C&I Energy storage EMU300 Detailed Introduction

Detailed Introduction

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Catalog

1. EMS Technical Requirement

The Energy Management System (EMS) for industrial and commercial energy storage primarily consists of modules including Power Conversion System (PCS), Battery Management System (BMS), battery cells, equipment monitoring, report analysis, auxiliary control, centralized control, load tracking, alarm history, and configuration center.

1.1. General Requirement

The equipment configuration and functional requirements of the Energy Storage Management System (EMS) are designed for unattended operation in industrial and commercial energy storage power stations.

The EMS monitoring system for industrial and commercial energy storage power stations covers data from batteries, power conversion systems (PCS), transformers, air conditioning units, fire protection systems, and switchgear. Battery data includes individual cells, battery clusters, and battery stacks. PCS information encompasses operational status, voltage, current, and active power.

It has the following main features:

(1) The system provides real-time monitoring of all station equipment, tracking operational status, recording data, and supporting historical data queries.

(2) It supports energy control strategies, including timed and power-controlled charging/discharging, to meet peak-valley arbitrage and load leveling requirements.

(3) Through coordinated control of the battery management system (BMS), it collects BMS alarm information and supports controlling the power reduction or shutdown of the power control system (PCS) to ensure optimal battery operation.

(4) It supports external communication and cloud transmission, accessible via a local switch or built-in 4G/5G module. The data features local caching and a resume capability.

(5) Data can be viewed in the cloud and on mobile devices.

1.2. Run Rules

General Principles of Energy Storage System Operation

The control objectives are to maximize the peak shaving and valley filling benefits, not to feed back to the grid, and not to overload the transformer during charging.

During off-peak hours at night and daytime low-load periods, the Energy Management System (EMS) controls the Power Conversion System (PCS) to charge energy storage based on battery State of Charge (SOC), while discharging during peak electricity hours.

(1) When the load power is less than or equal to the maximum discharge power of the energy storage system, the EMS controls the discharge power of the energy storage PCS to be ≤ the load power.

(2) When the load power exceeds the maximum discharge capacity of the energy storage system, the EMS controls the PCS to discharge at its maximum capacity.

(3) During load mutation, the EMS system monitors the load power in real time and controls the charging/discharging power of the energy storage PCS, ensuring that the discharged energy from the storage does not feed back into the grid.

Specific application scenarios include the following:

1) Peak shaving and valley filling strategy: control the battery discharge during the peak load phase (electricity price peak) to control the load at a reasonable level. When the load is low, choose the appropriate time period (electricity price valley section) to charge in the appropriate way.

2) Demand control strategy: systematic monitoring of grid-connected points to absorb grid electricity; When the grid-connected point absorbs the power consumption of the grid, it increases; exceeding a certain threshold; The energy storage system automatically increases the output; Ensure that the total power of the grid-connected point is less than the set threshold.

3) Anti-countercurrent control strategy: system monitoring of grid-connected points absorbing electricity consumption from the grid; When the grid-connected point absorbs less electricity from the grid; The energy storage system automatically reduces the output; Ensure that the energy storage system does not send power backwards to the grid; When the system has a reverse power transmission phenomenon; The system should immediately control the corresponding relay at the grid-connected point to trip.

1.3. Data acquisition, display and storage

(1) The system provides real-time monitoring of operational status and fault alerts across all devices, including: PCS (Power Control System) data (power, voltage, current, etc.) and status; BMS (Battery Management System) data (cell voltage, temperature, SOC, etc.) and status; energy meter data (forward/reverse active power, reactive power, power factor, voltage, current, etc.); and status information for system access control, water intrusion detection, switches, air conditioning, and fire safety systems (transmitted via BMS or directly connected through dry contacts).

(2) The query displays the operation records of each device, showing the operation data curves and working status curves of the devices in the database.

(3) The statistics of charging and discharging quantity can be queried by year, month and day.

(4) Store for ≥90 days, including fault status information, with data collection completed within 3 seconds per cycle.

1.4. System Architecture Design

Scenario architecture diagram:

Electricity/New Energy: This technology can be applied to power equipment monitoring, solar power generation systems, wind power generation systems, photovoltaic energy storage charging stations, and microgrid scenarios, enabling remote monitoring and control of energy equipment to enhance energy utilization efficiency.

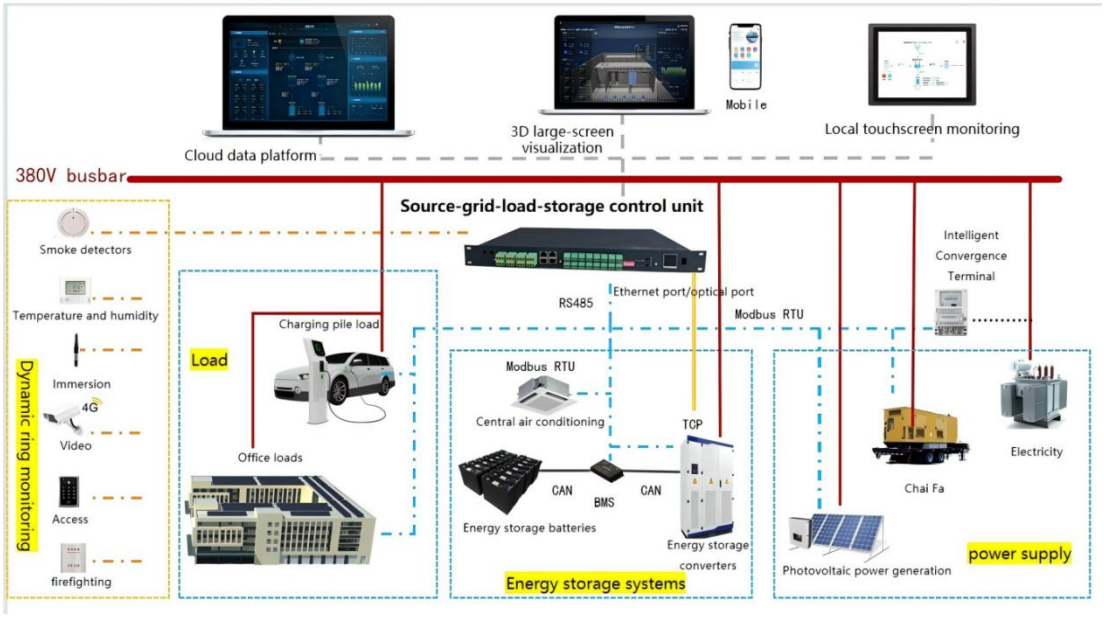


Figure 1-1 Architecture Diagram

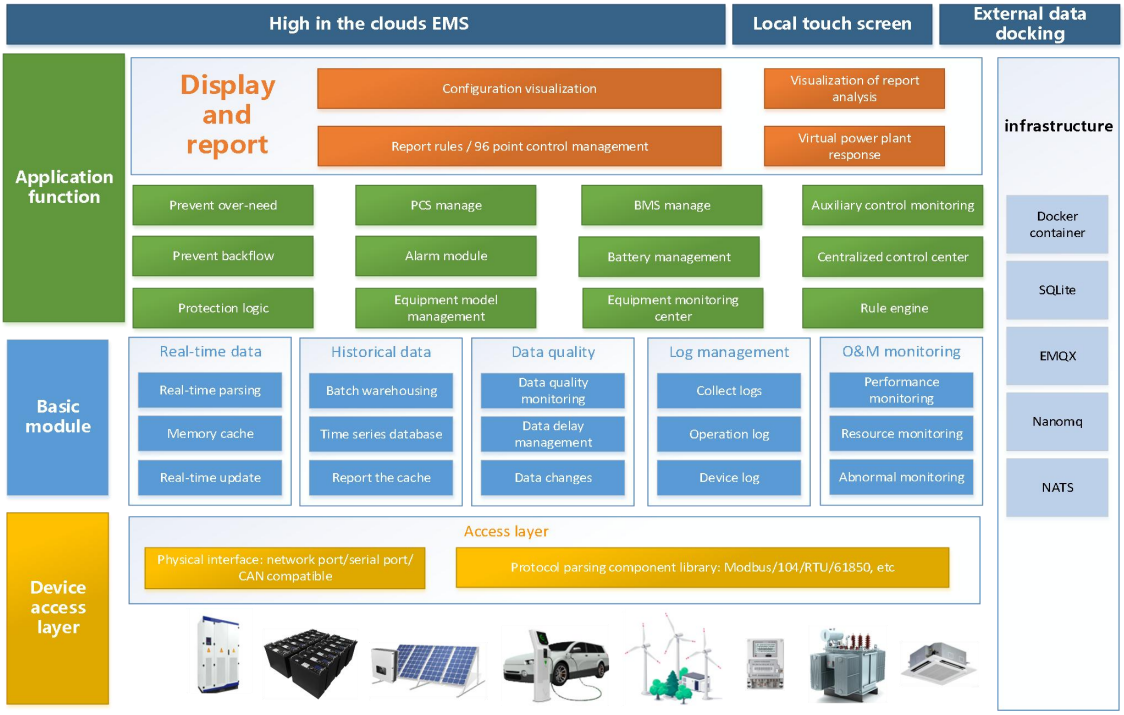


Figure 1-2 Functional Composition Diagram

2. Runtime Environment

2.1. Hardware equipment

Powered by an EMU device: 4-core processor, 4GB RAM, 32GB storage, with RK3562 recommended for domestic production

2.2. Environmental requirements

- Altitude: <4000m.
- Maximum ambient temperature (indoor or outdoor): 55℃;
- Minimum temperature: -25℃; Maximum daily temperature difference: 25℃;
- Maximum relative humidity: daily average: 95%; monthly average: 90%;
- Operating temperature: -30℃ to +55℃;
- Seismic resistance: Seismic fortification intensity: 9 (0.2g)

2.3. Installation methods

Pre-installed in containers or outdoor cabinets, with standard rack-mounted cabinets at 1U height.

2.4. Support software

Database SQLite, TDengine, Redis

Developing languages: Vue, JavaScript, and Go

EMQX and Nanomq middleware

3. Functional Requirement

3.1. Energy storage function

3.1.1. Overview of the power station

The power station overview displays information on the power station, including operational power, equipment details, power generation, and revenue. Equipment details include PCS, BMS, and auxiliary control information. Revenue statistics are displayed on a weekly, monthly, and yearly basis, allowing users to switch between these views. The central part of the page shows configuration information and corresponding equipment location details, as shown in Figure 3-1.

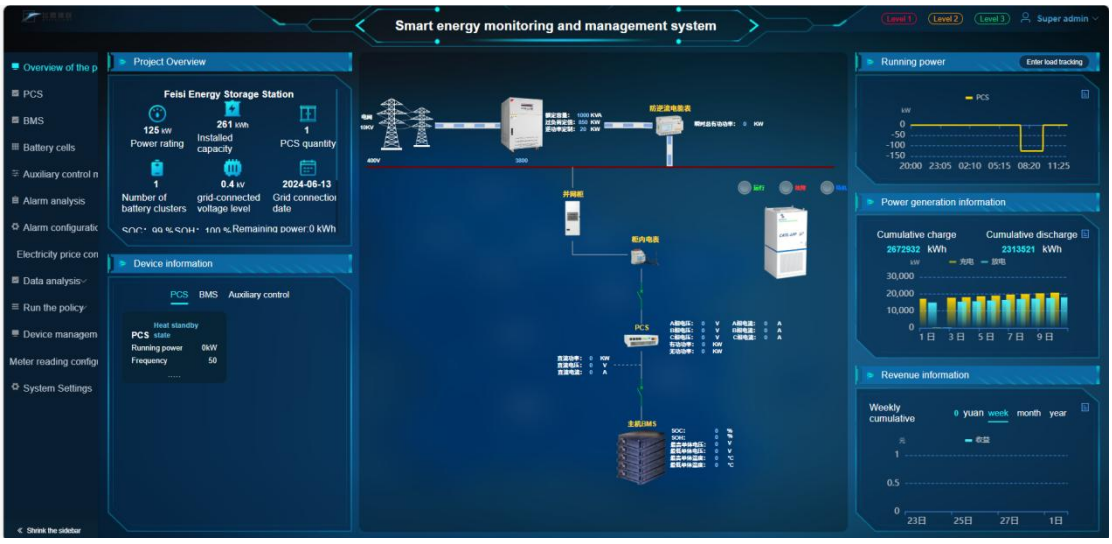


Figure 3- 1 Project Overview

3.1.2. PCS

The module displays basic information such as PCS information, equipment status, manufacturer, equipment model, battery cluster, number of batteries, battery specifications, and rated power. It shows active and reactive power. On the DC side, it displays total voltage and total current. For AC measurement, it shows voltage, current, active and reactive power, apparent power, and frequency. The left side of the module displays real-time and historical alarm information for the PCS, as shown in Figure 3-2.

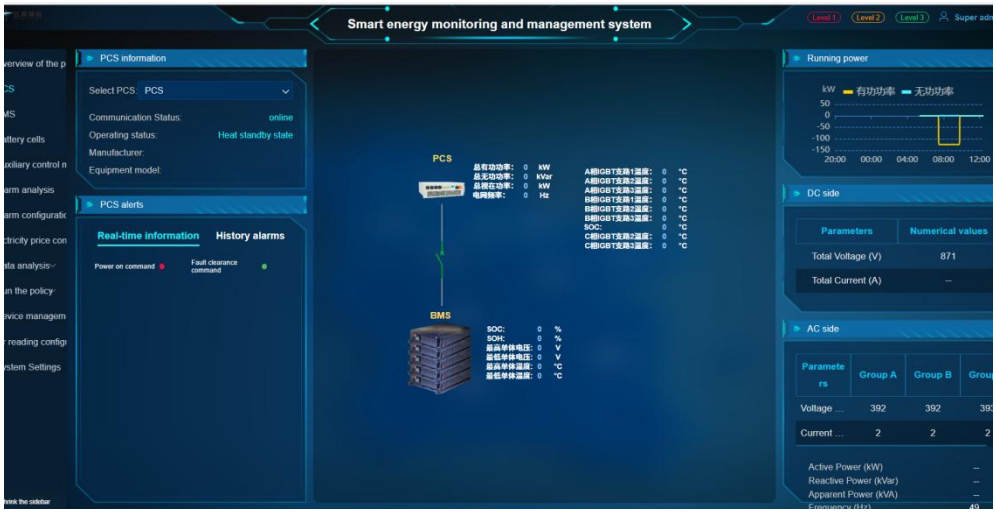


Figure 3- 2 PCS

3.1.3. BMS

The BMS Battery Manager module displays the status of battery clusters, battery health, and remaining power. It also shows cluster extreme values, including the highest and lowest voltages, temperatures, SOC, and serial numbers. In the lower left corner, it displays cluster power information, including statistics on charge and discharge. Users can click to switch between daily, weekly, and monthly statistics. In the lower right corner, it displays historical alarm information, such as low battery voltage and excessive current discharge. The middle section shows the real-time status of the equipment in a configuration format, as illustrated in Figures 3-3.

Figure 3- 3 BMS Main Interface

3.1.4. Battery

The battery page mainly displays the cell information. Users can view the real-time voltage, temperature, SOC and SOH measurement point information, as shown in Figure 3-4 and Figure 3-5.

Figure 3- 4 Battery Data

Figure 3- 5 Historical data

3.1.5. Auxiliary control monitoring

The auxiliary control mainly displays and detects auxiliary control equipment, such as air conditioning, liquid cooling units, comprehensive protectors and other equipment. It also checks measurement points, alarm records and other information, as shown in Figure 3-6.

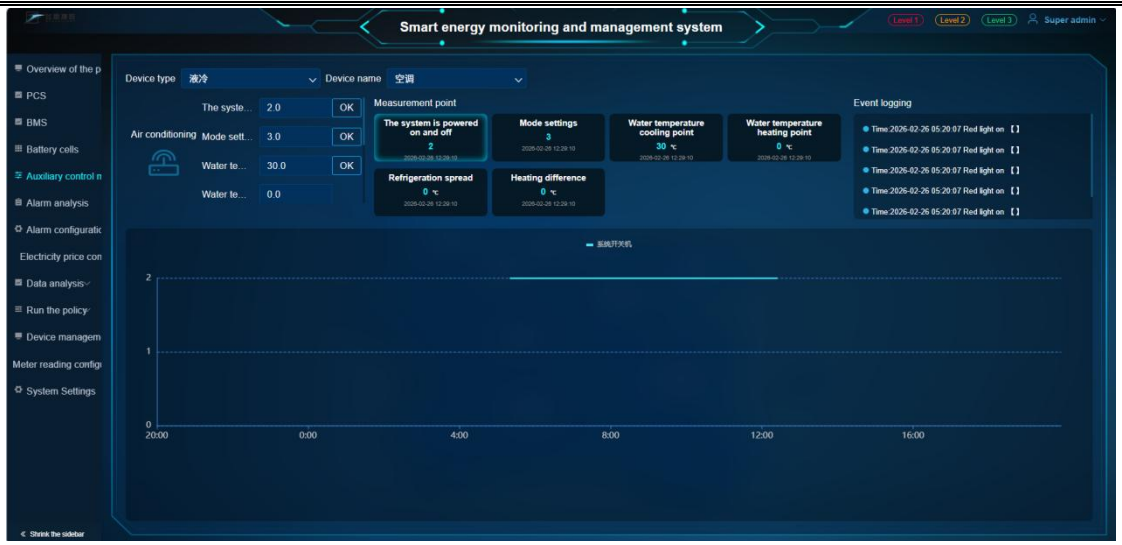


Figure 3- 6 Auxiliary Control Information

3.1.6. Alarm analysis

The alarm analysis module displays all alarm records of the project, categorizing them by level: critical, major, severe, and urgent. It also provides detailed information on each alarm, including the device name, alarm level, event description, occurrence time, creation and recovery times, and time status. The module allows users to manually confirm alarm records, filter records based on specific conditions, and view records in a paginated manner, as shown in Figure 3-7.

Figure 3- 7 Alarm History

3.1.7. Alarm configuration

The alarm configuration adds rules to determine whether the point condition meets the trigger condition and generates an alarm record, as shown in Figure 3-8.

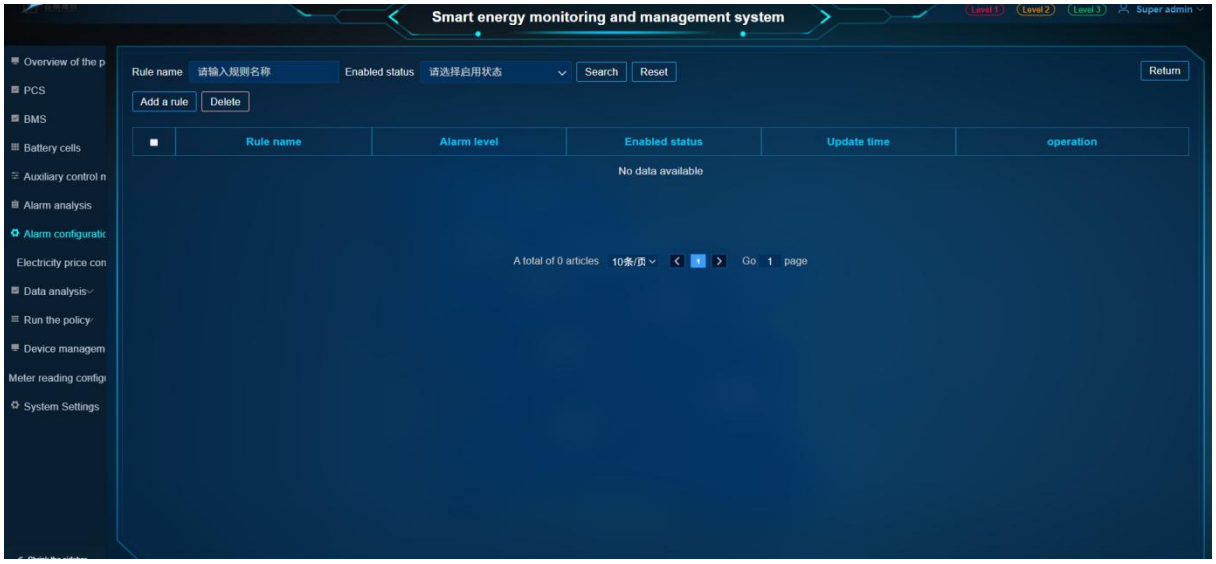


Figure 3- 8 Alarm Configuration

3.1.8. Electricity tariff configuration

3.1.8.1. Electricity price setting

The price setting is used to set and manage the price information of different months, including time template and price template. The price situation in different periods is displayed intuitively in a graphical way, as shown in Figure 3-9.

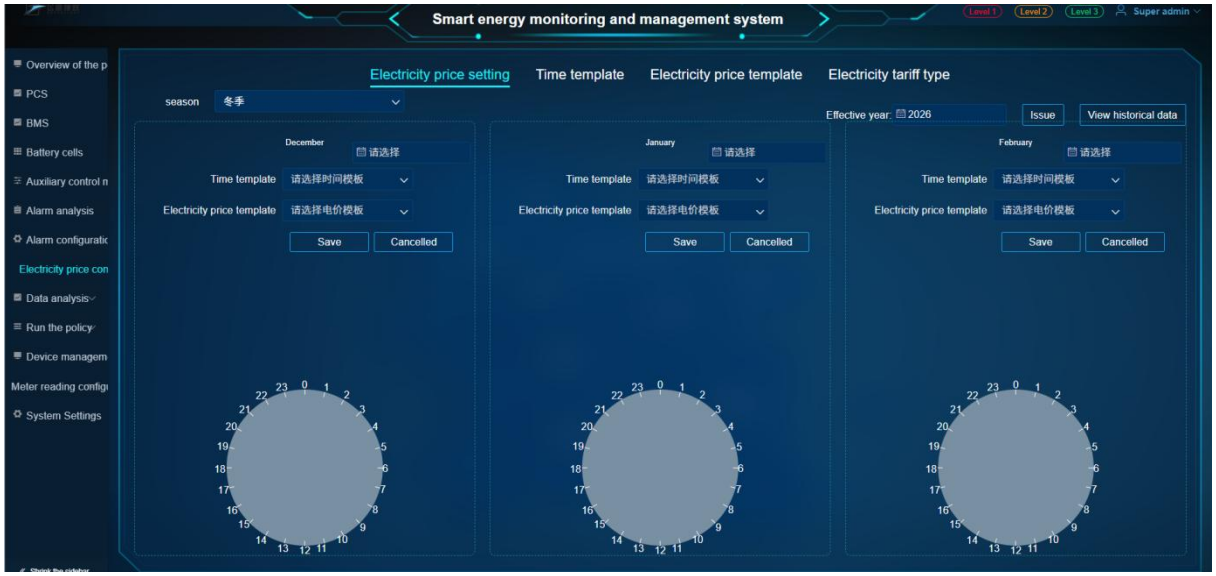


Figure 3- 9 Electricity Price Setting

3.1.8.2. Time template

The time template facilitates the creation, editing and management of electricity price periods according to the type of electricity price. As shown in Figure 3-10.

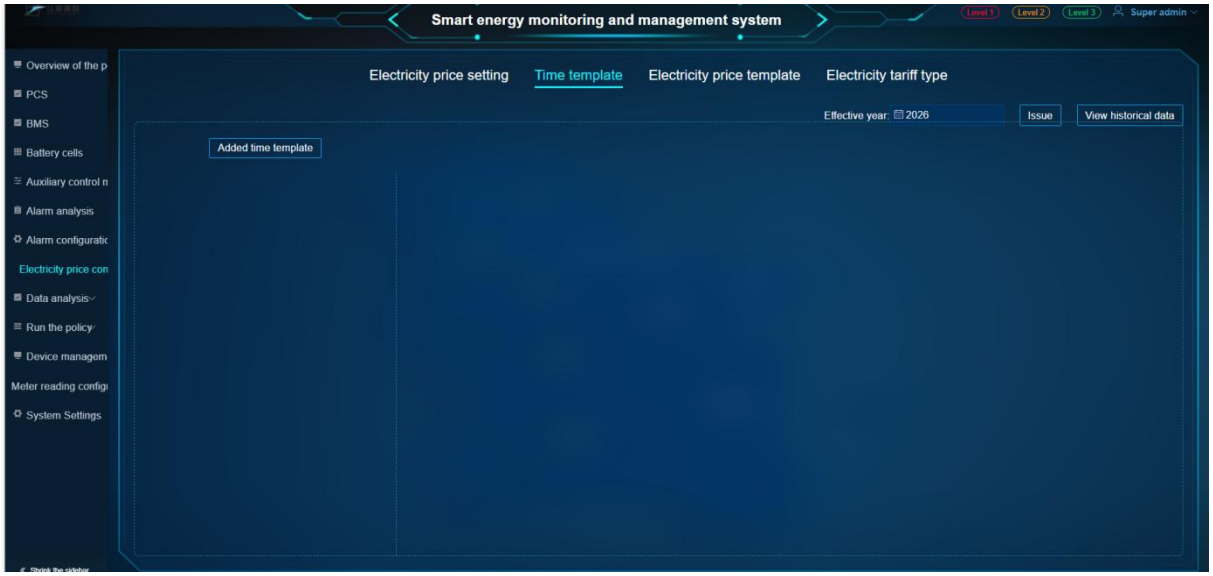


Figure 3- 10 Time template

3.1.8.3. Electricity price template

The electricity price template creates, edits and manages specific electricity price information according to the type of electricity price. As shown in Figure 3-11.

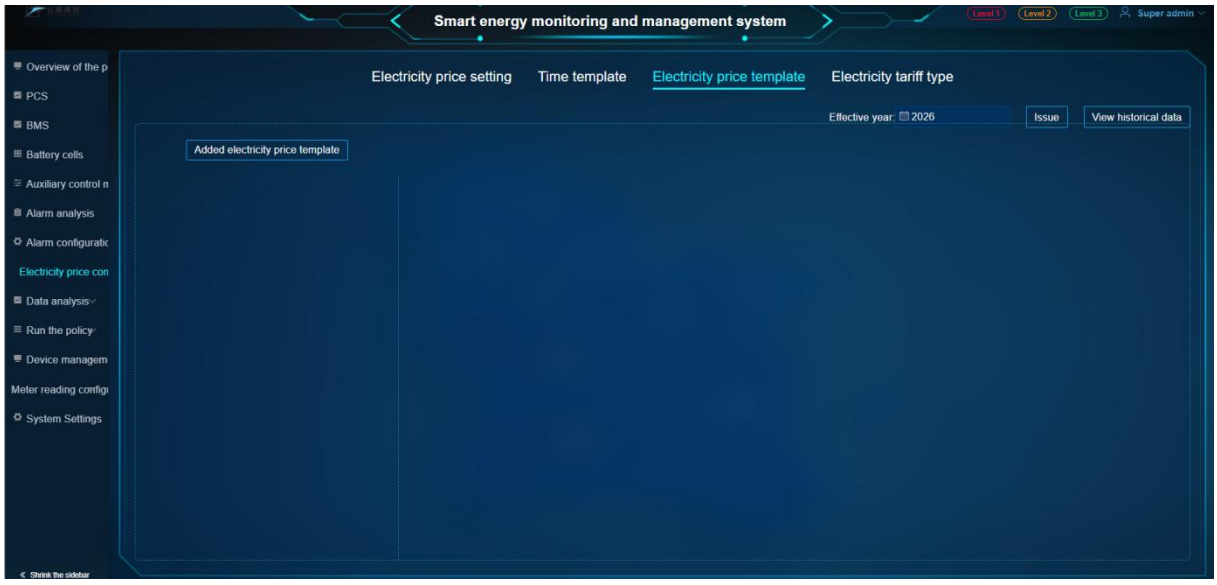


Figure 3- 11 Electricity Price Template

3.1.8.4. Type of electricity price

Customize and manage the name and color of the electricity price type, which is convenient to display in the electricity price setting, time template and electricity price template. As shown in Figure 3-12.

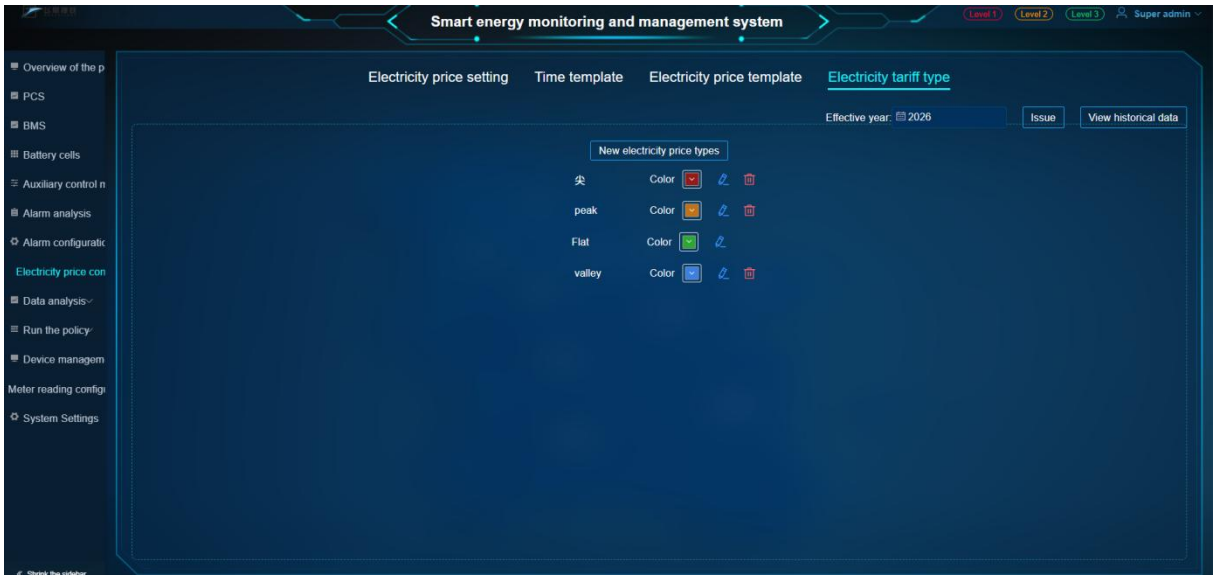


Figure 3- 12 Type of Electricity Price

3.1.9. Data analysis

3.1.9.1. statement analysis

Users can view the charging current and discharge current information of day and month. Charging is divided into forward active total, peak, peak, flat and valley energy, and discharge is reverse active total, peak, peak, flat and valley energy, as shown in Figure 3-13.

Date	pointed		peak		Flat		valley		Revenue (yuan)
	Charging volume	Discharge volume	Charging volume	Discharge volume	Charging volume	Discharge volume	Charging volume	Discharge volume	
									0.00
2026-02-10	9.00	285.00	131.00	10588.00	1149.00	7073.00	19451.00	0.00	0.00
2026-02-09	9.00	285.00	128.00	10335.00	1146.00	6990.00	19065.00	0.00	0.00
2026-02-04	9.00	285.00	115.00	9066.00	1134.00	6271.00	16796.00	0.00	0.00
2026-02-03	9.00	285.00	113.00	8815.00	1131.00	6268.00	16507.00	0.00	0.00
2026-02-08	9.00	285.00	125.00	10082.00	1144.00	6880.00	18651.00	0.00	0.00
2026-02-07	9.00	285.00	123.00	9829.00	1141.00	6841.00	18316.00	0.00	0.00
2026-02-06	9.00	285.00	120.00	9574.00	1138.00	6588.00	17737.00	0.00	0.00
2026-02-05	9.00	285.00	118.00	9320.00	1136.00	6512.00	17360.00	0.00	0.00
2026-02-02	-64.00	0.00	4.00	505.00	-153.00	-200.00	505.00	-52.00	0.00
2026-02-01	73.00	285.00	106.00	8060.00	1281.00	6465.00	15713.00	52.00	

Figure 3- 13 Statement Analysis

3.1.9.2. Load following

Provide detailed monitoring and analysis of energy load in the form of charts to help users understand energy consumption patterns, optimize energy use strategies, and improve energy efficiency. See Figure 3-14.

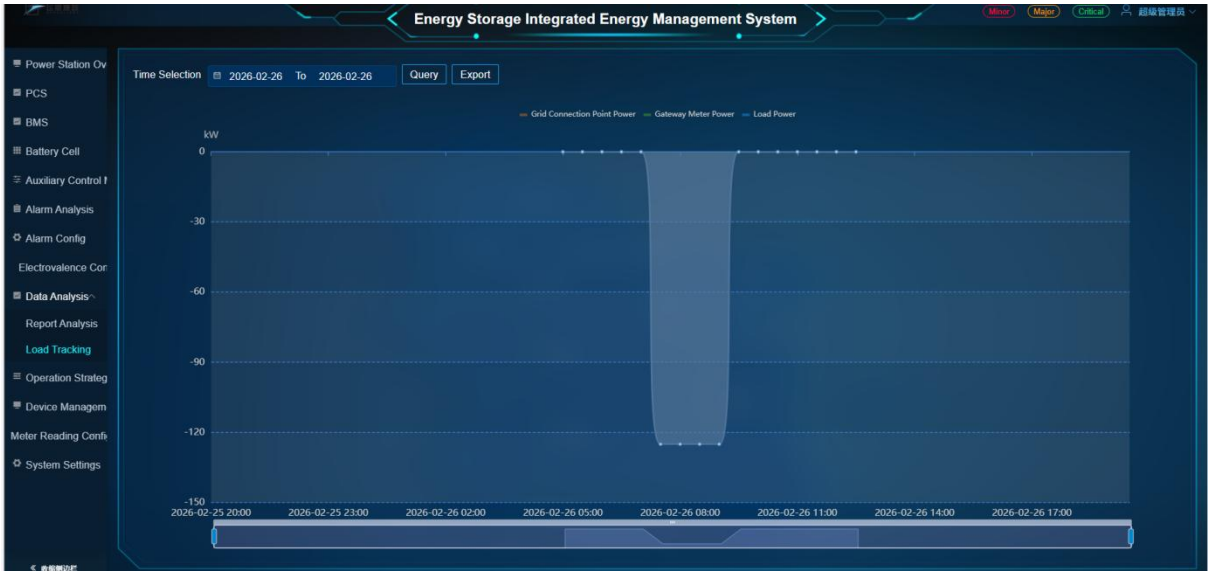


Figure 3- 14 Load following

3.1.10. Operational Strategy

3.1.10.1. Strategy management

Strategy configuration shows the usage scenarios and functions of various strategy configurations in the system by combining graphics and text, as shown in Figure 3-15.

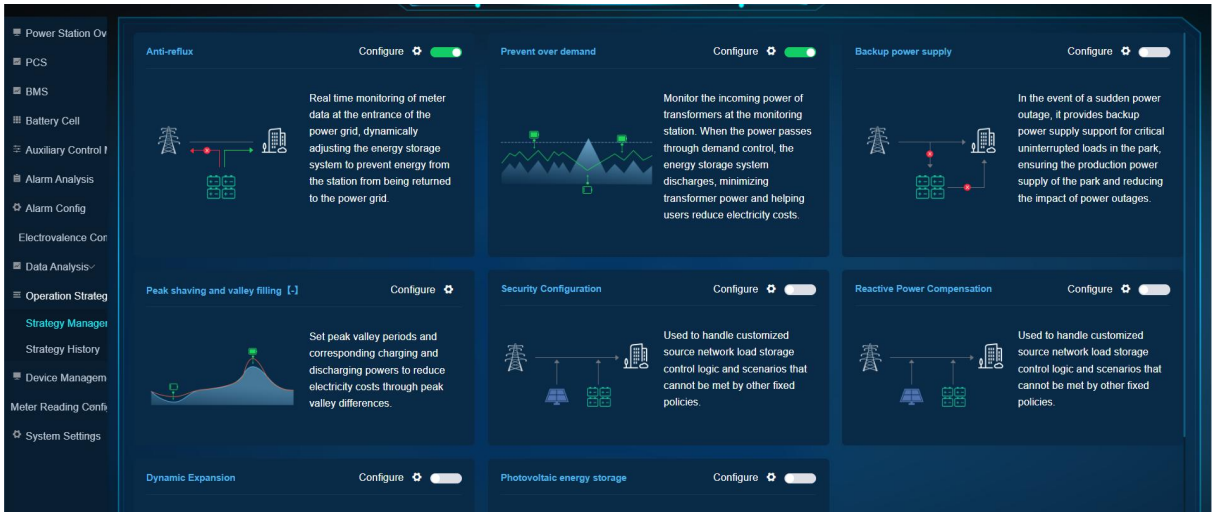


Figure 3- 15 Strategy Management

3.1.10.2. Strategy history

The history is issued to record and query the historical records of policy issuance, so that users can track the policy issuance and know whether the policy has been successfully issued to the specified device. As shown in Figure 3-16.

Figure 3- 16 Strategy History

3.1.11. Device management

3.1.11.1. Device analysis

By filtering device，, the device information status can be detected in real time, as shown in Figure 3-17.

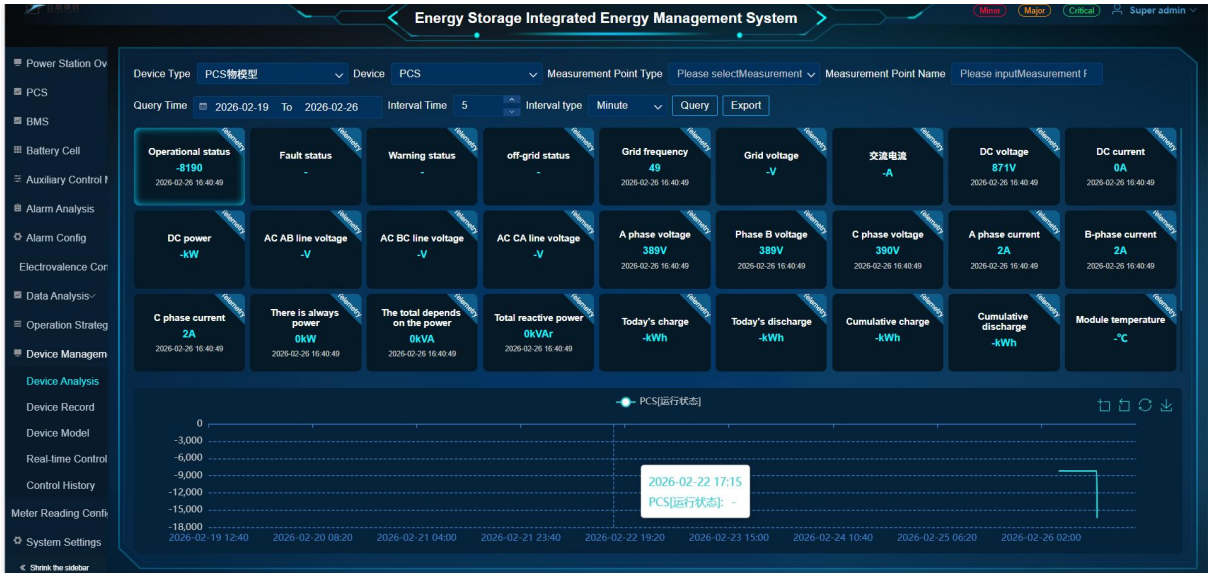


Figure 3- 17 Device Analysis

3.1.11.2. Device ledger

The device ledger is used to display the basic information of the device, and users can view, edit, and manage the point operations, as shown in Figure 3-18.

Figure 3- 18 Device Ledger

3.1.11.3. Device model

Manage the unique identity of the device model, the unique identity of the point, and the electricity price configuration, as shown in Figure 3-19.

Figure 3- 19 Device Model

3.1.11.4. Real-time control

It supports remote control and remote adjustment of the control device, and issues instructions to make the device effective, as shown in Figure 3-20.

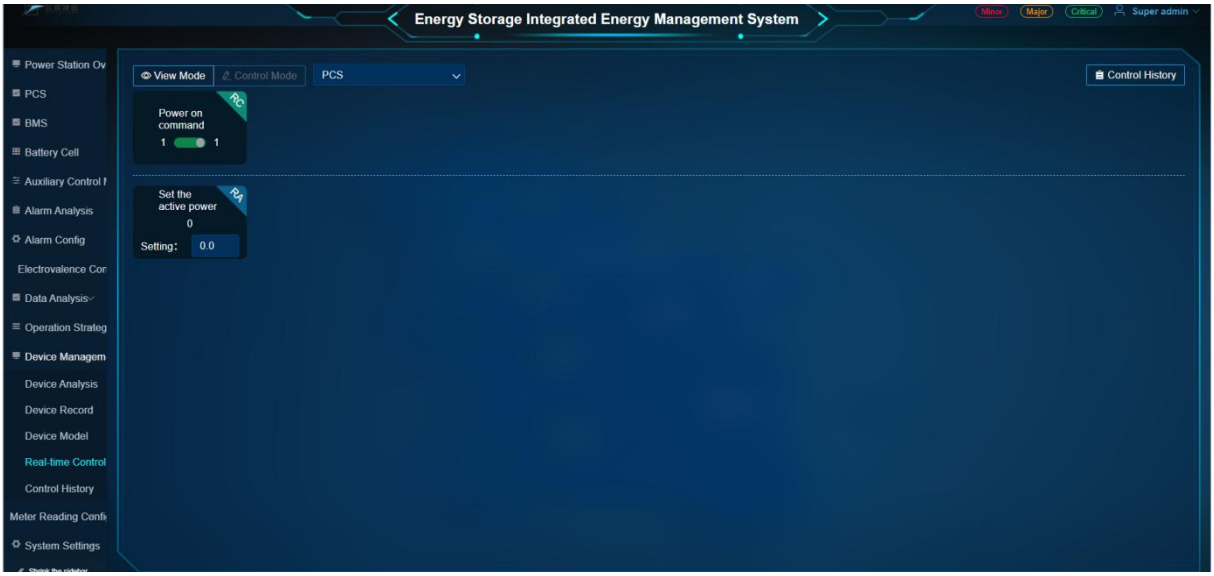


Figure 3- 20 Real-time Control

3.1.11.5. Control history

The control history records the operation of issuing point information in real-time control, which is convenient for user to observe whether the delivery operation takes effect, as shown in Figure 3-21.

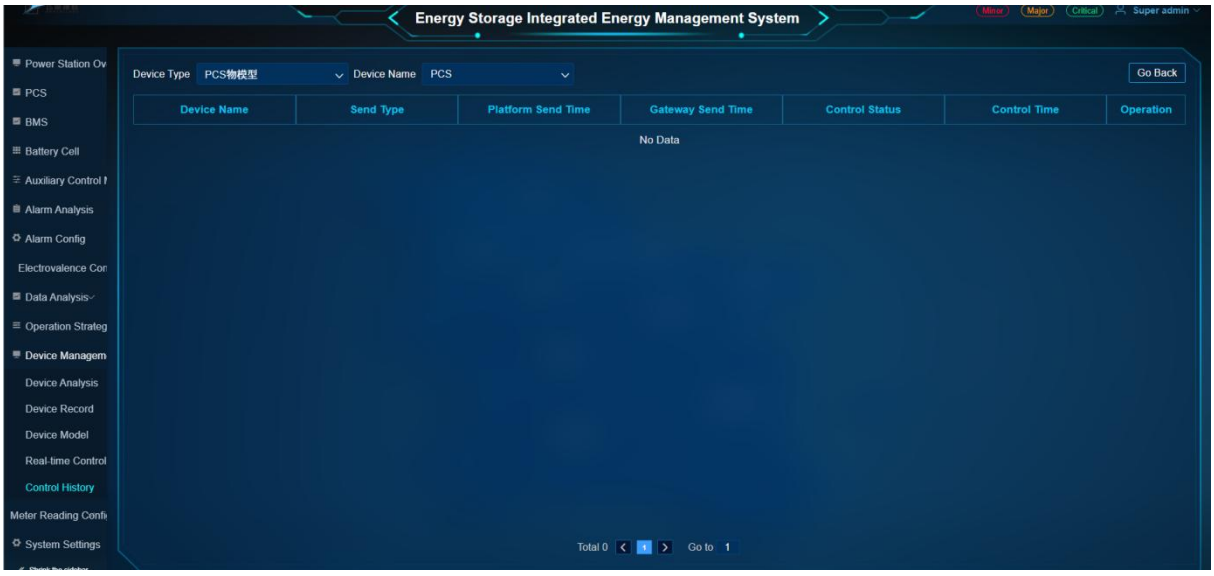


Figure 3- 21 Control History

3.1.12. System settings

3.1.12.1. User management

Manage user basic information, login name, mobile phone number, role assignment, and password reset, as shown in Figure 3-22.

Figure 3- 22 User Management

3.1.12.2. Audit logs

The audit log records important information such as the IP address and time when users log in to the platform, tracks and audits user operation behaviors, and ensures platfor security and compliance. As shown in Figure 3-23.

Figure 3-23 Audit Logs

3.1.12.2.1. Power station information

This module mainly displays the basic information of the project, and users can edit the project information, as shown in Figure 3-24.

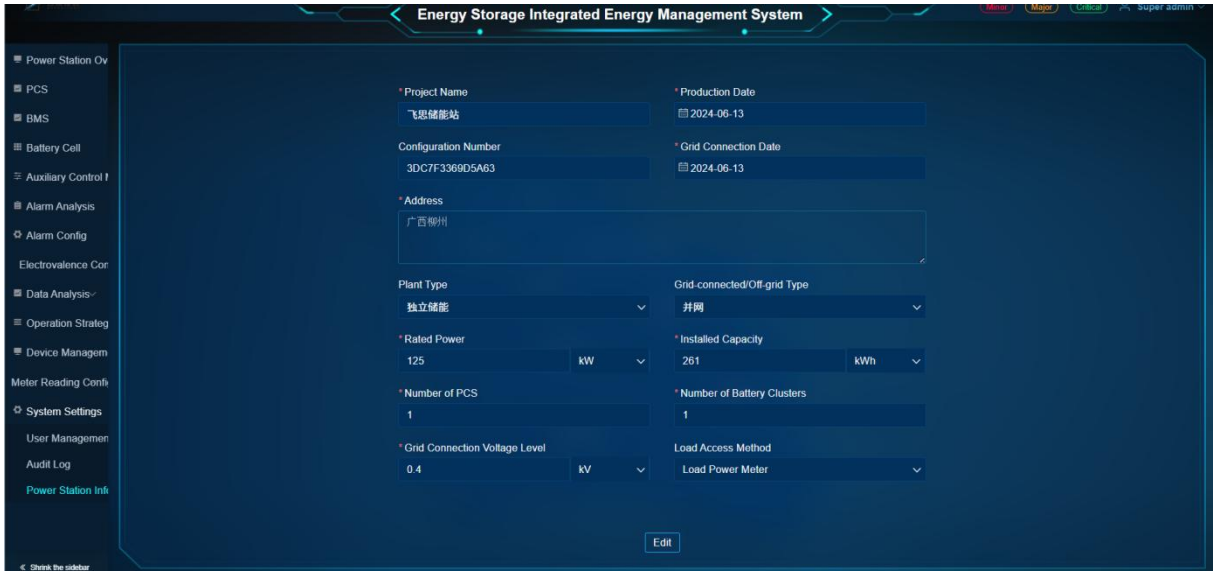


Figure 3- 24 Power Station Information

3.1.13. Meter reading

Manage and view meter and meter reading information, and perform meter reading configuration and meter reading operations, as shown in Figure 3-25.

Figure 3- 25 Meter Reading

3.1.14. Meter data

Check the meter reading information frozen for 15 minutes and daily freezing of the device, support re-metering and new meter reading data as shown in Figure 3-26.

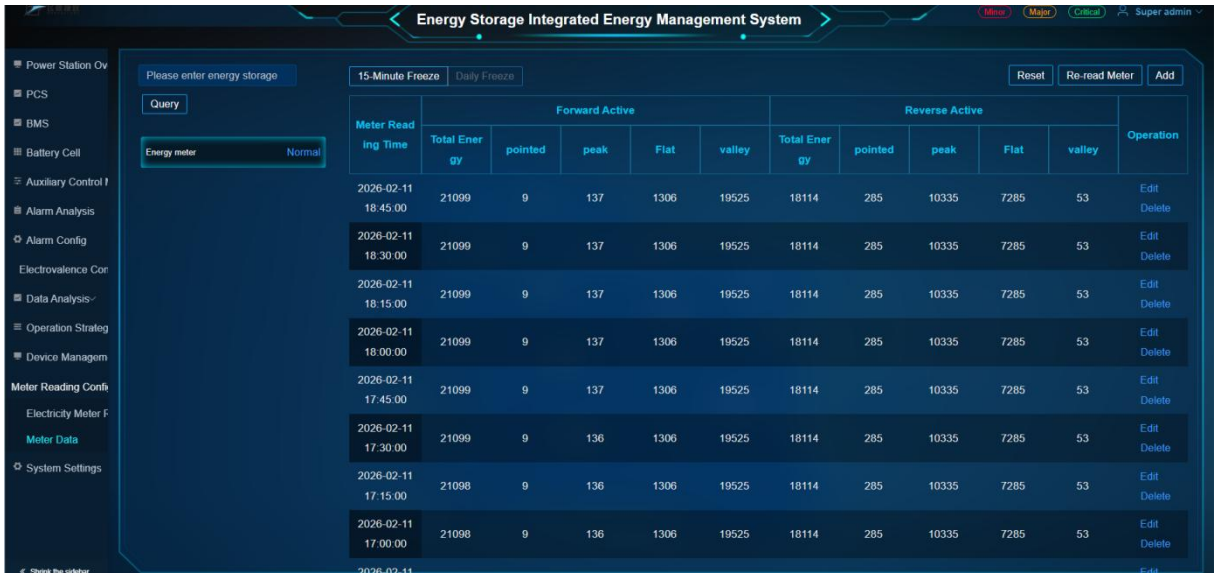


Figure 3- 26 Meter Reading Data

The Energy Management Unit (EMU) is an innovative technology with significant advantages, designed specifically for energy storage and microgrid scenarios. It is professionally designed to meet the energy management needs of these systems, integrating network ports, CAN, 485,232, and DI/DO interfaces. This setup fully supports data acquisition and control for BMS, PCS, diesel generators, and photovoltaic inverters. Additionally, the software integrates standard acquisition protocols and supports interfaces from major equipment manufacturers, making it widely applicable in industrial and commercial energy storage, household storage, and microgrid control scenarios.

3.2. Data acquisition function

3.2.1. Home page

On the home page, the network architecture diagram is generated according to the configured collection configuration, and it can also be switched to the display of the list. At the same time, the list form can search for the corresponding device information in the search bar according to your needs. As shown in Figure 4-1 and Figure 4-2.

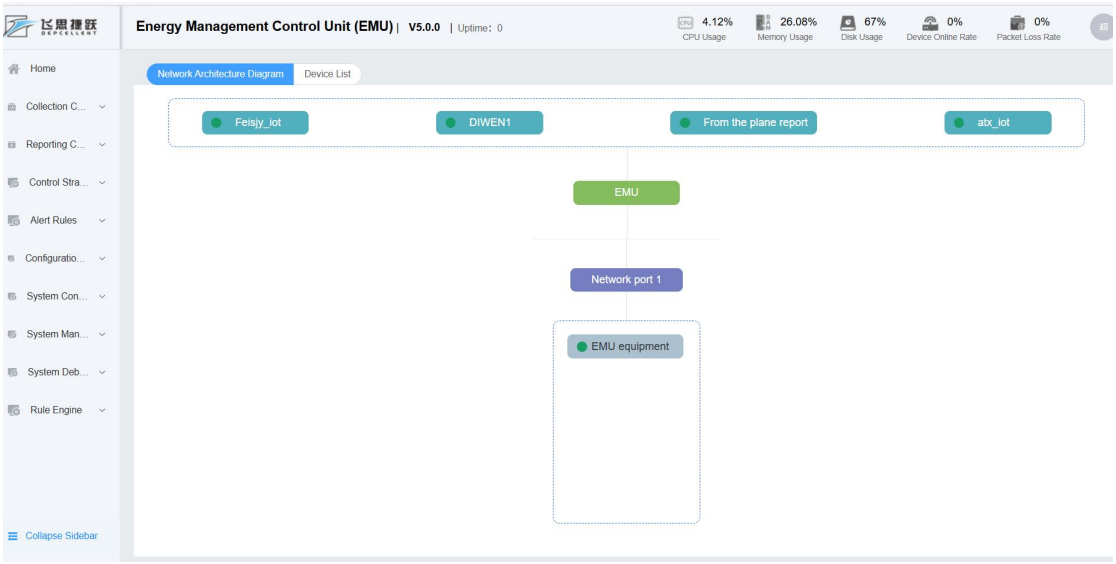


Figure 4- 1 Network Architecture Diagram

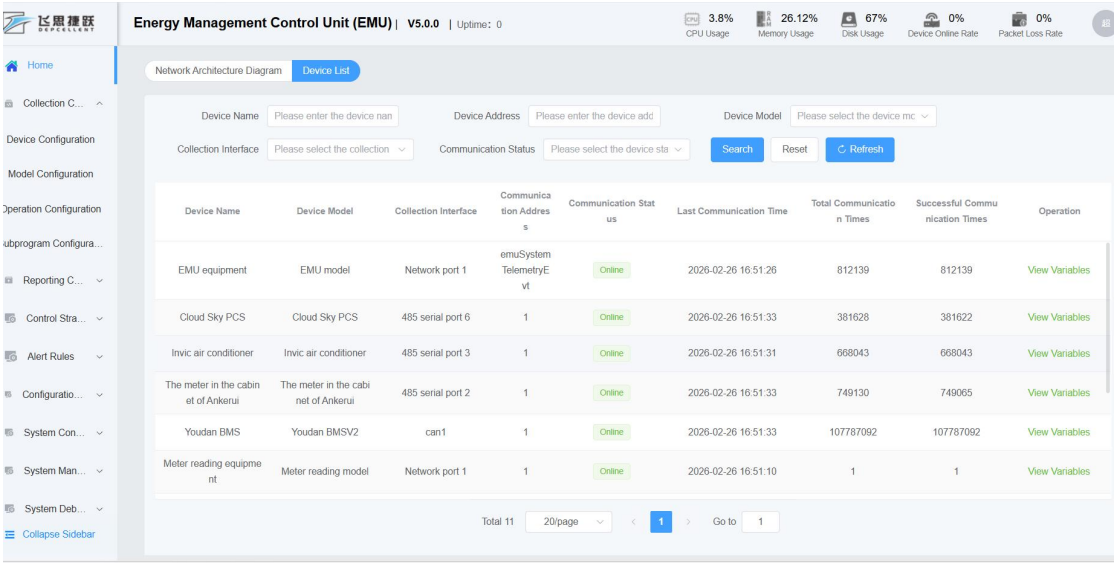


Figure 4- 2 Device List

3.2.2. Southbound configuration

A functional module for data communication between the gateway and the actual device.

3.2.2.1. Device configuration

The module is divided into three interfaces, namely the interface of all devices, the interface of serial port devices and the interface of network port devices. Click the middle device button to switch, as shown in the figure below. ttyS0~ttyS4 are serial port devices, and network port one and network port two are network port devices.

3.2.2.2. All Device

This interface displays all the configured device interfaces and divides all devices into devices connected to serial ports, as shown in Figure 4-3:

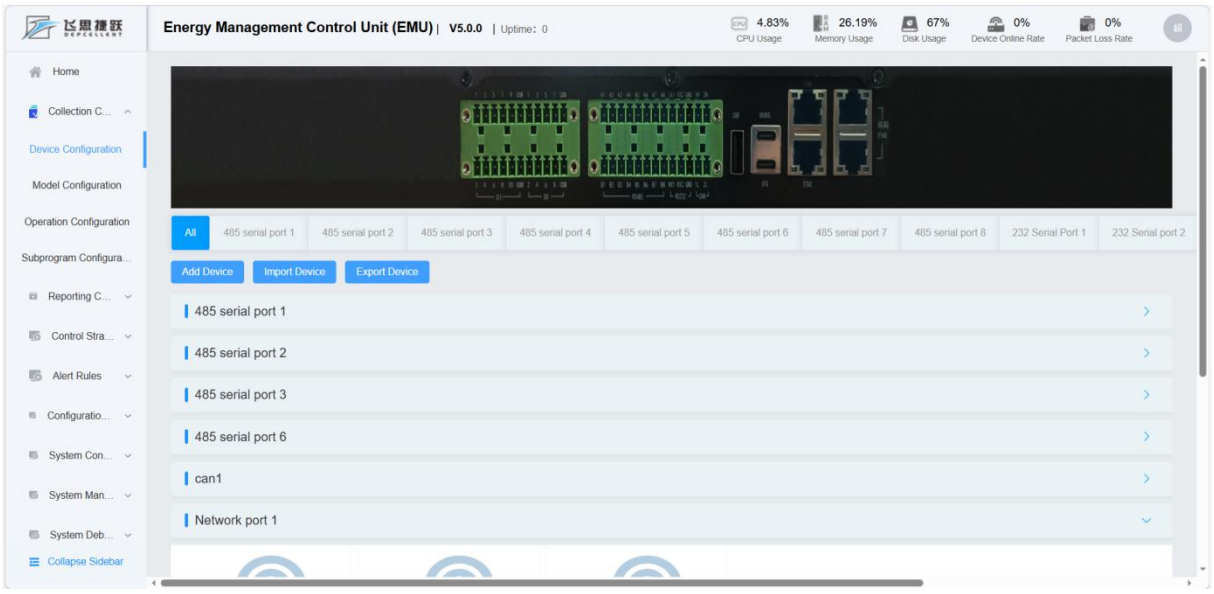


Figure 4- 3 All Device

3.2.2.2.1. Serial port device

Click on the serial port in ttyS0~ttyS4 to display the information of the device connected to the serial port, as shown in Figure 4-4.

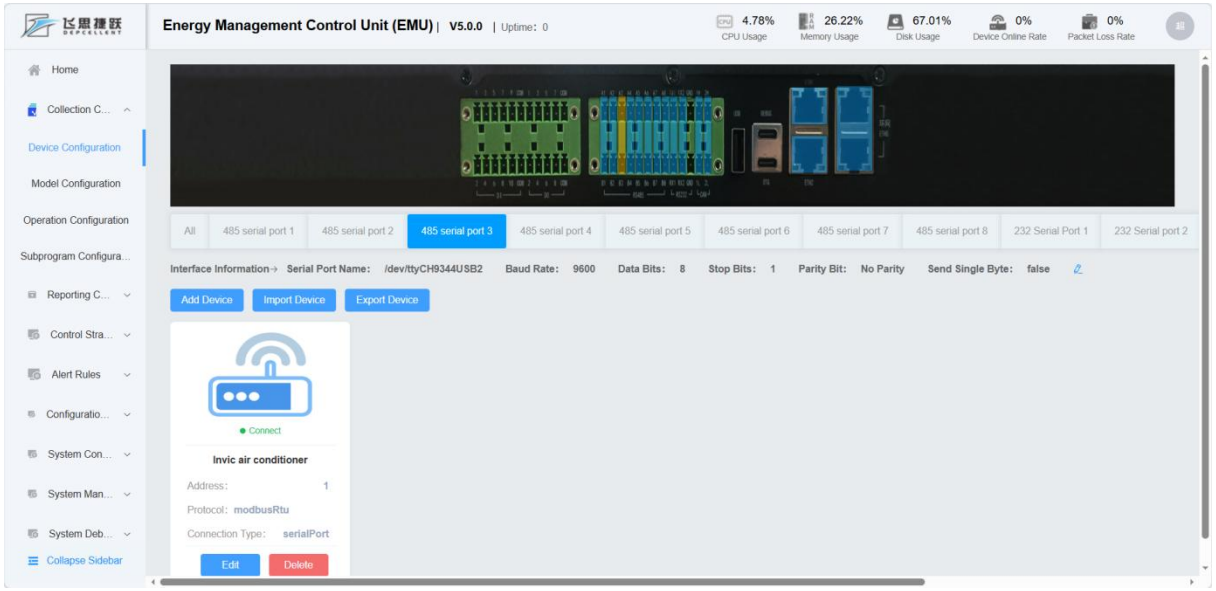


Figure 4- 4 Serial Port Device

3.2.2.2.2. Network port device

Click port 1 and port 2 to display the information of the corresponding devices connected to port 1 and port 2. As shown in Figure 4-5：

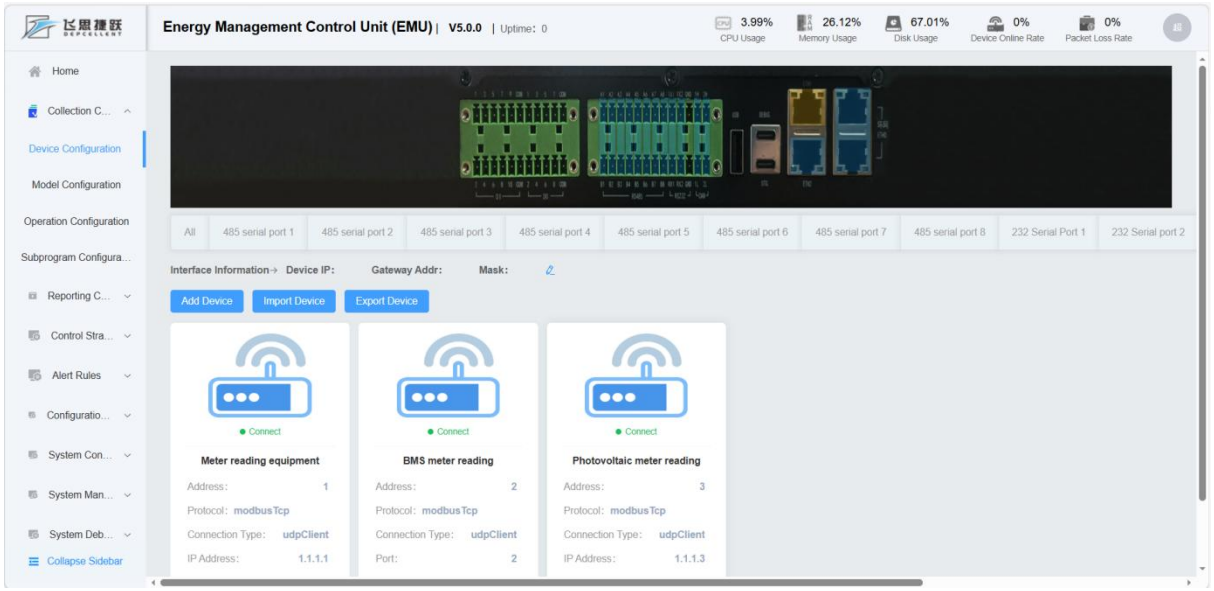


Figure 4- 5 Network Port Device

3.2.3. Model configuration

The model configuration is a module used to configure the device point information, including general, PLC, DL/T645-2007, and Modbus models, and the user can add variable parameters to realize the data point configuration through the configuration command information, as shown in Figure 4-6:

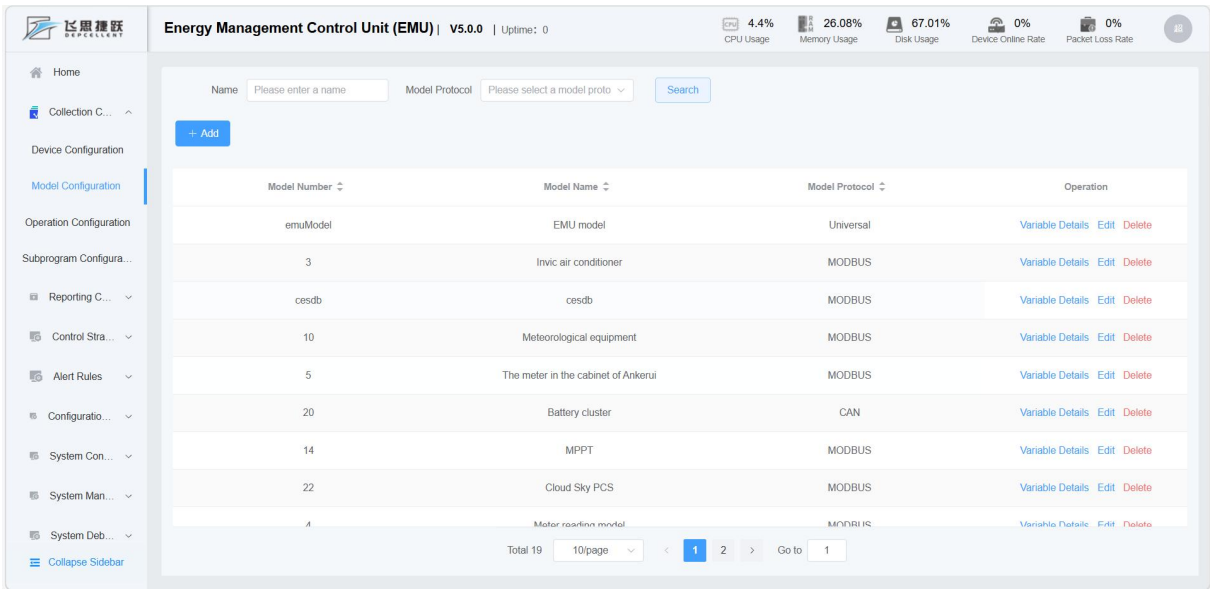


Figure 4- 6 Model Configuration

3.2.3.1. Variable details

In the model configuration interface, click the variable details button of the model list to enter the corresponding model variable details interface, which is used to configure the corresponding model point data. As shown in Figure 4-7.

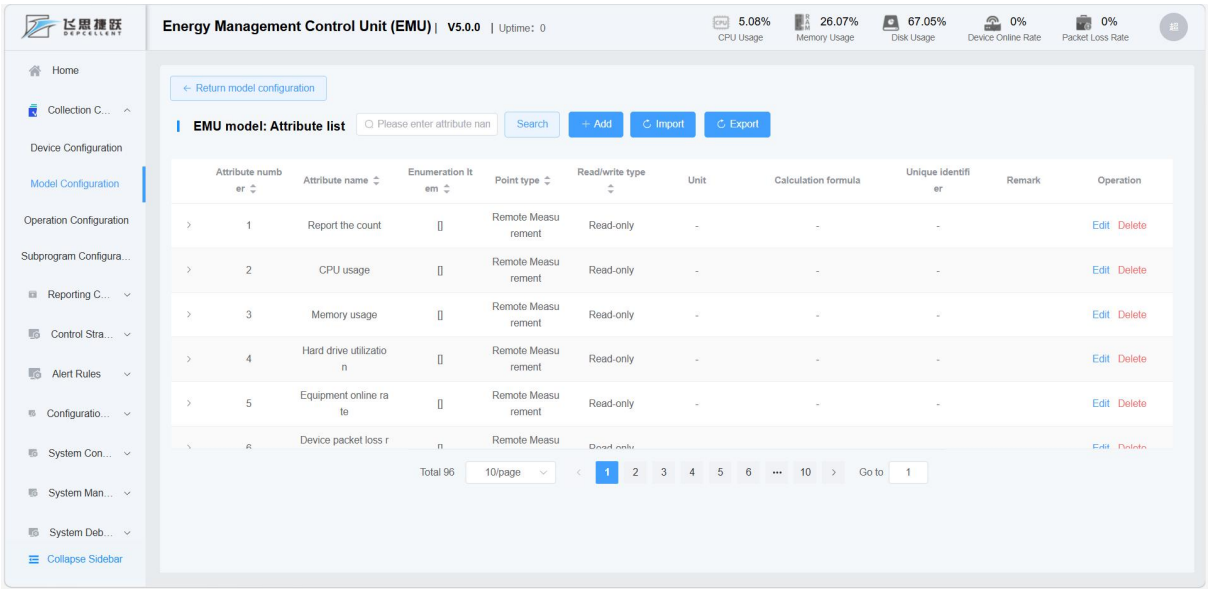


Figure 4- 7 Variable Details

3.2.4. Operation configuration

Run the configuration, formulate device collection rules, such as the collection cycle and the number of offline judgments, and then bind the devices defined by the device configuration module, and one running configuration can be bound to multiple devices. As shown in Figure 4-8:

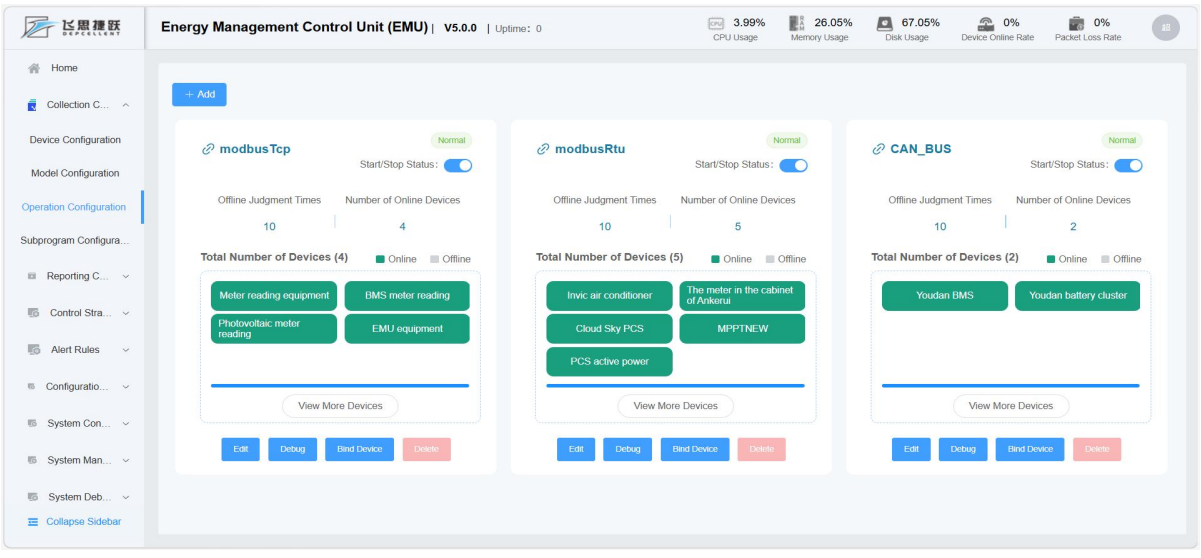


Figure 4- 8 Operation Configuration

3.2.4.1. Debug

The interface can debug the devices bound to the current running configuration, such as command issuance, manual collection, stop collection and message debugging, as shown in Figure 4-9：

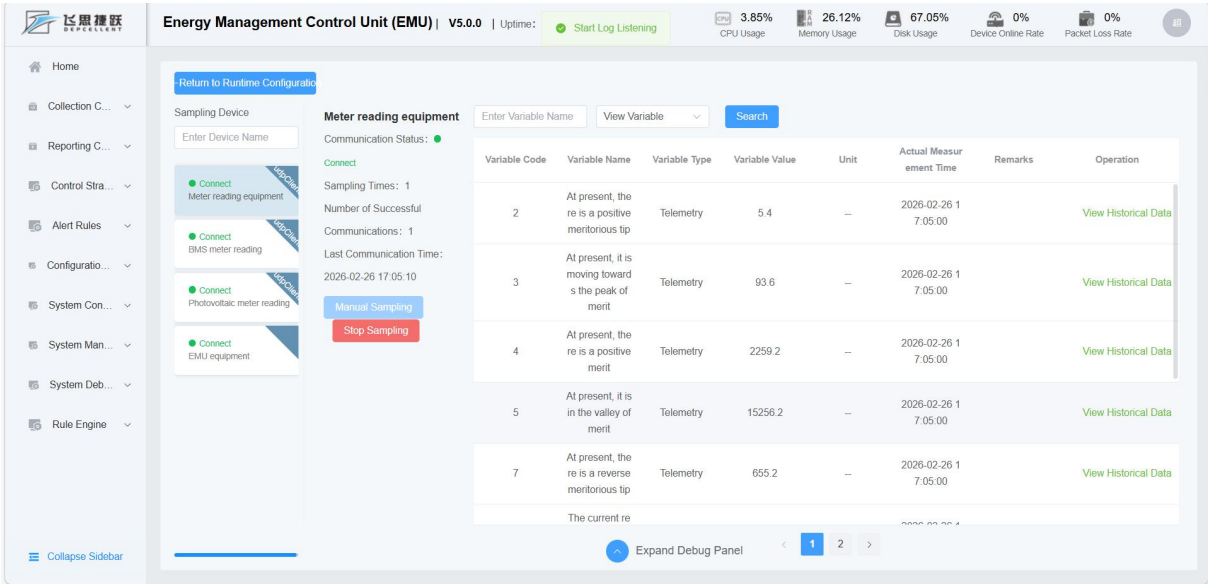


Figure 4- 9 Debug

Function：

1) The command is issued: the pop-up window shows the writable points, and the command can be issued.

2) Manual collection: manual collection once.

3) Stop collection: Click stop collection to temporarily stop the collection according to the cycle configured by the operation configuration. Exit the page or click again to resume the cycle collection.

4) Click on the right  , the system log information of the current device will appear.

3.2.5. Subroutine configuration

The management and configuration of each subroutine running in the system allows users to view, add, edit and delete subroutines, as well as configure the operating parameters of the subroutines. As shown in Figure 4 -10:

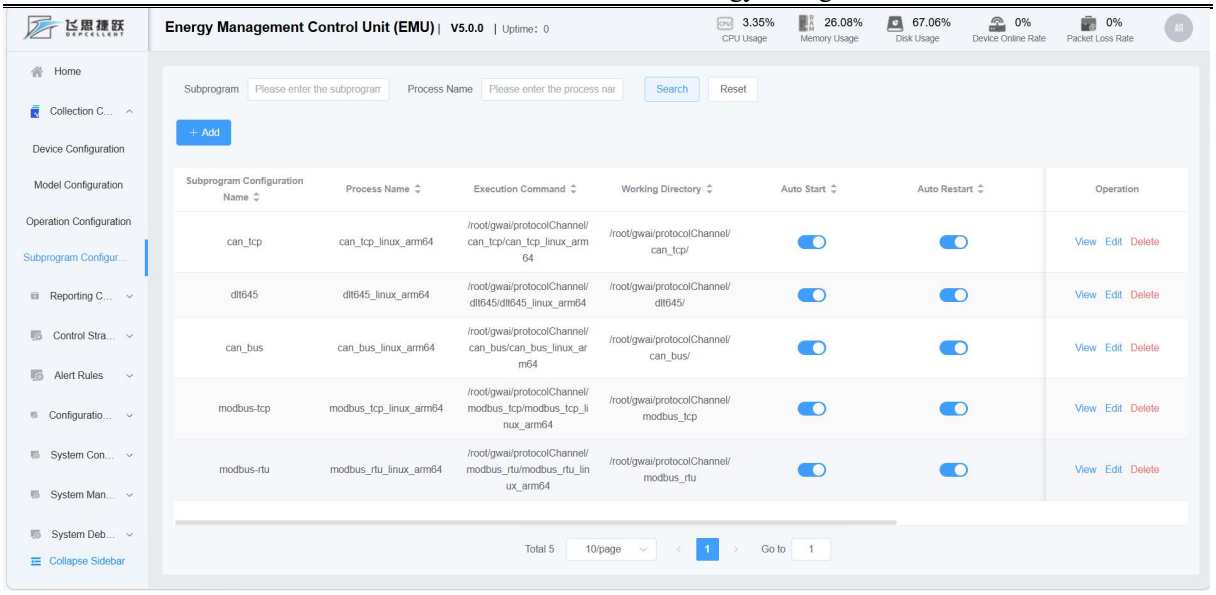


Figure 4- 10 Subroutine Configuration

3.2.6. Northbound configuration

3.2.6.1. Reporting channel

Through the configuration of the reporting channel, the collected data is reported to the specified platform. As shown in Figure 4-11：

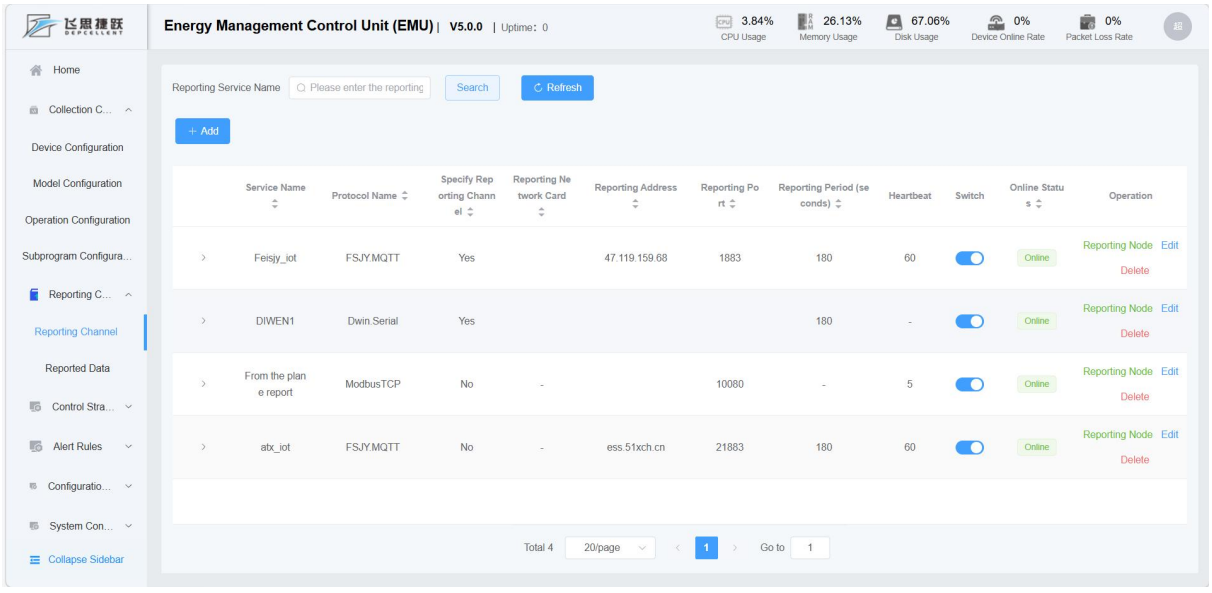


Figure 4- 11 Reporting Channel

3.2.6.2. Report nodes

Report the device information corresponding to the channel, as shown in Figure 4-12:

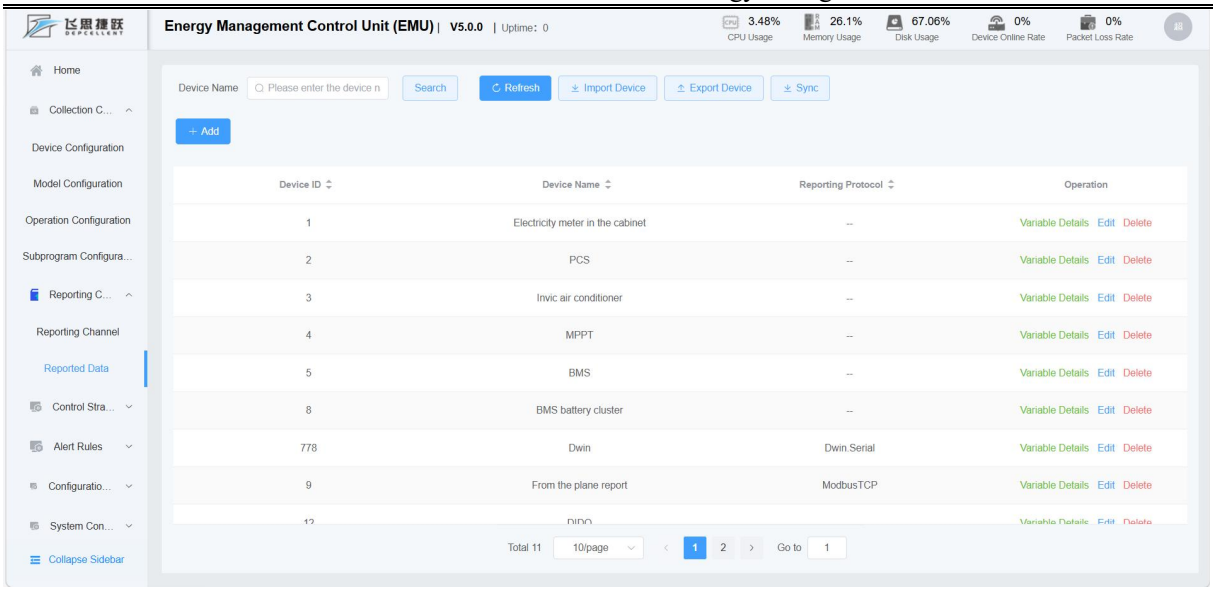


Figure 4- 12 Report Nodes

3.2.7. Alarm rules

3.2.7.1. Alarm configuration

By adding the rule to configure the point rule of the device, it can judge whether the point data collected conforms to the rule and generate an alarm record. As shown in Figure 4-13:

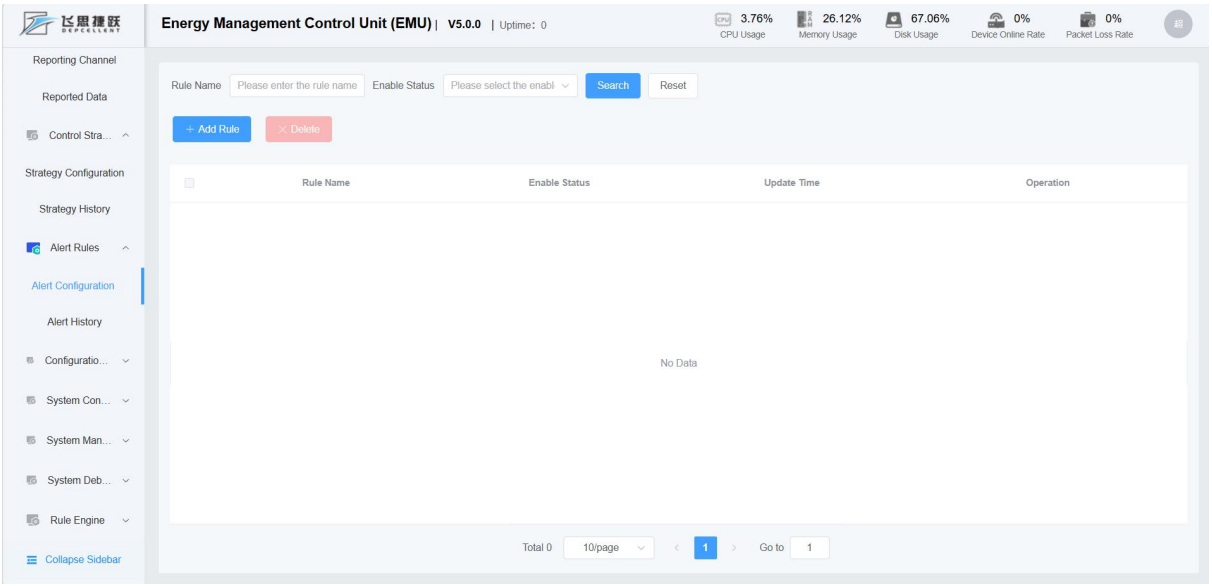


Figure 4-13 Alarm Configuration

3.2.7.2. Alarm history

After the rules are configured, the generation time and other information of the rules will be recorded every time the rules are started. After the rules are triggered, alarm events can be manually processed. As shown in Figure 4-14:

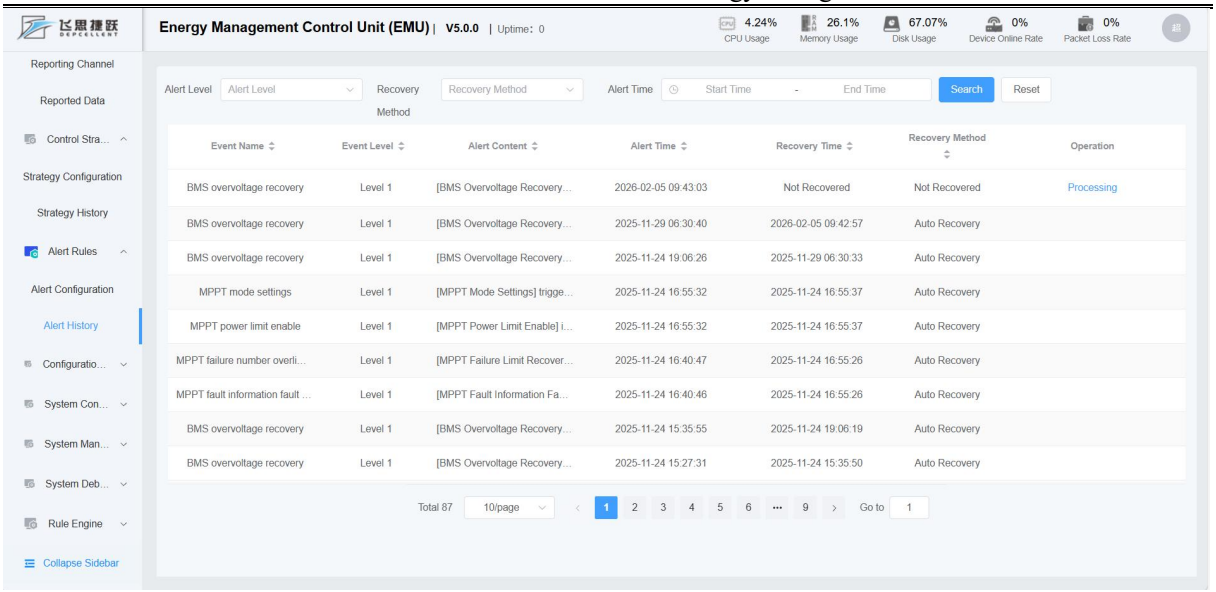


Figure 4- 14 Alarm History

3.2.8. Configuration management

3.2.8.1. Configuration list

The configuration list is used to display the overview of the power station, PCS, BMS and other pages. Users can configure the required related pages through the configuration, and can intuitively observe the running status of the current equipment through the configuration. As shown in Figure 4-15:

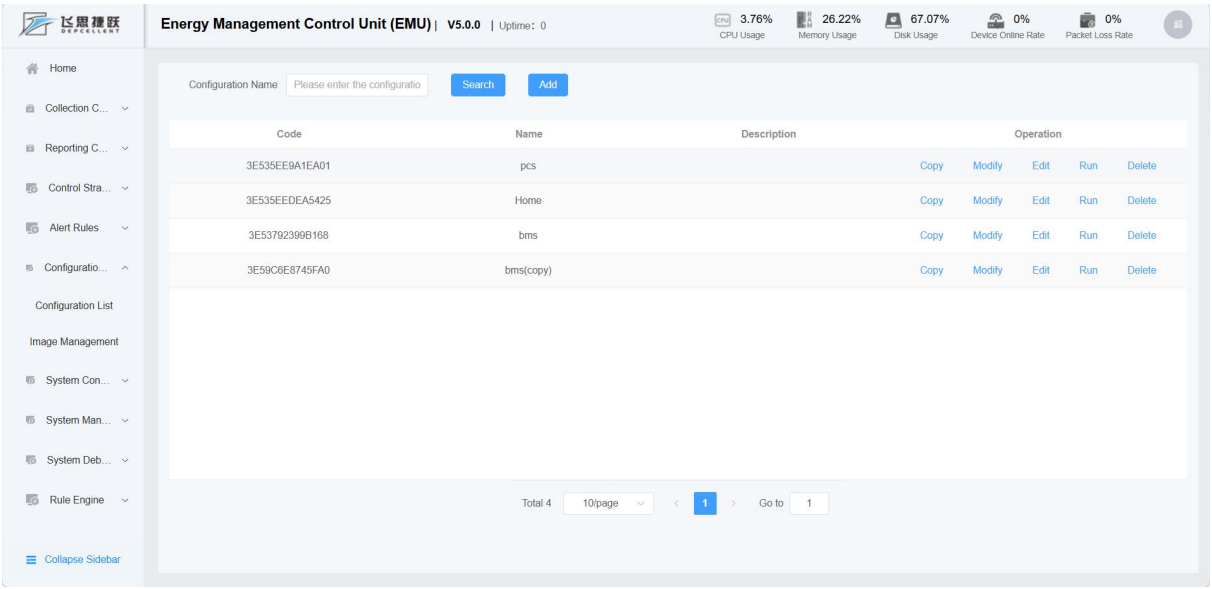


Figure 4- 15 Configuration Management

3.2.8.2. Image management

Image management is the place for configuration picture management. It contains many configuration pictures, classifies and organizes them, and provides an interface for uploading pictures. As shown in Figure 4-16:

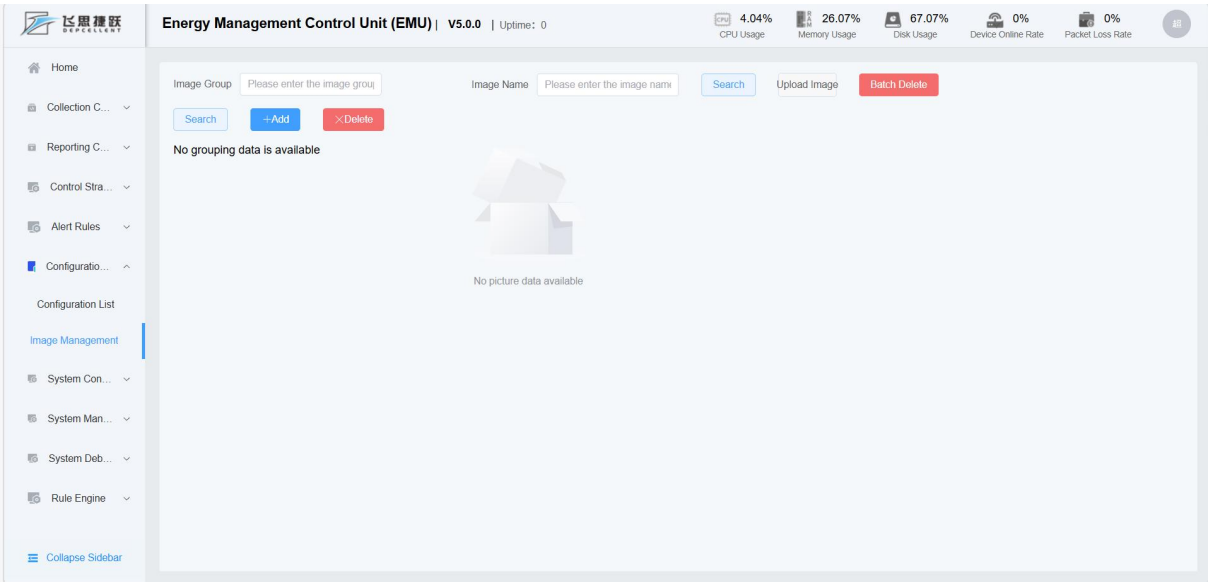


Figure 4-16 Image Management

3.2.9. System configuration

3.2.9.1. Storage Settings

Configure the parameters related to data storage in the system, including reported data storage and historical storage. As shown in Figure 4-17:

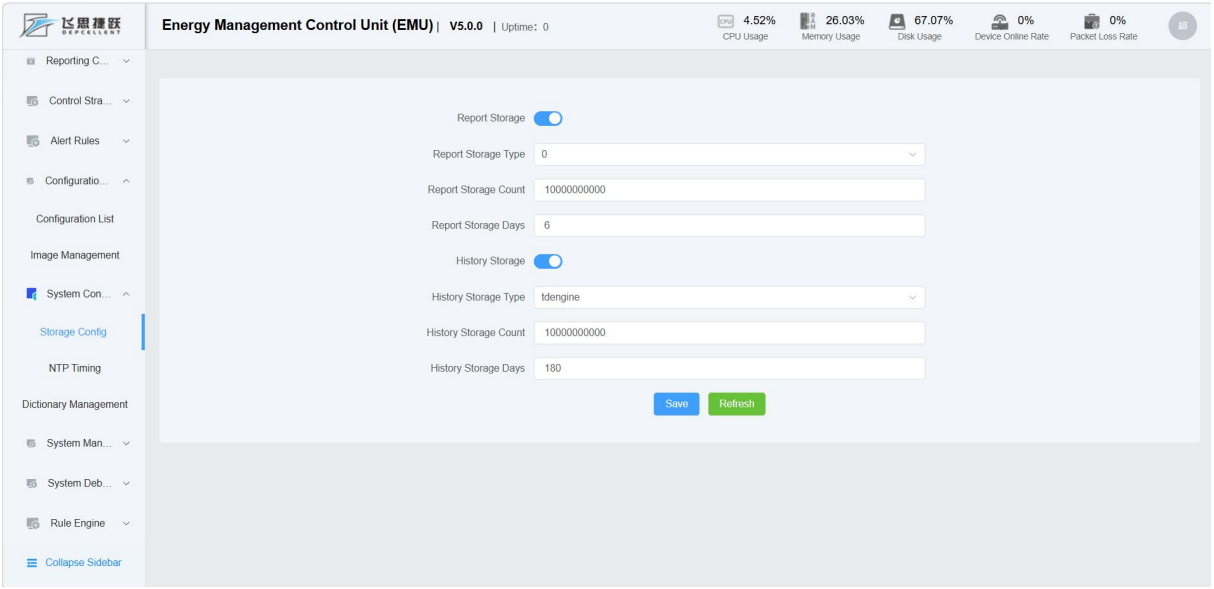


Figure 4- 17 Storage Settings

3.2.9.2. NTP calibration

The configuration and management system synchronizes the time function automatically calibrates the system time through the Network Time Protocol (NTP) server. As shown in Figure 4-18:

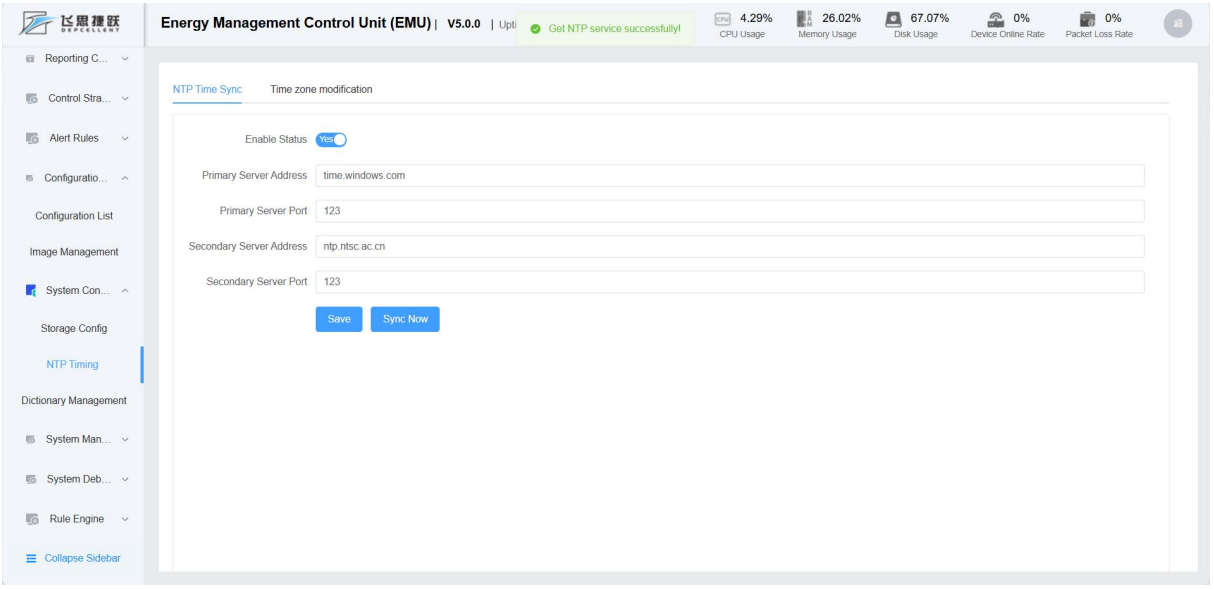


Figure 4- 18 NTP Calibration

3.2.9.3. Dictionary management

Maintain various data dictionaries used in the system, and users can view, add, modify and delete dictionary entries to ensure the standardization and consistency of system data. As shown in Figure 4-19:

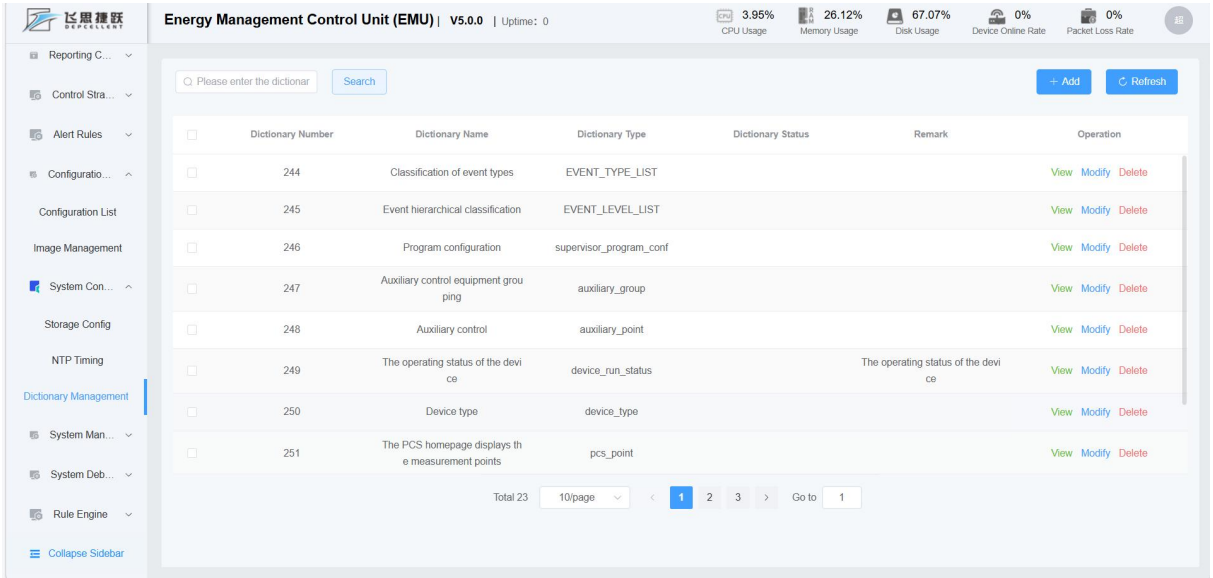


Figure 4-19 Dictionary Management

3.2.10. System management

3.2.10.1. User management

It includes adding, querying, editing and deleting users, as well as resetting user passwords for users in the management system. As shown in Figure 4-20:

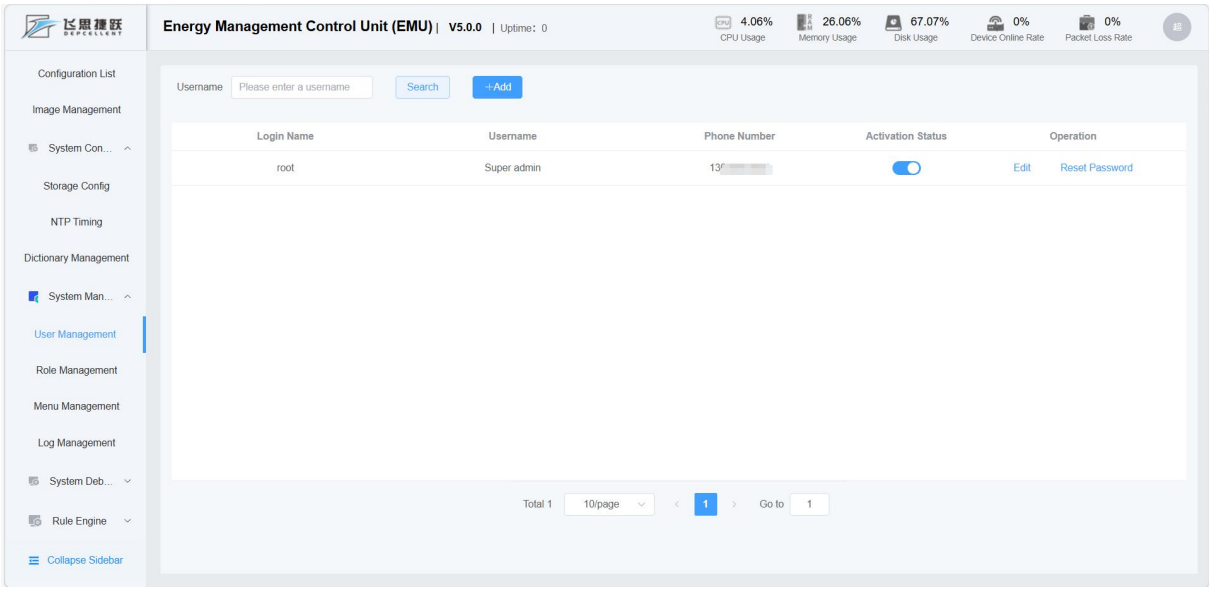


Figure 4- 20 User Management

3.2.10.2. Character management

The roles in the management system include adding, querying, editing and deleting roles, as well as updating user status and configuring menus. As shown in Figure 4-21:

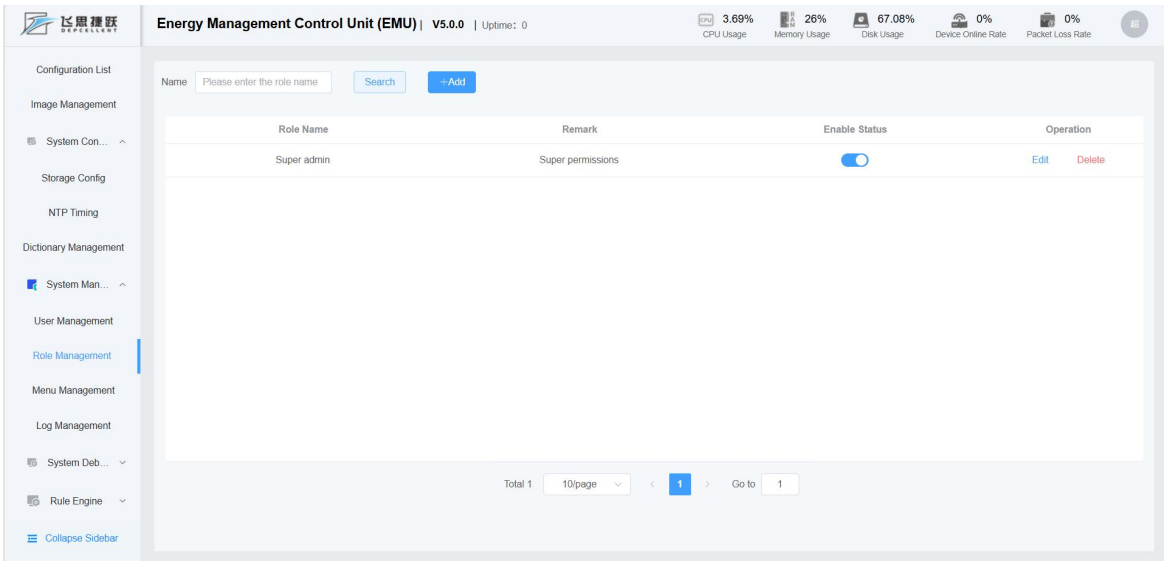


Figure 4- 21 Character Management

3.2.10.3. Menu management

The menu used in the management system includes adding, querying, editing and deleting menus, as well as sorting menus and other operations. As shown in Figure 4-22:

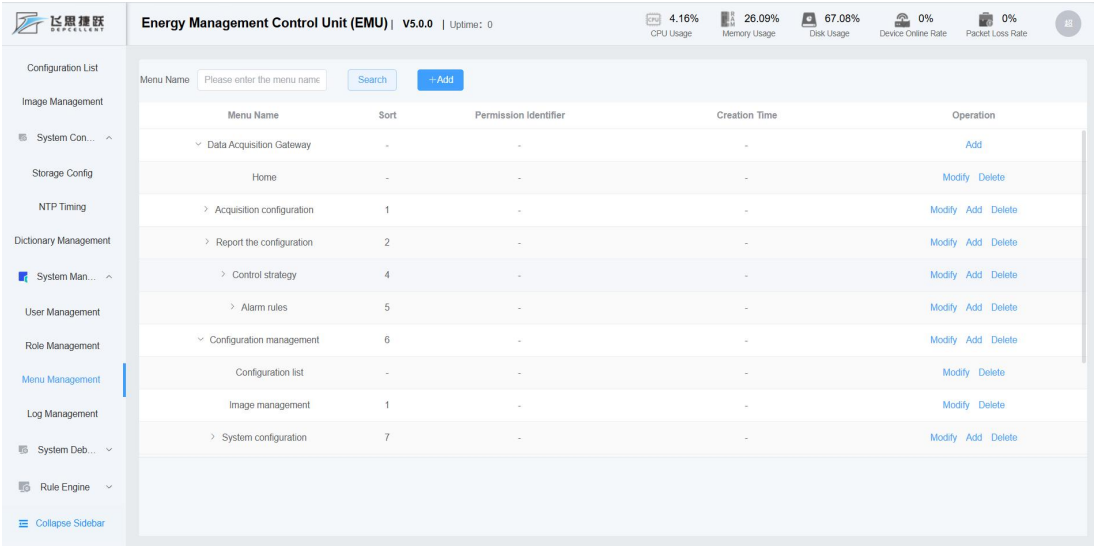


Figure 4- 22 Menu Management

3.2.10.4. Log management

Log management records important information such as the IP address and time of user login to the platform, tracks and audits user operation behaviors, and ensures the security and compliance of the platform. As shown in Figure 4-23:

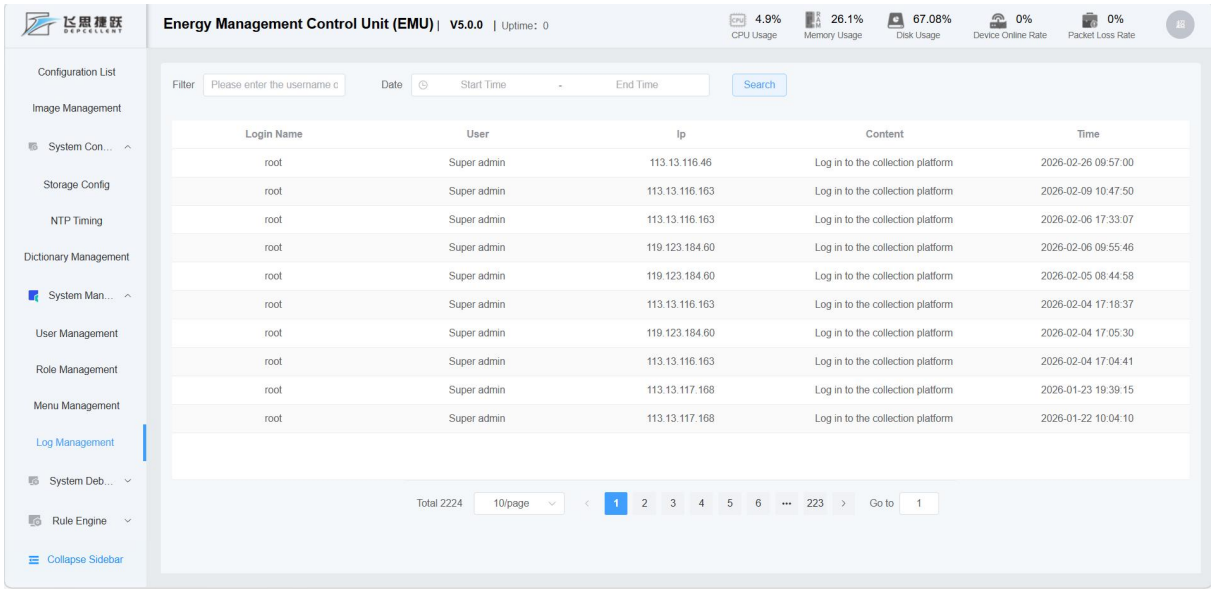


Figure 4- 23 Log Management

3.2.11. System debugging

3.2.11.1. Channel debugging

By opening serial port, CAN port, TCP client and other methods, the debugging channel is ensured to be smooth, and the accuracy of the data sent by the message is verified. As shown in Figure 4-24:

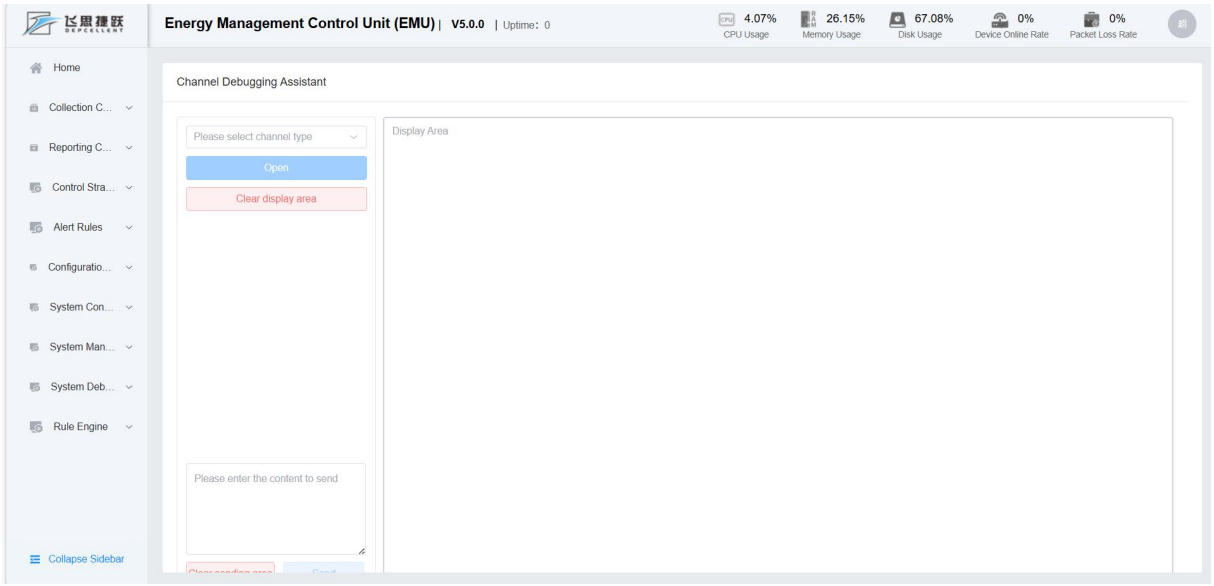


Figure 4- 24 Channel Debugging

3.2.11.2. System logs

View and analyze the log information generated during the operation of the system to understand the running status of the system and troubleshoot errors. As shown in Figure 4-25:

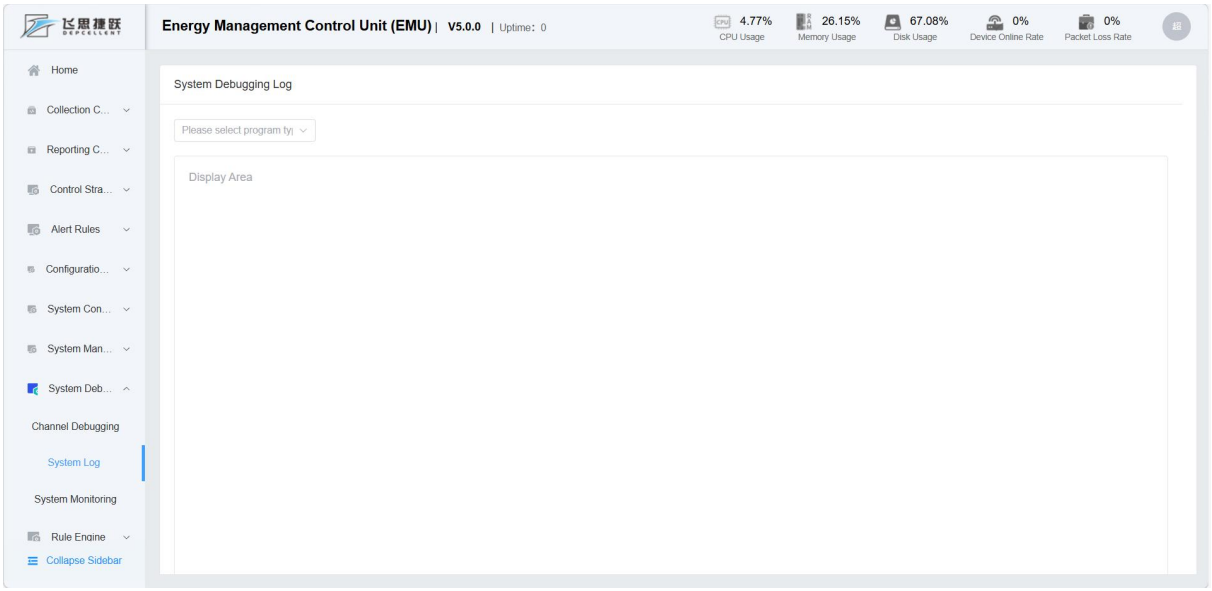


Figure 4- 25 System Logs

3.2.11.3. System monitoring

System monitoring is used to monitor the performance indicators of the system in real time to ensure the stability and reliability of the system. As shown in Figure 4-26:

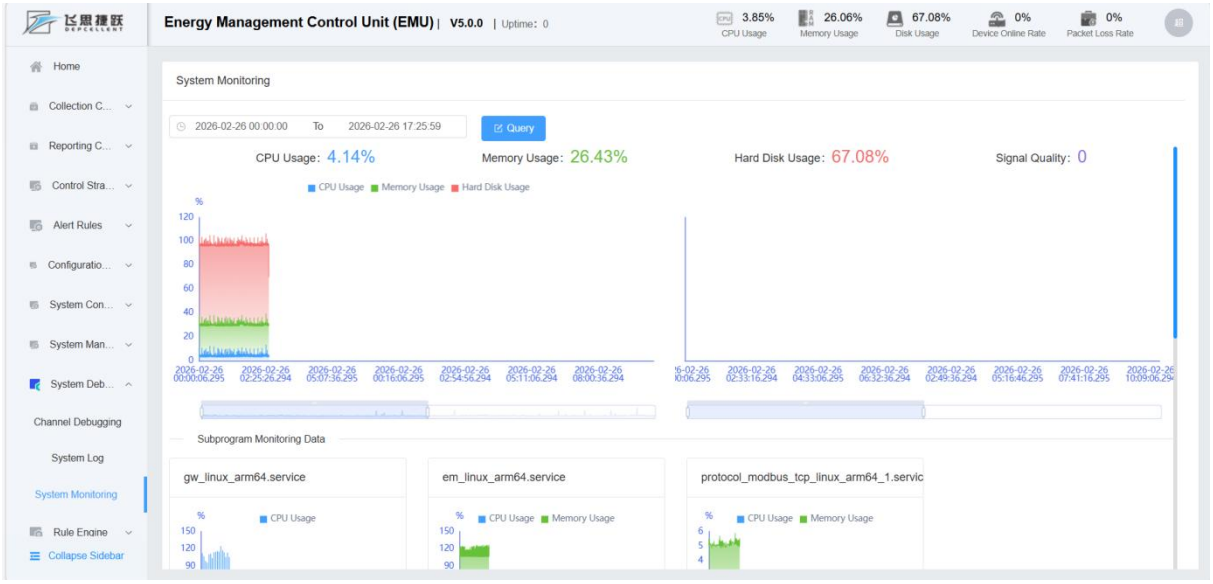


Figure 4- 26 System Monitoring

3.2.12. Rule engine

3.2.12.1. Rule configuration

Rules are configured to manage and configure rules. Users can create new rules, set the trigger conditions and actions of the rules, and view, edit, and delete configured rules. As shown in Figure 4-27:

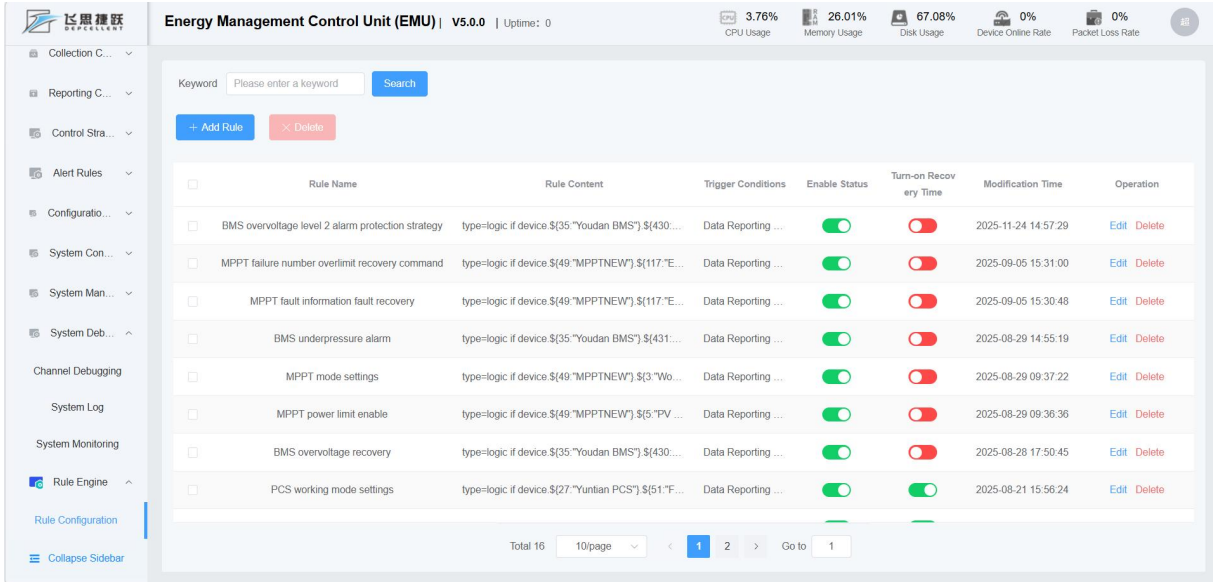


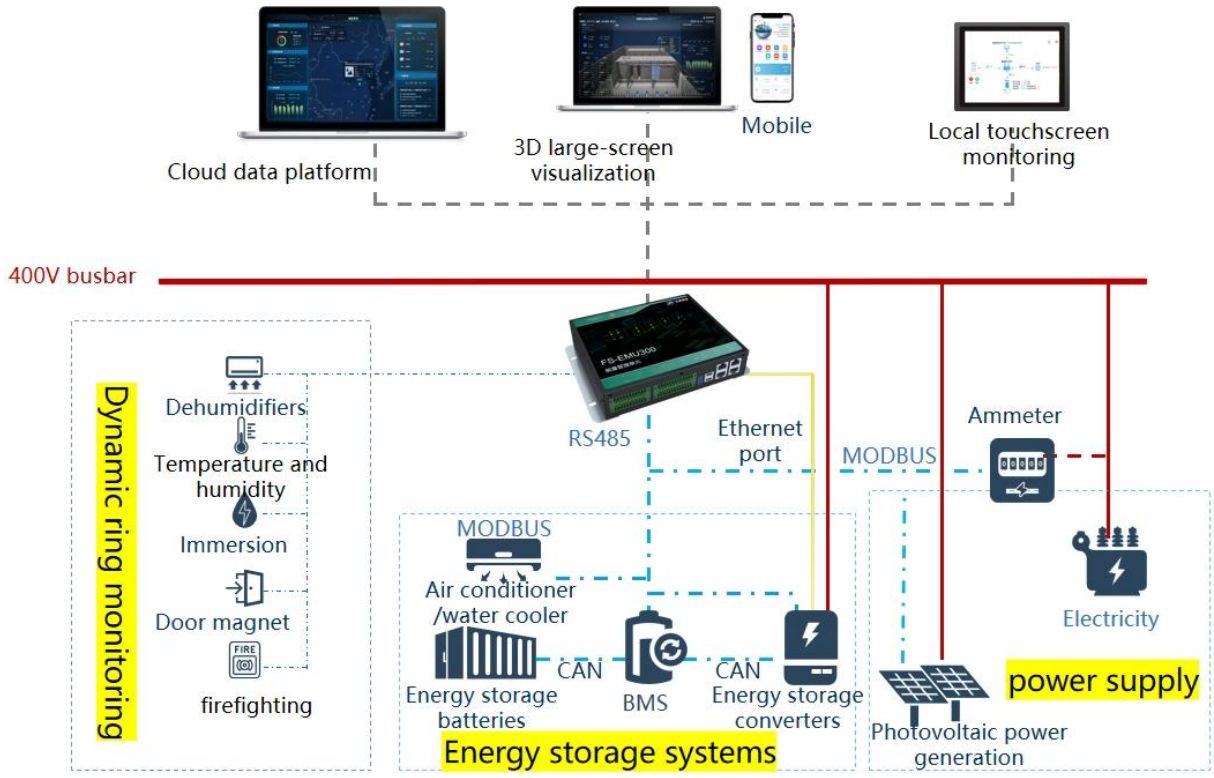
Figure 4- 27 Rule Configuration

4. EMU Hardware Requirements

The EMU Energy Management Monitoring Controller is an innovative technology with significant advantages, designed specifically for energy storage and microgrid applications. Compared to traditional devices like 4G routers, 5G routers, and PLC controllers, the EMU offers integrated management, simplifies system architecture, reduces the number of devices, and lowers maintenance costs. It also provides efficient energy management through real-time monitoring and intelligent control, optimizing energy storage and utilization. The controller can precisely manage energy storage devices and offer flexible energy dispatch strategies to enhance system stability and reliability, improve energy efficiency. Whether for industrial, commercial, or residential users, the EMU Energy Management Monitoring Controller offers convenience and benefits, making it an ideal solution for energy storage systems. It features a high-end ARM processor, including a quad-core ARM Cortex-A53 and an integrated GPU and NPU. The controller boasts high efficiency, performance, and cost-effectiveness, supporting 4GB memory and 32G onboard storage. The gateway integrates various functional interfaces, including Ethernet, 4G,5G, WiFi, RS485, RS232, HDMI, and DI/DO.

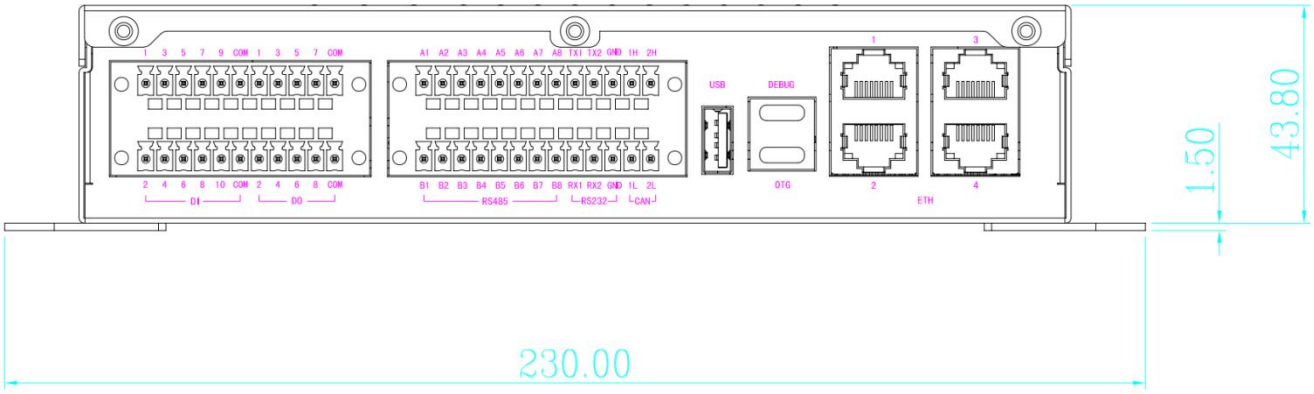
4.1. Product features

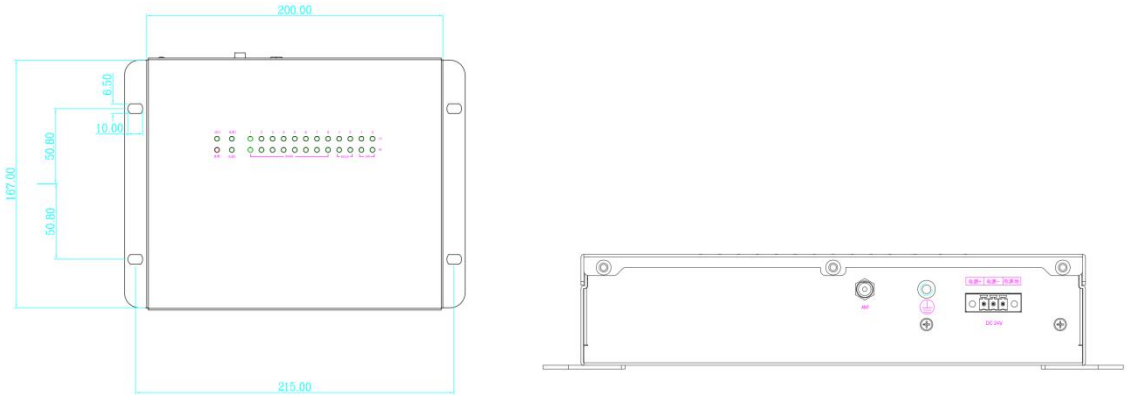
EMU monitors the equipment for energy storage and energy management scenarios in an all-round way, can timely collect the real-time operating status of PCS/BMS/auxiliary control equipment, and supports IO control output.



It is suitable for small and medium-sized energy storage scenarios and can be used as a multi-cabinet cabinet

4.2. Product view





Front panel size: 230 long, 43.80 high, 200 wide;

4.3. EMU parameter

4.3.1. Hardware parameters

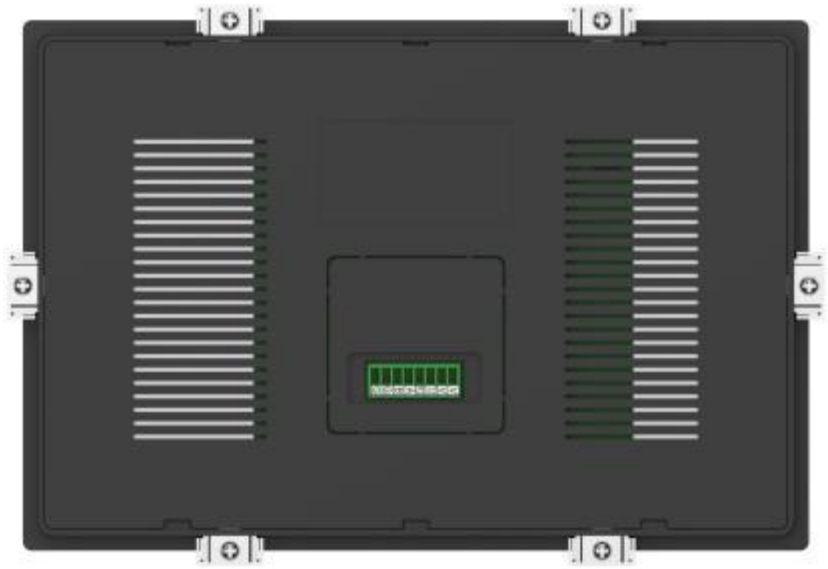
Device	Detailed description
CPU	ARM core platform， quad-core ARM Cortex-A53@2.0G Hz frequency
RAM	4GB DDR4
storage	32GB eMMC, can support expansion mSATA interface hard disk，up to1TB;
4G	1 road 4G interface，support ordinary SIM card
Ethernet port	4 road 100M RJ45 network ports, including 2ring network ports
Serial	10 road，including 8 road 485 serial ports,2 road 232 serial ports,with isolation;
CAN	2 road CAN2.0
DI	10 road，10 dry contact inputs
DO	8 road，normally open，30VDC/5A
USB	1supports USB2.0 HOST，which can be used for touch screen, USB flash drive, mouse, and keyboard, etc
Watch Dogs	CPU built-in watchdog
Debug/OTG	2 TypeC interfaces
Electric Source	DC 24V（Wide Pressure 9V-36V）
Overall Machine Size	230x167x43.8mm
Heat Dissipation Method	Passive heat dissipation, no fan
Working Environment	-30℃~+55℃

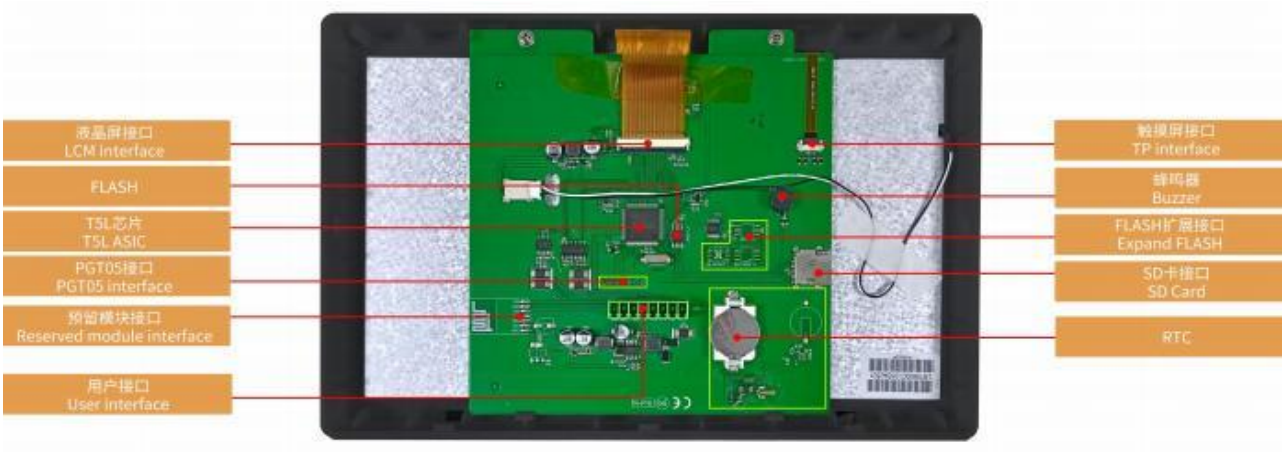
4.4. Screen optional

Product features:

- Based on T5L2 chip, running DGUS II system, commercial grade.
- 10.1 inches，1024*600 resolution，16.7M color，IPS screen，wide viewing angle.
- Resistive touch screen.
- With a case.

Screen interface diagram:



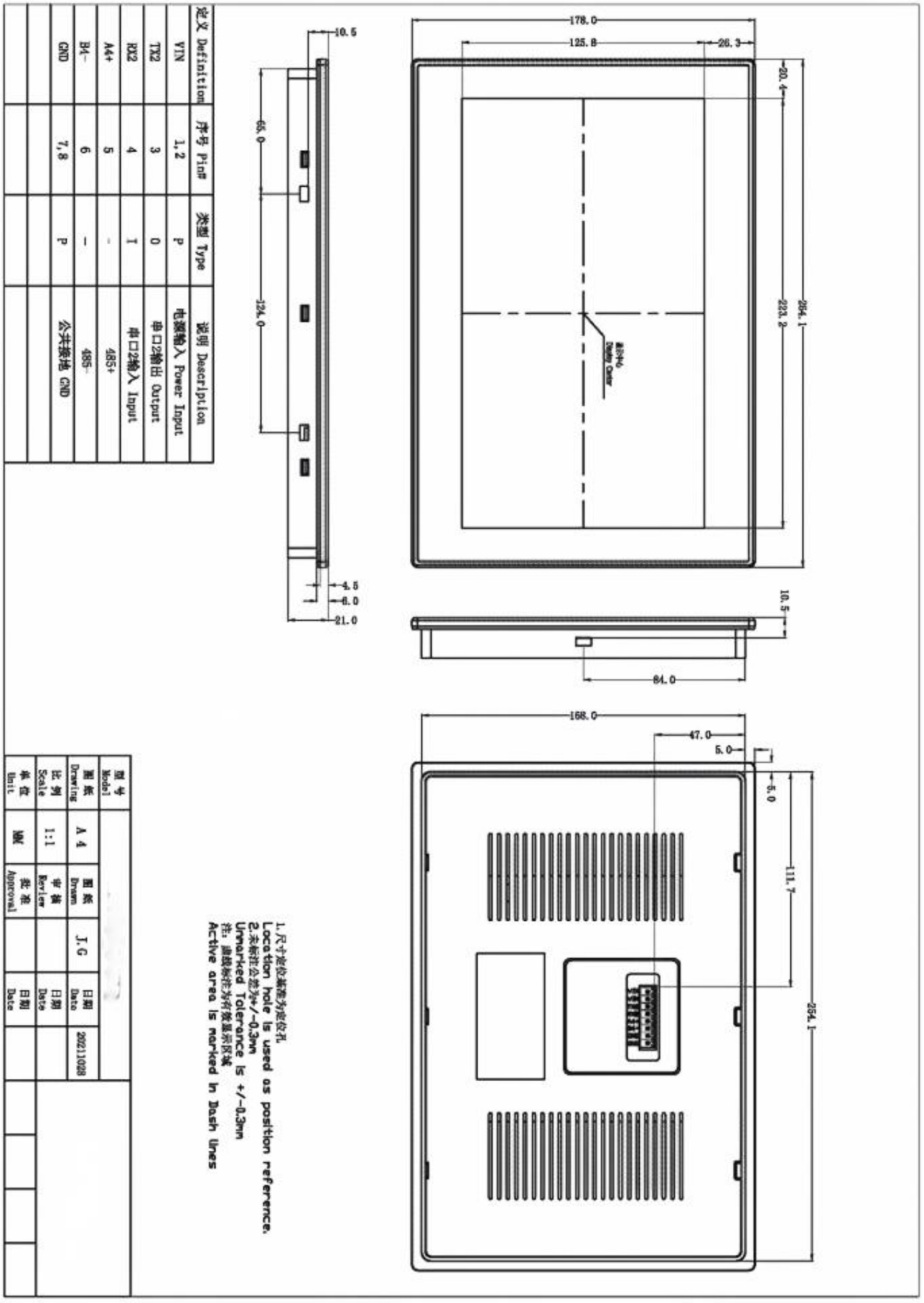


Hardware and interface description:

No.	Name	Description
1	T5L2 chip T5L2 ASIC	Mass product in 2019，1MBytes on-chip Nor Flash ，of which 512KBytes are used to store user databases,Erase times>100,000 times
2	LCM interface	FPC50_0.5mm, RGB interface
3	RTP interface	4Pin_1.0mm interface
4	User interface	12KByte/s 8Pin_3.81mm socket for power supply and serial communication. Download rate(typical value): 12KByte/s
5	Flash	16MBytes NOR Flash, for fonts, pictures and audio files. Rewrite cycle: over 100,000 times
6	Expand Flash interface	Expandable to 64Mbytes NOR Flash or 48Mbytes NOR Flash+512Mbytes NAND Flash
7	Buzzer	3V passive buzzer. Power: <1W
8	RTC	Button cell for power supply. Accuracy: ±20ppm @25℃
9	SD interface	FAT32. Download files by SD interface can be displayed in statistics
10	Reserved module interface	Wi-Fi module: connect to the cloud platform to update remotely USB module: download files by USB flash disk
11	PGT05 interface	When product crashes by accident, you can use PGT05 to update DGUS kernel and make the product return to normal

Packaging and physical dimensions:

Form Factor	264.1mm (W)×178.0mm (H) ×21.0mm (T)			
Net Weight	660g			
Packaging Standards				
packaging box model	**Dimensions**	**Layer**	**Quantity/Layer**	**Quantity(Pcs)**
Carton1：	220mm(L)×160mm(W)×47mm (H)	-	-	-
Carton2：	250mm(L)×200mm(W)×80mm (H)	-	-	-
Carton3：	320mm(L)×270mm(W)×80mm (H)	-	-	-
Carton4：	435mm(L)×335mm(W)×290mm(H)	-	-	-
Carton5：	600mm(L)×430mm(W)×290mm(H)	1	10	10



定义 Definition	序号 Pin#	类型 Type	说明 Description
VIN	1,2	P	电源输入 Power Input
TX2	3	O	串口2输出 Output
RX2	4	I	串口2输入 Input
A4+	5	-	485+
B4-	6	-	485-
GND	7,8	P	公共接地 GND

1.尺寸定位基准为定位孔
Location hole is used as position reference.
2.未标注公差为+/-0.3mm
Unmarked Tolerance is +/-0.3mm
注：虚线标注为有效显示区域
Active area is marked in Dash lines

型号 Model					
图纸 Drawing	A4	图纸 Drawn	J.G	日期 Date	20211028
比例 Scale	1:1	审核 Review		日期 Date	
单位 Unit	MM	批准 Approval		日期 Date	

防水橡胶垫片（用蓝色突出展示，实际为黑色）：位于屏与机壳之间，防止进水。户外使用还可在防水橡胶处增加玻璃胶，强化防水性能

Waterproof rubber gasket (blue part in the schematic, actually in black): located between screen and shell to prevent water ingress. Additional glass glue is available for outdoor use to strengthen the waterproof performance

1

开孔要求如图所示。
深度>15.0mm，
机壳面板厚度<3.0mm
The opening requirements are shown in the figure.
Depth>15.0mm
Device front housing thickness<3.0mm

将屏从机壳前方安装到机壳上的开孔中
Install the screen from the front into the housing openings.

2

将 4 个卡扣从机壳背面安装在屏上
Install the 4 clips on the screen from the back of the housing

安装好卡扣后，顺时针拧紧四颗螺钉即可将屏固定在机壳上
After the installation, tighten the 4 screws clockwise to fix the product to the housing

3

合上机壳后盖
Clip the back cover of the housing
安装完成
Installation completed

整机效果图
The final effect

Make energy storage safer and more efficient

Make Energy Storage Safer and More Efficient

Shenzhen Feisi Jieyue Technology Co., Ltd.

https://www.feisjy.com

Email: support@feisjy.com