TOSUN同星

Hardware IFU-TE1021

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V1.00	2023.7.5	Create a document	
V1.10	2024.1.10	Modify the document	

catalogue

1. Product profile

1.1 Product Overview

TE1021 is a point-to-point conversion tool from 100 / 1000Base-T1 Automotive Ethernet to 100 / 1000 Base-TX Ordinary Ethernet. We provide supporting cables with D-SUB 9 automotive Ethernet interface and RJ-45 crystal head interface for convenient ECU with

A PC connection with a car Ethernet interface.

TE1021 Select main or slave mode by buttons, and Ethernet data will be converted lossless between vehicle Ethernet and 100 / 1000Base-TX Ethernet communication. Data transmission is full-duplex in both directions. The mode configuration can simply complete the DIP switch.

TE1021 Will be the ideal low-cost converter tool between the 100 / 1000Base-T1 Automotive Ethernet and PC systems.

Suitable for R & D personnel, ECU production line, test engineers, after-sales engineers, etc.

1.2 Typical applications

- ✓ Vehicle-mounted Ethernet communication development
- ✓ Vehicle-mounted Ethernet communication test

1.3 Functions and parameters

- ✓ 100 / 1000Base-T1 100 / 1000 Mbit/s Full duplex 2 twisted pair UTP (unshielded twisted pair)
- ✓ Auto Ethernet-100 / 1000Base-TX Ordinary Ethernet data conversion
- ✓ Two types of on-board Ethernet interfaces are available: TE MATEnet or Rosenberg H-MTD
- ✓ D-SUB 9 Auto Ethernet 100Base-T1 interface
- ✓ Traditional Ethernet RJ 45 interface with indicator light
- ✓ The Ethernet data communication status LED indicator lamp
- ✓ Primary / slave mode, 100 MB / Gigabit can be configured by key press and displayed through LED status
- ✓ DIP switch for easy configuration
- ✓ Power supply voltage: DC 9~36V (Phoenix terminal power supply)
- ✓ Postforwarding time (for reference only): 100M:2.3us; 1000M:5.3us

- ✓ Robust aluminum housing design
- ✓ External dimensions: 110 x 70 x 36 mm
- ✓ Operating temperature: -45℃ ~85℃

1.4 Shipping list

- ✓ TE1021 devices(TE1021-M: MATEne interface, TE1021-R: Rosenberg H-MTD interface)
- ✓ RJ-45 crystal head interface cable
- ✓ TE MATEnet or Rosenberger H-MTD Cable(Not included as standard, requires separate ordering)

2. Hardware interface description

2.1 Description of the indicator light

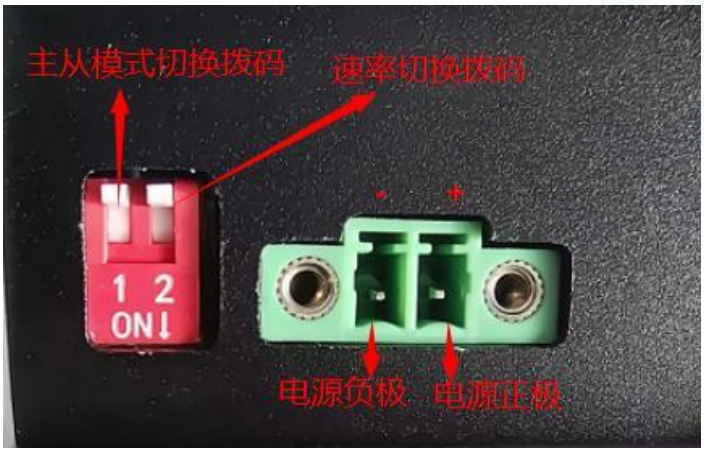
Physical picture of the indicator light:

Instructions for indicator light:

The light and dial switch	explain
Slave/Master	Master-slave mode dial switch
100Base-T1/1000Base-T1	100 MB / 1000 MB dial switch
Power	Chip identification indicator light
Ready	power light
Master	Host-mode indicator light
1000	The 1000M indicator lamp

Note: Master indicator is in host mode and out in slave mode; 1000 indicator is in 1000 MB mode and 100 MB mode.

2.2 DIP switch and power interface



among:

The 1000 BASE-T1 media converter has two DIP switches for the configuration.

DIP exchange board	state	description
1	falling-rising tone	Host mode
	Under	From the machine mode
2	falling-rising tone	1000BASE pattern
	Under	100BASE pattern

Note: In 100 / 1000 BaseT1 systems, one device must be set to host mode and the other link end must be set to slave mode.

Power interface:

The left is the power supply negative, the right is the power supply positive.

3. Functional use

3.1 Hardware connection

Step 1: Connect the power cord to provide 12V DC power supply with the green power indicator light; as shown below:

Step 2: Device RJ 45 network port is connected to ECU through the network cable; Ethernet interface is connected to ECU through the cable, as shown below:

Step 3:1000M mode dial code example:

The dial switch codes to make the device in 1000M communication mode, indicator light and dial switch status are shown in the figure:

Step 4: the device can be connected to grasp the package.

3.2 Additional information

The 100 / 1000 BASE-T1 converter is suitable for automotive Ethernet and the 100 / 1000 BASE-T1 maximum cable length limit of 15 m.

Do not use a power supply for the damaged equipment. Please do not open the device. Otherwise, we will lose our warranty period.

4. Inspection and maintenance

TE1021 the main electrical component is the semiconductor component, although it has a long life, but it may accelerate aging in the incorrect environment, greatly reducing the life. Therefore, regular inspections should be conducted during the use of the equipment to ensure that the use environment maintains the required conditions. It is recommended to check it up at least once every 6 months to a year. Under adverse environmental conditions, more frequent examinations should be performed. In the table below, if you encounter problems during maintenance, read below to find the possible cause of the problem. If the problem still cannot be solved, please contact Shanghai Tongxing Intelligent Technology Co., LTD.

project	check up	standard	move about
power suppl	Check the voltage fluctuation at the power supply side	9~30V DC	Use the voltmeter to check the source at the power input. Take the necessary measures to make the voltage fluctuation within the range
surrounding environment	Check the ambient temperature (Including the internal temperature of the enclosed environment)	-40℃~+80℃	Use the thermometer to check the temperature and ensure that the ambient temperature remains within the allowable range
	Check ambient humidity (Including the internal humidity in the closed environment)	Without air conditioning, the relative humidity must be at 10%~90%	Use a humidity meter to check the humidity and ensure that the ambient humidity remains within the allowable range
	Check for the accumulation of dust, powder, salt, and metal debris	No accumulation	Clean and protect the equipment
	Check water, oil, or chemical spray collision into the device	No spray touched the device	If the cleaning and protection equipment is required
	Check for corrosive or	No easily	Check by smelling or using

	flammable gases in the equipment area	corrosive or flammable gases	a sensor
	Check the vibration and shock levels	The vibration and shock are within the specified limits	Install the liner or other shock absorber, if required
	Check the noise sources near the equipment	There are no significant noise signal source	Isolation equipment and noise sources or protection equipment
Install wiring	Check the crimp connectors in the external wiring	There is sufficient space between the connectors	Visual scopic inspection adjust if necessary
	Check for the damage to the external wiring	No damage	Visual inspection and replace wiring if necessary

5. Precautions

① Connecting the circuit to avoid a short circuit.

② Before using the equipment, please carefully consult the pin information in the product use manual.

③ During the operation of the equipment, be careful to properly connect the power cord and avoid plugging and plugging.

④ pay attention to! Damage caused by electrostatic discharge (ESD).

6. Disclaimer

Shanghai TOSUN Technology , LTD. based on the principle of providing better service for users, will present detailed and accurate product information for users as much as possible in this manual. However, since the content of this manual has a certain timeliness, TOSUN Technology cannot fully guarantee the timeliness and applicability of the document in any period of time. TOSUN Technology has the right to update the contents of this manual without notice. In order to get the latest version of the information, please visit the official website of TOSUN Technology regularly or contact the staff of TOSUN Technology regularly. Thank you for your tolerance and support!

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汽车电子工具链，国产领导品牌

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同星智能的核心软件TSMaster及配套硬件设备，具备嵌入式代码生成、汽车总线分析、仿真、测试及诊断、标定等核心功能，覆盖了汽车整车及零部件研发、测试、生产、试验、售后全流程。

全球企业用户超4000家，用户覆盖：汽车整车厂、零部件供应商、芯片厂商、设备/服务供应商、工程机械、航空航天及舰船军工等领域。

扫码关注
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软件

- UDS诊断
- ECU刷写
- CCP/XCP标定
- 嵌入式代码生成
- 应用发布/加密发布
- 记录与回放
- 图形化编程
- 剩余总线仿真
- C/Python脚本
- 总线监控/发送
- SOMEIP和DoIP

硬件

- 1/2/4/8/12通道CAN FD/CAN转USB工具
- 1/2/6通道LIN转USB工具
- 10通道CAN FD/CAN转以太网工具
- 多通道Flexray/CAN FD转USB工具
- 多通道车载以太网/CAN FD转USB工具
- 车载以太网介质转换工具（T1转Tx）
- 多通道CAN FD/Ethernet/LIN记录仪

解决方案

- EOL测试设备
- FCT测试设备
- 汽车“四门两盖”试验解决方案
- 线控底盘测试解决方案
- 电机性能/耐久试验解决方案
- 新能源产线设备解决方案
- 总线一致性测试解决方案
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