

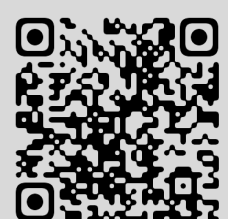
EC5001

Ethernet Converter 10Base-T1S

Product Manual v1.1



manual



products

www.takemind.com

10Base-T1S Ethernet Converter Introduction

The EC5001 Ethernet Converter converts Ethernet based on the 10Base-T1S protocol into a USB Ethernet interface. It supports configuration of basic parameters such as node count and node ID. It enables communication between conventional computers and devices based on 10Base-T1S.



Key Features

- Communication and power supply via USB interface
- Active LED displays real-time data transmission status
- Supports DIP switch configuration of terminal resistors
- Zero data modification, lossless transparent transmission
- Supports Windows 10, Windows 11, and Linux 5.15 / 6.1

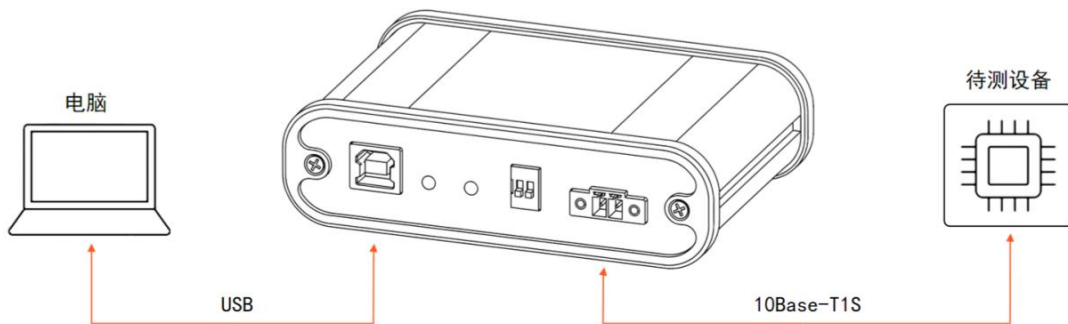
Product Information

Parameter	Description
Input Voltage:	4.5~5.5VDC
Power Consumption:	0.75W (Max.)
Dimensions:	69x104x30mm
Net Weight:	165g
Operating Temperature:	-40°C~+80°C
Protection Rating:	IP20

Package Contents

- 1 × 10Base-T1S Ethernet Converter
- 1 × 1 m USB Type-B cable

Standard Use Case



Basic parameter configuration of the EC5001 10Base-T1S must be completed on a computer. For details, refer to the Communication

Parameter Configuration section. In addition, the bus terminal resistors can be controlled via DIP switches. For details, refer to the DIP Switch section.

DIP Switch

DIP Switch	State	Description
1	ON (up)	TRXN terminal resistor 50Ω
	OFF (down)	TRXN terminal resistor 1.5kΩ
2	ON (up)	TRXP terminal resistor 50Ω
	OFF (down)	TRXP terminal resistor 1.5kΩ

Note:

1、The terminal resistors of the 10Base-T1S bus must be configured to the same value.

LED Information

Indicator	State	Color	Description
ON	Steady on	Red	Power connected
	Off	—	Power not connected
Act	Blinking	Red	Device is receiving or transmitting data
	Off	—	Device is idle

Communication Parameter Configuration

For configuration of device communication parameters such as Physical Layer Collision Avoidance (PLCA) mode and device ID, refer to the Linux driver

user guide when using Linux.

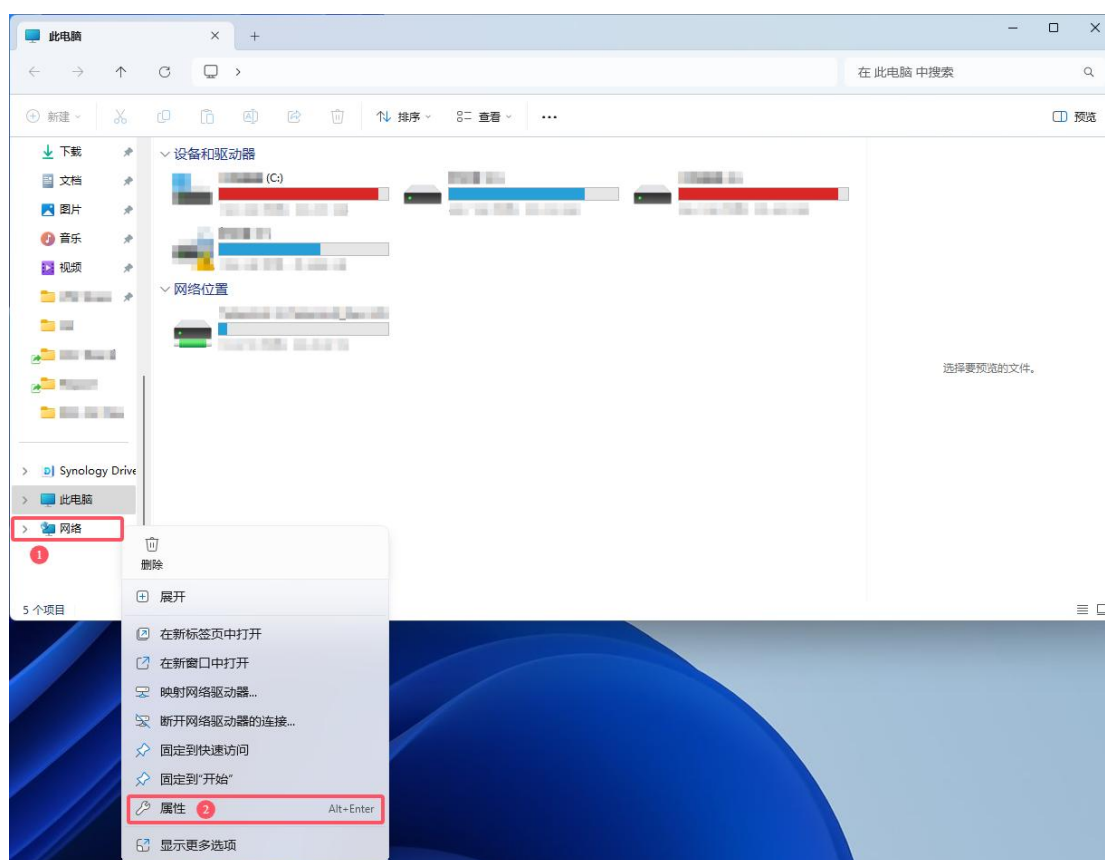
When using Windows, follow the steps below:

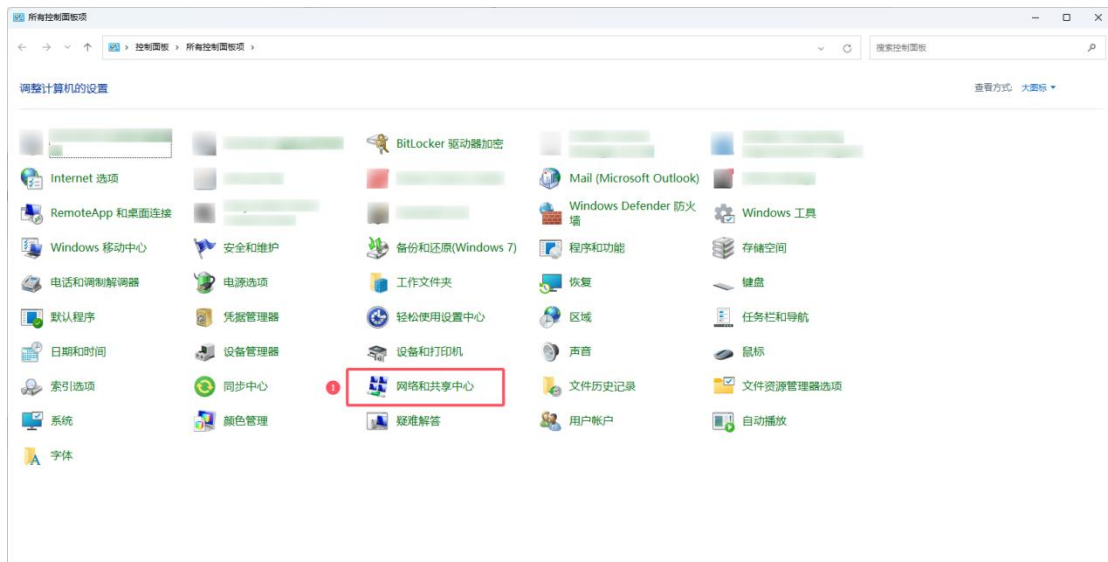
1、 Install the device driver. Download link:

<https://takemind.com/ec5001/>

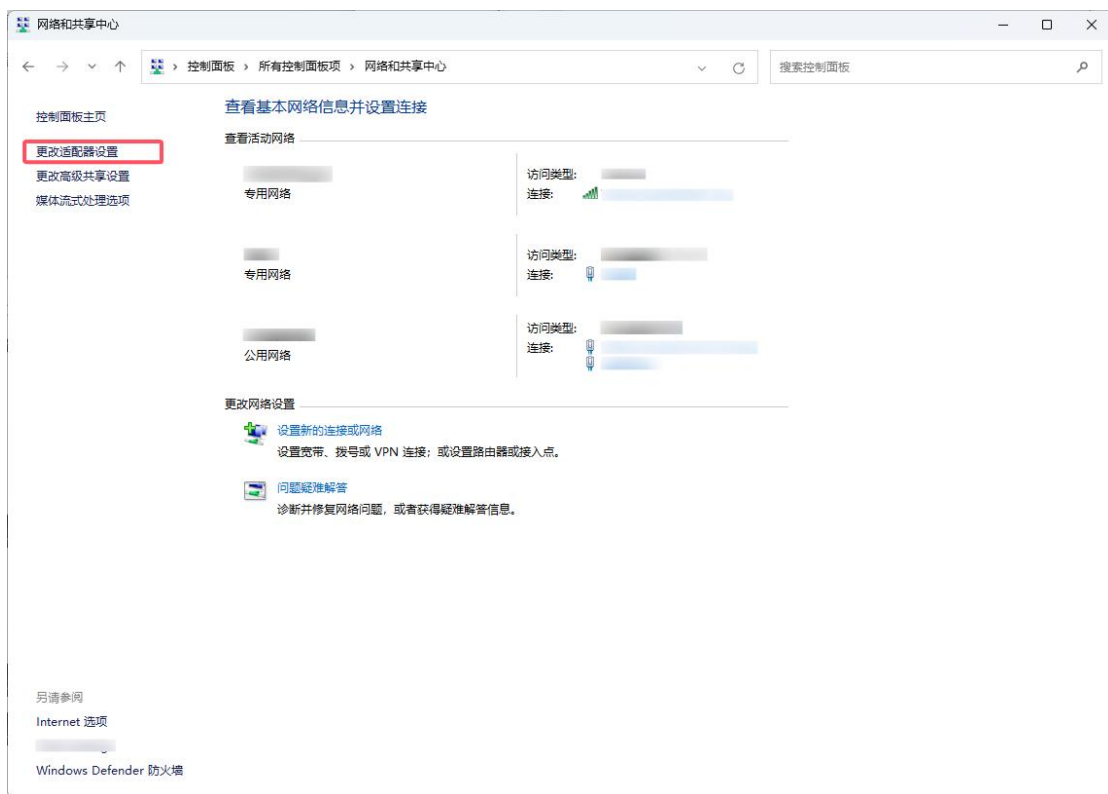
2、 Connect the device to the computer via USB;

3、 Open Network and Sharing Center: Right-click Network in the left navigation pane of File Explorer and select Properties, or open Control Panel and click Network and Sharing Center;

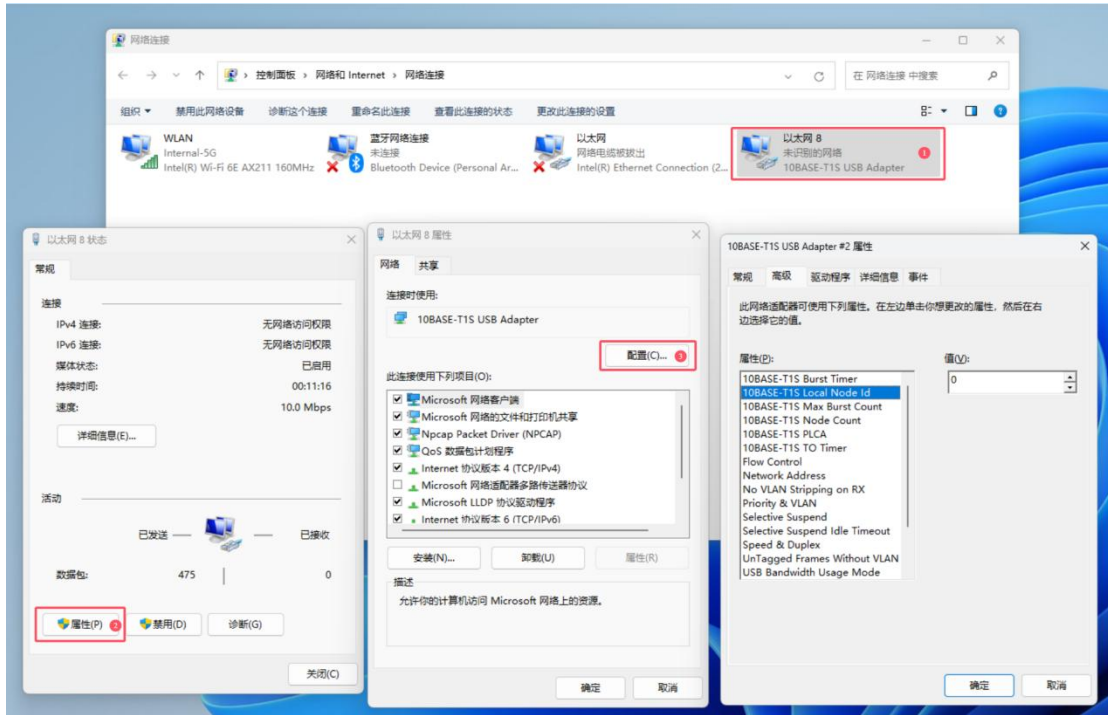




4、Open Network Connections: Click Change adapter settings on the left side of Network and Sharing Center;



5、 Double-click the corresponding network adapter. In the window that opens, click Properties, then click Configure. In the pop-up window, select the Advanced tab to configure parameters such as node count and device ID;



Application Scenarios



Scenario 1: Laboratory Controller Communication and Debugging

This figure illustrates a typical connection between a vehicle controller

and a host computer in a laboratory environment. The EC series device serves as a communication interface node, establishing a stable data exchange link between the controller and the computer via cables. Engineers can monitor, debug, and verify controller functions on the computer side to ensure the reliability and consistency of the communication process.



Scenario 2: In-Vehicle Debugging Environment

This scenario demonstrates an in-vehicle debugging application. The EC series communication interface device connects to the vehicle electronic control unit via the automotive Ethernet port, enabling high-speed communication with external test systems. The device is used directly in a real vehicle to handle Ethernet data access and transmission, supporting engineers in performing network debugging, data acquisition, and system validation under actual vehicle conditions. This configuration is suitable for engineering applications such as R&D road testing, vehicle control strategy

verification, and real-time diagnostics of in-vehicle networks.



Scenario 3: Industrial Production Environment

In an industrial production environment, the EC series automotive Ethernet converters are installed in control cabinets as communication bridging nodes for electronic controller testing. The devices provide stable and reliable data conversion between automotive Ethernet and standard Ethernet. This configuration is widely used in end-of-line (EOL) testing processes for controllers.

Warranty Information

Please use this product under the conditions described in this manual. The warranty period is limited to one year. Do not disassemble the enclosure; otherwise, the warranty will be void.

Revision History

Version	Section	Description	Date
1.0	All	Initial release	2022/09/09
1.1	Application Scenarios	Added application scenario descriptions	2025/10/21

Users can download the latest documentation for the EC5001 100/1000Base-T1 Ethernet Converter at:

<http://www.takemind.com/ec5001/>

Contact Us

Shanghai Dazei Intelligent Technology Co., Ltd

Building 5, No. 288 Yulv Road, Jiading District, Shanghai, China

- +86(0)21-5997-0838
- support@takemind.com
- www.takemind.com