OPERATION MANUAL

IMMPRO Operation Manual

Thank you very much for purchasing our product.
Before using your product, please read this manual carefully and keep it for future reference.

- This manual gives detailed description of the precautions that should be brought to your attention during operation.
- In order to ensure correct service of the IMMPRO please read this manual carefully before using the unit.
- For convenience of future reference, keep this manual after reading it.

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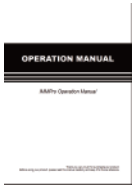


User manual x 1

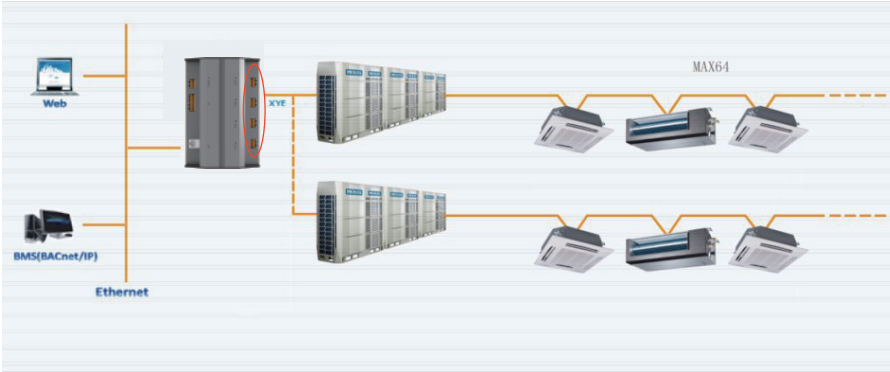
Dongle x 1

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

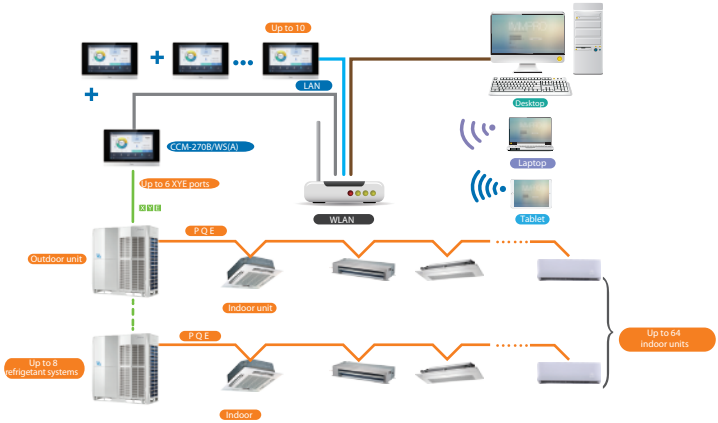
1 IMMPRO OVERVIEW

1.1 About the IMMPRO System

Intelligent Manager of Pro (IMMPRO) is ''s new-generation VRF management system. It consists of three parts: IMMPRO software, IMMP-BAC(A) or CCM-270B/WS(A), and VRF refrigerant system. The IMMPRO software communicates with IMMP-BAC(A) or CCM-270B/WS(A) via the network to control and manage the VRF units. The following figure shows the composition of the IMMPRO system:



IMMPRO system composition 1



IMMPRO system composition 2

1.2 Compatible Models

IMMPRO can connect up to 10 IMMP-BAC(A) or CCM-270B/WS(A) devices. When 10 IMMP-BAC(A) devices are connected, IMMPRO supports up to 320 refrigerant systems (2560 indoor units); when 10 CCM-270B/WS(A) devices are connected, IMMPRO supports up to 480 refrigerant systems (3840 indoor units).
Note: IMMPRO is compatible with the latest V6/V6i/VX/VXi/VCPro/Mini C/V6R system. In case other system is used, some IMMPRO functions may not be available. Please consult the technical support team before you make your purchase.

1.3 IMMP-BAC(A) and CCM-270B/WS(A)

IMMP-BAC(A) has four XYE ports. Each XYE port can connect to 8 refrigerant systems and 64 indoor units at maximum. Refer to IMMP-BAC(A) gateway User Manual for specific wiring.

IMMP-BAC(A)

CCM-270B/WS(A) has six XYE ports. Each XYE port can connect to 8 refrigerant systems and 64 indoor units at maximum. Refer to CCM-270B/WS(A) User Manual for specific wiring.

CCM-270B/WS(A)

Note: Refer to the respective installation manuals for installation and wiring of IMMP-BAC(A) and CCM-270B/WS(A).

1.4 IMMPRO Software Function Overview

You can use the IMMPRO software to monitor and control the air conditioning system. IMMPRO software functions are as follows:

Main functions are:

■ Main page

In this page, all the functions of the IMMPRO software are available and user can use them as per his convenience

■ Monitor

This function allows the user to monitor and control the indoor units, outdoor unit and the gateway devices

■ Floor Plan

This function allows to insert an image or map into the software and the air conditioners can be controlled more conveniently through the map

■ Schedule

This function allows to set a schedule for the air conditioners

■ Energy Statistics

This function allows to query the Electricity consumption charge of the indoor units inside the software

■ Group Management

This function allows to make groups inside the software to control the air conditioners in an easier way

■ Operation Data

This function shows the detailed parameter values and the changes that happened for each indoor unit or outdoor unit inside the software

■ System Log

This function shows the history of changes done for the system using the software

■ Settings

This function allows to do some settings regarding the software operation

1.5 Computer System Requirements to Run IMMPRO

	Required specifications	Remarks
PC	CPU: i7 or higher Memory: 16GB or greater Display card: Discrete graphics card, GTX1060 Hard disk: 1TB or more Screen resolution: > 1920 x 1080 Screen size: > 24"	For the computer to run normally, a desktop is recommended. IMMPRO requires a standalone computer to ensure that the computer settings will not cause IMMPRO to fail.
System	Windows 7 Ultimate 32/64-bit, Windows 10 Professional 32/64-bit	
File format	NTFS	

1.6 IMMPRO Installation and Commissioning

A professional and qualified engineer will be responsible for IMMPRO installation and commissioning. This manual only introduces the IMMPRO functions, their use and operating procedures. Refer to the respective technical manual for contents specific to installation and commissioning.

Note: Before you use IMMPRO, use IMMP-BAC(A) or CCM-270B/WS(A) to search for device. Otherwise, IMMPRO will not be able to search the relevant device. Please wait as the search for device takes seven minutes.

2. OVERVIEW OF IMMPRO FUNCTIONS

You can click a function tab at the top to access the corresponding function page.

2.1 Login

To log in IMMPRO, do as follows:
1. Run the IMMPRO
2. Enter the username and password on the login page. Then, click →

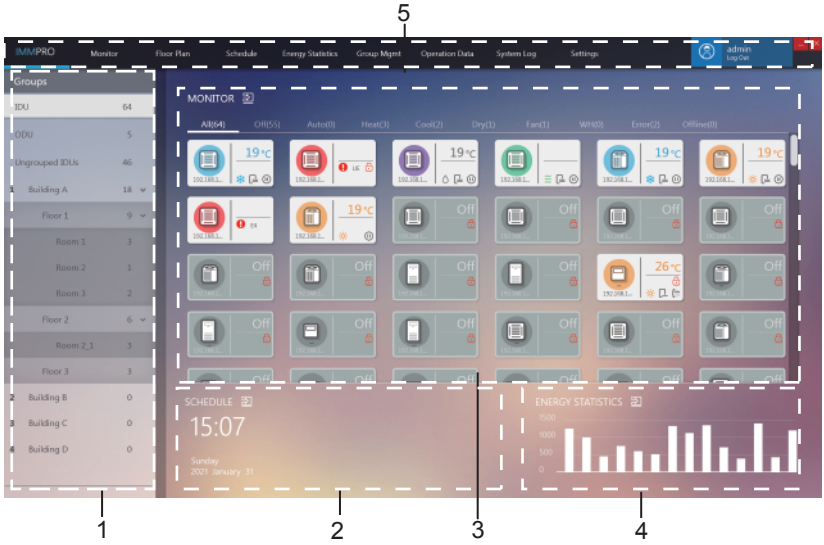
Login account description:

Account Type	Account Description
Login as normal user	Created by an advanced administrator account
Anonymous login	Click Guest Account on the login page to go to the anonymous account

A normal user account is created by the installation and commissioning personnel using the advanced administrator account.
At first login, you need to manually click on the login button →. With "Auto Login" checked after the first successful login, the account will automatically log in the next time you run IMMPRO.
*If you log in to IMMPRO anonymously, you can only view part of the IMMPRO function pages, which only allows you to check the current operating status of the indoor unit, and you cannot send any control commands to the indoor unit.
*Run as Administrator is required to start the IMMPRO.

2.2 Main Page

This section introduces the Main page.
The Main page is the default page for IMMPRO. You can check the operating status of the indoor and outdoor units monitored by the IMMPRO, as well as the current schedule waiting to be implemented.



No.	Item	Description
1	Group Navigation	Shows the groups created by the user
2	Current day schedule	Shows the commands scheduled to be implemented today
3	Device status	Shows the current status of the devices in the selected group
4	Energy Statistics	Energy statistics in graphical format
5	Function menus	Contains many functional menus.  When you click the area as indicated in the red box, the system exits the current account

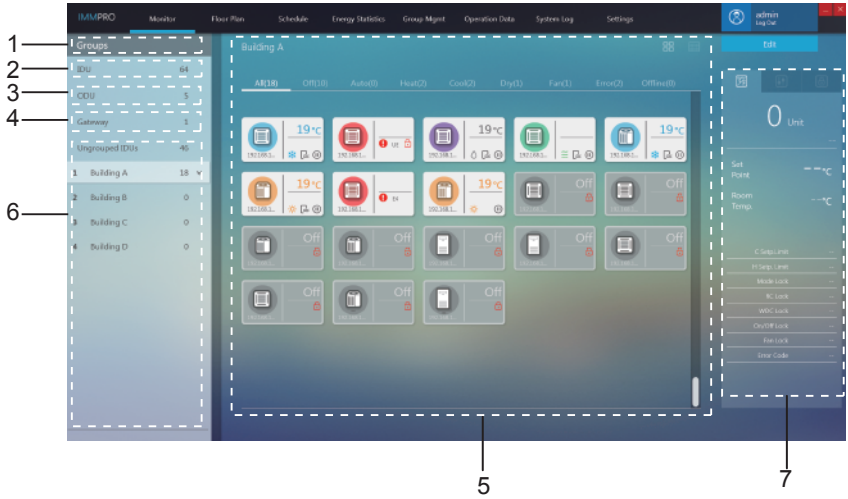
Click  in the red box to go directly to the corresponding menu function. Alternatively, you can click a function menu as required.

*Energy Statistics: The graph is fixed, and is not a histogram corresponding to the real-time energy consumption data.

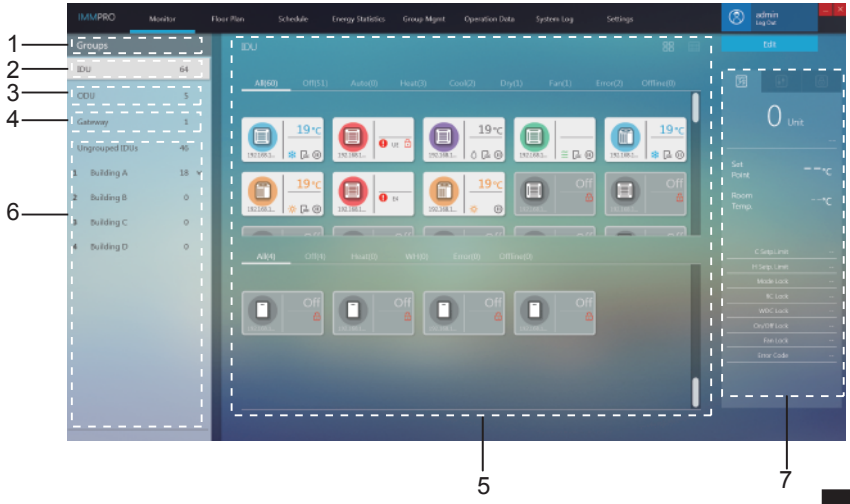
*If text like the group name and device name is too long and exceeds the display area, only the abbreviation will be shown. Mouse over these texts to view the full name in a pop-up window. For details, refer to the appendix, "Display Name Abbreviations".

2.3 Monitor

Below is an overview of the device monitor page.



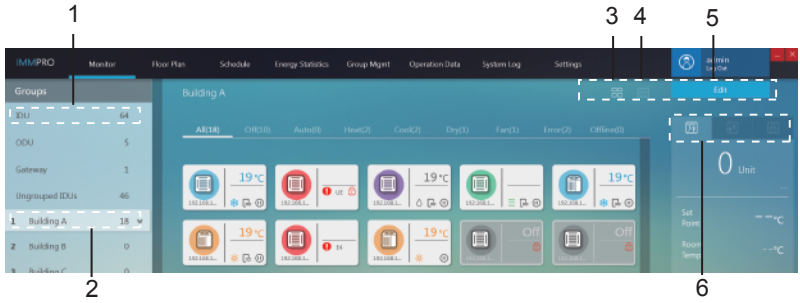
If the selected group supports high-temperature hydraulic module, the interface is as follows:



No.	Item	Description
1	Group Navigation	Shows the groups created by the user
2	IDU	All indoor units monitored by IMMPRO
3	ODU	All outdoor units monitored by IMMPRO
4	Gateway	All gateways monitored by IMMPRO
5	Device information view	Displays information about gateways, IDUs or ODUs
6	User groups	Groups created by the user. Supports 3 levels of group display
7	Device monitor	Details about IDU and IDU control functions

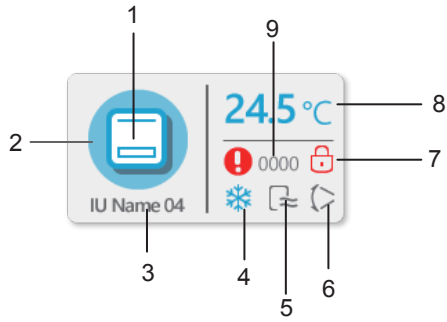
2.3.1 IDU

On the Monitor page, select a group in "Group Navigation" on the left. The IDU monitor page is displayed on the right:



No.	Item	Description
1	IDU	All indoor units monitored by IMMPRO
2	User groups	Groups created by the user. Supports 3 levels of group display
3	IDU icon view	Displays IDU information with icons. For details, refer to 2.3.1.1
4	IDU list view	Lists the IDU information. For details, refer to 2.3.1.2
5	Edit	Clicks to go to the editing page for the specific IDU. For details, refer to 2.3.1.4
6	IDU control interface	Details of the IDU as well as control and lock the IDU. For details, refer to 2.3.1.3

2.3.1.1 IDU icon view



No.	Item	Description
1	Model icon	Indicates the device to be managed
2	Background mode colour	Shows the current mode of the device
3	Device name	Customized device name; default naming rules: gateway IP address + port number + refrigerant system number + device address, for example: 192.168.1.112-0-2-22
4	Mode Icon	Shows the current mode of the device
5	Fan speed icon	Shows the current fan speed status of the device
6	Swing icon	Displays the current swing status of the device
7	Lock indicator	Indicates the current lock status of the device
8	Set Temperature	Value of the set temperature
9	Error code	Displays the specific error code

Icons for different IDU models

On the icon page:

Icon	Model
	Older models (Non-V6 IDU)
	Wired controller unit (multiple IDUs connected to the same wired controller) * For details, see appendix “Wired Controller Group".
	4-WAY
	WALL
	M-DUCT
	L-DUCT
	AHU
	H-DUCT
	COMPACT
	C&F
	FS
	FAPU
	SPLIT
	HRV
	1-WAY
	2-WAY
	Console

	HTHM
	FAPU
	FAPU
	AHUKIT(RAC)
	FS
	AHUKIT(DAC)
	The system does not support auto mode.
	The system supports auto mode.

Background colour and icons for different IDU modes

Background colour indicates the operating mode

Background Colour	Mode Icon	Operating Mode
		Auto
		Cool
		Dry
		Heat
		Fan
		Auto
		EXCH
		Bypass
		Free
		Water heat
	No display in this area	Standby (Off)
	No special status. Displays the real-time mode	Error
	No display in this area	Offline

Icons for IDU fan speeds

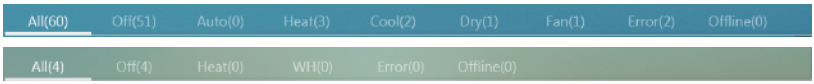
Icon	Fan speed status (3 speeds)	Fan speed status (7 speeds)
	Breeze	Speed 1
	Low	Speed 2
	--	Speed 3
	Mid	Speed 4
	--	Speed 5
	High	Speed 6
	Super-high	Speed 7
	Auto	Auto

Icons for IDU swing

Icon	Swing	Icon	Swing
	Angle 1		Angle 5
	Angle 2		Stop swing
	Angle 3		Start swing
	Angle 4		

Quick IDU classification

On the Monitor page, select all the IDU groups or customer-defined IDU groups to view the status of the selected IDUs on the right.



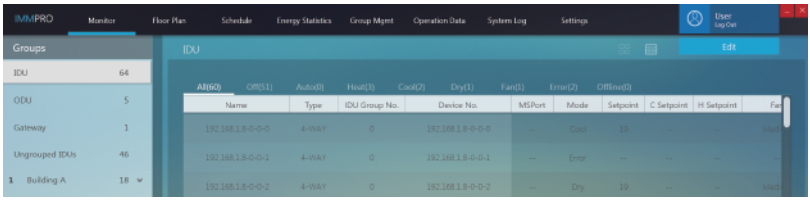
Icon	Description	Icon	Description
All(128)	Selected	All(128)	Unselected

Note: Grouping by quick classification is based on the operating status of the devices when the option is selected. If the status of the IDU changes subsequently, the change will not be reflected automatically.

About IDU status classification

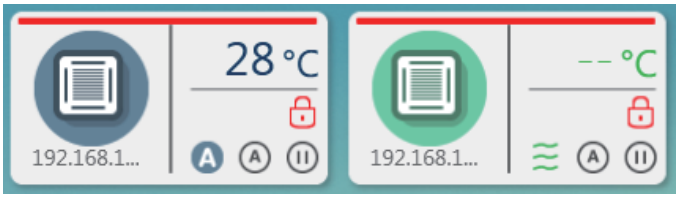
Status	Description
All	All IDUs
Off	IDUs in the "OFF" operating mode that are not offline and have no error
Auto	IDUs in the "AUTO" operating mode that are not offline and have no error
Heat	IDUs in the "HEAT" operating mode that are not offline and have no error
Cool	IDUs in the "COOL" operating mode that are not offline and have no error
Dry	IDUs in the "DRY" operating mode that are not offline and have no error
Fan	IDUs in the "FAN" operating mode that are not offline and have no error
WH	IDUs is in the “Water Heat” operating mode that are not offline and have no error
Error	IDUs that have errors and are not offline
Offline	IDUs that are disconnected

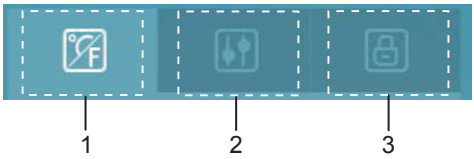
2.3.1.2 IDU list view



2.3.1.3 IDU control interface

When the device monitor page is displayed in the icon view, select all the IDU groups or user-defined groups to view the IDU control interface of the device monitor module on the right.
In the icon view, when a device to which you need to send the control command is selected, the corresponding IDU icon will be highlighted with a red line, as shown below:



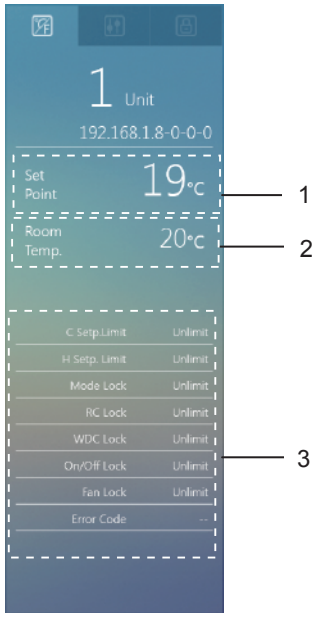


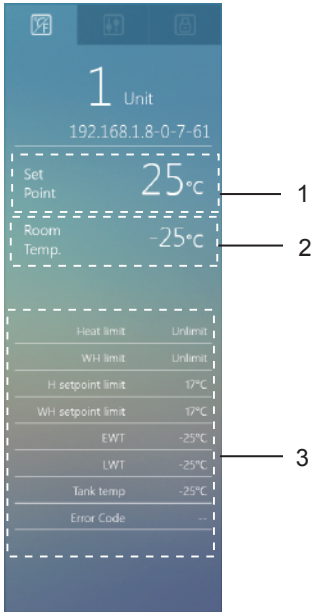
No.	Item	Description
1	Details	Displays the details of the IDU
2	Control	Controls the status of the IDU
3	Lock	Controls the lock in the IDU

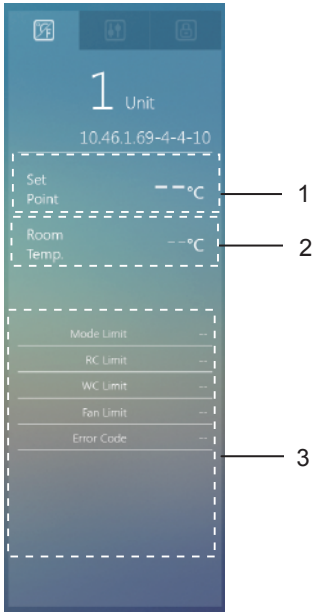
*You can only select one IDU to view the details at a time. For regular control and lock control, you can select multiple IDUs.
*For regular control and lock control, click to select or deselect the IDU.

Details

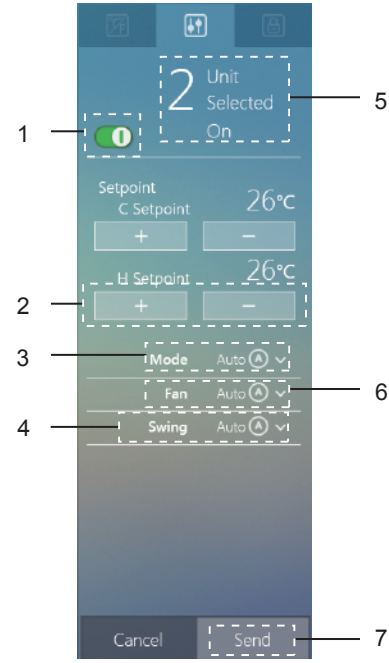
No.	Item	Description
1	Setting Temp	Displays the set temperature for the selected IDU
2	Room Temp	Displays the current indoor temperature of the selected IDU
3	Lock status	Displays information about the lock status of the IDU and the error codes

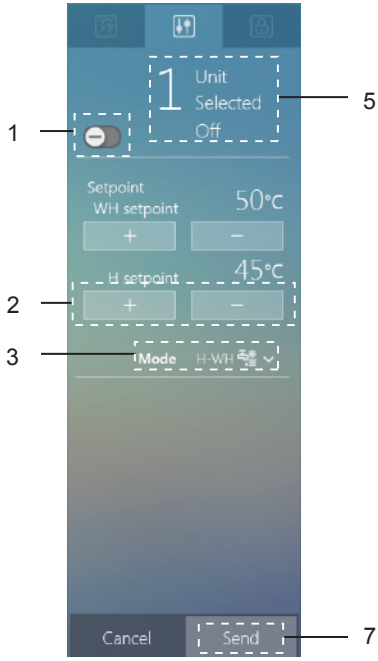


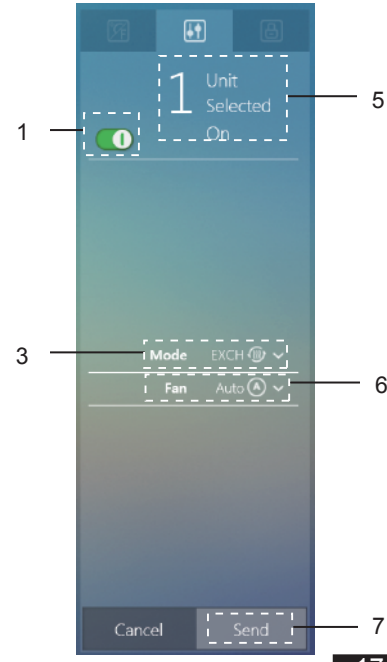




Control interface



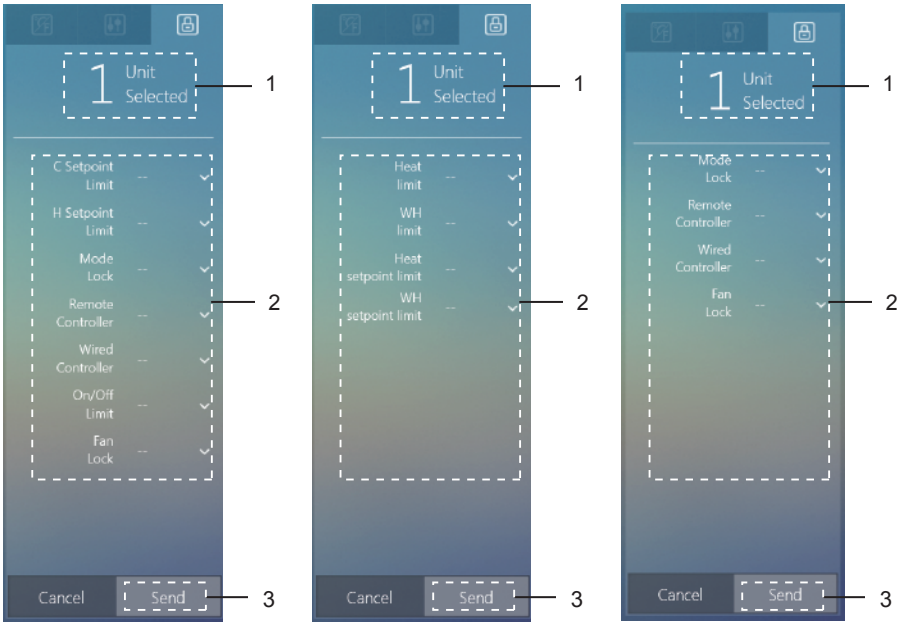




No.	Item	Description
1	On/Off	Turns the IDU on or off
2	Set point	Edits the set temperature
3	Mode	Regular models: Auto Cool Heat Dry Fan HRV: Auto Heat exchange Bypass Air exhaust Air supply Heat and Water Heat Water Heat
4	Swing	Auto Angle 1 Angle 2 Angle 3 Angle 4 Angle 5 Swing off
5	Unit Selected	Selects multiple IDUs to control
6	Fan	3 fan speed controls: Low Mid High Auto 7 fan speed controls: Speed 1 Speed 2 Speed 3 Speed 4 Speed 5 Speed 6 Speed 7 Auto
7	Send	Send control command

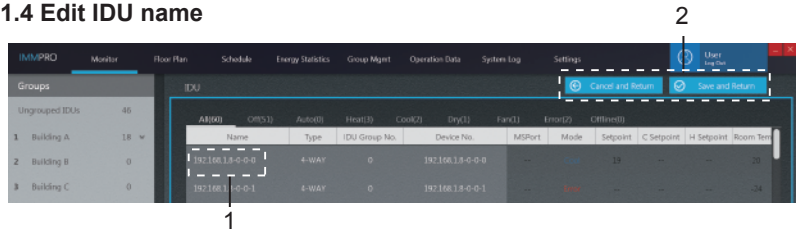
Lock interface

No.	Item	Description
1	Unit Selected	Selects multiple IDUs to control and lock
2	Lock parameters	Supports locking the lower limit for cooling temperature, upper limit for heating temperature, mode, remote controller, wired controller, unit switch, and fan speed
3	Send	Sends lock command



*Certain IDU models may not support all the lock functions mentioned above. Please consult the technical support engineer from on details regarding the different lock functions supported by specific IDU models.

2.3.1.4 Edit IDU name

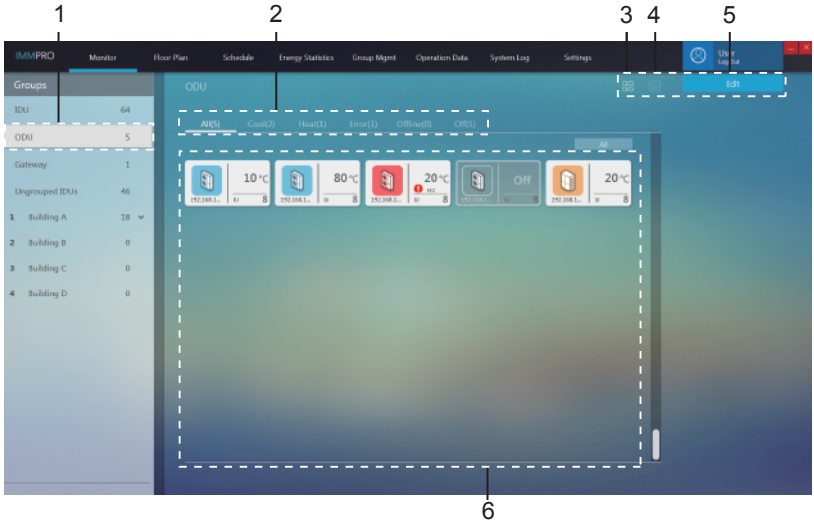


No.	Item	Description
1	IDU name	User can customize the IDU name
2	Quit editor	Save changes and quit the editor; or quit the editor without saving your changes

*An IDU name may include up to 50 characters. Only the first 50 characters will be retained if the name exceeds 50 characters.

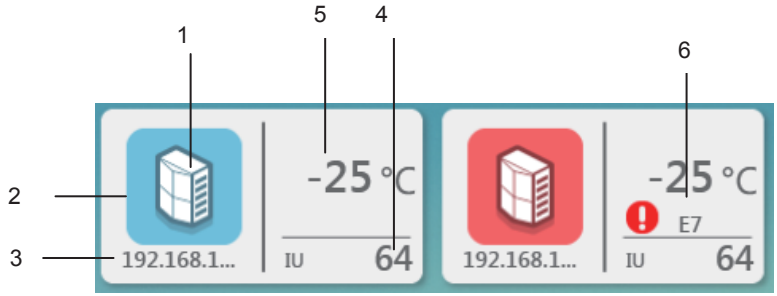
2.3.2 ODU

On the Monitor page, double click to select all ODU groups.



No.	Item	Description
1	ODU	All outdoor units monitored by IMMPRO
2	Quick ODU status classification	Classifies the status including Cool, Heat, Error, Offline, and Off
3	ODU icon view	Displays ODU information. For details, refer to 2.3.2.1
4	ODU list view	Lists ODU information. For details, refer to 2.3.2.2
5	Edit	Edits ODU name. For details, refer to 2.3.2.3
6	ODU information	Views ODU information

2.3.2.1 ODU icon view



No.	Item	Description
1	ODU model icon	Describes the device model
2	Background mode colour	Shows the current mode of the device
3	Device name	Customized device name
4	Number of IDUs	Number of IDUs connected to the ODU
5	Outdoor ambient temperature	Displays the outdoor ambient temperature
6	Error icon and error code	Indicates the error and error code

Icons for different ODU models

On the icon page

Icon	Model	Icon	Model
	Mini VRF unit		VRF unit

Background mode colour for ODU

Background colour indicates the operating mode, with the following status for different model types:

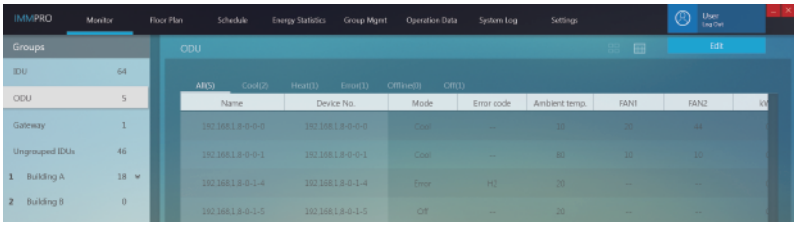
Background Colour	Operating Mode	Background Colour	Operating Mode
	Cool		Error
	Heat		Offline
	Standby (Off)		

Quick ODU classification

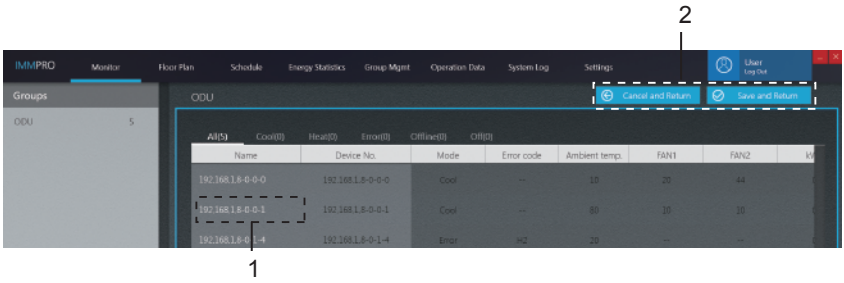
On the Monitor page, select the ODU to view the status of the selected ODU on the right.

Note: Grouping by quick classification is based on the operating status of the devices when the option is selected. If the status of the ODU changes subsequently, the change will not be reflected instantaneously.

2.3.2.2 List view of ODU information



2.3.2.3 Edit ODU name

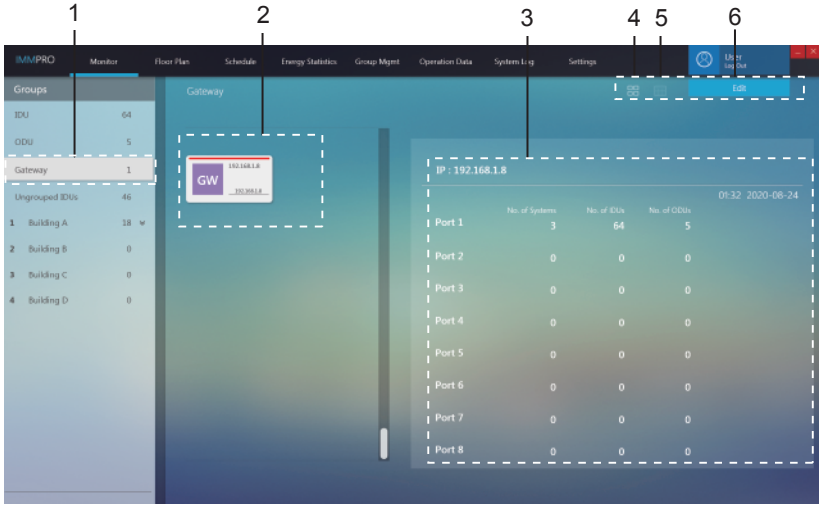


No.	Item	Description
1	ODU name	User can customize the ODU name
2	Quit editor	Save changes and quit the editor; or quit the editor without saving your changes

*An ODU name may include up to 50 characters. Only the first 50 characters will be retained if the name exceeds 50 characters.

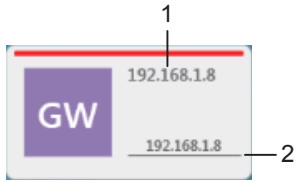
2.3.3 Gateway interface

On the Monitor page, double click to select all gateway groups. The gateway monitoring page is displayed on the right.



No.	Item	Description
1	Gateway group view	All the gateways monitored by IMMPRO
2	Gateway icon view	Displays information about the gateway. For details, refer to 2.3.3.1
3	Gateway information	Displays detailed information about the gateway. For details, refer to 2.3.3.2
4	Switch to gateway icon view	Displays information about the gateway
5	Switch to gateway list view	Lists detailed parameters of the gateway
6	Edit	Edit gateway name

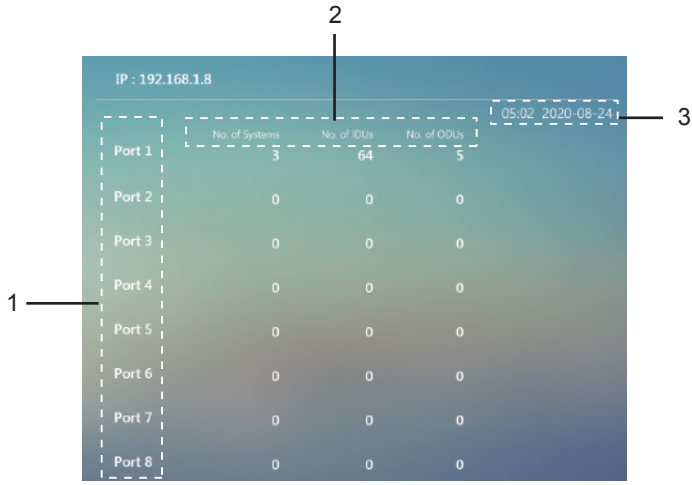
2.3.3.1 Gateway icon view



No.	Item	Description
1	Gateway name	Displays the name of the gateway
2	Gateway IP address	Displays the IP address of this gateway

2.3.3.2 Gateway information view

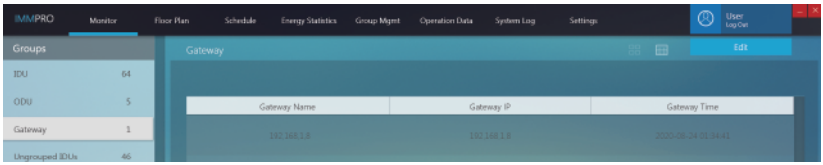
Select a gateway. Detailed information of the gateway is displayed on the right.



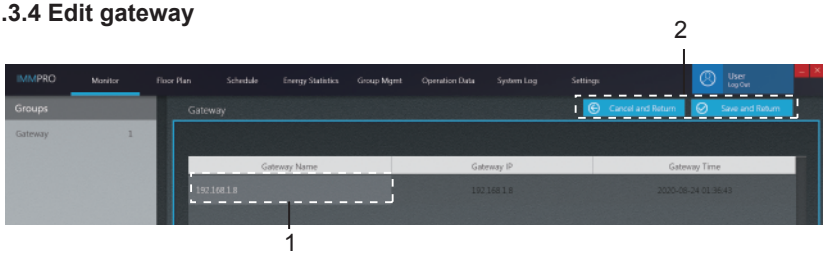
No.	Item	Description
1	Port number	Port information of the gateway
2	Information view	Information about the number of refrigerant systems, as well as total number of IDUs and ODUs at each port of the gateway
3	Gateway time	View the current time in the gateway

2.3.3.3 View list of gateway information

Lists gateway information: gateway name, gateway IP address, gateway time



2.3.3.4 Edit gateway

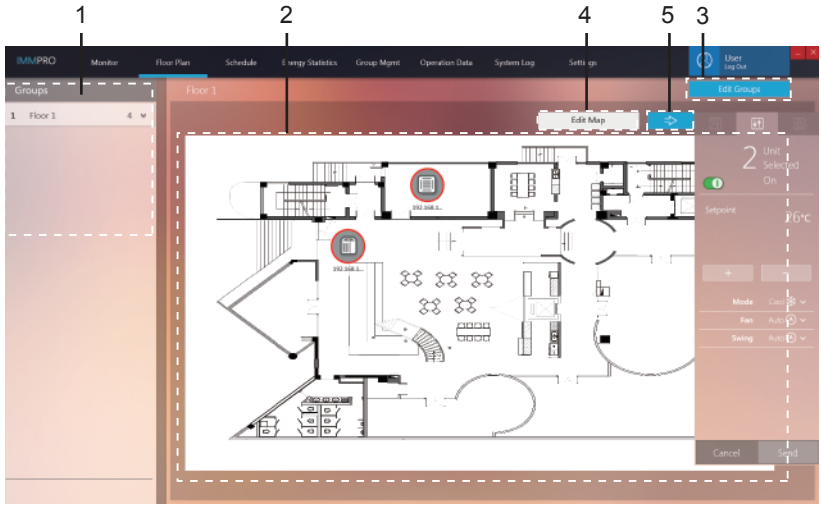


No.	Item	Description
1	Gateway name	User can edit the gateway name
2	Quit editor	Save changes and quit the editor; or quit the editor without saving your changes

*A gateway name may include up to 50 characters. Only the first 50 characters will be retained if the name exceeds 50 characters.

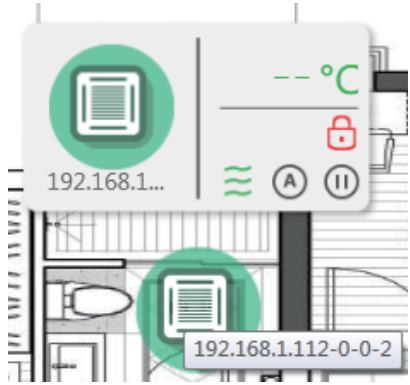
2.4 Floor Plan

2.4.1 Main page of Floor Plan



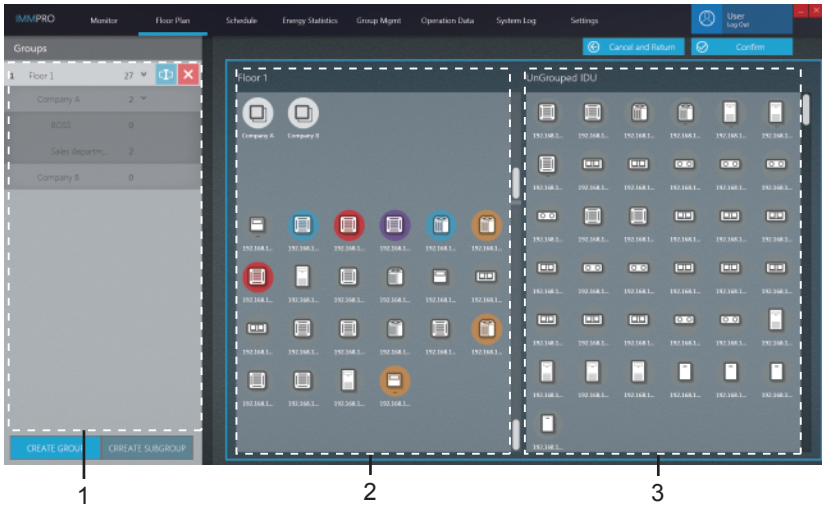
No.	Item	Description
1	Group Navigation	Displays information of the groups created
2	Plan view	Displays information of the uploaded floor plan
3	Edit Group	Supports creating building and floor groups
4	Edit Map	Supports importing or deleting floor plans, and moving the device to any location on the floor plan
5	Device monitor	The feature is similar to the “Device status. Control window” in the monitor interface.

*Plan can be edited only after the groups in "Floor Plan" have been created.
Mouse over the IDU icon to get to the IDU icon view, as follows:



2.4.2 Floor Plan - Edit Group

Click "Edit Group" at the top right corner of the main page in Floor Plan to enter.

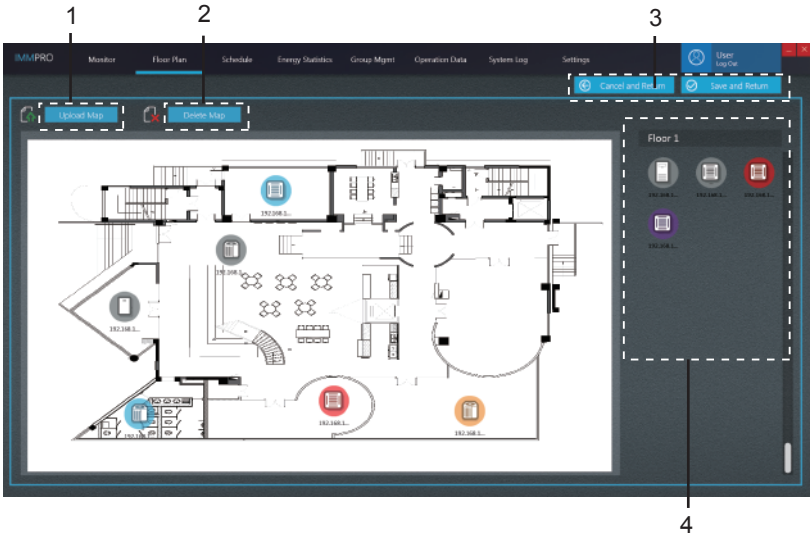


No.	Item	Description
1	Group list	Displays all groups
2	Group detail	Displays sub-groups and IDUs of the selected group.
4	Ungrouped IDUs	Left click the mouse to select one or many devices at 4, press and hold the left mouse button to drag and move devices from 4 to the selected **group name** before you release the left button of the mouse as illustrated with the red arrow in the above example where the device has been moved to the Building M group in the grade-1 groups. Right click the mouse to deselect the device.

*The groups in the "Floor Plan" are not related to the groups under "Group management". These are standalone groups.

2.4.3 Floor Plan - Edit Plan

Click "Edit Plan" at the top right corner of the main page in Floor Plan to enter.



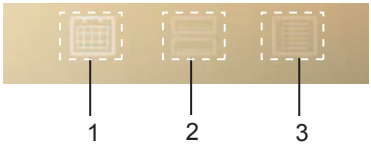
No.	Item	Description
1	Upload Map	Uploads a map file
2	Delete Map	Deletes a map file
3	Quit editor	Save changes and quit the editor; or quit the editor without saving your changes
4	Device view	Press and hold the left mouse button on the IDU in 4, and drag the IDU to the corresponding location in the map on the left. In the map on the left, press and hold the left mouse button on the IDU icon to continue to shift the location of the IDU. In the map display area, right click the IDU to move the IDU back to 4.

Supported image formats for import: .jpg, .jpeg, .bmp, .png.
Image size: Must be within 10Mb; otherwise, the function may not operate normally.
*To edit a map, you must select a map group first.

2.5 Schedule

2.5.1 View schedule status

Operating procedures:
The schedule can be displayed by date, device or plan. Left click the icon below to switch between the 3 types of schedule views on the page:



No.	Item	Description
1	Display by date	Left click to go to the page to view the schedule by date
2	Display by device	Left click to go to the page to view the schedule by device
3	Display by plan	Left click to go to the page to view the schedule by plan

2.5.2 Display schedule by date

On this page, you can view the number of commands that have been scheduled for a day.

No.	Item	Description
1	Date	Displays the current date or selects a specific date
2	Device object statistics	Displays the number of "device objects" in the selected scheduled command at 3
3	Schedule command	Displays the schedule commands to be implemented for the current day
4	Schedule information	Displays certain details of the schedule in which the schedule command is located
5	Edit	Accesses the edit status, and to add, delete or change the schedule plan

2.5.3 Display schedule by device

On the default page, no group is selected. The operation is similar to that of device monitor where a single click will expand the group, and a double-click will refresh the group.
Select an IDU in 2, and the list of daily scheduled activities that involve this IDU is displayed in 3.
Select a schedule in 3, and an outline of this schedule is displayed in 4.

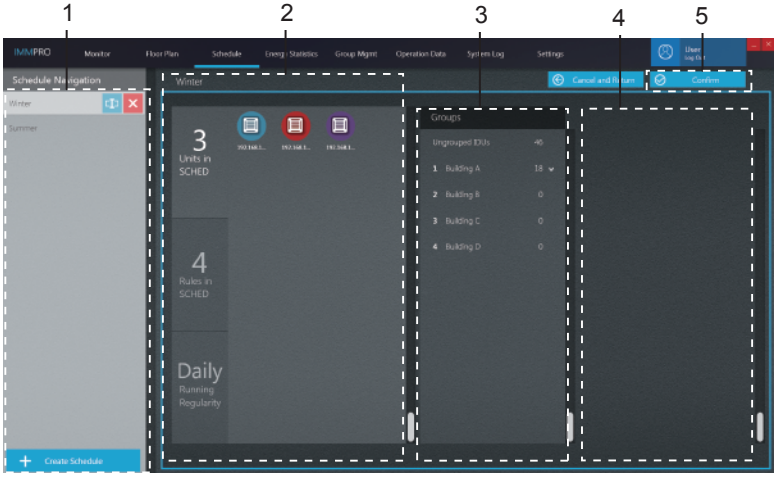
2.5.4 Display schedule by plan

The list of schedules is on the left. When a schedule is selected, the 3 elements of the schedule will be displayed on the right: schedule object, schedule command, and schedule date, default is the schedule object.
Select a plan in 1, and details of the schedule is displayed in 2.

2.5.5 Schedule - Edit schedule

Click Edit to go to the editing page:

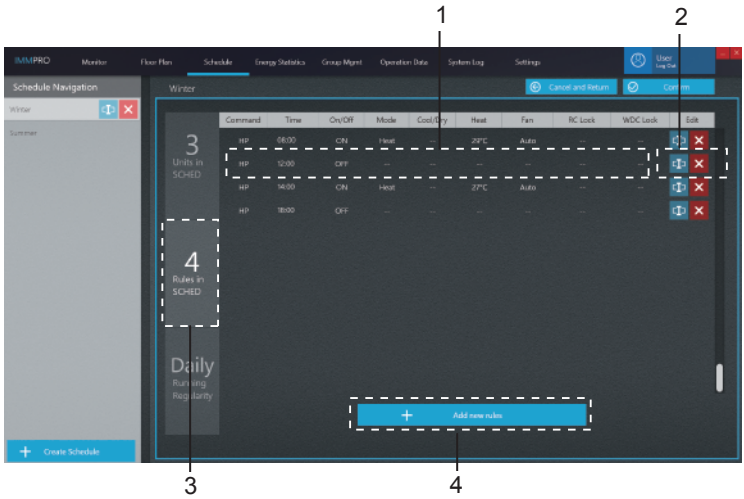
Edit schedule - edit devices



No.	Item	Description
1	Schedule Navigation	Displays the list of schedules or creates a new schedule
2	Selected devices	Displays the devices that are already included in the selected schedule
3	Group Navigation	Displays device groups
4	Devices to be selected	Use the mouse to click and hold on one or multiple devices at 4, and drag to move the devices at 4 to where the selected devices are. Left click to select the device. Right click to deselect the device.
5	Confirm	Save the changes

Note: The number next to the group name for item No. 3 represents the total number of all IDUs in this group, and not the current number of IDUs. When an IDU has been added to the left, this number will not change.

Edit schedule - Edit schedule command

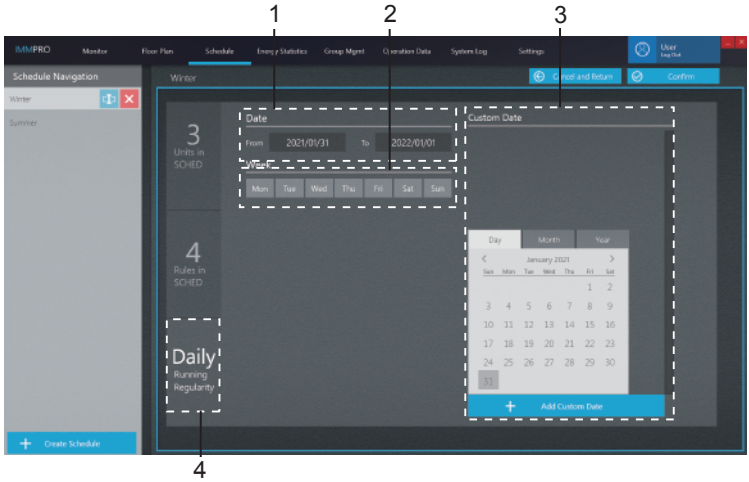


No.	Item	Description
1	Edit schedule command	Sets the specific schedule commands
2	Edit	Enter editor status; Back to select status; Delete selected schedule command.
3	Column to edit schedule command	Page to edit the schedule command
4	New schedule command	Creates a new schedule command. Supports up to 11 schedule commands

*Note: You can manually select the command type for the schedule command. When you select dual settings in "AUTO" mode (set two temperatures), different IDU models will produce different outcomes: 1. IDU does not respond to the command; 2. IDU runs in cooling mode; 3. IDU runs in "AUTO" mode with dual settings. Please consult the engineer on the specific implementation in the IDU.

*In the schedule, if there are more than one schedule commands for the same IDU at the same time, the final status of the IDU cannot be determined as all the schedule commands will be implemented.

Edit schedule - Edit schedule time



No.	Item	Description
1	Effective dates of schedule	The schedule is valid within the effective dates. Note that only the schedule is effective, the actual implementation of the schedule depends on other date parameters (such as the weekly plan).
2	Dates in weekly plan	Choose the relevant week if you need to follow a weekly plan.
3	Column to edit schedule time	Page to edit schedule command at runtime.
4	Custom Date	Create a custom date; Enter the edit status for custom date Delete the selected custom date.

*To implement the schedule, you must log in to IMMPRO first. Otherwise, the schedule is inactive.

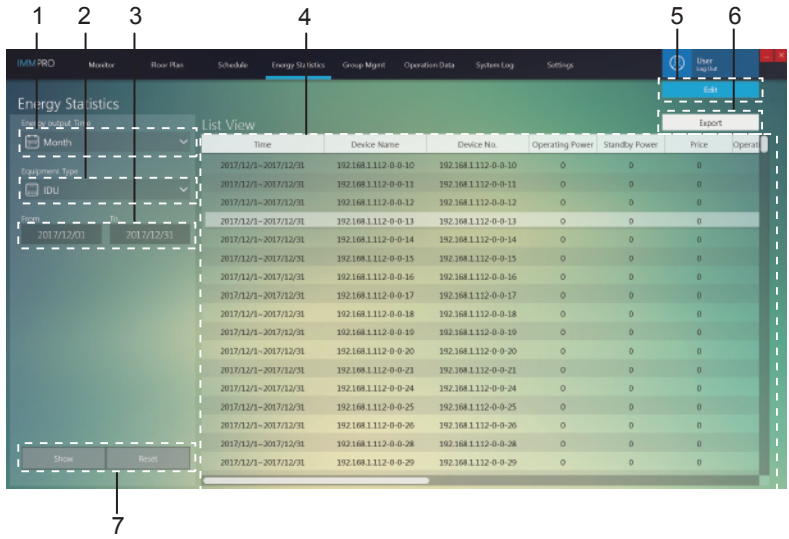
*Schedule implementation dates: 1. Schedule will be implemented within the effective dates if the dates fulfil the dates selected in the weekly plan; 2. Schedule will be implemented if the dates are custom dates. (The schedule will be implemented even if the custom date is not within the effective dates)

*Note: If a function similar to "sleep" has been set on the computer, the IMMPRO schedule

2.6. Energy Statistics

The following describes the components in energy statistics.
IMMPRO can partition the energy consumption of the ODU into every IDU based on each IDU operating circumstances, that is, it is an energy division function. The energy statistics show the result of this partition of electricity (in the form of reports etc.).

2.6.1 Energy Statistics - Main page



No.	Item	Description
1	Energy output by	Performs the energy statistics using either monthly or summary data
2	Data Type	Options include IDU, ODU, HTHM.
3	Reporting period	Selects the time period to output the energy statistics
4	View energy statistics	Displays the report on energy statistics
5	Edit	Compiles the energy statistics for the specific devices required
6	Export report	Exports the data, either in .csv or Excel format, from the energy data display to a table
7	Show or reset	"Show" is to compile the statistics based on selected conditions. "Reset" is to restore the device type and time of the statistics back to the default values

Monthly energy statistics

Statistical data of each IDU are compiled on monthly basis. Each line of data shows the energy statistics for a month, starting from the month when the statistics begin to the month when the statistics end.

For example, the start time is 2017-9-5, and the end time is 2017-11-23. The energy statistical report has three rows of data for each IDU, which are energy statistics for 2017-9-1~2017-9-30, 2017-10-1~2017-10-31, and 2017-11-1~2017-11-30 respectively.

Based on statistical totals

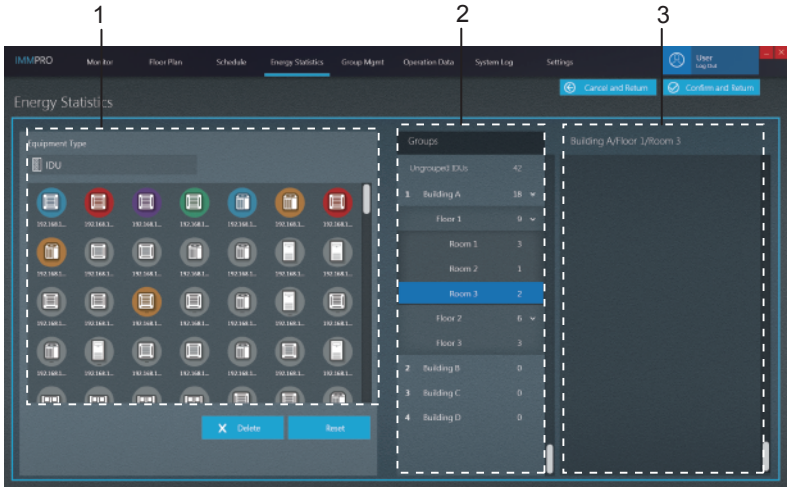
IDU energy statistics are compiled based on the selected dates, and each line shows the total energy consumption of each IDU.

For example, if the start time is 2017-9-5 and the end time is 2017-11-23, there will be a line of data in the energy statistics report for each IDU that contains the energy statistics for 2017-9-5~2017-11-23.

*If no device is selected in "Edit", the default is to export the energy statistics of all the IDUs in IMMPRO.

*Note: The exported .csv file is in the UTF-8 format. If the computer is not in the UTF-8 format, the default content may appear garbled. When you open the .csv file with Excel, you need to manually select the UTF-8 encoding method with the separator ",".

2.6.2 Energy Statistics - Edit



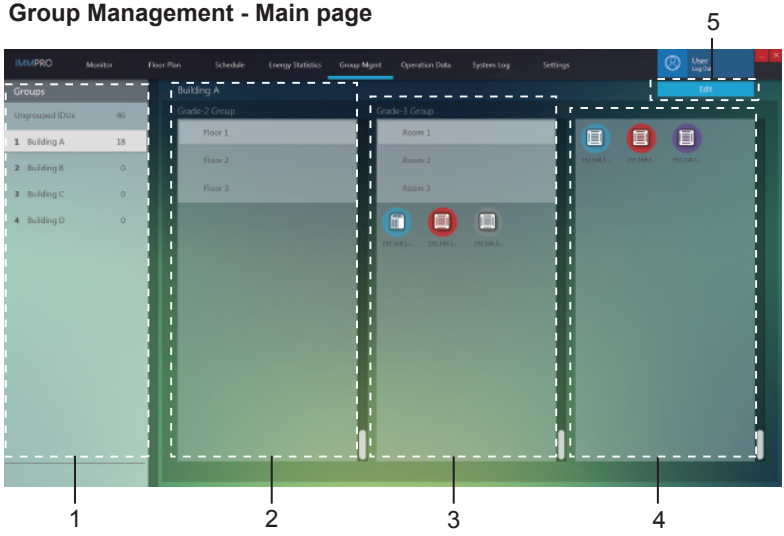
No.	Item	Description
1	Selected devices	Left click to select one or many devices at 3. Press and hold the left mouse button to drag the selected device to be displayed in 1. Select an IDU in 1, and click the delete button, to list the IDU again in 3, or drag the selected device to 3, and list the IDU again in 3. Right click the mouse to deselect the device.
2	Group Navigation view	Groups created by users
3	Devices to be selected	Energy statistics of IDUs in the selected group

Note: The number next to the group name for item No. 2 represents the total number of all IDUs in this group, and not the current number of IDUs. When an IDU has been added to the left, this number will not change.
Note: If an IDU has been set to "Public units", the energy statistics of this IDU will not be visible at the selection page for energy statistics.

2.7 Group Management

The following describes the components in group management.

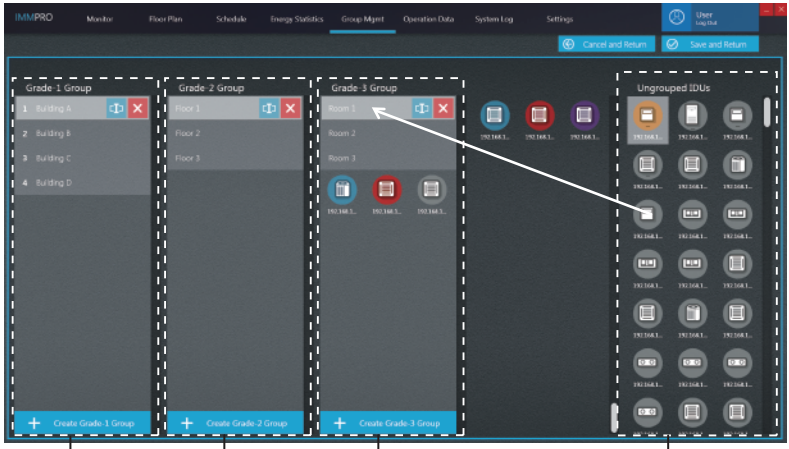
2.7.1 Group Management - Main page



No.	Item	Description
1	Group Navigation	Includes ungrouped IDUs (group by system) and user-created groups
2	Grade-1 Group	Displays IDUs in a grade-1 group. A grade-1 group can be understood as a particular building
3	Grade-2 Group	Displays IDUs in a grade-2 group. A grade-2 group can be understood as a particular floor in a certain building
4	Grade-3 Group	Displays IDUs in a grade-3 group. A grade-3 group can be understood as a particular room in a particular floor of a certain building
5	Edit group	Creates groups, and adds IDUs to the created groups

*If no device is selected in "Edit", the default is to export the energy statistics of all the IDUs in IMMPRO.

2.7.2 Group Management - Edit page

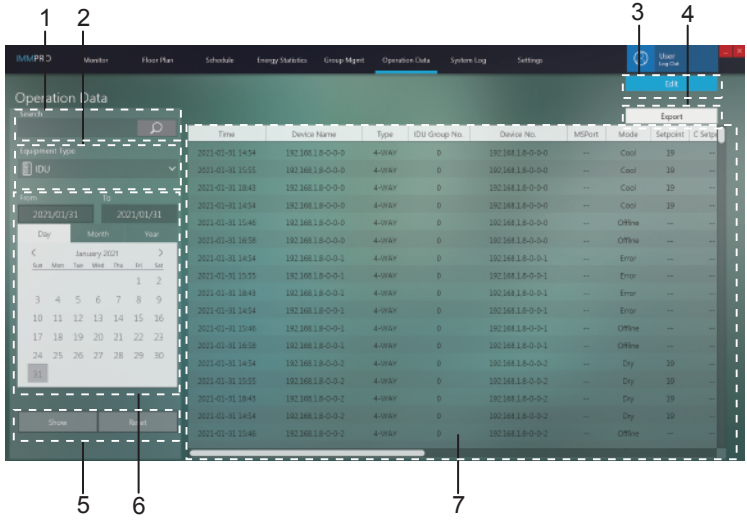


No.	Item	Description
1	Grade-1 Group	Displays or creates an IDU in the grade-1 group
2	Grade-2 Group	Displays or creates an IDU in the grade-2 group
3	Grade-3 Group	Displays or creates an IDU in the grade-3 group
4	Ungrouped IDUs	Left click to select one or many devices at 4, press and hold the left mouse button to drag and move devices from 4 to the selected group name, as illustrated with the red arrow in the above example where the device has been moved to the Room 01 group in the grade-3 groups. Right click the mouse to deselect the device.

2.8. Operation Data

The following describes the components in operation data.
Operation Data are the operation history for the devices. You can use these statistics to view changes in the operating status of the devices.

2.8.1 Operation Data - Main page



No.	Item	Description
1	Search data	Searches using the device name or device number. For example, search for an indoor unit with the device name, "192.168.1.112-3-0-6"
2	Statistical Object	Options include IDU, ODU, gateway and HTHM, Default value: IDU
3	Edit	Compiles the statistics for the specific devices required
4	Export	Exports data, either in .csv or Excel format, from the statistical data display to a table
5	Show, reset	"Show" is to compile the statistics based on selected conditions. "Reset" is to restore the device type and time of the statistics back to the default values
6	Statistical time	Selects the time period for the data statistics of the device
7	Statistical data view	Displays the corresponding data for different device types

*Note: The exported .csv file is in the UTF-8 format. If the computer is not in the UTF-8 format, the default content may appear garbled. When you open the .csv file with Excel, you need to manually select the UTF-8 encoding method with the separator ",".

2.8.2 Operation Data - Edit page

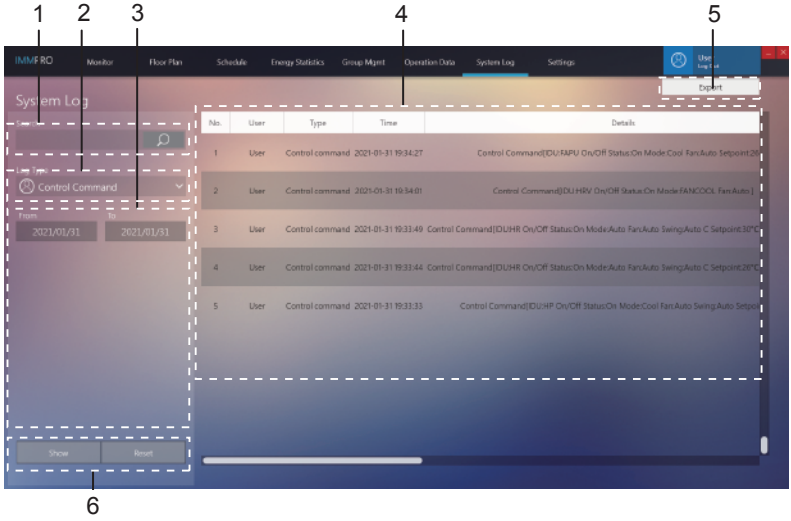
Enter the edit page, and select a device to check the statistics.

No.	Item	Description
1	Selected devices	Left click to select one or many devices at 3. Press and hold the left mouse button to drag the selected device to be displayed in 1. Select an IDU in 1, and click the delete button, to list the IDU again in 3, or drag the selected device to 3, and list the IDU again in 3. Right click the mouse to deselect the device.
2	Group Navigation view	IDU or ODU groups
3	Devices to be selected	IDUs and ODUs in the selected groups

Note: The number next to the group name for item No. 2 represents the total number of all IDUs in this group, and not the current number of IDUs. When an IDU has been added to the left, this number will not change.

2.9 System Log

The following describes the components in System log.



No.	Item	Description
1	Search	The search function works only for the "Device name" column, and only for the current display results. For example, enter the name of the schedule to complete the search for a log with a specific schedule command
2	Command type	Supports log queries on control commands, schedule commands, lock commands, and login
3	Time period	Select the time period of the statistics
4	Log contents	Includes details such as time, command type, and commands
5	Export log	Supports two formats, .csv and Excel, for export
6	Show and reset	The “Show" button will display the statistics on the right. The "Reset" button will clear all the statistical results on the right.

*Note: The exported .csv file is in the UTF-8 format. If the computer is not in the UTF-8 format, the default content may appear garbled. When you open the .csv file with Excel, you need to manually select the UTF-8 encoding method with the separator ",".

2.10 Settings

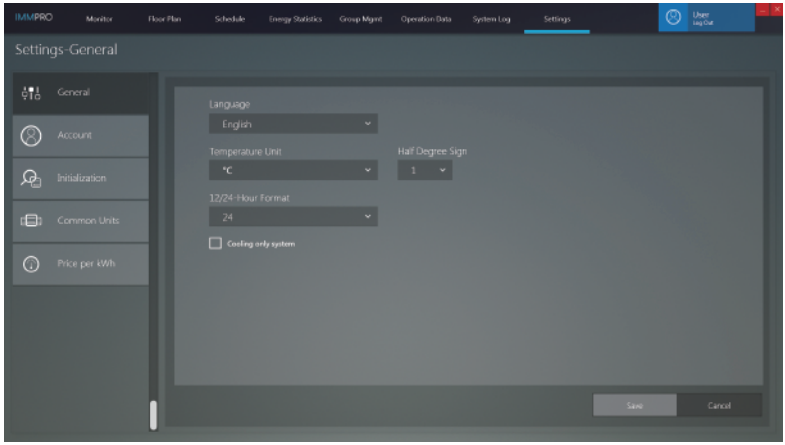
Below is an overview of the settings page.

Permissions

Account Type	Functional Restrictions
Login as normal user	Rights restricted to view your own login account on the account page, modify your own password; cannot create users
Guest Account	Rights restricted to experiences of IMMPRO software operations; cannot carry out device control, data export, manage settings

2.10.1 General settings

Language: Select the display language, such as Chinese and English.
Temperature Unit: Select the temperature unit displayed on the interface; options: °C and °F.
Half Degree Sign: If Temperature Unit is set to °C, the temperature interval can be set to 0.5°C or 1°C.
12/24-Hour Format: Select the 12-hour format or 24-hour format.
Cooling only system: Check this item when the system is a cooling only model.

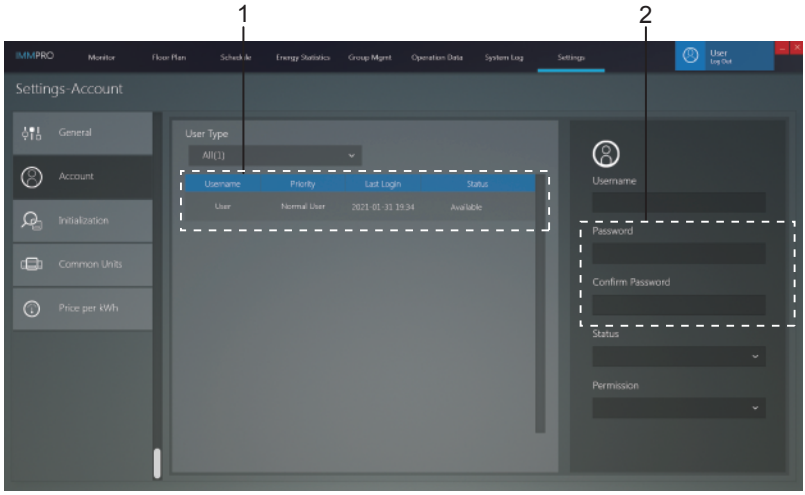


Once you have finished all the settings, click 

. The software will automatically reboot and return to the login page.
Note: Once you have changed some settings, the software will automatically reboot, and you need to login again. After login, the display will be in the new selected language.

2.10.2 Account

Account page for normal user:

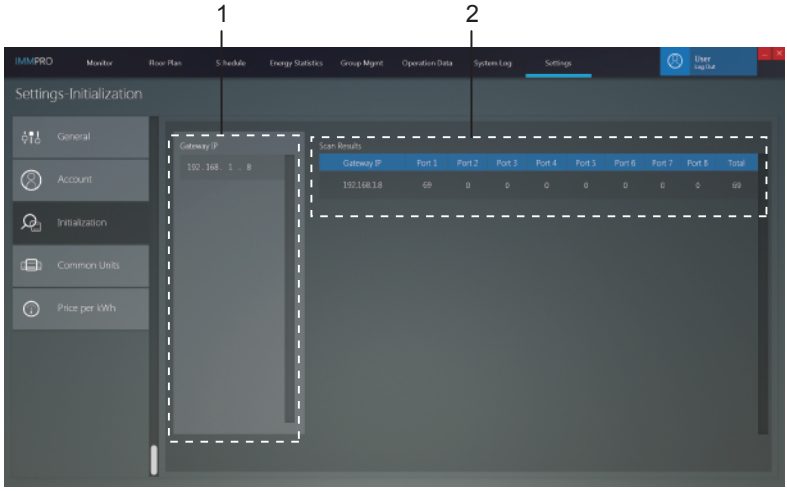


No.	Item	Description
1	Account information	Includes username, priority, last login time, and account status
2	Edit account	Change the password of the account. Click to save the new password

Note: Once the password is updated, you need to exit the system and login again.

2.10.3 Initialization

The initialization page displays the port information of the IMMP-BAC(A) or CCM-270B/WS(A) connected to IMMPRO. Details are described below:



No.	Item	Description
1	Gateway IP	IP address that IMMPRO uses to connect to IMMP-BAC(A) or CCM-270B/WS(A)
2	Gateway information view	Number of devices connected to each port of the gateway. When the CCM-270B/WS(A) is connected, data for the first 6 ports are valid. When the IMMP-BAC(A) is connected, data for the first 4 ports are valid.

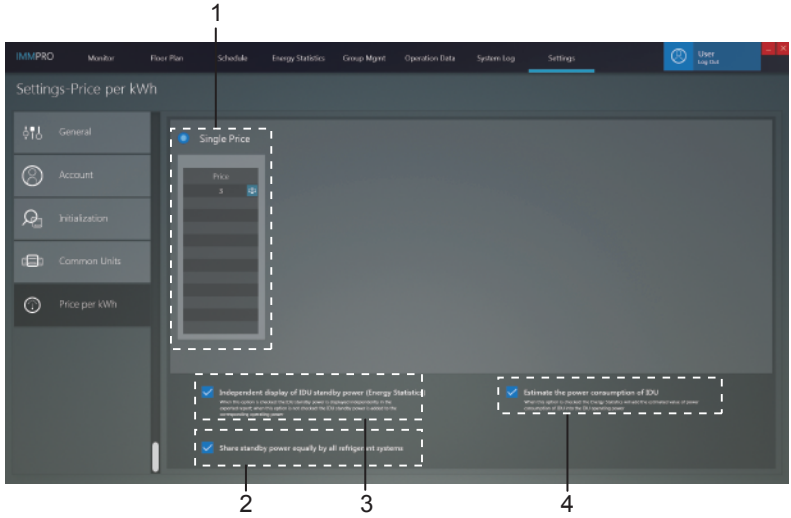
2.10.4 Common Units

"Common Units": When the energy statistics are being compiled, the energy consumption report will not display the records of the public units, instead it will divide and share the energy consumed evenly to all non-public IDUs.
Application scenarios: You can set the IDUs in places like the corridors, and lobby as public units, so that the energy consumed by the IDUs in these places will be automatically and equally shared to other active IDUs, which makes it convenient for property charges.

No.	Item	Description
1	Common Units	Displays information about the public units. Can move the devices at 3 on the right to the public units group.
2	Group Navigation	Group list view, which can be edited using the group management functional module.
3	Group devices	Displays information of devices in the group.
4	Save or reset	Save changes to the public unit or reset the public unit.

2.10.5 Electricity price

The electricity price function is used only for the Energy Statistics reports. You can configure the various parameters relating to the energy statistics on this page.



No.	Item	Description
1	Single Price	Set electricity price.
2	Share standby power equally by all refrigerant systems	Set the calculation method for the IDU standby power: 1. Share the standby power according to the refrigerant system; 2. Share the standby power is equally to all IDUs.
3	Independent display of IDU standby power (Energy Statistics)	Options for the output format of the energy statistics reports are follows: 1. Independent displays of the operating power of the IDUs and standby power; 2. Only displays the operating power.
4	Estimate the power consumption of IDU	Set the option in the energy statistics report to add the operating power of the IDUs to own operating power.

APPENDICES

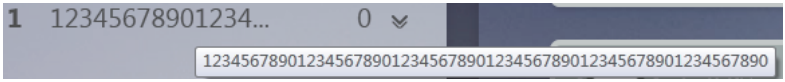
Appendix 1 Use Precautions of Software Functions

Appendix 1.1 Control for Hybrid Models

"Monitor"
When controlling IDUs with 3 fan speeds together with IDUs with 7 fan speeds, the fan speed will be set according to the 3 fan speed options.

Appendix 1.2 Display Name Abbreviations

When names like the group name, IDU name, ODU name, and schedule name, exceed the display area in IMMPRO.
When the length of names like the group name and device name exceeds the display area, only the abbreviation will be shown. Mouse over the abbreviation to display a small pop-up window which shows the full name. Below is an example of the pop-up window for the group name:



Appendix 1.3 Wired Controller Group

For the V6/V6i VRF units, certain wired controllers support the simultaneous access of multiple indoor units (IDU) where these IDUs will then form a "wired controller group". In IMMPRO, these IDUs will be treated as a single virtual IDU, and in the icon view in "Monitor" the wired controller group of IDUs will have its own icon. The name of the wired controller group is the same as the name of the IDU with the smallest SN.
Note: Refer to the relevant manuals on wired controllers, and indoor units for specific information on how to set the address of the wires controller group.

	IDUs in wired controller group
"Monitor" icon view	When one or more IDUs are offline in the wired controller group, the wired controller group icon will display an offline status. When there are errors in one or more IDUs in the wired controller group, the wired controller group icon will display an error status, and the error code will be the error code in the IDU with the smallest address SN. When the wired controller group is normal, the wired controller group icon will show the operating state of the IDU with the smallest SN.
"Monitor" list view	In a list view, each IDU in the group is displayed on a separate line, and you can view the details of each IDU in the group.
"Operation Data", "Energy statistics"	Each IDU in the group is displayed on a separate line, and you can view the statistics of each IDU in the group.
Send control command	The same commands are sent to the wired controllers in the group.

Appendix 2 Error Codes

This manual is intended for reference only. Refer to the error shown on the actual device for troubleshooting.
Error Codes for V6/V6i/VX/VXi/VCPro/Mini C/V6R Outdoor Unit

Error code [1]	Content
E0	Communication error between outdoor units
E1	Phase sequence error
E2	Communication error between indoor and master unit
E4	Outdoor heat exchanger temperature sensor (T3) error or outdoor ambient temperature sensor (T4) error
E5	Abnormal power supply voltage
E7	Compressor top or discharge pipe temperature sensor (T7C1/2) error
E8	Outdoor unit address error
xE9	EEPROM mismatch
xF1	DC bus voltage error
F3	Plate heat exchanger cooling refrigerant outlet temperature sensor (T6B) error
F5	Plate heat exchanger cooling refrigerant inlet temperature sensor (T6A) error
F6	Electronic expansion valve connection error
xH0	Communication error between main control chip and inverter driver chip
H2	Number of slave units detected by master unit has decreased
H3	Number of slave units detected by master unit has increased
xH4	Inverter module protection
H5	P2 protection appears three times in 60 minutes

H6	P4 protection appears three times in 100 minutes
H7	Number of indoor units detected by master unit not same as number set on main PCB
H8	High pressure sensor error
H9	P9 protection appears ten times in 120 minutes
yHd	Slave unit malfunction
C7	PL protection appears three times in 100 minutes
P1	Discharge pipe high pressure protection
P2	Suction pipe low pressure protection
xP3	Compressor current protection
P4	Discharge temperature protection
P5	Outdoor heat exchanger temperature protection
P9	Fan module protection
PL	Inverter module temperature protection
PP	Compressor discharge insufficient superheat protection
xL0	Inverter module protection
xL1	DC bus low voltage protection
xL2	DC bus high voltage protection
xL4	MCE error
xL5	Zero speed protection
xL7	Phase sequence error
xL8	Compressor frequency variation greater than 15Hz within one second protection
xL9	Actual compressor frequency differs from target frequency by more than 15Hz protection

Notes:

1. 'x' is a placeholder for the compressor system (compressor and related electrical components), with 1 representing compressor system A and 2 representing compressor system B. 'y' is a placeholder for the address (1 or 2) of the slave unit with the error.
2. For some error codes, a manual restart is required before the system can resume operation.
3. Once the EXV has been connected properly, the error code will flash to indicate that the connection has been re-established. A manual restart is then required before the system can resume operation.

Error Codes for Indoor Unit

Error code	Content
E0	Mode conflict
E1	Communication error between indoor and outdoor units
E2	Indoor ambient temperature sensor error
E3	Indoor heat exchanger mid-point temperature sensor error
E4	Indoor heat exchanger outlet temperature sensor error
E6	Fan error
E7	EEPROM mismatch
Ed	Outdoor unit error
EE	Water level error
FE	Indoor unit has not been assigned an address

Table of Error Codes for HTHM

Error code	Content
EE	EEPROM error
FE	No address error
C7	Inverter module temperature protection
E9	EEPROM mismatch
H4	Inverter module protection
H5	P2 protection appears three times in 60 minutes
H6	P4 protection appears three times in 100 minutes
1F6	Electronic expansion valve 1 connection error
2F6	Electronic expansion valve 2 connection error
E1	Communication error between hydro box and wired controller
E8	Water flow failure
F3	Water outlet temperature sensor error
F9	Water inlet temperature sensor error
F5	Tank temperature sensor error
E7	Discharge pipe temperature sensor error
FA	Suction pipe temperature sensor error
Fb	NTC temperature sensor error
FC	R410a circle liquid pipe temperature sensor error
Fd	R134a circle liquid pipe temperature sensor error
F8	Room temperature sensor error
H8	High pressure sensor error
Hb	Low pressure sensor error
E2	Communication error between hydro box and outdoor unit
H0	Communication error between main PCB and inverter driver PCB
E0	Communication error between master hydro box and slave hydro box
Ed	Outdoor unit error
E5	Abnormal power supply voltage
PP	Compressor discharge insufficient superheat protection

Error code	Content
P1	Discharge pipe high pressure protection
P2	Suction pipe low pressure protection
P3	Compressor current protection
P4	Discharge temperature protection
PL	Inverter module temperature protection
F1	DC bus voltage error
L0	Inverter module protection
L1	DC bus low voltage protection
L2	DC bus high voltage protection
L4	MCE error
L5	Zero speed protection
L7	Phase sequence error
L8	Compressor frequency variation greater than 15Hz within one second protection
L9	Actual compressor frequency differs from target frequency by more than 15Hz protection

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