SmartLink Manual

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Section 1

Introduction

1.1 Main Screen

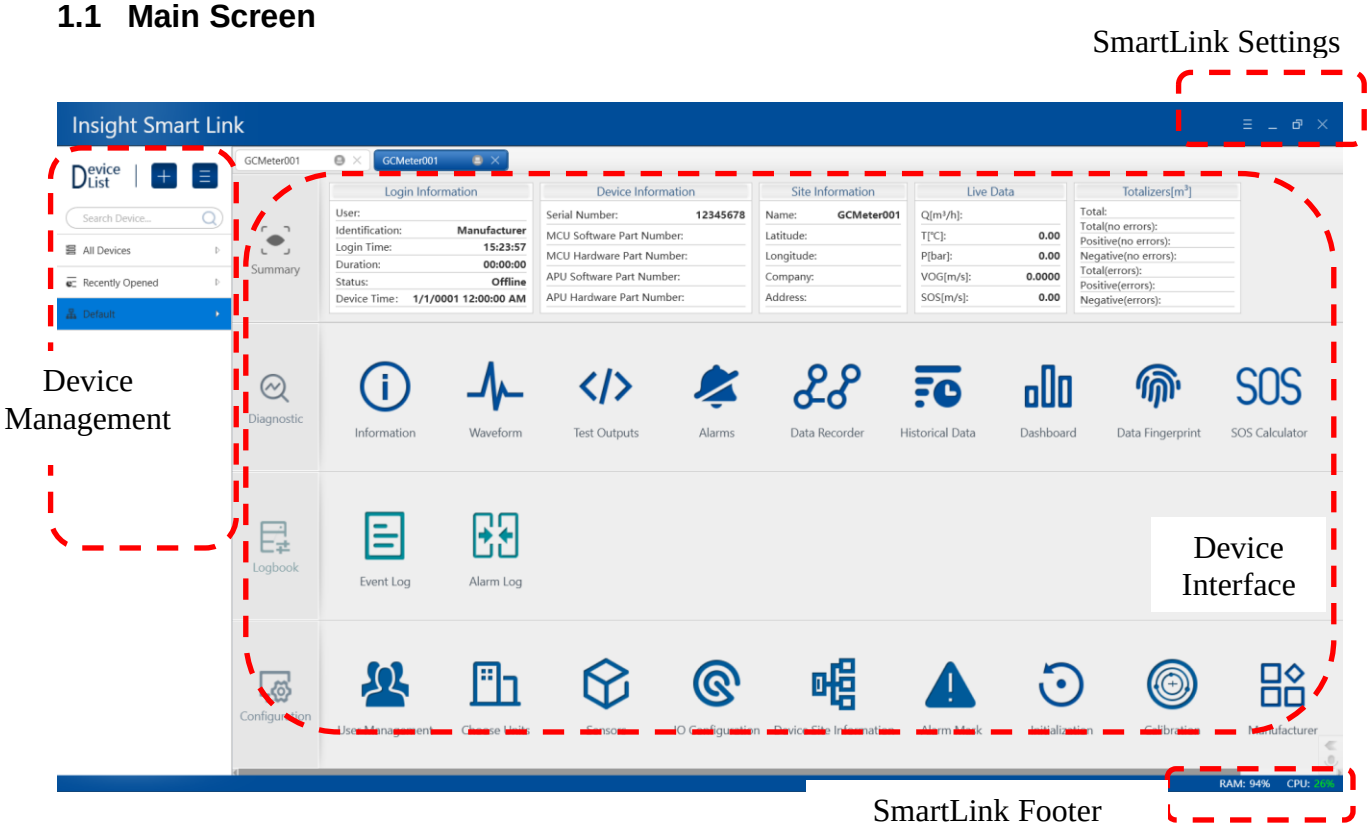


Figure 1 Software Main Screen

SmartLink is used to read data, configure parameters, diagnostics and read cloud data. The main screen is shown in

Figure 1.

To navigate the Main Screen – you can see that it has four functional blocks, menu, device management, workbench, and status bar.

1) SmartLink Settings: including:

   software information,

   help information,

   software configuration (i.e., units, network),

cloud manufacturer permissions, etc.

2) Device Management: used for device connection scanning, login, and recording.

3) Device Interface: Displayed after connecting to the equipment. It includes:

information display,

parameter configuration, logs,

and operation diagnostics

4) Footer: Computer memory and CPU usage.

1.2 User Management

To use the software, the user must log in a flow meter online with the correct username and password.

The iSonic allows for four user groups on the flow meter, and they are:

- *Casual*
- *Maintenance*
- *Administrator,* and
- *Manufacturer*

Each user group has its own permissions and default user whose username is same as the group name.

With the exception of the *Manufacturer*, the other three user categories can log in with a default password which is same as the username.

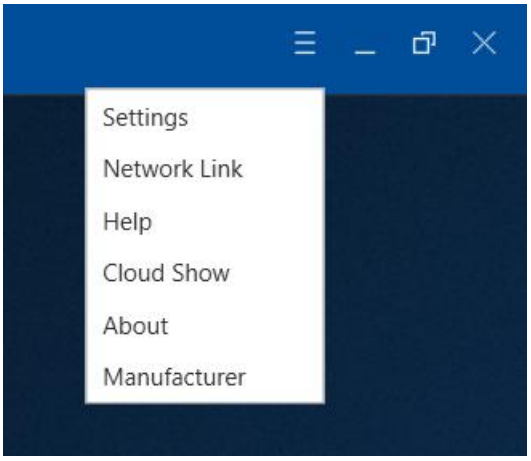
The *Manufacturer* can log in with a dynamic password. Section 5.2 will show have to get a dynamic password.

- Casual:
  - equipment information,
  - observing waveforms,
  - alarm and data recording,
  - review of historical data, real-time data,
  - SOS calculation,
  - event and alarm logs.
- Maintenance: Functions include those of the Casual users plus:
  - output testing,
  - fingerprint construction

- Administrator: Functions include those of the Maintenance users, plus:
    - account management,
    - setting units and the sensor I/O configuration,
    - equipment local information,
    - alarm masking,
    - calibration and maintenance of all user functions.
- Manufacturer: Functions include those of Administrators plus:
    - initialization,
    - equipment setup and all meter metrological settings.

Section 2

iSonic SmartLink Software Menus



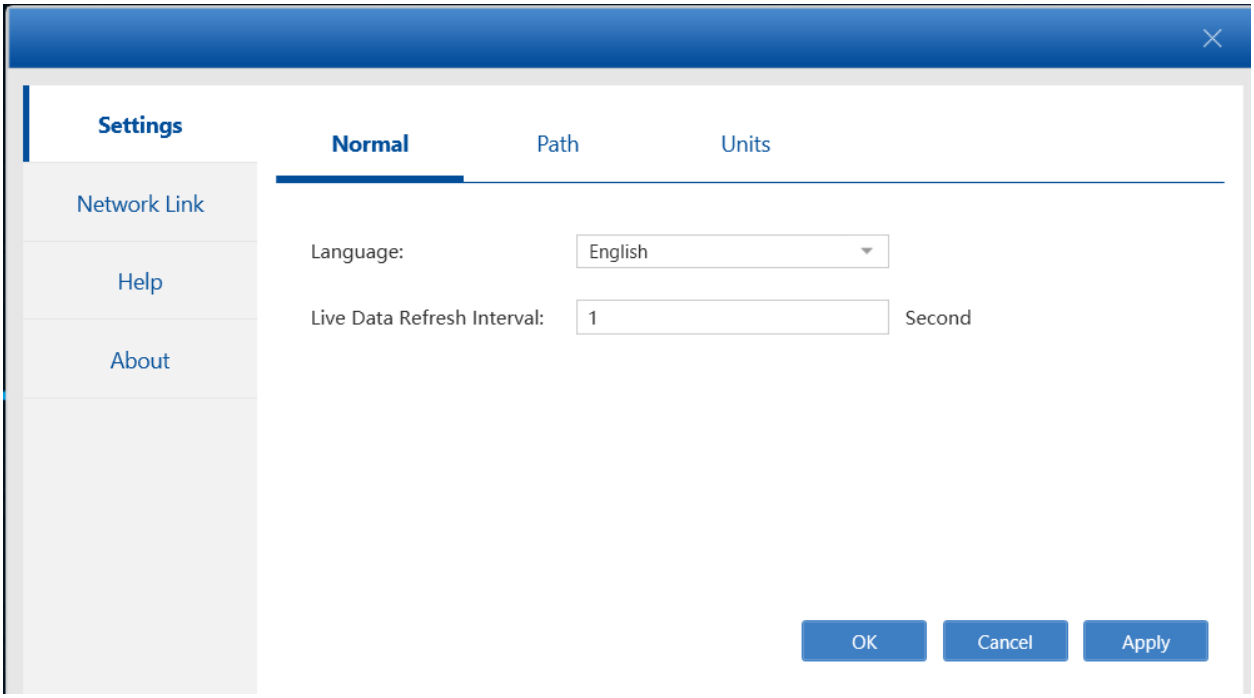
In the upper right corner  is the “hamburger” icon to enter the general settings section. This section consists of 7 parts:

- settings,
- network connections,
- help,
- cloud platform Kanban,
- about,
- manufacturer and dynamic password

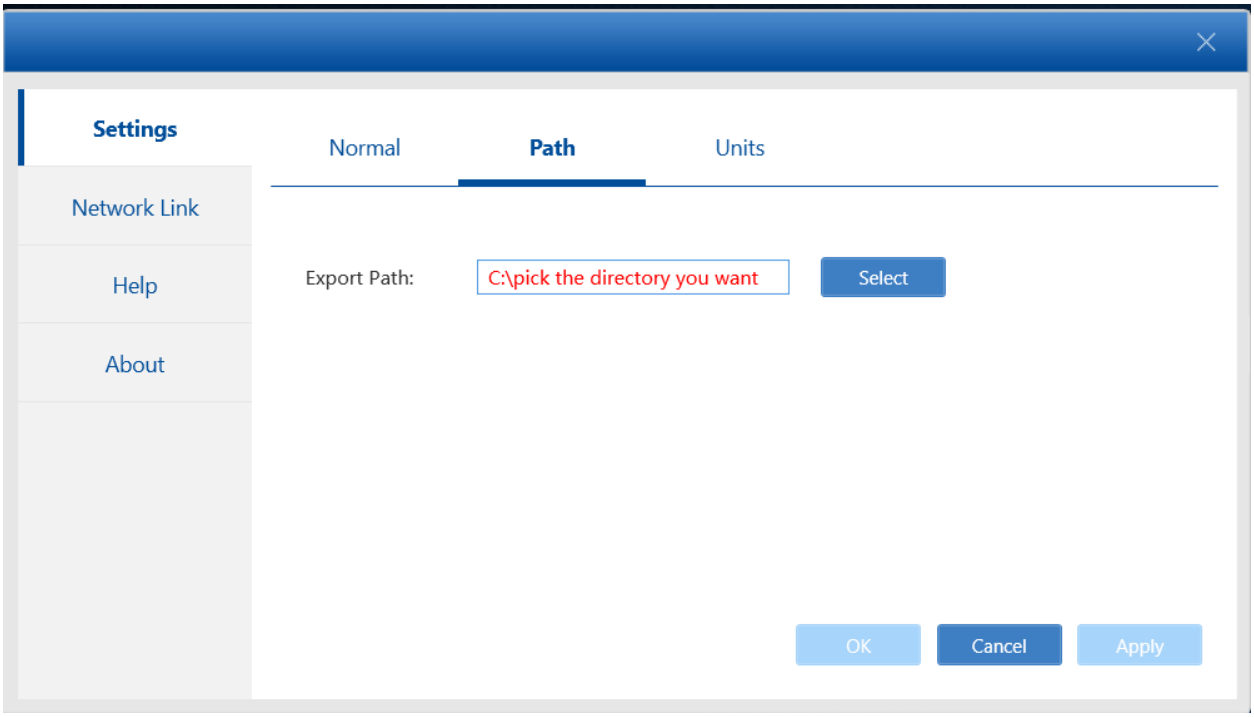
2.1 Settings

Click settings from the menu to enter this module, which includes three modules.

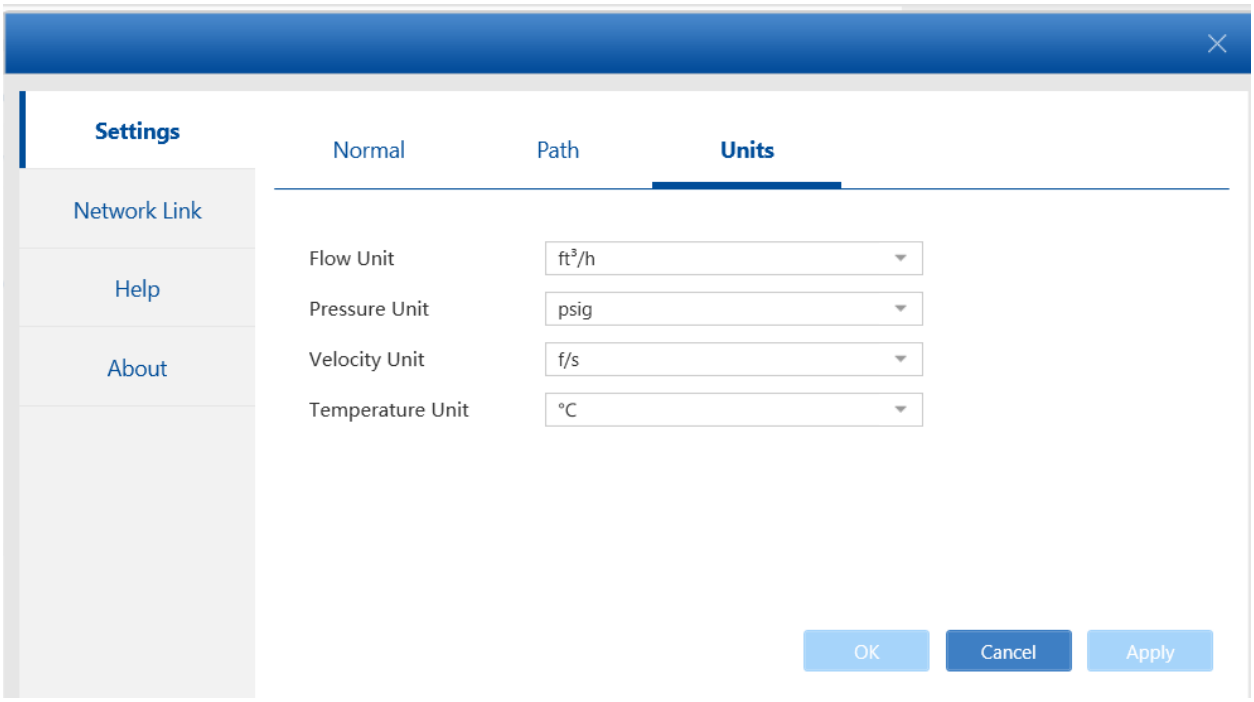
1) General: language setting and real-time data refresh time setting of the whole software.



2) Path: the default path for storing exported data. (Default is c:\SmartLink\Data)



3) Unit: This sets the SmartLink displayed units – not that of the device itself (SmartLink preferences do not affect the meter).

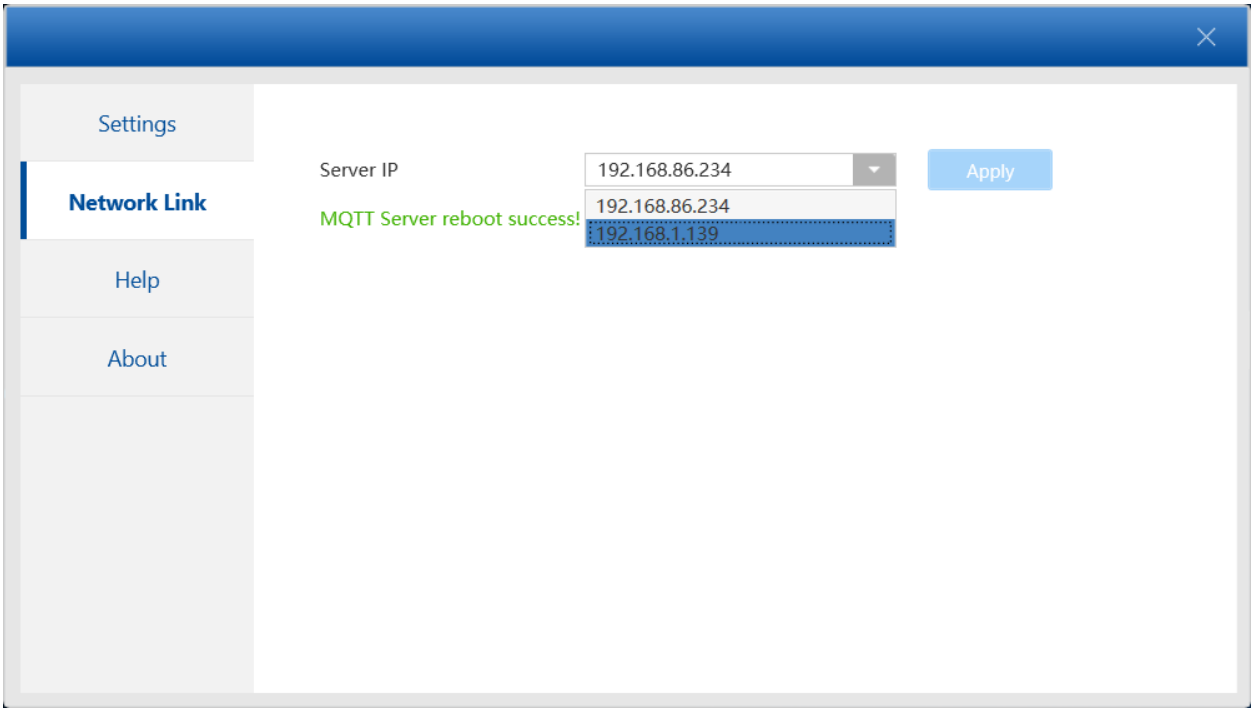


2.2 Network Connections

SmartLink connects via Ethernet or WiFi. It communicates with the MQTT protocol. However, it can only connect through one IP path at time. SmartLink defaults to the main link of the computer.

However, sometimes computers are connected to the internet as well as to an iSonic. With this screen – you can select the IP link that is connected to the device.

Note: The service IP must select an IP address in the same network segment as the device IP.



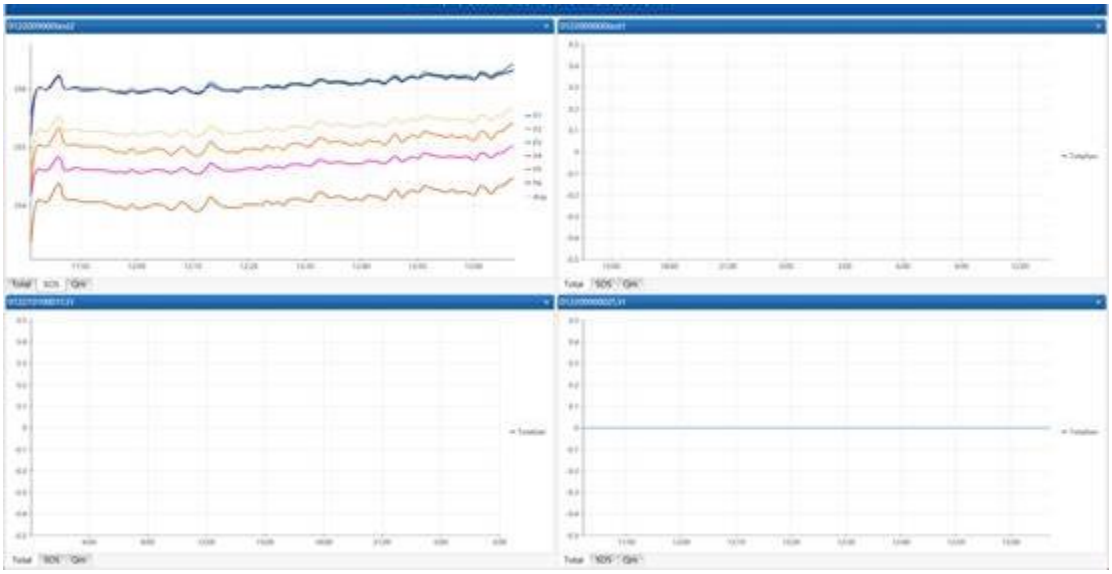
2.3 Help

When populated – this displays equipment and software help documents (PDFs).

2.4 About

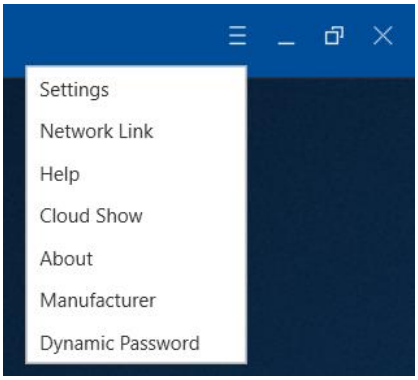
2.5 Cloud Platform – Kanban

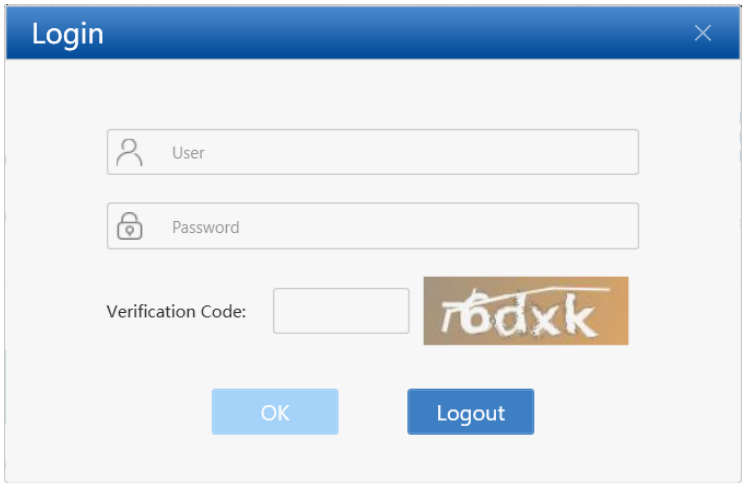
If configured – you can access the Cloud data with this setting.



2.6 Manufacturer

Click "Manufacturer" in the menu to pop up this window. This module is logged in by the cloud platform administrator. After logging into this module, you can view the dynamic password and initialize the cloud data.





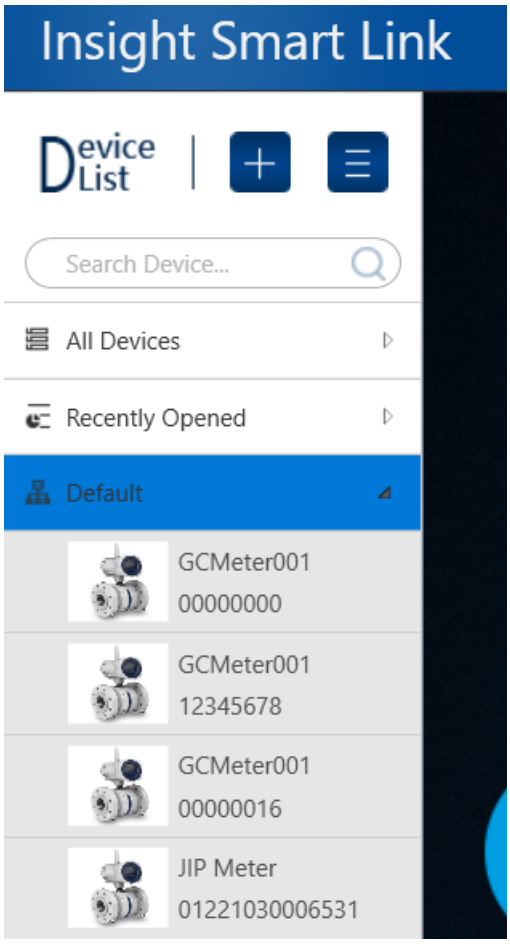
2.7 Dynamic Password

Click "dynamic password" in the menu to pop up this window. Through this window, you can obtain the dynamic password of the login device manufacturer's account for device connection login (see section 3.3 Device Connection - login for details).

This menu button can only be displayed after a Manufacturer logs in.

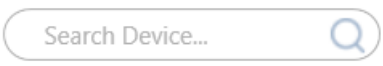
Section 3

Device Management



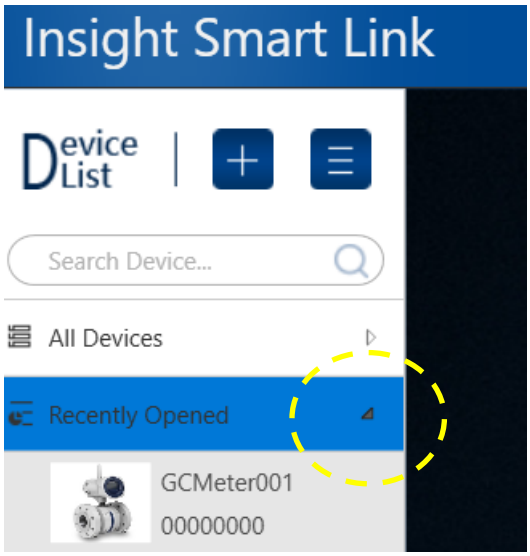
This module is the equipment display and operation module.

3.1 Function Introduction

1)  : Opens the device scanning window
2)  : switch the list mode, including "thin" and "detailed"
3)  : quick retrieval device
4) All devices: displays all devices
5) Recently opened: displays the last 10 recently opened devices

6) Double click the device item to open the login window

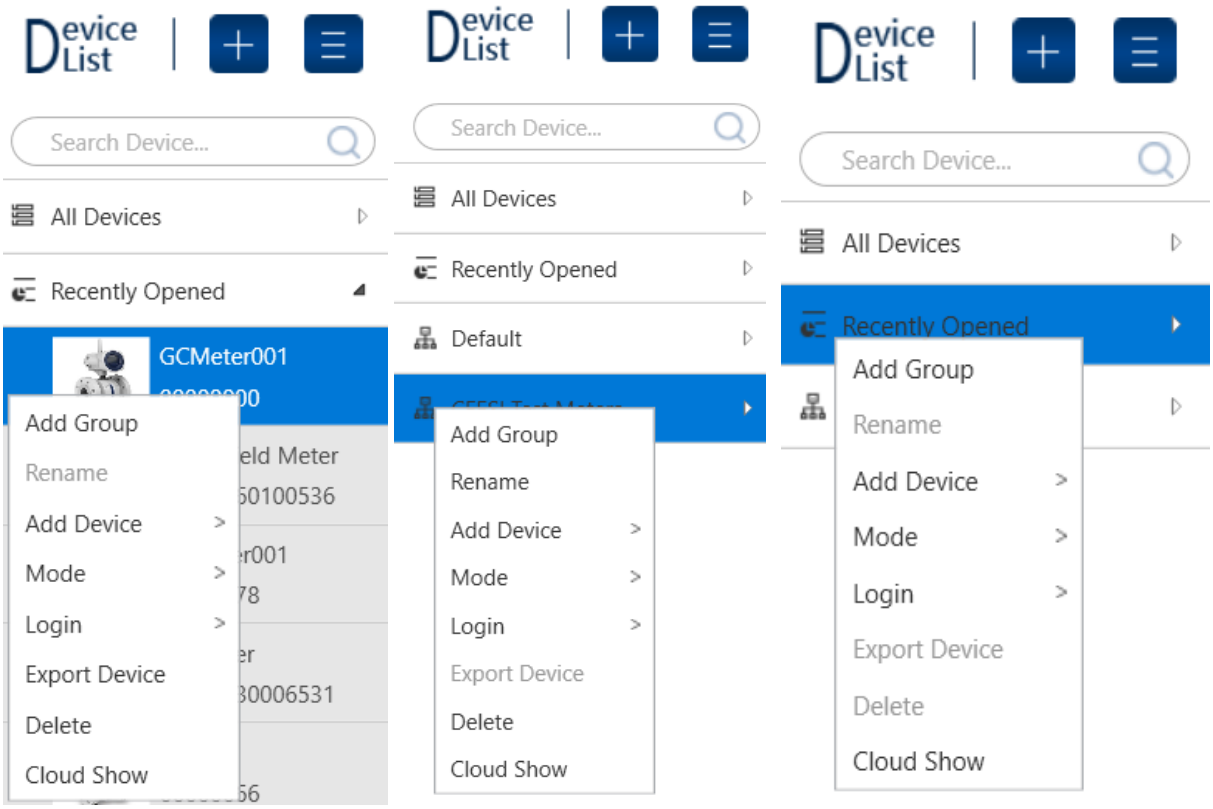
7) The list can be expanded/hidden by clicking here.



3.2 Right Click Menu

Right clicking – accesses menus (grayed out fields are inactive)

Menu 1 Menu 2 Menu 3



3.2.1 Menu Permissions

Gray indicates unavailable status.

1) Menu 1 is displayed when you right-click the device.

2) Menu 2 is displayed when you right-click a custom group.

3) Menu 3 is displayed when you right-click "all devices", "recently opened" and blank part.

3.2.2 Introduction to Menu Items

1) Add group: Adds a custom group

2) Rename: Renames a custom group.

3) Add device by one of three methods:

- scanning,
- offline and
- import

4) Mode: Switches the list mode/view. There are two modes: compact and detailed

5) Login: Two login methods, local login and offline login.

6) Export: Exports the device as an “SLD” file. The SLD file contains all locally stored device data, including data recording and fingerprints. This file is used for device import.

7) Delete: Delete a device or user-defined group.

8) Cloud data display: after clicking, the checked status will be displayed, and the device will be displayed in the Cloud platform Kanban (see 2.5 Section for details).

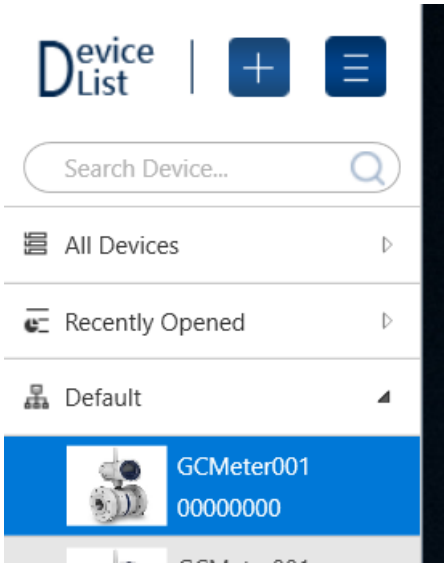
3.3 Device Connection

3.3.1 Operation steps

The computer is connected to the equipment through Ethernet, by either LAN (local area network) connection or direct connection.

Connection steps:
For direct connection, confirm that the computer and equipment are connected, and for LAN, confirm that the computer and equipment are connected to the LAN.

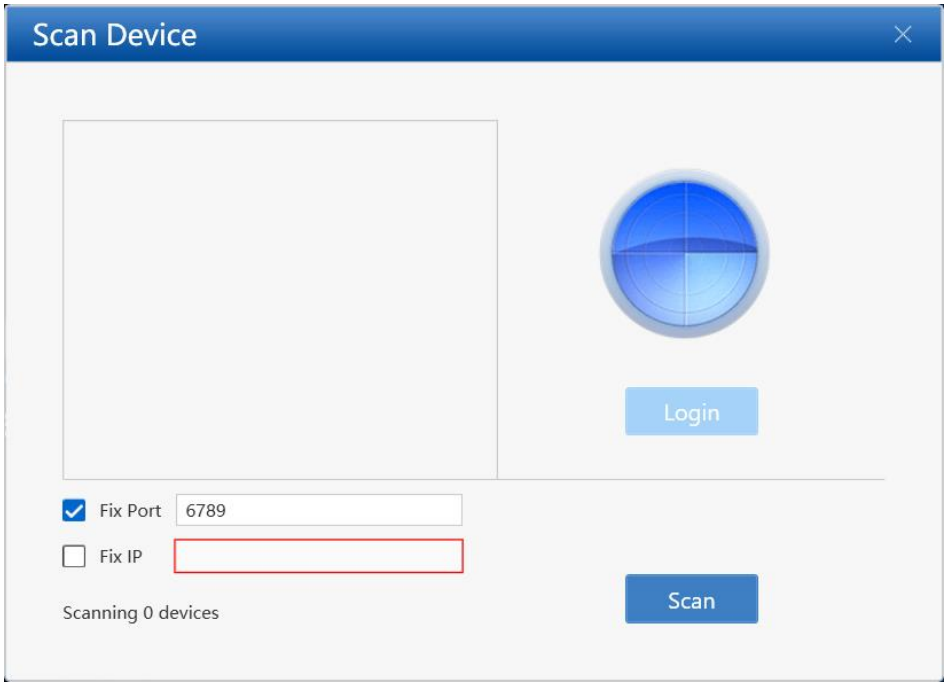
1) Click in the list  Button to pop up the scanning window.



2) If using a local area connection and the computer and equipment are not in the same network segment, you will need to:

- check "fixed IP" and fill in the IP address of the equipment
- then click the "scan" button

Otherwise - directly click the "scan" button.

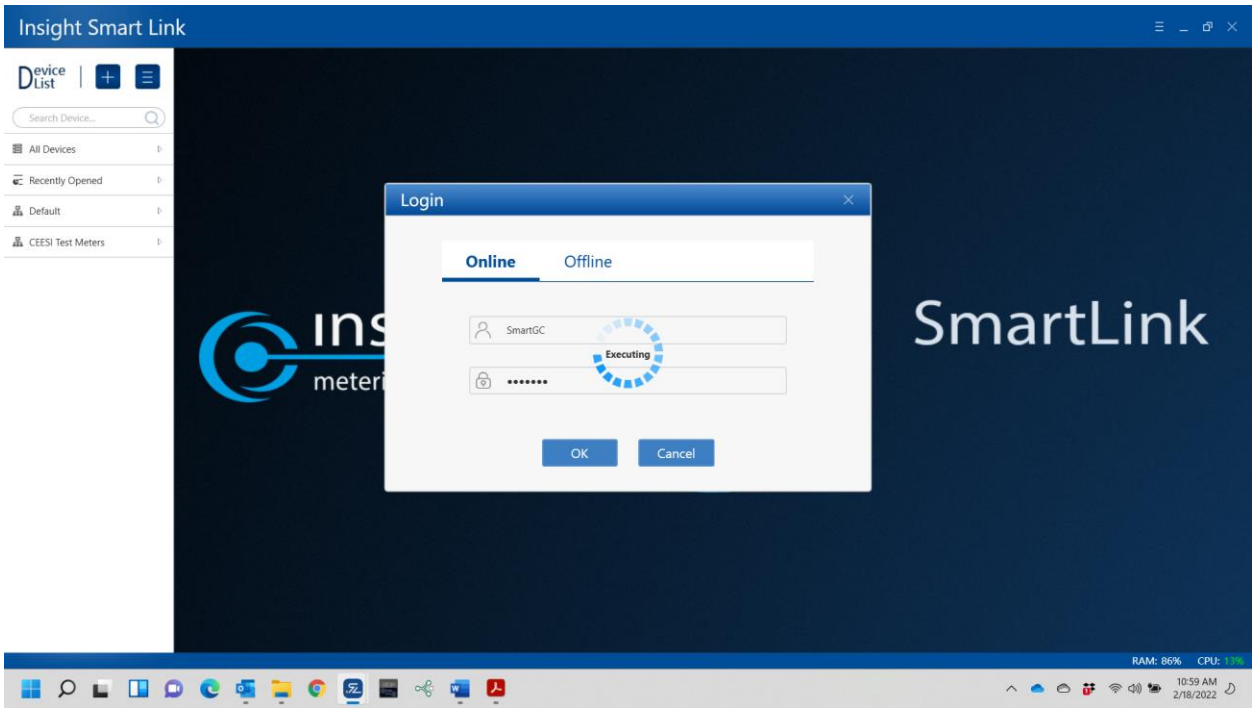


3) After scanning for the device (and finding it), click the "login" button to pop up the login window.

3) Enter the Username and password in the login window to log in to the device. Remember: Users are divided into four permissions: temporary, maintenance, administrator and manufacturer.

- The casual, maintenance and administrator log with a username and fixed password
- The manufacturer needs to log in through the account and dynamic password.

4) Log in successfully and the function area opens.



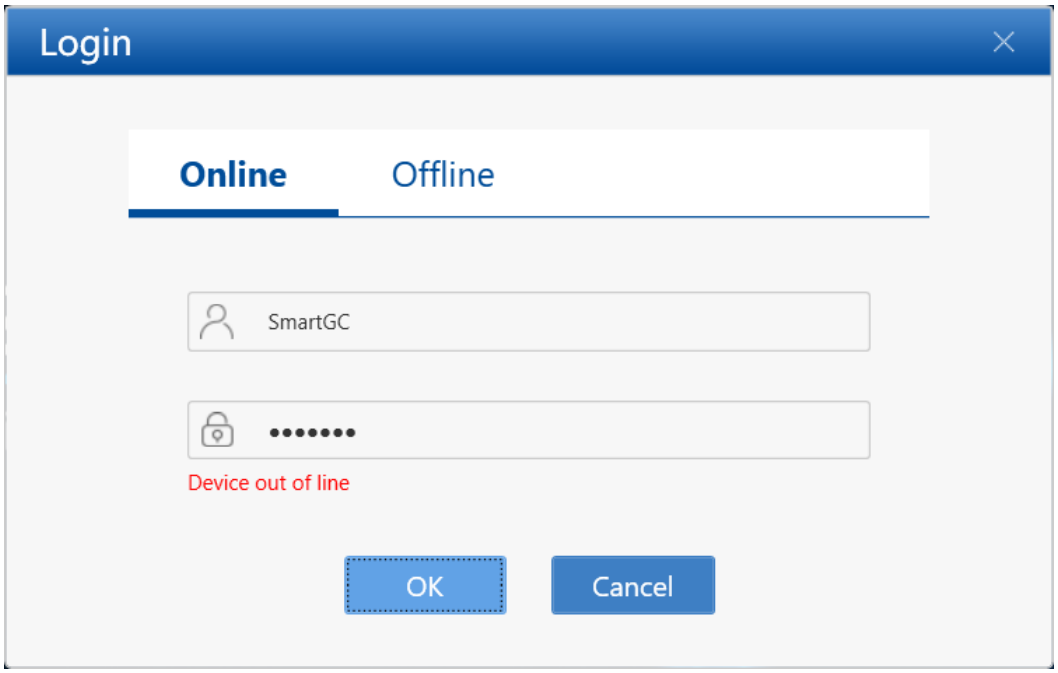
3.3.2 Exception Handling

Some exceptions will be encountered during scanning and login. The following are some common exceptions and handling methods:

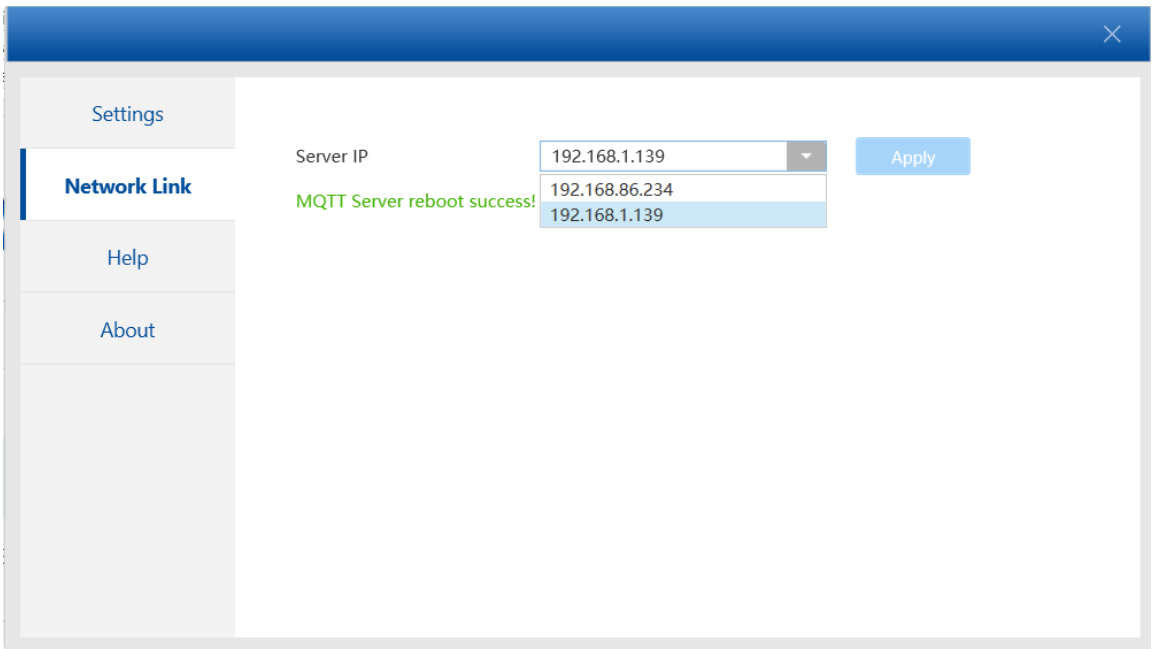
1) Device not scanned: Actions below

- Confirm whether the network is “Private” and without a Firewall.
- Confirm whether the device is being connected by another computer. Each device can communicate with only one computer at the same time.
- Confirm whether the device and the computer are in the same network segment. Different network segments need to enter the device IP before scanning.

2) After scanning the device, log in and prompt the device to be offline:

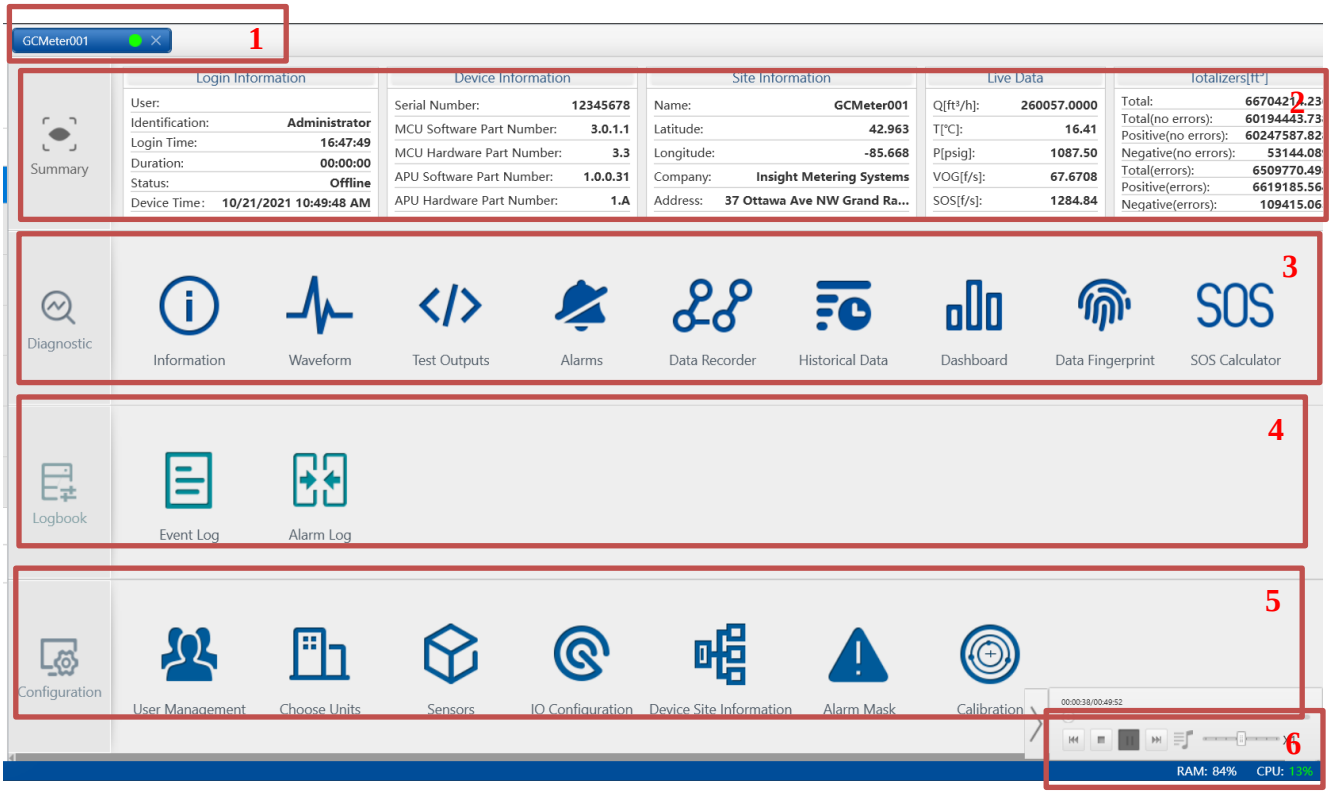


- Confirm whether the network is “Private” and without a Firewall.
- Check whether the computer has multiple network cards. If it is a computer with multiple network cards, click the upper right corner  Red box button, in "network connection - service IP", reconfigure the service IP, select the IP address of the same network segment as the device IP, and click apply to rescan the connection.



Section 4

Device Interface



The main function modules are displayed after connecting the device, including 6 modules:

1) Status Bar: used to select displaying between different equipment.
   - Green indicates normal connection,
   - Gray indicates offline,
   - Red indicates normal connection but there is an equipment alarm.

2) Equipment Summary: Display of basic equipment information and some real-time data.

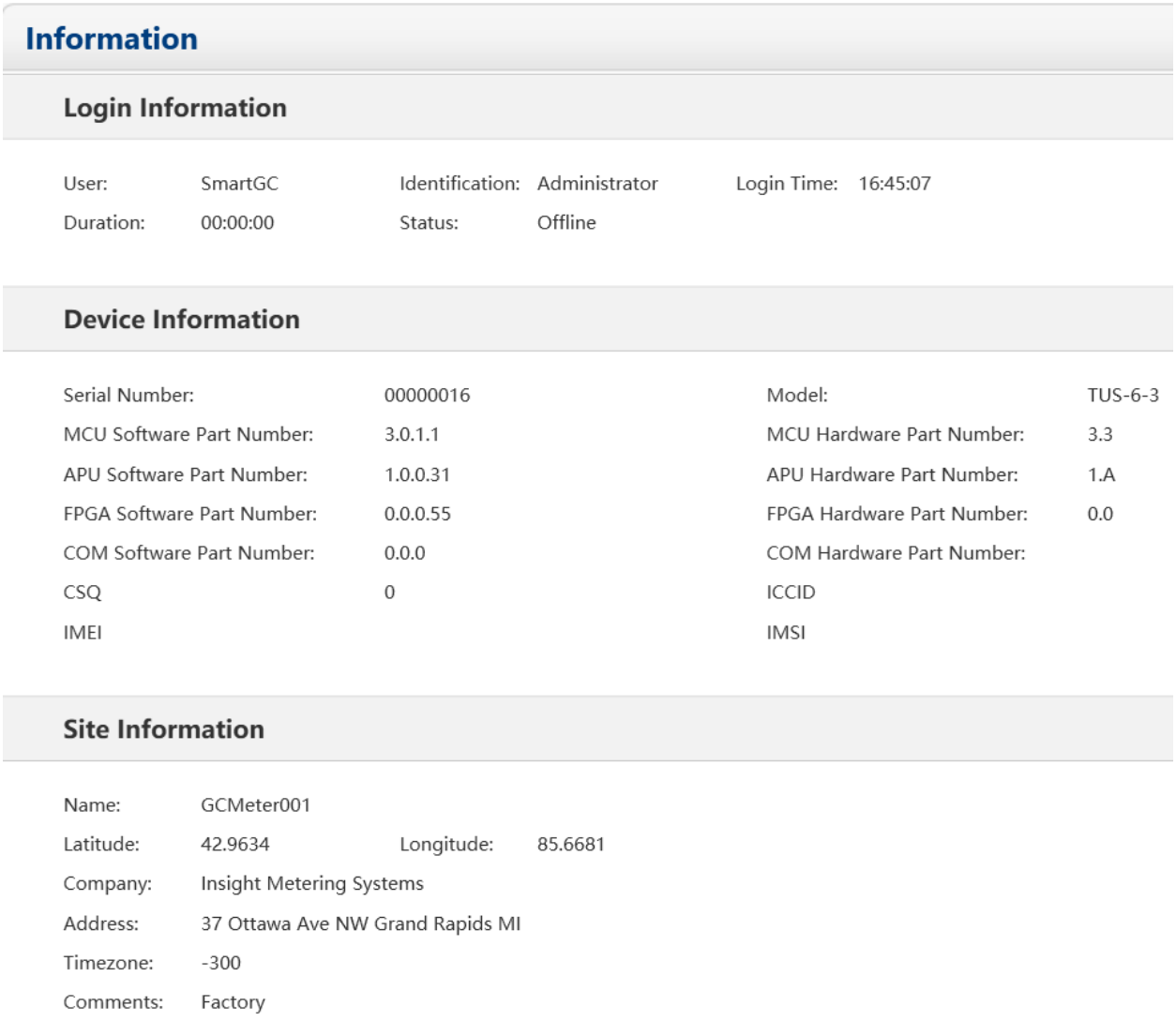
3) Diagnostics: Equipment details, data, analysis and diagnostics.

4) Log: Allows for querying the equipment event and alarm logs.

5) Configuration: Used for equipment parameter configuration, calibration, and inspection.

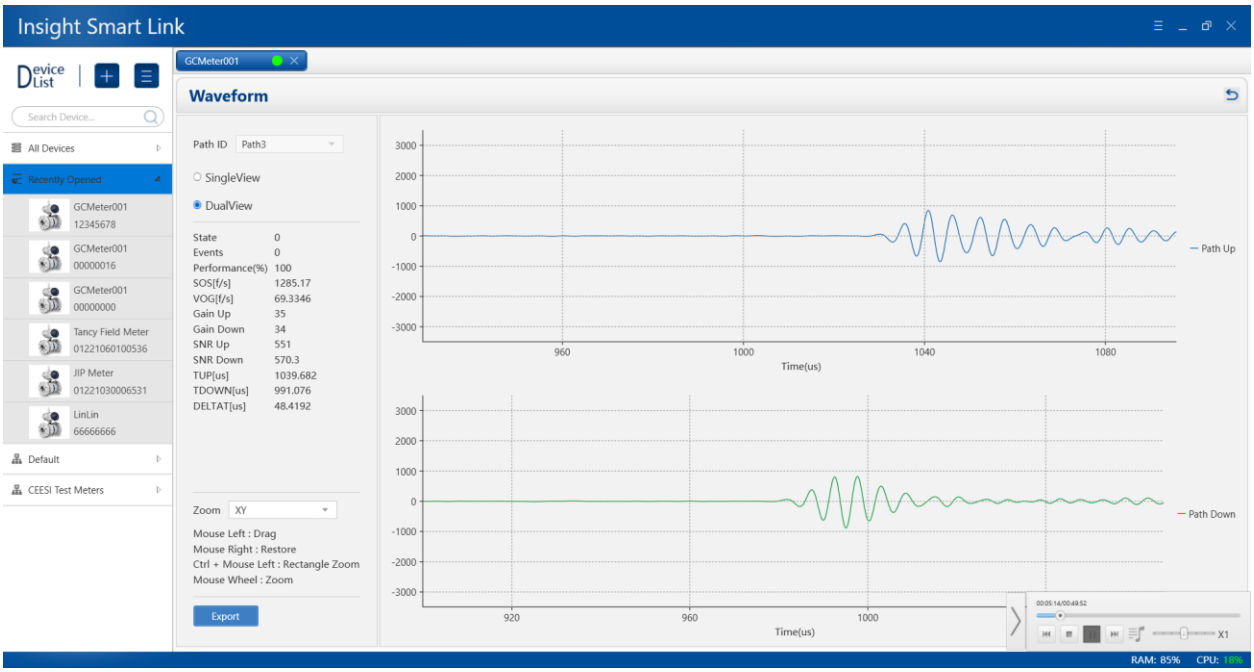
6) Data recording/playback: Equipment data recording and playback control.

4.1 Diagnostics – Device Information

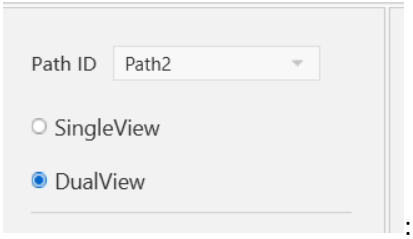


This module is the equipment information display interface, including login information, equipment information and local information. The local information can be set in 4.17 configuration - device local information.

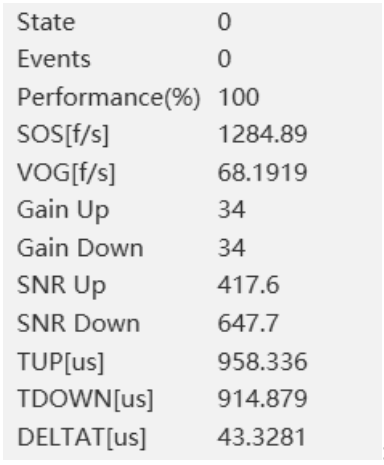
4.2 Diagnostics - Waveform



This module displays the waveform data of each channel of the equipment and the real-time data of the corresponding channel.

1) 

: select the display mode of channel and waveform view.

2) 

: real time data of the corresponding channel.

3) 

: waveform data in. TXT format can be displayed everywhere.

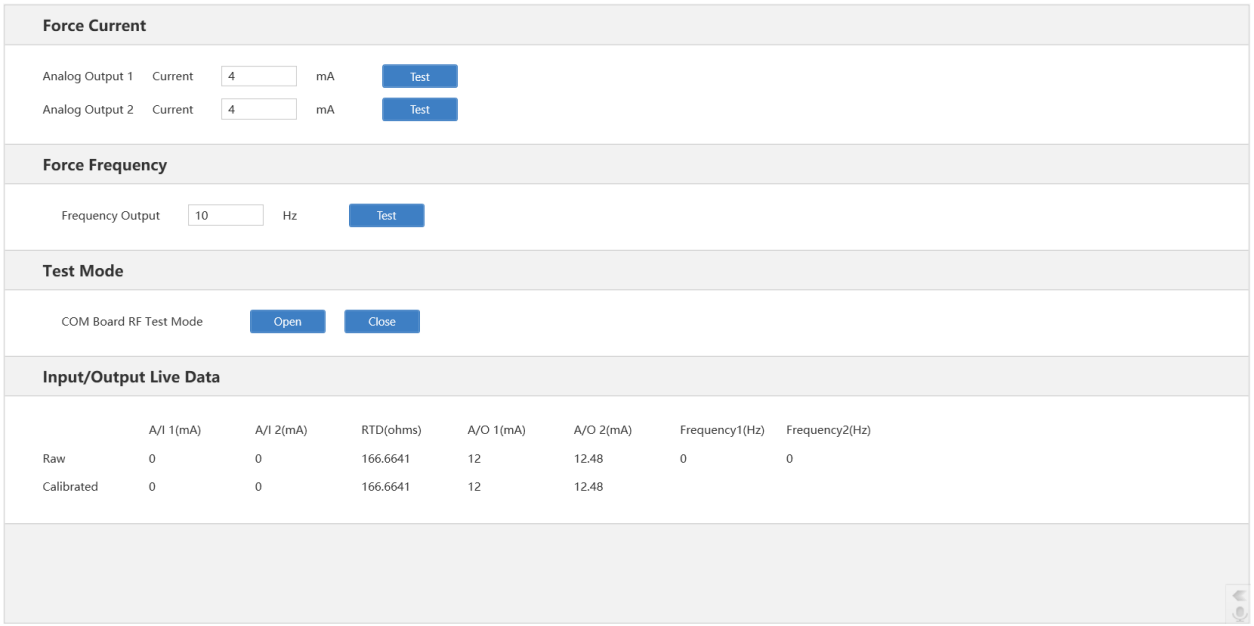
4) Left mouse button: press to drag the waveform.

5) Right click: Click to restore the waveform diagram.

6) Crtl + left mouse: you can frame and select the enlarged waveform.

7) Mouse wheel: zoom in and out the waveform.

4.3 Diagnostics - Output test



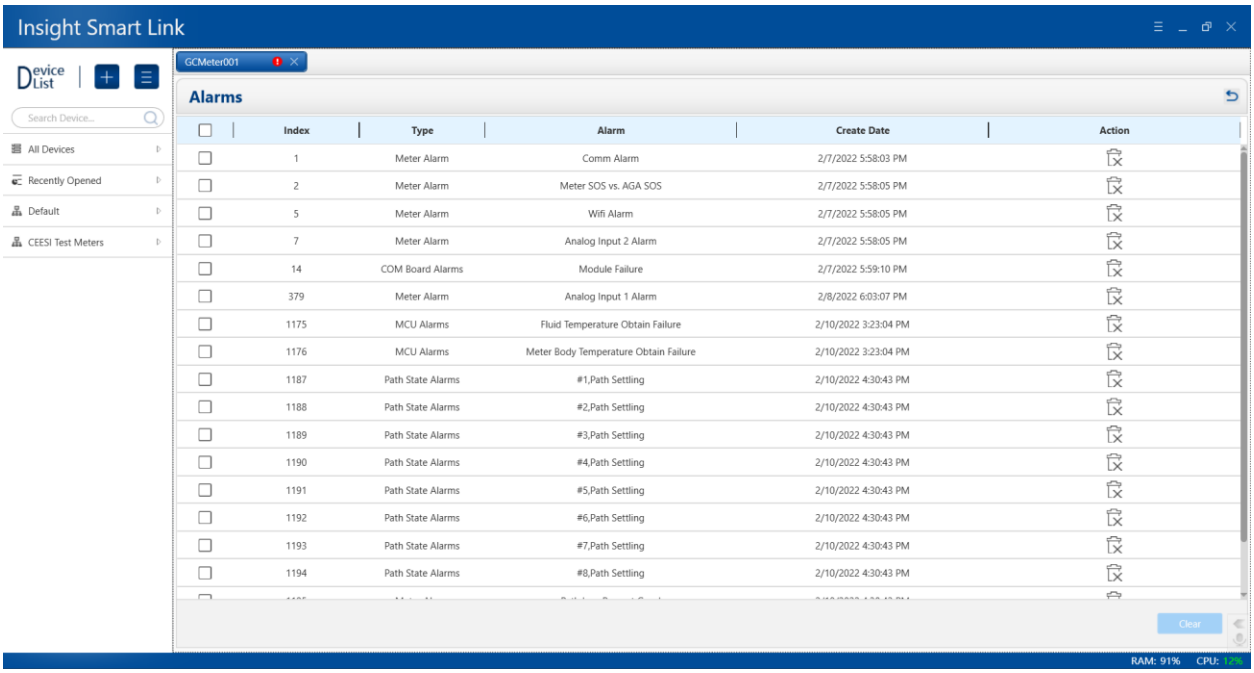
This tab helps field test/check out for analog output and frequency outputs.

1) Forcing a current value:
   - set the analog signal output value,
   - measure the output value through the detection equipment and calibrate the output value through "I/O configuration - AI/AO ".
   - For example, "analog signal 1 output", open the back cover of the equipment, connect AO.1 to the current test device, and the set value is 4 mA. Click test to observe whether the current test device is 4 mA. If it is not 4 mA, set it again after calibration in "storing I / O configuration - AI / AO" to observe whether the calibration value is 4 mA.
2) Forced frequency value:
   - set the frequency output value.

3) Test mode: (Certification tests only) turns on and off the RF test mode of 4G communication board.

4) Output/input Live Data: displays actual AI, AO, RTD and frequency real-time data.

4.4 Diagnostics - Alarms

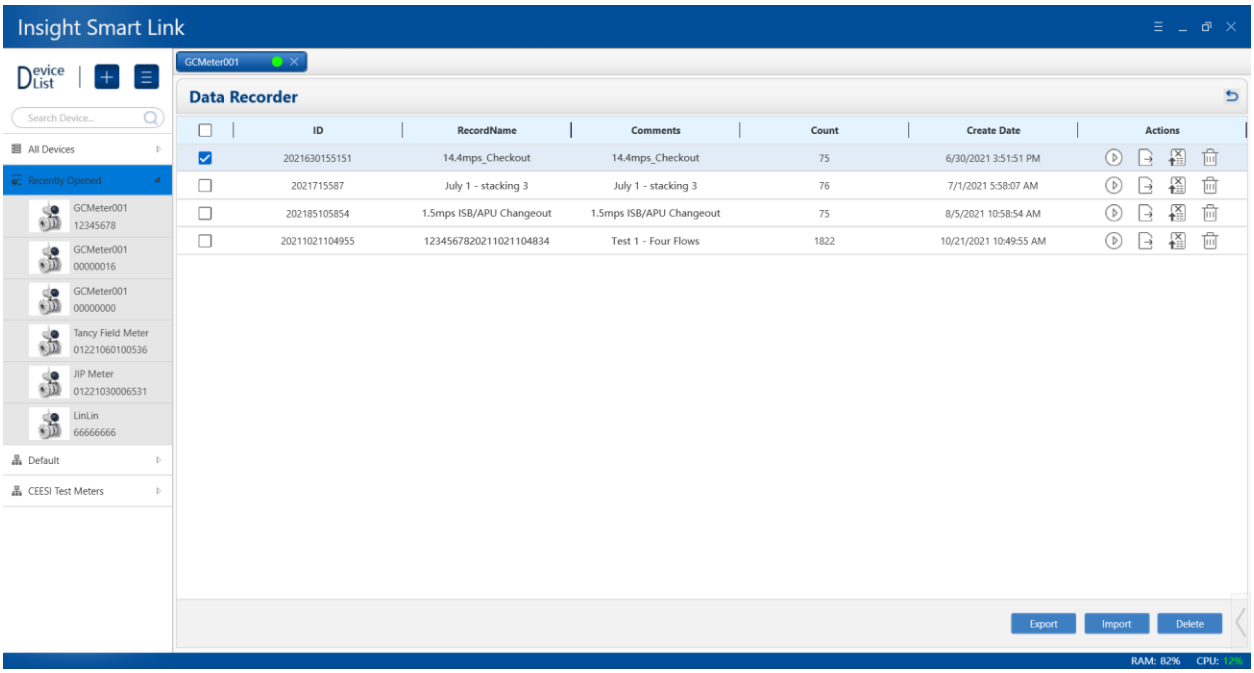


This module is used for real-time alarm display of equipment.

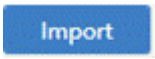
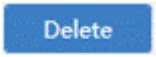
1)  : this alarm is to clear alarms manually, but if it still exists in the equipment, it will still be generated.

2)  : the alarm is clearly checked, but if it still exists in the equipment, it will be re-generated.

4.5 Diagnostics – Data Recorder (Playback/Recording Method 1)



This module is a record and display operation module. This module is commonly used in remote diagnostics and field support.
Strategy - record equipment data, export the recording file and send it to the manufacturer, so as to help judge and analyze if problems exist in the equipment.

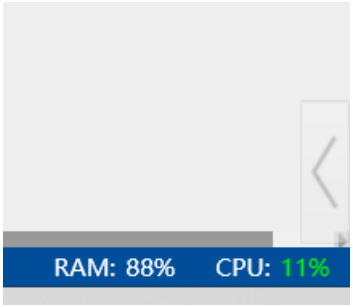
1)  : play this data, that is, switch the data source, take the data recorded at that time as the data source, and restore the recording state at that time, including real-time data, waveform, configuration and alarm.
2)  : export this piece of data in. SLR format for importing records.
3)  : export this data in Excel format.
4)  : delete this data.
5)  : export all selected data in. SLR format.
6)  : import data. The imported data must be the same table number data.
7)  : delete all selected data.

4.6 Diagnostics – Playback/Recording Method 2

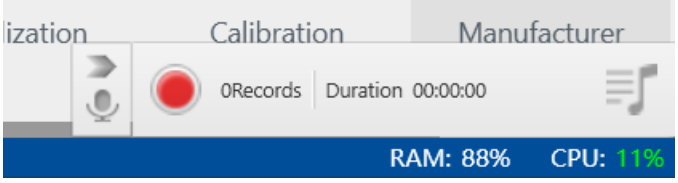
Expand or close the operation panel through the arrow in the lower right corner of the software. During playback, it is the playback control panel, otherwise it is the data recording panel.

4.6.1 Recording steps

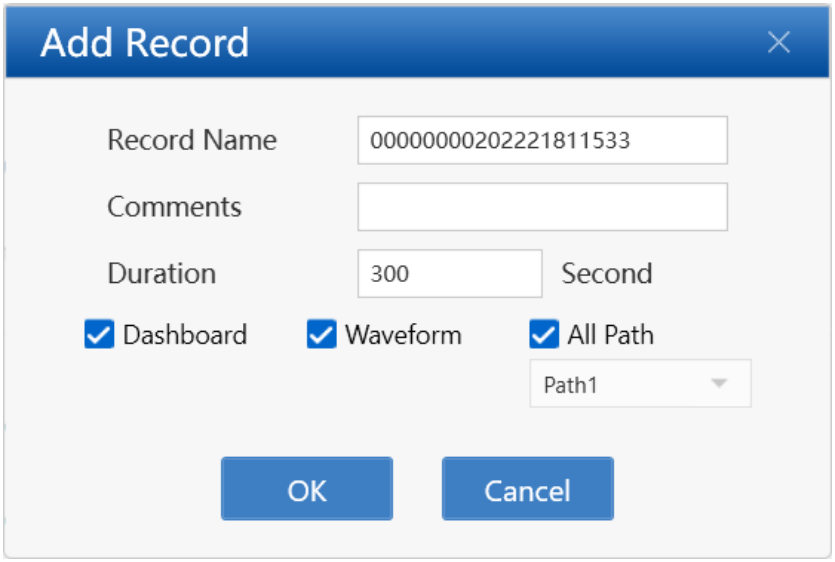
1) Expand the record panel (if not already expanded) – panel is lower right hand corner.



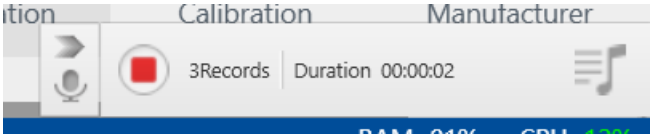
Click the red circular button to pop up the new recording window. Click  You can open the data recording function page.



3) Enter the recording name and duration (description is optional). When the recording time reaches the input duration, it stops automatically. If the duration is 0, it must be stopped manually.
Check real-time data and waveform, as required. If it is not checked, it will not be recorded. If all channels are checked, all channel data will be recorded repeatedly. If not checked, you can choose to record only single channel data. Click OK to start recording.



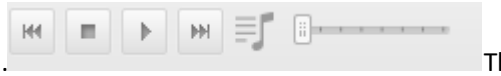
3) After recording, the control panel will change to the following status, and the number and length of data will be displayed. If the recording duration reaches the set duration, it will stop automatically, or you can click the red square button to stop recording manually.

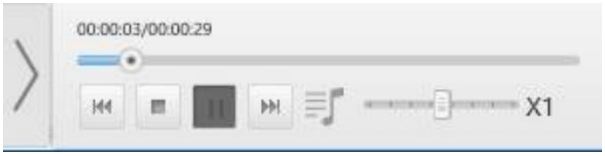


4) When you stop recording, a record is generated in the data recording module.

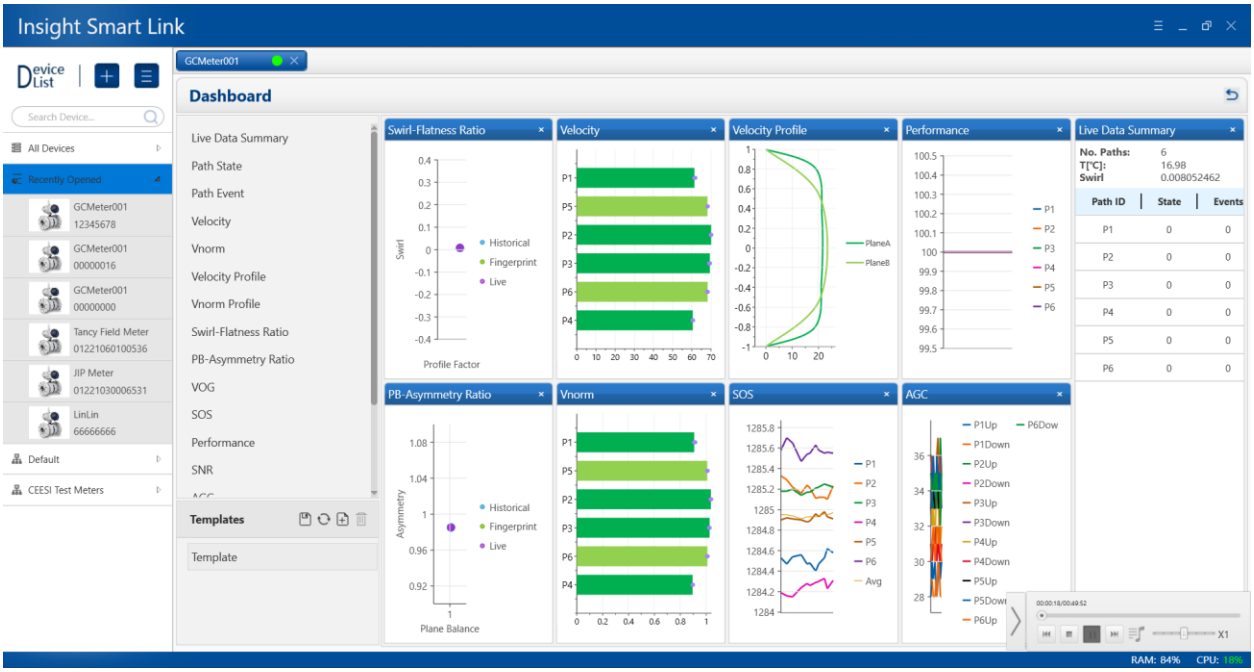
4.6.2 Playback

1) Select record in the "data recording" module and click the play button (see Section "4. 5 Diagnostics – Playback/Recording Method 1").

2) The workbench module will jump to the real-time data module. The lower right control panel will become the playback control panel.  The functions are back, stop, play \ pause, forward, open the "data recording" function page, and adjust the playback rate.



4.7 Diagnostics - Dashboard



This module is a real-time (playback) data display module. Through data charting, the current state of the equipment can be analyzed intuitively.

1) List: you can drag and double-click to add a chart to the display area

2) Display area: the chart window can be dragged, re-sized and double clicked as needed.

3) Template: in the template area, you can add custom templates and combine chart windows as needed.

The functions are saved, restored (restore to the last saved template), added and deleted. The current template will be saved automatically when switching templates.

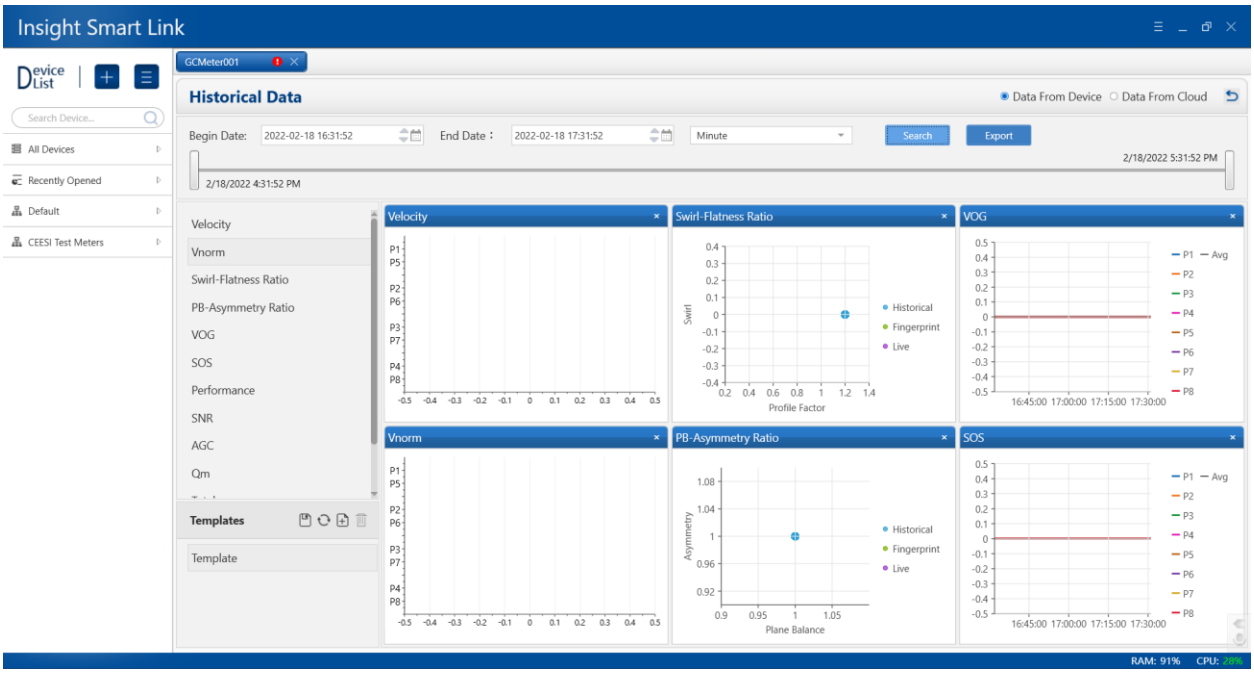
4)  : return to the main interface, and the current template will be saved automatically upon return.

5) The different screens include (more may be constructed)

- Live data summary: Real time data table
- Path state: Displays the state of each channel through a dot chart.
- Path event: Displays each channel event through a dot chart.
- Velocity: Displays a bar chart of path gas/fluid velocity.
- SOS: Displays a bar chart of path sound velocity.
- Turbulence: Displays a bar chart of path's percent turbulence.

- Vnorm: Displays a bar chart of path gas/fluid normalized velocity (path velocity divided by meter average)
- Swirl profile: displays the swirl values of different chord positions. (Note: This figure is not available in the 6-channel table)
- Velocity profile: Displays velocity values for different chord positions.
- Vnorm profile: Displays Vnorm values at different chord positions.
- Swirl/flatness (Profile Factor) ratio: the coordinate system shows that the x-axis value is the profile factor and the y-axis value is the Swirl value.
- Plane Balance and Asymmetry ratios: the coordinate system shows that the x-axis value is the plane balance ratio and the y-axis value is the asymmetry ratio.
- VOG, SOS, performance, SNR, AGC, Qm, total, temperature: data trend chart. Each chart will be generated independently.

4.8 Diagnostics - Historical Data



The function is similar to 4.7 real-time data, except that there is a subset of charts and there is a data query through time added.

1) 

: switches data sources (all configuration modules have the same function. See Section 5 cloud platform for details).

2) 

: exports to an Excel document.

3) Query: query data by selecting start time, end time and data type (minutes, hours, days).

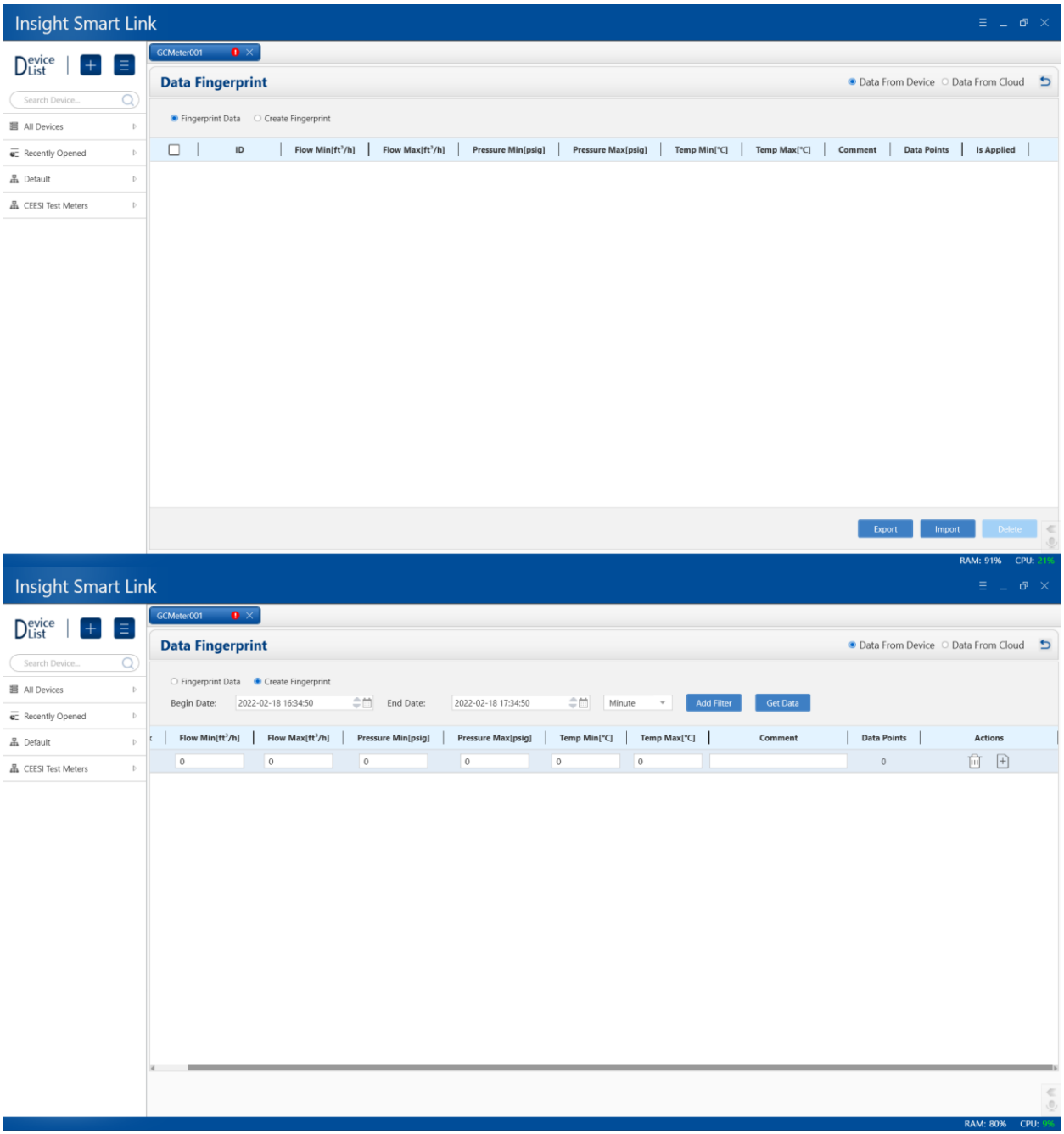
4) Sliding bar: Adjusts the time area through the sliding bar, and the corresponding chart displays the data in the relative time period.

5) Velocity: sound velocity of each channel, average value within the time range.

6) Vnorm: standard sound velocity of each channel, average value within the time range.

7) Other charts: same as live data.

4.9 Diagnostics – Data Fingerprint



This tab creates fingerprints and uses the fingerprint.

4.9.1 Function description

1) The fingerprint is created from real-time data. It is a reference data obtained by taking the weighted average value of the filtered data – using parameters set by the user.

2) There can be multiple fingerprints, but only one is used at a time.

3) Scope of use: in the "real-time data" and "historical data" modules, it is only shown in the two charts of swirl/flatness ratio and plane balance/asymmetry ratio.

4.9.2 Operation process

1) Select the start time and end time in the create fingerprint interface.

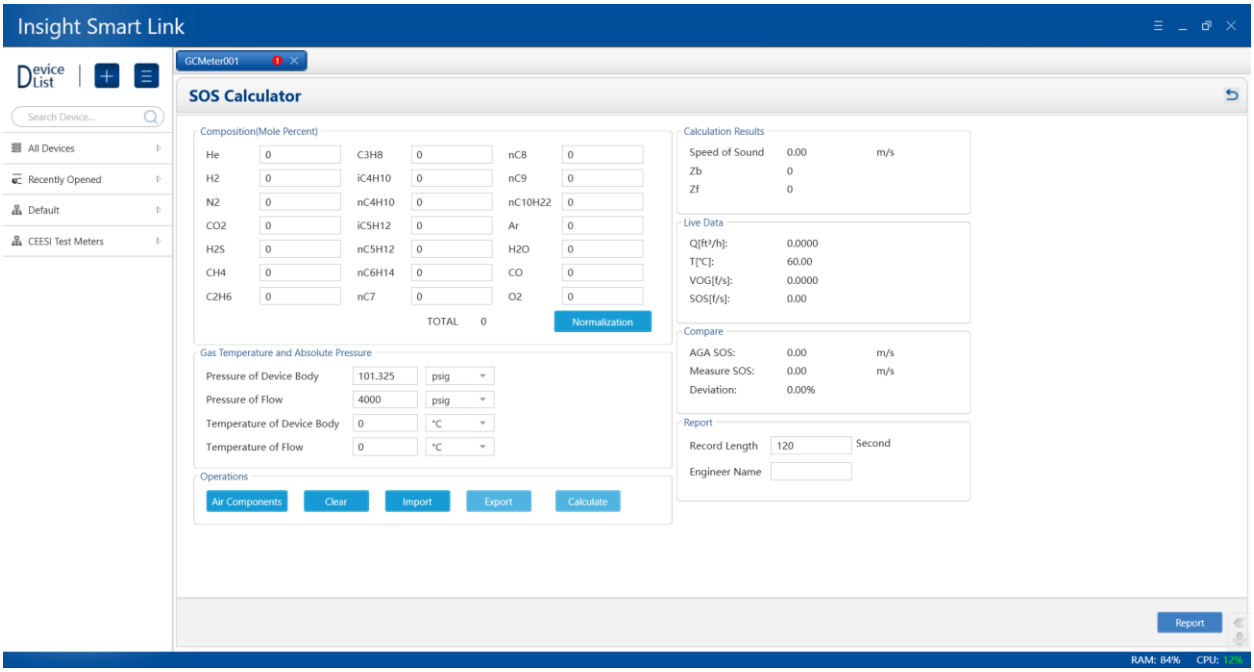
2) Click add filter criteria to define parameter values.

3) Click “get data” to collect the data. The data source can be a device or a cloud.

4) Click  Button to create a fingerprint.

5) Click on the fingerprint data interface  The user selects this data as a valid fingerprint.

4.10 Diagnostics - SOS calculation



This module is the interface for sound velocity calculation and verification report export.

1) Component (mole percent): gas component (gas component cannot exceed 1).

2) Normalization: normalize the gas components.

3) Air Components : automatic introduction of air components.

4) Clear: clears the gas parameters.

5) Import: imports the gas components provided by the gas chromatograph (Excel document), or exports the document.

6) Export: exports gas components for use later.

7) Calculate: calculate the sound velocity results.

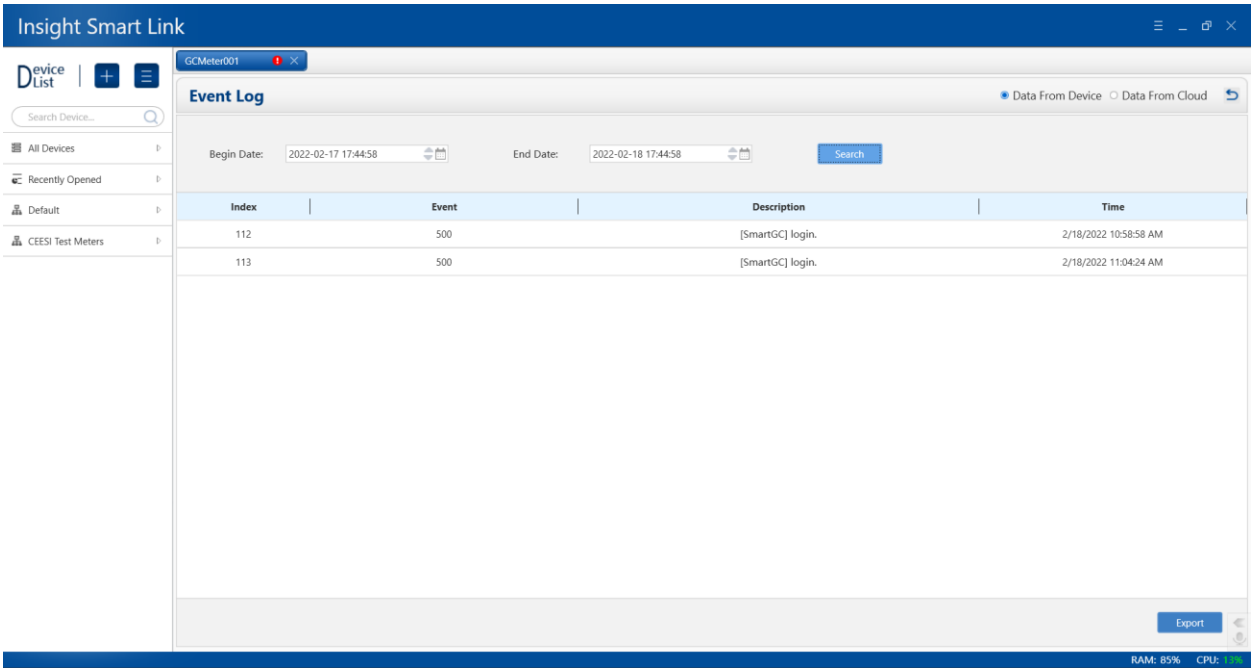
8) Comparison: deviation = (Measured SOS-AGA SOS) / AGA SOS.

- Measured SOS: actual sound velocity value.
- AGA SOS: calculated SOS.

9) Recording duration: the time for sound velocity verification to collect data. If it is not filled in, it defaults to two minutes.

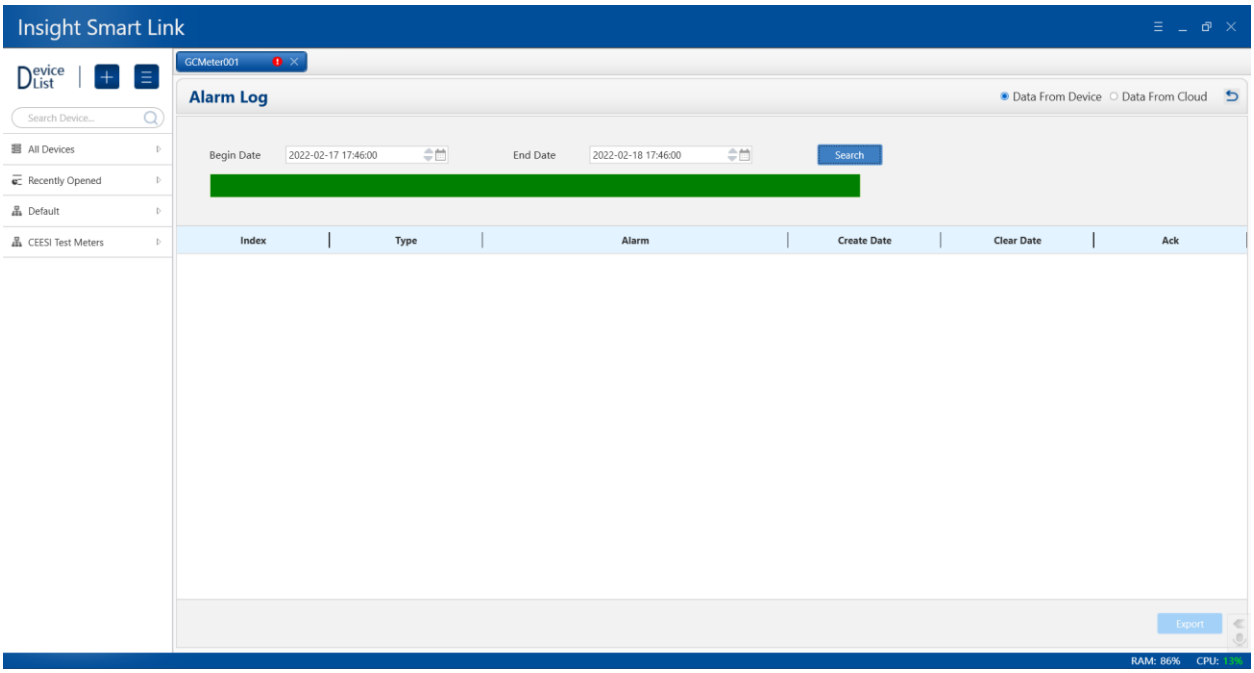
10) Report: generates verification report.

4.11 Logs - Event log



This module can query, display and export an event log. Including login, parameter modification, reset, log coverage, cloud data upload results, etc.

4.12 Logs - Alarm Log



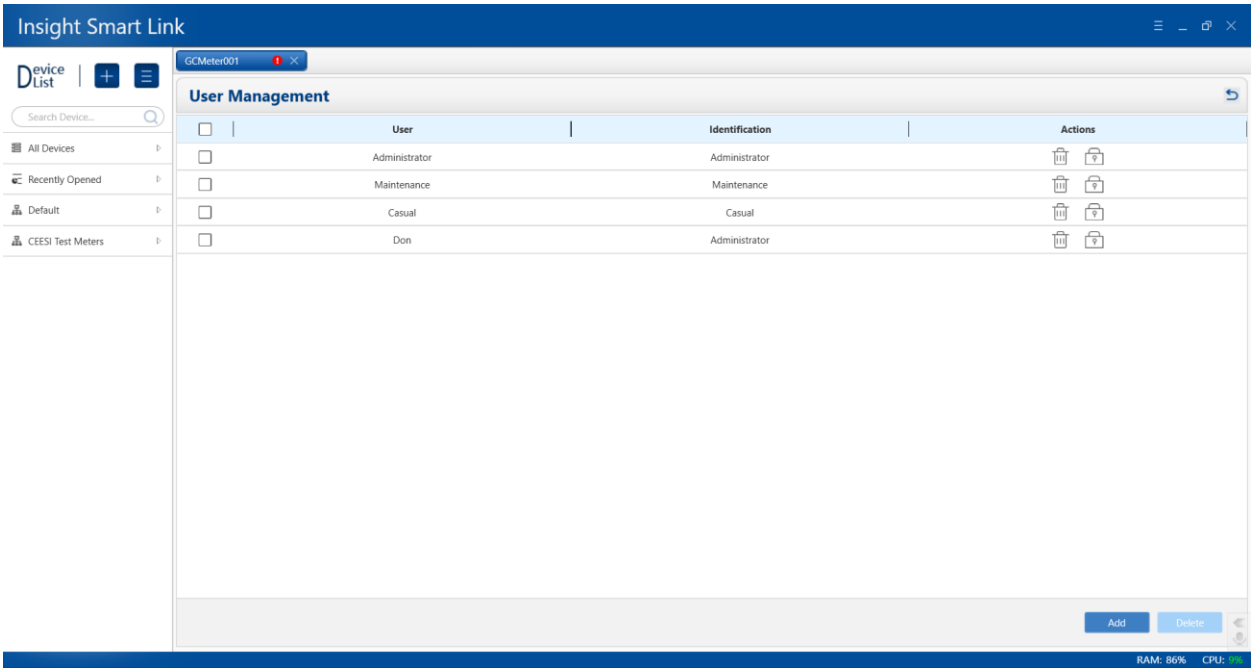
This tab queries, displays and exports alarm logs.

1) The green part indicates good, and the red part indicates that there is an alarm in this time period.

2) Click the red part to display the corresponding alarm information in the list.

3) The "confirm" column displays "auto clear" as the alarm manually cleared by the user in the "alarm" interface, and "auto clear" as the alarm automatically cleared by the equipment.

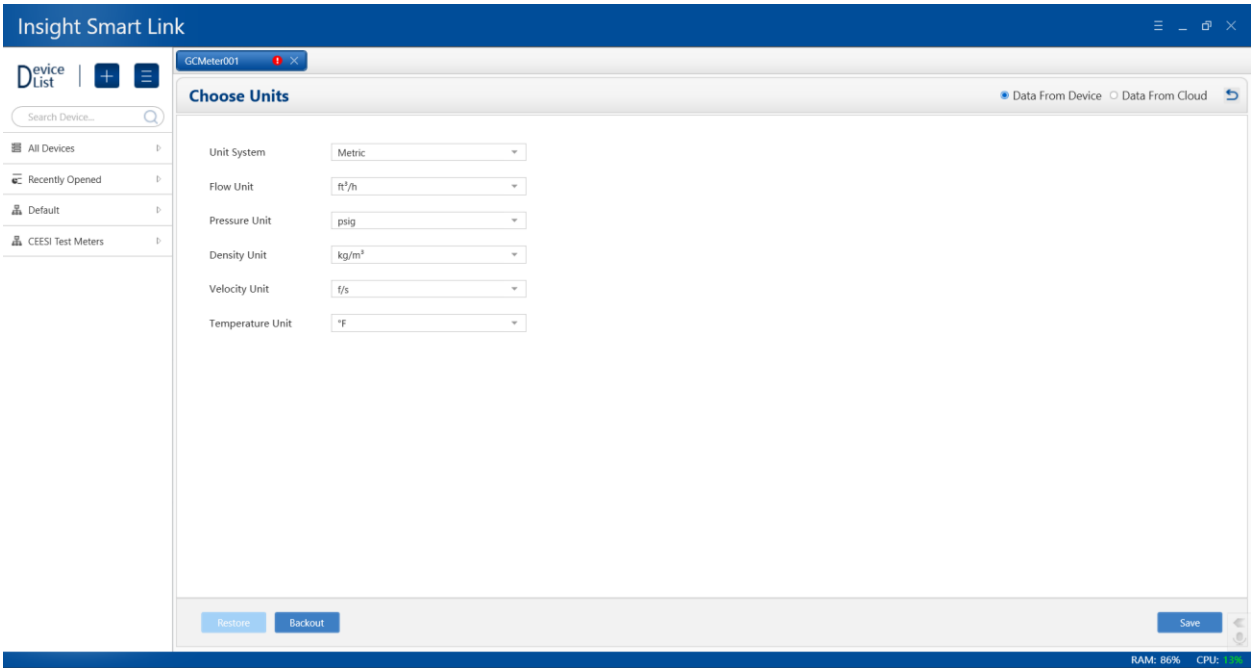
4.13 Configuration - User Management



This module is a user management interface, which can add, delete users and modify user passwords.

1) A total of 40 accounts can be added. One account will be configured for each permission at the factory. Users can add users by themselves through the administrator account.
2) The current login account cannot be deleted.
3) One cannot add vendor users.

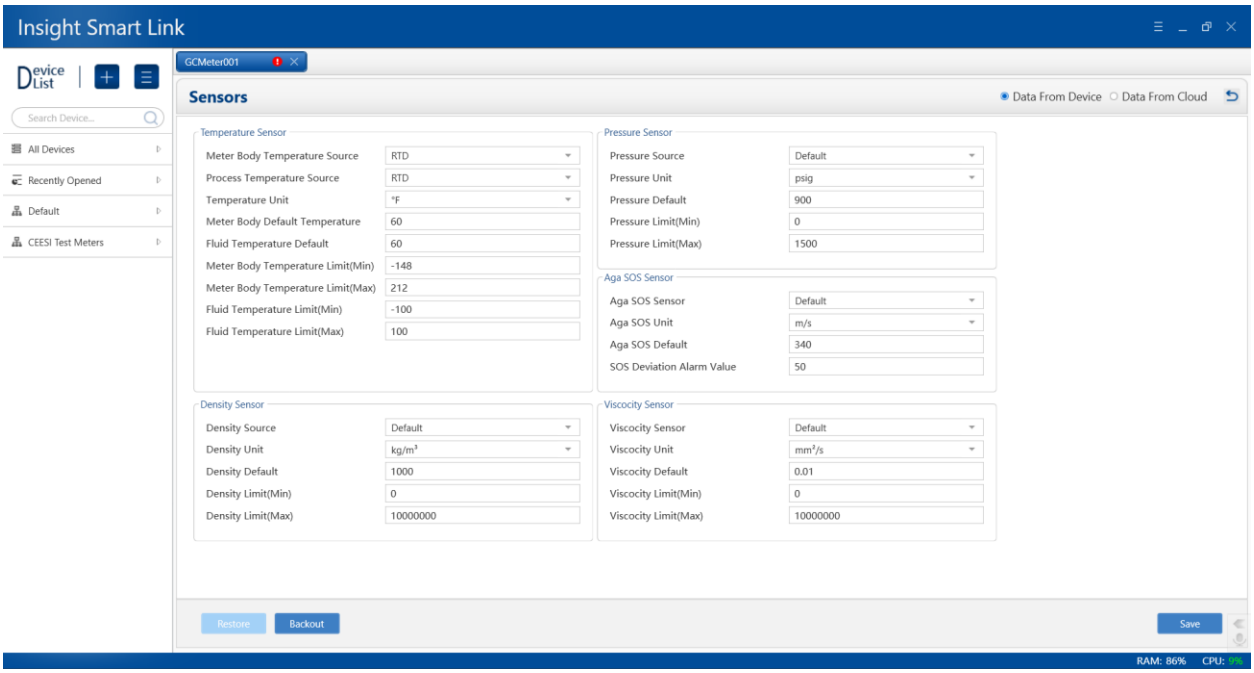
4.14 Configuration -- Units



This module is used to configure the data units of the device display.

1) English or metric units can be set uniformly through the unit system.
2) Save : saves the current configuration to the device.(this function is the same for all configuration modules)
3) Restore : restores to the configuration before saving. (This function is the same for all configuration modules)
4) Backout : undo all unsaved changes.(this function is the same for all configuration modules)

4.15 Configuration - Sensors

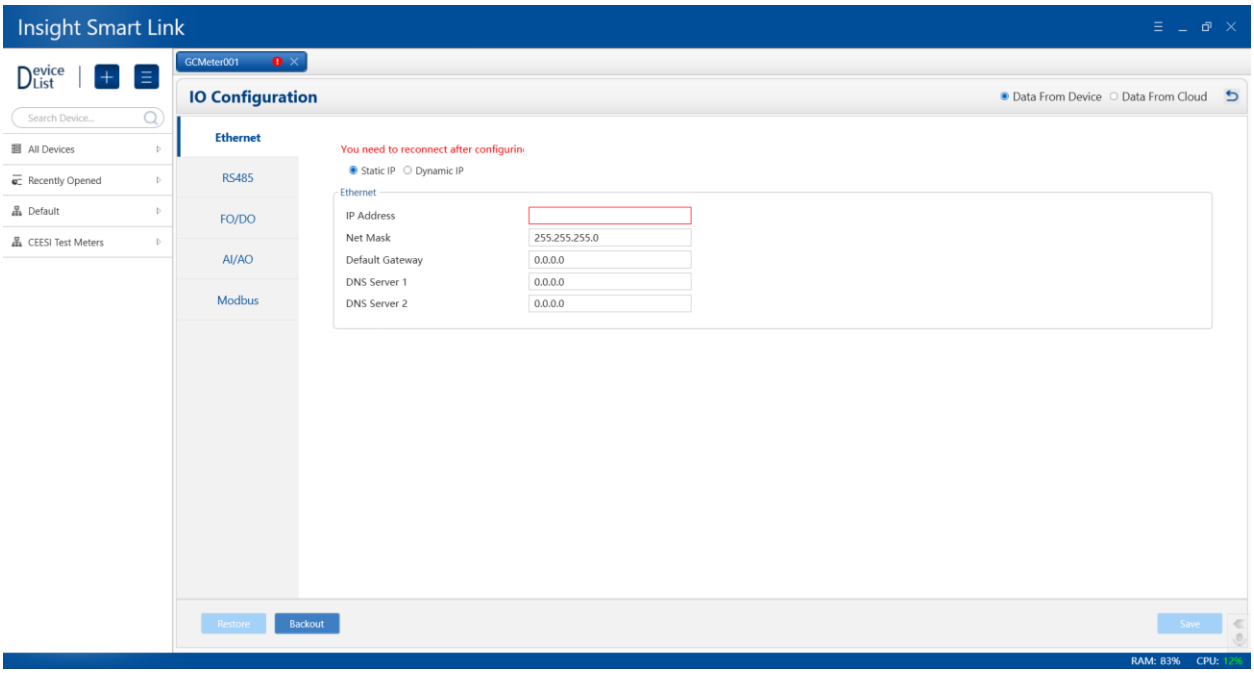


This module is set for external sensors. It includes five sensors: temperature, pressure, AGA sound velocity, density and viscosity.

1) When the sensor is set to default or data cannot be obtained, the preset value will be adopted.
2) Analog Signal 1: AI. 1 is used as the input source (see 4.16 -- I / O configuration -- AI / AO configuration -- AI. 1 for details).
3) Analog Signal 2: AI. 2 is used as the input source (see 4.16 -- I / O configuration -- AI / AO configuration -- AI. 2 for details).
4) Modbus: the device, as the host, reads data through MODBUS.(see 4.16 -- I / O configuration -- MODBUS for details).
5) Calculation: use the internal parameters of the equipment to calculate by yourself, and do not use external values.
6) Note that in the Aga sound velocity sensor, "MODBUS" means to directly read the sound velocity value, "MODBUS AGA" means to read the gas component, and then calculate the Aga sound velocity.

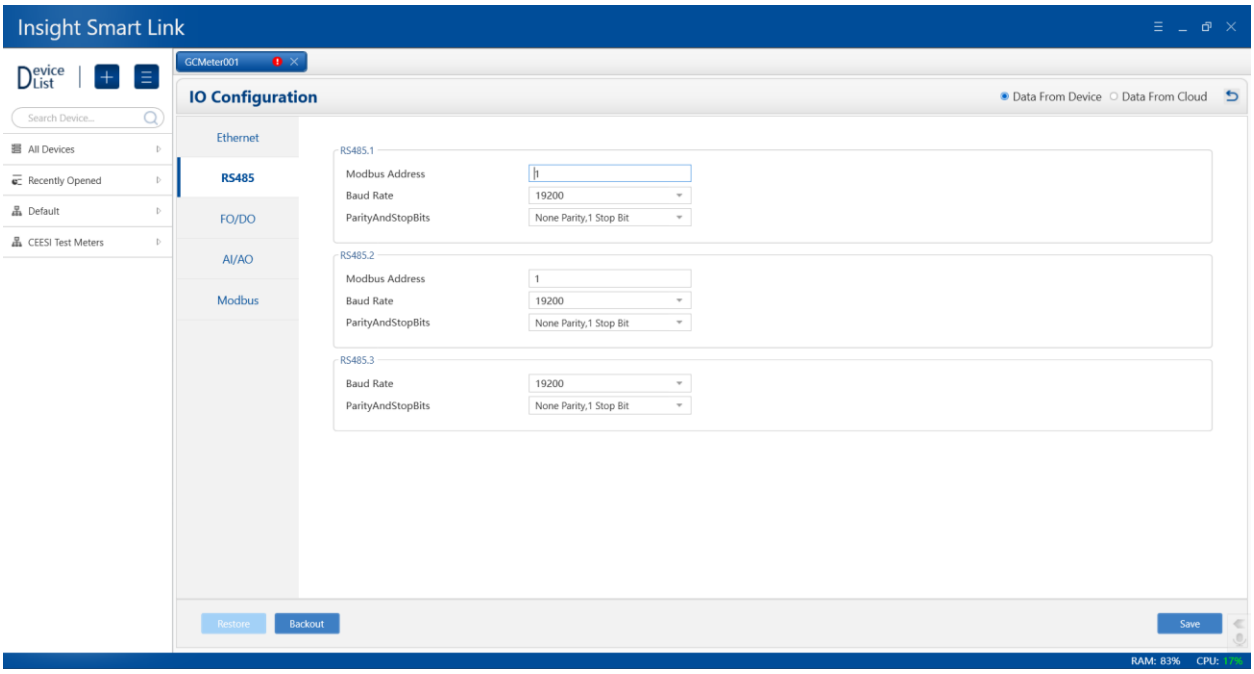
4.16 Configuration – I/O configuration

4.16.1 Ethernet



Used for device IP address configuration.

4.16.2 RS485

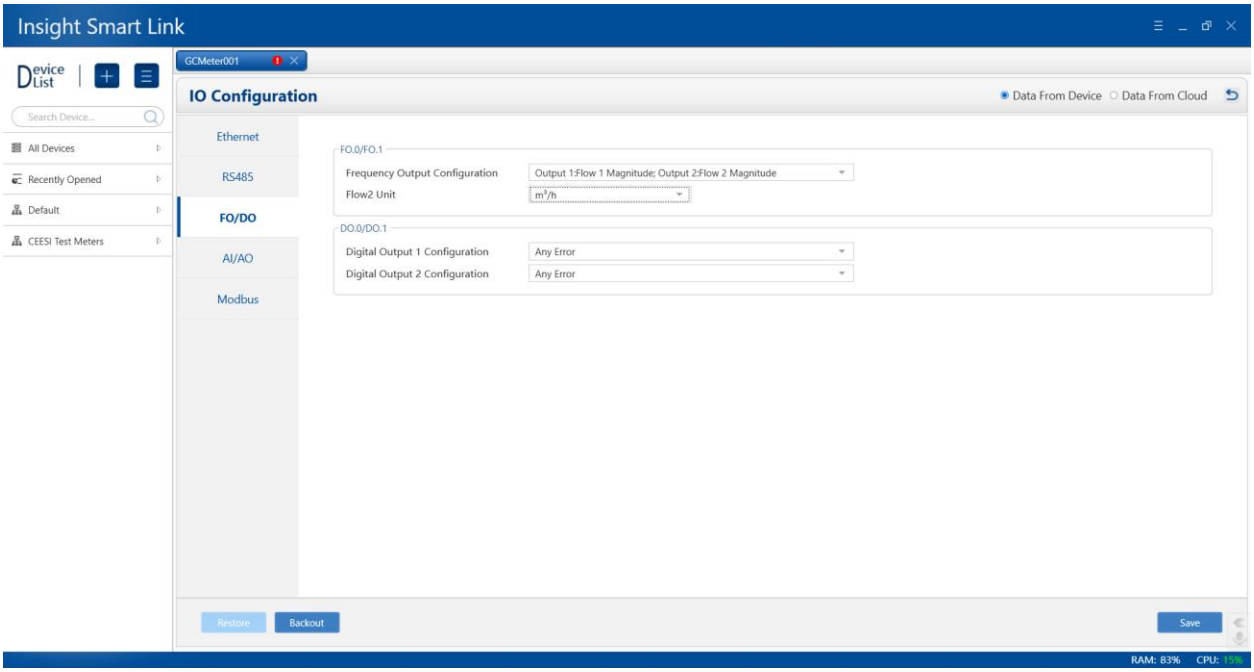


Used for device serial port configuration.

1) Rs485.1 and rs485.2: configure Modbus communication parameters when the equipment is used as a slave.

2) Rs485.3: Modbus communication parameter configuration when the equipment is used as the host.

4.16.3 FO/DO

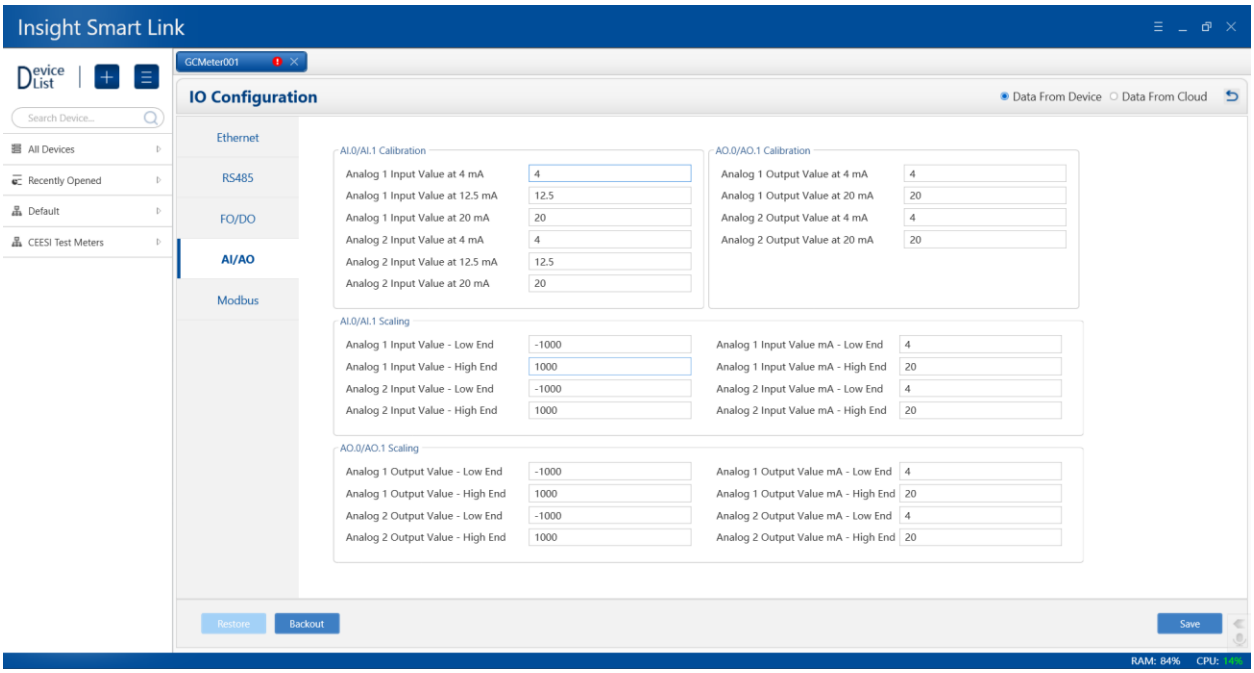


Used for frequency and digital output configuration.

1) FO. 1 / FO. 2: used to configure the output type and flow 2 units of two frequency output ports. Flow 1 unit cannot be configured, and the default value is m^3/h。

2) DO. 1 / DO. 2: used to configure the output type of two digital output ports.

4.16.4 AI/AO



Used for analog input / output parameter configuration.

1) AI. 1 / AI. 2 Calibration: analog input calibration. For example, calibrate ai.1: open the back cover of the equipment, connect ai.1 to the constant current source, set the constant current source to 4mA, observe the ai.1 value through the main interface of the equipment - flowmeter status - analog output / output, fill in the software "analog 1 input 4mA", then configure 12.5ma and 20mA in turn, and click save.
2) AO. 1 / AO. 2 Calibration: analog output calibration.

   For example, calibrate AO.1:

   - open the back cover of the equipment,
   - connect AO.1 to the current detection device,
   - Measure the current value when outputting 4mA and 20mA in "4.3 diagnosis - output test - forced current value"
   - Then input the measured values into "analog 1 output 4mA" and "analog 1 output 20mA", and click save.

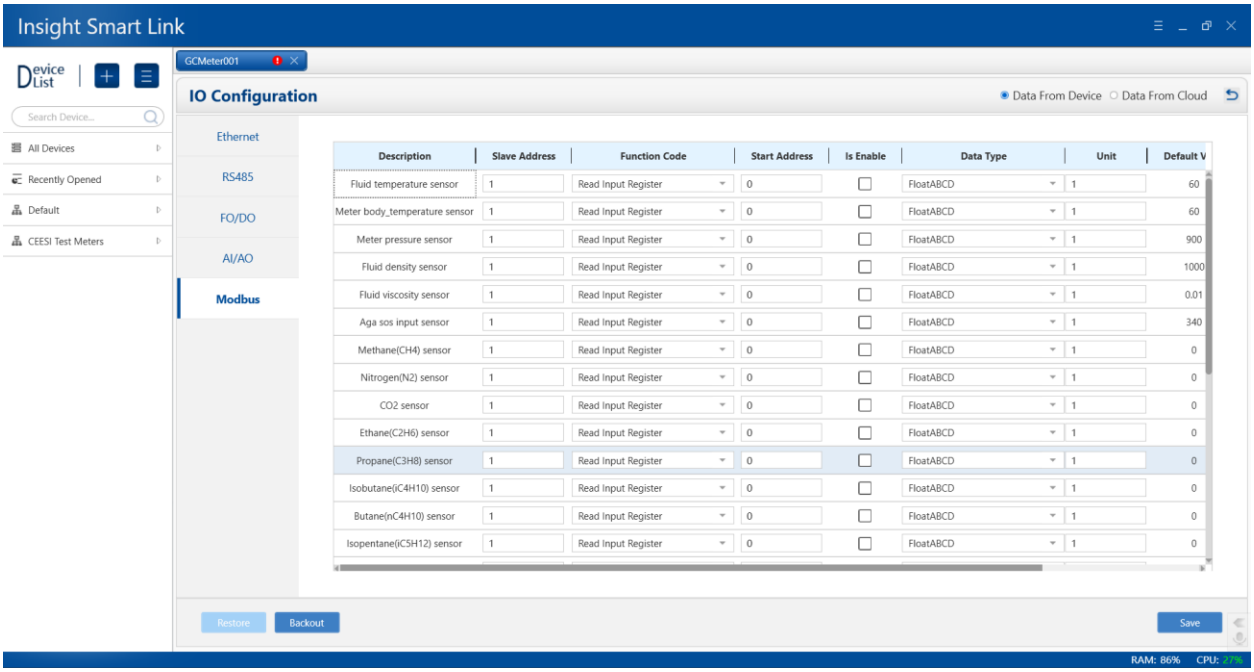
3) AI. 1 / AI. 2 scale: set the input value scale according to the actual type.

   For example, AI. 1 is a pressure input of 4mA-20mA, corresponding to 0-10000, then "analog 1 input Ma low end" is filled with 4mA, "analog 1 input low end" is filled with 0, "analog 1 input Ma high end" is filled with 20mA, and "analog 1 input high end" is filled with 10000.

   Note that the actual application is configured in "4.15 configuration - sensor - pressure sensor", and "analog signal 1" is selected for "pressure source". The pressure unit is set according to the actual pressure sensor unit.

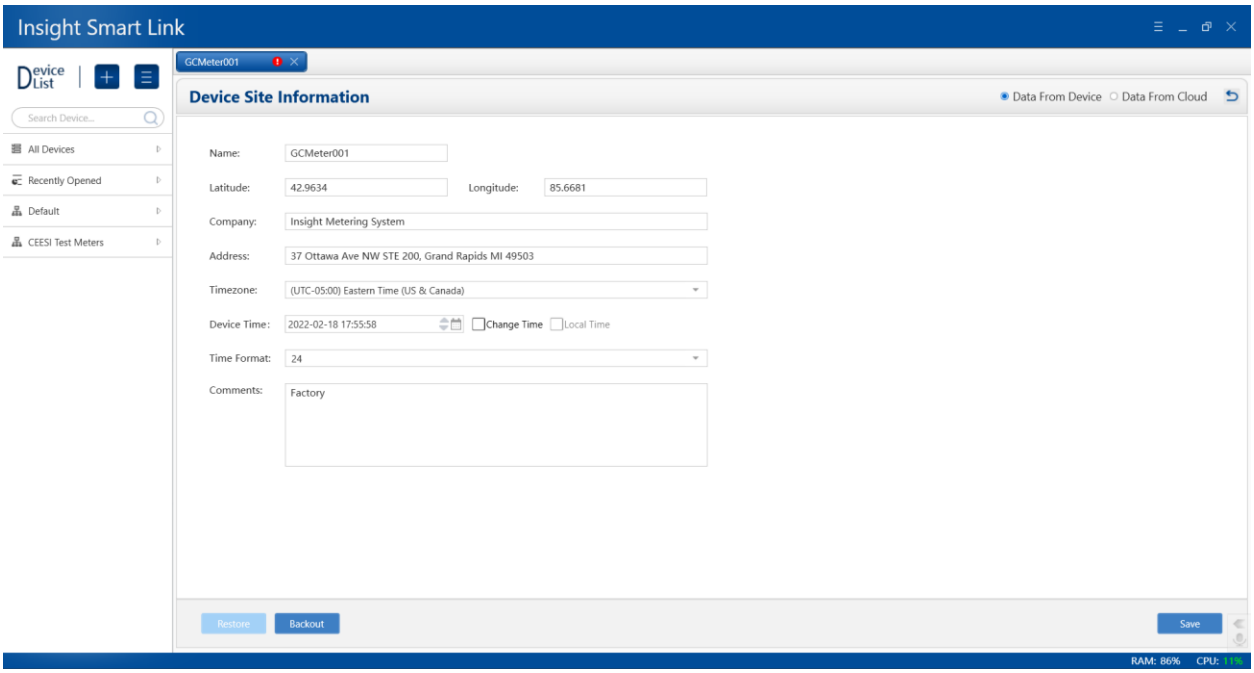
4) AO. 1 / AO. 2 scale: set the actual output value scale. AO. 1 is the output flow, and the unit is m^3/h. AO. 2 is the output temperature, in degC. For example, AO. 1 current 4mA-20mA corresponds to 0-100, then "analog 1 output Ma low end" is filled with 4mA, "analog 1 output low end" is filled with 5, "analog 1 output Ma high end" is filled with 20mA, and "analog 1 output high end" is filled with 100.

4.16.5 Modbus



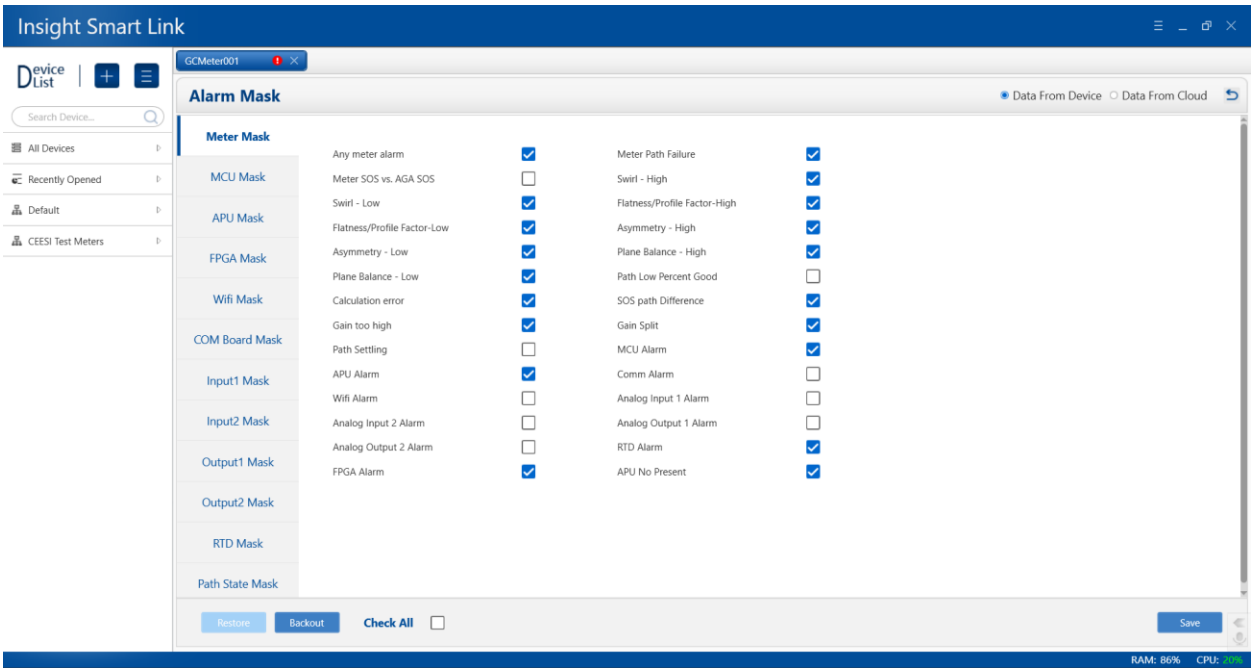
As the master, the device reads the Modbus parameter configuration of the slave data.

4.17 Configuration -- Device Local Information



It is used for equipment local information configuration. The company, address and other information here should be user information, not manufacturer information.

4.18 Configuration -- Alarm Masking



This tab is used for alarm shielding. After the alarm item is checked and saved, the equipment will not generate this alarm.

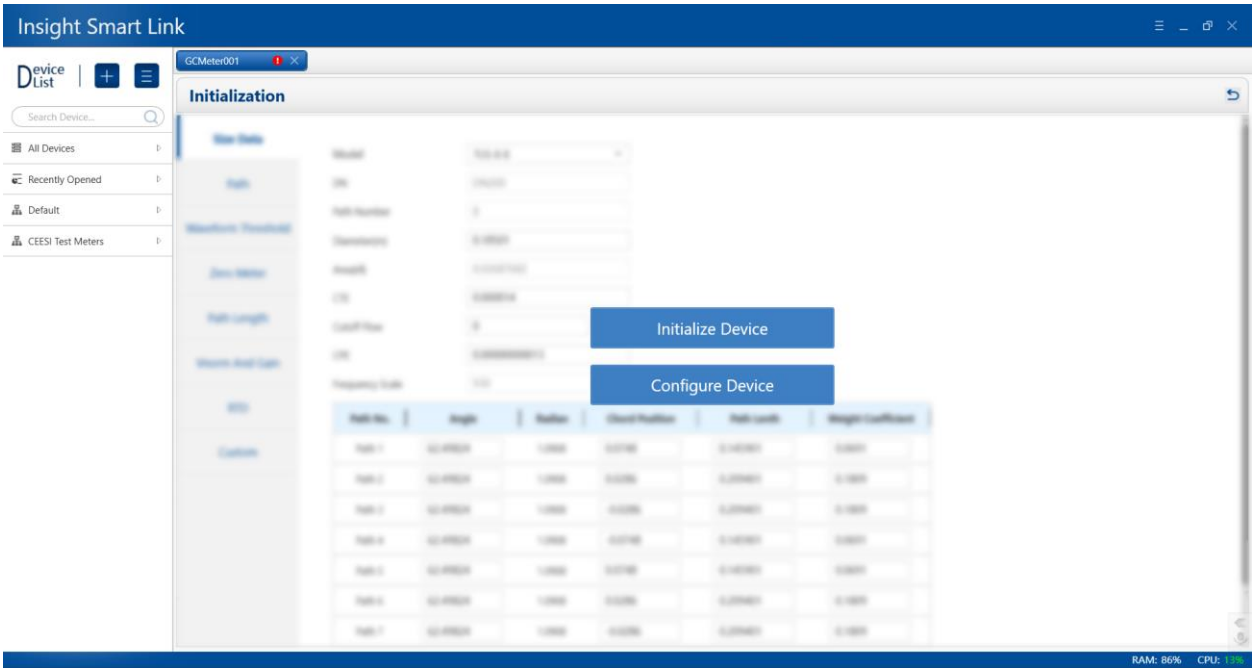
4.19 Configuration -- Initialization

After the equipment is assembled and inspected, the equipment needs to be connected and initialized.

Initialization steps:

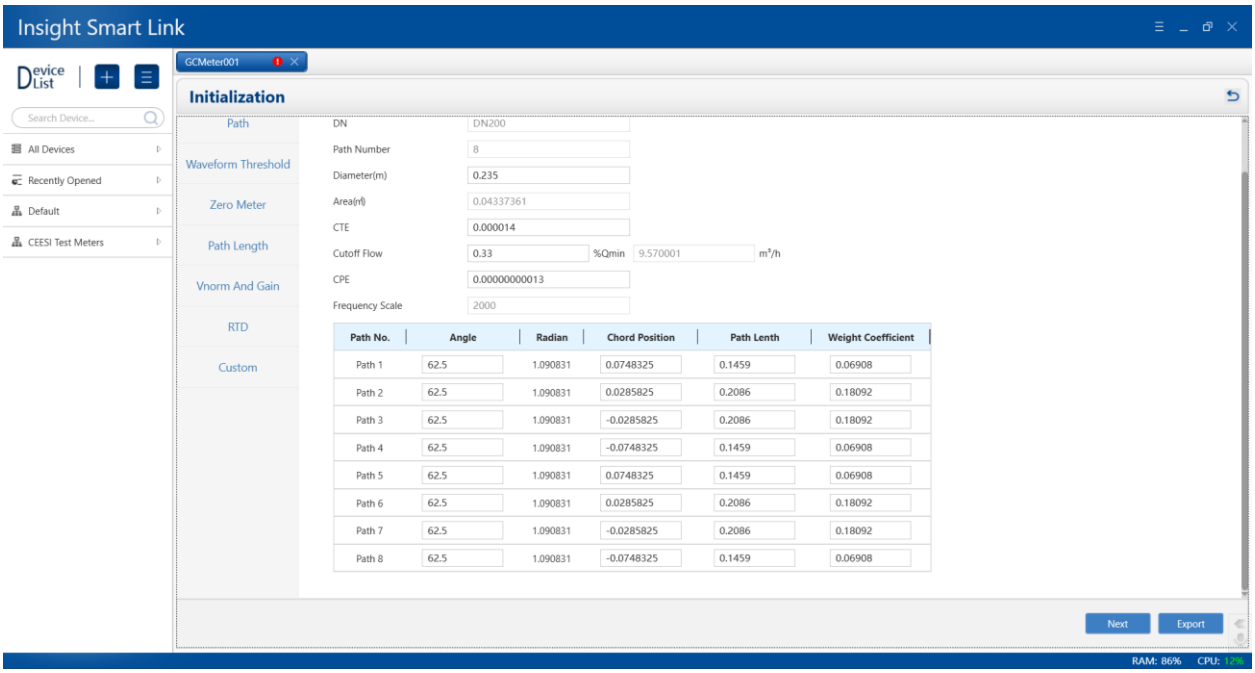
1) In the workbench interface, click the "initialization" option to open the initialization module.

2) After entering the module, there are two modes, "initialize device" and "configure device". The difference between the two modes is that "initialize device" needs to be configured step by step according to the configuration wizard until all configurations are completed. It is applicable to the first configuration or reconfiguration after device reformatting. "Configure device" is applicable to the configured devices. One of them can be configured separately for later maintenance.



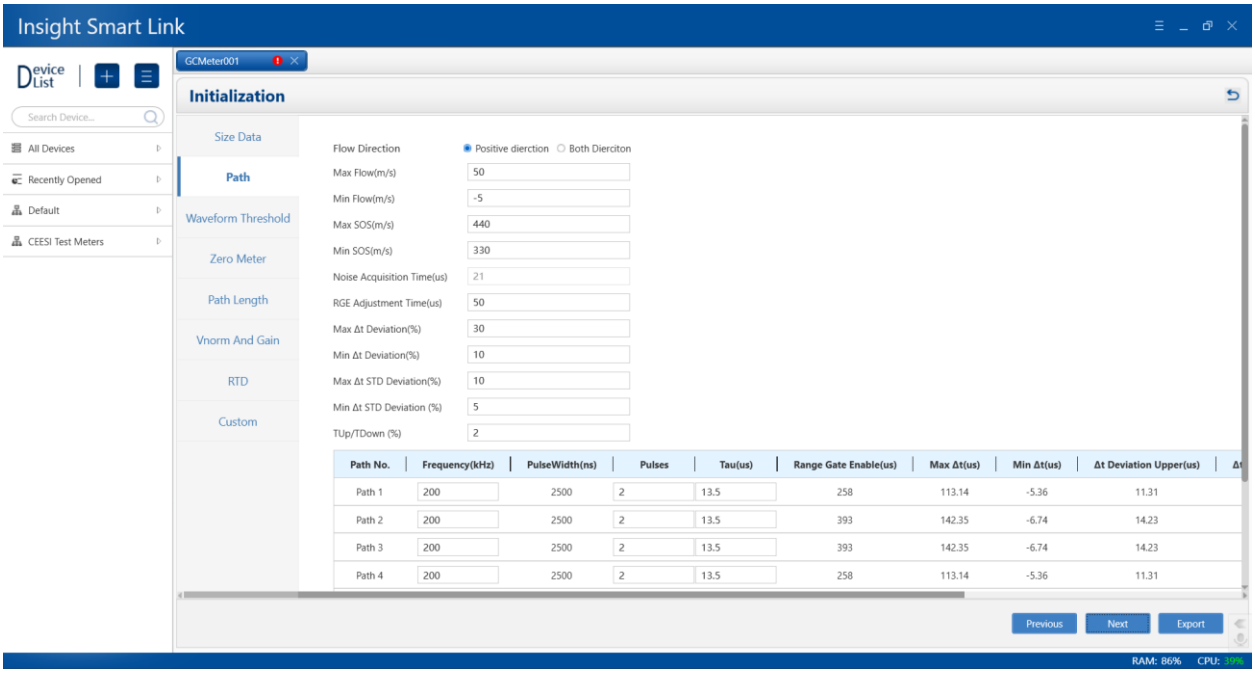
3) Click "initialize device" to enter the configuration interface. There are 7 configuration items in total: size information, channel, waveform threshold, zero drift test, path length, Vnorm and gain and general. Clicking "next" will automatically save the current data to the device, and then jump to the

next configuration item. Click "export" to export the excel of configuration data.

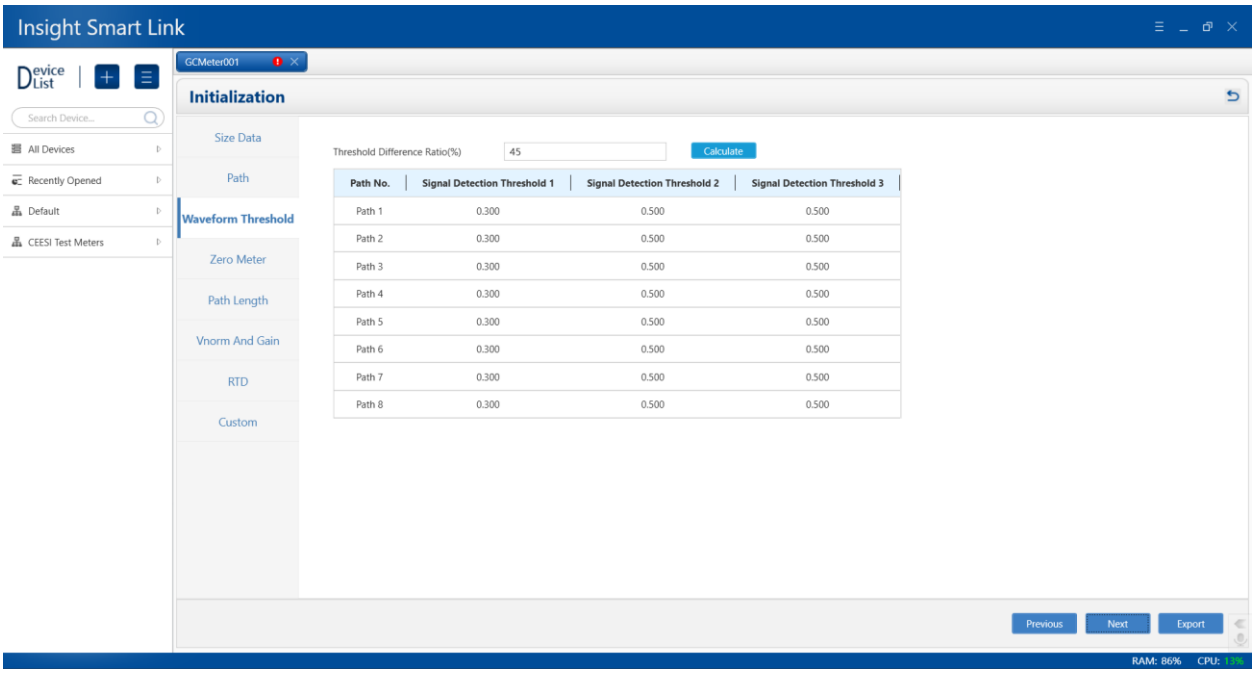


4) Size information: if you select the corresponding model of the equipment, the default data corresponding to this model will be filled in automatically and can be modified according to the actual situation. Click "next" to jump to the "channel" interface.

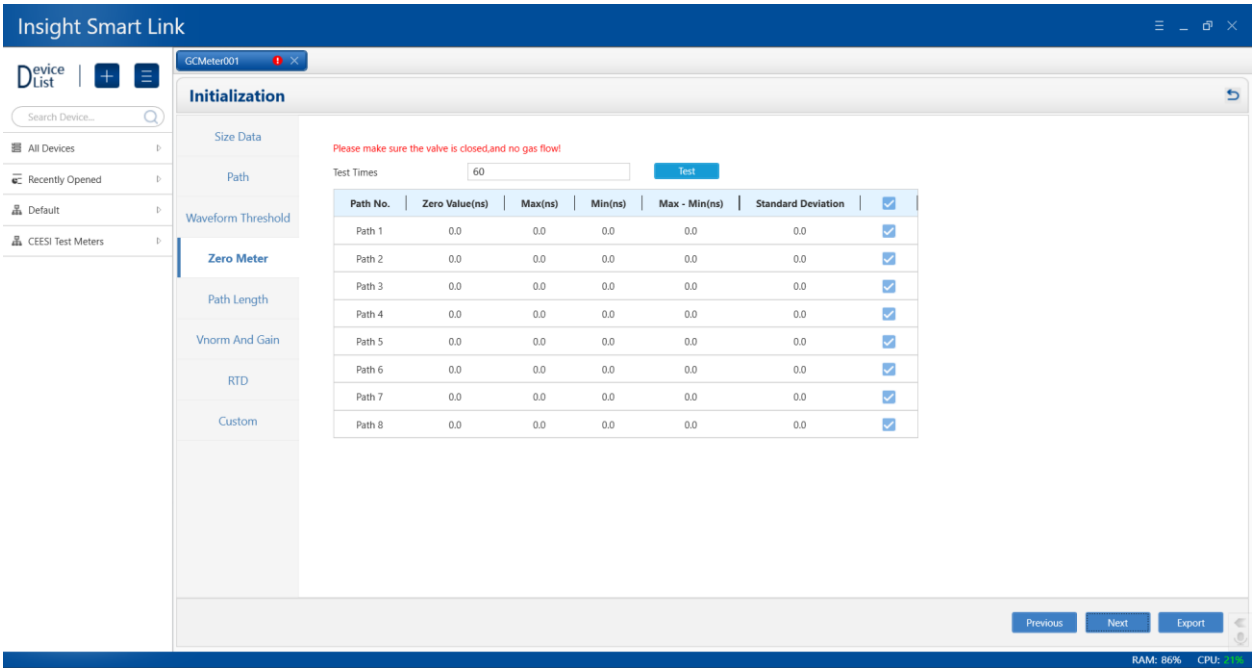
5) Path: it can be filled in according to the actual situation. Click "next" to jump to the "waveform threshold" interface.



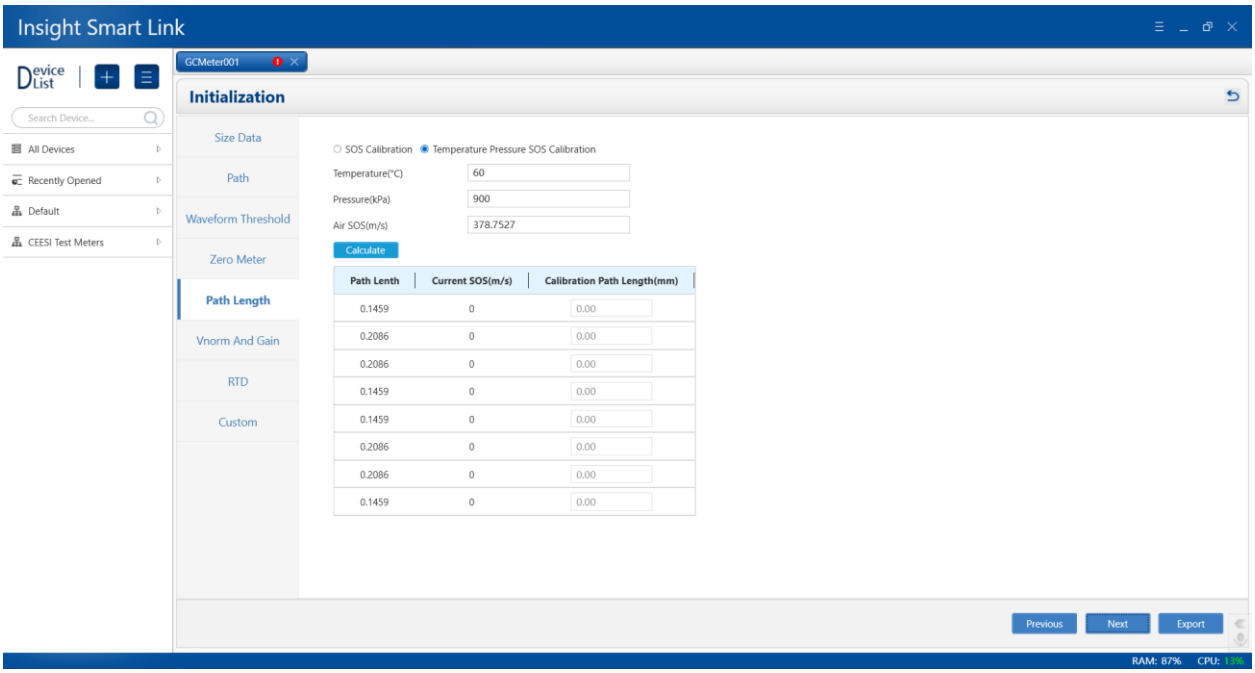
6) Waveform threshold: 1. Fill in the threshold difference ratio.2. Click calculate. Note that there must be no exception between path state and path event values here. If there is an exception, the configuration value of "channel" interface may be wrong, and you need to return to reconfiguration.3 Click "next" to jump to the "zero drift test" interface.



7) Zero drift test: 1. Close the valve and no gas flow.2. Output test times (i.e. the number of real-time data records).3 Click "next" to jump to the "sound length" interface.

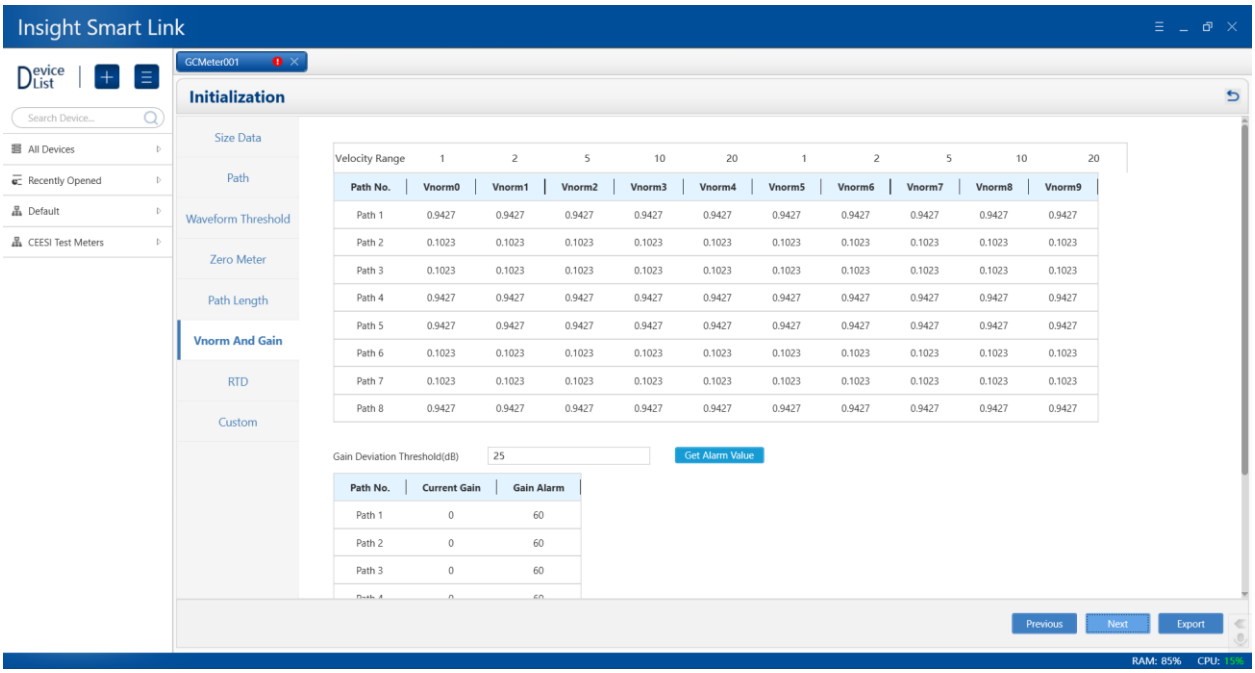


8) Path length: 1. Select the sound length mode, which is divided into two calibration methods. Sound velocity calibration: by filling in the sound speed and clicking "calculate", the current sound speed and sound length can be calculated automatically for calibration. Temperature pressure sound velocity calibration: the current sound velocity can be calculated automatically by filling in the temperature and pressure, and then click "calculate" to automatically calculate the current sound velocity and sound length for calibration.2. Click "next" to jump to Vnorm and gain interface.

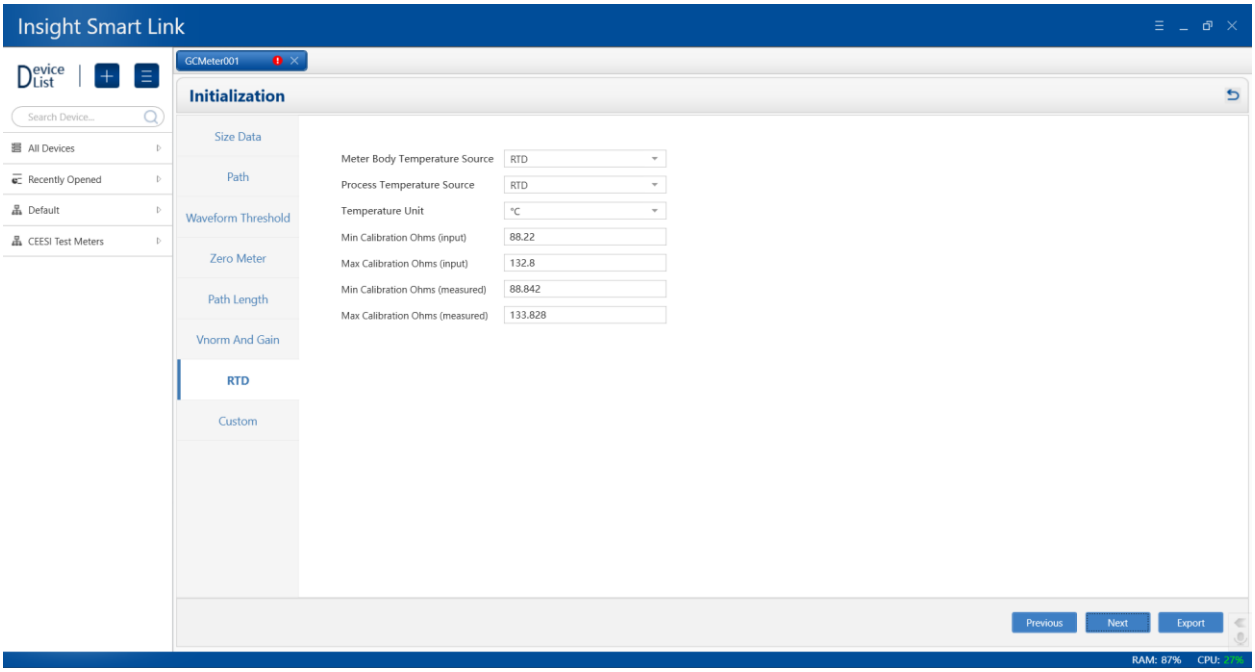


9) Vnorm and gain: 1. The value of Vnorm is automatically filled in by the system.2. Fill in the gain deviation threshold, click "get alarm value" to automatically calculate the gain alarm. Note that there must be

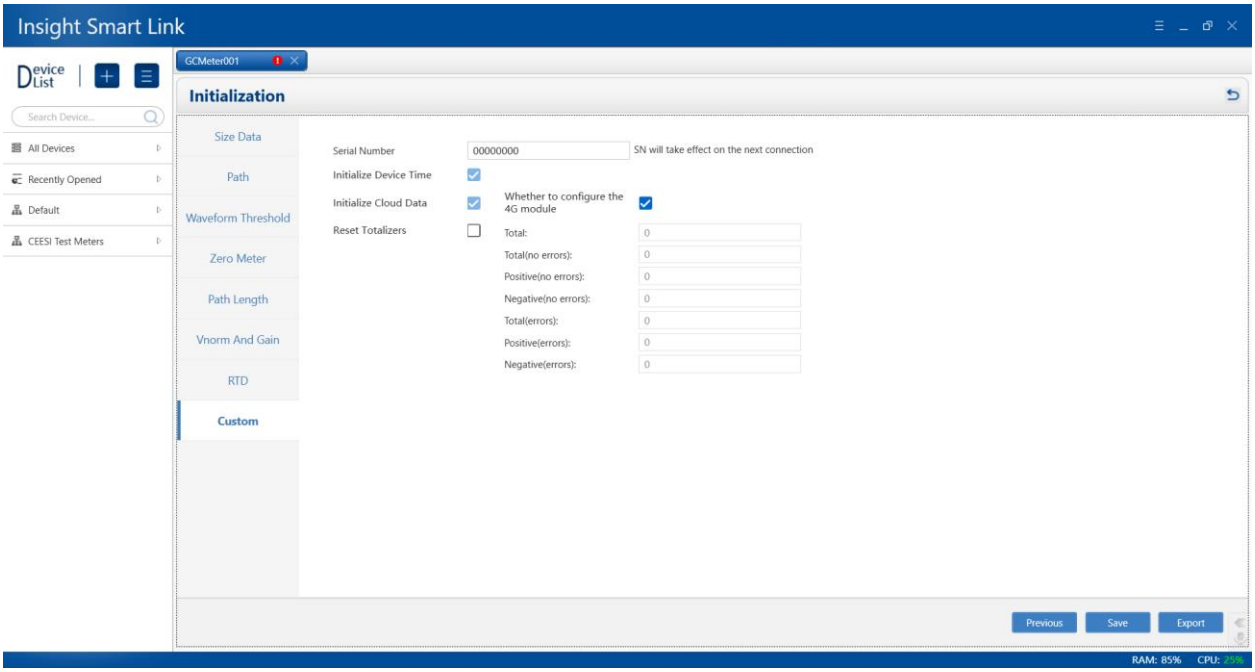
no abnormality in path state and path event values.3. Click "next" to jump to RTD interface.



10) RTD: 1. Before assembling the equipment, measure the RTD low-temperature and high-temperature resistance values and query the standard low-temperature and high-temperature resistance values.2. RTD is selected as the temperature source, and the unit is set according to the demand.3. Fill in the previous measured RTD values into the corresponding items respectively.4. Click "next" to jump to the general interface.



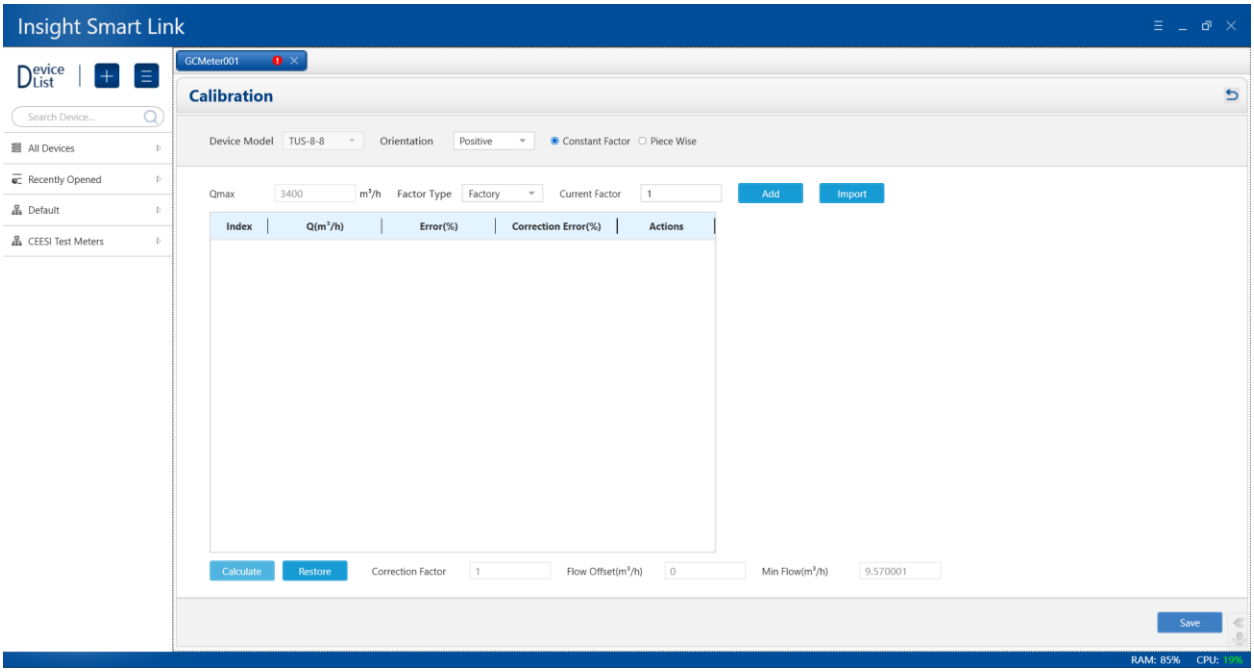
11) General: 1. Fill in the equipment serial number.2. Equipment initialization time is checked by default.3. Initialize cloud data is checked by default. Note that to initialize cloud data, you must log in to the cloud platform administrator (see 2.6 for details).Otherwise, you will be prompted that obtaining cloud data fails.4. Check "whether to configure 4G module" according to the device configuration, which is checked by default. If the software is not checked, the device configuration will be uploaded to the cloud backup, and if it is checked, the device will be uploaded to the cloud backup.5. Select whether to reset the accumulation as required.6. Click Save to complete initialization.



4.20 Configuration - Calibration

Calibration is divided into two modes: constant correction and multi-stage linear correction.

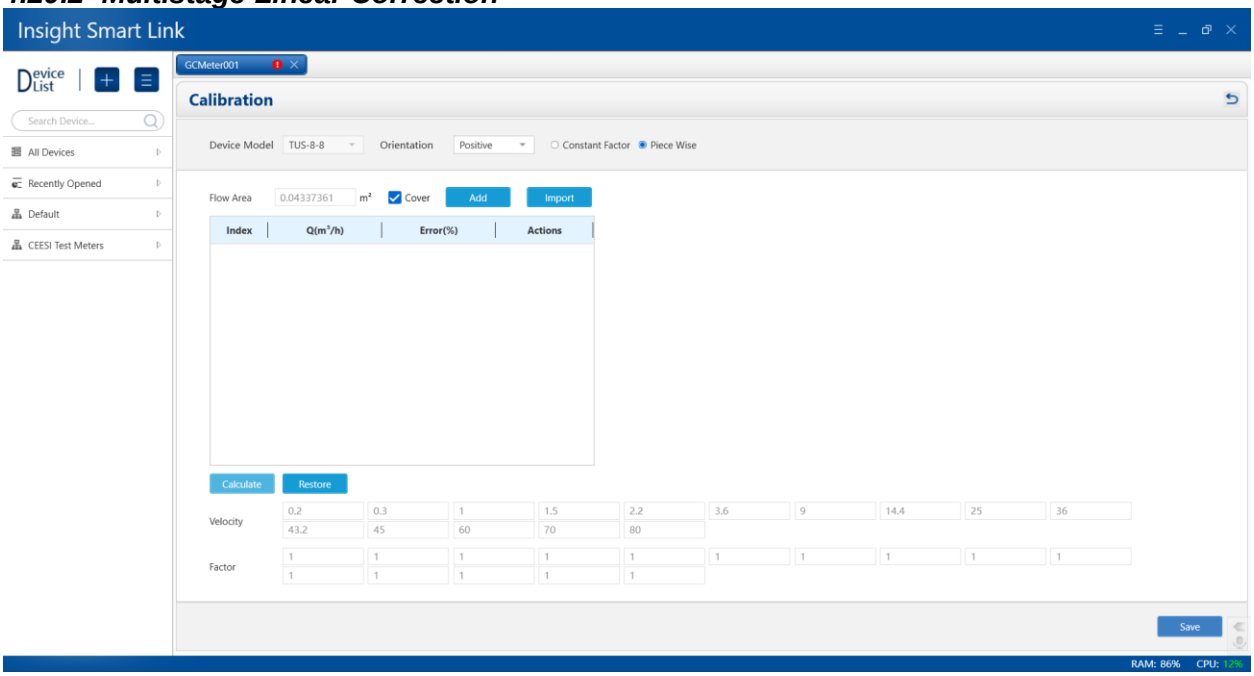
4.20.1 Constant Correction



Operation steps:

1) In the operation interface, click the "calibration" option to open the calibration module.
2) The equipment model will automatically select the current equipment model, and manually select the flow as forward or reverse
3) Selection constant correction
4) Select coefficient type
5) Add correction parameters, at least five flow points, which can be filled in manually by clicking Add, or directly import the identification record.
6) Click "calculate" to calculate the correction factor
7) Click Save to save to the device

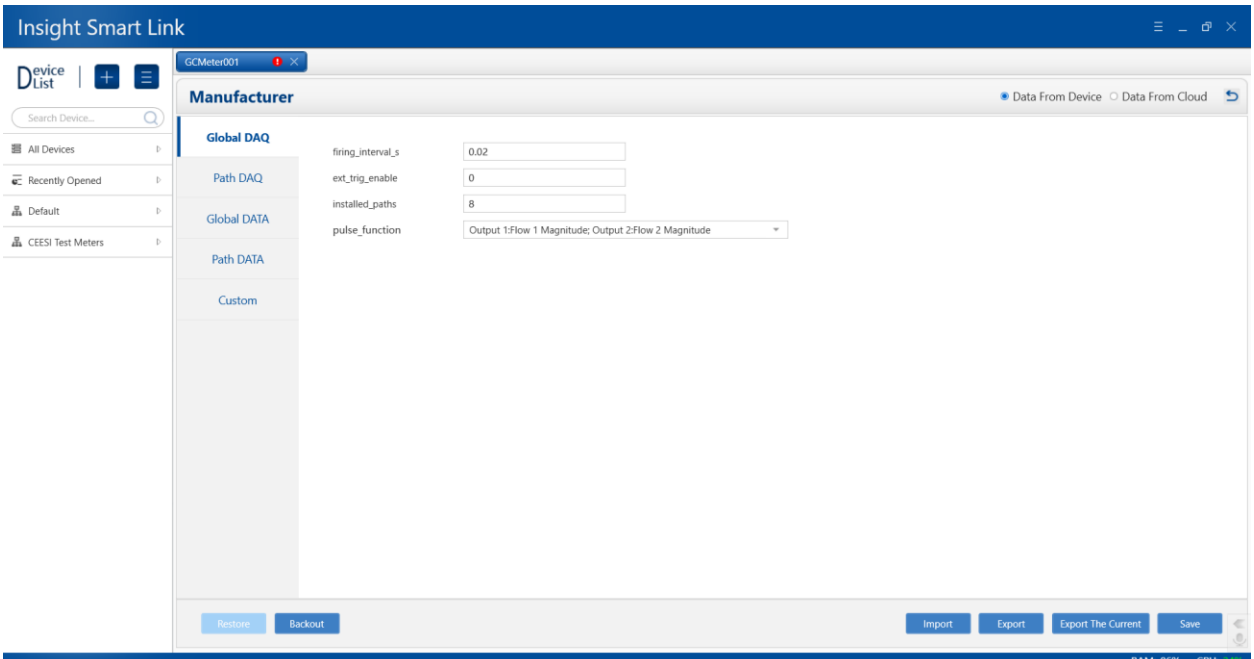
4.20.2 Multistage Linear Correction

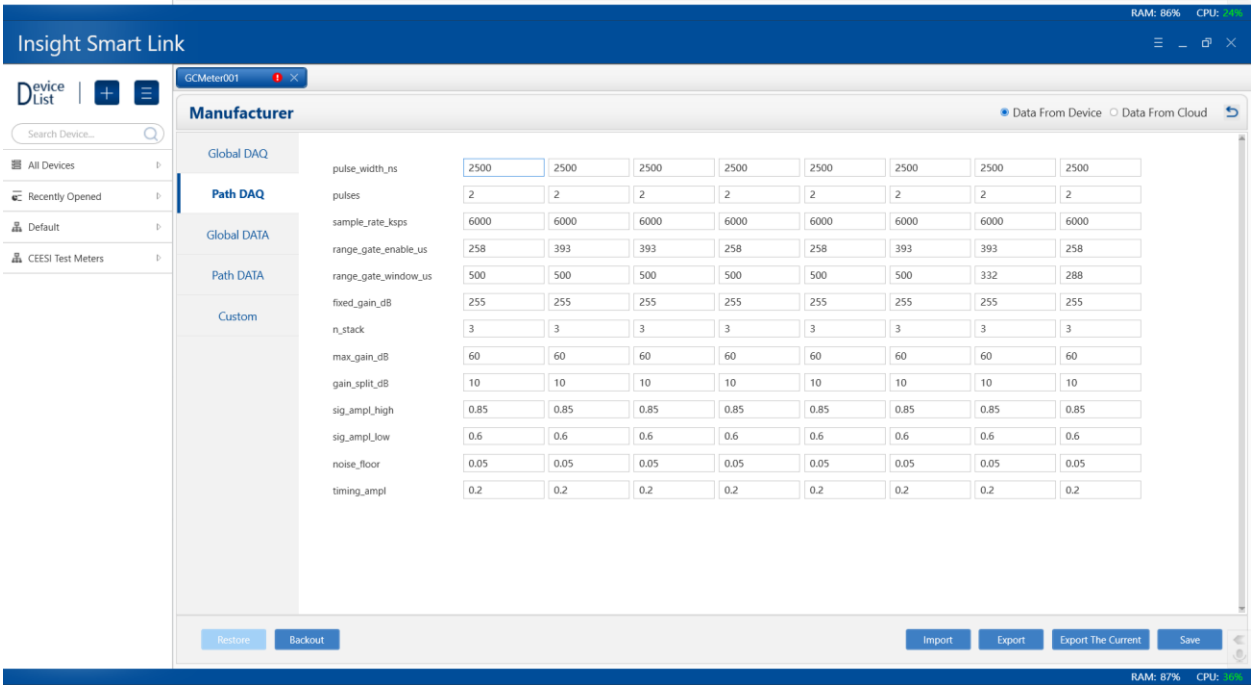


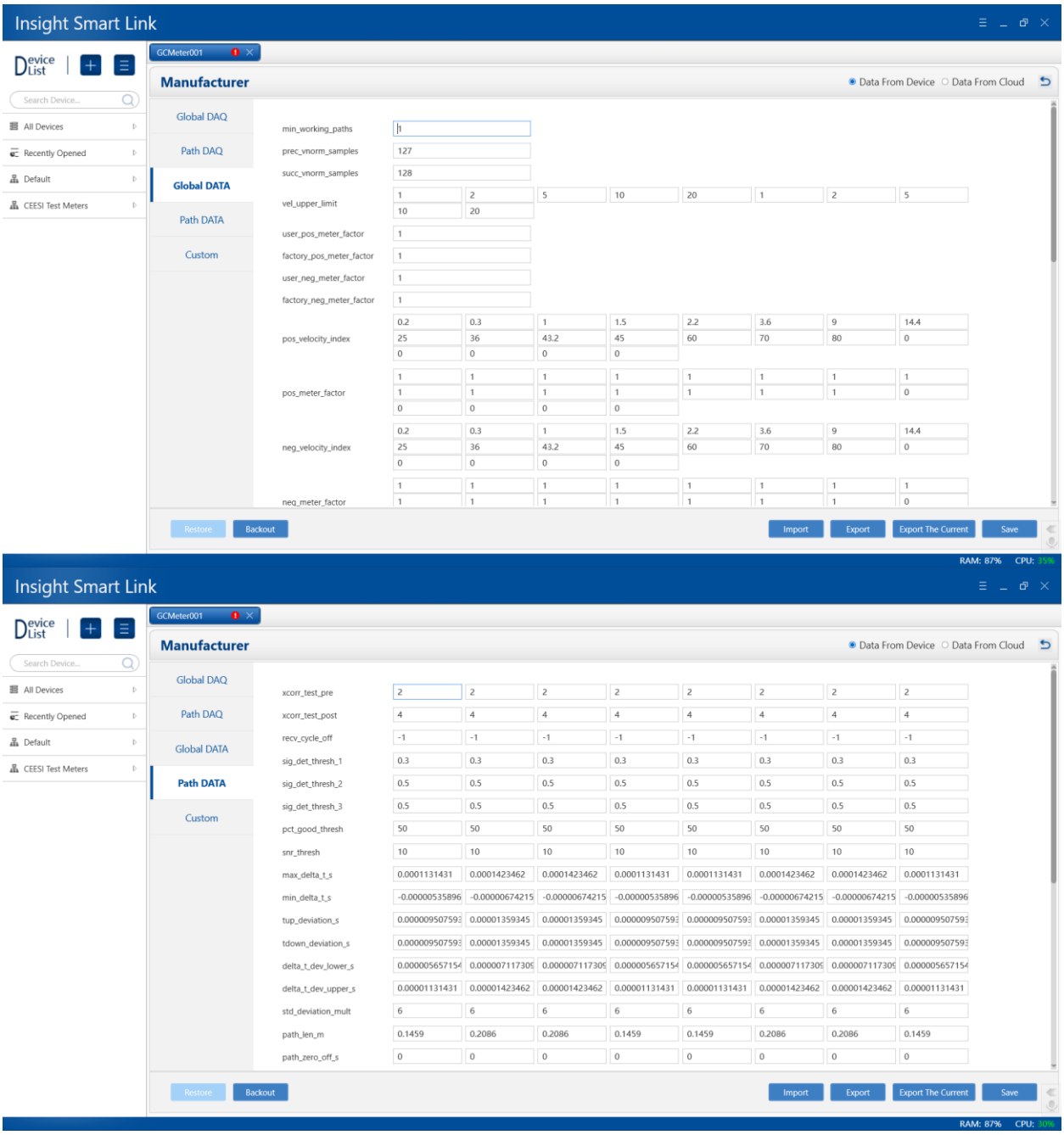
Operation steps:

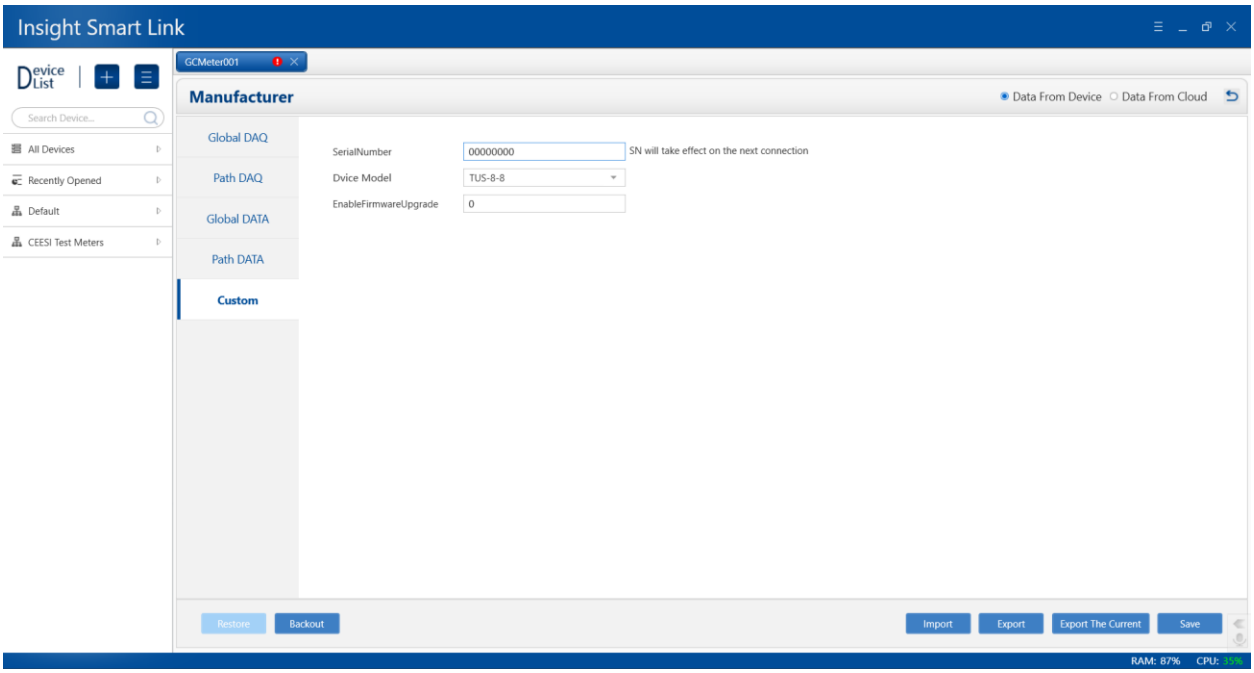
1) In the operation interface, click the "calibration" option to open the calibration module.
2) The equipment model will automatically select the current equipment model, and manually select the flow as forward or reverse
3) Select multi segment linear correction
4) Select whether to overwrite. If it is not checked, the flow point will be added. If it is checked, the calibration coefficient will be recalculated.
5) Add correction parameters. If overwrite is checked, at least five flow points need to be added. You can click Add to fill in manually, or directly import the identification record of Tianxin flowmeter.
6) Click "calculate" to calculate the correction factor
7) Click Save to save to the device

4.21 Configuration - Manufacturer






Insight Smart Link
Device List
Search Device...
All Devices
Recently Opened
Default
CEESI Test Meters
GCMeter001
Manufacturer
Data From Device
Data From Cloud
Global DAQ
Path DAQ
Global DATA
Path DATA
Custom
min_working_paths
prec_vnorm_samples
succ_vnorm_samples
vel_upper_limit
user_pos_meter_factor
factory_pos_meter_factor
user_neg_meter_factor
factory_neg_meter_factor
pos_velocity_index
pos_meter_factor
neg_velocity_index
neg_meter_factor
Restore
Backout
Import
Export
Export The Current
Save
RAM: 87%
CPU: 35%
Insight Smart Link
Device List
Search Device...
All Devices
Recently Opened
Default
CEESI Test Meters
GCMeter001
Manufacturer
Data From Device
Data From Cloud
Global DAQ
Path DAQ
Global DATA
Path DATA
Custom
xcorr_test_pre
xcorr_test_post
recv_cycle_off
sig_det_thresh_1
sig_det_thresh_2
sig_det_thresh_3
pct_good_thresh
snr_thresh
max_delta_t_s
min_delta_t_s
tup_deviation_s
tdown_deviation_s
delta_t_dev_lower_s
delta_t_dev_upper_s
std_deviation_mult
path_len_m
path_zero_off_s
Restore
Backout
Import
Export
Export The Current
Save
RAM: 87%
CPU: 30%


Insight Smart Link
Device List
Search Device...
All Devices
Recently Opened
Default
CEESI Test Meters
GCMeter001
Manufacturer
Data From Device
Data From Cloud
Global DAQ
Path DAQ
Global DATA
Path DATA
Custom
SerialNumber
00000000
SN will take effect on the next connection
Dvice Model
TUS-8-8
EnableFirmwareUpgrade
0
Restore
Backout
Import
Export
Export The Current
Save
RAM: 87%
CPU: 35%

Section 5

Cloud Platform

The equipment and software can be configured with cloud services, which include factory data backup, dynamic password acquisition, historical data storage and query.

5.1 Factory data backup

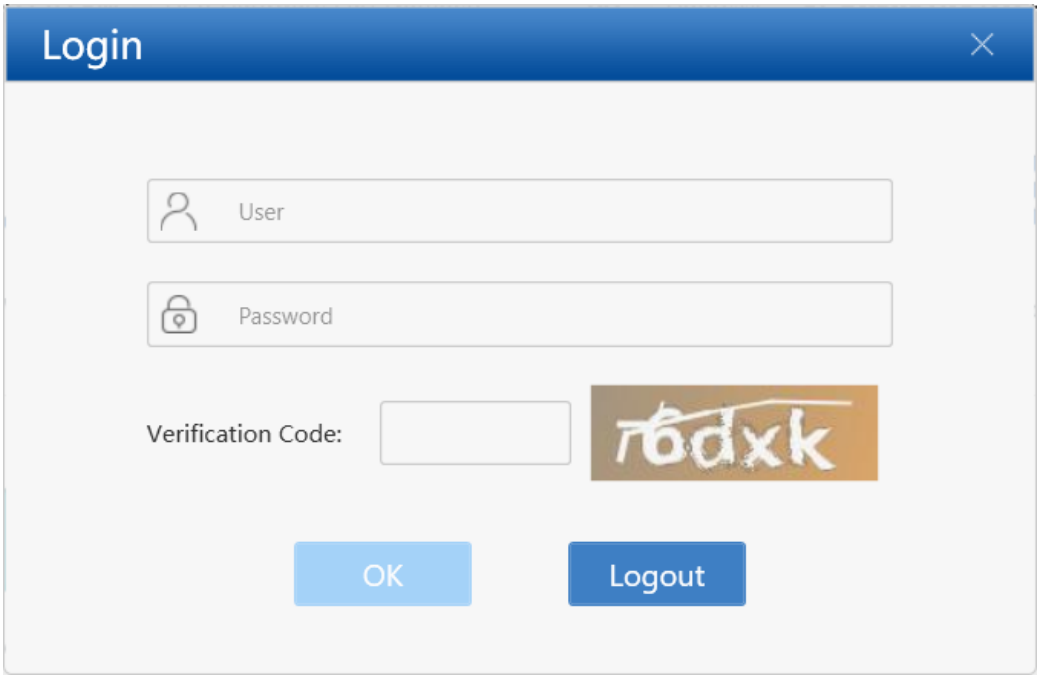
After initialization, the device will back up the configuration data to the cloud. See configuration initialization - general for details.

5.2 Dynamic password

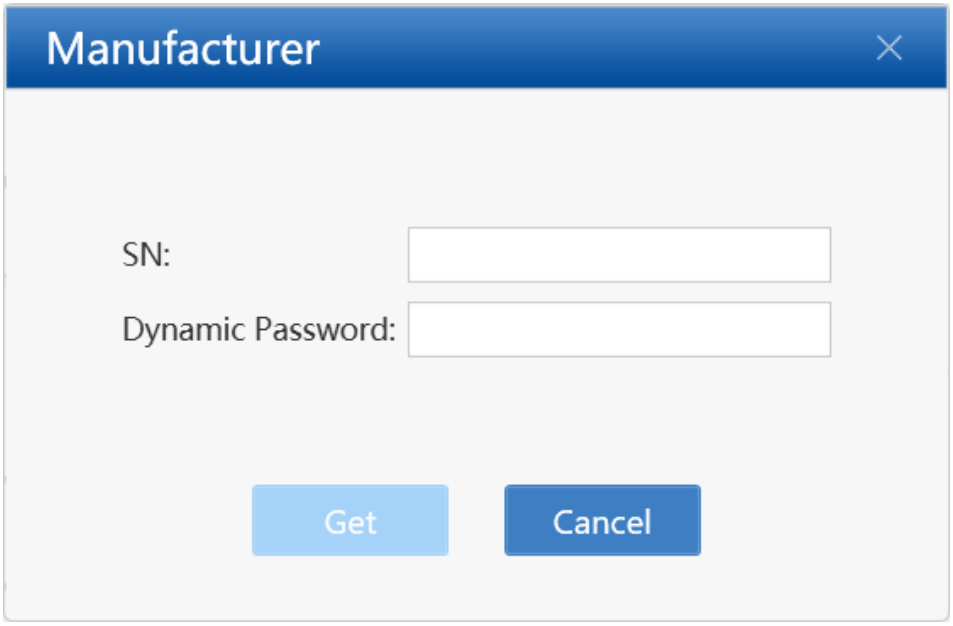
The dynamic password is used to log in the user with the authority of the equipment manufacturer.

Use steps:

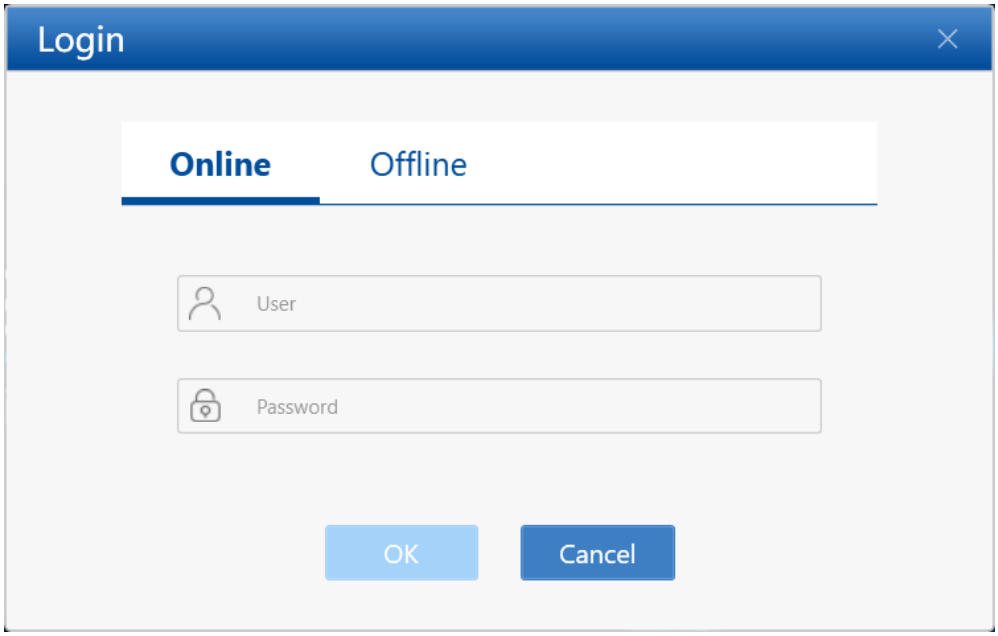
1) Click the menu - manufacturer in the upper right corner of the software, enter the cloud platform account and password, and click login.



2) Click the menu in the upper right corner of the software - dynamic password, enter the device serial number, and click get.



3) Connect the device and enter the manufacturer account and the dynamic password just obtained in the device login window.



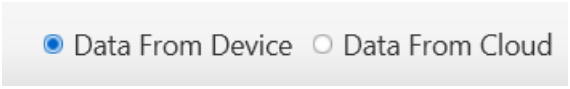
5.3 Data Storage Query

5.3.1 Storage

Data storage is completed by the device. In the initialization phase, 4G parameters will be configured in the device, and the device will upload data to the cloud platform through the 4G module.

5.3.2 Query

The query is completed by this software. Query steps:

1) Select the module with cloud platform data. The module with data source in the upper right corner of the module is the cloud data module, including historical data, fingerprint, event log, alarm log, unit, sensor, I / O configuration, device local information, alarm shielding and manufacturer. Data source selection flag: 

2) Select data from the cloud.
3) If the cloud has not been configured before, the cloud password configuration window will pop up, and the password can be queried in the factory report.
4) After the password is configured, the data source is switched to the cloud to query the data.

Section 6

Contact Information

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