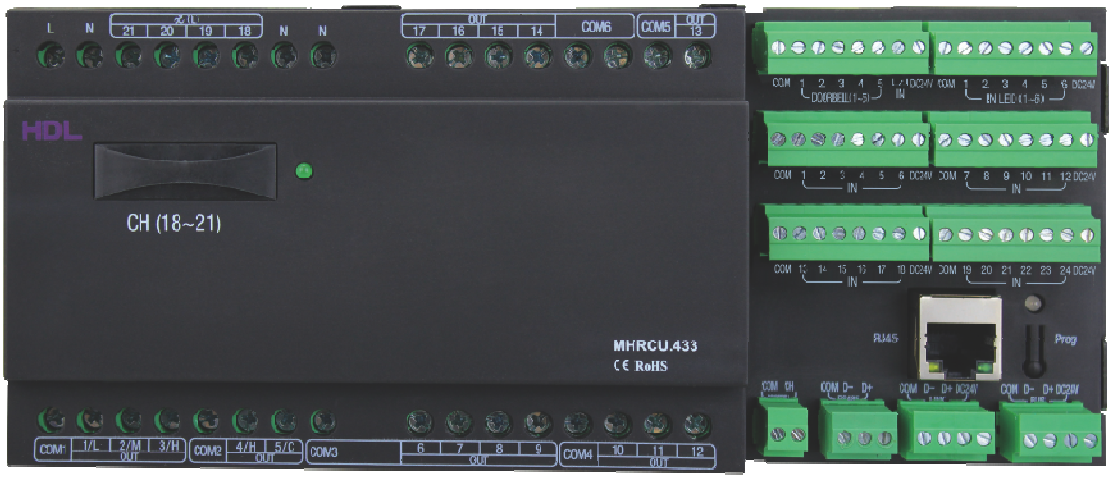
HDL®

User Manual

HDL-MHRCU.433

IHMS



buspro

www.hdlautomation.com

Document updates:

Version	Date	Description
V1.0	2015.07.14	Finish new document

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1. Overview

1.1 General Information

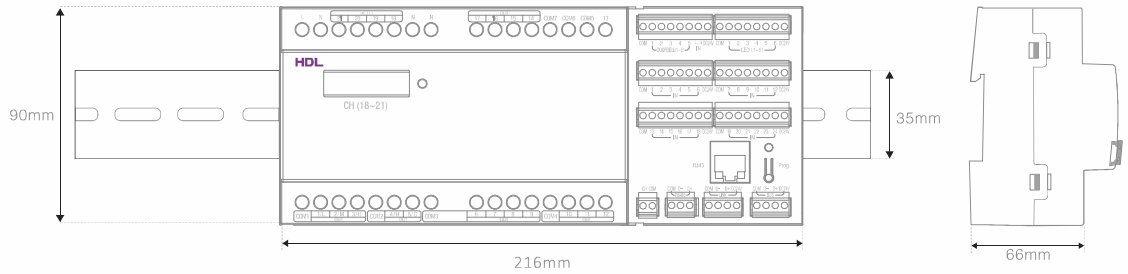
1.1.1 Description of the IHMS

The IHMS (Intelligent Hotel Management software, also called GRMS, Guest Room Management Software) is a hotel management software developed by HDL, which combines the powerful hotel host module SB-DN-48HNET/HDL-MHRCU.433, and its affiliated module (SB-DN-HMIX20, SB-DN-HMIX18, etc.), The IHMS is capable of controlling, monitoring, and managing lamps, ventilation fans, ACs, curtains, door bells, check in, check out, house-keeping information, and SOS alarms, etc.

1.1.2 Description of the HDL-MHRCU.433

The core of the HDL hotel system is the HDL-MHRCU.433 hotel room controller module. The module is capable of mix control, doorbell status display, 24-channel dry contact output, and LED output. In total the hotel controller has 48 channels, and can be programmed from the hotel management software. The module can control and monitor doorbell panels, 3rd party's doorbells, curtains, lights, fans and air conditioners.

1.1.3 Mounting the HDL-MHRCU.433



- Standard 35mm Din Rail Installation
- Inside Distribution Box(DB)

1.2 Functions of the HDL-MHRCU.433

Functions of the host control module

- 48 channels: Each channel has a lower limit, higher limit, and maximum limit.
- 99 scenes: Each scene has a running time of 0-250 seconds.
- Protection delay: Each channel has protection delay time of 0-60 minutes.
- Delay activation: Each channel has a delay activation time of 0-250 seconds.
- Card master activation: Scenes can be activated according to the status of the card

master.

- RJ45 port: The hotel host uses a RJ45 port to connect a room to the reception or management center. Using the existing hotel management software, the module can be integrated with third-party management software.

Mix control functions

- Channel 1 to 13 is a relay output, the output from each channel is 5A.
- Channel 14 to 17 is a relay output, the output from each channel is 10A.
- Channel 18 to 21 is a dimming output, the output from each channel is 1A.
- Channel 22 is for doorbell control.

Dry contract

- There are 24-channel dry contract inputs. (The control target must be set via the hotel management software.)

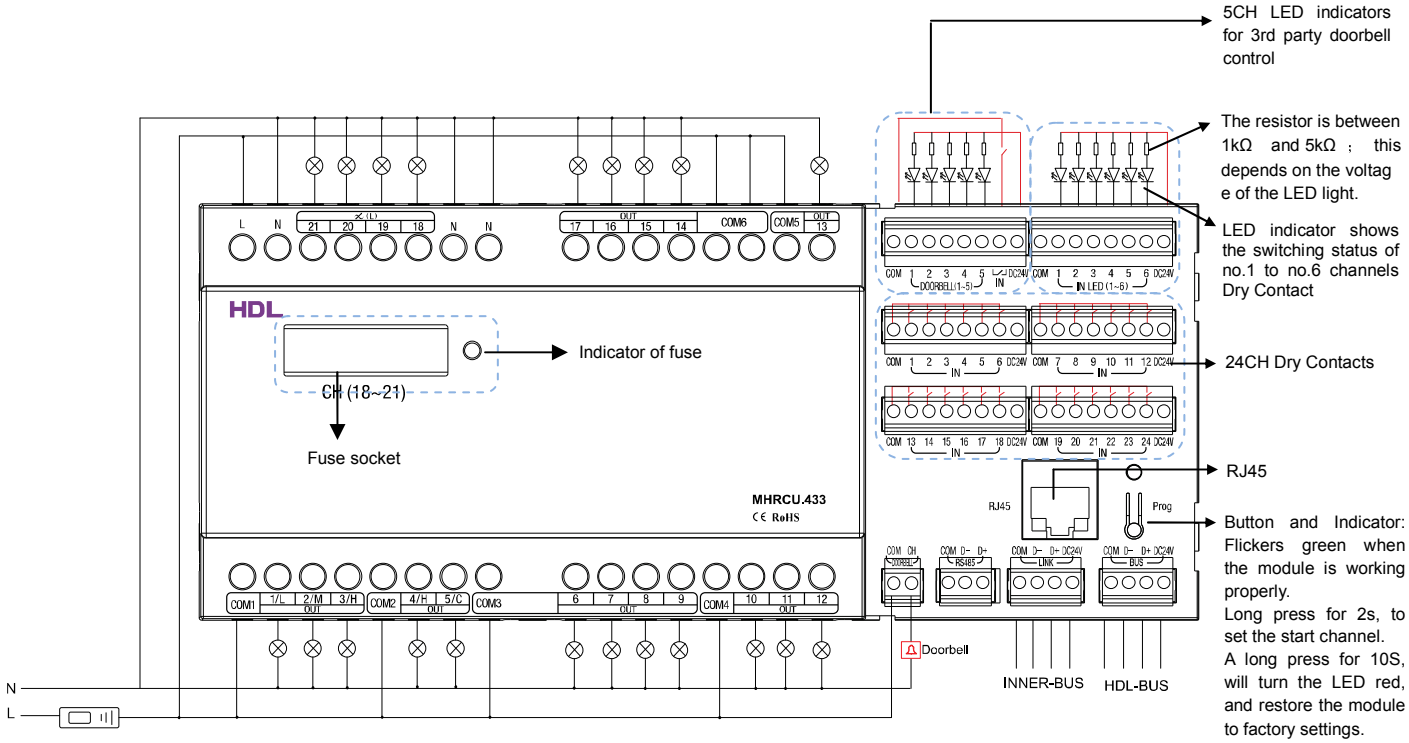
Door bell function

- 5-channel LED outputs for standard doorbells. (Third party doorbell status is also supported.)

LED output

- 6-channel common switch indicator outputs for 1 to 6 dry contact channels.

1.3 Description and Wiring of the HDL-MHRCU.433



If the HDL-MHRCU.433 is to be used in conjunction with another module, connect the additional module to the “INNER-BUS” port of HDL-MHRCU.433.

Default settings：

IP: 192.168.10.250

Router IP: 192.168.10.1 Port: 6000

The network segment of the module should be same as the PC.

Doorbell control:

Channel 22 of the HDL-MHRCU.433 is used to control the doorbell channel. Channel 22 is the default doorbell channel.

1.4 HDL Buspro Description

Connection Information

Buspro	
DC24V	Red
COM	Black
DATA-	White
DATA+	Yellow

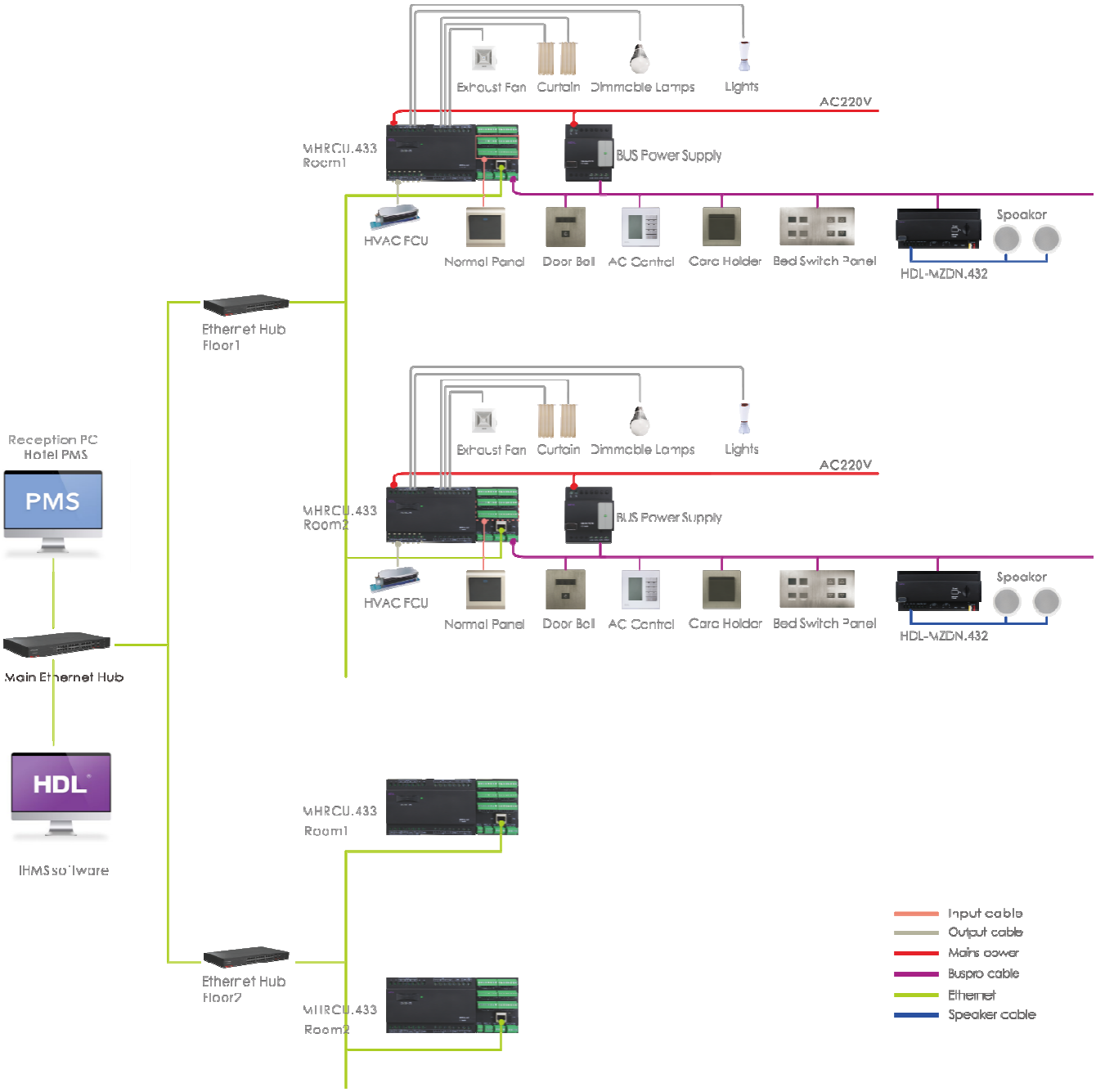
2. Safety precautions

- When installing the module do not exceed a torque strength of 0.4 Nm.
- Power cable for AC should be: 2.5mm2 ~4mm2, load: 1.5mm2 ~2.5mm2.
- Care must be taken when connecting to the Buspro interface. Failure to do so may result in damage to the module.
- Irreparable damage may occur to all system devices if the Buspro cable is connected to an AC voltage.
- Ensure good ventilation.
- Avoid contact with the liquids and corrosive gases.

3. Technical Data for the HDL-MHRCU.433

Electrical Parameters:	
Working voltage	DC20-30V
Static power consumption	60mA/DC24V
Dynamic power consumption	300mA/DC24V
Signal interface	HDL Buspro, RJ45, INNER Buspro
RJ45 interface	UDP/IP network Interface
TRIAC	16A TRIAC, minimum load is 30w
Buspro terminal	0.75 ~ 0.85mm single-core cable
Environmental Conditions:	
Working temperature	0℃~45℃
Working relative humidity	Up to 90%
Storage temperature	-20℃~+60℃
Storage relative humidity	Up to 93%
Approved	
CE	
RoHS	
Product information：	
Dimensions	216×90×56 (mm)
Weight	725(g)
Housing material	Nylon
Installation	35mm DIN rail installation
Protection degree	IP20

4. Topology


Exhaust Fan
Curtain
Dimmable Lamps
Lights
AC220V
MHRCU.433
Room1
BUS Power Supply
HVAC FCU
Normal Panel
Door Bell
AC Control
Card Holder
Bed Switch Panel
Speaker
HDL-MZDN.432
Ethernet Hub
Floor1
Exhaust Fan
Curtain
Dimmable Lamps
Lights
AC220V
MHRCU.433
Room2
BUS Power Supply
HVAC FCU
Normal Panel
Door Bell
AC Control
Card Holder
Bed Switch Panel
Speaker
HDL-MZDN.432
Reception PC
Hotel PMS
PMS
Main Ethernet Hub
HDL
IHMS software
MHRCU.433
Room1
Ethernet Hub
Floor2
MHRCU.433
Room2
Input cable
Output cable
Mains power
Buspro cable
Ethernet
Speaker cable

5. Features and introduction to the IHMS

5.1 Login

There are three types of user, administrator, master user and HDL user.

1) **Administrator:**

This type of user has an unlimited ability to control, set up, modify, and monitor.

Username: admin

Password: admin（default）

2) **Master User**

This type of user can monitor and control, but cannot set up or modify.

Username: master

Password: master（default）

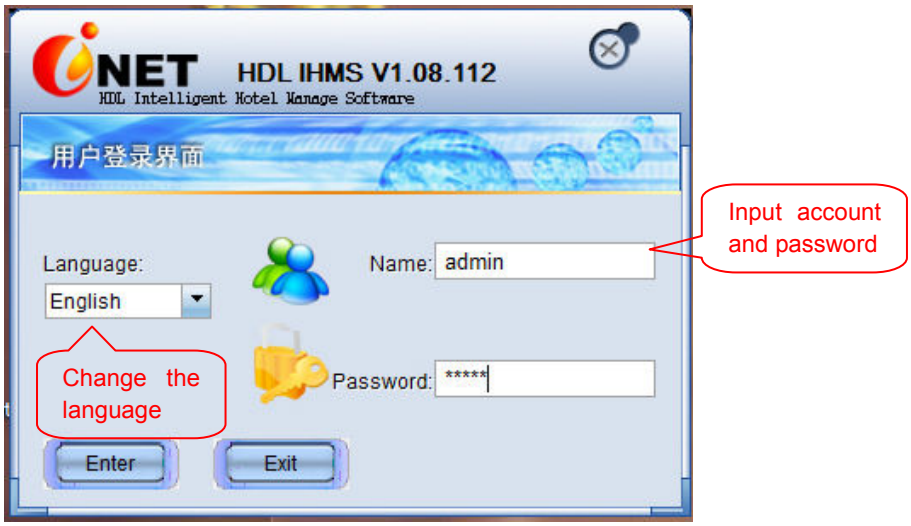
3) **HDL User**

This type of user can only monitor.

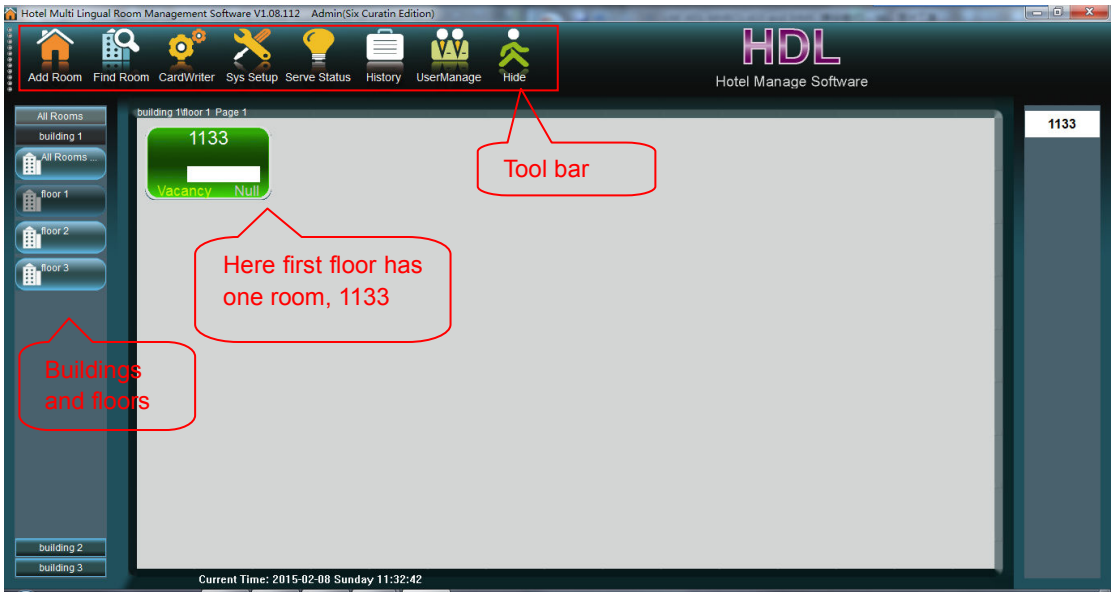
Username: hdl

Password: hdl（default）

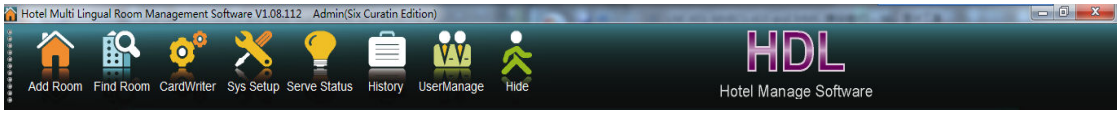
Login interface：



5.2 Main Interface



Tool bar:



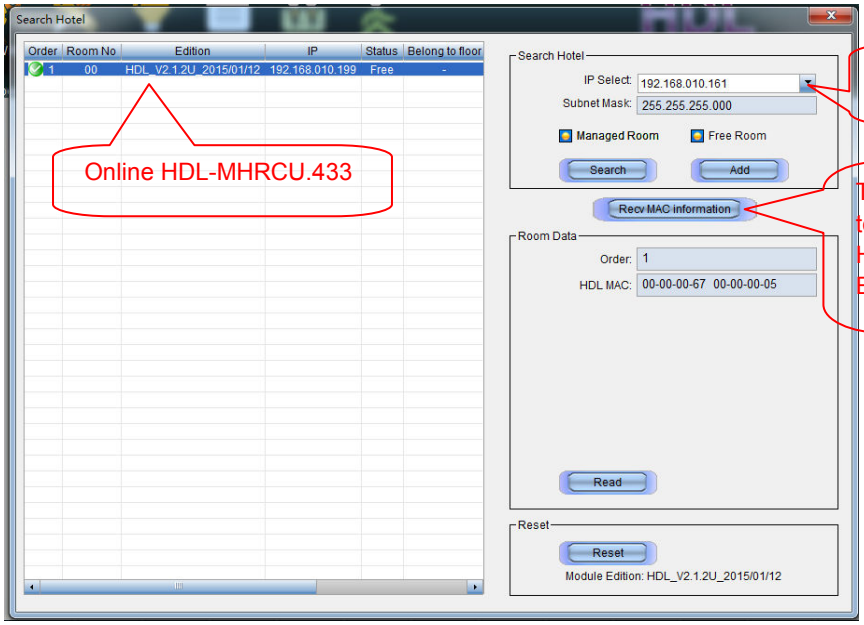
1) **Add Room：** Add a new host module (SB-DN-48HNET or HDL-MHRCU.433).
2) **Find Room:** Search for rooms that are available, or have pending service requests.
3) **Card Reader：** Write key card.
4) **Sys Setup:** Set system parameters such as customized service names, and resolution, etc.
5) **Serve status：** Show the guest service request history.
6) **History：** Show the card log, alarm log, and the door lock log.
7) **User Manage：** View, add, delete or modify a user account.
8) **Hide：** Minimize the program.

5.3 Tools

5.3.1 Add Room

To search and find online rooms, click on the ‘Add Room’ icon. One room refers to one HDL-MHRCU.433 host module.

Search online HDL-MHRCU.433:

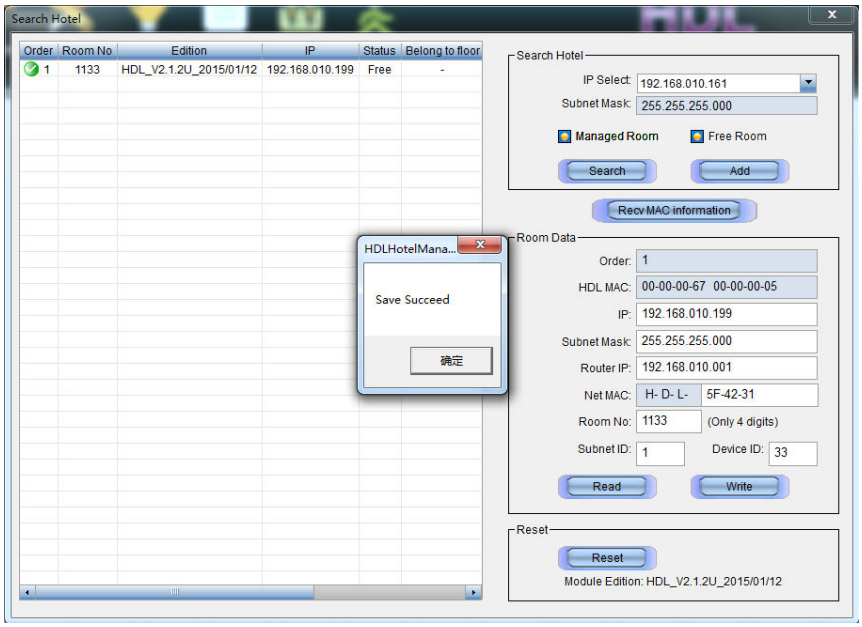


Managed Room：Rooms that have already been added

Free Room：Rooms that have not yet been added

Recv MAC information：Information for the host module (HDL-MHRCU.433)

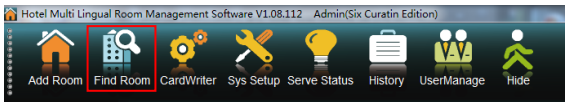
View or modify parameters：

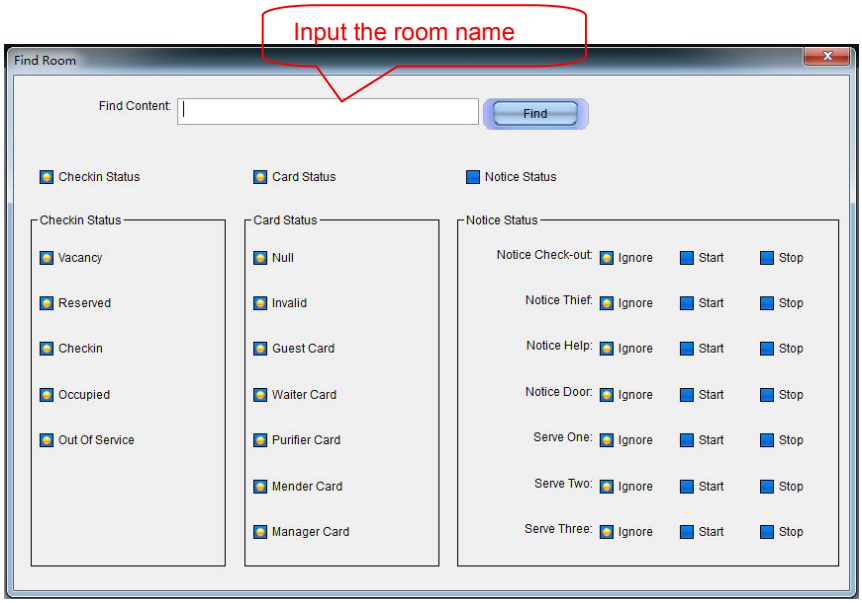


1) **HDL MAC**：The MAC address gives the unique hardware ID of the HDL-MHRCU.433 (00-00-00-67 00-00-00-05). The address can be changed with a tool supplied by HDL.
2) **IP**：The unique IP of the HDL-MHRCU.433 is 192.168.10.199.
3) **Router IP**：The gateway IP is 192.168.10.001.
4) **Net MAC**：The unique Ethernet MAC of the HDL-MHRCU.433 is H-D-L-5F-42-31.

5.3.2 Find Room

To find rooms which are vacant, or have pending service requests select the Find Room icon.

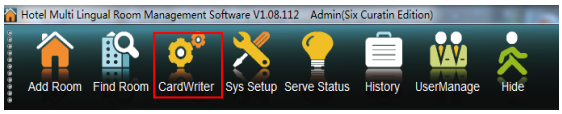




Rooms can be found by either inputting the room name(s), or through filtering via search parameters/conditions.

5.3.3 Card Writer

The card writer is used to program room cards for customers and housekeepers, etc. To program a card first select the card writer icon.



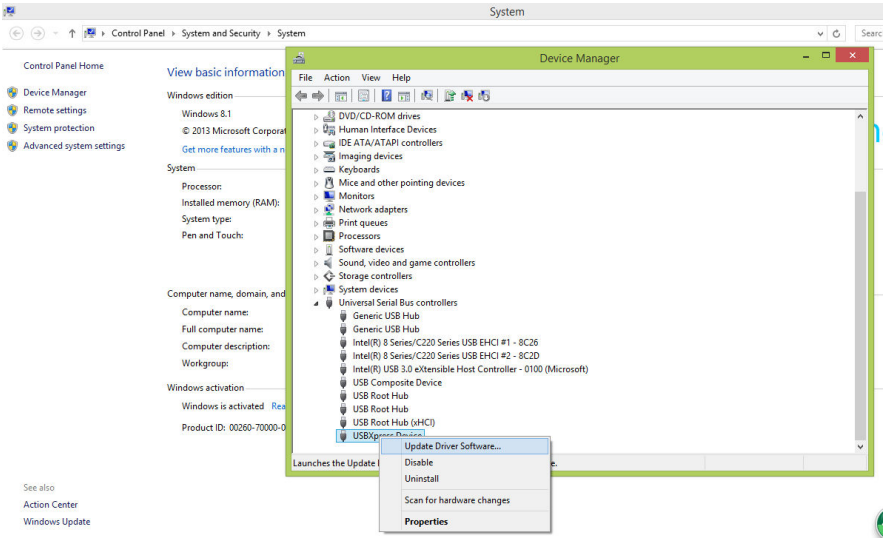
Card writer (with USB terminal):

The driver for the card writer can be found under the installation path for the IHMS, the driver is named “USB Card Writer Driver”.

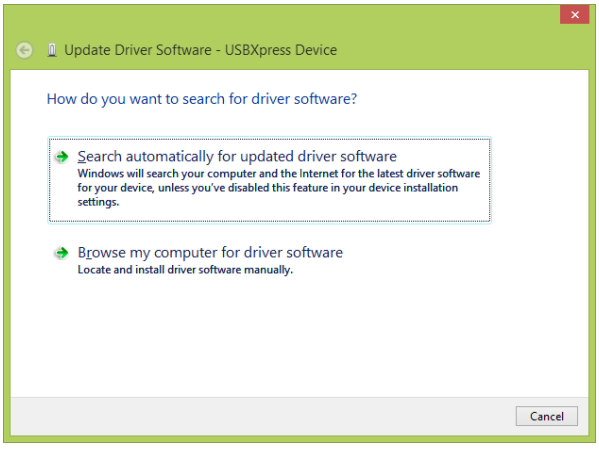
Driver installation steps:

1) Connect the card writer to your computer and install the USB driver.

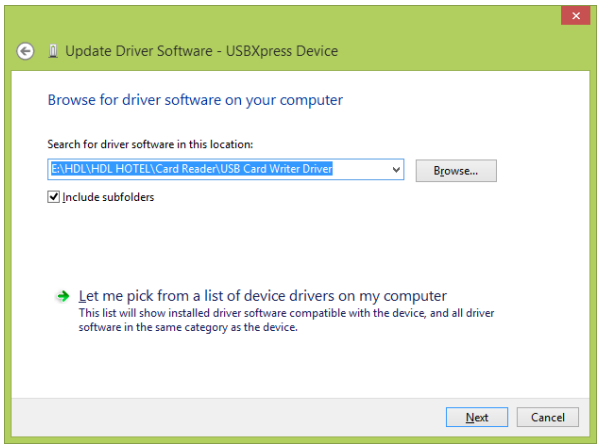
My computer -> properties -> device manager -> universal series bus controller -> the new connected USB, right click and select ‘update driver software.’



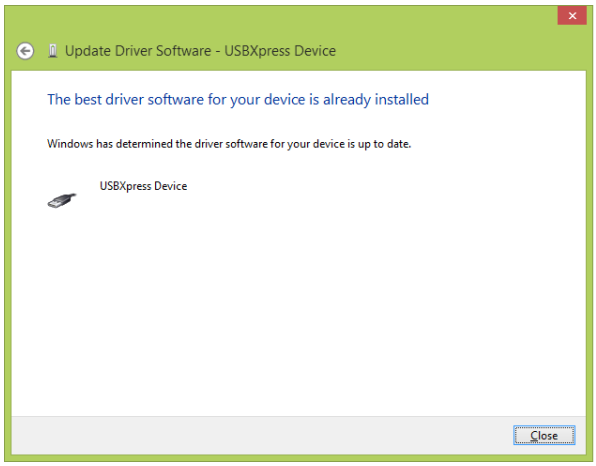
2) Select “Browse my computer for driver software”.



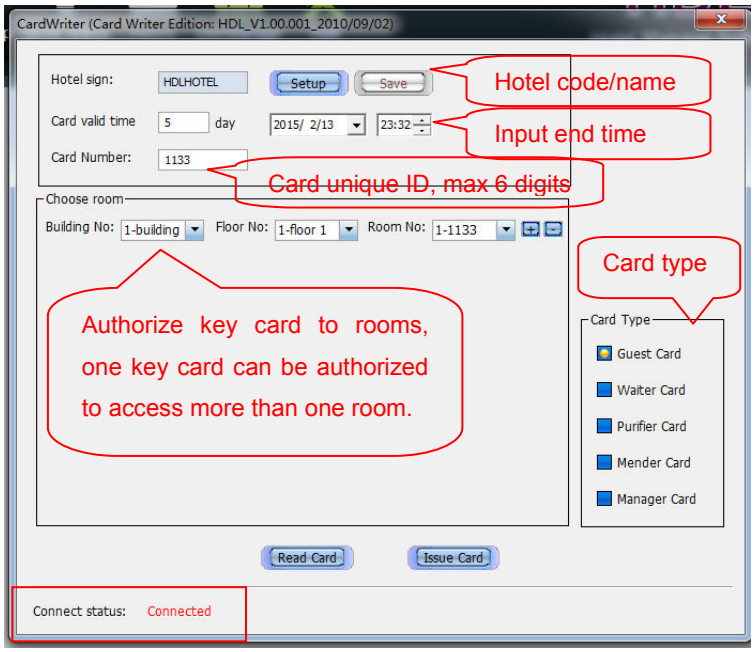
3) Select the USB Card Writer Driver on the installation path of IHMS.



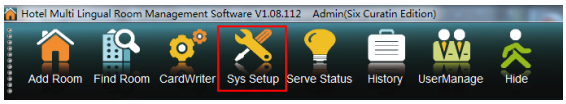
4) Updated successfully.



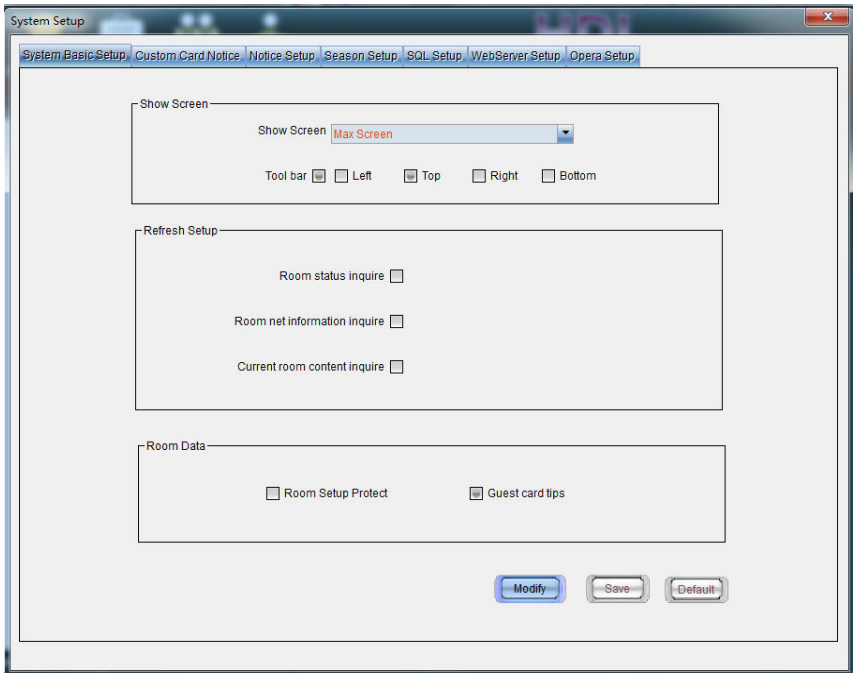
After the driver has been installed, the status will change to ‘connected’.



5.3.4 System Setup



（1）Basic system settings



1) **Show Screen:** Allows the size and the position of the IHMS and the Tool bar to be adjusted.

2) **Refresh Setup:**

Room status inquire: Sets the IHMS refresh time for the room status.

Room net information inquire: Sets the IHMS refresh time for the room net information inquiries e.g. room IP, MAC, room name, etc.

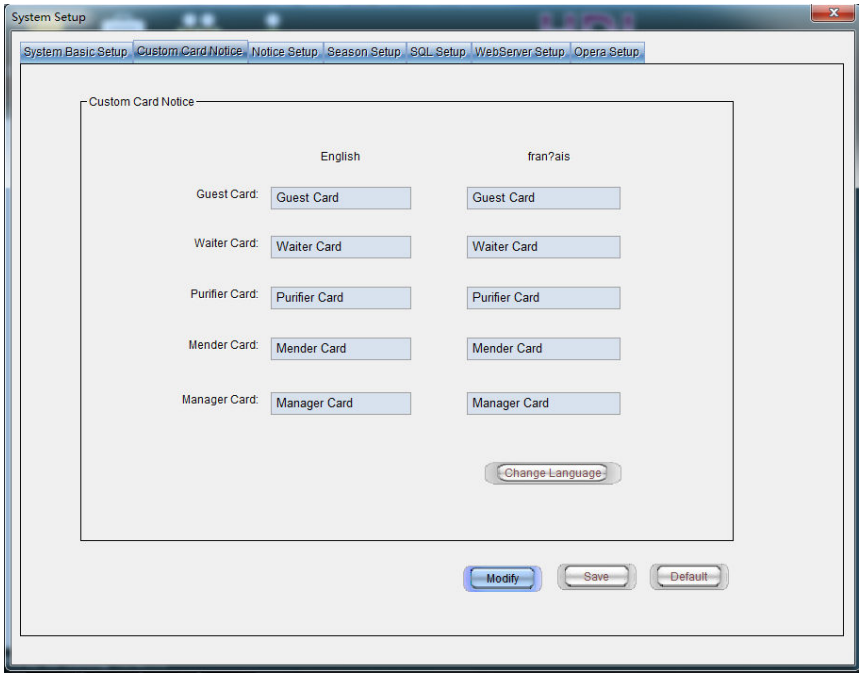
Current room content inquire: Sets the IHMS refresh time for the room currently selected. A user can inquire about the AC status, lamp status, curtain status, etc.

3) **Room data:**

Room Setup Protect: If this option is checked, a password will be needed when entering the control or setup mode.

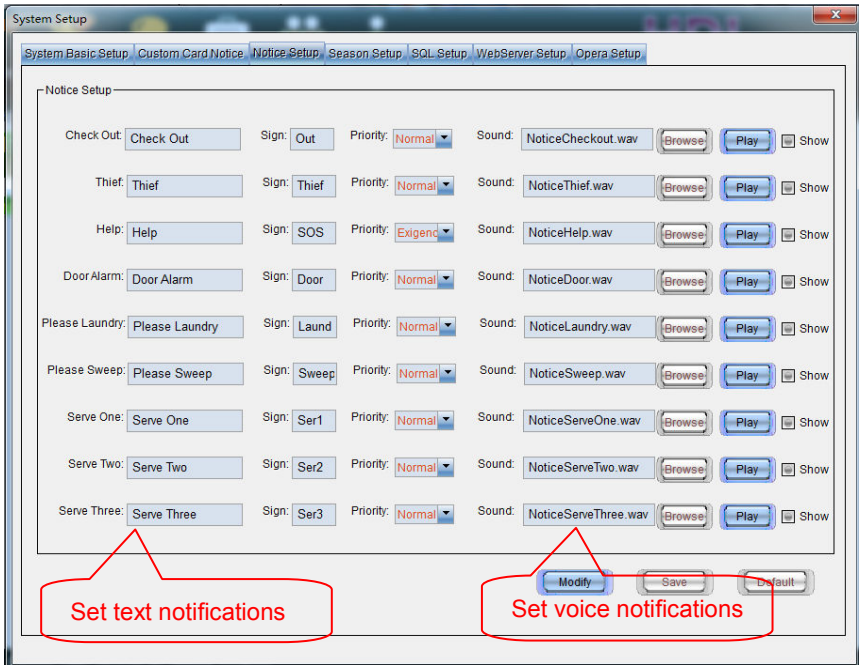
Guest card tips: If this option is checked, a notification will appear on screen if the guest is currently in the room while you are in the control or setup mode.

（2）Basic system settings

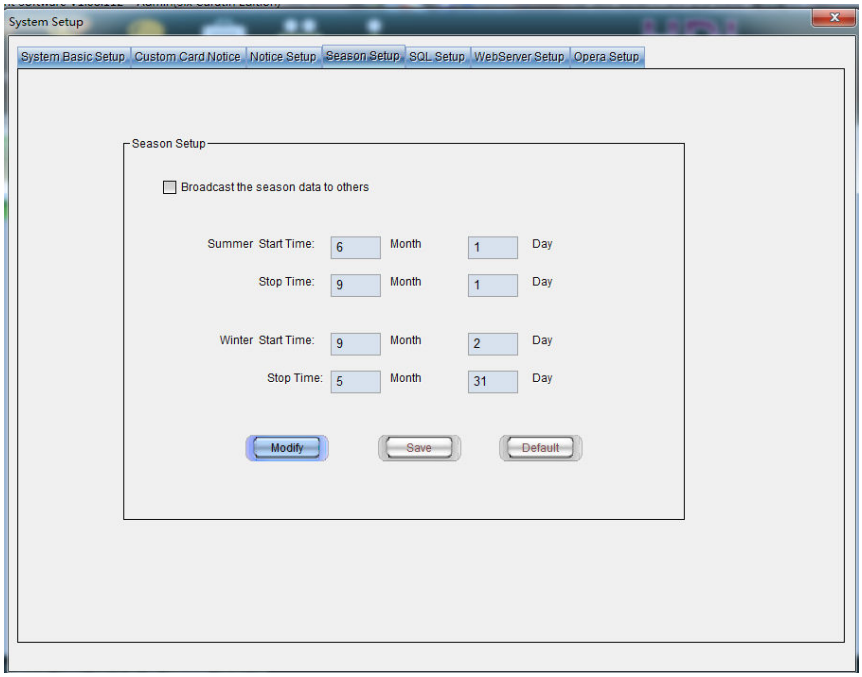


The room key cards can have a customized description.

（3）Notice Setup



（4）Season Setup



Different seasons can be allocated different dates, these dates can then be used to set the AC parameters.

If the season function is used, 'Broadcast the season data to others' must be enabled. To learn more about the AC settings, please refer to: "7.7.2 Air Conditioner tab".

（5）SQL Setup, WebServer Setup, Opera Setup:

These tabs are used for integration with 3rd party products/systems.

Hotel integration introduction：

HDL's hotel system is a room control system, which has been integrated with both the Cenium and Fidelio (also called Opera) hospitality PMS systems. HDL is able to integrate with other PMS systems on an as needed basis.

Below is a general diagram showing the structure of the HDL hotel system, when integrated into a Cenium and Fidelio PMS system.

The existing integration software modules by HDL (30 March, 2015)

- Cenium integration software module

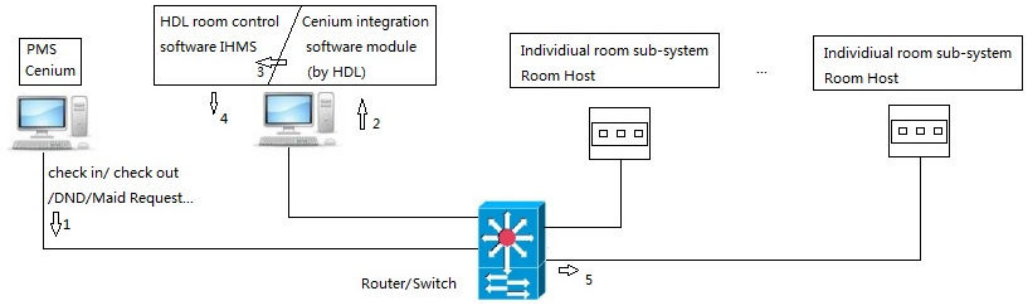
Utilize REST (Representative State Transfer) technology to integrate with Cenium.

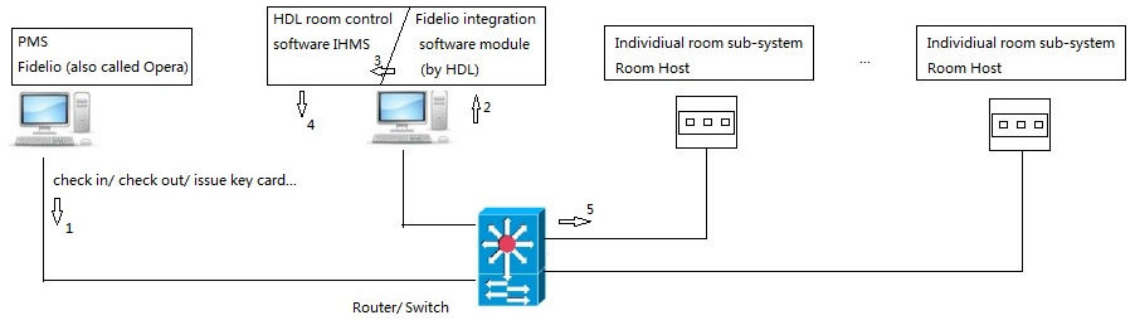
Features: check in, checkout, DND, Maid Request, etc. (30 March, 2015)

- Fidelio integration software module

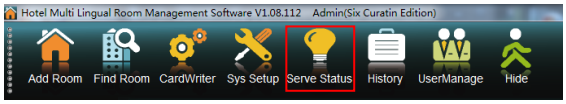
The software module is developed based on the Fidelio's sepc "FIAS_2.20m".

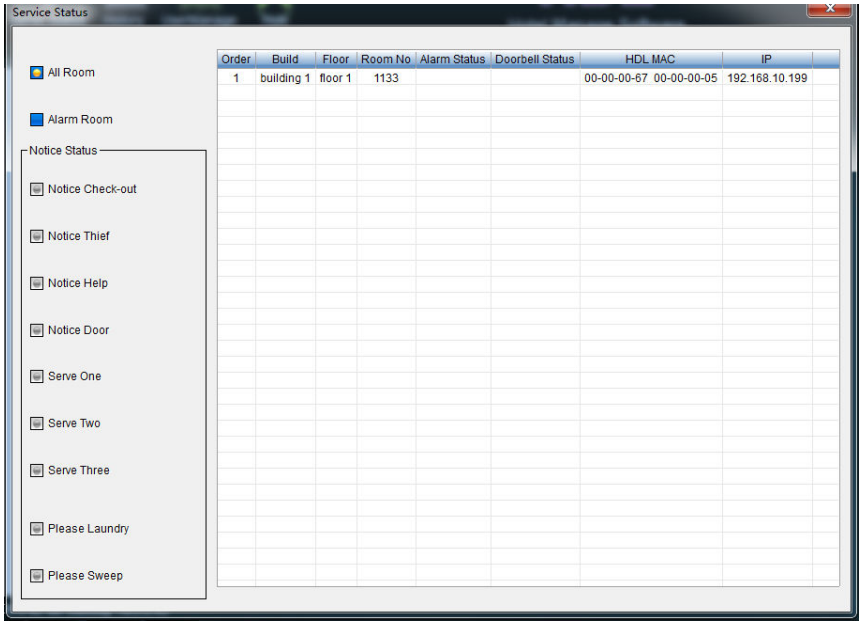
Features: check in, checkout, issue key card. (30 March, 2015)





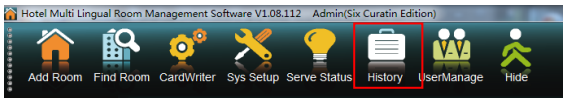
5.3.5 Serve Status

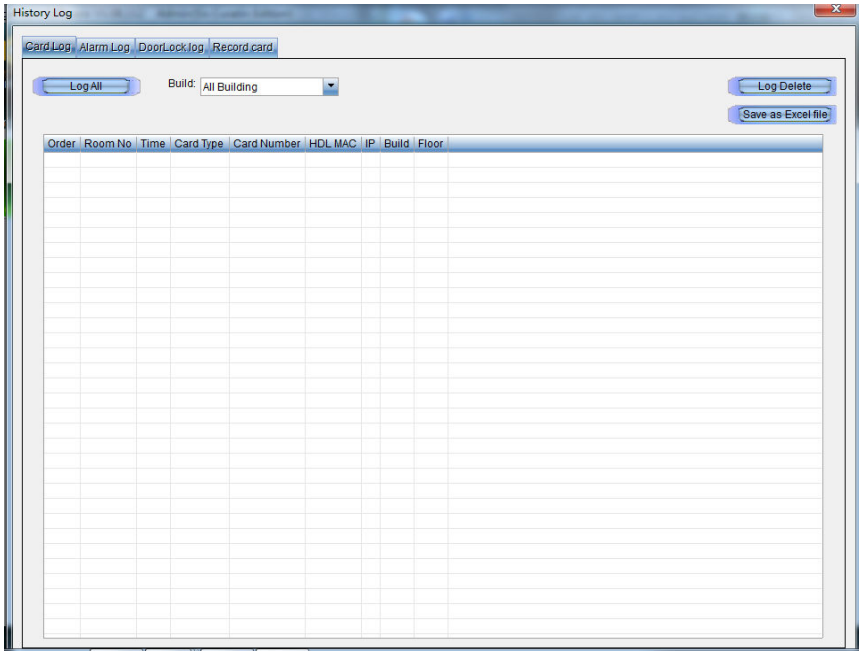




Check the notifications made for all rooms, or search via specific notifications.

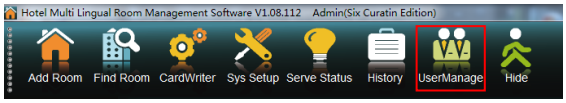
5.3.6 History

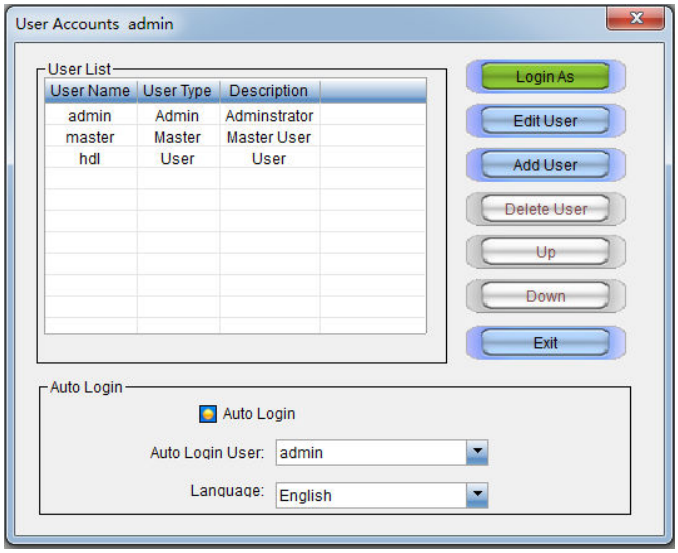




1) **Card Log：** Shows a record of the cards activity.
2) **Alarm Log：** Shows a record of the notifications made from each room.
3) **Door Lock Log：** Shows a record of the door lock activity.
4) **Record card:** Stores the records from issued cards. If a card is lost, the cards access privileges can be revoked.

5.3.7 User Management

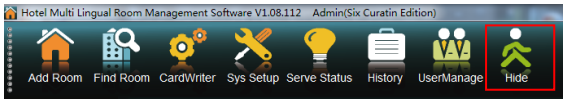




With User Accounts admin, an IHMS software user can be added, deleted, or modified.

Auto Login: If the Auto login feature is checked, the IHMS software does not require a password on initiation.

5.3.8 Hide



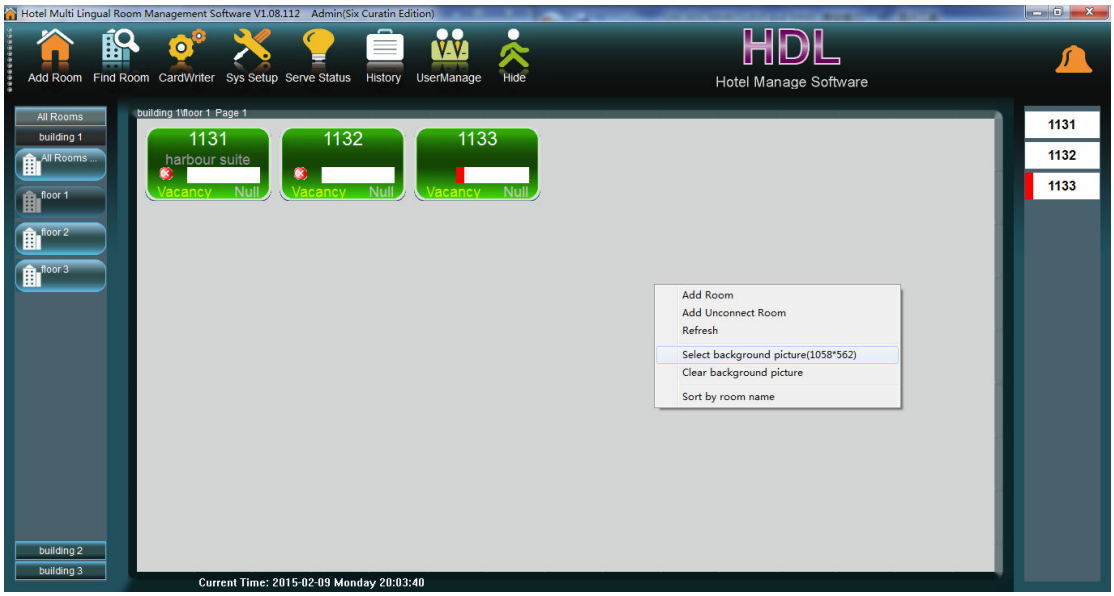
If the hide icon is selected, the IHMS software window will be minimized.

6. Setup

6.1 Add Room

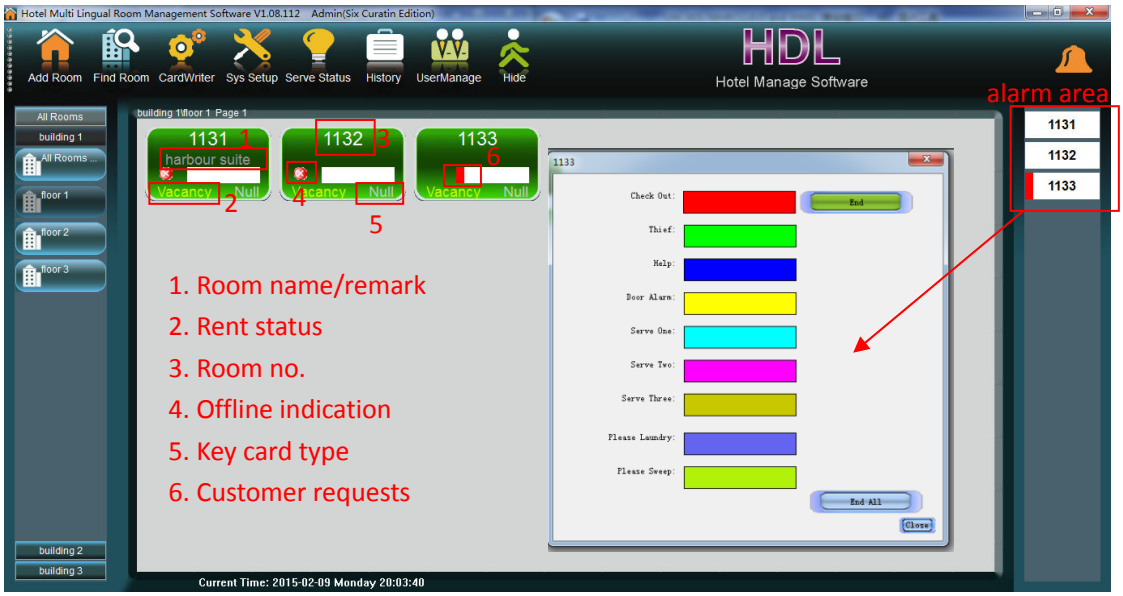
See Section “5.3.1 Add Room”.

6.2 Add a background image



To add an image to the background of the hotel management software, right click the blank area, and then select your chosen image/picture.

6.3 Room Description and Alarm Prompts

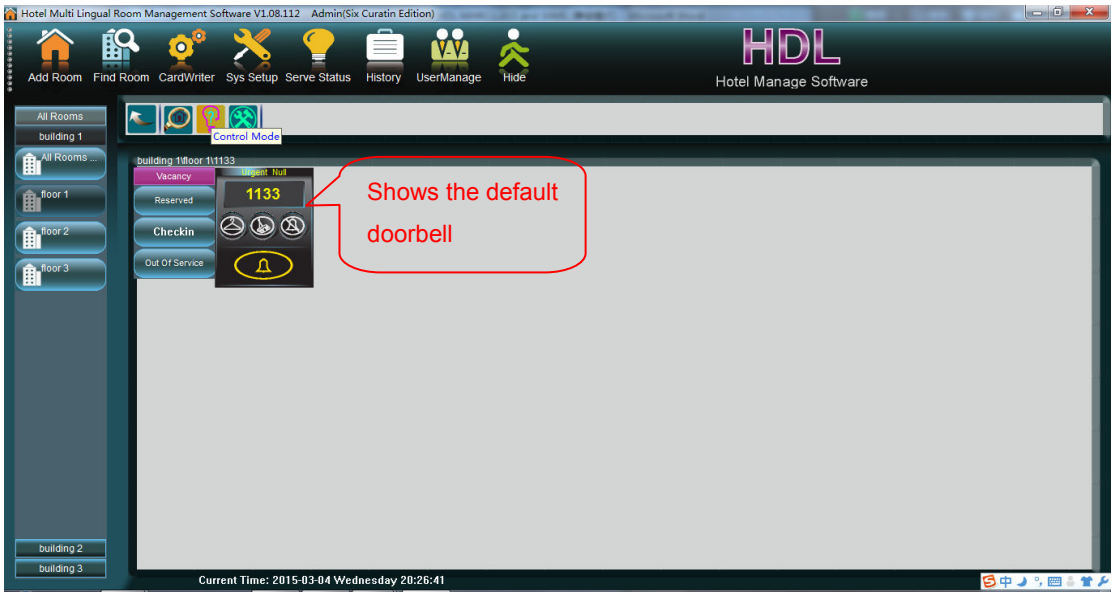


Click the Alarm area, you can check the alarm type of this room.

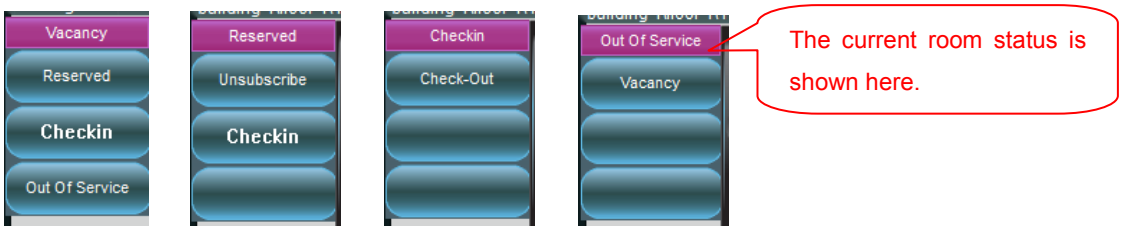
7. Room Management

After a room (HDL-MHRCU.433) has been added on the IHMS, an icon similar to the one shown here

will appear on the IHMS.
Clicking on this icon will enable you to view the room information.

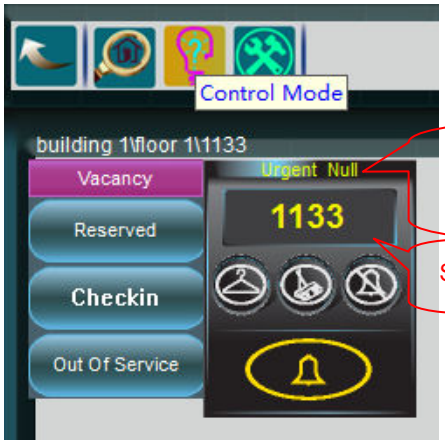


7.1 Current room status

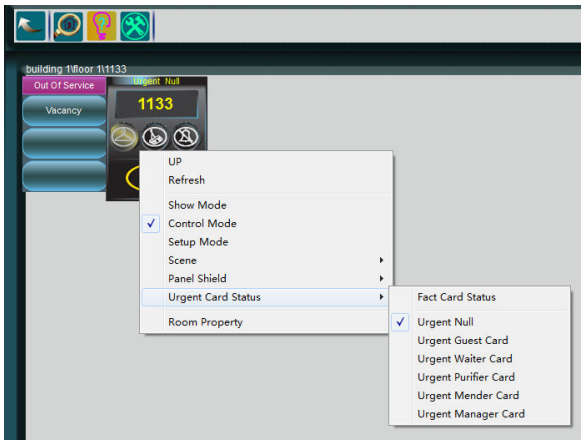


Here we can see the current status of the rooms. Using the Control Mode, the lease state can be changed, which in turn activates a corresponding scene. As an example if the room status is changed to vacant, the vacant scene will activate which deactivates the lighting and HVAC. For further information concerning scene settings, please refer to section “7.7.10 Scene tab”.

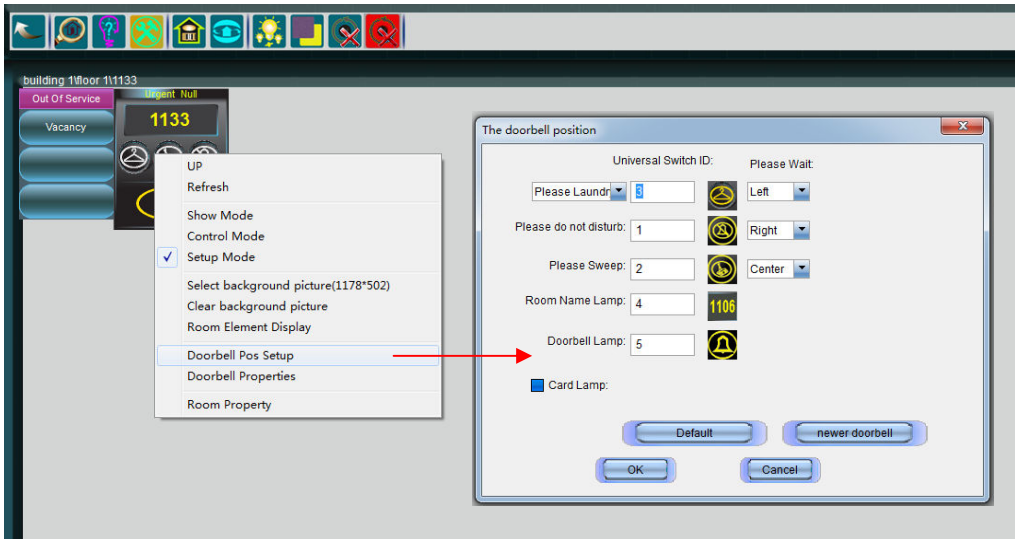
7.2 HDL Doorbell



To simulate the presence of a room card, use the Control Mode, and then right click on the doorbell icon.



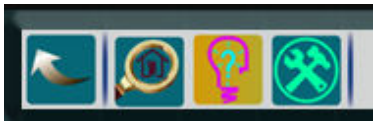
To setup a doorbell, go to the Setup Mode and right click on the door bell icon.



To control a doorbell, please refer to section “7.7.6 Other tab”.

7.2 Room tool bar

Please find below a brief explanation of the toolbar icons.



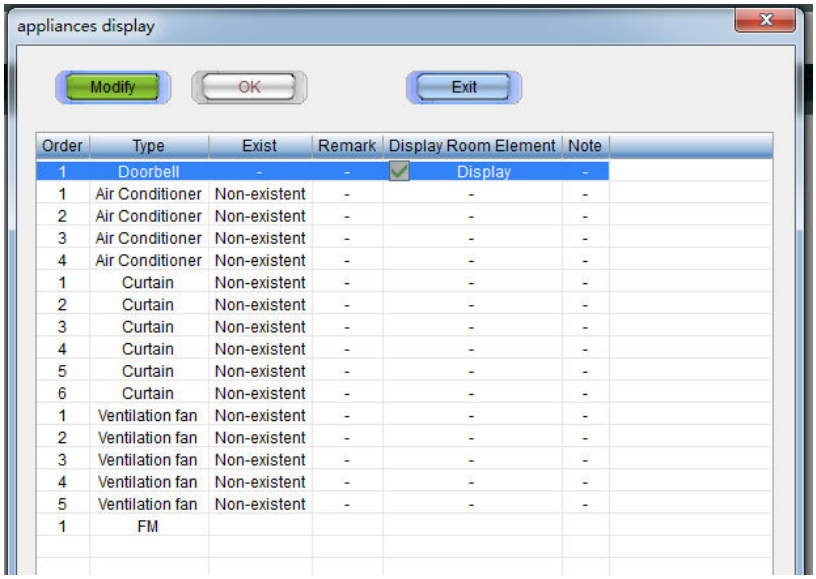
1) Return or go back a step.
2) Show mode: In this mode you can check requests, and the room device status.
3) Control mode: In this mode room devices can be controlled by clicking on them, and Scene/Panel Shield/Urgent Card Status can be simulated.
4) Setup mode: In this mode a room can be configured/adjusted.

Under Setup mode, we can use the functions found under icons 5 to 10:

5) Room element display: Displays elements present in the room.
6) Room element setting: Allows the element settings to be changed.
7) Add lamp: Allows a lamp/light to be added to the system.
8) Set background picture: Enables an image or picture to be added to the background of the display window.
9) Enable switch function: Enables switch functions.
10) Enable switch function (Debug level): Enables switch functions (Debug level).

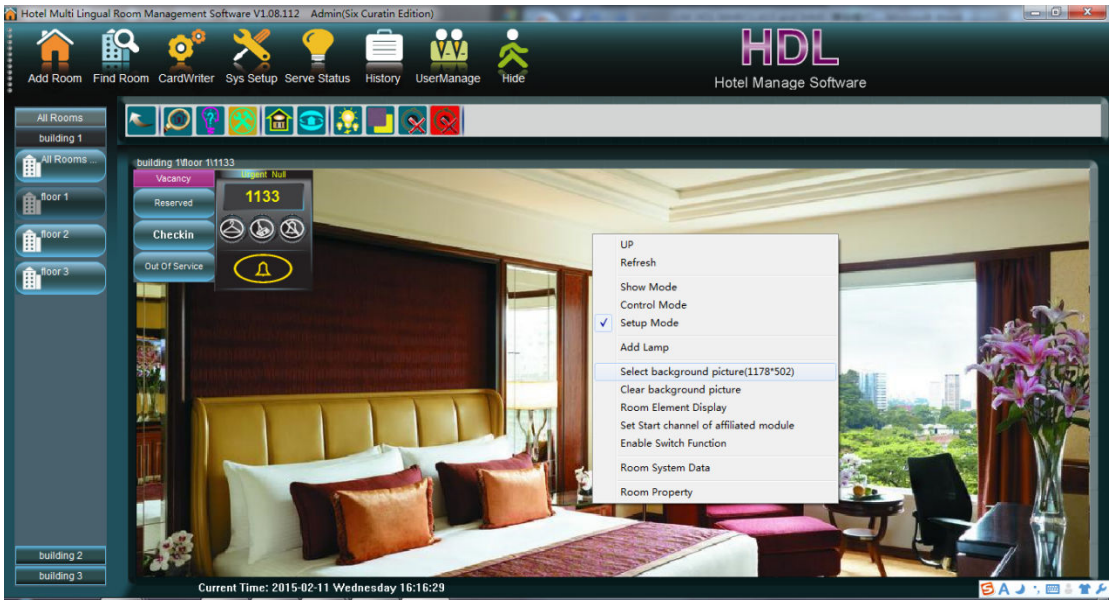
7.2 Room Element Display

If the room element display icon is selected, all the elements/appliances/devices in the room will be displayed.



7.3 Add a Room Background Image

To add a background image or icon to the window, right click on the add room background icon, or right click on a blank area and then click on ‘select background picture’.



7.4 Enable the Switch/Gateway function

To enable the switch function of the HDL-MHRCU.433, the switch icon must first be selected.

->

The HDL-BUS Pro Setup Tool will now be able to access the HDL Buspro system via the HDL-MHRCU.433 (room host module).

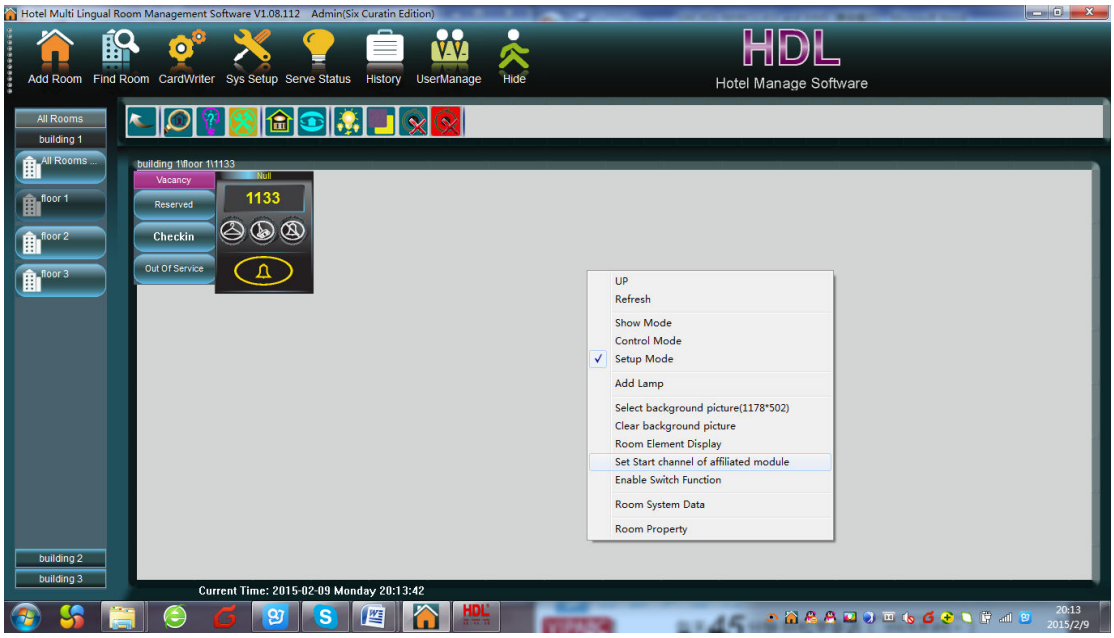
To enable debugging, click on the above icon to enable an unrestricted data flow.
Once the interface is exited, the two switch icons will revert to being inactive. This is a safety precaution to prevent commands being issued from other rooms.

7.5 Set a Start Channel for an Affiliated Module

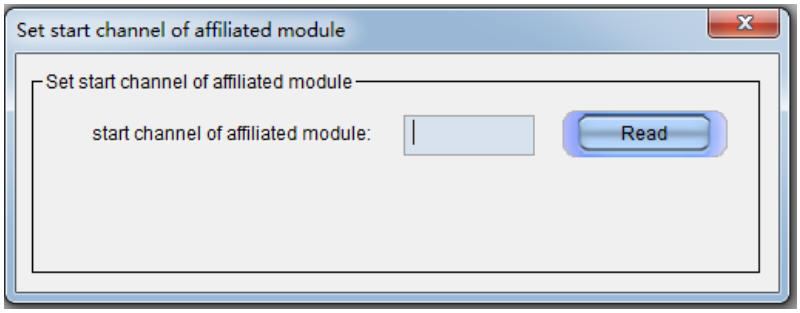
Section “1.1.2 Description of HDL-MHRCU.433”, details that the HDL-MHRCU.433 has 48 output channels, and 21 Mix Control channels.
In the host module, the default start channel for the Mix Control is 1, and the following 20 mix control channels occupy channels 2-21 of the host module.

The start channel of an affiliated module/Mix control can be changed.
To add another affiliated module, it must be connected to the “INNER-BUS” port of the HDL-MHRCU.433.

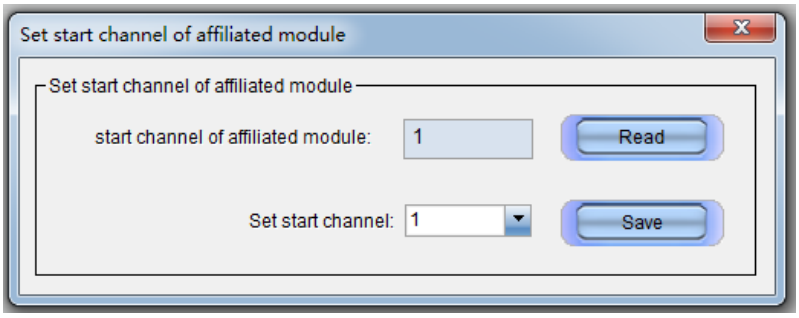
If a room is clicked, the below interface will be displayed.



A. To enter the setup mode, right click on a blank area of screen and select “set start channel of affiliated module”, the below window will then appear:



B. Then press the ‘PROG’ button on the affiliated module until the LED indicator turns red. After this then click on ‘Read’, and the below window will then appear.
(If you wish to change the Mix control’s default start channel, you must press the ‘PROG’ button on the HDL-MHRCU.433.)



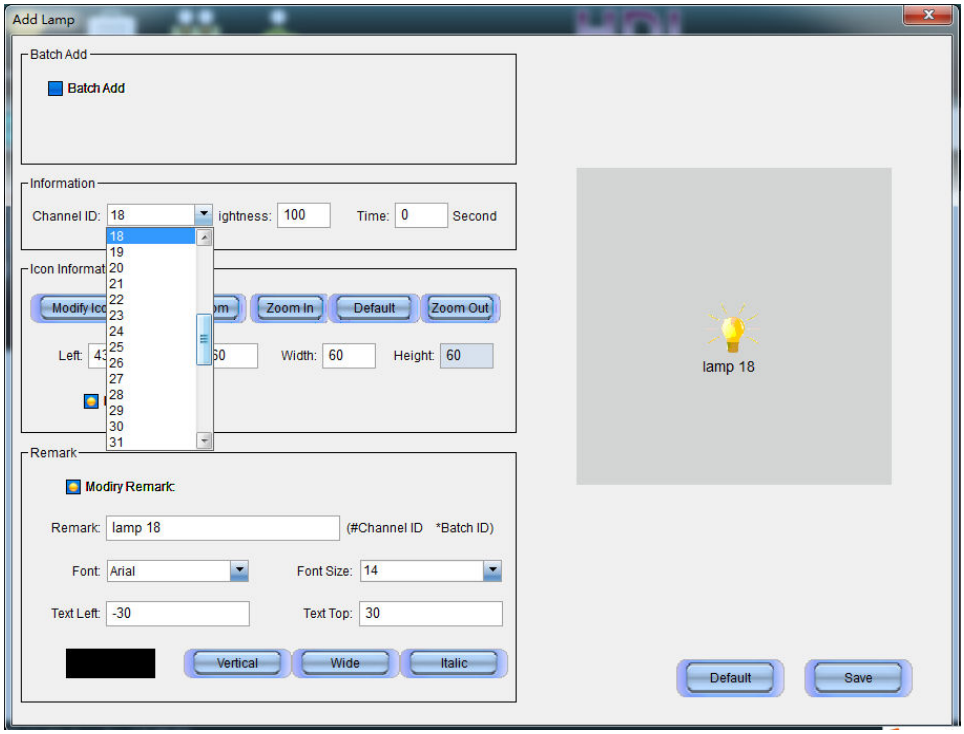
C. Set the start channel, if the channel is to be used in conjunction with the HDL-MHRCU.433 module, it is recommended that the start channel is set as 1. If an affiliated module like the SB-DN-RMIX20 is to be used then set the start channel as 23 or >23, because the Mix control channels occupied channel 1 to 21 of host module,

and doorbell control occupied channel 22 of host module.

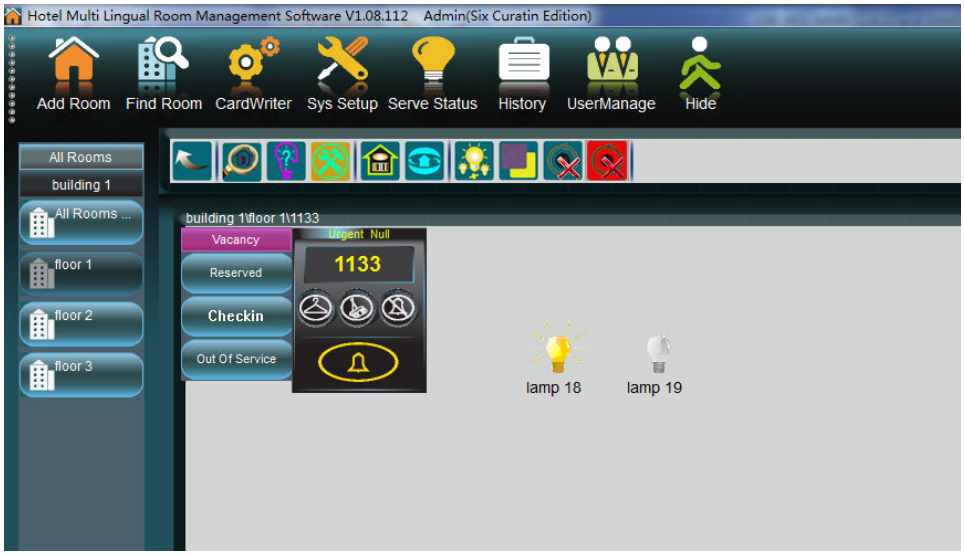
7.6 Add Lighting

In the Setup Mode, click this icon , or right click the blank area to add lighting/lamps. When the icon is clicked, the lamp will be added to the default site (lower left in the window);

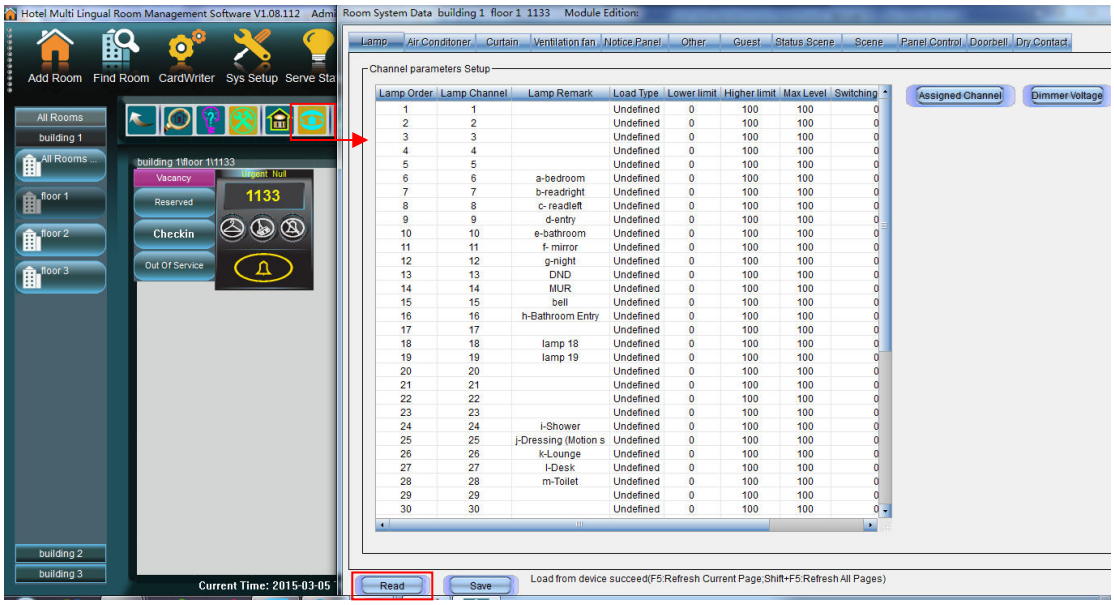
To customize the location of the icon, right click on your preferred area in the blank space.



1) Batch Add: This enables you to add multiple lamps at once.
2) Information:
   Channel ID: This shows which channel the lamp currently occupies in the host module.
   To set the start channel of an affiliated module, please refer to section “7.5 Set start channel of affiliated module”.
   Brightness: This shows the intensity of the lamp, with the HDL-MHRCU.433 module, only channels 18 to 21 are dimmable. If other channels are used, the brightness must be set 0 or 100.
3) Icon Information:
   This section allows the icon information to be edited.
4) Remark:
   This section allows a comment or remark to be input.



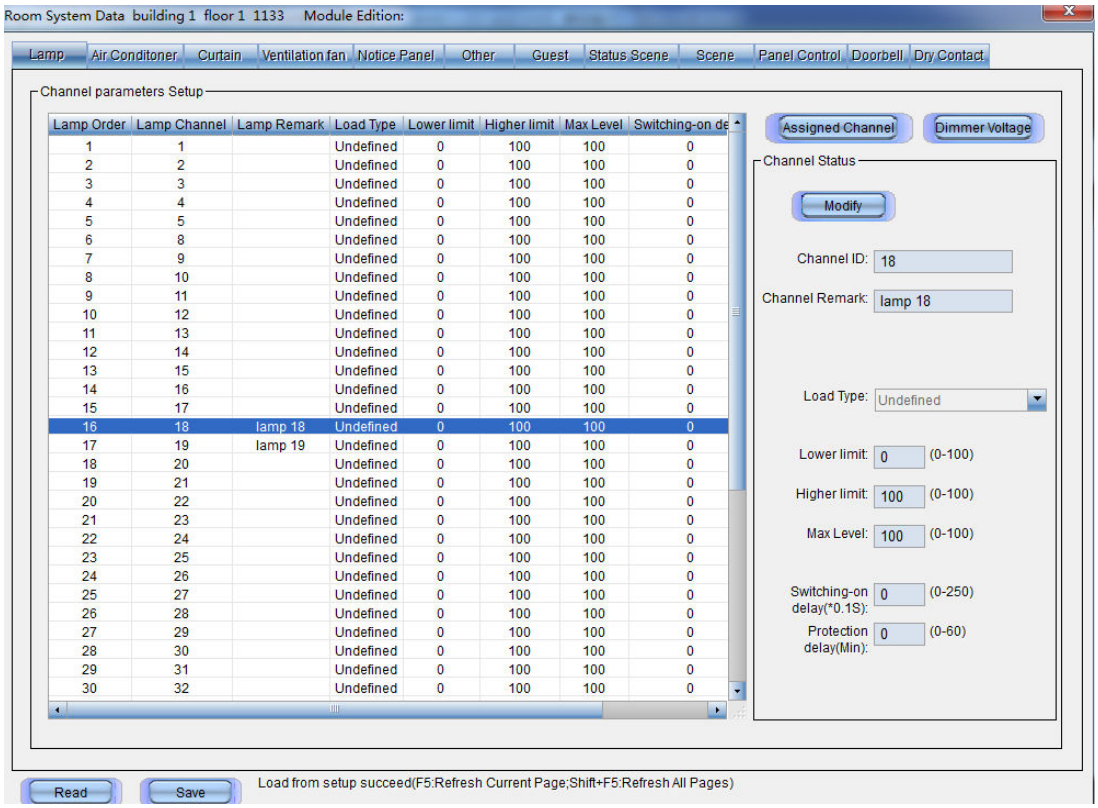
7.7 Setting room system data



The elements that make up a room such as doorbell panel, curtains, lights, fans and A/C etc., can be set in the room system data window.

1) **Before modifying the settings, read the host module settings first.**
2) **After the modifications have been made, they must be saved to the host module.**
3) **For further information concerning 'Read and Save', please refer to section "7.9 Save and Read".**

7.7.1 Lamp tab



The HDL-MHRCU.433 has 48 control channels and 21 Mix control channels, the first mix control channel is channel 1. (For further information, please refer to section “7.5 Set Start Channel of Affiliated Module”.)

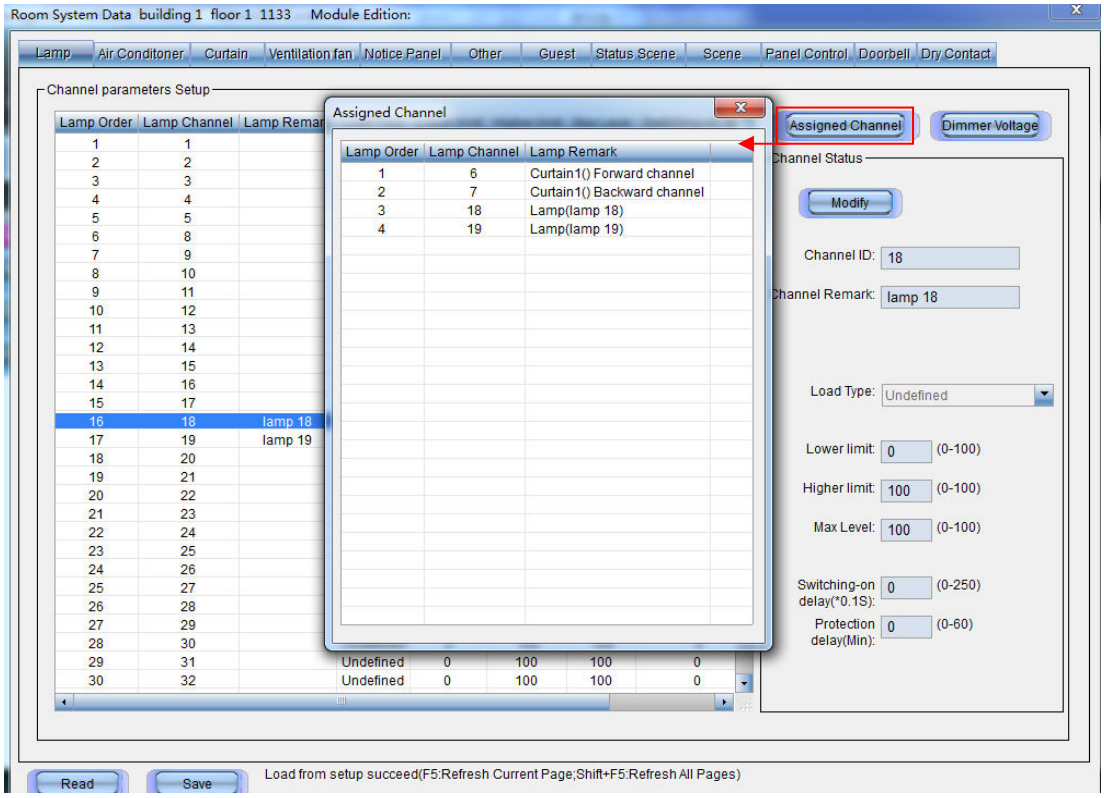
If there are no other affiliated modules connected to the HDL-MHRCU.433, only channels 1-21 can be used in the “Lamp” tab.

The “Lamp” tab, is able to show the unassigned channels, and the lamp channels.

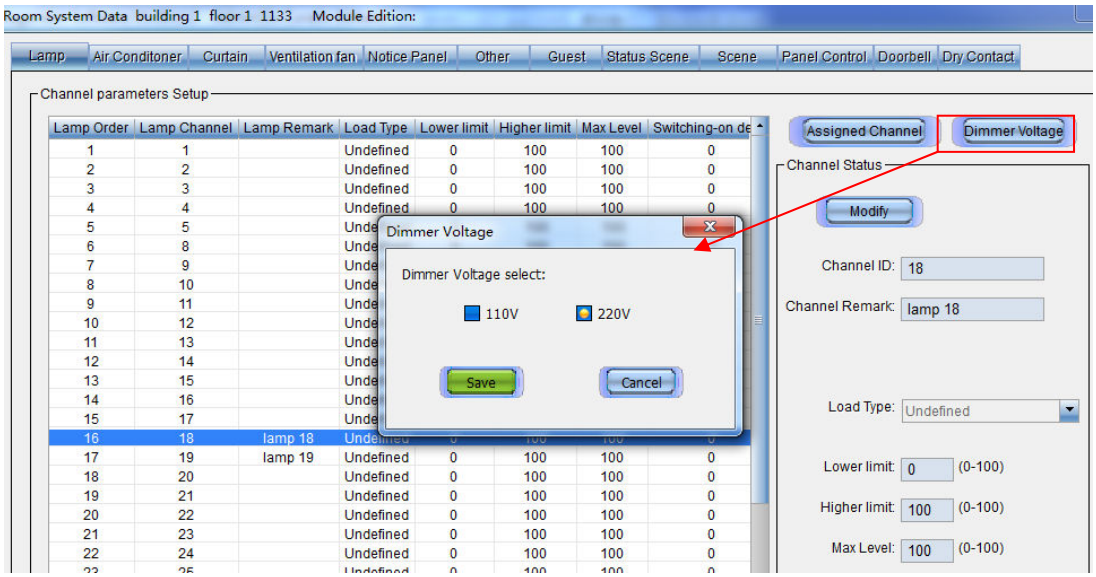
1) Channel ID: Channel ID of HDL-MHRCU.433, there are 48 channels in total.
2) Lower limit: If the brightness level is lower than the Lower limit, the channel will be shut down. By default the limit is set at “0%”.
3) Higher limit: If the brightness level is above the higher limit, the channel will reach its max level. By default the limit is set at “100%”. **The higher limit should not be set higher than the Max Level.**
4) Max Level: By default the max level is set at “100%”.**The maximum level must be set above the higher limit.**
5) Switching-on delay: This is used to reduce the impact from multiple channels switching on at once.
6) Protection delay: This is used to make sure that the time between channels “last on” and “next on” is longer than the protection delay time. As an example, if the protection delay time is set at “1 min”, the channel is switching from on to off. If a user then tries

to turn the channel on again after 4 seconds later, a further 56 seconds must elapse before the command is completed.

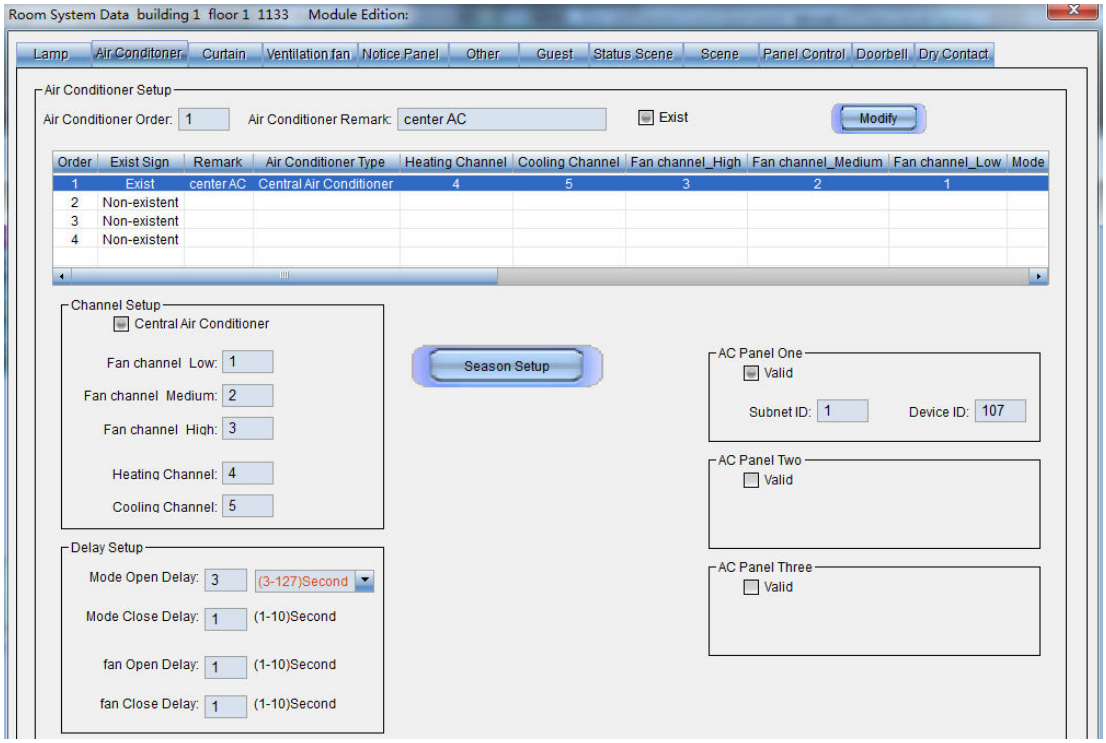
7) Assigned Channel: Shows the assigned channels and the lamp channels.



8) Dimmer Voltage: The dimming voltage can be selected.



7.7.2 Air Conditioner tab

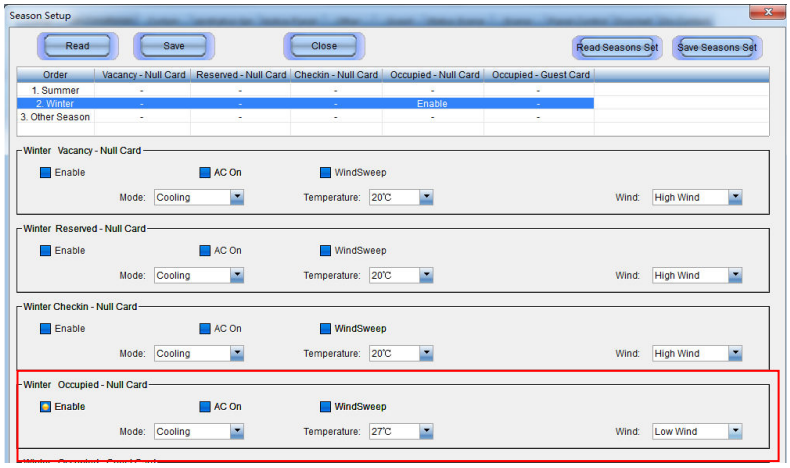


The HDL-MHRCU.433 supports up to 4 air conditioners, each AC can be controlled by up to 3 AC Panels (thermostats).

If the AC is centralized, you can assign a channel from the HDL-MHRCU.433 or affiliated module to the FCU (fan coil unit).

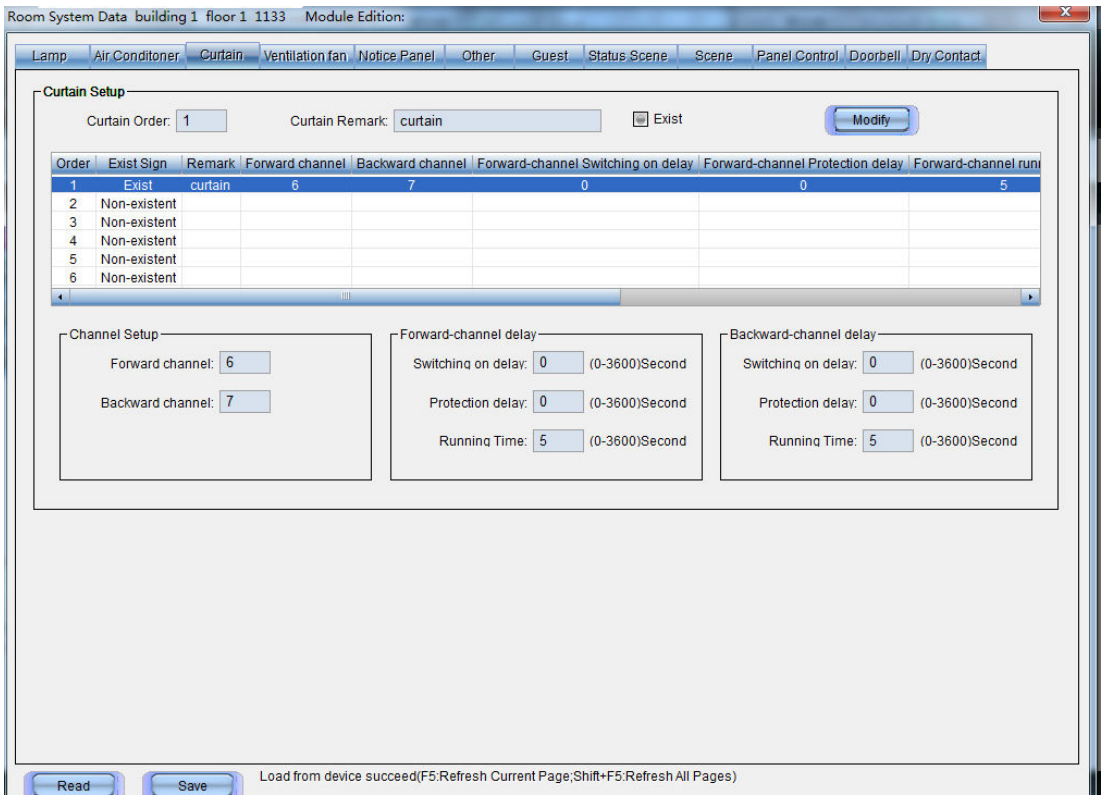
If the AC is centralized, but you do not wish to assign channels to an affiliated module, or you wish to use IR control, channels do not need to be assigned. Only input the ID of the AC panel (thermostat).

Season Setup: The air conditioner can be configured so that during different seasons it outputs the most suitable temperature. In the below screen shot the air conditioner has been set so that when a room is occupied, the AC outputs a temperature of 27℃. (The 'season settings' take priority over the scene controls.)



To set the dates for summer and winter, please refer to section “5.3.4 Sys Setup (Season Setup)”.

7.7.3 Curtain tab



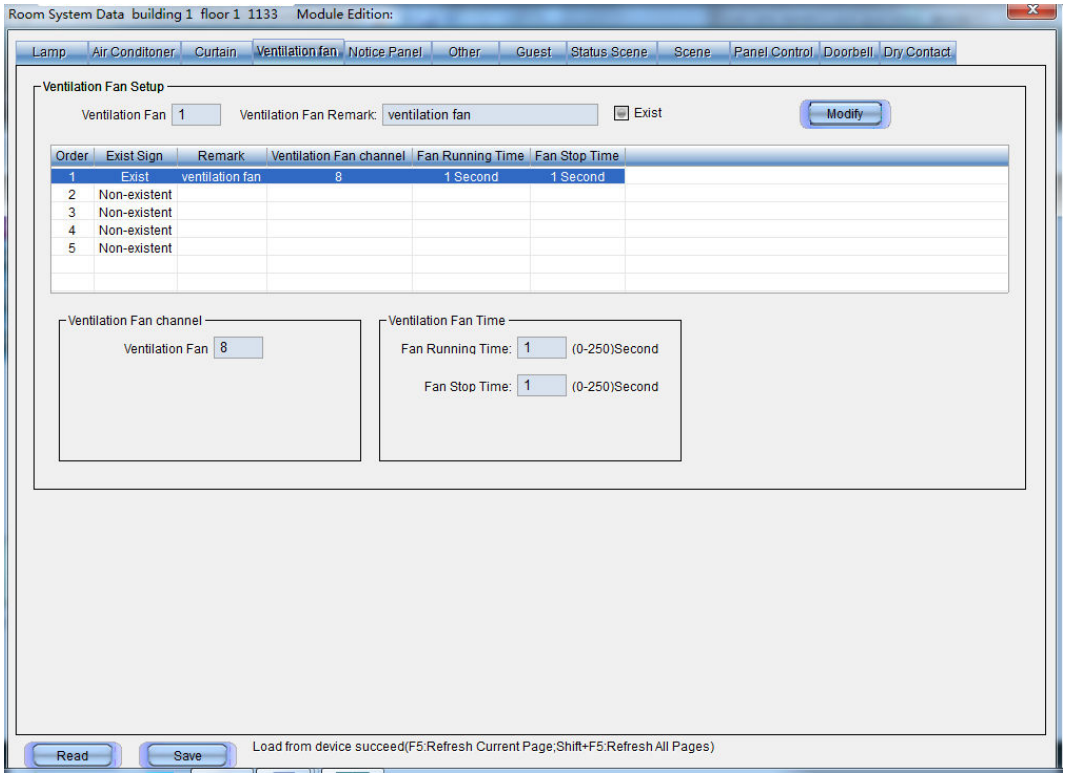
The HDL-MHRCU.433 supports up to 6 curtain motors, each curtain motor needs to be assigned 2 channels from the HDL-MHRCU.433. One channel is used for forwards, and the other channel being is used for backwards.

Switching on delay: Please refer to section “7.7.1 Lamp tab”.

Protection delay: Please refer to section “7.7.1 Lamp tab”.

Running time: The time the curtain motor is active.

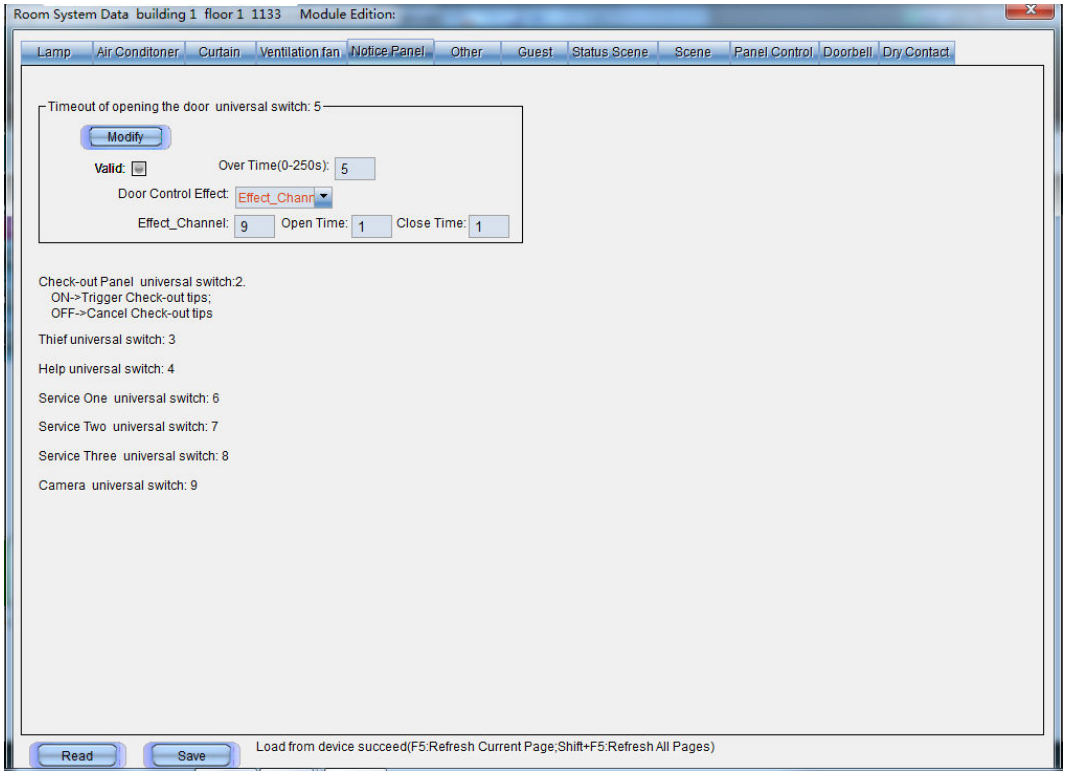
7.7.4 Ventilation fan tab



The HDL-MHRCU.433 supports up to 5 ventilation fans, each fan must be assigned a single channel from the HDL-MHRCU.433.

The running time of the fan can be customized as shown in the above screen shot. If the settings in the screen shot are implemented, the fan would be active every other second, ON(1s)->OFF(1s)->ON(1s)->….

7.7.5 Notice Panel tab



Timeout of opening the door universal switch: 5

This function is used to warn the end user if they have left a door open, and not inserted the room card into the card reader module. In the above screen shot, the settings show that when the HDL-MHRCU.433 receives a “universal switch 5-ON” command, a five second countdown will begin. If the HDL-MHRCU.433 does not receive a “universal switch 5-OFF”command, and the time elapses, channel 9 will be turned on and off alternatively (ON(1s)->OFF(1s)->…). This can be cancelled by sending the command “universal switch 5, off” to the HDL-MHRCU.433 or inserting the card into the card reader module.

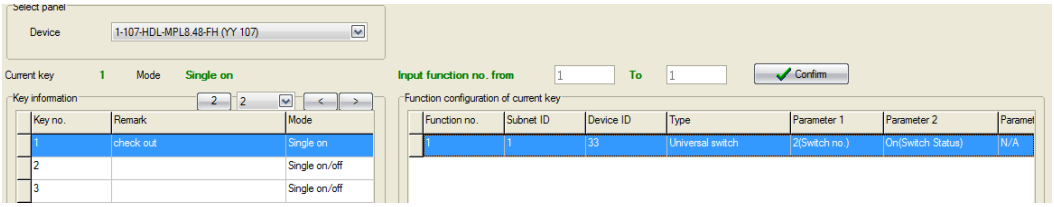
Universal Switch:

The universal switch tab displays the “universal switch” commands that the HDL-MHRCU.433 has received. When a customer request is received, a report is sent to the IHMS software.

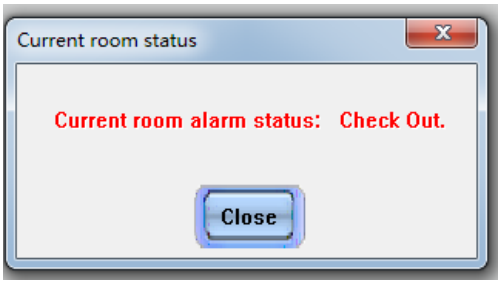
The usual method of sending a universal switch command to the HDL-MHRCU.433, is via a panel. As an example, if a guest uses the DLP panel to check out, the reception can receive a notification.

A. To enable the check out notification, open the DLP settings in HDL-BUS Pro Setup

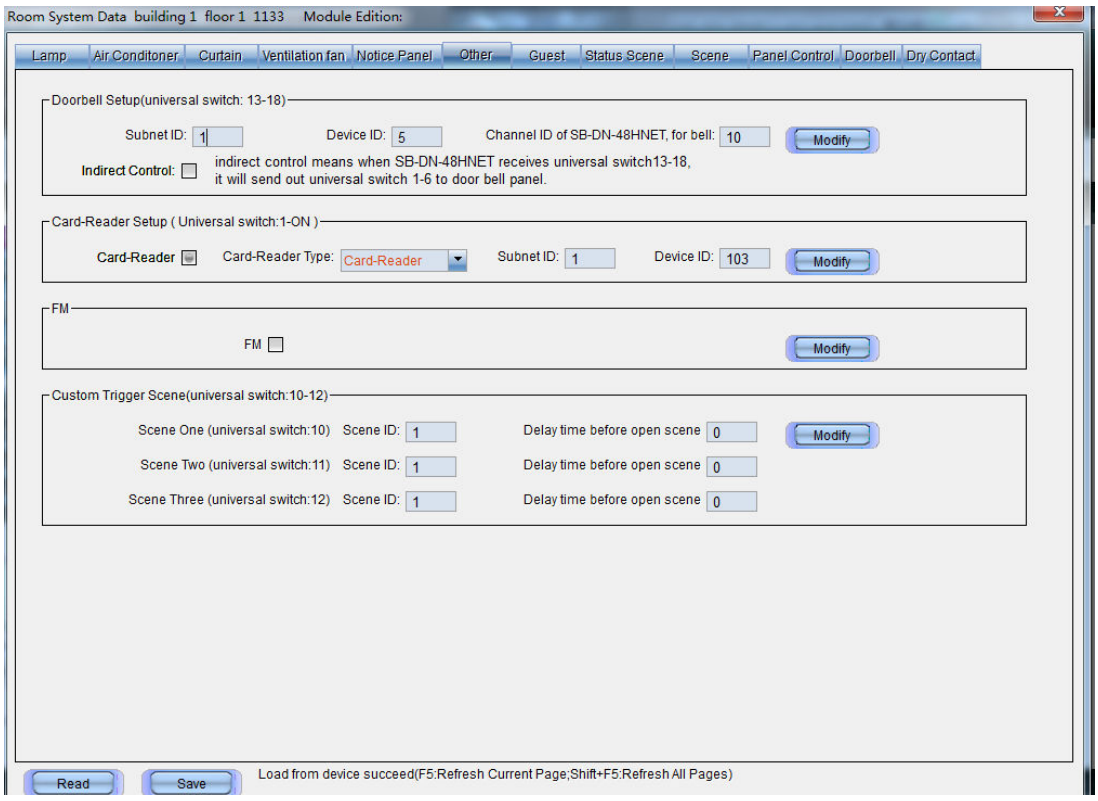
Tool:



B. When a customer makes a request via the DLP, a new window will display their request in the bottom right corner of the IHMS software.



7.7.6 Other tab

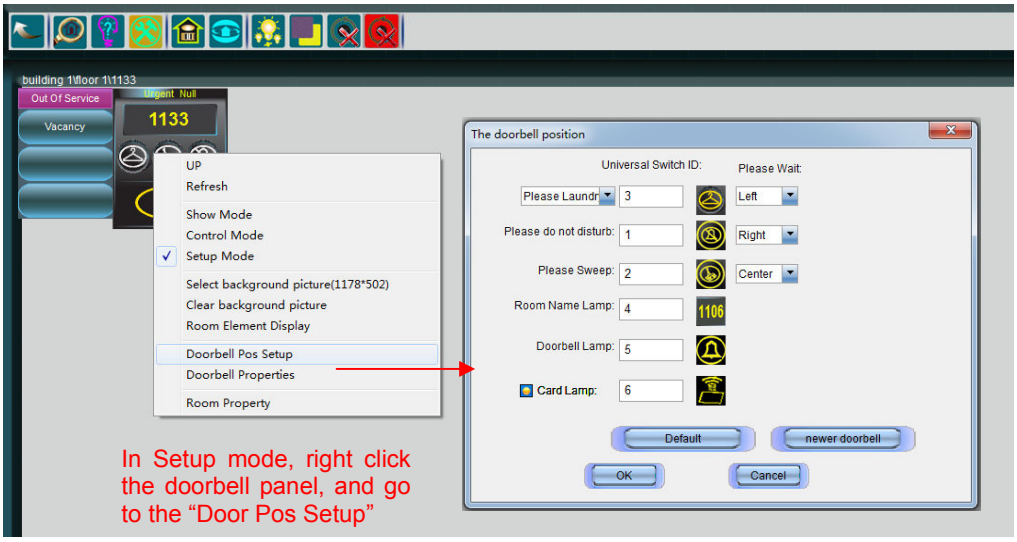


Doorbell Setup: Input the doorbell panel subnet ID, device ID, and channel ID. Then assign a channel to the bell. If the bell is connected to the “doorbell channel”, (see Section “1.3 Description and Wiring of the HDL-MHRCU.433” for details), channel 22 must be assigned to the bell.

To setup the doorbell, please follow the steps shown below.

1) Settings:

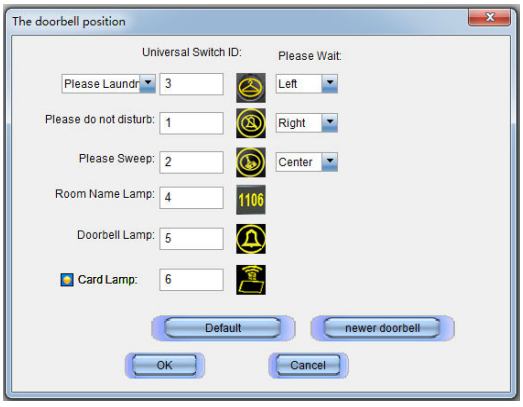
Using the IHMS software, open the settings tab to adjust the universal switch number.



Return to the "Control mode", to check if the doorbell operates correctly.

2) Control:

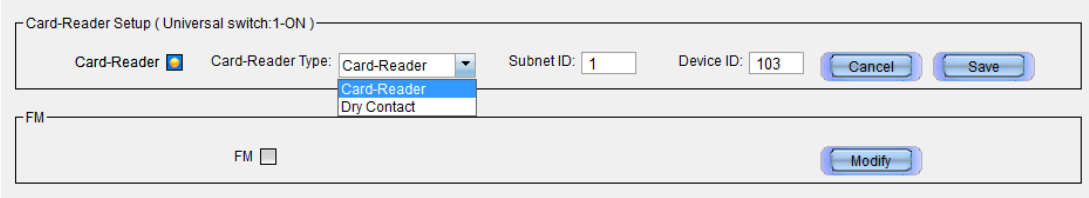
- **Direct Control:** Direct control is provided by any DLP, or button panel, that sends a universal switch number to a doorbell panel.



- **Indirect Control: Indirect control is provided by** any DLP, or button panel, that sends universal switch numbers 13-18 to the HDL-MHRCU.433. When HDL-MHRCU.433 receives Universal Switch 13-18, it will send out Universal Switch 1-6 to doorbell panel.

3) **Third party 'normal' doorbell control:** Third party 'normal' doorbell control is used to control doorbells from other manufactures that do not have native automation connectivity. Please refer to section "7.7.11 Doorbell tab" for further information.

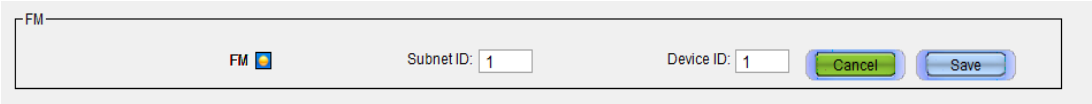
Card Reader Setup:



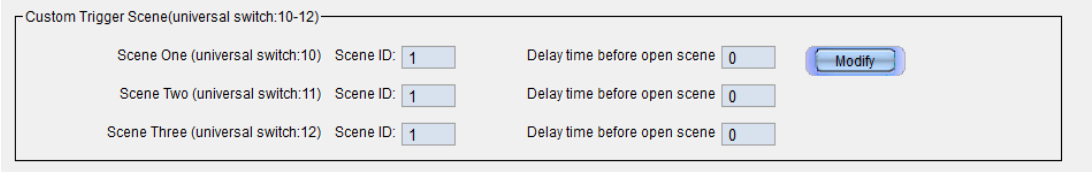
If a keycard is used to open a hotel guestroom door, the key can be placed into a card reader module. This card reader can then cause the power to be activated, or preset scenes to be triggered; the scenes triggered are dependent on the keycard type and card reader settings.

If the card reader is set as a “Dry Contact”, the HDL-MHRCU.433 and IHMS software will register a guest key card as being inserted when ‘universal switch 1 on’ command is received. When the ‘universal switch 1 off’ command is received, the system will register the keycard as being absent.

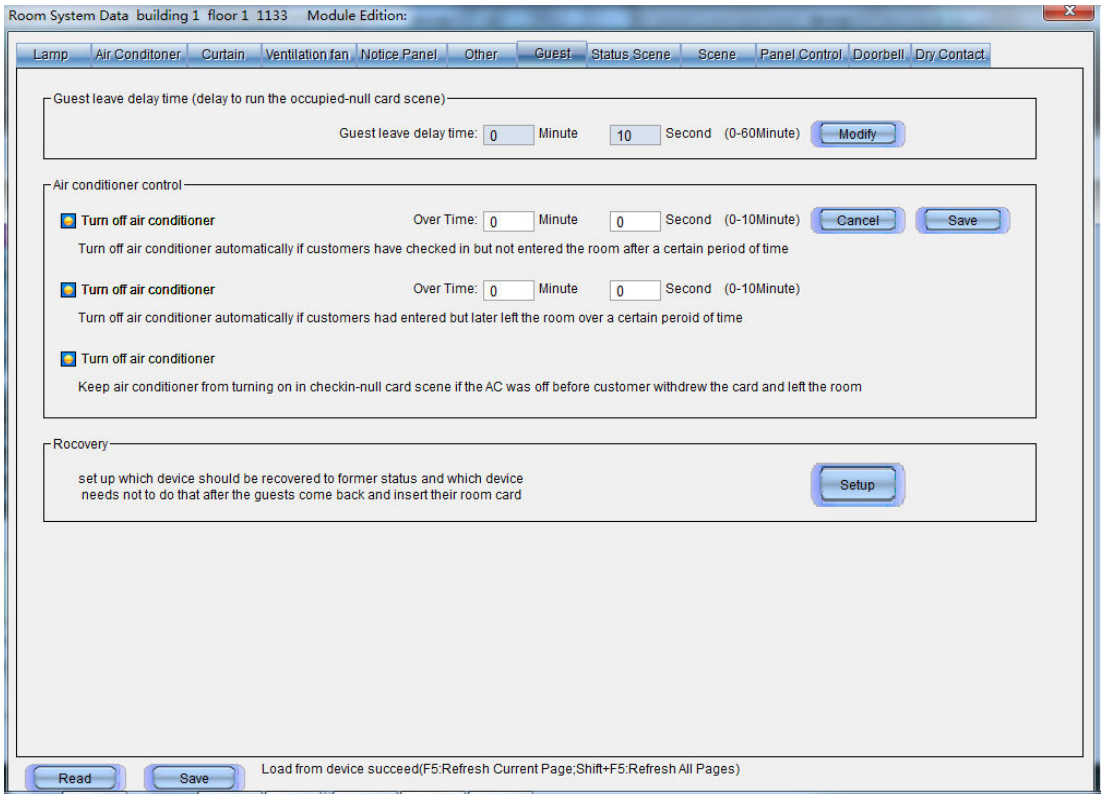
FM Setup: If a room has a FM panel installed, its device ID must be input.



Custom Scene triggers: This page is use to set the scene delay time. Scenes can be triggered by universal switch numbers 10, 11, and 12 sending an ‘on’ command. For further information concerning scenes, please refer to section “7.7.10 Scene tab”.



7.7.7 Guest tab

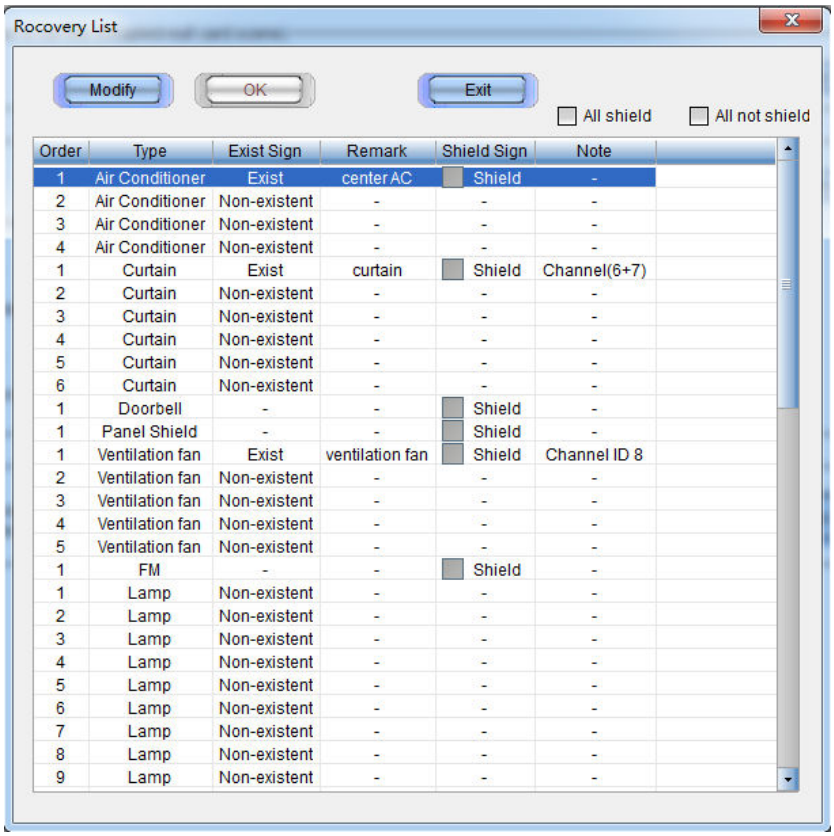


Guest leave delay time: When a guest removes their keycard from the card reader, a delay time can be programmed. This enables the HDL-MHRCU.433 to activate the *occupied-null* card scene after a set time has elapsed.

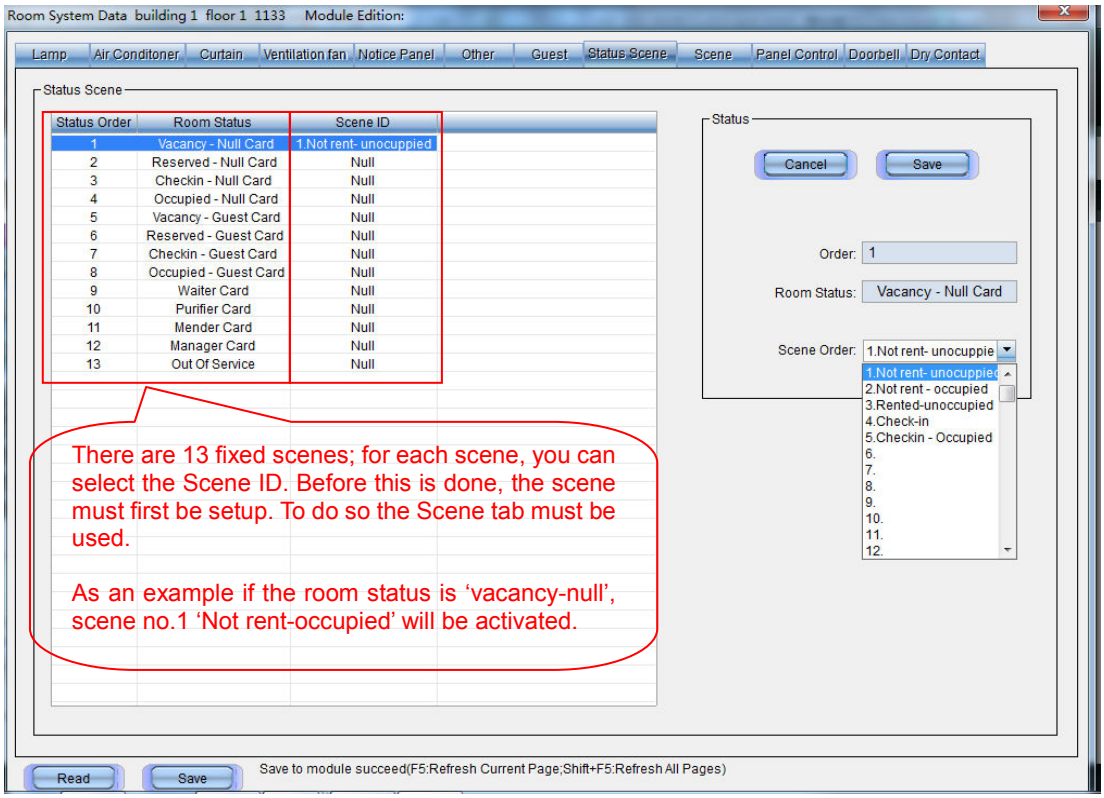
(Here occupied means the rent status of room from when the customer inserts his/her key card first time, until he/she checks out successfully. Occupied does not refer to the guest being in or out of the room.)

Recovery:

Normally, when a guest withdraws their key card and exits the room, the *occupied-null* card scene will activate. When the guest returns, and replaces the keycard into the card reader, the scene last used will be activated. This function can be deactivated via the shield function.



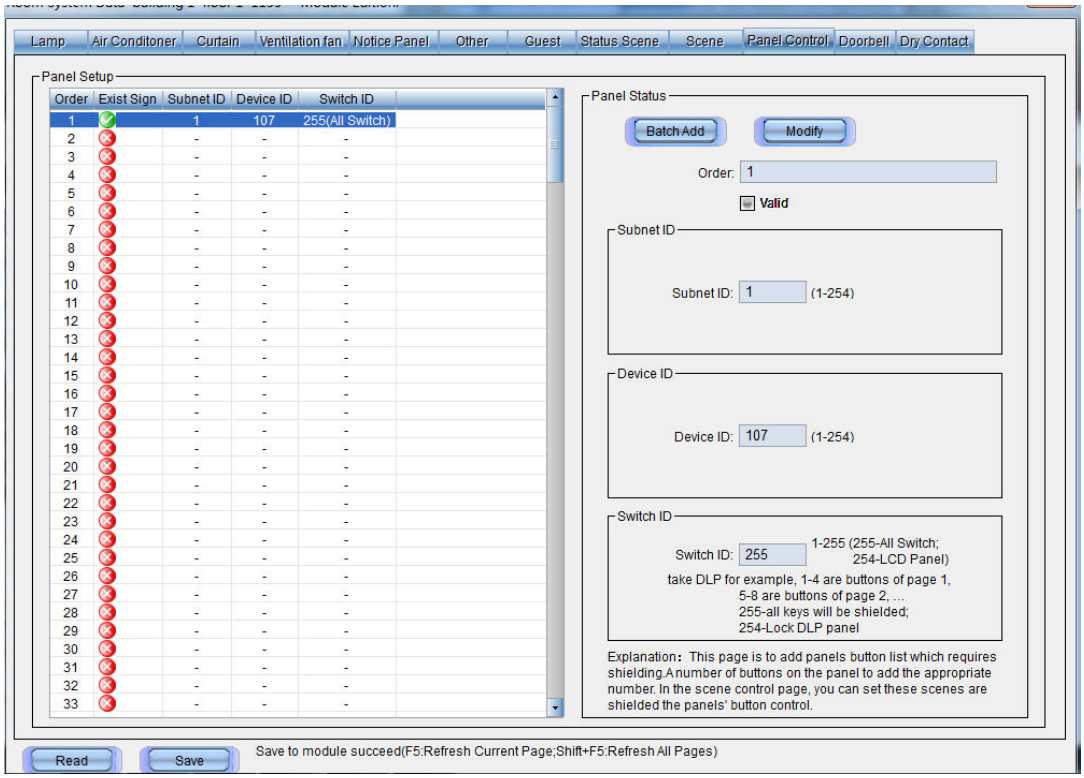
7.7.8 Scene Status tab



The HDL-MHRCU.433 can switch to, and run different scenes, according to the rent status and the keycard type used.

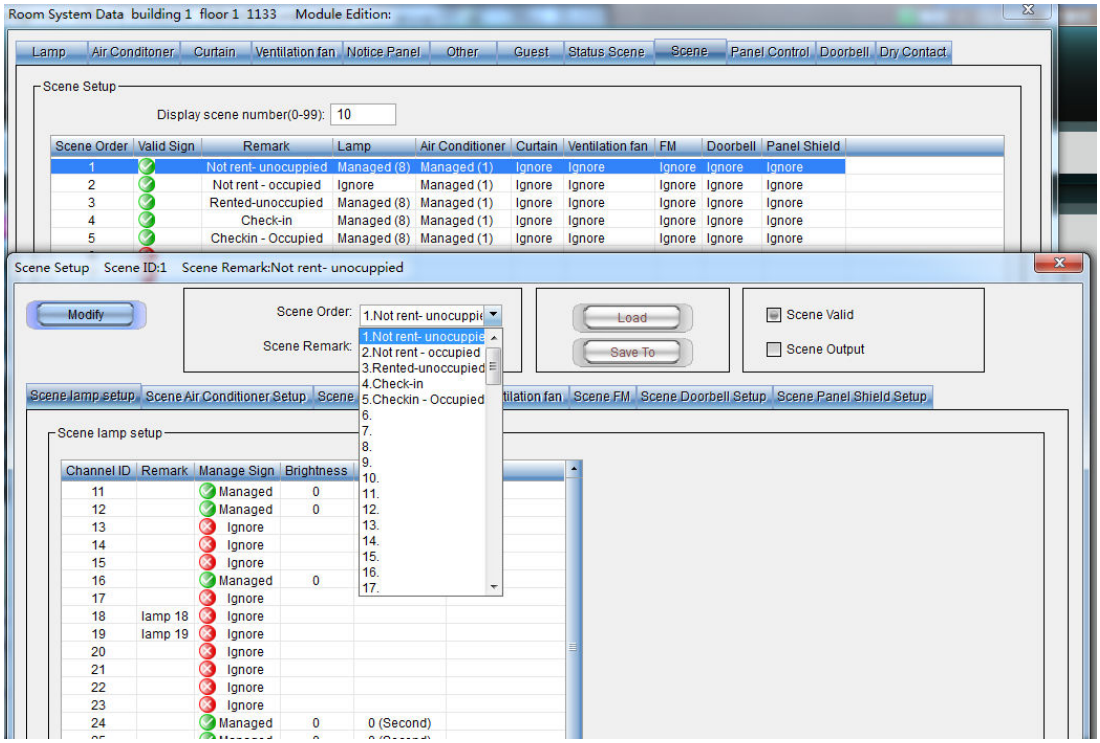
(Here occupied means the rent status of room from when the customer inserts his/her key card first time, until he/she checks out successfully. Occupied does not refer to the guest being in or out of the room.)

7.7.9 Panel Control tab



To shield (disable) a panel button when a scene is in use, the buttons information must be entered into the panel setup window.

7.7.10 Scene tab



The system allows up to 99 scenes to be created, in these scenes lamps, air conditioners, curtains, fans, radios, and panels can be configured. (To use “Scene Panel Shield Setup”, the ‘Panel Control Tab’ must first be set up).

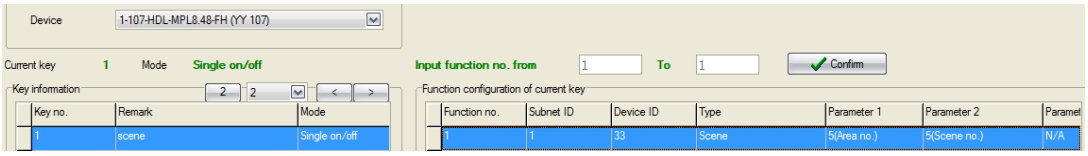
Scene Valid: Enables or disables a scene.

Scene Output: Enables a user to see the scene running, when it is being set up.

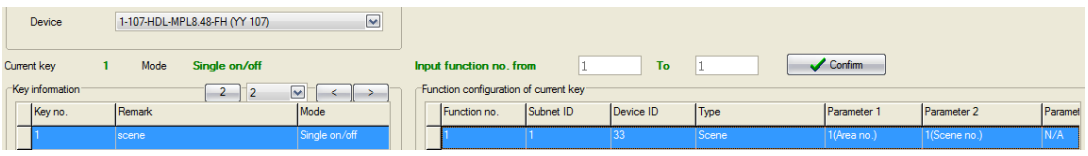
Recall a scene:

Scenes from the HDL-MHRCU.433 can be recalled, as shown in the below screen shots.

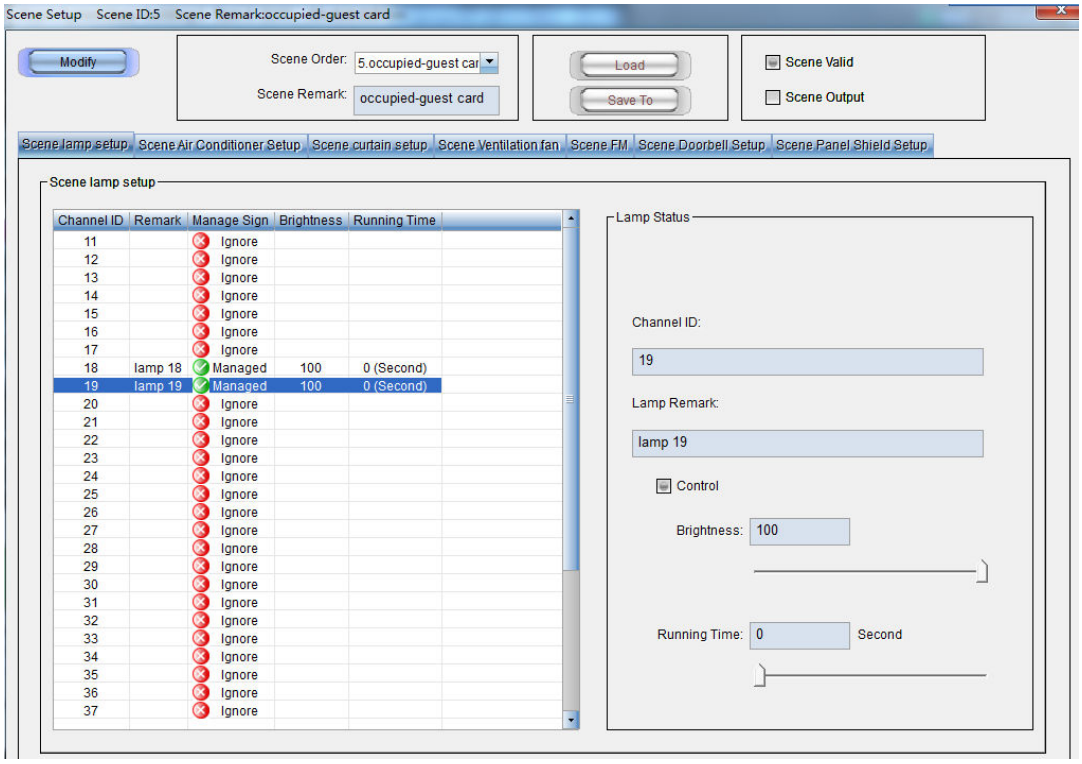
Recall scene 5:



Recall scene 1:

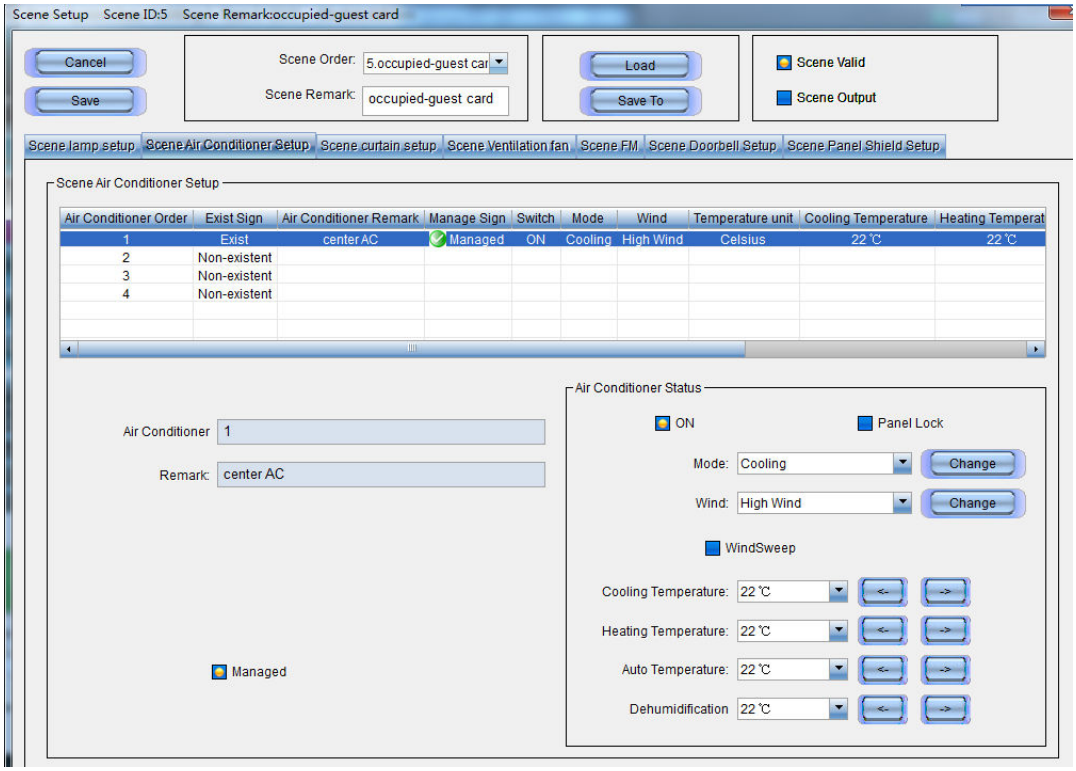


7.7.10.1 Scene and Lamp Setup



In scene 5 (occupied-guest card), lamp 18 and lamp 19 have been turned on.

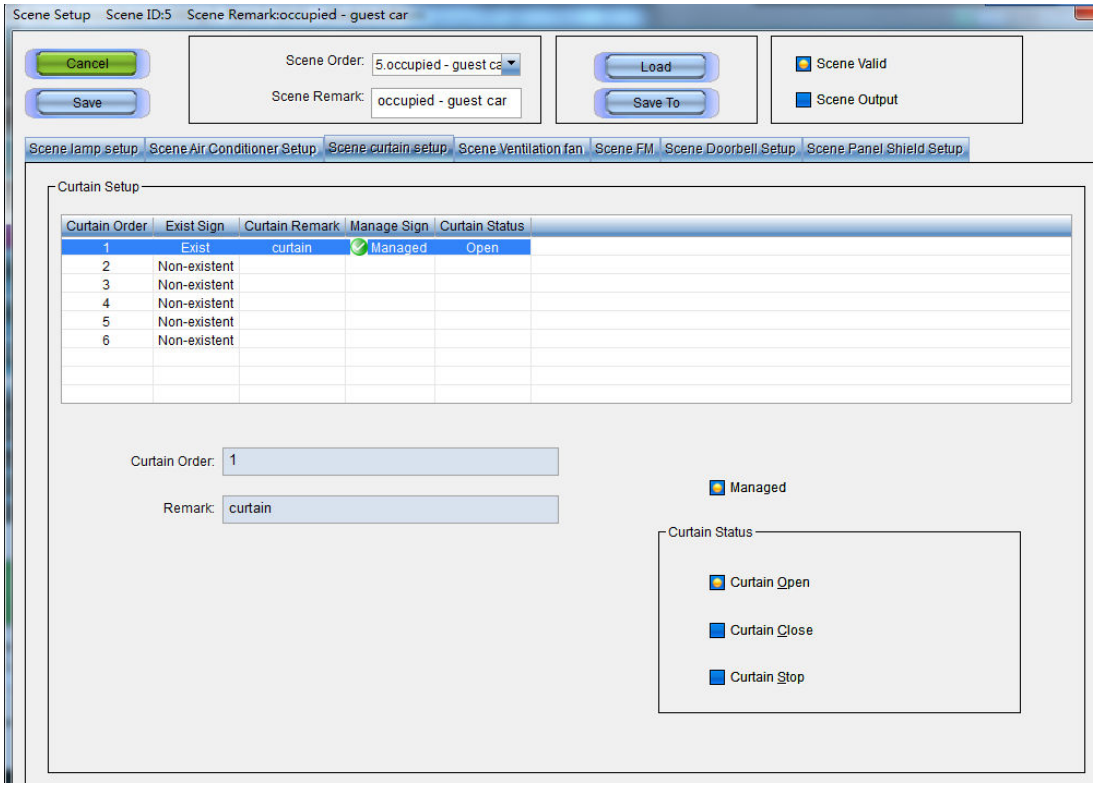
7.7.10.2 Air Conditioner Setup



In Scene 5 (occupied-guest card), the air conditioner has been turned on.

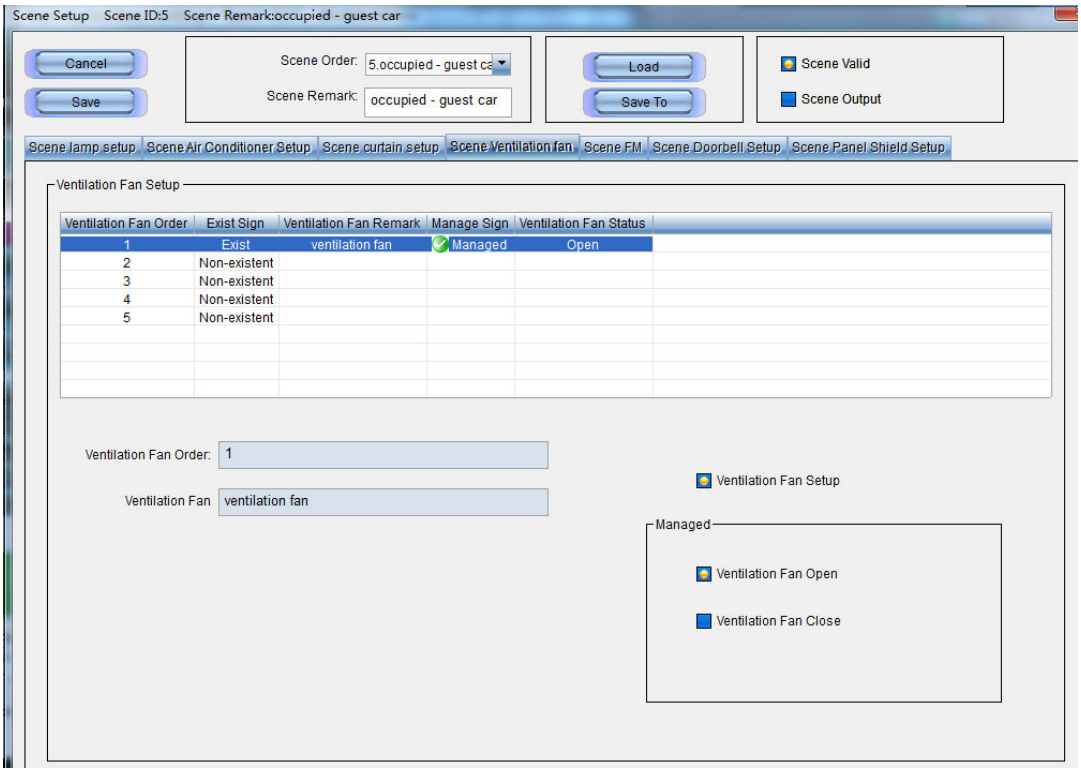
Panel lock: If the panel lock option is selected, the IHMS software runs scene 5 (occupied-guest card), locking the DLP AC page.
To enable the panel lock, the ID of the DLP panel must be entered into the air conditioner tab, for further information, please refer to section 7.7.2 Air conditioner tab.

7.7.10.3 Scene Curtain Setup



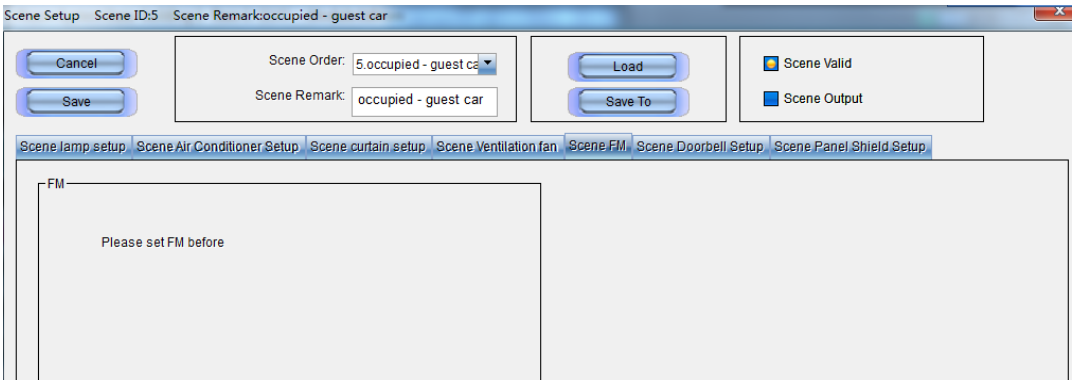
In Scene 5 (occupied-guest card), the curtain has been set as ‘managed’ and ‘open’.

7.7.10.4 Scene Ventilation fan Setup



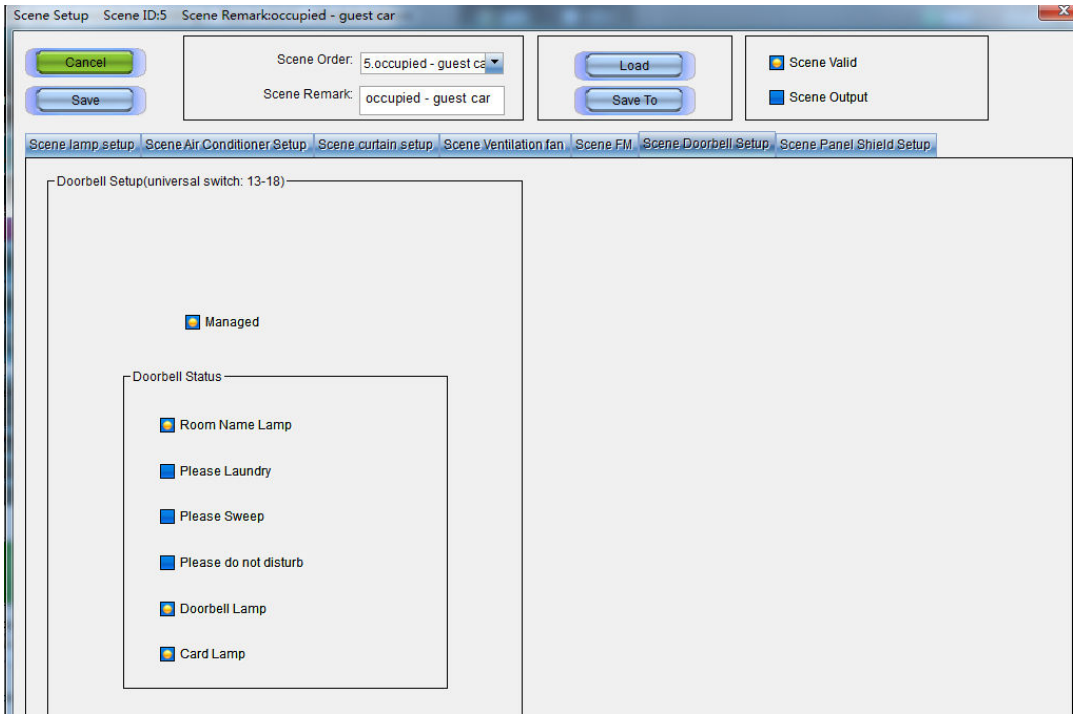
In Scene 5 (occupied-guest card), the ventilation fan has been set as ‘managed’ and ‘open’.

7.7.10.5 Scene FM Setup



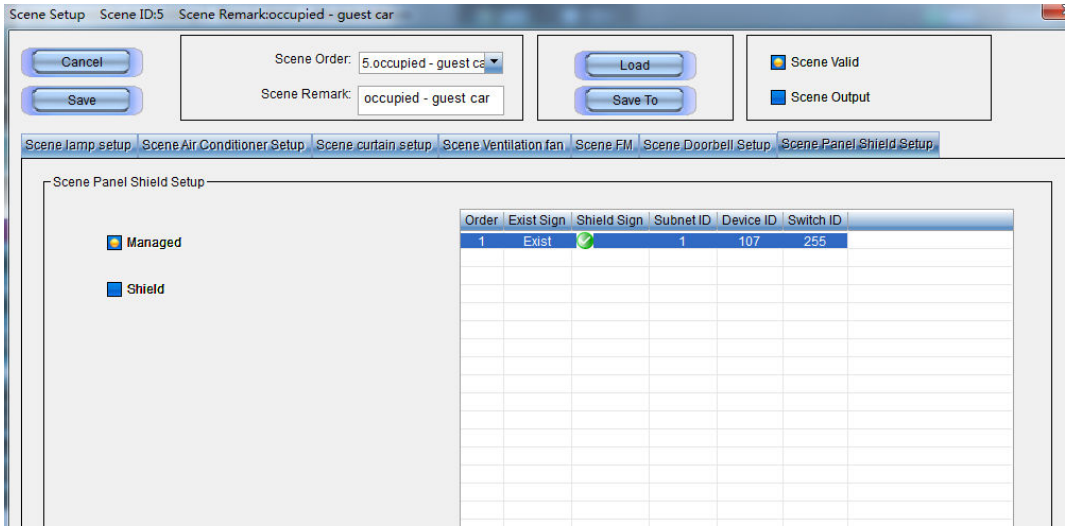
The FM panel settings have not been set in the Other Tab, so the FM function is unavailable. For further information concerning the FM panel, please refer to “7.7.6 Other tab”.

7.7.10.6 Scene Doorbell Setup



The status of the HDL doorbell can be managed in each scene, in scene 5 (occupied-guest card), the room name lamp, doorbell lamp, and the card lamp have been set as on.

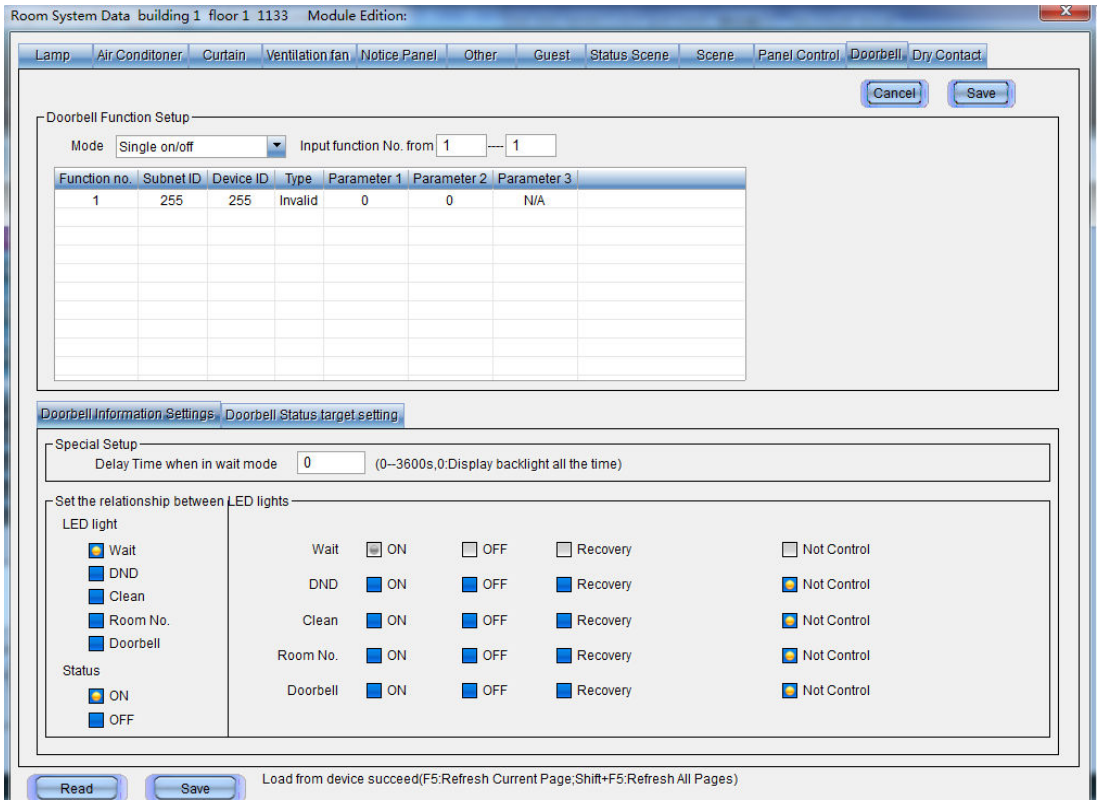
7.7.10.7 Scene Panel Shield Setup



In Scene 5 (occupied-guest card), a button or panel can be disabled via the shield function.

To enable the shield function, the ID of the button or panel must be entered into the ‘Panel Control’. For further information, please refer to section “7.7.9 Panel Control tab”.

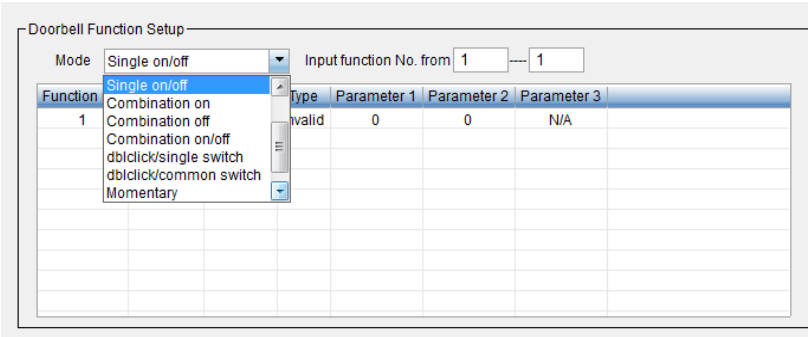
7.7.11 Doorbell tab



When a 3rd party standard doorbell panel is used, its information can be entered into the doorbell tab, and enabling its status to be shown.

For information concerning wiring and connections, please refer to section “1.3 Device Description and Wiring of HDL-MHRCU.433”.

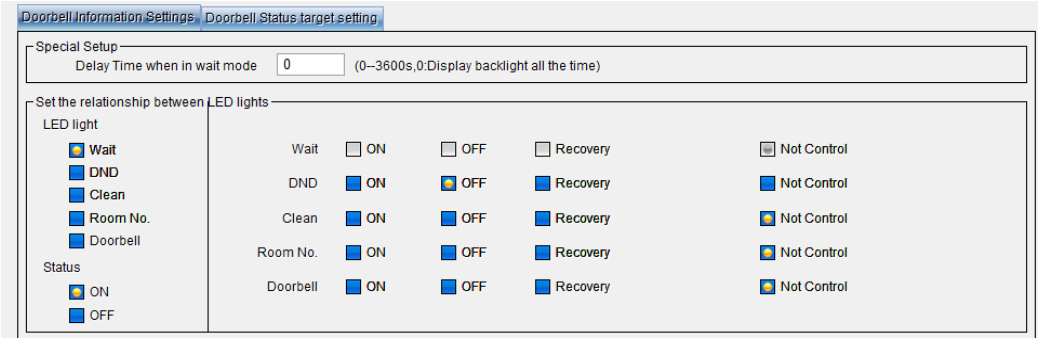
Doorbell Function Setup: When the doorbell is triggered, the resulting action can be set in the doorbell function setup window.



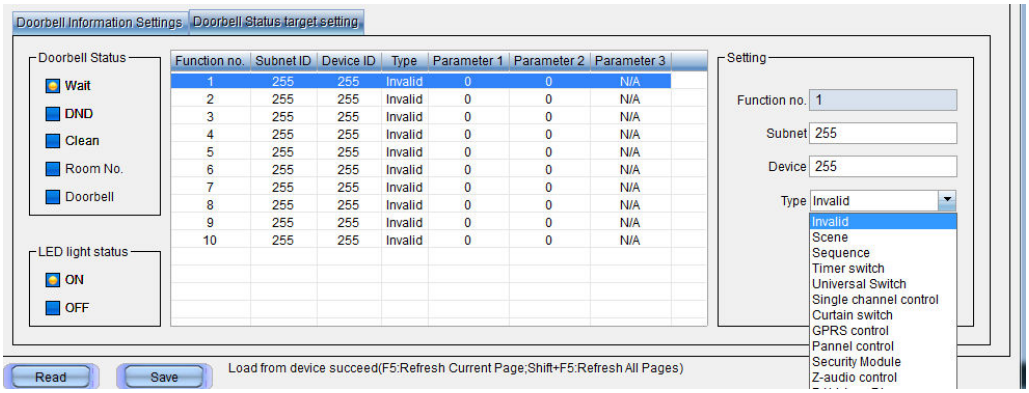
Doorbell Information Settings:

1) **Special setup:** The ‘wait mode’ delay time can be configured from 0-3600 seconds.

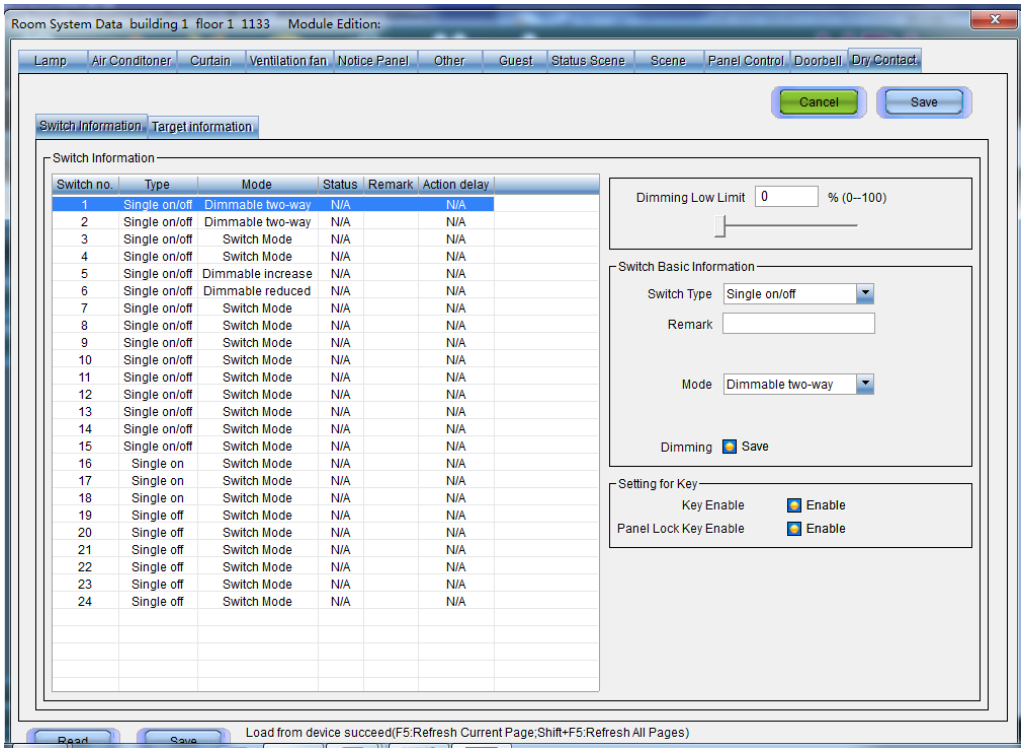
Set the relationship between LED lights: The relationship between a 3rd party doorbell and its LED indicator lights can be configured here. For example, when the guest triggers the 'Wait' led status to turn ON, the 'DND' led status must be OFF.



Doorbell Status target setting: Each doorbell status can have a maximum of 10 targets.

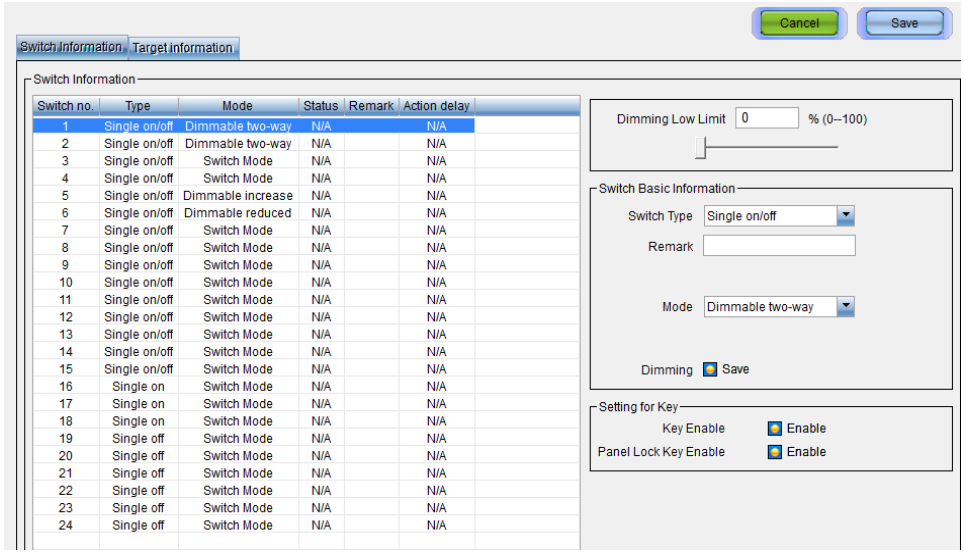


7.7.12 Dry Contact tab

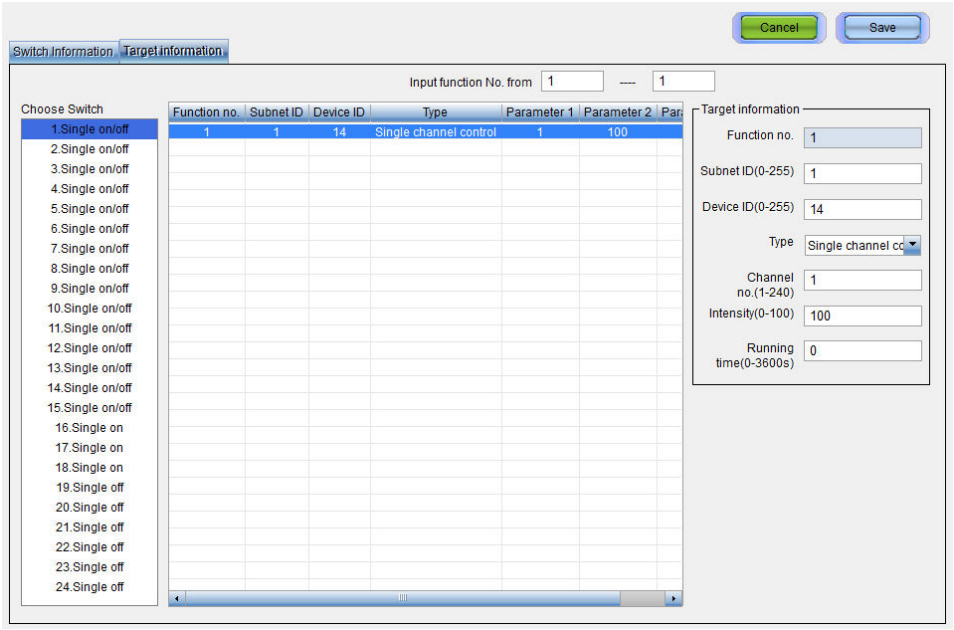


The HDL-MHRCU.433 has 24 dry contacts, which can be connected to ordinary switches. This enables the HDL host module to be used in conjunction with ordinary switches.

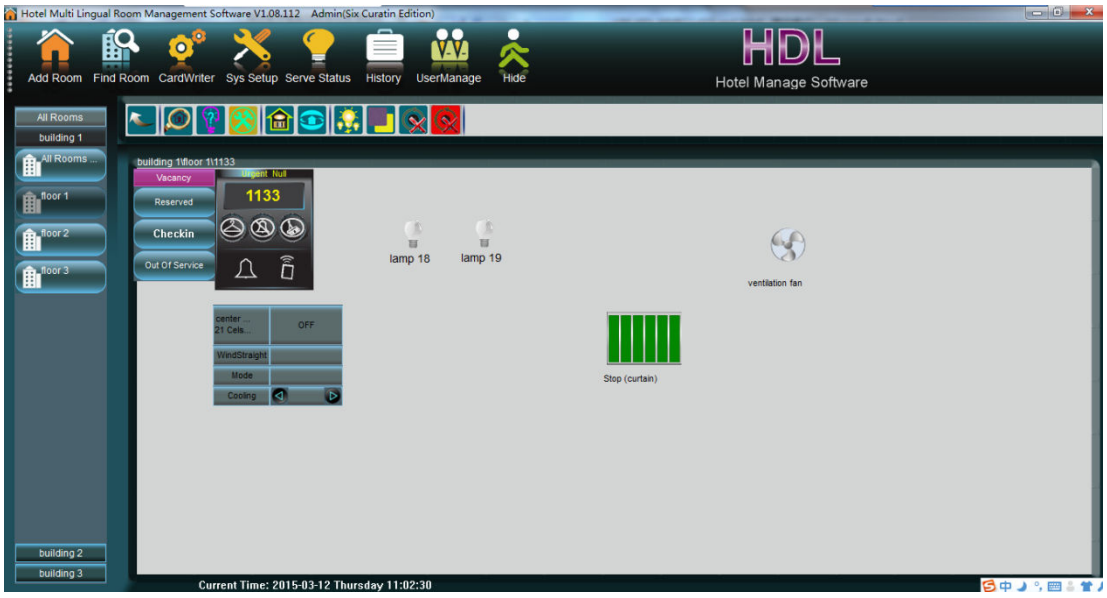
Switch Information: Enables a user to set the dry contact information.



Target Information: Enables a user to set the dry contact targets.



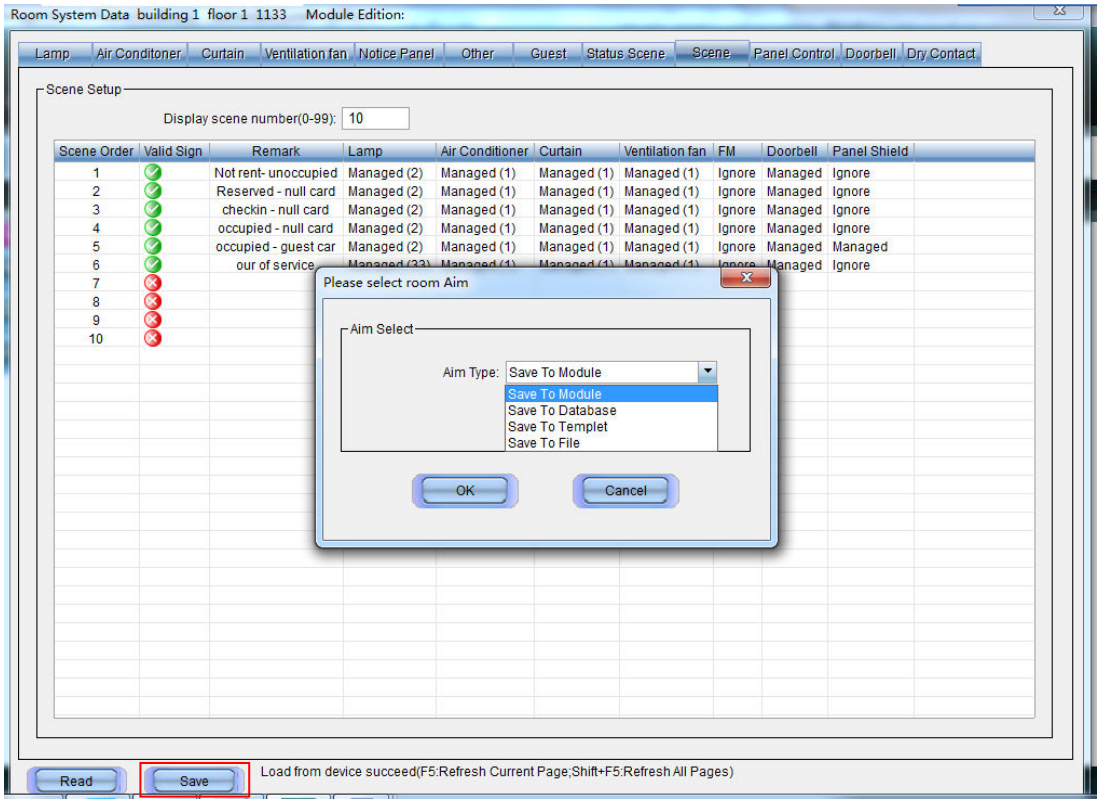
7.8 Set the Room Elements Position



The room elements can be seen in the above screen shot. After the room elements have been configured, clicking and dragging the icon will change its position.

7.9 Save and Read

7.9.1 Save data



After the room data has been changed, it must be saved in the Room System Data Window.

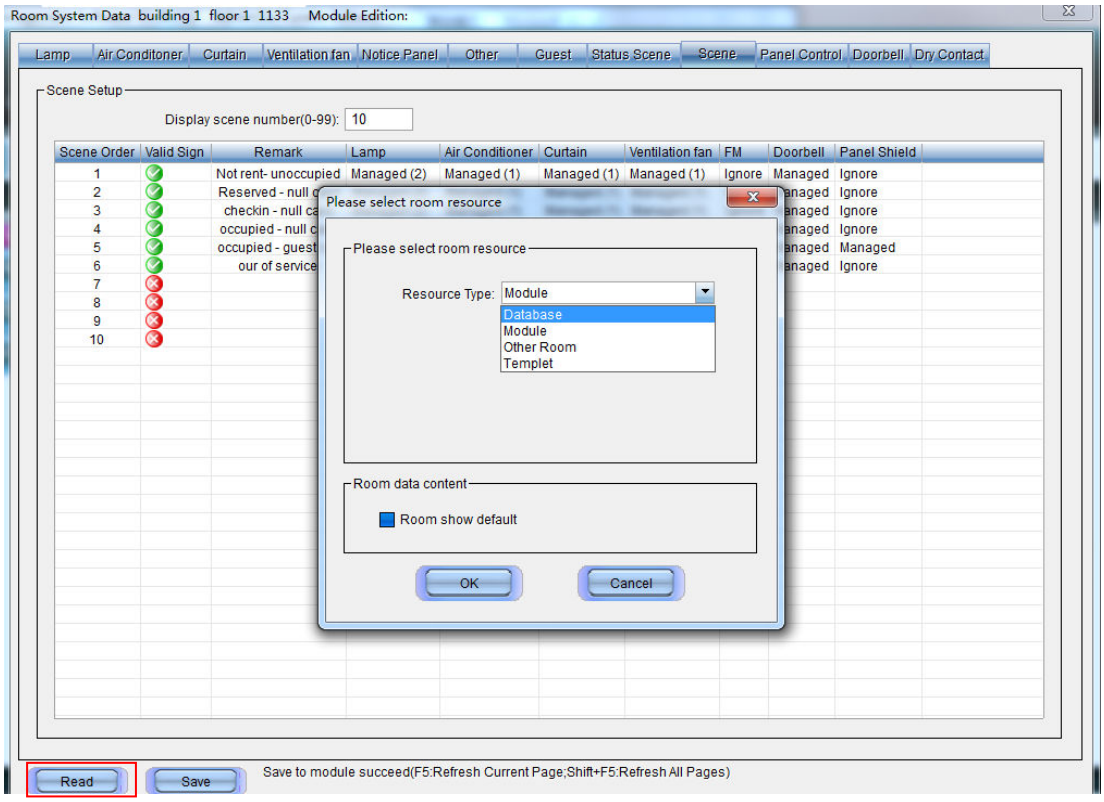
Save To Module: Saves the data to the HDL-MHRCU.433 module.

Save To Database: Saves the data to the IHMS.

Save To Templet: Saves the data as a **.tpt file in a default directory.

Save To File: Saves the data as a **.tpt file, with a selectable directory.

7.9.2 Read Data



The current data must be read before it is changed in the Room System Data Window.

Database: Reads the data from IHMS.

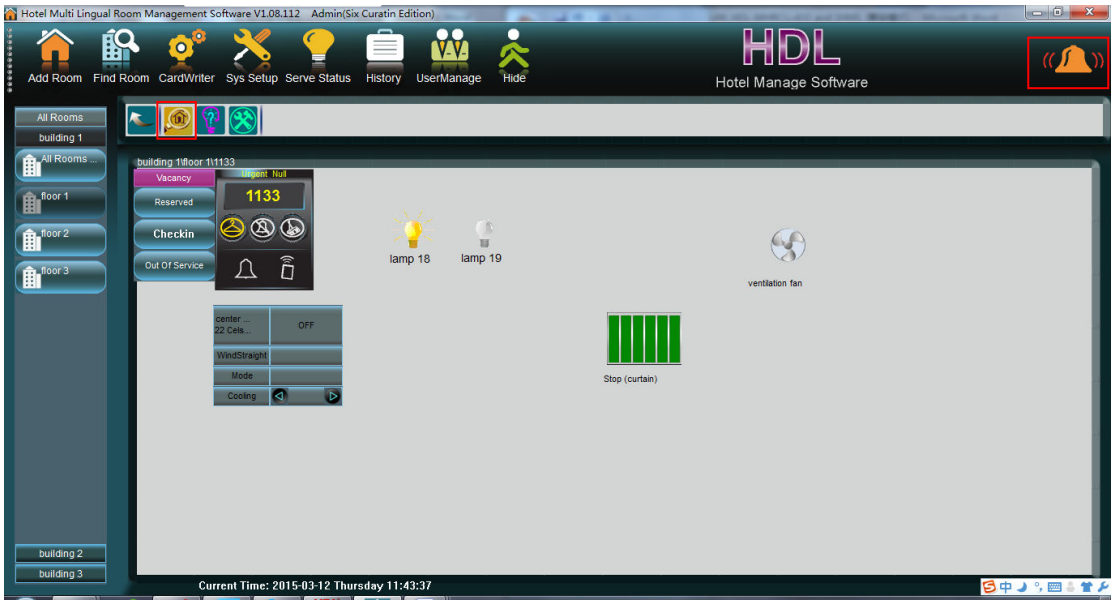
Module: Reads the current data from the HDL-MHRCU.433 module.

Other Room: Reads the data from another HDL-MHRCU.433 module.

Templet: Reads the data from the **.tpt file.

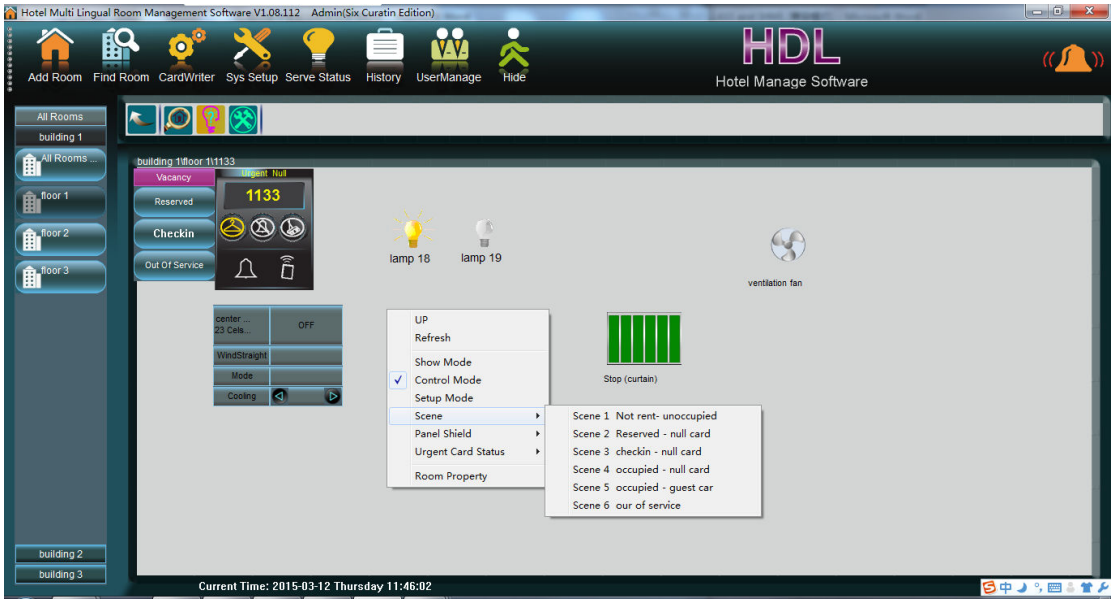
8. Monitor and Control

8.1 Show Mode



In Show Mode a user can check requests, and the status of devices/appliances.

8.2 Control Mode



Using control mode, all the configured devices and appliances in a room can be managed. The Scene/Panel Shield/Urgent Card Status, can also be simulated.

9. Application

A hypothetical guest room must be set up, below are the elements that must be controlled or managed.

Loads: (Room targets that will be controlled)

- 3 on/off lights; wall light, down light, bathroom light
- 2 leading edge dimmable lights; bedside light, reading light
- 1 curtain
- 1 FCU
- 1 ventilation fan

Equipment: (Necessary equipment from HDL to complete the installation)

1) HDL-MHRCU.433 (1-33) - Dry contacts are used to control all lights, curtains, ventilation fans and the check-out functionality.
2) HDL-MPL8.48 (1-107) - The AC page is used to control the FCU (air conditioning), other buttons are used for services such as laundry, cleaning, etc.
3) SB-3S-Bell-XS (1-5) - Enables the room status information to be displayed, e.g. Room number, laundry, DND, clean, doorbell lamp and card lamp, the door lock relay.
4) SB-RF-MSTR (1-103) - The card reader module.
5) SB-RF-Writer - The card writer module.

Requirements: (How the room should perform)

1) When the room is **Vacant** (empty);
   Lights: Wall light, down light, and bathroom lights are turned off.
   Leading edge dimmable lights: Bedside light and reading light are both turned off.
   Curtain: Closed.
   FCU: Off.
   Ventilation fan: Closed.
   Doorbell: The card icon on the doorbell panel is illuminated, approved staff can still open the room door.

2) When the room is **Reserved-null card** (booked);
   Lights: Wall light, down light, and bathroom lights are turned off.
   Leading edge dimmable lights: Bedside light and reading lights are both turned off.

Curtain: Closed.
FCU: Off.
Ventilation fan: Closed.
Doorbell: The Room name/number icon and card icon should be illuminated.

3) When the room is **Check-in-null card** (The customer has just been issued with the room card at reception);
Lights: Wall light and down light are at 100% brightness, the bathroom light is off.
Leading edge dimmable lights: Bedside light and reading lights are both turned off.
Curtain: Open
FCU: Cooling & high wind & 20° . Wait for 3 minutes, if the customer does not open the room and insert the card to card reader module, the AC will turn off.
Ventilation fan: Open
Doorbell: The Room name/number and card icon should be illuminated.

4) When the room is **Occupied-guest card** (The guest has checked in, entered the room and inserted the card into the card reader module)
Lights: Wall light and down light are at 100% brightness, the bathroom lights is off.
Leading edge dimmable lights: Bedside light and reading lights are both turned off.
Curtain: No change.
FCU: Cooling & low wind & 25°
Ventilation fan: Open
Doorbell: The Room name/number and card icon should be illuminated.

5) When the room is **Occupied-null card;**
Lights: Wall light, down light, and bathroom light are off.
Leading edge dimmable lights: Bedside light and reading lights are both turned off.
Curtain: Closed
FCU: Off
Ventilation fan: Off
Doorbell: The Room name/number and card icon should be illuminated.

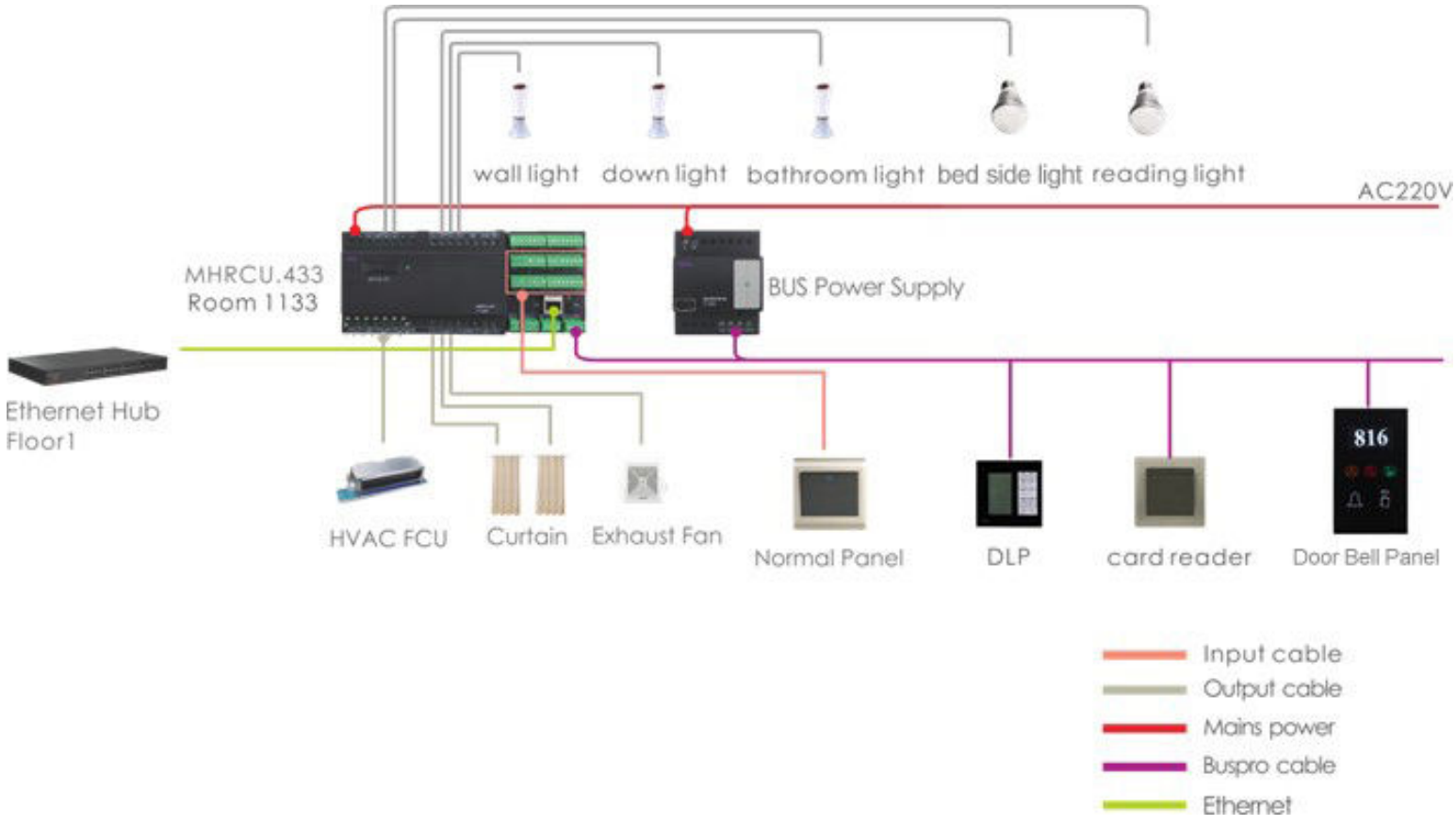
6) When the room is **Waiter card;**

Lights: Wall light, down light, and bathroom lights are unchanged.
Leading edge dimmable lights: Bedside light and reading lights are unchanged.
Curtain: Open.
FCU: Off, and lock the AC page of DLP.
Ventilation fan: Open.
Doorbell: The Room name/number and card icon should be illuminated.

7) When the room is **Out of Service;** the settings are the same as when the room is vacant;
Lights: Wall light, down light, and the bathroom lights are all off.
Leading edge dimmable lights: Bed side light and reading lights are off.
Curtain: Closed
FCU: Off
Ventilation fan: Closed
Doorbell: Only the card lamp on the doorbell is illuminated, staff can still access the guest room.

8) Other;
When the guest exits the room, a delay time of 1 minute should be activated. When the delay time has elapsed, the occupied-null card scene will activate.

Wiring:



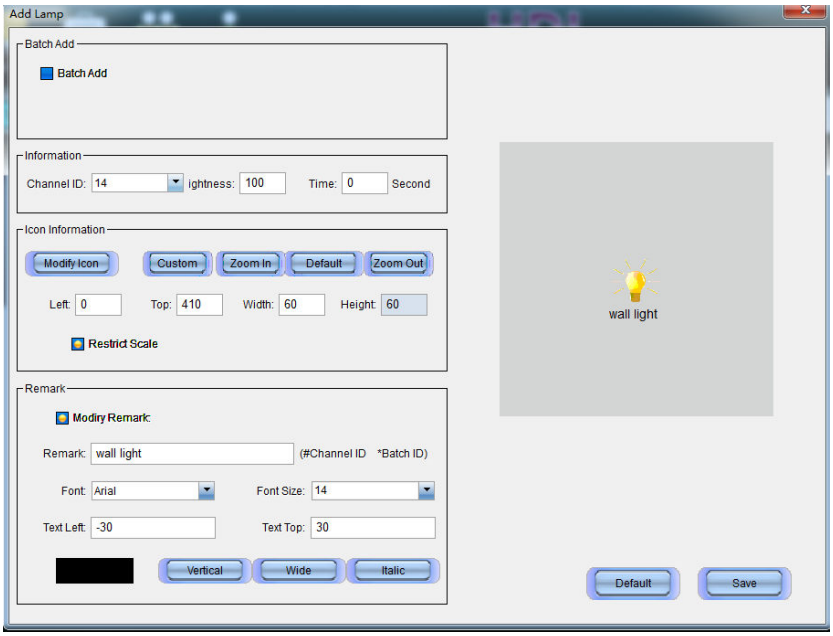
Setup:

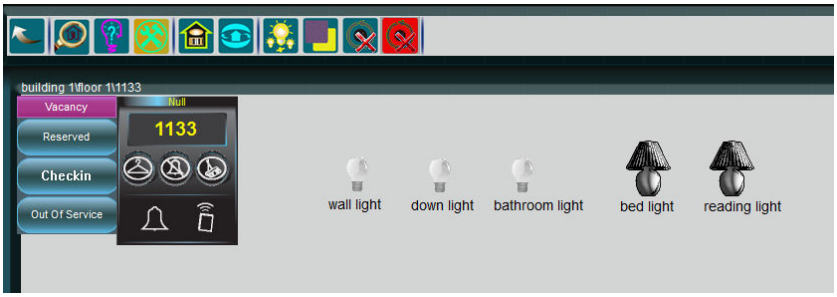
Detailed system setup steps are shown in the below screen shots.

1) Add Lights:

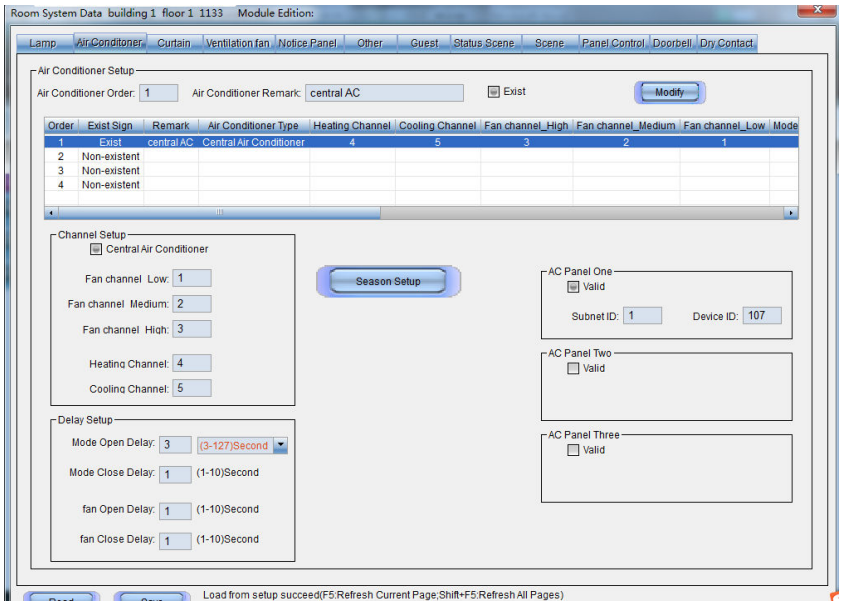
Assign channels 14/15/16 to the wall light/down light/bathroom light;

Assign channels 18/19 to the bedside light/reading light;

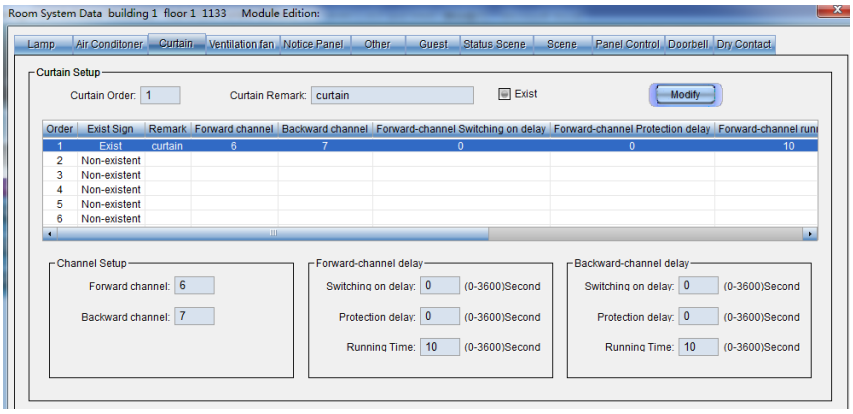




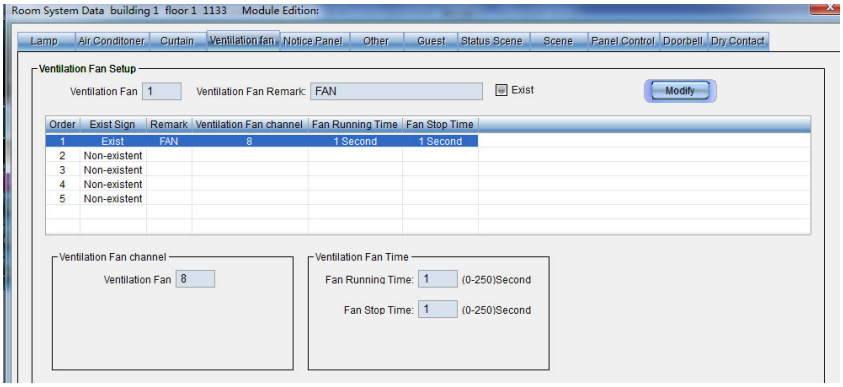
2) Add AC: Assign channels 1-5 for AC, then add a valid AC panel controller.



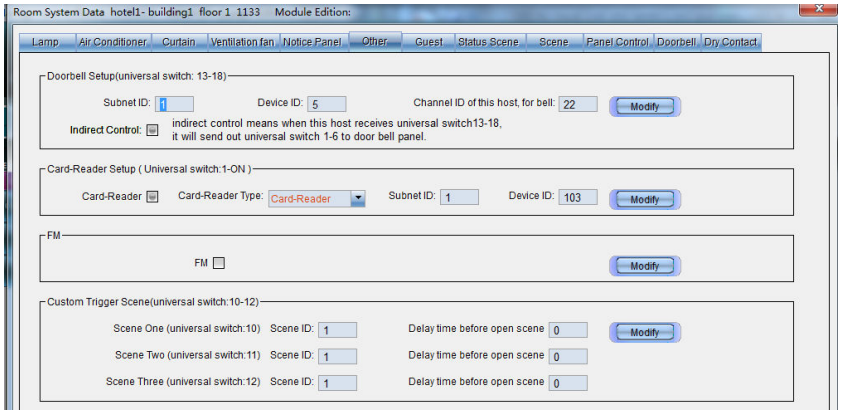
3) Add Curtain: Assign channels 6 and 7 to one curtain.



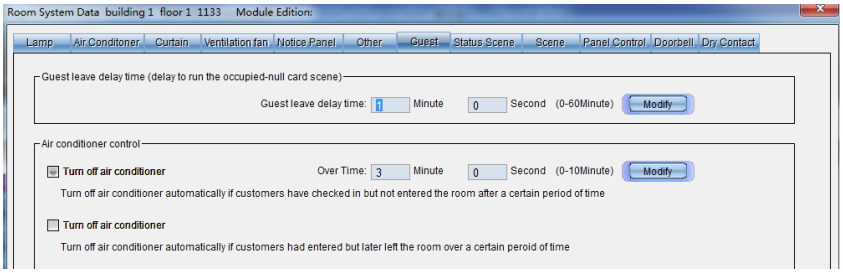
4) Add Ventilation fan: Assign channel 8 to the fan.



5) Match the Doorbell panel and Card Reader module: Enter the doorbell panel ID and the card reader module ID, and assign channel 22 to the bell.



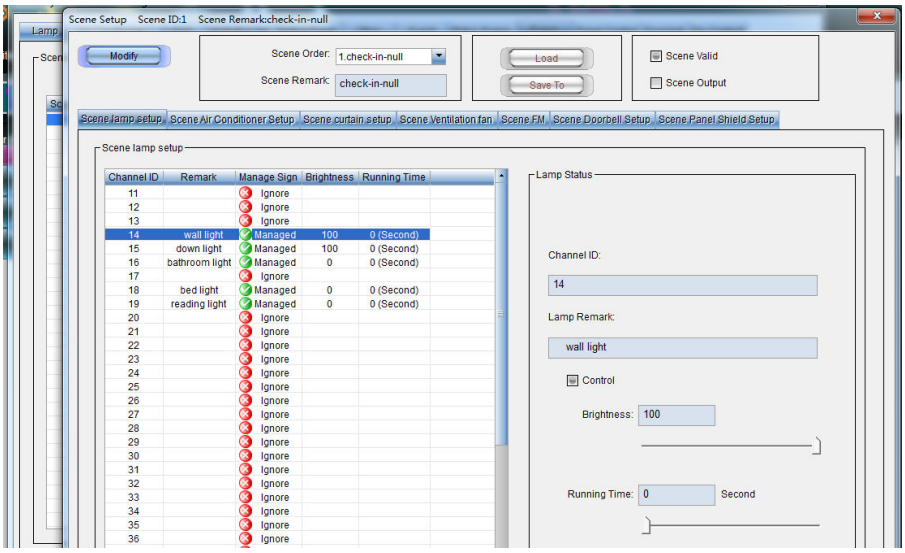
6) Guest settings: Set the guest leave delay time as 1 minute, then set a 3 minute delay time to turn off the AC when guest has checked in but not entered into the room.



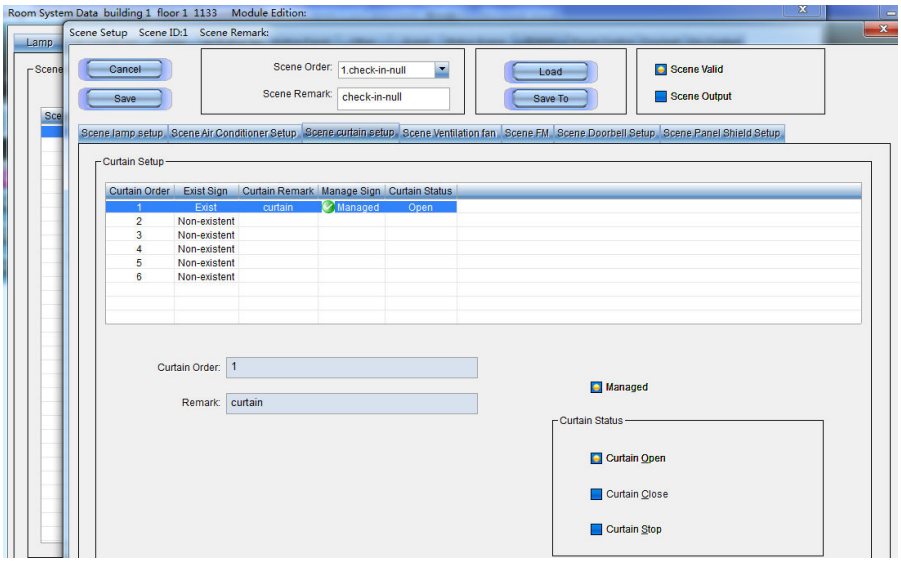
7) Scene setup: As an example the **Check-in-null card scene:**

Lights: Wall light and down light are at 100% brightness, the bathroom light is off.

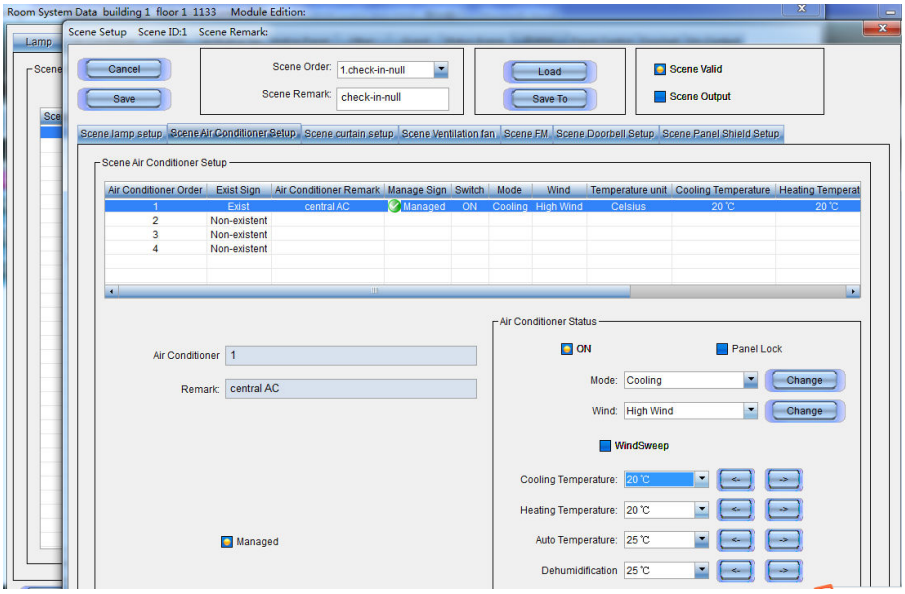
Leading edge dimmable lights: The bedside light and the reading light are both off.



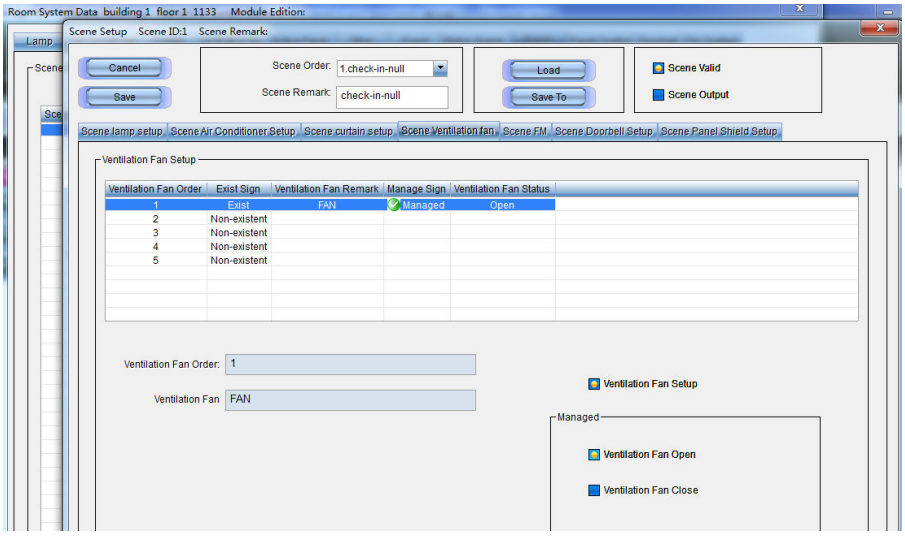
Curtain: Open



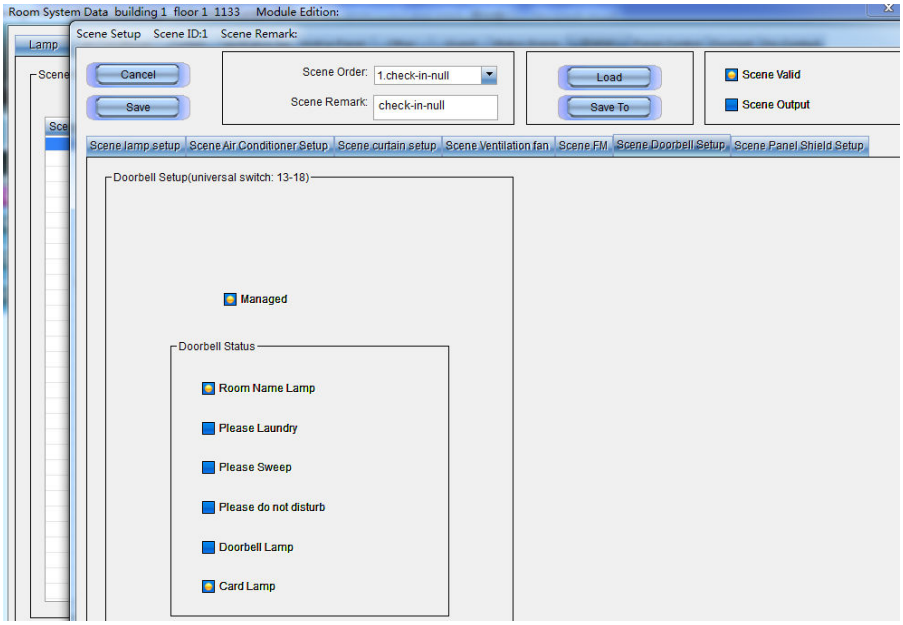
FCU: Cooling & high wind & 20°



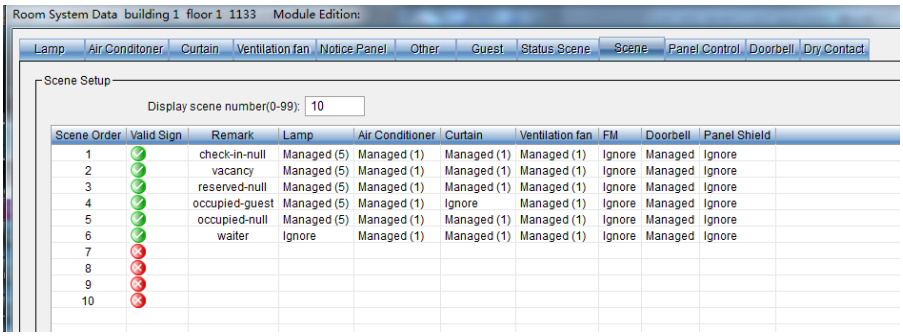
Ventilation fan: Open



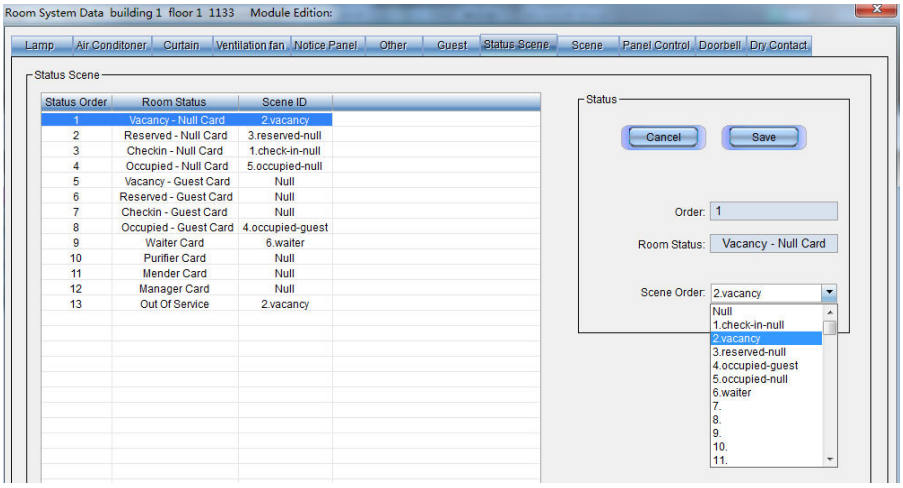
Doorbell: The room name lamp, and the card lamp on the doorbell panel are on.



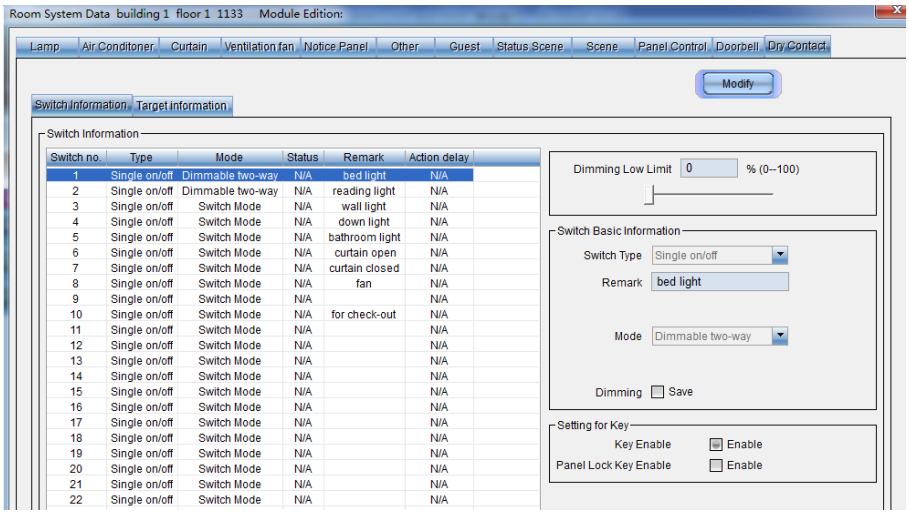
The finished scene setup:



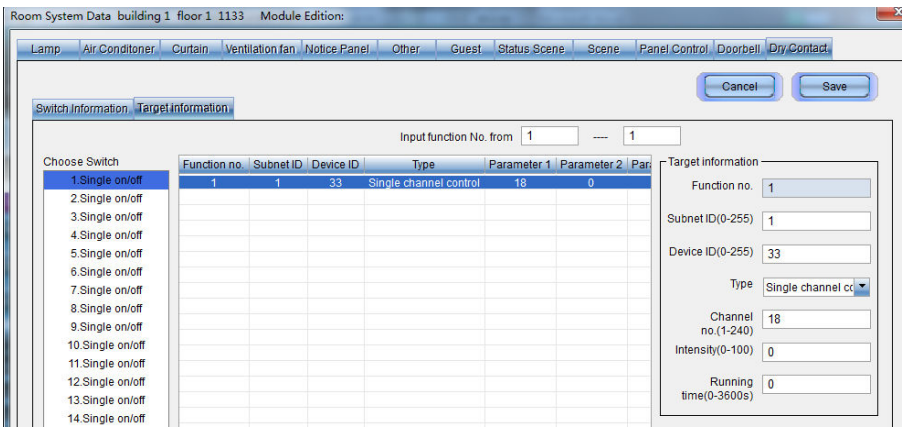
8) Scene Status: Select the room status' scene



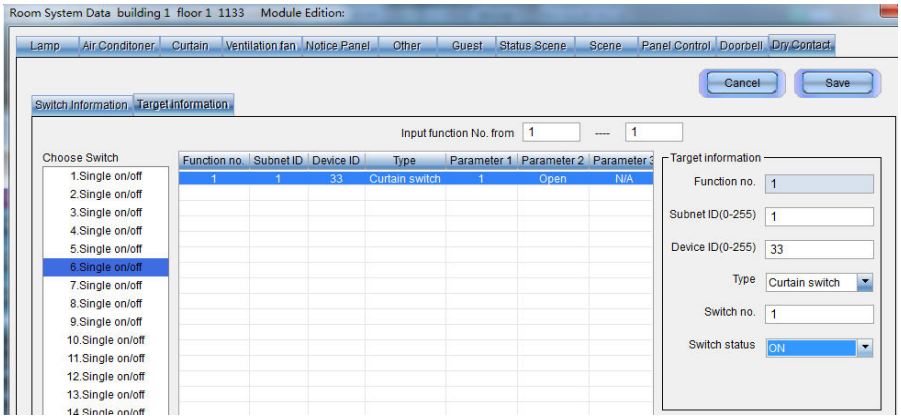
9) Dry contact settings: The dry contacts can be used to control the lights/curtains/fans, and one dry contact used for guest checks out.



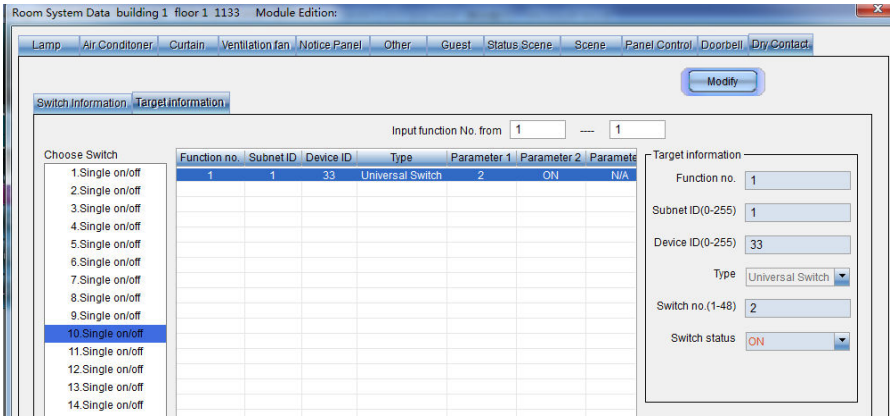
Switch 1 – Controls the bedside light; the host module subnet ID is 1, the device ID is 33, and channel 18 is connected to the bedside light.



Switch 6 – Controls the opening of curtains, the host module subnet ID is 1, and the device ID is 33. The curtain is to be controlled in Curtain Order 1 (see 'setup 3'), so the target switch number for the curtain is set as switch No.1.

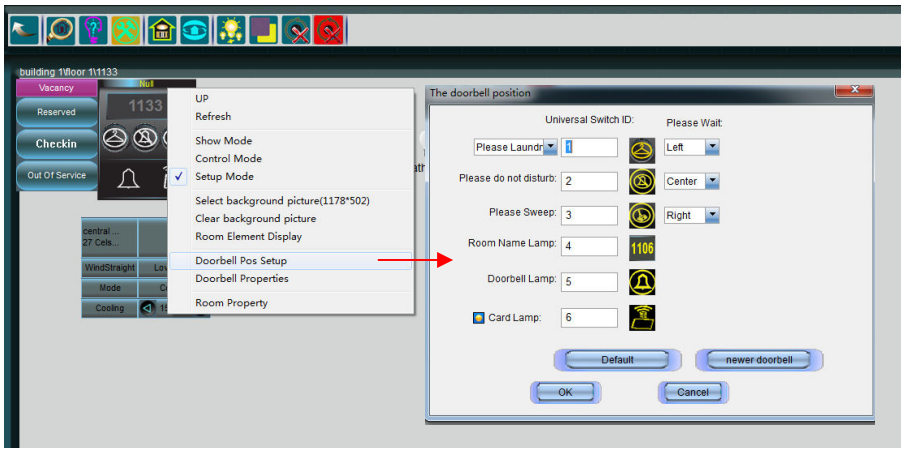


Switch 10 – Is used for the guest check out process, the host module subnet ID is 1, and the device ID is 33. When the host module receives 'universal switch no.2 on' command, it signifies that the guest wants to check-out.

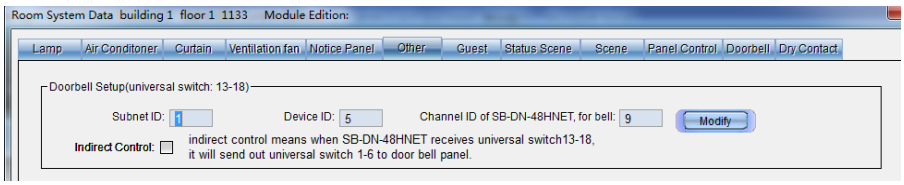


10) After the room data has been set, it needs to be saved to the module. Closing the "Room System Data" window, will display all the devices/targets present in the room.

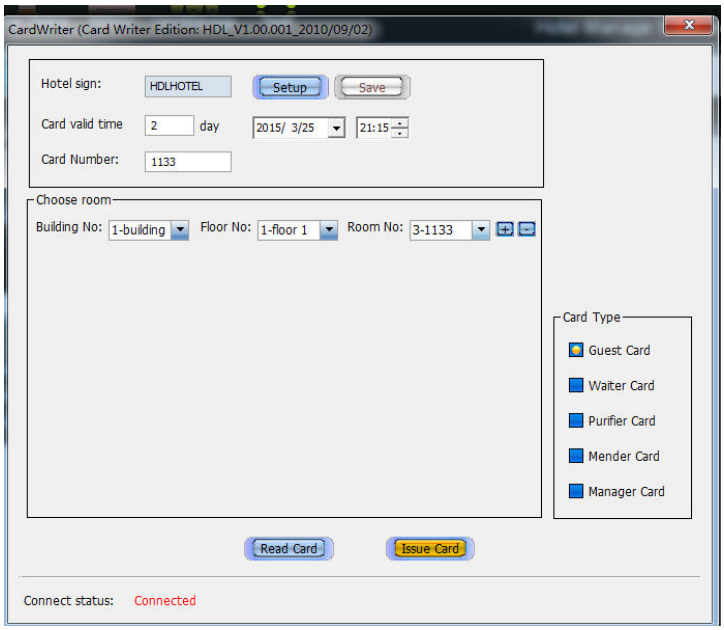
11) Doorbell setup in IHMS



Please refer to the process shown in step 5. If indirect control is not selected, universal switches 1 to 6 can be sent to the doorbell panel. This can enable the triggering of laundry/DND/sweep/room name/doorbell/card lamp.



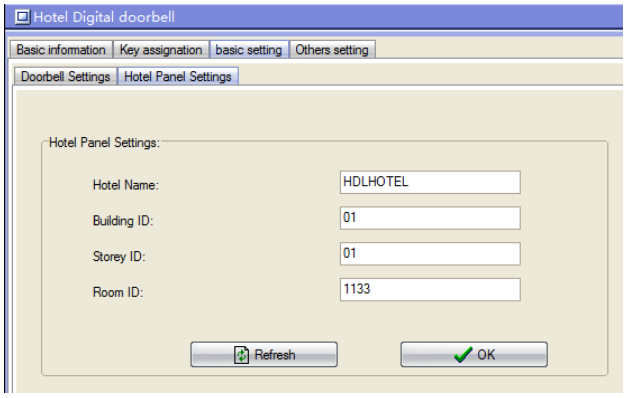
12) Card issued: Issuing a guest room card for Room 1133.



13) Doorbell setup using the HDL-BUS Pro setup tool:

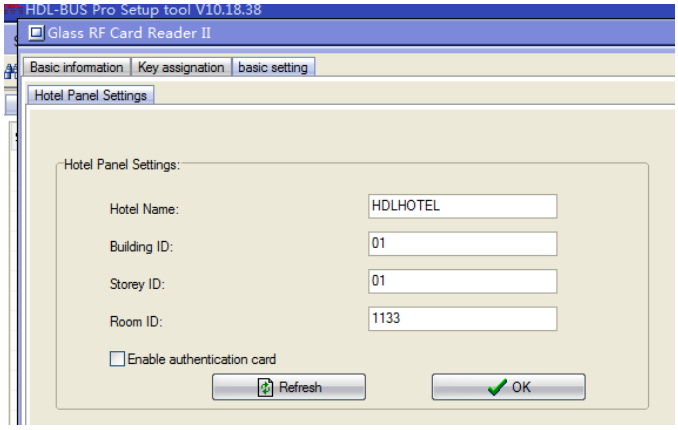
The switch function can be enabled from the host module, this allows a user to search for devices via the HDL-BUS Pro setup tool;

The Hotel Name, Building ID, Storey ID, and Room ID must be the same on both the host module and the room card.



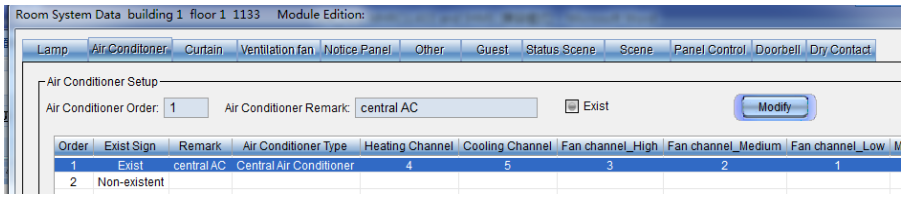
14) Card reader setup using the HDL-BUS Pro setup tool:

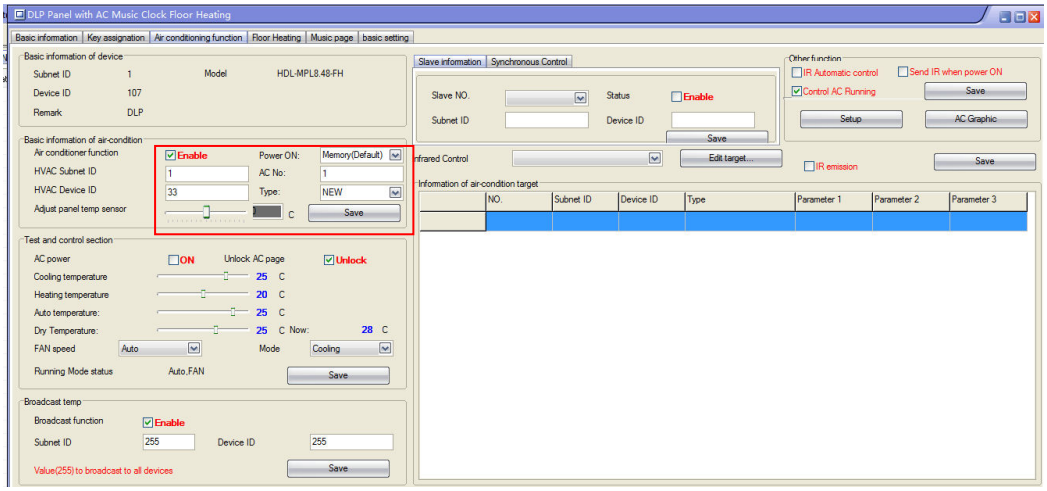
The Hotel Name, Building ID, Storey ID, and Room ID must be the same on both the host module and the room card.



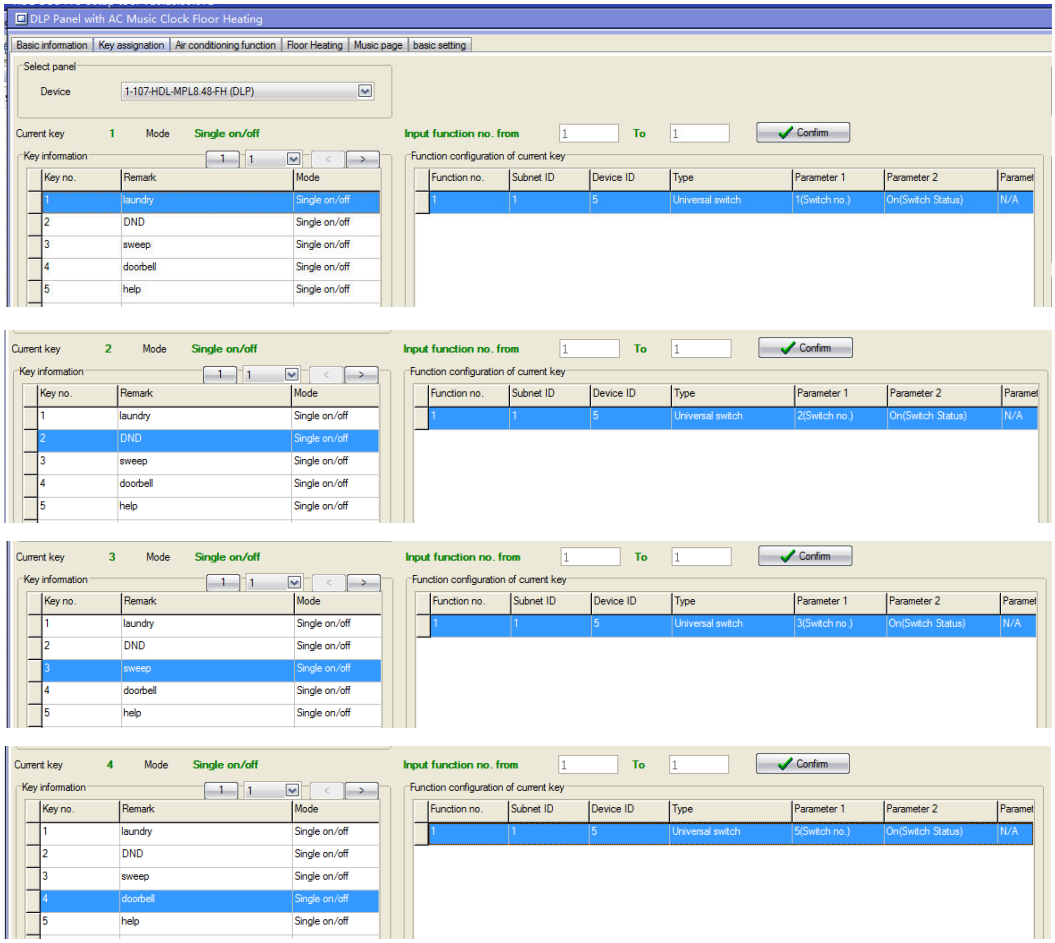
15) DLP setup using the HDL-BUS Pro setup tool:

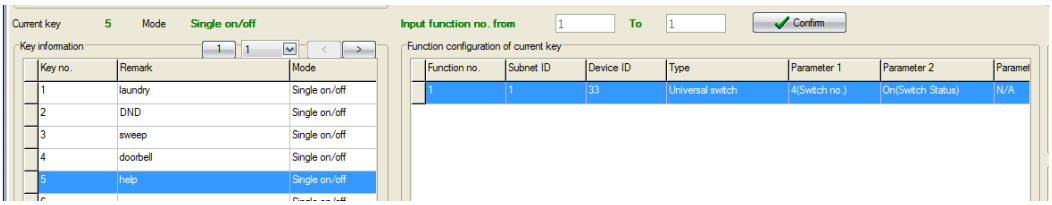
a) AC control: The ID of the host module must be input into the AC page. In the below example the AC has been added into order 1, so AC No.1 must be entered into the DLP and the TYPE must be set as NEW.





b) Button control: Buttons 1-4 are used to control laundry, DND, cleaning, and the doorbell. For more information concerning universal switch use and notifications, please refer to step 11. To enable the help service, ensure that the host module subnet ID is set as 1, and the device ID is set at 33.





16) Setup finished.

10. Note

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