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OWNER'S & INSTALLATION MANUAL

Centralized Controller

KCCT-128C IPS

Original Manual.

Thank you for choosing our products. Before you operate the product, please read this manual carefully and retain it for future reference.

Note: Figures in this manual are for illustrative reference purposes only.

Contents

1. Safety Precautions

Before using IMM-Lite, please carefully read the following instructions:

- Read this manual and retain it properly. If the administrator changes, be sure to hand over this manual to the new administrator.
- Do not install, move, disassemble, or repair the air conditioning system or the touchscreen central controller yourself. Always consult our after-sales service personnel for any operations.
- Ensure that the wall is strong enough to support the weight of this product.
- This product must be installed and used according to the conditions specified in this manual.
- In the event of electric leakage, short circuiting, or any other faults (such as a burning smell), stop operation immediately, turn off the circuit breaker, and report the issue to our after-sales service personnel.
- This manual serves as a reference for operation. If software upgrades occur without prior notice, please refer to the actual product.

Safety Precautions

The safety labels in this manual comply with standards both inside and outside of China. These labels have different definitions and are used to indicate different levels of danger. Please thoroughly read and fully understand the following safety labels (including the descriptions of signs and text) and follow relevant precautions to avoid damage to the health or property of users or others.

Warning	Indicates a medium-risk danger. If not avoided or serious injury may occur.
Caution	Indicates a low-risk danger. If not avoided, minor or moderate injuries may occur.
Prohibited	Indicates the stated measure is forbidden or the stated action must be stopped.
Note	Indicates a tip whose danger level is lower than the aforesaid danger levels and which, if not avoided, may cause reduced device performance, malfunctioning, or damage to the device or property.
Information	Indicates useful operation and maintenance information.

⚠ Waring

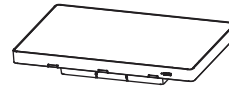
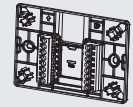
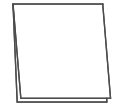
- This unit must be installed by professional technicians. Users are not allowed to install the unit themselves; otherwise, personal injury or damage to the controller may occur. Other electrical wiring work must be carried out by a professional technician according to the circuit diagram. All wiring work must comply with electrical safety specifications. It is forbidden to modify the use and function of the product without authorization.

⚠ Caution

- Do not install the product in places that are prone to flammable gas leaks. Flammable gas that leaks and lingers around the touchscreen central controller may cause a fire.
- Do not install the touchscreen central controller in base stations and other places where there is strong electromagnetic interference, where dust and other tiny particles can easily gather, and locations that are wet or easily exposed to water and sunlight; otherwise, the touchscreen may perform poorly or stop working.
- Install the touchscreen central controller indoors, with the distance between the installation place and the ground of more than 50 cm and less than 200 cm.
- Keep the touchscreen central controller away from other devices to ensure that there is enough space for installation and heat dissipation. Keep away from heating devices; otherwise, the touchscreen central controller may not function properly.
- In the event of any malfunction, please contact a professional technician. DO NOT disassemble or repair the unit without authorization.
- This equipment is not suitable for places where children gather.

2. List of Accessories

List

Name	Picture	Quantity
Touchscreen central controller		1
Mounting & fixing board		1
User manual		1
Plastic expansion pipe		2
ST3.5*25 screw		2

Statement:
Along with upgrades in the product, the information in this document is subject to change without notice.

3. Installation Instructions

Installation of the Touchscreen Central Controller

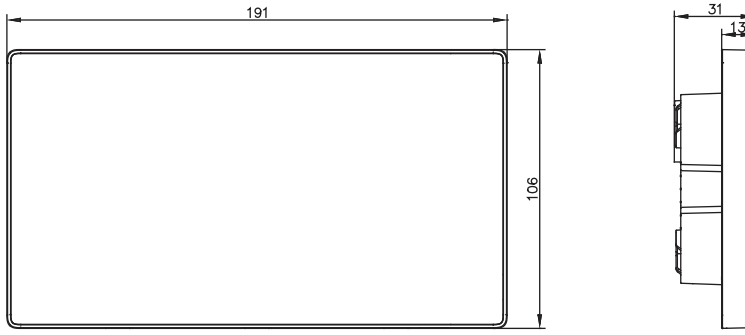
⚠ Warning

- Do not install the touchscreen central controller near areas with electromagnetic interference or next to a base station.
  Install the touchscreen central controller away from sources of steam, potential flammable gas leaks, heat, or sulfurous gases.
- The installation must comply with local laws and regulations.
  Reserve sufficient space for the installation, and leave adequate spacing between the device and surrounding community service network devices for heat dissipation.

Structure of the Touchscreen Central Controller

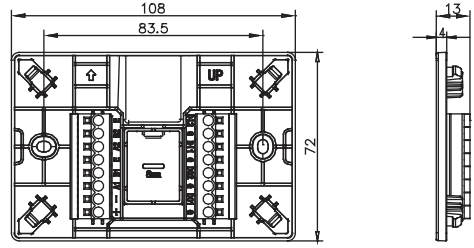
1) Front view and side view of the touchscreen central controller

(Unit: mm)

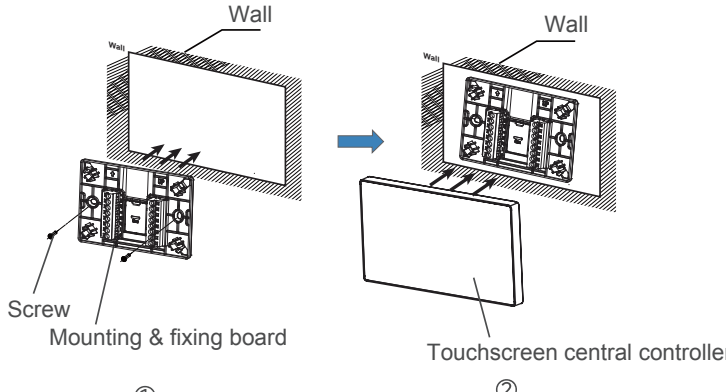


2) Mounting & fixing board dimensions

(Unit: mm)



3) Installation procedure

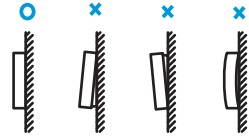


① Installing the mounting & fixing board

Install the mounting & fixing board on the wall using screws, ensuring that it is flush with the wall surface. Depending on the scenario, you may need to use the plastic expansion pipe provided in the packaging. Ensure that the "↑ UP" marking on the board faces outward, and pay close attention to its orientation.

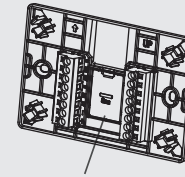
② Installing the touchscreen central controller

Once the connections are completed, insert the controller vertically into the installation base. Ensure it is properly secured.



Note

- Special note: Make sure you exert appropriate force when securing the mounting & fixing board with the screws. Excessive force may cause deformation of the two screw holes, making it harder to install the board.
- Depending on the different outgoing wire scenarios, you can open the knockouts at various positions for wiring purposes, specifically on the mounting & fixing board and the touchscreen central controller, as shown in the figures below.



Installation Precautions:

1) Make sure that the installation site is indoors, and the network gateway is installed at a height of at least 50 cm above the ground.

2) Make sure that the installation site is not affected by dust or electromagnetic interference.

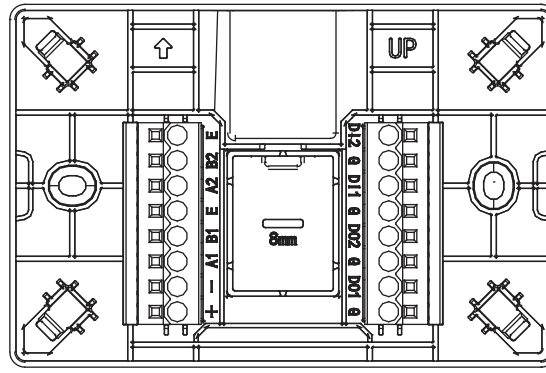
3) Make sure that the installation site is not exposed to sun or heating devices.

4) Make sure that the device is not installed in a humid location or somewhere that easily exposes the device to contact with water.

5) Make sure the device is not installed in locations where it can be easily corroded or where there are flammable gases.

Please install the gateway device in strict accordance with the above requirements, and check the installation site carefully before installation.

Wiring



The central controller features two RS485 ports for connecting to the central air conditioning system, one LAN port for linking to the local area network or router, and two DI ports and two DO ports for connecting to extended I/O devices.

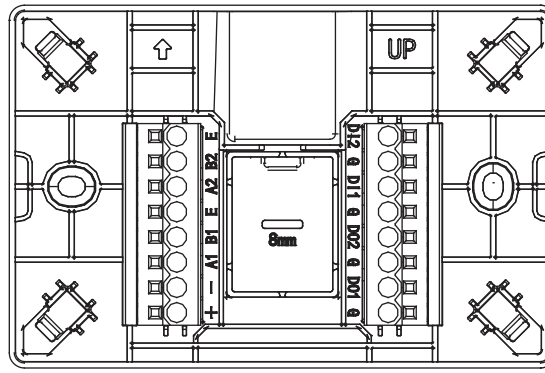
Note

- The central controller supports both V6 and V8 protocols. Each RS485 port can connect up to 8 systems. When only V8 devices are present, please ensure that the IDU addresses within each refrigerant system are unique. If both V6 and V8 devices, or only V6 devices are present, please ensure unique IDU addresses for all refrigerant systems.

Caution

- The touchscreen central controller is installed at one end of the RS485 communication bus. Do not install it in the middle of the bus.
- You need a three-core shielded cable of 0.7 to 1.0 mm^2 for the signaling wires. For details, please consult a professional technician.

Port Diagram



DC power port	+	Positive pole of 12 V DC power supply
	-	Negative pole of 12 V DC power supply
First RS485 communication port	A1	RS485 port A1, connected to ODU X
	B1	RS485 port B1, connected to ODU Y
	E	RS485 port E
Second RS485 communication port	A2	RS485 port A2, connected to ODU X
	B2	RS485 port B2, connected to ODU Y
	E	RS485 port E
DI port	G	Functional earthing
	DI1	Digital input port
	G	Functional earthing
	DI2	Digital input port
DO port	G	Functional earthing
	DO1	Digital output port
	G	Functional earthing
	DO2	Digital output port
Network port	LAN	Ethernet port, to access the device on the network

Specifications of the Touchscreen Central Controller

Power Supply Specifications	Scope	12 V DC 1 A
	Power consumption	Up to 12W
Operating Conditions	Voltage fluctuations	±10% of rated value
	Ambient temperature	0°C to 40°C
	Ambient humidity	10% RH to 90% RH
	Storage temperature	-10°C to 60°C
Dimensions	Length × Width × Height	190 mm x 106 mm x 32 mm
Device Color	Black	

Technical System/ Function Module	Modulation Mode	Frequency Range	Occupied Bandwidth	Transmitting Power
2.4 GHz Wireless network	802.11b: CCK, DQPSK, DBPSK 802.11g: 64-QAM, 16-QAM, QPSK, BPSK 802.11n: 64-QAM, 16-QAM, QPSK, BPSK	2400 MHz –2483.5 MHz	≤ 40 MHz	≤ 20 dBm
2.4 GHz Bluetooth	8DPSK, π/4 DQPSK, GFSK	2400 MHz –2483.5 MHz	≤ 2 MHz	< 10 dBm

Hereby, we declares that this model is in compliance with theessential requirements and other relevant provisions of RED directive 2014/53/EU. A copy of the full Doc is attached.

4. Overview

4.1 Introduction

IMM-Lite is an integrated touchscreen controller that uses Ethernet RS485 communication to control V8 and V6 series VRF products.

4.2 Highlights

- New appearance design, one-button control, and a more intuitive display of cooling/heating status.
- Powerful centralized control capabilities: Simultaneously controls V8 and V6 VRF models, offering one-stop smart control.
- Seamless integration with IMMPRO II for managing devices connected to IMM-Lite.
- Touchscreen controller with built-in energy-saving algorithms to detect IDUs with an inefficient operation status.
- Comprehensive device operation records to assist in on-site troubleshooting of device faults.
- Adaptive user interface to support two styles (large view and small view) based on the number of connected IDUs.
- OTA remote upgrade (online upgrade).

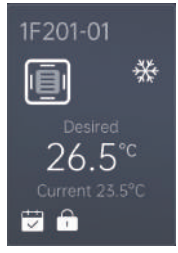
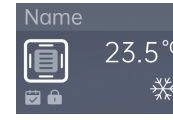
4.3 Terms

IMM-Lite: A 7-inch touchscreen controller from the IMM series, capable of managing up to 128 VRF IDUs.

Inefficient Detect Algorithms (IDA): Algorithms designed to detect inefficient operating actions, providing alerts based on user-defined detection device and algorithm conditions.

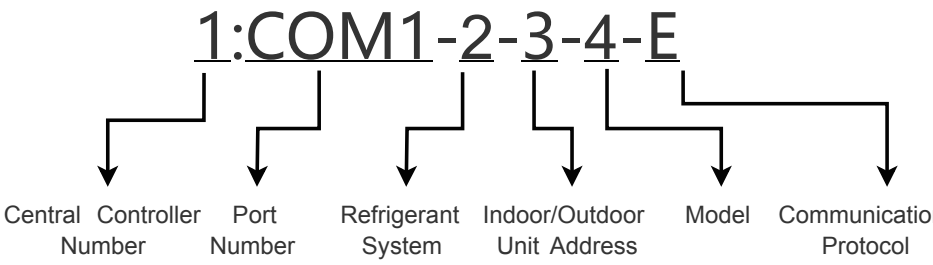
Large card view: A larger user interface style for device cards.

Small card view: A smaller user interface style for device cards.

Large card style	Small card style
	

Device Number:

The device number comprises the central controller number, port number, refrigerant system, indoor/outdoor unit address, model, and communication protocol. It serves as the default device name. Specific rules are as follows.

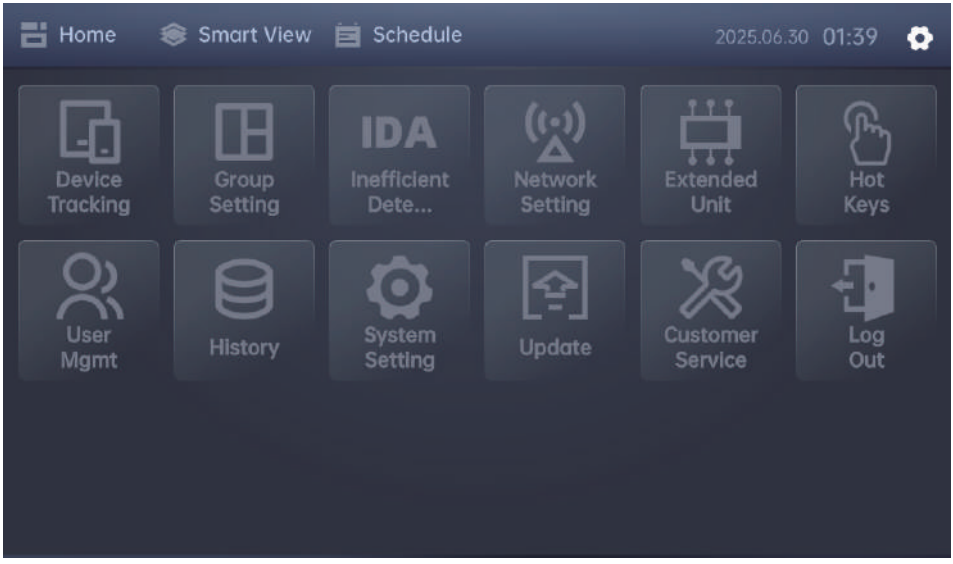


DC power port	Value Range	Explanation
Central Controller Number	1-N	Each controller is assigned a unique number.
Port Number	1-2	Indicates the RS485 port currently connected.
Refrigerant System	0-7	Represents the refrigerant system to which the device belongs.
Indoor/Outdoor Unit Address	Indoor Unit: 0-63, Outdoor Unit: 129-132	Represents the address of the indoor or outdoor unit.
Model	Defined by device model	Please refer to the appendix
Communication Protocol	E/S/O/H	Represents the protocol used for communication with indoor or outdoor units: E: V8, S: V6, O: V4+, H: Home.

5. About

5.1 Functions and Entries

The functions of IMM-Lite are displayed in the navigation and setting module at the top of the screen. Tap  on the far right of the navigation screen to open the settings panel.



The functions of the IMM-Lite can be divided into four main categories: device management, device status monitoring, system configuration, and account and system management. See the following table for the details about each function:

Module	Screen	Function	Page
Device management	Device Tracking	Enables you to track devices and edit device names	28
	Group Setting	Enables you to create, edit and delete a device group	32
	Smart View	Device control and locking	20
	Schedule	Enables you to create, edit, view and delete a schedule/event	24
	Extended Unit	Check or set DI/DO functions	62
Device status monitoring	Home	Real-time errors and warnings Overview of schedules today Device status control Device operation status monitoring Energy consumption trend	18
	History	User history: User login and operation history Status change record: Operating parameter records in case of device status changes Error and warning history: System error and warning history Periodic operation record: Real-time IDU and ODU status record query Runtime statistics: Device runtime statistics in different modes	55
System configuration	Network Setting	Enables you to set the local network and wireless network	37
	System Setting	1. Region: Enables you to set the region 2. Language: Enables you to set the language 3. Temp Unit: Enables you to set the temperature unit 4. Card Style: Large/Small 5. Backup: Enables you to set the device data backup cycle 6. Screen Off Time: Enables you to set the screen off time and screen brightness 7. Cloud Synchronization: Allows you to enable or disable synchronization of data to the cloud	40
	IDA	Allows you to set the algorithms for inefficient device operation. The central controller will monitor and record the device operation status based on the configured algorithms to facilitate energy conservation assessment.	44
	Hot Keys	1. All On Settings 2. All Off Settings 3. Memory Settings	48
Account and system management	User Mgmt	User account management	53
	Customer Service	Service contact number and Email	61
	Update	Enables you to view the version No. or upgrade the OTA	58
	Date	Enable Cloud Data Synchronization	60

5.2 Components

The central controller supports up to 128 IDUs.

Note

- The central controller supports both V6 and V8 protocols. Each RS485 port can connect up to 8 systems. When only V8 devices are present, please ensure that the IDU addresses within each refrigerant system are unique. If both V6 and V8 devices, or only V6 devices are present, please ensure unique IDU addresses for all refrigerant systems.

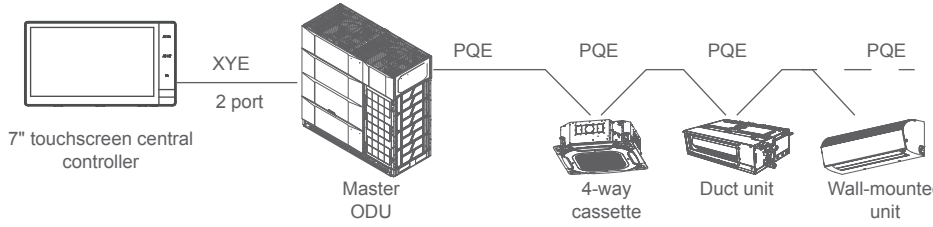
Product name	IMM-Lite central controller
Image	
Description	7" touchscreen central controller based on Debian OS

Specifications

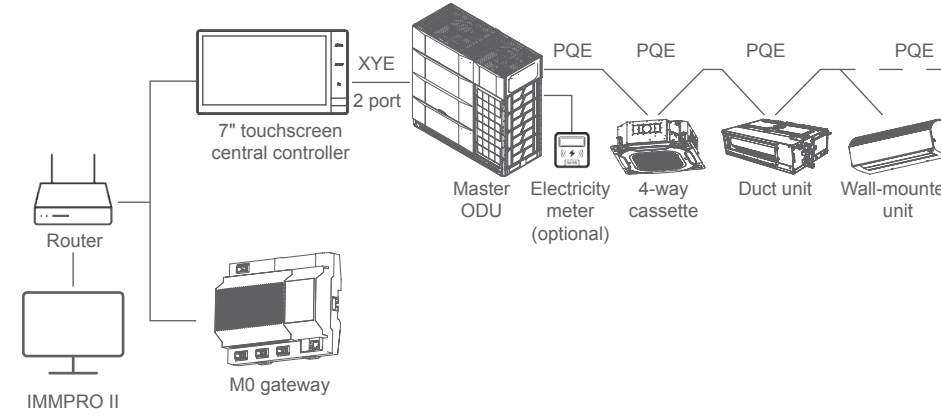
Product model	KCCT-128C IPS
Dimensions	190 mm × 106 mm × 32 mm (L × W × T)
Screen resolution	1024 px × 600 px
CPU	Px30
Memory	4 GB + 16 GB
Operating system	Debian OS 11 × 64-bit
Ethernet	10/100 Mbps Ethernet
Bluetooth	2.4 GHz
Wireless network	2.4 GHz
Rated voltage	DC 12 V
Power	12 W
Working temperature	0 to 40°C
Working humidity	10% to 90% RH (non-condensing)
RS485 port	2

System overview

With IMMPro II, supports up to 21 gateways or controllers.



System architecture - 7" touchscreen central controller



With IMMPro II, supports up to 21 gateways or controllers.

System architecture - 7" touchscreen central controller + M0 gateway

⚠ Caution

- Connection between air conditioners and the central controller: Properly connect the X, Y and E terminals on the ODU control board to the central controller interface. Failure to do so will prevent the central controller from receiving information from both IDUs and ODUs, potentially causing severe damage to the motherboard.
- To maintain ODU data consistency during future maintenance, it is advisable to label each communication line and record the corresponding serial number. This will help avoid data confusion caused by incorrect central controller connections during subsequent maintenance.

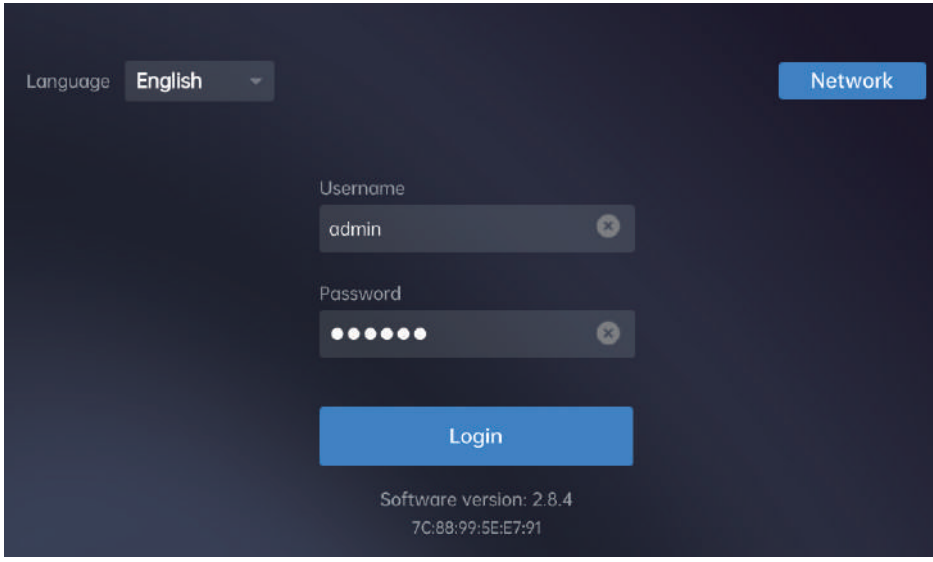
5.3 Initial Configuration

Step 1: Hardware installation and connection

Refer to the installation manual to properly install the IMM-Lite controller and connect it to the VRF system.

Step 2: Log in to IMM-Lite

Connect the power supply and start the IMM-Lite controller to access the login page. You may tap the English drop-down menu to change the system language if required.



Enter the account and password to log in to the system.

Default username: admin

Original password: 123456

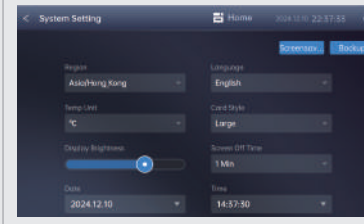
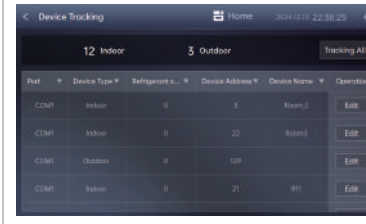
After logging in, refer to "15. User Management" to change the account password or add other accounts.

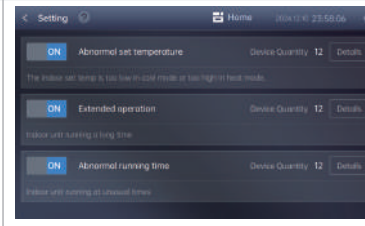
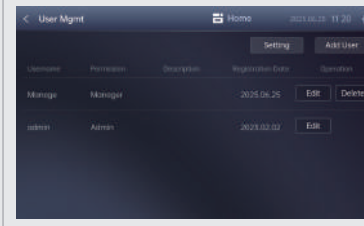
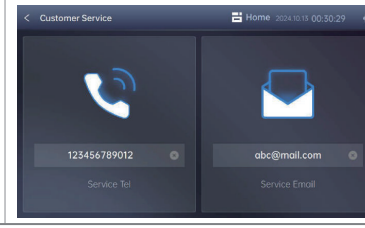
Note

- The administrator must remember the password for the super administrator (admin) account. IMM-Lite does not support password recovery for this account. If the password is forgotten, you will need to contact maintenance personnel or return the device to the factory for initialization, which will result in the loss of the original device topology information.

Step 3: Initial configuration

To ensure the normal operation of IMM-Lite functions, initial configuration is required upon first use. Follow the steps below to complete the initial configuration process:

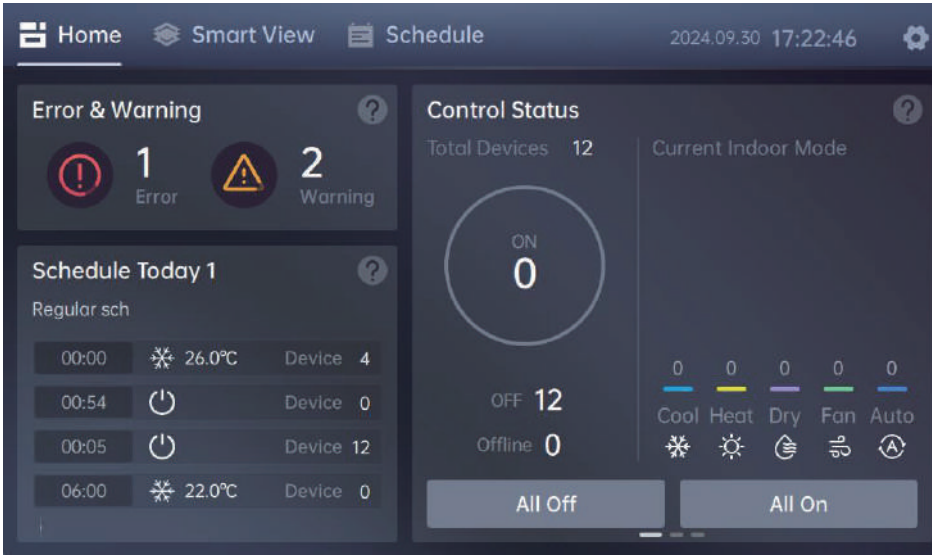
Step	Description	UI Screen
1	**Region selection** When you log in to IMM-LITE for the first time, a region setting window will appear. You can tap the drop-down menu to select a different region. After making your selection, tap Confirm to close the pop-up window and complete the region setting.	
2	**System setting** To ensure normal operation, you need to configure the basic settings of the central controller system after logging in to the system. This includes setting the system date and time, temperature unit, screen off time, screen brightness, card style, and enabling data synchronization. For further details, see "12. System Setting".	
3	**Device tracking** This function enables you to search for or delete devices connected to the central controller, and to edit device names. No AC devices are available for the central controller system. Once the communication cables of the AC devices are properly connected to the central controller system, you can begin searching for the devices. After conducting a search, verify that the number, addresses, and categories of the devices are correct. For details, see "9. Device Tracking".	
4	**Group setting** To better manage air conditioning devices, you can group the devices by floors or areas to realize group control of the devices. For details, see "10. Group Setting".	
5	**Network setting** This menu allows users change the central controller IP address, set the IMM-Lite central controller IP address or Wireless network on this module. For details, see "11. Network Setting".	

Step	Description	UI Screen
6	**IDA setting** IMM-Lite incorporates 3 Inefficient Detect Algorithms. Users can add devices to be monitored and set relevant monitoring rules. Once the device operation algorithm rules are applied, the system will log data on the inefficient operations of the devices being monitored. For details, see "13. IDA".	
7	**User management** In addition to the super administrator account, you can add multiple user accounts and customize the functional permissions for each role. To enhance account security, it is advised to change the initial password of the super administrator's admin account and to securely keep track of the updated password. For details, see "15. User Management".	
8	**Customer contact information setting** For details, see "18. Customer Service".	

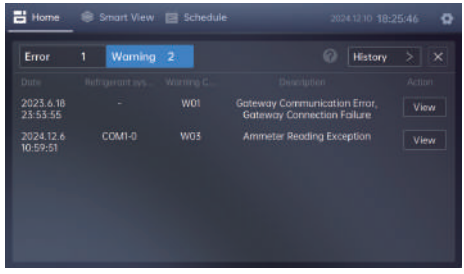
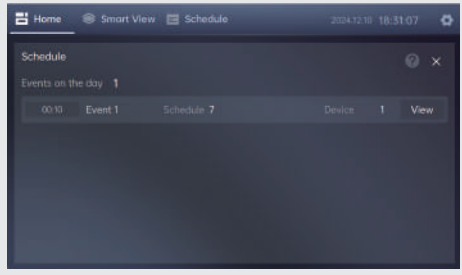
After the initial configuration is complete, you can fully utilize and experience the functions of IMM-Lite.

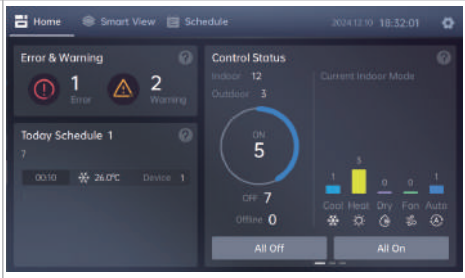
6. Home

The home page displays the Error & Warning, Schedule Today, Control Status, IDA and Energy date.



Tap different modules on the home page to view the latest statistics.

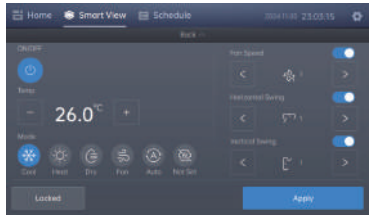
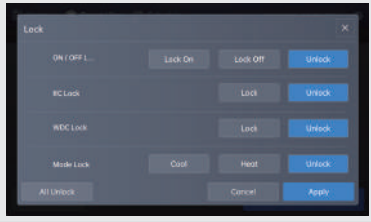
Module	Screen	Data Description
Error & Warning		Tap the "Error & Warning" module on the home page to access the real-time records screen: **Error** Displays the number of faulty devices **Warn** Displays the devices with a warning status
Schedule		Tap the "Schedule" module on the home page to view the events to be executed today. **Schedule** Displays the device schedules and events on the day By selecting the schedule view, you can view a detailed plan that spans the entire period. If there are multiple schedules set for one day, all events will be listed in chronological order within the schedules.

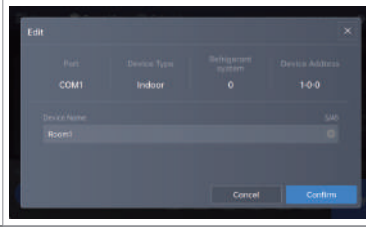
Module	Screen	Data Description
Control Status		On the home page, the "Control Status" area provides a real-time snapshot of the recording device's operational status. This includes the total number of IDUs, as well as the number of IDUs that are on, off, and offline. Additionally, it indicates the number of IDUs associated with each operating mode.
IDA		On the "Control Status" module of the home page, swipe left to view the IDA data. This includes records of three types of inefficient operational scenarios: abnormal set temperature, extended operation, and abnormal running time.
Energy date		On the "Control Status" module of the home page, continue to swipe left to view the total Energy consumption statistics for the preceding month. *Note: Without a meter and power distribution enabled, V6 devices cannot collect energy consumption data. V8 devices can generate estimated power data via their built-in algorithm, but this serves only as a reference and is unsuitable for billing. For accurate energy consumption data, a dedicated power meter must be installed for all outdoor units, and power distribution must be enabled using IMMPRO II software.

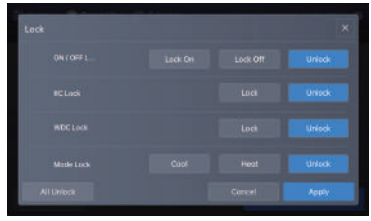
7. Smart View

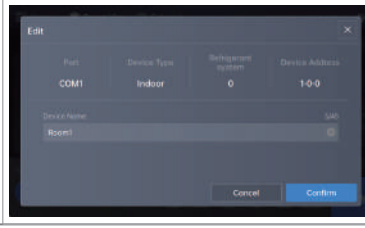
Tap Smart View in the navigation menu to view the status and details of devices connected to IMM-Lite, and to set device control commands for device detection and control.

The screen design of this section is available in two card styles: large and small. By default, the large card style is used when you initially access the device if no more than 18 IDUs are connected. If over 18 IDUs are connected, the small card style will be used by default. You can switch between the two styles on the "System Setting" screen based on your preference.

Style	Screen	Description
Large card (this option is recommended for systems with no more than 18 IDUs)		**Smart view** Here, you can view the information about connected devices and set control commands.
		**Device control** Tap the IDU card or folder area and select the desired IDU or group. On the control panel below, set the device start mode, temperature, and other parameters, and then tap Apply to issue commands. To set more detailed command parameters, you can tap More to expand the control panel. Set the device group on the "Group Setting" screen.
		On the expanded control panel, you can set more detailed commands. After selecting the setting, tap Apply to issue control commands based on the settings. If you don't need to adjust the fan speed or swing parameters, you can turn off the switch in the upper right corner to keep the current settings. To set the lock operation, tap Locked to enter the lock command setting window.
		**Device lock** On the lock command setting window, you can set the command response range to limit the operating status of IDUs.

Style	Screen	Description
Large card (this option is recommended for systems with no more than 18 IDUs)		**Additional Operations:** Long-press the device card to display the operation menu. You can view device details or rename the device.
		**Device Details:** Long-press the device card to access the pop-up menu, then select "Device Details" to view information including outdoor unit, indoor unit number, and type.
		**Device Rename:** Long-press the device card to access the pop-up menu, then select "Rename". The device name must be 45 bytes or less. The current/maximum length is indicated in the input box's upper right corner.

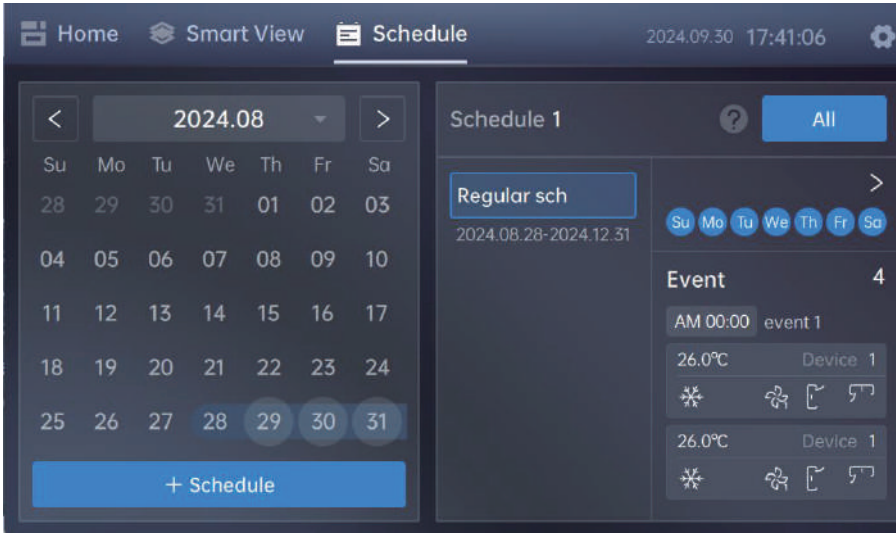
Style	Screen	Description
Small card (this option is recommended for systems with over 18 IDUs)		**Smart view** Here, you can view the information about connected devices and set control commands.
		**Device control** Tap the device card or folder area, select the device or group to be controlled, and then tap Control to open the control command setting window. After selecting the setting, tap Apply to issue control commands based on the settings. Set the device group on the "Group Setting" screen. To set the device operation lock command, tap Locked to enter the lock command setting window.
		**Device lock** On the lock command setting window, you can set the command response range to limit the operating status of IDUs.
		**Additional Operations:** Long-press the device card to display the operation menu. You can view device details or rename the device.
		**Device Details:** Long-press the device card to access the pop-up menu, then select "Device Details" to view information including outdoor unit, indoor unit number, and type.

Style	Screen	Description
Small card (this option is recommended for systems with over 18 IDUs)		**Device Rename:** Long-press the device card to access the pop-up menu, then select "Rename". The device name must be 45 bytes or less. The current/maximum length is indicated in the input box's upper right corner.

8. Schedule

Tap Schedule in the navigation menu to view and configure a schedule for your device, and to set up the scheduled event to be executed based on the date and time settings. Once the set time arrives, the system will automatically send execution commands for autonomous control.

Utilizing schedules in the daily management and maintenance of the device can streamline operations and minimize energy consumption.

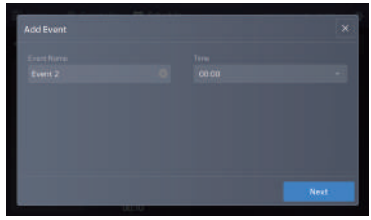
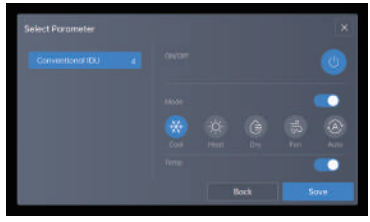
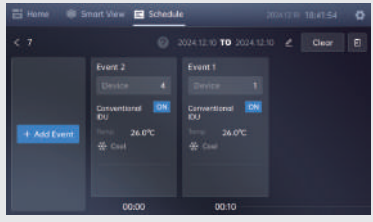


8.1 Creating a Schedule

Tap + Schedule to open the schedule creation window. There are two types of schedules:

1. Period: schedules to take effect within a specified period
2. Date: schedules to take effect on a specified day

Step	Screen	Description
1		**Creating a schedule - period** Enter the schedule name, date range, days of the week when the schedule is effective, and dates when the schedule should not be executed. You can set the dates when the schedule should not be executed based on holiday scheduling. After entering the schedule information, tap Next to enter the schedule creation window. If you tap Save, the system will save the current schedule information and the pop-up window will close.

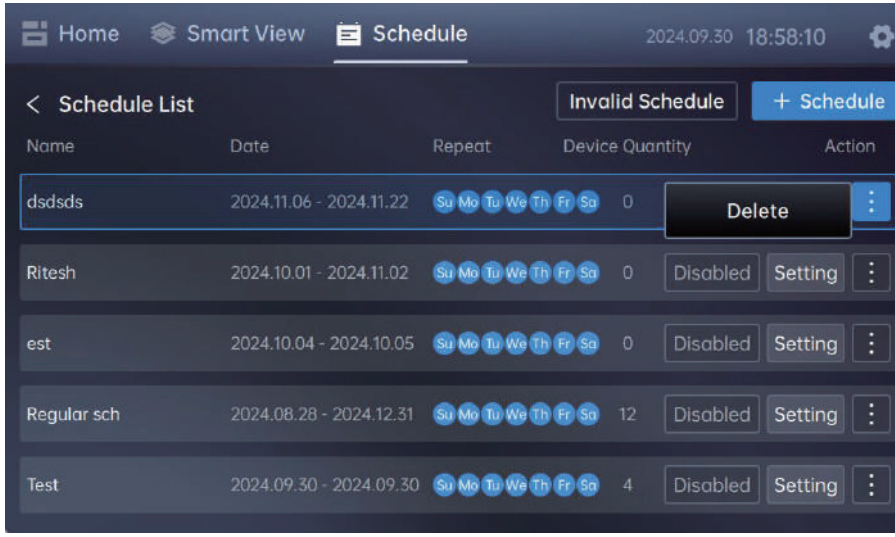
Step	Screen	Description
2		**Creating an event** Enter the event name and time to execute the event. After entering the event information, tap Next to enter the device selection window. If you tap Save, the system will save the current event information and the pop-up window will close.
3		**Selecting a linked device** Tap the device to execute the event command. After selecting the device, tap Next to enter the command setting window. If you tap Save, the system will save the current device selection and the pop-up window will close.
4		**Setting a command** Set the command to be executed by the device. If you choose multiple types of devices, you should set the commands for these devices separately. After the command setting is complete, tap Save to save all settings.
5		**Creating more events** After the command is saved, the system will enter the schedule detail screen where you can tap + Add Event to create more events and set the commands to be executed at other time.
6	**Completing schedule setting** The set event command will be executed once the set date and time arrive.	

Note

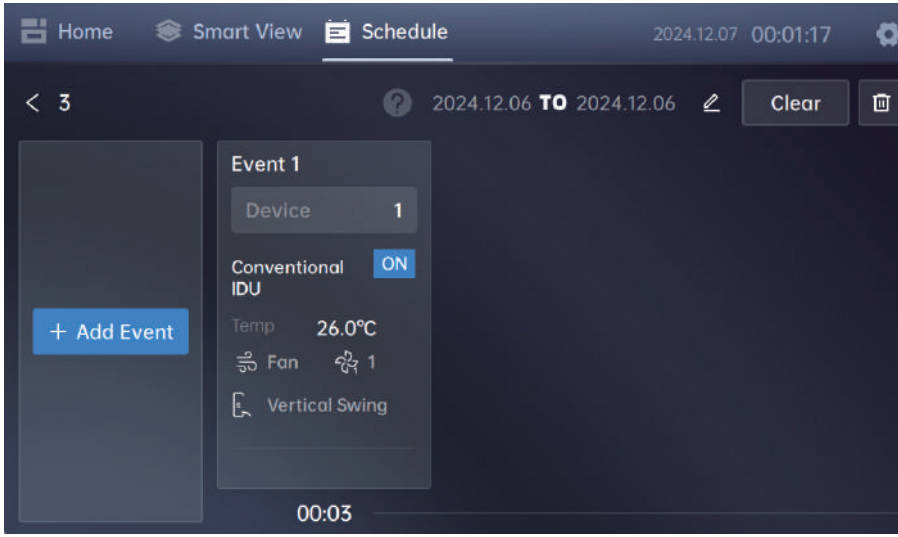
- The maximum number of schedules that can simultaneously exist in the controller is 256, with a daily maximum of 10 schedules, and each schedule can contain up to 24 events.
- The scheduled control will take effect only if it contains device-related event instructions. After creating a schedule, you must proceed to the next step and complete the event instruction settings.

8.2 Viewing and Editing

Tap All on the home page to enter the "Schedule List" page and view events within the valid date range.



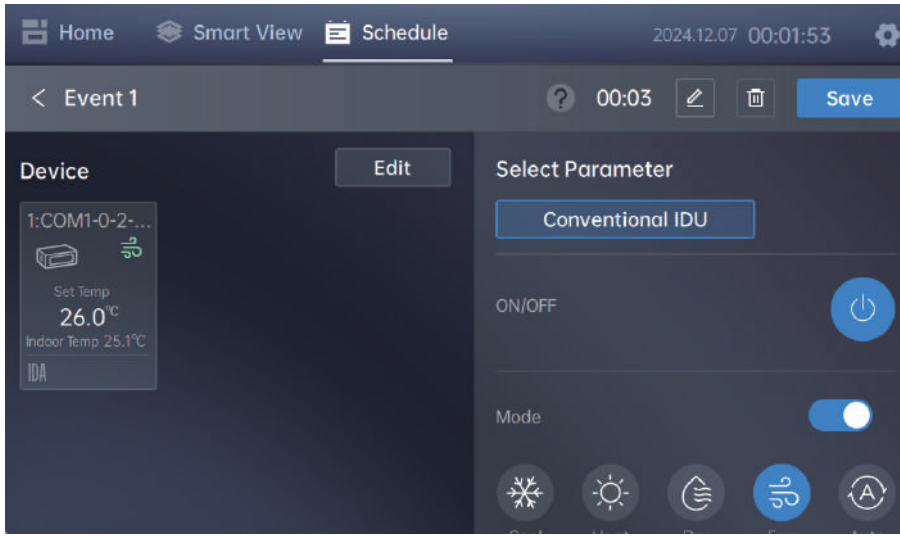
1. To view expired schedules, tap Invalid Schedule to access a new page.
2. Tap + Schedule to start the schedule creation process.
3. Schedule activation/deactivation: By default, newly created schedules will be enabled and executed according to the specified date range. To deactivate a schedule, tap Enabled to stop its effect. To resume execution, tap Disabled.
4. Schedule details: Tap Setting next to a schedule to access the event details screen, where all related schedules are listed.



4.1 To change the name or date range of a schedule, tap  to edit the basic information about the schedule.

4.2 Tap  to delete the current schedule, after which the events in this schedule will be inactive.

5. Event details: Tap an event card to enter the event details page where you can edit associated devices and command settings.



9. Device Tracking

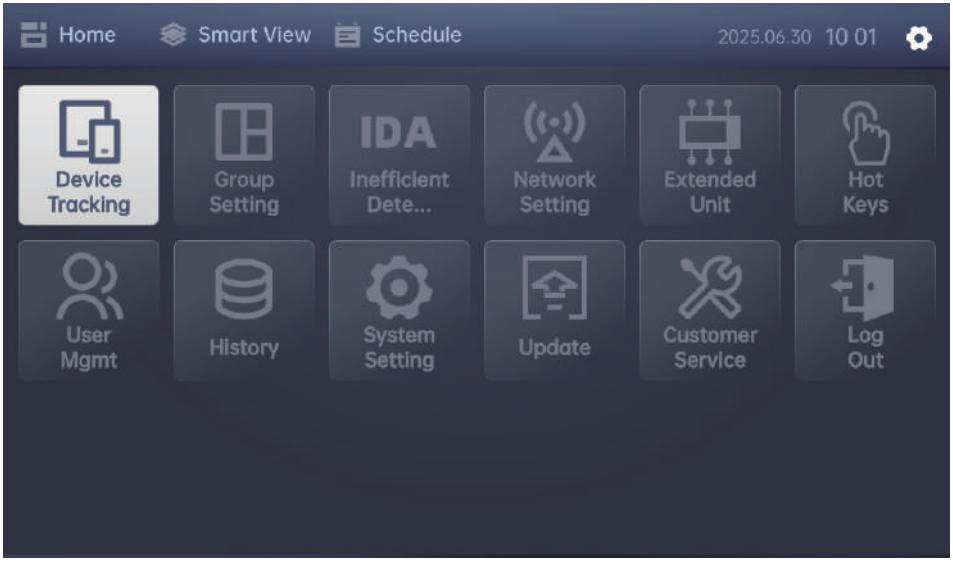
To synchronize or discover the latest device connection status, you need to perform device searching and add the device to the IMM-Lite client to monitor the devices. Searching for devices is necessary in the following cases:

1. First use of IMM-Lite.
2. A new device is added to IMM-Lite.
3. Device address is changed.
4. Topology of the refrigerant system is changed.

You can find two types of devices (IDUs and ODUs). Ensure the following before searching for devices:

1. The address of each system and that of any IDU cannot be duplicated.
2. The maximum number of IDUs that can be connected to each IMM-Lite is 128.
3. Each RS485 interface supports up to 64 IDUs.

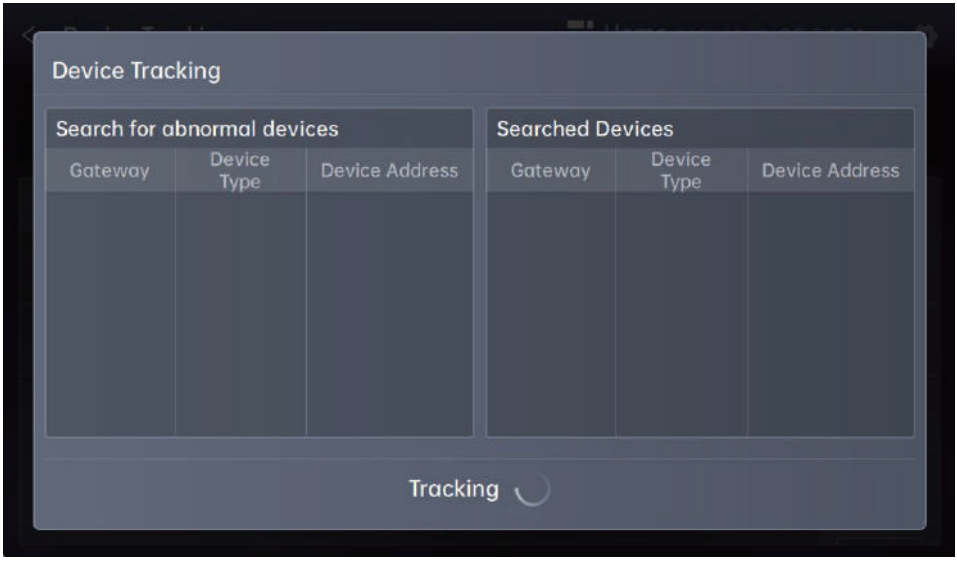
Open the settings panel and tap "Device Tracking" to enter the "Device Tracking" screen.



On the "Device Tracking" screen, you can see the number of IDUs and ODUs found by IMM-Lite in the last search. The device table will record the details of each device.

Tap Edit next to the device to edit its name.

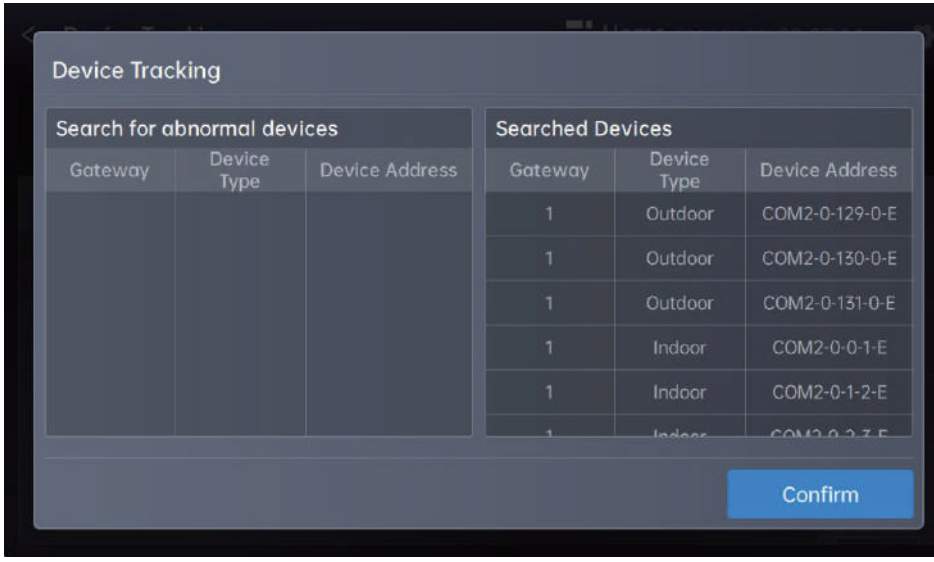
Tap Tracking All in the upper right corner of the screen, and then tap Confirm to start device searching.



Note

- If a device with a duplicate address is found, it will appear in the "Search for abnormal devices" section. You can reset the device address by following the prompts.

After the search is completed, the search result prompt screen will show unconnected devices and newly discovered devices. Unconnected devices are those saved from the last search and not found in this search (devices not connected to IMM-Lite). You can choose whether to retain the historical device information that was not found in this search.



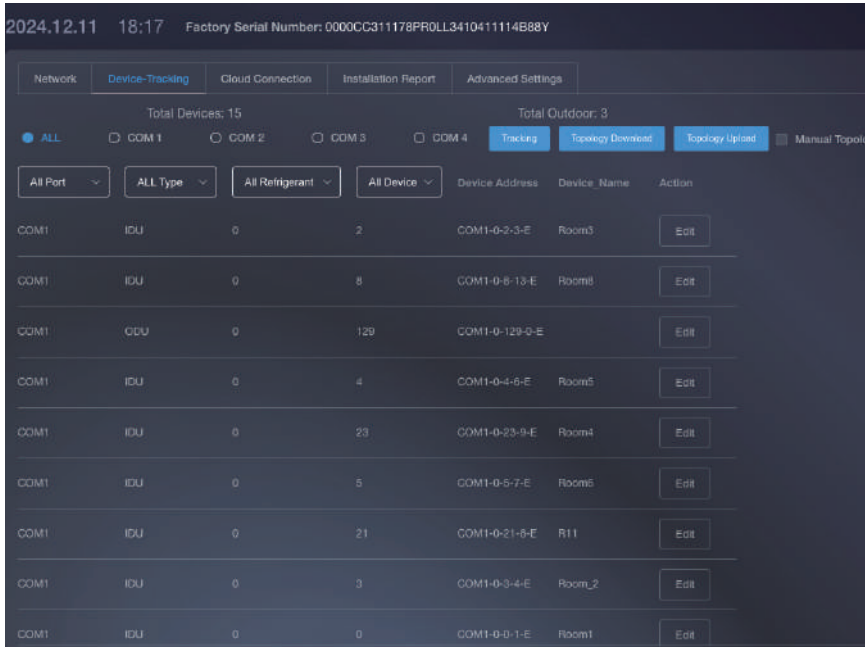
Tap Confirm to save the search results.

5.1 Modifying Device Information in Batches

When a large number of connected devices are available, you can utilize the built-in webpage function of IMM-Lite to quickly modify device information in batches, including device names and device groups.

The procedure for modifying device information in batches is as follows:

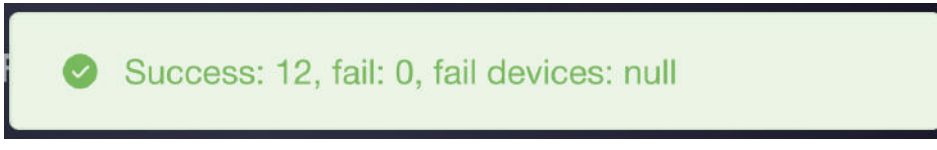
1. Ensure that your device (computer or tablet) is connected to the same network as IMM-Lite. Open a browser and enter the IP address assigned by IMM-Lite (which is available on the network settings screen) to open the website.
2. On the website login screen, enter the username (admin) and password (123AB@ab) to log in to IMM-Lite.
3. After logging in, switch to the "Device Tracking" interface. Tap "Topology Download" in the upper right corner to download the device topology template in CSV format.



4. Open the downloaded device topology template using Office or similar software. Fill in the device name and device group according to the template requirements, and then save the information.

C	D	E	F	G	H	I	J	K	L
Indoor unit number	Network address	Indoor unit address	Equipment name	Room area	Level 1 grouping	Level 2 grouping	Level 3 grouping	Level 4 grouping	Level 5 grouping
1:COM2-0-9-21-E	0#	9	1201-1		Build1	Floor2	1201		
1:COM2-0-21-8-E	0#	21	1201-2		Build1	Floor2	1201		
1:COM2-0-22-10-E	0#	22	1202-1		Build1	Floor2	1202		
1:COM2-0-23-9-E	0#	23	1202-2		Build1	Floor2	1202		

5. Return to the webpage and tap "Topology Upload" to upload the edited topology file to complete the modification of device information. A prompt box will appear on the webpage, displaying the upload results, including the number of successful and failed devices, along with the numbers of any failed devices.



If there are any failed devices, check the following:

1. Ensure that there are no duplicate device names.
2. Verify that there are no device names which exceed the length limit.
3. Confirm that the group name does not exceed the length limit.

After completing the above checks, try uploading the devices again.

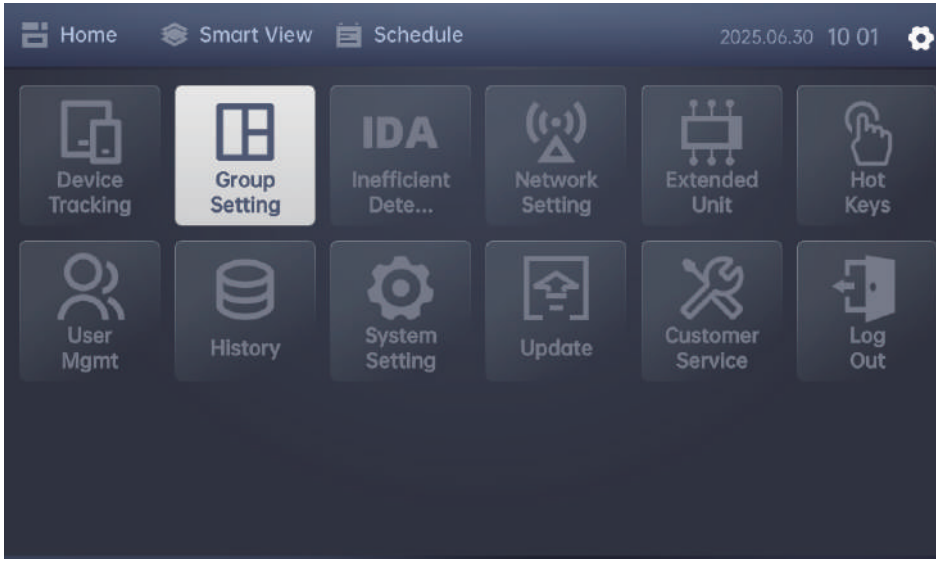
10. Group Setting

The "Group Setting" feature allows you to create, edit, and delete IDU groups, facilitating group control after device grouping. You can group devices based on their spatial distribution or floor layout, allowing for efficient management and control of IDUs in groups.

The rules for creating a group are shown below:

1. You can create up to 32 groups (including groups and sub-groups).
2. Each group supports up to 5 levels (e.g., All - Level 1 - Level 2 - Level 3 - Level 4 - Level 5 - Devices).
3. The same IDU cannot be included in two groups or levels at the same time.
4. Group names at the same level cannot be duplicated.

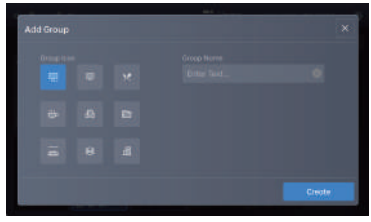
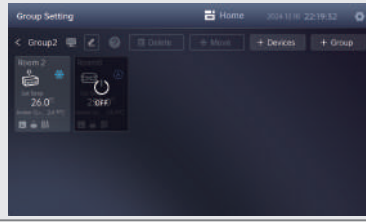
Tap  to open the settings panel, and then tap "Group Setting" on the panel to open the "Group Setting" screen.

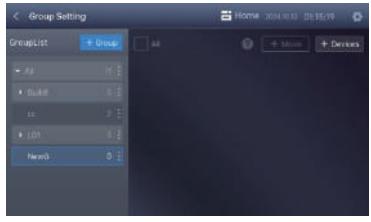
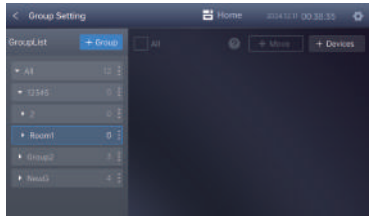


The "Group Setting" screen offers two styles: large card and small card. You can specify your preferred card style in "12. System Setting".

10.1 Creating a Group

Enter the "Group Setting" screen to manage the device group screen. The steps for creating a group differ slightly between large and small cards. Please refer to the following table for the creation steps:

Large card (this option is recommended for systems with no more than 18 IDUs)		
Step	Screen	Description
1		**Starting group creation** On the "Group Setting" screen, access the screen or folder where you want to create a sub-group. 1) To enter a folder, tap Enter > above the folder.
2		**Selecting a device** 1) Tap the device or group card to be included in the selected group. 2) Tap + Group to open the group-adding window.
3		**Entering group information** 1) Select the group card icon. 2) Enter the group name. 3) Tap Create to save the group information.
4		**Completing creation** After the creation is complete, the system will enter the new group details screen.

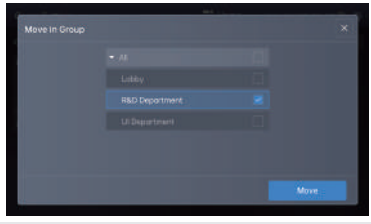
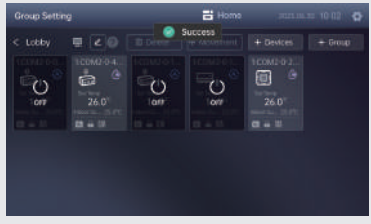
Small card (this option is recommended for systems with over 18 IDUs)		
Step	Screen	Description
1		**Starting group creation** Select a group on the "Group Setting" screen. 1) Select the group level containing the new group. 2) Tap + Group or ⋮ next to the group, and select "Add Group" to start the sub-group creation process.
2		**Entering group information** 1) Select the group icon. 2) Enter the group name. 3) Tap Create to save the new group.
3		**Entering the new group** 1) After the creation is complete, the system will enter the new group screen where you can tap + Devices to open the device-adding window.
4		**Adding a device** In the "Add Device" window, select the device or group card to be added to the new group, and tap Confirm to add the device to the group.
5		**Completing creation** After a device is added, the selected device or group will be added to the new group.

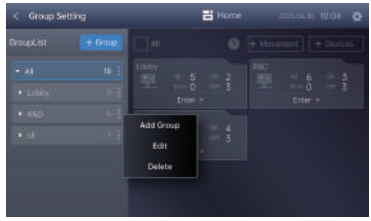
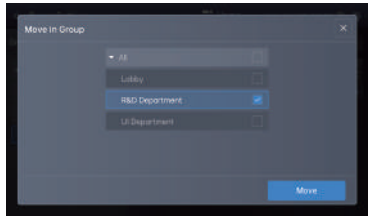
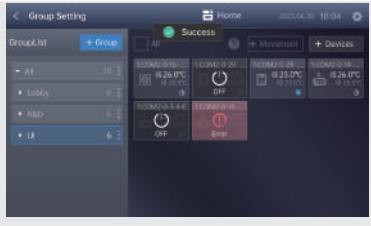
After grouping the devices, you can view the created group on the device screen to achieve group control.

10.2 Editing and Deletion

Enter the "Group Setting" screen to manage the device group screen. The methods for editing a group differ slightly between large and small cards. Please refer to the following table for the editing steps:

Large card (this option is recommended for systems with no more than 18 IDUs)

Step	Screen	Description
1		**Entering the group setting screen** On the "Group Setting" screen, access the screen or folder where you want to create a sub-group. 1) To enter a folder, tap Enter > above the folder.
2		**Entering the group details screen** 1) Tap to open the group information editing window where you can edit the group details. 2) Tap + Devices to open the device selection window where you can select the device to be added. 3) Select the device to be moved, and tap Movement to enter the "Move in Group" window. 4) Select the sub-group to be deleted, and tap Delete to delete the sub-group.
3		**Move in Group** Select the group to accept the device, and tap Movement to save the modification.
4		**Completed** After the modification is complete, the system will give a prompt indicating that the modification was successful.

Small card (this option is recommended for systems with over 18 IDUs)		
Step	Screen	Description
1		**Entering the group details screen** 1) Tap ⋮ next to the group to be edited, and select Edit to edit the group information. 2) Tap ⋮ next to the group to be deleted, and select Delete to delete the group.
2		1) Tap + Devices to open the device selection window where you can select the devices to join the current group. 2) Before moving a device, select the device or the corresponding group card, and then tap Movement to enter the group selection window.
3		**Moving a device** Tap ✓ to select the group to accept the device, and then tap Movement to save the modification.
4		**Completed** After the modification is complete, the system will give a prompt indicating that the modification was successful

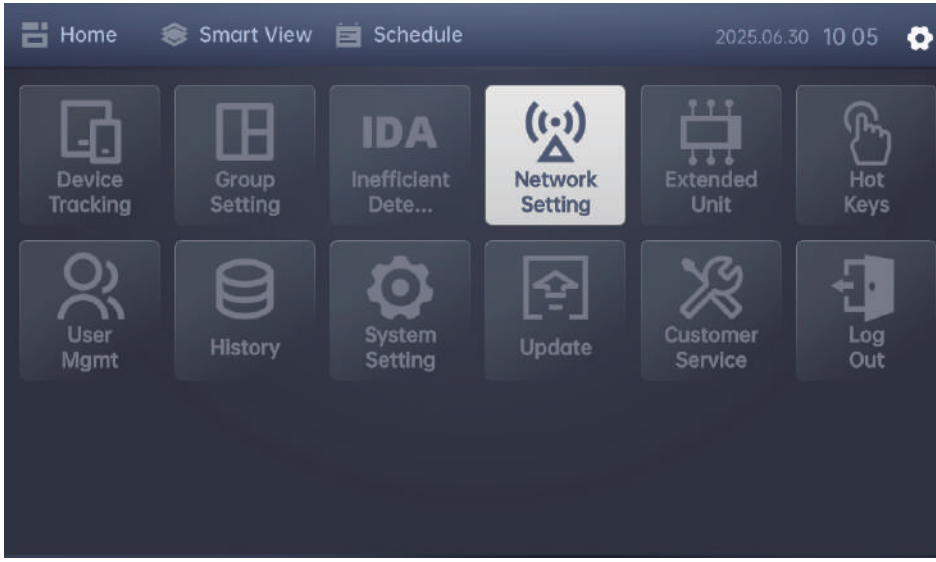
11. Network Setting

By default, IMM-Lite operates with a dynamic IP. You can modify its network configuration in the network settings.

The network configuration should be modified in the following situations:

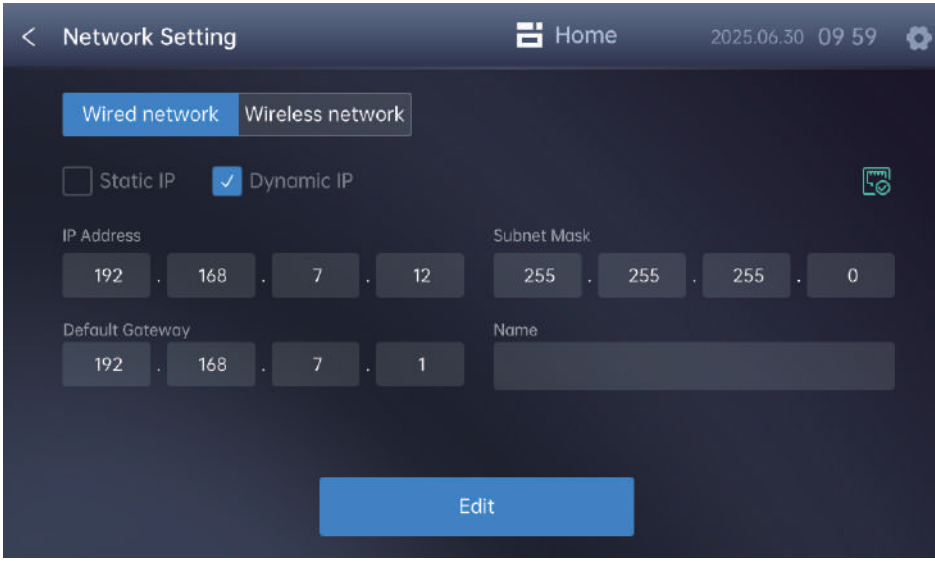
1. If the static IP address conflicts with the IP address of another device in the network, the IP address should be modified.
2. To connect to a network that provides Internet access, the IP address should be changed to a dynamic one.
3. When a static IP address is required for a specific network segment to maintain communication with other devices, the IP address should be modified.
4. To connect to a Wireless network, the IP address should be modified.
5. To modify port parameter values, the IP address should be modified.

You can access the network settings through the settings panel.



11.1 Editing Network Information

IMM-Lite uses a dynamic IP address by default. Users can set it to a static IP and manually configure the network, or automatically obtain a dynamic IP address.



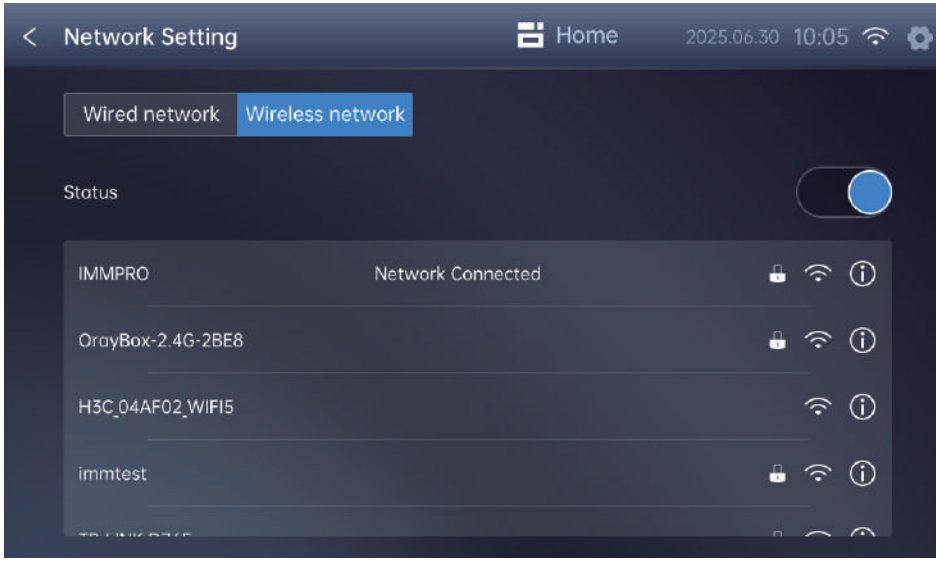
Tap Edit to modify the central controller static IP address, network name, and tap Confirm to save the changes.

Note

- When a static IP address is used, it should not conflict with that of any other device.

11.2 Connecting to Wireless network

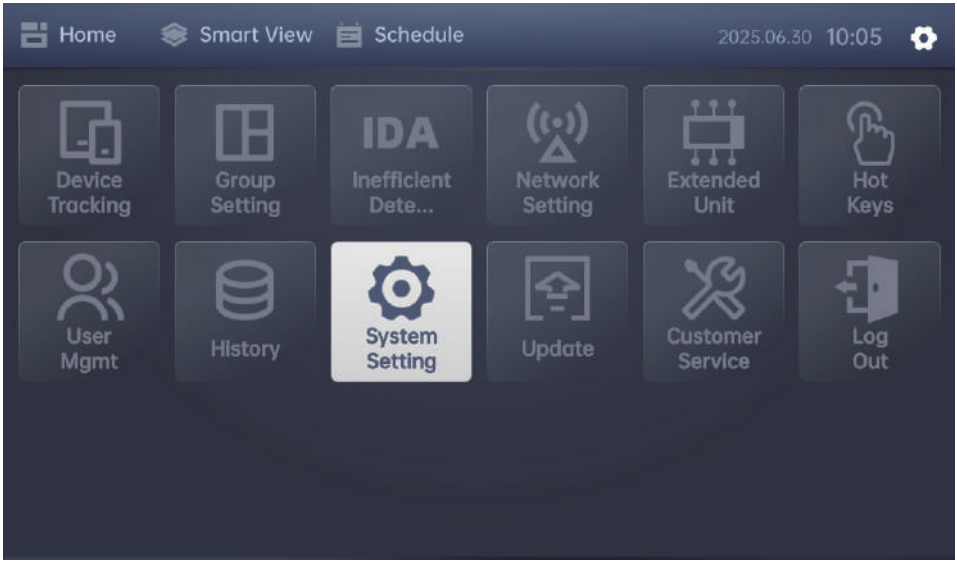
To connect IMM-Lite to a Wireless network, tap  on the "Network Setting" screen to enable Wireless network and search for available Wireless network nearby.



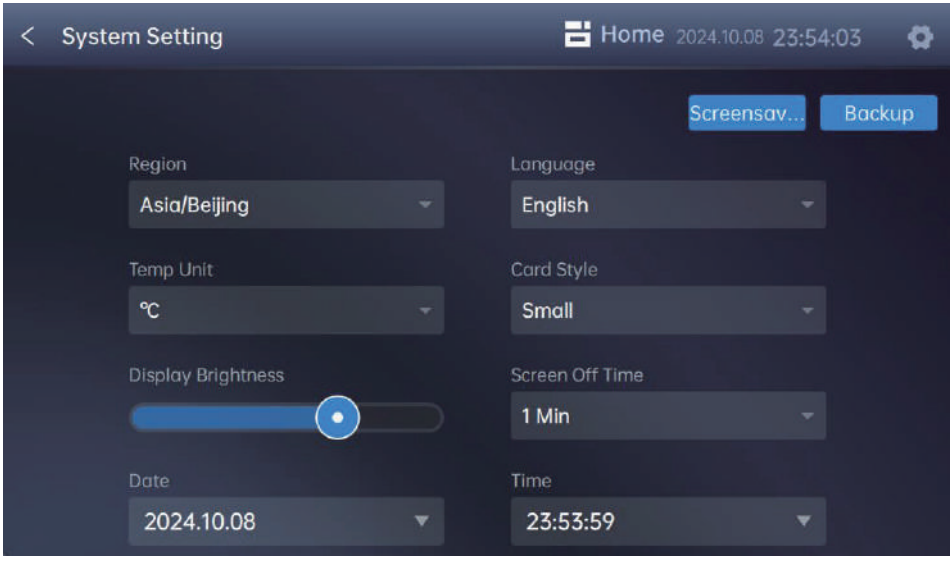
Select the network you want to connect to, enter the password, and tap "Confirm" to complete the connection process.

12. System Setting

Tap "System Setting" on the settings panel to enter the "System Setting" screen.



On the "System Setting" screen, tap the corresponding entry or option box to select or set each system option.



The "System Setting" screen includes the following options:

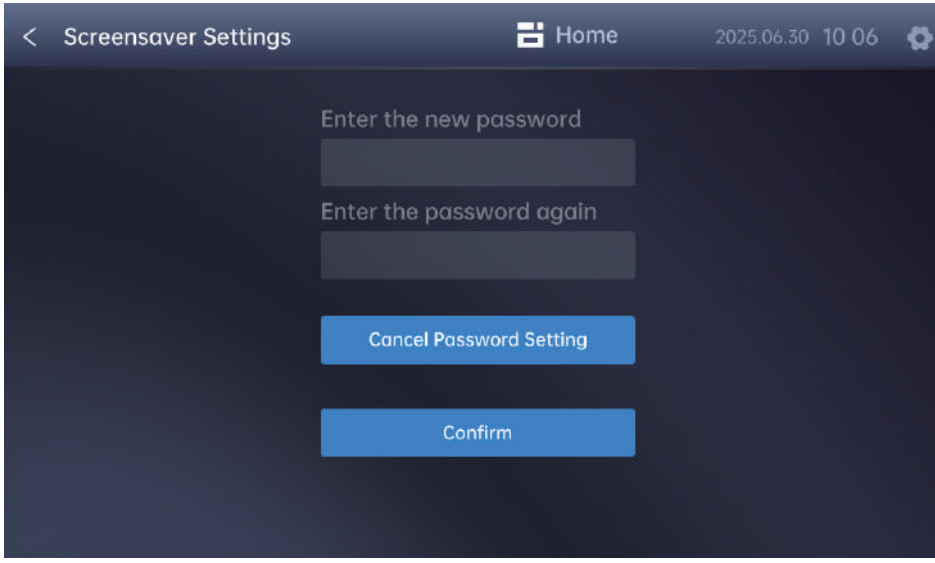
No.	Item	Options	Description
1	Region	Time zones from regions including Asia, Africa, America, Australia, Europe, and the Pacific are available for selection.	
2	Language	Chinese, English, Arabic, Spanish, Turkish, Portuguese, Korean, Russian, Italian, Polish, French, German, Georgian, Traditional Chinese	
3	Temp Unit	°C, °F	
4	Card Style	Adaptive, Large, Small	Adaptive: Default option. The system adjusts the card style based on the number of IDUs (Large: when the number of IDUs is smaller than or equal to 18; Small: when the number of IDUs is larger than 18). Large: Large card style, which is recommended for systems with no more than 18 IDUs. Small: Small card style, which is recommended for systems with over 18 IDUs.
5	Display Brightness	40% to 100%	
6	Screen Off Time	1 Min, 5 Min, 10 Min, N/A	Default: N/A
7	Date	YYYY.MM.DD	Enables you to set the date
8	Time	Hour:Minute:Second	Enables you to set the time
9	Cloud Synchronization	Upgrade/Data	After selecting "Update", you can upgrade the system to the latest cloud version and OTA upgrades are supported. After selecting "Data", you can synchronize local data to iBUILDINGComfort.
10	Screensaver Settings	Screensaver password	Enables you to set a screen-off password. By default, no screen-off password is provided.
11	Backup	Download backup file Upload backup file	Enables you to backup central controller data. When data is lost, you can read historical backup files to restore the data.

Note

- To ensure the proper execution of scheduled events, exercise caution when modifying the region, date, time, and other related information.

12.1 Screensaver Settings

To prevent accidental touches or restrict operations after the screen turns off, you can set a screensaver password. Once the screen turns off, you will need to enter the password to log back in and access the system.



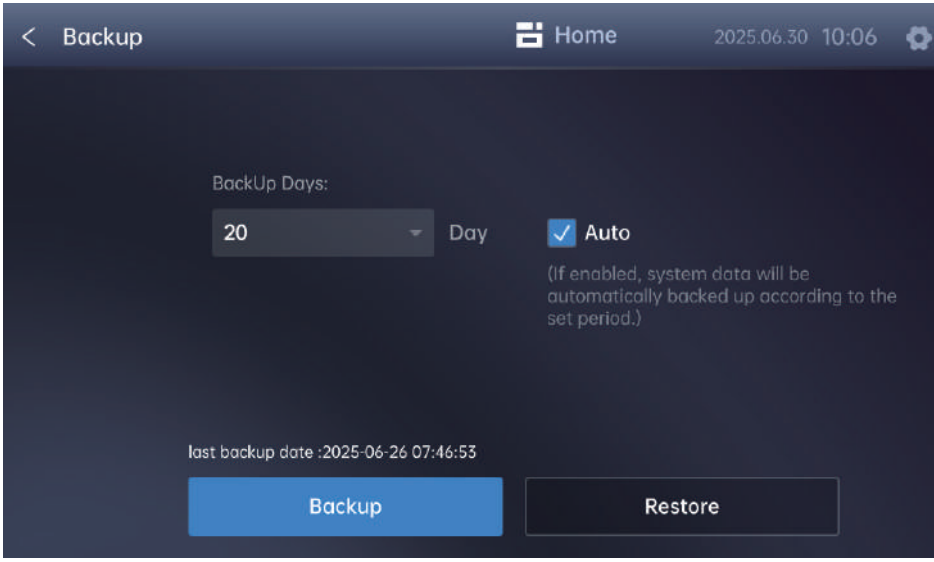
Tap Cancel Password Setting to clear the password settings. You can wake the screen by tapping it.

Note

- If a screensaver password is set, remember the password. IMM-Lite does not support password recovery for this account, nor does it support factory resets.

12.2 Backup

The backup function is designed to back up IMM-Lite data. If IMM-Lite loses its connection with the original data center, system data may be lost. In such cases, you can read historical backup files to restore the data.



Tap Backup to back up and download the current data file. Select Auto to automatically download data files according to the backup cycle.

Tap Restore to read backed-up files for data recovery.

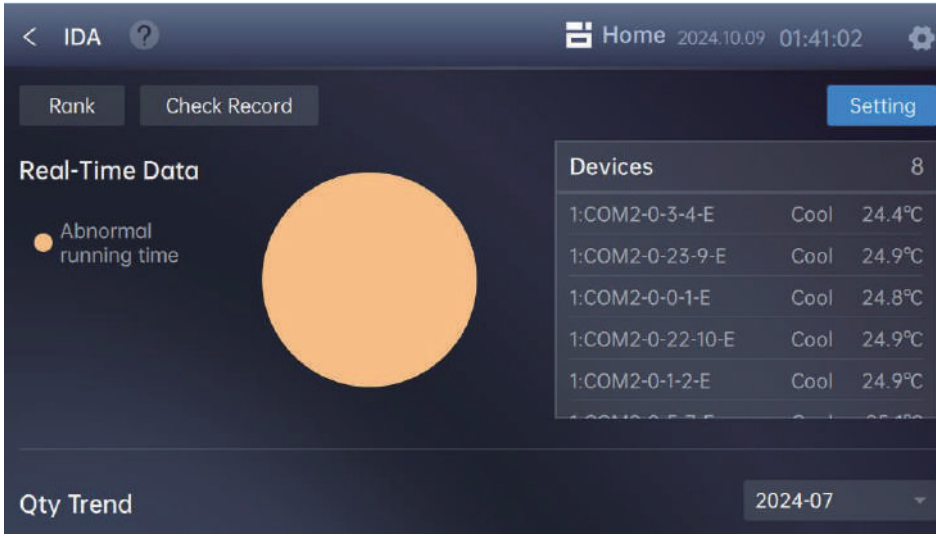
13. IDA

The IDA feature is based on the built-in IDAs to detect devices with an inefficient operation status. When a device operates abnormally under specific conditions, the system records the abnormal status of the device, allowing for timely intervention to reduce energy waste.

Tap "IDA" on the settings panel to enter the IDA screen.

13.1 Records

The IDA screen allows you to view the latest records on the configured IDAs.



Description of each module:

Module	Description
Rank	Tap Rank to enter the "Rank" screen to view the quantity ranking of IDA records.
Check Record	Tap Check Record to enter the "Check Record" screen to view the existing monitoring records.
Setting	Tap Setting to enter the "Setting" screen. Records can only be generated after settings are configured.
Real-Time Data	Overview of the current number of devices triggering IDA and their information
Qty Trend	IDA quantity trend for a specific month, defaulting to the quantity within the current month's time range

Note

- To generate records, three conditions must be met simultaneously: 1. IDA must be enabled; 2. Devices to be monitored must be associated; 3. IDA rules must be set for the associated devices.

13.2 Settings

When using this feature for the first time, you need to set the IDA rules. Records will only be generated after the rules are configured. Tap Setting to enter the rule setting screen.

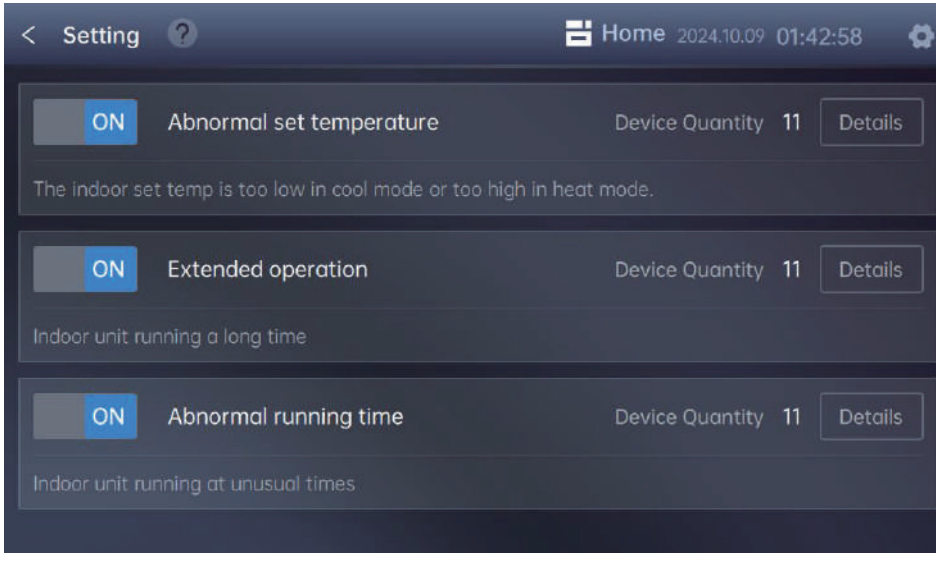
IMM-Lite supports 3 IDAs:

1. Abnormal set temperature
2. Abnormal running time
3. Extended operation

The specific rules are as follows:

No.	IDA Name	Default Rules	Description	Value Range
1	Abnormal set temperature	**Cool**: An alarm occurs when the set temperature is lower than 20°C. **Heat**: An alarm occurs when the set temperature is higher than 28°C.	The set temperature for IDUs in Cool mode is too low, or the set temperature in Heat mode is too high.	Temperature options: 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30
2	Abnormal running time	**Cool**: IDUs are running from 20:00 to 8:00 every day **Heat**: IDUs are running from 19:00 to 9:00 every day	IDUs are running at unset times.	Options: 0:00 to 23:00. The time span should not exceed 16 hours.
3	Extended operation	By 24:00, the IDU has operated for more than 18 hours in Cool or Heat mode.	The IDU runtime is too long	Options: 12, 18

The IDAs are disabled by default, without any associated device.



Tap ON to select the IDA to be enabled, and tap Details to enter the settings screen.

Tap Edit to enter the editing status to modify the monitoring status. In the editing status, tap + Select Device to add the devices to be monitored. After completing the editing, tap Save to apply the IDA settings.

14. Hot Keys

IMM-Lite enables quick control of physical keys, allowing you to manage devices without waking the screen. This feature helps eliminate the need to select devices or set commands during daily use, achieving "one-key control".

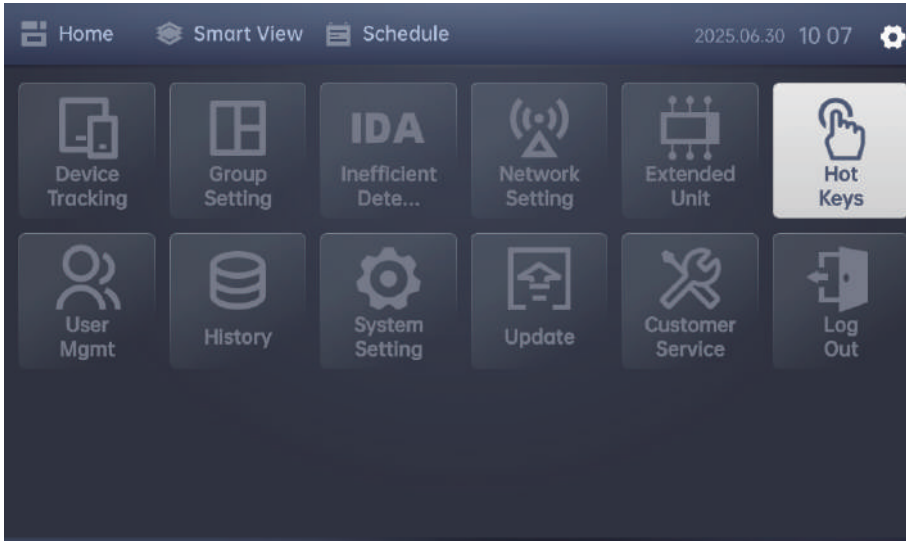
ALL ON: Tap "ALL ON" on the right side of the screen to turn on all associated devices.

ALL OFF: Tap "ALL OFF" to turn off all associated devices.

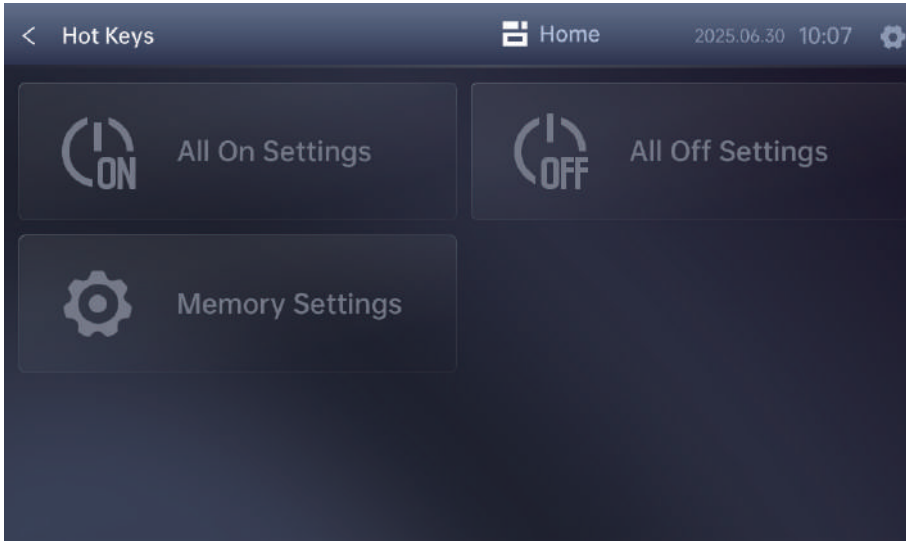
FN: Tap "FN" to view executable command options. After selecting a command, tap "Confirm" to control the associated devices according to your custom commands.

Note

- Before using hot keys, configure them on the "Hot Key Settings" screen and associate devices; otherwise, the keys will not function.
- Tap "Hot Key Settings" on the settings panel to access the "Hot Key Settings" screen.

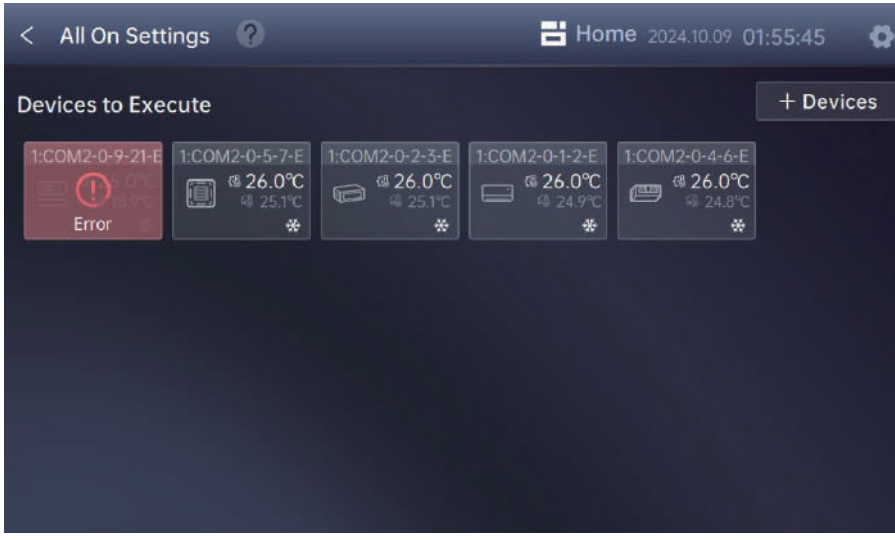


After entering the "Hot Key Settings" screen, tap the desired functional keys to access the detailed setting screen.



14.1 All On Settings

Select "All On Settings" to enter the "All On Settings" screen. Initially, no devices are associated. Tap + Devices to add devices that need to execute the "All On" command.

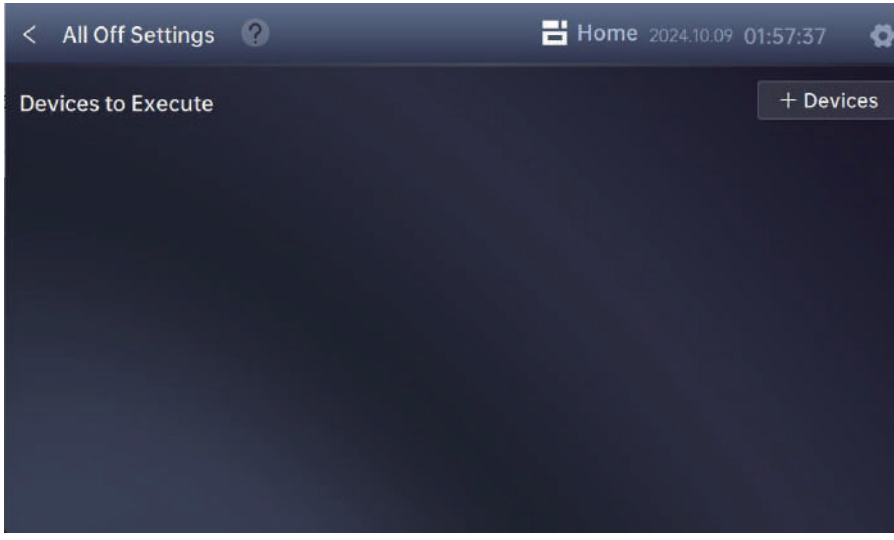


You can add devices that should be frequently powered on or remain in the powered-on state to the device list based on your needs. Then, tap Save to complete the addition process.

After adding the devices, tap "ALL ON" on the right side of the screen to turn on the added devices.

14.2 All Off Settings

Select "All Off Settings" to enter the "All Off Settings" screen. Initially, no devices are associated. Tap + Devices to add devices that need to execute the "All Off" command.

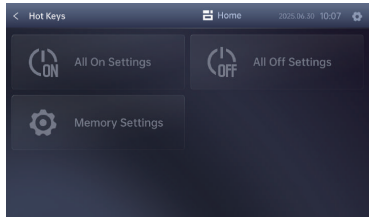
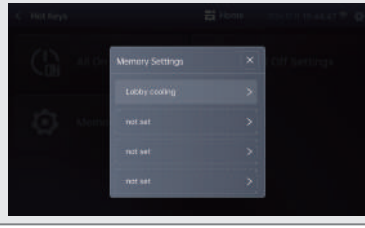


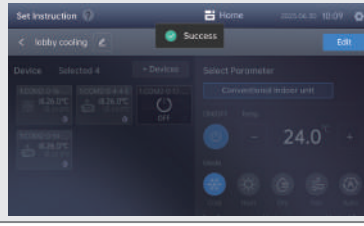
You can add devices that should be frequently powered off or remain in the powered-off state to the device list based on your needs. Then, tap Save to complete the addition process.

After adding the devices, tap "ALL OFF" on the right side of the screen to turn off the added devices.

14.3 Memory Settings

The memory function is designed for some commonly used specific commands, and allows you to set up and create quickly executable operation commands based on high-frequency control scenarios. The procedure for creating a command is as follows:

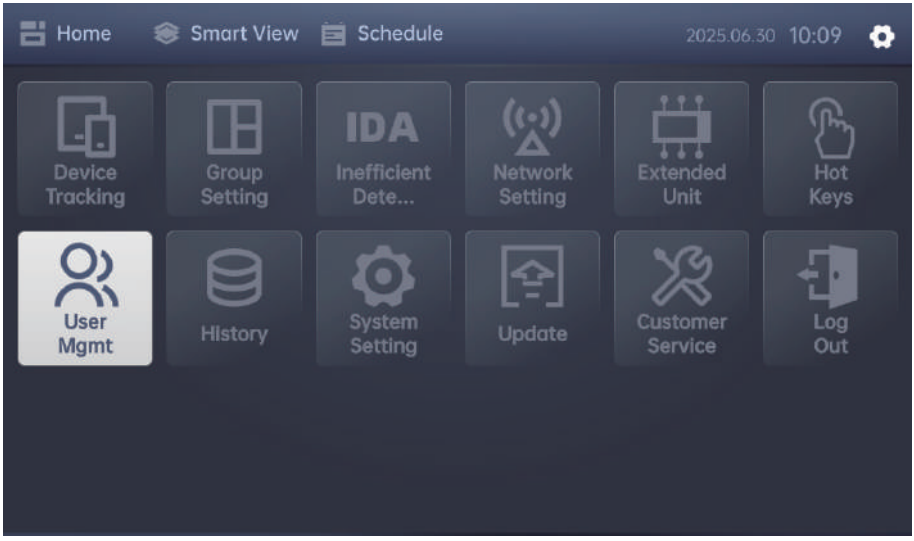
Step	Screen	Description
1		**Entering the "Memory Settings" screen** Select "Memory Settings" to open the memory setting window.
2		**Selecting a command** The system supports 4 commands. Tap the command you want to set to enter the command setting screen.

Step	Screen	Description
3		**Memory command setting screen** Tap ✎ to the left of a command to set its name. Tap Edit to the right of a command to edit the command.
4		**Adding a device** Tap + Devices to open the device selection window where you can select the device to be added. Note: The memory function is only valid when the command is associated with a device.
5		**Setting a command** After adding a device, you can set the command to be executed for each model on the right panel. For the initial setting, you need to tap each model to confirm whether to set the command as expected.
6		**Completing creation** After choosing the settings, tap Save in the upper right corner to save the settings. The creation process is complete after you save the settings.

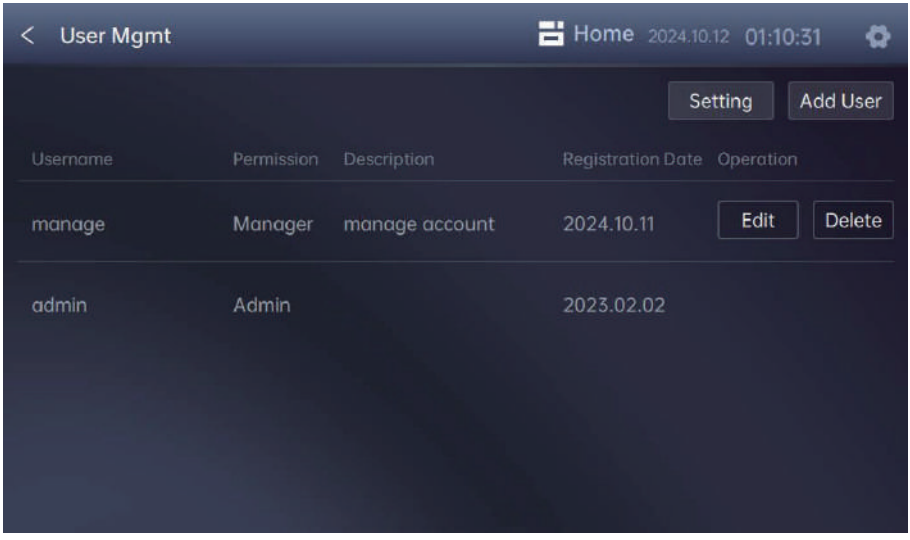
15. User Management

The "User Mgmt" module enables you to add, remove, and edit user information and to assign permissions for using various functional modules. You can manage multiple accounts through this module.

Tap "User Mgmt" on the settings panel to access the "User Mgmt" screen.



On the "User Mgmt" screen, you can view and manage existing accounts.

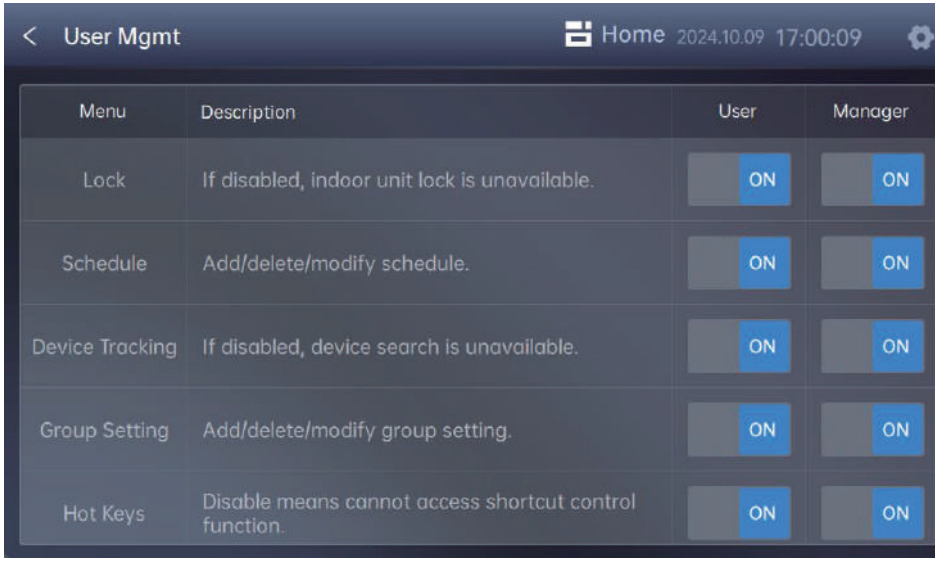


1. To add a user, tap Add User, enter the username and password, select the appropriate user role, and then submit that information to complete the user creation process.
2. To edit user information, such as username, password, or role, tap Edit to open the editing window where you can modify the user's details.

Note

- The administrator must remember the password for the super administrator (admin) account. IMM-Lite does not support password recovery for this account, nor does it support factory resets.

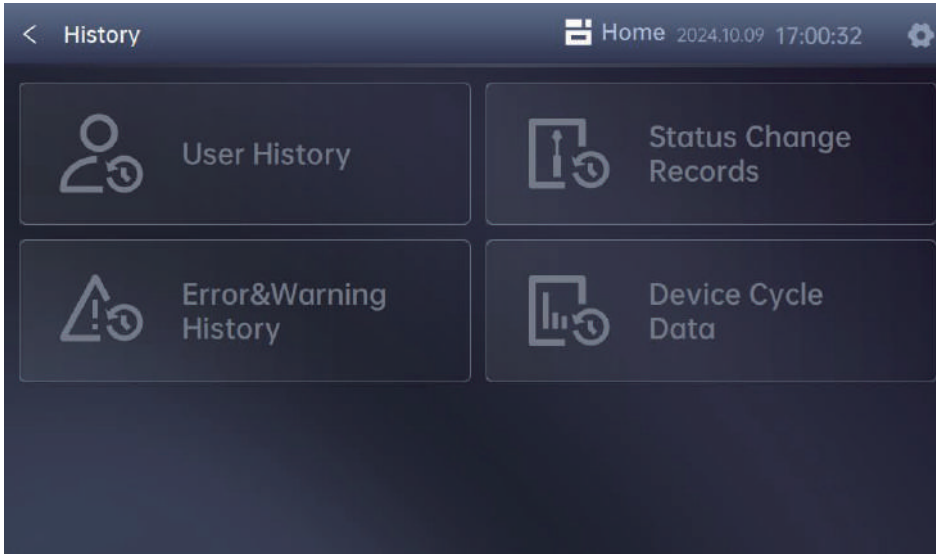
3. To delete a user, once an account is no longer needed, tap Delete following the account to delete it. Keep in mind that deleted accounts cannot be used to log in to the client.
4. To set role permissions, tap Setting to access the role permission settings. Here, you can manage and restrict the functional permissions for each account by defining the scope of permissions for each role.



On this screen, you can toggle the slider corresponding to each permission to grant or revoke the permission for each role.

16. History

To facilitate routine device maintenance of the IMM-Lite central controller and help technicians troubleshoot, the "History" screen will record all types of device running records and user operations.

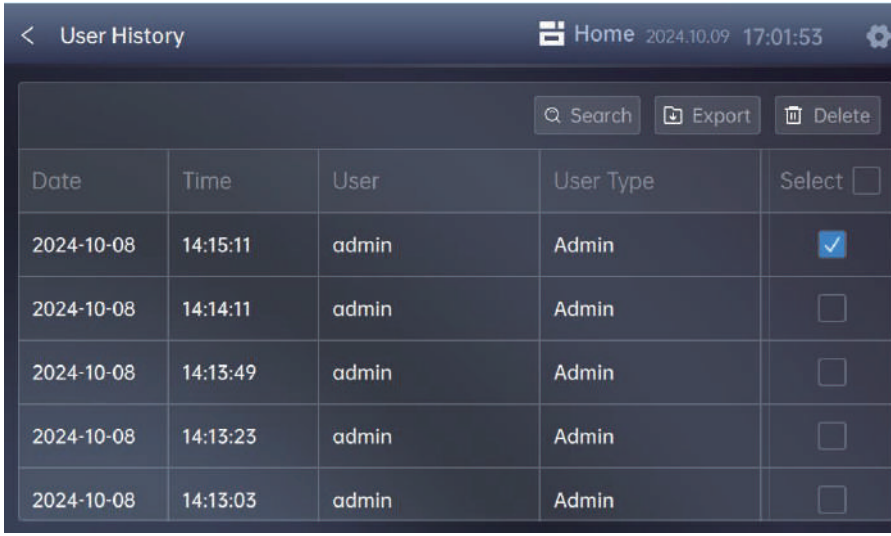


See the following table for all kinds of historical data and relevant operations:

Data Type	Description
User History	Comprises two categories: Login: History of account logins Operation: History of user-controlled operations
Status Change Records	Captures changes in device status, generating a record of the altered status.
Error & Warning History	Records errors or warnings associated with IMM-Lite central controller, IDUs, and ODUs. Error: IDU and ODU error records Warning: Records of problems related to central controller or data readings
Device Cycle Data	Records the running status of IDUs and ODUs, generating data every 5 minutes. Query results will display the most recent record at the time of the query.

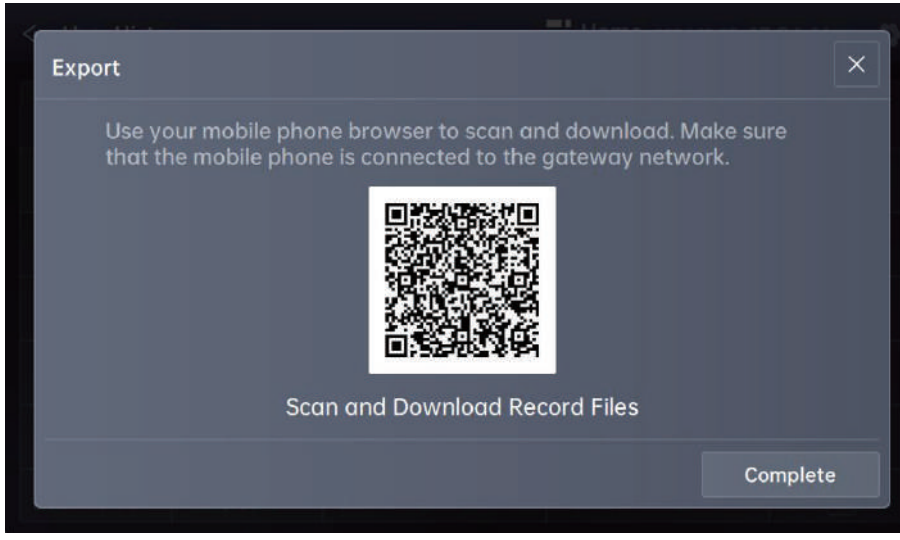
16.1 Viewing

Tap the type of history you want to view, and select the view range to check the history details.



16.2 Export

Select "History" to enter the record details page, and tap Export above the table to generate a QR code for file export based on the current query range. Then, scan the QR code with your mobile phone to download and save the record file.



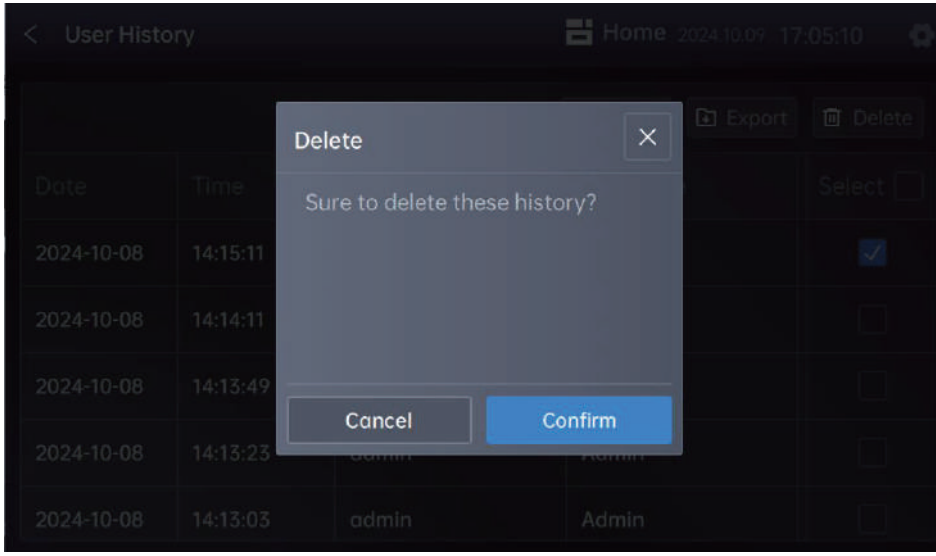
When scanning the QR code with your mobile phone, you should open a browser to download the file.

Note

- Ensure your mobile network is connected to the same network as the IMM-Lite central controller so that downloads are successful.

16.3 Deletion

To delete a record, select the desired record data from the list and then tap "Confirm" in the pop-up window.



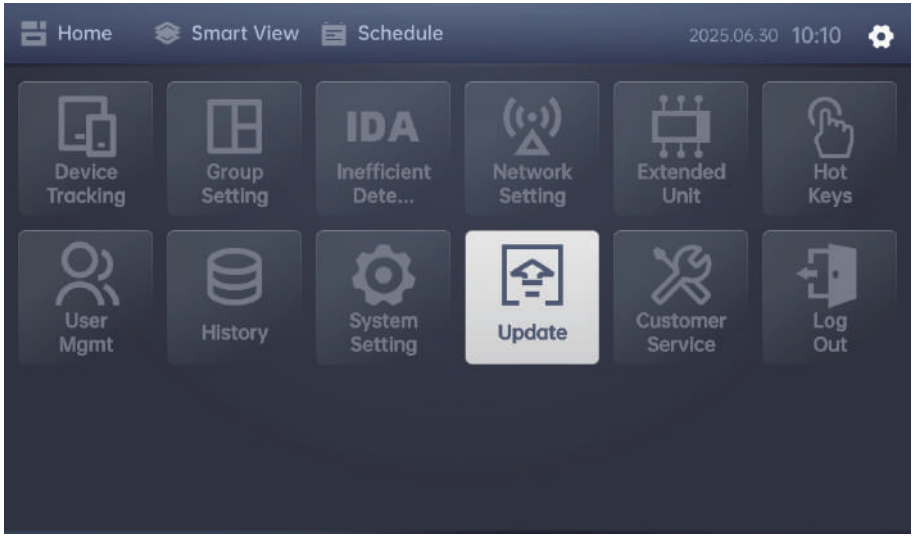
Note

- Once a data record is deleted, it cannot be recovered. Use the deletion function carefully.

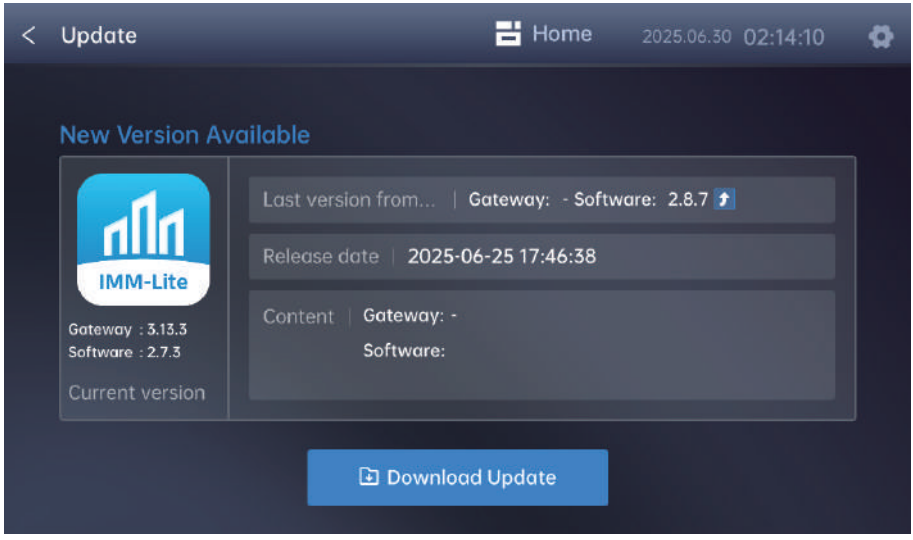
17. Upgrade

Current version information can be viewed on the "Update" screen. When IMM-Lite retrieves new version information from the cloud, the "Update" screen will display that information.

Tap "Update" on the settings panel to access the"Update" screen.



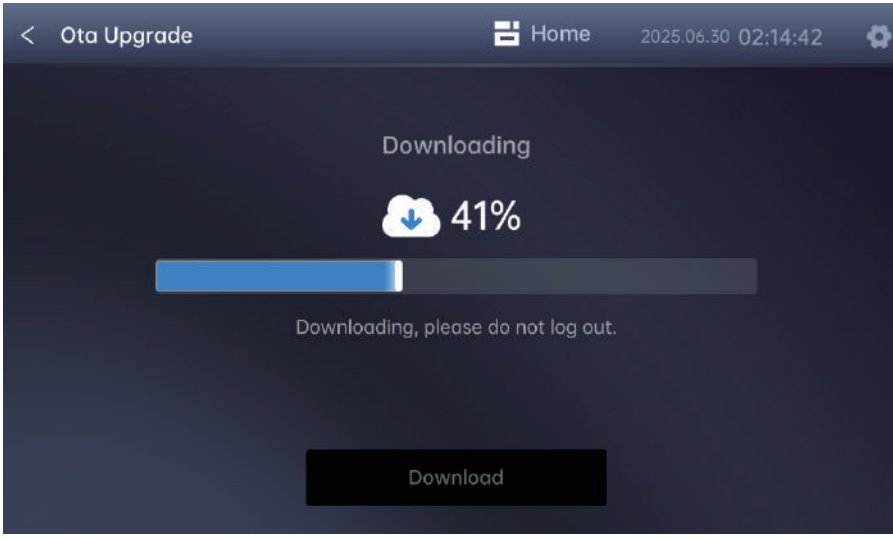
If information about the new version is available, you can view the upgrade instructions and tap "Download Updates" to begin the download and installation process.



Note

- To synchronize with the new version from the cloud, enable the cloud synchronization option on the "System Setting" screen and check "Update".

A progress bar will indicate the download and installation progress. The system will prompt you to restart the device to install the new version.



After restarting, you can access the upgraded version and enjoy the new features.

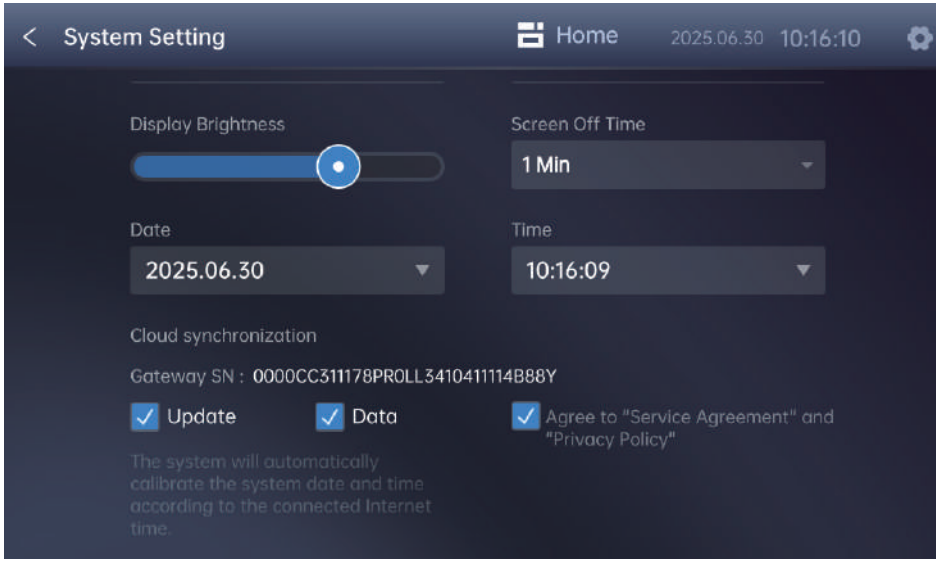
18. Cloud Data Function

The Cloud Data Function feature provides a comprehensive cloud-based management solution for VRF system operation data. It enables uploading operation data from VRF systems connected to the central controller to the cloud. Through the iBUILDING platform, users can remotely monitor, query real-time statuses, and control devices, offering an efficient and convenient solution for equipment management and data analysis.

Key Features: Device status display, Device control, Cloud scheduling (unavailable on IMM-Lite), Topology synchronization, Energy consumption data upload (requires IMMPRO II software and activation of the energy division feature), Billing data upload (requires IMMPRO II software and activation of the energy division feature)

Step 1: Enable Cloud Data Function

1. Log in to 7-inch central controller, enter the System Settings.
2. Under Cloud Synchronization, enable the Data option.
3. Review and accept the Service Agreement to activate.

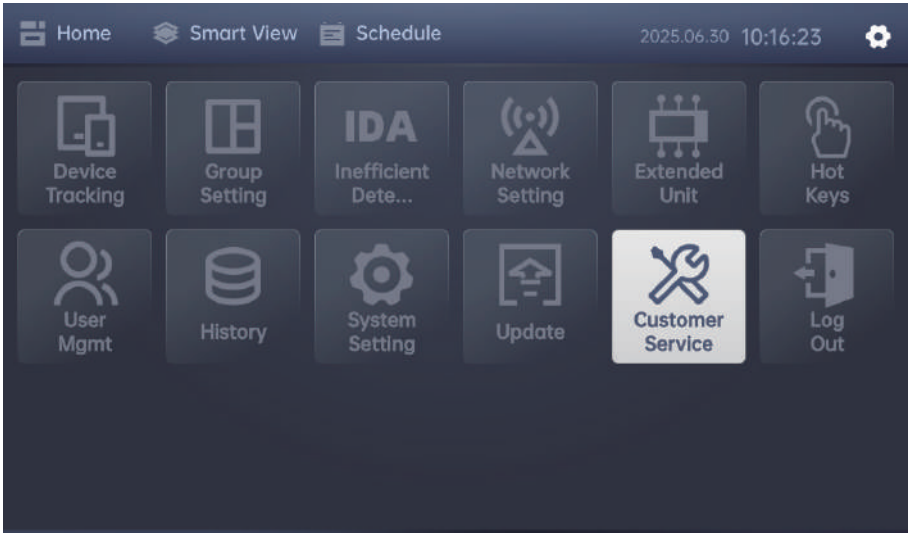


Step 2: Activate iBUILDING Platform Permissions

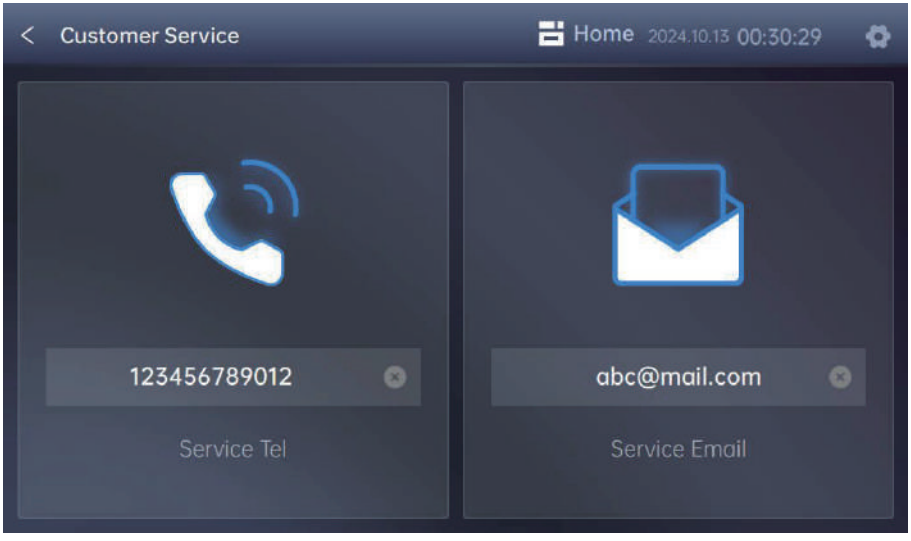
Contact technical support to activate iBUILDING platform access. For detailed usage instructions and operation guidelines, please refer to the iBUILDING platform product documentation.

19. Customer Service

Technical support personnel can edit the contact information of maintenance personnel on the "Customer Service" screen after completing the initial installation and commissioning. To view or edit contact information, tap "Customer Service" on the settings panel.



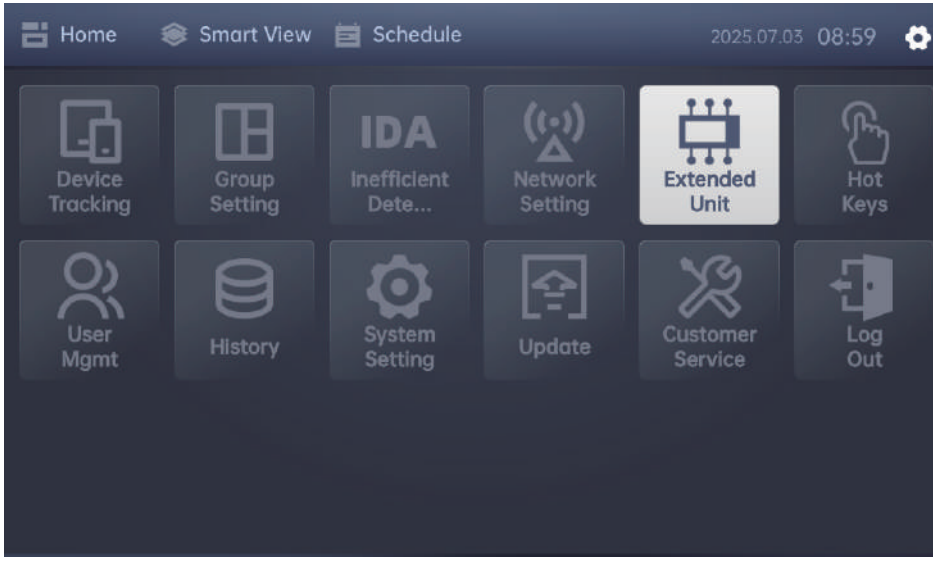
The "Customer Service" screen displays the email and contact information of the technical service engineer:



Tap the input box to edit the contact information.

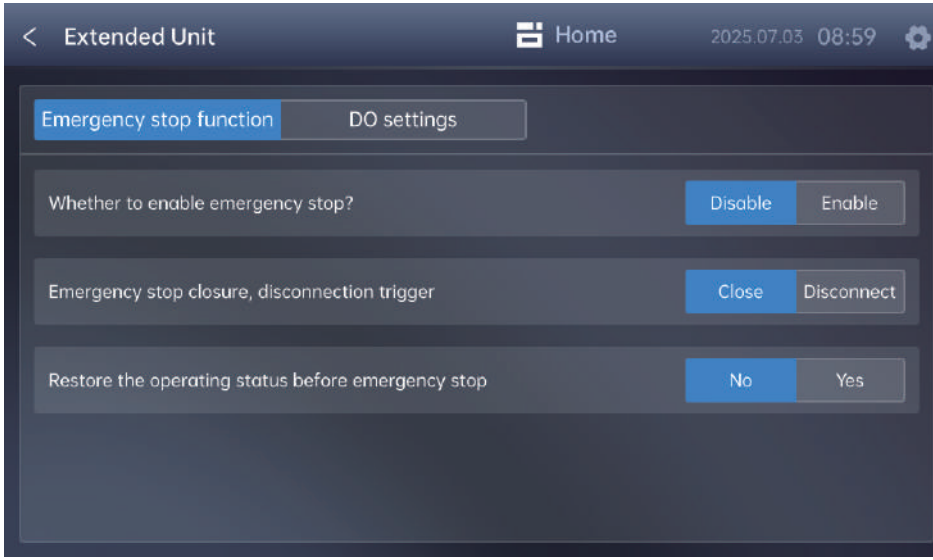
20. Extended Unit

The IMM-Lite central controller offers expanded control functions by connecting to external interfaces, including emergency stop signals and status output. This enables seamless collaboration with other systems or devices in complex application scenarios.
To configure this feature, tap "Extended Unit" in the settings panel. The extended unit include the following functions:



20.1 Emergency Stop Function

The IMM-Lite controller supports an emergency stop function, which allows an external emergency stop signal to be connected via the DI (Digital Input) interface. When enabled, While the emergency stop signal is active, the controller will forcibly shut down all running indoor units and enter continuous monitoring mode to ensure the safety of the equipment and environment.



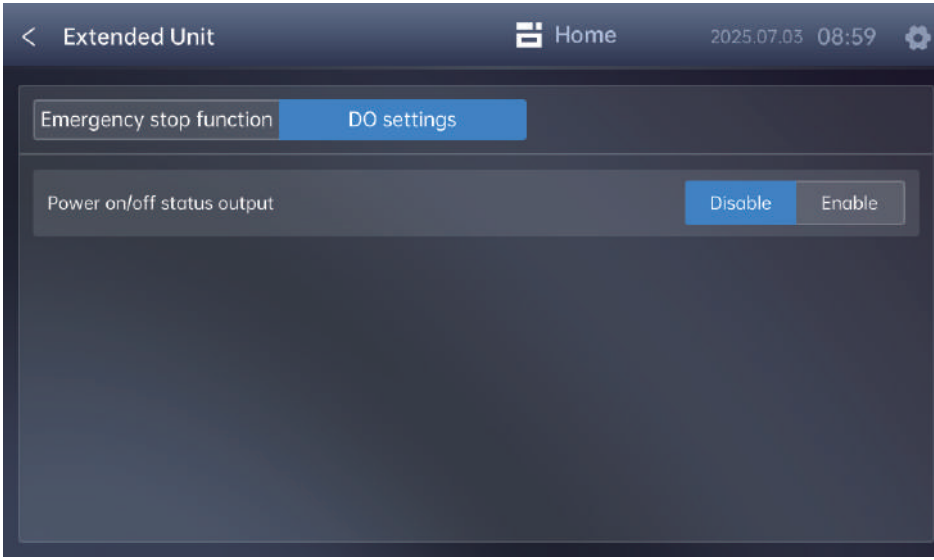
Setting	Description
Whether to enable emergency stop	Enables or disables the emergency stop function. When enabled, the controller will respond to emergency stop signals received through the DI interface.
Emergency stop closure, disconnection trigger	Select whether the emergency stop is triggered by “Close” or “Disconnect”, depending on the wiring configuration of the external device.
Restore the operating status before emergency stop	When enabled, the system will automatically restore the previous operating status of the indoor units after the emergency stop is cleared.

Note

- DI1 is used by default as the emergency stop signal input interface.
- The controller has a 3-minute startup buffer after powering on, during which emergency stop signals will be ignored.
- If no external emergency stop device is connected, the DI interface defaults to a state of disconnection.

20.2 DO Settings

The IMM-Lite central controller includes DO (Digital Output) interfaces, used to indicate the operating status of the connected indoor units.When any indoor unit is powered on, the controller outputs a high-level signal (DC 12V) from the DO1 interface during the next polling cycle (up to 5 minutes). This signal can be used to activate an indicator light or trigger external devices.When all indoor units are turned off, the system switches DO1 to a low-level signal (0V) during the next polling cycle, indicating that no indoor units are currently running.



Setting	Description
Power on/off status output	When enabled, the DO interface outputs a high/low level signal (DC 12V / 0V) based on the indoor unit status. This option is disabled by default.

Note

- DO1 is used by default as the power status output interface.
- The DO interface provides a DC 12V active output, with a maximum output current of 100mA. It can directly drive low-power loads without requiring an external power supply.
- Do not connect the DO interface to any external voltage source or parallel it with other active outputs, as this may damage the controller.

21. Q&A

21.1 Common Issues and Solutions

Problem	Description	Solution
The server is busy or the system times out.	The central controller is connected normally, but its functions cannot work properly, resulting in a "server busy" or "call timeout" message.	Power on the controller again. After the controller starts up, run it to see if the operation returns to normal.
Unable to find a device.	When you search for devices on a client, the central controller information cannot be located, or the air conditioning device loses communication connections.	Check whether all ports are normally connected: 1. Check whether the central controller is normally connected to the power supply. 2. Check for loose connection of the network cable to the central controller hardware LAN port. 3. Check whether the IDU and ODU are correctly connected to the power supply. 4. Check whether the X terminal, Y terminal, and COM port on the ODU control board are correctly connected. If communication fails, reverse the connection and try again.

21.2 IMM-Lite Controller and M0 Gateway Collaboration

To use the IMM-Lite controller together with the M0 gateway device, you need to configure the network to ensure that both the controller and gateway are on the same network.

Connection method	Description	Remarks
Static IP setting	Set a static IP address for the IMM-Lite central controller.	Suitable for local LAN connections using a network cable to access the M0 gateway network.
Dynamic IP setting	Configure the IMM-Lite central controller to dynamically obtain an IP address.	The central controller will automatically receive an IP address from the router. When the static IP address is switched to a dynamic one, you must reconnect the IMM-Lite central controller.

Note

- When the IMM-Lite controller works with the IMMPROII system and is connected to the M0 gateway, it should be on the same network as the M0 gateway.
- When a static IP address is used, it should not conflict with that of any other device.

Appendix

IDU Models and Icons

Model	Icon View	Name
1		Four-way cassette
2		Wall-Mounted units
3		Medium Static Pressure Duct
4		Low Static Pressure Duct
6		High Static Pressure Duct
7		Compact Four-way cassette
8		Ceiling&Floor
9		Floor Standing(concealed)
10		Floor Standing
11		Fresh Air Processing Unit
13		HRV
14		One-way cassette
15		Two-way cassette
20		Fresh Air Processing Unit
21		AHUKIT(return air control)
24		AHUKIT(discharge air control)

Warning Code

Warning Code	Description
W01	Abnormal communication with gateways and connection failure between gateways
W02	Insufficient storage capacity (over 90% capacity is occupied)
W03	Abnormal ammeter reading
W04	Outdoor unit program version lower than 16
W05	The refrigerant system of 1st Generation indoor units cannot be identified.

WP-MD24IU-173D-EN V.D

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