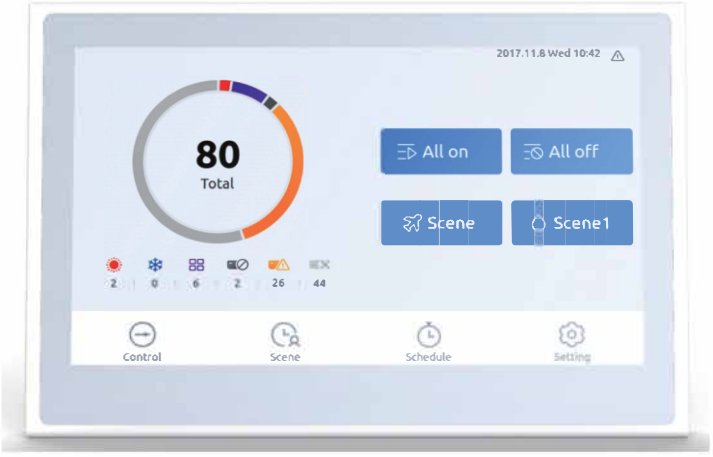
Operation Manual of VRF NV6 Centralized Controller KJ-08A1.00



⚠ Safety Warning

Only qualified personnel should install and service the equipment. The installation, starting up and servicing of heating, ventilating and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers and labels that are attached to the equipment.

April 2022

Please keep a backup after reading

Dear user:

Welcome to buy and use our products, and thank you for your trust in our company! We would like to create a comfortable and healthy living space for you with our dedicated service, and we hope you can give us your valuable comments on our work.

Please read this manual carefully before using this product, and please keep it properly after reading.

The Company is committed to continuous improvement of the product and reserves the right to change design and specifications without notice. Thanks for your understanding.

Contents

1 Instructions

1.1 Description ofIcons

Mode icon (The optional mode depends on the indoor unit used)			
Icon	Definition	Icon	Definition
	Auto mode		Refrigeration mode
	Dehumidification mode		Air supply mode
	Heating mode		Auto wind speed
	Low wind speed		Middle wind speed
	High wind speed		Blow wind left and right
	Blow wind up and down		

Note: The icons in the final program shall prevail. The logic description is only an explanation of contents.

1.2 Explanation of terms

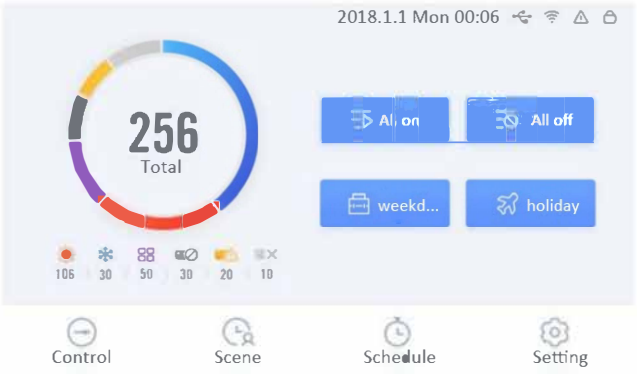
- System address: In general, an air conditioner is composed of different refrigeration systems. Each refrigeration system consists of indoor and outdoor units which run relatively independently. Therefore, the addresses of indoor and outdoor units in each system are unique, and the addresses of indoor units in different systems vary. The system address of air conditioner unit is formatted differently by various manufacturers, but it is generally used as the unique address to identify the unit by the centralized controller.
- Indoor unit: It refers to the object controlled by this centralized controller. It means an indoor unit of air conditioner, and the indoor unit has a unique system address.
- Outdoor unit: It refers to the outdoor unit connected to the indoor unit of air conditioner. An outdoor unit can be connected to one or more indoor units. In some customers' units, multiple outdoor units can be connected to multiple indoor units.

2 Language Selection Interface

The language selection interface will be displayed when the system is started after leaving the factory or the factory setting is restored and the system loading is completed.

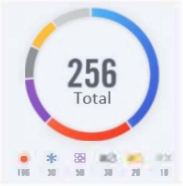
3 Home Page

The home page will be displayed after the program is started. The functions of unit state statistics, one-key all on, one-key all off, quick start of profiles and system time and state display are provided in this interface.



3.1 Unit Statistics Interface

The state and quantity statistics of all units are provided in the unit statistics interface.



Click the Unit Statistics Chart to directly enter the unit statistics page. In this page, the user can see the relevant information of the units under this centralized controller. The information is sorted by statistics of single units or group statistics.

Group name: It displays the group name of the air conditioner unit. If the group is not named by the user, a default name will be given.

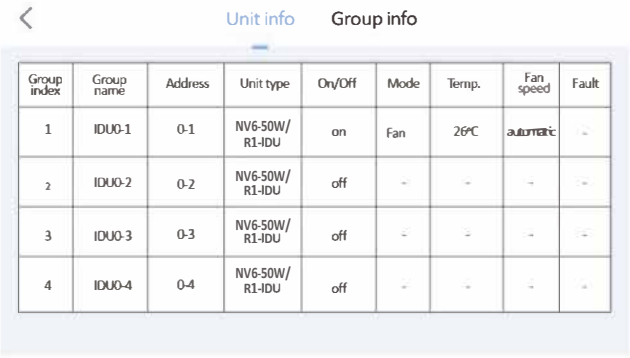
Unit name: It displays the name of the air conditioner unit. If the unit is not named by the customer, it will default to unit 1, unit 2, etc.

System address: It displays the system address of the air conditioner unit. This address is used as the unique address to identify the unit by the centralized controller. The whole form is sorted by this address. The format of address is: "ID_system address_address of indoor unit". For example: the address of indoor unit in system 1 is 1, and the indoor unit is named "ID_01_01"

Model: It displays the model of the air conditioner unit. If no model information is found, the model can be directly named INDOOR.

ON/OFF: It displays the ON/OFF state of the indoor unit. If the unit is turned on, "ON" will be displayed; if it is turned off, "OFF" will be displayed; in case of disconnection, a fault or no information detected, " — " will be displayed.

Mode, set temperature, wind speed and fault: It mainly expresses the mode and other information of the indoor unit . The mode and information updated actually will be displayed in real time.



Group index	Group name	Address	Unit type	On/Off	Mode	Temp.	Fan speed	Fault
1	IDU0-1	0-1	NV6-50W/ R1-IDU	on	Fan	26℃	automatic	-
2	IDU0-2	0-2	NV6-50W/ R1-IDU	off	-	-	-	-
3	IDU0-3	0-3	NV6-50W/ R1-IDU	off	-	-	-	-
4	IDU0-4	0-4	NV6-50W/ R1-IDU	off	-	-	-	-

The statistical information of single unit is consistent with the information of group statistics, but the forms are expressed differently.

Group index	Group name	Index	Unit name	Address	Unit type	On/Off	Mode	Temp.	Fan speed	Fault
1	Elevator	1	IDU0-1	ID_01_01	KFR-50 LW	On	Fan	28℃	low	-
		2	IDU0-2	ID_01_02	KFR-50 LW	Off	-	-	-	-
		3	IDU0-3	ID_01_03	KFR-50 LW	Off	Fan	26℃	low	fault
2	Shops	1	IDU0-4	ID_02_01	KFR-50 LW	Off	-	-	-	fault
		1	IDU0-4	ID_02_02	KFR-50 LW	Off	-	-	-	fault

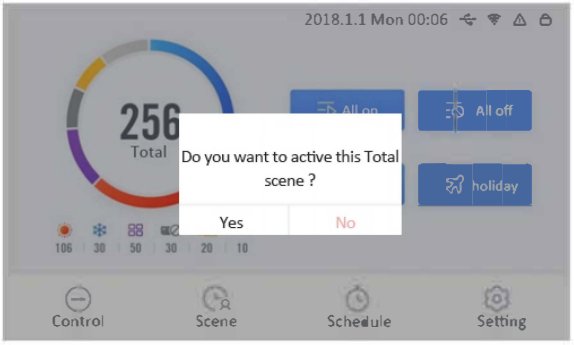
3.2 All ON and All OFF Buttons

All ON and All OFF buttons are provided on the main interface so that the user can directly turn on or turn off all devices.

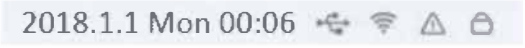
3.3 Profiles Button

Two buttons for profiles are provided on the main page so that the user can directly control the device through the profiles. The setting, adding and editing of profiles are described in detail on the setting page of profiles. The first two profiles set by the user are provided here. If no profiles are set by the user, they will default to the two profiles of "Workday" and "Holiday" set by the factory.

When the Profiles is clicked, a pop-up box will appear to confirm with the user whether to enable the profiles. The profiles will be enabled after being confirmed by the user.



3.4 State Bar



The state bar is at the top of main interface, displaying the basic information and state of the current system: date and time, USB interface state, WIFI state, unit fault state and system-locked state.

3.5 Function Entry Bar

The function entry bar is at the bottom of main interface. Click the corresponding buttons to enter the corresponding function interfaces.

4 Control Interface

The control interface is divided into three pages: all control, group control and single control according to the granularity of control, so that the user can conduct operations easily. The fault display is on the far right of selection bar. If a fault occurs to the unit, the fault display icon will appear.

4.1 All Control Function Interface

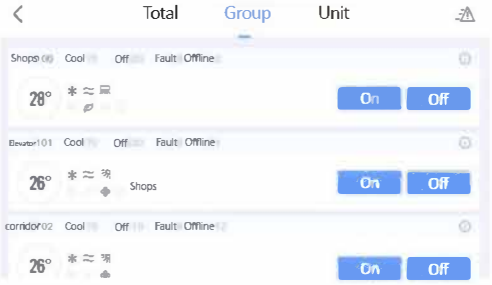
The statistical information of current control objects is provided at the top of all control interface, including number of units, number of startups in all modes, number of shutdowns, number of faults and number of offline operations. In the main interface of control, state information and control information are included:

- The state information refers to the control buttons highlighted (such as room temperature, left and right, auto, heating and other information detected by the first indoor unit in the figure above)
- The control information mainly refers to the control buttons (such as set temperature, blowing control, wind speed control, mode control and switch control). The other functions that are not commonly used such as sleep, negative ion, energy saving, fresh air and strong can be controlled by the "More" control button.

4.2 Group Control Function Interface

4.2.1 Group control list interface

Select Group Control to enter the group control list interface. The group control list interface displays all groups of current system. The state statistics of all units in each group and the last control command of each group are displayed. The functions of Group ON and Group OFF can be operated directly and rapidly in this interface. Click Group to directly enter the group control interface to control various modes and switches of indoor unit in this group.



4.2.2 Group control interface

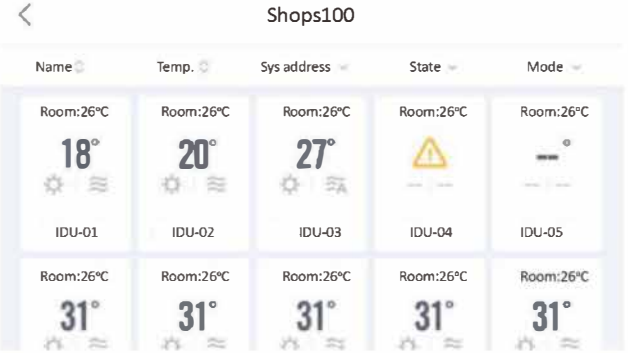
The units in this group can be directly controlled in the group control interf ace. The statistical information of current control objects is provided at the top of group control interface, including number of units, number of startups in all modes, number of shutdowns, number of faults and number of offline operations.

In the control interface, state information and control information are included:

- The state information refers to the control buttons highlighted (such as room temperature, left and right, auto, heating and other information detected by the first indoor unit in the fig ure above)
- The control information mainly refers to the control buttons (such as set temperature, blowing control, wind speed control, mode control and switch control). The other functions that are not commonly used such as sleep, negative ion, energy savi ng, fresh air and strong can be controlled by the "More" control button.

4.2.3 Group control information interface

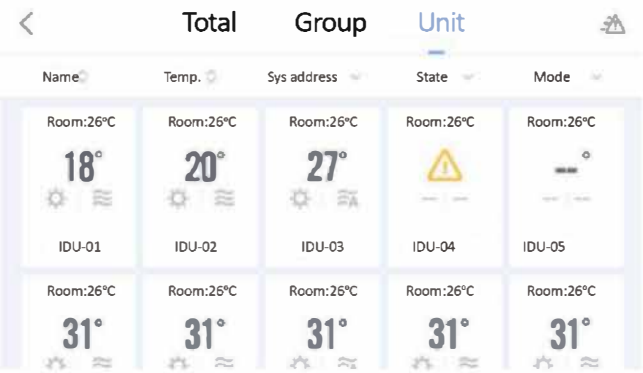
Click the Information button ⓘ at the top right corner of each group in the group control list interface, and the page will enter the group information interface. All units in this group and the state of units are listed in the group information interface.



4.3 Single Control Function Interface

4.3.1 Single control list interface

Click Single Control to switch to the single control list interface. The current state of all units in the system is listed in the main interface of single control. The unit list can be sorted and screened by name, temperature, system address, state and mode. Click a unit, and the page will enter the single control interface.



4.3.2 Single control interface

In the main interface of control, state information and control information are included:

- The state information refers to the control buttons highlighted (such as room temperature, left and right, auto, heating and other information detected by the first indoor unit in the figure above)
- The control information mainly refers to the control buttons (such as set temperature, blowing control, wind speed control, mode control and switch control). The other functions that are not commonly used such as sleep, negative ion, energy saving, fresh air and strong can be controlled by the “More” control button.

5 Profiles Interface

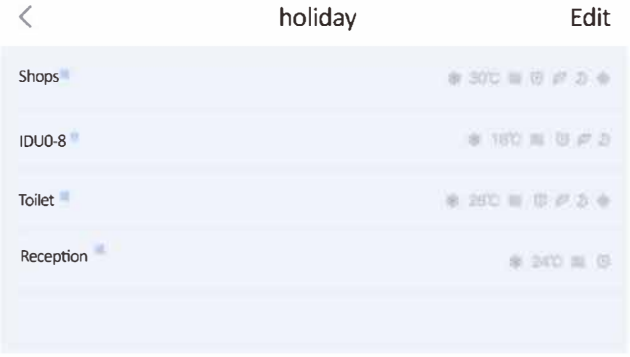
5.1 Main Interface of Profiles

Press on the home page to enter the main interface of profiles. The profiles refer to a set of control commands preset by the user. The user can pre-select the unit to be controlled and the operation mode and on-off state of the corresponding unit. After the user selects the profiles, the control command preset can be directly enabled.

Press the profiles box to enable the profiles. Press and hold the profiles box to sort the profiles. The top two profiles will be automatically displayed on the home page.

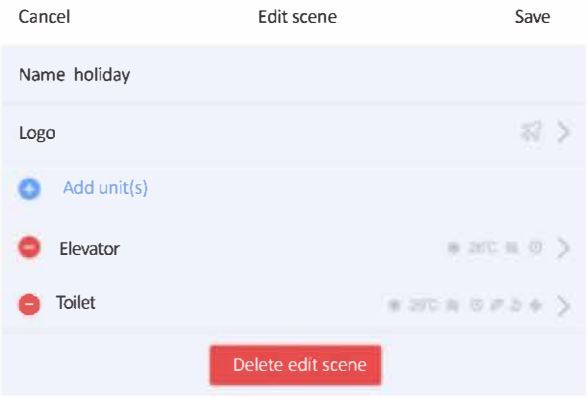
5.2 Profiles Detail Interface

Press at the top right corner of profiles in various Profiles buttons, and the page will enter the profiles detail interface. The unit in the corresponding profile and the control command information of the unit will be displayed in this interface. Press the Edit button at the top right corner of the interface, and the page will enter the profiles editing interface.



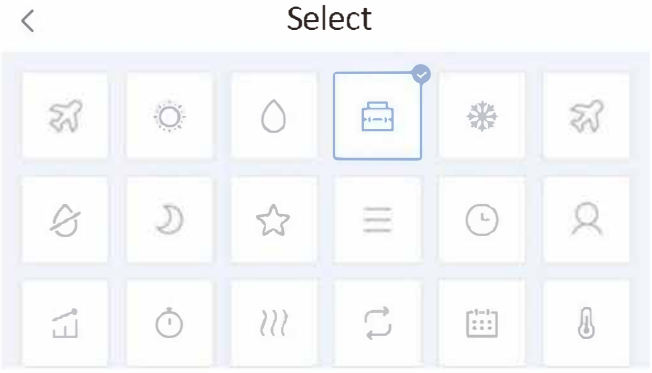
5.3 Profiles Editing Interface

In the profiles editing interface, the user can rename the profiles, change the icon and select the control unit and control commands.



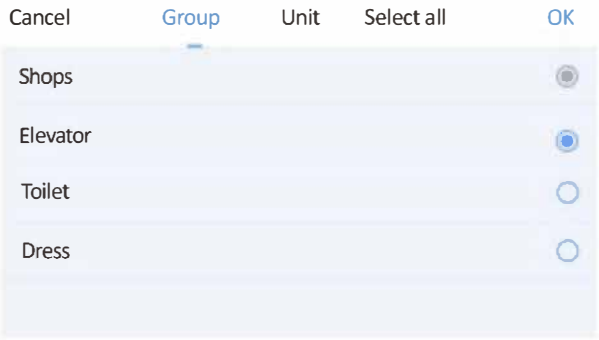
1) The user can name the profiles at “Name”.

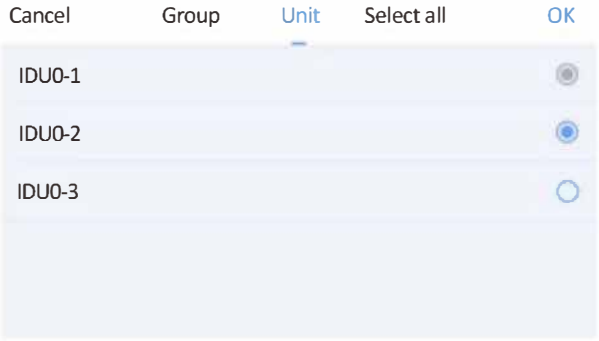
2) The user can select the corresponding icon of profiles at “Icon” so as to enhance the identification of profiles. Enter the icon selection interface as shown below:

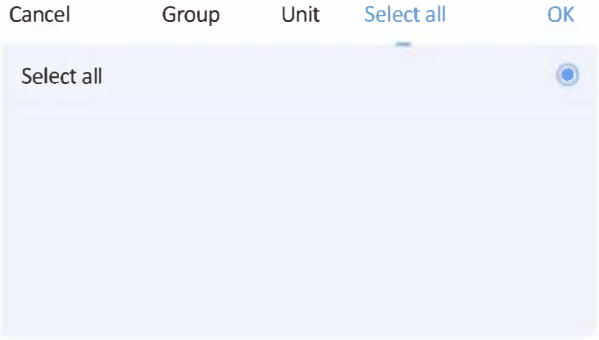


3) The user can select the air conditioner object to be controlled in the profile at “Add Air Conditioners Controlled”, so as to realize the profiles control of some air conditioners.

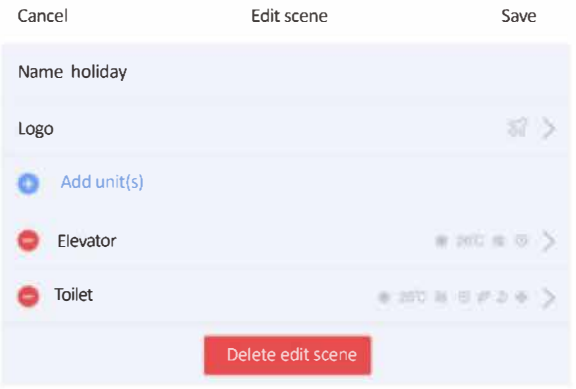
When selecting air conditioners, the user can select a unit, a group or all units based on needs.







4) Delete air conditioner: The user can press the "-" symbol on the left side of air conditioner to delete the air conditioner group.

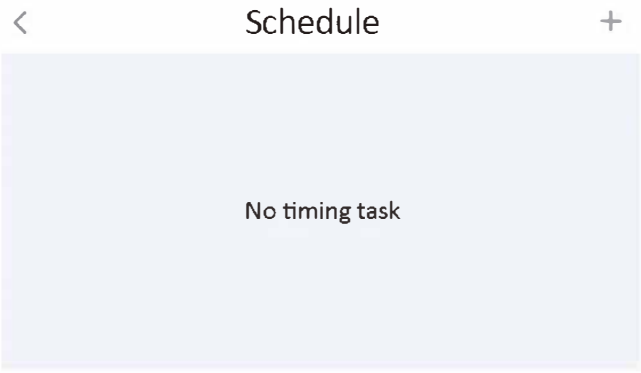


5) The control mode preset for the air conditioner object corresponding to the profiles is displayed in the fourth line and below. Click the ">" icon on the right side of the entry to preset the air conditioner control mode. The control interface has the same style as the other control interfaces.

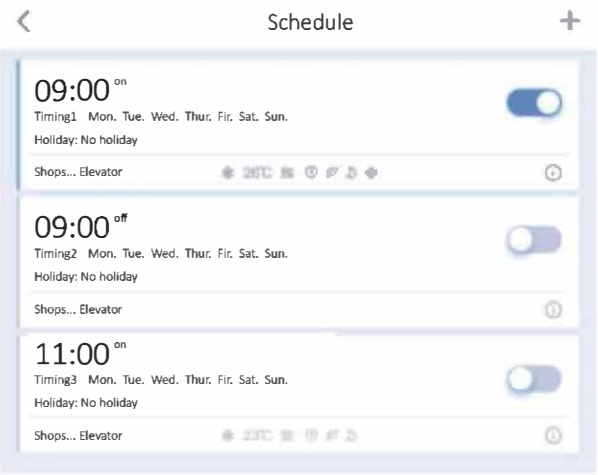
6 Timer Interface

6.1 Main Interface ofTimer

Press the button on the home page to enter the main interface of timer. The user can view or set the timing tasks of units in this interface. If there are no timing tasks, "No Timing Tasks" will be displayed in the center of interface.



The user can press the "+" button at the top right corner of the main interface of timer to add new timing tasks. When there are timing tasks, the name, time, command action, weekly cycle and other information of timing tasks will be displayed in the main interface of timer.

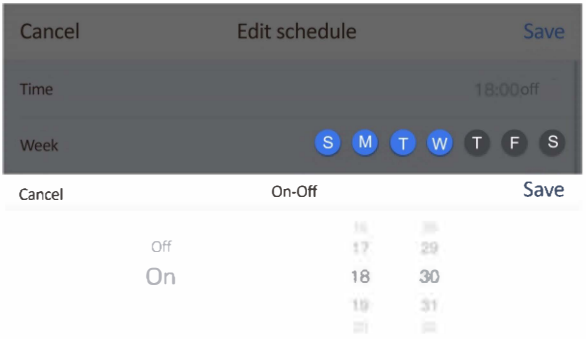


The user can set to enable or disable the timing task by using . Press the button to enter the timing task editing interface.

6.2 Timing Task Editing Interface

In the timing task editing interface, the user can edit the time, weekly cycle, exception timing, timing name and control unit of timing task.

Click “Time”, and a time selection box will pop up. The user can select the time and ON/OFF in this box.

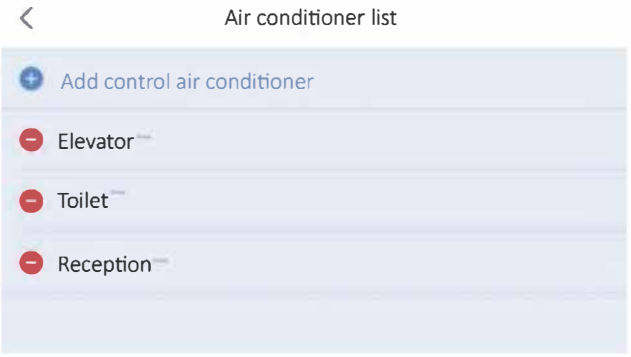


The week item can be used to set the repeating day of every week. The background color of the selected day will become blue, indicating that the timing task will be executed on this day every week.

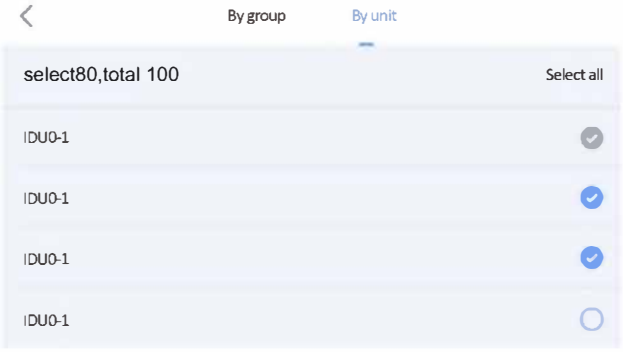
Click Control to enter the control command editing interface. The user can edit the timing control command in this interface.

6.2.1 Air conditioner list setting

Click “Air Conditioner” in the timing task editing interface to enter the unit selection interface. The user can add or delete a unit that executes the task in this interface.



Click “Add Air Conditioners Controlled” to enter the unit selection interface. Thelist of units that can be added is displayed in theunit selection interface. When selecting units,the user can switch to the mode of selection by group or selection by unit, and multiple items in the list can be selected. Among them, the unitsdisplayed in gray have been added.



6.2.2 Exception timing setting

If the user does not need to execute the timing task on a specific day, the day can be set as exception timing date. The timing task will not be executed on the day set as exception timing date.

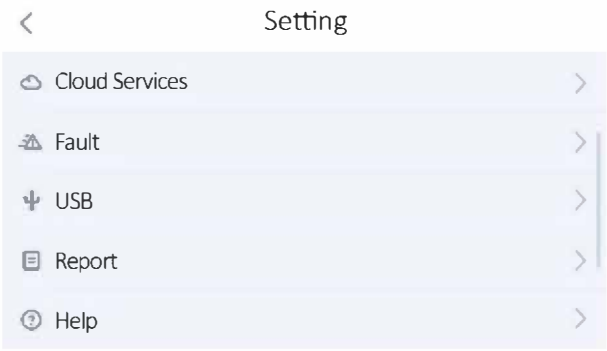
Click Exception Timing to enter the exception timing editing interface. The user can add, edit and delete exception timing tasks in this interface.

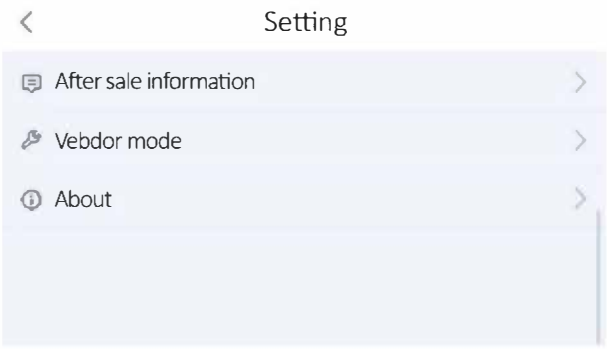
Click Add at the top right corner to enter the exception timing adding interface. Click Add Date to add the exception timing date for this group.

7 Setting Interface

7.1 Main Interface of Setting

Click the button on the home page to enter the main interface of setting. The settings of various information such as air conditioner information setting, underlying setting of the device, network setting, report information and after-sales setting are provided in this interface.



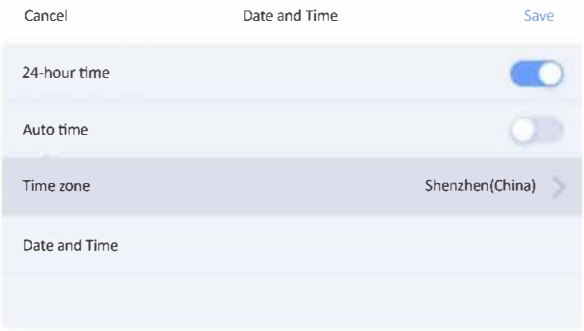


7.2 General Setting

Press "General" on the setting home page to enter the general setting interface. This interface is used to set the date and time, screen lock, screen brightness, screen-on time, volume, temperature display unit, language and factory reset of the device.

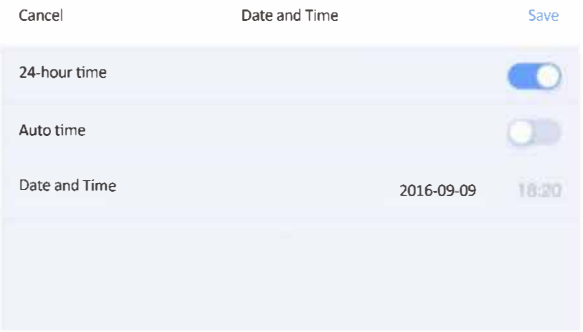
7.2.1 Modification of data and time

In the general setting interface, the user can manually modify the date, time, time zone and time display mode according to needs or enable the function of automatic time checking to set the time automatically.



When the function of automatic time checking is disabled, the user can click Date and Time to manually set the date and time of system.

After the function of automatic time checking is enabled, the system will connect to the time checking server of external network to automatically check the time. The user cannot manually set the date and time at this time.



7.2.2 Screen lock

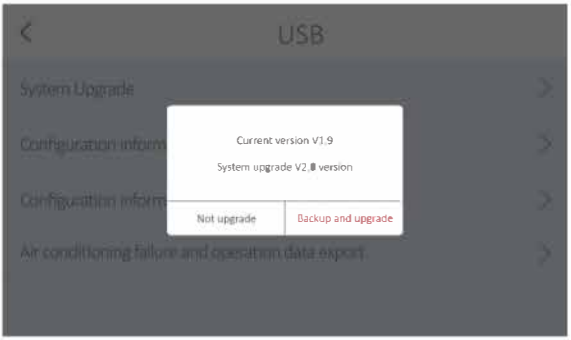
The screen lock function is used to automatically lock the system after the screen is turned off. When the screen is turned on again for operation after the system is locked, the user needs to enter the password to unlock the system. The unlocking password can be set, modified and canceled in this setting item.

7.3 USB Setting

This device is equipped with a USB interface. The functions of system upgrade, configuration information data import, configuration information data export and air conditioner fault and operation data export can be implemented through USB.

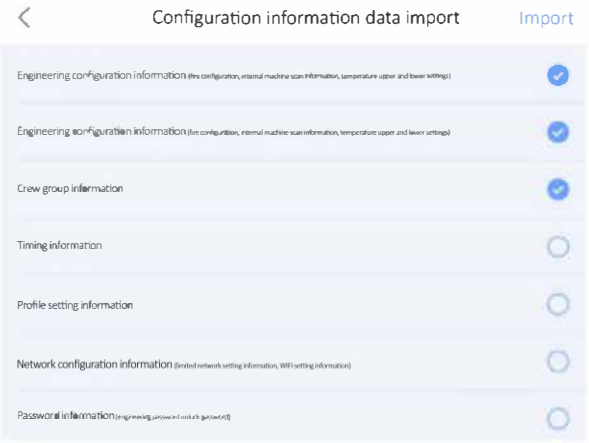
7.3.1 System upgrade

This function is used to upgrade or rewrite the system software through a U disk.

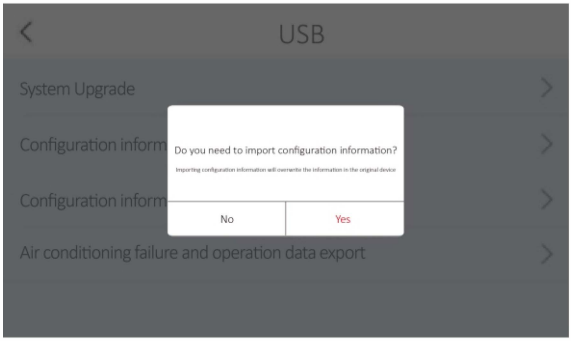


7.3.2 Configuration information data import

The configuration information can be imported through a U disk, and the original settings will be overwritten after importing. The configuration information that can be imported includes: engineering configuration information (engineering settings such as fire control configuration, indoor unit scanning results and setting of upper and lower temperature limits), unit naming information (single unit and group), unit grouping information, timer setting information (weekly timer and exception timer), profiles setting information, network configuration information (wired and wireless network setting information) and password information (engineering password and unlocking password).



Click the “Import” button at the top right corner, and a prompt will pop up to remind the user to confirm import configuration.



7.3.3 Configuration information data export

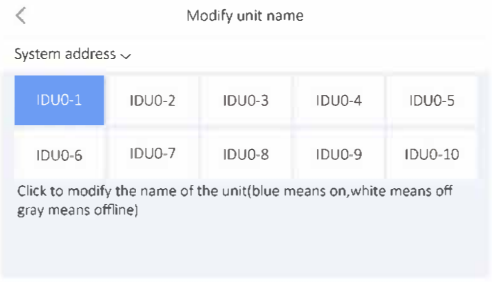
The configuration information can be exported for backup through a U disk. The configuration information that can be exported includes: engineering configuration information (engineering settings such as fire control configuration, indoor unit scanning results and setting of upper and lower temperature limits), unit naming information (single unit and group), unit grouping information, timer setting information (weekly timer and exception timer), profiles setting information, network configuration information (wired and wireless network setting information) and password information (engineering password and unlocking password).

7.3.4 Air conditioner fault and operation data export

The system fault information and operation information can be exported to a U disk. The system fault information includes: fault of inner unit (fault time and type of indoor unit), fault of outdoor unit (fault time and type of outdoor unit), statistical operation data of indoor unit (accumulative operation time of indoor unit) and statistical operation data of outdoor unit (accumulative operation time of outdoor unit).

7.4 Air Conditioner Renaming

The function of renaming air conditioner can be used to rename the units connected to the system, so that the user can manage and identify some specific units easily. Select the system address to screen and display the system address of device. The user can directly observe the change in unit state in the interface after operating the air conditioner switch on site with the remote control or wire controller and changing the unit state. Click the corresponding unit to rename the unit.

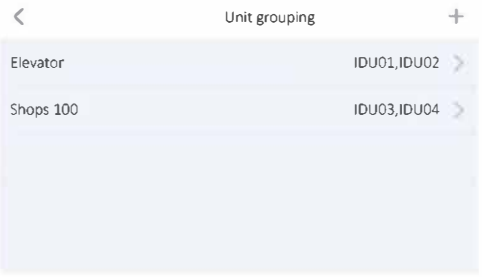


7.5 Air Conditioner Grouping

The function of grouping air conditioner can be used to group the units connected to the system so that the user can uniformly manage some devices. Different units can be divided into the same group to realize group management. A single unit can be assigned to multiple groups.

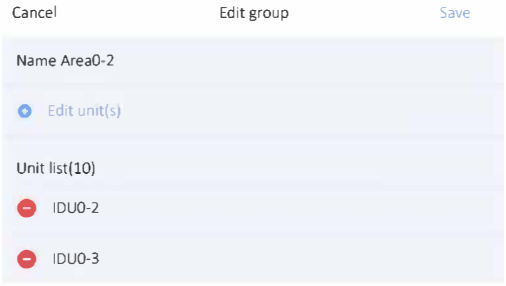
7.5.1 Main interface of air conditioner grouping setting

Press “Group Air Conditioner” on the setting home page to enter the air conditioner grouping setting interface.



7.8.2 Group editing

Click Group Name in the air conditioner grouping interface to enter the group editing interface. The user can rename a group, add or delete a unit or delete a group in the group editing interface. Click the name to edit the group name. Click the unit to be deleted in the list item. The number after "Air Conditioner List" indicates the number of current units in this group.



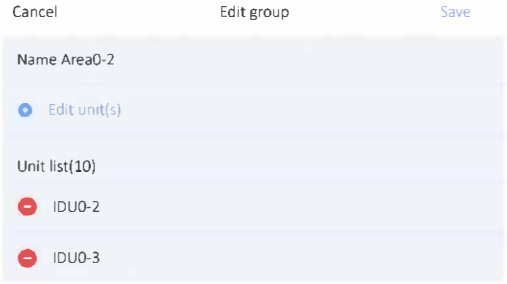
Click Add Air Conditioner to switch to the air conditioner adding interface. The user can directly click "Select All" in the first line to select all units, or separately select the units to be added. The units in gray have been selected, and repeated selection is not allowed.

After the Delete Group button at the bottom of group editing interface is clicked, a prompt will pop up to remind the user to confirm the deletion.

After all parameters to be edited are completely edited in the group editing interface, click the "Save" button at the top right corner to save the group information.

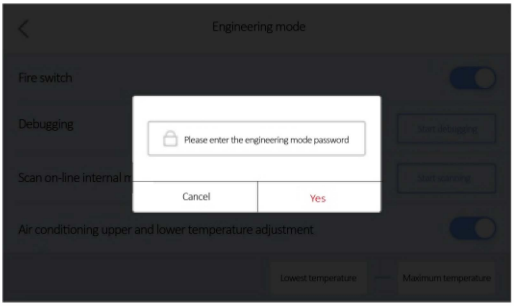
7.5.3 Group adding

Click the "+" at the top right corner of air conditioner grouping interface to enter the group adding interface. The group adding interface is similar to the group editing interface. After the corresponding group information is filled in, click Save to save the group information.

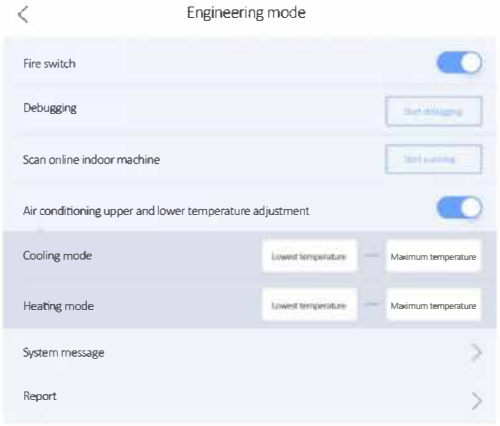


7.6 Engineering Mode

The engineering mode is mainly used for first debugging and follow-up repair and maintenance by engineering personnel. After the password for engineering mode is authenticated, the engineering personnel can set the parameters and settings related to the unit system in this interface.

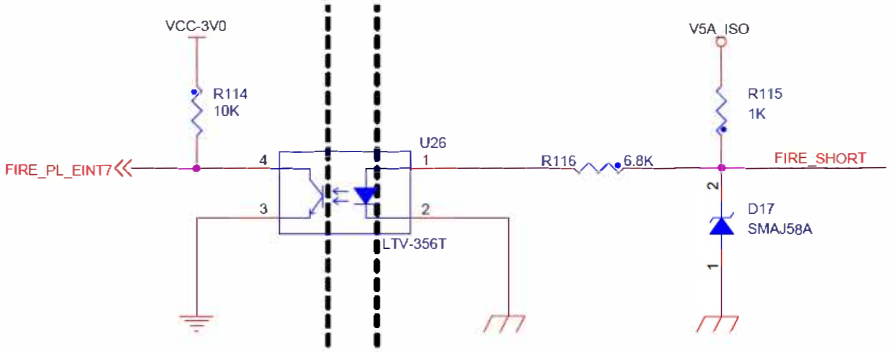


After the engineering password is entered, the page will enter the engineering mode interface.



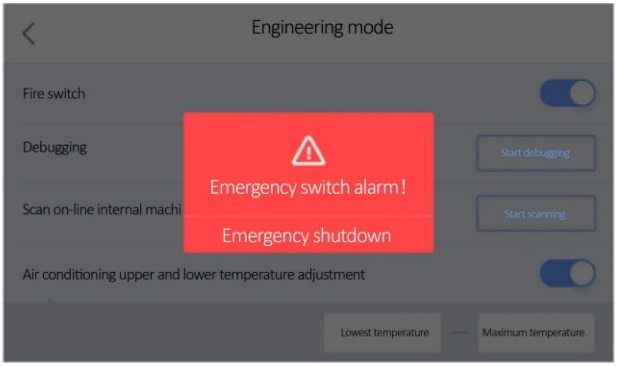
7.6.1 Enable fire control switch

The two fire control switches at the bottom of centralized controller are used to input fire alarms. The diagram of fire control input is as follows:



Among them, the FIRE_SHORT signal is the terminal signal of fire control input. After the fire signal is pulled, an interrupt signal will be transmitted to the inside of system to trigger a fire alarm event.

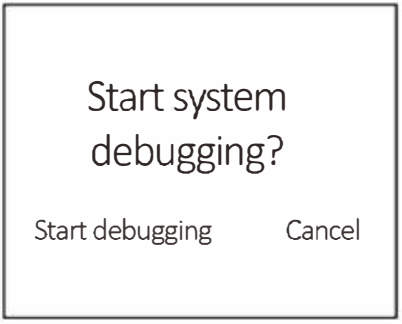
After the "Fire Control Switch" setting is enabled in the settings, the system will monitor the state of the two switches in real time. If the system detects that the switches are off, it will consider that there is a fire alarm signal. The system will immediately shut down all units, and simultaneously give a fire alarm prompt in the interface.



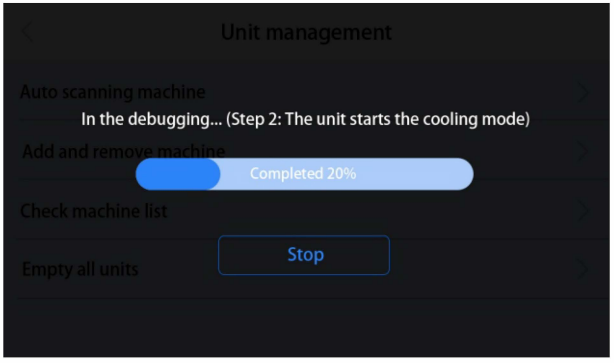
7.6.2 Debugging function

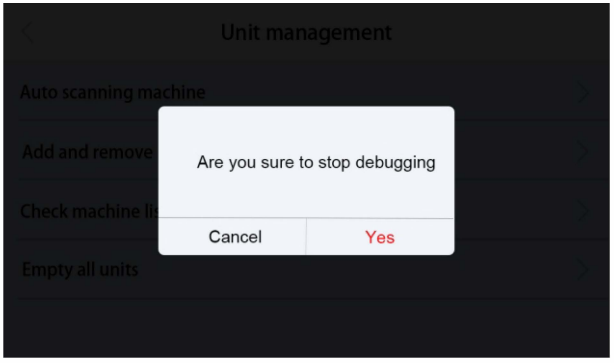
This centralized controller is equipped with the function to debug the air conditioner system. The unit can enter the debugging function through the engineering mode after first installation. The debugging can be stopped at any time during the debugging process, and the debugging progress can also be determined according to the state of indoor unit and system.

Click Debug, and a pop-up box will appear to confirm with the user whether to start the debugging program.

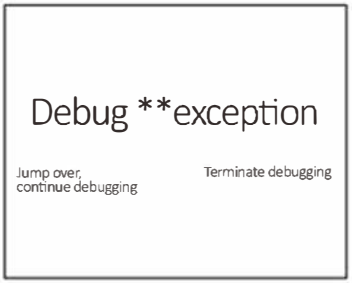


After the user confirms the startup of debugging program, the system will enter the automatic debugging function and display the current debugging progress. The user can see the operation steps and state of the current debugging unit, and stop the debugging progress at any time.

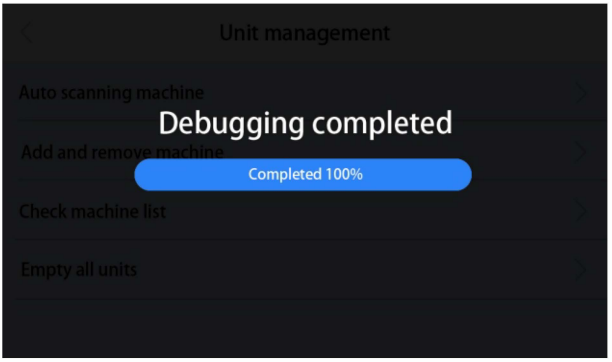




If an exception occurs during the debugging process, a pop-up box will appear to confirm with the user whether to continue debugging or stop debugging.



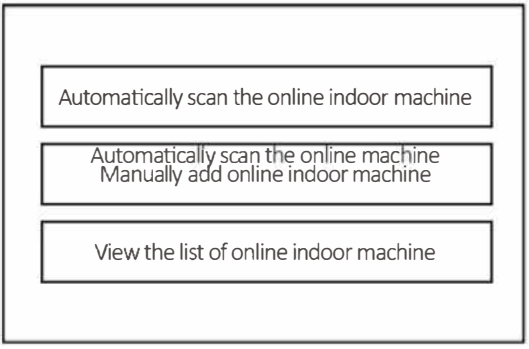
When the debugging is completed, the system will give a confirmation prompt, and after confirmation, the debugging program will be ended.



7.6.3 Scan online indoor units

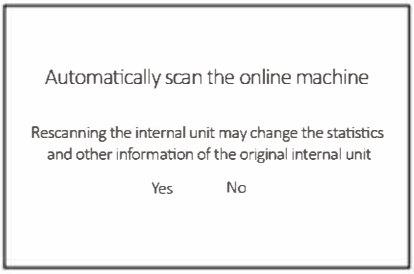
This centralized controller can directly scan the indoor units connected. The number of indoor units, their addresses and models and other information can be determined through the device network, so that the engineering personnel can determine the conditions of indoor units connected to the centralized controller

After entering the online indoor unit scanning interface, there will be 3 options:

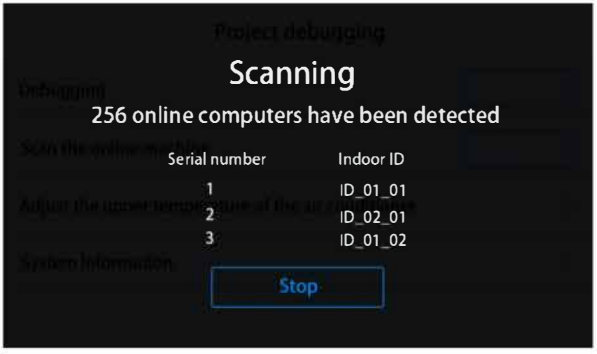


7.6.3.1 Automatically scan online indoor units

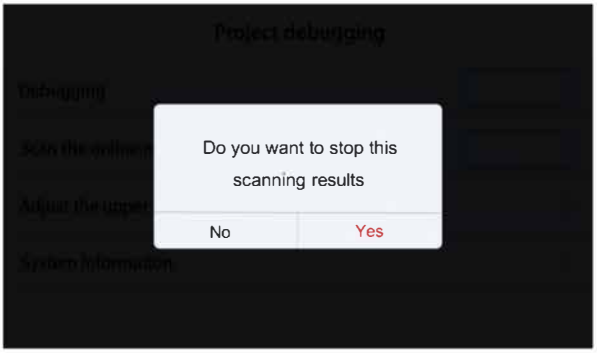
The system can automatically scan all units connected through the function of automatically scanning online indoor units. After entering this function, the system will confirm with the user whether to start the scanning program. If the function of rescanning units is enabled, the original unit information will be overwritten.



After the user confirms the scanning of indoor units, the page will enter the indoor unit scanning interface. The system will start to automatically search for online units. The scanning program will be stopped at any time by pressing the Stop button.

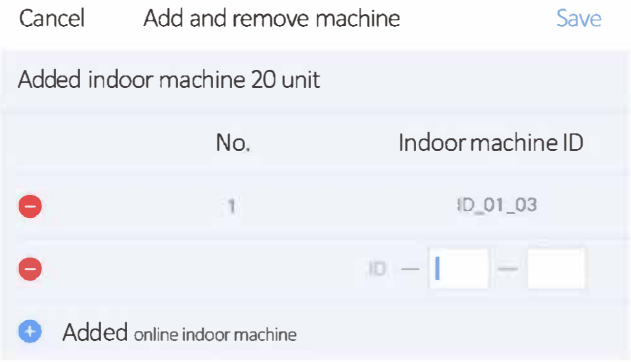


After the scanning is completed or manually stopped, a pop-up box will appear to confirm with the user whether to save the scanning results. After confirmation, the scanning information will be written to the system.



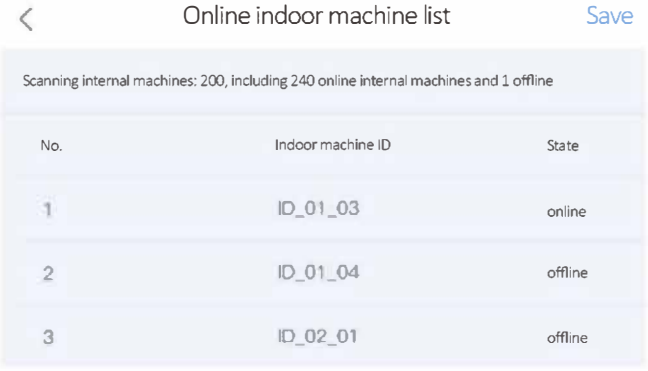
7.6.3.2 Manually add online indoor units

The user can manually add indoor units through the function of manually adding online indoor units. The user only needs to manually enter the ID of unit to be added and press the Save button.



7.6.3.3 View list of online indoor units

The user can view the existing units through the function of viewing list of online indoor units. The units are sorted by their system addresses, and the number of indoor units scanned, number of online indoor units and number of offline indoor units are displayed in the header.

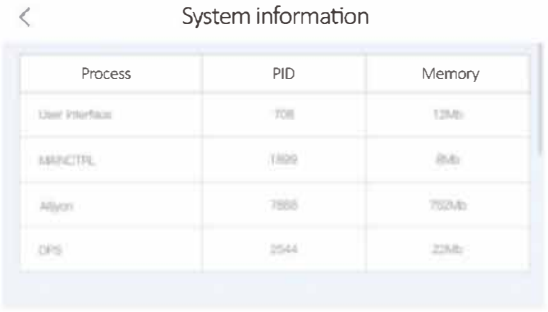


7.6.3.4 Adjust upper and lower temperature limits of air conditioner

This function can be used to edit the upper and lower temperature limits of indoor unit. After the setting is completed, the unit can be controlled by remote control or wire controller only within the temperature range. If this setting is disabled, the temperature control range of indoor unit will remain unchanged.

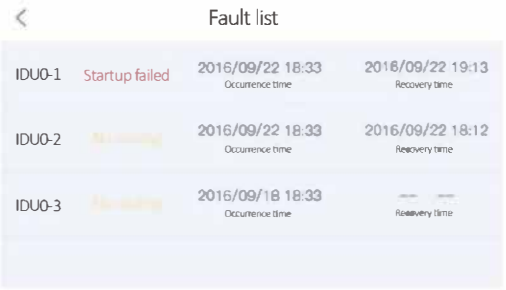
7.6.3.5 System information

This function can be used to view the operation parameter information of internal programs of system. The system information serves as a reference for system maintenance.



7.7 Fault List

The system will list the fault history after entering the fault list, so that maintainers can position and eliminate the existing problems.



7.8 Help

This function allows the user to view the help information of all system functions.

7.9 About

This function is used to display the loader version, kernel version, application software version, application software date, MAC address and other information of this device.