

Hotline: 400-6988-571

Innovative cold chain technology

Quality of Health and Life

Zhejiang WASON Cold Chain Technology Co., Ltd.

www.wason.cn

Address: Hangzhou, Zhejiang

Postal code: 311121

Fax: 0571-81951056

Email: info@wason.cn

Tel: 0571-81951053/0571-81951054



WeChat Official Account: WASON



User Manual

ES Series Intelligent Management Host



Zhejiang WASON Cold Chain Technology Co., Ltd.

Special Explanation

This user manual is a companion guide for the ES series temperature and humidity monitoring system under the WASON brand, intended for use during the installation of hardware and accompanying data analysis software. Due to product upgrades or other reasons, if there are discrepancies between the images, mechanical dimensions, and actual products in the manual, please refer to the actual product.

The company reserves the right of final interpretation

Zhejiang WASON Cold Chain Technology Co., Ltd.

400-6988-571

China · Zhejiang · Hangzhou

www.wason.cn

Copyright.All rights reserved.

Zhejiang WASON Cold Chain Technology Co., Ltd.

Catalogue

Chapter 1: Product Selection.....	01
Chapter 2 Introduction to Product Functions.....	02
Chapter 3 Interface Description.....	04
1. Front panel interface.....	04
1) Alarm reset button.....	05
2) Working indicator light.....	05
2. Rear panel interfaces.....	06
Chapter 4 Wiring Diagram.....	09
Chapter 5: Dimensional Specification Drawing.....	09
Chapter 6: Instructions for Use.....	11
1. Version description.....	11
2. Host configuration.....	11
1) Host parameter configuration.....	11
2) Network configuration.....	12
3. Node configuration.....	15
1) Configure a single collector.....	15
2) Batch configuration (applicable to devices of the same type).....	15
3) Addition/deletion of nodes.....	16
Chapter 7 Common Exception Handling Methods.....	17
1. The management host is not working.....	17
2. Communication abnormality between the host and the collector.....	17
3.Communication failure between host and Cold Chain Cloud (V2/V3 versions).....	17

Chapter 1 Product Selection

Model	WS-ES100 V0	WS-ES100 V1	WS-ES100 V2	WS-ES100 V3	WS-ES100 V4
Collector ount	100				
Model	WS-ES200 V0	WS-ES200 V1	WS-ES200 V2	WS-ES200 V3	WS-ES200 V4
Collector count	200				
Brief introduction	Simple Version	standard edition	WIFI printing plate	GPRS printing plate	TCP/IP printing plate
Acquirer communicat ion	2-channel public POWERBUS + 2-channel RS485				
Maximum communicat ion distance	2000 meters (requires repeater)				
Communica tion line	1.5 square pure copper twisted pair cable				
Mode of connection	Star, Tree, Ring, Bus, or a mix of these				
SMS alert	/	•	•	•	•
Acoustic and light alarm	•	•	•	•	•
Power outage alarm	/	•	•	•	•
Supply electricity	AC220V+DC24V dual power supply				
Data storage	SD Card (8GB)	SD Card (8GB)	SD Card (8GB)	SD Card (8GB)	SD Card (8GB)

Upload data	to PC	to PC	WIFI to the cloud	GPRS to the cloud	Ethernet to the Cloud
Outline dimension	197x197x72.5				

Note: 1. "/" indicates the feature is not available, while "(" indicates it is available.

2.2 RS485 communication with host serial numbers composed of "ES followed by 8 digits"; the "E followed by 8 digits" format lacks this functionality.

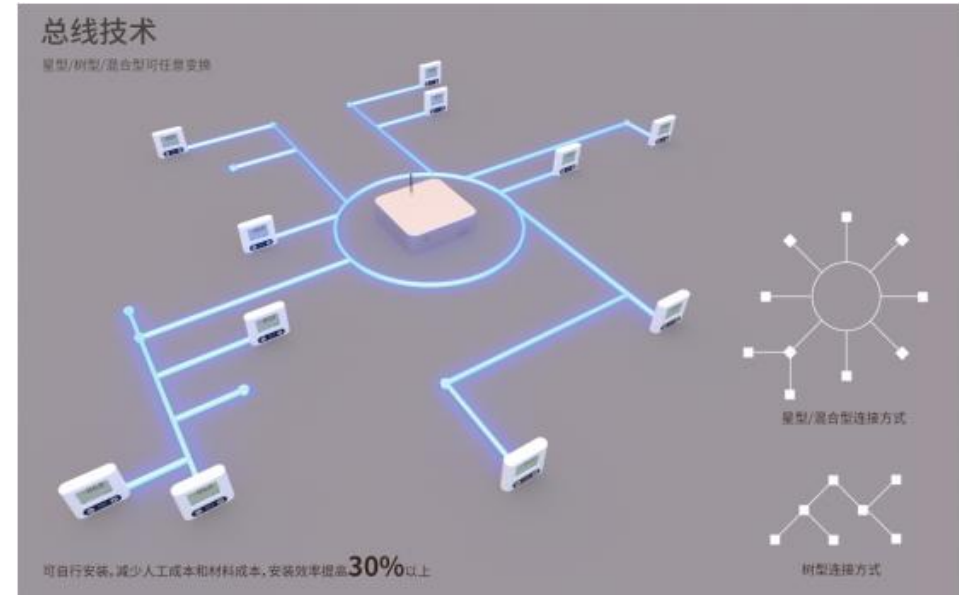
3. Repeaters are optional and can be purchased separately as needed.

Chapter 2 Product Function Introduction

- Cutting-edge technology:** Powered by advanced POWERBUS bus technology, this two-wire system delivers both power and communication with non-polarized wiring. It features error-proofing functionality, strong anti-interference capability, and adaptability to grid voltage fluctuations. The system supports mixed power supply operation and flexible wiring configurations including star, tree, ring, and bus types, fully compliant with GSP standards.
- Compatible with legacy systems:** Features two independent RS485 communication ports, each supporting up to 32 devices, and is backward-compatible with older RS485 communication equipment.
- Data acquisition channels:** 2 shared POWERBUS channels and 2 dedicated RS485 channels, supporting single/temperature dual/temperature sensors with humidity detection.
- Sensor capacity:** The management host can simultaneously collect data from up to 200 sensors or devices, with channel transmission distance reaching 2 km. A 1.5 mm² pure copper twisted pair cable is recommended. Note: When the number of collectors exceeds 100 or the distance exceeds 500 m, a repeater must be installed.
- Storage:** The device uses a high-capacity SD card as the local storage medium, with an 8GB standard capacity and compatibility with 2G-32G cards. Data is

stored in CSV format.

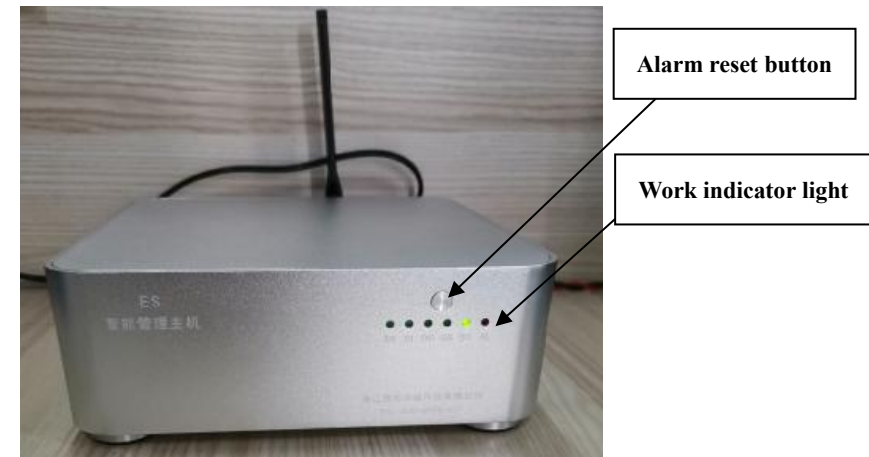
- f. Real-time communication: The host is configured with one reserved RS232 interface for real-time communication with the host computer, using the RS485 protocol. Another USB interface is reserved for real-time communication with the host computer, and is used for parameter configuration in GPRS and WIFI versions. Additionally, a simple historical output query command is provided for SD card data recording.
- g. GPRS connectivity: The GPRS version utilizes 4G communication technology, compatible with China Mobile and China Unicom SIM cards. Data is uploaded to a cloud platform for storage, enabling more convenient statistical analysis.
- h. WIFI Communication: The WIFI version utilizes wireless communication, eliminating data usage, with data uploaded to the cloud platform for easier statistical analysis. The TCP/IP version connects directly to Ethernet serial servers via RS232 interface, also eliminating data usage, and uploads data to the cloud platform through wired networks for stable and reliable performance.
- i. Alarm Output: The management host supports SMS alerts for sensor alarm statuses, allowing customization of location names and multiple recipients (default: 10 phone numbers). It features a built-in buzzer and a dry contact relay output for external alarms, with an output voltage of DC24V.
- j. Power supply for the management host: 1 external AC 220V input and 1 UPS backup DC 24V/5A power interface with automatic switching. When the backup power activates, the management host will send an alarm SMS notification, requiring the SIM card to have SMS enabled.
- k. Environmental requirements: Operating temperature: -20°C to 70°C; Humidity: 0% to 95% RH (non-condensing)



graph 1

Chapter 3: Interface Description

1. Front panel interface



graph 2

1) Alarm reset button

When the host system triggers an alarm, the external alarm will sound. Pressing this button cancels the alarm, and it will not sound again for 15 minutes.

2) Work indicator light

					
SR	DI	DO	GS	ST	AL
System Operation	Data Input	Data Output	4G Module	Management Settings	Alarm Status

SR (green): Host status indicator light

The indicator light stays on normally when the host is recording, and it emits a 'beep' sound when an SD card is inserted.

When an abnormality occurs on the host, the indicator light will flash. The main abnormalities are as follows:

4G module malfunction: 2 flashes followed by 3 seconds of shutdown

WIFI module error: 3 flashes followed by 3 seconds of silence

SD card error: 4 flashes, 3S off

SPIFLASH exception: 5 flickers followed by 3 seconds of blackout

Collector scan error: 6 flickers followed by 3S blackout

DI (green): Data Input

The sensor inputs data, and the indicator light flashes during data communication.

DO (green): Data output

The host outputs data, and the indicator light flashes during data communication.

GS (Green): GPRS/GSM 4G network status indicator

INDICATOR STATUS	OPERATIVE MODE
Extinct	The GPRS module is damaged and not working.
Flash every 3 seconds	The module is working properly
Fast blink	Data transmission

ST (green): POWERBUS communication status indicator light

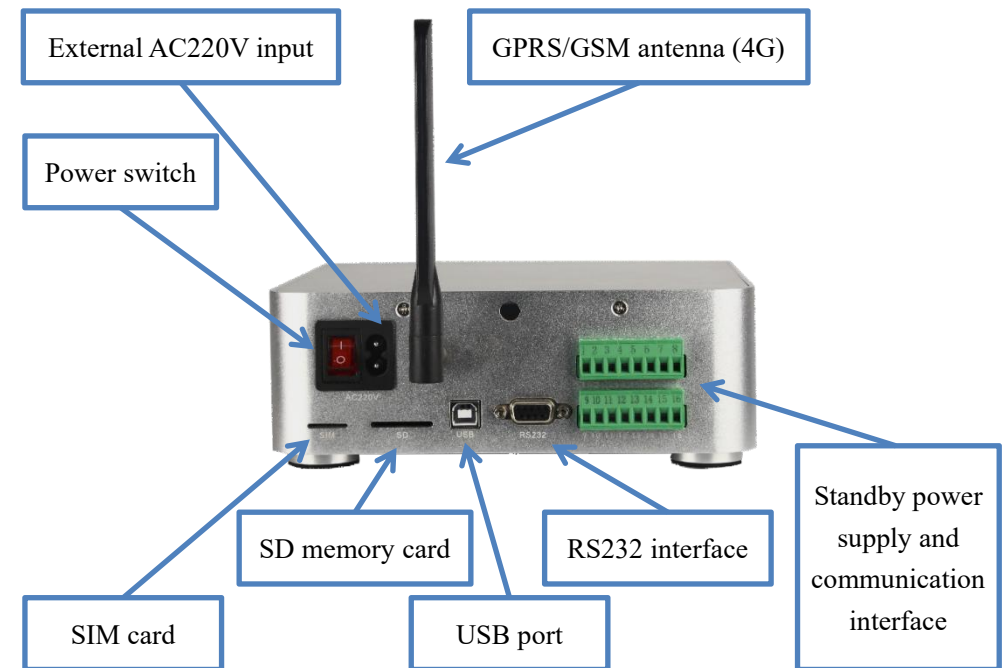
The indicator light stays on during normal operation, but flashes when an abnormal condition occurs.

AL (red): Alarm status indicator light

When the host detects an alarm from any sensor, the red alarm indicator flashes once per second.

2. backplane interface

Data acquisition channel and alarm relay output interface



graph 3

Power interface and switch

The management host operates on mains power when the switch is on, powered by an external AC220V input.

SIM joggle

Install the SIM card for SMS alerts and data transfer, compatible with China Mobile and China Unicom 4G networks.

SD card slot

The device supports local data storage via SD card, with 8GB standard memory. A 'beep' sound is emitted when an SD card is inserted.

Note: The management host will not operate if the SD card is not inserted.

PC communication interface

RS232 interface: Communication with PC host software PCC

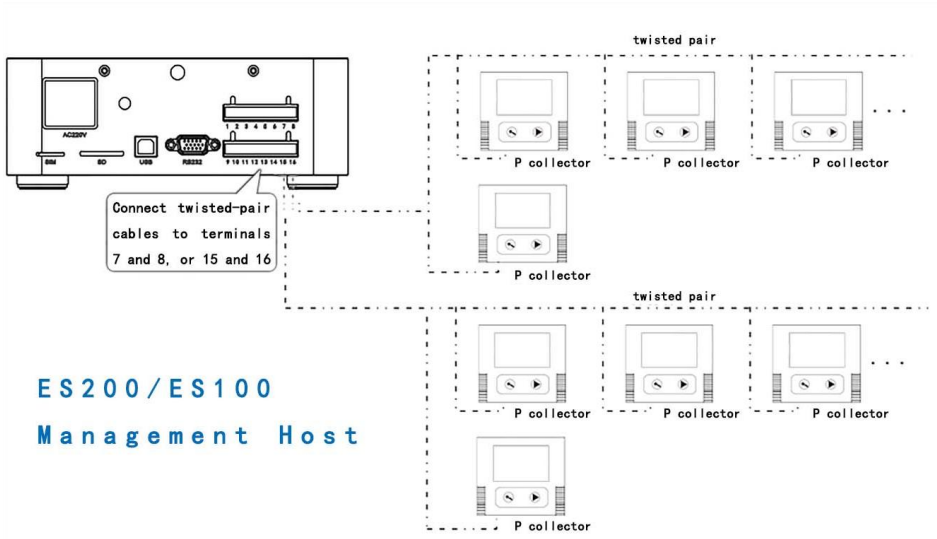
USB interface: Communicates with PC configuration tools to set host parameters including recording intervals, alarm intervals, and SMS alarm numbers. It also allows configuration of collector over-limit alarms and network communication settings (GPRS, WIFI, and TCP/IP versions).

Backup power supply and communication interface (8-pin plug-and-play terminal):

TERMINAL MARKING	INTERFACE SPECIFICATION
1	Alarm relay output negative
2	The alarm relay outputs positive (DC24V)
3	RS485+ (485A)

4	RS485- (485B)
5	UPS backup power (negative)
6	UPS backup power (positive) (DC24V)
7	+ -Power supply and data communication interface for the collector, non-polar
8	+ -Power supply and data communication interface for the collector, non-polar
TERMINAL MARKING	INTERFACE SPECIFICATION
9	debugging interface GND
10	debugging interface RX
11	RS485+ (485A)
12	RS485- (485B)
13	Power (Positive) (DC24V)
14	Power (Negative)
15	+ - Power supply and data communication interface for the collector,non-polar
16	+ - Power supply and data communication interface for the collector,non-polar

Chapter 4 Wiring Diagram



graph 4

Chapter 5 Dimensional Specifications Diagram

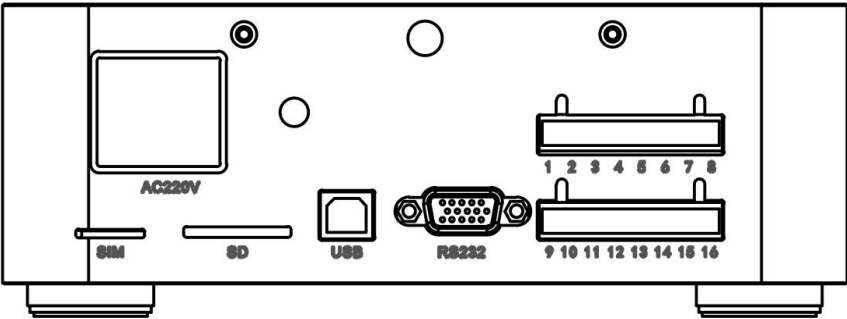
Dimension specifications (mm):

front panel :



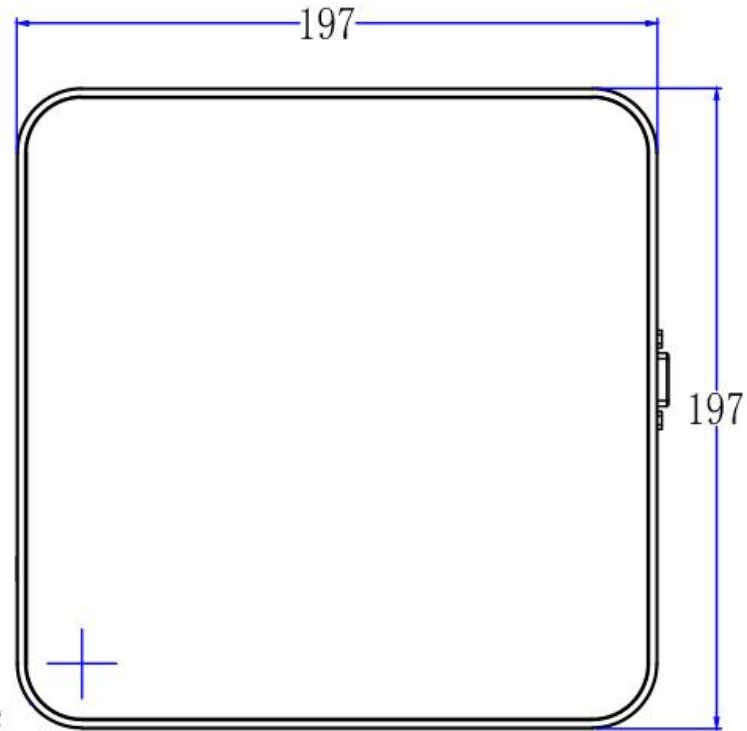
graph 5

back panel :



graph 6

vertical view :



graph 7

Chapter 6 Configuration Tool Instructions

For initial setup, configure the ES management host parameters. Configuration differs across five versions: Basic V0, Standard V1, WiFi V2, GPRS V3, and TCP/IP V4.

1. Imprint

Basic Version V0: Uploads local PCC files, with voice alarm but no SMS functionality on the host.

Standard Edition V1: Upload local PCC files, with SMS functionality and voice alarm capability on the host.

WiFi version V2: Cloud-based upload, with SMS notification and voice alarm on the host.

GPRS-enabled V3: Supports cloud uploads, SMS notifications on host, and voice alerts.

TCP/IP V4: Supports cloud upload, SMS alerts, and voice alarm functions on the host.

2. Host configuration

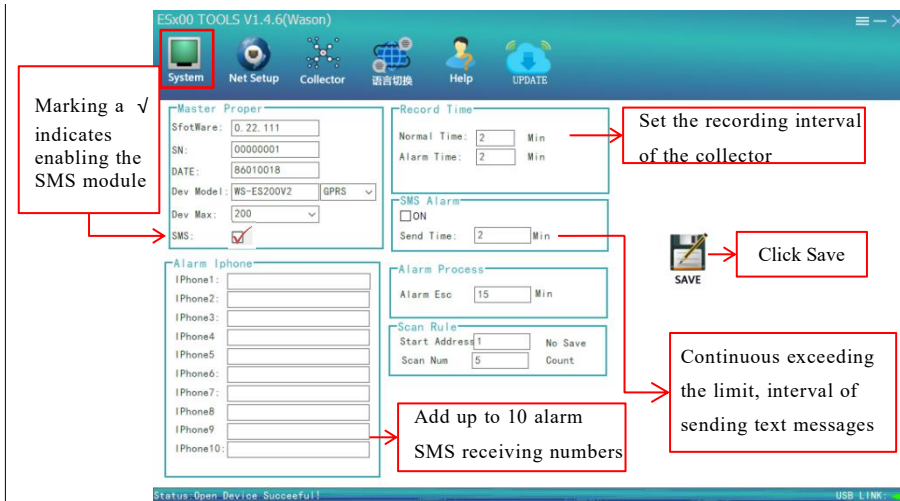
The V0 and V1 versions require no configuration. Simply connect to your computer, and all settings can be configured through PCC. For detailed instructions, refer to the PCC user manual.

The configurations of V2, V3, and V4 hosts are as follows:

Open the host configuration  `esx00_usr.exe` tool  `esx00_usr.exe`

1) Host parameter configuration

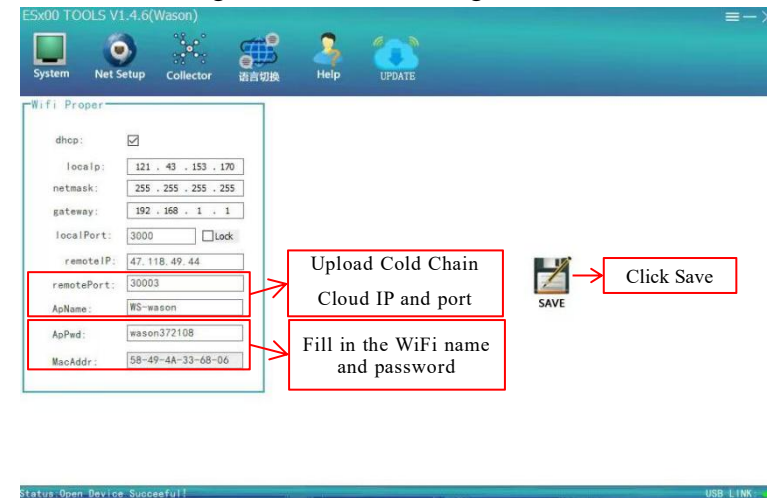
As shown in Figure 8:



graph 8

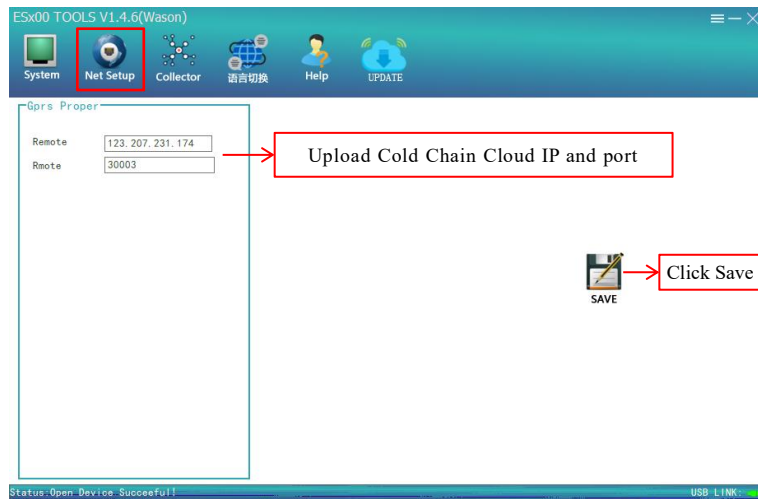
2) Network configuration

- The WiFi version configuration is shown in Figure 9:



graph 9

- The configuration for the GPRS version is shown in Figure 10.



graph 10

- TCP/IP version configuration:

A. Hardware connection



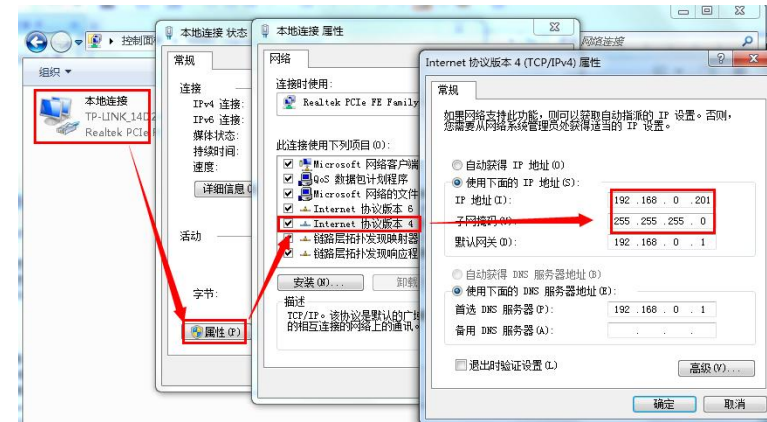
B. set up parameters

To prevent issues like server unavailability, ping failures, or web page access problems in the application, perform the following checks on the computer before use after hardware connection:

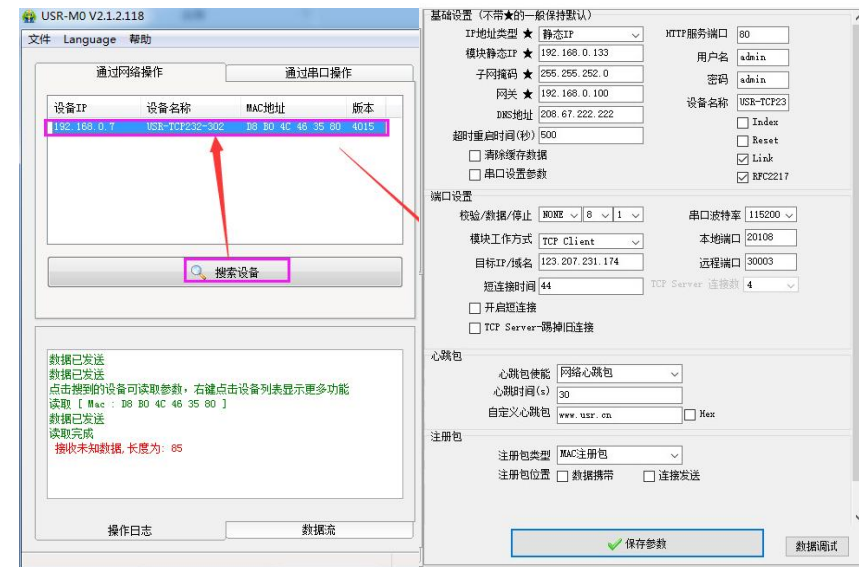
Check the following content.

- 1) Turn off your computer's firewall (usually found in Control Panel) and antivirus software;
- 2) Shut down all network cards unrelated to this test, keeping only one local connection active.

- 3) For direct server-to-PC connections, the computer must be assigned a static IP address within the same subnet as the 302 server.



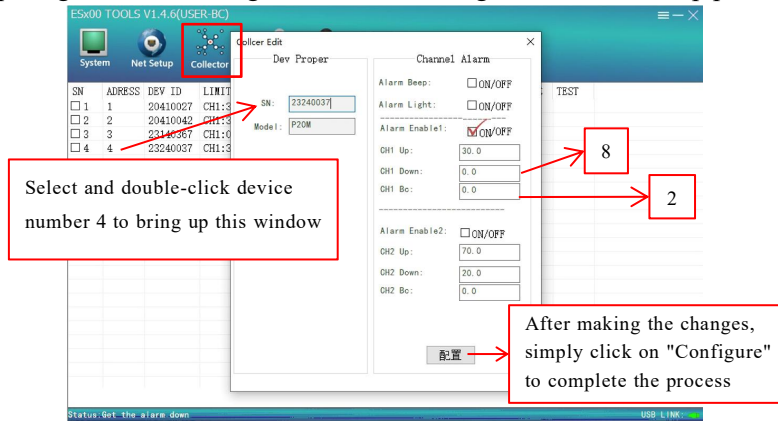
- C. The configuration page for SR-TCP232-302 is as follows (restart the module after web settings):



3. Node configuration

1) Configure a single collector

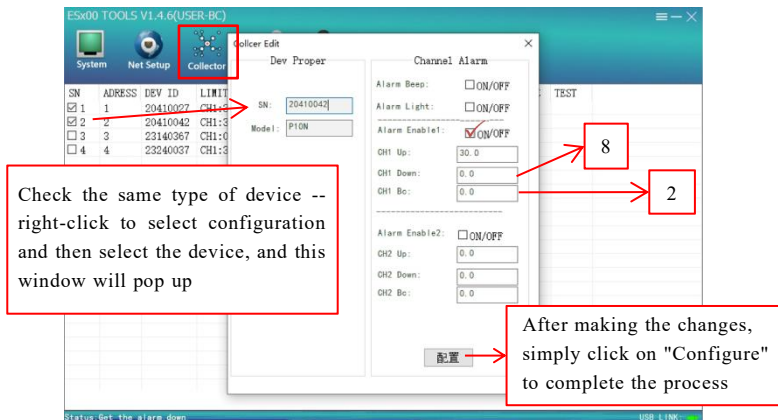
To configure alarm thresholds for a single collector and enable alerts, first select the node. Right-click the blank area to access existing devices. Then, double-click the device requiring threshold configuration. Refer to Figure 11 for the setup process.



graph 11

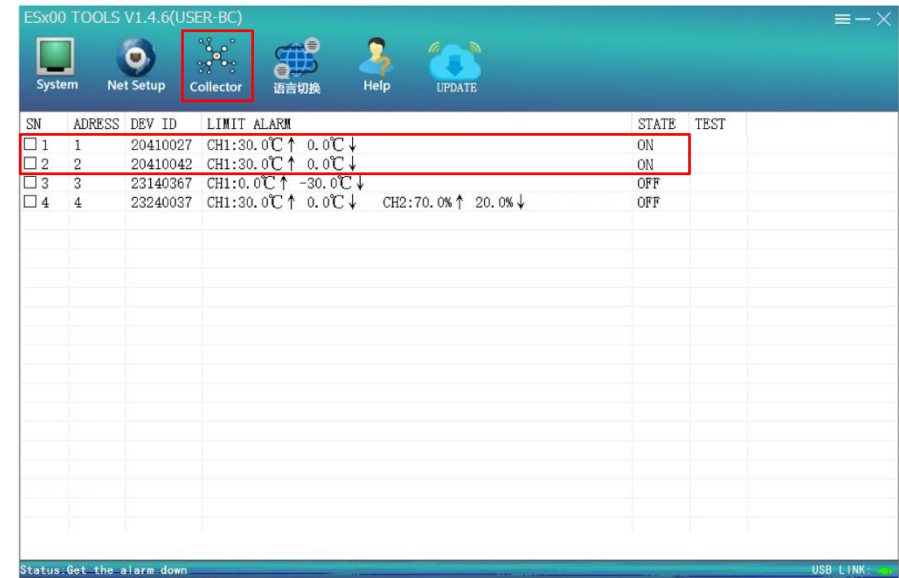
2) Batch configuration (for devices of the same type)

Configure alarm thresholds for multiple collectors and enable alerts, as shown in Figure 12.



graph 12

Configuration is complete. The result is shown in Figure 13:



graph 13

3) Add or delete nodes

When a node is added, it will be directly added to the host's network. The host will automatically scan and recognize it. If a node needs to be removed, simply delete it, and the host will automatically scan and remove it.

Note: The configuration takes effect only after powering off and restarting the host.

Chapter 10 Common Abnormal Handling Methods

1. The management host is not working

- Turn on the power switch
- An SD card must be inserted. The management host will not function without it.

2. Communication failure between host and collector

- Check if the collector displays normally.
- Check the connection line between the host and the collector.
- If there are more than 100 collectors or the distance exceeds 500 meters, a repeater must be installed.

3. Communication failure between host and cold chain system (V2/V3 versions)

- Ensure host communication is normal

V2 (WiFi version): Check if the WiFi antenna is functioning properly and verify that the SR indicator light remains on continuously.

V3 (GPRS version): Verify that the SIM card is properly installed and functioning, and check if the SR indicator light remains on continuously.

- Ensure the remote IP and port settings are correct

During network configuration, the remote IP is set to 123.207.231.174 and the remote port to 30003.

Note: After configuring the host, power off and then power on to restart.