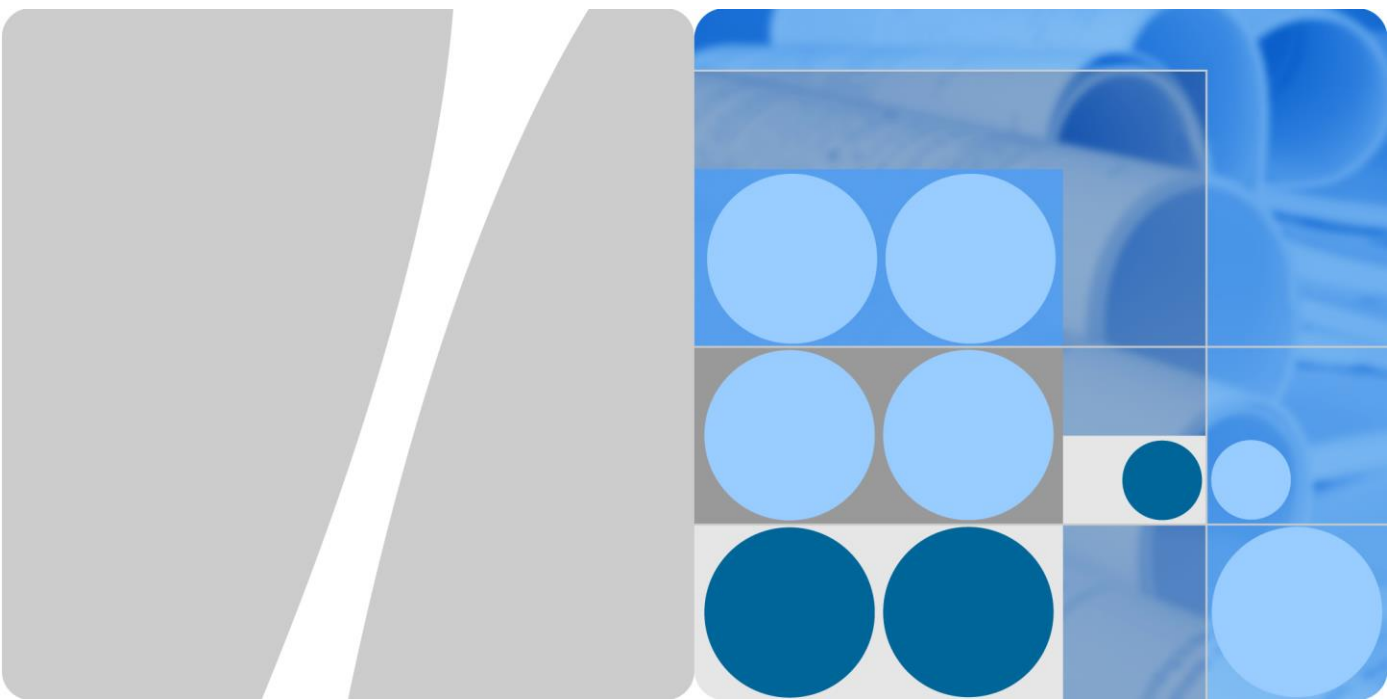




**ECC800 Data Center Controller
V100R002C00**

User Manual

Issue	08
Date	2020-03-16

Copyright © Huawei Technologies Co., Ltd. 2020. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: <https://e.huawei.com>

About This Document

Purpose

This document describes the ECC800 data center controller in terms of features, devices, user interfaces (UIs), and power-on commissioning, as well as frequently asked questions (FAQ) and troubleshooting measures.

This document describes all the functions of the ECC800. Certain functions are implemented by hardware such as the UPS and PDU, and may be unavailable if the hardware is not connected to the ECC800.

The ECC800 functions described in the user manual are applicable to multiple FusionModule solutions, and some functions may be applicable only to a few FusionModule solutions. For details about the applicable ECC800 functions, see the FusionModule solution documentation.

The figures provided in this document are for reference only.

The software version is ECC800 V100R002C00.

Intended Audience

This document is intended for:

- Sales engineers
- Technical support engineers
- Maintenance engineers

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	Indicates a hazard with a low level of risk which, if not

Symbol	Description
	avoided, could result in minor or moderate injury.
 NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
 NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

Changes between document issues are cumulative. The latest document issue contains all updates made in previous issues.

Issue 08 (2020-03-16)

Optimized the **Preparations and WebUI Login** section.

Issue 07 (2019-12-20)

Updated the safety information.

Issue 06 (2019-06-10)

Added information about access actuator ports.

Modified the "How Do I Set and Add Devices?" section.

Issue 05 (2019-02-28)

Added information about USB ports.

Updated some MDU screenshots.

Updated the air conditioner name to smart cooling product.

Issue 04 (2018-12-20)

Modified the "Commissioning CIMs and BIMs" section.

Modified the "Commissioning the AC Actuator (Wireless Networking)" section.

Added the camera IPC V200R003C00 software version to the section "Commissioning a Camera".

Modified the "WebUI" section.

Added the description about connecting a passive fire extinguishing signal to the ECC800 AI/DI port in the "Fire Extinguishing Linkage" section.

Added description of non-auto-discovered devices in the FAQ.

Modified the "How Do I Set and Add the UPS2000-G" section.

Issue 03 (2018-09-10)

Updated the ECC800 V100R002C00 based on the ECC800 V100R002C10. Updated UI expressions.

Changed the camera commissioning mode.

Changed the prerequisites for connecting the smart cooling product.

Deleted the scenario where the camera is connected to the smart ETH gateway and the VCN is connected to the LAN switch during camera commissioning.

Issue 02 (2018-05-10)

Added the procedure for exporting data in section "Deployment Wizard".

Updated the UI fields in section "Configuring Power Management Parameters".

Issue 01 (2018-02-12)

This issue is the first official release.

Contents

About This Document	ii
1 Safety Information	1
1.1 General Safety	1
1.2 Personnel Requirements	4
1.3 Electrical Safety	4
1.4 Installation Environment Requirements.....	6
1.5 Mechanical Safety	7
1.6 Others	9
2 Overview	11
2.1 Positioning	11
2.2 Features.....	11
3 Device Description.....	13
3.1 ECC800	13
3.2 Southbound Device Introduction.....	23
3.2.1 Rack Environment Unit	23
3.2.2 Smart ETH Gateway.....	24
3.2.3 General Input Unit.....	26
3.2.4 Power Distribution Unit.....	28
3.2.5 Access Control System	30
3.2.5.1 Aisle or Room Access Control System.....	30
3.2.5.1.1 Access Actuator	31
3.2.5.1.2 Fingerprint and Card Reader with a Keypad	35
3.2.5.1.3 Fingerprint and Card Reader	36
3.2.5.1.4 Card Reader with a Keypad.....	38
3.2.5.1.5 Magnetic Lock.....	39
3.2.5.2 Cabinet Access Control System	40
3.2.6 AC Actuator.....	41
3.2.7 Skylight Actuator.....	44
3.2.8 Multi-Functional Sensor	46
3.2.9 Smoke Detector	49
3.2.10 Temperature Sensor	50
3.2.11 Alarm Beacon	50

3.2.12 Water Sensor.....	51
3.2.12.1 WLDS600 Water Sensor	51
3.2.12.2 WLDS900 Water Sensor	53
3.2.12.3 Electrode Water Sensor	54
3.2.13 WiFi Converter	54
3.2.14 WiFi Module	56
3.2.15 ETH Converter	57
3.2.16 PAD	59
3.2.17 T/H Sensor	61
3.2.17.1 T/H sensor (BOM number: 33010346)	61
3.2.17.2 T/H Sensor (BOM number: 02310NBS)	62
3.2.18 Intelligent Battery Monitoring System.....	63
3.2.18.1 CIM.....	64
3.2.18.2 BIM.....	73
4 UI Description	75
4.1 WebUI.....	75
4.2 Mobile Phone APP	81
4.3 PAD APP	82
5 Power-On Commissioning.....	84
5.1 Preparations and WebUI Login	84
5.2 Configuration Wizard	87
5.3 Commissioning Alarm Notification.....	88
5.4 Commissioning the Smart Busway.....	92
5.5 Commissioning the AC Actuator (Wireless Networking)	93
5.6 Commissioning CIMs and BIMs.....	95
6 Feature Description.....	98
6.1 (Optional) Setting Device Performance Parameters	98
6.2 Setting ECC800 Cascading.....	99
6.3 Access Management	100
6.3.1 Commissioning a Door Status Sensor.....	100
6.3.1.1 Commissioning a Door Status Sensor (Connected to the AI/DI port on the independent deployment AI_DI unit)	100
6.3.1.2 Commissioning a Door Status Sensor (Connected to the AI/DI Port on the Rack Environment Unit)	101
6.3.2 Commissioning an Access Control Device and a Cabinet Electronic Lock	102
6.3.3 Commissioning the Exit Button, Skylight Button, Atmosphere Light, Emergency Button, and Magnetic Lock ..	106
6.3.4 Commissioning an Emergency Door Release Button	107
6.4 Video Management.....	108
6.4.1 Preparing Documentation.....	108
6.4.2 Networking Scenarios.....	108
6.4.3 Commissioning a Camera (Smart ETH Gateway Networking Scenario/Versions Earlier than IPC V200R003C00)	110

6.4.3.1 Commissioning IPC6325 Cameras	110
6.4.3.2 Commissioning IPC6325 Camera (SD Card Configured).....	114
6.4.4 Commissioning a Camera (Smart ETH Gateway Networking Scenario).....	116
6.4.4.1 Commissioning IPC6325 Cameras	116
6.4.4.2 Commissioning IPC6325 Camera (SD Card Configured).....	120
6.4.5 Commissioning a Camera (LAN Switch Networking Scenario/Versions Earlier than IPC V200R003C00).....	122
6.4.5.1 Commissioning IPC6325 Cameras	122
6.4.5.2 Commissioning IPC6325 Camera (SD Card Configured).....	124
6.4.6 Commissioning a Camera (LAN Switch Networking Scenario)	127
6.4.6.1 Commissioning IPC6325 Cameras	127
6.4.6.2 Commissioning IPC6325 Camera (SD Card Configured).....	129
6.4.7 Setting Parameters on the VCN WebUI	132
6.4.8 Setting Parameters on the VCN IVS Client.....	134
6.5 Fire Linkage.....	137
6.6 PUE Configuration	140
6.6.1 Configuring PUE Standard Mode.....	141
6.6.2 Configuring PUE User-defined Mode.....	142
6.6.3 Viewing PUE Data.....	144
6.7 Power Management.....	145
6.7.1 Configuring Power Management Parameters.....	145
6.7.2 Querying Power Parameters.....	148
6.8 Cooling Capacity Management	149
6.8.1 Setting Cooling Capacity Management Parameters.....	149
6.8.2 Querying Cooling Capacity Parameters.....	150
6.8.3 (Optional) Setting Cooling Management Parameters	151
6.9 Remote Management.....	153
6.9.1 NetEco Management	153
6.9.1.1 Connecting the Communications Cable	153
6.9.1.2 Setting NetEco Parameters.....	154
6.9.1.3 Creating an ECC800 on the NetEco.....	155
6.9.1.4 Setting the Transparent Transmission Function	156
6.9.2 Third-party NMS Management (over SNMP).....	159
6.9.2.1 Connecting the Communications Cable	159
6.9.2.2 Setting SNMP Management Parameters	159
7 Maintenance.....	162
7.1 Routine Maintenance.....	162
7.2 Common Faults and Troubleshooting.....	163
7.3 Component Replacement.....	165
7.3.1 Replacing an ECC800 Main Control Module.....	165
7.3.2 Replacing a PSU.....	167
7.3.3 Replacing ECC800 Antennas	168

7.3.4 Replacing a SIM Card and Micro SD Card	169
8 FAQ	171
8.1 WebUI Operations	171
8.1.1 How Can I View Version Information?	171
8.1.2 How Do I Set the Date and Time?	171
8.1.3 How to Check the System Type and Set the Smart Module Name	172
8.1.4 How to Manage WebUI Users?	173
8.1.5 Creating a Smart Module Plan View.....	174
8.1.6 How Do I Set and Add Devices?	176
8.1.6.1 How to Set and Add an Integrated UPS Parameters?.....	176
8.1.6.2 How to Set and Add a UPS2000-G?	176
8.1.6.3 How to Set and Add a UPS5000-E?.....	178
8.1.6.4 How to Set and Add a SUNRISE SCU-20K?	180
8.1.6.5 How to Set and Add a NetCol5000-C030 Parameters (over Modbus TCP)?.....	181
8.1.6.6 How to Set and Add a NetCol5000-C030 (over Modbus RTU)?	182
8.1.6.7 How to Set and Add a NetCol5000-A025 Parameters (over MAC-Modbus)?	184
8.1.6.8 How to Set and Add a NetCol5000-A042 Parameters?	185
8.1.6.9 How to Set and Add a NetCol5000CF_110 Parameters (over Modbus-TCP)?.....	186
8.1.6.10 How to Set and Add a PDU8000 or integrated PDF (over Modbus-TCP)?.....	187
8.1.6.11 How to Set and Add a PDU8000 (over Modbus RTU)?	187
8.1.6.12 How to Set and Add a PDU2000?.....	189
8.1.6.13 How to Set and Add an ATS?	192
8.1.6.14 How to Set and Add a PMAC625 AC Meter?	193
8.1.6.15 How to Set and Add a PMAC615 AC Meter?	195
8.1.6.16 How to Set and Add a PDC DC Meter?	196
8.1.6.17 How to Set and Add an Independent Deployment AI_DI Unit?	197
8.1.6.18 How to Set and Add an IP Device?	199
8.1.6.19 How to Set and Add the Multi-functional Sensor	200
8.1.6.20 How to Set and Add the Smoke Detector (Connected to the AI/DI Port on the ECC800)?	202
8.1.6.21 How to Set and Add the Smoke Detector (Connected to the AI/DI Port on the Skylight Actuator).....	203
8.1.6.22 How to Set and Add the WLDS900 Water Sensor	204
8.1.6.23 How to Set and Add the WLDS600 Water Sensor?	205
8.1.6.24 How to Set and Add the Electrode Water Sensor?	207
8.1.6.25 How to Set and Add the Temperature Sensor (Connected to the AI/DI Port on the ECC800)?	208
8.1.6.26 How to Set and Add the Temperature Sensor (Connected to the NTC Port on the Rack Environment Unit)...	209
8.1.6.27 How to Set and Add the T/H Sensor (BOM Number: 33010346)?	209
8.1.6.28 How to Set and Add the T/H Sensor (BOM Number: 02310NBS)?	211
8.1.7 How to Restore Factory Settings?	213
8.1.8 How Do I Install a Network Security Certificate?	213
8.1.9 How Can I Install a Device Access Certificate?	214
8.1.10 How Can I Change the ECC800 IP Address on the WebUI.....	215

8.1.11 How Do I Configure ECC800 Alarm Parameters	215
8.1.12 How Can I View Real-Time Monitoring Data, Active Alarms, Historical Alarms, Access Event, and Operation Logs?	216
8.1.13 How Can I Handle Alarms?	217
8.1.14 How Can I View Performance Data?	217
8.1.15 How Is a Signal Name Changed?	217
8.1.16 How Can I Export Historical Data and Device Data?	218
8.1.17 How Can I Export or Import a Configuration File?	219
8.1.18 How Can I Export Fault Information?	220
8.1.19 How Can I Synchronize Device Parameters?	221
8.1.20 How Can I Associate an Alarm, a DO Output, and Sound?	222
8.1.21 How Can I Handle DO Association Failure?	222
8.1.22 What Do I Do If the ECC800 WebUI Display Language Changes from Chinese to English During Use?	223
8.1.23 What Do I Do If the ECC800 Fails to Communicate with the UPS5000-E?	223
8.1.24 What Do I Do If a Message Indicating Unauthorized Fingerprint Is Displayed During Fingerprint Scanning on the Access Control Device (Fingerprint Has Been Recorded)?	224
8.1.25 How Can I Rectify Camera Access Restriction	224
8.1.26 How Should I Add the Devices Accessed Through a Smart ETH Gateway over Modbus-TCP to the ECC800 WebUI?	225
8.1.27 How Should I Add the Devices Accessed Through a Smart ETH Gateway over Modbus-MAC to the ECC800 WebUI?	226
8.1.28 How Should I Add Devices Accessed Through the ETH Converter to the ECC800 WebUI?	227
8.1.29 How Should I Add Devices Accessed Through the ECC800 COM Port to the ECC800 WebUI	229
8.1.30 How Should I Add Devices Accessed Through the ECC800 AI/DI Port to the ECC800 WebUI	230
8.1.31 How Should I Open Doors Remotely over the ECC800 WebUI	232
8.1.32 How Should I Turn On or Off Aisle Lights in the Smart Module over the ECC800 WebUI?	233
8.1.33 How Should I Opening Skylights Remotely over the ECC800 WebUI?	234
8.1.34 How Should I Turn On or Off Smart Cooling Products over the ECC800 WebUI?	235
8.1.35 How Should I Open the Cabinet Electronic Lock over the ECC800 WebUI	235
8.1.36 How Should I Link the Smoke Alarm with the Alarm Beacon over the ECC800 WebUI	236
8.1.37 How should I Link the AI/DI Alarm with the Alarm Beacon over the ECC800 WebUI	237
8.1.38 How Should I Modify Device Names over the ECC800 WebUI	238
8.2 APP Operations	239
8.2.1 How to Connect to a WiFi Network	239
8.2.2 How to Prepare and Login App	240
8.2.3 How Do I Ensure that Device Positions in the Plan View Are Consistent with Actual Positions?	242
8.2.4 How Do I View Running Information	243
8.2.5 How Can I Export and Import Data?	244
8.2.6 How Can I Synchronize Device Parameters?	244
8.2.7 How Can I Handle App Login Failure?	245
9 PLC Function	246
9.1 Linkage Control Introduction	246

9.2 Linkage Control Configuration Examples	247
A Acronyms and Abbreviations.....	249

1 Safety Information

1.1 General Safety

Statement

Before installing, operating, and maintaining the equipment, read this document and observe all the safety instructions on the equipment and in this document.

The "NOTICE", "CAUTION", "WARNING", and "DANGER" statements in this document do not cover all the safety instructions. They are only supplements to the safety instructions. Huawei will not be liable for any consequence caused by the violation of general safety requirements or design, production, and usage safety standards.

Ensure that the equipment is used in environments that meet its design specifications. Otherwise, the equipment may become faulty, and the resulting equipment malfunction, component damage, personal injuries, or property damage are not covered under the warranty.

Follow local laws and regulations when installing, operating, or maintaining the equipment. The safety instructions in this document are only supplements to local laws and regulations.

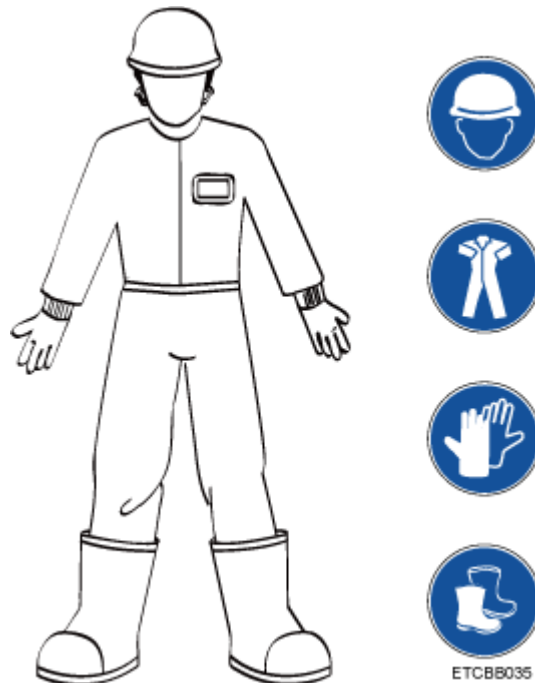
Huawei will not be liable for any consequences of the following circumstances:

- Operation beyond the conditions specified in this document
- Installation or use in environments which are not specified in relevant international or national standards
- Unauthorized modifications to the product or software code or removal of the product
- Failure to follow the operation instructions and safety precautions on the product and in this document
- Equipment damage due to force majeure, such as earthquakes, fire, and storms
- Damage caused during transportation by the customer
- Storage conditions that do not meet the requirements specified in this document

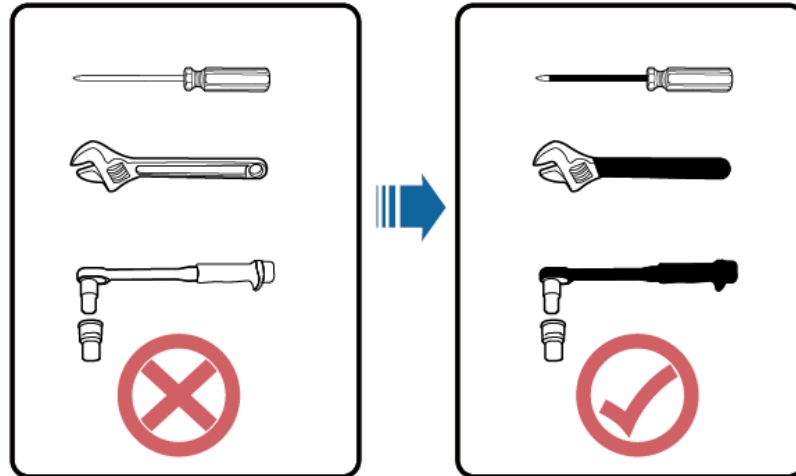
General Requirements

- Do not install, use, or operate outdoor equipment and cables (including but not limited to moving equipment, operating equipment and cables, inserting connectors to or removing connectors from signal ports connected to outdoor facilities, working at heights, and performing outdoor installation) in harsh weather conditions such as lightning, rain, snow, and level 6 or stronger wind.

- Before installing, operating, or maintaining the equipment, remove any conductive objects such as watches or metal jewelry like bracelets, bangles, and rings to avoid electric shock.
- When installing, operating, or maintaining the equipment, wear dedicated protective gears such as insulation gloves, goggles, and safety clothing, helmet, and shoes, as shown in the following figure.

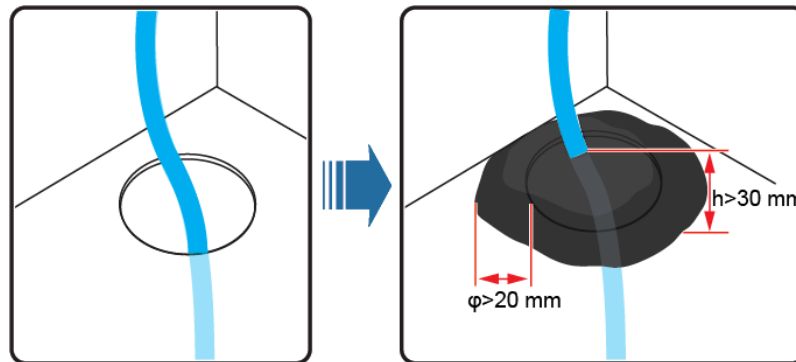


- Follow the specified procedures for installation, operation, and maintenance.
- Before handling a conductor surface or terminal, measure the contact point voltage and ensure that there is no risk of electric shock.
- After installing the equipment, remove idle packing materials such as cartons, foam, plastics, and cable ties from the equipment area.
- In the case of a fire, immediately leave the building or the equipment area, and turn on the fire alarm bell or make an emergency call. Do not enter the building on fire in any case.
- Do not stop using protective devices. Pay attention to the warnings, cautions, and related precautionary measures in this document and on the equipment. Promptly replace warning labels that have worn out.
- Keep irrelevant people away from the equipment. Only operators are allowed to access the equipment.
- Use insulated tools or tools with insulated handles, as shown in the following figure.



TN01H00005

- All cable holes should be sealed. Seal the used cable holes with firestop putty. Seal the unused cable holes with the caps delivered with the cabinet. The following figure shows the criteria for correct sealing with firestop putty.



TN01H00006

- Do not scrawl, damage, or block any warning label on the equipment.
- Tighten the screws using tools when installing the equipment.
- Do not work with power on during installation.
- Repaint any paint scratches caused during equipment transportation or installation in a timely manner. Equipment with scratches cannot be exposed to an outdoor environment for a long period of time.
- Before operations, ensure that the equipment is firmly secured to the floor or other solid objects, such as a wall or an installation rack.
- Do not use water to clean electrical components inside or outside of a cabinet.
- Do not change the structure or installation sequence of equipment without permission.
- Do not touch a running fan with your fingers, components, screws, tools, or boards before the fan is powered off or stops running.

Personal Safety

- If there is a probability of personal injury or equipment damage during operations on the equipment, immediately stop the operations, report the case to the supervisor, and take feasible protective measures.
- To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telecommunication network voltage (TNV) circuits.

- Do not power on the equipment before it is installed or confirmed by professionals.

1.2 Personnel Requirements

- Personnel who plan to install or maintain Huawei equipment must receive thorough training, understand all necessary safety precautions, and be able to correctly perform all operations.
- Only qualified professionals or trained personnel are allowed to install, operate, and maintain the equipment.
- Only qualified professionals are allowed to remove safety facilities and inspect the equipment.
- Personnel who will operate the equipment, including operators, trained personnel, and professionals, should possess the local national required qualifications in special operations such as high-voltage operations, working at heights, and operations of special equipment.
- Professionals: personnel who are trained or experienced in equipment operations and are clear of the sources and degree of various potential hazards in equipment installation, operation, maintenance
- Trained personnel: personnel who are technically trained, have required experience, are aware of possible hazards on themselves in certain operations, and are able to take protective measures to minimize the hazards on themselves and other people
- Operators: operation personnel who may come in contact with the equipment, except trained personnel and professionals
- Only professionals or authorized personnel are allowed to replace the equipment or components (including software).

1.3 Electrical Safety

Grounding

- For the equipment that needs to be grounded, install the ground cable first when installing the equipment and remove the ground cable last when removing the equipment.
- Do not damage the ground conductor.
- Do not operate the equipment in the absence of a properly installed ground conductor.
- Ensure that the equipment is connected permanently to the protective ground. Before operating the equipment, check its electrical connection to ensure that it is securely grounded.

General Requirements

Use dedicated insulated tools when performing high-voltage operations.

AC and DC Power



DANGER

Do not connect or disconnect power cables with power on. Transient contact between the core of the power cable and the conductor will generate electric arcs or sparks, which may cause fire or personal injury.

- If a "high electricity leakage" tag is attached on the equipment, ground the protective ground terminal on the equipment enclosure before connecting the AC power supply; otherwise, electric shock as a result of electricity leakage may occur.
- Before installing or removing a power cable, turn off the power switch.
- Before connecting a power cable, check that the label on the power cable is correct.
- If the equipment has multiple inputs, disconnect all the inputs before operating the equipment.
- A circuit breaker equipped with a residual current device (RCD) is not recommended.
- A damaged power cable must be replaced by the manufacturer, service agent, or professionals to avoid risks.
- High voltage operations and installation of AC-powered facilities must be performed by qualified personnel.

Cabling

- When routing cables, ensure that a distance of at least 30 mm exists between the cables and heat-generating components or areas. This prevents damage to the insulation layer of the cables.
- Do not route cables behind the air intake and exhaust vents of the equipment.
- Ensure that cables meet the VW-1 flame spread rating requirements.
- Bind cables of the same type together. When routing cables of different types, ensure that they are at least 30 mm away from each other.
- If an AC input power cable is connected to the cabinet from the top, bend the cable in a U shape outside the cabinet and then route it into the cabinet.
- When the temperature is low, violent impact or vibration may damage the plastic cable sheathing. To ensure safety, comply with the following requirements:
- Cables can be laid or installed only when the temperature is higher than 0°C. Handle cables with caution, especially at a low temperature.
- Cables stored at subzero temperatures must be stored at room temperature for at least 24 hours before they are laid out.
- Do not perform any improper operations, for example, dropping cables directly from a vehicle.
- When selecting, connecting, and routing cables, follow local safety regulations and rules.

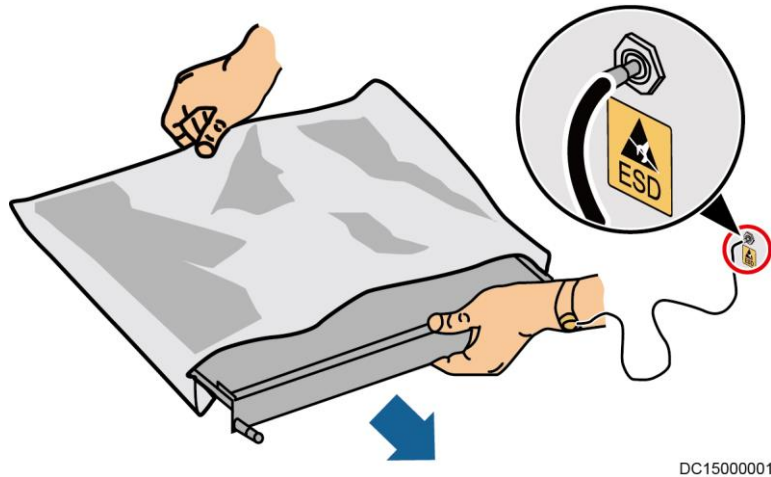
ESD

NOTICE

The static electricity generated by human bodies may damage the electrostatic-sensitive components on boards, for example, the large-scale integrated (LSI) circuits.

- Wear ESD gloves or a well-grounded ESD wrist strap when touching the device or handling boards or application-specific integrated circuits (ASICs).
- When holding a board, hold its edge without touching any components. Do not touch the components with your bare hands.
- Package boards with ESD packaging materials before storing or transporting them.

Figure 1-1 Wearing an ESD wrist strap



Neutral-Ground Voltage

It is recommended that the three-phase loads be equalized and the neutral-ground voltage be kept at less than 2 V to meet power distribution requirements.

1.4 Installation Environment Requirements

- To prevent fire due to high temperature, ensure that the ventilation vents or heat dissipation system are not blocked when the equipment is running.
- Install the equipment in an area far away from liquids. Do not install it under areas prone to condensation, such as under water pipes and air exhaust vents, or areas prone to water leakage, such as air conditioner vents, ventilation vents, or feeder windows of the equipment room. Ensure that no liquid enters the equipment to prevent faults or short circuits.
- If any liquid is detected inside the equipment, immediately disconnect the power supply and contact the administrator.
- Do not expose the equipment to flammable or explosive gas or smoke. Do not perform any operation on the equipment in such environments.
- Ensure that the equipment room provides good heat insulation, and the walls and floor are dampproof.
- Install a rat guard at the door of the equipment room.

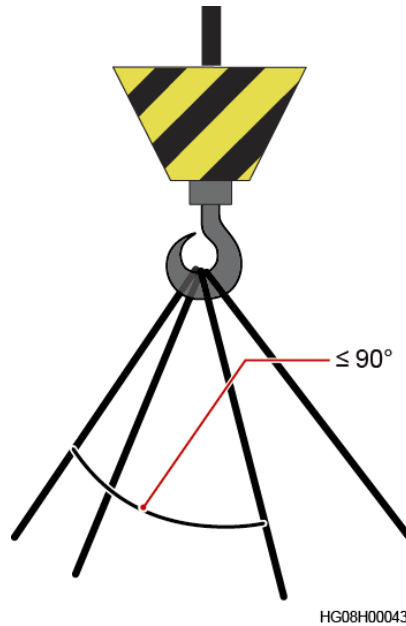
Installation at Heights

- Working at heights refers to operations that are performed at least 2 meters above the ground.
- Do not work at heights if the steel pipes are wet or other potential danger exists. After the preceding conditions no longer exist, the safety director and relevant technical personnel need to check the involved equipment. Operators can begin working only after obtaining consent.
- When working at heights, comply with local relevant laws and regulations.
- Only trained and qualified personnel are allowed to work at heights.
- Before working at heights, check the climbing tools and safety gears such as safety helmets, safety belts, ladders, springboards, scaffolding, and lifting equipment. If they do not meet the requirements, take corrective measures or disallow working at heights.
- Wear personal protective equipment such as the safety helmet and safety belt or waist rope and fasten it to a solid structure. Do not mount it on an insecure moveable object or metal object with sharp edges. Make sure that the hooks will not slide off.
- Set a restricted area and eye-catching signs for working at heights to warn away irrelevant personnel.
- Carry the operation machinery and tools properly to prevent them from falling off and causing injuries.
- Personnel involving working at heights are not allowed to throw objects from the height to the ground, or vice versa. Objects should be transported by tough slings, hanging baskets, highline trolleys, or cranes.
- Ensure that guard rails and warning signs are set at the edges and openings of the area involving working at heights to prevent falls.
- Do not pile up scaffolding, springboards, or other sundries on the ground under the area involving working at heights. Do not allow people to stay or pass under the area involving working at heights.
- Inspect the scaffolding, springboards, and workbenches used for working at heights in advance to ensure that their structures are solid and not overloaded.
- Any violations must be promptly pointed out by the site manager or safety supervisor and the involved personnel should be prompted for correction. Personnel who fail to stop violations will be forbidden from working.

1.5 Mechanical Safety

Hoisting Devices

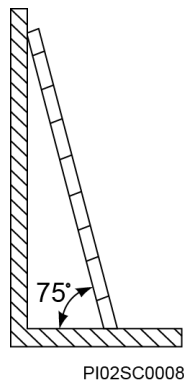
- Do not walk under hoisted objects.
- Only trained and qualified personnel should perform hoisting operations.
- Check that hoisting tools are available and in good condition.
- Before hoisting objects, ensure that hoisting tools are firmly secured onto a load-bearing object or wall.
- Ensure that the angle formed by two hoisting cables is no more than 90 degrees, as shown in the following figure.



- Do not drag steel ropes and hoisting tools or bump hoisted objects against hard objects during hoisting.

Using Ladders

- Use wooden or fiberglass ladders when you need to perform live working at heights.
- When a step ladder is used, ensure that the pull ropes are secured and the ladder is held firm.
- Before using a ladder, check that it is intact and confirm its load bearing capacity. Do not overload it.
- Ensure that the ladder is securely positioned. The recommended angle for a ladder against the floor is 75 degrees, as shown in the following figure. An angle rule can be used to measure the angle. Ensure that the wider end of the ladder is at the bottom, or protective measures have been taken at the bottom to prevent the ladder from sliding.



- When climbing a ladder, take the following precautions to reduce risks and ensure safety:
- Keep your body steady.
- Do not climb higher than the fourth rung of the ladder from the top.
- Ensure that your body's center of gravity does not shift outside the legs of the ladder.

Drilling Holes

When drilling holes into a wall or floor, observe the following safety precautions:

NOTICE

Do not drill holes into the equipment. Doing so may affect the electromagnetic shielding of the equipment and damage components or cables inside. Metal shavings from drilling may short-circuit boards inside the equipment.

- Obtain the consent from the customer, subcontractor, and Huawei before drilling.
- Wear goggles and protective gloves when drilling holes.
- When drilling holes, protect the equipment from shavings. After drilling, clean up any shavings that have accumulated inside or outside the equipment.

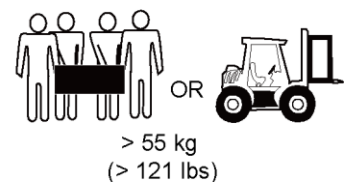
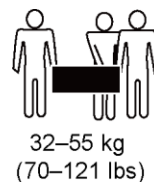
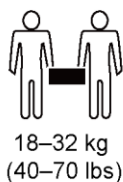
Moving Heavy Objects



DANGER

When removing a heavy or unstable component from a cabinet, be aware of unstable or heavy objects on the cabinet.

- Be cautious to avoid injury when moving heavy objects.



NH01H00144

- When moving the equipment by hand, wear protective gloves to prevent injuries.
- Move or lift the equipment by holding its handles or lower edges. Do not hold the handles of modules (such as power supply units, fans, and boards) that are installed in the equipment because they cannot support the weight of the equipment.
- Avoid scratching the cabinet surface or damaging cabinet components and cables during equipment transportation.
- When transporting the equipment using a forklift truck, ensure that the forks are properly positioned to ensure that the equipment does not topple. Before moving the equipment, secure it to the forklift truck using ropes. When moving the equipment, assign dedicated personnel to take care of it.
- Choose railways, sea, or a road with good condition for transportation to ensure equipment safety. Avoid tilt or jolt during transportation.
- Move a cabinet with caution. Any bumping or falling may damage the equipment.

1.6 Others

- Exercise caution when shutting down the smart cooling product. Doing so may cause equipment and room overheating, which will damage the equipment.

- Exercise caution when powering off the rPDU or PDU2000. Doing so may affect the power supply to equipment, which will interrupt services.
- Exercise caution when manually shutting down the UPS inverter for transferring to bypass mode, or when adjusting the UPS output voltage level or frequency. Doing so may affect the power supply to equipment.
- Exercise caution when setting battery parameters. Incorrect settings will affect the power supply and battery lifespan.

2 Overview

2.1 Positioning

The ECC800 is the core component for the smart module local management. It is intelligent, flexible in connection, easy to maintain, and reliable. It adopts the POE bus for expansion, and allows all intelligent monitoring devices to be flexibly laid out so that it can manage the devices in the smart module.

2.2 Features

- Efficient
 - Supports access of wireless devices and provides backup routes, reducing cable layout workload and enhancing reliability.
 - Supports unlocking through the access card, password and fingerprint.
 - Supports remote alarm notifications by SMS and email.
 - Supports power supply and communication over the power over Ethernet (POE) bus, providing rich bandwidth resources and high communication efficiency.
 - Supports remote upgrade, fault data export, and configuration parameter synchronization.
 - Supports the connection of eight in-room access control devices and three cameras for a single smart module.
 - Cascades a maximum of three ECC800s, displays the active alarms and power usage effectiveness (PUE) data of cascaded ECC800s on the WebUI of one ECC800.
 - Collects statistics on the instantaneous PUE and average PUE of the smart module and displays the statistics on a dashboard and in curves, so that you can query the power consumption of the smart module in real time
 - Supports the function of transparent transmission over the RS485 port, so that southbound components can communicate with the NetEco after accessing the ECC800.
 - Allows you to modify device performance parameters and query historical performance data.
 - Supports asset management, power management, and cooling capacity management, allowing a grasp of dynamic information about the smart module in a timely manner, and facilitating effective management.

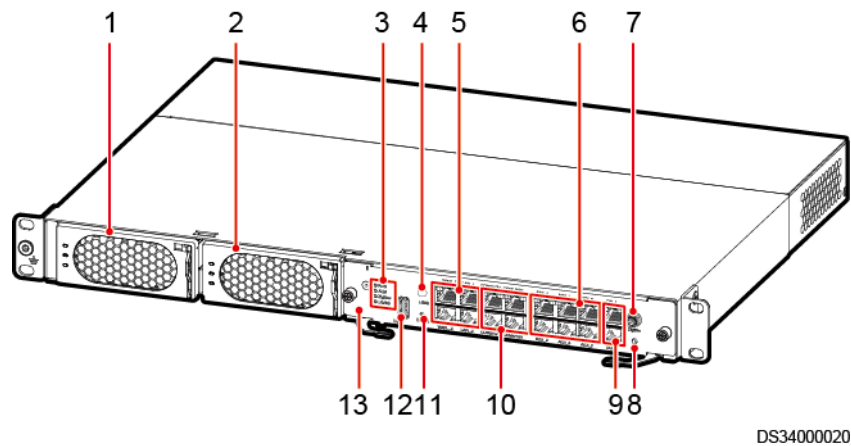
- Supports deployment wizard, which provides commissioning guidance.
- Simple
 - Supports local WiFi hotspots. After you install the WiFi module at the USB port on the ECC800, you can connect to the ECC800 using the app on the mobile phone or tablet computer to view the basic information about the smart module, such as layout, resources, energy efficiency, environment, and alarms. This increases usability.
 - Supports query of device information in real time using the pad app or mobile phone app, facilitating operation and maintenance.
 - Supports connection of NE monitoring devices to the POE bus in plug-and-play mode for auto-discovery and auto-registration requiring no configuration. This feature enables fast delivery and higher maintainability.
- Reliable
 - Supports intelligent linkage management which allows customization of linkage logic, achieving intelligent operation and maintenance.
 - Supports dual power inputs, providing high reliability.
 - Supports intelligent battery monitoring management, which allows monitoring of cell voltage and internal resistance for discovery of failed cells.
 - Supports automation functions such as fire control linkage and smoke alarm linkage.
 - Supports a POE ring network, reducing networking fault points and providing high reliability.
 - Supports cabinet-level magnetic locks, door status sensor, and temperature monitoring, providing high security.
 - Interconnects with the NetEco and supports the SNMP, allowing central management over various scenarios and modules.

3 Device Description

3.1 ECC800

The ECC800 consists of power supply units (PSUs) and an ECC800 main control module and monitors the equipment and environment in the smart module.

Figure 3-1 ECC800 (front view)



- (1) PSU

(4) 3G/4G antenna port
Manufacturer: Guangdong
Shenglu Telecommunication Tech.
Co., Ltd.
Model: SL10802U

(7) RF_Z antenna port
Manufacturer: Guangdong
Shenglu Telecommunication Tech.
Co., Ltd.
Model: SL15334H

(10) RS485 port 12V (COM1–4)

(13) ECC800 main control module
- (2) PSU

(5) FE ports
(WAN_1–WAN_2 and
LAN_1–LAN_2)

(8) SW button

(11) Default button
- (3) Status indicator

(6) AI/DI_1–6 sensor
input port

(9) DO_1–2 dry
contact output

(12) USB port

Figure 3-2 ECC800 (rear view)

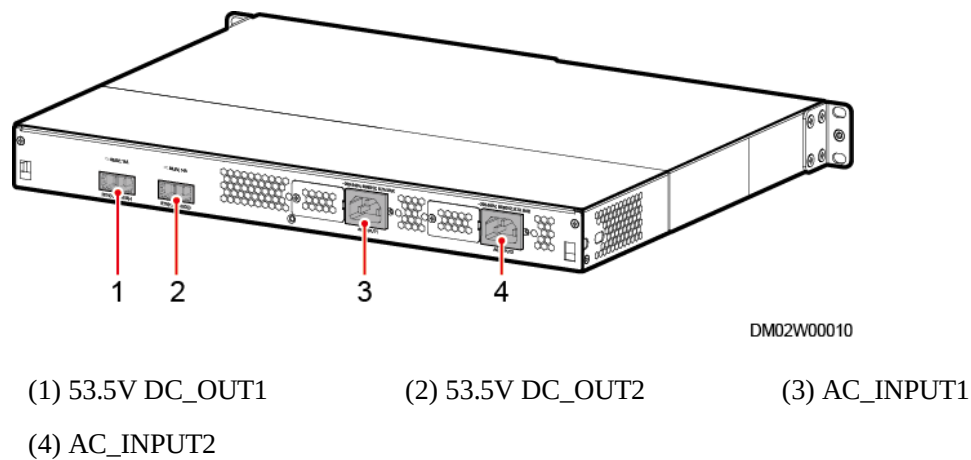
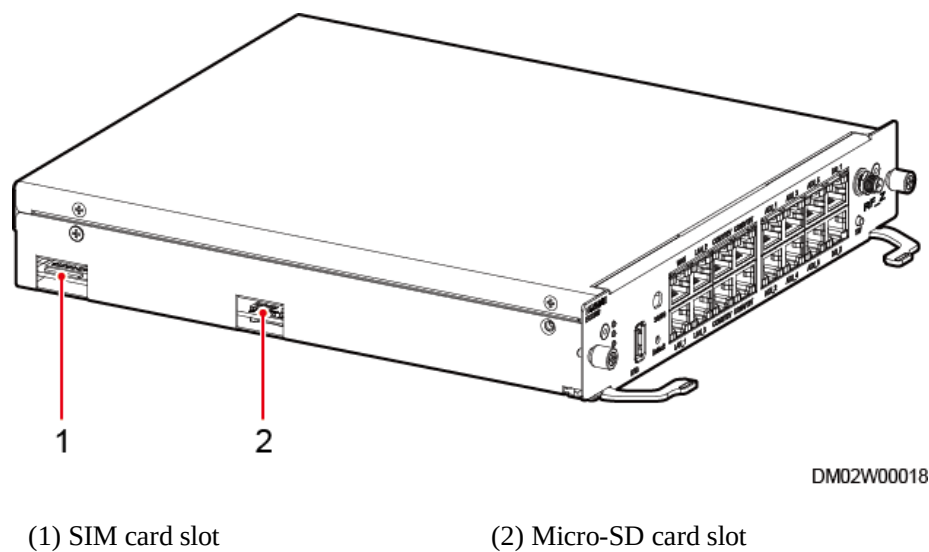


Figure 3-3 ECC800 main control module (side view)



ECC800 Specifications

Table 3-1 ECC800 environmental specifications

Item	Specifications
Working temperature	–20°C to +50°C
Storage temperature	–40°C to +70°C
Relative humidity	5%–95% RH (non-condensing)
Altitude	0–4000 m (When the altitude is between 3000 m and 4000 m,

Item	Specifications
	the temperature decreases by 1°C for each additional 200 m.)

Table 3-2 ECC800 structural specifications

Item	Specifications
Dimensions (L x W x H)	442 mm x 330 mm x 43.6 mm
Color	Black
Installation	Can be installed in a 1 U space in a standard 19-inch cabinet
Environmental protection	RoHS5

Table 3-3 ECC800 technical specifications

Item	Specifications
Power input	• Supports two AC inputs • Rated voltage: 200–240 V AC/100–120 V AC • Rated frequency: 50 Hz/60 Hz
Power output	• Output voltage: 42–58 V DC (rated voltage: 53.5 V DC) • Output power of two power module supplies: 2000 W (176–300 V AC); 940 W (linear derating at 85–175 V AC) • Output power of a single power module supply: 1000 W (176–300 V AC); 470 W (linear derating at 85–175 V AC)
FE port expansion	Supports two WAN ports, two LAN ports, and 10/100M communications rate
RS485 serial port expansion	• Supports four RS485 ports with the default communications rate of 9600 bit/s. • Each port provides 12 V DC power with the rated current of 450 mA.
AI/DI expansion (RJ45)	• Supports six AI/DI ports to connect to smoke sensors, water sensors, and temperature sensors. • Each port provides 12 V DC power with the rated current of 85 mA.
DO expansion (RJ45)	Two DO ports. Each port supports passive and active DO. • Supports passive (dry contact) DO ports with contact point capacity of 20 W, maximum withstand voltage of 60 V DC, and rated current of 500 mA. • Supports active DO ports with the output voltage of 12 V DC and output current of 450 mA.

Item	Specifications
Wireless communication	Supports wireless communication that complies with IEEE802.15.4.
3G (optional)	Supports 3G (WCDMA) communication and is compatible with 2G (GSM) communication. A standard SIM card slot is provided. NOTE The prerequisite for using a SIM card is that the site has signal coverage.
USB	- After installing the WiFi module, connect the WiFi module to the ECC800 using the app on the mobile phone or tablet computer to view the basic information about the smart module, such as layout, resources, energy efficiency, environment, and alarms. - Insert a USB flash drive to export historical data, device data, fault information, and configuration files, and import or export the device configuration data and historical data.
Button	- SW: wireless network pairing button - Default: restores the default IP address

Table 3-4 ECC800 RF parameters

Model Name	Specifications	
ECC800	RF_Z Operation Frequency	2405 MHz–2480 MHz
	RF_Z EIRP (max.)	5 dBm
	3G Operation Frequency	WCDMA BAND: 850 MHz–2100 MHz GSM: 850 MHz–1900 MHz
	3G EIRP (max.)	36 dBm
	Software version	V100

Indicators

Table 3-5 Indicators on the ECC800 main control module

Indicator	Color	Name	Status	Description
RUN	Green	Running status indicator	Steady on	The power supply is normal, the program is being loaded, or WiFi WPS is pairing.
			Off	The power supply is abnormal.
			Blinking at long	The software runs properly (the indicator blinks at 0.5 Hz, on for

Indicator	Color	Name	Status	Description
			intervals	1s and then off for 1s) or the ECC800 registers with the NetEco successfully.
			Blinking at short intervals	The ECC800 does not register with the NetEco (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	The system is normal.
RF_Z	Green	Communication status indicator	Steady on	No network parameters exist, or a network is to be created.
			Blinking at long intervals	A network is set up, and no node access is allowed (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at super short intervals	A network is set up, and node access is allowed (the indicator blinks at 10 Hz, on for 0.05s and then off for 0.05s).
3G	Green	3G status indicator	Steady on	The 3G module is powered on.
			Off	The 3G module stops running, or no 3G module is configured.
			Blinking at long intervals	The 3G module succeeds in dial-up (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The 3G module registers with the operator network successfully (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).

Table 3-6 PSU indicator description

Indicator	Color	Name	Status	Description
	Green	Power indicator	Steady on	The converter has a power input.
			Off	The converter has no power input or is faulty.
			Blinking at	The converter is being queried (the indicator blinks at 0.5 Hz, on for 1s

Indicator	Color	Name	Status	Description
			long intervals	and then off for 1s).
			Blinking at short intervals	The converter application program is being loaded (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
	Yellow	Alarm indicator	Steady on	The converter generates a forewarning indicating that power will be limited due to ambient over temperature, or generates a protection shutdown alarm due to ambient over temperature or under temperature.
				Power input overvoltage or undervoltage protection
				Reverse DC input connection
				Slight current imbalance
				Output overvoltage
				Hibernation
			Off	The converter generates no protection alarms.
	Red	Fault indicator	Steady on	The converter locks out due to output overvoltage.
				The converter delivers no output due to internal faults.
			Off	The converter is working properly.

Wireless Network Pairing (SW) and IP Address Reset (Default) Buttons

Table 3-7 Wireless network pairing and IP address reset buttons

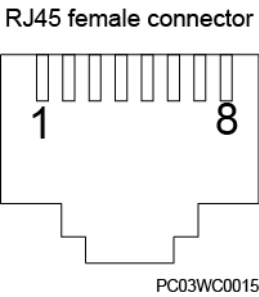
Button Name	Function Description	Operation Description	Indicator Status
SW	Wireless network RF_Z (802.15.4)	In non-wireless network (802.15.4) pairing mode, press and hold down the button for 1.2s to 5s to enter the	The RF_Z indicator is blinking at super short intervals.

Button Name	Function Description	Operation Description	Indicator Status
	pairing	wireless network pairing mode.	
		In wireless network (802.15.4) pairing mode, press and hold down the button for 1.2s to 5s to exit the pairing mode; or the system automatically exits the pairing mode after 30 minutes without pressing the button.	The RF_Z indicator is blinking at long intervals.
		Press and hold down the button for more than 6s to clear network parameters.	The RF_Z indicator is on.
	WiFi pairing button NOTE This function is supported only in a scenario where the WiFi converter is configured.	In non-WiFi pairing mode, press the button for less than 1.2s to enter the WiFi pairing mode.	• When the system enters the pairing mode, the RUN indicator is steady on. • After pairing succeeds, the RUN indicator blinks just as before WiFi pairing. • If pairing does not succeed in 3 minutes, the RUN indicator blinks just as before WiFi pairing.
Default	IP address reset	Hold down the button for at least 3s. Then the IP addresses for the ECC800 WAN_1 and WAN_2 ports will restore to the default addresses.	None

Communications Ports

The ECC800 provides the following communications ports. [Figure 3-4](#) shows the pins of the RJ45 port.

Figure 3-4 RJ45 port pins



There are four FE ports, that is, two WAN ports (WAN_1 and WAN_2) and two LAN ports (LAN_1 and LAN_2). Table 3-8 provides the FE port pin definitions.

Table 3-8 FE port pin definitions

Item		Description
Pin sequence	Pin 1	TX+
	Pin 2	TX-
	Pin 3	RX+
	Pin 4	N/A
	Pin 5	N/A
	Pin 6	RX-
	Pin 7	N/A
	Pin 8	N/A
Indicator	Green indicator	Linked, steady on
	Yellow indicator	ACT data communication, blinking

There are four RS485 ports (COM1/12V–COM4/12V). Table 3-9 provides the RS485 port pin definitions.

Table 3-9 RS485 port pin definitions

Item		Description
Pin sequence	Pin 1	RS485+
	Pin 2	RS485–
	Pin 3	12 V DC_OUT
	Pin 4	RS485+

Item		Description
	Pin 5	RS485–
	Pin 6	N/A
	Pin 7	N/A
	Pin 8	GND
Indicator	Green indicator	Power output indicator - Steady on: The 12 V DC output is normal. - Off: No 12 V DC output is provided.

There are six AI/DI dry contact inputs (AI/DI_1–6). [Table 3-10](#) provides the AI/DI port pin definitions.

 NOTE

- Pins 1, 2, 4, and 5 identify sensor types.
- Pin 3 and Pin 8 are power output ports.
- Pin 6 and Pin 7 collect sensor data. Pin 7 can detect current type sensors (4–20 mA). Pin 6 and Pin 7 can detect the output status of passive dry contact type sensors. Pin 3 and Pin 7 can detect temperature sensors.

Table 3-10 AI/DI port pin definitions

Item		Description
Pin sequence	Pin 1	Type_1
	Pin 2	Type_2
	Pin 3	12 V DC
	Pin 4	Type_3
	Pin 5	Type_4
	Pin 6	DI–
	Pin 7	DI+
	Pin 8	GND
Indicator	Green indicator	Power output indicator - Steady on: The 12 V DC output is normal. - Off: No 12 V DC output is provided.

There are two DO dry contact outputs (DO_1 and DO_2). [Table 3-11](#) provides the DO port pin definitions.

Table 3-11 DO port pin definitions

Item		Description
Pin sequence	Pin 1	N/A
	Pin 2	N/A
	Pin 3	12 V DC_OUT
	Pin 4	N/A
	Pin 5	N/A
	Pin 6	DO_NO
	Pin 7	DO_COM
	Pin 8	GND
Indicator	Green indicator	Power output indicator - Steady on: The 12 V DC output is normal. - Off: No 12 V DC output is provided.

Table 3-12 USB port pin definitions

Item		Description
Pin sequence	Pin 1	5 V
	Pin 2	DM
	Pin 3	DP
	Pin 4	GND

Power Ports

The ECC800 provides four power ports, including two AC input ports (AC_INPUT1 and AC_INPUT2) and two DC output ports (DC_OUTPUT1 and DC_OUTPUT2). [Table 3-13](#) provides the power port pin definitions.

Table 3-13 Power port pin definitions

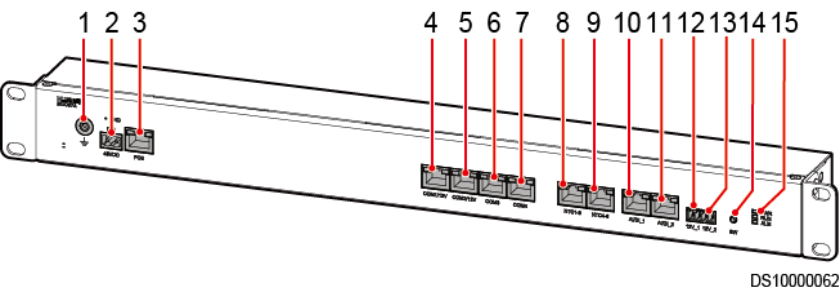
Port Type	Pin	Description
AC	Pin 1	L
	Pin 2	PE
	Pin 3	N
DC	Pin 1	48V+
	Pin 2	48VGND

3.2 Southbound Device Introduction

3.2.1 Rack Environment Unit

The rack environment unit collects and controls the environmental data of IT cabinets in the smart module.

Figure 3-5 Rack environment unit



- | | | | |
|-------------------|------------------------------|-----------------------|-------------------|
| (1) Ground port | (2) 48 V DC power input port | (3) POE port | (4) COM1/12V port |
| (5) COM2/12V port | (6) COM3 port | (7) COM4 port | (8) NTC1-3 |
| (9) NTC4-6 | (10) AI/DI_1 port | (11) AI/DI_2 port | (12) 12V_1 port |
| (13) 12V_2 port | (14) BLINK button | (15) Status indicator | |

Specifications

Table 3-14 Technical specifications for the rack environment unit

Item	Specifications
Power input	- DC input: Terminal, with input voltage of 36–60 V DC - POE input: One POE port that complies with IEEE802.3at.
12 V power output	Two 12 V DC power outputs with the rated output current of 250 mA
POE port	FE communication with the rate of 10/100M
RS485 serial port expansion	- Four RS485 ports with the default communications rate of 9600 bit/s - Among the four RS485 ports, two support 12 V DC, 400 mA power output. - The other two are isolated, with the default communications rate of 9600 bit/s, and do not support power output.

Item	Specifications
AI/DI input	Two active 12 V DC, 200 mA AI/DI input ports
Temperature sensor port	Provides two RJ45 ports to connect to six temperature sensors, each RJ45 port connecting to three temperature sensors.
BLINK button	Provides a BLINK function.

Indicators

Table 3-15 lists the structural specifications for the rack environment unit.

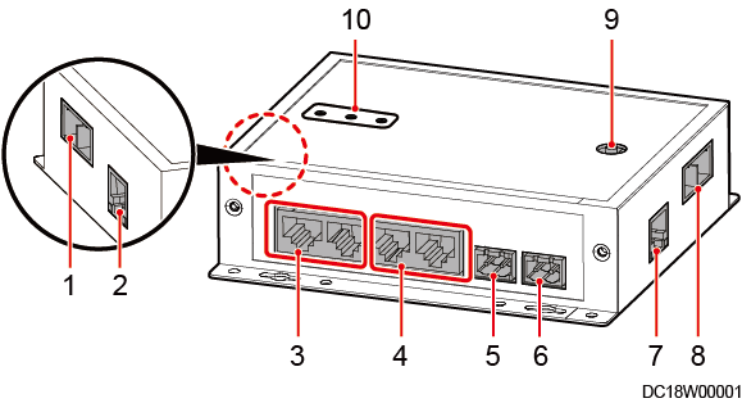
Table 3-15 Indicator description

Indicator	Color	Name	Status	Description
PWR	Green	Power input status indicator	Steady on	The power input is normal.
			Off	There is no power input.
RUN	Green	Module running status indicator	Off	The power is abnormal or the board program is loading.
			Blinking at long intervals	The software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	POE communication fails (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals for 0.5s (blinking at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.

3.2.2 Smart ETH Gateway

A smart ETH gateway allows the extension of the 53.5 V DC power supply and FE communication for the ECC800 and can be flexibly deployed in a smart module.

Figure 3-6 Smart ETH gateway



- (1) PWR_IN cascading power port

(2) FE_1 cascading signal port

(3) POE_1-2 ports

(4) POE_3-4 ports

(5) 48V_OUT1 power output port

(6) 48V_OUT2 power output port

(7) FE_2 cascading signal port

(8) PWR_OUT cascading power port

(9) BLINK button

(10) Status indicator

Specifications

Table 3-16 Technical specifications for a smart ETH gateway

Item	Specifications
Power input	PWR_IN D-type power input terminal, for power cascading, input voltage range: 45–55 V DC Power of a single smart ETH gateway: max (2.7 A , 48 V DC); power of cascaded smart ETH gateways: max (25 A, 48 V DC)
Power output	- PWR_OUT D-type power output terminal, for power cascading, output voltage range: 45–55 V DC 48V_OUT1 and 48V_OUT2, terminal (1 A,48 V DC), output voltage range: 45–55 V DC
FE port	Two FE ports, RJ45 terminal with an indicator, 10/100M communication rate, for the cascading between smart ETH gateways and the communication with the upper computer
POE port	Four POE ports, RJ45 terminal with an indicator, 10/100M communications rate, complying with IEEE802.3, IEEE802.3u, IEEE802.3af/at
BLINK button	If you press the BLINK button, the RUN indicator blinks intermittently at super short intervals (blinking at super short intervals for 0.5s and then off for 0.5s) for 5 seconds.

Indicators

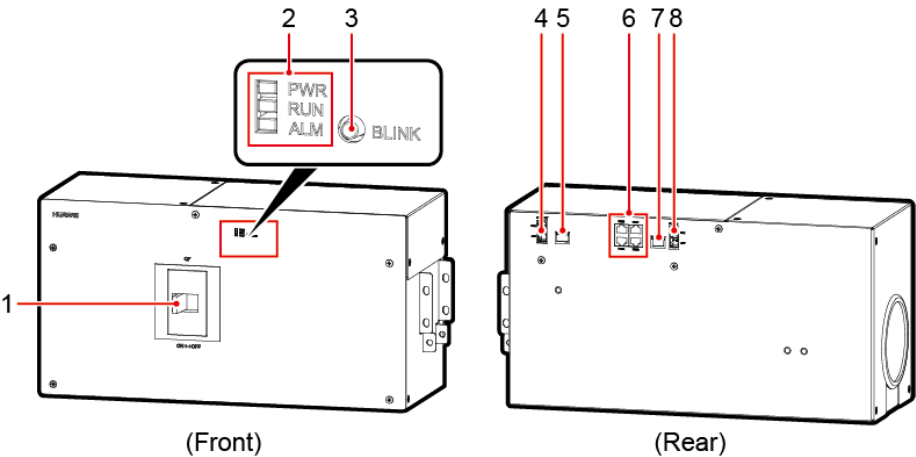
Table 3-17 Indicators on a smart ETH gateway

Indicator	Color	Name	Status	Description
PWR	Green	Power input status indicator	Steady on	The power input is normal.
			Off	There is no power input.
RUN	Green	Module running status indicator	Off	The power supply is abnormal.
			Blinking at long intervals	The smart ETH gateway successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The smart ETH gateway does not register with the ECC800 (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals for 0.5s (blinking at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.

3.2.3 General Input Unit

The general input unit integrates the smart ETH gateway and power distribution functions. It provides external power ports for the bus system to collect, count, and report input electrical parameters.

Figure 3-7 General input unit



DC02W00097

- | | | | |
|-------------------------------|----------------------|-------------------------------|----------------------------------|
| (1) QF circuit breaker | (2) Status indicator | (3) BLINK button | (4) PWR_OUT cascading power port |
| (5) FE2 cascading signal port | (6) POE1-4 ports | (7) FE1 cascading signal port | (8) PWR_IN cascading power port |

Table 3-18 Technical specifications of the general input unit

Item	Specifications
Power input	PWR_IN power input terminal, for power cascading, input voltage range: 45–55 V DC.
Power output	PWR_OUT power output terminal, for power cascading, output voltage range: 45–55 V DC.
FE port	Two FE ports, RJ45 terminal with an indicator, 10/100M communications rate, for cascading between the general input unit and the power distribution unit and for communication with the upstream device.
POE port	Four POE ports, RJ45 terminal with an indicator, 10/100M communications rate, 45–55 V DC power output.
BLINK button	If you press the BLINK button, the RUN indicator blinks intermittently at super short intervals (blinking at super short intervals for 0.5s and then off for 0.5s) for 10s.

Table 3-19 Indicators on the general input unit

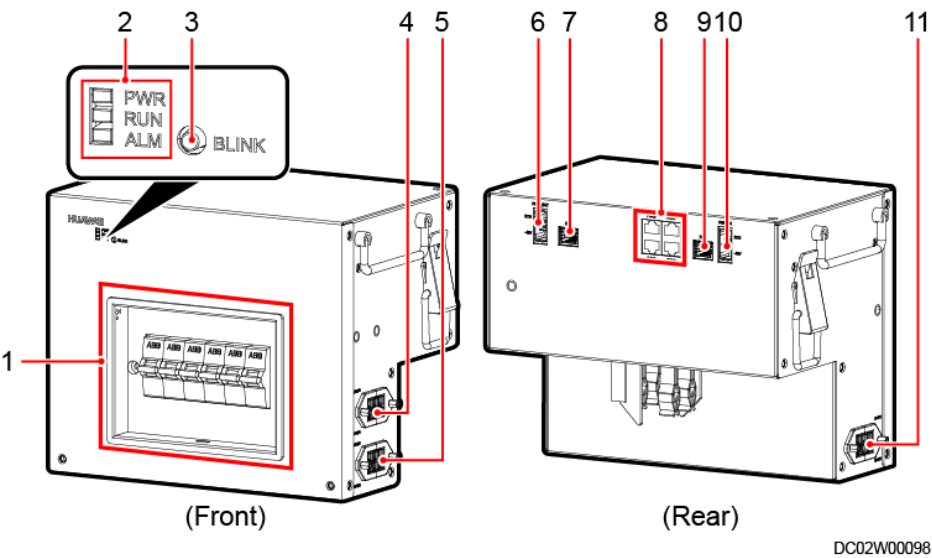
Indicator	Color	Name	Status	Description
PWR	Green	Power input	Steady on	The power input is

Indicator	Color	Name	Status	Description
RUN	Green	Module running status indicator		normal.
			Off	There is no power input.
			Off	The power input is abnormal.
			Blinking at long intervals	The general input unit has successfully registered with the ECC800 and the software runs properly (blinking at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The general input unit has failed to register with the ECC800 (blinking at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals (blinking at 10 Hz, on for 0.05s and then off for 0.05s) for 0.5s, and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.

3.2.4 Power Distribution Unit

The power distribution unit integrates the smart ETH gateway and power distribution functions. It provides external power ports for the bus system to collect, count, and report output electrical parameters.

Figure 3-8 Power distribution unit



DC02W00098

- | | | | |
|-------------------------------|----------------------------------|---|------------------------|
| (1) QF1–6 circuit breakers | (2) Status indicator | (3) BLINK button | (4) AC output terminal |
| (5) AC output terminal | (6) PWR_OUT cascading power port | (7) FE2 (Fast Ethernet) cascading signal port | (8) POE1–4 ports |
| (9) FE1 cascading signal port | (10) PWR_IN cascading power port | (11) AC output terminal | |

Table 3-20 Technical specifications of the power distribution unit

Item	Specifications
Power input	PWR_IN power input terminal, for power cascading, input voltage range: 45–55 V DC
Power output	PWR_OUT power output terminal, for power cascading, output voltage range: 45–55 V DC
FE port	Two FE ports, RJ45 terminal with an indicator, 10/100M communications rate, for cascading between power distribution units and between the power distribution unit and general input unit
POE port	Four POE ports, RJ45 terminal with an indicator, 10/100M communications rate, 45–55 V DC power output
BLINK button	If you press the BLINK button, the RUN indicator blinks intermittently at super short intervals (blinking at super short intervals for 0.5s and then off for 0.5s) for 10s.

Table 3-21 Indicators on the power distribution unit

Indicator	Color	Name	Status	Description
PWR	Green	Power input status indicator	Steady on	The power input is normal.
			Off	There is no power input.
RUN	Green	Module running status indicator	Off	The power input is abnormal.
			Blinking at long intervals	The power distribution unit has successfully registered with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The power distribution unit has failed to register with the ECC800 (the indicator blinking at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals (blinking at 10 Hz, on for 0.05s and then off for 0.05s) for 0.5s, and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.

3.2.5 Access Control System

The access control system applies to the equipment room, aisle containment, and cabinet doors.

3.2.5.1 Aisle or Room Access Control System

The access control system collects and monitors data about the access of devices and personnel to ensure access security.

Diverse access control devices such as the fingerprint and card reader with a keypad, fingerprint and card reader, and card reader with a keypad are supported. Note that the communication distance between an access control device and an access actuator should be less than or equal to 5 meters.

 NOTE

If the IC cards used by the access control device need to be purchased, the IC card chip specifications are as follows.

Table 3-22 IC card chip specifications

Item	Specifications
Chip model	S50
Chip name	Mifare 1K (S50) card
Chip type	Philips Mifare 1 IC S50
Operating frequency	13.56 MHz
Read/write distance	1–3 cm
Storage capacity	8 Kbit, 16 partitions

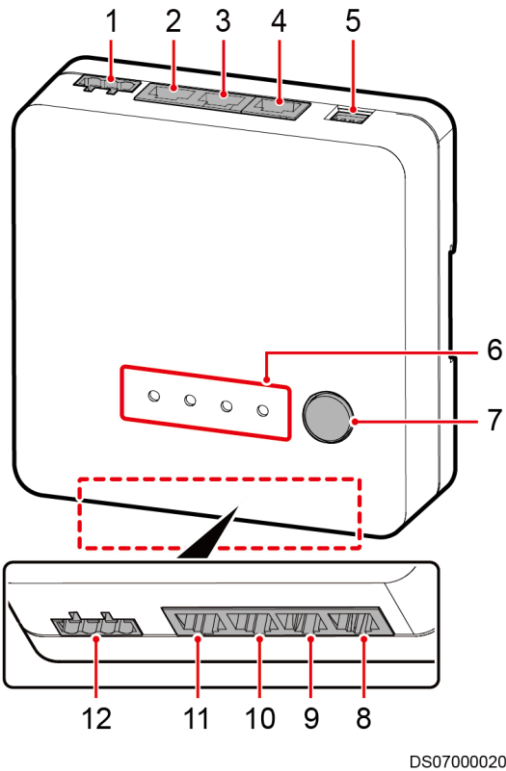
The emergency button or emergency door release button is used to open a door in emergencies.

- The emergency button can disconnect the power supply to the lock and therefore unlock the door in case of emergency.
- In case of emergency, break the glass of the emergency door release button to disconnect the power supply to the lock and therefore unlock the door.

3.2.5.1.1 Access Actuator

The access actuator is the control component for the aisle door in a smart module. It connects to the ECC800 controller over FE port, wireless networking (802.15.4). It opens the magnetic lock by detecting the card swiping information of the card reader, door open button information, and fire linkage information. It has access right management, access event record, and alarm record functions.

Figure 3-9 Access actuator



- | | | |
|--|--|--|
| (1) 48 V power port | (2) POE port | (3) RS485 port COM2 |
| (4) RS485 port COM1 | (5) Address DIP switch | (6) Status indicator |
| (7) BLINK button | (8) WG_2 Wiegand interface | (9) WG_1 Wiegand interface |
| (10) AI/DI_2 dry contact (Reserved port for linkage control or third-party fire extinguishing system dry contacts) | (11) AI/DI_1 dry contact (Reserved port for exit button) | (12) LOCK/GND/GATE/COM door status or magnetic lock port |

Specifications

Table 3-23 Access actuator technical specifications

Item	Specifications
Power input	- DC input: Terminal, with input voltage of 36–60 V DC - POE input: One POE port that complies with IEEE802.3at.
POE port	FE communication, 10/100M communications rate
Wireless communication	One wireless communication port that complies with IEEE802.15.4, mutual backup with FE communication

Item	Specifications
AI/DI port	Two AI/DI ports, can connect to the fire alarm and exit button
DO/DI port	- One 12 V DC power output that controls magnetic locks, terminal - One DI input port for connecting to the door status switch
RS485 serial port expansion	Two RS485 ports (one route) with the default communications rate of 9600 bit/s, physical port cascading supported (reserved function)
Wiegand interface	Two Wiegand interfaces, 12 V DC card reader operating power output; two routes of card readers (non-fingerprint readers) can operate at the same time.
BLINK button	- Press the button for less than 1 second to start blinking. - Hold down the button for 1–5 seconds to search for a network and start networking. - Hold down the button for more than 10 seconds to clear network parameters.
Address DIP switch	4-pin address DIP switch
E-label	Supported

Indicators

Table 3-24 Access actuator indicator description

Indicator	Color	Name	Status
PWR	Green	Power input status indicator	- Steady on: The power input is normal. - Off: There is no power input.
RUN	Green	Communication status indicator	- Off: The power is abnormal or the board program is loading. - Blinking at long intervals: The access actuator successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s). - Blinking at short intervals: The communication is disconnected or the access actuator fails to register with the ECC800 (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s). - Blinking: The indicator blinks at super short intervals for 0.5s (blinking at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.

Indicator	Color	Name	Status
ALM	Red	Alarm indicator	- Steady on: A system failure alarm is generated. - Off: No system alarm is generated.
RF_Z	Green	Wireless communication status indicator	- Steady on: No network parameters exist, or a network is to be created. - Blinking at long intervals: A network is set up, and no node access is allowed (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s). - Blinking at super short intervals: A network is set up, and node access is allowed (the indicator blinks at 10 Hz, on for 0.05s and then off for 0.05s). - Blinking intermittently at super short intervals: The access actuator is searching for a network (the indicator blinks at super short intervals for 0.5s and then turns off for 0.5s).

Communications Ports

The access actuator provides one DO port (LOCK/GND) and one DI port (GATE/COM). [Table 3-25](#) lists the LOCK/GND/GATE/COM port pin definitions.

Table 3-25 LOCK/GND/GATE/COM port pin definitions

Item		Description
LOCK/GND (control magnetic locks) pin sequence	LOCK	12V_OUT
	GND	GND
GATE/COM (door status) pin sequence	GATE	DI1
	COM	COM

3.2.5.1.2 Fingerprint and Card Reader with a Keypad

Figure 3-10 Fingerprint and card reader with a keypad



 NOTE

The following uses the old fingerprint and card reader with a keypad as an example. The new and old fingerprint and card readers have the same appearance, but have different indicator colors when the device is collecting a fingerprint. For details, see "Access control device operating status."

(1) Fingerprint reader

(2) LED indicator

Table 3-26 Specifications for the fingerprint and card reader with a keypad

Item	Specifications
Dimensions (L x W x H)	156 mm x 53 mm x 38 mm
Rated operating voltage	12 V DC $\pm$ 15%
Rated operating current	300 mA $\pm$ 15%
Card type supported	IC card
Authorized storage	A maximum of 3000 authorized users, with a maximum of 6000 fingerprints
Communications mode	RS485 and Wiegand communications ports

Table 3-27 Access control device operating status

Item		Old Version	New Version
Standby	LED indicator	The indicator is steady blue.	The indicator is steady blue.
	Fingerprint reader	The indicator is steady green.	The indicator is off.
Unauthorized fingerprint	LED indicator	The indicator blinks blue, red, blue, red,	The indicator blinks blue, red, blue, red,

Item		Old Version	New Version
collection		and blue in order.	and blue in order.
	Fingerprint reader	The indicator is steady green.	The indicator turns on (white).
	Buzzer sounds	The buzzer sounds three.	The buzzer sounds three.
Authorized fingerprint collection	LED indicator	The indicator blinks blue, red, and blue in order.	The indicator blinks blue, red, and blue in order.
	Fingerprint reader	The indicator is steady green.	The indicator turns on (white).
	Buzzer sounds	The buzzer sounds once.	The buzzer sounds once.
Card swiping	LED indicator	The indicator blinks blue, red, and blue in order.	The indicator blinks blue, red, and blue in order.
	Buzzer sounds	The buzzer sounds once.	The buzzer sounds once.

3.2.5.1.3 Fingerprint and Card Reader

Figure 3-11 Fingerprint and card reader



(1) Fingerprint reader

(2) LED indicator

Table 3-28 Fingerprint and card reader

Item	Specifications
Dimensions (L x W x H)	156 mm x 53 mm x 38 mm
Rated operating voltage	12 V DC $\pm$ 5%
Rated operating current	300 mA $\pm$ 5%
Card type supported	IC card
Authorized storage	A maximum of 3000 authorized users, with a maximum of 6000 fingerprints
Communications mode	RS485 and Wiegand communications ports

Table 3-29 Access control device operating status

Item		Old Version	New Version
Standby	LED indicator	The indicator is steady blue.	The indicator is steady blue.
	Fingerprint reader	The indicator is steady green.	The indicator is off.
Unauthorized fingerprint collection	LED indicator	The indicator blinks blue, red, blue, red, and blue in order.	The indicator blinks blue, red, blue, red, and blue in order.
	Fingerprint reader	The indicator is steady green.	The indicator turns on (white).
	Buzzer sounds	The buzzer sounds three.	The buzzer sounds three.
Authorized fingerprint collection	LED indicator	The indicator blinks blue, red, and blue in order.	The indicator blinks blue, red, and blue in order.
	Fingerprint reader	The indicator is steady green.	The indicator turns on (white).
	Buzzer sounds	The buzzer sounds once.	The buzzer sounds once.
Card swiping	LED indicator	The indicator blinks blue, red, and blue in order.	The indicator blinks blue, red, and blue in order.
	Buzzer sounds	The buzzer sounds once.	The buzzer sounds once.

3.2.5.1.4 Card Reader with a Keypad

Figure 3-12 Card reader with a keypad



Table 3-30 Specifications of a card reader with a keypad

Item	Specifications
Dimensions (L x W x H)	114 mm x 63 mm x 25 mm
Operating voltage	Operating voltage range: 10.8–13.2 V DC; rated voltage: 12 V DC
Operating current	Static standby current80 mA, dynamic operating current (card swiping, key pressing) 150mA, minimum input current 12 V DC/300 mA
Communications mode	Wiegand communications port

3.2.5.1.5 Magnetic Lock

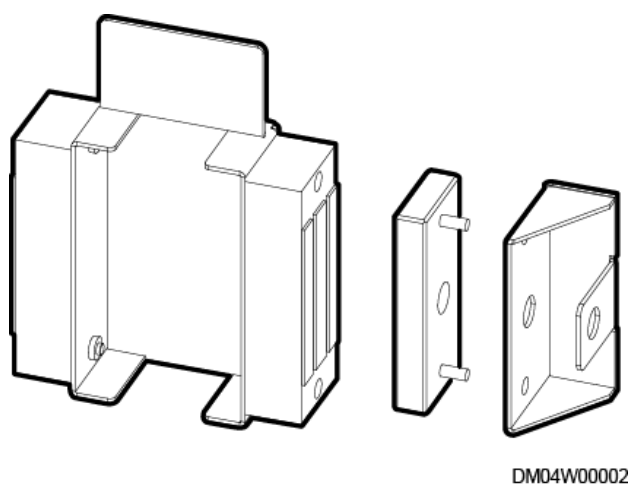
Figure 3-13 Double door magnetic lock



Figure 3-14 Single door magnetic lock



Figure 3-15 Magnetic lock for a sliding door



3.2.5.2 Cabinet Access Control System

The cabinet access control system applies to cabinets in the aisle containment to ensure data and device security.

Electronic cabinet lock

Features:

- An IC card can be used after being authorized using software.
- An IC card can be authorized for one lock or all locks.
- Door opening information is recorded through a network.
- The system displays the status of cabinet doors and locks in real time, the system displays the status of cabinet doors and locks in real time and reports the unauthorized door opening.
- The system supports remote unlocking.

Figure 3-16 Electronic cabinet lock



Table 3-31 Cabinet electronic lock specifications

Item	Specifications
Rated input voltage	12 V DC
Rated current	200–300 mA
Unlock mode	Power on to unlock
Card type supported	IC card
Mechanically unlock	Supported

Mechanical Code Lock

Features:

- The cabinet door can be opened with only the key and without the password.
- The cabinet door can be opened with only the password and without the key.
- The user can set a password.
- A password should contain at least three digits.
- The password can be reset if the user forgot it.

Figure 3-17 Mechanical code lock

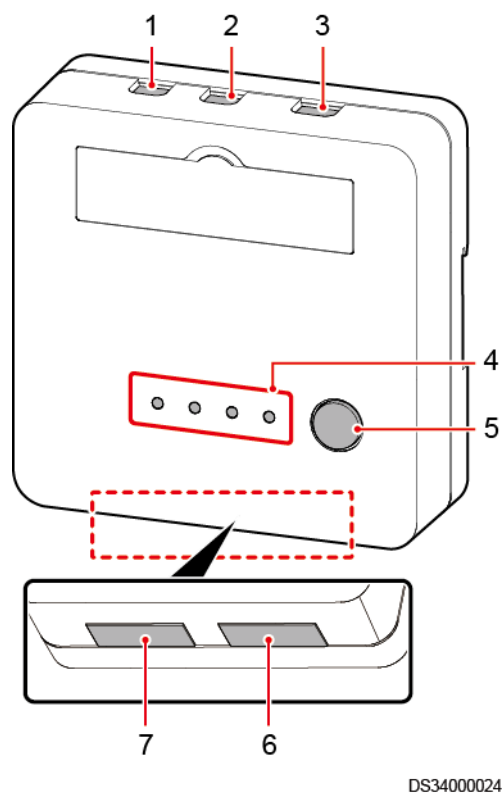


DM88000023

3.2.6 AC Actuator

The AC actuator is used in a smart module to control the lighting inside the smart module by receiving commands from the access control system or host, infrared linkage information (disabled by default), or signals from the light button. It also provides a charging port for the pad.

Figure 3-18 AC actuator



- (1) AC OUT2 port
- (2) AC OUT1 port
- (3) AC IN port
- (4) Status indicator
- (5) BLINK button
- (6) AI/DI dry contact
- (7) COM1–2 RS485 port

Specifications

Table 3-32 AC actuator technical specifications

Item	Specifications
Power input	One AC input, 100–240 V AC.
Power output	- AC OUT1: two AC outputs, 100–240 V AC, maximum total current: 5 A. The built-in relay can connect or disconnect the circuit. - AC OUT2: one AC output, 100–240 V AC, maximum current: 5 A. Supplies power continuously.
Wireless communication	One wireless communication port, complying with IEEE802.15.4.
RS485 port	One route of dual RS485 ports, not isolated (reserved).
AI/DI detection	Two AI/DI dry contacts, connecting to two light buttons.
BLINK button	Press the button for less than 1 second to start blinking.

Item	Specifications
	• Hold down the button for 1–5 seconds to search for a network and start networking. • Hold down the button for more than 10 seconds to clear network parameters.

Indicators

Table 3-33 AC actuator indicators

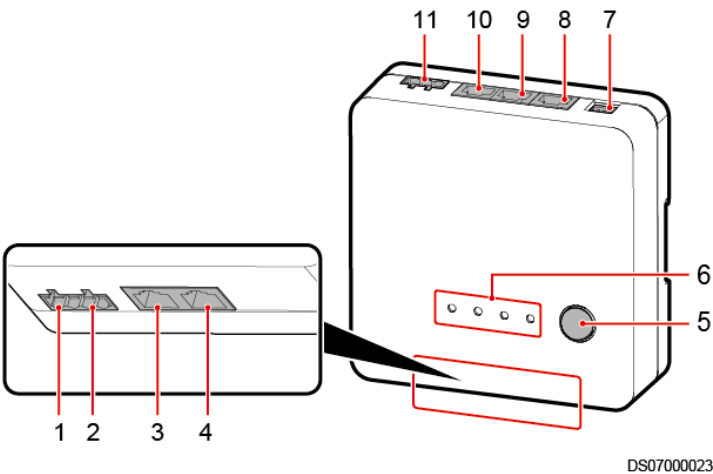
Indicator	Color	Name	Status	Description
Power	Green	Power status indicator	Steady on	The power input is normal.
			Off	There is no power input.
RUN	Green	Running status indicator	Off	The power is abnormal or the board program is loading.
			Blinking at long intervals	The AC actuator successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The communication is disconnected or the AC actuator fails to register with the ECC800 (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals for 0.5s (blinking at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.
RF_Z	Green	Communication status indicator	Steady on	No network parameters exist, or a network is to be created.
			Blinking at long intervals	A network is set up, and no node access is allowed (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at super short	A network is set up, and node access is allowed (the indicator

Indicator	Color	Name	Status	Description
			intervals	blinks at 10 Hz, on for 0.05s and then off for 0.05s).
			Blinking intermittently at super short intervals	The AC actuator is searching for a network (the indicator blinks at super short intervals for 0.5s and then turns off for 0.5s).

3.2.7 Skylight Actuator

The skylight actuator controls the rotating skylight on the aisle containment of the smart module through the alarm linkage information from the fire extinguishing system or the control information from the upper computer. The skylight actuator supports E-labels and wireless networking (802.15.4).

Figure 3-19 Skylight actuator



- | | | | |
|---|---|-------------------------------|-------------------------------|
| (1) LOCK/GND magnetic lock DO output port | (2) BUTTON/GND window open button DI input port | (3) AI/DI_1 sensor input port | (4) AI/DI_2 sensor input port |
| (5) BLINK button | (6) Status indicator | (7) Address DIP switch | (8) COM1 port |
| (9) COM2 port | (10) POE port | (11) 48 V power port | |

Specifications

Table 3-34 Skylight actuator technical specifications

Item	Specifications
Power input	DC input: Terminal, with input voltage of 36–60 V DC

Item	Specifications
	POE input: One POE port that complies with IEEE802.3 at.
POE port	FE communication with the rate of 10/100M
Wireless communication	One wireless port that complies with IEEE802.15.4, mutual backup with FE communication
AI/DI port	Two AI/DI ports for detecting fire extinguishing linkage signals; smoke detection signals also supported
DO output	One 12 V DC power output for controlling the skylight magnetic lock; driving six skylight magnetic locks simultaneously
DI input	One DI input port for connecting to the window open button
BLINK button	- Hold down the button for less than 1 second to start blinking. - Hold down the button for 1–5 seconds to search for a network and start networking. - Hold down the button for more than 10 seconds to clear network parameters.
Address DIP switch	4-pin address DIP switch
E-label	Supported

Indicators

Table 3-35 Skylight actuator indicator description

Indicator	Color	Name	Status	Description
Power	Green	Power input status indicator	Steady on	The power input is normal.
			Off	There is no power input.
RUN	Green	Operating status indicator	Off	The power is abnormal or the board program is loading.
			Blinking at long intervals	The skylight actuator successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The communication fails or the skylight actuator fails to register with the ECC800 (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals for 0.5s (blinking

Indicator	Color	Name	Status	Description
				at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.
RF_Z	Green	Communication status indicator	Steady on	No network parameters exist, or a network is to be created.
			Blinking at long intervals	A network is set up, and no node access is allowed (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at super short intervals	A network is set up, and node access is allowed (the indicator blinks at 10 Hz, on for 0.05s and then off for 0.05s).
			Blinking intermittently at super short intervals	The skylight actuator is searching for a network (the indicator blinks at super short intervals for 0.5s and then turns off for 0.5s).

Communications Ports

The skylight actuator provides one DO port (LOCK/GND) and one DI port (BUTTON/GND). [Table 3-36](#) lists the LOCK/GND/BUTTON/GND port pin definitions.

Table 3-36 LOCK/GND/BUTTON/GND port pin definitions

Item		Description
LOCK/GND pin sequence	LOCK	12V_OUT
	GND	GND
BUTTON/GND pin sequence	BUTTON	DI3
	GND	GND

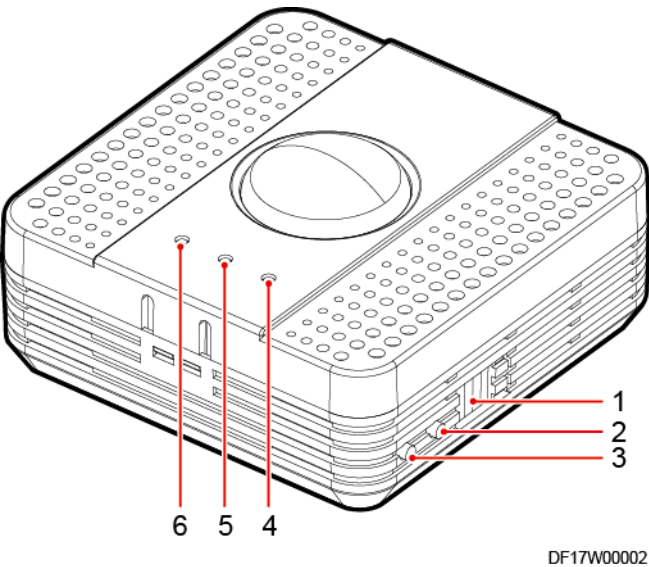
3.2.8 Multi-Functional Sensor

A multi-functional sensor integrates the temperature and humidity (T/H) sensor, smoke sensor and infrared detection. The multi-functional sensor can connect to the ECC800 over FE or wireless communication.

 NOTE

The infrared detection function is enabled only when the intelligent lighting function is enabled.

Figure 3-20 Multi-functional sensor



- (1) Address DIP switch
- (2) BLINK button
- (3) TEST button
- (4) RF_Z indicator
- (5) RUN indicator
- (6) ALM indicator

Specifications

Table 3-37 Multi-functional sensor technical specifications

Item	Specifications
Temperature monitoring	−40°C to 80°C. Precision ≤ ±0.5 °C (0-50 °C).
Humidity monitoring	0 to 100%RH. Precision ≤ ±5% RH (25 °C, 20%–80% RH).
Smoke monitoring	Complies with UL217. The smoke sensor generates an alarm when testing 3.2% weak dust for each foot.
POE port	One POE port that complies with IEEE802.3 at.
RS485 port	Reserves one RS485 port.
DI input	One DI input port, 12 V DC power input.
BLINK button	Wireless communication: - Press the button for less than 1 second to start blinking. - Hold down the button for 1–5 seconds to search for a network and start networking. - Hold down the button for more than 10s to clear network

Item	Specifications
	parameters.
Smoke sensor test button	Supported
E-label	Supported

Indicators

Table 3-38 Description of the indicators on the multi-functional sensor

Indicator	Color	Name	Status	Description
RUN	Green	Module running status indicator	Blinking at long intervals	The multi-functional sensor successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The multi-functional sensor fails to register with the ECC800 or the communication fails (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals for 0.5s (blinking at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm or smoke alarm is generated.
			Off	No system alarm is generated.
RF_Z	Green	Communication status indicator	Steady on	No network parameters exist, or a network is to be created.
			Blinking at long intervals	A network is set up, and no node access is allowed (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at super short intervals	A network is set up, and node access is allowed (the indicator blinks at 10 Hz, on for 0.05s and then off for

Indicator	Color	Name	Status	Description
				0.05s).
			Blinking intermittently at super short intervals	The multi-functional sensor is searching for a network (the indicator blinks at super short intervals for 0.5s and then turns off for 0.5s).

3.2.9 Smoke Detector

Smoke detectors are used to detect the smoke concentration.

Figure 3-21 Smoke detector



Table 3-39 Technical specifications of a smoke detector

Item	Specifications
Operating voltage	DC12V (9–16 V DC)
Quiescent current	< 8 mA
Alarm current	< 35 mA
Output mode	Relay output
Output contact capacity	3 A/120 V AC or 3 A/24 V AC
Operating temperature	–10°C to +50°C
Ambient humidity	< 95% RH (non-condensing)
Dimensions	Diameter: 112 mm, height: 41 mm

3.2.10 Temperature Sensor

The temperature sensor (the BOM code: 3301034) is used for the surface temperature measure, industrial process control, measurement instrument, etc.

Figure 3-22 Temperature sensor



Table 3-40 Temperature sensor specifications

Item	Specifications
Measurement range	–20°C to +70°C
Measurement precision	±1°C (25°C)
Operating temperature	–10°C to +55°C
Operating voltage	10–16 V DC
Storage temperature	–40°C to +70°C

3.2.11 Alarm Beacon

When a fire occurs or smokes are generated in the micro-modular equipment room, the alarm beacon generates an audible signal and flashes to inform operators of fire and security risks.

Figure 3-23 Alarm beacon

DF05000028

Table 3-41 Structural specifications of an alarm beacon

Item	Specifications
Dimensions (L x W x H)	130 mm x 75 mm x 55 mm
Installation requirements	Installed on a wall
Environmental requirements	RoHS, Reach

Table 3-42 Technical specifications of an alarm beacon

Item	Specifications
Power input	RJ45 port, input voltage 9–16 V DC, operating current ≤ 400 mA
Sound pressure	$\geq 100 \pm 3$ dB/30 cm
Continuous operating time	≥ 45 min

3.2.12 Water Sensor

A water sensor detects water on the floor in real time and generates an alarm when water is detected.

3.2.12.1 WLDS600 Water Sensor

The WLDS600 water sensor with the BOM number of 33010556 consists of a water detection cable, a water detector, an extension line, and a conversion cable.

Figure 3-24 WLDS600 water sensor

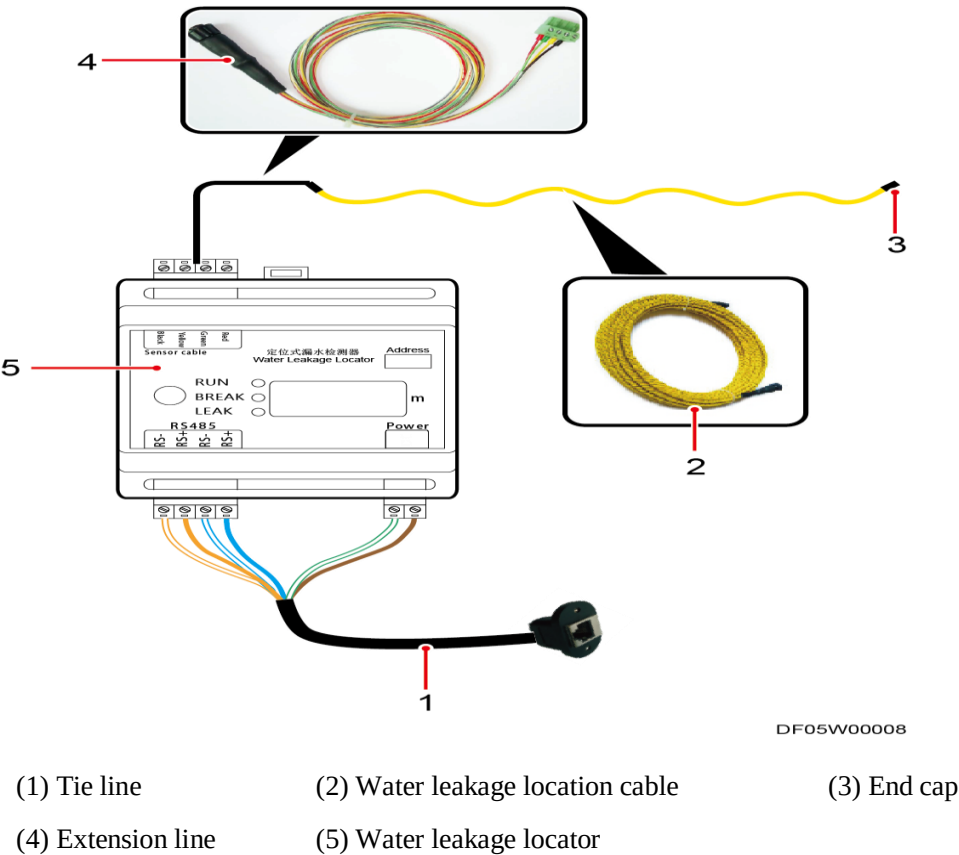


Table 3-43 WLDS600 water sensor specifications

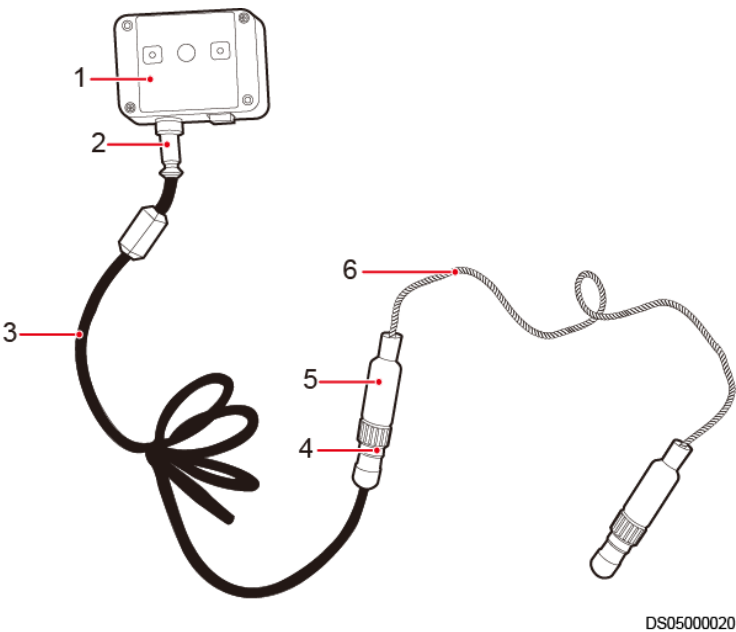
Item	Specification
Dimensions (H x W x D)	70 mm x 58 mm x 86 mm ±1
Power supply	9–16V DC or 9–16V AC
Impulse current	≤ 450 mA
Power dissipation	< 2 W
Power, communication connector	RJ45 female connector 1 piece
Protocol type	Modbus-RTU, data bits 8bits, no parity
Baud rate, address	Default support 9600, baud rate setable, address setable, default address is 1, stop bit is 1bit.
Detected distant	100m (support cable connection in series)
Accuracy	±0.5 m (the cable length 0-10 m)

Item	Specification
	1 m±1% (the cable length 10-100 m)
Alarm Light state	When the power supply is working properly, the green indicator is on. When a fault occurs, the yellow indicator is on. When water leakage occurs, the red indicator is on.
Display	4-bits Nixie tube shows leaking position.
Adjustable Sensitivity	3 grade of sensitivity
Installation	DIN track install supported.

3.2.12.2 WLDS900 Water Sensor

The WLDS900 water sensor with the BOM number of 33010352 consists of a water detection cable, a water detector, and a conversion cable.

Figure 3-25 WLDS900 water sensor



- (1) Water detector

(4) Conversion cable end B, connected to the water detection cable
- (2) Conversion cable end A, connected to the water detector

(5) Water detection cable end A, connected to the conversion cable
- (3) Conversion cable

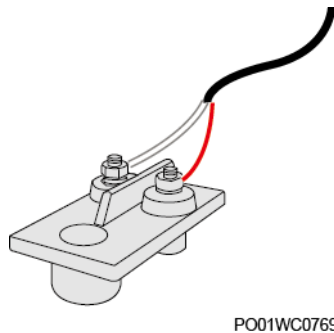
(6) Water detection cable

Table 3-44 WLDS900 water sensor specifications

Item	Specification
Operating voltage	12 V DC (9–16 V DC)
Operating temperature	–20°C to +70°C
Storage temperature	–40°C to +85°C
Humidity	10%–80% RH (non-condensing)

3.2.12.3 Electrode Water Sensor

The electrode water sensor with the BOM number of 33010444 contains electrode probes and cables.

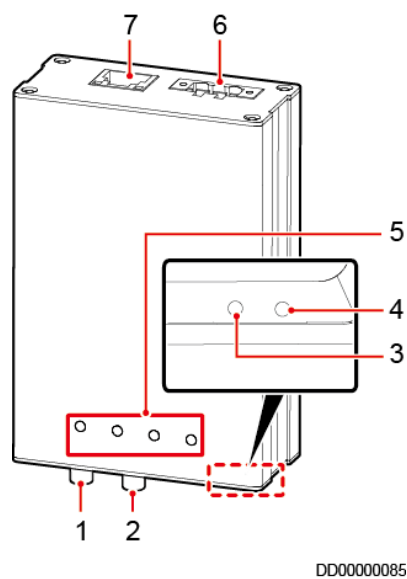
Figure 3-26 Electrode water sensor**Table 3-45** Electrode water sensor technical specifications

Item	Specification
Operating temperature	–40°C to +80°C
Storage temperature	–40°C to +80°C
Service life	10 years

3.2.13 WiFi Converter

The WiFi converter is used in a smart module to convert POE signals into WiFi signals for communicating with devices such as the pad and mobile phone.

Figure 3-27 WiFi converter



- (1) RF_1 antenna port
- (2) RF_2 antenna port
- (3) Reset button
- (4) WPS button
- (5) Status indicator
- (6) 48 V power port
- (7) POE port

Specifications

Table 3-46 WiFi converter technical specifications

Item	Specifications
Power input	- DC input: Terminal, with input voltage of 36–60 V DC - POE power supply: One POE port, complying with IEEE802.3at, 25.5 W
WiFi function	2.4 GHz frequency, two antennas, supporting eight STA connections, 50 m WiFi coverage (no blockage) - Support the WPS button
Reset button	Press and hold down the button for more than 5s to restore the factory settings of the WiFi converter.
WPS button	Support fast WiFi access by WPS

NOTE

WPS function: If you choose **Advanced settings > WPS connection** on the WLAN of the intelligent device and press the WPS button on the WiFi converter at the same time, the intelligent device will quickly connect to the WiFi hotspot of the micro-module.

Indicators

Table 3-47 WiFi converter indicators

Indicator	Color	Name	Status	Description
RUN	Green	Running status indicator	Blinking at long intervals	The WiFi converter successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The WiFi converter fails to register with the ECC800 or the communication is disconnected (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.
WiFi	Green	WiFi status indicator	Steady on	The WiFi converter is powered on but there is no data communication.
			Blinking	Data communication is in progress.
WPS	Green	WPS mode indicator	Off	The WPS is normal.
			Blinking	WPS matching mode. If the matching fails, the WPS indicator turns off after blinking for 2 minutes. If the matching is successful, the WPS indicator turns off.

3.2.14 WiFi Module

The WiFi module provides WiFi signals for equipment such as pads and mobile phones to interact with the host computer.

Figure 3-28 WiFi module



DC02W00018

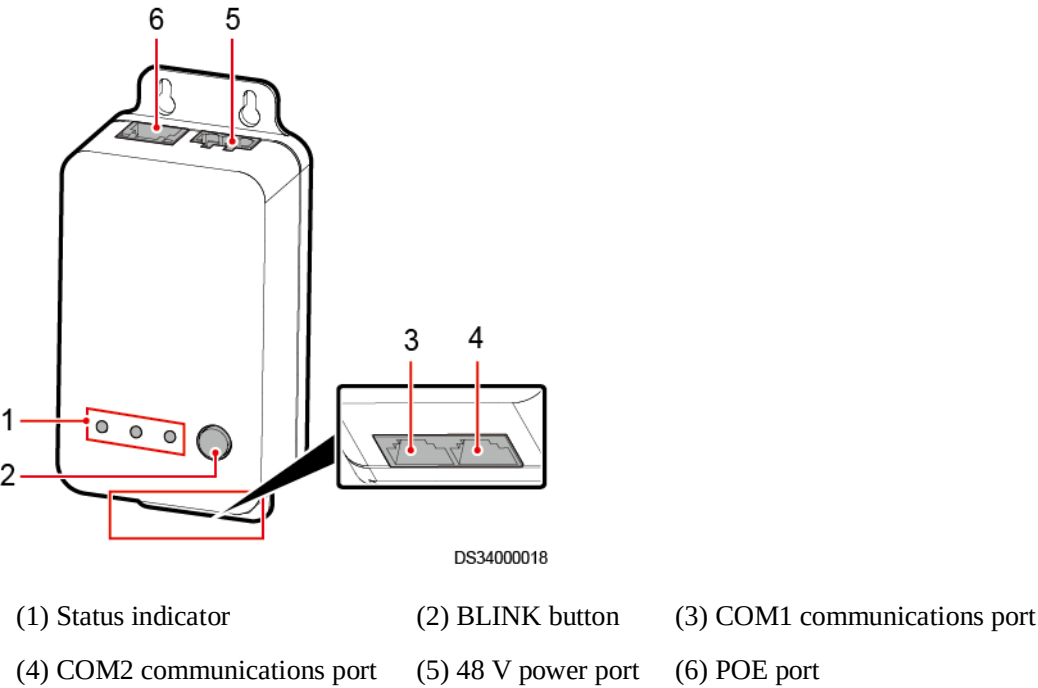
Table 3-48 Technical specifications

Item	Specifications
Wireless standard	IEEE 802.11n, IEEE 802.11g, and IEEE 802.11b
Network bandwidth	• 11n: up to 150 Mbps • 11g: up to 54 Mbps • 11b: up to 11 Mbps
Frequency band	2.4-2.4835 GHz
Wireless transmission power	20 dBm (MAX EIRP)
Supported operating system	Windows 2000/XP/Vista/Linux/Win 7
Ports	USB 2.0 high-speed connector
Voltage range	5.0 V DC±5%
Operating temperature	-20°C to +70°C
Storage temperature	-40°C to +90°C
Relative humidity	10%–90% RH (non-condensing)
Storage humidity	5%–90% RH (non-condensing)
Power	< 0.8 W

3.2.15 ETH Converter

The ETH converter is used to convert the Modbus–RTU protocol or CAN protocol to the Modbus-MAC protocol for connecting to the POE bus.

Figure 3-29 ETH converter



Specifications

Table 3-49 ETH converter technical specifications

Item	Specifications
Power input	- DC input: Terminal, with input voltage of 36–60 V DC - POE power supply: One POE port, 10/100M communication rate, complying with IEEE802.3at
RS485 or control area network (CAN)	Provides two RS485/CAN ports. The default communications rate for the RS485 port is 9600 bit/s, and that for the CAN port is 125 kbit/s. Both ports match the RJ45 terminal shared by RS485 and CAN.
BLINK button	If you press the BLINK button, the RUN indicator blinks intermittently at super short intervals (blinking at super short intervals for 0.5s and then off for 0.5s) for 10 seconds.
E-label	Supported

Indicators

Table 3-50 ETH converter indicators

Indicator	Color	Name	Status	Description
PWR	Green	Power input status indicator	Steady on	The power input is normal.
			Off	There is no power input.
RUN	Green	Operating status indicator	Off	The power supply is abnormal.
			Blinking at long intervals	The ETH converter successfully registers with the ECC800 and the software runs properly (the indicator blinks at 0.5 Hz, on for 1s and then off for 1s).
			Blinking at short intervals	The communication fails or the ETH converter fails to register with the ECC800 (the indicator blinks at 4 Hz, on for 0.125s and then off for 0.125s).
			Blinking	The indicator blinks at super short intervals for 0.5s (blinking at 10 Hz, on for 0.05s and then off for 0.05s) and then turns off for 0.5s. The cycle lasts for 10s.
ALM	Red	Alarm indicator	Steady on	A system failure alarm is generated.
			Off	No system alarm is generated.

3.2.16 PAD

The pad allows the wireless access from the data center management system. You can monitor the equipment in the data center and environmental parameters in real time over the APP.

[Figure 3-30](#) shows a pad.

Figure 3-30 Pad

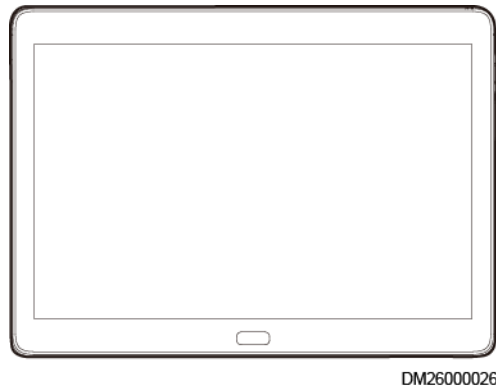


Table 3-51 Pad structural specifications

Item	Specifications
Dimensions (L x W x H)	248.5 mm x 150 mm x 8.3 mm
Weight	About 433 g

[Table 3-52](#) lists pad technical specifications.

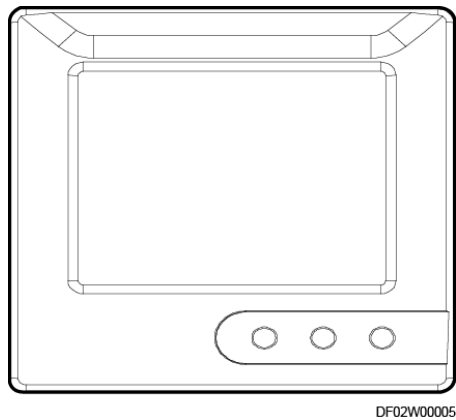
Table 3-52 Pad technical specifications

Item	Specifications
Touchscreen	10.1-inch, 1280x800 IPS full view, IPS screen, and capacitive five-point touch
Store	- Machine: 16 GB - Memory: 2 GB LPDDR3 - Extension card: microSD, a maximum of 64 GB supported
Button/Port	- Power switch and volume button 3.5 mm stereo headphones port - Micro SD card port - Micro-USB port that supports charging and synchronization with PC data
Battery	- Materials: Li-polymer - Capacity: 4800 mAh - WiFi connection/Web page browse time: about 6.5 hours - Power adapter charge time: about 6 hours

3.2.17 T/H Sensor

3.2.17.1 T/H sensor (BOM number: 33010346)

Figure 3-31 Appearance



The T/H sensor uses an RJ45 connector.

Figure 3-32 Pins of an RJ45 connector

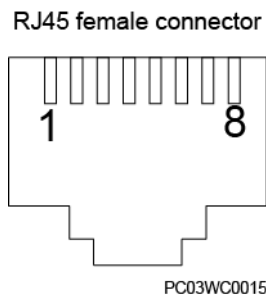


Table 3-53 Pin description of an RJ45 connector

Pin	Description
Pin 1	A
Pin 2	B
Pin 3	V+
Pin 4/5/6/7	Reserved
Pin8	V-

Table 3-54 T/H sensor specifications

Item	Specifications
Temperature measuring range	-20°C to 70°C
Temperature accuracy	≤ ±0.3°C (25°C)
Humidity measuring range	0%–100% RH
Humidity accuracy	≤ ±5% RH (25°C, 30%–80% RH)
Operating temperature	-20°C to 70°C
Operating voltage	9–16 V DC
Storage temperature	-40°C to 80°C (non-condensing)
Output	RS485

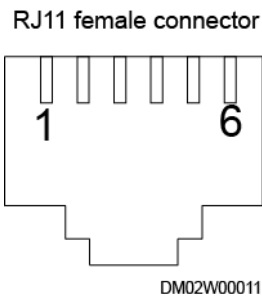
3.2.17.2 T/H Sensor (BOM number: 02310NBS)

Figure 3-33 Appearance



- (1) Status indicator
- (2) RS485_IN
- (3) RS485_OUT
- (4) Address DIP switch

The RS485 communications ports of the T/H sensor use RJ11 (6P6C) connectors.

Figure 3-34 Pins of an RJ11 connector**Table 3-55** Pin description of an RJ11 connector

Pin	Description
Pin 1 or Pin 2	GND
Pin 3	RS485-
Pin 4	RS485+
Pin 5 or Pin 6	12V

Table 3-56 Temperature and humidity sensor specifications

Item	Specifications
Temperature measuring range	–20°C to +70°C
Temperature accuracy	±1°C
Operating temperature	–10°C to +55°C
Operating voltage	9–16 V DC
Storage temperature	–40°C to +70°C
Output	RS485

3.2.18 Intelligent Battery Monitoring System

The intelligent battery monitoring system consists of the CIM (CIM01C2) and BIM (BIM01C3).

The communication interface module (CIM) is an intelligent battery management module that collects wireless communication data from the downstream battery interface module (BIM) groups, collects and analyzes the operating data of battery strings, calculates state of charge (SOC) and state of health (SOH) of batteries and battery strings and estimates the battery health status accordingly, supports battery tripping management, and uploads data to the management unit through COM or POE ports.

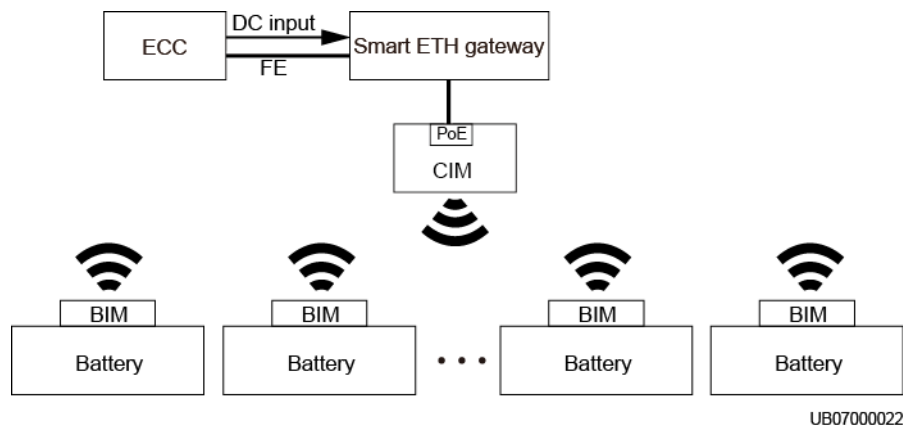
The BIM is a battery monitoring module that monitors the voltages, internal resistances, and pole temperatures of batteries.

NOTE

- One CIM can manage BIMs of a maximum of four battery strings.
- The BIM01C3 supports Shoto batteries.

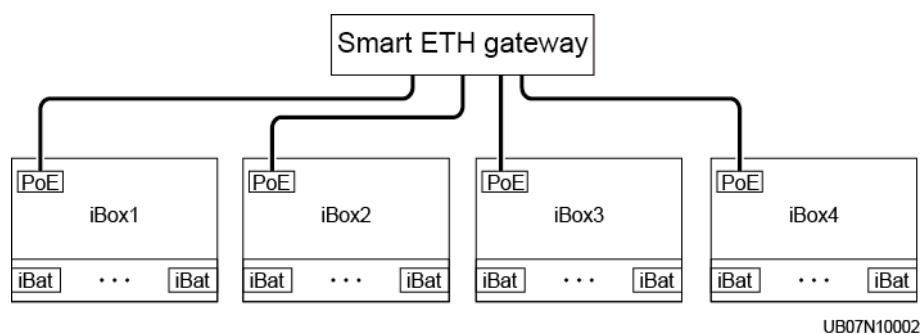
In the scenario with battery cabinets, the CIM is installed inside a smart module battery cabinet and the CIM communications cable connects to a smart ETH gateway. [Figure 3-35](#) shows the CIM and BIM networking in the scenario with battery cabinets.

Figure 3-35 CIM and BIM networking (in the scenario with battery cabinets)



When a battery system needs to be managed by multiple CIMs, the CIMs can be connected to northbound devices using straight-through cables (the ECC800 supports four CIMs in parallel through the smart ETH gateway) without cascading. [Figure 3-36](#) shows the system networking.

Figure 3-36 CIM communications cable connecting to a smart ETH gateway

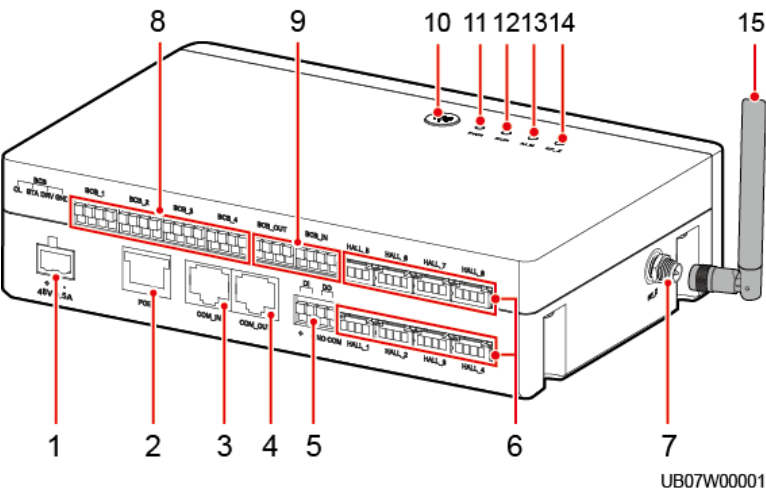


3.2.18.1 CIM

CIM is a battery information collection module. It collects battery status data from the downstream BIM groups through wireless communication, and sends the data to the ECC800, UPS, and the third-party network management system (NMS) through COM or POE ports.

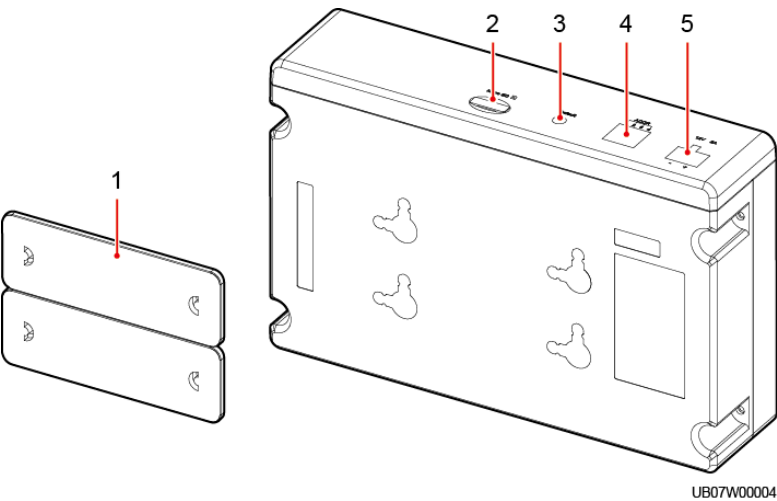
Appearance

Figure 3-37 CIM front view



- | | | |
|---|---|--|
| (1) -48 V 0.5 A port
(power input) | (2) POE port | (3) COM_IN port (RS485
communication input) |
| (4) COM_OUT port
(RS485 communication
output) | (5) DI and DO ports | (6) HALL_1-HALL_8
current monitoring ports |
| (7) RF_Z antenna port | (8) BCB_1-BCB_4 ports
(BCB_2-BCB_4 reserved) | (9) BCB_OUT and BCB_IN
ports |
| (10) Networking switch | (11) PWR indicator | (12) RUN indicator |
| (13) ALM indicator | (14) RF_Z indicator | (15) Delivered antenna |

Figure 3-38 CIM bottom view



- | | |
|--------------|------------------------|
| (1) Fastener | (2) Micro SD card slot |
|--------------|------------------------|

- (3) Default button (IP reset)
- (4) ADDR dual in-line package (DIP) switch (RS485 communications address)
- (5) 12V 2A port (power input)

Power Port

Figure 3-39 Power port pins

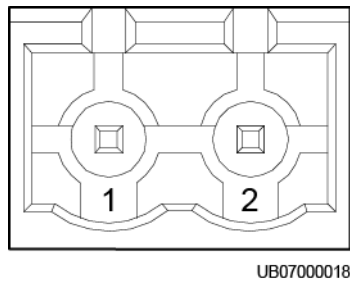


Table 3-57 12 V, 2 A port pin definitions

Pin	Definition	Description
1	—	In this scenario, an external power module is adopted to supply 12 V DC operating voltage.
2	+	

Table 3-58 –48 V, 0.5 A port pin definitions

Pin	Definition	Description
1	+	The system provides 48 V DC operating voltage in this scenario.
2	—	

POE Port

Figure 3-40 POE port pins

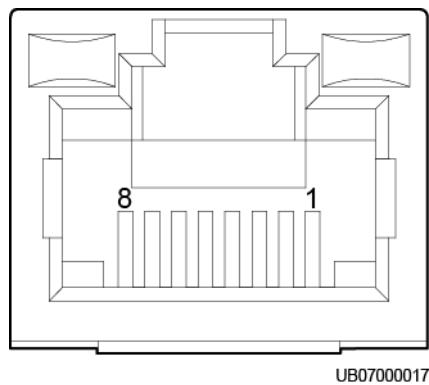


Table 3-59 POE port pin definitions

Pin	Definition	Description
1	TX+	Supports power supply through the POE port. The terminal is an RJ45 terminal with an indicator.
2	TX–	
3	RX+	
4, 5	P45_P1	
6	RX–	
7, 8	P78_P1	

COM Port

Figure 3-41 COM port pins

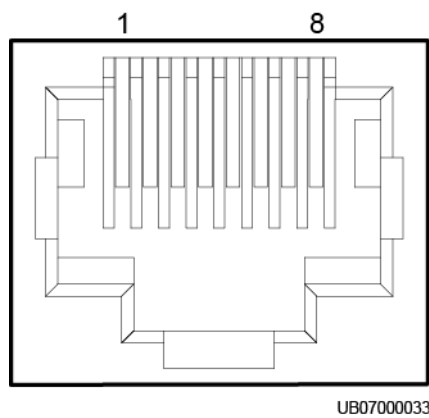


Table 3-60 COM port pin definitions

Pin	Signal	Description
1	RS485+	Two cascaded RS485 communication ports
2	RS485–	
3	NC	
4	RS485+	
5	RS485–	
6	GND	
7	NC	
8	NC	

DI and DO Ports

Table 3-61 DI and DO port pin definitions

Pin	Definition	Signal Description	Status Description	Initial Status	Remarks
1	+	Dry contact input signal	- Open: The dry contact input is open. - Closed: The dry contact input is closed.	Open	Dry contact input and output signal
2	—				
3	NO	Dry contract output signal	- Open: The dry contact output is open. - Closed: The dry contact output is closed.	Open	
4	COM				

HALL Current Monitoring Port

Figure 3-42 HALL Current monitoring port pins

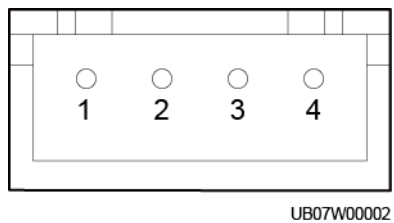


Table 3-62 HALL Current monitoring port pin definitions

Pin	Definition	Description
1	+12 V	Detect the charge and discharge currents of four battery strings or eight battery routes.
2	−12 V	
3	AI	
4	GND	

NOTE

- If the battery string is configured with the neutral wire, measure the currents of the positive and negative battery string cables. If the battery string is not configured with the neutral wire, measure the current of either the positive or negative battery string cable. The following uses the scenario where the battery string is configured with the neutral wire as an example.
- When a CIM manages multiple battery strings, first connect the Hall effect sensors on the positive and negative cables of battery string 1 respectively to the corresponding ports on the CIM. Then connect the Hall effect sensors on battery string 2 to the CIM in the same way, and so on.
- If the positive or negative battery string cable is too thick to be routed through the Hall effect sensor, or the measurement range of the Hall effect sensor is not enough, use multiple Hall effect sensors to monitor the current of one battery string. The CIM supports the sum of the monitoring results of multiple Hall effect sensors, which is set through **Multi-Hall cur. setting**.
- The value of **Multi-Hall cur. setting** equals the number of positive or negative Hall effect sensors in a single battery string and should be greater than or equal to 1.

BCB Port

Figure 3-43 BCB port pins

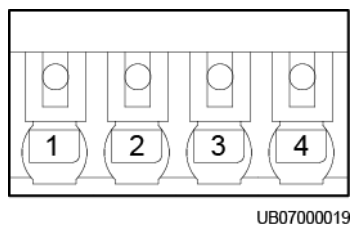


Table 3-63 BCB_1–BCB_4 port pin definitions

Pin	Definition	Signal Description	Status Description	Initial Status	Remarks
1	OL	Monitors whether the BCB box is connected	- Grounded: BCB connected. - Disconnected: BCB not connected.	Disconnected	The four BCBs can separately manage tripping of four battery routes.
2	STA	Monitors the battery circuit breaker	- Grounded: The battery circuit breaker is ON. - Disconnected: The battery circuit breaker is OFF.	Disconnected	
3	DRV	Controls battery circuit breaker trip and outputs 12 V driving signals	0 V: There is no driving signal for BCB tripping. 12 V: There is a driving signal for BCB tripping.	0 V	
4	GND	Secondary side ground			

Table 3-64 BCB_IN and BCB_OUT cascading port pin definitions

Pin	Definition	BCB_IN Signal Description	BCB_OUT Signal Description	Status Description	Initial Status	Description	
1	OL	Specifies whether the BCB connects to the signal output port.	Specifies whether the cascaded BCBs connect to the signal input port.	- Grounded: BCB connected. - Disconnected : BCB not connected.	Disconnected	Receives BCB commands sent by the UPS and supports BCB port cascading management.	
2	STA	Signal output port for the battery circuit breaker status	Monitors whether the cascaded BCBs are connected to the input.	- Grounded: The battery circuit breaker is ON. - Disconnected : The battery circuit breaker is OFF.	Disconnected		
3	DRV	Controls battery circuit breaker trip and receives 12 V driving signals		0 V: There is no driving signal for BCB tripping. 12 V: There is a driving	0 V		
4	GND	Secondary side ground					

Pin	Definition	BCB_IN Signal Description	BCB_OUT Signal Description	Status Description	Initial Status	Description
				signal for BCB tripping.		

DIP Switch

Table 3-65 DIP switch description

No.	Definition	Description
1	ADDR_1	RS485 communications address setting
2	ADDR_2	
3	ADDR_3	
4	ADDR_4	

Indicators

Table 3-66 Indicator description

Indicator	Color	Meaning	Status	Description	Measure
RF_Z	Green	Wireless communication status	Steady on	No network parameters exist. (A network is to be created.)	Requires no handling.
			Blinking at super short intervals	A network is being created (new nodes allowed).	
			Blinking at long intervals	Data is being transmitted (new nodes not allowed).	
RUN	Green	Northbound communication status	Blinking at long intervals	The communication is normal.	Requires no handling.
			Blinking intermittently at super short intervals	Blinking, lasting for 10s.	Requires no handling.
			Blinking at short intervals	Communication fails. (No legitimate northbound data has been received for 3 minutes.)	1. Check whether the communication cable is loose. • If yes,

Indicator	Color	Meaning	Status	Description	Measure
					reconnect the communication cable. - If no, go to the next step. 2. Check whether the device is malfunctioning. - If yes, replace the device. - If no, contact Huawei technical support.
ALM	Red	Alarm indicator	Steady on	The actual number of online devices is less than the value of BIM number.	Check the value of BIM number, the BIM cable connection, and the BIM indicators.
			Off	The actual number of online devices equals the value of BIM number.	Requires no handling.
PWR	Green	Power indicator	Steady on	Board power indicator.	Requires no handling.

NOTE

- If an indicator blinks at long intervals, it is blinking at 0.5 Hz, that is, on for 1s and then off for 1s.
- If an indicator blinks at short intervals, it is blinking at 4 Hz, that is, on for 0.125s and then off for 0.125s.
- If an indicator blinks at super short intervals, it is blinking at 10 Hz, that is, on for 0.05s and then off for 0.05s.
- Blinking intermittently at super short intervals means an indicator blinks at super short intervals for 0.5s and then remains off for 0.5s.

Networking Switch

Table 3-67 Networking switch description

Name	Definition	Function
Button pressing	Press the button for less than 1s.	CIM blinking function
Button pressing	Press and hold the button for more than	Creates a network if no network has been created. Switches between network

Name	Definition	Function
	1s but less than 5s.	organization and data transmission if a network has been created.
Button holding down	Press and hold the button for more than 10s but less than 20s.	Clears the current network (including the network parameters of all the online BIMs).

Default Button

Table 3-68 Default button description

Name	Definition	Function
Default button	Hold down the button for more than 10 seconds.	Reset to the default IP address (192.168.0.10)

3.2.18.2 BIM

The BIM is a battery monitoring module that monitors the voltages, internal resistances, and pole temperatures of batteries and supports 12 V power.

Features

- Monitors the voltages, internal resistances, and pole temperatures of 12 V batteries.
- Supports the hibernation function. (When it detects that the battery voltage is low, it will enter the low-power mode.)
- Communicates with the CIM wirelessly.

BIM Appearance

Figure 3-44 BIM



DD00000088

Indicators

Table 3-69 Indicator description

Indicator	Color	Silk Screen	Status	Description
Running	Green	RUN	Off	Power consumption is low or the BIM is not powered on.
			Blinking at super short intervals	The networking has started but not completed.
			Blinking at long intervals	The networking succeeds.
Alarm	Red	ALM	Off	The BIM is not faulty.
			Steady on	• The BIM is measuring the battery internal resistance. • The BIM is faulty. • Communication with the CIM times out. • No network is connected. (The BIM is waiting to connect to a network.)
			Blinking at super short intervals	• Network parameters are being cleared. • The BIM is blinking.

NOTE

- If an indicator blinks at long intervals, it is blinking on for 1s and then off for 1s.
- If an indicator blinks at super short intervals, it is blinking at 10 Hz, that is, on for 0.05s and then off for 0.05s.
- If both the red and green indicators light up at the same time, orange effect may be generated.

Networking Switch

Table 3-70 Networking switch description

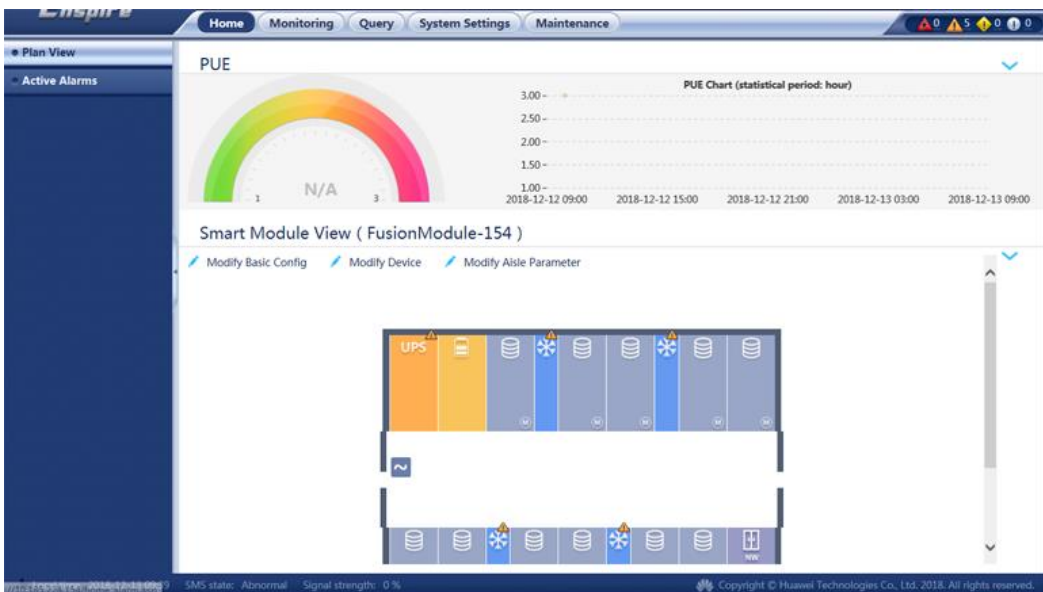
Name	Definition	Function
Button pressing	Press the button for less than 5 seconds.	Searches for and joins a network if there is no network. Initializes the network parameters if there is a network.
Button holding down	Hold down the button for more than 5 seconds.	Clears the current network and resets the wireless module; disconnect the network.

4 UI Description

4.1 WebUI

For data transmission security, the ECC800 supports WebUI access through TLS.

Figure 4-1 Home page



WebUI Introduction

Table 4-1 WebUI introduction

Main Menu	Second-Level Menu	Third-Level Menu	Function	Factory Defaults Restoration _a	Remarks
Home	Plan View	—	View and manage the layout view of	Yes	—

Main Menu	Second-Level Menu	Third-Level Menu	Function	Factory Defaults Restoration _a	Remarks
			devices. View the system PUE (including the instantaneous mPUE value and average PUE value) in a dashboard and the system trend curve.		
	Active Alarms	—	View active alarms.	No	—
	Multi-Module Monitoring _b	—	View the status of each cascaded ECC800.	Yes	—
Monitoring	System	Connected devices, such as ECC800, ETH Converter Group, and Smart ETH Gateway Group.	Monitor the device running information in real time, set device running parameters, and control the device running. For example, set smart cooling product parameters, delete devices failing in communication, and set AI/DI device parameters.	Yes	For example, in the path of Monitoring > ECC800 > Running Parameters: AI/DI_1 sensor-AI/DI_6 sensor is Disable by default. IP device num is 0 by default. Online detection timeout interval is 30 by default.
	Power Distribution	Connected devices, such as Integrated PDU, PDU8000, and Power Distribution Unit		Yes	—
	Aisle	Connected devices, such as Multi-Functional Sensor Group, Access Actuator Group, and		Yes	—

Main Menu	Second-Level Menu	Third-Level Menu	Function	Factory Defaults Restoration _a	Remarks
		Skylight Actuator Group			
	Cooling	Connected smart cooling products.		Yes	—
	Cabinet	IT cabinet		Yes	—
Query	Historical Alarms	—	Query historical alarms.	No	—
	Performance Data	—	Query device performance data.	No	—
	Operation Log	—	Query operation logs.	No	—
	Access Event	—	Query access control events.	No	—
	Export Data	—	Export historical data and device data.	No	—
System Settings	System Parameters	Site Configuration	Set the system type and site ID.	Yes	Smart module name is FusionModule by default. System type is FusionModule2000 by default. NOTE If System type is General , the ECC800 is a general collector that collects device data and reports the data to the northbound NMS.
		Monitor IP	Set the IP address for the monitoring module.	No	IP for WAN_1 is 192.168.1.10 by default. IP for WAN_2 is 192.168.0.10 by default.
		Time	Set the time zone, time, and date.	No	—
	Access Management	—	Set the access users and permissions.	No	—

Main Menu	Second-Level Menu	Third-Level Menu	Function	Factory Defaults Restoration _a	Remarks
	Video Management	—	Add, modify, or delete videos.	Yes	—
	NMS Application	NetEco	Set SNMP and NetEco communications parameters.	Yes	Server IP is 192.168.8.11 by default. Port number is 31220 by default. Monitoring IP address for link setup is WAN_1 by default.
		SNMP		Yes	SNMP version is SNMPv3 by default. SNMP port number is 161 by default.
		Transparent Transmission Channel	Set the transparent transmission function of the device and upload the network security certificate.	Yes	Transparent Transmission Through COM Ports is Disable by default. Enable security authentication is Enable by default.
	Device Management	Device Addition	Add devices or replace the security certificate for device access.	No	—
		Security Certification Change		No	—
	Smart Module Cascading	—	Cascade up to three ECC800s through multi-module configuration.	Yes	—
	PUE Configuration	—	Set PUE parameters.	Yes	PUE Function is Enable by default. PUE configuration mode is Standard by default.
	Linkage Control	—	Set PLC linkage rules.	Yes	—
	Alarm Parameters	Basic Alarm Parameters	Set basic alarm parameters and alarm association parameters.	Yes	—
		Alarm Linkage		Yes	—

Main Menu	Second-Level Menu	Third-Level Menu	Function	Factory Defaults Restoration _a	Remarks
	Performance Parameters	Performance Parameters	Query and set device performance parameters.	Yes	—
		All Configured Data	View all the preset performance parameters	Yes	—
	Event Notification	Email Settings	Set alarm notification mode to be over email and SMS.	Yes	—
		SMS Settings		Yes	—
		Alarm Notification		Yes	—
	Signal Name Modify	—	Modify signal names.	Yes	—
Maintenance	Software Upgrade	Software Upgrade	Upgrade the software of the ECC800 and its southbound devices online.	Yes	—
	Version Information	—	Query the version information about hardware and software.	No	—
	E-Label	—	Query or export E-labels.	No	—
	User Management	—	Manage users, such as adding, modifying, and deleting users.	No	—
	Configuration File	—	Import and export configuration files to configure devices quickly, and restore factory defaults.	No	—
	Fault Information	—	Export fault information.	No	—
	APP Download	—	Download the app installation package by scanning the QR	No	—

Main Menu	Second-Level Menu	Third-Level Menu	Function	Factory Defaults Restoration _a	Remarks
			code.		
	Parameter Sync	—	Synchronize device parameters to quickly import data of southbound devices (such as the multi-functional sensor and skylight actuator).	No	—
	Access Package Mgmt	—	Manage the access package.	No	—
	Opening Guide	—	Support the deployment wizard and set simple parameters as instructed by the wizard.	No	—
- a: The factory settings can be restored only on the WebUI. - b: Multi-Module Monitoring is displayed on the Home page only after you set Smart Module Cascading.					

4.2 Mobile Phone APP

Figure 4-2 Home

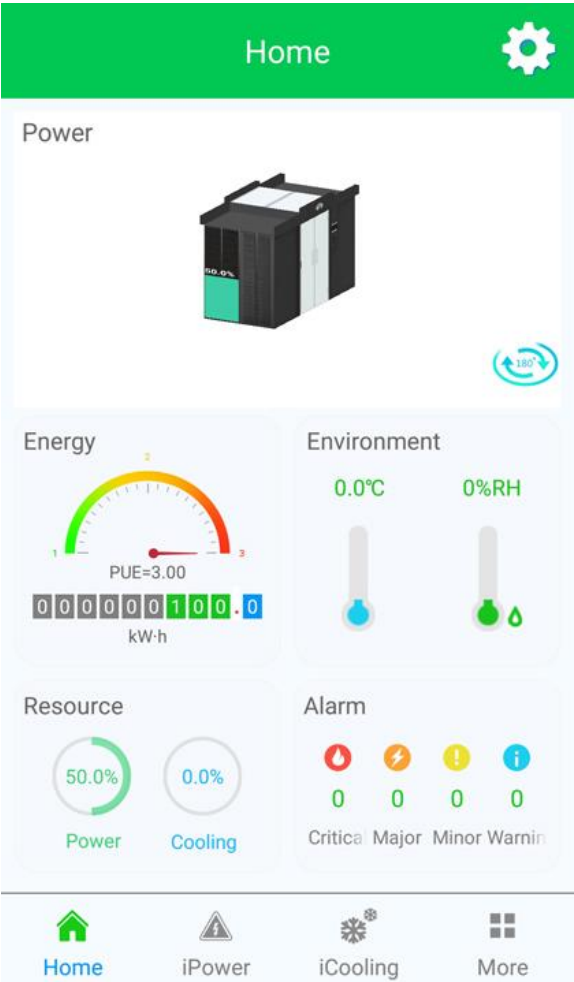


Table 4-2 Mobile phone app functions

Screen		Function
Home		Allows you to view the device layout diagram, energy, environment, resource consumption, and alarms.
iPower		Allows you to view the power distribution information about the smart module.
iCooling		Allows you to view the total IT power and total cooling power.
More	Monitor	Allows you to view details about devices under the monitoring system, power distribution, aisle, cooling, and cabinet types.
	Asset Details	Allows you to view device asset details such as electronic labels of system devices and other devices.
	iFind	Allows you to modify the names and positions of devices in the

Screen		Function
		device layout diagram, and deliver a blinking command to a device under iFind.
	Operation Log	-
	Access Event	-
	Performance Data	Allows you to view device performance data, such as the battery curve and battery discharge curve.
	Software Upgrade	Allows you to upgrade the software using a USB flash drive or locally.
	Export Data	Allows you to export device configuration data, current configuration files, and historical data.
	Import Data	Allows you to import a configuration file.
	Network Parameter	-
	Parameter Sync	-
	Version Info	Check the Software Version and Hardware Version of the device.

4.3 PAD APP

Figure 4-3 Home



Table 4-3 Mobile phone app functions

Screen		Function
Home		Allows you to view the device layout diagram, energy, environment, resource consumption, and alarms.
iPower		Allows you to view the power distribution information about the smart module.
iCooling		Allows you to view the total IT power and total cooling power.
More	Monitor	Allows you to view details about devices under the monitoring system, power distribution, aisle, cooling, and cabinet types.
	Asset Details	Allows you to view device asset details such as electronic labels of system devices and other devices.
	iFind	Allows you to modify the names and positions of devices in the device layout diagram, and deliver a blinking command to a device under iFind.
	Operation Log	-
	Access Event	-
	Performance Data	Allows you to view device performance data, such as the battery curve and battery discharge curve.
	Software Upgrade	Allows you to upgrade the software using a USB flash drive or locally.
	Export Data	Allows you to export device configuration data, current configuration files, and historical data.
	Import Data	Allows you to import a configuration file.
	Network Parameter	-
	Parameter Sync	-
	Version Info	Check the Software Version and Hardware Version of the device.

5 Power-On Commissioning

5.1 Preparations and WebUI Login

Prerequisites

- Computer operating system: Support Windows 7 and later versions
- It is recommended that the screen resolution be 1366 x 768 or higher.
- Browser: IE9 and later versions; Firefox and later versions; Chrome and later versions

Procedure

- Step 1** Connect a network cable between the PC network port and the WAN_1 port (protected by a security mechanism) on the ECC800.

Table 5-1 Default IP addresses for the WAN and LAN ports on the ECC800

Port	Default IP Address
WAN_1	192.168.1.10
WAN_2	192.168.0.10
LAN_1 and LAN_2	192.168.248.10

NOTICE

- The WAN_1 port IP address cannot be set to an IP address in any of the following network segments: 192.168.0.x, 192.168.8.x, 192.168.248.x, and 192.168.245.x.
- IP addresses for the WAN_1 and WAN_2 ports should not be set in the same network segment.
- In some customized scenarios, the default IP address for the WAN_2 port is 192.168.248.10. The default value prevails.
- WAN ports support the Internet access and LAN ports support the intranet access. Connect the PC network port to the WAN port or LAN port on the ECC800 based on the access network.

- Step 2** Configure the PC IP address and the WAN_1 IP address in the same network segment.

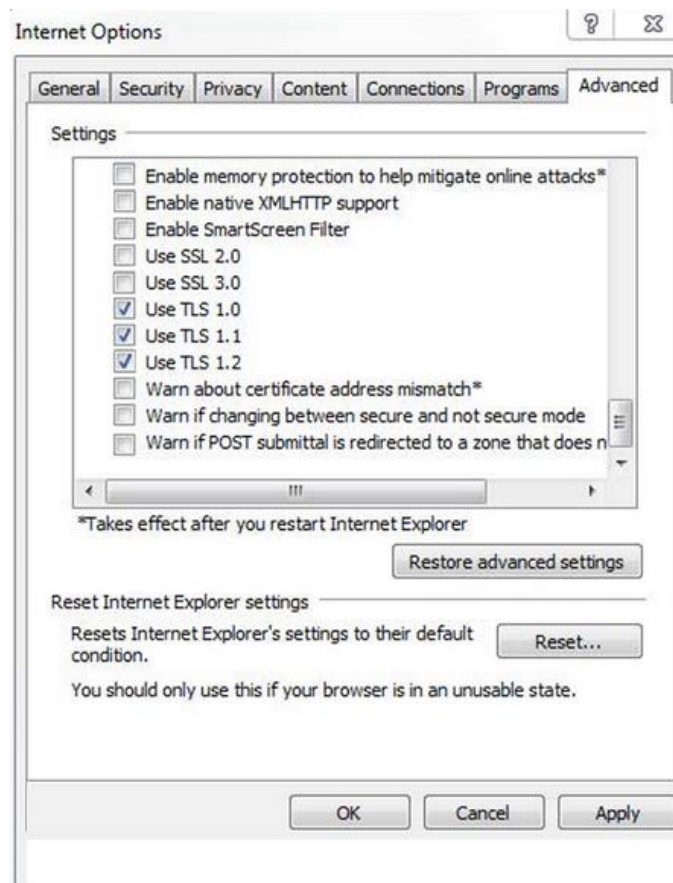
If the port IP address is 192.168.1.10, subnet mask is 255.255.255.0, and default gateway is 192.168.1.1, set the PC IP address to 192.168.1.11, subnet mask to 255.255.255.0, and default gateway to 192.168.1.1.

Step 3 Set LAN parameters.

NOTE

- If the ECC800 connects to a LAN and a proxy server has been selected, perform [Step 3.3](#) and [Step 3.4](#).
 - If the ECC800 connects to the Internet, and the PC in a LAN accesses the Internet over a proxy server, do not perform [Step 3.3](#) and [Step 3.4](#). Otherwise, you will fail to access the ECC800.
1. Open the Internet Explorer and choose **Tools > Internet Options**.
 2. Click the **Advanced** tab and select **Use TLS1.1** and **Use TLS1.2**.
 3. (Optional) Click the **Connections** tab and select **LAN settings**.
 4. (Optional) On **Proxy server**, clear **Use a proxy server for your LAN**.
 5. Click **OK**.

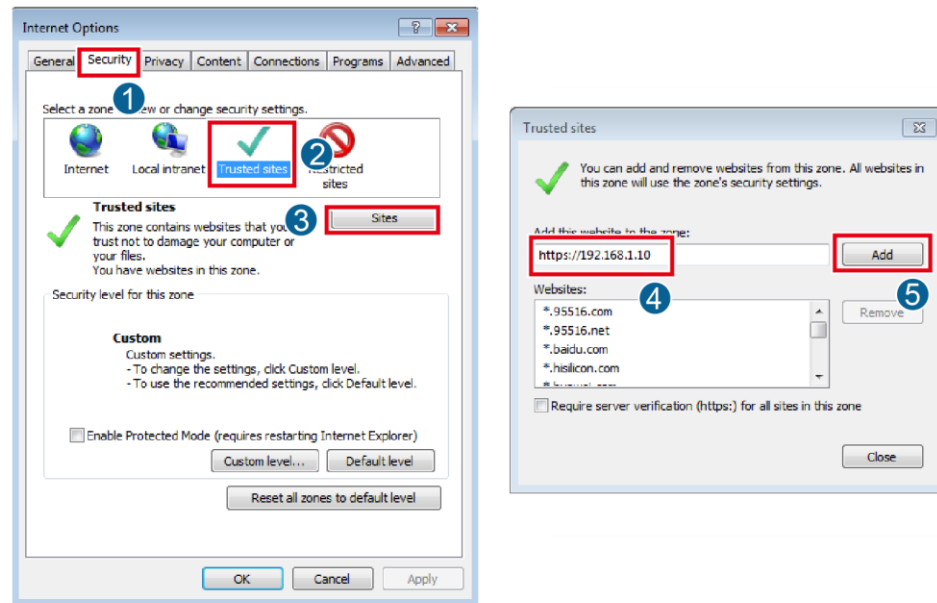
Figure 5-1 Setting internet options



Step 4 Set Internet Explorer parameters.

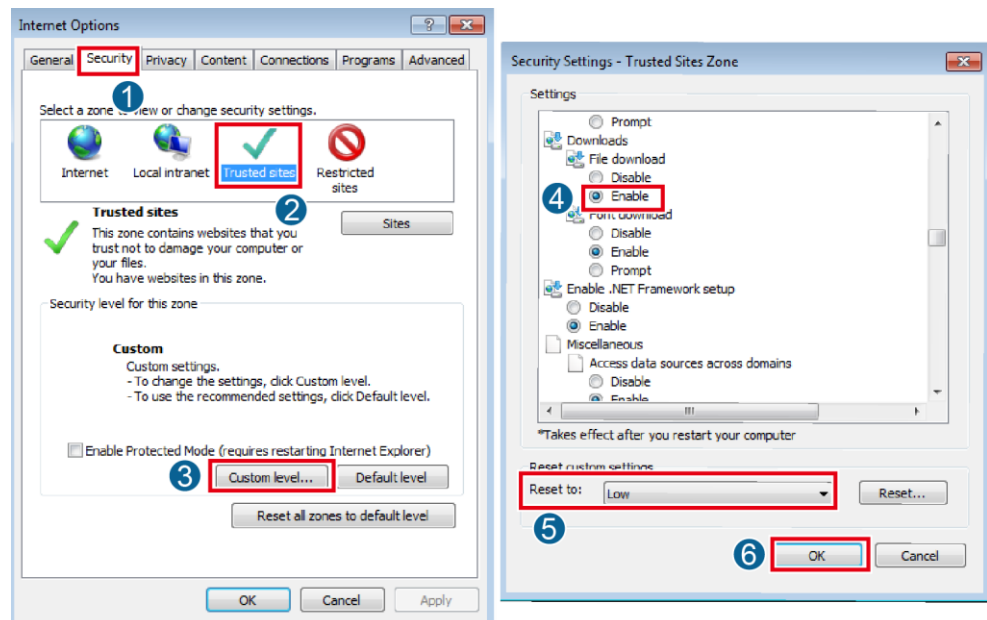
1. When you use Internet Explorer for access, set Internet Explorer to ensure the normal display of and operations on the WebUI. Choose **Tools > Compatibility View**, and add the web access address to the compatibility view.
2. Add the ECC800 IP address to the list of trusted sites.

Figure 5-2 Adding an address



3. Enable file download and set the security level of the trusted site to low.

Figure 5-3 Setting parameters



NOTE

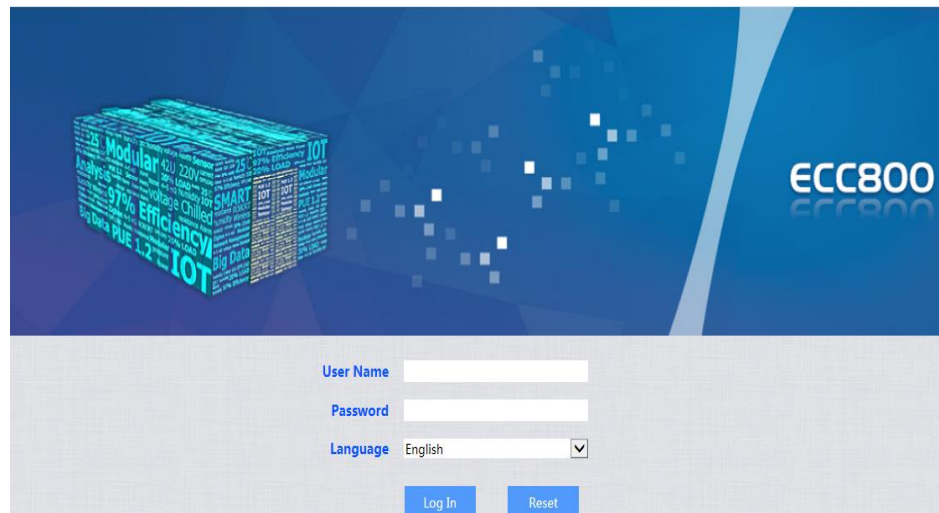
When switching between different versions of the ECC800 on your PC, you are advised to clear the historical Internet Explorer cache. Failing to do so may cause some information missed or exception after login. The following provides the details:

1. Open Internet Explorer and choose **Tools > Internet Options > General**.
2. Select **Delete browsing history on exit** and click **Delete**.
3. In the **Delete Browsing History** dialog box, select all options except **Password**, and click **Delete**.

Step 5 Log in to the ECC800 WebUI.

1. Enter **https://monitoring IP address** (such as monitoring IP address **https://192.168.1.10**) in the address box of the browser, and then press **Enter** to enter the WebUI login page.

Figure 5-4 WebUI login page



2. On the login page, enter the preset user name **admin** and preset password **Changeme**, set the language, and click **Log In**.

NOTE

- After the first login, change the password in time to ensure account security and prevent unauthorized network attacks, such as data tampering. Huawei will not be liable for any security issues caused by your failure to change the preset password in time or password loss after changing.
- An account is logged out due to timeout if no operation is performed within 10 minutes after system login.
- It is recommended that a maximum of three users log in to the ECC800 WebUI at the same time.

----End

5.2 Configuration Wizard

Context

- Only administrators are entitled to perform the configuration wizard.
- Currently, commissioning wizard is provided for the following functions: **Smart Module Settings, Basic Param Settings, Add Devices, Add Sensor, Plan View, Power Dist Settings, Temp Control Settings, Linkage Test, Video Settings, and Access Management.**

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

NOTE

The deployment wizard is displayed when you log in to the ECC800 WebUI for the first time or the system type is switched.

Step 2 Choose **Maintenance** > **Opening Guide** to access the parameter configuring page for the configuration wizard.

Step 3 Configure related parameters on the page as instructed. For details, see the function description on the left of the page.

NOTE

- In the process, click **Previous**, **Next**, and **Skip** as required.
- To exit before the configuration is complete, click **Finish** to terminate the configuration directly.

Step 4 After configuring the parameters, click **Finish**.

Step 5 After confirming that the commissioning **Result** is normal, enter the **Checker Name** and **Check Date**, and click **Configuration Completed**.

NOTE

To export the configuration result, click **Export Check Result**. The export file format is **csv**.

----End

5.3 Commissioning Alarm Notification

You can set alarm notification by email or SMS as required. Information about a maximum of 20 users who will receive alarm notification can be displayed.

Prerequisites

To implement alarm notification by SMS, the following conditions must be met:

- The ECC800 is configured with a 3G module and supports SIM card access in 2G/3G/4G mode. The 2G card should support the GSM mode, and the 3G/4G card should support the WCDMA and GSM modes.

To implement alarm notification by email, the following conditions must be met:

- The ECC800 is connected to a network with an email server through a WAN port. Both the Internet and local area network (LAN) are supported.

NOTE

The ECC800 supports only SMS notification service but not data service by using the 3G module.

Procedure

Step 1 Choose **System Settings** > **Event Notification**.

Step 2 Set the **Outbox Setting** parameter.

Figure 5-5 Setting the Outbox Setting parameter

NOTE

- Click **Test** to test whether the email is sent successfully. If the email fails to be sent, check the sender's email parameter settings; if the email is sent successfully, click **Submit**.
- If **Test email sending failed** is displayed, check whether the receiver's email server requires CA certificate verification. If it is required, download the CA certificate from the receiver's email website and upload it in the **Mailbox Certificate** area.
- The following email addresses are for reference only (the actual parameters apply) and are used only for configuring the email function.

Table 5-2 Main parameters on the sender's email configuration page

Email Type	Email Server Domain Name	Mailbox Server IP Address	Encryption Mode and SMTP port	Remarks
Sina Mail	smtp.sina.com	How to obtain: 1. Click Start on the PC, enter cmd in Running area, and click Search to access the administrator page. 2. Enter ping email server domain name at the position of the blinking cursor and press Enter to obtain email server IP addresses.	Non-encryption: 25	- The email server must comply with the standard SMTP protocol to ensure that the email sending and receiving functions are normal. - Enter the email client authorization password at Password for 163 Mail, 126 Mail, and QQ Mail.
163 Mail	smtp.163.com		Non-encryption: 25; SSL encryption: 465	
126 Mail	smtp.126.com		Non-encryption: 25; SSL encryption: 465	
QQ Mail	smtp.QQ.com		SSL encryption: 465	
Sohu Mail	smtp.sohu.com		Non-encryption: 25	
139 Mail	smtp.139.com		Non-encryption: 25	
Hotmail	smtp-mail.outlook.com		TLS encryption: 587	
189 Mail	smtp.189.com		Non-encryption: 25	

- Step 3** Click **Add** in the **Email Receiving Settings** area and enter the receiver's email address.
- Step 4** Click **Confirm** to access the re-authentication page. Enter **Login password** and click **Submit**.
- Step 5** Click **Test** to check whether the added email address is available. If it is available, **Successfully to send the test email.** is displayed. If it is unavailable, **Failed to send the test email.** is displayed. Check whether the receiver's email parameters are correctly set.
- Step 6** Select **Add** on the **SMS Settings** page and enter the receiver's mobile phone number.
- Step 7** Click **Confirm** to access the re-authentication page. Enter **Login password** and click **Submit**.
- Step 8** Click **Test** to check whether the added mobile phone number is available. If it is available, **Successfully to send the test short message.** is displayed. If it is unavailable, **Failed to send the test short message.** is displayed. Check whether the receiver's mobile phone parameters for receiving short messages are correctly set.

Figure 5-6 SMS setting page

The screenshot shows the 'SMS Receiver Settings' page. At the top, there are three tabs: 'Mailbox Settings', 'SMS Settings' (which is active), and 'Alarm Notification'. Below the tabs, the title 'SMS Receiver Settings' is displayed. There is a table with three columns: 'S/N', 'Mobile Phone Number', and 'SMS Test'. The table has one data row with 'S/N' value '1', 'Mobile Phone Number' value '*****7896', and an 'SMS Test' button labeled 'Test'. Below the table, there are three buttons: 'Add', 'Modify', and 'Delete'. A modal window titled 'Add Mobile Phone Number' is open in the bottom right corner. It contains a text input field for 'Mobile Phone Number' with a hint '0~9','+' (3-16characters) and a 'Confirm' button.

- Step 9** Set the **Alarm notification delay time** and **Add Alarm Notification** parameters.

Figure 5-7 Setting the Alarm notification delay time parameter

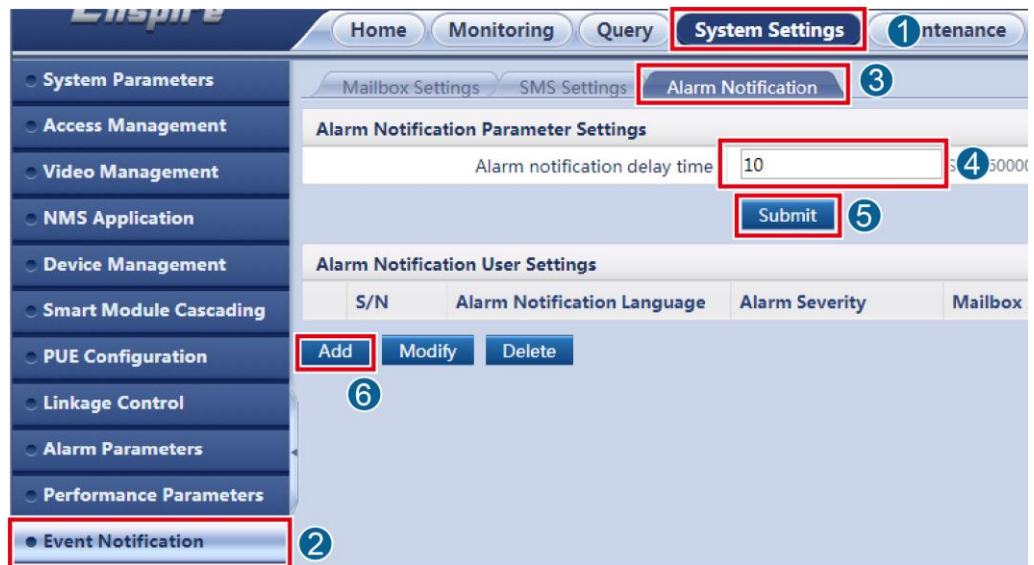
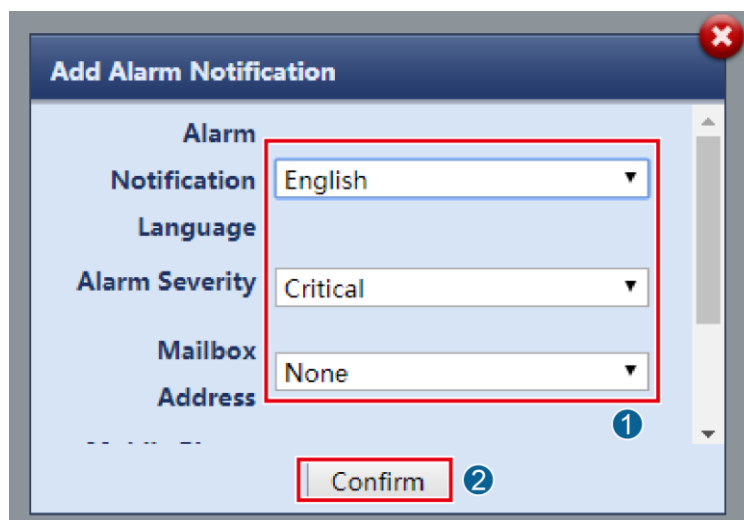


Figure 5-8 Adding alarm notification



NOTICE

Mailbox Address in **Alarm Notification** can be selected after it is added in **Mailbox Settings**. **Mobile Phone Number** can be selected after it is added in **SMS Settings**.

Step 10 Click **Confirm** to access the re-authentication page. Enter **Login password** and click **Submit**.
----End

Follow-up Procedure

To modify or delete the email parameter settings, click **Modify** or **Delete**.

5.4 Commissioning the Smart Busway

Context

If the smart busway is used, general input units and power distribution units communicate with the ECC800 using the Modbus-MAC protocol. After the general input units and power distribution units properly connect to the ECC800, the ECC800 automatically identifies the units.

Then, you need to set parameters for the general input units and power distribution units; otherwise, a false alarm may be generated.

Procedure

Step 1 Set parameters for general input units on the ECC800 WebUI.

1. Set parameters for general input unit 1.

Table 5-3 Power distribution settings for a general input unit

Path	Parameter Name	Default Value	Setting
Monitoring > Power Distribution > General Input Unit1 > Running Parameters > Power Distribution Settings	Rated system frequency	50	Set based on actual conditions.
	Rated system voltage	380	Set based on actual conditions.
	Rated system current	250	Set based on actual conditions. NOTE The value should be consistent with the information on the nameplate of the general input unit. • If the model is NMW-0250AC, set Rated system current to 250 A. • If the model is NMW-0160AC, set Rated system current to 160 A.
	System CT ratio	250	Set based on actual conditions. • If Rated system current is 250 A, set System CT ratio to 250. • If Rated system current is 160 A, set System CT ratio to 200.

2. Set the parameters for other general input units in the same way or by synchronizing parameters.

Path: **Maintenance > Parameter Sync**

Step 2 Set parameters for power distribution units on the ECC800 WebUI.

1. (Optional) To modify the branch signal name of the power distribution unit, choose **System Settings > Signal Name Modify** and access the **Batch Signal Configuration** to modify the name, and then tap **Submit**.
2. The following is an example of how to display two branches for power distribution unit 1.

Choose **Monitoring > Power Distribution > Power Distribution Unit 1 > Display Configuration**, select **Running Information Display** and **Running Parameters Display** corresponding to QF1 and QF2, and then tap **Submit**.

3. Configure the power distribution settings for power distribution unit 1.

Table 5-4 Power distribution settings for a power distribution unit

Path	Parameter Name	Default Value	Description
Monitoring > Power Distribution > Power Distribution Unit 1 > Running Parameters > Power Distribution Settings	QF1 Rated current (QF1) QF2 Rated current (QF2)	32	Rated current 32 A for each branch.
	QF1 Branch circuit breaker in use (QF1) QF2 Branch circuit breaker in use (QF2)	Enable	When the parameter is set to Disable for a branch, all alarms of the branch will not be reported. When the parameter is set to Enable for a branch, all alarms of the branch will be reported.

4. Set the parameters for other power distribution units in the same way or by synchronizing parameters.

Choose **Maintenance > Parameter Sync**.

----End

5.5 Commissioning the AC Actuator (Wireless Networking)

If an AC actuator with wireless networking is configured, perform the following steps to set its parameters.

Prerequisites

The upstream power input circuit breaker of the AC actuator is turned on.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Before networking, ensure that both the ECC800 and AC actuator have no network parameters. That is, the RF_Z indicators on the ECC800 and AC actuator are both steady green.

- If the RF_Z indicator on the ECC800 is not steady green, hold down the SW button on the ECC800 for more than 6 seconds to make the ECC800 enter non-networking status.
 - If the RF_Z indicator on the AC actuator is not steady green, hold down the BLINK button on the AC actuator for more than 10 seconds to make the AC actuator enter non-networking status.
1. Hold down the SW button on the ECC800 main control module for 2 seconds (1.2–5 seconds allowed). The RF_Z indicator on the ECC800 main control modules turns from steady green to blinking green at super short intervals (blinking at 10 Hz, on for 0.05 seconds and then off for 0.05 seconds). The ECC800 enters the wireless networking (802.15.4) pairing status.
 2. Hold down the BLINK button on the AC actuator for 2 seconds (1–5 seconds allowed). The RF_Z indicator on the AC actuator turns from steady green to blinking green intermittently at super short intervals (blinking at super short intervals for 0.5 second and then off for 0.5 second). The component enters the wireless network search status.
 3. After the wireless networking (802.15.4) pairing succeeds, the RF_Z indicator on the AC actuator starts to blink at long intervals.
 4. After all AC actuators are networked, hold down the SW button on the ECC800 main control module for 2 seconds (1.2–5 seconds allowed). The RF_Z indicator on the ECC800 main control modules turns from blinking green at super short intervals to blinking green at long intervals (blinking at 0.5 Hz, on for 1 second and then off for 1 second). The ECC800 exits the wireless networking (802.15.4) pairing status.

NOTE

If two or more ECC800 controllers need to be networked in wireless (802.15.4) mode, only one system can be networked at one time. During the networking, ensure that the RF_Z indicators on the ECC800 main control modules of other systems are blinking at long intervals or steady on.

Step 2 Set running parameters for the AC actuator.

Table 5-5 Setting AC actuator parameters

Path	Operation
Monitoring > Aisle > AC Actuator Group > AC Actuator n > Running Parameters	Set Route 1 Control Mode to Light , and click Submit .
	Set Route 2 Control Mode to PAD Charging , and click Submit . NOTE If two AC actuators are configured, you only need to set the Route 2 Control Mode for one AC actuator.

Step 3 Check the functions of the AC actuator.

Table 5-6 Function commissioning

Check Method	Normal Connection Status
Path: Monitoring > Aisle > AC Actuator Group > AC Actuator n 1. Choose Running Parameters , set Set light mode is Manual . 2. Choose Controls , select Light control , select ON , and click Submit .	The light is on.
When the light is normal, set Set light mode to Automatic . Path: Monitoring > Aisle > AC Actuator Group > AC Actuator .	

----End

5.6 Commissioning CIMs and BIMs

If CIMs and battery interface modules (BIMs) are installed, perform the following steps to commission.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **Monitoring > Power Distribution > CIM > Running Parameters**.
- Step 3** Set **CIM single battery qty.**, **Batt installation time**, **Battery string capacity**, **Current source**, and **Battery string No.**. Retain default values for other parameters.

Table 5-7 Setting CIM parameters

Parameters	Description	Remarks
CIM single battery qty.	Total number of batteries monitored by the CIM.	Set according to the battery parameters planned by the customer.
Batt installation time	Actual time at which batteries are installed.	N/A
Battery string capacity	- If the CIM manages a single battery string, set this parameter to the capacity of a single battery. - If the CIM manages multiple battery strings, set this parameter to the capacity of a single battery multiplied by the number of battery strings.	Obtain the battery capacity from the battery label or document.

Parameters	Description	Remarks
Current source	Select a Hall effect sensor (0-xxx A). The actual specifications of the Hall effect sensor will apply.	N/A
Battery string No.	Set this parameter based on the planned codes for CIMs and battery strings.	Set according to the customer plan.

Step 4 Set the wireless networking (802.15.4) function of CIMs and BIMs.

Before networking, ensure that all the CIMs and BIMs have no network parameters, that is, the RF_Z indicator on the CIM is steady green and the RUN/ALM indicator on the BIM is steady red.	- If the RF_Z indicator on the CIM is not steady on (green), press and hold down the networking switch on the CIM for 10–20 seconds to clear the original network. - If the RUN/ALM indicator on the BIM is not steady red, hold down the BIM networking switch for at least 5 seconds to clear the original network.
If multiple CIMs are connected, commission one CIM first and then commission the other CIMs in the same way.	Indicator status: - Blinking at long intervals: The indicator is on for 1 second and then off for 1 second alternately. - Blinking at super short intervals: The indicator is on for 0.05 seconds and then off for 0.05 seconds alternately. - If the CIM is blinking at super short intervals, the indicator is on for 0.125 seconds and then off for 0.125 seconds alternately.

- Hold down the networking switch on the CIM for 2 seconds. The ALM indicator blinks red once, and the RF_Z indicator turns from steady green to blinking green at super short intervals, which indicates that the CIM is being networked.
- Press the BIM networking switch for 2 seconds. When the RUN/ALM indicator turns from steady red to blinking green at super short intervals, and finally to blinking green at long intervals, the BIM connects to the CIM network.

NOTE

- It is recommended that BIMs be networked from the positive battery string terminal according to the battery cable connection sequence.
 - Batteries are numbered depending on the sequence of connecting BIMs to the CIMs.
- Perform networking operations on the next BIM only after networking for the previous BIM is successful. Repeat [Step 4.2](#) to add other BIMs to the CIM network.
 - Press the CIM networking switch for 2 seconds. When the RF_Z indicator on the CIM turns from blinking green at super short intervals to blinking green at long intervals, the networking is complete.

 NOTE

After the networking is complete, if the ALM indicator on the CIM is steady on, the number of devices online is smaller than the value of **BIM Number**. Check that **BIM Number** is set to a correct value and that the BIM is successfully networked.

5. (Optional) If multiple CIMs are cascaded, repeat [Step 4.1](#) to [Step 4.4](#) to perform networking for remaining CIMs and BIMs.

----**End**

6 Feature Description

6.1 (Optional) Setting Device Performance Parameters

Context

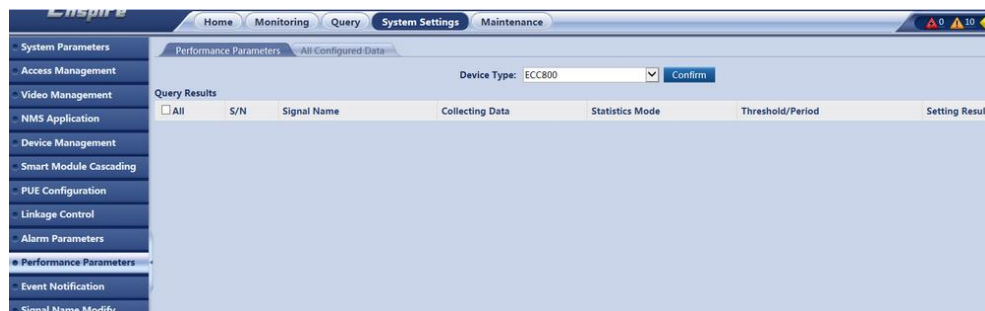
- Setting device performance parameters will affect the storage of device performance data.
- The device performance data threshold can be changed to determine whether to record the intermediate status parameters of device performance data.
- If you need to change parameters such as **Collecting Data**, refer to the following procedure.

Procedure

Step 1 Choose **System Settings** > **Performance Parameters**.

Step 2 Set device performance parameters on the **Performance Parameters** page. Select the device to be set under **Device Type** and click **Confirm**. All performance parameters of the selected device are displayed.

Figure 6-1 Performance parameter setting page



Step 3 Set device performance parameters, select the performance parameters to be submitted in the first column, set **Collecting Data**, and click **Submit**. After the parameters are successfully submitted,  is displayed in the setting result of the changed parameters, and the numbers of parameters that are successfully changed and failed to be changed are displayed beside **Submit**.

Step 4 Select the **All Configured Data** tab page to view the configured device performance parameters.

----End

6.2 Setting ECC800 Cascading

If multiple smart modules (≤ 3) are installed in the same room and the customer has not deployed the NetEco, multiple ECC800s can be cascaded for management. To set the cascading function, follow the procedure in this section.

Prerequisites

Cascaded ECC800s communicate with each other properly.

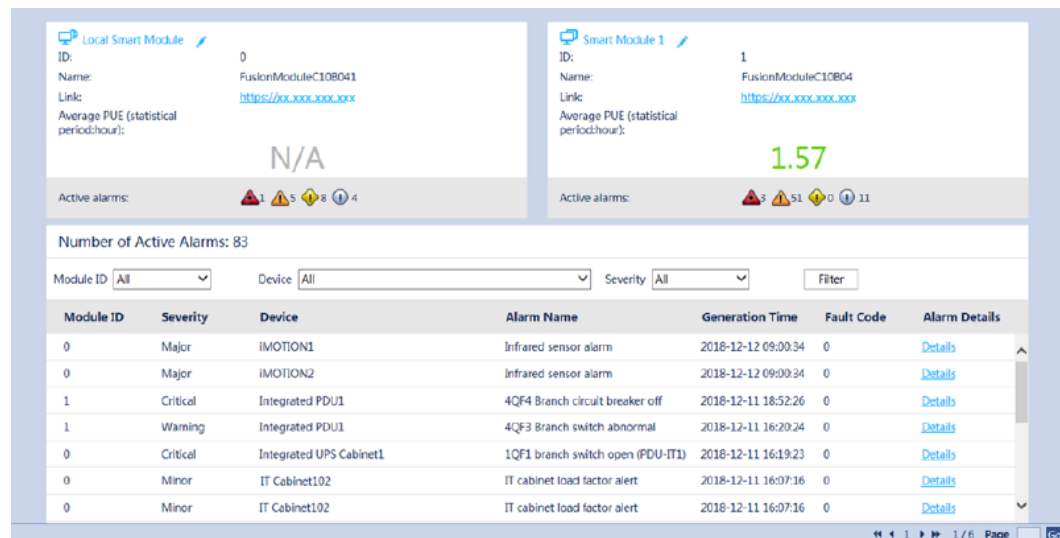
Context

A maximum of three ECC800s can be cascaded. After the IP addresses of other smart module ECC800s in the room are added to an ECC800, their active alarms and PUE data can be displayed and viewed.

You can click links on the cascading management page of the master ECC800 to display the login pages of the other ECC800s. Then, you can log in to view the details.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > Smart Module Cascading**.
- Step 3** Click **Add**. In the displayed **New Smart Module Cascading** dialog box, enter the IP addresses of the ECC800s to be cascaded.
- Step 4** Click **Confirm**.
- Step 5** Choose **Home > Multi-Module Monitoring**. The information about the cascaded ECC800s is displayed.

Figure 6-2 ECC800 cascading page**NOTE**

The interface of the ECC800 V100R002C10 is used as an example.

- Step 6** (Optional) Click the alarm bubble in the **Active alarms** area in a smart module to view the corresponding active alarm information.
- Step 7** (Optional) Click the pencil icon next to a smart module name, and the **Edit Smart Module Title** dialog box is displayed. Change the smart module name and click **Confirm**.
- Step 8** (Optional) Click **Link** in a smart module on the cascading page to access the corresponding ECC800 login page.
- Step 9** (Optional) Filter and query the details of each alarm by smart module, device, or alarm severity in the **Active alarms** area.

----End

6.3 Access Management

6.3.1 Commissioning a Door Status Sensor

6.3.1.1 Commissioning a Door Status Sensor (Connected to the AI/DI port on the independent deployment AI_DI unit)

If a door status sensor is installed, perform the following steps to configure it.

Context

- To use the AI/DI sensor, enable the corresponding AI/DI port and name the sensor. After that, the specific alarm can be reported.
- If the sensor is prefabricated, only check its settings.

- If multiple door status sensors are connected, commission one door status sensor first and then commission the other door status sensors in the same way.

Procedure

Step 1 Set parameters for a door status sensor.

NOTE

In this example, the door status sensor is connected to the AI/DI_1 port on the independent deployment AI_DI 1.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.
3. Set **Device Type** to **Independent Deployment AI_DI Unit**, set **Device Name** to **Independent Deployment AI_DI1 Unit**, and click **OK**.
4. On the query result tab page, set the new signal name of **AI/DI_1** to **Door1** and click **Submit**.

NOTE

Order number of door sensor name is same as cabinet.

5. Choose **Monitoring > System > Independent Deployment AI_DI Unit Group > Independent Deployment AI_DI1 Unit > Running Parameters > AI/DI_1 Port Settings**.
6. Set **Door1 sensor** to **Enable** and click **Submit**.
7. Set **Door1 sensor type** to **Door sensor**, ensure that **Door1 power supply** is **Yes**, and click **Submit**.
8. Perform the preceding operations to set parameters for ports AI/DI_2 to AI/DI_8.

Step 2 Check the door status sensor functions.

Table 6-1 Commissioning the sensor

Check Method	Normal Connection Status
Open the cabinet door.	Door1 DI alarm is generated on the active alarm page of the app or WebUI.

----End

6.3.1.2 Commissioning a Door Status Sensor (Connected to the AI/DI Port on the Rack Environment Unit)

If a door status sensor is installed, perform the following steps to configure it.

Context

- If the sensor is prefabricated, only check its settings.
- If multiple door status sensors are connected, commission one door status sensor first and then commission the other door status sensors in the same way.

Procedure

- Step 1** Choose **Monitoring > Cabinet > IT Cabinet1 > Cabinet Collector1 > Running Parameters**, set the door status sensor parameters.

Table 6-2 Parameter settings

Setting area	Object	Method
AI/DI_1 Port Settings	Front door status (AI/DI_1)	1. Choose AI/DI_1 sensor to Enable , click Submit . 2. Set AI/DI_1 sensor type to Door sensor , click Submit .
AI/DI_2 Port Settings	Rear door status (AI/DI_2)	1. Choose AI/DI_2 sensor to Enable , click Submit . 2. Set AI/DI_2 sensor type to Door sensor , click Submit .

- Step 2** Check the door status sensor functions.

Table 6-3 Commissioning the sensor

Check Method	Normal Connection Status
Close and then open the door.	If the alarm is enabled for the front and rear doors, a cabinet door open alarm is displayed on the active alarm screen of the app or the active alarm page of the WebUI.

----End

6.3.2 Commissioning an Access Control Device and a Cabinet Electronic Lock

If an access control device and cabinet electric lock are installed, perform the following steps to configure it.

Prerequisites

- A maximum of eight access actuators are supported.
- When the fingerprint reader is connected to the ECC800 for the first time, the permissions need to be synchronized.

Procedure

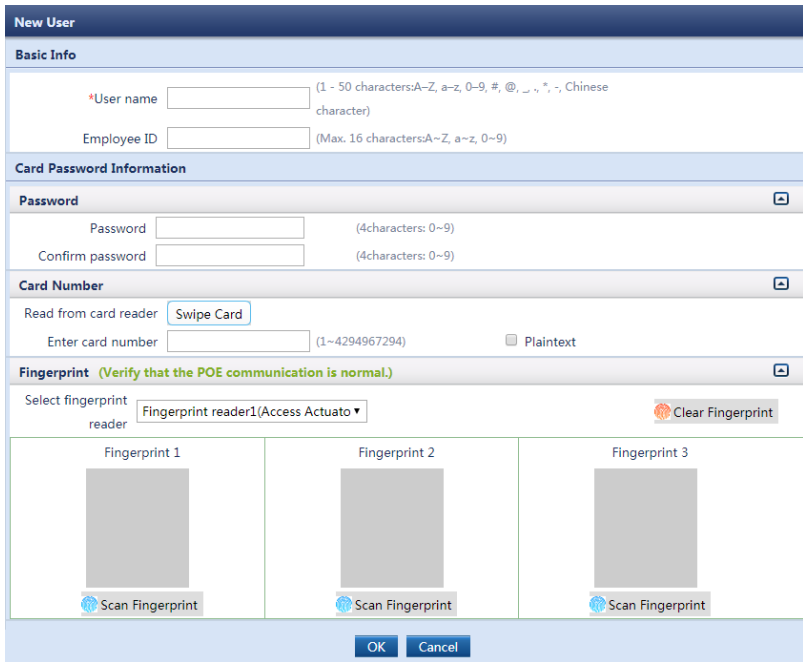
- Step 1** Set the access user management and access permission management.
1. Choose **System Settings > Access Management** to access the access management page. The system supports the management of various access permissions through the access card, password, and fingerprint.

2. On the **Authorization Operations** tab page, click **Add** to access the new user page. On the **Basic Info** tab page, enter **User name** and **Employee ID**.
Specify the following information on the **Password** tab.
 - Password: Enter and confirm the password.
 - Card number: The card number can be recorded directly or by swiping the card.
 - Record directly: Type the access card number in the text box.
 - Record by swiping the card: Click **Swipe Card** and place the card on the access control device. The card number is automatically recorded.
 - Fingerprint: On the **Fingerprint** tab page, select **Fingerprint** for **Select fingerprint reader** and click **Collect**. On the **Please collect fingerprint** page, click **OK**. Then put your finger on the fingerprint reader to collect the fingerprint after hearing the voice prompt. After you hear a beep sound, move your finger away and collect the fingerprint again.

NOTE

- Each fingerprint should be recorded three times.
- A maximum of three fingerprints from different fingers can be recorded.

Figure 6-3 Adding access users



On the **Authorization Information** and **Term of Authorization** tab pages, select access users whose access permissions are to be set, and set **Authorized Device**, **Authorization Mode**, **Cabinet Lock**, **Start time**, and **End time**.

- Access Actuator: Select the authorized access actuator for the user based on the actual requirements. For example, select **Access Actuator1** on the **Access Actuator** tab.
- Authorization mode: Select **Card**, **Fingerprint**, **Card and password**, **Card and fingerprint**, **Fingerprint and password**, or **Card, password and fingerprint**

NOTE

- For example, if you select **Card, password and fingerprint** for the authorization mode, the door can be opened only after you swipe an authorized card first, enter the authorized password (press # to confirm the password), and then scan the fingerprint.
- The fingerprint information is used only for configuring the access control function and is not used for other purposes. The fingerprint information is encrypted during transmission in the ECC800 to ensure that the personal data of users is fully protected.
- Cabinet lock: Select a type on the **Cabinet Lock** tab page, for example, **Smart module > IT Cabinet1 > E-LOCK1**.
- Permission validity period: Set **Start date**, **Expiration date**, and **Allow door open period**.

Figure 6-4 Adding access permissions

New

Select fingerprint reader Clear Fingerprint

Fingerprint 1 Scan Fingerprint

Fingerprint 2 Scan Fingerprint

Fingerprint 3 Scan Fingerprint

Authorization Information

Access actuator ☐ All

Access actuator	Authorized Device	Authorization Mode
☐ Access Actuator1		☐ Card ☐ Fingerprint ☐ Card and password ☐ Card and fingerprint ☐ Fingerprint and password ☐ Card , password and fingerprint
☐ Access Actuator2		☐ Card ☐ Fingerprint ☐ Card and password ☐ Card and fingerprint ☐ Fingerprint and password ☐ Card , password and fingerprint
☐ Access Actuator3		☐ Card ☐ Fingerprint ☐ Card and password ☐ Card and fingerprint ☐ Fingerprint and password ☐ Card , password and fingerprint

OK **Cancel**

NOTE

You can authorize and delete access users in batches.

3. Click **OK** to complete the task of adding access management settings.
4. On the **Authorization Operations** tab page, click **Synchronize to Device**, select the modified access control devices, and click **Start Synchronization**.

Figure 6-5 Synchronizing access permissions

Synchronize Access Permission			
☐ All	Authorized Device	Device Status	Synchronization Status
☐	Access Actuator1	Online	Not synchronized
☐	E-LOCK11	Online	Synchronization complete ✓
☐	Fingerprint reader(Access Actuator1)	Online	Synchronization complete ✓

(Verify that the POE communication is normal.)

Start Synchronization

- When **Synchronization Status** is **Synchronized** for the related devices, close the **Synchronize Access Permission** page.

Step 2 Set an alarm for card readers.

Set **Logical level configuration for reader removed** based on the fingerprint reader configured for the access control system.

- If the access control system uses a **Card and password** reader, choose **Monitoring > Aisle > Access Actuator Group > Access Actuator n** on the ECC800 WebUI, click **Running Parameters**, and set **Logical level configuration for reader removed** of the corresponding card reader to **High level alarm**.

Table 6-4 Setting method

Cable Connection Scenario	Setting Method
The card reader with a keypad is connected to WG_1 port on the access actuator.	Set Logical level configuration for reader 1 removed to High level alarm . Logical level configuration for reader 2 removed remains as Low level alarm .
The card reader with a keypad is connected to WG_2 port on the access actuator.	Set Logical level configuration for reader 2 removed to High level alarm . Logical level configuration for reader 1 removed remains as Low level alarm .

- If the access control system uses a **Card**, **Card and fingerprint**, or **Card, password and fingerprint** reader, retain the default value **Low level alarm** for **Logical level configuration for reader removed**.

Step 3 Check the functions of the access control device and access actuator.

Table 6-5 Function check

Check Method	Normal Connection Status
Method 1: Attempt to open the door using the configured authentication mode. Method 2: On the WebUI, choose Monitoring > Aisle > Access Actuator Group > Access Actuator n , and click Controls to open the door remotely.	For method 1: The aisle door is opened successfully. For method 2: After you choose Query > Access Event on the WebUI, you can view the type of this access control event.

Step 4 Check the functions of the cabinet electric lock.

Table 6-6 Function check

Check Method	Normal Connection Status
Method 1: Ensure that the cabinet door is closed, and attempt to open the door with an IC card. Method 2: On the WebUI, choose Monitoring > Cabinet > IT Cabinet n > E-LOCK n , and click Controls to open the door remotely.	For method 1: Swipe an authorized IC card, press the lower part of the cabinet electronic lock when the green indicator blinks, and open the cabinet electronic lock. For method 2: After the cabinet electrical lock is remotely opened, press the lower part of the cabinet electronic lock after the green indicator blinks, and open the cabinet electronic lock. Choose Query > Access Event on the WebUI, you can view the type of this access control event.

----End

6.3.3 Commissioning the Exit Button, Skylight Button, Atmosphere Light, Emergency Button, and Magnetic Lock

Procedure

Step 1 Check functions of the exit button.

Table 6-7 Function commissioning

Check Method	Normal Connection Status
Attempt to open the door by pressing the exit button when the aisle door is closed.	The aisle door is opened successfully.

Step 2 Check functions of the skylight button.

Table 6-8 Function commissioning

Check Method	Normal Connection Status
Attempt to open the door by pressing the skylight button when the aisle door is closed.	The skylight can be opened manually.

Step 3 Check functions of the atmosphere light.

Table 6-9 Function commissioning

Check Method	Normal Connection Status
Press the atmosphere light button.	The atmosphere light is steady blue.

Step 4 Check functions of the emergency button.

Table 6-10 Function commissioning

Check Method	Normal Connection Status	Follow-up Procedure
Attempt to open the door by pressing the emergency button when the aisle door is closed.	The aisle door is opened successfully.	You need to restore the emergency button.

Step 5 Check functions of the magnetic lock.

Table 6-11 Function commissioning

Check Method	Normal Connection Status	Troubleshooting
When the aisle door is normally closed, check whether there is a door open alarm on the ECC800.	There is no door open alarm on the ECC800.	If a door open alarm is reported when the door is closed, relocate the magnetic lock and magnet to minimize the deviation until the door open alarm is cleared.

----End

6.3.4 Commissioning an Emergency Door Release Button

Procedure

Step 1 Check the function of an emergency door release button.

Table 6-12 Function check

Check Method	Normal Connection Status	Follow-up Procedure
When the room door is properly closed, short-circuit the wiring terminals NC and COM or NO and COM on the emergency door release button.	The room door is opened properly.	Remove the short-circuit cable from the wiring terminals NC and COM or NO and COM on the emergency door release button.

----End

6.4 Video Management

6.4.1 Preparing Documentation

Before commissioning a camera, prepare the following documents in addition to this document.

Table 6-13 Documentation for Commissioning Preparation

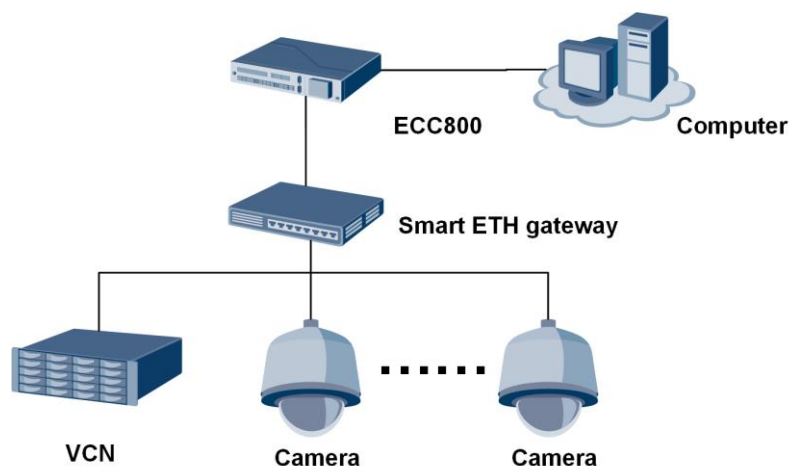
Component	Document
IPC6325-WD-VR	<i>IPC6325-WD-VR Configuration Guide</i>
VCN500/VCN540	VCN500: VCN500 Product Documentation VCN540: VCN510&VCN520&VCN540 Product Documentation

6.4.2 Networking Scenarios

Smart ETH Gateway Networking Scenario

- There are multiple VCNs for multiple smart modules, you are advised to evenly distribute the cameras to each VCN.
- A maximum of four cameras can be connected in the smart ETH gateway networking scenario.

Figure 6-6 Camera + VCN connecting to the ETH gateway



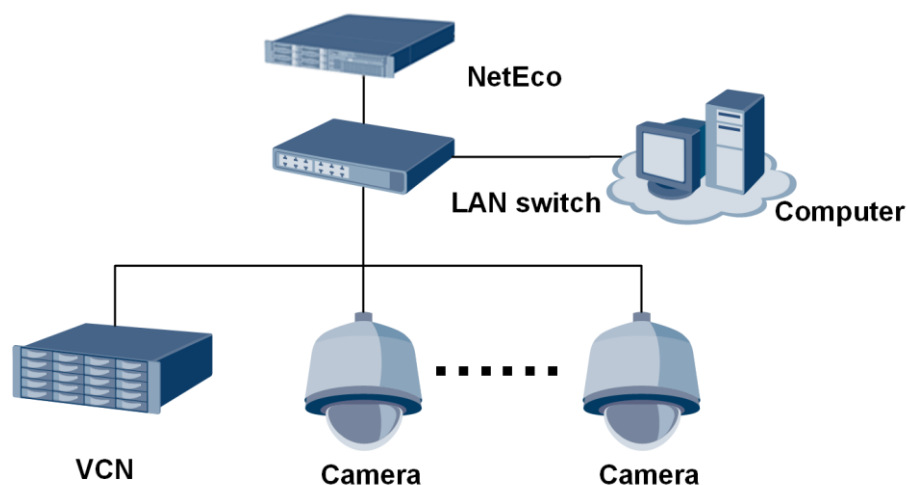
NOTICE

- To ensure the normal operating of the ECC800, avoid high data traffic, such as the concurrent display of dynamic monitoring of cameras and VCN500 video playback.
- To ensure the normal operating of the ECC800, you can view the videos from a maximum of two IPC6325-WD-VR cameras concurrently.

LAN Switch Networking Scenario

There are multiple VCNs for multiple smart modules, you are advised to evenly distribute the cameras to each VCN.

Figure 6-7 Camera + VCN connecting to the LAN switch



6.4.3 Commissioning a Camera (Smart ETH Gateway Networking Scenario/Versions Earlier than IPC V200R003C00)

If the camera web version is earlier than IPC V200R003C00, commission the camera by referring to this topic.

6.4.3.1 Commissioning IPC6325 Cameras

Prerequisites

If multiple cameras are accessed, retain the connection of one camera and disconnect connections from other cameras. After commissioning the connected camera, commission other cameras in the same way.

Context

- The existing network is equipped with the ECC800 that supports the Dynamic Host Configuration Protocol (DHCP). After the ECC800 and IPC6325 camera are powered on, the IPC6325 camera automatically obtains an IP address that is in the same network segment as the ECC800 IP address.
- Before commissioning the IPC6325 camera, set the IP address for the IPC6325 camera based on customer requirements.
- Set the internal and external IP addresses as planned by the customer. The following IP addresses are just examples.

Table 6-14 IP address plan

Device	Internal IP Address	External IP Address
Camera	Example: 192.168.248.50; range: 192.168.248.50–192.168.248.199	Camera external IP address
VCN	Example: 192.168.248.55; range: 192.168.248.50–192.168.248.199	VCN external IP address

Procedure

Step 1 Set the IP address for the IPC6325 camera.

1. Enter **https://192.168.248.10** in the address box of the browser and press **Enter** to access the WebUI login page. After login, choose **System Settings > Video Management**.
2. Under the **Search for Video Device IP Address** list, click **Search**.

NOTE

- Configure the camera IP address and the IP address of the LAN port on the ECC800 in the same network segment.
- The search timeout interval is 10s. If the search fails, a search failure message is displayed.
- To avoid missing cameras, perform **Search** for multiple times.

Figure 6-8 Searching for the camera IP address

Select	ID	Name	External IP	Internal IP	Video Type	Link

Add Modify Delete

Search for Video Device IP Address

Search

Search Result

S/N	IP Address	MAC Address	Link (PC and LAN IP Addresses Should Be in the Same Network Segment)
1	192.168.248.59	F8:98:B9:11:DC:DE	https://192.168.248.59
2	192.168.248.112	00:E0:4C:98:43:94	https://192.168.248.112

3. Add the camera that has been found to **Video Information**. Click **Add** under the **Video Information** list, and enter the camera information in the displayed **New Video Information** window.
 - **Name**: Enter the camera name (for example, **Camera1**).
 - **External IP**: Enter the external IP address of the camera (The IP address assigned by the network administrator prevails).
 - **Internal IP**: Enter the internal IP address, that is, the found camera IP address: 192.168.248.50.
 - **Video Type**: Select the video type based on the customer's device.
 - **Link**: Enter the external IP address of the camera (for example, <https://external IP address of the camera>).

Figure 6-9 Adding video information

New Video Information

Name
A-Z, a-z, 0-9, #, @, _ , *, -, , Chinese character (1-50 characters)

External IP

Internal IP 192, 168, 248
(192.168.248.50~192.168.248.199)

Video Type Camera

Link https://
255 characters in maximum (excluding ^, |, <, >, : , * , & , % , (,) , , \).

Confirm

4. Select the required camera, and click the link under **Link** (PC IP address and camera external IP address should be in the same network segment) to access and log in to the

camera WebUI. Enter the preset user name **admin** and preset password **HuaWei123**, and click **Login**.

5. (Optional) Choose **Settings > Basic Configuration > Network Parameters**, set **Way to obtain IP** to **Use the following IP address** and set an IP address to the planned IP address for the camera. The IP address should be in the range of 192.168.248.50 to 192.168.248.199.

Step 2 Click **Confirm** after video information is entered.

NOTE

To perform [Step 1.5](#), return to the ECC800 **Video Management** page. In the **Video Information** area, select the camera added in [Step 1.3](#) and click **Modify**. In the displayed **New Video Information** dialog box, set **Internal IP** to the IP address planned in [Step 1.5](#), and click **Confirm**.

Step 3 In the **Video information** list, click a link address under **Link** to go to the camera WebUI as instructed.

Step 4 For details about how to commission IP cameras and set parameters for them, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section.

1. Preview the site situation in real time and check the camera coverage through videos. Adjust the lens if necessary.
2. (Optional) If you use the SD card when no VCN is configured, perform commissioning by following the instructions in [6.4.3.2 Commissioning IPC6325 Camera \(SD Card Configured\)](#).
3. Set camera stream type, primary stream, and secondary stream 1 parameters.

NOTICE

Set coding protocol to H.264.

Figure 6-10 Setting primary stream parameters

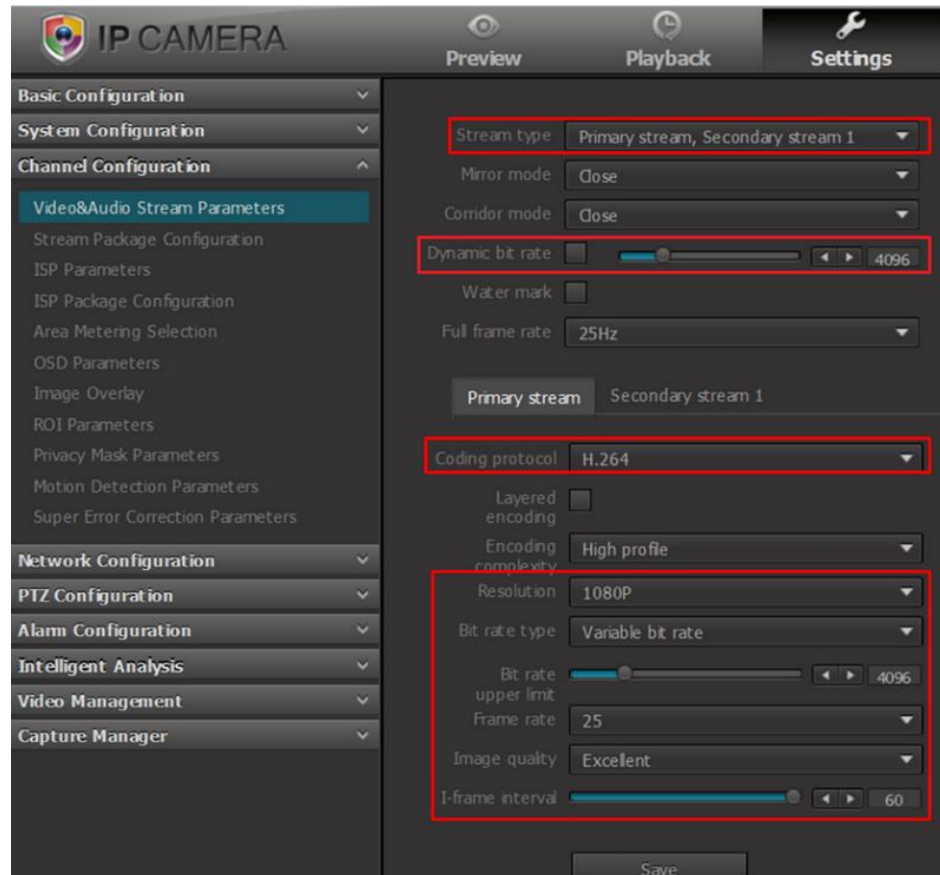
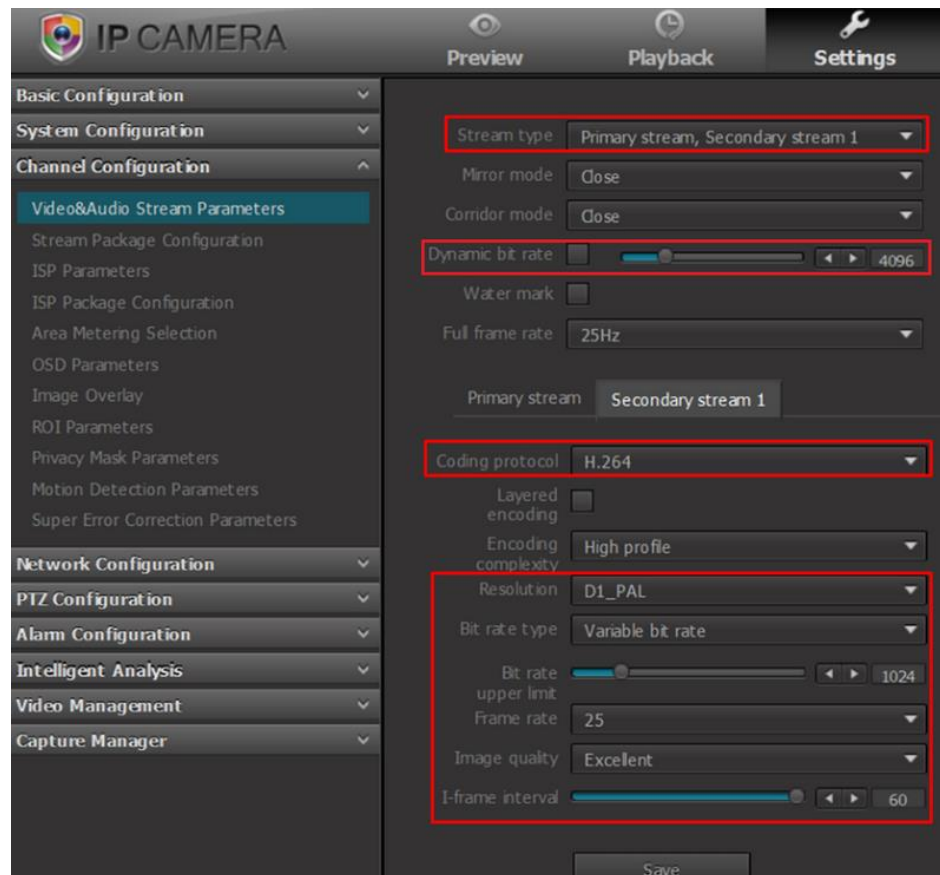


Figure 6-11 Setting secondary stream 1 parameters



----End

Follow-up Procedure

Commission the other cameras by referring to this section.

6.4.3.2 Commissioning IPC6325 Camera (SD Card Configured)

Context

If the VCN is not configured and an SD card is chosen, perform the following procedure.

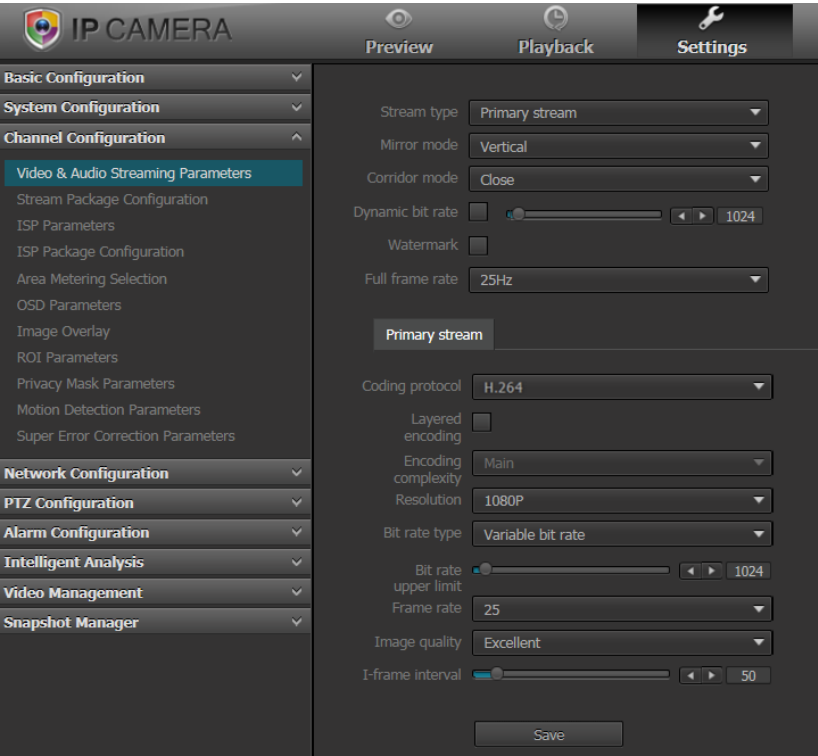
Procedure

Step 1 Format the SD card.

1. Choose **Settings > System Configuration > Storage Management**.
2. The **Storage Management** page is displayed. Format the SD card.

Step 2 Set the camera stream type and primary stream parameters.

Figure 6-12 Setting audio and video parameters



NOTE

If longer-time video storage is required, set camera parameters according to the following table.

Table 6-15 Camera configuration parameters

Condition				Result	
Coding Protocol	Resolution	Frame Rate	I-frame Interval	Minimum Required Bit Rate	Supported Video Storage Duration (h)
H.265	1080P	25	50	1M	66
H.264	1080P	25	50	1M	66
H.265	720P	25	50	0.8M	75
H.264	720P	25	50	1M	66
H.265	720P	25	50	0.6M	105
H.264	720P	25	50	0.8M	75

----End

6.4.4 Commissioning a Camera (Smart ETH Gateway Networking Scenario)

If the camera web version is IPC V200R003C00, refer to this topic to commission the camera.

6.4.4.1 Commissioning IPC6325 Cameras

Prerequisites

If multiple cameras are accessed, retain the connection of one camera and disconnect connections from other cameras. After commissioning the connected camera, commission other cameras in the same way.

Ensure that the camera has connected to the smart ETH gateway and the smart ETH gateway communicates properly with the ECC800.

Context

- The existing network is equipped with the ECC800 that supports the Dynamic Host Configuration Protocol (DHCP). After the ECC800 and IPC6325 camera are powered on, the IPC6325 camera automatically obtains an IP address that is in the same network segment as the ECC800 IP address.
- Before commissioning the IPC6325 camera, set the IP address for the IPC6325 camera based on customer requirements.
- Set the internal and external IP addresses as planned by the customer. The following IP addresses are just examples.

Table 6-16 IP address plan

Device	Internal IP Address	External IP Address
Camera	Example: 192.168.248.50; range: 192.168.248.50–192.168.248.199	Camera external IP address
VCN	Example: 192.168.248.55; range: 192.168.248.50–192.168.248.199	VCN external IP address

Procedure

Step 1 Connect a network cable between the PC network port and the LAN_1 port (protected by a security mechanism) on the ECC800.

Step 2 Set the IP address for the IPC6325 camera.

- Enter **https://192.168.248.10** in the address box of the browser and press **Enter** to access the WebUI login page. After login, choose **System Settings > Video Management**.
- Under the **Search for Video Device IP Address** list, click **Search**.

NOTE

- Configure the camera IP address and the IP address of the LAN port on the ECC800 in the same network segment.
- The search timeout interval is 10s. If the search fails, a search failure message is displayed.

- To avoid missing cameras, perform **Search** for multiple times.

Figure 6-13 Searching for the camera IP address

Select	ID	Name	External IP	Internal IP	Video Type	Link

Add Modify Delete

Search for Video Device IP Address

Search

Search Result

S/N	IP Address	MAC Address	Link (PC and LAN IP Addresses Should Be in the Same Network Segment)
1	192.168.248.59	F8:98:B9:11:DC:DE	https://192.168.248.59
2	192.168.248.112	00:E0:4C:98:43:94	https://192.168.248.112

3. Add the camera that has been found to **Video Information**. Click **Add** under the **Video Information** list, and enter the camera information in the displayed **New Video Information** window.
 - **Name:** Enter the camera name (for example, **Camera1**).
 - **External IP:** Enter the external IP address of the camera (The IP address assigned by the network administrator prevails).
 - **Internal IP:** Enter the internal IP address, that is, the found camera IP address: 192.168.248.50.
 - **Video Type:** Select the video type based on the customer's device.
 - **Link:** Enter the external IP address of the camera (for example, <https://external IP address of the camera>).

Figure 6-14 Adding video information

New Video Information

Name
A-Z, a-z, 0-9, #, @, ., -, *, ~, Chinese character (1-50 characters)

External IP

Internal IP 192.168.248.
(192.168.248.50~192.168.248.199)

Video Type

Link
255 characters in maximum (excluding ^, |, <, >, ~, *, &, %, (,), \).

Confirm

4. Select the required camera, and click the link under **Link** (PC IP address and camera external IP address should be in the same network segment) to access and log in to the camera WebUI. Enter the preset user name **admin** and preset password **HuaWei123**, and click **Login**.
5. (Optional) Choose **Settings > Basic Configuration > Network Parameters**, set **Way to obtain IP** to **Use the following IP address** and set an IP address to the planned IP address for the camera. The IP address should be in the range of 192.168.248.50 to 192.168.248.199.

Step 3 Click **Confirm** after video information is entered.

 NOTE

To perform [Step 2.5](#), return to the ECC800 **Video Management** page. In the **Video Information** area, select the camera added in [Step 2.3](#) and click **Modify**. In the displayed **New Video Information** dialog box, set **Internal IP** to the IP address planned in [Step 2.5](#), and click **Confirm**.

Step 4 In the **Video information** list, click a link address under **Link** to go to the camera WebUI as instructed.

Step 5 For details about how to commission IP cameras and set parameters for them, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section.

1. Preview the site situation in real time and check the camera coverage through videos. Adjust the lens if necessary.
2. (Optional) If you use the SD card when no VCM500 is configured, perform commissioning by following the instructions in [6.4.4.2 Commissioning IPC6325 Camera \(SD Card Configured\)](#).
3. Choose **Settings > Video/Audio/Image > Video Settings**, and set **IP address**, **Subnet mask**, and **Gateway IP address** for the camera according to the site plan.

NOTICE

Set coding protocol to H.265.

Figure 6-15 Setting primary stream parameters

Stream typePrimary,Secondary 1

Mirror modeDisable

Corridor modeDisable

Full frame rate25Hz

Watermark☐

Dynamic bit rate☐

51216384

4096

PrimarySecondary 1

Coding protocolH.265

Encoding complexityHigh profile

Resolution1920 * 1080

Bit rate typeVariable bit rate

Bit rate upper limit

51216384

4096

Frame rate25

Image qualityExcellent

I-frame interval

60

Layered encoding☐

Figure 6-16 Setting secondary stream 1 parameters

Stream type: Primary, Secondary 1

Mirror mode: Disable

Corridor mode: Disable

Full frame rate: 25Hz

Watermark: ☐

Dynamic bit rate: ☐ 512 16384 4096

Primary Secondary 1

Coding protocol: H.265

Encoding complexity: High profile

Resolution: 720 * 576

Bit rate type: Variable bit rate

Bit rate upper limit: 256 4096 1024

Frame rate: 25

Image quality: Excellent

I-frame interval: 1 500 60

Layered encoding: ☐

Enable area cropping: ☐

(Note: It's recommended to use area crop when the resolution is 720P or higher.)

----End

Follow-up Procedure

Commission the other cameras by referring to this section.

6.4.4.2 Commissioning IPC6325 Camera (SD Card Configured)

Context

If the VCN is not configured and an SD card is chosen, perform the following procedure.

Procedure

- Step 1** Log in to the Huawei IPC WebUI.
- Step 2** Format the SD card.
 1. Choose **Settings > System Configuration > Storage Management**.
 2. The **Storage Management** page is displayed. Format the SD card.
- Step 3** Set the camera stream type and primary stream parameters. Path: **Settings > Video/Audio/Image > Video Settings**.

Figure 6-17 Setting audio and video parameters

Stream type

Primary

Mirror mode

Vertical

Corridor mode

Disable

Full frame rate

25Hz

Watermark

☐

Dynamic bit rate

☐

512

16384

4096

Primary

Coding protocol

H.265

Encoding complexity

Main profile

Resolution

1920 * 1080

Bit rate type

Variable bit rate

Bit rate upper limit

512

16384

4096

Frame rate

25

Image quality

Excellent

I-frame interval

60

Layered encoding

☐

NOTE

If longer-time video storage is required, set camera parameters according to the following table.

Table 6-17 Camera configuration parameters

Condition				Result	
Coding Protocol	Resolution	Frame Rate	I-frame Interval	Minimum Required Bit Rate	Supported Video Storage Duration (h)
H.265	1080P	25	50	1M	66
H.264	1080P	25	50	1M	66
H.265	720P	25	50	0.8M	75
H.264	720P	25	50	1M	66
H.265	720P	25	50	0.6M	105
H.264	720P	25	50	0.8M	75

----End

6.4.5 Commissioning a Camera (LAN Switch Networking Scenario/Versions Earlier than IPC V200R003C00)

If the camera web version is earlier than IPC V200R003C00, commission the camera by referring to this topic.

6.4.5.1 Commissioning IPC6325 Cameras

Prerequisites

If multiple cameras are accessed, retain the connection of one camera and disconnect connections from other cameras. After commissioning the connected camera, commission other cameras in the same way.

Procedure

Step 1 Log in to the camera WebUI.

1. Configure the PC IP address and the camera IP address in the same network segment. Enter the camera IP address (192.168.0.120 by default) in the address bar of the Internet Explorer and press **Enter** button.

NOTE

The following lists the requirements of the operating system and browser for logging in to the camera through the WebUI.

- Support Windows 7: Internet Explorer 8/9/10/11, Chrome 32+, and FireFox 35–51
 - Support Windows 8: Internet Explorer 10/11, Chrome 32+, and FireFox 35–51
 - Support Windows 10: Internet Explorer 11, Chrome 32+, and FireFox 35–51
 - Google Chrome 45 or later versions need to install the Internet Explorer tab plug-in.
 - Only 32-bit web browsers are supported.
2. Enter the preset user name **admin** and the preset password **HuaWei123**, and click **Log In**.

Step 2 For details about how to commission IP cameras and set parameters for them, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section.

1. Preview the site situation in real time and check the camera coverage through videos. Adjust the lens if necessary.
2. Choose **Settings > Network Configuration > Network Parameters**, and set **IP address**, **Subnet mask**, and **Gateway IP address** for the camera according to the site plan.
3. Set camera stream type, primary stream, and secondary stream 1 parameters.

NOTICE

Set coding protocol to H.265.

Figure 6-18 Setting primary stream parameters

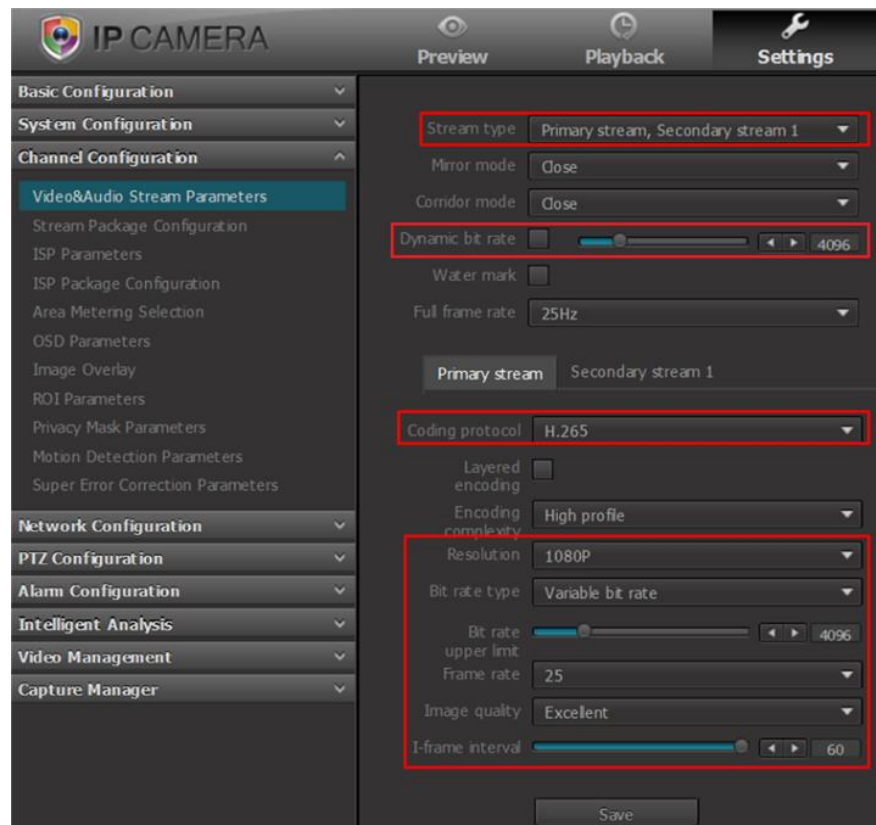
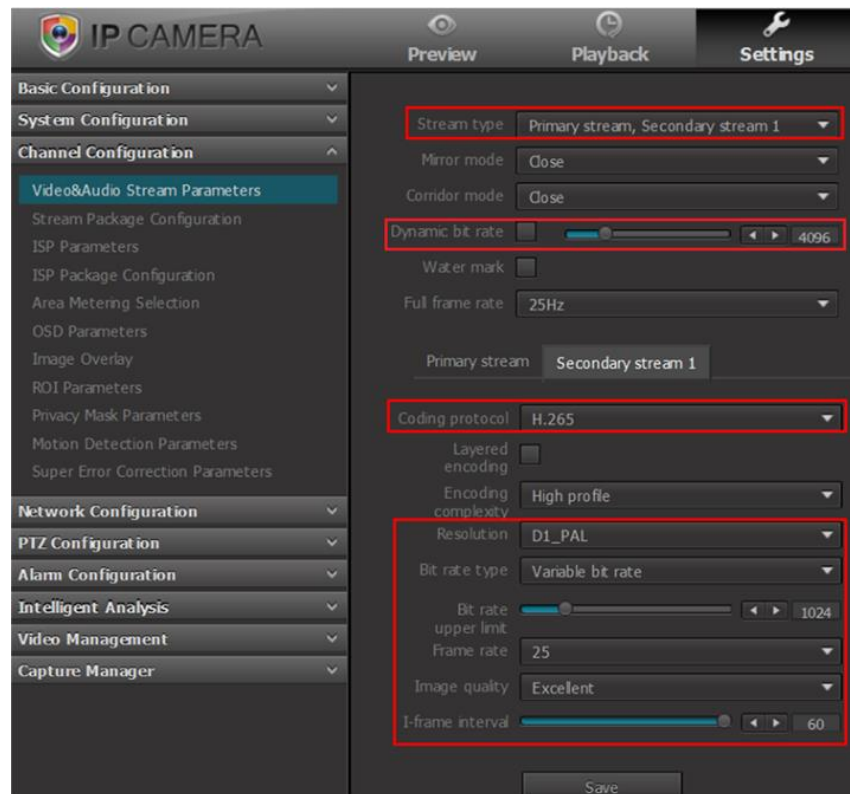


Figure 6-19 Setting secondary stream 1 parameters



----End

Follow-up Procedure

Commission the other cameras by referring to this section.

6.4.5.2 Commissioning IPC6325 Camera (SD Card Configured)

Context

If the VCN is not configured and an SD card is chosen, perform the following procedure.

Procedure

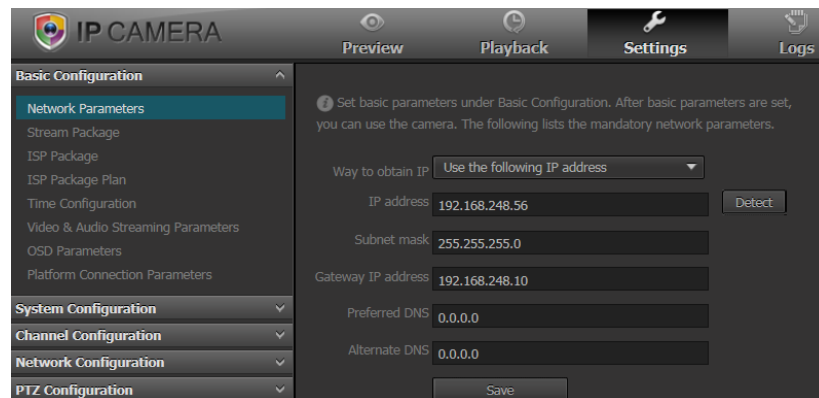
Step 1 Log in to the camera WebUI.

1. Configure the PC IP address and the camera IP address in the same network segment. Enter the camera IP address (192.168.0.120 by default) in the address bar of the Internet Explorer and press **Enter**.
2. Enter the preset user name **admin** and the preset password **HuaWei123**, and click **Log In**.

Step 2 For details about how to commission cameras and set parameters for them, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section.

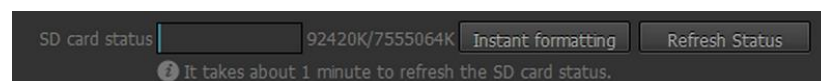
1. Preview the site situation in real time and check the camera coverage through videos. Adjust the lens if necessary.
2. Set **IP address**, **Subnet mask**, and **Gateway IP address** to the planned values.

Figure 6-20 Basic camera configuration



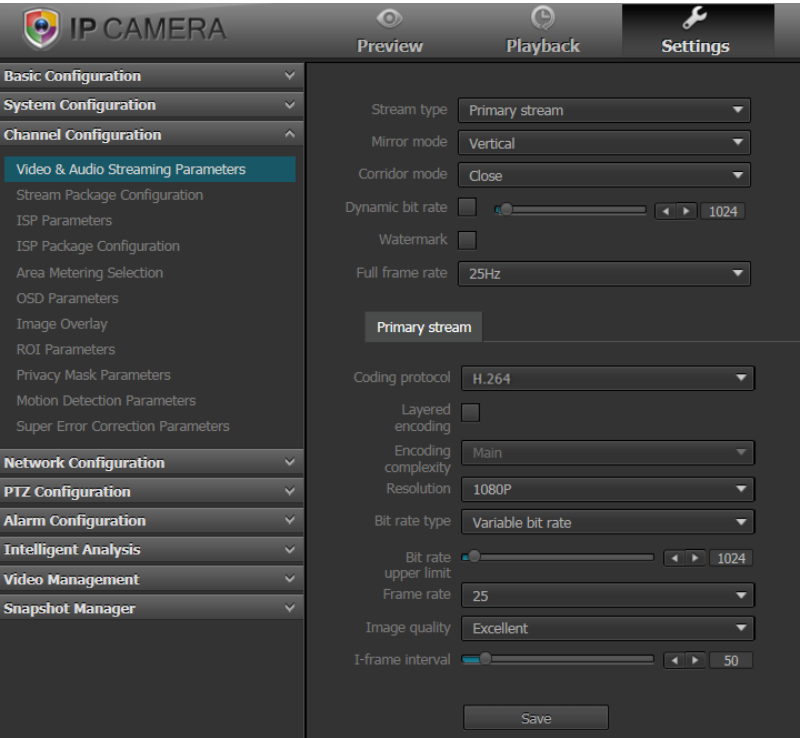
3. Format the SD card.
 - a. Choose **Settings > System Configuration > Storage Management**.
 - b. The **Storage Management** page is displayed, format the SD card.

Figure 6-21 Format the SD card



4. Set the camera stream type and primary stream parameters.

Figure 6-22 Setting audio and video parameters



NOTE

If longer-time video storage is required, set camera parameters according to the following table.

Table 6-18 Camera configuration parameters

Condition				Result	
Coding protocol	Resolution	Frame rate	I-frame interval	Minimum required bit rate	Supported video storage duration (h)
H.265	1080P	25	50	1M	66
H.264	1080P	25	50	1M	66
H.265	720P	25	50	0.8M	75
H.264	720P	25	50	1M	66
H.265	720P	25	50	0.6M	105
H.264	720P	25	50	0.8M	75

----End

6.4.6 Commissioning a Camera (LAN Switch Networking Scenario)

If the camera web version is IPC V200R003C00, refer to this topic to commission the camera.

6.4.6.1 Commissioning IPC6325 Cameras

Prerequisites

If multiple cameras are accessed, retain the connection of one camera and disconnect connections from other cameras. After commissioning the connected camera, commission other cameras in the same way.

Procedure

Step 1 Log in to the camera WebUI.

1. Configure the PC IP address and the camera IP address in the same network segment. Enter the camera IP address (192.168.0.120 by default) in the address bar of the Internet Explorer and press **Enter** button.

NOTE

The following lists the operating system and browser supported for logging in to the camera through the WebUI.

- Support Windows 7: Internet Explorer 8/9/10/11, Chrome 32+, and FireFox 35–51
 - Support Windows 8: Internet Explorer 10/11, Chrome 32+, and FireFox 35–51
 - Support Windows 10: Internet Explorer 11, Chrome 32+, and FireFox 35–51
 - Google Chrome 45 or later versions need to install the Internet Explorer tab plug-in.
 - Only 32-bit web browsers are supported.
2. Enter the preset user name **admin** and the preset password **HuaWei123**, and click **Log In**.

Step 2 For details about how to commission IP cameras and set parameters for them, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section.

1. Preview the site situation in real time and check the camera coverage through videos. Adjust the lens if necessary.
2. Choose **Settings > Network Configuration > Network Parameters**, and set **IPv4 address**, **IPv4 Subnet mask**, and **IPv4 Gateway address** for the camera according to the site plan.
3. Choose **Settings > Video/Audio/Image > Video Settings**, and set **IP address**, **Subnet mask**, and **Gateway IP address** for the camera according to the site plan.

NOTICE

Set coding protocol to H.265.

Figure 6-23 Setting primary stream parameters

Stream typePrimary,Secondary 1

Mirror modeDisable

Corridor modeDisable

Full frame rate25Hz

Watermark☐

Dynamic bit rate☐

51216384

4096

PrimarySecondary 1

Coding protocolH.265

Encoding complexityHigh profile

Resolution1920 * 1080

Bit rate typeVariable bit rate

Bit rate upper limit

51216384

4096

Frame rate25

Image qualityExcellent

I-frame interval

60

Layered encoding☐

Figure 6-24 Setting secondary stream 1 parameters

Stream type: Primary, Secondary 1

Mirror mode: Disable

Corridor mode: Disable

Full frame rate: 25Hz

Watermark: ☐

Dynamic bit rate: ☐ 512 16384 4096

Primary: Secondary 1

Coding protocol: H.265

Encoding complexity: High profile

Resolution: 720 * 576

Bit rate type: Variable bit rate

Bit rate upper limit: 256 4096 1024

Frame rate: 25

Image quality: Excellent

I-frame interval: 1 500 60

Layered encoding: ☐

Enable area cropping: ☐

(Note: It's recommended to use area crop when the

----End

Follow-up Procedure

Commission the other cameras by referring to this section.

6.4.6.2 Commissioning IPC6325 Camera (SD Card Configured)

Context

If the VCN is not configured and an SD card is chosen, perform the following procedure.

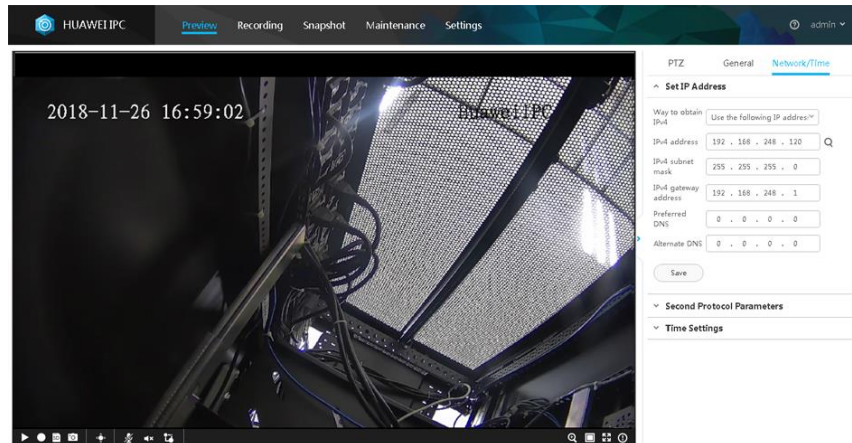
Procedure

Step 1 Log in to the camera WebUI.

1. Configure the PC IP address and the camera IP address in the same network segment. Enter the camera IP address (192.168.0.120 by default) in the address bar of the Internet Explorer and press **Enter**.
2. Enter the preset user name **admin** and the preset password **HuaWei123**, and click **Log In**.

- Step 2** For details about how to commission cameras and set parameters for them, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section.
1. Preview the site situation in real time and check the camera coverage through videos. Adjust the lens if necessary.
 2. Set **IPv4 address**, **IPv4 subnet mask**, and **IPv4 gateway address** to the planned values.

Figure 6-25 Basic camera configuration



3. Format the SD card.
 - a. Choose **Settings > System Configuration > Storage Management**.
 - b. The **Storage Management** page is displayed, format the SD card.
4. Set the camera stream type and primary stream parameters. Path: **Settings > Video/Audio/Image > Video Settings**.

Figure 6-26 Setting audio and video parameters

Stream type

Primary

Mirror mode

Vertical

Corridor mode

Disable

Full frame rate

25Hz

Watermark

☐

Dynamic bit rate

☐

512

16384

4096

Primary

Coding protocol

H.265

Encoding complexity

Main profile

Resolution

1920 * 1080

Bit rate type

Variable bit rate

Bit rate upper limit

512

16384

4096

Frame rate

25

Image quality

Excellent

I-frame interval

60

Layered encoding

☐

NOTE

If longer-time video storage is required, set camera parameters according to the following table.

Table 6-19 Camera configuration parameters

Condition				Result	
Coding protocol	Resolution	Frame rate	I-frame interval	Minimum required bit rate	Supported video storage duration (h)
H.265	1080P	25	50	1M	66
H.264	1080P	25	50	1M	66
H.265	720P	25	50	0.8M	75
H.264	720P	25	50	1M	66

Condition				Result	
Coding protocol	Resolution	Frame rate	I-frame interval	Minimum required bit rate	Supported video storage duration (h)
H.265	720P	25	50	0.6M	105
H.264	720P	25	50	0.8M	75

----End

6.4.7 Setting Parameters on the VCN WebUI

Prerequisites

For details about the VCN hardware description and installation, see the "Hardware Guide" in the corresponding VCN product documentation. For details about the VCN configuration, see *Configuration Guide*.

NOTE

The version number is subject to the *Quick Start* delivered with the VCN. The description and link in this document are for reference only.

Context

A default IP address has been configured for the VCN before delivery. Modify the IP address based on the actual network plan.

Procedure

Step 1 Modify the IP address for the VCN.

1. Configure the PC IP address and the VCN IP address in the same network segment. Enter the OMU Portal address (the default address for VCN is <https://192.168.1.100:8443>; the default address for VCN540 is <https://192.168.2.101:8443>) in the address bar of the Internet Explorer and press the **Enter** button.

NOTE

The OMU Portal supports Internet Explorer 8.0 and later versions.

2. On the login page, enter the user name **Admin** and preset password **Change_Me**, and click **Log In** to enter the OMU Portal page.

NOTE

After the first login, change the password in time to ensure account security and prevent unauthorized network attacks, such as data tampering. Huawei will not be liable for any security issues caused by your failure to change the preset password in time or password loss after changing.

3. Choose **Local Configuration > Server configuration**. Set the service IP address (internal IP address of the VCN), NAT IP address (external IP address of the VCN), time zone, and time according to the site requirements.

Figure 6-27 Configuring the server

NOTE

- Set **Business IP** to XXX.XXX.XXX.XXX, **Subnet mask** to 255.255.254.0, **Gateway IP** to XXX.XXX.XXX.XXX. The values here are examples. The actual values prevail.
 - Set **NAT IP** to **VCN external IP address**, which is the same as the external IP address mapped from the VCN internal IP address displayed on the ECC800.
4. Configure the NTP synchronization. After setting **The NTP clock source server** to **Yes**, set the IP address of the NTP server.

NOTE

The server that connects to cameras needs to enable the camera NTP synchronization function. For the detailed operations, see [Step 2](#).

Step 2 Enabling camera NTP synchronization.

The camera NTP synchronization function for the server is disabled by default. The camera NTP synchronization function needs to be enabled for the server that connects to cameras. After the camera NTP synchronization function is enabled, cameras will automatically time-synchronize from their access servers.

- Log in to the OMU portal of the VCN as the Admin user.
- Choose **Maintenance > Unified Configuration**.
- Select the server that the camera needs to access, set **Module name** to **SCU** and **Parameter type** to **System property**, and click **Search**.

Figure 6-28 Configuring Camera NTP Synchronization

Module Name	Restart	Parameter type	Parameter Name	Description	Value	Value Limit	Remarks	Operation
SCU	No	System property	FTZControlTime	FTZ lock time	300	The value is	The default	Edit Copy
SCU	No	System property	FTZLongFacTime	A wireless FTZ	30	A positive is	Unit: second	Edit Copy
SCU	Yes	System property	NTPPC	Whether to use	0	The value 0 is	Default: 0, 1	Edit Copy
SCU	No	System property	FTZLongFacTime	String length	true	The value is	Complexity	Edit Copy

- In the search results, click **Edit** in the row where **Parameter Name** is **NTPIPC** and set **Value** to 1.
- Click **Save**. After the camera NTP synchronization function is enabled, the camera, after being connected to the server, will automatically time-synchronize with the server.

----End

Follow-up Procedure

- The VCN automatically restarts after the IP address is modified. The restart takes about 5 minutes. After the restart, use the new IP address to access the VCN.
- Change the PC IP address to an address in the network segment of the new VCN IP address, enter the VCN IP address in the address box of the Internet browser, and log in to the OMU Portal system.
- (Optional) Deploying IVS in Stack Mode. For details, log in to the <https://e.huawei.com/>, search for the VCN product documentation, open the documentation, and see the section **(Optional) Deploying IVS in Stack Mode**.
- (Optional) Deploying MPUs in Cluster Mode. For details, log in to the <https://e.huawei.com/>, search for the VCN product documentation, open the documentation, and see the section **(Optional) Deploying MPUs in Cluster Mode**.

NOTE

For the VCN500, search for **VCN500 Product Documentation**. For the VCN540, search for **VCN510&VCN520&VCN540 Product Documentation**.

6.4.8 Setting Parameters on the VCN IVS Client

Prerequisites

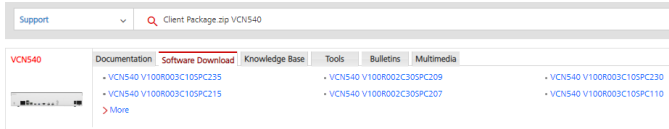
The network communication between the VCN and the camera is normal.

Procedure

Step 1 Install the VCN IVS client.

1. Download the VCN IVS client.

You can obtain the VCN IVS in either of the following ways:

Method 1	Obtain the HW_IVS_Client.exe file from the software CD-ROM delivered with the VCN.
Method 2	1. Log in to the VCN OMU Portal, choose Local Configuration > Basic Configuration, and view Current version. 2. Log in to https://support.huawei.com/enterprise/, and search for Client Package.zip followed by the VCN model (Client Package.zip VCN540 for example). In the search result, click the Software Download tab, click the version and patch number corresponding to the current version, and download the Client Package.zip software package. Figure 6-29 Client Package search result 

2. Double-click **HW_IVS_Client.exe**, adopt the default installation mode, and wait until the installation is complete.

- Double-click the client program and on the login page, enter the user name **Admin** and preset password **Change_Me**, and set **Server address** to the actual service IP address (VCN IP address) and **Port** to 9900.

NOTE

If the VCN IVS and VCN are deployed in the same LAN, set **Server IP address** to the VCN internal IP address (192.168.248.55, for example). If the VCN IVS is on an extranet and the VCN is on a LAN, set **Server IP address** to the VCN external IP address.

NOTE

If the VCN software version is V100R003 or later, the default user name is **admin**.

If the VCN software version is V100R002 or earlier, the default user name is **Admin**.

- Click **Log In** to access the client home page.

NOTE

After the first login, change the password in time to ensure account security and prevent unauthorized network attacks, such as data tampering. Huawei will not be liable for any security issues caused by your failure to change the preset password in time or password loss after changing.

Step 2 Add a camera. For details, see the documentation delivered with the equipment or obtain the documentation by referring to the "Preparing Documentation" section. View the corresponding section.

NOTE

The IPC6325 camera is driven by the HWSKD protocol.

- In the **Quick Setup** area on the VCN IVS home page, double-click **Add Camera**.
- Click + in the lower left corner on the **Search criteria** page, setting the parameters according to the following table, and click **Next**.

Table 6-20 Setting search criteria

Item	Value
Start IP Address and End IP Address	IP address range
Drive	HWSKD
Access domain	Select the domain that cameras need to access
Mount Server	Select the server that cameras need to access

NOTE

There are multiple VCNs for multiple smart modules, you are advised to evenly distribute the cameras to each VCN.

- Click **Search**, in each camera record, enter the user name and password in the text boxes and click **Verify**. If the camera is verified successfully, select cameras to add and click **Next**.
- Preview live video images, click the camera in the camera list on the left, and adjust camera parameters to optimize the image effect. Then click **Next**.
- (Optional) Group the cameras and click **Next** after grouping.
- Click **Finish** to finish adding a camera.

Step 3 Configuring a Video Recording Plan.

1. In the **Quick Setup** area on the VCN IVS home page, double-click **Server Recording Plan**.
2. Select the camera on the **Cameras** list and click **Next**.
3. (Optional) Set recording parameters, and click **Next**.
4. Set recording plan parameters in the **Time settings**. Drag the timeline to select the time segment for implementing video recording.

NOTE

If you set the recording plan policy is to **All**, you do not need to set the recording plan time.

5. Click **Next** to complete the recording plan setting. When  is displayed in the status bar, the recording plan has been set successfully.
6. Click **Finish**.

Step 4 Create a user.

When connecting to the VCN on the NetEco, you need to log in to the VCN as a non-admin user.

1. Log in to the VCN IVS as user Admin.

NOTE

If the VCN software version is V100R003 or later, the default user name is **admin**.

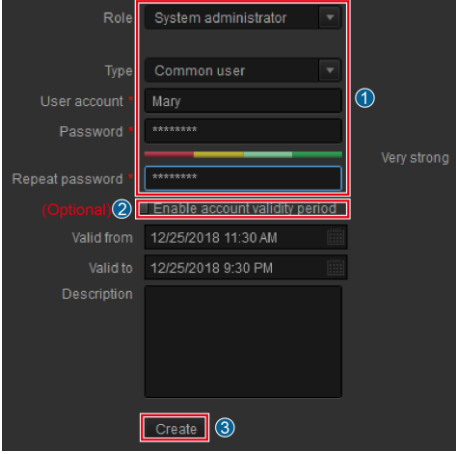
If the VCN software version is V100R002 or earlier, the default user name is **Admin**.

2. On the VCN IVS home page, double-click **Add User**, create a user, and click **Next**. The **Assign Rights** page is displayed.

NOTE

When creating a user, you can select **Enable account validity period** and set **Valid from** and **Valid to** to set the account validity period for the created user.

Figure 6-30 Creating a user



3. Set **Multi-point logins** to a value greater than 2.
4. In the **Assign Device View Rights** area, select the cameras to be browsed and queried by the user. Set other parameters based on the documentation delivered with the equipment

or the documentation obtained by referring to the **Preparing Documentation** section, and click **Finish**.

----End

6.5 Fire Linkage

Prerequisites

- You have obtained the IP address of the ECC800 as well as the user name and password used for WebUI login.
- A PC with an IP address in the same network segment as that of the ECC800 is prepared, and the PC has connected to port WAN_1 on the ECC800.
- Ensure that **Enable linkage control function** is **Yes**.

Context

- The ECC800 can generate an alarm using the multi-functional sensor or smoke sensor in the aisle. This alarm, however, cannot be used to trigger the customer's fire extinguishing system.
- When detecting fire alarms through the fire controller, the ECC800 opens the skylights to facilitate fire control, opens the aisle access control system and turns on the lighting to facilitate escape, and shuts down smart cooling products to prevent the fire from spreading due to air supply.

NOTE

An active dry contact signal of the customer's fire extinguishing system cannot be connected to the ECC800 AI/DI port.

- The default status of fire control linkage is **off**. Set it based on the actual situation.
- Shutting down the smart cooling product by fire linkage is used as an example. Refer to this section for details about opening the skylight, unlocking the aisle access control, and turning on the lighting system by fire linkage.
- In this example, the fire controller connects to port AI/DI_6. The actual port prevails.

Linkage Grouping

Table 6-21 Linkage grouping

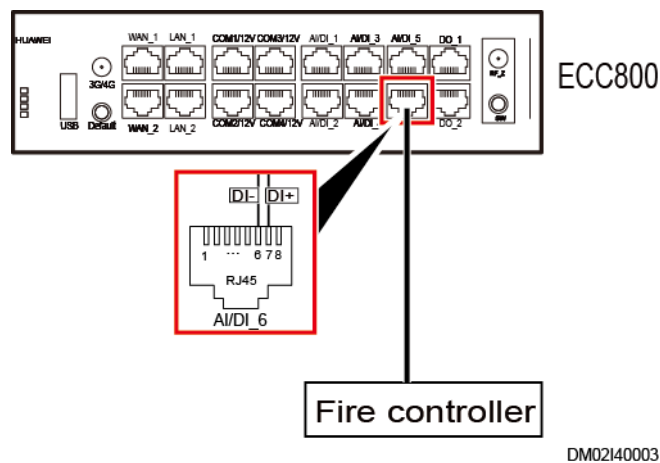
Linkage Category	Default Status	Function
• Link smoke alarm with skylight open • Link smoke alarm with door open	on	If a smoke alarm is raised, the smart module opens the skylights and access control by default.
• Link smoke alarm with air conditioner off • Link smoke alarm with light turn on ^a	off	If this linkage status is set to on and a smoke alarm is raised, the smart cooling products turn off or lights turn on automatically.

Linkage Category	Default Status	Function
Intelligent lighting ^a	off	If this linkage status is set to on , the camera detects human motion, and an infrared alarm is raised, the aisle lights turn on automatically.
- Link fire control with skylight open - Link fire control with door open - Link fire control with light turn on ^a - Link fire control with air conditioner off	off	If you set this linkage status to on and a fire occurs in the smart module, the skylights open, lights turn on, and the access control opens automatically, or the smart cooling products turn off automatically.
a: To link Link smoke alarm with light turn on, Intelligent lighting, and Link fire control with light turn on, set Monitoring > Aisle > AC Actuator Group > AC Actuator > Set light mode to Automatic on the WebUI.		

Procedure

Step 1 Install cables between the fire controller and ECC800.

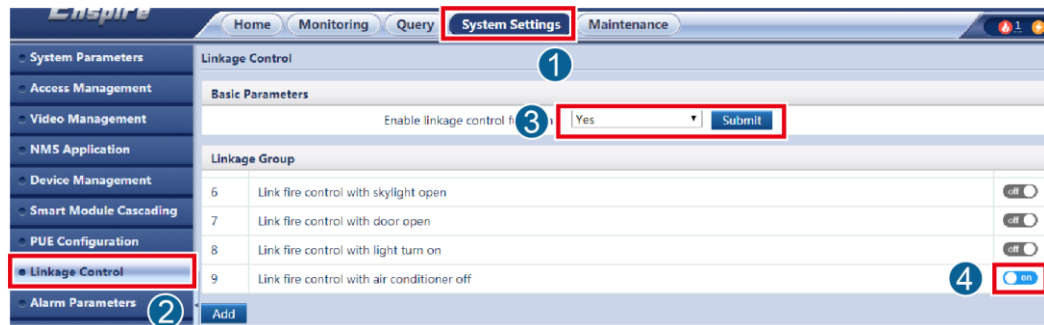
Figure 6-31 Installing cables between the fire controller and ECC800



Step 2 Log in to the ECC800 WebUI as an administrator.

Step 3 Set the **Linkage Group** status.

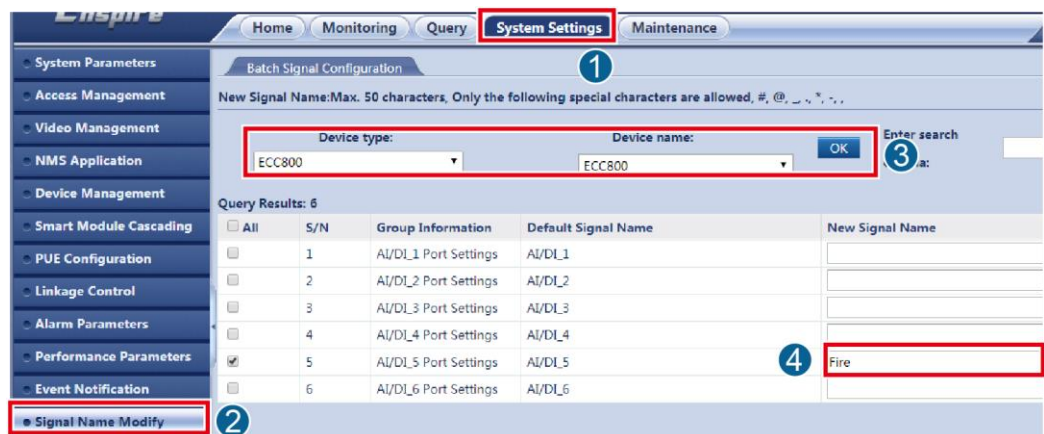
Figure 6-32 Setting the Linkage Group status

**NOTE**

Select **Link fire control with smart cooling product off** under **Linkage Group**. If its value is **on**, the corresponding logic configurations under **Linkage Logic List** are available. If its value is **off**, the corresponding logic configurations under **Linkage Logic List** are unavailable.

Step 4 Modify the AI/DI_6 signal name and click **Submit**.

Figure 6-33 Modifying a signal name



Step 5 Enable the AI/DI device.

1. Choose **Monitoring > System > ECC800 > Running Parameters > AI/DI_6 Port Settings**.
2. Select **Fire sensor** to **Enable**, and click **Submit**, then enter the AI/DI_6 port settings page.
3. Select **Fire sensor type** and set it to **Normal Open** or **Normal Close** as required.

NOTE

After the corresponding AI/DI device is enabled, the AI/DI device type must be consistent with the DO state.

Table 6-22 Fire sensor NO and NC definitions

Item	Definition
NO	Dry contact signal for the fire sensor abnormality alarm. Closed: alarm; open: normal
NC	Dry contact signal for the fire sensor abnormality alarm. Closed: normal; open: alarm

4. Ensure that **Fire power supply** is set to **No**.
5. Click **Submit**.

----End

Follow-up Procedure

After the alarm has been cleared when fire control linkage or smoke alarm linkage occurs, perform the following operations:

- Close the skylights manually.
- Start the smart cooling products manually.
- Set **Set light mode** of the AC actuator to **Automatic**. WebUI path: **Monitoring > Aisle > AC Actuator Group > AC Actuator**.

6.6 PUE Configuration

The PUE configuration mode can be set to **Standard** and **User-defined** on the ECC800 WebUI. You can enable PUE functions and select a PUE configuration mode based on requirements.

NOTE

If the device electrical energy cannot be collected, disable the PUE function for the scenarios where the PUE calculation condition is not met, for example, the smart cooling product is powered by the wall-mounted PDB.

Feature Description

- Supports user-defined settings of the PUE and power consumption on the ECC800 WebUI.
- Synchronizes the PUE and power consumption calculated by the ECC800 from the WebUI to the app, and displays the data on the app screen.
- The ECC800 connects to the NetEco over a northbound port and can upload the calculated PUE and power consumption data to the NetEco.

PUE Calculation Formula

NOTE

The PUE ranges from 1 to 3. If the PUE value is greater than or equal to 3, the value is displayed as 3. When the PUE value is 1, it is invalid.

Table 6-23 PUE calculation formula

Configuration Mode	PUE Calculation Method
Standard	PUE = Increment in total system input electrical energy/Increment in total electrical energy of system IT load output
User-defined	PUE = Increment in total active electrical energy of device input/Increment in total energy consumption of IT load output
NOTE When the configuration mode is set to Standard , the ECC800 can automatically calculate the PUE of multiple devices connected in the N+1 and 2N scenarios.	

6.6.1 Configuring PUE Standard Mode

Procedure

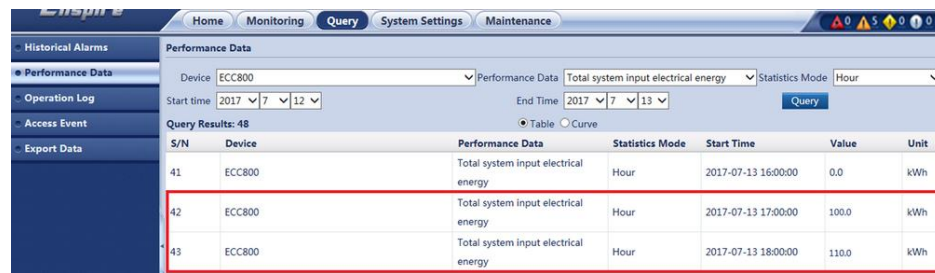
- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > PUE Configuration**.
- Step 3** Set **PUE function** to **Enable**.
- Step 4** Set the **PUE configuration mode** to **Standard**, and click **Submit**.
- Step 5** View the PUE. Choose **Query > Performance Data** and set **Device** to **ECC800** from the drop-down list box. For other searching criteria such as **Performance data**, **Statistics mode**, **Start time**, and **End time**, select the item based on requirements and click **Query**. You can also view the PUE in the dashboard or curve on the home page.

----End

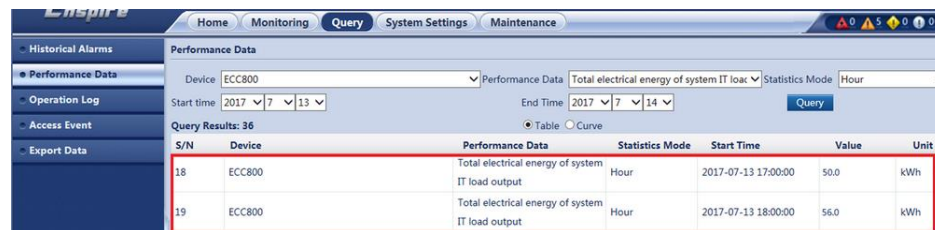
Example of PUE Calculation

In this example, the PUE is calculated on the basis of the start time 17:00 and end time 18:00.

1. Choose **Query > Performance Data**.
2. Set **Device** to **ECC800**, **Performance data** to **Total system input electrical energy**, and **Statistics Mode** to **Hour**, set other query criteria such as **Start time** and **End Time** as required, and click **Query**. Record the increment in total system input electrical energy of the ECC800. Increment in total system input electrical energy = 110.0 kWh – 100.0 kWh = 10.0 kWh.

Figure 6-34 Querying the total system input electrical energy

- Set **Device** to **ECC800**, **Performance data** to **Total electrical energy of system IT load output**, and **Statistics mode** to **Hour**, set other query criteria such as **Start time** and **End time** as required, and click **Query**. Record the increment in total electrical energy of system IT load output of the ECC800. Increment in total electrical energy of system IT load output = 56.0 kWh – 50.0 kWh = 6.0 kWh.

Figure 6-35 Querying the total electrical energy of system IT load output

- Calculate the PUE of the smart module. $PUE = \text{Increment in total system input electrical energy} / \text{Increment in total electrical energy of system IT load output} = 10.0 \text{ kWh} / 6.0 \text{ kWh} = 1.67$.

6.6.2 Configuring PUE User-defined Mode

Context

This section describes how to configure PUE for the integrated PDC connected.

The functions of configuration buttons for the PUE user-defined mode are described as follows.

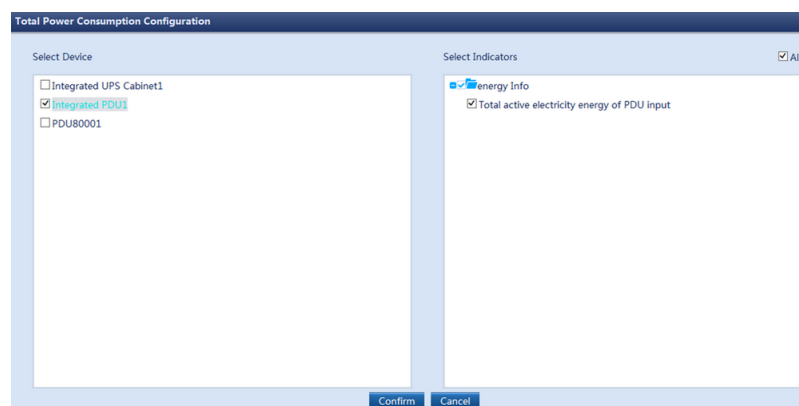
Table 6-24 PUE configuration buttons

No.	Button	Description
1	Add	Adds new total power consumption or IT power consumption parameters.
2	Delete	Deletes a parameter setting for the total power consumption or IT power consumption.

Procedure

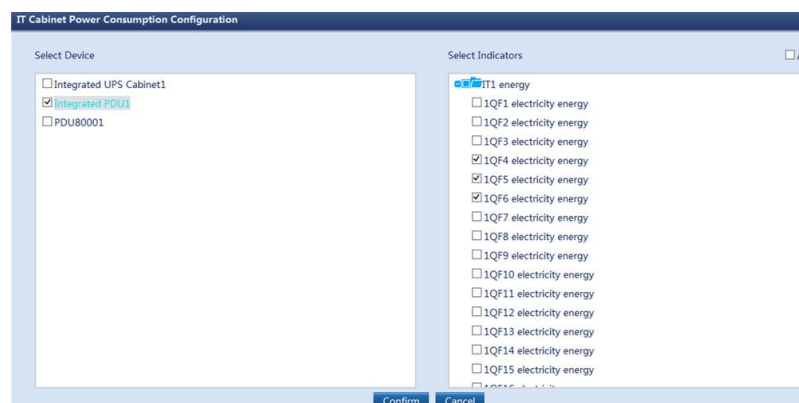
- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > PUE Configuration**.
- Step 3** Ensure that **PUE function** is set to **Enable**.
- Step 4** Set **PUE configuration mode** to **User-defined**, and click **Submit**.
1. On the **Total Power Consumption Configuration** tab page, click **Add** to enter the **Total Power Consumption Configuration** page. On the **Select Device** tab page, select **Integrated PDU 1**. On the **Select Indicators** tab page, select **Total active electricity energy of PDU input**, and click **Confirm**.

Figure 6-36 Total power consumption configuration



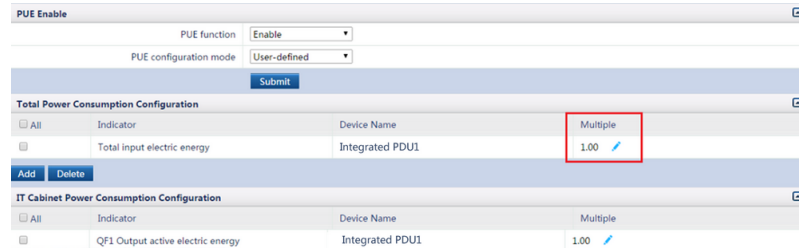
2. On the **IT Cabinet Power Consumption Configuration** tab page, click **Add** to enter the **IT Cabinet Power Consumption Configuration** page. On the **Select Device** tab page, select **Integrated PDU1** and on the **Select Indicators** tab page, select **1QF4 electricity energy**, **1QF5 electricity energy**, and **1QF6 electricity energy**, and click **Confirm**.

Figure 6-37 IT cabinet power consumption configuration



3. Under **Total Power Consumption Configuration** and **IT Cabinet Power Consumption Configuration**, click the edit icon on the right to modify the multiple for calculating indicators, as shown in [Figure 6-38](#).

Figure 6-38 Editing a multiple



NOTE

- The multiple ranges from 0.01 to 4.99, with two significant digits. The default value is 1.00.
- The multiple is configured for slightly adjusting the calculated PUE, ensuring that the calculated PUE is as close as possible to the actual PUE.

Step 5 Calculate the PUE of the smart module. $PUE = (\text{Increment in the total active electricity energy of the device input}) / (\text{Increment in the total power consumption of the branch IT load output})$

NOTE

Performance data source: The ECC800 obtains total electricity energy of branches from the power distribution devices.

Step 6 You can also view the PUE in the dashboard or **PUE Chart** on the home page.

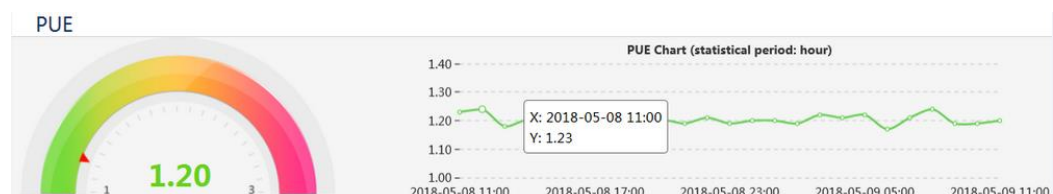
----End

6.6.3 Viewing PUE Data

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **Home** > **Plan View** to view real-time PUE data.

Figure 6-39 Viewing real-time PUE data



Step 3 Choose **Query** > **Performance Data** to view historical PUE data.

1. Choose **Device**, **Performance data**, **Start time**, **End Time**, and the display mode (table or curve) of the PUE parameter as required.

2. Click **Query**.**NOTE**

- The 17:00:00 data includes the data from 17:00:00 to 18:00:00.
- If the query time is between 18:00:00 and 19:00:00 and the time has not arrived at 19:00:00 yet, then the displayed time is 18:00:00 and the data includes the data from 18:00:00 to the query time.

Figure 6-40 Viewing historical PUE data

S/N	Device	Performance Data	Statistics Mode	Start Time	Value
1	ECC800	PUE (hour)	Hour	2018-05-08 00:00:00	1.23
2	ECC800	PUE (hour)	Hour	2018-05-08 01:00:00	1.22
3	ECC800	PUE (hour)	Hour	2018-05-08 02:00:00	1.23
4	ECC800	PUE (hour)	Hour	2018-05-08 03:00:00	1.24
5	ECC800	PUE (hour)	Hour	2018-05-08 04:00:00	1.24
6	ECC800	PUE (hour)	Hour	2018-05-08 05:00:00	1.24
7	ECC800	PUE (hour)	Hour	2018-05-08 06:00:00	1.24
8	ECC800	PUE (hour)	Hour	2018-05-08 07:00:00	1.24
9	ECC800	PUE (hour)	Hour	2018-05-08 08:00:00	1.22
10	ECC800	PUE (hour)	Hour	2018-05-08 09:00:00	1.23
11	ECC800	PUE (hour)	Hour	2018-05-08 10:00:00	1.23
12	ECC800	PUE (hour)	Hour	2018-05-08 11:00:00	1.24
13	ECC800	PUE (hour)	Hour	2018-05-08 12:00:00	1.18
14	ECC800	PUE (hour)	Hour	2018-05-08 13:00:00	1.20
15	ECC800	PUE (hour)	Hour	2018-05-08 14:00:00	1.15
16	ECC800	PUE (hour)	Hour	2018-05-08 15:00:00	1.18
17	ECC800	PUE (hour)	Hour	2018-05-08 16:00:00	1.18
18	ECC800	PUE (hour)	Hour	2018-05-08 17:00:00	1.15
19	ECC800	PUE (hour)	Hour	2018-05-08 18:00:00	1.15

----End

6.7 Power Management

6.7.1 Configuring Power Management Parameters

Prerequisites

- Power distribution devices (such as the integrated UPS, integrated PDF and precision PDC) are successfully connected to the ECC800.
- The smart module plan view has been created.

Context

IT cabinets, network cabinets, and smart cooling products support power management. The ECC800 connected to an IT cabinet is used as an example in this section.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Choose **Home > Plan View > Modify Device** and click **Apply Power Distribution Standard Configuration** to use the default configuration to configure electricity for devices

in the smart module. The following scenarios support the function of applying default electricity configuration:

- N+1 scenario: The system has only one power distribution cabinet and is working in single-power supply mode.
- 2N non-isolation scenario: The system has only one power distribution cabinet and is working in dual-power supply mode.
- 2N isolation scenario: The system has two power distribution cabinets and is working in single-power supply mode.

NOTE

For details about the power distribution solution, refer to the power distribution wiring diagram supplied with the product.

Step 3 Double-click a network cabinet to access the **Basic Configuration** page.

Step 4 Check whether the branch information in **Apply Power Distribution Standard Configuration** is consistent with the actual situation, and set electricity configuration parameters such as **Device Name**, **Cabinet height**, **Power system**, **Number of power supplies**, and **Rated cabinet power** as required.

NOTE

The settings in the following table are used as examples to describe the basic configuration.

Table 6-25 Basic configuration

Parameter		Setting	Description
Device Name		IT Cabinet 101	Set based on the actual device name.
Cabinet height		42	U space quantity of the cabinet.
Power Distribution Parameter Settings	Power system	Single-phase	Set single-phase or three-phase based on the actual power supply.
	Number of power supplies	2	rPDU quantity.
	Rated cabinet power	6.00	Set based on the actual rated power of the cabinet.
rPDU-A01		PDU80001 > 1QF1(L1)	Select a power distribution device and power distribution branch for the rPDU numbered rPDU-A01 in the cabinet.
rPDU-B01		PDU80001 > 2QF1(L1)	Select a power distribution device and power distribution branch for the rPDU numbered rPDU-B01 in the cabinet.
Branch auto-fill mode		• Ascending order • Descending order	• If the branch for the first cabinet is 1QF1(L1), 2QF1(L1), the branches for

Parameter	Setting	Description
		subsequent cabinets are 1QF2(L2) , 2QF2(L2) , and the like. • If the branch for the first cabinet is 1QF10(L1), 2QF10(L1), the branches for subsequent cabinets are 1QF9(L3), 2QF9(L3), and the like.

Figure 6-41 Power configuration

The screenshot shows the 'Basic Configuration' window with the following settings:

- Device Name:** IT Cabinet101 (with a hint: A-Z, a-z, 0-9, #, @, ., -, *, ~, Chinese character (max. length: 50 characters))
- Cabinet height:** 42 U (6~64)
- ☐ Apply to all cabinets
- Power Distribution Parameter Settings:**
 - Power system:** Single-phase
 - Number of power supplies:** 2
 - Rated cabinet power:** 6.00 kW (0.00~21.00)
 - ☐ Apply to all cabinets
 - rPDU-A01:** PDU80001, 1QF1 (L1)
 - rPDU-B01:** PDU80001, 2QF1 (L1)

At the bottom are buttons: Cancel, Previous, Next, and Finish.

NOTE

- If **Apply to all cabinets** is selected, all other cabinets use this configuration.

- If **Clear the power distribution configuration of all cabinets** is selected, the power distribution configuration of all cabinets will be cleared.

Step 5 Click **Finish** after checking that electricity has been configured for all IT cabinets, network cabinets, and smart cooling products.

NOTE

The electricity needs to be configured manually for the devices that are not in the default electricity configuration range based on the actual situation. Take lighting power supply for example. Choose **Monitoring > Power Distribution > General Input Unit1 > Power Distribution Unit > Running Parameters > Branch Output Configuration**, and set **Branch Output Configuration** to **LED** based on the actual cable connection. Select the branch output configuration and set corresponding parameters for other power distribution devices based on the actual cable connection.

Step 6 Click **Exit Edit Mode** to exit the view editing page of the smart module.

Step 7 Choose **Monitoring > Cabinet**, and set **Cabinet load factor overhigh alarm threshold** (default value: 90) on the **Running Parameters** page. If the default value is used, an alarm will be raised when the power load factor of the power distribution devices in the smart module exceeds 90%.

NOTE

The alarm hysteresis is 5% by default. That is, if the cabinet load factor overhigh alarm threshold is 90%, the raised alarm will be cleared when the load factor drops to a value smaller than 85%.

----End

6.7.2 Querying Power Parameters

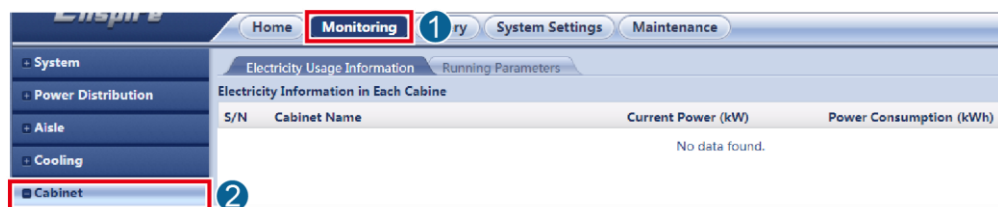
Prerequisites

Power distribution devices are successfully connected to the ECC800.

Procedure

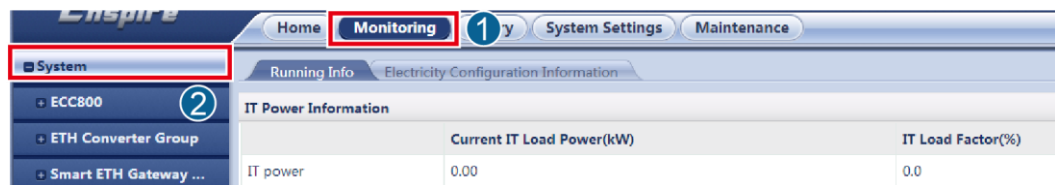
- Step 1** Log in to the ECC800 WebUI as the administrator.
- Step 2** Query the power usage information about each cabinet, such as the power (kW), power consumption (kWh), and load factor (%).

Figure 6-42 Power usage information



Step 3 View the IT power information about the smart module.

Figure 6-43 Viewing IT power information



Step 4 Choose **Home** > **Plan View**. In the **PUE** area, you can view the transient mPUE.

NOTE

- Transient mPUE = Total input power/Total IT power of the smart module. For example, if a PDU8000 with the total input power of 5 kW connects to the smart module, whose total IT power is 3.6 kW, the transient mPUE = 5 kW/3.6 kW = 1.39.
- If the power management is not configured, the PUE area in **Plan View** displays the average PUE.

----End

6.8 Cooling Capacity Management

6.8.1 Setting Cooling Capacity Management Parameters

Prerequisites

- All smart cooling products communicate with the ECC800 properly.
- The electricity management configuration is complete, and the IT cabinet power statistics are normal.
- The number of smart cooling products (number of started smart cooling products) with the valid maximum cooling capacity received by the ECC800 is greater than or equal to the **Number of running air conditioners in this group** in Teamwork settings of smart cooling products.

Context

- Only for water cooled smart cooling product.
- After the smart cooling product is successfully connected to the ECC800, the **cooling capacity management function** is **enabled** by default.
- The cooling capacity of the chilled water smart cooling products in the smart module can be managed by collecting the running parameters of the chilled water smart cooling products and using the smart module electricity management function.

Procedure

Step 1 Log in to the ECC800 WebUI as the administrator.

Step 2 Choose **Monitoring** > **Cooling** > **Running Parameters** to access the **Temperature and Humidity Parameters** page. Check whether **Temperature and humidity control** type is **Cold-aisle**.

- Step 3** Choose **Monitoring > Cooling > Running Parameters** to access the **Running Parameters** page. Set **Number of redundant air conditioners** and **Local yearly highest temperature** as required and tap Submit.

Figure 6-44 Setting running parameters

☐ All	Signal Name	Signal Value	Remarks
☐	Number of redundant air conditioners	0 - +	(0~8)
☐	Local yearly highest temperature	35.0 - +	°C (-50.0~150.0)

Submit Restore

- Step 4** Choose **Monitoring > Cooling > Running Parameters**. In the **Cooling Capacity Management** area, set the parameters related to cooling capacity management for the watercooled smart cooling product, such as the target cooling load factor and recommended supplywater temperature statistics cycle.

Figure 6-45 Setting cooling capacity management parameters

☐ All	Signal Name	Signal Value	Remarks
☐	Minimum supply water temperature	7 - +	°C (7~19)
☐	Maximum supply water temperature	19 - +	°C (7~19)
☐	Temperature difference between supply and return water	5 - +	°C (5~7)
☐	Target cooling load factor	90 - +	% (50~90)
☐	Recommended supply water temperature statistics cycle	Day ▼	

Submit Restore

----End

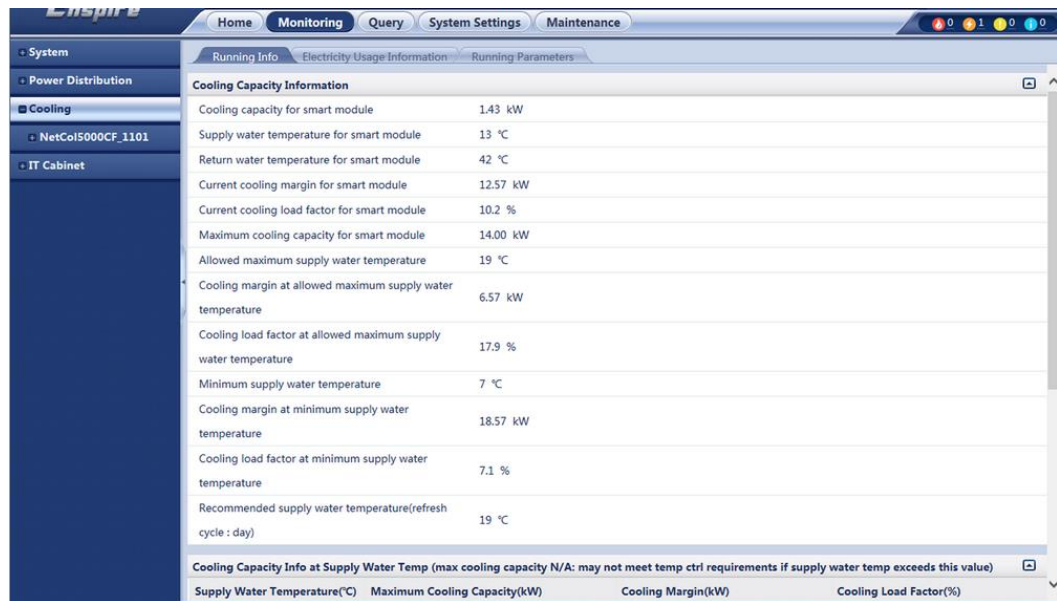
6.8.2 Querying Cooling Capacity Parameters

Prerequisites

The chilled water smart cooling product is successfully connected to the ECC800.

Procedure

- Step 1** Log in to the ECC800 WebUI as the administrator.
- Step 2** Choose **Monitoring > Cooling** to access the **Running Info** page.
- Step 3** Query the cooling information about the smart module, such as **Cooling capacity for smart module**, **Supply water temperature for smart module**, **Return water temperature for smart module**, and **Maximum cooling capacity for smart module**, as shown in [Figure 6-46](#).

Figure 6-46 Cooling capacity parameters

The screenshot shows the 'Cooling Capacity Information' page in the iCooling interface. The left sidebar has a tree view with 'System' expanded, showing 'Power Distribution', 'Cooling', 'NetCol5000CF_1101', and 'IT Cabinet'. The 'Cooling' section is selected. The main area displays a table of parameters for the smart module.

Cooling Capacity Information	
Cooling capacity for smart module	1.43 kW
Supply water temperature for smart module	13 °C
Return water temperature for smart module	42 °C
Current cooling margin for smart module	12.57 kW
Current cooling load factor for smart module	10.2 %
Maximum cooling capacity for smart module	14.00 kW
Allowed maximum supply water temperature	19 °C
Cooling margin at allowed maximum supply water temperature	6.57 kW
Cooling load factor at allowed maximum supply water temperature	17.9 %
Minimum supply water temperature	7 °C
Cooling margin at minimum supply water temperature	18.57 kW
Cooling load factor at minimum supply water temperature	7.1 %
Recommended supply water temperature(refresh cycle : day)	19 °C

At the bottom, there is a summary row:

Supply Water Temperature(°C)	Maximum Cooling Capacity(kW)	Cooling Margin(kW)	Cooling Load Factor(%)
13	1.43	12.57	10.2

Step 4 Choose **Monitoring > System**. Click **Cooling Capacity Information** on the **Running Info** tab page to query the cooling capacity parameters of the smart module.

Step 5 If the cooling load factor of the smart module exceeds 95%, a cooling margin insufficient alarm will be raised, which will be cleared when the cooling load factor is smaller than 93%.

----End

6.8.3 (Optional) Setting Cooling Management Parameters

Working Principle of the iCooling Function

The smart cooling product models that support iCooling linkage are air cooled smart cooling products (NetCol5000-A025 and NetCol5000-A042).

The smart cooling product model that supports iCooling linkage is the water cooled smart cooling products (NetCol5000CF_110).

The function of iCooling linkage is to enable smart cooling products to quickly respond to load changes and implement on-demand cooling. Multiple smart cooling products in a smart module and the indoor and outdoor units of an smart cooling product can be regulated to achieve optimal energy efficiency without hotspots.

- iCooling disabled
 - For the cold aisle containment in the smart module, all IT cabinets use the cooling capacity in the cold aisle and the temperatures inside the cold aisle are unevenly distributed due to the uneven air flow.
 - The cooling requirements of the IT cabinets can be met and partial hot spots can be avoided only if the cooling capacity provided by the smart cooling product matches the heat load of the corresponding IT cabinets.
- iCooling enabled

- The cold aisle is divided into multiple areas according to the smart cooling product positions. The cooling capacity from any smart cooling product in the areas can meet the temperature requirements of the IT cabinets because the temperature unevenness is relatively low.
- The smart cooling products in each area quickly respond to load changes in the areas and are regulated to achieve optimal energy efficiency.

Prerequisites for the iCooling Function

Before setting the iCooling function, the following requirements must be met:

- Determine the installation position for the cabinet temperature sensor in strict accordance with the requirements in the installation guide.
- After installing the cabinet equipment, use filler panels to seal the vacant U space.
- The smart module plan view has been created. The positions of devices in the smart module plan view must be the same as their actual locations.
- All smart cooling products in the smart module need to be networked for teamwork. For details about how to configure teamwork networking, see the smart cooling product user manual of the corresponding model. One smart module has only one group. In this group, communication between the slave and master units as well as communication between the master unit and the ECC800 is normal.
- The WebUI displays the **Enable iCooling** page only for smart cooling products that support the iCooling function.
- The scenario is dual-row cold aisle containment and the following conditions are met:
 - Smart cooling product should be placed face to face.
 - The smart module is configured with an integrated UPS or integrated PDF. Electricity has been configured for IT cabinets, network cabinets, and smart cooling products. The ECC800 collects statistics on IT branch power information, which is mapped to IT cabinets and network cabinets.
 - Rack environment units and cabinet-level temperature sensors are installed for IT cabinets or network cabinets. The ECC800 can monitor the temperature of each cabinet.
 - At least one cold-aisle temperature and humidity sensor is installed for each smart cooling product, and each smart cooling product can detect the sensor readings.

WebUI Operations

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 If the iCooling function needs to be used, choose **Monitoring > Cooling > Running Parameters**. On the iCooling parameter setting page, set **Enable iCooling** to **Yes** and click **Submit** to finish the iCooling function setting.

Figure 6-47 Setting the iCooling function

Electricity Usage Information		Running Parameters	
iCooling Parameters			
☐ All	Signal Name	Signal Value	R
☒	Enable iCooling	Yes	

Submit Restore

Step 3 Set the iCooling temperature set point and humidity setpoint according to the actual environment.

Figure 6-48 Setting the temperature and humidity setpoints

All	Signal Name	Signal Value	Remarks	Setting Result
☒	Enable iCooling	Yes		✓
☒	iCooling temperature setpoint	24.0	℃ (15.0~45.0)	
☒	iCooling humidity setpoint	45.0	%RH (20.0~80.0)	

Submit Restore Succeeded: 1 Failed: 0

NOTE

- When iCooling is enabled, smart cooling products enter the iCooling teamwork control mode.
- The temperature and humidity refer to the values at the air intake vents of the IT cabinets.
- After iCooling linkage is enabled, if the preceding conditions are not met, the smart cooling product automatically exits the iCooling teamwork mode and enters the standalone mode. To view **Team work status**, choose **Monitoring > Cooling > NetCol5000 > Running Info > Status Information**.
- When iCooling is enabled, the T/H threshold can only be set on the ECC800 WebUI.
- When iCooling is disabled, smart cooling products enter the intelligent teamwork control mode (teamwork control of smart cooling products).

Step 4 (Only for air cooled smart cooling product) Choose **Monitoring > Cooling > Running Parameters** to access the **Temperature and Humidity Parameters** page. Check whether **Temperature and humidity control type** is **Cold-aisle**.

----End

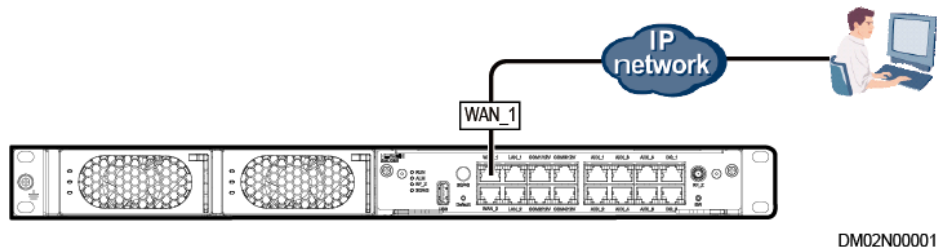
6.9 Remote Management

6.9.1 NetEco Management

6.9.1.1 Connecting the Communications Cable

Procedure

Step 1 Connect the communications cable to the WAN_1 port on the ECC800.

Figure 6-49 Connecting the communications cable

----End

6.9.1.2 Setting NetEco Parameters

When the smart module can be connected to the NetEco, perform the following steps to configure parameters.

Procedure

- Step 1** Apply for a fixed IP address to the equipment room network administrator.
- Step 2** Set the IP address, subnet mask, and default gateway on the ECC800 WebUI.

Table 6-26 IP parameters

Path	Parameter	Default Value	Setting
System Settings > System Parameters > Monitor IP > WAN_1	IP	192.168.1.10	Set this parameter based on the IP address assigned by the network administrator.
	Subnet mask	255.255.255.0	Set this parameter based on the subnet mask assigned by the network administrator.
	Default gateway	192.168.1.1	Set this parameter based on the default gateway address assigned by the network administrator.

- Step 3** Click **Submit**.
- Step 4** Set NetEco communications parameters on the ECC800 WebUI.

Table 6-27 NetEco parameters

Path	Parameter	Default Value	Setting
System Settings > NMS	Server IP	192.168.8.1 1	IP address of the primary NetEco server NOTE The NetEco IP address and the ECC800 IP

Path	Parameter	Default Value	Setting
Application > NetEco > Communication Parameters			address must be configured in the same network to ensure normal connection between the NetEco and the ECC800.
	Port number	31220	31220
	Network port for link setup	WAN_1	WAN_1 or WAN_2

Table 6-28 Setting the authentication password

Path	Parameter	Default Value	Setting
System Settings > NMS Application > NetEco > Set Authentication Password	Authentication password	Modifyme_123	Set this parameter based on customer requirements. NOTE Requirements for setting passwords: 'a~z', 'A~Z', '0~9', '~!@#^*_={ }:, ./?-`\$'(8-32 characters that include at least three of the following types: lowercase letters, uppercase letters, digits, and special characters)
	Confirm authentication password	N/A	N/A

Step 5 Click **Submit**.

----End

6.9.1.3 Creating an ECC800 on the NetEco

Prerequisites

- You have logged in to the NetEco client by web browser.
- You have created modules or container in **Data Center Planning**.

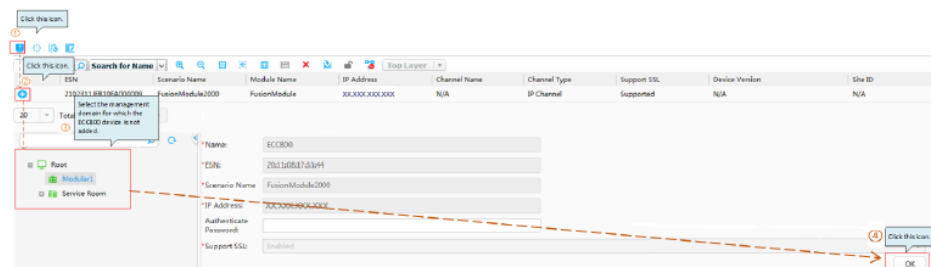
Context

For detailed operations, see *iManager NetEco 6000 Device Installation and Commissioning Guide* of the corresponding version.

Procedure

1. Choose **System > Configuration Management > Data Center Planning** from the main menu. The **Data Center Planning** window is displayed.
2. Click  in the upper left area of the **Data Center Planning** window to switch to the **Uncreated Device Information** window.
3. Click  in the **Uncreated Device Information** window to switch to the **Add Device** window. You can add an ECC800 device to the specified modular in the **Add Device** window. For detailed operations, see [Figure 6-50](#).

Figure 6-50 Adding an ECC800 device to the modular



NOTE

- Click **OK**, and you can view the task information, including **Type**, **Device Name**, **Region**, **Progress**, **Status**, **Start Time**, **End Time**, and **Information** in the displayed **Progress** window.
- During binding of the ECC800 for the first time, the screen will be locked indefinitely when the progress bar reaches 30%, and displays **Loading device profile. Please try it later**. The actual operation results prevail.

6.9.1.4 Setting the Transparent Transmission Function

Context

- Using the transparent transmission function, the NMS can directly manage southbound components that are not monitored by the ECC800.
- In this example, the COM2 port of the ECC800 is used for transparent transmission.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > NMS Application > Transparent Transmission Channel**.
- Step 3** Set **COM2(Port:3212)** to **Enable** and click **Submit**.

NOTE

Mapping relationship: COM1 corresponds to port 3211, COM2 port 3212, COM3 port 3213, and COM4 port 3214.

- If the port is set for the first time, you are prompted to set an authentication password. On the **Set Authentication Password** tab page, set **Authentication password** and **Confirm authentication password** and click **Submit**.

 NOTE

Enable security Authentication is set to **Enable** by default. If so, an authentication password must be set. If **Enable security Authentication** is set to **Disable**, there is no need to set an authentication password but this is risky.

- If the port has been used, you will be prompted that the transparent transmission function cannot be enabled and you need to select an idle port.

- Step 4** Log in to the NetEco WebUI as an administrator.
- Step 5** Choose **System > Configuration Management > Data Center Planning**. The **Data Center Planning** window is displayed.
- Step 6** Select the management domain to add a device. The management domain can be a modular, rack, or equipment room.
- Step 7** (Optional) If the management domain is a rack, click the management domain and choose **Design** under . The page for adding a device is displayed. Otherwise, skip this step.
- Step 8** In the lower-left corner of the page, click the **Device** tab.
- Step 9** Click the drop-down list box in **Type** and select **Sensor**.
- Step 10** In this example, a Polymer temperature and humidity (T/H) sensor is added in the equipment room of the root node. Select the device to be added and drag its icon to the management domain.
- Step 11** Set management attributes.

Figure 6-51 Page for setting management attributes

Management Info

Parent Object: 2.1M Rack

Type: Sensor_BAOLIMA_WS332_I

* Name: Sensor_BAOLIMA_WS332_I

Med Node: medNode_11

Protocol Type: MODBUS

* IP Address:

* Port:

* Device Address:

* Timeout period: 3

Connection Test

→ Electricity Info

→ Status Info

→ Extended Info

→ Assets Info

NOTE

IP Address indicates the ECC800 login IP address. **Port** indicates the ECC800 COM2 port (3212).
Device Address indicates the Polymer T/H sensor address.

Step 12 Click  to save the created device view.

Step 13 Choose **System > Configuration > Transmission Channel Management**.

Step 14 Click **Modify** after selecting the IP address of the ECC800 connected to the NMS.

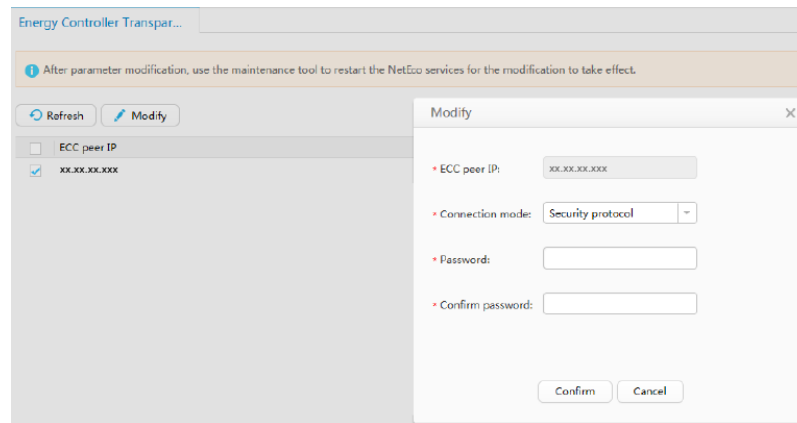
- If **Connection mode** is set to **Compatible**, click **Confirm**.

NOTE

On the ECC800 WebUI, **Enable Security Authentication** is set to **Disable**.

- If **Connection mode** is set to **Security protocol**, enter the value of **Confirm password** that has been set on the ECC800 WebUI, and click **Confirm**.

Figure 6-52 Page for managing transparent transmission channels



----End

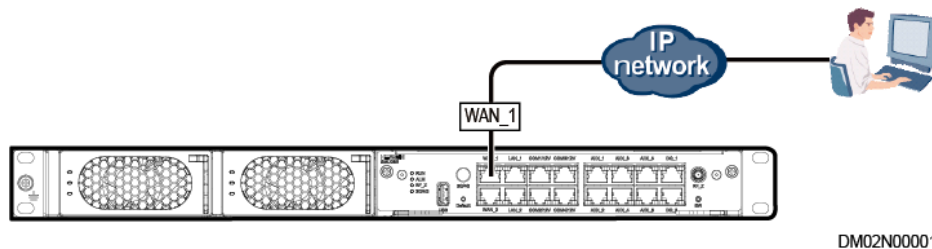
6.9.2 Third-party NMS Management (over SNMP)

6.9.2.1 Connecting the Communications Cable

Procedure

Step 1 Connect the communications cable to the WAN_1 port on the ECC800.

Figure 6-53 Connecting the communications cable



----End

6.9.2.2 Setting SNMP Management Parameters

Prerequisites

Before setting SNMP parameters, obtain the information listed as follows from the NMS.

Table 6-29 Information obtained from the NMS

Item	Default Value	Description
SNMP version	SNMPv3	SNMP version and port number used by the ECC800 and NMS. The SNMP versions include SNMPv1, SNMPv2c, and SNMPv3.
SNMP port number	161	
- Read community name - Write community name	N/A	If you use SNMPv1 or SNMPv2c, enter the read and write community names that comply with the NMS. Otherwise, the ECC800 will not connect to the NMS. The read community name must be different from the write community name.
- User name - MD5/SHA password - DES/AES password	N/A	To enhance the security, you need a user name and password for authentication if you use SNMPv3. After the authentication succeeds, the ECC800 can communicate with the NMS.
Trap target address	N/A	IP address of the NMS server.
Trap port	162	Port defined by the user.

Context

- SNMPv3 parameters should be set before connecting the ECC800 to the NMS. These parameters are required for setting up the ECC800 on the NMS.
- SNMPv1 and SNMPv2c are insecure. Therefore, **SNMPv3** is recommended. This section uses **SNMPv3** as an example.

Procedure

Step 1 Apply to the equipment room network administrator for a fixed IP address.

Step 2 Set the IP address, subnet mask, and default gateway on the ECC800 WebUI.

Table 6-30 IP parameters

Path	Item	Default Value	Setting
System Settings > System Parameters > Monitor IP > WAN_1	IP	192.168.1.10	Set this parameter based on the IP address assigned by the network administrator.
	Subnet mask	255.255.255.0	Set this parameter based on the subnet mask assigned by the network administrator.
	Default gateway	192.168.1.1	Set this parameter based on the default gateway address assigned by the network administrator.

Step 3 Set SNMP parameters.

1. Choose **System Settings > NMS Application > SNMP**.
2. Set **SNMP Version** to **SNMPv3** and set **SNMP port number** to the required port number or retain its default value **161**.
3. Click **Submit** under **SNMP**.
4. Click **Add** in **SNMPv3**.
5. Set **User name**, set **Authentication Protocol** to **SHA** or **MD5**, set **Privacy Protocol** to **AES** or **DES**, and specify **MD5/SHA password**, **Confirm MD5/SHA password**, **DES/AES password**, and **Confirm DES/AES password**.

 NOTE

- Set **User name**, **MD5/SHA password**, and **DES/AES password** to any character strings that meet the system requirements. Note that **MD5/SHA password** and **DES/AES password** must be set to different values. Record the settings.
 - MD5 and DES are insecure protocols. Therefore, you are advised to set **Authentication Protocol** to **SHA** or set **Privacy Protocol** to **AES**.
6. Set **Password validity period** and **Advance expiration notification (days)**.
 7. After setting the parameters, click **Confirm**.
 8. Click **Add** under **SNMP Trap**.
 9. Set **Trap Target Address** and **Trap Port**, set **SNMP Version** to **SNMPv3**, and specify **SNMPv3 User Name**. Set **Trap target address** to the IP address of the NMS server and set **Trap port** to the port defined by the user.
 10. After setting the parameters, click **Confirm**.
 11. Click **Export** in the **Mib File** pane, export the Mib file, and send it to the development engineers of the NMS.

 NOTE

For enterprise users: Log in to <http://support.huawei.com/enterprise>, download the software package of the required version from **Support > Software Download > Network Energy > Fusion Modular Data Center > ECC800**, and decompress the software package to obtain the MIB file.

For carrier users: Log in to <http://support.huawei.com>, download the software package of the required version from **Support > Software > Carrier Cloud & Data Center > Data Center Facility > Fusion Modular Data Center > ECC800**, and decompress the software package to obtain the MIB file.

----End

7 Maintenance

7.1 Routine Maintenance

Table 7-1 Routine maintenance for the PSU in the ECC800

Check Item	Expected Result	Troubleshooting
AC input	Input voltage: 200–240 V AC/100–120 V AC Frequency: 45-66 Hz	If the input voltage is abnormal, check the power grid and input cable connection.
Output voltage	Output voltage: 53.5 V DC (tolerance $\pm 5\%$)	If the output voltage is abnormal, check the load power and cable connection.
Indicator	The green indicator is steady on, and the red indicator is faulty.	Check the output voltage and determine whether the PSU is faulty. If the PSU is faulty, replace it.
Fan	No abnormal noise is generated.	If abnormal noise is generated, clean the fan.
Operating environment	- Ambient temperature: -20°C to $+50^{\circ}\text{C}$ - Humidity: 0-95% RH (non-condensing)	If the temperature or humidity is abnormal, check the smart cooling product status.
Cable connection	The cable connection is secure.	Secure loose cables.
	Cables are not damaged.	Replace damaged cables.

Table 7-2 Routine maintenance for the main control module in the ECC800

Check Item	Expected Result	Troubleshooting
Indicator	The green indicator is steady on or blinking.	If the indicator is off or any abnormal condition occurs, see common faults and troubleshooting to rectify the fault.

Check Item	Expected Result	Troubleshooting
Network port indicator	The green indicator is steady on, and the yellow indicator is blinking.	If the indicator status is abnormal, check the network cable connection.
Operating environment	- Ambient temperature: -20°C to $+50^{\circ}\text{C}$ - Humidity: 0-95% RH (non-condensing)	If the humidity or temperature is abnormal, check the smart cooling product status.
Cable connection	The cable connection is secure.	Secure loose cables.
	Cables are not damaged.	Replace damaged cables.

7.2 Common Faults and Troubleshooting

Table 7-3 Common faults and troubleshooting for PSUs

Symptom	Possible Cause	Measure
The PWR indicator (green) is off.	There is no AC input.	Check whether the AC input is abnormal.
	The PSU is faulty.	Replace the PSU.
The ALM indicator (yellow) is steady on.	Over temperature protection is triggered.	- The ambient temperature exceeds the upper threshold, and the cooling capacity of the smart cooling product needs to be increased. - The air channel is obstructed and needs to be unblocked.
	AC input overvoltage or undervoltage protection is triggered.	Check the AC input.
The ALM indicator (yellow) is blinking.	Communication with the PSU is interrupted.	- Clean the connector in the rear of the faulty PSU. - If the fault persists, replace the ECC800 subrack.
	Communication with the main control module is interrupted.	
The ALM indicator (red) is steady on.	Output overvoltage protection is triggered.	If the PSU is locked out, disconnect the AC input from the PSU, and then power on the PSU again

Symptom	Possible Cause	Measure
		after the indicator turns off. If the fault persists, replace the PSU.
	There is no output due to a PSU fault.	Replace the faulty PSU.

Table 7-4 Common faults and troubleshooting for the main control module

Symptom	Possible Cause	Measure
The RUN indicator (green) is off.	There is no AC input.	If the green indicators on PSUs are steady on, the power input to the system is normal. Otherwise, rectify power grid faults.
	The main control module is faulty or not securely installed.	Reinstall the main control module. If the fault persists, replace the main control module.
The RUN indicator (green) is blinking at 4 Hz.	The main control module does not register with the NetEco.	Register the main control module with the NetEco.
RJ45 power output indicators turn off (involved ports: AI/DI1-AI/DI6, COM1-COM4, and DO1-DO2).	The corresponding power ports have no output.	Energize corresponding power ports over the WebUI or NMS.
	The corresponding power ports are short-circuited.	Check whether the connected load is short-circuited. If yes, eliminate the short circuit.
The ALM indicator (red) is steady on.	An alarm is generated.	View active alarms on the WebUI and clear them one by one.

Table 7-5 Common faults and troubleshooting for the independent deployment AI_DI unit

Symptom	Possible Cause	Measure
The PWR indicator is off.	The independent deployment AI_DI unit is faulty or the power to the independent deployment AI_DI unit is abnormal.	Check whether the board is faulty and whether the cable connection between the ECC800 and independent deployment AI_DI unit is normal.
The RUN indicator is off.	The contact between the	Check whether the

Symptom	Possible Cause	Measure
	independent deployment AI_DI unit and the ECC800 is abnormal, or the independent deployment AI_DI unit is faulty.	independent deployment AI_DI unit is faulty and whether the cable connection between the ECC800 and independent deployment AI_DI unit is normal.
The RUN indicator is blinking at short intervals (on for 0.125s and then off for 0.125s).	Communication between the independent deployment AI_DI unit and the main control module is interrupted.	Check whether the cable connection between the ECC800 and independent deployment AI_DI unit is normal, whether the independent deployment AI_DI unit is faulty, and whether the independent deployment AI_DI unit is added on the ECC800 WebUI.
The ALM indicator is on.	An alarm whose default severity is critical or major exists.	Check and clear the alarm.

7.3 Component Replacement

1. After replacing components, log in to the WebUI and choose **Maintenance > Parameter Sync** to access the parameter synchronization page.
2. Click **Device type** and select the component type from the drop-down list.
3. Select the failure device in **Source Device**, select the reserved device in **Target Device**, and click **Submit** to synchronize the configuration parameters of the failure device to the reserved device.
4. On the **Monitoring > System > ECC800 > Controls** tab page, select **Delete device with communication failure** and click **Submit**, add the reserved device to the smart module view.

7.3.1 Replacing an ECC800 Main Control Module

Prerequisites

NOTICE

- The ECC800 main control module is hot-swappable.
- Before disconnecting cables from the ECC800 main control module, label the cables based on the corresponding ports.

- Tools: ESD wrist strap, ESD gloves, Phillips screwdriver, labels, marker
- Materials: a new undamaged and undeformed ECC800 main control module of the appropriate model

Procedure

Step 1 Use the **Back Up Current Settings** function to record the ECC800 configuration information or manually record the information.

Path: **Maintenance > Configuration File > Back Up Current Settings**

NOTE

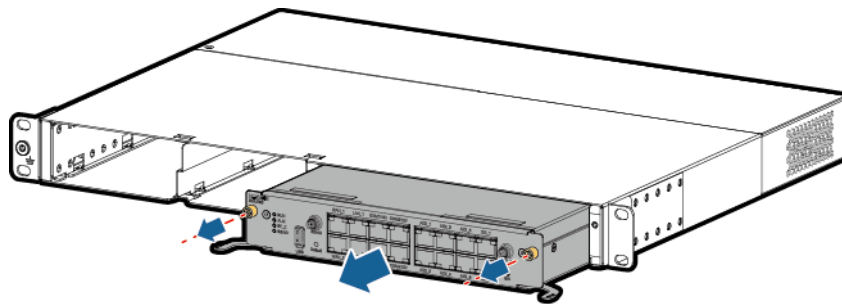
If the main control module is damaged, you may fail to log in to the ECC800. In this case, you cannot back up the settings.

Step 2 Label each cable and antenna based on the corresponding ports on the ECC800 main control module.

Step 3 Remove cables, the WiFi module, and antennas from the ECC800 main control module.

Step 4 Loosen the screws on both sides of the ECC800 main control module and pull the handles on both sides of the ECC800 main control module to remove the main control module.

Figure 7-1 Removing the ECC800 main control module

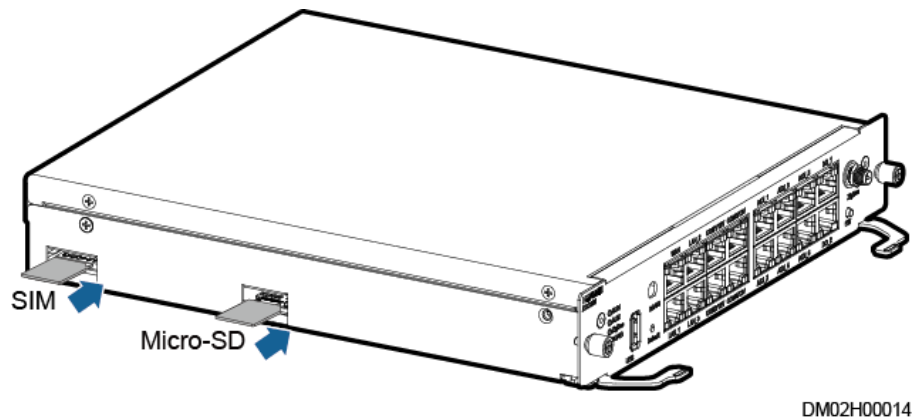


DS34000019

Step 5 (Optional) Remove the Micro SD card and SIM card from the corresponding slots on the side of the ECC800 main control module.

Step 6 (Optional) Install the removed Micro SD and SIM card in the corresponding slot of the new ECC800 main control module.

Figure 7-2 Installing the Micro SD and SIM card



- Step 7** Install the spare ECC800 main control module in the ECC800 subrack and tighten the screws on both sides of the ECC800 main control module.
- Step 8** Connect the communications cables, WiFi module, and antennas to the ECC800 main control module.
- Step 9** Choose **Maintenance > Configuration File** and import the backup configuration file, or set parameters for the devices that connect to the ECC800 to ensure normal communication.
- End

7.3.2 Replacing a PSU

Prerequisites



DANGER

Do not touch the terminals in the rear of a removed PSU to avoid electric shocks.

- Tool: insulation gloves
- Materials: a reserved undamaged and undeformed PSU of the appropriate model.

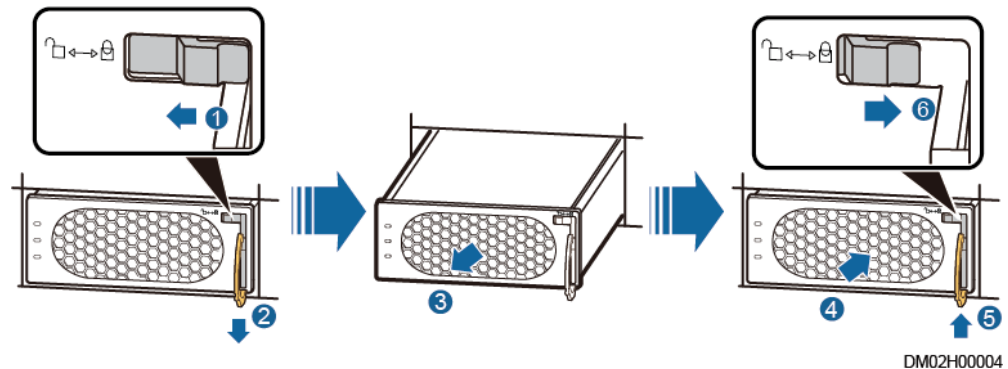
Context

The PSU is hot-swappable.

Procedure

- Step 1** Push the locking latch in the upper right corner of the PSU panel leftwards.
- Step 2** Pull out the handle of the PSU to remove the PSU from the subrack.
- Step 3** Gently push the reserved PSU into the subrack along guide rails, and push the locking latch rightwards to secure the handle.

Figure 7-3 Replacing a PSU



----End

7.3.3 Replacing ECC800 Antennas

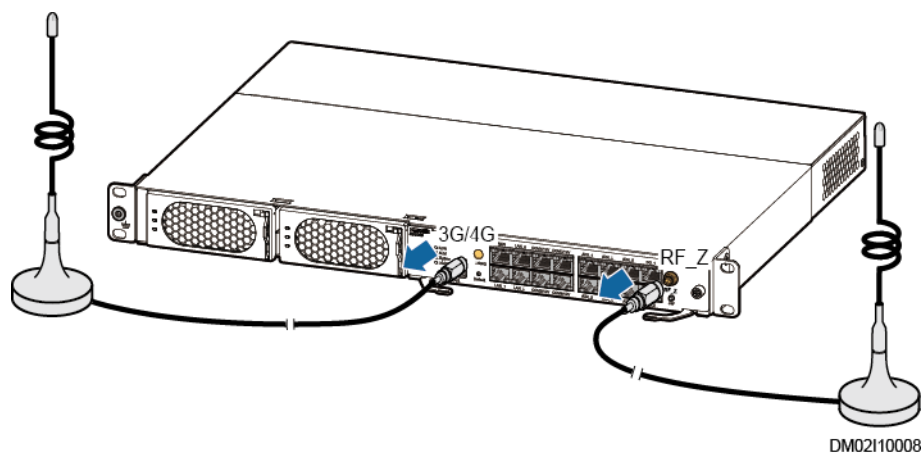
Prerequisites

- Tools: ESD wrist strap, ESD gloves
- Materials: Spare ECC800 antennas of the same model are available and functional.

Procedure

- Step 1** Remove the 2.4G and 3G antenna cables connected to the ports on the ECC800, as shown in [Figure 7-4](#).

Figure 7-4 Removing antennas



- Step 2** Install the spare 2.4G antenna and 3G antenna in the original positions and connect them to the ECC800.

----End

7.3.4 Replacing a SIM Card and Micro SD Card

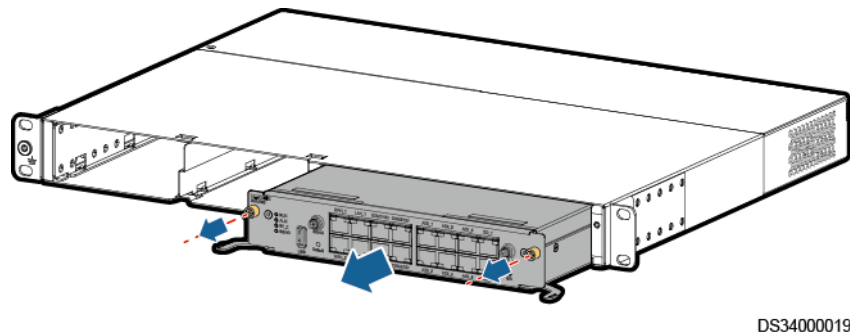
Prerequisites

- Tools: ESD wrist strap, ESD gloves
- Materials: A spare SIM card and a micro SD card of the same model are available and functional.

Procedure

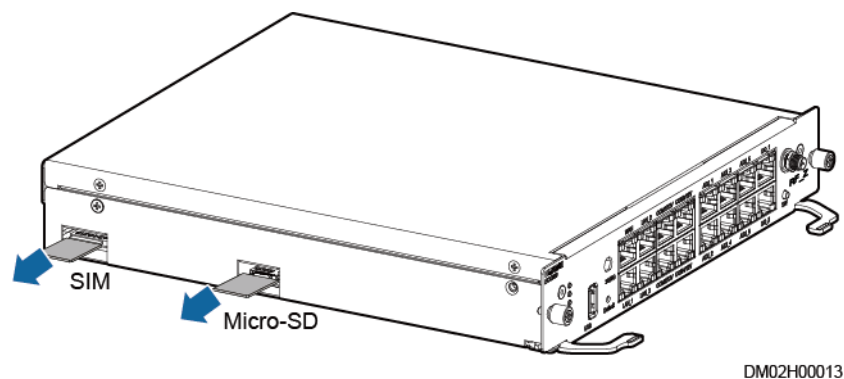
- Step 1** Record the position of the signal cable connected to the ECC800 main control module panel, and then disconnect the signal cable.
- Step 2** Loosen the screws on both sides of the ECC800 main control module.
- Step 3** Pull the handles on both sides of the ECC800 main control module, and to remove the main control module.

Figure 7-5 Removing the ECC800 main control module



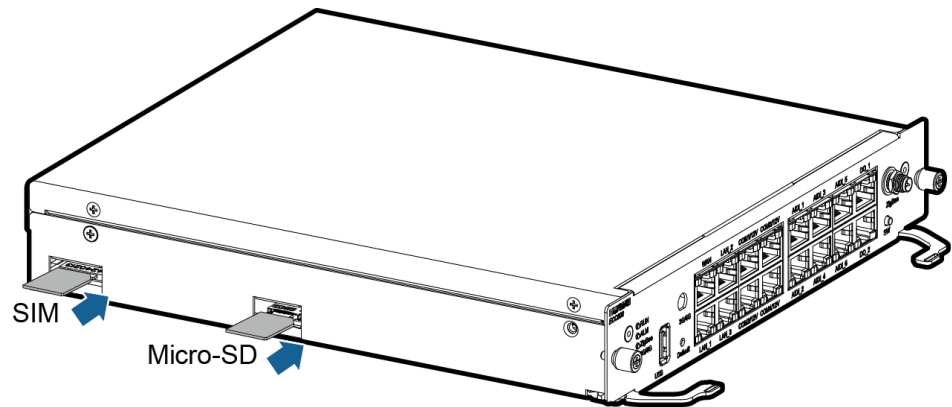
- Step 4** Remove the SIM card and micro SD card from the card slot.

Figure 7-6 Removing a SIM card and a micro SD card



- Step 5** Install the spare SIM card and micro SD card into the card slot.

Figure 7-7 Installing a SIM card and a micro SD card



DM02H00014

- Step 6** Install the ECC800 main control module in the card slot.
- Step 7** Tighten the screws on both sides of the ECC800 main control module.
- Step 8** Reconnect signal cables to the ECC800 main control module panel based on the recorded information.
- End**

8 FAQ

8.1 WebUI Operations

8.1.1 How Can I View Version Information?

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
 - Step 2** Click  in the upper right corner of the home page and view the ECC800 version information.
 - Step 3** Choose **Maintenance > Version Information** and view the version information of ECC800 and connected device.
- End

8.1.2 How Do I Set the Date and Time?

Procedure

- Step 1** Choose **System Settings > System Parameters > Time**.
 - Step 2** Set the time zone, date, and time or click **Obtain Local Time**, and click **Submit**.
 - Step 3** (Optional) If the NTP server is used for time synchronization, select **NTP server sync**, set **NTP primary server IP**, **NTP backup server IP**, **Port number**, and **Sync interval (min)**, and click **Submit**.
- End

8.1.3 How to Check the System Type and Set the Smart Module Name

Context

- System type: FusionModule500, FusionModule800, FusionModule1000A, FusionModule1000B, FusionModule2000, FusionModule5000 and General can be selected based on the actual project configuration.
- Site ID: Alarms of devices under monitoring in the site are sent to the specified mobile phone numbers of maintenance engineers by SMS. After **Smart module name** is changed, the new site ID will be displayed in the short message content (for example, XXX device communication interruption) so that maintenance engineers will know the site where the fault has occurred.

Procedure

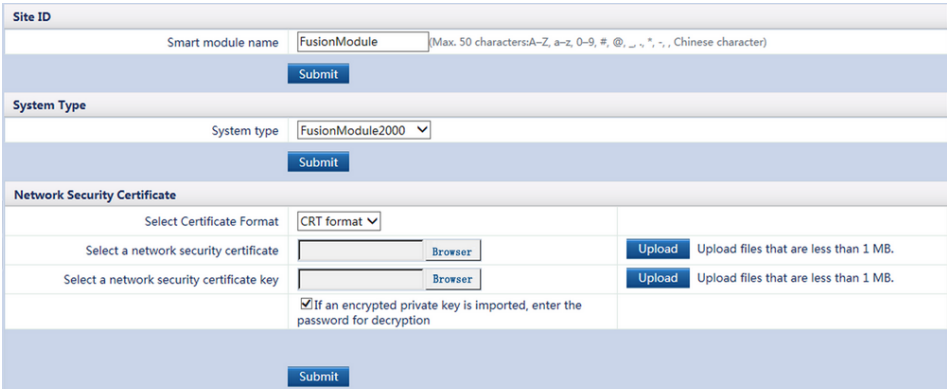
Step 1 Choose **System Settings > System Parameters > Site Configuration**, and check whether **System Type** is consistent with the type of the smart module.

(Optional) If the system type is inconsistent with the type of the smart module, perform the following operations. The system type FusionModule2000 is used as an example.

NOTE

- By default, the system type displayed on the web page is the system type selected last time. Change the system type as required.
 - If the system type is changed, the monitoring software will restart and you can log in to the WebUI again after 3 minutes.
1. Select **FusionModule2000** from the **System type** drop-down list box.
 2. Click **Submit** in the **System Type** area.

Figure 8-1 Setting the system type



The screenshot shows the 'Site ID' configuration page. The 'Smart module name' is set to 'FusionModule'. Below it is the 'System Type' section, where 'System type' is set to 'FusionModule2000'. There are 'Submit' buttons for both the 'Smart module name' and 'System Type' sections. Below the 'System Type' section is the 'Network Security Certificate' section, which includes a 'Select Certificate Format' dropdown set to 'CRT format', two 'Select a network security certificate' fields with 'Browse' buttons, and two 'Upload' buttons. A checkbox is checked for 'If an encrypted private key is imported, enter the password for decryption'. A 'Submit' button is at the bottom of the 'Network Security Certificate' section.

3. Go to the **Re-authentication** page, enter the login user name and password, and click **Submit**.

Step 2 Choose **System Settings > System Parameters > Site Configuration**, modify **Smart module name**, and click **Submit** in the **Site ID** area.

----End

8.1.4 How to Manage WebUI Users?

Context

WebUI users are classified as **Administrator** and **Operator**. They have different operation rights.

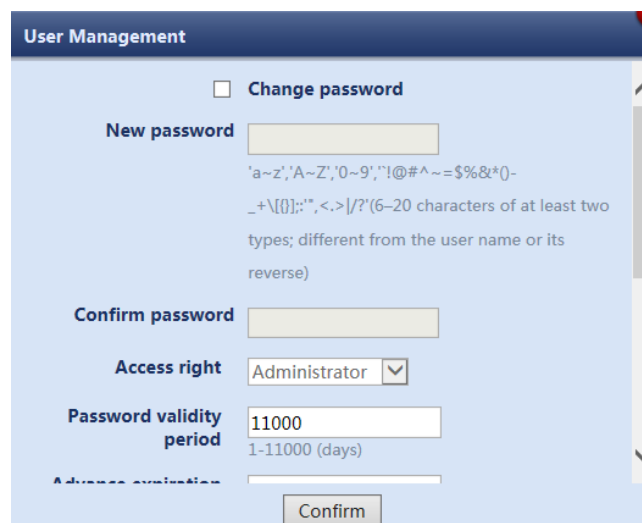
- Administrator: The user name is **admin** and preset password is **Changeme**. The administrator has all rights, including the rights for user management, browsing and modifying all parameters in the system, software upgrade, and data import and export.
- Operator: The user name is **operator** and preset password is **Changeme**. Operator has no rights for user management, system setting, version upgrade, running parameters, smart module plan view editing, and internal fault information exporting.

Procedure

Step 1 Change the login password.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **Maintenance > User Management**. The user management page is displayed.
3. Choose the user to be modified and click **Modify**. Reset the login password on the displayed page.

Figure 8-2 Changing the login password



The screenshot shows the 'User Management' interface. At the top, there is a checkbox labeled 'Change password'. Below it, there are two text input fields: 'New password' and 'Confirm password'. The 'New password' field has a password strength indicator below it showing 'a~z', 'A~Z', '0~9', '!', '@', '#', '^', '~', '\$', '%', '&', '*' and a note: '6-20 characters of at least two types; different from the user name or its reverse'. Below the 'Confirm password' field is a dropdown menu for 'Access right' currently set to 'Administrator'. Below that is a text input field for 'Password validity period' set to '11000' with a note '1-11000 (days)'. At the bottom, there is a 'Confirm' button.

Step 2 Add a WebUI user.

1. Choose **Maintenance > User Management**. The user management page is displayed.
2. Click **Add**.
3. Specify **User name**, **Password**, **Confirm password**, **Password validity period**, **Advance expiration notification (days)**, and **Timeout period**, select appropriate values from the **Access right** and **Login source** drop-down list boxes, and click **Confirm**.

NOTE

- On the user management page, you can modify, delete, lock, and unlock a user.

- The value of **Advance expiration notification (days)** must not be greater than the value of **Password validity period**.
- The WebUI supports a maximum of 16 users and a maximum of 3 concurrent online users.

----End

8.1.5 Creating a Smart Module Plan View

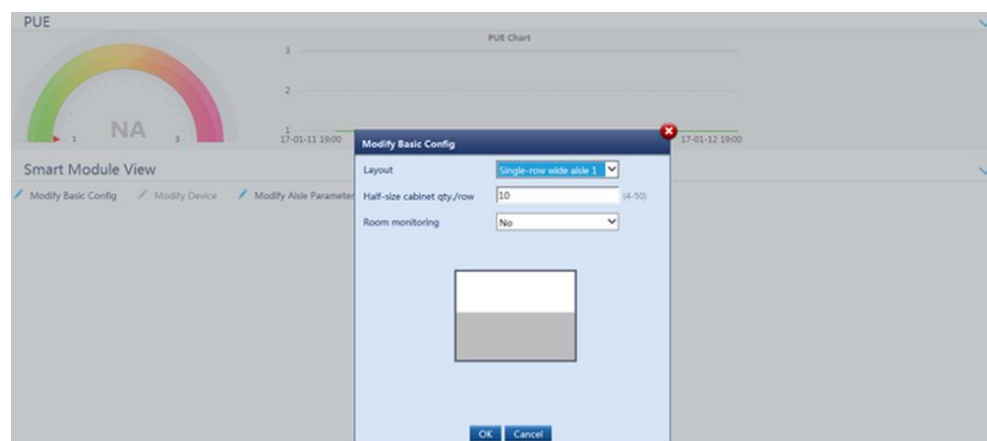
Prerequisites

To create a smart module plan view, it is recommended that you obtain or draw the planned layout of the smart modular data center before the creation.

Procedure

- Step 1** Choose **Home > Plan View** and click **Create smart module** in **Smart Module View**. The **Modify Basic Config** dialog box is displayed. Set the layout and device quantity in **Layout** and **Half-size cabinet qty./row** based on the actual smart module scenario.

Figure 8-3 Modifying basic configurations



- If **Room monitoring** is set to **No**, draw a smart module view.
- If **Room monitoring** is set to **Yes**, draw an equipment room view and smart module view.

- Step 2** Drag the icons of registered devices (for example, the access actuator) and devices on the cabinet list to appropriate positions in the layout diagram, tap a device icon, modify the value of **Device Name** in the **Basic Configuration** dialog box, and click **Exit Edit Mode** to create a smart module plan view.

NOTE

There may be multiple same device icons on the editing page. If you are unable to determine the positions of wireless communications devices such as the access actuator, general input unit, and power distribution unit, use the following methods to identify them:

- Hold down the BLINK button on a device for less than 1s to report the blinking status to the ECC800. The corresponding device icon in the WebUI plan view blinks.
- Drag a device in the WebUI plan view. The RUN indicator on the corresponding device blinks intermittently at super short intervals.

If both room-level and smart module access actuators exist, modify the value of **Device Name** to distinguish them.

The value of **Device Name** for the power distribution unit should be consistent with its label, for example, **NMW A 01**.

Step 3 Hold down the BLINK button on a device such as a smart ETH gateway for less than 1s to report the blinking status to the ECC800. The corresponding device icon in the WebUI plan view blinks. Check that the device positions and types in the plan view are consistent with the actual situation by delivering the blinking command.

NOTE

- If a room-level access control device and camera exist, drag them to the equipment room view.
- You can click the camera icon in the view to display the camera web page.

Figure 8-4 Example plan view without room monitoring

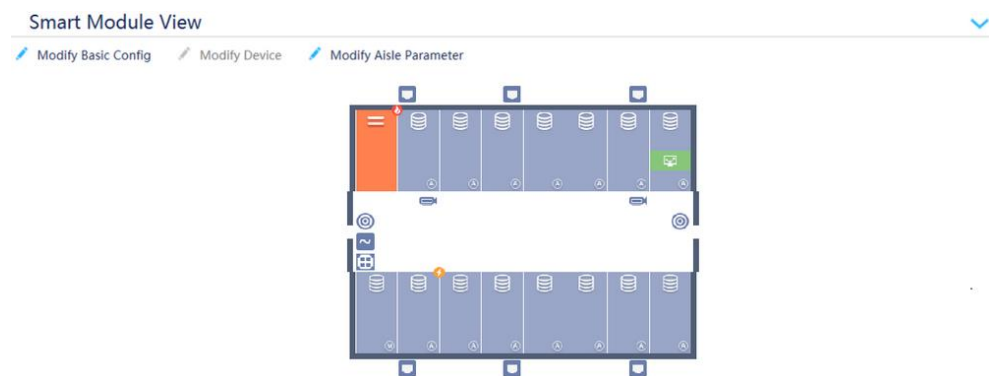
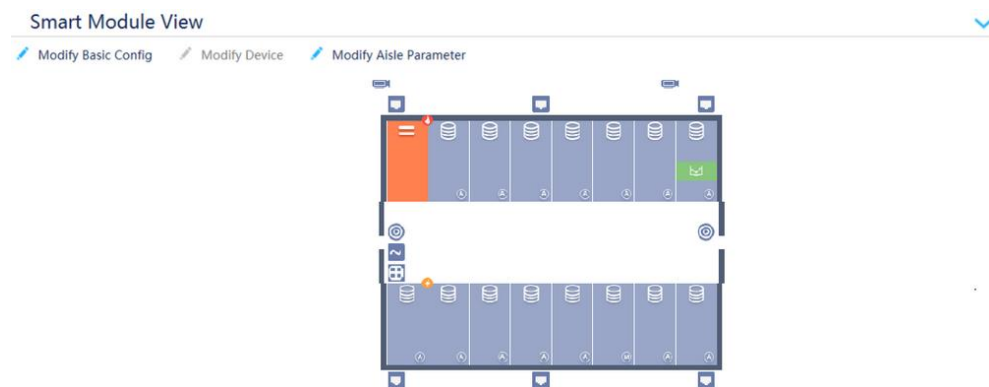


Figure 8-5 Example plan view with room monitoring



----End

Follow-up Procedure

To modify the smart module plan view, perform the following steps:

1. Choose **Home > Plan View**.
2. Click **Modify Device** in **Smart Module View**. The **Devices** is displayed.

3. Drag registered devices (for example, the camera) to the appropriate positions in the layout diagram and click **Exit Edit Mode**. The smart module plan view is updated.
4. When editing the smart module view, click  **Zoom In** or  **Restore** to adjust the size of the view.

8.1.6 How Do I Set and Add Devices?

8.1.6.1 How to Set and Add an Integrated UPS Parameters?

Prerequisites

One end of the straight-through cable has been connected to the FE port on the integrated UPS, and the other end has been connected to the POE port on the smart ETH gateway.

Procedure

Step 1 Start the integrated UPS, and tap **System Info** on the LCD.

Step 2 Choose **System Info** > **Settings**, enter the user name **admin** and password **000001**, and then tap . In the displayed dialog box for confirming the password, tap **OK**.

NOTE

If you enter incorrect passwords for three consecutive times, you will be locked out for 5 minutes.

Step 3 Choose **Settings** > **Communication**, and set **IP address assign** to **Automatic(DHCP)**.

Step 4 Tap  to go back to the main menu screen.

NOTE

After setting parameters for the integrated UPS, the ECC800 discovers the access from the integrated UPS automatically.

----End

8.1.6.2 How to Set and Add a UPS2000-G?

Prerequisites

One end of the straight-through cable has been connected to the COM_1 or COM_2 port on the Modbus expansion card of the UPS2000-G, and the other end has been connected to the COM port on the ETH converter.

Procedure

Step 1 Set monitoring parameters for the UPS2000-G.

- Set monitoring parameters for the UPS2000-G-(1-3 kVA).

 NOTE

Operate the DIP switch SW1 on the optional Modbus card to set the UPS2000-G device address. Toggle switches 1 to 8 of DIP switch SW1 specify the device address in binary mode. **ON** indicates **1**, and **OFF** indicates **0**.

Table 8-1 Setting a device address

Device Address	Toggle Switch 1	Toggle Switch 2	Toggle Switch 3	Toggle Switch 4	Toggle Switch 5	Toggle Switch 6	Toggle Switch 7	Toggle Switch 8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF

- Set monitoring parameters for the UPS2000-G-(6–20 kVA).

 NOTE

Operate the DIP switch S2 on the optional Modbus card to set the UPS2000-G device address. Toggle switches 1 to 8 of DIP switch S2 specify the device address in binary mode. **ON** indicates **0**, and **OFF** indicates **1**.

Table 8-2 Setting a device address

Device Address	Toggle Switch 1	Toggle Switch 2	Toggle Switch 3	Toggle Switch 4	Toggle Switch 5	Toggle Switch 6	Toggle Switch 7	Toggle Switch 8
1	OFF	ON	ON	ON	ON	ON	ON	ON
2	ON	OFF	ON	ON	ON	ON	ON	ON
3	OFF	OFF	ON	ON	ON	ON	ON	ON
4	ON	ON	OFF	ON	ON	ON	ON	ON

Step 2 Add a UPS2000-G.

- Log in to the ECC800 WebUI as an administrator.
- Add a UPS2000-G.

Table 8-3 Adding a UPS2000-G

Path	Parameter Name	Setting
Choose System Settings > Device Management	Device attribute	Select UPS from the drop-down list box.
	Device Type	Select UPS2000G-A from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.

Path	Parameter Name	Setting
and click Add Device . The parameters for adding devices are displayed.	Communications Port	Select COM2 from the drop-down list box. NOTE The setting example indicates that the UPS2000-G is connected to the COM2 port on the ECC800. If the UPS2000-G is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the UPS2000-G based on the actual situation.

- Click **Test Connect** to check whether the UPS2000-G connects to the ECC800 properly.
 - If the UPS2000-G connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the UPS2000-G does not connect to the ECC800 properly, check whether the cable between the UPS2000-G and the ECC800 is connected properly, whether the UPS2000-G and ECC800 are running properly, and whether the input parameters are consistent with the UPS2000-G parameters.

NOTE

The section describes how to add a UPS2000-G in a single UPS scenario. In a parallel UPS scenario, if the common communications address of the Modbus card is added to the ECC800, all UPS2000-Gs can be connected to the ECC800.

----End

8.1.6.3 How to Set and Add a UPS5000-E?

Prerequisites

- One end of the straight-through cable has been connected to the RS485 port on the UPS5000-E monitoring module, and the other end has been connected to the COM port on the ETH converter.
- When connecting devices, you are advised to add devices one by one and ensure that the view is consistent with the real object. If all devices have been added and powered on, only the BLINK function of the ETH converter can be used to identify the mapping between the UPS5000-E and ETH converter.

Procedure

Step 1 Set the UPS5000-E monitoring parameters.

- On the displayed screen after UPS5000-E startup, tap **System Info**.
- Choose **System Info** > **Settings**, enter the user name **admin** and password **000001**, and press .
- Tap **Communication** and set **RS485 baud rate** to **9600**, and **RS485 address** to **1** on the displayed communication settings screen.

Figure 8-6 UPS5000-E communication settings

No active alarm

Settings > Communication

IP address allocation:

Manual

IP address:

192.168.000.104

Subnet mask:

255.255.255.255

Gateway:

192.168.000.001

RS485 baud rate:

9600

RS485 address:

1

Step 2 Add a UPS5000-E.

1.

Log in to the ECC800 WebUI as an administrator.
2.

Add a UPS5000-E.

Table 8-4 Adding a UPS5000-E

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select UPS from the drop-down list box.
	Device Type	Select UPS5000 from the drop-down list box.
	Connect To	Select ETH Converter n from the drop-down list box.
	Communications Port	Select COM1/COM2 from the drop-down list box.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the UPS5000-E based on the actual situation.

3.

Click **Test Connect** to check whether the UPS5000-E connects to the ECC800 properly.

-

If the UPS5000-E connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.

-

If the UPS5000-E does not connect to the ECC800 properly, check whether the cable between the UPS5000-E and the ECC800 is connected properly, whether the UPS5000-E and ECC800 are running properly, and whether the input parameters are consistent with the UPS5000-E parameters.
4.

Choose **Monitoring > System > ETH Converter Group > ETH Converter n > Running Parameters** and set **Device name** to **ETH Converter n_Device name**.

----End

8.1.6.4 How to Set and Add a SUNRISE SCU-20K?

Prerequisites

- One end of the straight-through cable has been connected to the RS485 port on the SUNRISE-SCU-20K, and the other end has been connected to the COM port on the ETH converter.
- When connecting devices, you are advised to add devices one by one and ensure that the view is consistent with the real object. If all devices have been added and powered on, only the BLINK function of the ETH converter can be used to identify the mapping between the SUNRISE-SCU-20K and ETH converter.

Procedure

Step 1 Set the SUNRISE-SCU-20K monitoring parameters.

1. After SUNRISE-SCU-20K startup, tap **Settings** on the home screen and enter the password **111111** to enter the parameter settings screen.
2. Choose **Settings > Comm Settings**, and set **Monitoring baud rate** to **9600**, and set **Monitoring address** based on site requirements.

NOTE

- The default value of **Monitoring address** is **1** for the SUNRISE-SCU-20K.
- If multiple SUNRISE-SCU-20K devices are connected to a same smart module, ensure that each monitoring address of a SUNRISE-SCU-20K is unique.

Step 2 Add a SUNRISE-SCU-20K.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a SUNRISE-SCU-20K.

Table 8-5 Adding a SUNRISE-SCU-20K

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select Air Conditioner from the drop-down list box.
	Device Type	Select SUNRISE-SCU-20K from the drop-down list box.
	Connect To	Select ETH Converter n from the drop-down list box.
	Communications Port	Select COM1/COM2 from the drop-down list box.
	Device Address	In this example, Device Address is set to 2 . During actual configuration, set the device address based on the actual situation.

3. Click **Test Connect** to check whether the SUNRISE-SCU-20K connects to the ECC800 properly.

- If the SUNRISE-SCU-20K connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the SUNRISE-SCU-20K does not connect to the ECC800 properly, check whether the cable between the SUNRISE-SCU-20K and the ECC800 is connected properly, whether the SUNRISE-SCU-20K and ECC800 are running properly, and whether the input parameters are consistent with the SUNRISE-SCU-20K parameters.
4. Choose **Monitoring > System > ETH Converter Group > ETH Converter n > Running Parameters** and set **Device name** to **ETH Converter n_Device name**.
 5. Choose **Monitoring > Cooling > SUNRISE-SCU-20K n > Running Parameters** and set **Device name** to **SUNRISE-SCU-20K_Device name**.

Step 3 On the **Running Parameters** tab page, set smart cooling product running parameters.

Step 4 On the **Controls** tab page, set the smart cooling product control parameters (such as on/off control parameters).

 CAUTION

After the smart cooling product is shut down, the temperature of the smart module increases and data running is affected. Exercise caution when performing this operation.

----End

8.1.6.5 How to Set and Add a NetCol5000-C030 Parameters (over Modbus TCP)?

Prerequisites

One end of the straight-through cable has been connected to the FE port on the NetCol5000-C030 main control board, and the other end has been connected to the POE port on the ETH converter.

Procedure

Step 1 Set NetCol5000-C030 monitoring parameters.

1. Enter the NetCol5000-C030 home page, click **Settings**, choose user name **admin** and enter password **000001**. After login, the settings screen of the NetCol5000-C030 is displayed.
2. Choose **Settings > Comm Settings > IP Settings**, set **IP assigning mode** to **Automatic(DHCP)**, and tap **Submit**.
3. Choose **Settings > Comm Settings > Modbus Settings**, and set **Connection mode** to **Server and client**, **Server encryption** to **Enable**.

NOTE

- After setting parameters for the NetCol5000-C030, the ECC800 discovers the access from the smart cooling product automatically.
- The earlier version has **Protocol** setting on the screen. The actual screen prevails.

Step 2 Set the running parameters and control parameters for the NetCol5000-C030 on the WebUI.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **Monitoring > Cooling > NetCol5000-C0301**.

NOTE

0301 in **NetCol5000-C0301** is variable and subject to change with the smart cooling product model and connection sequence. The displayed value prevails.

3. On the **Running Parameters** tab page, set smart cooling product running parameters.
4. On the **Controls** tab page, set the smart cooling product control parameters (such as on/off control parameters).

CAUTION

After the smart cooling product is shut down, the temperature of the smart module increases and data running is affected. Exercise caution when performing this operation.

----End

8.1.6.6 How to Set and Add a NetCol5000-C030 (over Modbus RTU)?

Prerequisites

One end of the straight-through cable has been connected to the J73 communications port on the NetCol5000-C030 main control board, and the other end has been connected to the COM port on the ETH converter.

Procedure

Step 1 Set NetCol5000-C030 monitoring parameters.

1. Enter the NetCol5000-C030 home page, click **Settings**, choose the user name **Admin** and enter password **000001**. After login, the settings screen of the NetCol5000-C030 is displayed.
2. Choose **Settings > Comm Settings > Modbus Settings**, choose **Baud rate** to **9600** and set **Comm address** to **1**.

NOTE

The earlier version has **Protocol** setting on the screen. The actual screen prevails.

Step 2 Add a NetCol5000-C030.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a NetCol5000-C030.

Table 8-6 Adding a NetCol5000-C030

Path	Parameter Name	Setting
Choose System Settings > Device Management	Device attribute	Select Air Conditioner from the drop-down list box.
	Device Type	Select NetCol5000-C030 from the drop-down list

Path	Parameter Name	Setting
and click Add Device . The parameters for adding devices are displayed.		box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM1 from the drop-down list box. NOTE The setting example indicates that the NetCol5000-C030 is connected to the COM1 port on the ECC800. If the NetCol5000-C030 is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the NetCol5000-C030 based on the actual situation.

- Click **Test Connect** to check whether the NetCol5000-C030 connects to the ECC800 properly.
 - If the NetCol5000-C030 connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the NetCol5000-C030 does not connect to the ECC800 properly, check whether the cable between the NetCol5000-C030 and the ECC800 is connected properly, whether the NetCol5000-C030 and ECC800 are running properly, and whether the input parameters are consistent with the NetCol5000-C030 parameters.

Step 3 Set the running parameters and control parameters for the NetCol5000-C030 on the WebUI.

- Log in to the ECC800 WebUI as an administrator.
- Choose **Monitoring > Cooling > NetCol5000-C0301**.

 NOTE

0301 in **NetCol5000-C0301** is variable and subject to change with the smart cooling product model and connection sequence. The displayed value prevails.

- On the **Running Parameters** tab page, set smart cooling product running parameters.
- On the **Controls** tab page, set the smart cooling product control parameters (such as on/off control parameters).

 CAUTION

After the smart cooling product is shut down, the temperature of the smart module increases and data running is affected. Exercise caution when performing this operation.

----End

8.1.6.7 How to Set and Add a NetCol5000-A025 Parameters (over MAC-Modbus)?

Prerequisites

One end of the straight-through cable has been connected to the FE port on the NetCol5000-A025 main control board, and the other end has been connected to the POE port on the ETH converter.

Procedure

Step 1 Set NetCol5000-A025 monitoring parameters.

1. Enter the NetCol5000-A025 home page, click **Settings**, choose the user name **admin**, and enter password **000001**. After login, the settings screen of the NetCol5000-A025 is displayed.
2. Choose **Comm Settings** > **IP Settings**, set **IP assigning mode** to **Automatic (DHCP)**, and click **Submit**.
3. Choose **Settings** > **Comm Settings** > **Modbus Settings**, and set **Connection mode** to **Server and client**, **Server encryption** to **Enable**.

NOTE

After the NetCol5000-A025 parameters are set, the ECC800 can automatically identify the automatic access of the NetCol5000-A025.

Step 2 Set the running parameters and control parameters for the 25 kW smart cooling product on the ECC800 WebUI.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **Monitoring** > **Cooling** > **NetCol5000-A0251**.

NOTE

- **0251** in **NetCol5000-A0251** is variable and subject to change with the smart cooling product model and connection sequence. The displayed value prevails.
3. On the **Running Parameters** tab page, set running parameters.
 4. On the **Controls** tab page, set the smart cooling product control parameters (such as on/off control parameters).



CAUTION

After the smart cooling product is shut down, the temperature of the smart module increases and data running is affected. Exercise caution when performing this operation.

----End

8.1.6.8 How to Set and Add a NetCol5000-A042 Parameters?

Prerequisites

One end of the straight-through cable has been connected to the FE_1 port on the NetCol5000-A042 main control board, and the other end has been connected to the POE port on the ETH converter.

Procedure

Step 1 Set NetCol5000-A042 monitoring parameters.

1. Enter the NetCol5000-A042 home page, click **Settings**, choose the user name **admin**, and enter password **000001**. After login, the settings screen of the NetCol5000-A042 is displayed.
2. Choose **Comm Settings > IP Settings**, set **IP assigning mode** to **Automatic (DHCP)**, and click **Submit**.
3. Choose **Settings > Comm Settings > Modbus Settings**, and set **Connection mode** to **Server and client**, **Server encryption** to **Enable**.

NOTE

After the NetCol5000-A042 parameters are set, the ECC800 can automatically identify the automatic access of the NetCol5000-A042.

Step 2 Set the running parameters and control parameters for the 42 kW smart cooling product on the ECC800 WebUI.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **Monitoring > Cooling > NetCol5000-A0421**.

NOTE

0421 in **NetCol5000-A0421** is variable and subject to change with the smart cooling product model and connection sequence. The displayed value prevails.

3. On the **Running Parameters** tab page, set running parameters.
4. On the **Controls** tab page, set the smart cooling product control parameters (such as on/off control parameters).

CAUTION

After the smart cooling product is shut down, the temperature of the smart module increases and data running is affected. Exercise caution when performing this operation.

----End

8.1.6.9 How to Set and Add a NetCol5000CF_110 Parameters (over Modbus-TCP)?

Prerequisites

One end of the straight-through cable has been connected to the FE port on the NetCol5000CF_110 main control board, and the other end has been connected to the POE port on the smart ETH gateway.

Context

The chilled water smart cooling product is displayed as **NetCol5000CF_110** on the ECC800 WebUI and the corresponding smart cooling product is NetCol5000-C(065, 080).

Procedure

Step 1 Set the NetCol5000CF_110 monitoring parameters.

1. Enter the home page, click **Settings**, select user name **Admin**, enter password **000001**, and click **Log In**. The NetCol5000CF_110 settings page is displayed.
2. Choose **Settings > Comm Settings > IP Settings**, set **IP assigning mode** to **Automatic (DHCP)**, and click **Submit**.
3. Choose **Settings > Comm Settings > Modbus Settings**, set **Link mode** to **Server and client**, and set **Server encryption** to **Enable**.

NOTE

After the parameters are set, the ECC800 can automatically identify the NetCol5000CF_110.

Step 2 Set the running parameters and control parameters for the NetCol5000CF_110 on the WebUI.

1. Log in to the ECC800 WebUI as the administrator.
2. Choose **Monitoring > Cooling > NetCol5000CF-1101**.

NOTE

- The following describes how to set the NetCol5000CF-1101.
 - **110x** in **NetCol5000CF_110x** is variable and subject to change with the smart cooling product model and connection sequence. **x** indicates the smart cooling product connection sequence.
3. On the **Running Parameters** tab page, set the smart cooling product running parameters.
 4. On the **Controls** tab page, set the smart cooling product control parameters (such as on/off control parameters).

CAUTION

After the smart cooling product is shut down, the temperature of the smart module increases and data running is affected. Exercise caution when performing this operation.

----End

8.1.6.10 How to Set and Add a PDU8000 or integrated PDF (over Modbus-TCP)?

Prerequisites

One end of the straight-through cable has been connected to the FE port on the PDU8000 or integrated PDF, and the other end has been connected to the POE port on the smart ETH gateway.

Context

The method of connecting the PDU8000 to the ECC800 is the same as that for the integrated PDF. Connecting the integrated PDF to the ECC800 by following the instructions in this section.

Procedure

Step 1 Set the PDU8000 monitoring parameters.

1. Enter the PDU8000 home page, tap **System Info**.
2. Choose **System Info** > **Settings**, enter the user name **admin** and password **000001**, and press .
3. Tap **Communication** to set **IP address assign** to **Automatic(DHCP)** on the displayed communication settings screen and the PDU8000 is discovered by ECC800 automatically and is connected to the ECC800.

----End

8.1.6.11 How to Set and Add a PDU8000 (over Modbus RTU)?

Prerequisites

One end of the straight-through cable has been connected to the COM port on the PDU8000, and the other end has been connected to the COM port on the ECC800 collector, rack environment unit, or ETH converter.

Procedure

Step 1 Set the PDU8000 monitoring parameters.

1. Enter the PDU8000 home page, tap **System Info**.
2. Choose **System Info** > **Settings**, enter the user name **admin** and password **000001**, and press . In the password message dialog box displayed, click **Confirm**.
3. Tap **Communication** and check **IP address assign** to **Manual**. And set **Serial port baud rate** to **9600**, and **Serial port address** to **1** on the displayed communication settings screen.

Figure 8-7 PDU8000 communication settings screen

PDU8000

(1/1): [Critical] Board quantity inconsistency

1 0 0 0

Settings -> Communication

IP address assign:Manual

IP address:192.168.000.010

Subnet mask:255.255.255.000

Gateway:192.168.248.001

Serial port baud rate:9600

Serial port address:1

Home

Down

Back

Step 2 Add a PDU8000 (Modbus-RTU).

1. Log in to the ECC800 WebUI as an administrator.

2. Add a PDU8000.

Table 8-7 Adding a PDU8000

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select PDU from the drop-down list box.
	Device Type	Select PDU8000 from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM1 from the drop-down list box. NOTE The setting example indicates that the PDU8000 is connected to the COM1 port on the ECC800. If the PDU8000 is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the PDU8000 based on the actual situation.

3. Click **Test Connect** to check whether the PDU8000 connects to the ECC800 properly.

If the PDU8000 connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.

If the PDU8000 does not connect to the ECC800 properly, check whether the cable between the PDU8000 and the ECC800 is connected properly, whether the
- Issue 08 (2020-03-16)
- Copyright © Huawei Technologies Co., Ltd.
- 188

PDU8000 and ECC800 are running properly, and whether the input parameters are consistent with the PDU8000 parameters.

----End

8.1.6.12 How to Set and Add a PDU2000?

Prerequisites

One end of the straight-through cable has been connected to the COM 1 or COM 2 port on the PDU2000, and the other end has been connected to the COM port on the ECC800 collector, rack environment unit, or ETH converter.

Context

Table 8-8 PDU2000 basic Information

Vendor	Name Displayed on the WebUI	Eleventh and Twelfth Characters in Device Barcode _a
Clever	PDU2000-M (C)	FT
Haipengxin	PDU2000-M (H)	6B
a: The barcode starts with 21 and is attached to the device.		

Procedure

Step 1 Set the PDU2000 monitoring parameters.

- Set the PDU2000-M (C) monitoring parameters.

NOTE

The display of a single-phase module is used as an example.

- After the PDU2000-M (C) is powered on, the LCM displays the initialization screen.

Figure 8-8 PDU2000-M (C) initialization screen



- Press **MENU** to enter the device communications address screen.

Figure 8-9 PDU2000-M (C) communications settings



- Set address to **1** by pressing **DOWN** and **UP**.
- Press **MENU** to confirm the settings.

NOTE

The parameter settings take effect only if you press **MENU** and then the PDU2000-M (C) buzzes and restarts. If you do not press **MENU**, the PDU2000-M (C) buzzes and restarts automatically after 30s and the settings are not saved.

- Set the PDU2000-M (H) monitoring parameters

NOTE

The display of a single-phase module is used as an example.

- After the PDU2000-M (H) is powered on, press **MENU**. The LCM displays

SEt
Add

- Press **MENU** again to access the device communications address screen.

Figure 8-10 PDU2000-M (H) communications settings

Add
01

- Press **DOWN** and **UP** to select the address to be set.
- Press **MENU** to confirm the settings.

NOTE

If modification is successful, Add 90d is displayed: If modification fails, Add E11 is displayed:

Step 2 Add a PDU2000.

- Log in to the ECC800 WebUI as an administrator.
- Add a PDU2000.

Table 8-9 Adding a PDU2000

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select PDU from the drop-down list box.
	Device Type	Select PDU2000-M (C) or PDU2000-M (H) from the drop-down list box based on the actual device.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM1 from the drop-down list box. NOTE The setting example indicates that the PDU2000 is connected to the COM1 port on the ECC800. If the PDU2000 is connected to another port, enter the number of the connected port.
	Device Address	Enter the actual device address of the PDU2000.

- Click **Test Connect** to check whether the PDU2000-M connects to the ECC800 properly.

- If the PDU2000 connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
- If the PDU2000 does not connect to the ECC800 properly, check whether the cable between the PDU2000 and the ECC800 is connected properly, whether the PDU2000 and ECC800 are running properly, and whether the input parameters are consistent with the PDU2000 parameters.

----End

8.1.6.13 How to Set and Add an ATS?

Prerequisites

One end of the straight-through cable has been connected to the COM port on the ATS, and the other end has been connected to the COM port on the ECC800 collector, rack environment unit, or ETH converter.

Context

The ATS (ABB) model is OMD800.

Procedure

- Step 1** Set the ATS device address. On the ATS display panel, choose **Device Configuration > Modbus** and set the device address.

NOTE

- The ATS device address is 1 by default.
- The initial password is **0001** for the ATS display panel.

- Step 2** Add an ATS.

1. Log in to the ECC800 WebUI as an administrator.
2. Add an ATS.

Table 8-10 Adding an ATS

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select ATS from the drop-down list box.
	Device Type	Select ATS from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM1 from the drop-down list box. NOTE The setting example indicates that the ATS is connected to the COM1 port on the ECC800. If the ATS is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the

Path	Parameter Name	Setting
		ATS based on the actual situation.

3. Click **Test Connect** to check whether the ATS connects to the ECC800 properly.
 - If the ATS connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the ATS does not connect to the ECC800 properly, check whether the cable between the ATS and the ECC800 is connected properly, whether the ATS and ECC800 are running properly, and whether the input parameters are consistent with the ATS parameters.

----End

8.1.6.14 How to Set and Add a PMAC625 AC Meter?

Prerequisites

One end of the straight-through cable has been connected to the RS485 port on the PMAC625 AC meter, and the other end has been connected to the COM port on the ECC800.

Context

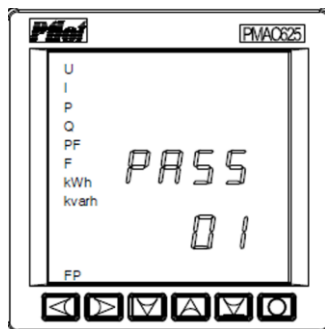
- The model of the three-phase AC power meter for the PDC is PMAC625.
- When connecting devices, you are advised to add devices one by one. If all devices have been added and powered on, only the BLINK function of the ETH converter can be used to identify the mapping between the PMAC625 and ETH converter.

Procedure

Step 1 Set the PMAC625 communications address.

1. Press  on the displayed screen after the PMAC625 is started. Press  after entering the programming mode. Modify the password (1 by default) in blinking ones digit by pressing  or , and press  to confirm the setting.

Figure 8-11 Programming screen of the PMAC625



2. Enter the communications address setting screen by pressing  or , and press  to confirm the setting.
3. Select the place of the communications address value to be modified by pressing  or , modify the communications address value (ranging from 1 to 247) by pressing  or , and then press  to save the setting.

Figure 8-12 Communications address of the PMAC625



Step 2 Add a PMAC625.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a PMAC625.

Table 8-11 Adding a PMAC625

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select Electricity Meter from the drop-down list box.
	Device Type	Select PMAC625 from the drop-down list box.
	Connect To	Select ETH Converter n from the drop-down list box.
	Communications Port	Select COM1/COM2 from the drop-down list box.
	Device Address	In this example, Device Address is set to 100 . During actual configuration, set the device address for the PMAC625 based on the actual situation.

3. Click **Test Connect** to check whether the PMAC625 connects to the ECC800 properly.
- If the PMAC625 connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the PMAC625 does not connect to the ECC800 properly, check whether the cable between the PMAC625 and the ECC800 is connected properly, whether the

PMAC625 and ECC800 are running properly, and whether the input parameters are consistent with the PMAC625 parameters.

4. Choose **Monitoring > System > ETH Converter Group > ETH Converter n > Running Parameters** and set **Device name** to **ETH Converter n_Device name**.

----End

8.1.6.15 How to Set and Add a PMAC615 AC Meter?

Prerequisites

One end of the straight-through cable has been connected to the RS485 port on the PMAC615 AC meter, and the other end has been connected to the COM port on the ECC800.

Context

The model of the single-phase AC meter for the lighting control box is PMAC615.

Procedure

Step 1 Set the PMAC615 communications address.

1. After the PMAC615 is started, press  on the displayed screen and the configuration screen is displayed. Press  until the ID prompt is displayed, indicating the communications address setting screen.
2. Press  and a blinking cursor is displayed. Press  to modify the communications address based on site requirements. Then press  to confirm the address setting.

Figure 8-13 PMAC615 communications address



Step 2 Add a PMAC615.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a PMAC615.

Table 8-12 Adding a PMAC615

Path	Parameter Name	Setting
Choose System Settings >	Device attribute	Select Electricity Meter from the drop-down list box.

Path	Parameter Name	Setting
Device Management and click Add Device . The parameters for adding devices are displayed.	Device Type	Select PMAC615 from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM3 from the drop-down list box. NOTE The setting example indicates that the PMAC615 is connected to the COM3 port on the ECC800. If the PMAC615 is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 8 . During actual configuration, set the device address for the PMAC615 based on the actual situation.

- Click **Test Connect** to check whether the PMAC615 connects to the ECC800 properly.
 - If the PMAC615 connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the PMAC615 does not connect to the ECC800 properly, check whether the cable between the PMAC615 and the ECC800 is connected properly, whether the PMAC615 and ECC800 are running properly, and whether the input parameters are consistent with the PMAC615 parameters.

----End

8.1.6.16 How to Set and Add a PDC DC Meter?

Prerequisites

One end of the straight-through cable has been connected to the RS485 port on the PDC DC meter, and the other end has been connected to the COM port on the ECC800.

Context

The model of the PDC is PDU8000-0630DCV5-HVA002 and the BOM number is 02403121.

Procedure

Step 1 Set the communications address for the PDC DC meter.

- Tap **Settings** on the screen after the PDC DC meter is started.
- Enter **1** in the displayed password dialog box, tap **Enter**, and then tap **Confirm** to enter the setting screen.
- Set the communications address. Tap the ID under **Device ID** on the displayed setting screen, enter **2** (the actual value prevails) using the keyboard that pops up, and then tap **Enter**.
- Press the restart button at the rear of the monitoring screen. Then the parameters take effect.

 NOTE

The communications address is **1** by default.

Step 2 Add a PDC DC meter.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a PDC DC meter.

Table 8-13 Adding a PDC DC meter

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select Electricity Meter from the drop-down list box.
	Device Type	Select LF DC Meter from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM2 from the drop-down list box. NOTE The setting example indicates that the DC meter is connected to the COM2 port on the ECC800. If the DC meter is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the PDC DC meter based on the actual situation.

3. Click **Test Connect** to check whether the PDC DC meter connects to the ECC800 properly.
 - If the PDC DC meter connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the PDC DC meter does not connect to the ECC800 properly, check whether the cable between the PDC DC meter and the ECC800 is connected properly, whether the PDC DC meter and ECC800 are running properly, and whether the input parameters are consistent with the PDC DC meter parameters.

----End

8.1.6.17 How to Set and Add an Independent Deployment AI_DI Unit?

Prerequisites

One end of the straight-through cable has been connected to the COM_IN port on the independent deployment AI_DI unit, and the other end has been connected to the COM port on the ECC800 collector, rack environment unit, or ETH converter.

Procedure

Step 1 Set monitoring parameters for the independent deployment AI_DI unit.

Set the address of the independent deployment AI_DI unit to **1** or **2** by setting its DIP switch.

The DIP switch consists of toggle switches 1–4 (from left to right). Toggle switches 1–3 specify the address of the independent deployment AI_DI unit. Toggle switch 4 specifies the address of the RS485 build-out resistor. **1** indicates **ON**, and **0** indicates **OFF**.

NOTE

The device address for the independent deployment AI/DI unit can only be set to **1** or **2**.

Table 8-14 Setting a device address

Address	Toggle Switch 1	Toggle Switch 2	Toggle Switch 3
1	OFF	ON	ON
2	ON	OFF	ON

NOTE

If the signal quality is poor due to signal reflection caused by long communications cables (longer than 50 m), set toggle switch 4 to ON for the furthest independent deployment AI_DI unit. After the DIP switch settings are modified, power off and restart the independent deployment AI_DI unit for the new settings to take effect.

Step 2 Add an independent deployment AI_DI unit.

1. Log in to the ECC800 WebUI as an administrator.
2. Add an independent deployment AI_DI unit.

Table 8-15 Adding an independent deployment AI_DI unit

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select Independent Deployment AI_DI Unit from the drop-down list box.
	Device Type	Select Independent Deployment AI_DI Unit from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM3 from the drop-down list box. NOTE The setting example indicates that the independent deployment AI_DI unit is connected to the COM3 port on the ECC800. If the independent deployment AI_DI unit is connected to another port, set the COM port to the ECC800 port connected to the independent deployment AI_DI unit.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address

Path	Parameter Name	Setting
		for the independent deployment AI_DI unit based on the actual situation.

3. Click **Test Connect** to check whether the independent deployment AI_DI unit connects to the ECC800 properly.
 - a. If the independent deployment AI_DI unit connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - b. If the independent deployment AI_DI unit does not connect to the ECC800 properly, check whether the cable between the independent deployment AI_DI unit and the ECC800 is connected properly, whether the independent deployment AI_DI unit and ECC800 are running properly, and whether the input parameters are consistent with the parameters of the independent deployment AI_DI unit.

----End

8.1.6.18 How to Set and Add an IP Device?

Prerequisites

- An IP device is connected to the ECC800 over a switch. The device and ECC800 have been powered on.
- You have obtained the IP address of the IP device.

Context

- IP devices, such as ATMs, are devices with IP attributes in an equipment room or site. By adding an IP device, you connect the device to the ECC800 in the same network so that the ECC800 monitors the device status. If the IP device is offline, the ECC800 will report a disconnection alarm on its WebUI.

NOTE

In a LAN scenario, the IP device and the ECC800 collector must be in the same network.

- Following is a procedure example about how to add five IP devices with the online detection timeout interval being 29 seconds.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Choose **Monitoring > System > ECC800 > Running Parameters**.

Step 3 Click **Unhide All Advanced Signals**, on the **IP Device Detection Parameters** tab page, set **Online detection timeout interval** to 29. The value range is 10 to 60 seconds. Click **Submit**.

NOTE

Online detection timeout interval is 30 by default, which means that the ECC800 determines that the communication with the device is interrupted if the device has no response within 30 seconds.

Step 4 Set **IP device num** to 5. The value range is 0 to 100.

Step 5 Click **Submit**. The **IP Device 1-5** tab page is displayed.

Step 6 On the **IP Device 1-5** tab page, set **Enable online detection IP device 1** to **Enable**.

Step 7 Click **Submit**.

Step 8 Specify **IP device 1 address**.

 NOTE

- Set **IP device 1 address** to the IP address of IP device 1. For example, set **IP device 1 address** to **192.168.2.137**.
- Add other IP devices in the same way.

Step 9 Click **Submit**.

Step 10 (Optional) If you need to change the name of an IP device, perform the following steps:

1. Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.
2. Set **Device Type** to **ECC800**, set **Device Name** to **ECC800**, and click **OK**.
3. On the query result tab page, set the new signal name of **IP device 1** to **XXX** and click **Submit**.

----End

8.1.6.19 How to Set and Add the Multi-functional Sensor

If a multi-functional sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the POE port on the multi-functional sensor, and the other end has been connected to the POE port on the ETH converter.

Procedure

Step 1 Set multi-functional sensor parameters.

On the WebUI, choose **Monitoring > Aisle > Multi-Func Sensor Group > Multi-Func Sensor1 > Running Parameters**, ensure that **Smoke enable** and **Temp enable** are set to **Enable**, set **High temperature alarm threshold** and other parameters as required, and then click **Submit**.

 NOTE

If multiple multi-functional sensors are connected, commission one multi-functional sensor first and then commission the other multi-functional sensors in the same way.

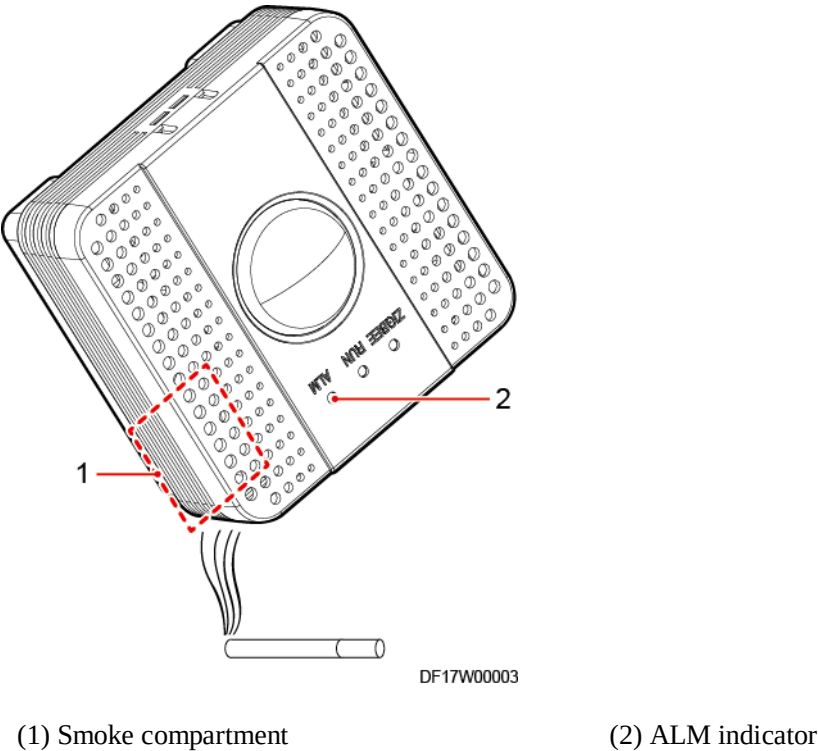
Step 2 Check the functions of the multi-functional sensor.

Table 8-16 Function check

Check Method	Normal Connection Status
Temperature and humidity detection: View the running information about the multi-functional sensor on the	You can view the current ambient temperature and

Check Method	Normal Connection Status
WebUI.	humidity.
Smoke detection: Simulate a smoky environment. Smoke generation methods: Generate smoke. Place the paper 5–10 cm away from the smoke compartment, and let smoke enter the smoke compartment through the hole in the side of the multi-functional sensor. Smoke dispersing method: Send clean air to the smoke compartment through the hole in the side of the multi-functional sensor. CAUTION - Do not generate open flame, and ensure that smoke does not damage any device. - When testing the smoke detection function of the multi-functional sensor, do not start the smart cooling product or fan, because the air from the smart cooling product or fan will interfere with the smoke, and therefore affect the detection result. - After the commissioning is complete, clean up dust.	- Start counting time immediately when smoke is entering the hole. After about 30 seconds, the red ALM indicator turns on, and the app or WebUI displays a smoke alarm. - Some time later after the smoke is dispersed, the red ALM indicator turns off and the smoke alarm disappears.

Figure 8-14 Detecting smoke



----End

8.1.6.20 How to Set and Add the Smoke Detector (Connected to the AI/DI Port on the ECC800)?

If a smoke sensor is installed, perform the following steps to configure it.

Prerequisites

- Connecting Cables to the Smoke sensor (NC):
The smoke detector has been connected to the AI/DI port on the ECC800 collector using a network cable.
To connect the cable for the smoke detector, perform the following steps:
Short-circuit core wires 1 and 8 on the other end of the network cable, and connect the network cable to the cable delivered with the smoke detector. The following table describes the cable connection.

Table 8-17 Smoke detector cable connection

Wire of the Network Cable	Smoke Detector Cable
Core wire 1 (orange-white), core wire 8 (brown)	GND (black)
Core wire 3 (green-white)	+12 V (red)
Core wire 6 (green)	Normally closed end (yellow)
Core wire 7 (brown-white)	Common end (green)
None (reserved; no connection needed and to be insulated)	Normally open end (blue)

- Connecting Cables to the Smoke Sensor:
One end of the network cable has been stripped, core wires 1 (orange-white), 5 (white-blue) and 8 (brown) have been short-circuited, core wires 3 (green-white) and 6 (green) have been connected to the cable delivered with the smoke detector, and the other end of the network cable has been connected to the AI/DI port on the rack environment unit.

Context

- If the sensor is prefabricated, only check its settings.
- The actual value prevails. Only the method of the parameter settings is described.

Procedure

Step 1 Set smoke detector parameters.

NOTE

In this example, the smoke detector is connected to the AI/DI_2 port on the ECC800.

- Log in to the ECC800 WebUI as an administrator.
- Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.

3. Set **Device type** to **ECC800**, set **Device name** to **ECC800**, and click **OK**.
4. On the query result tab page, set the new signal name of **AI/DI_2** to **Smoke** and click **Submit**.
5. Choose **Monitoring > System > ECC800 > Running Parameters > AI/DI_2 Port Settings**.
6. Set **Smoke sensor** to **Enable** and click **Submit**.
7. Confirm that **Smoke sensor type** is automatically identified as **Smoke sensor** or **Smoke sensor(NC)**. Ensure that **Smoke power supply** is **Yes**.

Step 2 Check the monitoring functions of smoke detector.

Table 8-18 Commissioning the sensor

Check Method	Normal Connection Status	Alarm Clearance Method
Simulate a smoky environment under the smoke sensor.	Smoke DI alarm is displayed on the active alarm page of the app or WebUI.	• If Smoke sensor type is set to Smoke Sensor, power off and reset the smoke sensor to clear the alarm. • If Smoke sensor type is set to Smoke Sensor(NC), press the reset button of the smoke sensor to clear the alarm.

----End

8.1.6.21 How to Set and Add the Smoke Detector (Connected to the AI/DI Port on the Skylight Actuator)

If a smoke sensor is installed, perform the following steps to configure it.

Prerequisites

The smoke detector has been connected to the AI/DI port on the skylight actuator using a network cable.

To connect the cable for the smoke detector, perform the following steps:

Short-circuit core wires 1 and 8 on the other end of the network cable, and connect the network cable to the cable delivered with the smoke detector. The following table describes the cable connection.

Table 8-19 Smoke detector cable connection

Wire of the Network Cable	Smoke Detector Cable
Core wire 1 (orange-white), core wire 8 (brown)	GND (black)
Core wire 3 (green-white)	+12 V (red)
Core wire 6 (green)	Normally closed end (yellow)

Wire of the Network Cable	Smoke Detector Cable
Core wire 7 (brown-white)	Common end (green)
None (reserved; no connection needed and to be insulated)	Normally open end (blue)

Context

- If the sensor is prefabricated, only check its settings.
- The actual value prevails. Only the method of the parameter settings is described.

Procedure

Step 1 Set smoke sensor parameters.

NOTE

In this example, the smoke sensor is connected to the AI/DI_1 port on the skylight actuator.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **Monitoring > Aisle > Skylight Actuator Group > Skylight Actuator 1 > Running Parameters > DI1 alarm level**.
3. Set **DI1 alarm level** to **Low voltage alarm** or **High voltage alarm**, and click **Submit**.

NOTE

- Set **DI1 alarm level** to **Low voltage alarm** if the smoke sensor is connected over **NO**.
- Set **DI1 alarm level** to **High voltage alarm** if the smoke sensor is connected over **NC**.

Step 2 Check the monitoring functions of smoke sensor.

Table 8-20 Commissioning the sensor

Check Method	Normal Connection Status	Alarm Clearance Method
Simulate a smoky environment under the smoke sensor.	DI1_smoke alarm is displayed on the active alarm page of the app or WebUI.	Press the reset button of the smoke sensor to clear the alarm.

----End

8.1.6.22 How to Set and Add the WLDS900 Water Sensor

If a water sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the RJ45 port on the WLDS900 water sensor, and the other end has been connected to the AI/DI port on the ECC800.

Context

- To use the AI/DI sensor, enable the corresponding AI/DI port and name the sensor. The specific alarm then can be reported.
- If the sensor is prefabricated, only check its settings.
- The actual value prevails. Only the method of the parameter settings is described.

Procedure

Step 1 Set water sensor parameters.

NOTE

- In this example, the water sensor is connected to the AI/DI_1 port on the ECC800.
 - The default alarm severity of the AI/DI port is **Minor**. If you want to change the alarm severity, see **How Should I Configure Alarm Parameters**.
1. Log in to the ECC800 WebUI as an administrator.
 2. Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.
 3. Set **Device type** to **ECC800**, set **Device name** to **ECC800**, and click **OK**.
 4. On the query result tab page, set the new signal name of **AI/DI_1** to **Leak** and click **Submit**.
 5. Choose **Monitoring > System > ECC800 > Running Parameters > AI/DI_1 Port Settings**.
 6. Set **Leak sensor** to **Enable** and click **Submit**.
 7. Confirm that **Leak sensor type** is automatically identified as **Leak sensor(Rope)**. Ensure that **Leak power supply** is **Yes**.

Step 2 Check functions of water sensors.

Table 8-21 Function check

Check Method	Normal Connection Status	Alarm Clearance Method
Immerse the water detection cable in water.	Leak DI alarm is generated on the active alarm screen of the app or on the WebUI.	Wipe dry the water detection cable. The alarm disappears automatically.

----End

8.1.6.23 How to Set and Add the WLDS600 Water Sensor?

If a water sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the RJ45 port on the WLDS600 water sensor, and the other end has been connected to the energized COM port on the ECC800.

Procedure

- Step 1** The default communications address **1** of the water sensor is used for connecting to the ECC800.
- Step 2** Log in to the ECC800 WebUI as an administrator.
- Step 3** Add the water sensor.

Table 8-22 Adding the water sensor

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select Sensor from the drop-down list box.
	Device Type	Select Water Sensor from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM1 from the drop-down list box. NOTE The setting example indicates that the water sensor is connected to the COM1 port on the ECC800. If the water sensor is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the water sensor based on the actual situation.

- Step 4** Click **Test Connect** to check whether the water sensor connects to the ECC800 properly.
- If the water sensor connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the water sensor does not connect to the ECC800 properly, check whether the cable between the water sensor and the ECC800 is connected properly, whether the water sensor and ECC800 are running properly, and whether the input parameters are consistent with the water sensor parameters.
- Step 5** Set water sensor parameters.
- Log in to the ECC800 WebUI as an administrator.
 - Choose **Monitoring** > **System** > **Water Sensor** > **Running Parameters**.
 - Set the parameters based on actual conditions, and click **Submit**.
- Step 6** Check functions of water sensors.

Table 8-23 Function check

Check Method	Normal Connection Status	Alarm Clearance Method
Immerse the water detection cable in water.	Choose Monitoring > System > Water Sensor > Running Info. Check that Leakage status is Alarm	Wipe dry the water detection cable. The alarm disappears automatically.

Check Method	Normal Connection Status	Alarm Clearance Method
	and Distance from the leakage point is greater than 0 m. Choose Home > Active Alarms. Check that a water sensor alarm is generated.	

----End

8.1.6.24 How to Set and Add the Electrode Water Sensor?

If a water sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the network cable has been stripped, core wires 6 and 7 have been connected to the cable delivered with the electrode water sensor, and the other end of the network cable has been connected to the AI/DI port on the rack environment unit.

Context

- To use the AI/DI sensor, enable the corresponding AI/DI port and name the sensor. The specific alarm then can be reported.
- If the sensor is prefabricated, only check its settings.
- The actual value prevails. Only the method of the parameter settings is described.

Procedure

Step 1 Set water sensor parameters.

NOTE

In this example, the water sensor is connected to the AI/DI_3 port on the ECC800.

- Log in to the ECC800 WebUI as an administrator.
- Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.
- Set **Device Type** to **ECC800**, set **Device Name** to **ECC800**, and click **OK**.
- On the query result tab page, set the new signal name of **AI/DI_3** to **Leak** and click **Submit**.
- Choose **Monitoring > System > ECC800 > Running Parameters > AI/DI_3 Port Settings**.
- Set **Leak sensor** to **Enable** and click **Submit**.
- Confirm that **Leak sensor type** is automatically identified as **Leak sensor(Electroc)**. Ensure that **Leak power supply** is **Yes**, and click **Submit**.

Step 2 Check functions of water sensors.

Table 8-24 Function check

Check Method	Normal Connection Status	Alarm Clearance Method
Immerse the two contacts of the electrode water sensor in water.	Leak DI alarm is generated on the active alarm screen of the app or on the WebUI.	Wipe dry the two contacts of the water sensor. The alarm disappears automatically.

----End

8.1.6.25 How to Set and Add the Temperature Sensor (Connected to the AI/DI Port on the ECC800)?

If a temperature sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the RJ45 port on the temperature sensor, and the other end has been connected to the AI/DI port on the ECC800.

Context

- If the sensor is prefabricated, only check its settings.
- The actual value prevails. Only the method of the parameter settings is described.
- If multiple temperature sensors are connected, commission them one by one.

Procedure

Step 1 Set temperature sensor parameters.

NOTE

In this example, the temperature sensor is connected to the AI/DI_2 port on the ECC800.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.
3. Set **Device Type** to **ECC800**, set **Device Name** to **ECC800**, and click **OK**.
4. On the query result tab page, set the new signal name of **AI/DI_2** to **Temperature** and click **Submit**.
5. Choose **Monitoring > System > ECC800 > Running Parameters > AI/DI_2 Port Settings**.
6. Set **Temperature sensor** to **Enable** and click **Submit**.
7. Confirm that **Temperature sensor type** is automatically identified as **NTC**. Ensure that **Temperature power supply** is **Yes**.

Step 2 Check the monitoring functions of the temperature sensor.

Table 8-25 Commissioning the sensor

Check Method	Normal Connection Status
View the operating information about the temperature sensor on the WebUI.	You can view the current cabinet temperature.

----End

8.1.6.26 How to Set and Add the Temperature Sensor (Connected to the NTC Port on the Rack Environment Unit)

If a temperature sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the RJ45 port on the temperature sensor, and the other end has been connected to the NTC port on the rack environment unit.

Procedure

- Step 1** The temperature sensor supports self-discovery and does not need to set parameters.
- Step 2** Check the monitoring functions of temperature sensor.

Table 8-26 Commissioning the sensor

Check Method	Normal Connection Status
Path: Monitoring > Cabinet > IT Cabinet n > Cabinet Collector n	You can view the current cabinet temperature.

----End

8.1.6.27 How to Set and Add the T/H Sensor (BOM Number: 33010346)?

If a T/H sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the RJ45 port on the temperature sensor, and the other end has been connected to the COM port on the ECC800.

Procedure

- Step 1** Set the T/H sensor device address.

1. Go to the LCD screen of the T/H sensor. Press **SET** to go to the **ADD** screen, and set the device address to **1** by pressing + or –.

Step 2 Add a T/H sensor.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a T/H sensor.

Table 8-27 Adding a T/H sensor

Path	Parameter Name	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select Sensor from the drop-down list box.
	Device Type	Select T/H sensor from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM3 from the drop-down list box. NOTE The setting example indicates that the T/H sensor is connected to the COM3 port on the ECC800. If the T/H sensor is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the T/H sensor based on the actual situation.

3. Click **Test Connect** to check whether the T/H sensor connects to the ECC800 properly.
 - If the T/H sensor connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the T/H sensor does not connect to the ECC800 properly, check whether the cable between the T/H sensor and the ECC800 is connected properly, whether the T/H sensor and ECC800 are running properly, and whether the input parameters are consistent with the T/H sensor parameters.

Step 3 Check functions of the T/H sensor.**Table 8-28** Function check

Check Method	Normal Connection Status
Check the running information about the T/H sensor on the WebUI.	Choose Monitoring > Aisle > T/H Sensor Group > T/H Sensor n > Running Info , and check the current T/H information of the cabinet.
Set T/H sensor alarm thresholds.	Choose Monitoring > Aisle > T/H Sensor Group > T/H Sensor n > Running Parameters , and set High temperature alarm threshold , Low temperature alarm threshold , High humidity alarm threshold , and Low humidity alarm threshold as required. NOTE The default values of High temperature alarm threshold ,

Check Method	Normal Connection Status
	Low temperature alarm threshold, High humidity alarm threshold, and Low humidity alarm threshold are 30.0°C, 5.0°C, 85.0% RH, and 15.0% RH, respectively.

----End

8.1.6.28 How to Set and Add the T/H Sensor (BOM Number: 02310NBS)?

If a T/H sensor is installed, perform the following steps to configure it.

Prerequisites

One end of the straight-through cable has been connected to the RS485_IN port on the T/H sensor, and the other end has been connected to the COM port on the ECC800.

Procedure

Step 1 Set the T/H sensor device address.

Set the T/H sensor device address through the DIP switch on the T/H sensor.

Toggle switches 1 to 6 of the DIP switch specify the device address in binary mode. **ON** indicates 1, and **OFF** indicates 0.

Table 8-29 Setting a device address

Address	Toggle Switch 1	Toggle Switch 2	Toggle Switch 3	Toggle Switch 4	Toggle Switch 5	Toggle Switch 6
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF

Step 2 Add a T/H sensor.

1. Log in to the ECC800 WebUI as an administrator.
2. Add a T/H sensor.

Table 8-30 Adding a T/H sensor

Path	Parameter Name	Setting
Choose System Settings > Device	Device attribute	Select Sensor from the drop-down list box.
	Device Type	Select T/H sensor from the drop-down list box.

Path	Parameter Name	Setting
Management and click Add Device . The parameters for adding devices are displayed.	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM3 from the drop-down list box. NOTE The setting example indicates that the T/H sensor is connected to the COM3 port on the ECC800. If the T/H sensor is connected to another port, enter the number of the connected port.
	Device Address	In this example, Device Address is set to 1 . During actual configuration, set the device address for the T/H sensor based on the actual situation.

3. Click **Test Connect** to check whether the T/H sensor connects to the ECC800 properly.
 - If the T/H sensor connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the T/H sensor does not connect to the ECC800 properly, check whether the cable between the T/H sensor and the ECC800 is connected properly, whether the T/H sensor and ECC800 are running properly, and whether the input parameters are consistent with the T/H sensor parameters.

Step 3 Check functions of the T/H sensor.

Table 8-31 Function check

Check Method	Normal Connection Status
Check the running information about the T/H sensor on the WebUI.	Choose Monitoring > Aisle > T/H Sensor Group > T/H Sensorn > Running Info , and check the current T/H information of the cabinet.
Set T/H sensor alarm thresholds.	Choose Monitoring > Aisle > T/H Sensor Group > T/H Sensorn > Running Parameters , and set High temperature alarm threshold , Low temperature alarm threshold , High humidity alarm threshold , and Low humidity alarm threshold as required. NOTE The default values of High temperature alarm threshold , Low temperature alarm threshold , High humidity alarm threshold , and Low humidity alarm threshold are 30.0°C , 5.0°C , 85.0% RH , and 15.0% RH , respectively.

----End

8.1.7 How to Restore Factory Settings?

Context

NOTICE

Restoring factory settings will restore parameters to their default values. Perform this operation with caution.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
 - Step 2** Choose **Maintenance > Configuration File** and click **Restore Factory Settings**.
 - Step 3** Enter the password currently used for logging in to the WebUI and click **Submit**.
- End

8.1.8 How Do I Install a Network Security Certificate?

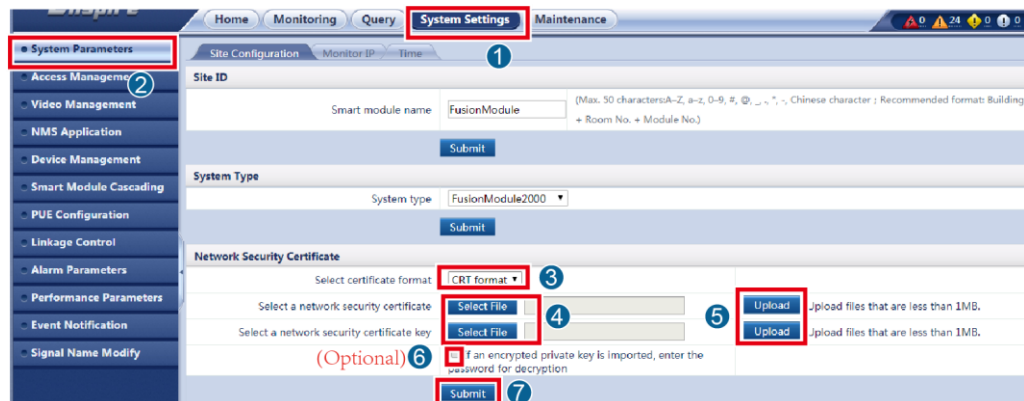
Context

- You have copied a network security certificate and its key you obtained to the PC.
- Install a network security certificate if a security certificate problem message is displayed when you attempt to log in to the ECC800 WebUI.
- You need to apply to an organization authorized by the customer for a network security certificate and its key with the ECC800 IP address or domain name. This section describes how to import the certificate and key.

Procedure

- Step 1** Log in to the ECC800 WebUI as the administrator.
- Step 2** Upload a network security certificate.

Figure 8-15 Uploading a network security certificate



NOTE

If the network security certificate is encrypted, select **If an encrypted private key is imported, enter the password for decryption**, and specify **Key cryptography** and **Confirm key cryptography**.

----End

8.1.9 How Can I Install a Device Access Certificate?

Context

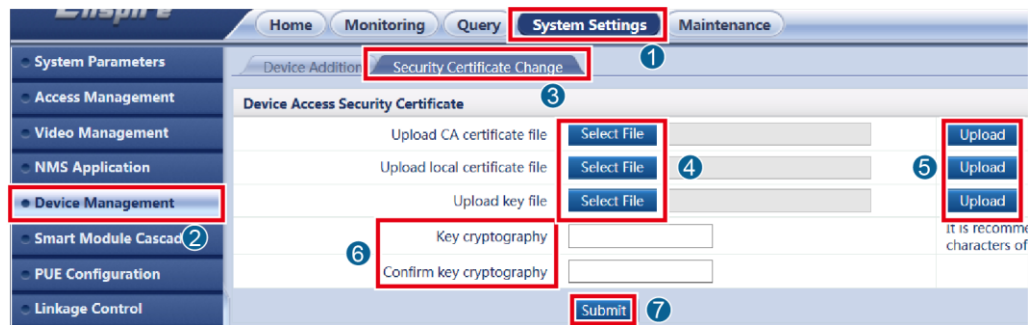
- You have obtained a device access certificate and the certificate key and have copied the certificate and key file to the PC.
- A preset certificate is provided for the ECC800 and its connected devices. If a higher security level is required, replace the certificate both on the ECC800 and the devices.
- You need to apply for a device access certificate from an organization authorized by the customer, and replace the original certificate on the devices and ECC800.
- This section describes how to import a certificate to the ECC800. For details about how to import a certificate to devices, see the operation manual of the devices.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Upload a device access certificate.

Figure 8-16 Uploading a certificate



----End

8.1.10 How Can I Change the ECC800 IP Address on the WebUI

Context

You have obtained the IP address, subnet mask, and default gateway information planned for the ECC800.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings** > **System Parameters** > **Monitor IP** and change the IP, subnet mask, and default gateway information for the ECC800 as planned.
- Step 3** Click **Submit**.
- Step 4** In the displayed **Setting succeeded. Log in again.** dialog box, click **OK**.

----End

8.1.11 How Do I Configure ECC800 Alarm Parameters

Context

- You can set parameters under **Enable Alarm**, **Severity**, **Output Dry Contact** and **Loudspeaker** based on requirements.
 - When **Enable Alarm** is set to **Disable** for an alarm, the ECC800 will not show this alarm.
 - You can set **Severity** to **Critical**, **Major**, **Minor**, or **Warning** as required.
 - After an alarm and a DO output are associated over **Output Dry Contact**, the device connected to the DO port will act if the alarm is generated.
 - If an alarm is associated with the loudspeaker and **Loudspeaker** is set to **Enable**, the loudspeaker produces sound when the alarm is generated.
- You can modify alarm parameters in batches over **Batch Setting**.
- The setting methods for different alarms are the same. This section describes how to set the Operation log full alarm for the ECC800.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > Alarm Parameters**.
- Step 3** On the **Basic Alarm Parameters** page, choose **ECC800** from the **Select a device type** drop-down list box, choose the ECC800 to be set from the **Device name** drop-down list box, and then click **Confirm**.
- Step 4** Set **Enable Alarm** to **Enable** or **Disable** for **Operation log full** as required. Set **Severity** to **Critical, Major, Minor**, or **Warning** as required.

NOTE

To modify **Enable Alarm** or **Severity** in batches, click **Batch Setting** in the left corner of the **Basic Alarm Parameters** page, and choose **ECC800** from the **Select a device type** drop-down list box. Set **Destination Parameter of Enable Alarm** or **Source Parameter** and **Destination Parameter of Severity**, and click **OK**.

- Step 5** On the **Alarm Linkage** page, set **Device type** to **ECC800**, select **Device Type** or **Device** in the **Linkage type** column, and click **Confirm**.
- Step 6** (Optional) If you select **Device** in the **Linkage type** column, select the **ECC800** to be set in the **Device name** column.
- Step 7** Click **Select** in the **Output Dry Contact** column corresponding to **Operation log full** as required, select **Yes** or **No** for DO1 or DO2, and click **OK**.

NOTICE

Select a DO not used by other functions. Otherwise, the association setting fails.

- Step 8** Click **Select** in the **Loudspeaker** column corresponding to **Operation log full** as required, set **Loudspeaker** to **Yes** or **No**, and click **OK**.

----End

8.1.12 How Can I View Real-Time Monitoring Data, Active Alarms, Historical Alarms, Access Event, and Operation Logs?

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Click **Monitoring**, select the device to be viewed, and select **Running Info** to view the real-time data of the device.
- Step 3** Choose **Home > Active Alarms** to view the active alarms of the ECC800. Click **Details** in the **Alarm Details** area to view alarm details of devices.
- Step 4** Choose **Query** to view the historical alarms, access events, and operation logs of the device.
1. View historical alarms, choose **Query > Historical Alarms**. Set **Device**, **Start time**, **End time**, **Sort mode** and **Sorting By**, and click **Query**.
 2. To view access events, choose **Query > Access Event**.

3. To view operation logs, choose **Query > Operation Log**.

----End

8.1.13 How Can I Handle Alarms?

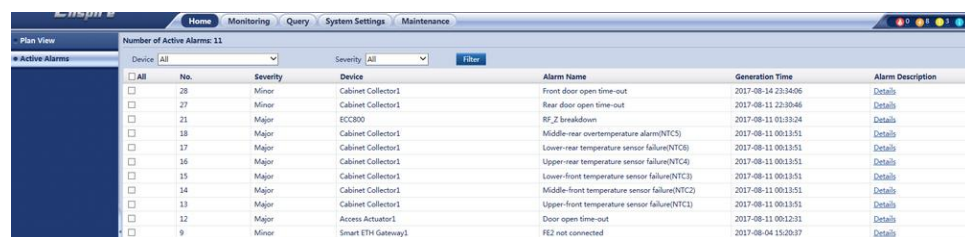
Procedure

Step 1 Log in to the ECC800 WebUI.

Step 2 Choose **Home > Active Alarms** and view active alarms.

Step 3 Select an alarm to be acknowledged and click **Confirm**.

Figure 8-17 Acknowledging an alarm



Device	No.	Severity	Device	Alarm Name	Generation Time	Alarm Description
All	28	Minor	Cabinet Collector1	Front door open time-out	2017-08-14 21:34:06	Details
	27	Minor	Cabinet Collector1	Rear door open time-out	2017-08-11 22:30:46	Details
	21	Major	ECC800	RF_2 breakdown	2017-08-11 01:33:24	Details
	18	Major	Cabinet Collector1	Middle-rear overtemperature alarm(NTC5)	2017-08-11 00:13:51	Details
	17	Major	Cabinet Collector1	Lower-rear temperature sensor failure(NTC8)	2017-08-11 00:13:51	Details
	16	Major	Cabinet Collector1	Upper-rear temperature sensor failure(NTC4)	2017-08-11 00:13:51	Details
	15	Major	Cabinet Collector1	Lower-front temperature sensor failure(NTC3)	2017-08-11 00:13:51	Details
	14	Major	Cabinet Collector1	Middle-front temperature sensor failure(NTC2)	2017-08-11 00:13:51	Details
	13	Major	Cabinet Collector1	Upper-front temperature sensor failure(NTC1)	2017-08-11 00:13:51	Details
	12	Major	Access Actuator1	Door open time-out	2017-08-11 00:12:31	Details
	9	Minor	Smart ETH Gateway1	FE2 not connected	2017-08-04 15:20:37	Details

Step 4 Handle an alarm based on the alarm information.

Step 5 Select an alarm to be cleared and click **Clear Alarm**.

NOTE

The cleared alarm is displayed in the historical alarm list.

----End

8.1.14 How Can I View Performance Data?

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Choose **Query > Performance Data**.

Step 3 Set **Device**, **Performance data**, **Statistics mode**, **Start time**, and **End time**, and click **Query**.

----End

8.1.15 How Is a Signal Name Changed?

Context

- In this example, the smoke sensor is connected to the AI/DI_3 port on the ECC800.
- The following procedure describes how to change the signal name of AI/DI_3. Other signal names can be changed in a similar way.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > Signal Name Modify**. The **Batch Signal Configuration** page is displayed.
- Step 3** Set **Device type** to **ECC800**, set **Device name** to **ECC800**, and click **OK**.
- Step 4** On the query result tab page, set the new signal name of **AI/DI_3** to **Smoke** and click **Submit**.
- Step 5** Choose **Monitoring > System > ECC800 > Running Parameters > AI/DI_3 Port Settings**. Check that the signal name of AI/DI_3 has been changed to **Smoke**.
- End

8.1.16 How Can I Export Historical Data and Device Data?

Context

- Export Historical Data: You can export historical alarms, active alarms, performance data, operation logs, and access events of the system for viewing and analyzing events.
- Export Device Data: You can export device data in system.
- If **Encryption Password** is selected, the exported data package will be encrypted, and you need to enter the encryption password to decompress the data package. To ensure data security, you are advised to select **Encryption Password**.

Procedure

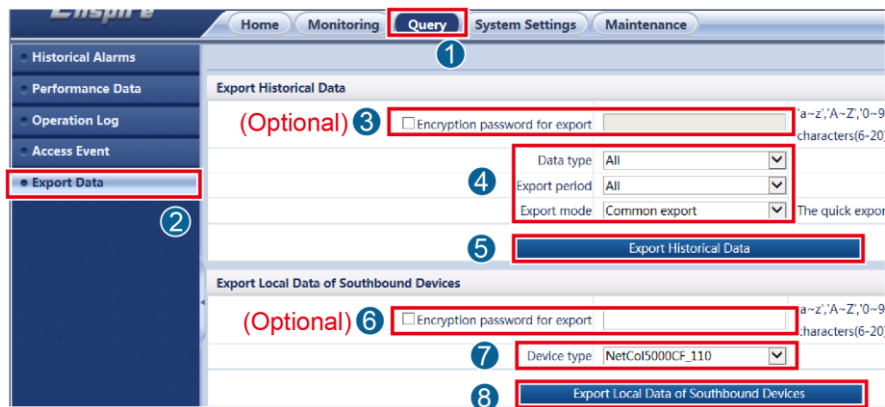
- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Select **Query > Export Data**.
- Step 3** (Optional) Select **Encryption password for export** and enter an encryption password.

NOTE

Record the password for decompressing the data package.

- Step 4** Export historical data and local data of southbound devices, and select a save path to save the exported data to the PC.

Figure 8-18 Exporting data



NOTE

- Data can be exported from the integrated PDF, integrated UPS, iBOX, smart cooling product, and other devices that have the local data storage function.
- If a USB flash drive is inserted, click **Export Historical Data** or **Export Local Data of Southbound Devices of Southbound Devices**, and specify a save path to save exported data to the USB flash drive.

----End

8.1.17 How Can I Export or Import a Configuration File?

Context

You can export parameter configurations for ECC800_1 to a PC. If ECC800_2 needs the same parameter configurations, import the configuration file to ECC800_2.

NOTICE

ECC800_2 and ECC800_1 must have the same type and number of connected devices.

Procedure

Step 1 Log in to the ECC800_1 WebUI as an administrator.

Step 2 Choose **Maintenance > Configuration File**.

Step 3 Export a configuration file.

1. Specify **Configuration file encryption password**.

NOTE

Record the password for importing a configuration file.

2. Click **Back Up Current Settings**.

Step 4 Import a configuration file.

NOTICE

- Before importing the configuration file, ensure that the current system type is the same as the system type when the configuration file is exported.
- The ECC800_2 will restart after you import the configuration file.

1. Log in to the ECC800_2 WebUI as an administrator.
2. Import a configuration file.

Figure 8-19 Importing a configuration file



----End

8.1.18 How Can I Export Fault Information?

Procedure

- Step 1** Log in to the ECC800_1 WebUI as an administrator.
- Step 2** Choose **Maintenance** > > **Fault Information**.
- Step 3** (Optional) Select **Encryption password for export** and enter an encryption password

NOTICE

If **Encryption password** is selected, the exported data package will be encrypted, and you need to enter the encryption password to decompress the data package. To ensure data security, you are advised to select **Encryption password for export**.

NOTE

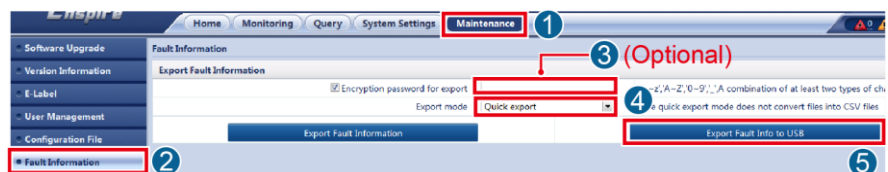
Record the password for decompressing the data package.

- Step 4** Export fault information and save the exported data to the PC or USB flash drive.

Figure 8-20 Exporting information to PC



Figure 8-21 Exporting information to USB flash drive



----End

8.1.19 How Can I Synchronize Device Parameters?

Context

- Do not delete the source devices before replacing devices.
- After replacing devices, you can choose to synchronize configured device parameters to the target devices.
- **Source Device:** device before replacement
- **Target Device:** device after replacement

Procedure

- Step 1** Log in to the ECC800 WebUI as the administrator.
- Step 2** Choose **Maintenance** > **Parameter Sync**.
- Step 3** Select a value from the **Device type** drop-down list box.
- Step 4** Specify source device and target device, click **Submit**.

NOTICE

If communication between the ECC800 and the device is interrupted during parameter synchronization, the synchronization fails. Ensure that the ECC800 and the device communicate properly and synchronize parameters again.

 NOTE

The source device can be a device that communicates properly or fails to communicate, but the target device must be a device that communicates properly.

----End

8.1.20 How Can I Associate an Alarm, a DO Output, and Sound?

Context

- After an alarm and a DO output are associated, the device connected to the DO port will act if the alarm is generated.
- This section describes how to associate an ECC800 alarm with a DO output.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Choose **System Settings** > **Alarm Parameter** > **Alarm Linkage**.

Step 3 Select **ECC800** for **Device type**, select **Device Type** or **Device** for **Linkage type**, and click **Confirm**.

 NOTE

Select **ECC800** from the **Device name** list if you have selected **Device** for **Linkage type**, and click **Confirm**.

Step 4 Select the alarm to be bound to a DO port, and click **Select** in the **Output Dry Contact** list for **Smoke DI alarm**. On the **Set Dry Contact Outputs(ECC800)** page, set **DO2** or **DO1** to **Yes** and click **OK**.

Step 5 Select the alarm to be bound to a loudspeaker, and click **Select** in the **loudspeaker** list for **Smoke DI alarm**. On the **Please set the sound(ECC800)** page, set **loudspeaker** to **Yes** or **No** and click **OK**.

NOTICE

Select a DO not used by other functions. Otherwise, the association setting fails.

----End

8.1.21 How Can I Handle DO Association Failure?

Context

- If DO association fails, the DO port to be associated may be used by other functions. Check whether the DO port is used.
- Two ECC800 functions may use a DO port: Linkage control and alarm linkage.

Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Check whether the DO port is used.
- Choose **System Settings** > **Alarm Parameters** and check whether the DO port is used.
 - Choose **System Settings** > **Linkage Control** and check whether the DO port is used.
- Step 3** After changing the DO port state to idle, associate the DO port again. If the association still fails, contact Huawei technical support.
- End

8.1.22 What Do I Do If the ECC800 WebUI Display Language Changes from Chinese to English During Use?

Context

Cause: The browser cookies are deleted.

Procedure

- Step 1** Manually refresh the browser page.
- End

8.1.23 What Do I Do If the ECC800 Fails to Communicate with the UPS5000-E?

Procedure

- Step 1** Tap **System Info** on the LCD after the UPS is started.
- Step 2** Choose **System Info** > **Settings**, enter the user name and password, and tap .
-  **NOTE**
- The preset user name is **admin** and the preset password is **000001**.
- Step 3** Choose **Settings** > **Advanced** and set **Modbus TCP encryption** to **Disable**.
- End

8.1.24 What Do I Do If a Message Indicating Unauthorized Fingerprint Is Displayed During Fingerprint Scanning on the Access Control Device (Fingerprint Has Been Recorded)?

Procedure

- Step 1** Ensure that no obstacles exist in front of the fingerprint, and then scan the fingerprint on the access control device again.
- Step 2** If the message indicating unauthorized fingerprint is still displayed after you perform [Step 1](#), you need to synchronize the fingerprint information.
1. Choose **System Settings > Access Management**. On the **Authorization Operations** tab page, click **Synchronize to Device**, select the device for synchronizing fingerprint information, and click **Start Synchronization**.
 2. After the **Synchronization Status** of the device becomes **Synchronized**, close the **Synchronize Access Permission** page.
 3. Scan the fingerprint on the access control device again.
- Step 3** If the message indicating unauthorized fingerprint is still displayed after you perform [Step 1](#) and [Step 2](#), you need to record the user's fingerprint again.
1. Choose **System Settings > Access Management**.
 2. Select the involved user and record the fingerprint again.

----End

8.1.25 How Can I Rectify Camera Access Restriction

Prerequisites

If Huawei S12700 series switch is used, refer to this section to rectify the fault. For more information, consult network engineers.

Context

The camera is inaccessible after the MAC address and IP address are bound in network configuration.

Procedure

- Step 1** Use the free-rule configuration method. Configure the free-rule MAC address so that users can access the network without authentication. For the configuration method, see the section **authentication free-rule** in [S12700 V200R008C00 Product Documentation](#).

----End

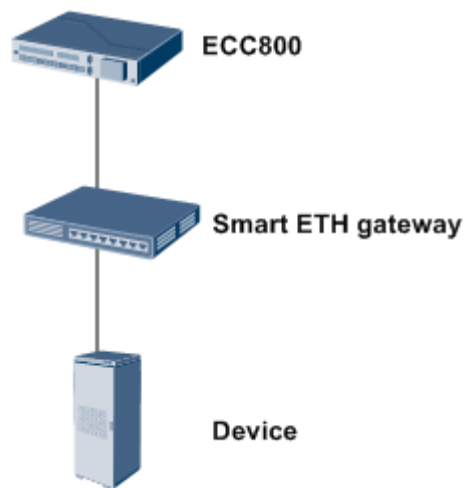
8.1.26 How Should I Add the Devices Accessed Through a Smart ETH Gateway over Modbus-TCP to the ECC800 WebUI?

Prerequisites

The device supports DHCP.

Context

Figure 8-22 Network diagram



Procedure

- Step 1** Ensure that the device communication mode has been set to **DHCP**.
- Step 2** Log in to the ECC800 WebUI as an administrator, and check whether the device exists on the **Monitoring** page.
 - If the device exists, and communication status is normal, the device has accessed the ECC800 successfully.

Figure 8-23 Device accessed the ECC800



- If the device does not exist, check that the cable is properly connected between the device and the ECC800, the ECC800 is operating properly, and communications parameters are set correctly.

----End

Follow-up Procedure

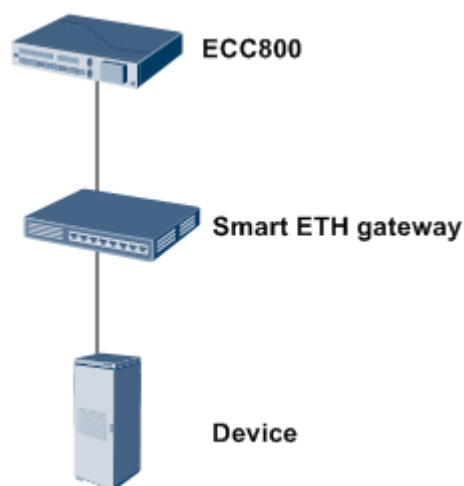
Choose **Home** > **Plan View** on the ECC800 WebUI, and drag the device to the corresponding position in the **Smart Module View** pane based on the actual device layout.

8.1.27 How Should I Add the Devices Accessed Through a Smart ETH Gateway over Modbus-MAC to the ECC800 WebUI?

Context

The device that supports Modbus-MAC can be automatically identified by the ECC800.

Figure 8-24 Network diagram



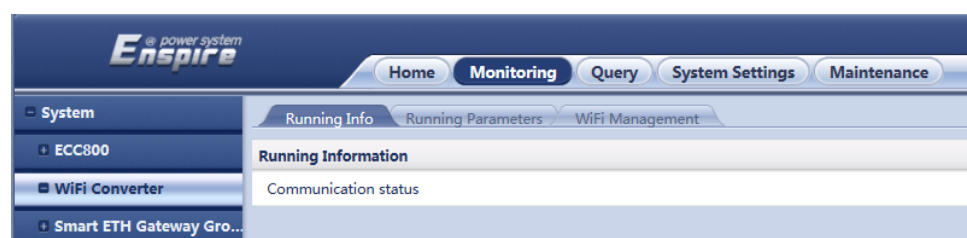
Procedure

- Step 1** Log in to the ECC800 WebUI as an administrator, and check whether the device exists on the **Monitoring** page.

The following is an example of confirming the access of a WiFi converter.

- If the device exists, and communication status is normal, the device has accessed the ECC800 successfully.

Figure 8-25 Device accessed the ECC800



- If the device does not exist, check that the cable is properly connected between the device and the ECC800 and that the device and ECC800 are operating properly.

----End

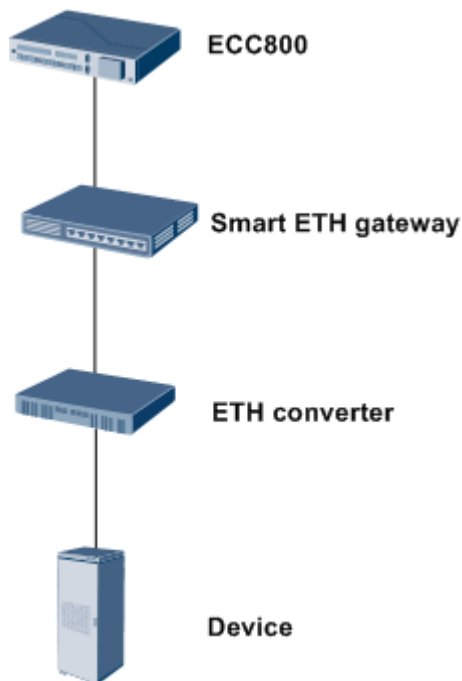
Follow-up Procedure

Choose **Home** > **Plan View** on the ECC800 WebUI, and drag the device to the corresponding position in the **Smart Module View** pane based on the actual device layout.

8.1.28 How Should I Add Devices Accessed Through the ETH Converter to the ECC800 WebUI?

Context

Figure 8-26 Network diagram



Procedure

Step 1 Set communications parameters on the device.

Table 8-32 Description of communications parameters to be set on a device

Parameter	Recommended Value
Baud rate	This section uses 9600 as an example. Set this parameter based on site requirements. NOTE For certain devices, this parameter does not need to be set.

Parameter	Recommended Value
Communications address	This section uses 1 as an example. Set this parameter based on site requirements.

Step 2 Add the device to the ECC800 WebUI.

1. Log in to the ECC800 WebUI as the administrator.
2. Add the device.

Table 8-33 Parameter description for adding a device

Path	Parameter	Setting
Choose System Settings > Device Management and click Add Device . The parameters for adding devices are displayed.	Device attribute	Select the device attribute to be accessed from the drop-down list box.
	Device Type	Select the device type to be accessed from the drop-down list box.
	Connect To	Select the corresponding ETH converter from the drop-down list box. NOTE Use the blinking function of the ETH converter to identify the mapping between the device and the ETH converter.
	Communications Port	Select COM1/COM2 from the drop-down list box.
	Device Address	This section uses 1 as an example. In practice, set this parameter to be the same as the communications address for the device.

3. Click **Test Connect** to check whether the device connects to the ECC800 properly.
 - If the independent deployment AI_DI unit connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the connection is not proper, check that the cable is properly connected between the device and the ECC800, that the device and ECC800 are running properly, and that the input parameters are consistent with the device parameters.
4. Choose **Monitoring > System > ETH Converter Group > ETH Converter n > Running Parameters** and set **Device name** to **ETH Converter n_Device name**.

----End

Follow-up Procedure

Choose **Home > Plan View** on the ECC800 WebUI, and drag the device to the corresponding position in the **Smart Module View** pane based on the actual device layout.

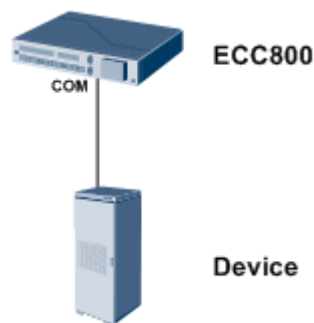
8.1.29 How Should I Add Devices Accessed Through the ECC800 COM Port to the ECC800 WebUI

Prerequisites

This section uses the device connecting to the COM1 port on the ECC800 as an example.

Context

Figure 8-27 Network diagram



Procedure

Step 1 Set communications parameters on the device.

Table 8-34 Description of communications parameters to be set on a device

Parameter	Recommended Value
Baud rate	This section uses 9600 as an example. Set this parameter based on site requirements. NOTE For certain devices, this parameter does not need to be set.
Communications address	This section uses 1 as an example. Set this parameter based on site requirements.

Step 2 Add the device to the ECC800 WebUI.

1. Log in to the ECC800 WebUI as an administrator.
2. Add the device.

Table 8-35 Parameter description for adding a device

Path	Parameter	Setting
Choose System Settings >	Device attribute	Select the device attribute to be accessed from the drop-down list box.

Path	Parameter	Setting
Device Management and click Add Device . The parameters for adding devices are displayed.	Device Type	Select the device type to be accessed from the drop-down list box.
	Connect To	Select ECC800 from the drop-down list box.
	Communications Port	Select COM1 from the drop-down list box. NOTE The setting example indicates that the device connects to the COM1 port on the ECC800. If the device connects to another port, enter the number of the connected port.
	Device Address	This section uses 1 as an example. In practice, set this parameter to be the same as the communications address for the device.

- Click **Test Connect** to check whether the device connects to the ECC800 properly.
 - If the independent deployment AI_DI unit connects to the ECC800 properly, click **Confirm**. The connected devices are displayed in the **Number of connected devices** list.
 - If the connection is not proper, check that the cable is properly connected between the device and the ECC800, that the device and ECC800 are running properly, and that the input parameters are consistent with the device parameters.

----End

Follow-up Procedure

Choose **Home** > **Plan View** on the ECC800 WebUI, and drag the device to the corresponding position in the **Smart Module View** pane based on the actual device layout.

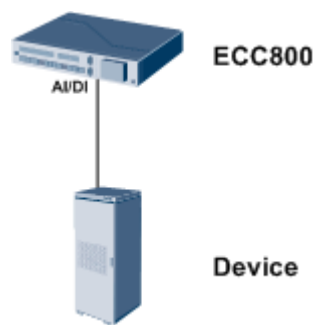
8.1.30 How Should I Add Devices Accessed Through the ECC800 AI/DI Port to the ECC800 WebUI

Prerequisites

This section uses the device connecting to the AI/DI_1 port on the ECC800 as an example.

Context

Figure 8-28 Network diagram



Procedure

- Step 1 Log in to the ECC800 WebUI as an administrator.
- Step 2 Add the device.

Table 8-36 Parameter description for adding a device

Path	Parameter	Setting
Monitoring > System > ECC800 > Running Parameters > AI/DI_1 Port Settings NOTE The setting example indicates that the device connects to the AI/DI_1 port on the ECC800. If the device connects to another port, enter the number of the connected port.	AI/DI_1 sensor	Select Enable and click Submit
	AI/DI_1 sensor type	Select the type of the device to be accessed from the drop-down list box. NOTE The device types (excluding normal open and normal close) can be automatically identified for devices except for door sensor and leak sensor (Electroc) after connection.
	AI/DI_1 power supply	The default value is Enable .

- Step 3 After setting all mandatory parameters, click **Submit**.
----End

Follow-up Procedure

Choose **Home > Plan View** on the ECC800 WebUI, and drag the device to the corresponding position in the **Smart Module View** pane based on the actual device layout.

8.1.31 How Should I Open Doors Remotely over the ECC800 WebUI

Context

If O&M personnel need to enter a smart module but do not take an access cord or forget the password, you can open the door remotely over the ECC800 WebUI.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Open the aisle door.

Table 8-37 Operations for opening a door remotely

Path	Setting
Monitoring > Aisle > Access Actuator Group > Access Actuator n > Controls	Select Remote door opening and click Submit



CAUTION

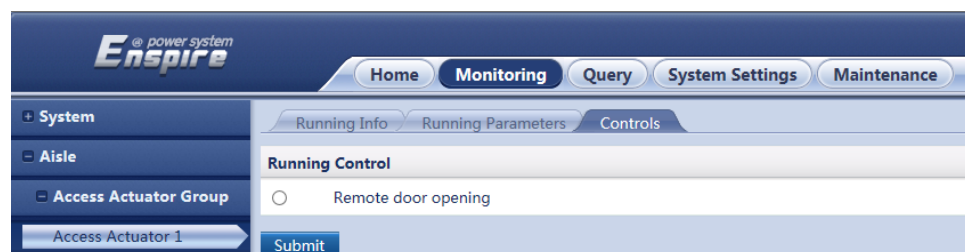
Remotely opening the door may open the smart module door, and this may pose security risks. Exercise caution when performing this operation.

----End

Example

The following figure shows how to remotely open the aisle door controlled by access actuator 1.

Figure 8-29 Opening a door remotely



8.1.32 How Should I Turn On or Off Aisle Lights in the Smart Module over the ECC800 WebUI?

Context

- If O&M personnel forget to turn off lights when exiting the data center, you can remotely turn off the lights over the ECC800 WebUI.
- When the local light button is faulty or lights cannot be turned on through a linkage, you can remotely turn on the lights over the ECC800 WebUI.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Turn on or off aisle lights.

Table 8-38 Operations for turning on or off aisle lights

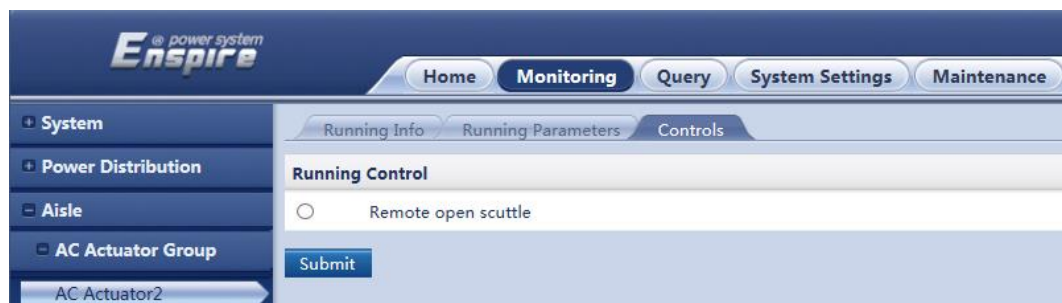
Path	Setting
Monitoring > Aisle > AC Actuator Group > AC Actuator n > Running Parameters	Set Set light mode is Manual .
Monitoring > Aisle > AC Actuator Group > AC Actuator n > Controls	Select Remote open scuttle , select ON or OFF as required, and click Submit .

----End

Example

The following figure shows how to turn on or off the lights controlled by AC actuator 2.

Figure 8-30 Turning on or off aisle lights



Follow-up Procedure

Set **Set light mode** is **Automatic**.

8.1.33 How Should I Opening Skylights Remotely over the ECC800 WebUI?

Context

You can open skylights over the ECC800 WebUI in emergencies.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Open skylights.

Table 8-39 Operations for opening skylights

Path	Setting
Monitoring > Aisle > Skylight Actuator Group > Skylight Actuator n > Controls	Select Remote open scuttle and click Submit

CAUTION

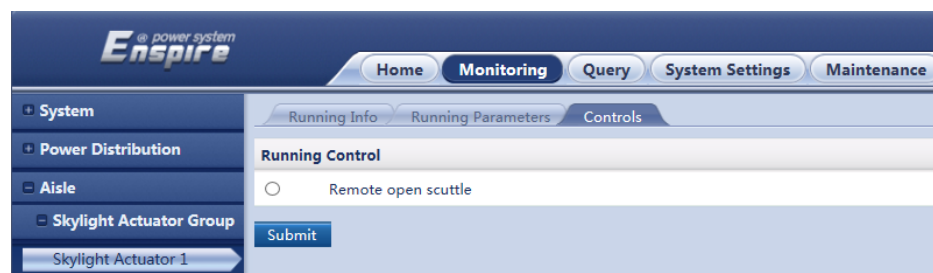
Remotely opening the skylight may open the smart module skylight, and this may pose security risks. Exercise caution when performing this operation.

----End

Example

The following figure shows how to open the skylights controlled by skylight actuator 1.

Figure 8-31 Opening skylights



Follow-up Procedure

After the maintenance is complete, O&M personnel need to close the skylights in the smart module manually.

8.1.34 How Should I Turn On or Off Smart Cooling Products over the ECC800 WebUI?

Context

You can turn on or off smart cooling products over the ECC800 WebUI in emergencies.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Turn on or off smart cooling products.

Table 8-40 Operations for turning on or off smart cooling products

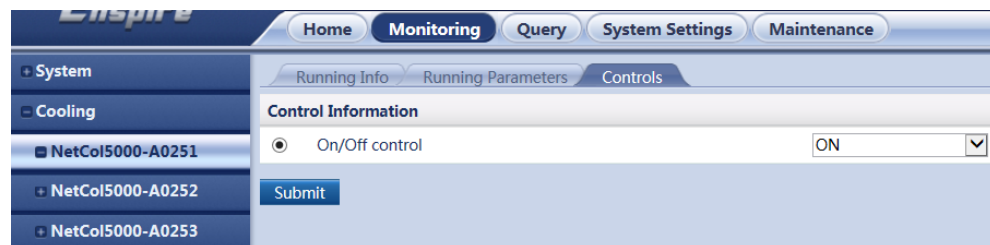
Path	Setting
Monitoring > Cooling > NetCol n > Controls	Select On/Off control , select ON or OFF as required, and click Submit .

----End

Example

The following figure shows how to turn on or off the NetCol5000-A025.

Figure 8-32 Turning on or off smart cooling products



8.1.35 How Should I Open the Cabinet Electronic Lock over the ECC800 WebUI

Context

When O&M personnel need to open a cabinet for maintenance, you can open the cabinet electronic lock over the ECC800 WebUI.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Open the cabinet electronic lock.

Table 8-41 Operations for opening a cabinet electronic lock

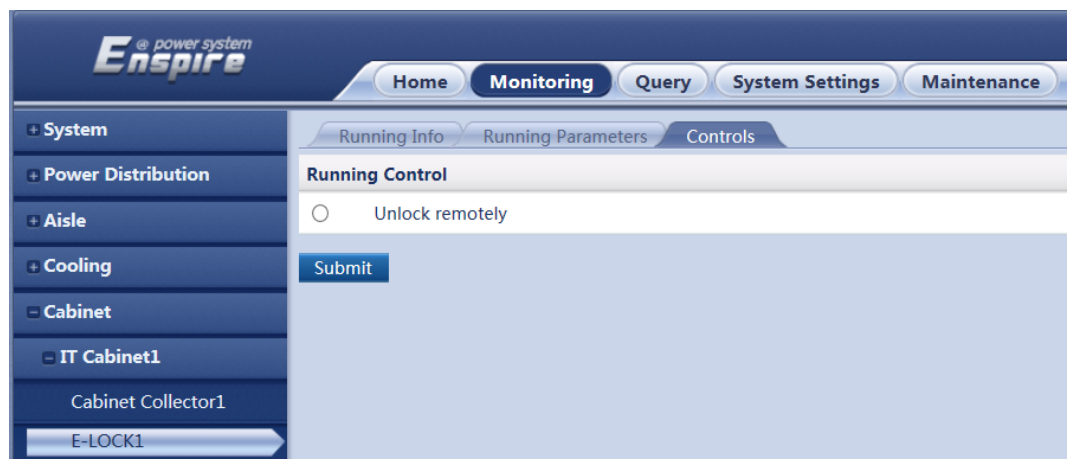
Path	Operation
Monitoring > Cabinet > IT Cabinet n > E-LOCK n	Select Remote and click Submit .

----End

Example

The following figure shows how to open electronic lock 1 for IT cabinet 1.

Figure 8-33 Opening a cabinet electronic lock



Follow-up Procedure

After the maintenance is complete, O&M personnel need to close the cabinet door manually.

8.1.36 How Should I Link the Smoke Alarm with the Alarm Beacon over the ECC800 WebUI

Prerequisites

The alarm beacon is connected to the DO port on the ECC800.

Context

This section describes how to set an alarm linkage by linking output dry contact of the smoke alarm on the multi-functional sensor to the DO2 port.

After the smoke alarm is linked with the alarm beacon, if smoke is detected inside the smart module, the alarm beacon connecting to the corresponding DO2 port will generate an audible and visual alarm.

Procedure

Step 1 Choose **System Settings > Alarm Parameter > Alarm Linkage**.

Step 2 Select **Multi-Func Sensor** for **Device Type**, select **Device Type** or **Device** for **Linkage type**, and click **Confirm**.

NOTE

Select **Multi-Func Sensor n** from the **Device Name** list if you have selected **Device** for **Linkage type**, and click **Confirm**.

Step 3 Click **Select** in the **Output Dry Contact** list for **Smoke alarm**. On the **Set Dry Contact Outputs(Multi-Func Sensor)** page, set **DO2** to **Yes** and click **OK**.

Step 4 Click **Select** in the **loudspeaker** list for **Smoke alarm**. On the **Please set the sound(Multi-Func Sensor)** page, set **loudspeaker** to **Yes** and click **OK**.

----End

8.1.37 How should I Link the AI/DI Alarm with the Alarm Beacon over the ECC800 WebUI

Prerequisites

The alarm beacon is connected to the DO port on the ECC800.

Context

After the AI/DI alarm is linked with the alarm beacon, if smoke is detected inside the smart module, the alarm beacon connecting to the corresponding DO port will generate an audible and visual alarm.

This section describes how to set an alarm linkage by linking output dry contact of the smoke DI alarm on the AI/DI_1 sensor to the DO2 port.

Procedure

Step 1 Choose **System Settings > Alarm Parameter > Alarm Linkage**.

Step 2 Select **ECC800** for **Device type**, select **Device Type** or **Device** for **Linkage type**, and click **Confirm**.

NOTE

Select **ECC800** from the **Device name** list if you have selected **Device** for **Linkage type**, and click **Confirm**.

Step 3 Click **Select** in the **Output Dry Contact** list for **AI/DI_1 DI alarm**. On the **Set Dry Contact Outputs(ECC800)** page, set **DO2** to **Yes** and click **OK**.

Step 4 Click **Select** in the **loudspeaker** list for **AI/DI_1 DI alarm**. On the **Please set the sound(ECC800)** page, set **loudspeaker** to **Yes** and click **OK**.

----End

8.1.38 How Should I Modify Device Names over the ECC800 WebUI

Context

- When a device name does not correspond to the actual location or needs optimizing, you can modify the device name over the ECC800 WebUI.
- The following describes how to modify the name of the smart ETH gateway.

Procedure

Step 1 Log in to the ECC800 WebUI as an administrator.

Step 2 Modify the device name.

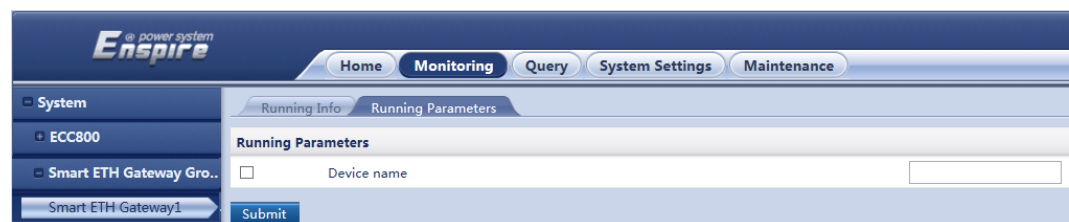
Table 8-42 Operations for modifying a device name

Path	Setting
Monitoring > System > Smart ETH Gateway Group > Smart ETH Gateway 1 > Running Parameters	Select Device name , enter the new name in the text box as planned, and click Submit .

----End

Example

Figure 8-34 Modifying a device name



8.2 APP Operations

8.2.1 How to Connect to a WiFi Network

Prerequisites

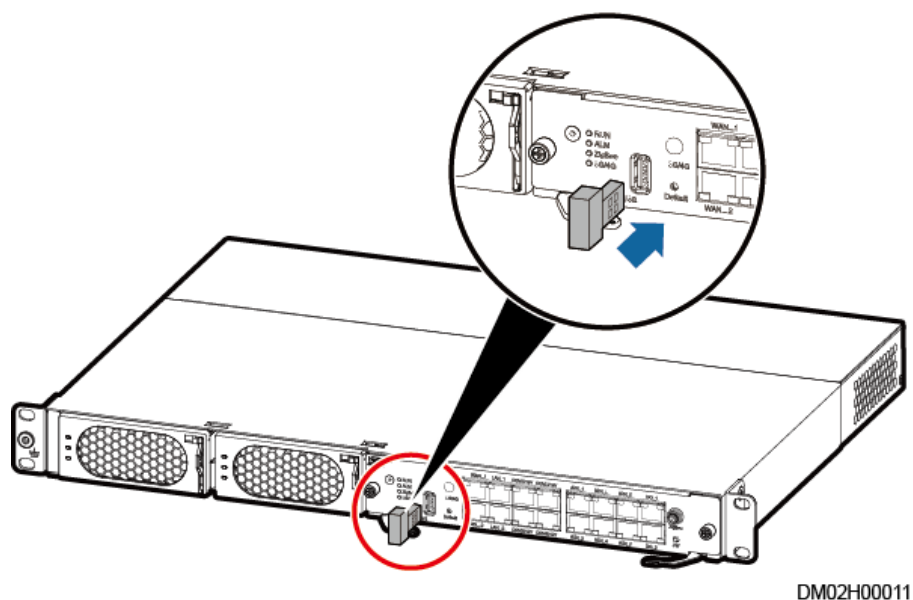
You can connect a WiFi module or a WiFi converter to a WiFi network.

Procedure

Step 1 Connecting to a WiFi network.

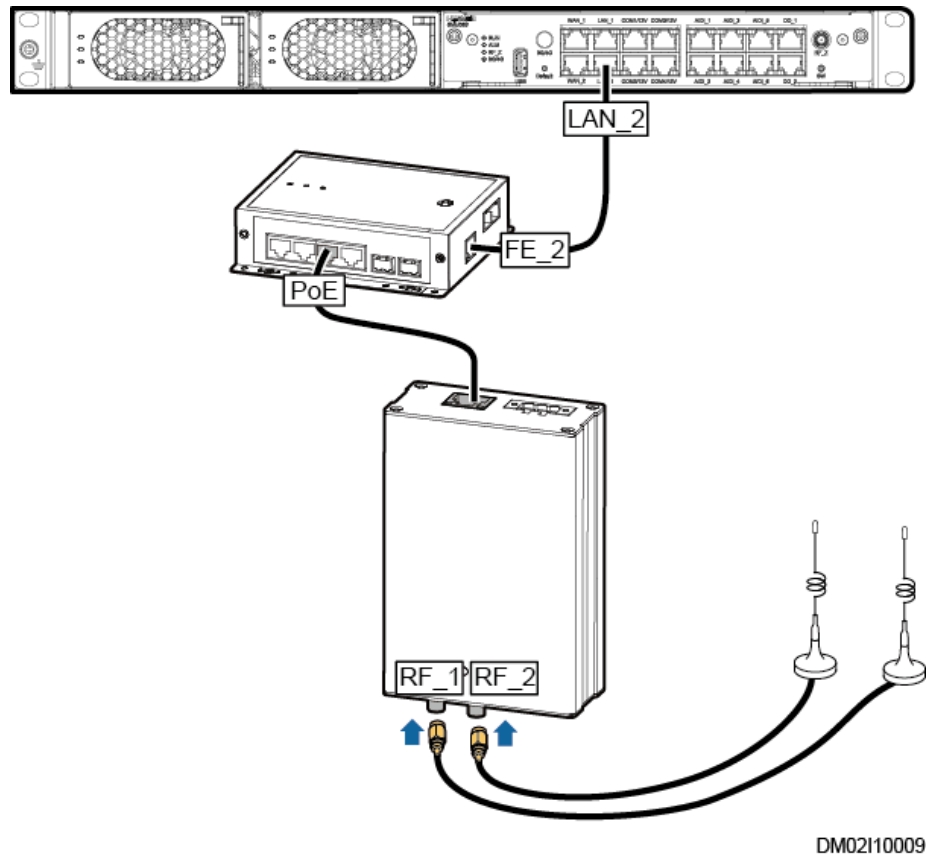
- Method 1: Insert a WiFi module into the USB port on the ECC800.

Figure 8-35 Installing a WiFi module



- Method 2: Connect cables between the WiFi converter and a smart ETH gateway as well as between the smart ETH gateway and the ECC800.

Figure 8-36 Installing a WiFi converter



NOTE

The WiFi antenna should be installed on the planned position by using the magnet.

----End

8.2.2 How to Prepare and Login App

Prerequisites

App operating environment requirements:

- The mobile device must run Android 4.0 or later and is not root operation system (the operating system is not flashed).
- The mobile device has sufficient battery reserve.
- You have obtained the IP address of the ECC800 as well as the user name and password used for WebUI login.
- A PC with an IP address in the same network segment as that of the ECC800 is prepared, and the PC has connected to port WAN_1 on the ECC800.

Procedure

Step 1 Download and obtain the app installation package using any of the following three methods:

- Log in to HUAWEI App Store (<http://a.vmall.com/>) or Google Play, search for **FusionModule**, and tap **Download**.
 - Outside China: Tap the **Google play** app and search for **FusionModule**.
 - In China:
 - i. Set the pad language to **Chinese**.
 - ii. Open the browser on the pad, enter www.baidu.com in the address box, search for **HUAWEI App Store**, select **Ordinary Download**, and tap **Save**.

NOTICE

Do not use the Google Play to download the HUAWEI App Store.

- iii. Install the HUAWEI App Store. If the downloaded file exists in the drop-down list box, tap the file to install the HUAWEI App Store. If the downloaded file does not exist in the drop-down list box, choose **File** > **Local** on the desktop, find the **Download** folder, and click the HUAWEI App Store installation package.

NOTICE

After you open the HUAWEI App Store, select **NOT NOW** if "New Version" is displayed.

- Log in to the ECC800 WebUI using a PC. Choose **Maintenance** > **App Obtaining**, scan QR code, and save the app installation package to the PC or a path on the mobile storage device. Then, copy the app installation package to a mobile phone or pad.
- When the WiFi is enabled, enter <https://192.168.245.10> in the address bar of the Firefox browser (version 41.0 or later) on a mobile phone or pad, and press **Enter** to access the ECC800 WebUI. Choose **Maintenance** > **App Obtaining** and scan QR code to save the app package to the mobile phone or pad.

Step 2 Install the app.

By default, the Android operating system forbids the installation of apps not obtained from the Android market. Therefore, before installing the app, set the mobile phone so that it allows the installation of apps from unknown sources.

1. Tap the app installation file for installation. After the installation is complete, check that



the app icon is displayed on the home screen of the mobile phone or pad.

Step 3 Enable the WiFi function on the ECC800 WebUI.

1. Log in to the ECC800 WebUI as an administrator.
2. Choose **Monitoring** > **System** > **WiFi Converter** and click **WiFi Management**.
3. Set **Enable WiFi** to **Enable** and click **Submit**.
4. If this is the first time you enable the WiFi function, set **WiFi Password** and click **OK**.
5. Enter the password currently used for logging in to the WebUI and click **Submit**.
6. Specify **WiFi SSID** and **WiFi Password** and click **Submit** to change the SSID and password.

 NOTE

- If you have set a password when enabling WiFi for the first time, you do not need to set the password again.
 - The WiFi function is disabled by default. If you need to use the WiFi function, enable it over the WebUI. When you enable the WiFi function, change the WiFi password to ensure connection security.
 - A password that has been used for a long time is more likely to be stolen or cracked. The risk increases along with the time of use. Change the WiFi password once half a year.
7. Enter the password currently used for logging in to the WebUI and click **Submit**.

Step 4 Log in to the app.

1. Start the mobile phone or pad app, choose **Settings > Network Connection** on the login screen, select **WiFi SSID** specified on the WebUI, and enter the value of **WiFi Password** specified on the WebUI for login.
2. On the login screen, choose **Settings > Server IP Settings**, and ensure that the IP address is **192.168.245.10**.
3. The user name and login password for the app are the same as those for the ECC800 WebUI. Specify the user name and password, and tap **Login**.

 NOTE

- After the first login, change the password in time to ensure system access security.
- When the mobile phone app connects to the monitoring system, the WiFi function of the monitoring system is disabled by default. Before connecting the mobile phone app to the monitoring system, enable the WiFi function on the WebUI. For security, you are advised to disable the WiFi function when the app is not in use.
- A password that has been used for a long time is more likely to be stolen or cracked. The risk increases along with the time of use. Change the password once three months.
- You are advised to use a mobile phone that has not been rooted to reduce the risk of information leakage.
- It is recommended that you use different user names to log in to both the ECC800 WebUI and app at the same time. If you use the same user name to log in to the WebUI and app at the same time, either of them will be forcibly logged out.
- If an exception in network or an unexpected exit from the app occurs, the original user can log in immediately and the newly-added user need to wait 5 more minutes to log in.

----End

8.2.3 How Do I Ensure that Device Positions in the Plan View Are Consistent with Actual Positions?

Prerequisites

The smart module plan view has been created, and the device positions in the plan view are consistent with actual positions.

Context

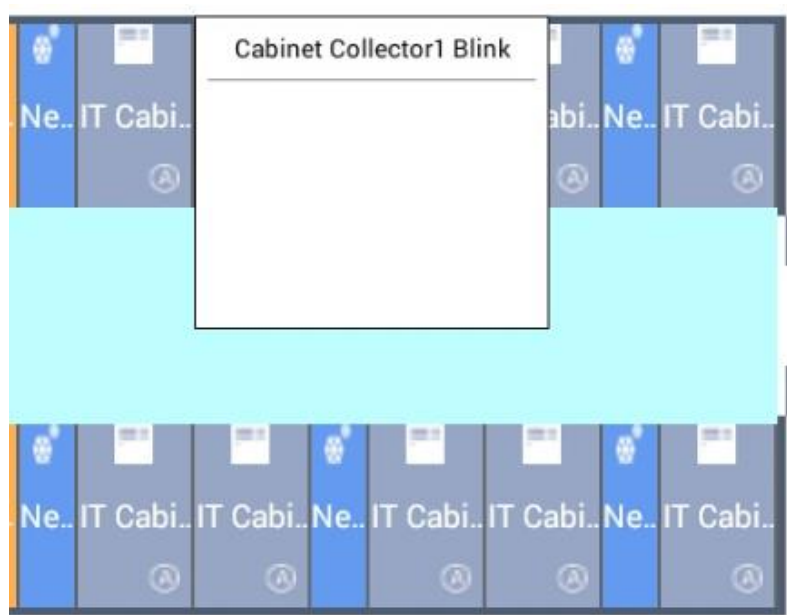
The rack environment unit is used as an example.

Procedure

- Step 1** Log in to the ECC800 mobile phone or pad app as an administrator.

- Step 2** Choose **Home > More > iFind**.
- Step 3** Tap **Cabinet Collector n Blink** to deliver a blinking command. The corresponding device in the smart module blinks. Check that the device positions and types in the plan view are consistent with the actual situation by delivering the blinking command.

Figure 8-37 Rack environment unit blinking



----End

8.2.4 How Do I View Running Information

Context

You can use the APP software to view the smart module data center layout, active alarms, historical alarms, asset details, operation logs, system parameters, and version information.

Procedure

- Step 1** Log in to the ECC800 mobile phone or pad app as an administrator.
- Step 2** To view the smart module data center layout, tap **Home**.
- Step 3** View running information.

Table 8-43 Viewing running information

Main Menu	Second-Level Menu	Third-Level Menu
Alarms Management	- Active Alarms - Historical Alarms	—
More	Asset Info	Asset Details

Main Menu	Second-Level Menu	Third-Level Menu
	System Management	• Network Parameter • Version Info
	Log Management	• Operation Log • Access Event

----End

8.2.5 How Can I Export and Import Data?

Procedure

Step 1 Log in to the ECC800 mobile phone or pad app as an administrator.

Step 2 Export data.

1. Choose **More > System Maintenance > Export Data**.
2. Select **Local** or **USB** from the **Select export location** drop-down list box.
3. (Optional) Select **Select the encryption mode** and enter an encryption password.
4. Select a value from the drop-down list box in the **Export Device Configuration Data** or **Export Historical Data** area.
5. Tap **Export**.

Step 3 Import data.

1. Choose **More > System Maintenance > Import Data**.
2. Select **Local** or **USB** from the **Select import location** drop-down list box.
3. The configuration file is encrypted, enter the password in the **Decryption Password** text box.
4. Select a configuration file and tap **Import**.

NOTE

The ECC800 will restart after you import the configuration file.

----End

8.2.6 How Can I Synchronize Device Parameters?

Context

After a device is replaced, you can synchronize the parameters of the original device to the new device.

Procedure

Step 1 Log in to the ECC800 mobile phone or pad app as an administrator.

Step 2 Choose **Parameter Sync**.

 NOTE

- Path for choosing **Parameter Sync** for the ECC800 V100R002C10 version: **More > Parameter Sync**
- Path for choosing **Parameter Sync** for the ECC800 V100R002C00 version: **More > System Maintenance > Parameter Sync**

Step 3 Select the source device and target device.

- Source device: device before replacement
- Target device: device after replacement

Step 4 Complete the operation.

- Tap **Submit** on the pad app.
- Tap **Finish** on the mobile phone app.

----End

8.2.7 How Can I Handle App Login Failure?

Context

If the message **The IP is already used** is displayed when you attempt to log in to the mobile phone or pad app, perform the operations in this section to handle the issue.

Procedure

Step 1 If you have obtained the user name and password used in the previous successful login, perform the following operations:

1. Check that the mobile phone or pad connects to the ECC800 over WiFi properly.
2. Use the obtained user name and password to log in to the app and exit.
3. Use the user name and password that previously failed the login to log in to the app again.

Step 2 If you have not obtained the user name and password used in a previous successful login, perform the following operations:

1. Close the app and wait 4–5 minutes.
2. Use the user name and password that previously failed the login to log in to the app again.

----End

9 PLC Function

9.1 Linkage Control Introduction

The ECC800 provides the linkage control function. You can set logic rules and control the DO output signal by collecting the signal value.

You can select signals (such as the AI/DI device status signals) and perform logic operations such as AND, OR, NOT, GREATER THAN, LESS THAN, DELAY, and FILTER. The operation result can be provided to the dry contact to meet the site control requirements.

Logic Parameters

The following are the inputs, operators, and outputs for linkage control logic programs:

- Inputs:
 - Sample: Such as AI/DI device signals.
 - Alarm: Such as AI/DI alarm signals.
 - Constant
 - Register: A register can combine multiple levels of logic programs.
- Operators:
 - AND: The output is valid if both inputs are valid.
 - OR: The output is valid if either input is valid.
 - NOT: The output is the inverse value of the input signal or constant.
 - >: The output is active if the input is greater than the constant.
 - <: The output is active if the input is less than the constant.
 - DELAY: The output of the input signal or constant is delayed and the output is constant.
 - FILTER: The output is active if the input reaches the constant.
- Outputs:
 - Outputs are associated with dry contact outputs and can be used for generating alarms or controlling devices.
 - Register: A register can combine multiple levels of logic programs.
 - Alarm: The operation result is generated as a new alarm.

Feature Description

The linkage control configuration is concise and easy to operate. You can perform the following operations:

- Configure linkage control logic programs on the WebUI for display.
- Import or export configuration files.
- Restore the default linkage control configuration by one click.

The following are descriptions of the WebUI:

- **Basic Parameters:** The configurations of the linkage control logic programs are valid if **Enable linkage control function** is set to **Yes**.
- **Linkage group:** You can configure Linkage groups by type.
- **Linkage Logical List:** You can configure logic program lines.
- **Import and Export:** You can import or export configuration files to generate logic program lines in batches.
- **Restore configuration:** You can click **Restore Factory Defaults** to restore the default linkage control configurations.

9.2 Linkage Control Configuration Examples

Context

NOTICE

- Linkage control does not need to be configured onsite and its default configuration applies. Before adding or modifying linkage control linkage logic, consult Huawei engineers.
 - When you do not know how to rectify the incorrect linkage control configuration or want to synchronize the linkage control configuration from another ECC800, use the linkage control configuration import and export function.
-
- The ECC800 supports linkage control linkage and controls the DO output signal by collecting the signal value. For example, the ECC800 can implement fire linkage by detecting fire alarms through the fire controller and opening the skylight, opening the aisle door, and shutting down the smart cooling product based on the alarm status.
 - The following describes how to configure the linkage control linkage, using **Link fire extinguishing with skylight open** as an example.
 - In this example, the fire controller connects to the AI/DI_1 port. The actual port prevails.

Procedure

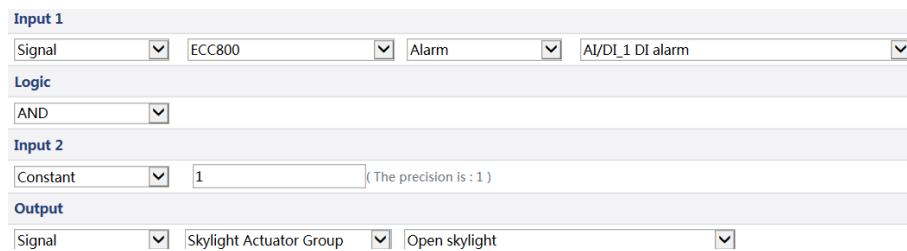
- Step 1** Log in to the ECC800 WebUI as an administrator.
- Step 2** Choose **System Settings > Linkage Control**.
- Step 3** Ensure that **Enable linkage control function** is **Yes**.
- Step 4** Add or edit a logic group name.

1. On the **Linkage Group** tab page, click **Add**.
2. In the displayed **Add Logical Group** dialog box, set **Group name** to **Link fire extinguishing with skylight open**.
3. Click **OK**.

Step 5 Add or edit a logic program.

1. On the **Linkage Group** tab page, select the edited logic group name **Link fire extinguishing with skylight open**.
2. On the **Linkage Logical List** tab page, click **Add** or the edit icon .

Figure 9-1 Linkage control logic page



Input 1

Signal Alarm

Logic

AND

Input 2

Constant (The precision is : 1)

Output

Signal Open skylight

3. Click **Submit**.

Step 6 On the **Linkage Group** tab page, set **Link fire extinguishing with skylight open** to **on**.

----End

Follow-up Procedure

You can use the configuration file import and export function to export the linkage control linkage rules configured for an ECC800 to a local PC and then import the rules to another ECC800. This function achieves quick configuration for the linkage control.

A Acronyms and Abbreviations

A

AC	alternating current
AES	Advanced encryption standard
AI	analog input
APP	application

B

BCB	battery control I/O board
-----	---------------------------

C

COM	component object model
-----	------------------------

D

DC	direct current
DES	Data Encryption Standard
DI	digital input
DO	digital output

E

ECC	energy control center
ESN	equipment serial number
ETH	Ethernet

F

FE	fast Ethernet
I	
iBAT	iBattery
IC	integrated circuit
iCooling	iCooling
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
IT	Internet technology
L	
LED	light emitting diode
M	
MTBF	mean time between failures
MTTR	mean time to repair
MAC	Media Access Control
MD5	message digest algorithm
Mib	Mib
N	
NAT	network address translation
NetEco	iManager NetEco data center infrastructure management system
NTC	negative temperature coefficient
P	
PDU	power distribution unit
POE	power over Ethernet
PSU	power supply unit
PUE	power usage effectiveness
R	

RF	radio frequency
RH	relative humidity
RJ	Registered Jack
RoHS	restriction of the use of certain hazardous substances
S	
SD	secure digital
SHA	SecureHashAlgorithm
SIM	subscriber identity module
SMS	short message service
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SSL	Secure Sockets Layer
SSID	service set identifier
T	
TLS	Transport Layer Security
U	
UPS	uninterruptible power system
USB	universal serial bus
V	
VCN	video cloud node
W	
WiFi	wireless fidelity
WPS	WiFi protected setup