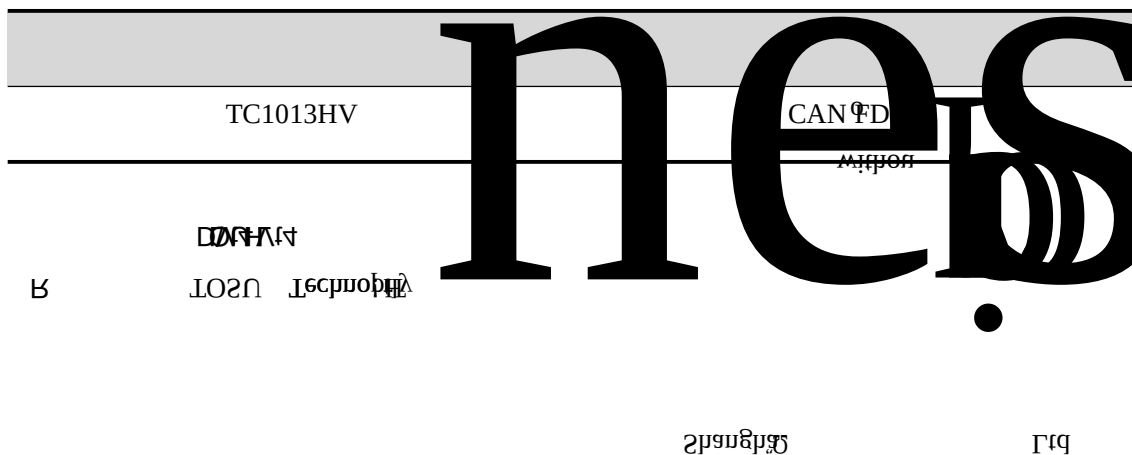




CAN FD to USB Interface



Copyright Information

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In an effort to provide users with the best possible service, Shanghai TOSUN Technology Ltd. (hereinafter referred to as “TOSUN Technology”) has made every attempt to present accurate and detailed product information as possible in this manual. However, due to the time-sensitive nature of the content, TOSUN Technology cannot guarantee the timeliness and applicability of the information at all times.

The information and data contained in this manual are subject to change without prior notice. For the latest updates, please visit the [official website of TOSUN Technology](http://www.tosunai.cn) or contact our support team directly. We appreciate your support.

- Vehicle-representative test scenarios
- Simulation of main controllers (e.g., cockpit, ADAS)
- Built-in safety and endurance test benches
- Versatile in-house programming

- High-precision time base in the microsecond range, providing precise timing references

• Runs on Windows and Linux with excellent system

channel. Automotive-grade design ensures stability under



Provides cross-platform APIs for secondary development.

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The TC1013HV is a dual-channel CAN FD interface device that supports CAN FD bit rates of up to 8 Mbps.

It connects to the PC via a USB 2.0 interface, and features a driver-free design for both Windows and Linux, ensuring excellent system compatibility.

Used with the powerful TSMaster software, it supports loading DBC and ARXML database files for convenient monitoring, analysis, and simulating of CAN FD bus data. It also supports UDS diagnostics, ECU flashing, and CCP/XCP calibration functions.

Included resources:

- CAN FD monitoring software TSMaster
- Cross-platform secondary development library (with a dedicated programming manual)



This document covers the operation of the device on Windows. For usage on Linux and other operating systems, please refer to the separate user manual.



PC Interface	USB 2.0
Timestamp Precision	Microsecond-level high-precision timestamps
Driver	Cross-platform, driver-free

Enclosure Material	Plastic Housing
Dimensions	113 * 98* 38 mm
Weight	162.5 g
Operating Temperature	TBA
Operating Humidity	10% ~ 90% RH (no condensing)



Connection Standard	High-speed CAN (ISO 11898-2 compliant)
Supported Protocols	Full support for CAN and CAN FD (ISO 11898-1 compliant)
CAN Baud Rate	125 kbps ~ 1 Mbps
CAN Frame Data Length	Up to 8 bytes
CAN FD Baud Rate	125 kbps ~ 8 Mbps
CAN FD Frame Data Length	Up to 64 bytes; supports BRS frames
Max Frame Rate	Transmit: 20,000 frames/s; Receive: 20,000 frames/s (single channel, 1 Mbps, remote frame, 0 data bytes)
Termination Resistor	120 Ω per CAN channel
Relay Type	Magnetic latching relay



Operating Voltage	USB power supply	--	5.0	--	V



Figure 1-1 Mechanical Dimensions

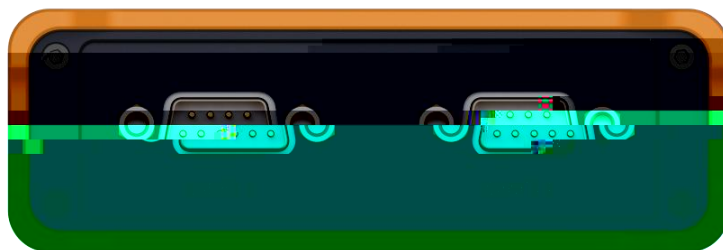


Figure 1-2 Hardware Interface (CAN FD)

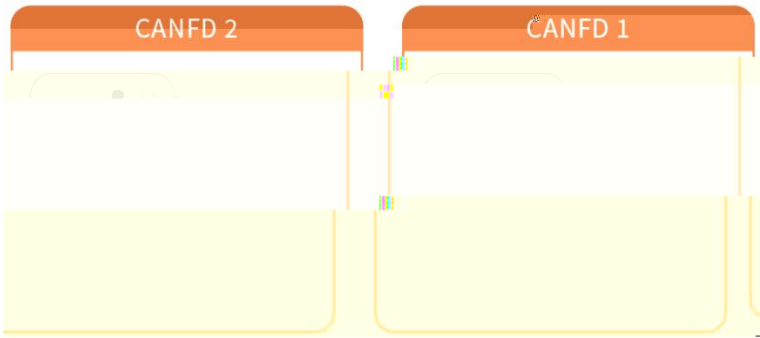


Figure 1-3 Pin Layout (CAN FD)



Figure 1-4 Front Panel Layout



CAN FD 1 ~ 2	Status of CAN FD channel 1 ~ 2



CAN FD	Green	Normal frame transmission/reception
	Red	Frame transmission/reception error — configuration, protocol, or wiring fault



The blinking frequency depends on the bus load rate — the higher the bus load, the faster it blinks.



- Operating System: Windows or Linux
- One available USB port (USB 2.0 or higher), or a powered USB hub



- The TC1013HV features a driver-free design, ensuring outstanding system compatibility. It can be used directly on Windows (7/8/10/11) or Linux without manual driver installation.



- TSMaster software
- PDF user manual
- Programming library (for secondary development)



The download link is available on the official website of Shanghai TOSUN Technology Ltd.: <https://www.tosunai.com/>





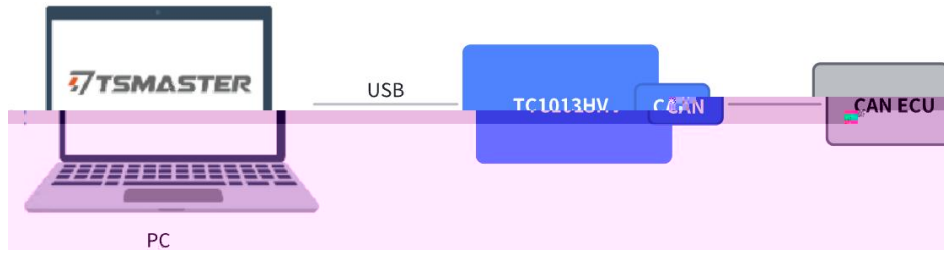


Figure 2-1 Example in Wi



Figure 2-3 Channel Configuration (CAN)

4. Click “Analysis” → “Start” to connect the device.

The TC1013HV includes built-in termination resistors, which can be enabled or disabled in the software as required.



each end of the CAN bus, ensuring that the total bus resistance stays at 60Ω. API. The recommended configuration is to enable one 150Ω termination resistor at built-in termination resistors, which can be enabled or disabled via the software. Pay attention to the termination-resistor enable settings. The TC1013HV comes with

Figure 5-4 Using CAN



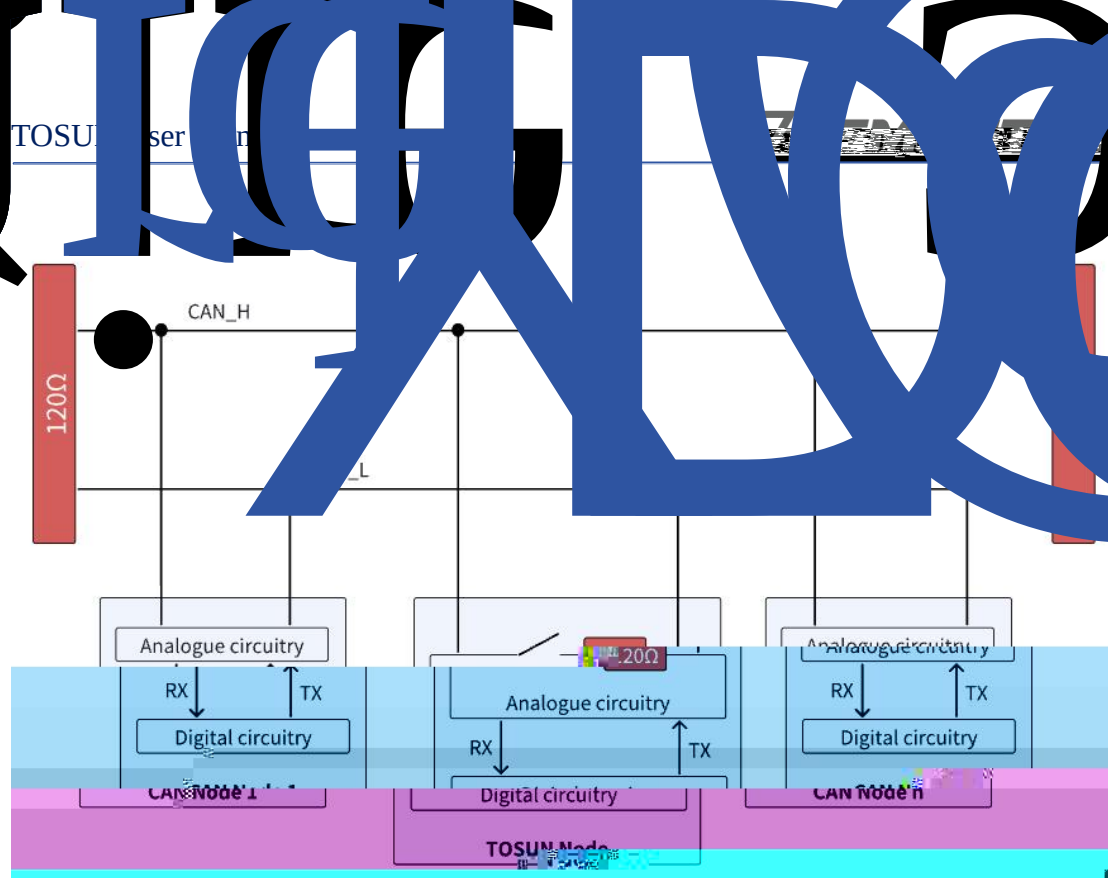


Figure 2-5 Connecting to the CAN Bus

After configuring and connecting the software and hardware

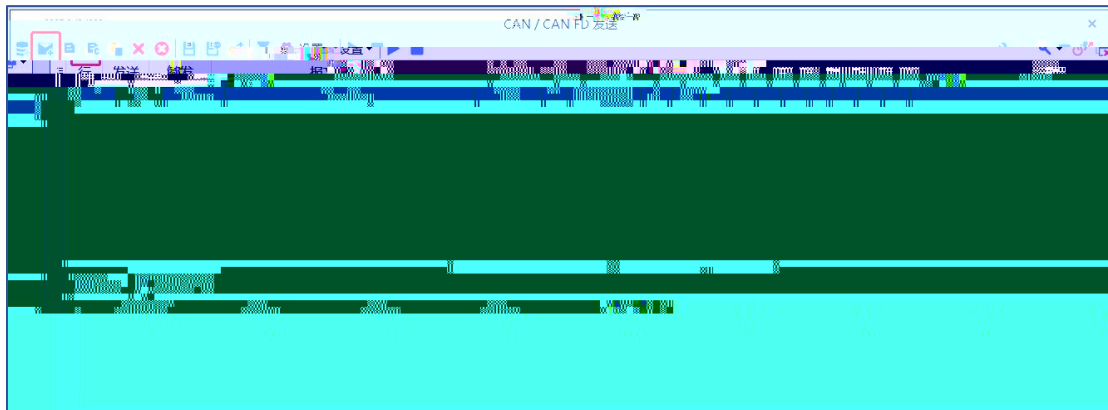


Figure 2-6 Adding CAN Message

2. Message information can be viewed under “Analysis → Data Analysis → Message Analysis → Add CAN/CAN FD Message Information.”



Figure 2-7 CAN Message Information

3. Bus statistics can be viewed under “Analysis → Data Analysis → Statistics → Show CAN Statistics” (example shows one channel).





Figure 2-10 Copying the C Code

2. In the mini-program module, click “Design → Mini-program → Add C Mini-Program Editor” to open the C code editor.

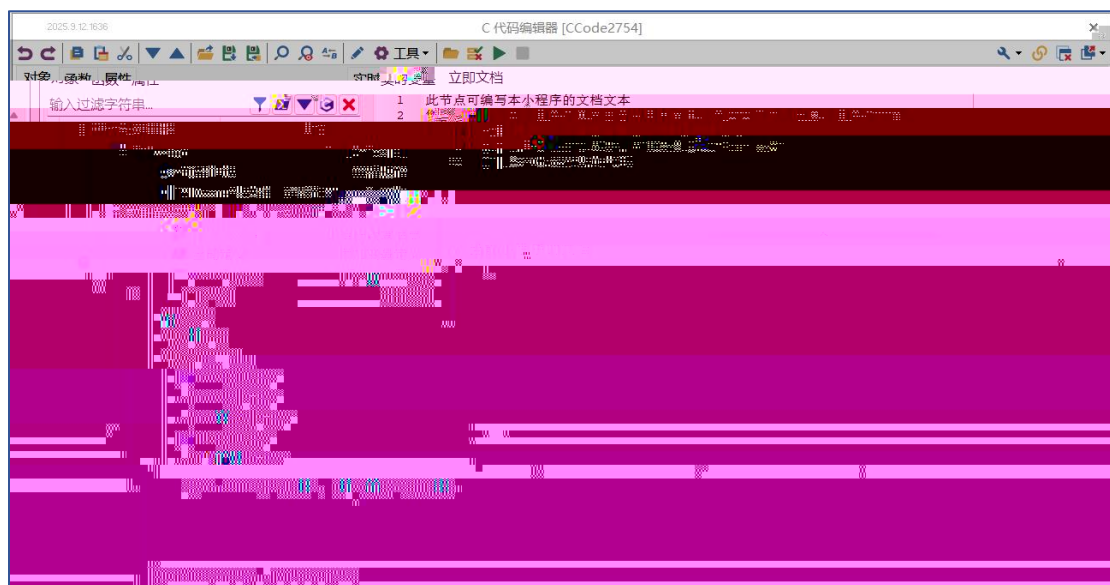


Figure 2-11 Adding a C Mini-Program Editor

3. In the C Code Editor, add a key event (e.g., Key A), paste the copied code into the event handler, then click Compile and Run.



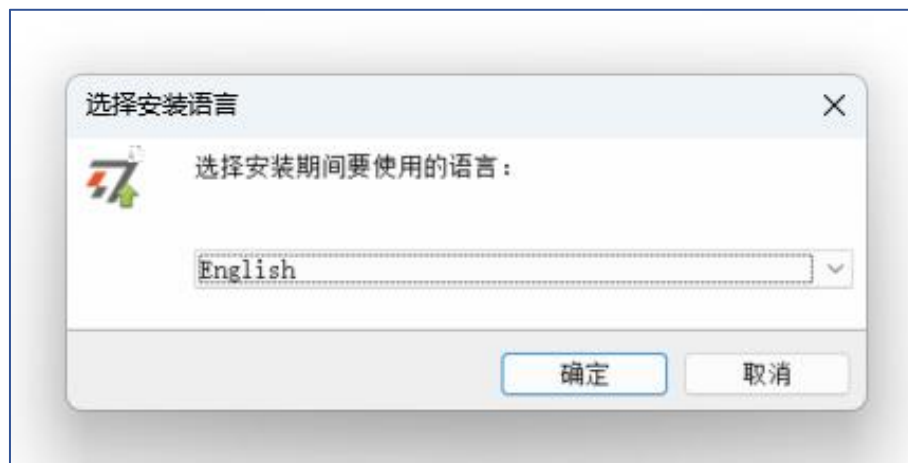


Figure 3-2 TSMaster Installation

2. Accept the license agreement and click “Next”.



Figure 3-3 TSMaster Installation

3. Choose an installation directory and click “Next “.

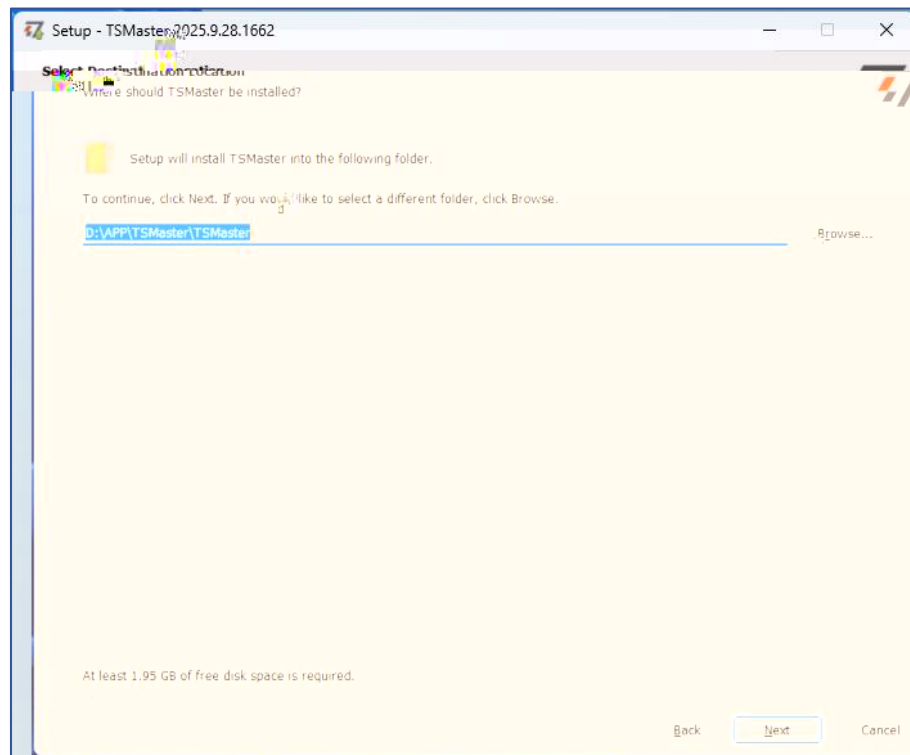


Figure 3-4 TSMaster Installation

4. Select additional tasks as needed and click “Next”.

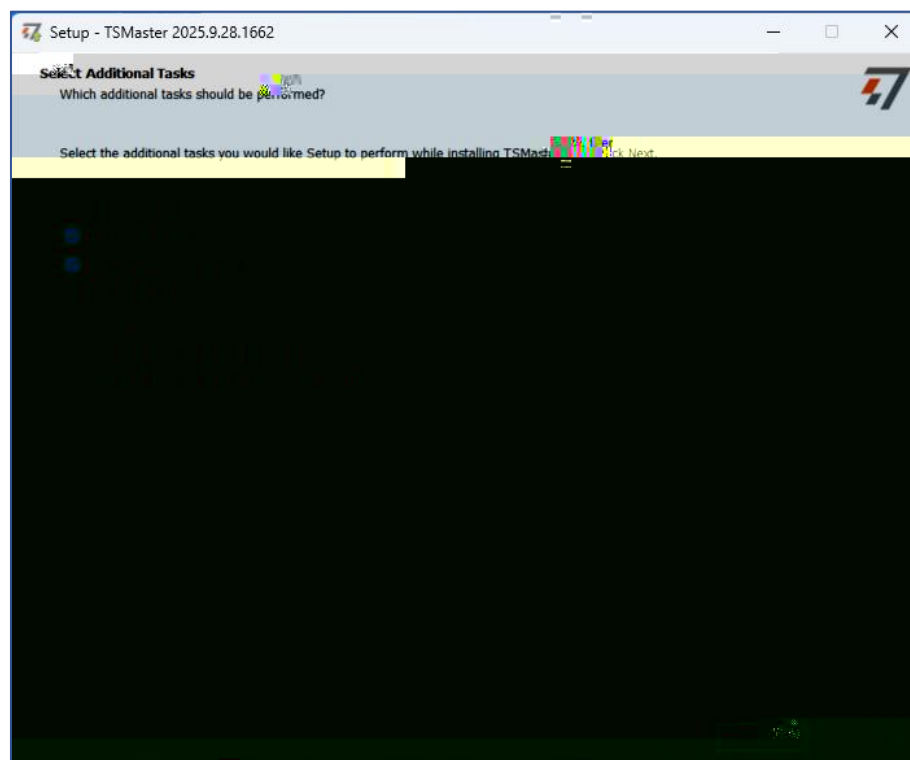


Figure 3-5 TSMaster Installation

5. Click “Install” and wait for completion.

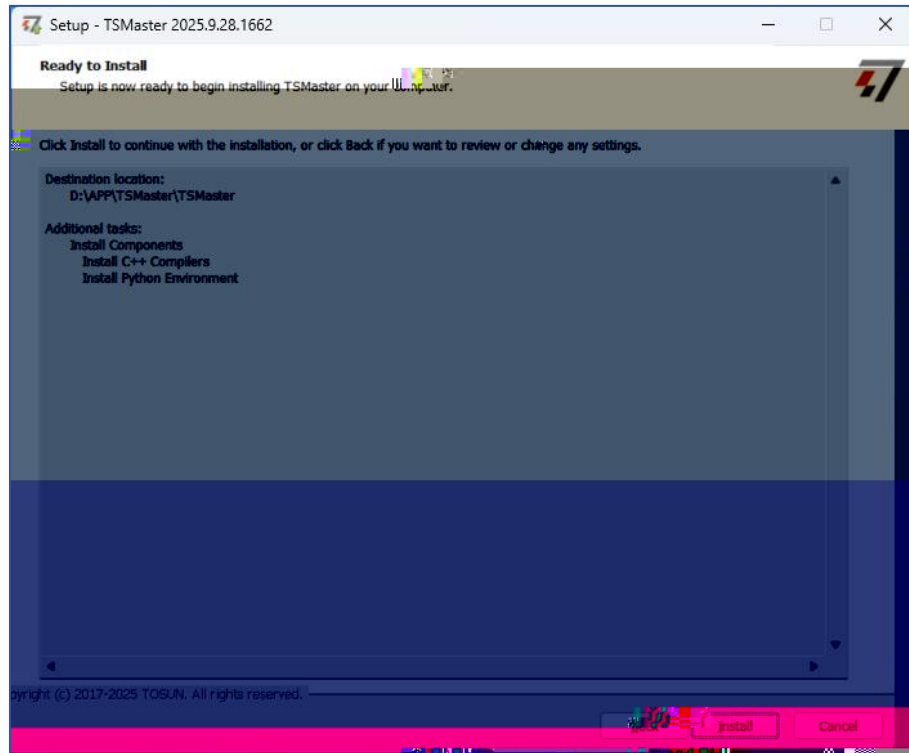


Figure 3-6 TSMaster Installation

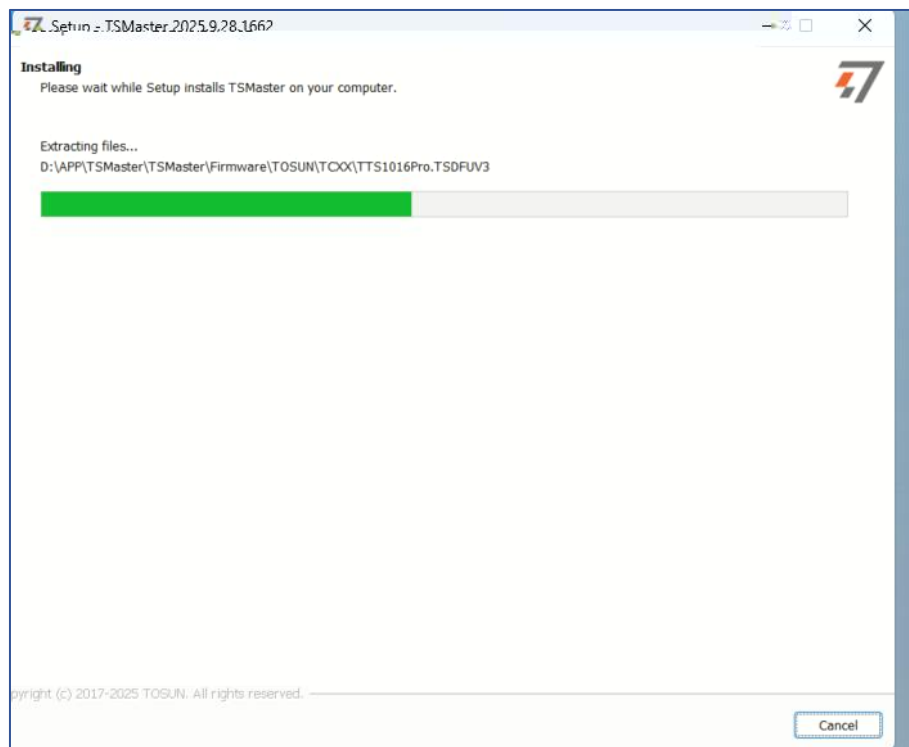


Figure 3-7 TSMaster Installation

6. Click “Finish” to complete installation.

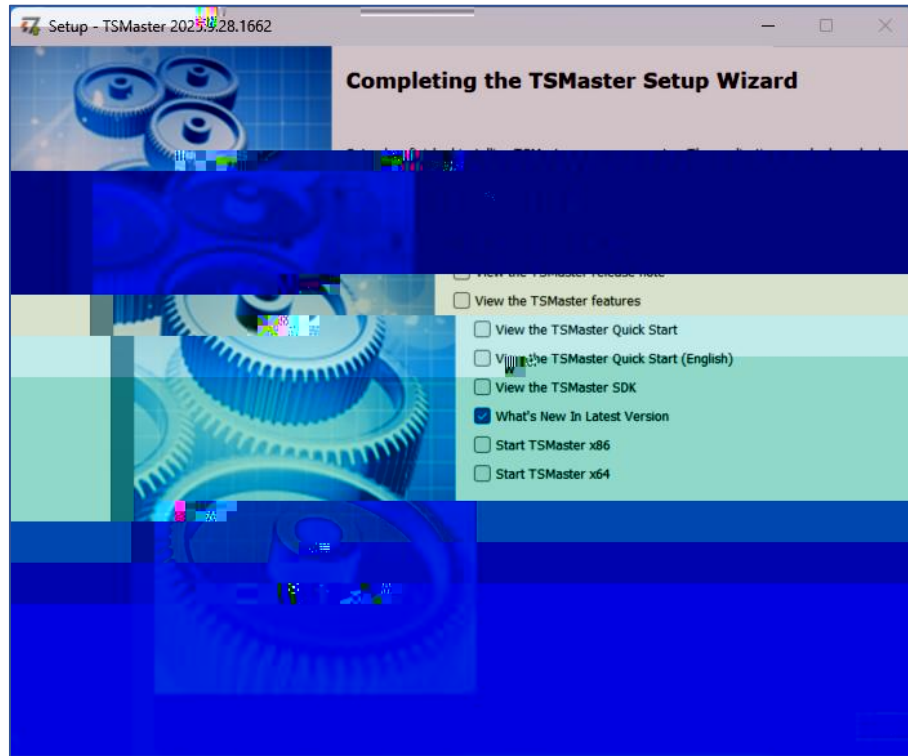


Figure 3-8 TSMaster Installation



The TC1013HV primarily contains semiconductor components, which typically have a long service life. However, adverse environmental conditions may accelerate aging and degrade performance. To ensure proper operation, regular inspections are recommended to maintain the required environmental conditions.

It is recommended to inspect the device at least once every 6 to 12 months. In harsher environments, inspections should be performed more frequently. Refer to the table below for inspection criteria and recommended actions. If issues persist, please contact Shanghai TOSUN Technology Ltd.



Power Supply	Check voltage fluctuation at power input	USB port:+5V DC	Use a power meter or voltmeter at the input; ensure voltage fluctuation is within range
Ambient Conditions	Check ambient temperature (including internal temperature within enclosures)	-40 ~ +40	Use a thermometer to ensure temperature is within specified range
	Check the ambient humidity (including internal humidity within enclosures)	10% ~ 90% RH	Use a hygrometer to ensure humidity is within specified range



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Contamination	Check for accumulation of dust, powder, salt, and metal debris	None	Clean the device and prevent future contamination
	Check for exposure to water, oil, or chemicals	None	Clean and shield if necessary
Hazardous Gases	Check for corrosive or flammable gases	None	Use sensors or odor detection to verify

Protesters

Software

• Embedded code generation and application data

• Embedded code generation and application data

• Embedded code generation and application data

• Embedded code generation and application data

• Embedded code generation and application data

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Hardware

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Solutions

• Embedded code generation and application data

• Embedded code generation and application data

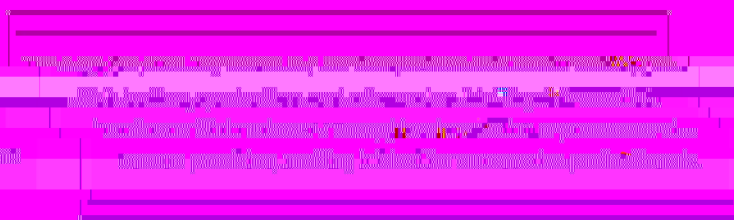
• Embedded code generation and application data

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Solutions

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