

## Hardware IFU-TE1105

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Shanghai TOSUN Technology LTD

6 / 8,4801, Jiading District, Shanghai

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## 1. Product profile

### 1.1 Product Overview

TE1105 is a 5-way Ethernet switch launched by Star Intelligence, which can realize the selection of any port in the standard Ethernet 100Base-Tx / 1000Base-T or the vehicle Ethernet 100 / 1000Base-T1 with the terminal network and monitor monitoring.

Support IEEE 802.1q (VLAN) mode, support MAC filtering, IEEE802.1Qav AVB flow Plastic surgery, IEEE802.1Qat time-sharing scheduling.

Select the normal mode or the user customization mode by pressing the button. Primary or slave mode is switched and Ethernet data will be converted lossless between vehicle Ethernet and 100 / 1000Base-TX Ethernet communication. TE1105 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

- ✓ Car Ethernet message is forwarded
- ✓ Vehicle Ethernet data monitoring and analysis
- ✓ Vehicle-mounted Ethernet communication test
- ✓ Various test stands

### 1.3 Functions and parameters

#### 1.3.1 Main functions

- ✓ 5-way 100Base-Tx / 1000Base-T and 100 / 1000Base-T1, which can be switched at any time through the software
- ✓ Vehicle Ethernet interface form: TE MATEnet and Rosenberg H-MTD
- ✓ Support the Ethernet message forwarding and listening mode
- ✓ Support 2 custom configurations, can define VLAN, TSN time-sharing scheduling, AVB flow shaping, port filtering gauge  
Wait (need to communicate with the same customized)
- ✓ Mirror Function: Two channels of the vehicle Ethernet can realize the message mirror function
- ✓ Transmission function: the vehicle Ethernet transmits the message to the PC directly through

the RJ 45

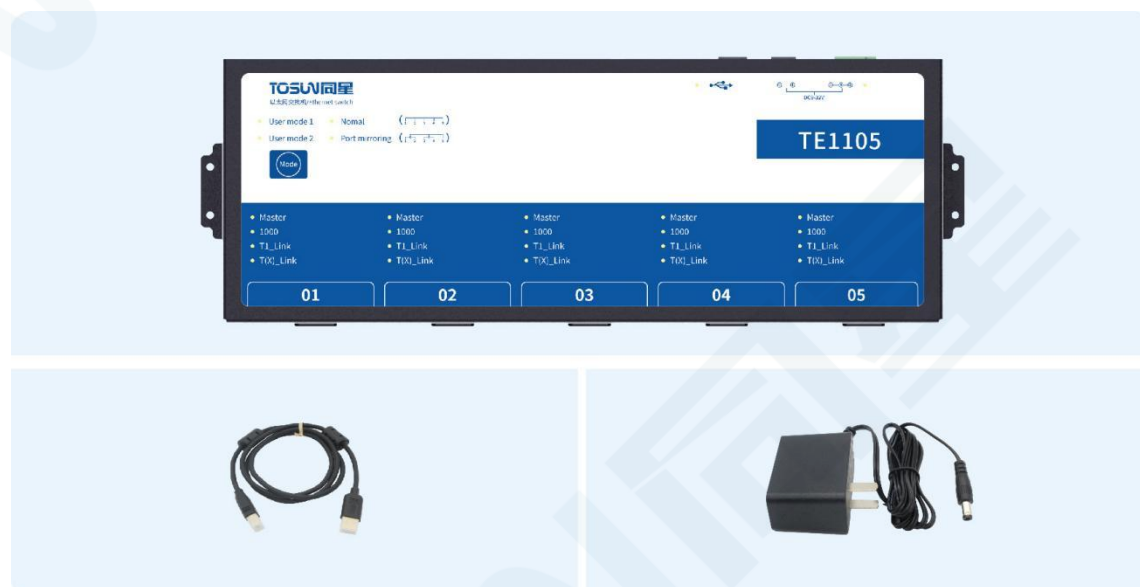
- ✓ The LED displays the vehicle / standard Ethernet working status
- ✓ Master / slave mode, rate, can be configured by dialing and displayed by LED status
- ✓ Custom-made, high-quality cable

### 1.3.2 Technical parameters

channel	5-way 100Base-Tx / 1000Base-T and 100 / 1000Base-T1
Ethernet interface	RJ 45 + TE MATenet or Rosenberg H-MTD
supply electricity	DC 9-32V
working temperature	-40°C~80°C
sheathing material	aluminium product
size	300×120×30 mm

### 1.4 Shipping list

- ✓ TE1105 Host machine
- ✓ USB line
- ✓ DC 12V Power supply adapter
- ✓ TE MATenet Or Rosenberg H-MTD cable (not standard, be ordered separately)



## 2. Hardware appearance and interface

### 2.1 Hardware appearance



### 2.2 Hardware interface and indicator light

#### 2.2.1 Power supply interface



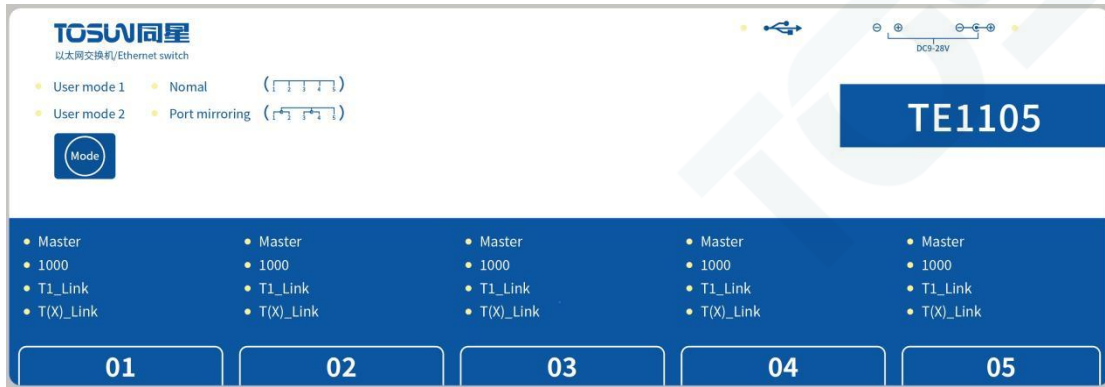
Support 9-32V power supply, support two power supply modes, the default factory provides 12V power supply;

Mode 1: Phoenix terminal power supply, 9-32V power supply, the left is the positive, the right is the negative.

Method 2: 12V supporting power supply supply.

Note: USB ports are only used for communication and do not provide power.

### 2.2.2 LED indicator lamp



Instructions for indicator light:

pilot lamp	definition	explain
	power light	Electricity is often bright
	Usb pilot lamp	The connecting usb line is always bright
User model1	Mode indicator light-User Customizing mode 1	Mode selection is often bright
User model2	Mode indicator light-User customization mode 2	Mode selection is often bright
Nomal	Regular switch mode	Mode selection is often bright
Port mirroing	Mirror message monitoring mode	Mode selection is often bright
Master	Primary and slave mode switching indicator light	Host mode is always on / slave mode is off
1000	The 100M / 1000M switch indicator light	1000M mode always on / 100M mode off
T1_Link	The T1 port link Link indicator light	The T1 port selection is often bright
T(X)_Link	T (X) port link Link indicator light	The T (X) port selection is often bright

## 2.3 Equipment mode



The device switches the working mode through the mode key and supports four working modes: Normal, Port mirroring, User mode1 and User mode2;

➤ **The device comes with two default modes:**

Normal: General switch mode

Port mirroring: Mirror message monitoring mode.

Conventional switch mode: ports 2 and 3 are grouped together, ports 4 and 5 are grouped together, and port 1 can monitor and capture packets from other ports.

Mirror message monitoring mode: Port 1 and Port 2 are grouped together, Port 3 and Port 4 are grouped together, and Port 5 can monitor and capture packets from other ports.

➤ **Two user customization modes are supported:**

User mode1: User customization is required, defining VLAN, TSN time-sharing scheduling, AVB flow shaping, port filtering rules, etc

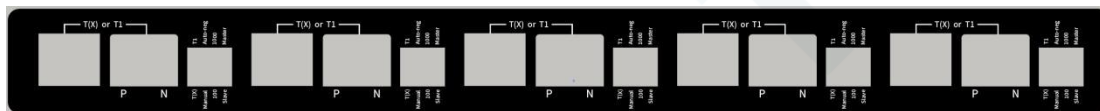
User mode2: User customization is required, defining VLAN, TSN time-sharing scheduling, AVB flow shaping, port filtering rules, etc



## 2.4 Port mode settings

### 2.4.1 Introduction of the port mode

All 5-way ports support T1 and T (X) Ethernet port switching, 1000M and 100M rate switching, master-slave mode switching; all 5-way ports support self-negotiation function;



### 2.4.2 Port mode switching

Code switch: used to switch the port mode



Dial-up code 1: T (X) and T1 port type switch;

Dial code 2: port self-negotiation and manual configuration mode switch;

Dial code 3:1000M and 100M rate switch;

Dial code 4: master and slave mode switching;

### 3. TE1105 hardware use

#### 3.1 Example of the use of the device

Objective: The device acts as a regular switch to make two PCs communicate through ports 1 and 2; The steps are as follows:

##### 3.1.1 Power-up

Make sure that the power supply indicator light is always on;



##### 3.1.2 Select the working mode of the equipment

Make the device work in the Normal switch mode, and the Mode button can switch the device mode to ensure that the device mode indicator light is always on;



**(Note: Device mode indicator is not on please restart the device!!!)**

### 3.1.3 Select the port working mode

- Set port 1: Use regular Ethernet port with self-negotiation configuration (self-negotiation mode will ignore rate and master settings); as shown in the figure:



- Set port 2: using the conventional Ethernet port, using manual configuration, setting rate to 1000M, host mode; as shown in the figure:

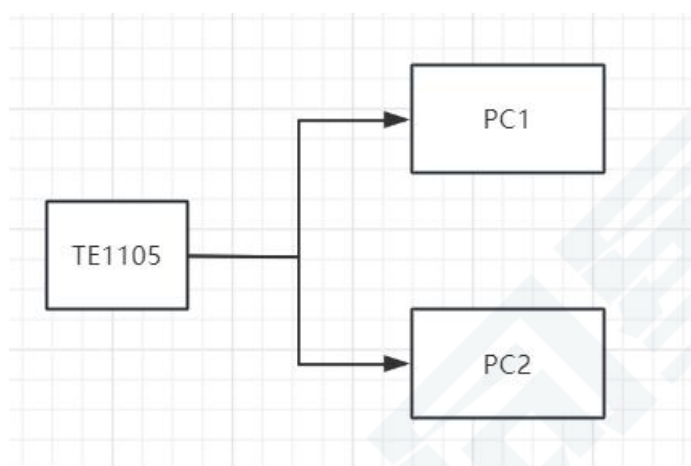


### 3.1.4 Network cable port configuration

Insert one network cable RJ 45 into the port of the PC 1 and the other network cable RJ 45 into the port of PC 2 as shown in the figure below; ensure that two computers are under the same LAN, set static IP of PC 1:192.168.0.30, and static IP of PC 2:192.168.0.11;



Connection Block Diagram:



PC machine 1:



Internet 协议版本 4 (TCP/IPv4) 属性

常规

如果网络支持此功能，则可以获取自动指派的 IP 设置。否则，你需要从网络系统管理员处获得适当的 IP 设置。

自动获得 IP 地址(O)

使用下面的 IP 地址(S):

IP 地址(I): 192 . 168 . 0 . 30

子网掩码(U): 255 . 255 . 255 . 0

默认网关(D): 192 . 168 . 0 . 1

自动获得 DNS 服务器地址(B)

使用下面的 DNS 服务器地址(E):

首选 DNS 服务器(P): . . .

备用 DNS 服务器(A): . . .

退出时验证设置(L) 高级(V)...

确定 取消

PC machine 2:



Internet 协议版本 4 (TCP/IPv4) 属性

常规

如果网络支持此功能，则可以获取自动指派的 IP 设置。否则，你需要从网络系统管理员处获得适当的 IP 设置。

自动获得 IP 地址(O)

使用下面的 IP 地址(S):

IP 地址(I): 192 . 168 . 0 . 11

子网掩码(U): 255 . 255 . 255 . 0

默认网关(D): 192 . 168 . 0 . 1

自动获得 DNS 服务器地址(B)

使用下面的 DNS 服务器地址(E):

首选 DNS 服务器(P): . . .

备用 DNS 服务器(A): . . .

退出时验证设置(L) 高级(V)...



### 3.1.5 Send the data

Cmd enters the command window and two computers call the following two commands to send ICMP request:

#### 1-PC input: ping 192.168.0.11-t

```
C:\Users\seven>ping 192.168.0.11 -t
正在 Ping 192.168.0.11 具有 32 字节的数据:
来自 192.168.0.11 的回复: 字节=32 时间=1ms TTL=64
来自 192.168.0.11 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.0.11 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.0.11 的回复: 字节=32 时间=2ms TTL=64
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来自 192.168.0.11 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.0.11 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.0.11 的回复: 字节=32 时间=2ms TTL=64
```

#### 2. PC input: ping 192.168.0.30-t

Two PCs can communicate with each other, as shown in the figure:

```
C:\Users\ZHANGLIANG>ping 192.168.0.30 -t
正在 Ping 192.168.0.30 具有 32 字节的数据:
来自 192.168.0.30 的回复: 字节=32 时间=2ms TTL=128
来自 192.168.0.30 的回复: 字节=32 时间=2ms TTL=128
来自 192.168.0.30 的回复: 字节=32 时间=2ms TTL=128
来自 192.168.0.30 的回复: 字节=32 时间=2ms TTL=128
来自 192.168.0.30 的回复: 字节=32 时间=2ms TTL=128
来自 192.168.0.30 的回复: 字节=32 时间=2ms TTL=128
```

### 3.2 The TE1105 is used together with the TE1051

TE1105 It can be used with the single Ethernet converter TE1051 launched by same Star, realizing real-time observation of message information and recording message information in TSMaster software. The use steps are as follows:

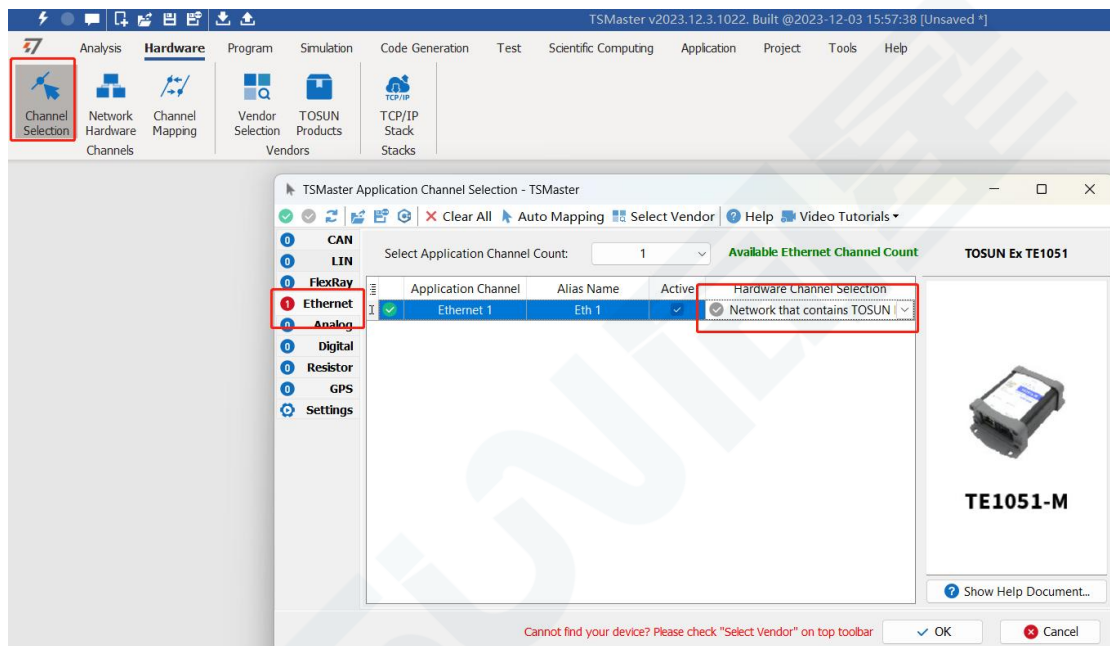
#### 3.2.1 Hardware Connection

TE1105 With TE1051 through the RJ-45 crystal head interface cable or MATENET Ethernet interface cable TE1051.



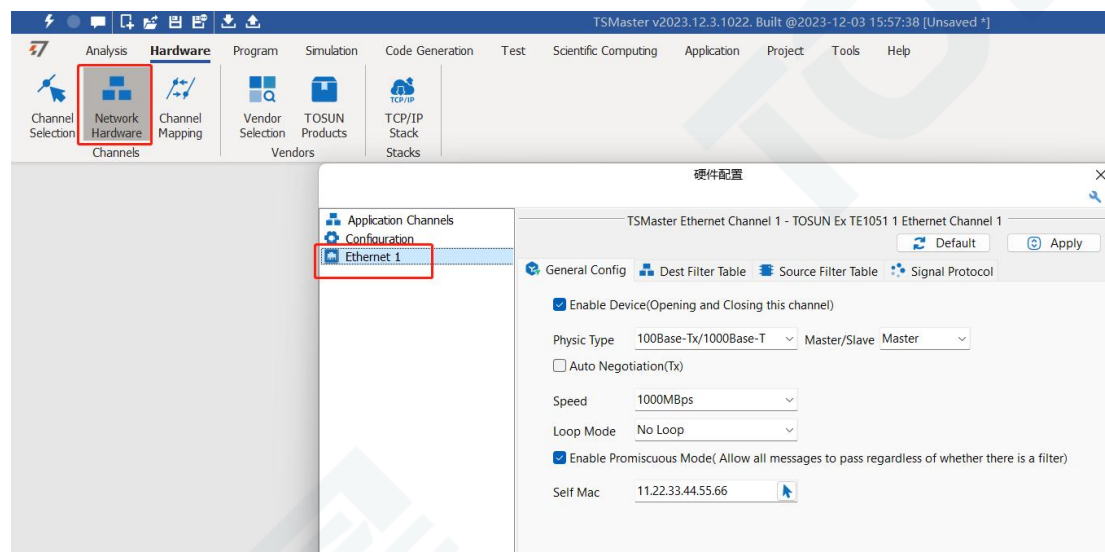
#### 3.2.2 Software configuration

Channel selection-Ethernet-select the hardware TE1051



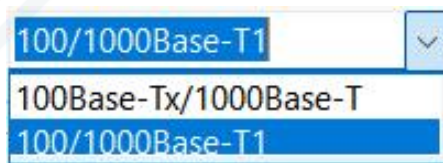
### 3.2.3 Hardware configuration

#### Bus Hardware-Ethernet1-Universal configuration



Enabling device: Use the hardware channel

Physical interface type: T1 port or T (X) port

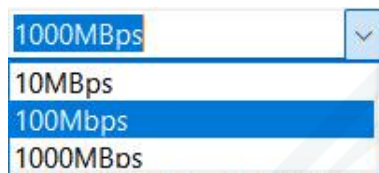


Master / slave: Master-slave mode selection

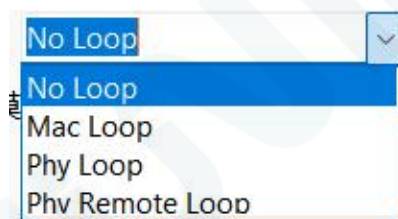


T (X) port self-negotiation mode: check the use of self-negotiation mode

Speed: 100M or 1000M mode



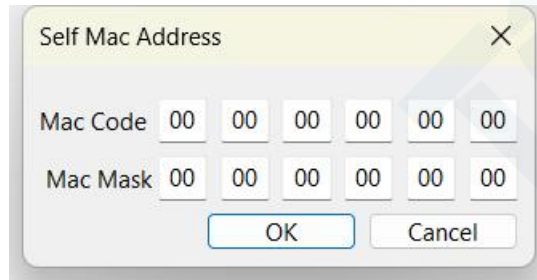
Cycle mode:



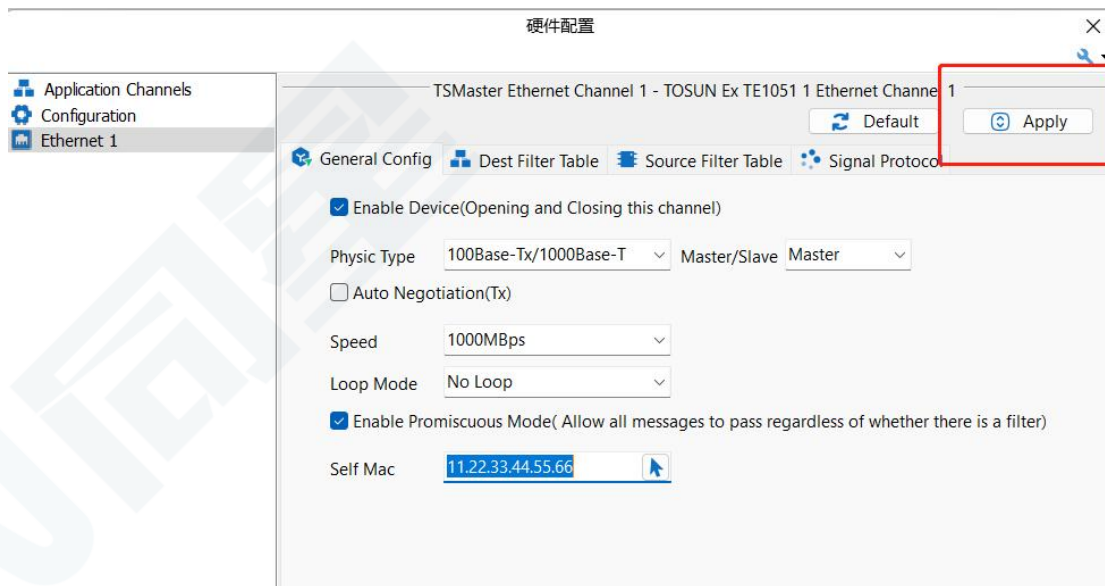


Enouncing mode (checked by default): allow all packets to pass in this mode

Self-contained Mac address: It can be manually configured



Configuration is complete click on the app:



Note: The TE1051 software configuration is completed, and the interface indicator of TE1105 will be on after starting the project.

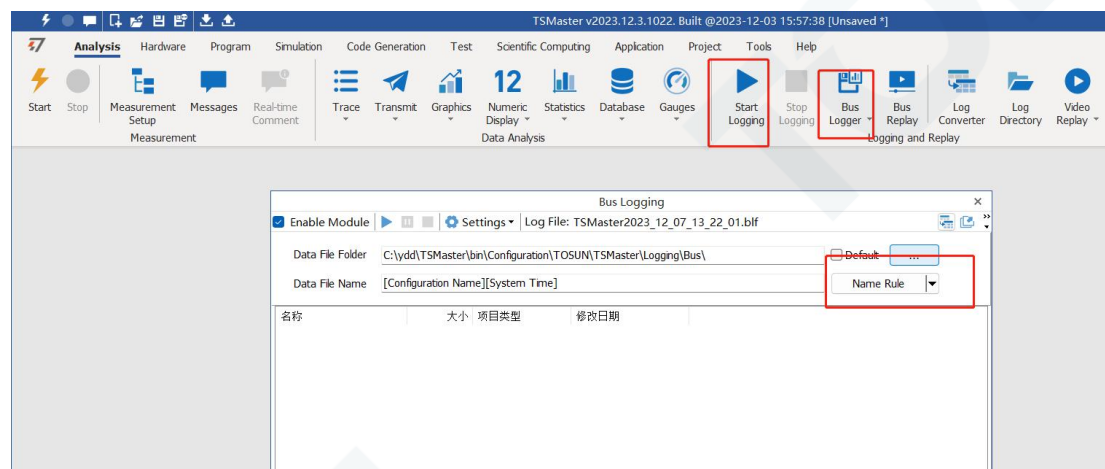
### 3.2.4 Message information

Start the project-View Ethernet message messages

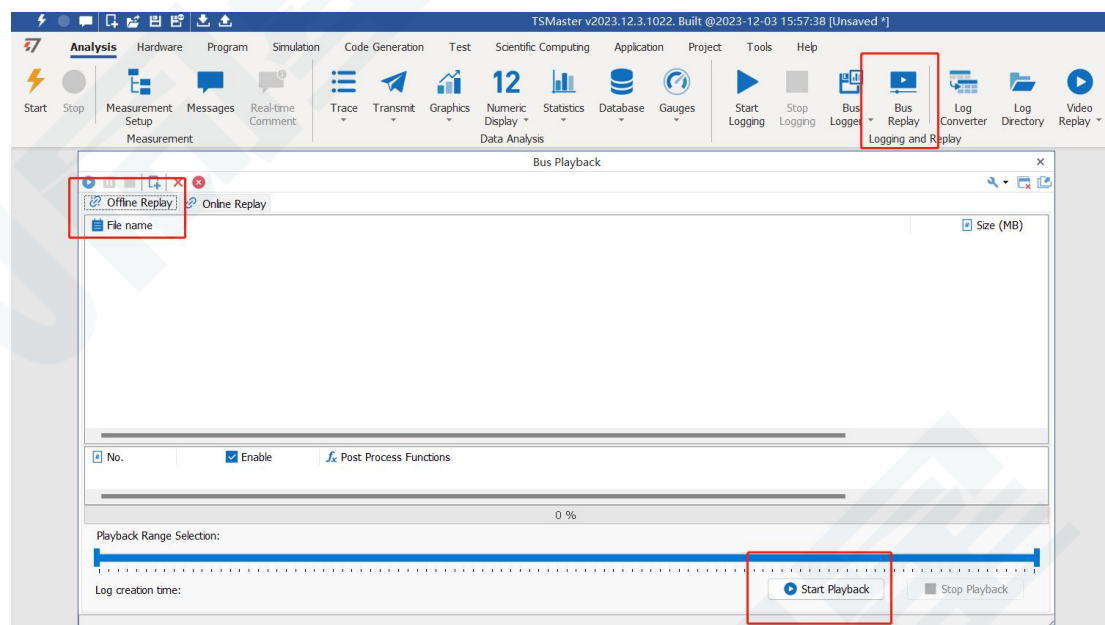


### 3.2.5 Bus record

Bus record, can set the record file name, record file size, etc.



### 3.2.6 Bus playback



Both the offline playback and the online playback modes.

Offline playback: only view the message data, load the playback file, and start the playback.

Online playback: the channel needs to be connected and can be simulated during playback.

## 4. Inspection and maintenance

TE1105 The main electrical component is the semiconductor component, although it has a long life, 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 is still not solved, please contact Shanghai TOSUN Technology LTD.

project	check up	standard	move about
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 flammable gases in the equipment area	No easily corrosive or flammable gases	Check by smelling or using a sensor
	Check the vibration and shock levels	The vibration and shock are within the specified	Install the liner or other shock absorber, if required

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

## 6. Disclaimer

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- 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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