

User Manual

Local Commander

Model: Z503

Software: V4.1-4.2

Hardware: V1.5

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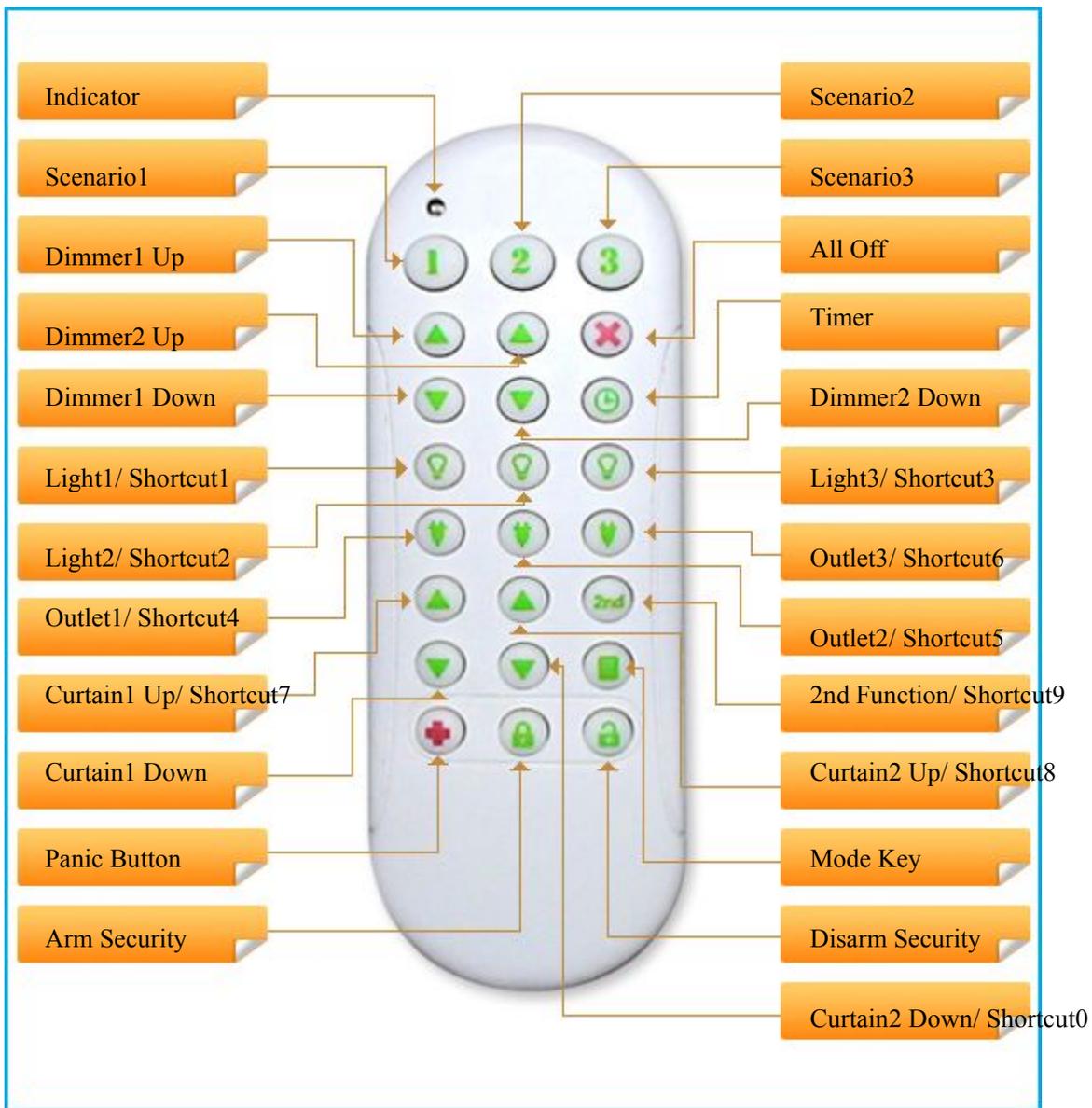
1. Introduction

Netvox Z503, a ZigBee local commander, can be bound with the lighting/ curtain/ dimmer devices for users to control these devices wirelessly. It allows people to perform the scene controls, and each button is programmable. Z503 also equipped with an emergency button. When users ask for urgent assistance, simply push the button, and it will send the alarm message to the command center. The Warning Device will send out alarm sound or lighting alert for immediate help.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Product Appearance



3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 3V CR2032 battery
- Operating consumption: Tx \leq 43mA; Rx \leq 28mA
- Standby consumption: \leq 1uA
- Up to 70 meters wireless transmission range in non-obstacle space
- Easy installation and configuration

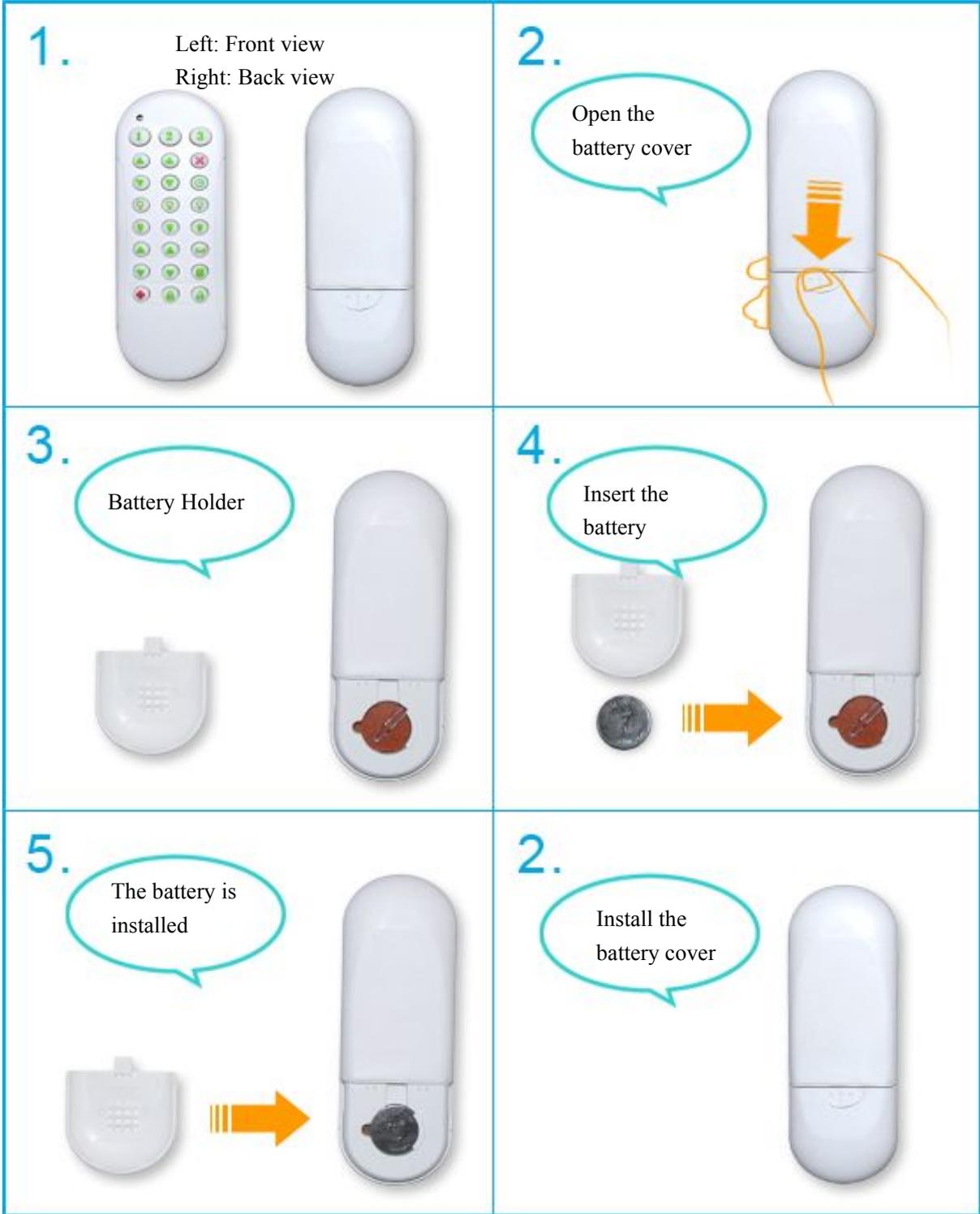
4. Installation

- This device is NOT truly waterproof/ resistant and is for indoor use.

5. Setting up Z503

5-1. Join the ZigBee Network

- (1) While Z503 is under the coverage from a coordinator or a router whose **permit-join feature is enabled**, Z503 will be permitted to join the network.
- (2) Insert a set of 3V batteries (CR2032), the positive plate facing outside and cover the case as shown below. The indicator will flash once to show powering on successfully.
- (3) Join into HA network: press both 2nd function key  and scene one key . The indicator flashes once and start to search the network and request to join. Once joining into the network, Z503 will enroll to CIE System ; the indicator flashes 6 times to show success; otherwise, it will flash 4 times to show fail.
- (4) Join into ZLL network: press both 2nd function key  and scene two key . The indicator flashes once to start to search the network and request to join.
- (5) The indicator will flash **5 times** after it is joined successfully. Otherwise, the indicator will stay **OFF**.
- (6) The default network for Z503 to join is HA network. Z503 will automatically request to join AH network after 30 seconds of step (2) if users do not manually select network type as shown in step (3).



5-2. Binding

Only in HA network, Z503 can be bound with the device which supports HA On/Off Output/ HA Level Controllable Output/ HA Mains Power Outlet/ HA On/Off Light/ HA Dimmable Light/ HA Color Dimmable Light/ HA Shade/ HA Heating Unit/ HA Cooling Unit/ HA Pump (such as Z800/ Z801RX/ ZC01/ Curtain controller/ Dimmer Light).

[On/Off Control]:

Step1. Press and hold either of the three  or  for 3 seconds to broadcast the binding request.

The indicator will flash **once**.

Step2. Enable the binding feature of the device which supports On/Off Control cluster.

Step3. The indicator flashes **5 times** after the binding is completed; otherwise, the indicator flashes **10 times**.

- Each button can be bound with up to 5 devices.

[Dimmer/Curtain Control]:

Step1. Press and hold both  and  (Dimmer/Curtain button set) to broadcast the binding request. The indicator will flash **once**.

Step2. Enable the binding feature of the device which supports Dimmer/Curtain Control cluster.

Step3. The indicator flashes **5 times** after the binding is completed; otherwise, the indicator flashes **10 times**.

- Each button set can be bound with up to 5 devices.

[The 3rd/4th Curtain Control]:

Step1. Press . The indicator will flash **once**.

Step2. Press and hold both  and  (Curtain button set) to broadcast the binding request. The indicator flashes **once**.

Step3. Enable the binding feature of the device which supports Curtain Control cluster.

Step4. The indicator flashes **5 times** after the binding is completed; otherwise, the indicator flashes **10 times**.

- Each button set can be bound with up to 5 devices.

[HA IAS Control]:

Step1. Press and hold one  for 3 seconds to broadcast the binding request. The indicator will flash **once**.

Step2. Enable the binding feature of the IAS device.

Step3. The indicator flashes **5 times** after the binding is completed; otherwise, the indicator flashes **10 times**.

- Panic button only can be bound with 1 device.

5-3. Group Build up

In Zll network, Z503 is able to establish group, and control devices in the group. If users do not establish a group, there are three corresponding methods to establish groups:

- ① Turn on the identify function of devices which will be in the group. Press and hold  OR  for more than three seconds); the indicator flashes 5 times to show success.
- ② Turn on the identify function of devices which will be in the group. Press  and  (dimmer up  + dimmer down ) (curtain up  + curtain down ) at the same time; the indicator flashes once and then the indicator flashes 5 times to show success.
- ③ Press 2nd function key  ; the indicator flashes once. At the same time press  and  (curtain up  + curtain down ). The indicator flashes one more time and Z503 immediately sends “add group if identify” to build up the group corresponding to 3rd or 4th curtain. The indicator flashes 5 times to show success.

5-4. Control the Devices Through Wireless

After binding with devices:

- A. Press  or  to control the On/Off feature.
- B. Press  to control the Dimming-up/Rolling-curtain-up feature.
- C. Press  to control the Dimming-down/Rolling-curtain-down feature.
- D. Press  . The indicator flashes once. Then press Curtain  or Curtain  to control the 3rd/4th Rolling-curtain feature.
- E. Press All Off  to turn off all the On/Off/Dimmer devices.
- F. Press  once, and then press  to turn off all the On/Off/Dimmer devices in 5 minutes.
Press  twice within 5 seconds, and then press  to turn off all the On/Off/Dimmer devices in 15 minutes.
Press  for 3 times within 5 seconds, and then press  to turn off all the On/Off/Dimmer devices in 30 minutes.

5-5. Emergency

After binding with IAS devices, press  to send emergency message to the network.

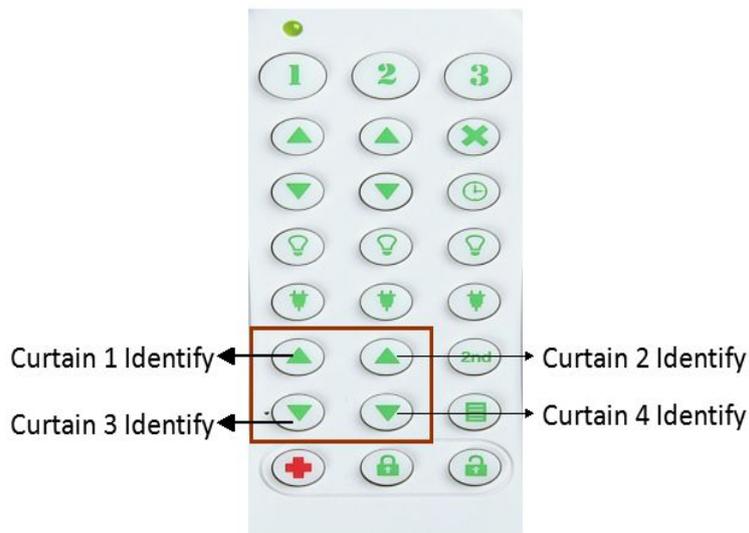
5-6. Arm/Disarm Security

After finding out CIE device (please refer to 5-1. Join the ZigBee Network), users area able to arm/disarm the security through Z503.

- Arm: While the security is disarmed, press and hold  for 3 seconds to arm the security. The indicator will flash **once**.
- Disarm: While the security is armed, press and hold  for 3 seconds to disarm the security. The indicator will flash **once**.

5-7. Store Scene

1. Press and hold  or  or  or  for 5 seconds. The indicator flashes once and identify the corresponding binding device for 120 seconds. Press and hold  for 5 seconds to control curtain 1 and curtain 2 to identify for 120 seconds. Press and hold  for 5 seconds to control curtain 3 and curtain 4 to identify for 120 seconds. As shown below:



2. Press and hold  or  or  for more than 3 seconds; the indicator flashes once to store the scene. Z503 will save the devices status of the network. The Indicator flashes 5 times after the setting is completed; otherwise, it will not flash.

5-8. Configure Scene and Get Scene Configuration

Support “Configure Scene” and “Get Scene Configuration” functions and control up to four scenes each key

( or  or ).

5-9. Recall Scene

Press Scenario  or  or  less than 3 seconds to recall scene. When configuring more than once scene through “Configure Scene”, press  or  or  to switch saved scenes.

5-10. Delete Stored Scene

Press and hold  for 3 seconds, and the indicator will flash **once**. After the scene is deleted, the indicator flashes **7 times**; otherwise, it flashes **3 times**.

- The scene cannot be restored after deleting.
- It is recommended that users delete scene when first-time use or Z503 joins a new ZigBee network.
- The enrolled CIE will be deleted when users delete stored scenes. Thereafter, users can press 2nd

function key  and press  to enroll to CIE again.

5-11. Sleeping Mode

Z503 is designed to go into sleeping mode for power-saving in some situations:

- A. When it doesn't find a network to join → Z503 will go to sleeping mode.
- B. While the device is in the network → the sleeping period is 5 minutes; it will wake up every 5 minutes to keep online.
- C. Once Z503 was joined to a network and by any chance the network is no longer existed or the device is out of the network → Z503 will wake up every 15 minutes to find the network it joined before. It never keeps in sleeping mode and continues to find its network every 15 minutes. This condition would consume up to 30 times power spending compared to normal-operating status. To prevent this unwanted power consumption, we recommend that users manually power off the device.

5-12. Wake up Z503

When users would like to setup or acquire data from the device which is in sleeping mode, we have to wake up the device. To wake up Z503, press and hold  first. Meanwhile, press  to wake it up. After waking up, there will be some situations:

- Z503 is in the network → the indicator will flash **5 times**, and Z503 will broadcast the device information such as IP address and IEEE address.
- Z503 hasn't joined the network → the indicator will flash **once**, and Z503 will start to search a network to join.
- Z503 was joined to a network and by any chance the network is no longer existed → the indicator will flash **once**, and Z503 will find the network it joined before.

5-13. Battery

Low-power report: When the operating voltage is lower than 2.4V, Z503 will send a low-power report to the CIE device. The 4 battery attributes:

- BatteryVoltageMinThreshold: 2.1V
- BatteryVoltageThreshold1: 2.2V
- BatteryVoltageThreshold2: 2.3V
- BatteryVoltageThreshold3: 2.4V

When the battery voltage is lower than the VoltageThreshold, it will send the voltage alarm code:

- Lower than BatteryVoltageMinThreshold → sends the Alarmcode = 0x10
- Lower than BatteryVoltageThreshold1 → sends the Alarmcode = 0x11
- Lower than BatteryVoltageThreshold2 → sends the Alarmcode = 0x12
- Lower than BatteryVoltageThreshold3 → sends the Alarmcode = 0x13

Users are able to use these data to check the battery status:

- Power configuration cluster (ID:0x0001)
- Battery voltage attribute (ID:0x0020)

5-14. Restore to Factory Setting

To restore it to factory setting, please follow the steps:

Step1. Power off Z503.

Step2. Press and hold both  and , and then power on Z503.

Step3. After the indicator flashes **10 times**, reboot Z503 to complete the restore.

- When the restore is failed, the indicator will generate slow flash **3 times**.

6. Home Automation Clusters for Z503

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by Z503.

1.End Point(s) : 0x0F,0x0A

2.Device ID : HA Deviceid Remote Control (0x0006) , HA IAS Ancillary Control Equipment (0x0401) .

3.EndPoint Cluster ID

Cluster ID for Z503	
Server side	Client side
EP 0X0F (Device ID: Deviceid Remote Control (0x0006))	
Basic(0x0000)	On-Off(0x0006)
	Level Control(0x0008)
Identify(0x0003)	Groups(0x0004)
Commissioning (0x0015)	Scenes(0x0005)
EP 0X0A (IAS Ancillary Control Equipment (0x0401))	
Basic(0x0000)	ACE(0x0501)
Power configuration(0x0001)	
Identify(0x0003)	
Commissioning (0x0015)	
Poll Control (0x0020)	
Diagnostics (0x0B05)	

Attributes of the Basic Information

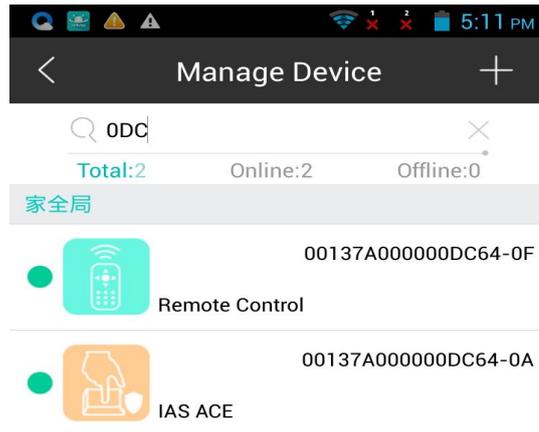
Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	<i>ZCLVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	<i>ApplicationVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x2B	O
0x0002	<i>StackVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x35	O
0x0003	<i>HWVersion</i>	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x0E	O
0x0004	<i>ManufacturerName</i>	Character	0 – 32	Read only	netvox	O

		string	bytes			
0x0005	<i>ModelIdentifier</i>	Character string	0 – 32 bytes	Read only	Z503E3ED	O
0x0006	<i>DateCode</i>	Character string	0 – 16 bytes	Read only	201505019	O
0x0007	<i>PowerSource</i>	8-bit Enumeration	0x00 – 0xff	Read only	0x03	M
0x0010	<i>LocationDescription</i>	Character string	0 – 16 bytes	Read/write		O
0x0011	<i>PhysicalEnvironment</i>	8-bit Enumeration	0x00 – 0xff	Read/write	0x00	O
0x0012	<i>DeviceEnabled</i>	Boolean	0x00 – 0x01	Read/write	0x01	M

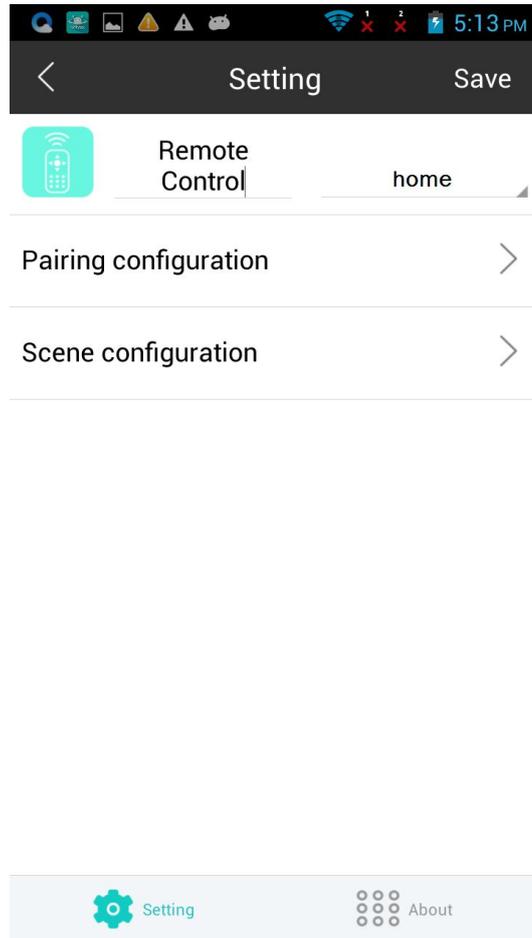
7. Netvox APP Control Interface

1. After the device is added to the Netvox system, search for the IEEE address in the device management interface of the APP as shown in following figure:

note: 00137A000000DC64 - 0F (IEEE - EP)



2. Select Remote Control as shown in following figure:



3. Click Pairing configuration and the following screen appears: You will see the EP supported by the device
 Note:00137A000000DC64 - 01 (IEEE - EP)

Pairing configuration:

EP 01 ~ 03 Corresponding to Lamp 1 ~ Lamp 3 buttons

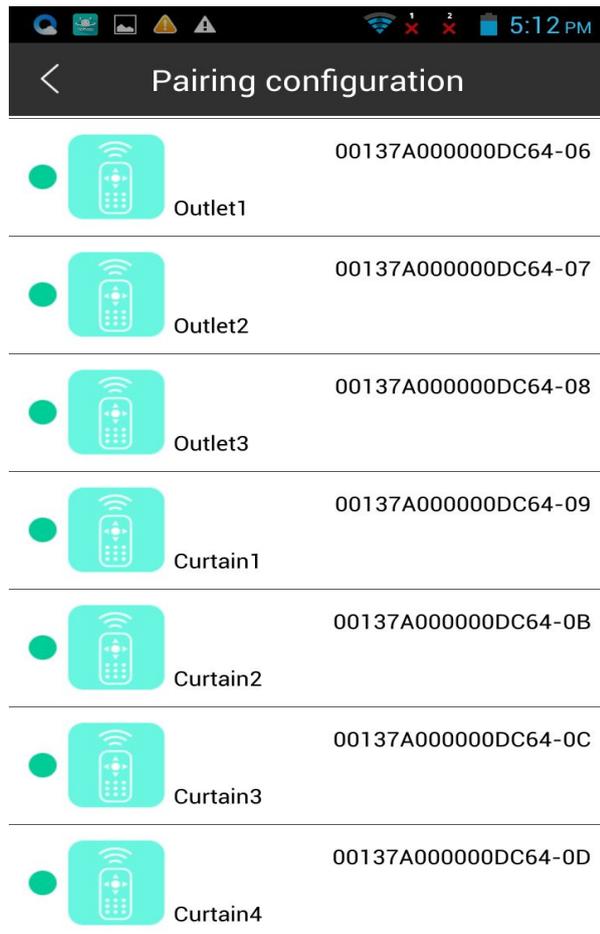
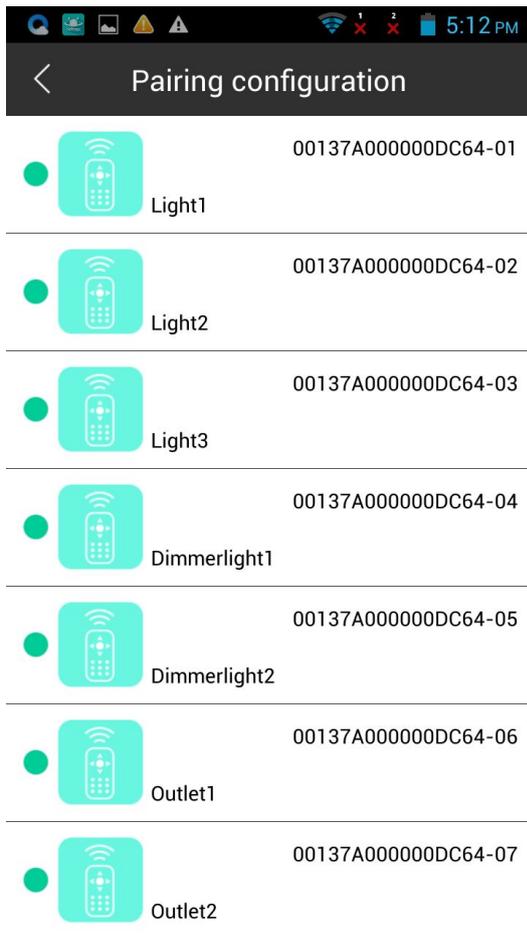
EP 04-05 Corresponding to dimmer 1 (up / down) to dimmer 2 (up / down) buttons

EP 06 ~ 08 corresponds to the Outlet 1 ~ Outlet 3 buttons

EP 09 to 0B corresponds to the Curtain 1 (Up / Down) to Curtain 2 (Up / Down) buttons

EP 0C to 0D corresponds to the Curtain 1 (Up / Down) to Curtain 2 (Up / Down) buttons

Short press the second function button to switch between EP 09 ~ 0B and EP 0C ~ 0D. Pairing configuration operations are virtual EP



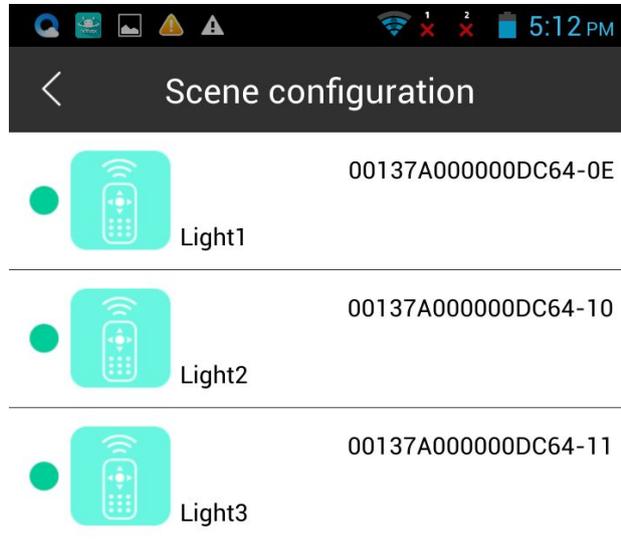
4. Click scene configuration, the following interface will appear. You will see EP support scene function Note :

00137A000000DC64 - 0E(IEEE - EP)

Scene configuration:

EP 0E ~ 11 corresponds to "1", "2", "3" three scene button.

Each EP can be bound to four scenario actions.



8. Important Maintenance Instructions

- Please keep the device in a dry place. Precipitation, humidity, and all types of liquids or moisture can contain minerals that corrode electronic circuits. In cases of accidental liquid spills to a device, please leave the device dry properly before storing or using.
- Do not use or store the device in dusty or dirty areas.
- Do not use or store the device in extremely hot temperatures. High temperatures may damage the device or battery.
- Do not use or store the device in extremely cold temperatures. When the device warms to its normal temperature, moisture can form inside the device and damage the device or battery.
- Do not drop, knock, or shake the device. Rough handling would break it.
- Do not use strong chemicals or washing to clean the device.
- Do not paint the device. Paint would cause improper operation.

Handle your device, battery, and accessories with care. The suggestions above help you keep your device operational. For damaged device, please contact the authorized service center in your area.