TOSUN同星

Hardware IFU -TE1051

Version: V1.00 | English

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Document Revision History:

Documentation Edition	date	Update content	remarks
V1.00	2023.12.01	Create a document	

catalogue

1. Product profile

1.1 Product Overview

TE1051 is a 2-way Ethernet to USB interface tool. Users can transfer the data of one mode of standard Ethernet 100Base-Tx 1000Base-T or on-board Ethernet 100 / 1000Base-T1 to the PC through USB interface, and realize the simulation, analysis and test of Ethernet data through TSMaster software, or DoIP, SOMEIP and other functions.

TE1051 is small and solid shell,, no external power supply, easy to use.

1.2 Typical applications

- ✓ Vehicle Ethernet residual bus simulation
- ✓ Vehicle Ethernet data monitoring and analysis
- ✓ Vehicle-mounted Ethernet communication test

1.3 Functions and parameters

1.3.1 Main functions

- ✓ Hundred us (microsecond) level hardware message timestamp
- ✓ Windows10 / 11 system free drive design, win7 need to install the drive
- ✓ 1-Route 100Base-Tx 1000Base-T 100 / 1000Base-T1,
- ✓ Selection can be switched over at any time through the software
- ✓ Vehicle Ethernet interface form: TE MATEnet and Rosenberg H-MTD
- ✓ Auto class design, supports loading ARXML files in TSMaster
- ✓ The LED displays the vehicle / standard Ethernet working status
- ✓ The LED displays the system operating status, including the rate, the maste r/s pull
- ✓ A USB status indication
- ✓ Analyse the vehicle Ethernet message
- ✓ Support for DoIP, SOMEIP
- ✓ Supporting Windows secondary development API interface, support with time stamp, facilitate secondary development
- ✓ Message RAW format to receive, send and send complete events, support to modify the message CRC

- ✓ Provide a TCPIP example engineering based on the API interface and the lwip protocol stack
- ✓ Maximum loop rate about 7 Mbyte (duplex)

1.3.2 Technical parameters

channel	Standard Ethernet 100Base-Tx 1000Base-T or on-board Ethernet 100 / 1000Base-T1
PC section interface	USB2.0
Ethernet interface	RJ 45 + TE MATEnet or Rosenberg H-MTD
drive	Windows10 / 11 system drive-free design, Win7 needs to install the drive
Time stamp accuracy	Hundred us (microsecond) level hardware message timestamp
isolation method	Network transformer / capacitor isolation
supply electricity	USB supply electricity
working temperature	-40℃~80℃
sheathing material	aluminium product
size	100×70×36 mm

1.4 Shipping list

- ✓ TE1051 host machine
- ✓ USB line
- ✓ 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

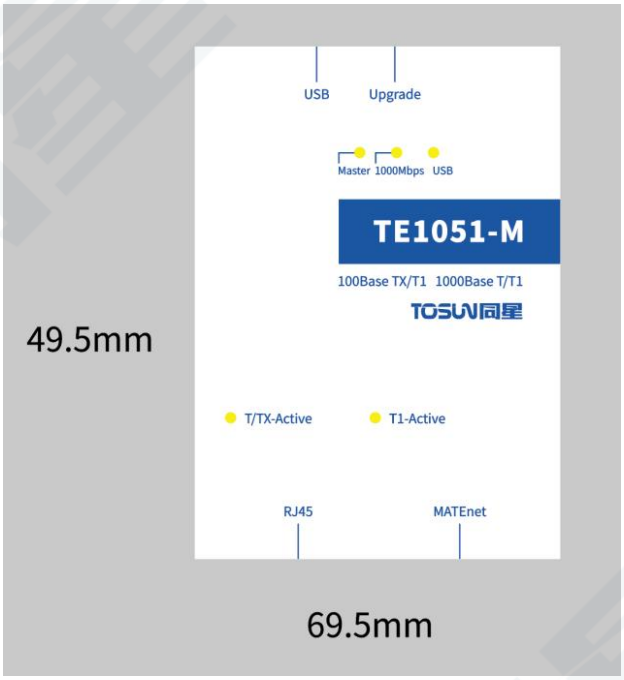
2.2.1 Hardware interface

USB interface (right) and firmware brush interface:

RJ 45 interface (left) and TE-MATEnet / Rosenberg H-MTD interface (right):

2.2.2 LED indicator lamp

Physical picture of the indicator light:



Instructions for indicator light:

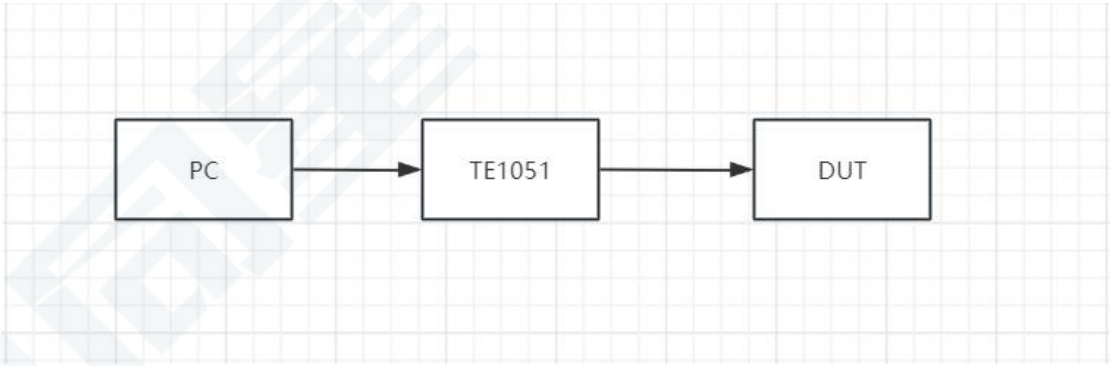
pilot lamp	definition	explain
Master	Primary and slave mode indicator light	Chang Liang is the host mode
1000Mbps	100M / 1000M indicator lamp	Chang Liang is 1000Mbps
USB	The USB power supply indicator lamp	It is often lit after being powered up
T/TX-Active	T/TX pilot lamp	T/TX enable
T1-Active	T1 indicator light	T1 enabling

3. Hardware Using Examples

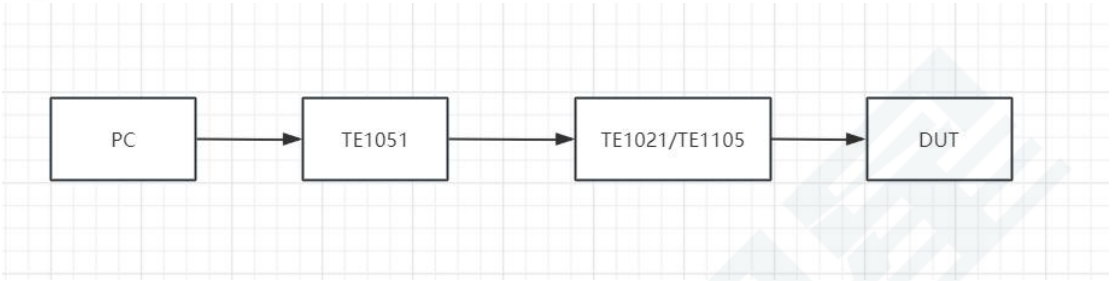
The single-channel Ethernet converter TE1051 launched by the same star can be used alone or combined with the same star series Ethernet converter (TE1021 / TE1105), realizing the functions such as real-time observation of message information and recording message information in TSMaster software.

3.1 Hardware connection

TE1051 The PCIe end of the device is connected to the PC, the T / TX end connects to the test through RJ 45, and the T1 end is connected to the test through MATEnet or Rosenberg H-MTD.



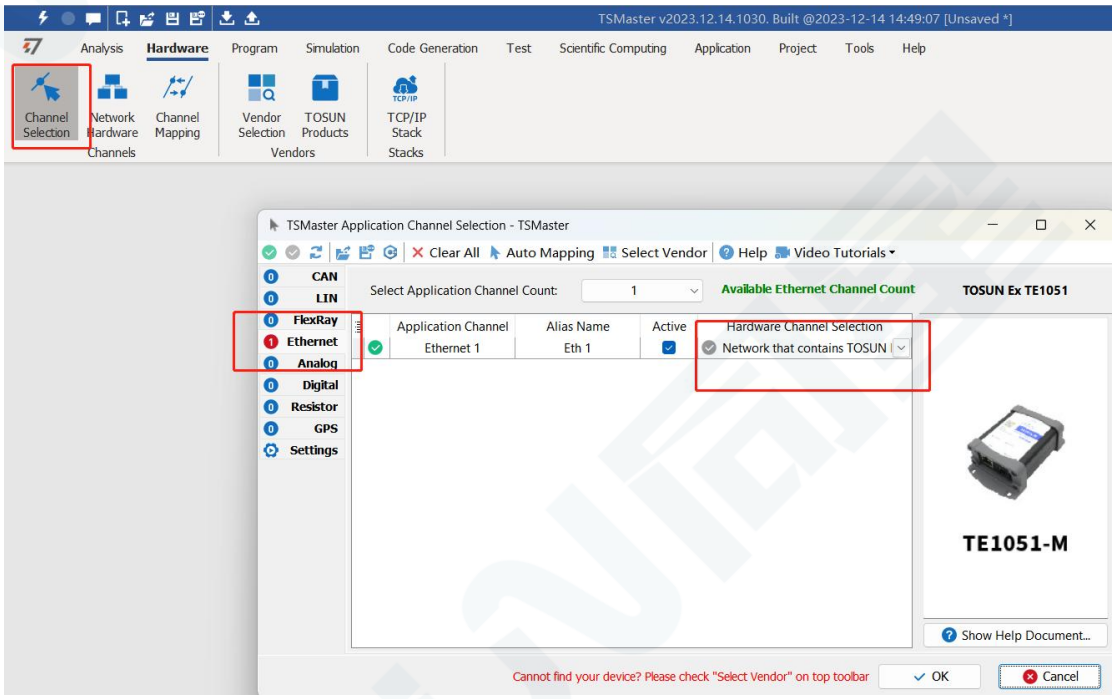
Connect to the same-star Ethernet converter device:



LED lights briefly after power on the USB port:

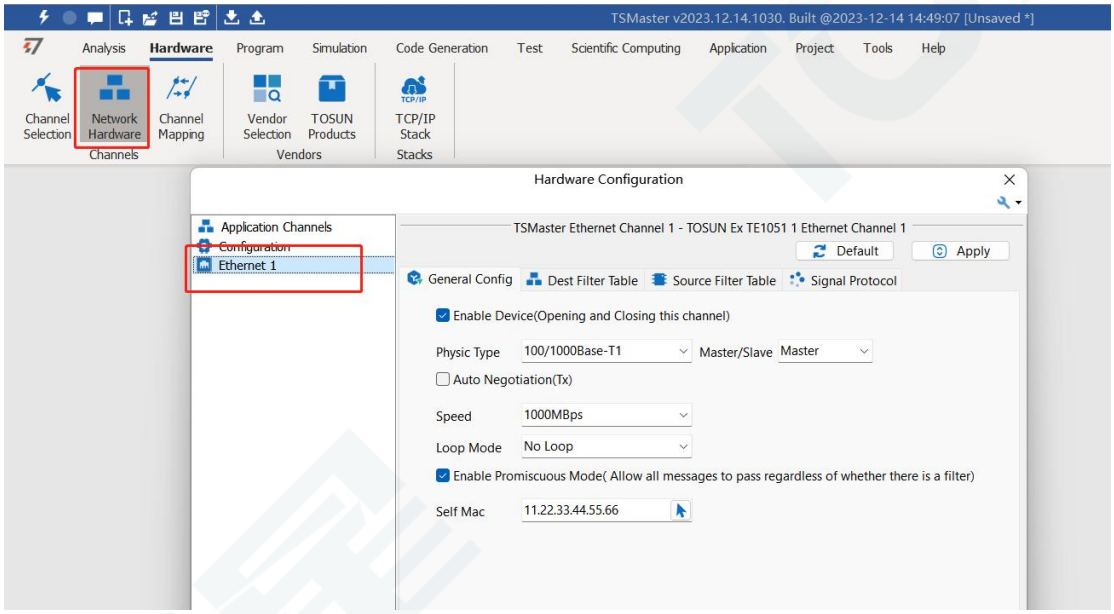
3.2 Channel selection

Channel selection-Ethernet-select the hardware TE1051



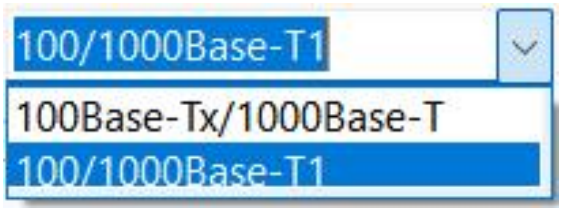
3.3 Bus configuration

Bus Hardware-Ethernet1-Universal configuration

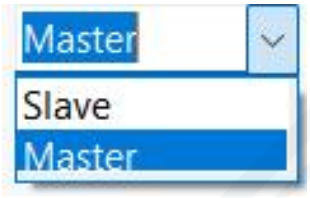


Configuration options:

1. Enabling equipment: the hardware channel is checked
2. Physical interface type: T1 port or T (X) port

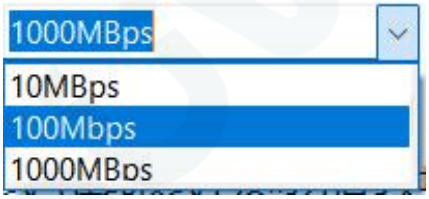


3. Master / slave: Master and slave mode selection



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

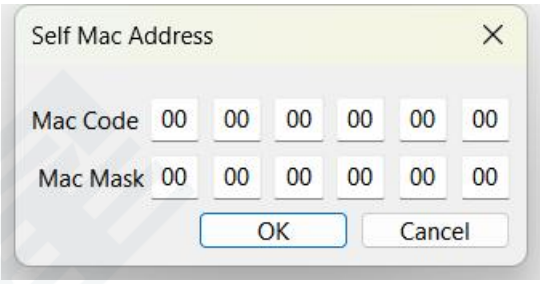
5. Rate: 100M or 1000M mode



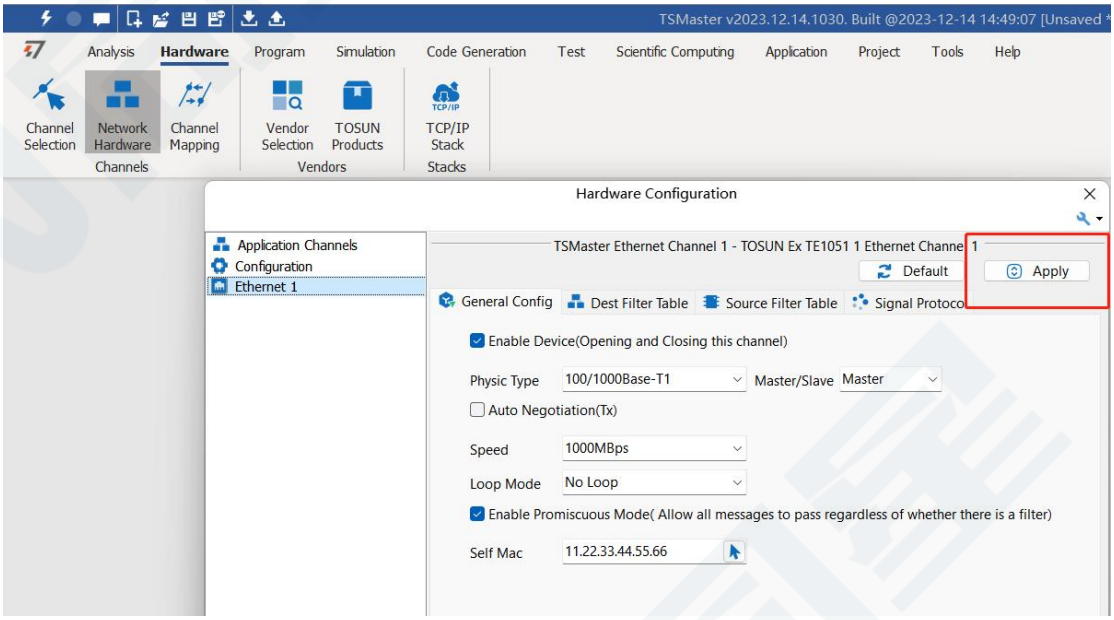
6. Cycle mode:

7. Enounding mode (checked by default): all messages are allowed to pass in this mode

8. Your own Mac address: It can be manually configured



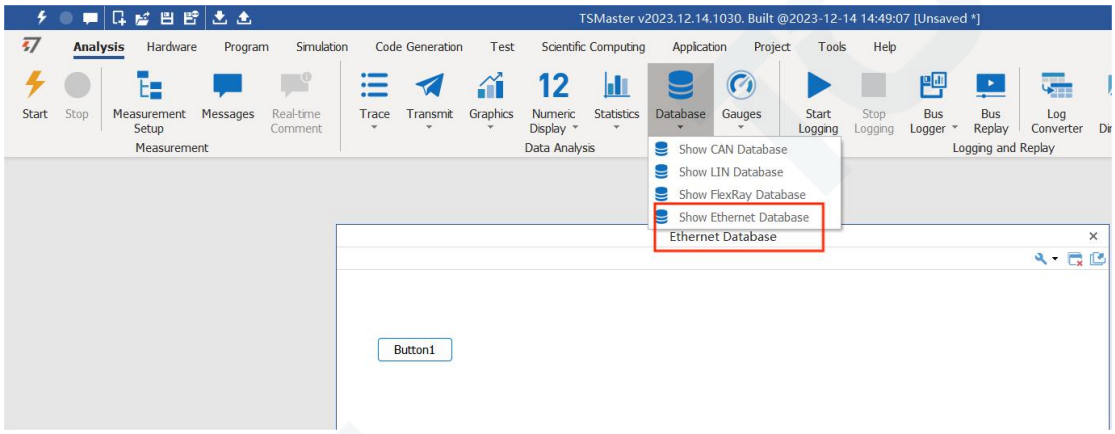
Configuration is complete click on the app:



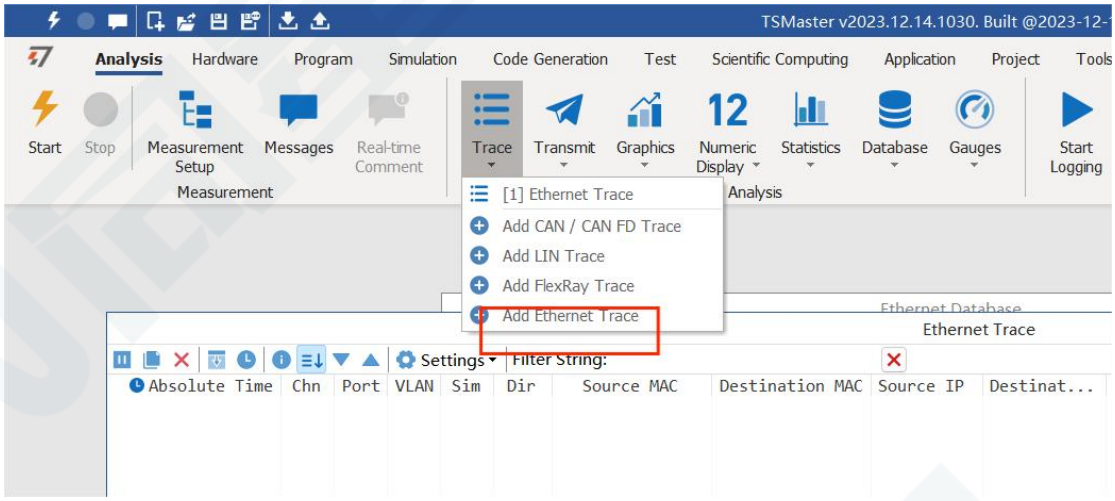
Note: The Master and 1000M indicators will glow after the software configuration is completed according to the configuration.

3.4 Message collection

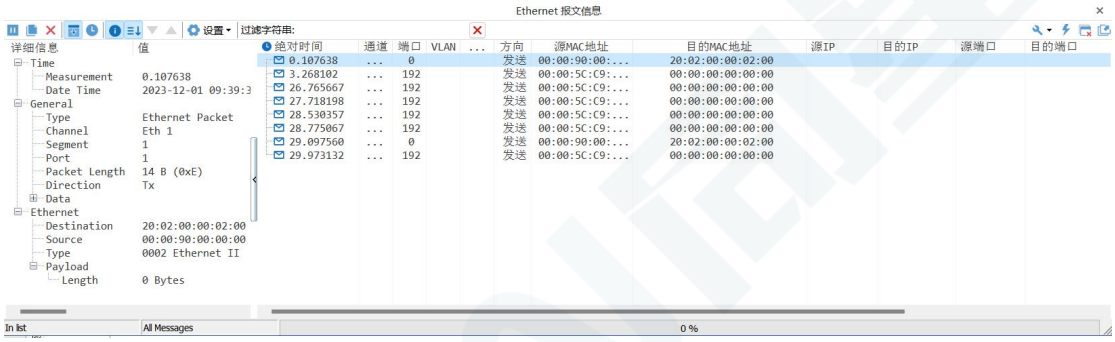
Database loading (function to be updated):



Start the project-View Ethernet message messages

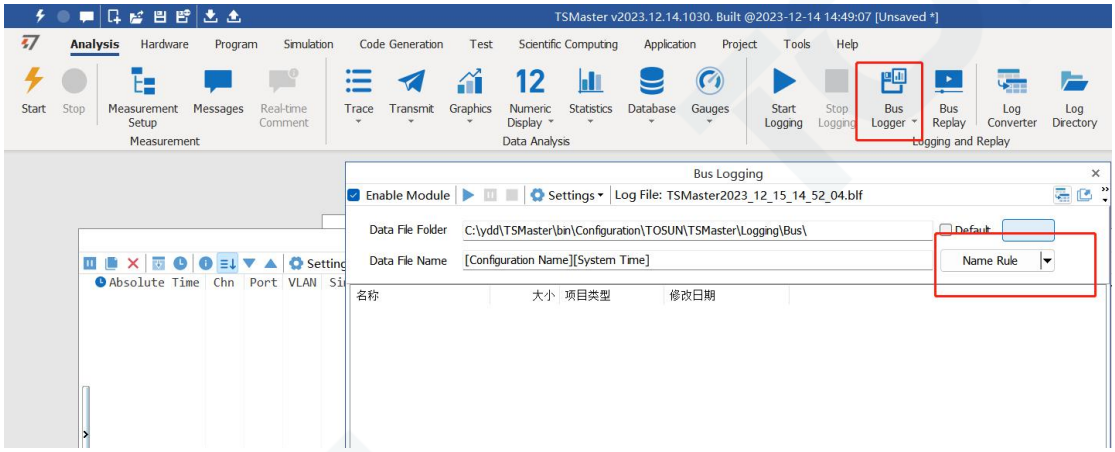


The Ethernet message information is expanded:

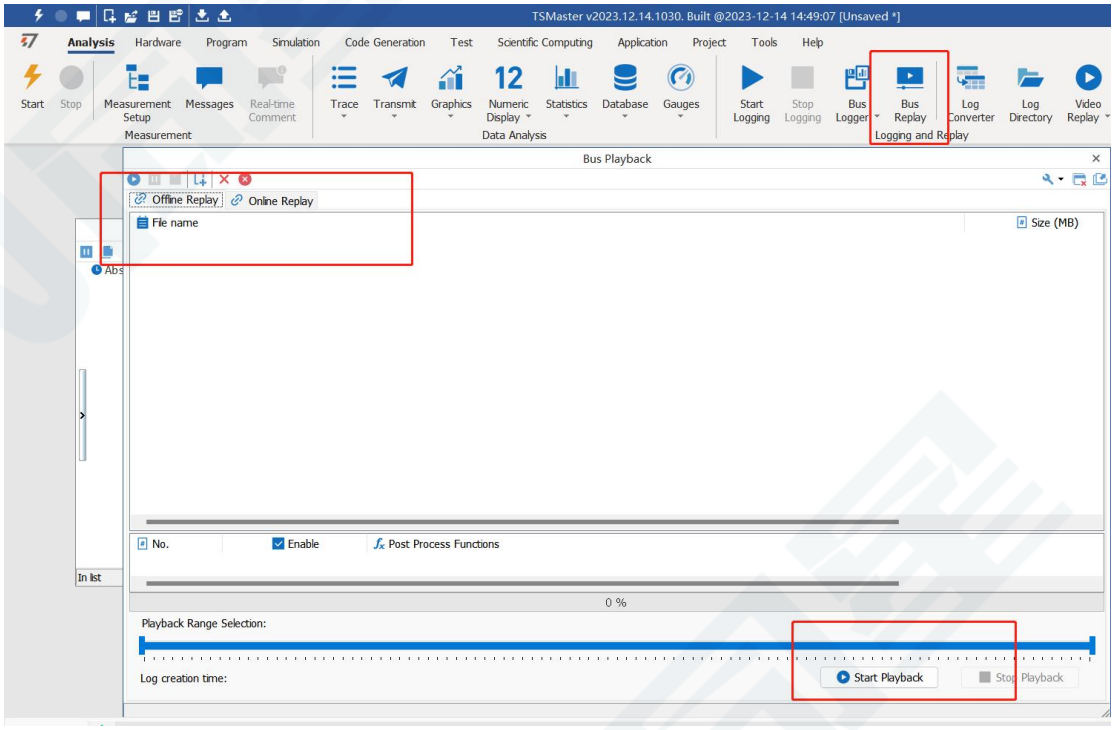


3.5 Message records

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



3.6 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.

3. Inspection and maintenance

TE1051 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 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 TOSUN Intelligent Technology Co., 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 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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- 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
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