

CCM-210G/BWS

Installation and Operation Manual



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Product Overview

The new generation of all-touch color screen centralized controller integrates the centralized control, grouping, and schedule management functions of air conditioners and provides unified management of fresh air equipment and hot water modules. This device is mainly deployed in office buildings, commercial residential buildings, and public buildings for integrated control of HVAC equipment. It can be connected to the network for a remote upgrade by the device manager and provide real-time alarms for equipment failure through a visual interface. The controller provides a new interactive interface in night mode, more suitable for equipment rooms and other scenarios with insufficient light, thus improving the visual experience of operators. It adopts a popular design of super-narrow bezel and can be mounted on walls of different styles.







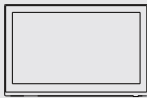
Product Overview

First Use

Instructions for Use

FAQs

List of Materials

Name	Quantity (specification)	Picture
Adapter	x1 (output 12V DC)	
Manual	x1	
Screw	x3 (ST4*20)	 It is used with plastic expansion pipe for wall installation
Screw	x2 (M4*25)	 It is installed on the 86 stuffing box in cooperation with the support bar
Plastic expansion pipe	x3	
Support bar	x2	
Controller	x1	

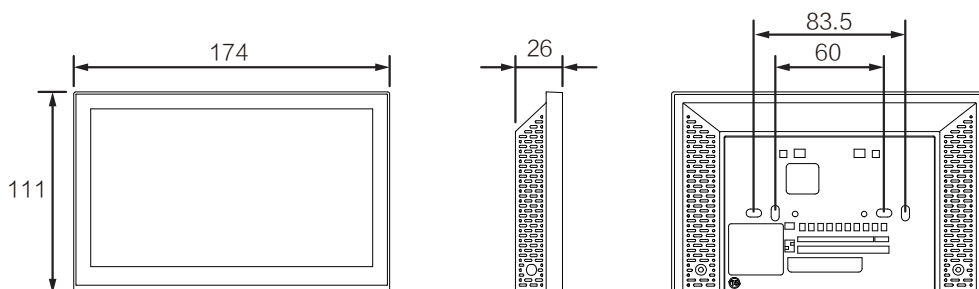
Specification

Table 1 Specification

Adapter	Input (AC)	100-240V, 50/60Hz, 600mA
	Output (DC)	12.0V, 2A
	Supplier	ChenZhou Frecom Electronics Co., Ltd.
	Model	F24L14-120200SPAV
Controller	Input voltage	12VDC
	Operating temperature	23~110°F (-5~43°C)
	Operating humidity	RH40%~RH90%
	Dimensions	174x111x26(mm)

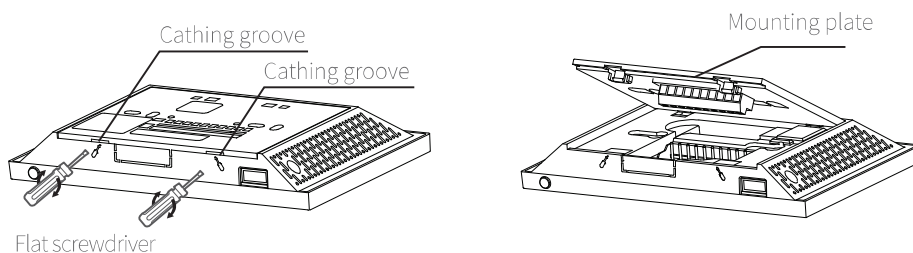
Installation Steps

Front and back view of the controller

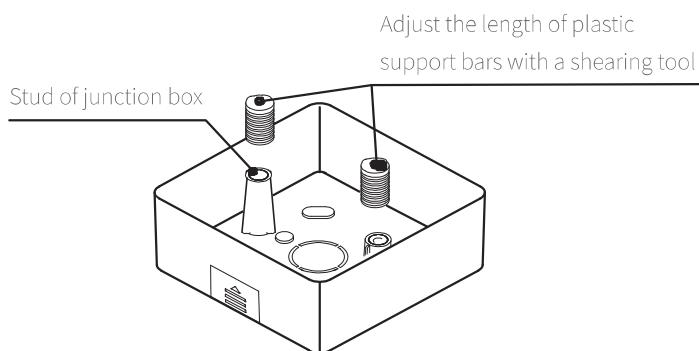


Install the controller

Step 1: Push a flat screwdriver into the catching groove of the controller and rotate it to remove the controller's mounting plate.



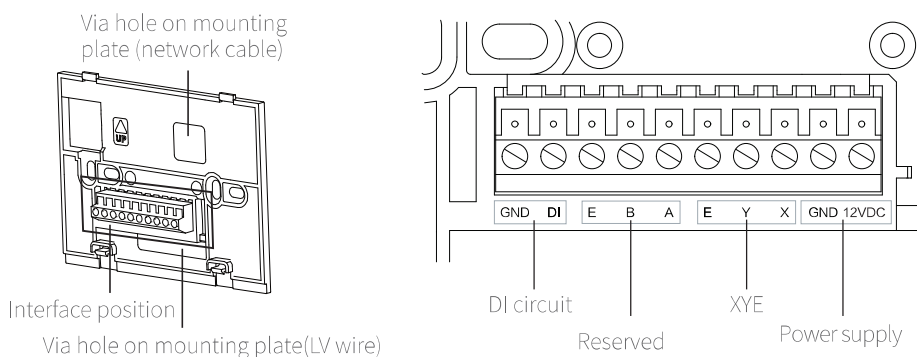
Step 2: If the box is buried in the wall, adjust the length of the two plastic support bars in the accessory to ensure that the controller's mounting plate is flush with the wall when installed on the studs of the junction box. (Skip this step for surface installation)



Step 3: Connect wires according to the interface position shown in the following figure.

Surface installation: no need to get the wire through the via hole on the mounting plate;

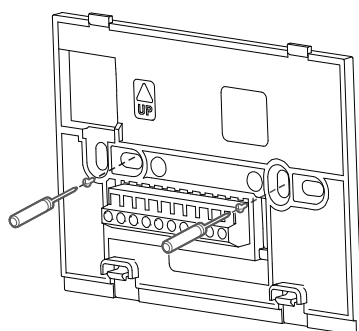
Concealed installation: get the wire through the via hole on the mounting plate before connection.



Step 4: Fix the mounting plate on the wall with the screws in the accessory bag.

Surface installation: install with the 60 mm or 83.5 mm via hole;

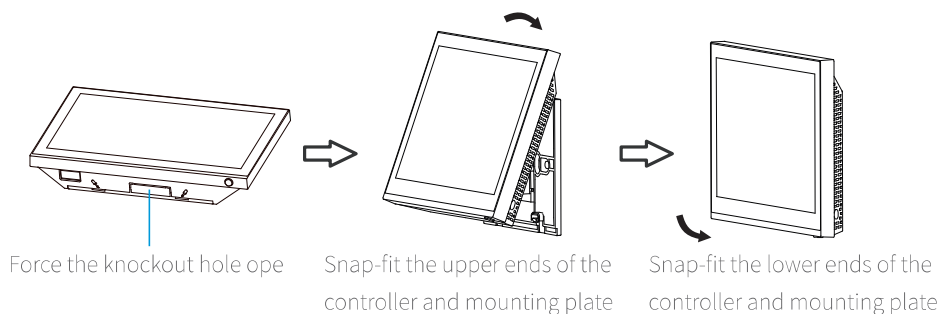
Concealed installation: install with the 60 mm or 83.5 mm junction box. Put the wires well connected to the mounting plate back into the junction box through the via hole on the mounting plate.



Step 5: Snap-fit the controller with the mounting plate.

Surface installation: force the knockout hole open and get the wire out of the knockout hole;

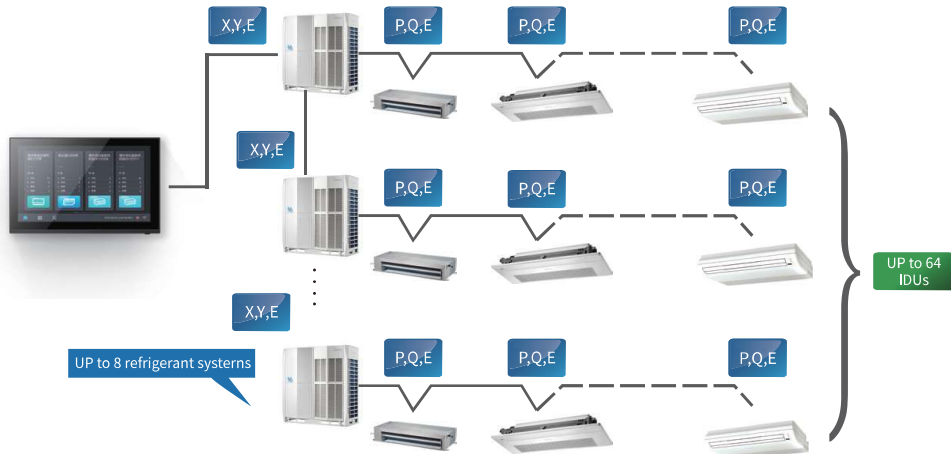
Concealed installation: no need to force the knockout hole open.



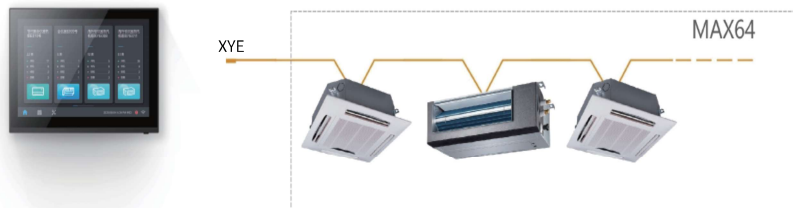
Attention: The controller is only suitable for installation at a height of $\leq 2\text{m}$.

Wiring diagram of controller

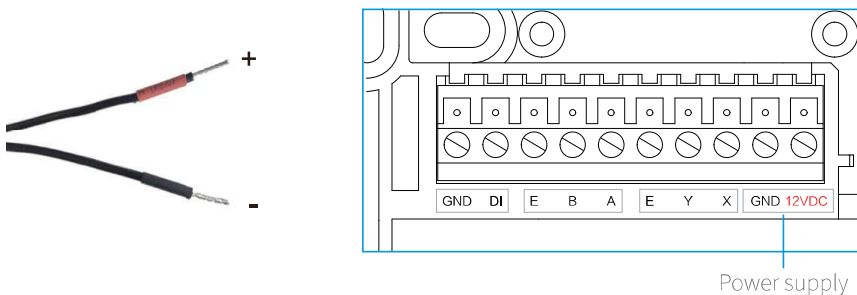
Connect the controller to the XYE end of the ODU's communication board through shielded cables. The ODU's motherboard needs to be set to allow automatic addressing according to the manual.



Or directly connect the controller's XYE end to the first-generation AC and DC IDU's XYE end.



The controller can connect up to 8 refrigerant systems and control 64 IDUs.



The left picture shows the outlet ends of the adapter (12V DC), where the red end is the positive pole and the black end is the negative pole. Connect them to the correct terminals on the controller's back.

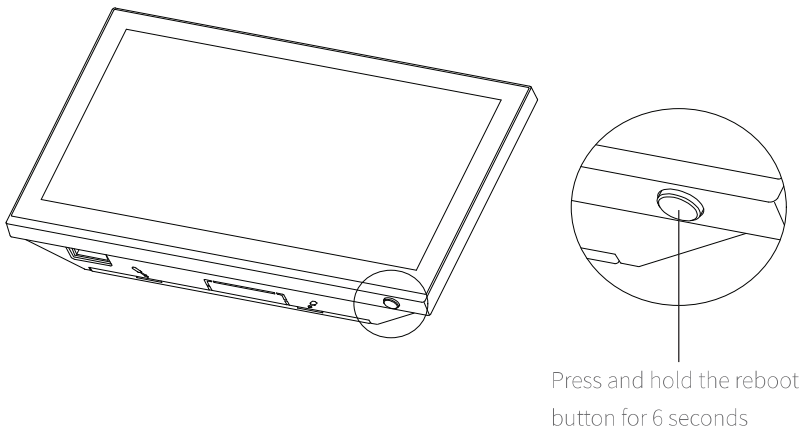
Controller debugging

Professionals are needed for debugging. For specific steps, see "Installation Interface".

● **Tips:** After power-on for the first time, the controller will automatically search for connected devices. For any device change later, it must search again on the installation interface.

Controller reset

When the device needs to be rebooted, press and hold the reboot button for 6 seconds to reboot it. Reboot does not restore the device to factory defaults. If you want to restore the device to factory defaults, operate in Service Settings of the software.

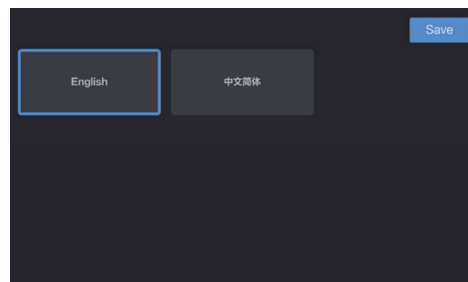


First Use

Before you start, please read the following contents carefully and operate and set the controller as prompted. Make sure that you are fully aware of the basic functions of the controller and know how to configure the controller correctly.

Language Settings

For the first use, you will be prompted to set the system language. The default language is English. Please select your language and click Save.




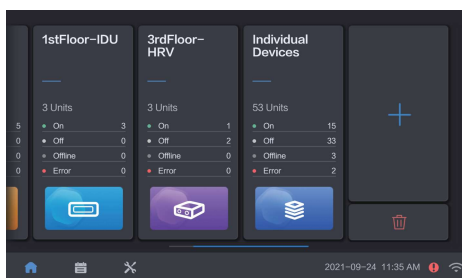
Language selection

Interface Description

After selecting the language, you will see the homepage of the controller. This page includes two parts.

The upper part shows the main contents (see the following page) that you can view and operate.

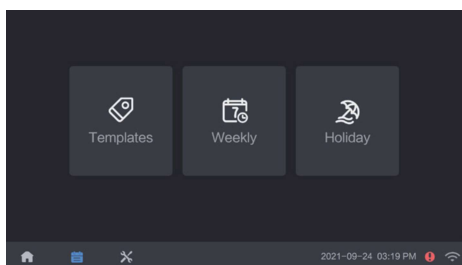
The lower part is the fixed status bar. You can click  and other buttons to go to target pages.



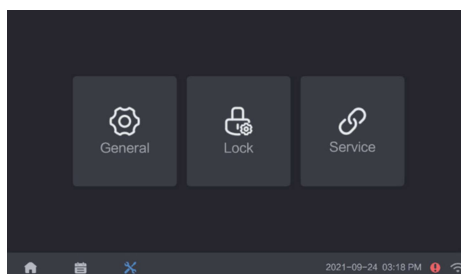
Page description – homepage



Page description – status bar




Page description - schedule management



Page description – system settings


Click  to go to the homepage, where you can also see the groups.

Click  to go to the schedule management page.

Click  to go to the system settings page, where you can adjust the general settings, A/C lock settings, and service settings.

Click  to go to the error device display module.

System Settings

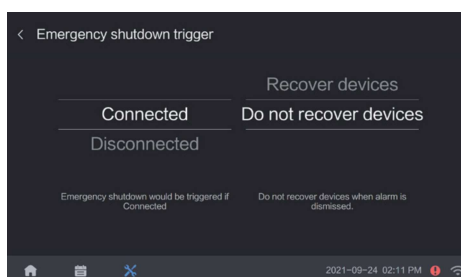
Before using the system for the first time, you need to configure some project-specific properties so that the project can progress normally. Click  to go to the system settings page. To set different options, you need to go to Service Settings or General Settings. Please operate based on the following prompts.

Attention:

These options have their default values set at delivery. If you leave them unchanged, the system can still work normally. However, the discrepancies between these values and those actually applicable to the project may result in the malfunction of air conditioners. In addition, do not change or set the options in Service Settings unless you are clear about their meanings. Otherwise, the system may fail. To go to Service Settings, you need to enter a PIN code. For details, see "System Settings" > "Service Settings" in Instructions for Use below or consult our technical support.

Emergency shutdown trigger

This system allows you to stop the A/C system under emergency by accessing the dry contact (for details, see description of the "emergency shutdown trigger" in Instructions for Use below). The default settings are "Emergency shutdown would be triggered if connected" and "Do not recover devices when alarm is dismissed". If you want to change the settings, change them in Service Settings > Emergency shutdown trigger.

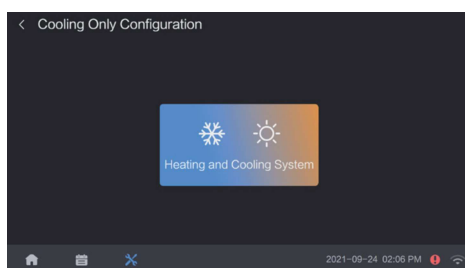


Settings of emergency shutdown

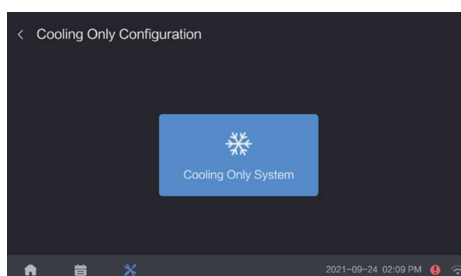
Settings of cooling only system

This system allows you to control the cooling only system. When the cooling only system is enabled, the control system will not be able to send heating and related commands to the A/C system (for details, see the description of "Cooling Only System" in the Instructions for Use). The system is initially set to the "Heating and Cooling System".

If you access an air conditioner running on the cooling only system, please switch the system mode to cooling only system in Service Settings > Cooling Only Configuration.



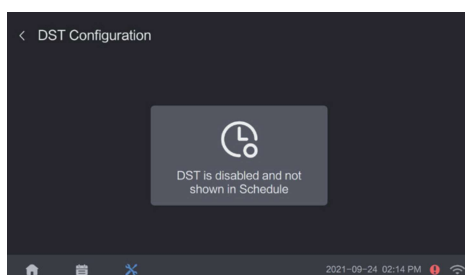
Air conditioning mode



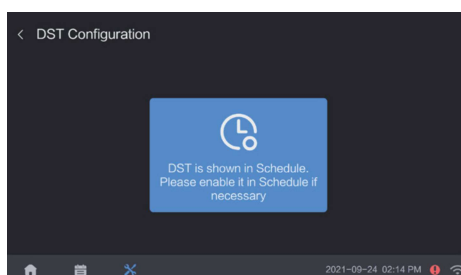
Cooling mode

Settings of daylight saving time (DST)

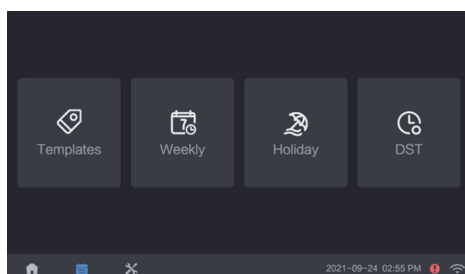
This system allows you to set DST. The default setting is "DST not enabled and setting interface not visible". To enable the DST settings, please turn the DST setting page visible in Service Settings > DST Configuration and set DST by choosing Schedule > DST (for detailed settings and description of DST, see "DST" in Instructions for Use).



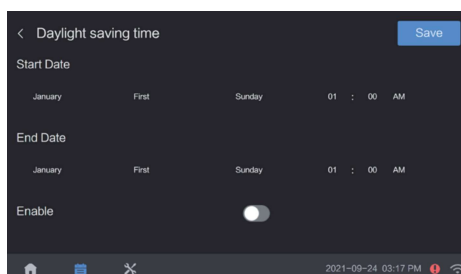
DST settings – invisible



DST settings – visible



Schedule (DST visible)

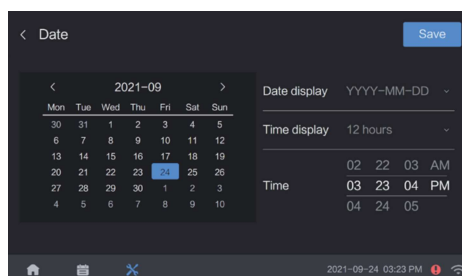


DST settings

Date

This system contains an RTC clock chip, which can keep the memory and accuracy of the clock in case of power failure.

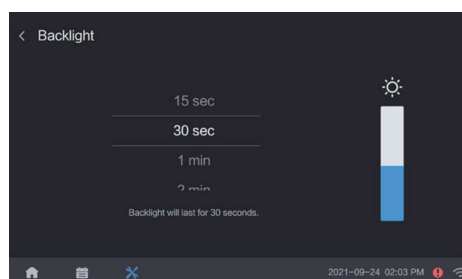
For the first use, if you find that the initial time is inconsistent with the current time, please set the time in General Settings > Date. On this page, you can also set the display format of time and date. Please select the appropriate display format based on the convention of the local language.



Date

Backlight settings

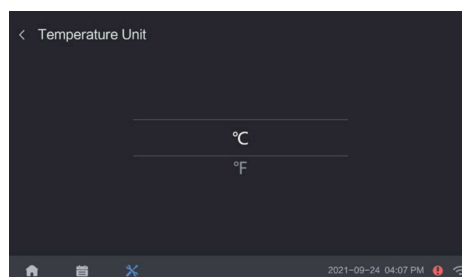
This system allows you to set the backlight off time and backlight intensity. The initial setting is "screen off after 1 min inactivity" and 50% backlight intensity. If necessary, you can change them in General Settings > Backlight.



Backlight settings

Temperature unit

This system allows you to set the display of the temperature unit (for details, see "Temperature Unit" in Instructions for Use). The default setting is "Celsius" (°C shown on the interface). If you want to change the unit to "Fahrenheit" (°F shown on the interface), change it in General Settings > Temperature Unit.



Temperature unit

Device Topology

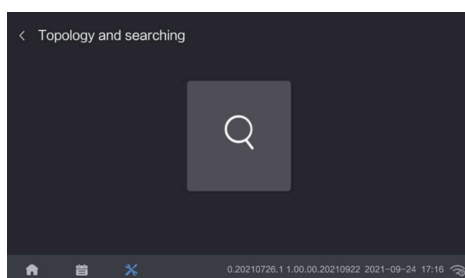
By default, the centralized control system does not save or display any air conditioners. After the communication cable of an air conditioner is correctly connected with the centralized control system, you can search and save the air conditioner. To do this, choose Service Settings > Topology and Search. After the search, please verify the quantity, addresses, and types of devices. Then, click Save to save the search results. Before saving, you can also rename the device. For renaming rules, see relevant contents of "Topology and Search" in Instructions for Use below.

Change the device name

You can click the "✎" button in the Device Name column to change the device name. After the change, click the Save button in the upper right corner to save it together with the topology result.

Attention:

- 1.The air conditioner must be correctly connected and powered on;
- 2.After saving the search results, do not search and save them again unless necessary. Otherwise, the saved results may be overwritten and cause the system to fail;
- 3.Please connect and search devices under the guidance of a professional to avoid accidents.

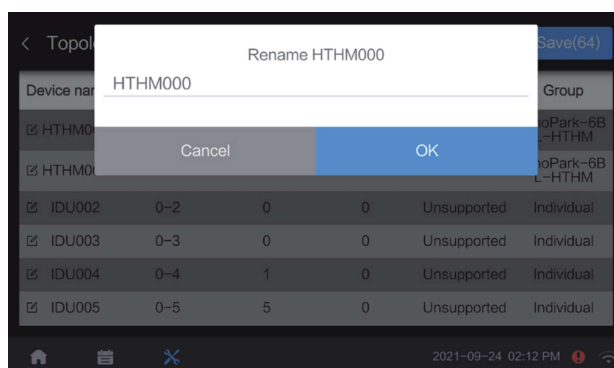


Search a device (empty)

A screenshot of the 'Topology and searching' screen displaying a table of search results. The table has columns for Device name, Addr, Unit type, Wired group, Auto mode, and Group. There are five rows of data, each with a checkbox in the Device name column. A 'Save(64)' button is in the top right corner. The status bar at the bottom shows a timestamp '2021-09-24 02:11 PM' and a battery icon.


Device name	Addr	Unit type	Wired group	Auto mode	Group
<input checked="" type="checkbox"/> HTHM000	0-0	17	0-63	Unsuitable	InnoPark-6B L-HTHM
<input checked="" type="checkbox"/> HTHM001	0-1	17	0	Unsuitable	InnoPark-6B L-HTHM
<input checked="" type="checkbox"/> IDU002	0-2	0	0	Unsupported	Individual
<input checked="" type="checkbox"/> IDU003	0-3	0	0	Unsupported	Individual
<input checked="" type="checkbox"/> IDU004	0-4	1	0	Unsupported	Individual
<input checked="" type="checkbox"/> IDU005	0-5	5	0	Unsupported	Individual

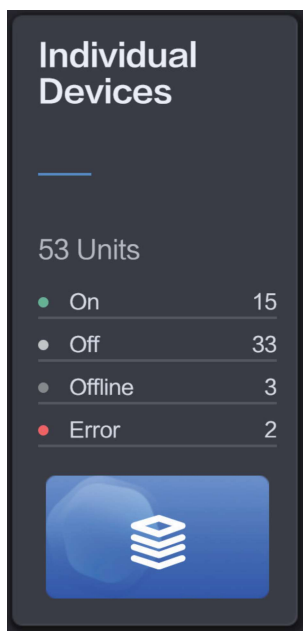
Display of search results



Change the device name

Create a Group

After saving the device topology and search results, click " to go to the homepage, where you can see two cards. On the first card, you can see all the saved devices that you have just searched. Since we have not established and assigned any groups yet, these devices are currently placed in a temporary group called Individual Devices. Click + on the second card to create a group.

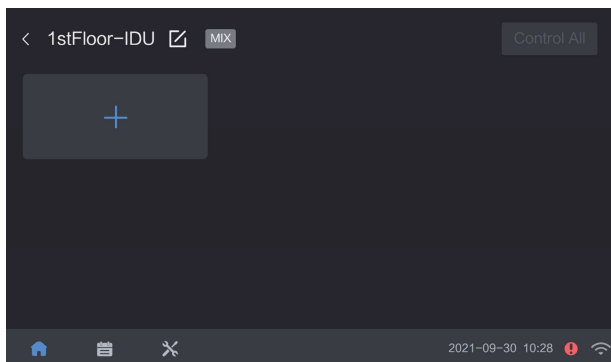


Card with individual devices



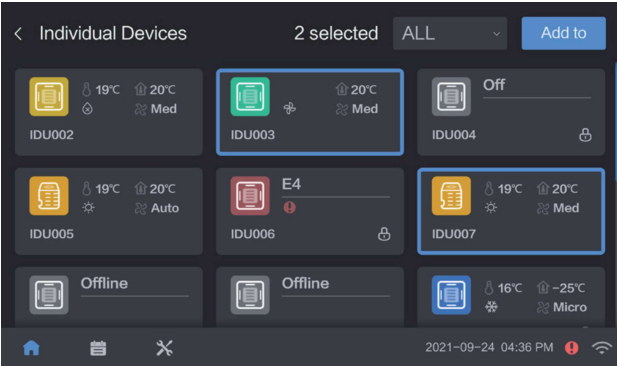
Group management card

You need to name the created group and add devices to the group. Here, we create an empty group named 1stFloor-IDU.



Create a new group

Currently, the group is empty and the type label of the group is Mixed. This means that we can add any type of device to the group (for device types, see "Device Management" in Instructions for Use. Here, to put it simply: since different types of devices differ greatly in setting parameters, we will put devices with the same control parameters into the same type. There are five types of devices, including: "IDU", "FA", "HRV", "AHU-Kit", and "HTHM". Devices of different types can neither be put into the same group nor put under the same control or use the same schedule template). Click + on the page. Select the devices to be added from Individual Devices and add them to the group.



Create a new group

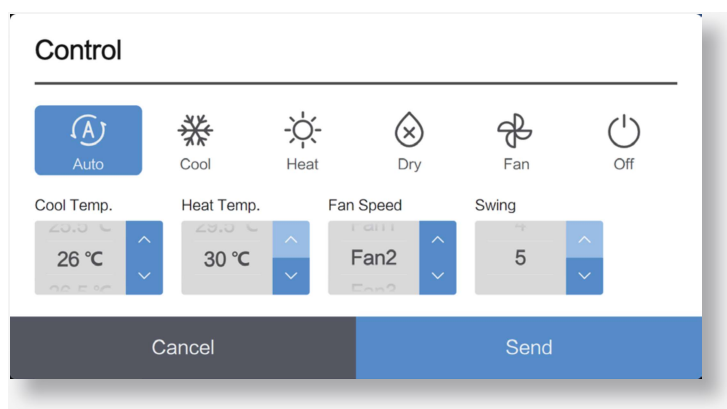
After devices are selected, click Add. They are added to the group. Then, you can view the changed group. Now, you can see the group label has turned into IDU. This indicates that you can only add devices of the IDU type into this group later.



Group with devices

Device Control

As shown in the above figure, in the group, you can directly click the Control All button in the upper right corner to control all devices in the group, or select one or several devices and then click the Control button in the upper right corner to control them. After clicking the Control button, you can see the following control panel:



On the control panel, you can change the operating mode and mode parameters of the device. After setting, click Send to send the command.

As the VRF centralized control system has delayed information feedback, the device status may not be updated in time. After the polling is done, the device status will be updated automatically.

Schedule Management

Schedule includes the weekly schedule and holiday schedule. It helps users to automatically control air conditioners at a fixed time.

The recommended order of use is to create the corresponding template before setting the schedule, and then apply the template in the schedule. The schedule structure used in this system is "template-schedule". You are recommended to create a template before setting the schedule and apply the template to the schedule.

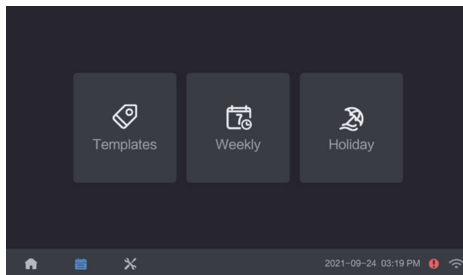
One schedule template can be referenced by multiple schedules simultaneously. By modifying the template, you can quickly modify all mapping schedules.

Remarks: When creating a schedule, if you do not create a suitable schedule template in advance, you can first save an empty schedule for selected devices and add devices to the schedule after the template is created. The schedule template contains the commands that a device needs to execute at specified time points within a day, and you can add up to 8 time points in a template.

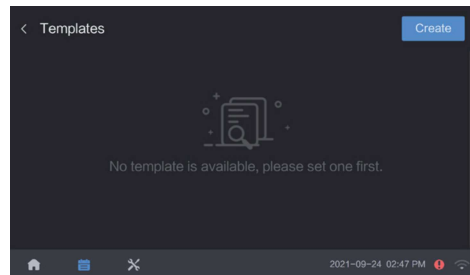
Create a template

To create a weekly schedule or holiday schedule, we need to create a schedule template first. The steps are introduced below (also follow these steps to create other schedule templates):

- ① Name of schedule template: Weekday IDU template;
 - ② Device type of schedule template: IDU;
 - ③ The template contains four commands: "cooling at 8:20 a.m., 18° C and fan speed 3", "shutdown at 11:40 a.m.", "cooling at 1:20 p.m., 20° C and fan speed 7", and "shutdown at 5:30 p.m."
- First, click the "📅" icon in the status bar to go to the schedule management interface. Select Schedule Template. The template page is displayed.

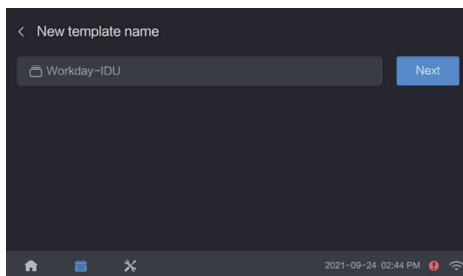


Schedule management page



Template list (empty)

Since no template has been created, the template list page is empty. Click the Add button in the upper right corner to add a template. Here, we add a template called Weekday IDU template.



Add the template name



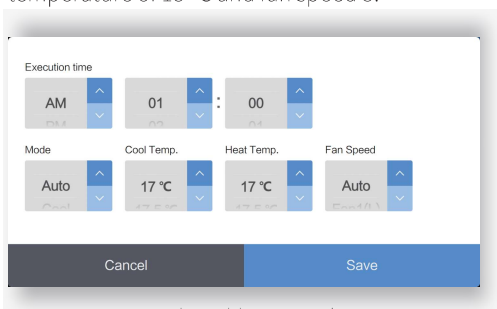
Add template commands

In the add-command pane, we can select the device type for the template. As mentioned above, there are five device types for choice, including "IDU", "FA", "HRV", "AHU-Kit", and "HTHM". Select IDU and click + to add the first command. The command consists of two parts:

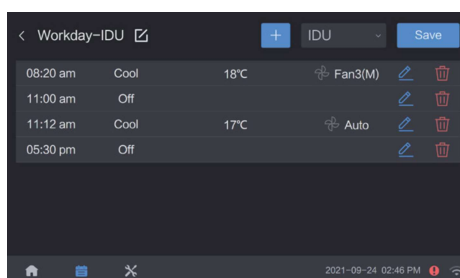
Part 1: time point, namely the time that the command needs to be executed. Here, you need to adjust the hour and minute (or to further set the a.m. or p.m. under the 12-hour system). For example, if you select "8:20 a.m.", the command will be executed at 8:20 in the morning.

Part 2: command, with the same elements as mode control. You need to select the mode to be executed and the parameters.

As shown below, we set a command for the IDU to run in cooling mode at 8:20 a.m. at a temperature of 18° C and fan speed 3.

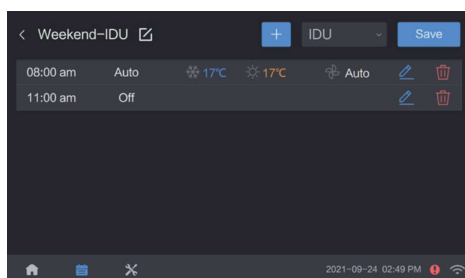


Panel to add commands



Template command list

Similarly, we can add and set commands for other time points. As shown above, we have added a total of 4 commands. To delete a command, click the delete button "🗑" after the command. To modify a command, click the modify button "✎". Upon completion, click Save to save the template. Now, on the template list page, you can see the template that you have created. We can create a weekend template in the same way.



Weekend IDU template



Template list

Create a weekly schedule

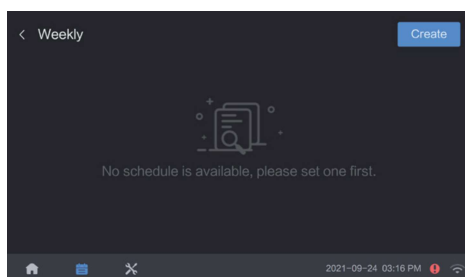
The weekly schedule will repeatedly execute the control commands for the air conditioner on a weekly basis based on the schedule template set by the user for each date. Before creating the weekly schedule, make sure that:

- ① Device topology has been completed for the controller;
- ② The group has been created (optional, if no group is created, devices can be added to the schedule one by one; but if you need to add devices in a group, please create the group in advance);
- ③ The schedule template of the correct type has been created based on the device type specified in the schedule command.

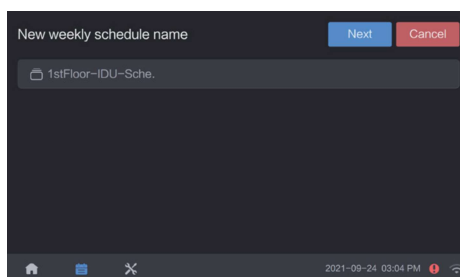
Next, we will create a new weekly schedule as follows:

- ① Schedule name: 1stFloor-IDU-Sche;
- ② Applied devices: all IDUs in the 1stFloor-IDU group;
- ③ The Weekday IDU template is applied from Monday to Friday, while the Weekend IDU template is applied on weekends.

First, click the "📅" icon in the status bar to go to the schedule management interface. Select Weekly Schedule. The schedule list page is displayed. Since no schedule has been created, the weekly schedule list page is empty. Click the Add button in the upper right corner to add a weekly schedule.

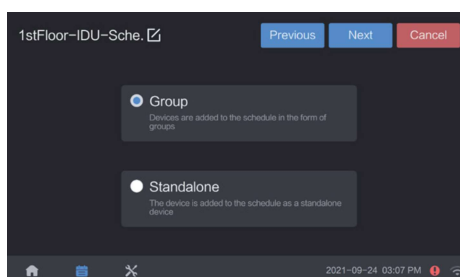


Weekly schedule list (empty)

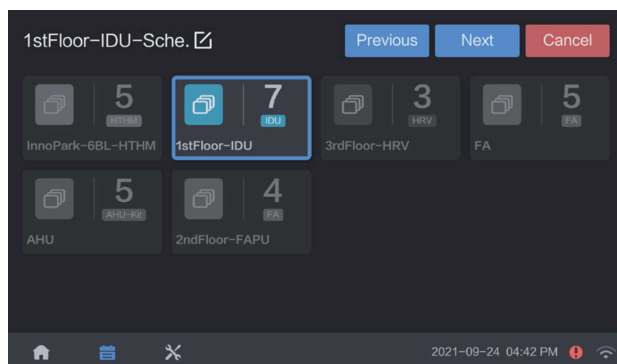


Enter the name of the weekly schedule

Similar to creating the template, we enter the name of the new schedule on the schedule naming page. In the next step, we need to select the devices that the schedule will cover. We can add devices in a group or add them one by one. Here, we take group adding as an example. Add the previously created 1stFloor-IDU into the schedule. Click Next.

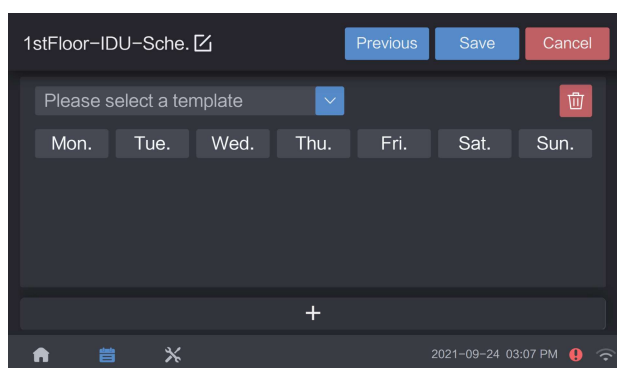


Select the way of adding devices

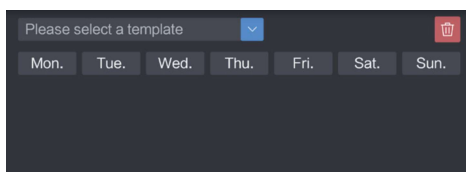


Add the 1stFloor-IDU group

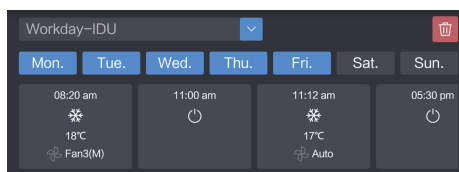
The editing page of the 1stFloor-IDU-Sche card is displayed, where you will see an empty task card. This task card comprises two elements: the schedule template required by the task and the date that the template needs to be executed.



Editing page of the 1stFloor-IDU-Sche card



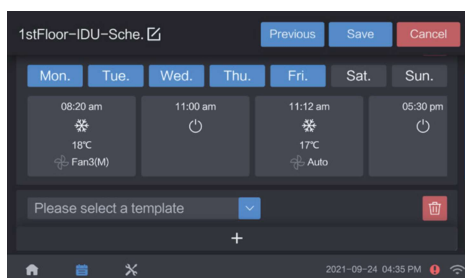
Empty task card



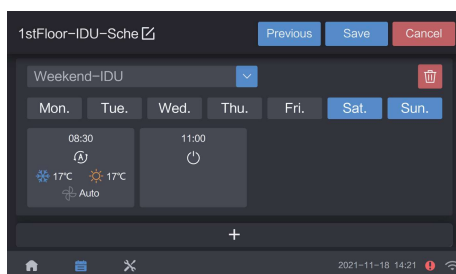
Select the Weekday IDU template task card

In the drop-down box of the task card, select the Weekday IDU template. Since each template only includes the schedule in one day, we can select labels from Monday to Friday to quickly apply the selected template to the day. So far, the first task card has been completed.

Because commands of the weekend schedule are different from the weekdays, we need to create one more template card to apply the template. Click + below to create a new empty task card. Select the Weekend IDU template and click Saturday and Sunday to apply the weekend schedule template to the weekends.

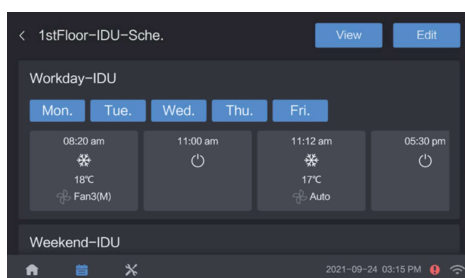


Add a new task card

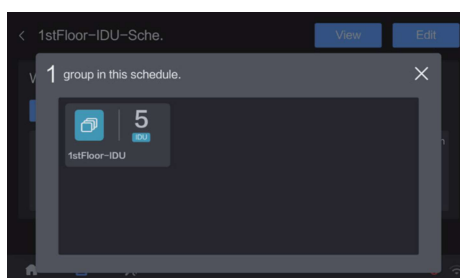


Select the template and time (weekend)

Now, we have completed the schedule setting. Click the Save button in the upper right corner. Then, you can see the details of the newly created schedule, including task cards added to the schedule. Click the View button in the upper right corner to view devices or groups added to the schedule.

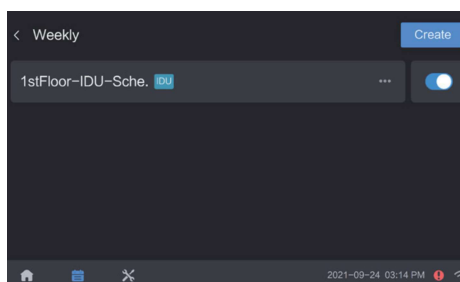


Schedule details



View all added devices

At this time, if you return to the schedule list page, you can quickly enable or disable the schedule by operating the slider on the right. If the slider is at the off position, the schedule will not be executed (you can quickly switch the schedule during season change).



Schedule list

Create a holiday schedule

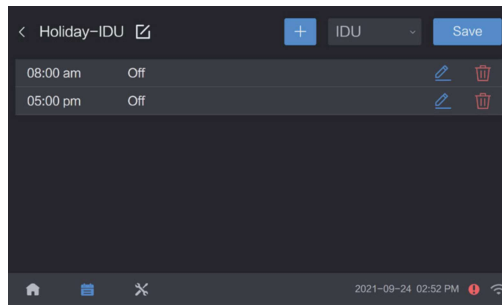
Because the weekly schedule is repeated everyday within a week, you cannot exclude a day. To solve this problem, we can create a holiday schedule to overwrite the command of the weekly schedule. Before creating the holiday schedule, make sure that:

- ① Device topology has been completed for the controller;
- ② Devices have been added to the group. Individual devices cannot be added to the holiday schedule.
- ③ A schedule template has been created for the holiday schedule.

Note: You can only add groups instead of single devices to the holiday schedule.

The holiday schedule only needs one schedule template, which runs for all days within the holiday schedule.

To create a holiday schedule, we need to use the above method to create a schedule template named Holiday IDU template, whose contents are shown in the following figure:

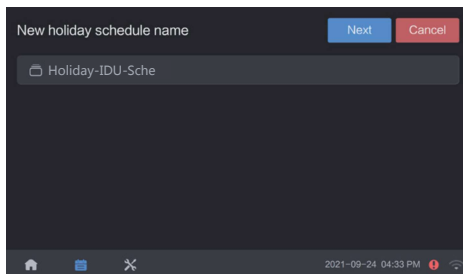


Holiday schedule template

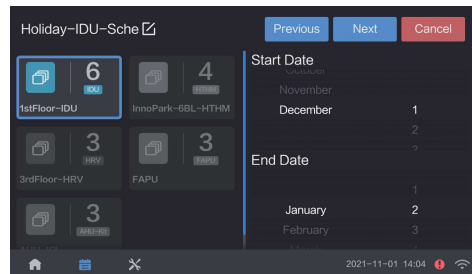
Click "☰" in the status bar to go to the schedule management page. Select Holiday Schedule. On the page displayed, click Add. We will create a new holiday schedule as follows:

- ① Schedule name: Holiday-IDU-Sche;
- ② The schedule is applied from December 20 to next January 2 every year;
- ③ The schedule covers all devices in the 1stFloor-IDU group;
- ④ The schedule applies the Holiday IDU template.

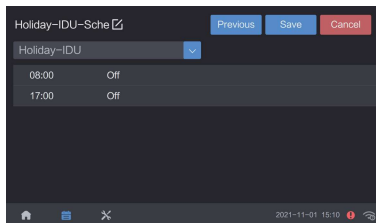
Note: The above template will cover all weekly schedules in the 1stFloor-IDU group from December 20 to next January 2 every year. The weekly schedules for devices in this group will no longer be executed during this period, instead the schedule commands from the holiday schedule will be executed.



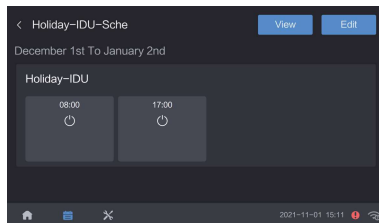
Enter the name of the holiday schedule



Select the group and date



Select the Holiday IDU template



View the saved schedule

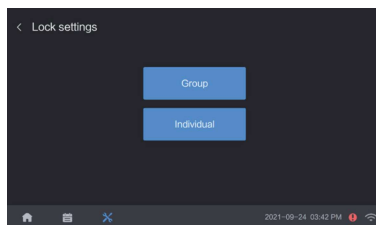
To create a holiday schedule, you can follow the similar steps of creating the weekly schedule:

- ① On the schedule naming page, enter the name Holiday-IDU-Sche;
- ② On the device selection page, select the 1stFloor-IDU group that you want to apply the schedule to and set the schedule's start date (December 20) and end date (January 2).
- ③ On the template selection page, select the Holiday IDU template. Click Save. Then, you can see the schedule details as shown in the above figure.

Device Locking

In addition to direct control and schedule management of devices, you can also lock devices.

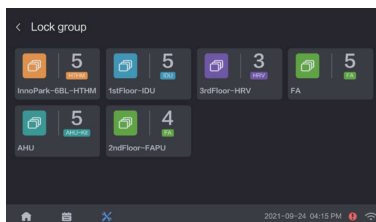
Click the "X" icon in the status bar to go to the System Settings page. Select Lock Settings. The locking page is displayed.



Locking page

On this page, you can manage device locking in two ways:

- ① Lock group: In the group list, click the group card to go to the group page, where you can view or set the lock items for devices in the group.

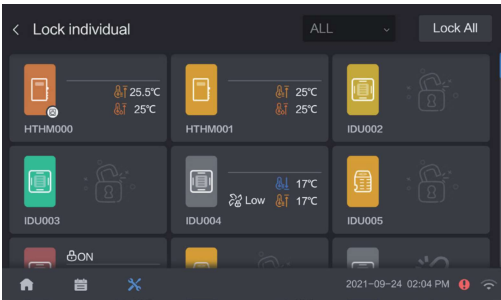


Select the group in Lock Settings



View lock cards of devices in the group

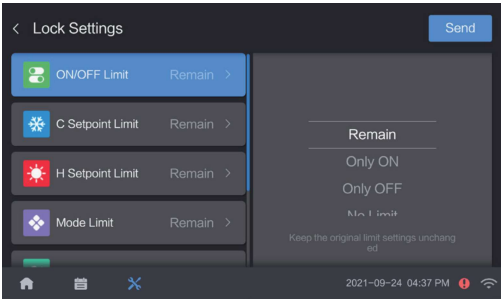
② Lock individual: View the lock items of all IDUs. You can filter all devices of the same type and lock them at one time.



View lock cards of devices

You can view the current locking status of devices from the lock cards (for lock items available for specific devices, see "A/C Lock Settings" in Instructions for Use). Select the IDU to be locked and click the Settings button in the upper right corner. The Lock Settings page is displayed (if in a group, you can click the Lock All button in the upper right corner to set all devices in the group at one time).

On the Lock Settings page, you can see lock items on the left and the lock item's options on the right. After setting different lock items, click Send in the upper right corner to send the lock settings to IDUs.

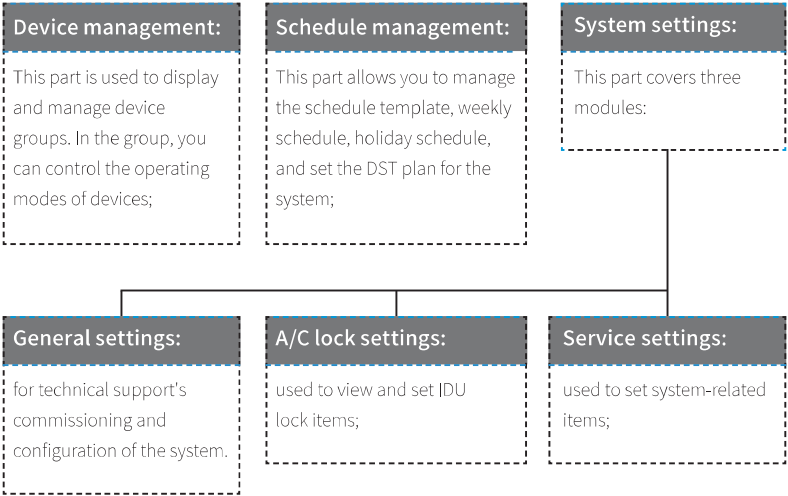


Lock settings page

Attention: Since different devices may have different locking values for the same lock item, when selecting and setting the locking status for more than one device simultaneously, we will initialize all items to Remain. Remain indicates that the item is not set, and each device maintains its original settings.

Instructions for Use

During controller operation, three parts will be used, including:



Attention: Do not operate Service Settings unless you are a professional. Otherwise, the A/C system and controller may be affected and fail.

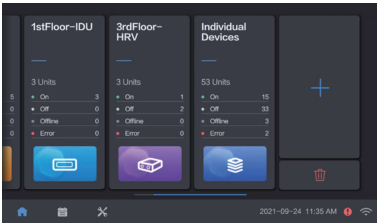
The controller's interface includes two parts. The upper part shows the main contents that users can operate. The lower part is the fixed status bar. You can click and other buttons to go to target pages.

Click to go to the homepage, where you can also see the groups.

Click to go to the schedule management module.

Click to go to the system settings module.

Click to go to the error device display module.



Homepage

General Description

Keyboard

The controller provides a separate keyboard for users to input text. Third-party keyboards cannot be installed.



Keyboard for simplified Chinese



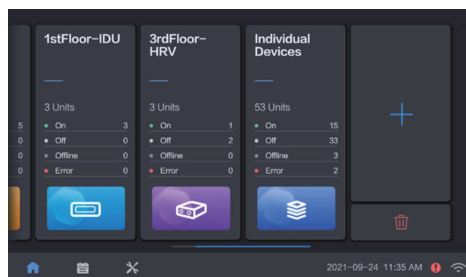
English keyboard

You can click the "🌐" button next to the Space bar to switch languages. There are two languages for choice. The Space bar shows the language currently in use.

Attention: The unfolded keyboard will cover some contents. After input, you can click any area outside the keyboard to fold it.

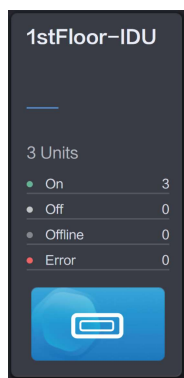
Device Management

On the homepage after startup (or click the "🏠" button), you can see groups for device management.

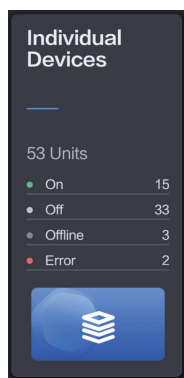


Group page

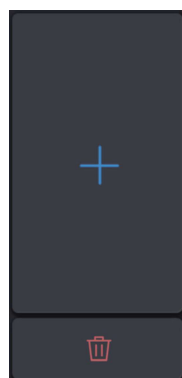
This page shows three types of cards:






















Group card



Card of individual devices



Group management card

Card Type	Card Description												
Group card	<p>Used to show the existing group. This card contains the following information: group name, total number of devices in the group, statistics of power-on, power-off, offline, and error devices, and icons indicating device types;</p> <p>Different device types are represented by different icons. There are a total of 6 device types.</p> <table><tr><td></td><td></td><td></td></tr><tr><td>IDU</td><td>FA</td><td>HRV</td></tr><tr><td></td><td></td><td></td></tr><tr><td>HTHM</td><td>AHUKit</td><td>Unspecified type</td></tr></table> <p>Click this card to enter the group, where you can operate the group, view information of devices in the group, and control the devices.</p>				IDU	FA	HRV				HTHM	AHUKit	Unspecified type
													
IDU	FA	HRV											
													
HTHM	AHUKit	Unspecified type											
Card of individual devices	<p>This group card contains devices not in a group and can also show the total number of devices in the group and statistics of power-on, power-off, offline, and error devices. The group icon is shown below:</p>  <p>After clicking this card, you can view information of individual devices or add devices to groups that have been created.</p>												
Group management card	Click " + " in the card to create a group, and click " 🗑 " below to delete a group.												

Group management

By clicking the group card, you can view information of devices in the selected group, rename, add, delete, and control devices. For details, see the following.

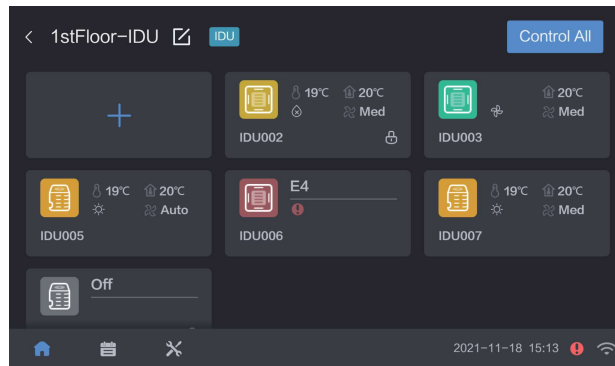


Figure 1 Group – Details

- **Create a group**

Click "+" in the Group Management Card to create a group. When creating a group, you need to set the name of the group (see Figure 2 Create a Group – Edit the Group Name). The group name contains up to 10 English letters or Chinese characters and must not contain illegal characters or duplicate existing groups. If the above rules are not met, the group cannot be created.

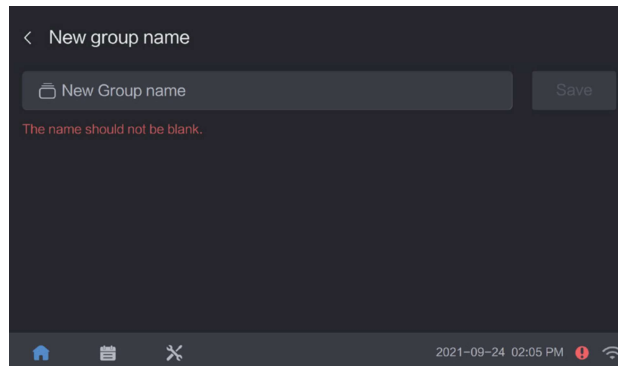


Figure 2 Create a group – Edit the Group Name

After the group is created, it belongs to "unspecified type" by default (see Figure 3: Created Group – Unspecified Type). There is no device in the group. Click the + card to go to the device selection page (see Figure 4: Created Group – Add Devices to the Group). On this page, select devices and click the Add button to add them to the group. Devices in the group must be of the same type, and devices of a different type, when added to the self create group, will be grayed out and cannot be selected.



Figure 3 Created Group – Unspecified Type

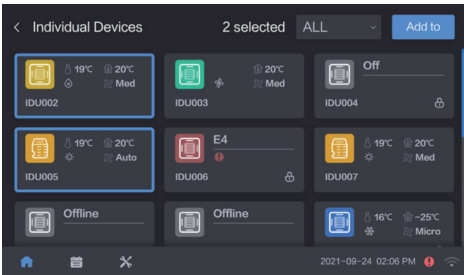


Figure 4 Created Group – Add Devices to the Group

After devices are added to the group, the group will adapt its label to the type of added devices. The device type of the group cannot be changed once determined, and only the same type of devices can be added to the group.

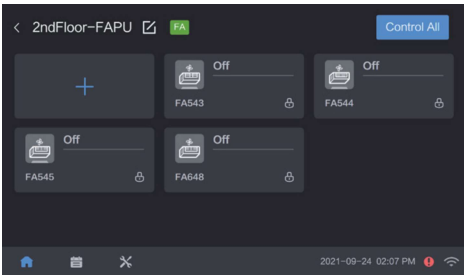


Figure 5 Completed Group

● **Rename a group**

On the group details page (see Figure 5 Completed Group), click the "✎" button to rename the group. The group renaming rules are the same as the group creation rules.

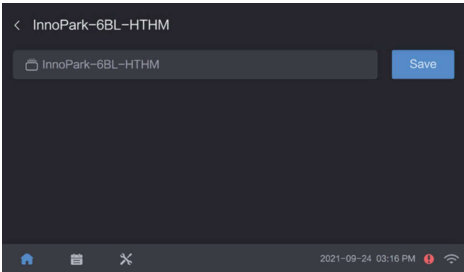


Figure 6 Rename a Group

• Delete a group

By clicking the Delete button (🗑️) in the Group Management Card, you can delete a group. Devices in the deleted group will go to the Individual Devices group.

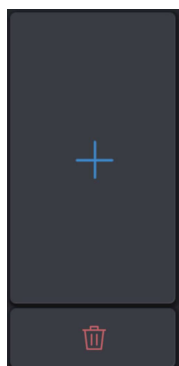


Figure 7 Group Management Card

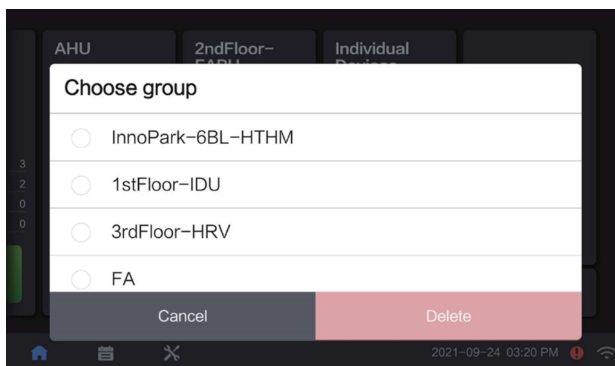


Figure 8 Choose the Group to be Deleted

• Add devices to a group

You can add devices to a group in two ways:

- ① Click + on the group details page and select the devices to be added. For details, see steps of adding and setting devices in group creation;
- ② Select devices to be added from individual devices (see Figure 9 Individual Devices – Select Devices). Click the Add to button in the upper right corner to add devices to the correct group. You can add devices to the group with the same type of devices or the group with mixed types of devices (the list is empty if the group with the same type of devices is unavailable).

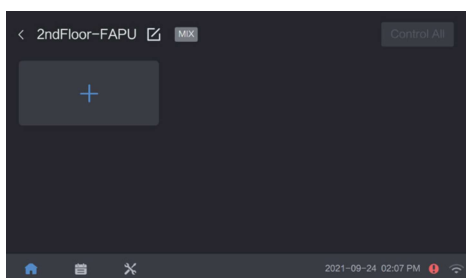


Figure 9 Individual Devices – Select Devices

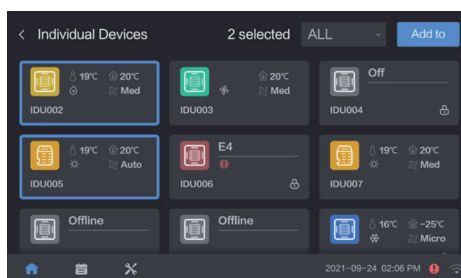


Figure 10 Individual Devices – Add devices to the Group

• Delete devices from a group

On the group details page, click the "🗑️" button in the upper right corner to remove devices out of the group. Removed devices will be added to the Individual Devices group. See Figure 1 Group – Details.

Device control

On the group details page, you can view the running status of devices. When no device is selected, you can click the Control All button in the upper right corner to control all devices in the group. If you have selected one or more devices, you can click the Control button to control the selected devices.



Figure 11 Device Control – Control All Devices



Figure 12 Device Control – Control Selected Devices

• Control panel

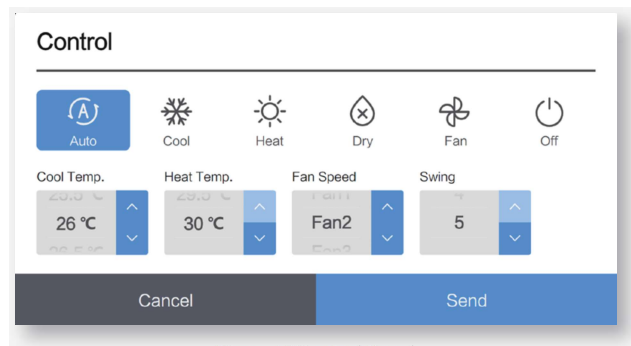
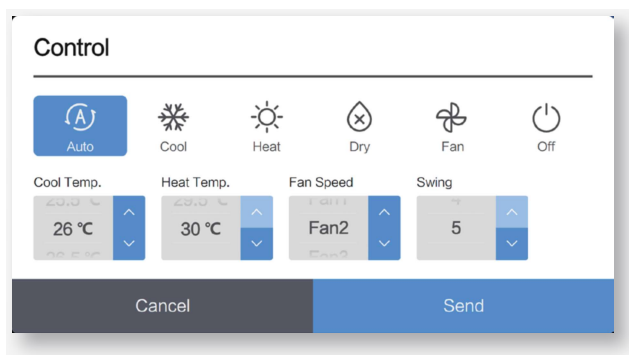


Figure 13 Control Panel

On the upper part of the control panel, you can select the device running mode, and the parameter bar at the bottom allows you to adjust the parameters, as shown in Figure 13 Control Panel. Adjustable parameters differ for different devices and modes. Please adjust them based on the actual situation. For details, see the following table:



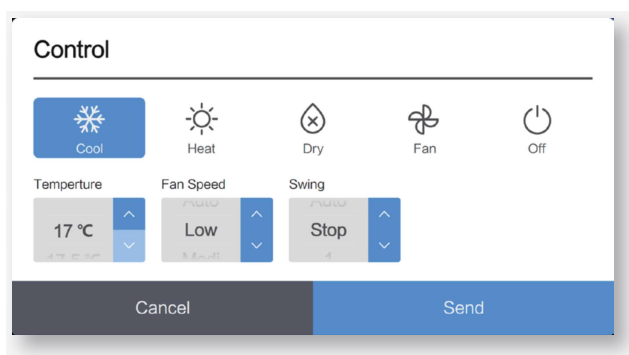
Device type: IDU with auto mode (heat recovery type)

Mode: auto (double set points), cool, heat, dry, fan, off.

Cooling and heating temperatures: 17~30° C (62~86° F)

Fan speed: auto, 1~7 (7 gears), low/medium/high (3 gears)

Swing: auto, stop, 1-5 fixed angle



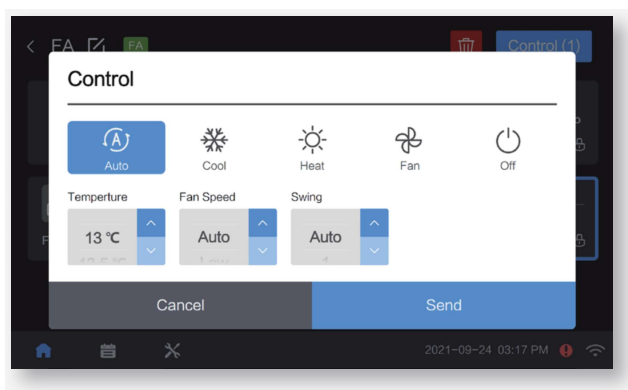
Device type: IDU without auto mode (heat pump type)

Mode: cool, heat, dry, fan, off.

Cooling and heating temperatures: 17~30° C (62~86° F)

Fan speed: auto, 1~7 (7 gears), low/medium/high (3 gears)

Swing: auto, stop, 1-5 fixed angle



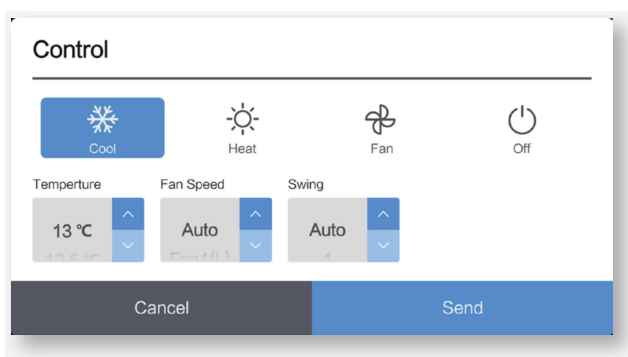
Device type: FA with auto mode (heat recovery type)

Mode: auto (single set point), cool, heat, fan, off.

Cooling and heating temperatures: 13~30° C (55~86° F)

Fan speed: auto, 1~7 (7 gears), low/medium/high (3 gears)

Swing: auto, stop, 1-5 fixed angle



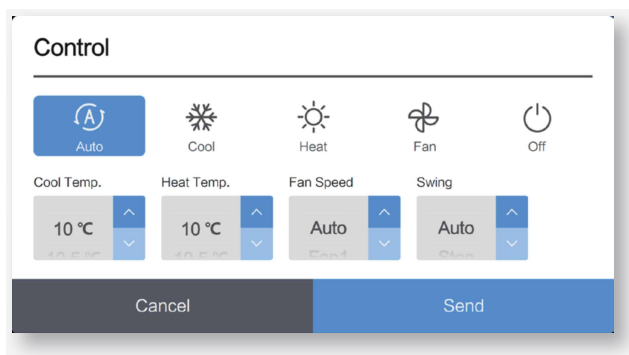
Device type: FA without auto mode (heat pump type)

Mode: cool, heat, fan, off.

Cooling and heating temperatures: 13~30° C (55~86° F)

Fan speed: auto, 1~7 (7 gears), low/medium/high (3 gears)

Swing: auto, stop, 1-5 fixed angle

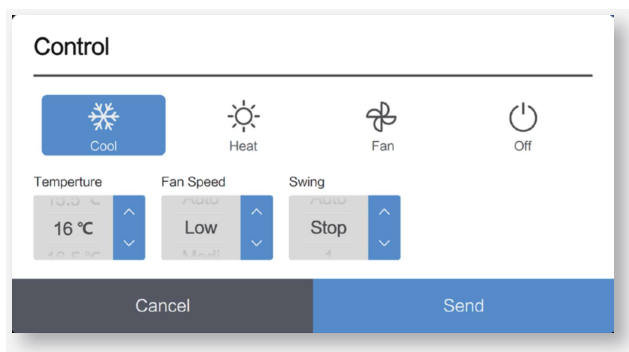


Device type: AHU-Kit with auto mode (heat recovery type) Mode: auto (double set points), cool, heat, fan, off.

Cooling and heating temperatures: 10~30° C (50~86° F)

Fan speed: auto, 1~7 (7 gears), low/medium/high (3 gears)

Swing: auto, stop, 1-5 fixed angle



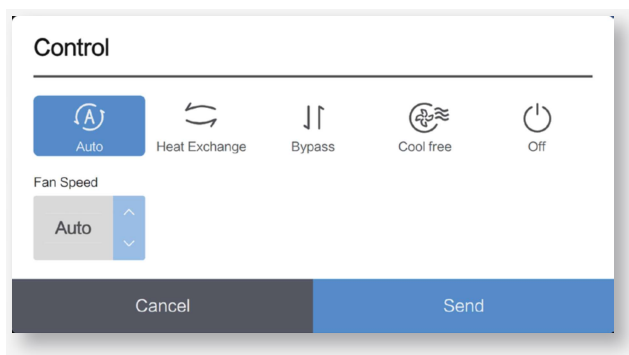
Device type: AHU-Kit without auto mode (heat pump type)

Mode: cool, heat, fan, off.

Cooling and heating temperatures: 10~30° C (50~86° F)

Fan speed: auto, 1~7 (7 gears), low/medium/high (3 gears)

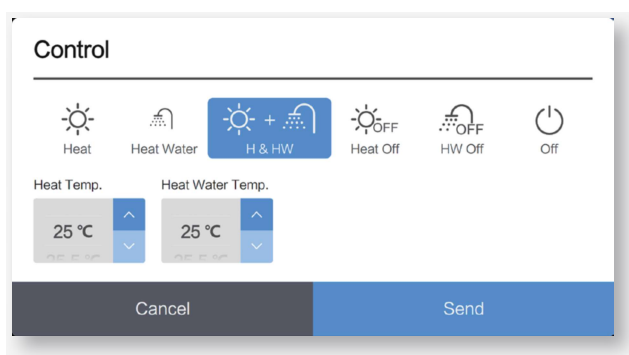
Swing: auto, stop, 1-5 fixed angle



Device type: HRV

Mode: auto, heat exchange, bypass, cool free, off

Fan speed: auto (fan speed not regulated in auto mode), low/medium/high speed



Device type: HTHM

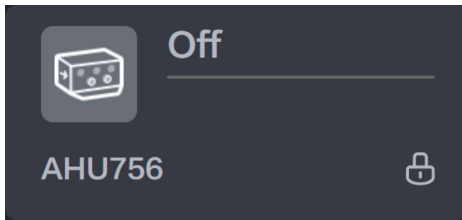
Mode: heat, heat water, H+HW, heat off, HW off, off

Temperature: 25~80° C (77~176° F)

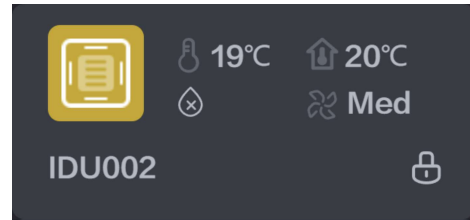
When you select a device, the control panel is initialized to the current operating mode and operating parameters of the device. When you select more than one device, the default parameters are initialized.

After selecting the parameters, click the Send button. The command will be issued. Click the Cancel button. The control panel will be closed to cease device control.

- Card display



If the device supports the auto mode, a highlighted line will appear at the bottom of the device icon.



If the device belongs to the wired controller group, the "wired controller" icon will be lit on as shown in the figure

The relationship between the device type and icon is shown below:

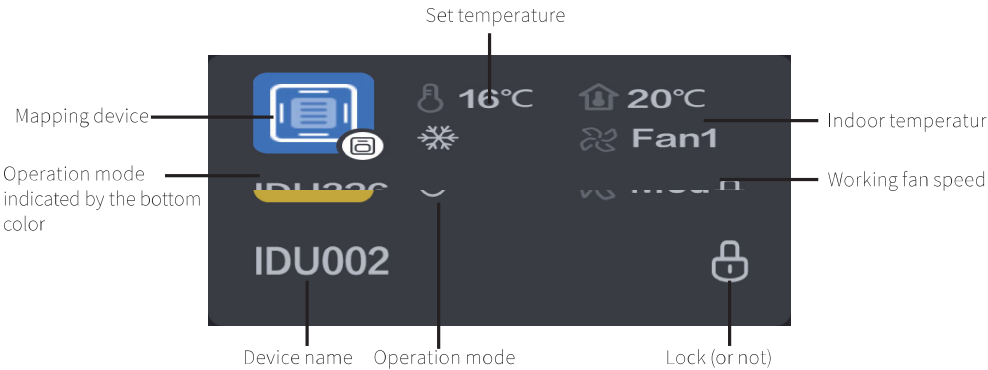
Model	Type	Icon
1st Generation IDU	IDU	
4-Way Cassette	IDU	
Wall-mounted	IDU	
Medium Static Pressure Duct	IDU	
Low Static Pressure Duct	IDU	
Air Handling Unit	IDU	
High Static Pressure Duct	IDU	
Compact 4-Way Cassette	IDU	
Ceiling & Floor	IDU	
Floor Standing	IDU	
Floor Standing	IDU	

Fresh Air Processing Unit	FA	
Inverter Split AC	IDU	
Heat Recovery Ventilator	HRV	
1-Way Cassette	IDU	
2-Way Cassette	IDU	
Console	IDU	
High Temperature Hydro Module	HTHM	
Fresh Air Processing Unit	FA	
Fresh Air Processing Unit	FA	
AHUKIT(return air control)	AHU-Kit	
Floor Standing	IDU	
AHUKIT (discharge air control)	AHU-Kit	

The relationship between mode and icon is shown below:

Mode	Icon	Mode	Icon
Auto		Fan	
Heating		Free cooling	
Heat exchange		Coolin	
Heat water		Dry	
Bypass		Failure	Text description
		Offline/power-off	Text description

The card shows the device details on the right:



- ① In the running state, it shows parameters of the current mode, including the set temperature (showing the set temperature of the current running mode for auto mode or HTHM mode with double set points), indoor temperature (outlet temperature in heat mode for HTHM or water tank temperature in heat water mode), icon of running mode, locking state, and fan speed (1~7 gears or 3 gears for low/medium/high fan speed);
- ② In power-off mode, only the off indicator and locking state are displayed;
- ③ In offline state, only the offline indicator is displayed;
- ④ In failure mode, the failure code, failure icon, and locking mode are displayed.

Attention:

- (1) Devices and wired controller group are displayed as per following rules:
 - i. Devices not in the wired controller group are normally displayed;
 - ii. If devices belong to a wired controller group, the system will determine whether all devices in the wired controller group co-exist on the current interface. If no, devices are separately displayed. If yes, devices in the wired controller group will be displayed in a merged view, represented by the device with the smallest address number.
 - iii. The device for the merged view represents all devices in the wired controller group. When you add this device to a group, schedule, or control this device, your operation applies to all devices in the wired controller group.
- (2) If the information of the wired controller group changes, the group and schedule will change as follows. Please take measures to keep devices operating normally.
 - i. Delete a device from the wired controller group: The wired controller group still exists in groups and schedules that it previously joins. The deleted device, if still in the topology, will be separated from the wired controller group and also exist in groups and schedules. You can operate the device normally.
 - ii. Add a device to the wired controller group: The wired controller group still exists in groups and schedules that it previously joins. If the device added to the wired controller group is not in the same group and schedule with the latter, this device will not be added automatically. You need to re-add this device to the schedule or group and save the latter.
- (3) For mixed control of devices "supporting the auto mode" and "not supporting the auto mode", the control panel does not display the auto mode control option.
- (4) Devices supporting the auto mode will have double set points when setting the auto mode.
- (5) For mixed control of devices with "3-gear fan speed" and "7-gear fan speed", the control panel shows the 7-gear fan speed, and commands for devices with "3-gear fan speed" are sent as per the rule of 12-low, 34-medium, and 567-high. The interface will show the 7-gear fan speed and 3-gear fan speed as follows.

Fan Speed



- Some models may not support certain parameter settings. The controller can send any control command to each model. A model, if not supporting a control command, will handle it according to its own logic. For details about the response and processing logic of the model, see its function book.
- When the mode is set to Fan, the temperature cannot be adjusted.
- When the mode is set to Dry, the fan speed cannot be adjusted.
- The cooling model needs to be set in Service Settings to shield the heating mode.

Schedule Management

To manage devices automatically, users need to set the weekly schedule and holiday schedule to send commands to specified devices at specified time. Moreover, DST is needed so that schedules during the DST period can be correctly executed for countries running the DST system. Users also need to customize templates in Schedule Template, through which multiple schedule commands can be managed as a group, simplifying the schedule settings.

Terms and Definitions

Schedule template	A schedule template contains 1~8 commands that can be quickly applied to the schedule and executed on the specific date set in the schedule.
Weekly schedule	By setting the command queue for every day from Monday to Sunday in a week, you can make the devices in the weekly schedule run the same template on the same day of the week (one week as a cycle).
Holiday schedule	The holiday schedule has a priority higher than the weekly schedule. Devices within the holiday schedule will only execute the commands of the holiday schedule during the holiday, instead of executing the commands of the weekly schedule. The holiday schedule specifies the start and end dates of the holiday (month-day, repeated every year), and in the holiday, the same template is run every day.
DST	You can set the DST by entering its start time and end time. During DST, the time stamp of the device will be one hour faster than the normal time (currently 18:00, but displayed as 19:00).

Schedule template

Attributes of schedule template: template name, template type (one template can only support the mode commands for the same type of devices), and 1~8 mode commands. You need to set the device type of the schedule template. After the type is set, the parameter range of commands added to the template will be adjusted based on the device type. Each command contains two parts: the execution time and the control command sent. The control command does not contain the swing information (whose sending "remain unchanged").

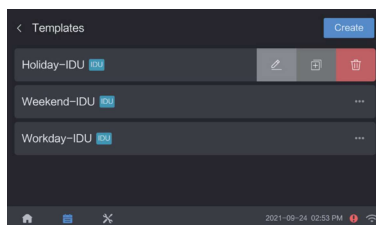


Figure 14 Schedule Template – Template List

On the Schedule Template page, you can see the list of templates that have been set. Click the New button in the upper right corner to add a template. Click the template card to directly view and edit template contents. Click the "... " icon after the template card to unfold a menu. On this menu, you can edit (✎), copy (📄), or delete (🗑️) the template. For specific operations, see Table 1 Schedule Template Management Operations

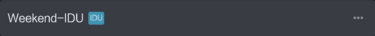


Figure 15Schedule Template – Template Card

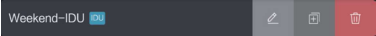


Figure 16 Schedule Template –
Unfold Template Card Menu



Figure 17 Schedule Template – Edit the Template



Figure 18 Schedule Template – Insert a Command

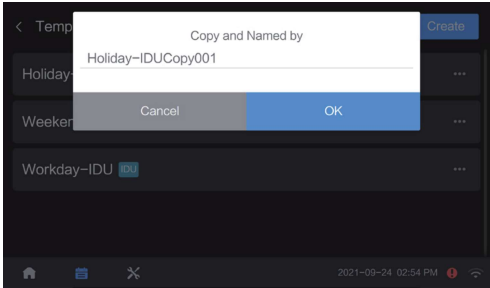


Figure 19 Schedule Template – Copy the Template

Go to the template editing page, where you can rename the template by clicking the icon next to the title.

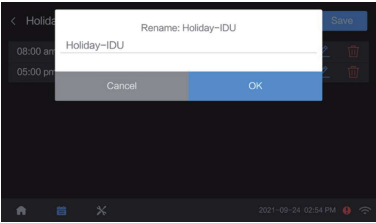


Figure 20 Schedule Template – Rename the Template

Operation	Description
New	Creates a new template. During creation, you need to set the template name, device type of template, and command queue before saving. You can create up to 500 templates.
Edit	<p>Views the command queue in the template. You can add, delete, and modify commands, or change the device type of the template (if conditions permit). For details, see Figure 17 Schedule Template – Edit the Template and Figure 18 Schedule Template – Insert a Command.</p> <p>The template will record whether it is applied to the schedule. You cannot change the device type of the template being applied. For a template not applied, after deleting all commands, you can change the application type of the template and add commands of other device types.</p> <p>If you change the time, commands, and name of the template, the mapping schedules will be changed accordingly, thus achieving the purpose of batch modification.</p> <p>You can rename the template by clicking the Edit button (✎) right after the template name on the template editing page. The new name must not be duplicate with the existing template. If the name is duplicate, you will be prompted and will not be able to save the template.</p> <p>The names of templates and schedules can contain up to 18 characters (Chinese or English) and must not contain the following special characters: `~!@#\$%^&*()= {}';\[]<>《》/?~!@#¥……&*()—— {}【】‘;:”“。、,、?</p>
Copy	<p>Copies the specified template. After copying, the new template will be renamed according to the existing template. The naming rule is "Original name \$COPY\$ serial number".</p> <p>Copies the specified template. After copying, the new template will be initially named according to the existing template. The naming rule is "Original name \$COPY\$ serial number". You can modify the initial name, and the modified name must comply with the naming rules. Click OK to complete the copy, or click Cancel to cancel the copy operation. See Figure 19 Schedule Template – Copy the Template.</p> <p>Note: \$COPY will change with the language (Copy in English and 复制 in Chinese); \$ serial number is a string containing three digits started with 001. If the copied new name is duplicate, the serial number adds 1;</p> <p>For example, after "Friday IDU" is copied, it becomes "Friday IDU copy 001";</p> <p>If the copied name exceeds the length limit specified in naming rules, the last few characters of the original name will be deleted (the number of deleted characters depends on the length of the \$COPY string).</p>
Delete	<p>You can delete the specified template.</p> <p>The template will record whether it is applied to the schedule. When deleting a template being applied, you will be prompted to reconfirm your operation. This ensures that you are aware of the consequences of doing so.</p>

Table 1 Schedule Template Management Operations

Weekly schedule





On the Weekly Schedule page, you can see the list of weekly schedules that has been set. Click the New button in the upper right corner to create a new weekly schedule. Click the schedule card below to view the schedule contents directly. Click the  icon on the right of the module card to unfold the menu. On the menu, you can view () , copy () , or delete () the template. On the View interface, you can further edit or rename the schedule. For specific operations and meaning, see Table 2 Weekly Schedule Management Operations.



Figure 21 Weekly Schedule – Schedule Card



Figure 22 Weekly Schedule – Unfold the Schedule Card Menu

You can quickly enable and disable the weekly schedule by operating the slider on the right (see Figure 23 Weekly Schedule – Schedule List. In this figure, the weekly schedule is enabled). The modification will become valid immediately once made.

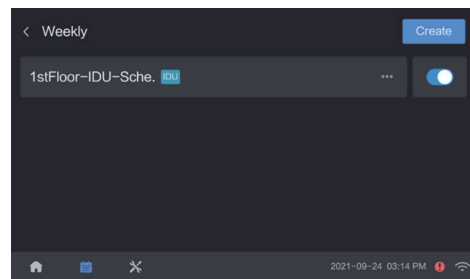


Figure 23 Weekly Schedule – Schedule List

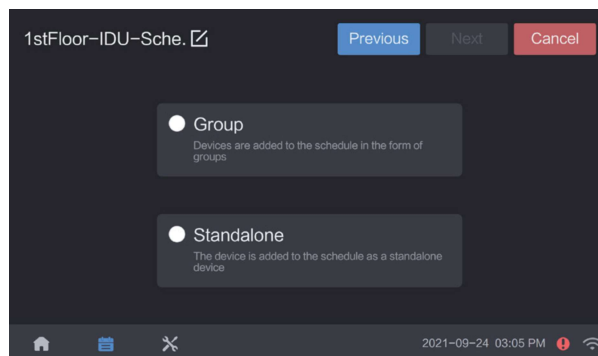


Figure 24 Weekly Schedule –
Select the Schedule Organization Mode

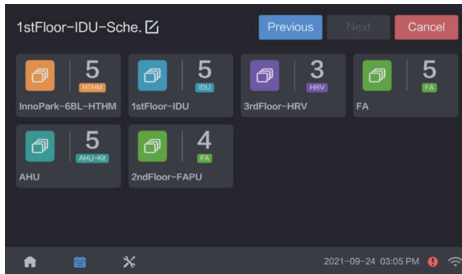


Figure 25 Weekly Schedule – Add a Group



Figure 26 Weekly Schedule – Add a Device

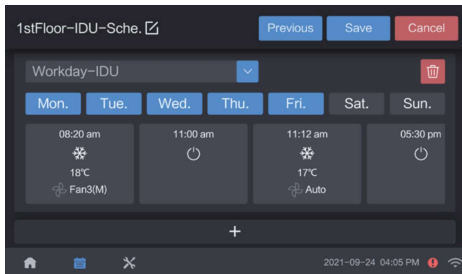


Figure 27 Weekly Schedule – Select a Template

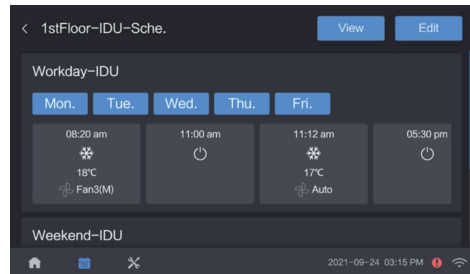


Figure 28 Weekly Schedule – View Schedule Details

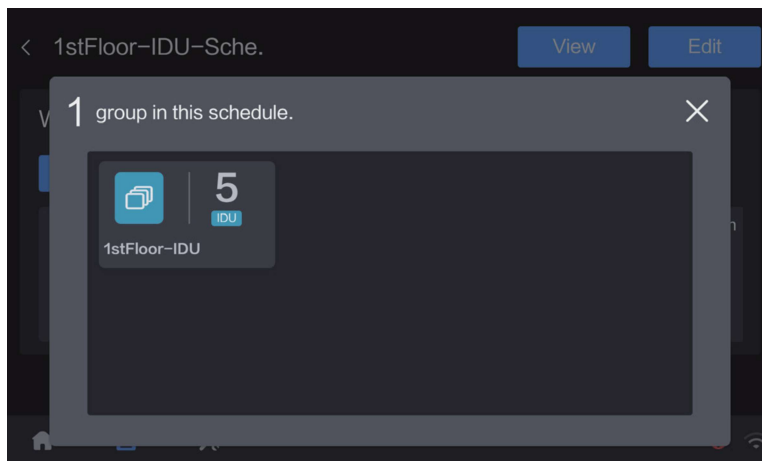


Figure 29 Weekly Schedule – View Schedule Details – View Device Conditions

Operation	Description
New	<p>Adds a weekly schedule. To do this, you need to select whether the device in the schedule is selected separately or as a group. For details, see Figure 25 Weekly Schedule – Add a Group and Figure 26 Weekly Schedule – Add a Device.</p> <p>After determining the device selection mode, you can select devices. Such selected devices will determine the device type of the schedule.</p> <p>After confirming devices, you can select the schedule templates to be executed for the 7 days from Monday to Sunday. Only one template can be selected one day, and templates between different days can be repeated. If no template is selected for a day, no command will be executed on that day. See Figure 27 Weekly Schedule – Select a Template.</p> <p>You can create up to 200 weekly schedules.</p>
View	<p>Click the schedule card to go to the schedule viewing page, where you can view the task cards added to the schedule (see Figure 28 Weekly Schedule – View Schedule Details) and the list of devices (Figure 29 Weekly Schedule – View Schedule Details – View Device Conditions).</p>
Edit	<p>On the schedule details page, click the Edit button in the upper right corner to edit schedules. The way of editing a schedule is similar to the way of creating a schedule.</p> <p>If the device type is changed on the device selection page, you will be prompted that the existing schedule template will be emptied.</p> <p>On the schedule editing page, click the edit button (✎) on the right of the schedule name to rename the schedule. The new name must not be the same as the existing weekly schedule. If it is the same, you will be prompted and will not be able to save the name.</p> <p>The names of templates and schedules can contain up to 18 characters (Chinese or English) and must not contain the following special characters: `~!@#\$%^&*()= {}';\[]<>《》/?~!@#¥……&*()—— {}【】‘;’”“。、\?</p>
Copy	<p>Copies the specified schedule. After copying, the new schedule will be renamed according to the existing schedule. The naming rule is "Original name \$COPY\$ serial number".</p> <p>Remarks: \$COPY will change with the language (Copy in English and 复制 in Chinese); \$ serial number is a string containing three digits started with 001. If the copied new name is duplicate, the serial number adds 1;</p> <p>If the copied name exceeds the length limit specified in naming rules, the last few characters of the original name will be deleted (the number of deleted characters depends on the length of the \$COPY string).</p>
Delete	<p>You can delete the specified template.</p> <p>The template will record whether it is applied to the schedule. When deleting a template being applied, you will be prompted to reconfirm your operation. This ensures that you are aware of the consequences of doing so.</p>

Table 2 Weekly Schedule Management Operations

Holiday schedule

Holiday schedule differs from weekly schedule in the following aspects for creation:

- ① You can only add devices as a group to the holiday schedule.
- ② You need to set a valid date interval for the holiday schedule.
- ③ Holiday schedule only needs one template that runs every day.

On the Holiday Schedule page, you can see the list of holiday schedules that has been set. Click the New button in the upper right corner to create a new holiday schedule. Click the schedule card below to view the schedule contents directly. Click the ... icon on the right of the module card to unfold the menu. On the menu, you can view (), copy (), or delete () the template. On the View interface, you can further edit or rename the schedule. For specific operations and meaning, see Table 3 Holiday Schedule Management Operations.



Figure 30 Holiday Schedule – Schedule Card



Figure 31 Holiday Schedule – Unfold the Schedule Card Menu

You can quickly enable and disable the holiday schedule by operating the slider on the right (see Figure 32 Holiday Schedule – Schedule List. In this figure, the holiday schedule is enabled). The modification will become valid immediately once made.

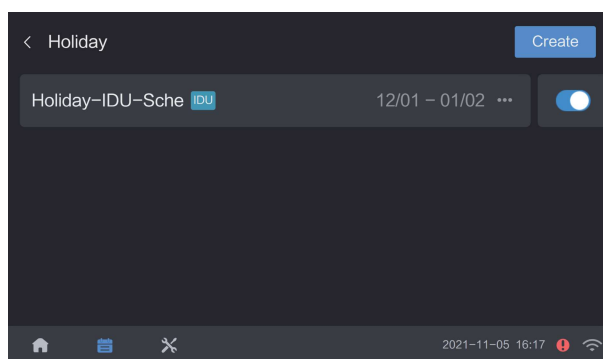


Figure 32 Holiday Schedule – Schedule List

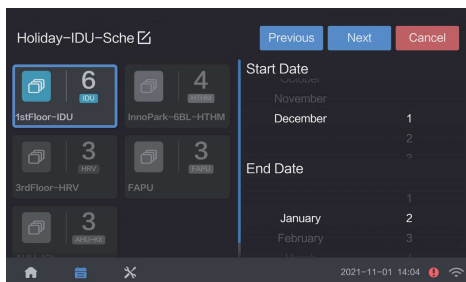


Figure 33 Holiday Schedule –
Add a Group and Select Date Interval

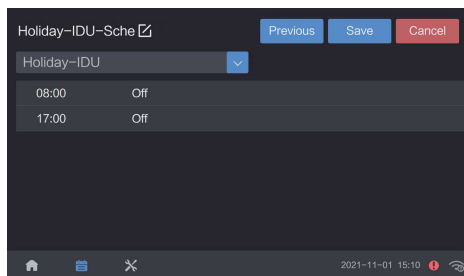


Figure 34 Holiday Schedule – Select a Template

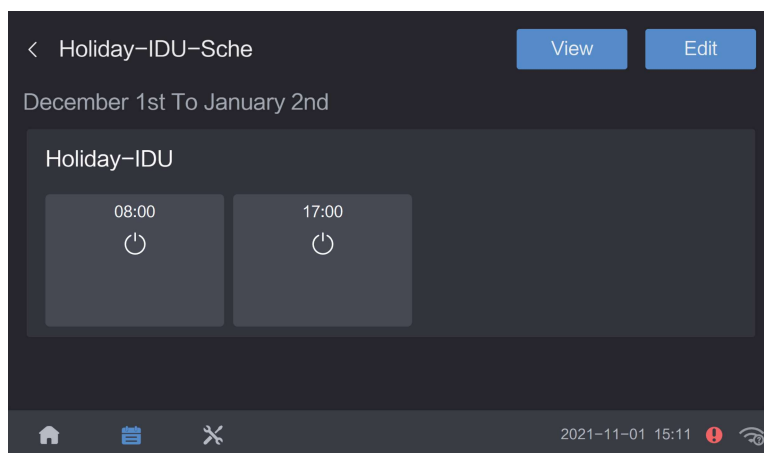


Figure 35 Holiday Schedule – View Schedule Details

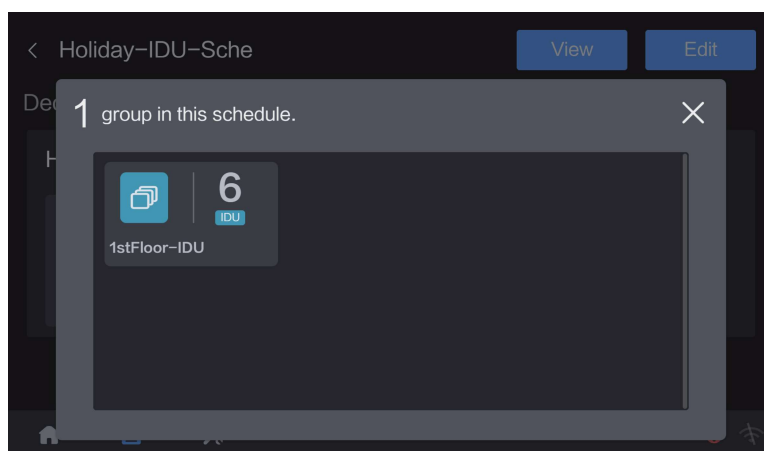


Figure 36 Holiday Schedule – View Schedule
Details – View Device Conditions


Operation	Description
New	<p>Adds a holiday schedule. You need to determine devices and valid interval. For details, see Figure 33 Holiday Schedule – Add a Group and Select Date Interval. You can select the schedule template to be executed. Only one template can be selected, and it is repeated every day. See Figure 34 Holiday Schedule – Select a Template.</p> <p>You can create up to 100 holiday schedules.</p> <p>The interval consists of a start time and an end time and can cross the year. The start date of this year will be displayed on the interface. After you select the dates, only the month and day in the date are taken as the condition to identify the start and end dates, which are repeated every year;</p>
View	Click the schedule card to go to the schedule viewing page, where you can view the task cards added to the schedule (see Figure 35 Holiday Schedule – View Schedule Details) and the list of devices (see Figure 36 Holiday Schedule – View Schedule Details – View Device Conditions).
Edit	<p>The way of editing a schedule is similar to the way of creating a schedule.</p> <p>If the device type is changed on the device selection page, you will be prompted that the existing schedule template will be emptied.</p> <p>On the schedule editing page, click the edit button () on the right of the schedule name to rename the schedule. The new name must not be the same as the existing weekly schedule. If it is the same, you will be prompted and will not be able to save the name.</p> <p>The names of templates and schedules can contain up to 18 characters (Chinese or English) and must not contain the following special characters: `~! @\$%^&*()= {}';\[]<>《》/?~! @# ¥…… &* () ——— {} [] ‘; : ” “。 , \ ?</p>
Copy	<p>Copies the specified schedule. After copying, the new schedule will be renamed according to the existing schedule. The naming rule is "Original name \$COPY\$ serial number".</p> <p>Remarks: \$COPY will change with the language (Copy in English and 复制 in Chinese); \$ serial number is a string containing three digits started with 001. If the copied new name is duplicate, the serial number adds 1; For example, after "Friday IDU" is copied, it becomes "Friday IDU copy 001"; If the copied name exceeds the length limit specified in naming rules, the last few characters of the original name will be deleted (the number of deleted characters depends on the length of the \$COPY string).</p>
Delete	You can delete the specified schedule.

Table 3 Holiday Schedule Management Operations

DST

To set the DST start and end time, you need to determine the weekday in a specific month as the start and end time. The DST start and end time must be accurate to minute. Also, an enabler is available for you to set whether to execute DST.

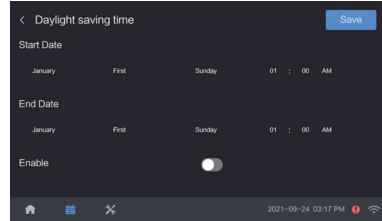


Figure 37 DST

System Settings

General settings

Basic settings and query functions of users.

Terms and Definitions

Date	Provides users with basic settings of time and date, and their formats
Backlight	Allows you to set the backlight duration. The backlight will automatically go out after the system remains inactive for a period over the set time. The backlight is on after you touch the screen again.
System language	Switches system languages
Wifi	Queries the scanned SSID, queries the current connection status, and connects to the specified SSID.
Temperature unit	Switches between Celsius and Fahrenheit
Information query	Switches between Celsius and Fahrenheit
Firmware upgrade	Upgrades the touch screen through USB or OTA. You can query the current version, versions available for upgrade, and the upgrade status and progress

● Date

You can set the current date and time and modify the time and date format, which will take effect immediately after saving. See Figure 38 General Settings – Date.

Change scope of time format: 12-hour system and 24-hour system.

Change scope of date format: ‘YYYY/MM/DD’, ‘MM/DD/YYYY’, ‘DD/MM/YYYY’

Attention: Changes made to this time will affect the schedule execution, DST execution, and log generation.

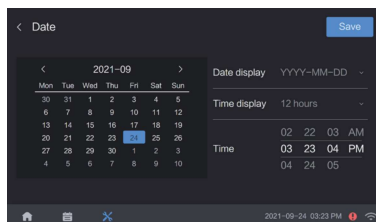


Figure 38 General Settings – Date

● Backlight settings

This function allows you to set the duration of backlight after inactivity and adjust the backlight brightness. The settings will take effect immediately after saving.

As shown below, the left part allows you to adjust the backlight duration, which is divided into 8 gears from 15 seconds to 60 seconds. The right part allows you to adjust the backlight intensity by moving the slider (the darkest to the brightest from top down).

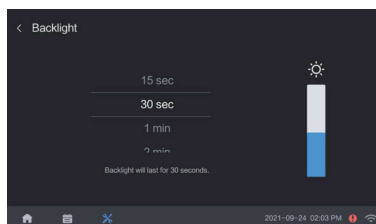


Figure 39 General Settings – Backlight

● System language

You can select the language displayed on the interface, as shown in Figure 40 General Settings – Language Settings. After changing the language, you will be asked whether to save the change. The language becomes valid immediately once you click Save.

Languages currently available are listed in Table 1 General Settings – Supported Languages

Language	Option
English	English
Chinese	Chinese (simplified)

Table 1 General Settings – Supported Languages



Figure 40 General Settings – Language

• WiFi

You can view the current network status from the status bar:

Full signal	Strong signal	Weak signal	Extremely weak signal	Not connected	WiFi off

You can view and control the networking of the controller through the WiFi module in the settings.

You can set the following functions in the module:

- ① Turn on/off WiFi: You can turn on or turn off WiFi with the slider in the upper right corner.
- ② View the current WiFi hotspot list. The list contains SSID, encryption flag, and signal strength information. Click "🔒" to connect the network. If SSID is encrypted, you need to enter a password.
- ③ View the WiFi currently connected. If the WiFi is connected, the interface will display its information, including the SSID for WiFi connection, signal strength, and IP address. If the connection is down, you will be prompted that the system is not connected due to password error or other reasons. You can edit the connected WiFi. Click "🔒" to go to the editing page. On this page, you can change the password for connection and forget the WiFi.



Figure 41 General Settings – WiFi

• Temperature unit

You can swipe up and down to switch between Celsius and Fahrenheit, as shown in Figure 42 General Settings – Temperature Unit. This operation only affects the front-end interface, while background logs are not affected and still generated in a fixed format. Your change will be validated immediately without saving.

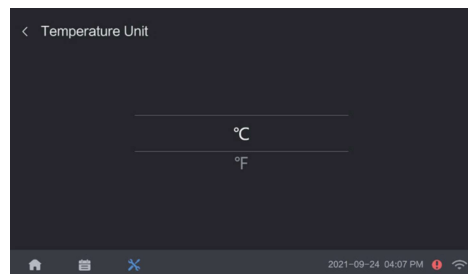


Figure 42 General Settings – Temperature Unit

• Information query

You can view different types of IDUs, ODUs, and faulty devices through this interface, as shown in Figure 43 General Settings-Information Query. You can select the models to be viewed in the upper right corner. The parameters are listed in Table 2 General Settings – Parameters for Information Query.

IDU	FA	HRV	AHU-Kit	HTHM	ODU	Faulty
Device name	Device name	Device name	Device name	Device name	Device name	Device name
Device address	Device address	Device address	Device address	Device address	Device address	Device address
Indoor temperature	Indoor temperature	Indoor temperature	Working mode	Working mode	Outdoor temperature	Error code
Set temperature	Exhaust temperature	Fan speed	Indoor temperature	Set temperature of heat water	Working mode	/
Fan speed	Set temperature	Working mode	Set temperature	Set temperature of room	Error code	/
Working mode	Fan speed	Error code	Fan speed	Set temperature of heat water	Priority mode	/
Swing angle	Working mode	/	Swing angle	Water inlet temperature	/	/
Error code	Error code	/	Error code	Water inlet temperature	/	/
/	/	/	/	Tank temperature	/	/
/	/	/	/	Error code	/	/

Table 2 General Settings – Parameters for Information Query

Name	Address	Mode	TwoutS	TaS	ThankS	Twin	Tout	Tank	Error Code
HTHM000 0-63	0	Heat Water	25	25	25	20	-25	-25	No error
HTHM060 0-63	60	Heat Water	25	25	25	-25	-25	-25	No error
HTHM061 0-63	61	Heat Water	25	25	25	-25	-25	-25	No error
HTHM062 0-63	62	Heat Water	25	25	25	-25	-25	-25	No error
HTHM001	1	Heat	40	80	60	90	20	70	No error
HTHM763	63	Offline	---	---	---	---	---	---	Offline

Figure 43 General Settings – Information Query

● Firmware upgrade – USB

You can upgrade the device through USB. Put the upgrade file in the USB drive and insert it into the device's USB port. Go to the USB firmware upgrade interface to view the current software version. Then, you can choose the upgrade file in the USB drive from the drop-down box. If there is no upgrade file or the USB drive is not inserted, the drop-down box will be empty.

After selecting one of the files, the system will verify the files. This may take a long time. Please be patient. If the verification is passed, the version of the upgrade file will be displayed. If the version of the selected file is consistent with the expected version, it can be upgraded. During USB upgrade, the version relationship with the earlier/later version is not verified, and you can upgrade to the selected version forcibly.

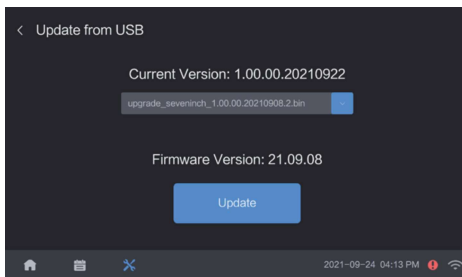


Figure 44 General Settings –
Update from USB (Selected Firmware)

Attention:

- 1.FAT32 is the recommended file format for the USB drive, and the USB drive can only have one partition.
- 2.The upgrade file shall be put in the root directory of the USB drive.

● Firmware upgrade – OTA

You can upgrade the device through OTA. The device receiving the push will compare the relationship between the current version and the pushed version for display of differential information. The system will not be updated if it is already the latest version, and you will be prompted that the system is already the latest. If the system version is earlier than the pushed version, it will display the version number of the pushed version and firmware status of the current version.

Upgradeable firmware has the following status:

- ① Connecting... it has not been connected or the OTA server does not respond;

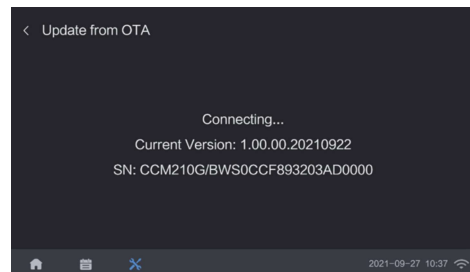


Figure 45 General Settings –
Update from OTA (Connecting)

- ② No need to download since it is already the latest version;

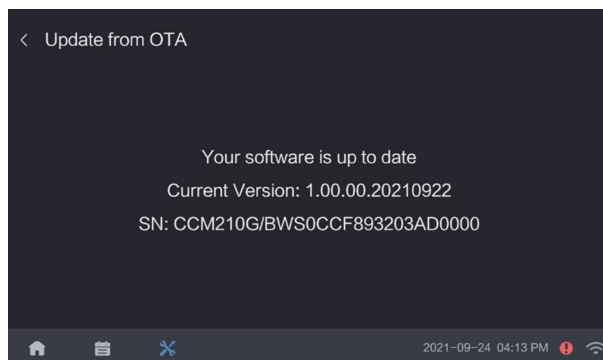


Figure 46 General Settings – Update from OTA (Latest Version)

- ③ Waiting... download has not started. You can download it;

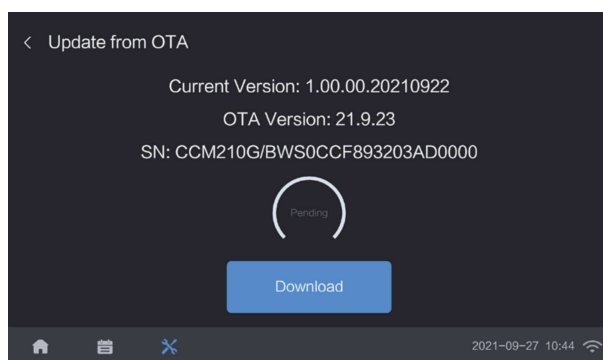


Figure 47 General Settings – Update from OTA (Waiting)

- ④ Downloading... firmware being downloaded. You need to wait until download is complete;

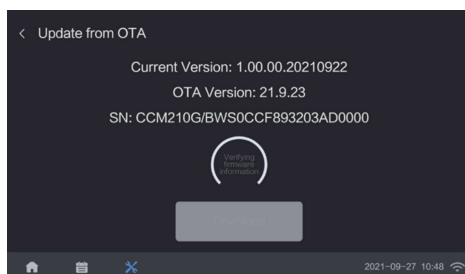


Figure 48 General Settings –
Update from OTA (Verifying OTA information)

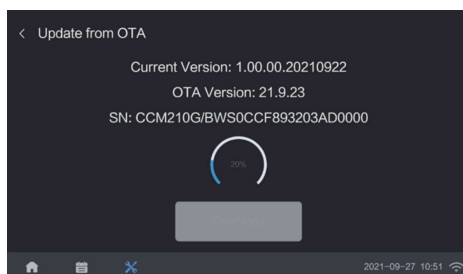


Figure 49 General Settings –
Update from OTA (Downloading)

⑤ Download completed. You can update the version now.

Attention: During OTA upgrade, the device must be connected to the network. Otherwise, the device cannot receive the upgrade push or download the firmware file.



Figure 50 General Settings – Update from OTA
(Download Completed)

A/C lock settings

You may want to lock and restrict some functions for energy saving or other purposes. You can view and lock air conditioners in two ways:

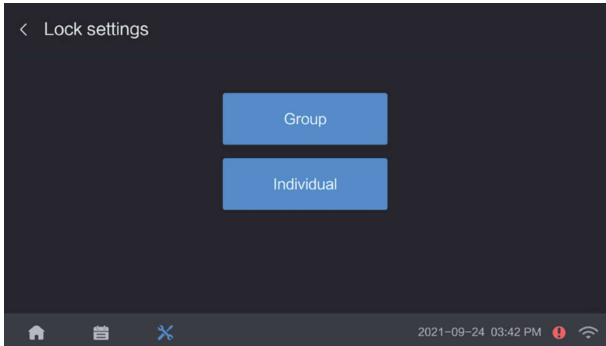


Figure 51 Locking Page

View all IDUs by single device: All devices can be listed in the device list. You can filter all devices of the same type and lock them at one time.

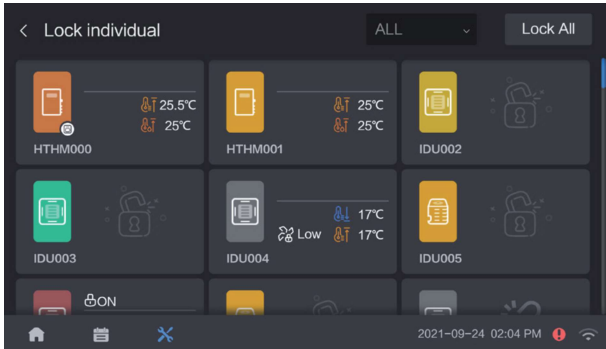


Figure 52 View Device Locking Cards

Select devices as a group: In the group list, click the group cards to go to different group pages, where you can view or set lock items for devices in the group.

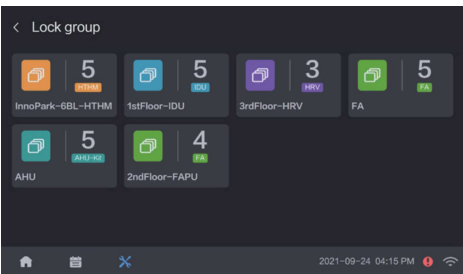


Figure 53 Select Groups in Lock Settings

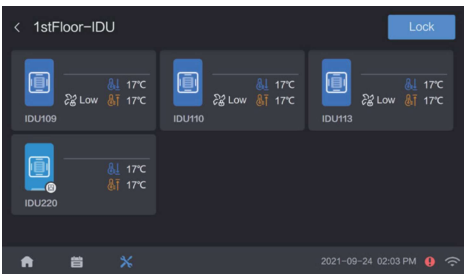


Figure 54 View Lock Cards of Devices in the Group

On the lock card list page, click the Lock button in the upper right corner to lock the selected devices (when viewing lock cards in group mode, just click the Lock button without selecting a device).

- 1. You cannot set lock items for different types of devices simultaneously;
- 2. Since different devices may have different locking values for the same lock item, when selecting and setting the locking status for more than one device simultaneously, we will initialize all items to Remain. Remain indicates that the item is not set, and each device maintains its original settings.

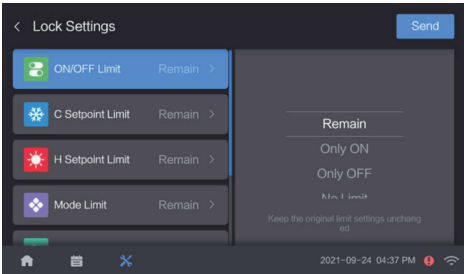


Figure 55 Page of Lock Settings









● View lock items of devices

On the single-device page or group page (clicking the Group button), devices are displayed as lock cards. You can query locking status of devices based on the contents of lock items.









Card Type	Card Display	Zone Identifier
No lock card		/
HTHM cards		
Other IDU cards		

For devices without lock items, see the above figure;





The HTHM cards have four zones.





Zone	Lock Item	Specific Value
A	H Mode Limit	<p>If it is not locked, the icon and locking value are not displayed</p> <p>If it is locked, the icon appears, and the value represents the locking status of heating mode, including "lock off" ( OFF) and "lock on" ( ON).</p>
B	H Setpoint Limit	<p>If it is not locked, the icon and locking value are not displayed</p> <p>If it is locked, there are two conditions:</p> <ol style="list-style-type: none"> 1. Lock the set point of heating mode (temperature not specified and locked as per the current set temperature of the device) without displaying the specific value, as shown in the figure:  2. Lock the upper threshold set for heating temperature. The specific value is displayed on the right side:  80°C
C	H Setpoint Limit	<p>If it is not locked, the icon and locking value are not displayed</p> <p>If it is locked, the icon appears, and the value represents the locking status of heat water mode, including "lock off" ( OFF) and "lock on" ( ON).</p>
D	WH Setpoint Limit	<p>If it is not locked, the icon and locking value are not displayed</p> <p>If it is locked, there are two conditions:</p> <ol style="list-style-type: none"> 1. Lock the heat water temperature (temperature not specified and locked as per the current set temperature of the device) without displaying the specific value, as shown in the figure:  2. Lock the upper threshold set for the heat water temperature. The specific value is displayed on the right side:  25°C

Other IDU cards have 7 zones:












Zone	Lock Item	Specific Value
A	Mode Limit	If it is not locked or this item is not applicable to the device, the icon does not appear If it is not locked, the icon appears and maps to the IDU's running mode (see the following table)
B	C Setpoint Limit	If the setpoint of cooling mode is not limited or this item is not applicable to the device, the icon and value do not appear If the setpoint of cooling mode is limited, the icon and value appear  17°C
C	Fan Limit	If it is not locked or this item is not applicable to the device, the icon and locking value do not appear If it is locked, the icon appears, and the value represents the locked fan speed. It supports 3-gear ( Fan5) and 7-gear ( Low) fan speed for different devices.
D	H Setpoint Limit	If the setpoint of heating mode is not limited or this item is not applicable to the device, the icon and value do not appear If the setpoint of heating mode is limited, the icon and value appear  17°C
E	ON/OFF Limit	If it is not locked or this item is not applicable to the device, the icon and locking value do not appear If it is locked, the icon and value appear  OFF indicates that the device only accepts the power-off command.  ON indicates that the device only accepts the power-on command.
F	WDC Limit	If it is not locked or this item is not applicable to the device, the icon and locking value do not appear If it is locked, the icon () appears, indicating that the remote control commands are not accepted
G	RC Limit	If it is not locked or this item is not applicable to the device, the icon and locking value do not appear If it is locked, the icon () appears, indicating that commands from the wired controller are not accepted

The HTHM cards have four zones.

Locking Mode	Icon
Auto locking	
Bypass locking	
Cooling locking	
Free cooling locking	

Locking Mode	Icon
Dry locking	
Fan locking	
Heating locking	
Heat exchange locking	

Locking parameters for different models

Lock Item	Icon	Lock Item	Icon
C Setpoint Limit		Mode Limit	
C Setpoint Limit		H Setpoint Limit	
Fan Limit		WDC Limit	
RC Limit		WH Mode Limit	
H Mode Limit		H Setpoint Limit	
WH Setpoint Limit		/	/

Different types of devices be separately controlled due to the different range of optional parameters. Through different configurable items, devices can be divided into the following categories:

Normal IDU

ON/OFF Limit	Power-on locking, power-off locking, unlocking
Mode Limit	Cooling locking, heating locking, unlocking
C Setpoint Limit	17~30° C (62~86° F), unlocking
H Setpoint Limit	17~30° C (62~86° F), unlocking
Fan Limit	Gear 1~7, unlocking
WDC Limit	Locking, unlocking
RC Limit	Locking, unlocking

FA

ON/OFF Limit	Power-on locking, power-off locking, unlocking
Mode Limit	Cooling locking, heating locking, unlocking
C Setpoint Limit	13~30° C (55~86° F), unlocking
H Setpoint Limit	13~30° C (55~86° F), unlocking
Fan Limit	Gear 1~7, unlocking
WDC Limit	Locking, unlocking
RC Limit	Locking, unlocking

HRV

Mode Limit	Free cooling locking, heat exchange locking, bypass locking, auto locking, unlocking
Fan Limit	Gear 1~7, unlocking
RC Limit	Locking, unlocking
WDC Limit	Locking, unlocking

AHU-Kit

ON/OFF Limit	Power-on locking, power-off locking, unlocking
Mode Limit	Cooling locking, heating locking, unlocking
C Setpoint Limit	10~30° C (50~86° F), unlocking
H Setpoint Limit	10~30° C (50~86° F), unlocking
Fan Limit	Gear 1~7, unlocking
WDC Limit	Locking, unlocking
RC Limit	Locking, unlocking

HTHM

WH Mode Limit	Kept on, kept off, unlocking
H Mode Limit	Kept on, kept off, unlocking
H Setpoint Limit	25~80, locking, unlocking
WH Setpoint Limit	25~80, locking, unlocking

Service Settings

Attention: Please use the Service Settings under the guidance of technical support. Improper operation will affect the controller's normal functions. The PIN code for entering Service Settings is "200101". Please keep it properly. Enter the PIN. The detailed list menu is displayed.

Terms and Definitions

Report export	Used to export running reports. Reports can be exported through USB or Email, and exported files are the device's original running records, which can provide reference for the manufacturer to analyze device operations.
Emergency shutdown trigger	Used to set the trigger conditions for emergency shutdown and device recovery options after emergency shutdown.
Cooling only system	Used to set whether the interface displays the cooling only system
DST configuration	Used to set whether the interface displays DST options.
Reset to factory defaults	Used to quickly format the controller and restore it to the factory defaults.
Activate advanced mode	Reserved function
Topology and search	Used to search and save the devices accessing the controller. You can also query the information of saved devices (including group, address, model, and wired controller group) and modify the names of saved devices.
Email settings	Used to configure the information of the addresser in the email for report export.
Backup and recovery	Used to back up the settings and database of the controller, and restore backup files to new controllers.
Online upgrade settings	Used to set related function parameters for online upgrade.
Dry contact	Used to back up the settings and database of the controller, and restore backup files to new controllers.

● Report export

This function is used to export the device running records within a schedule. There are two export methods:

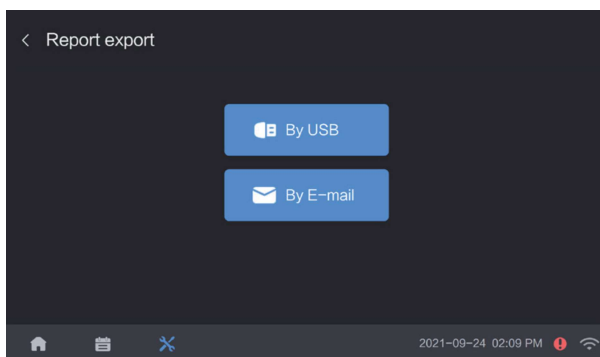


Figure 56 Service Settings – Report Export – Select the Export Method

① Export through a USB drive. You need to insert the USB drive (FAT file system only) into the USB port;

② Export through email. You can only export logs of one day as the email has a size limit on attachments.

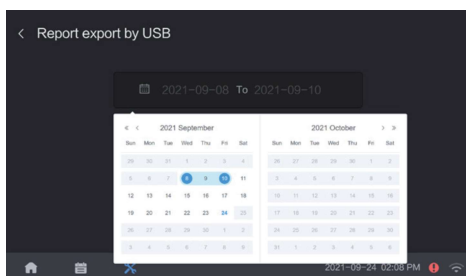


Figure 57 Service Settings – Report Export – Select Time Period for USE Export

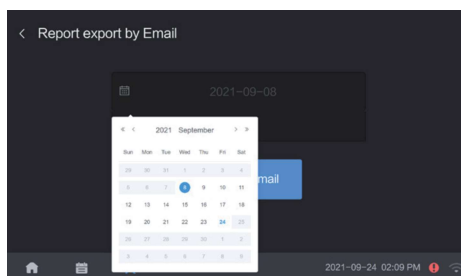


Figure 58 Service Settings – Report Export – Select Time for Email Export

During export, you need to select the time period. The page will limit the inapplicable dates according to the existing schedule. You can only select the dates with logs (or start and end dates). To export reports through email, you need to configure the email addresser. The addresser information will be provided by the mail service provider. If it is not configured in advance, the email configuration page will be displayed. The recipient is empty if no email has been sent to him/her and otherwise will be auto-filled.

● Emergency shutdown trigger

The controller activates the emergency shutdown function through the dry contact status. When emergency shutdown is triggered, a power-off command will be sent to the IDU through the XYE port. If the IDU is locked, it will be unlocked first before the power-off command is sent.

The configurable options are listed below (see Figure 59 Advanced Settings – Emergency shutdown trigger):

Two trigger modes:

- ① The dry contact is normally open and triggered by closing;
- ② The dry contact is normally closed and triggered by opening.

Whether to restore the status before emergency shutdown after the alarm:

- ① Restore the device status after the alarm: a) HTHM can only restore the current running mode. If any other mode has been set but is not running during emergency shutdown, the mode cannot be restored; b) The fan speed will be restored to the running mode before emergency shutdown; if it does not run before emergency shutdown, the fan will be restored to the automatic speed.
- ② The device status is not restored after the alarm, and the device is still off.

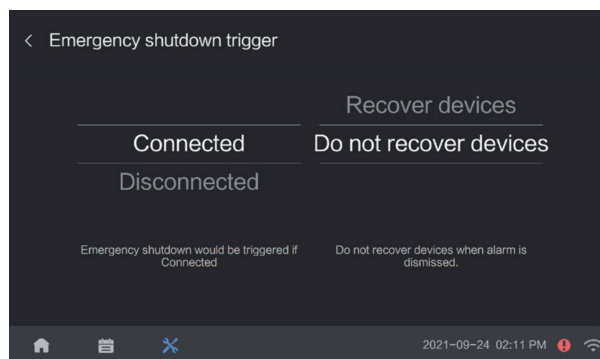


Figure 59 Service Settings – Emergency Shutdown

Emergency shutdown must comply with the following logic:

When the controller is in emergency shutdown state: the background checks the dry contact status every second. If the dry contact remains non-triggered for 5 seconds, the controller exits the emergency shutdown state and switches to the normal state. If the dry contact remains triggered for 60 seconds, an unlocking command will be sent to the device in power-on locking state, and a power-off command will be sent to the device in running state.

When the controller is in normal state: the background checks the dry contact status every second. If the dry contact remains triggered for 5 seconds, emergency shutdown is triggered, and the controller switches to the emergency shutdown state.

Attention: The emergency shutdown function will not be triggered within 3 minutes after the device is powered on and can only be triggered 3 minutes later. The default setting is "connection status triggered and device status not restored".

● Cooling only configuration

When connected to the cooling only system, the system shall not display heating related options. You need to configure Service Settings to change the controller type to "cooling only system". In this way, heating options will not appear in schedule template settings and device control (HTHM remains unchanged and heating options are still displayed).

Click the indicator box on the page to switch between device types.

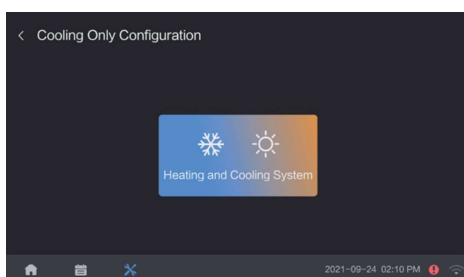


Figure 60 Service Settings – Cooling Only Configuration – Heating and Cooling System

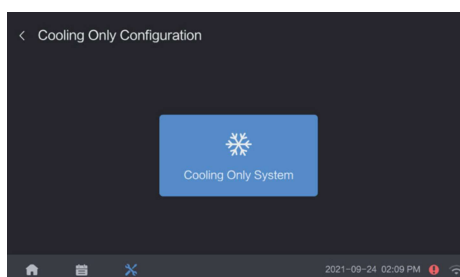


Figure 61 Service Settings – Cooling Only Configuration – Cooling Only System

● DST configuration

In regions not requiring DST, this module is added in Service Settings to cancel DST display.

Click the indicator box on the page to enable or disable DST display.

When the DST is set to invisible, DST settings will not be deleted, but the "Enable" option will be set to "Disable".

When the DST is set to visible, it will not be enabled automatically. You need to enable it manually on the DST interface.

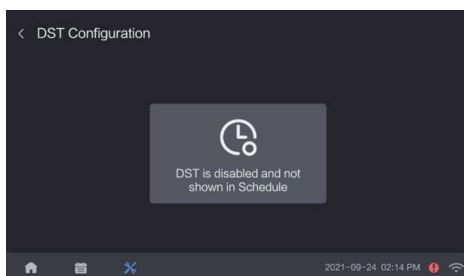


Figure62 Service Settings > DST Configuration > DST Invisible

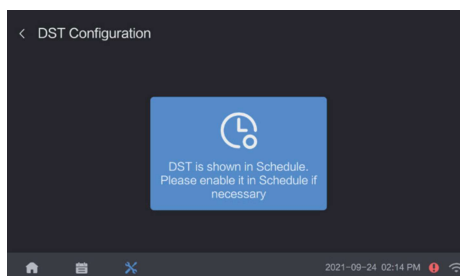


Figure63 Service Settings > DST Configuration > DST Visible

● Reset to factory defaults

Deleted settings will restore to factory defaults. The deleted data and their default values are shown below.

Dry contact	Factory Defaults
Device topology information	N/A
Grouping information	N/A
Schedule information	N/A
Email settings	N/A
WiFi settings	No WiFi connected
Device running records	Delete
Date format	yyyy-mm-dd
Time format	24h time format
Temperature unit	Degree Celsius
Language	English
DST settings	Invisible, disabled

Dry contact	Factory Defaults
Settings of emergency shutdown	Emergency shutdown after connection, device status not restored
Cooling only configuration	Heating and cooling system
Initialization state	Language selection requires initialization
OTA address	mqtt://47.111.159.216
OTA port	1883
OTA username	N/A
OTA password	N/A
Backlight brightness	50%
Backlight off time	60s

● Topology and Search

For the first entry, the touch screen does not display the device. (See Figure 64 Advanced Settings > Device Topology > Null State). Click the Search button to search. The search results will pop up in tabular form (See Figure 65 Service Settings > Device Topology > Device List). The number of IDUs searched is represented numerically on the Save button. Click the Search button to search again. The search results will update the table.

Display the searched devices and information, including:

- ① IDU name (user editable) defaults to "[UnitType] [system] [addr]";
- ② IDU address (inherent);
- ③ Model code (inherent);
- ④ Wired controller group No. (inherent);
- ⑤ Whether to support automatic mode (inherent);
- ⑥ **The default group name is "Individual".**

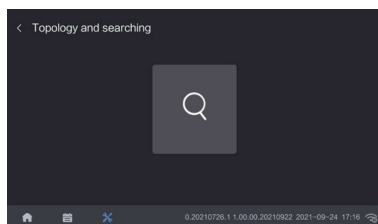


Figure64 Service Settings > Device Topology
> Null State

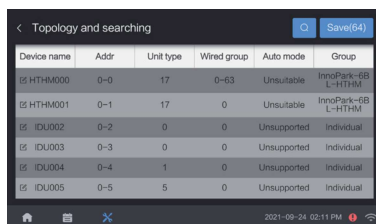


Figure65 Service Settings > Device Topology
> Device List

Display the IDU through the table (if there is no IDU saved, display the searched IDU). The user can change the IDU name through the interface (the title of the interface is the original device name, reminding the user what is changing), and click the Save button to save the IDU information into the database. The inherent information of the IDU (as shown above) shall be subject to the contents saved during the use of the controller. If the IDU requires changes, search and save again.

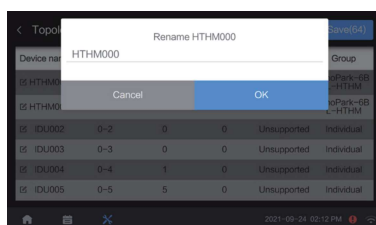


Figure66 Service Settings > Device Topology
> Change the Device Name

Remarks:

1. After the air conditioning system is powered on, it will be initialized. During this period, the controller cannot query the device. Wait for the initialization to complete (about 7-8 minutes), and then search for the device.
2. If a new device is added, wait for 3 minutes, and then search for the device.

3. The device name, group, and schedule will be recorded so that the user will not lose information after multiple topologies. The specific logic is as follows:

- a) If this topology does not include the previously saved device (such as device A), the topology results will not show this device, but its information will be saved in the database.
- b) If you search and find this device in the next topology, the search results will include the previous device group and name.
- c) The condition for identifying the same device is that the device address, system number, and type are consistent. If different devices have the same address, the device will be initialized in step b); that is, the device name and group are deleted;
- d) The device group and schedule to be saved must not be modified again. If they are modified and saved again, the device will no longer be saved in the group or schedule.

● Email Configuration

Used to configure the information of the addresser in the email for report export and verify the configuration items entered by the user. Verification rules are as follows:

Item	Rule
Subject	Mandatory
Address of sender	Mandatory, conforming to email address rules
Username	Optional; it defaults to the address of the sender if not entered
Password	Mandatory
Security protocol	One out of three
SMTP port	Mandatory, 1-5 digits
SMTP server	Mandatory, conforming to URL address rules

● Backup and recovery

ou can back up the information about device topology, schedule, and settings. Backup requires a USB drive. After clicking Backup, the backup file will save the system version and backup time. When recovery is needed, put the backup file in the root directory of the USB flash disk and connect the device. After you select the file correctly, the system will check the backup file and display the version and time. The tampered backup file cannot pass the verification, and there will be a prompt "Verification Failed". After the user clicks "Restore", the system will prompt the user to "Reboot". Click this button to reboot the system. The data is automatically restored. During this period, do not cut off the power but wait for the reboot to complete.

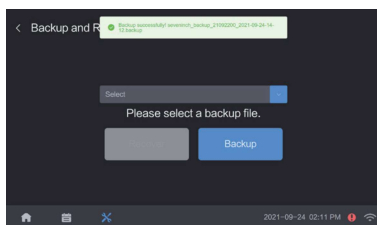


Figure67 Service Settings >
Backup and Recovery > Backup

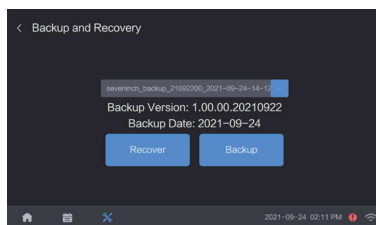


Figure68 Service Settings >
Backup and Recovery > Recovery

● OTA Settings

The online upgraded server may need to be configured. Fill in and modify the contents according to the actual situation (non-professionals must not configure it privately, otherwise, the upgrade may fail), and click Save. The upgrade program will reboot in the background.

FAQs

Q: Why cannot the device be searched?

- Make sure that both the IDU and ODU are powered on (the VRF system will be in the initialization state just after being powered on. Wait patiently for the completion of VRF initialization);
- Ensure that the communication lines are connected properly. The wrong wiring will lead to a communication failure.
- It takes time to find the device. Please search for the device 3 minutes after the controller and the VRF achieve normal communication.

Q: Why is the number of devices searched less than that accessed by the system?

- If there are still some devices not found, you can wait for a certain time, and then click the Search button again. If the device data will not increase, perform the following inspection steps.
 - a) Check whether the IDUs have a duplication address. The duplication address will affect the search results of the IDUs;
 - b) Make sure that both the IDU and ODU are powered on (the VRF system will be in the initialization state just after being powered on. Wait patiently for the completion of VRF initialization);
 - c) Ensure that the communication lines are connected properly. The wrong wiring will lead to a communication failure.
 - d) It takes time to find the device. Please search for the device 3 minutes after the controller and the VRF achieve normal communication.

Q: Why is the device offline?

- During the initialization of the VRF system or the controller, some devices may not be found. If the problem still persists, perform the following inspection steps.
 - a) Make sure that the IDU or ODU has been powered on and the signal lines are connected normally;
 - b) Make sure that the IDU address is not reset. The new address number needs to be saved in the system through a new topology.

Q: Why is the automatic mode unavailable?

- The VRF of the heat pump system does not support automatic mode. If the selected device belongs to the heat pump system, the automatic mode is not available on the control panel.
- When the devices in the heat recovery system and the heat pump system are selected and controlled simultaneously, the automatic mode option will disappear.

Q: Why is the heating mode unavailable?

- If the access system is a heating and cooling system and the heating mode is not available on the control panel, check Advanced Settings > Cooling Only Configuration , and adjust the current settings to "Heating and Cooling System".

Q: Why does the device state fail to update for a long time after the command is sent?

- The device state update depends on the polling messages of the IDU and ODU systems. The display of the controller may have a delay. Please wait patiently for 2 to 3 minutes;
- If the device state is not updated after a long wait, check whether the device has executed the lock option limit command.

Q: Why is the number of devices displayed on the interface less than the expected number?

- The devices in the same wired controller group will be displayed together. When the device running mode of the wired controller group is in control, the state of devices for other wired controller groups will be updated synchronously.

Q: Why is there no group available when editing the schedule?

- The group that has been created but has no device added is an empty group without device type. Such an empty group will not be displayed when editing the schedule. Before editing the schedule, you should edit the groups that need to be added to the schedule.

Q: Why is there no template available when editing the schedule?

- The schedule will determine the device type according to the added device or group, and will not use a template that is inconsistent with the device type. Before creating a schedule, make sure that the schedule template to be added has been created.

Q: Why is the DST option unavailable?

- If you need to enable the DST settings, select "DST setting interface is visible" in Service Settings > DST Configuration.

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