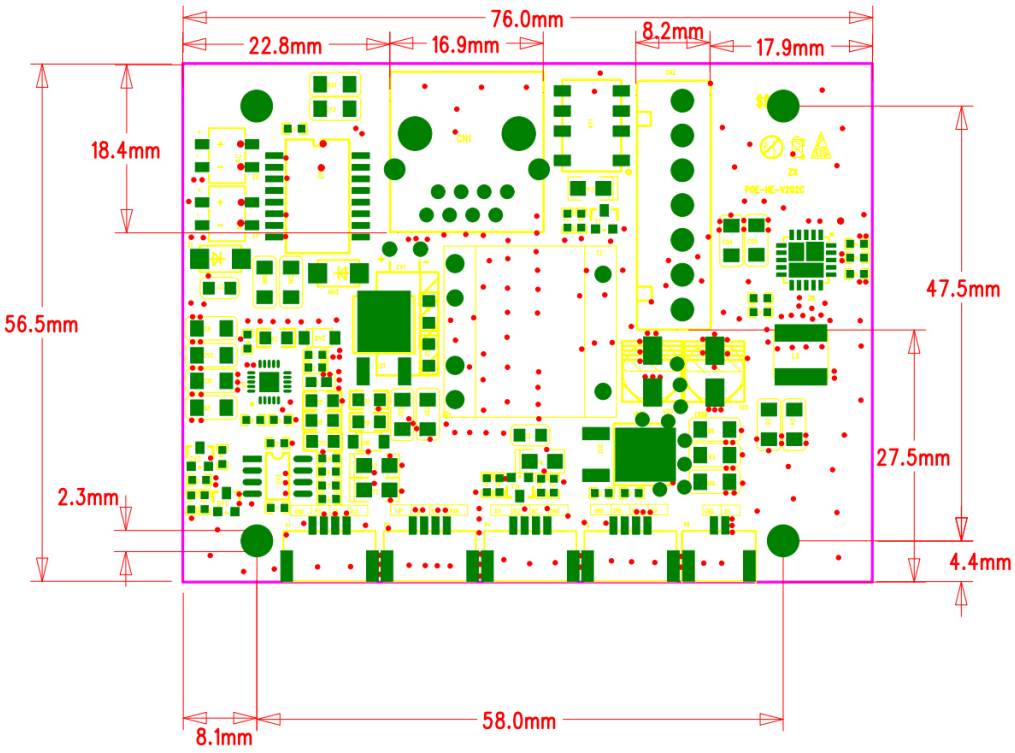
Interface	1* POE Input Port (RJ45 female) 1* Data Output Interface（P2: 4P1.25 ultra-thin terminal） 1* DC12V Interface (P3: 4P1.25 ultra-thin terminal) 1* DC5V Interface (P8: 2P1.25 ultra-thin terminal) 1* Serial port Interface (P1: 4P1.25 ultra-thin terminal) 1* IO port Interface (P4: 4P1.25 ultra-thin terminal) 1* Integrated function interface (7P3.81 Phoenix terminal)
Function	POE / RS485 / Relay / Serial port / IO port / dual voltage
Material	FR-4
Color	Bright black
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-20～60℃ For Operating -30～80℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 37g
Dimension	76mm*56.5mm*16mm
Package	Anti-static pearl cotton

Product Applications

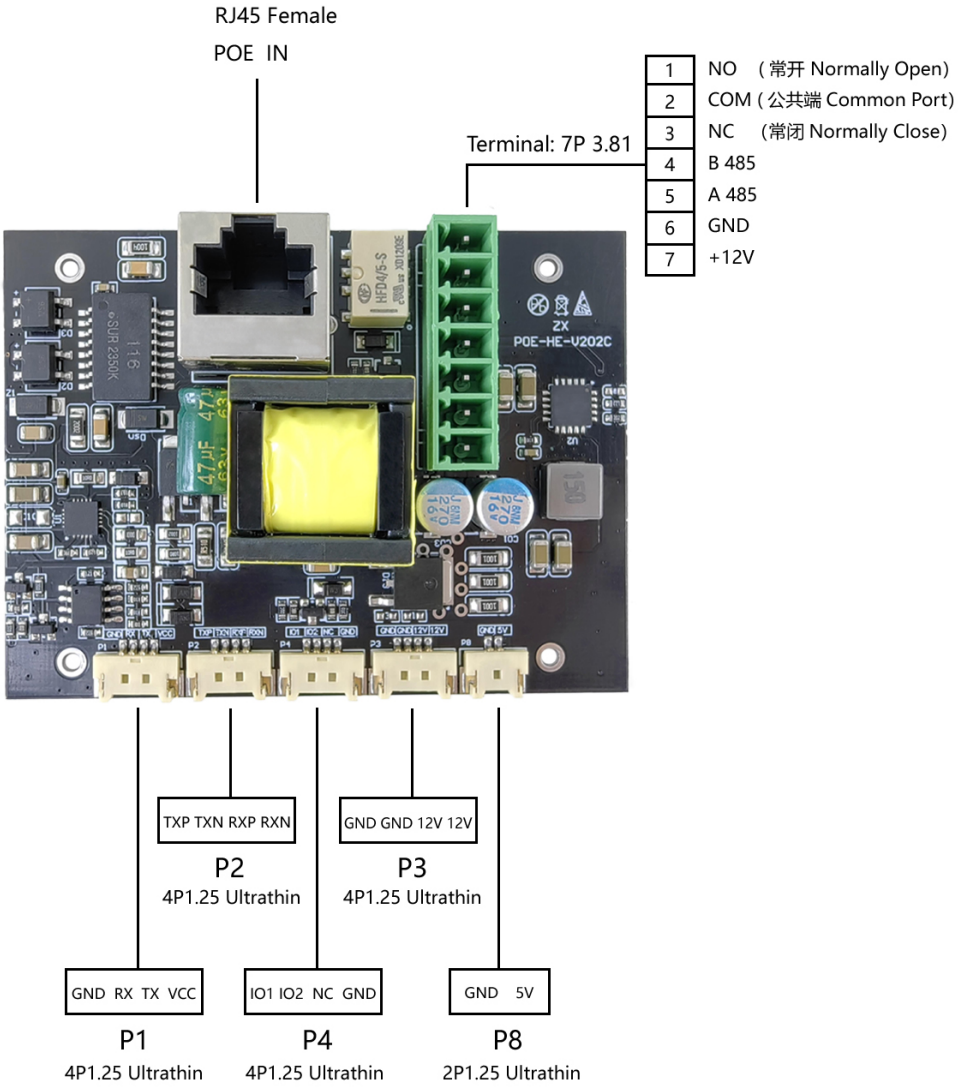
The V202C is a 30W POE module designed specifically for commercial display devices. It is primarily used in building intercoms, access control systems, electronic doorplates, commercial billboards, cash registers, facial recognition machines, and other equipment.

The V202C enables IP commercial display devices that previously lacked POE functionality to directly receive POE signals, maintaining compatibility with existing management platforms and software, while functioning normally. The V202C has demonstrated outstanding performance in POE commercial display applications and has been well-received by commercial display manufacturers and end users.

Dimensions


76.0mm
22.8mm
16.9mm
8.2mm
17.9mm
18.4mm
56.5mm
47.5mm
27.5mm
2.3mm
4.4mm
8.1mm
58.0mm

Interface Definition



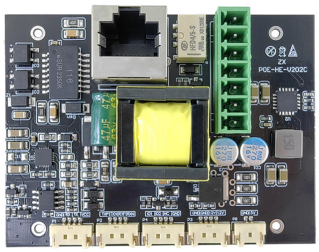
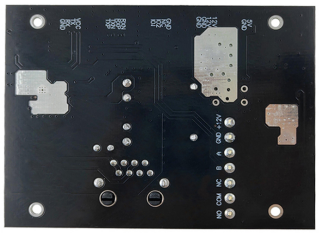
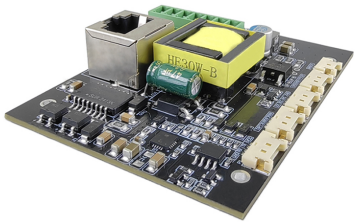
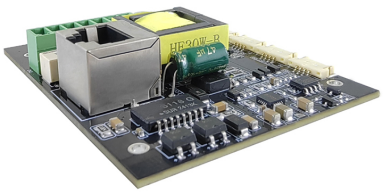
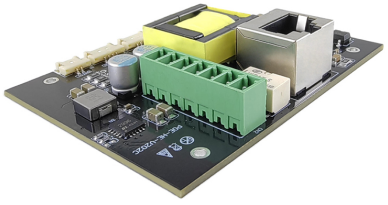
Application Scenarios

Cash Register

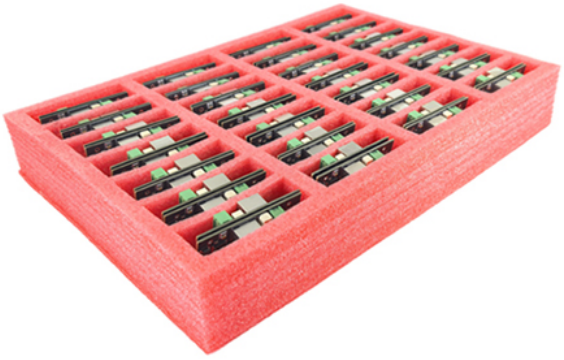
Building Intercom

Electronic Door Plate

Product Detail

Product Package



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

MPQ: 280PCS

N.W: 10.3kg

G.W: 11.3kg