Simon wireless RCU

Technical manual

CONTENT

1 Function Overview

1.1 Function overview of wireless RCU system

Wireless RCU system is mainly used in hotel rooms. The devices in the system communicate through ZigBee wireless communication, and the devices can be added to the ZigBee network through standard configuration and batch configuration. System device is as follows:

1 Gang Smart Switch (Hotel)
2 Gang Smart Switch (Hotel)
3 Gang Smart Switch (Hotel)
4 Gang Smart Switch (Hotel)
1 Gang Smart Scene Switch (Hotel)
2 Gang Smart Scene Switch (Hotel)
3 Gang Smart Scene Switch (Hotel)
4 Gang Smart Scene Switch (Hotel)
1 Gang Smart Curtain Switch (Hotel)
2 Gang Smart Curtain Switch (Hotel)
ZigBee Gateway (LAN) (Hotel)
Smart Central-AC Thermostat(FCU) (Hotel)
4 Gang Multifunction smart switch(2 scene+2 switch) (Hotel)
6 Gang Smart Scene Switch (Hotel)
6 Gang Multifunction Smart Switch(3 scene+3 switch) (Hotel)
6 Gang Multifunction Smart Switch(2 scene+4 switch) (Hotel)
Keycard switch (Hotel)

This manual provides users with detailed technical parameter information about the equipment, including network distribution methods, functional parameters and operating instructions of the equipment. The following figure is the wireless RCU system network topology diagram:
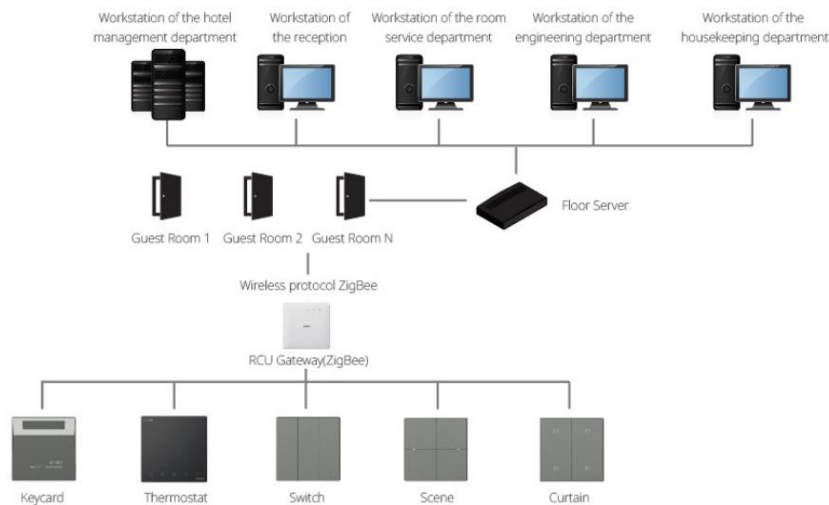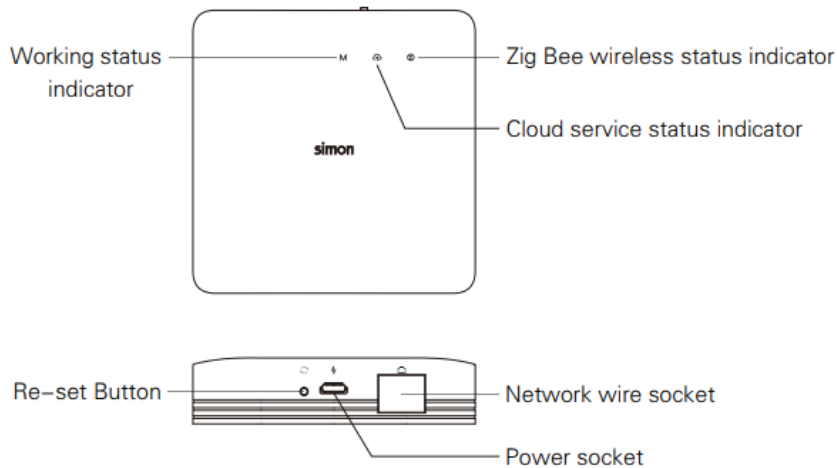
1.2   Gateway function description

1.   **Technical parameters**

Product name: ZigBee Gateway (LAN) (Hotel)

Wireless connection: ZigBee

Power input: DC5V, 1A

2.   **Wiring diagram**

3.   **Indicator light and button status description**

Working status indicator	4Hz flashing	Gateway firmware is being upgraded
	Keep on	Wired connection
	not bright	The gateway is not powered on
Cloud service status indicator	4Hz flashing	Try to connect to cloud service
	2Hz flashing	Cloud connection abnormality, please check the network
	Keep on	Normal connection with cloud service
	not bright	The gateway is not powered on or the network cable is not connected.
ZigBee wireless status indicator	4Hz flashing	ZigBee device is connecting to the network
	2Hz flashing	ZigBee network abnormality
	Keep on	ZigBee network work normally
	not bright	The gateway is not powered on
All indicators	Keep on for 1 second and then turn off	After the gateway is powered on and started/ before the application runs
Button	Press and hold it for 20 seconds	Restore factory setting

2 Sub-device function description

2.1 Smart switch/Smart scene switch

1. Technical parameters

Product name: Smart switch   *Implementation standard: GB/T16915.2*
Wireless connection: ZigBee   Load: LED light
Input voltage: 220V±10%～50Hz
Maximum load: resistive 800W/channel   capacitive 200W/channel
Product name: Smart scene switch   *Implementation standard: GB/T16915.2*
Wireless connection: ZigBee
Input voltage: 220V±10%～50Hz
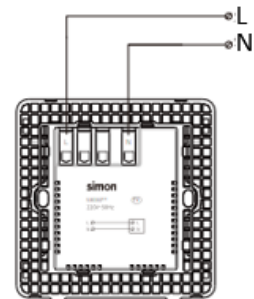Power consumption: ≤1W

2. Wiring diagram

Front view of 1-Gang smart switch/scene switch
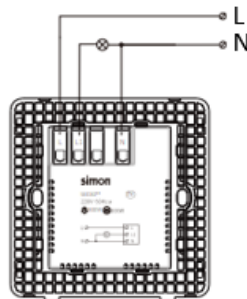
Wiring of 1-Gang smart switch

Wiring of 1-Gang smart scene switch

Front view of 2-Gang smart switch/scene switch

Wiring of 2-Gang smart switch
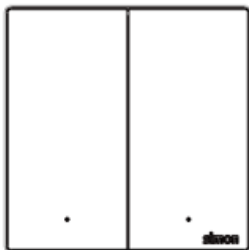
Wiring of 2-Gang smart scene switch

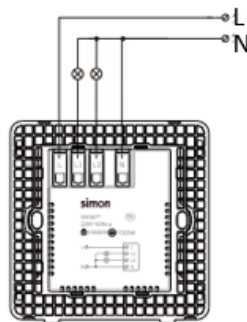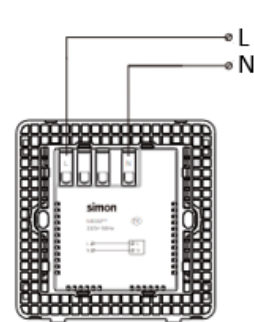Front view of 3-Gang smart switch/scene switch

Wiring of 3-Gang smart switch

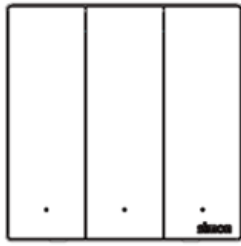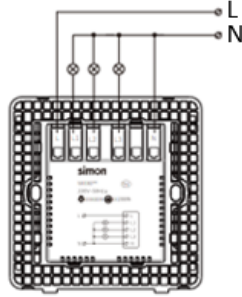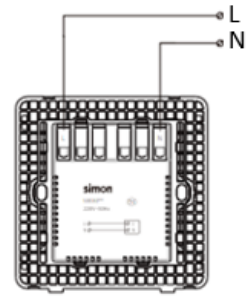Wiring of 3-Gang smart scene switch
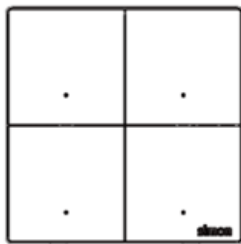
Front view of 4-Gang smart switch/scene switch
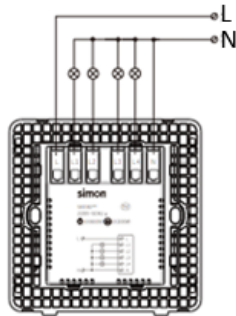
Wiring of 4-Gang smart switch
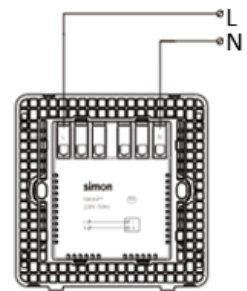
Wiring of 4-Gang smart scene switch
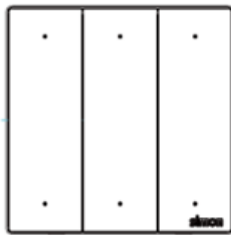
Front view of 6-Gang smart scene switch
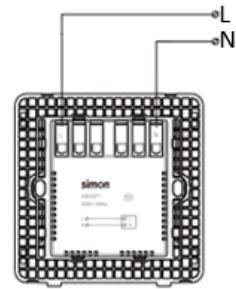
Wiring of 6-Gang smart scene switch

3. Network configuration instruction

* Ensure smart device is within effective coverage of ZigBee network(Communication distance between any ZigBee devices: ＜2 walls, ＜100m in open area).

* After the smart switch is powered on, long press the left bottom button more than 3S until the corresponding indicator flashes, Use the Simon-Bus system configuration tool to do network configuration for device. If it is still not connected to the network after 180S, please try it again;

* Instruction for exiting the network: If the local device needs to exit the network, long press the left bottom button more than 5S until the corresponding indicator flashes at a frequency of 2Hz for 2S, then the network exit is successful.

4. **Indicator status description**

Smart switch configuration Indicator Status

Waiting pairing	4 quick flashes per second
Pairing success	2 flashes per second for 2s
Pairing failure	1 flash per second for 10s
Initial power on	ON for 1s
Reset success	2 flashes per second for 2s

Smart scene switch configuration Indicator Status

Waiting pairing	4 quick flashes per second
Pairing success	2 flashes per second for 2s
Pairing failure	1 flash per second for 10s
Initial power on	ON for 1s
Reset success	2 flashes per second for 2s

5. **Function description**

* When the device is powered off and then powered on again, the switch will maintain the switch state before power off, and it supports power off memory function;

* Smart switch loops can be configured as multi-control, and the states of multi-control switches are synchronized (After the switch is configured as multi-control, it still can achieve multi-control function even if cut off internet access, but it cannot achieve multi-control function if the gateway is powered off);

* Smart scene switch can be configured as scenario or multi-control function.

* The devices support batch network configuration. Un-configured devices can be batch configured as long as they are not in the standard network configuration state.

* The devices support batch off-grid function. When the gateway is reset, batch off-grid message will be sent to the device, and the device will automatically leave the grid after receiving the message.

* After receiving the no-card status broadcast from keycard switch, switch buttons are invalid. After receiving insert card status broadcast, the button operation is restored.
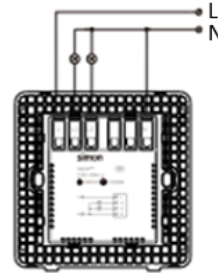
2.2 Multifunction smart switch (switch + scene)

1. Technical parameters

Product name: Multifunction smart switch   Ambient temperature: -10℃～40℃

Wireless connection: ZigBee   Environmental humidity: ≤90%RH (no condensation)

Input voltage: 220V±10%～50Hz   Implementation standard: GB/T16915.2

Maximum load: resistive 800W/channel, capacitive 200W/channel

2. Wiring diagram
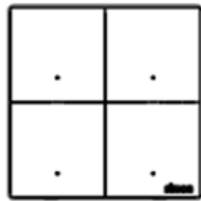
Front view of 4-Gang Multifunction smart switch (2 scene+2 switch)

Wiring of 4-Gang Multifunction smart switch (2 scene+2 switch)
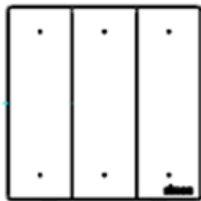
Front view of 6-Gang Multifunction smart switch (3 scene+3 switch)
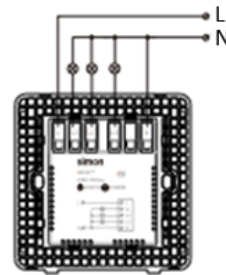
Wiring of 6-Gang Multifunction smart switch (3 scene+3 switch)
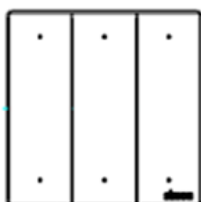
Front view of 6-Gang Multifunction smart switch (2 scene+4 switch)
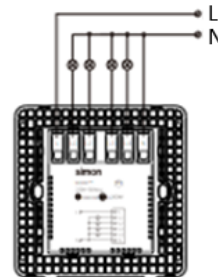
Wiring of 6-Gang Multifunction smart switch (2 scene+4 switch)

3. Network configuration instruction

* Ensure smart device is within effective coverage of ZigBee network(Communication distance between any ZigBee devices: ＜2 walls, ＜100m in open area).

* After the smart switch is powered on, long press the left bottom button more than 3S until the corresponding indicator flashes, Use the Simon-Bus system configuration tool to do network configuration for device. If it is still not connected to the network after 180S, please try it again;

* Instruction for exiting the network: If the local device needs to exit the network, long press the left bottom button more than 5S until the corresponding indicator flashes at a frequency of 2Hz for 2S, then the network exit is successful.

4. Indicator status description

Smart switch configuration Indicator Status

Waiting pairing	4 quick flashes per second
Pairing success	2 flashes per second for 2s
Pairing failure	1 flash per second for 10s
Initial power on	ON for 1s
Reset success	2 flashes per second for 2s

Smart switch work status Indicator instruction

Initial power on	ON for 1s
Not pair	4 flashes per second for 2s
Not configured as multi-control or scenario	2 flashes per second for 2s
Configured as scenario	2 flashes per second for 2s
Configured as multi-control	Short press light up or light off

5. Button diagram and control instruction

6. Function description

* When the device is powered off and then powered on again, the switch will maintain the switch state before power off, and it supports power off memory function;

* Smart switch loops can be configured as multi-control, and the states of multi-control switches are synchronized (After the switch is configured as multi-control, it still can achieve multi-control function even if cut off internet access, but it cannot achieve multi-control function if the gateway is powered off);

* Smart scene switch can be configured as scenario or multi-control function.

* The devices support batch network configuration. Un-configured devices can be batch configured as long as they are not in the standard network configuration state.

* The devices support batch off-grid function. When the gateway is reset, batch off-grid message will be sent to the device, and the device will automatically leave the grid after receiving the message.

* After receiving the no-card status broadcast from keycard switch, switch buttons are invalid. After receiving insert card status broadcast, the button operation is restored.

2.3 Smart curtain switch

1. Technical parameters

Product name: Smart curtain switch   Ambient temperature: -10 ℃ ~ 40 ℃

Wireless connection: ZigBee   Environmental humidity: ≤90%RH (no condensation)

Input voltage: 220V±10%～50Hz   Implementation standard: GB/T16915.2

Maximum load: 200W/channel

2. Wiring diagram
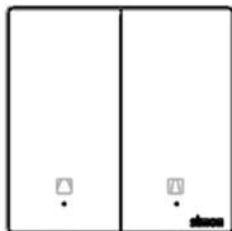
Front view of 1-Gang smart curtain switch
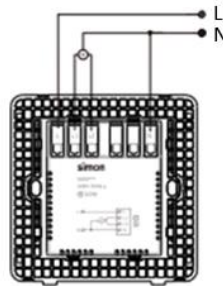
Wiring of 1-Gang smart curtain switch
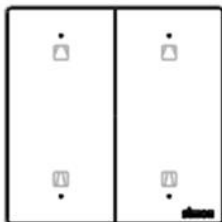
Front view of 2-Gang smart curtain switch
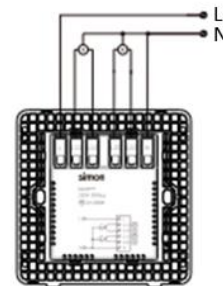
Wiring of 2-Gang smart curtain switch

3. Network configuration instruction

* Ensure smart device is within effective coverage of ZigBee network(Communication distance between any ZigBee devices: ＜2 walls, ＜100m in open area).

* After the smart curtain switch is powered on, long press the left bottom button more

than 3S until the corresponding indicator flashes, Use the Simon-Bus system configuration tool to do network configuration for device. If it is still not connected to the network after 180S, please try it again;

* Instruction for exiting the network: If the local device needs to exit the network, long press the left bottom button more than 5S until the corresponding indicator flashes at a frequency of 2Hz for 2S, then the network exit is successful.
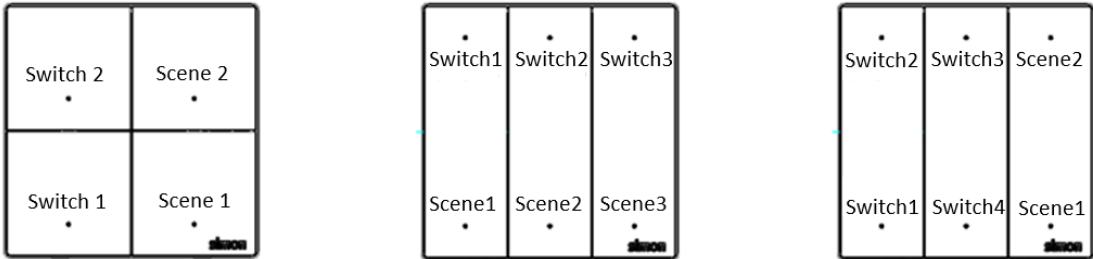
4. **Indicator status description**

Smart curtain configuration Indicator Status

Waiting pairing	4 quick flashes per second
Pairing success	2 flashes per second for 2s
Pairing failure	1 flash per second for 10s
Initial power on	ON for 1s
Reset success	2 flashes per second for 2s

5. **Button diagram and control instruction**
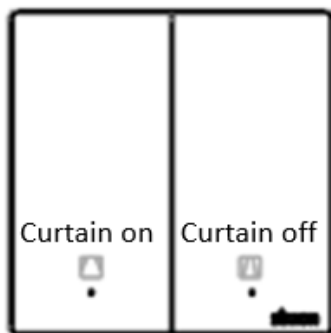
6. **Function description**

* It does not support curtain stroke calibration. The default total stroke running time is 180 seconds and does not support percentage control.

* The devices support batch network configuration. Un-configured devices can be batch configured as long as they are not in the standard network configuration state.

* The devices support batch off-grid function. When the gateway is reset, batch off-grid message will be sent to the device, and the device will automatically leave the grid after receiving the message.

* After receiving the no-card status broadcast from keycard switch, switch buttons are invalid. After receiving insert card status broadcast, the button operation is restored.

2.4 Smart thermostat

1. **Technical parameters**

Product name: Smart thermostat Ambient temperature: -10℃～40℃

Wireless connection: ZigBee Environmental humidity: ≤90%RH (no condensation)

Input voltage: 220V±10%～50Hz

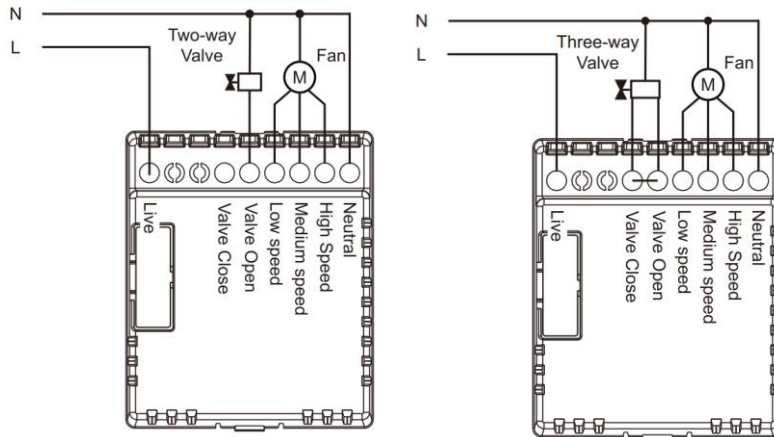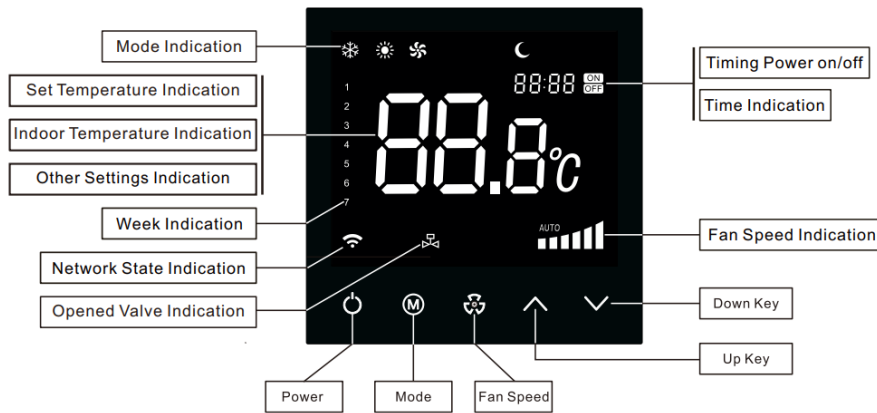Rated current: <2A (maximum resistive load) Temperature control accuracy: ±1℃

Temperature display range: 0～40℃ Temperature setting range: 15～35 ℃

2. Wiring diagram

3. Product function

Product function description:

Function	Operation	Description	Screen Display
Network Configuration	In the Off State, press [∨] for 3s.	In the Off state, press [∨] for 3s until [📶] flashes, then the product tries to connect to the network, when [📶] turns from flashing to steady on, it means adding successfully. The LCD will display content as shown in Fig. 1.	Fig. 1
Network Logout	In the Off State, press [∨] for 20s.	In the Off state, press the [∨] for 20s, the product tries to logout, when [📶] disappears, the product logout successfully. The LCD will display nothing.	
Power On/Off	Short press [⏻].	When the product is off, short press [⏻] to turn on the product, then the LCD will display content as shown in Fig. 2.	Fig. 2
Cooling/ Heating Mode Switch	In the On State, press [Ⓜ] for 3s.	Switch the cooling/heating mode. In the cooling mode, the LCD displays [❄]. In the heating mode, the LCD will display [☀].	
Sleep Mode	In the On State, short press [Ⓜ].	As shown in Fig. 3, the LCD displays [☾]. Then the product enters the sleep mode. After the product operates for 2 hours in sleep mode, the temperature is set to rise (for cooling) or decrease (fo heating) 1 . Two hours later, the temperature is set to continuously rise (for cooling) or decrease (for heating) 1 . Then the product will run at the adjusted temperature. Short press [⏻] to quit this mode.	Fig. 3
Air Supply Mode	In the On State, short press [Ⓜ] twice.	As shown in Fig. 4 the LCD displays [❀]. Then the product enters the air supply mode and closes the electric valve. If the product is currently in the automatic fan speed mode, it will change to the manual fan speed mode, short press [❀] to switch the fan speed. Short press [Ⓜ] or [⏻] to quit this mode.	Fig. 4
Fan Speed Setting	In the On State, short press [❀].	Every short press of [❀] will switch the fan speed. The switch process is as shown in Fig. 5.	Fig. 5

Timing Power-on Setting	In the On State, press 「🕐」 for 3s.		The LCD will display ON , then the hour section will flash as shown in Fig. 6. Short press 「∧」 or 「∨」 to adjust the timing hours to power on. Short press 「🕐」 once, then the minutes section will flash, short press 「∧」 or 「∨」 to adjust the timing minutes to power on. After the setting is completed, leave it alone for 5s. Thus, the product will enable the function off timing power-on, then the product will power off automatically, when the timing time arrives, the product will power on automatically.	Fig. 6
Timing power-off settings	In the On State, press 「🕐」 for 3s, then short press 「🕐」 twice.		The LCD will display OFF , then the hour section will flash as shown in Fig. 7. Short press 「∧」 or 「∨」 to adjust the timing hours to power off. Short press 「🕐」 once, then the minute section will flash. Short press 「∧」 or 「∨」 to adjust the timing minute to power off. After setting is completed, leave it alone for 5s. Thus, the product will enable the function of timing power-off. Once the timing time arrives, the product will power off automatically. Remark: 1. Upon setting the timing power-on/off each time, the initial time for the timing power-on/off is set value set last time and the factory default is 12:00; 2. If timing power-on function is enabled, manual power-on will cancel this function. To enable this function again, it needs to be set it again; 3. If timing power-off function is enabled, manual power-off will cancel this function. To enable this function again, it needs to be set it again; 4. Upon setting the timing power-on/off, short press 「⏻」 or 「◎」 to cancel current setting.	Fig. 7
Time & Week Setting	In the On State, press 「🕐」 for 3s, then short press 「🕐」 four times.		The hour section will flash. Then short press 「∧」 or 「∨」 to adjust the hours. Short press 「🕐」 once, then the minute section will flash. Short press 「∧」 or 「∨」 to adjust the minutes. Short press 「🕐」 once, then the week section will flash. Press 「∧」 or 「∨」 to adjust weeks. After the setting is completed, leave it alone for 3s or press 「⏻」 or 「◎」 to complete the setting.	
Temperature Setting	In the On State, short press 「∧」 or 「∨」.		Every short press will set the temperature to change 1°C. The setting range of temperature is: 15-35°C. The factory default is 25°C .	
View Indoor Temperature	In the On State, press 「∨」for 1s.		View the indoor environmental temperature and the LCD will display the content as shown in Fig. 8. The mode will exit if it is not operated for 5s or if any key is short pressed.	Fig. 8
Temperature Calibration Setting	In the Off State, press 「◎」 for 3s.		The LCD will display the content as shown in the Fig. 9. Short press 「∧」 or 「∨」 to adjust the calibration value. The adjusting range is -6.0-6.0 °C, the step value is 0.1°C and the factory default is 0.0 °C. The setting will be completed if it is not operated for 5s, or if 「⏻」 or 「🕐」 is short pressed.	Fig. 9
Controlled-fan Setting		Short press 「◎」 once.	The LCD will display the content as shown in Fig. 10. Short press 「∧」 or 「∨」 to enable the controlled-fan function. F.1 represents the fan is not controlled and F.0 represents the fan is controlled. The fan is set to be controlled in the factory default. The setting will be completed if it is not operated for 5s, or if 「⏻」 or 「🕐」 is short pressed. Remark: 1. The controlled fan represents that in the automatically-controlled fan speed mode, the fan will stop running if the conditions for closing fan are met. 2. The not-controlled fan represents that in the automatically-controlled fan speed mode, the fan will continuously run at a low fan speed and not stop running if the conditions for closing fan are met.	Fig. 10
Power-off Memory Setting		Short press 「◎」 twice.	The LCD will display the content as shown in the Fig. 11. Short press 「∧」 or 「∨」 and set wether to enable the power-off memory function. E.1 represents enabling this function, i.e., the power restoration will restore the power-on/off state before power outage. E.0 represents disabling this function, i.e., the power restoration will enter the standby state. The E.0 of power-off memory function is disabled in the factory default. The setting will be completed if it is not operated for 5s, or if 「⏻」 or 「🕐」 is short pressed.	Fig. 11
Back-light Shift Setting		Short press 「◎」 three times.	The LCD will display the content as shown in the Fig. 12. Short press 「∧」 or 「∨」 to adjust the back-light shift. The adjusting range is 0-5 shifts and the step value is 1. bL.0 represents the back-light shift is 0, i.e, the back-light will be off when the user performs no operation. bL.5 represents the back-light shift is 5, i.e, the back-light will be on with a duty cycle corresponding to shift 5 if the LCD displays an icon when the user performs no operation. The factory default back-light shift is bL.5. The setting will be completed if it is not operated for 5s, or if 「⏻」 or 「🕐」 is short pressed.	Fig. 12
Restore Factory Settings		Short press 「◎」 four times.	The LCD will display the content as shown in the Fig. 13. Short press 「∧」 or 「∨」 and set weather to restore factory settings. d.1 represents restoring factory settings. d. 0 represents do not restore factory settings. The factory default setting is d.0. The setting will be completed if it is not operated for 5s, or if 「⏻」 or 「🕐」 is short pressed.	Fig. 13

Supplementary instruction:

* The devices support batch network configuration. Un-configured devices can be batch configured as long as they are not in the standard network configuration state.

* The devices support batch off-grid function. When the gateway is reset, batch off-

grid message will be sent to the device, and the device will automatically leave the grid after receiving the message.

* After receiving the no-card status broadcast from keycard switch, switch buttons are invalid. After receiving insert card status broadcast, the button operation is restored.

2.5 Keycard switch

1. Technical parameters

Product name: Keycard switch   Ambient temperature:-10℃~40℃

Wireless connections: ZigBee   Environment humidity: ≤90%RH (no condensation)

Input voltage: 220V±10%~50Hz

Maximum load: Resistive 800W/channel, capacitive 200W/channel

2. Network configuration instruction

* Ensure smart device is within effective coverage of ZigBee network(Communication distance between any ZigBee devices: ＜2 walls, ＜100m in open area).

* After the smart curtain switch is powered on, long press the left bottom button more than 3S until the corresponding indicator flashes, Use the Simon-Bus system configuration tool to do network configuration for device. If it is still not connected to the network after 180S, please try it again;

3. Indicator status description

Keycard switch configuration Indicator Status

Waiting pairing	4 quick flashes per second
Pairing success	2 flashes per second for 2s, indicate card status(If there is a card, the light will be off, if there is no card, the light will be on)
Pairing failure	1 flash per second for 10s
Reset success	2 flashes per second for 2s
Insert set card	Keep on 2 flashes per second

4. Function description

* When inserting the card, the relay is activated, then the card status and welcome scenario are sent to switches.

* When removing the card, delay to disconnect the relay, then the card status and leave scenario are sent to switches.

* If the ZigBee scene number is not bound, it means that there is no need to trigger the scene when inserting or removing the card.

* When keycard switch is added to the room type, when inserting or removing the card, the card status will be broadcast. If other devices receive "no card" broadcast message, the devices will be locked and uncontrollable. After receiving "there is card" broadcast message, the devices will be unlocked and restore normal control.

* If removing the card and inserting the card back into keycard switch before the delay time to disconnect the relay, the card status and card insertion scenario will not be sent.

* The factory default keycard switch reads the information of card's 7th section. You

can change the card section for keycard switch to be read via setting card. When setting card is inserted into keycard switch, the frequency of the indicator for keycard switch is 2Hz Flash.

* The devices support batch network configuration. Un-configured devices can be batch configured as long as they are not in the standard network configuration state.

* The devices support batch off-grid function. When the gateway is reset, batch off-grid message will be sent to the device, and the device will automatically leave the grid after receiving the message.
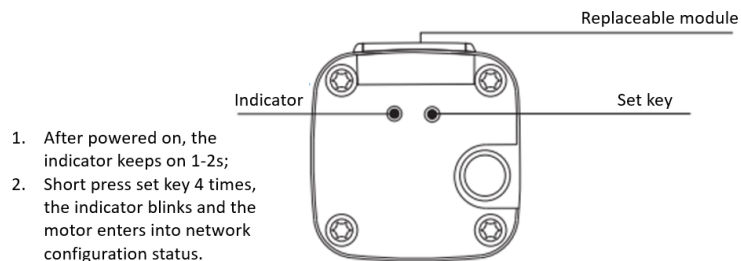
2.6 Smart curtain motor

1. Technical parameters

| Rated torque（N.m）	Running speed（cm/s）	Input voltage（V）	Rated frequency（Hz）	Motor speed（r/min）
1.2	9	100-240	50/60	60
Working system	Insulation grade	Motor length	Protection grade	
S2 12min	B	290	IP40	

2. Network configuration instruction

After the smart curtain motor is powered on, short press the button on the head of the motor four times. The motor will vibrate back and forth twice on the fourth time (if it does not happen, continue to short press it until the red indicator on the bottom flashes quickly, then enter to network configuration. If it does not connect to the network after 180S, please try it again.

Replaceable module

Indicator   Set key

1. After powered on, the indicator keeps on 1-2s;
2. Short press set key 4 times, the indicator blinks and the motor enters into network configuration status.
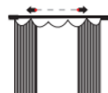
3. Set limit

After the curtain is installed, the motor is powered on, and the curtain can be started to open and close by gently pulling the curtain.
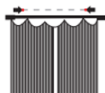
When the curtain is closed once for the first time, closing limit can be automatically set.

When the curtain is opened once for the first time, opening limit can be automatically set.
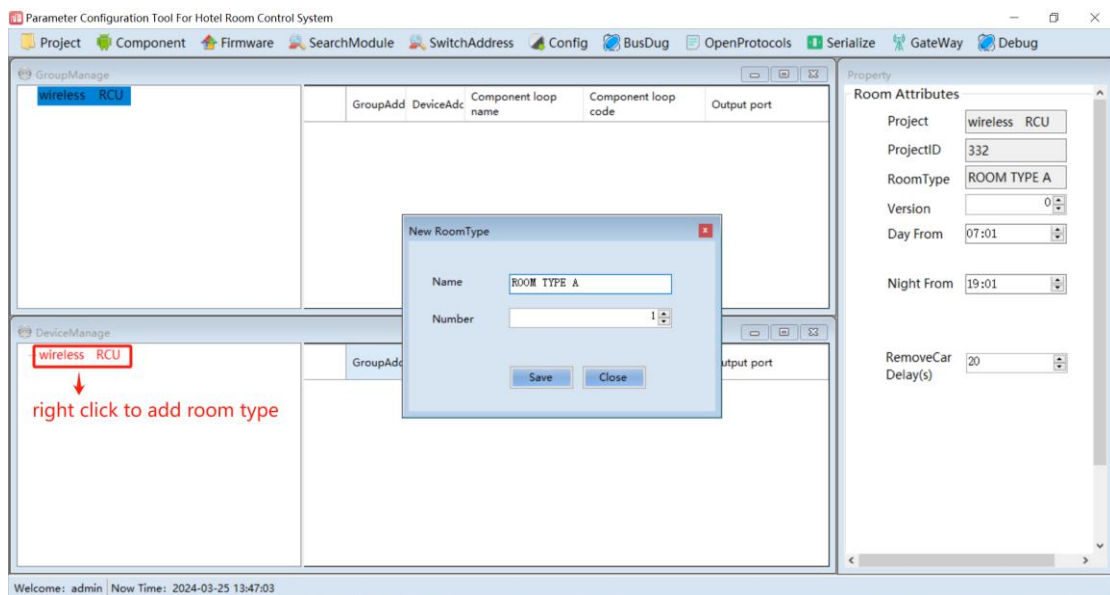
4. Function description

* Smart curtain motors do not support batch network configuration.

* By scenario setting, you can control to open or close curtains, but cannot control the curtain percentage.

* Curtains cannot be configured as multi-control
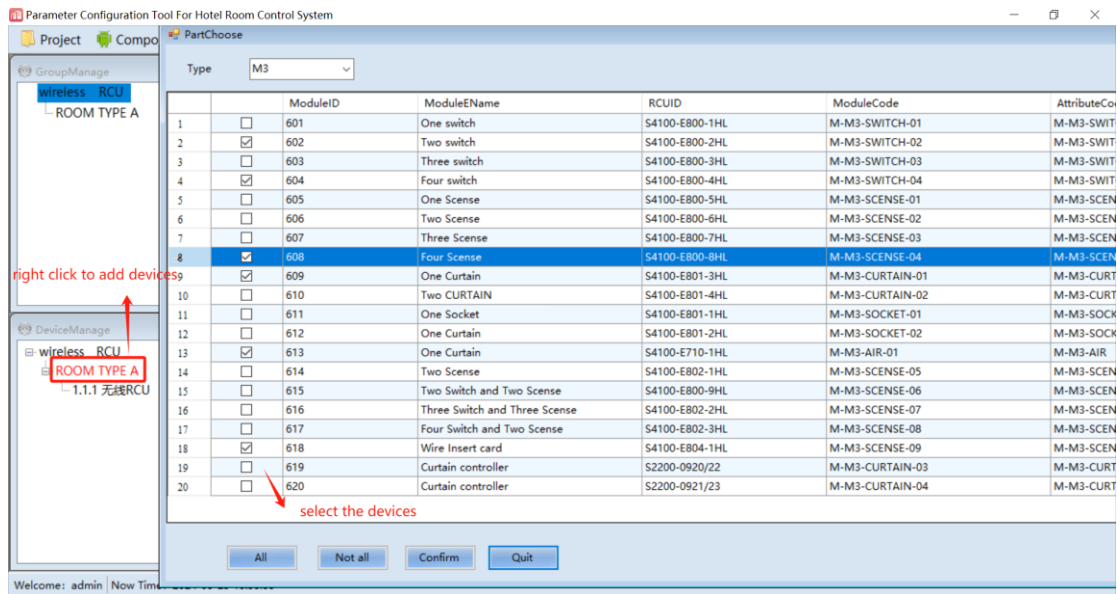
3 Simon-Bus configuration instructions

3.1 Add new project, select the gateway'5-S2200-0803-0HL'
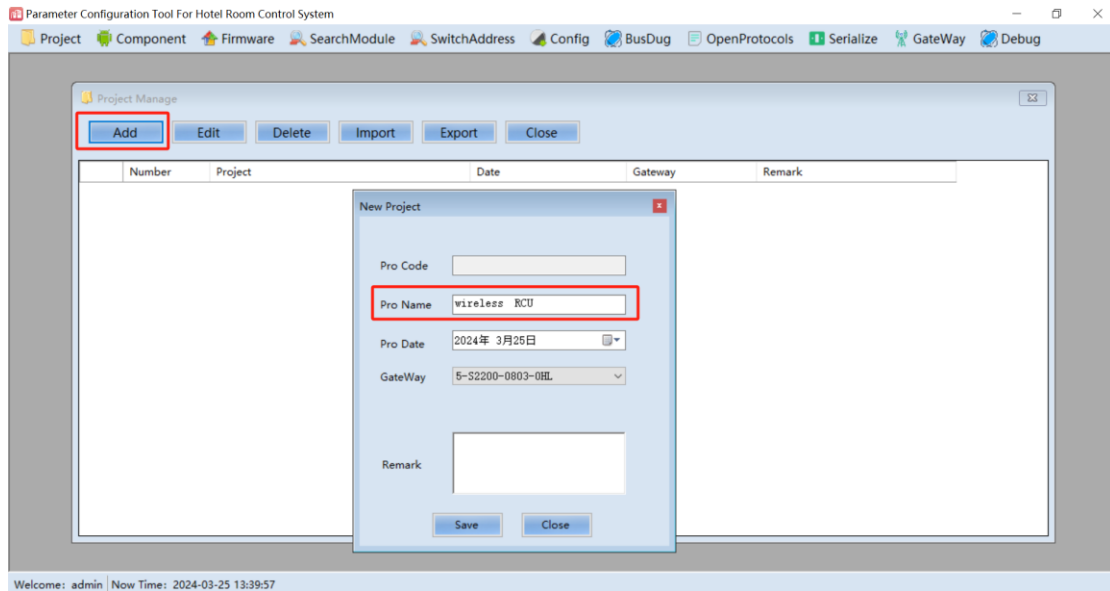

3.2 Add room type

3.3 Add room devices

3.4 Make network configuration for devices

The computer and the ZigBee gateway are connected to the same LAN. Use the configuration tool to search for gateway and after searching it out, select it. Next make the devices into the standard network configuration state, use the configuration tool to search for the devices and wait for the devices to join the ZigBee network. It will shows the node ID, mac and other information of the devices on the page if connection is successful.
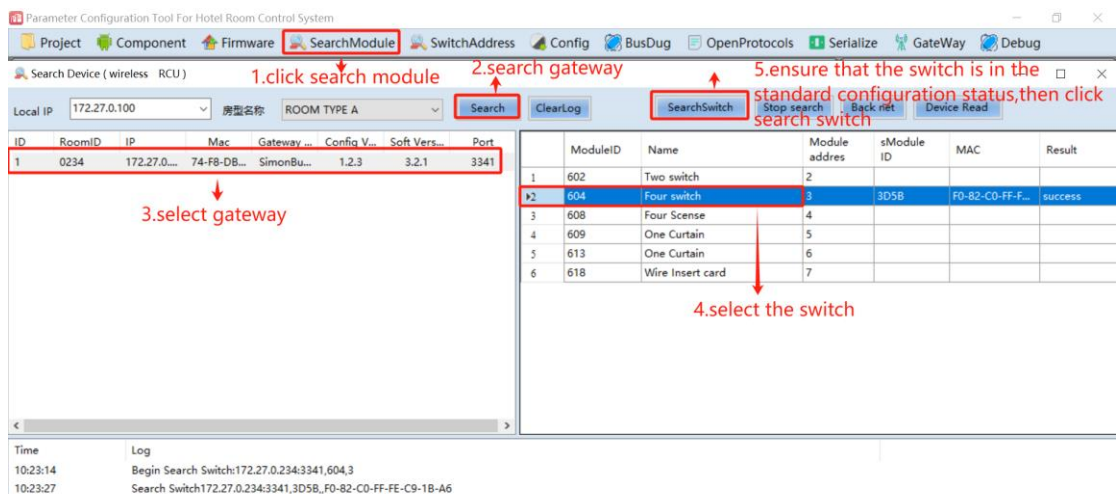
3.5 Add group address
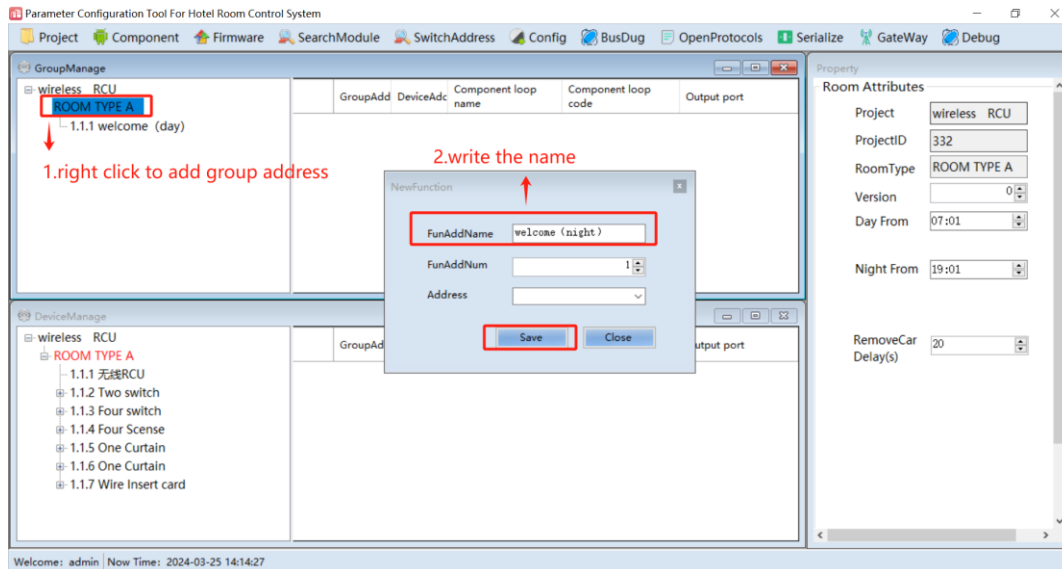
3.6 Set group address parameters

Notice:

* Can't place curtain loops in the group if set the type of group address as multi-control, because curtains do not support multi-control;

* If thermostat is used as the execution loop in the scenario, only ON/OFF function of thermostat can be configured, and temperature, mode, wind speed function of thermostat can't be configured in the scenario;
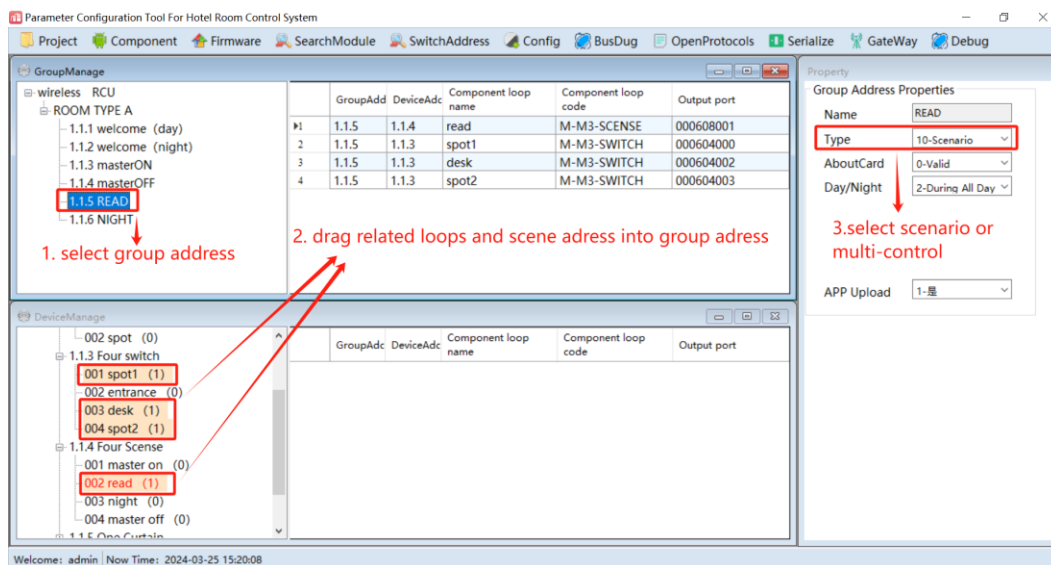

3.7 Keycard configuration

Notice:

* The "Night scenario for inserting card" does not need to be configured. If the "Night scenario for inserting card" is not configured, the configured "Daytime or All-day

scenario for inserting card" will be executed no matter what time the card is inserted.

* When keycard switch is added to the room type, but the scenarios for inserting or removing card are not configured. In this situation, there is no scenario execution when inserting or removing the card, but the card status will be broadcast. And if other devices receive "no card" broadcast message, the devices will be locked and uncontrollable. After receiving "there is card" broadcast message, the devices will be unlocked and restore normal control.
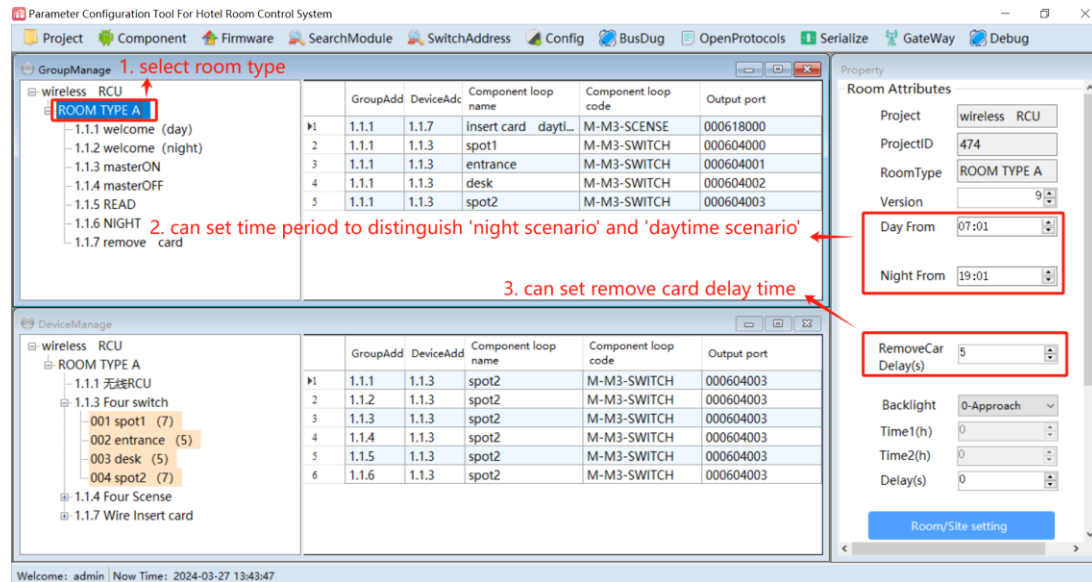
3.8 Send Program
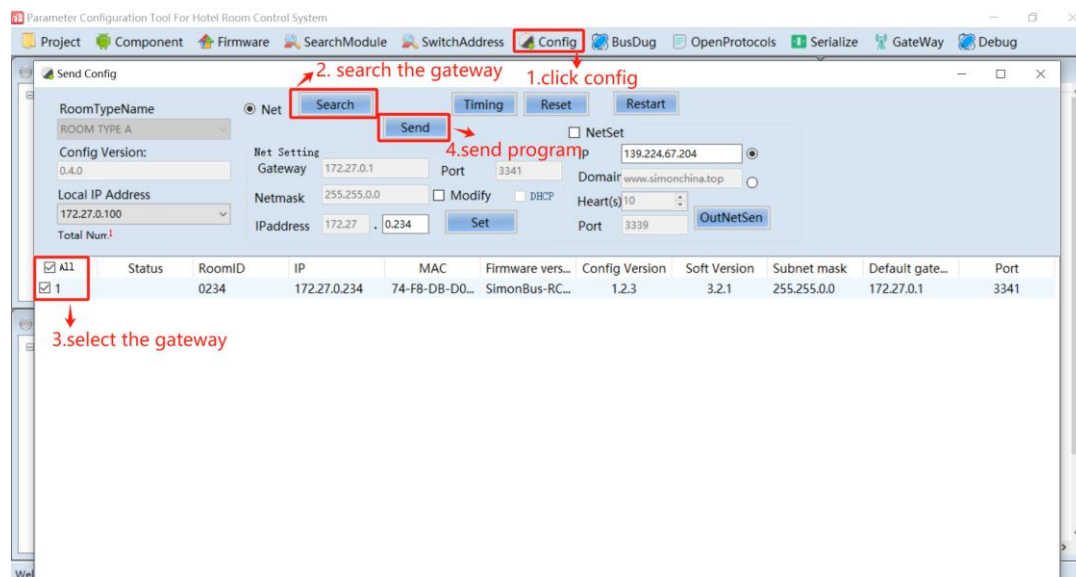
Follow the steps shown in the figure above to send program. The gateway will send configuration information to devices. Whether the device is configured successfully requires a debugging engineer to check if it can achieve scenario and multi-control functions or not. If not, the gateway needs to be restarted. When gateway is in the initialization phase, it will re-send configuration information about scenarios and multi-control functions.

4 Q&A

1. Whether the device is configured successfully requires a debugging engineer to check if it can achieve scenario and multi-control functions or not. If not, the gateway needs to be restarted. When gateway is in the initialization phase, it will re-send configuration information about scenarios and multi-control functions.
2. If all devices in the configured multi-control group are not all online, during the use of multi-control, the multi-control response of other online devices will delay 5 seconds, or sometimes it will not execute.
3. Curtains cannot be configured as multi-control.