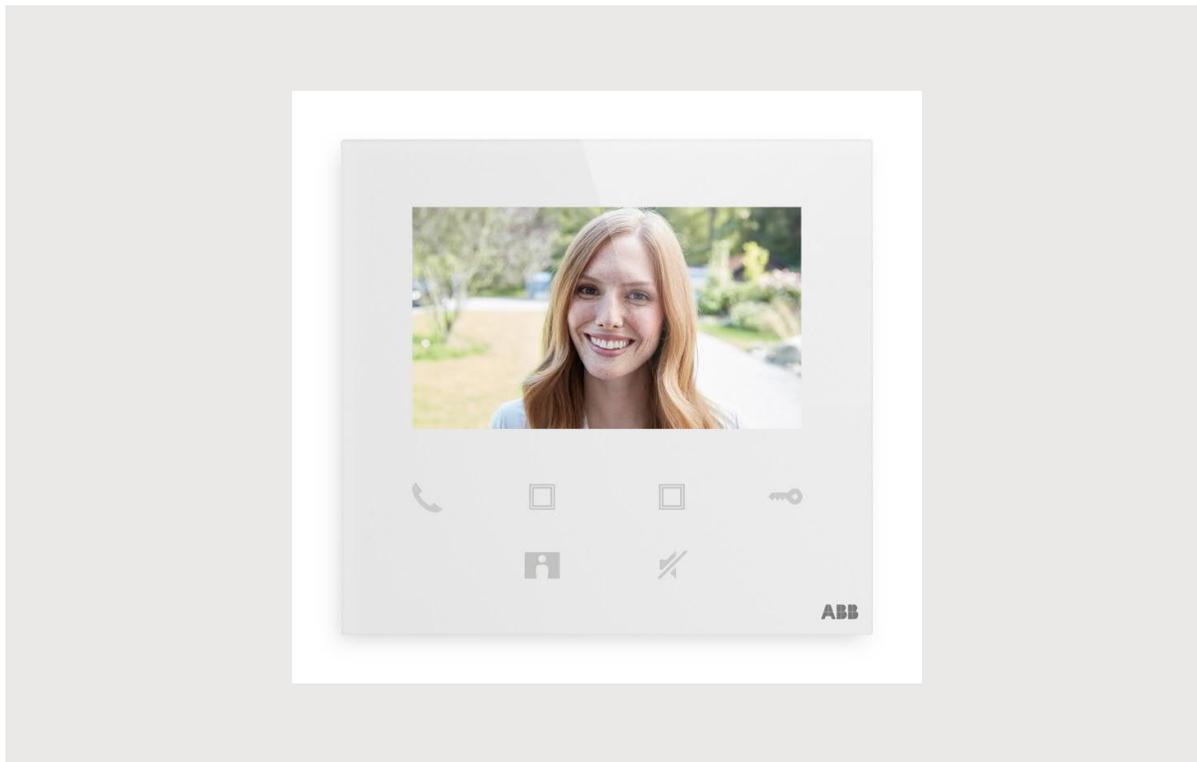


2TMD042000D0009 | 10.06.2020

Product manual ABB-Welcome

M2240.-W Video indoor station 4.3, WiFi



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1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place. If you pass the device on, also pass on this manual along with it. ABB accepts no liability for any failure to observe the instructions in this manual.

2 Safety



Warning

Electric voltage!

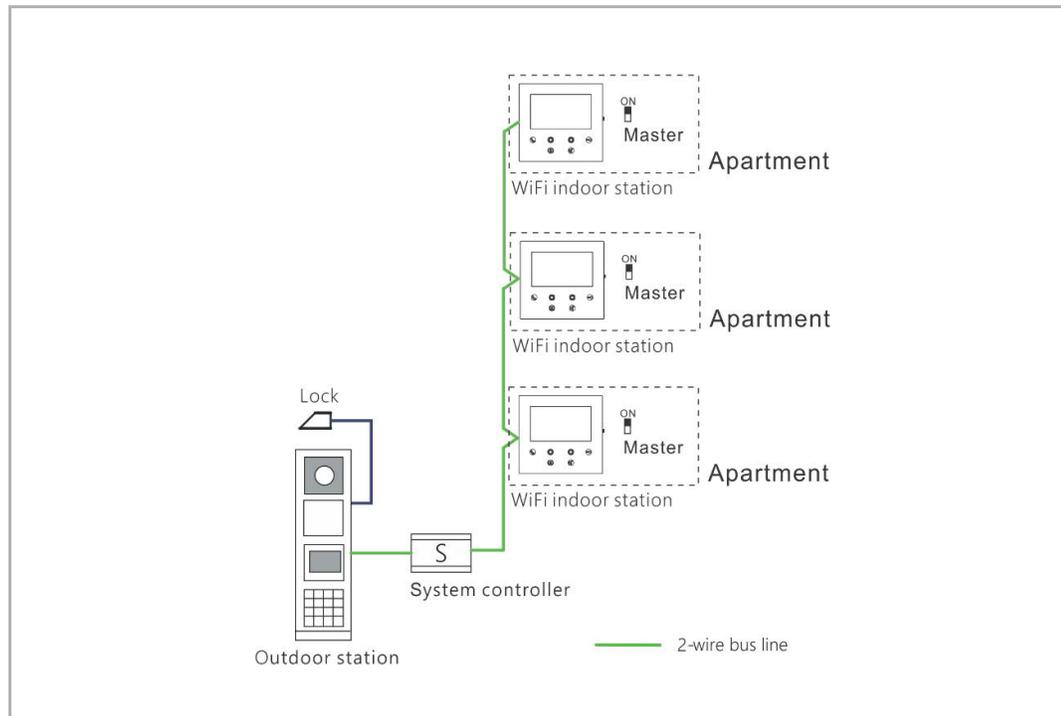
Dangerous currents flow through the body when coming into direct or indirect contact with live components.

This can result in electric shock, burns or even death.

- Disconnect the mains power supply prior to installation and/or disassembly!
- Permit work on the 100-240 V supply system to be performed only by specialist staff!

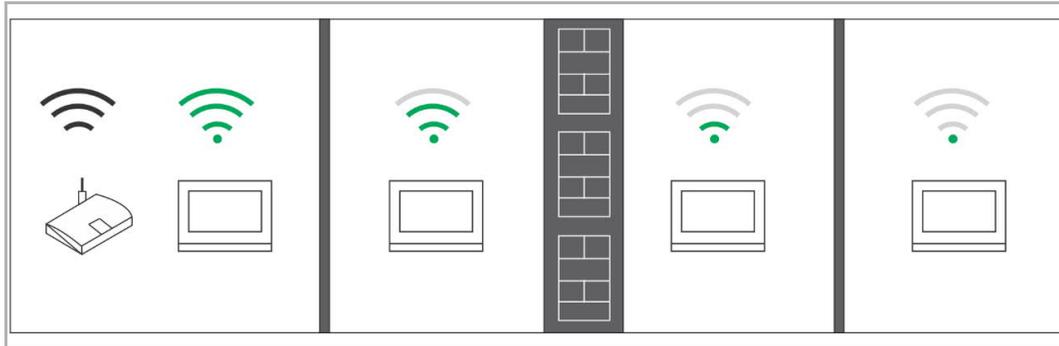
3 Intended use

This device is a central control panel of the ABB-Welcome system and operates exclusively with components from this system. The device must only be installed in dry indoor rooms.

**Note**

Only one WiFi indoor station can be used in the same apartment, and this WiFi indoor station must be set to "Master" mode.

WiFi installation



Note

If the device supports WiFi function, please make sure the device has good WiFi signal reception before installation. The distance between the router and monitors, and the construction materials used in the walls are factors that can affect signal quality.

If the WiFi signal is not strong enough to guarantee correct operation, a WiFi repeater must be installed between the router and this device in order to boost the WiFi signal received by this device.

4 Environment



Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with household waste.

- The device contains valuable raw materials that can be recycled. Therefore, dispose of the device at the appropriate collecting facility.

4.1 ABB devices

All packaging materials and devices from ABB bear the markings and test seals for proper disposal. Always dispose of the packing materials and electric devices and their components via an authorized collection facility or disposal company.

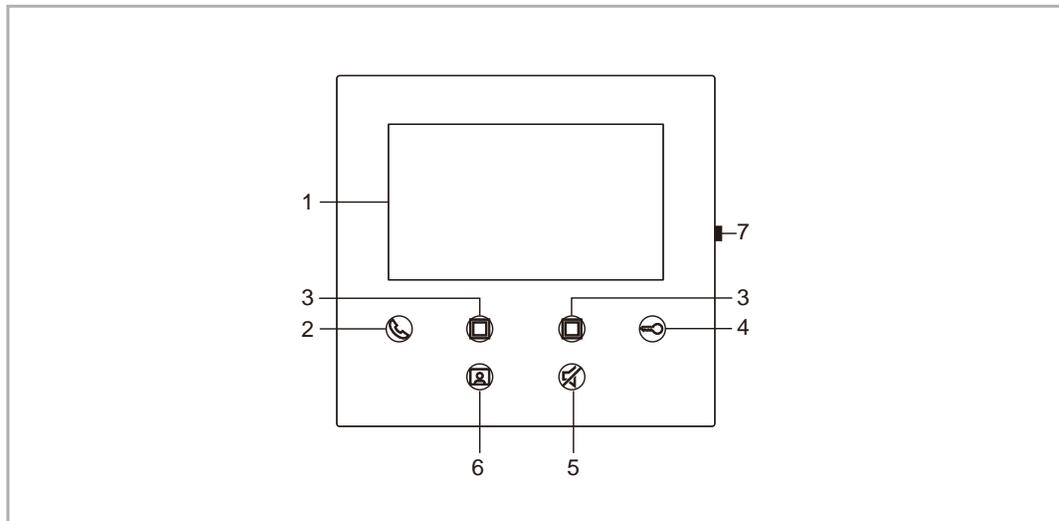
ABB products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU-Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU-REACH ordinance and law for the implementation of the ordinance (EG) No.1907/2006)

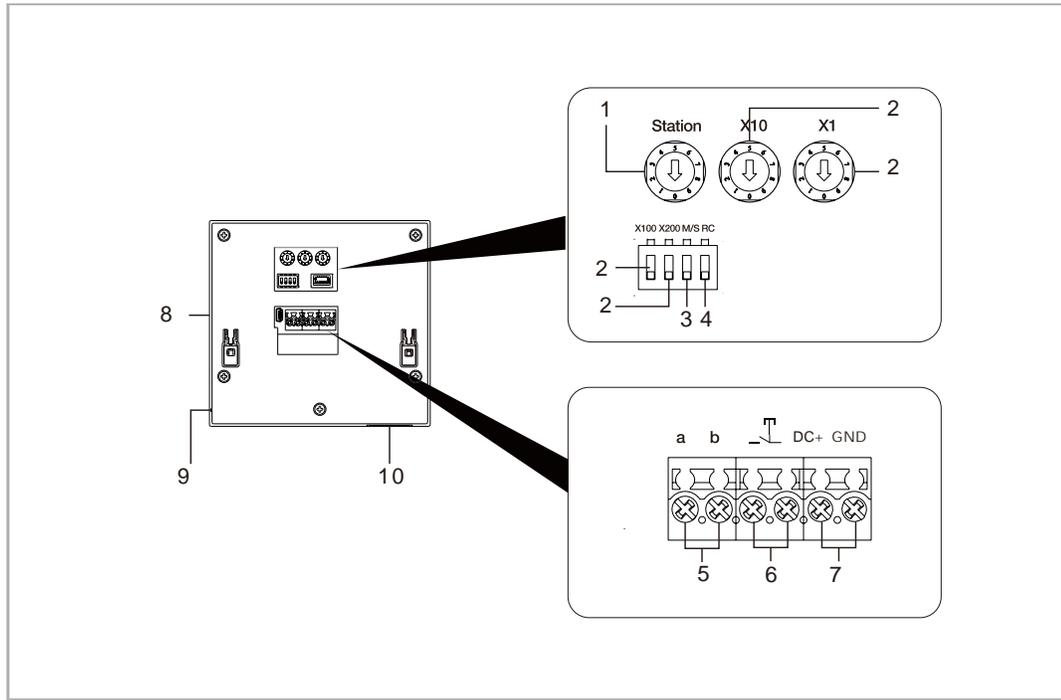
5 Product description

5.1 Control elements



No.	Description
1	4.3" IPS screen
2	Communication button While a call is coming in, press this button to activate the communication within 30 s and press again to end the call.
3	Programmable button can be set to release the 2nd lock of the outdoor station, call guard unit, intercom call and control the switch actuator.
4	Unlock button <ul style="list-style-type: none"> Open the door by pressing this button at any time. Auto-unlock: The door is automatically opened after an incoming call (Hold this button for more than 3 seconds)
5	Mute button <ul style="list-style-type: none"> In standby mode, press this button to mute the ringtone of this indoor station. In standby mode, long press this button to mute the ringtone of all indoor stations in the same apartment. While a call is coming in, press this button to reject the call. During the conversation, press this button to mute the microphone.
6	Surveillance button In standby mode, press this button to surveil the outdoor station and external cameras if available.
7	Setting button

5.2 Terminal description



No.	Description
1	Outdoor station selector switch Set the address of the default outdoor station.
2	Indoor station selector switch Selector switch X10 sets tens digits, selector switch X1 sets units digits, Dip switches X100 and X200 set hundreds digits.
3	Master/slave function switch Only one indoor station in each apartment can be set as "Master" (ON=Master).
4	Terminal resistor switch In video installations or mixed audio and video installations, the switch must be set as 'RC on' on the last device of the line (ON=RC on).
5	a, b = bus connector
6	A potential free contact, such as a doorbell pushbutton
7	Connector for local power supply *Only apply to M22403-W
8	Setting button Press to enter setting mode.
9	Microphone
10	Speaker

6 Technical data

Designation	Value
Operating voltage range	20-30 V $\overline{=}$
Standby current	24 V $\overline{=}$, 45 mA
Operating current	24 V $\overline{=}$, 330 mA
Operating temperature	5 °C...+45 °C
Single-wire clamps	2 x 0.28 mm ² ...2 x 0.75 mm ²
Fine-wire clamps	2 x 0.28 mm ² ...2 x 0.75 mm ²
Wireless transmission power	Max. 20 dBm
Wireless transmission standard	IEEE 802.11 b/g/n, 2.4 GHz
IP level	IP 30

7 Mounting/Installation

**Warning**

Electric voltage!

Dangerous currents flow through the body when coming into direct or indirect contact with live components.

This can result in electric shock, burns or even death.

- Disconnect the mains power supply prior to installation and/or disassembly!
- Permit work on the 100-240 V supply system to be performed only by specialist staff!

7.1 Requirement for the electrician

**Warning**

Electric voltage!

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the user of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

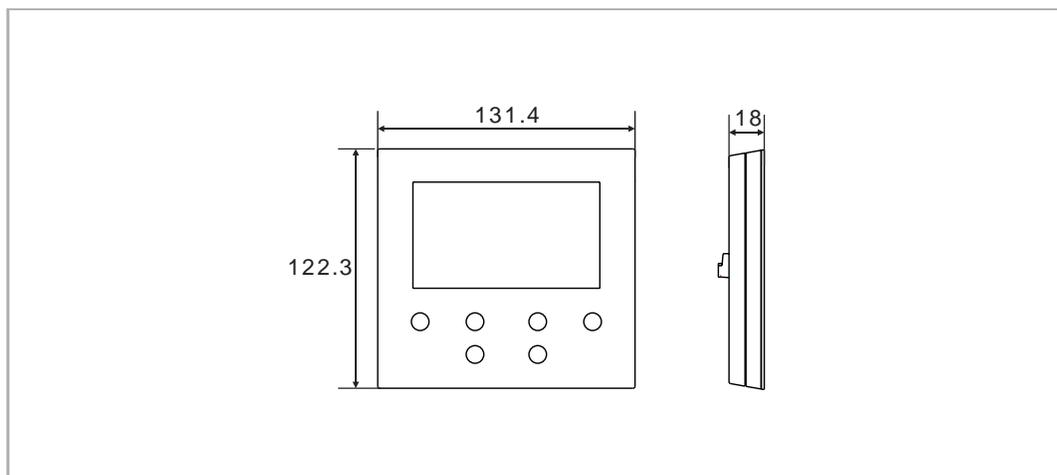
The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
 1. Disconnect
 2. Secure against being re-connected
 3. Ensure there is no voltage
 4. Connect to earth and short-circuit
 5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective grounding, necessary additional measures, etc.).

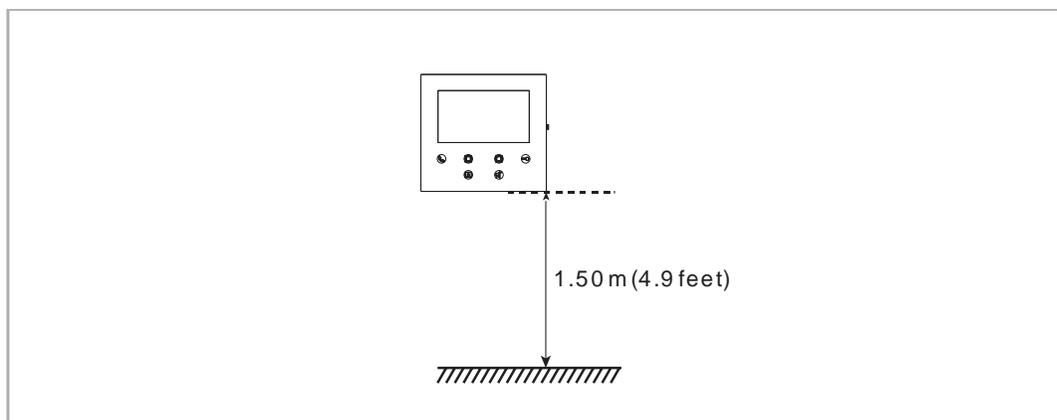
7.2 General installation instructions

- Terminate all branches of the wiring system via a connected bus device (e.g., indoor station, outdoor station, system device).
- Do not install the system controller directly next to the bell transformer and other power supplies (to avoid interference).
- Do not install the wires of the system bus together with 100-240 V wires.
- Do not use common cables for the connecting wires of the door openers and wires of the system bus.
- Avoid bridges between different cable types.
- Use only two wires for the system bus in a four-core or multi-core cable.
- When looping, never install the incoming and outgoing bus inside the same cable.
- Never install the internal and external bus inside the same cable.

7.3 Product dimensions

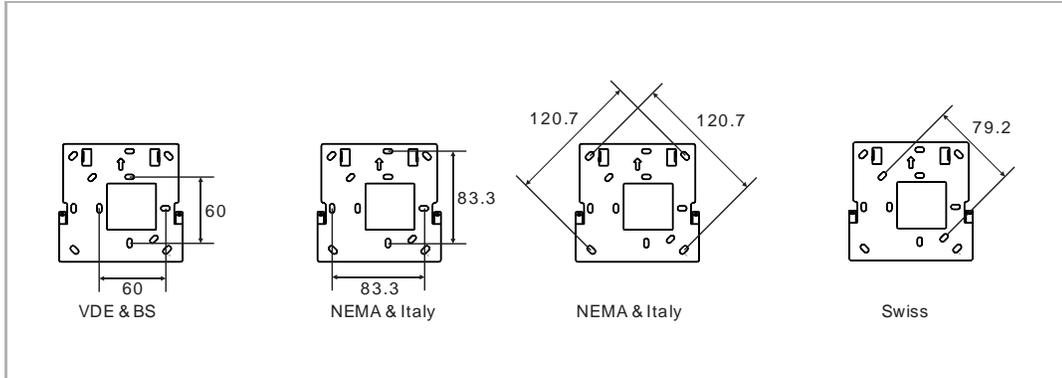


7.4 Installation height

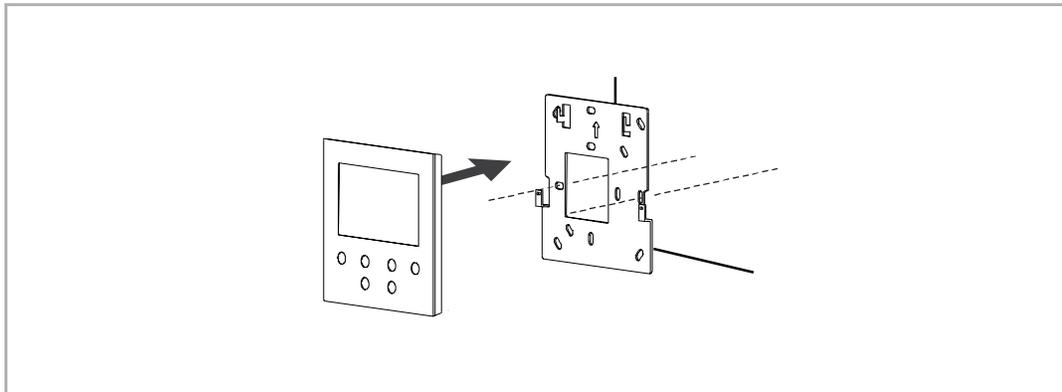


7.5 Surface-mounted installation

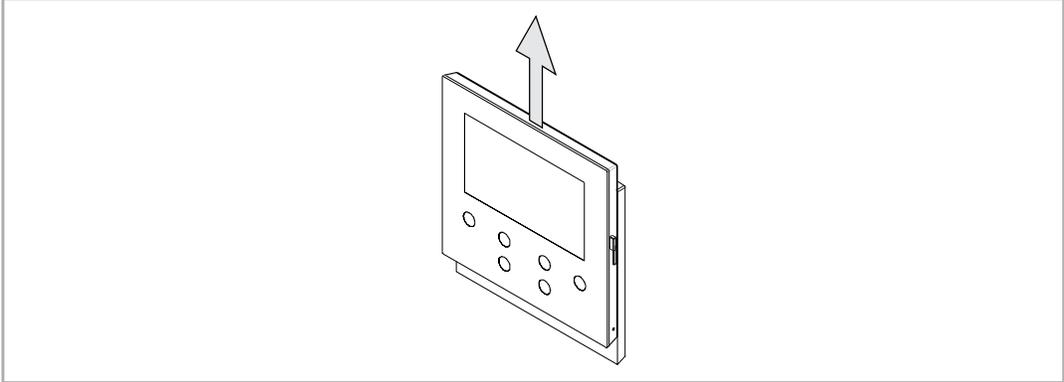
Surface-mounted box



Surface-mounted installation



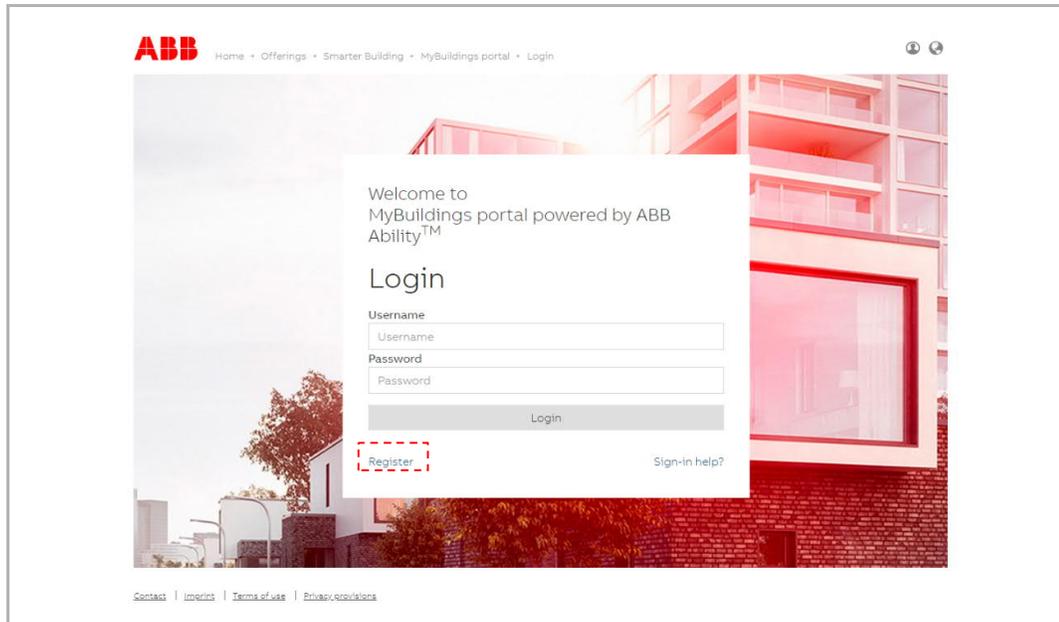
7.6 Dismantling



8 Commissioning

8.1 Registering an account on the MyBuildings portal

Access the link: <https://mybuildings.abb.com>, and click "Register". Fill in the form as required to register an account. Then activate the user account when you receive the email sent from the MyBuildings portal.



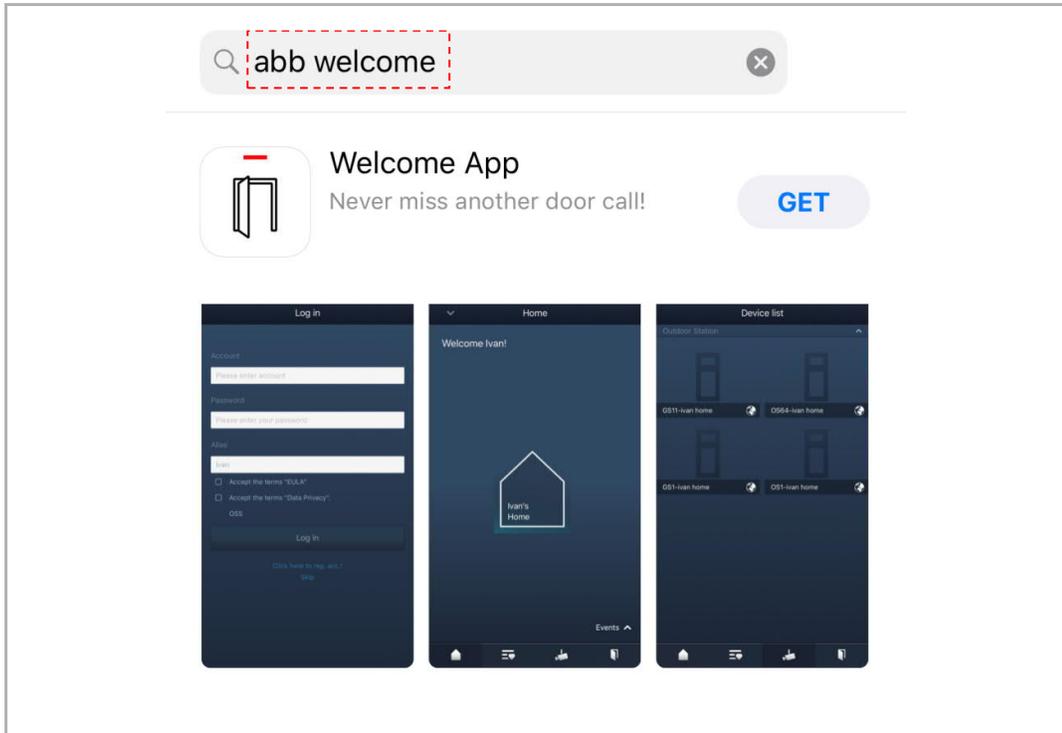
8.2 Download APP

Download the APP from Google Play or the Apple Store via the keyword "ABB Welcome". Then install the relevant APP on a mobile or tablet.



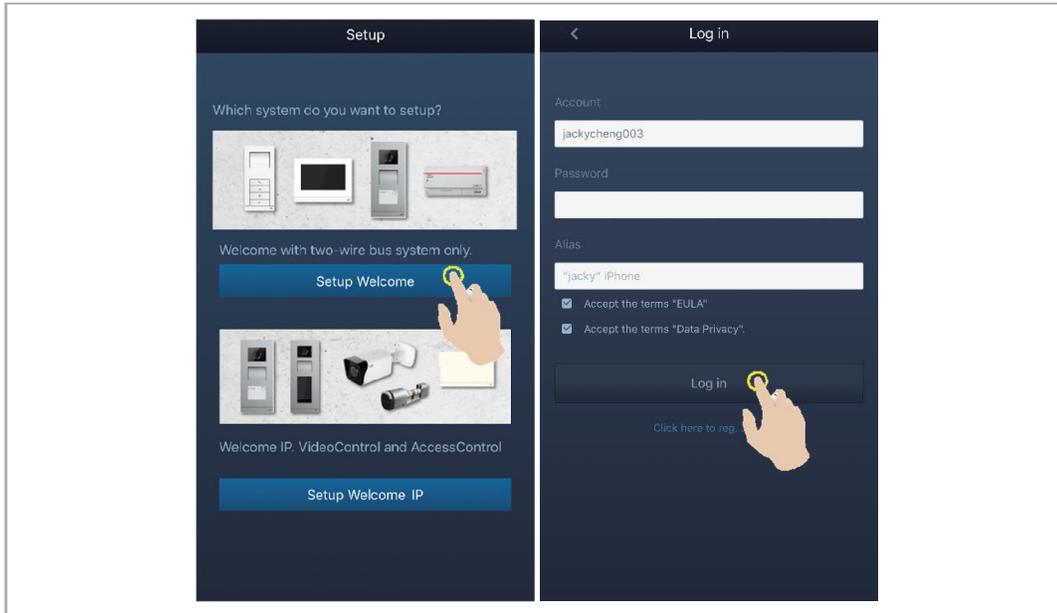
Note

The following snapshots used in this document were taken on the IOS system.



8.3 Logging into the APP

On the mobile phone/tablet, click  to open the app, select "Setup Welcome" and then enter the user name, password and alias, tick the checkboxes to accept all the terms and conditions, then click "Log in".



Note

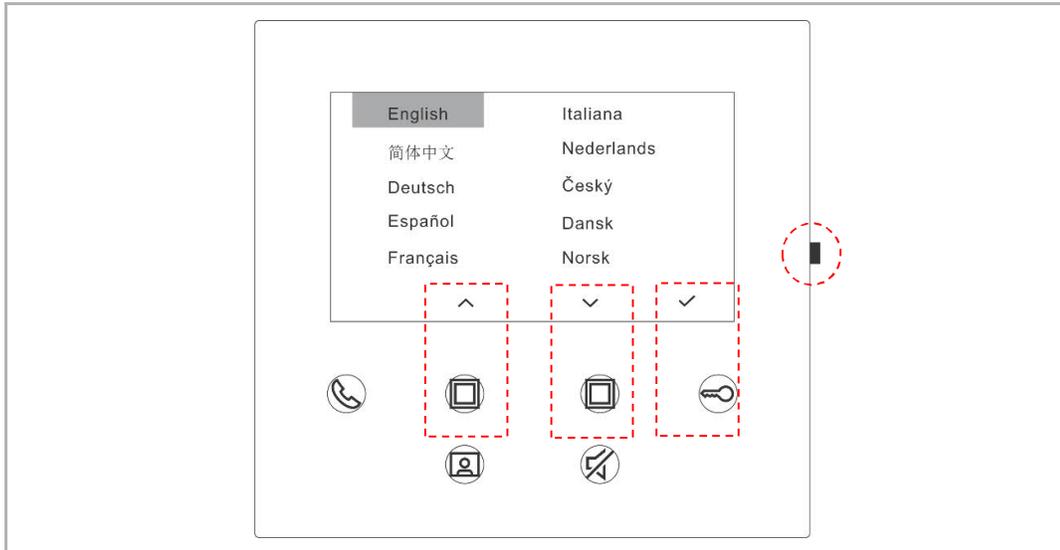
If an incorrect password is entered more than 3 times, no further attempts are permitted within a certain period of time.

8.4 Initial setup

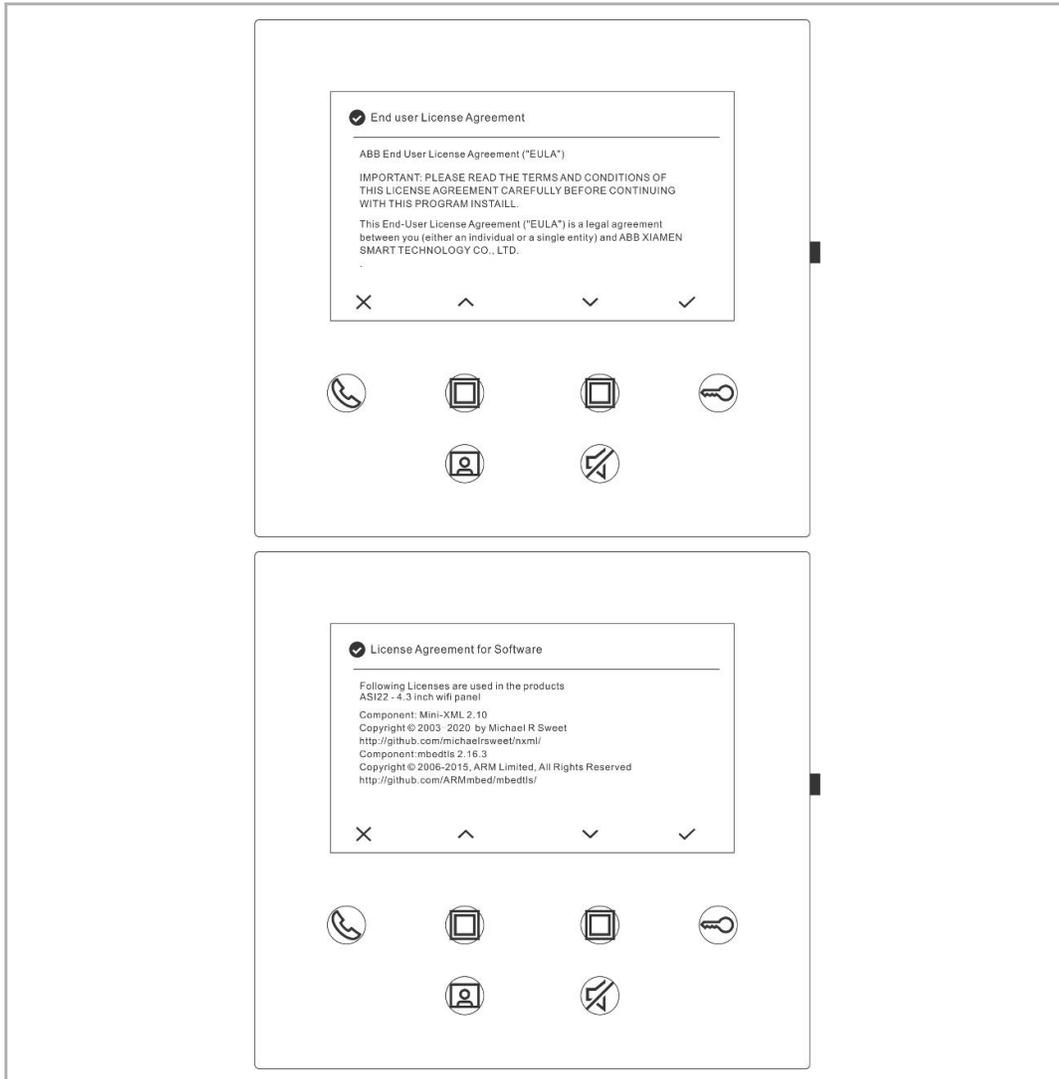
1. Select language

In standby status, press the setting button to access the language setting screen if it is being powered on for the first time.

You can tap the program button and key button to select a language (maximum of 16 languages).



2. Accept the license



3. WiFi setting



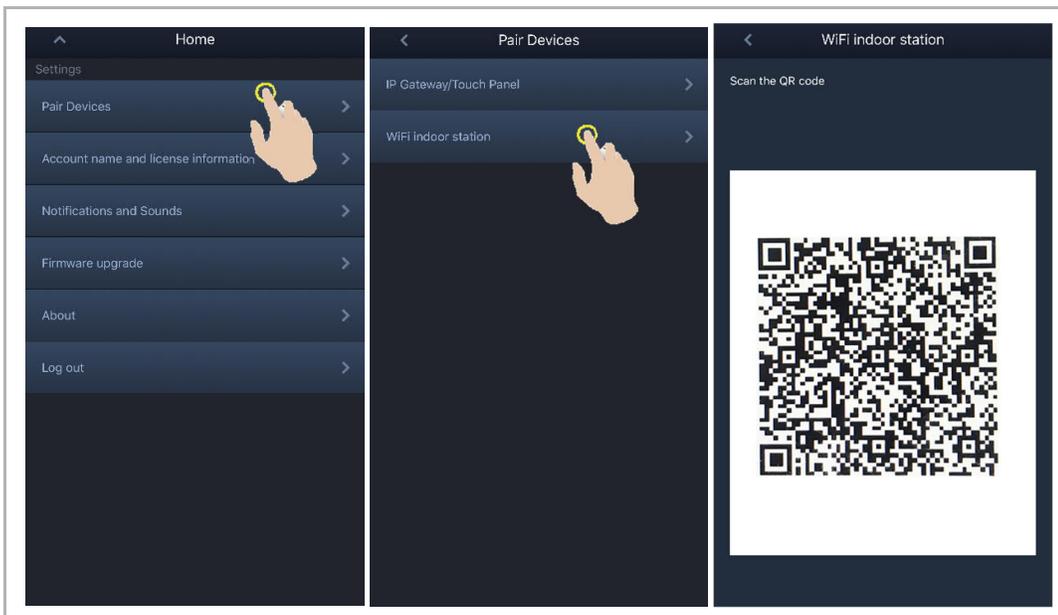
Note

An account on the MyBuildings portal should be registered first.
Only 2.4G WiFi can be supported by this WiFi indoor station, please set the router to 2.4G WiFi before initial setup.

On the panel, press the setting button to access the QR code screen.

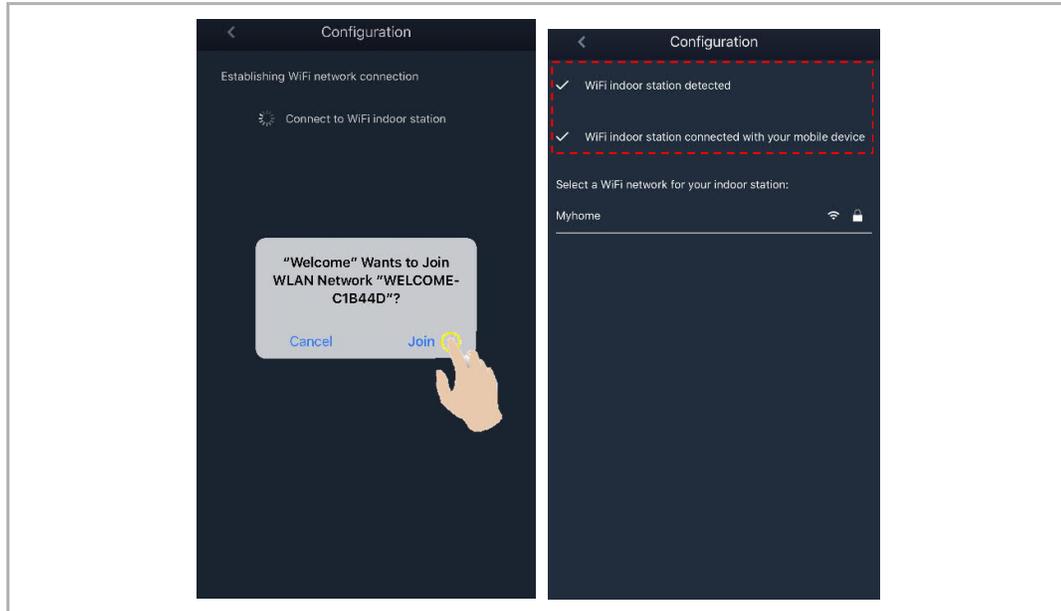


On the APP "Home" screen, tap "v", followed by "Pair devices", "WiFi indoor station" to scan QR code on the WiFi indoor station.



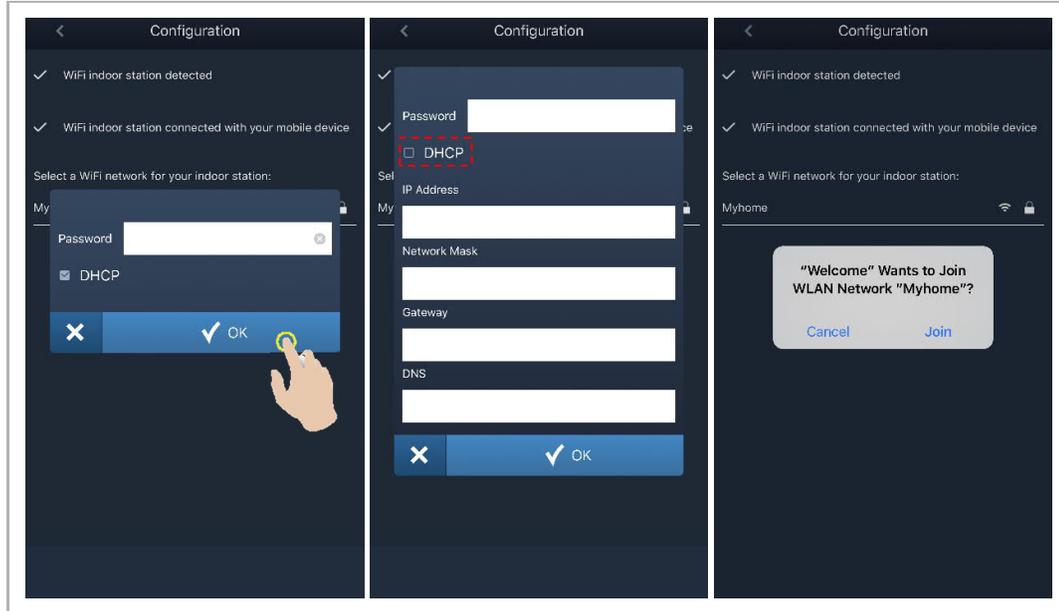
[1] APP connect to the panel via WiFi

On the APP "Configuration" screen, tap "Join" to connect APP to the WiFi indoor station.



[2] APP transfer home WiFi to the panel

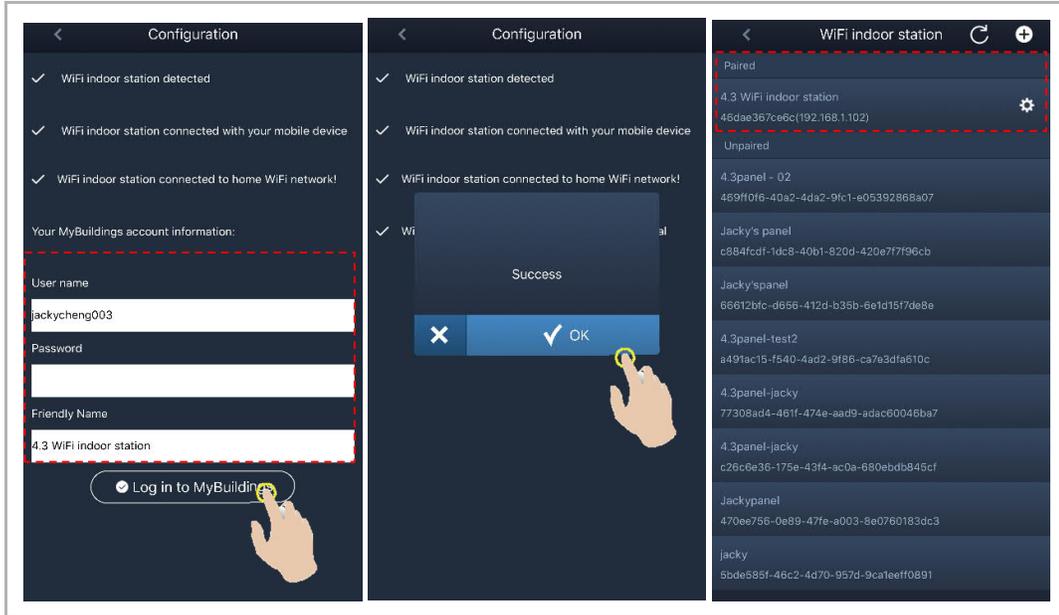
Select your home WiFi name and enter the password to transfer your home WiFi to the WiFi indoor station. IP address of the WiFi indoor station is set to "DHCP" by default, you can also set a static IP address by unticking the check box "DHCP".



4. MyBuildings settings

Then enter the MyBuildings account and password and click "Log in to MyBuildings".

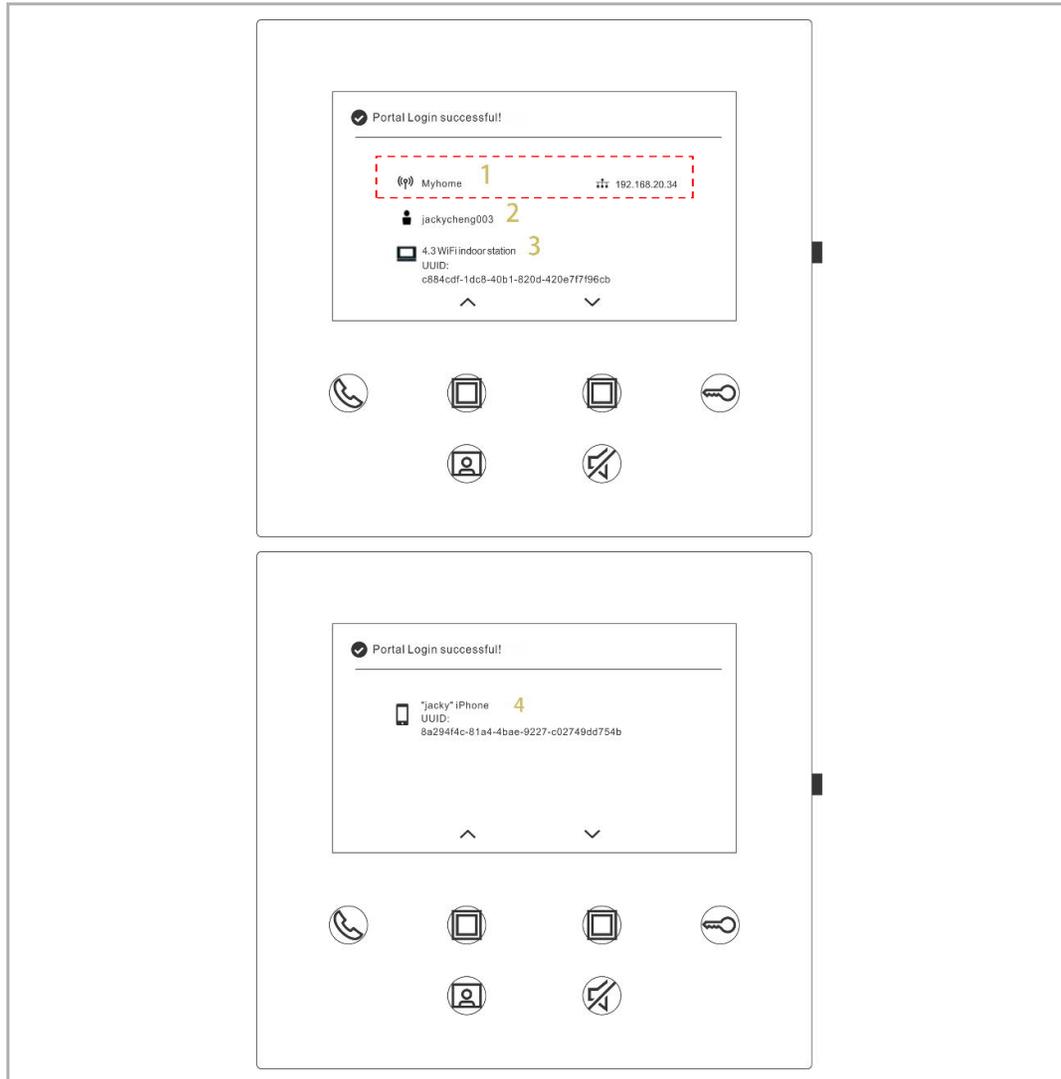
After a while, APP will pair the WiFi indoor station automatically.



Note

You can use the normal functions in the WiFi indoor station (e.g. receive an incoming call, release the lock of the outdoor station etc.).

5. View the setting information



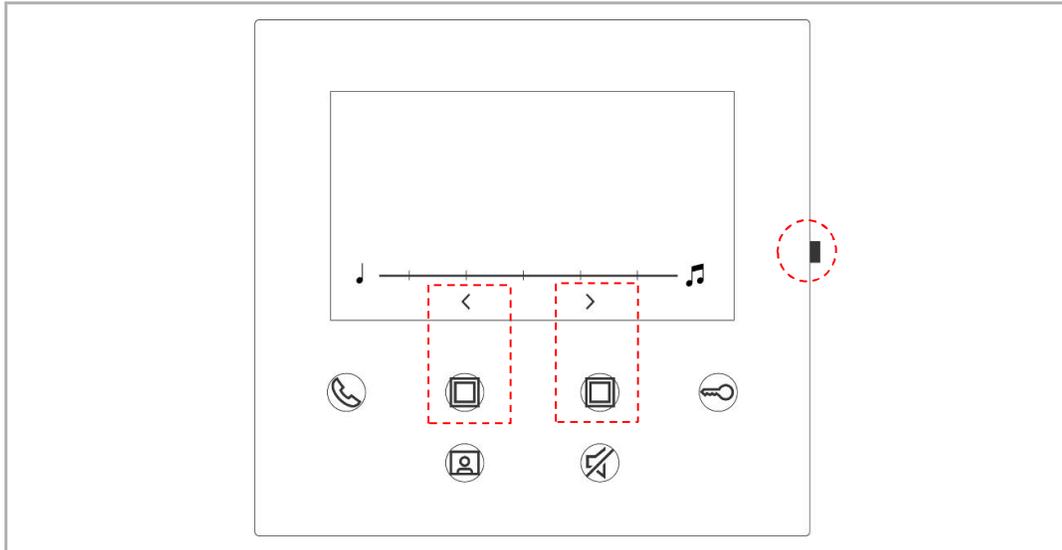
No.	Description
1	WiFi name and IP address used by the WiFi indoor station
2	MyBuildings account used by the WiFi indoor station and APP
3	Friendly name used by the WiFi indoor station
4	Friendly name used by APP, maximum 8 APPs can be displayed on the screen.

8.5 Local settings

8.5.1 Ringtone setting

In standby status, press the setting button to access the setting screen.

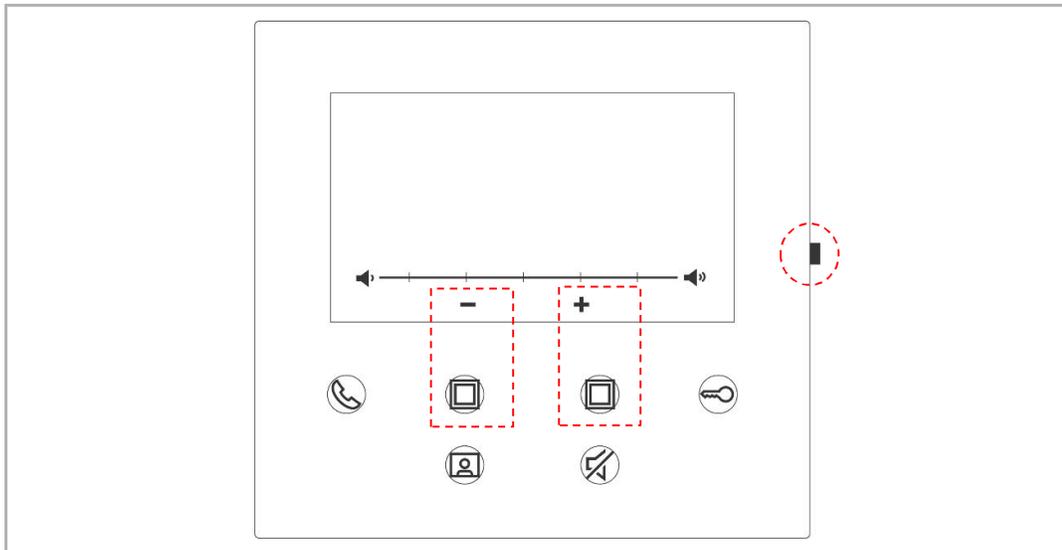
You can tap the program button to select a ringtone (maximum of 5 ringtones).



8.5.2 Volume setting

In standby status, press the setting button to access the setting screen.

You can tap the program button to select a level (maximum of 5 levels).

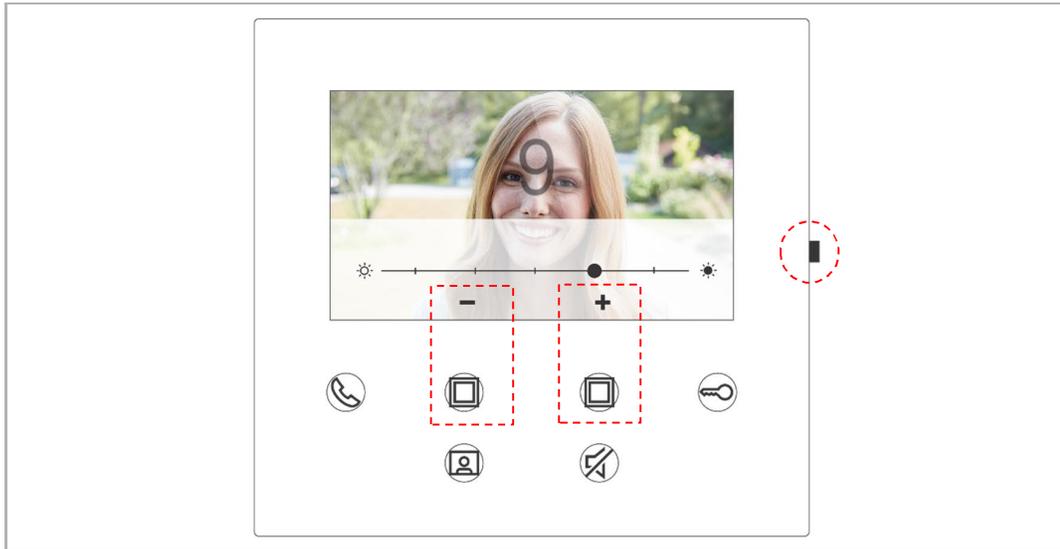


8.5.3 Brightness setting

In standby status, press the setting button to access the setting screen.

You can tap the program button to select a level (maximum of 5 levels).

The screen shows the countdown for the last 10 seconds.

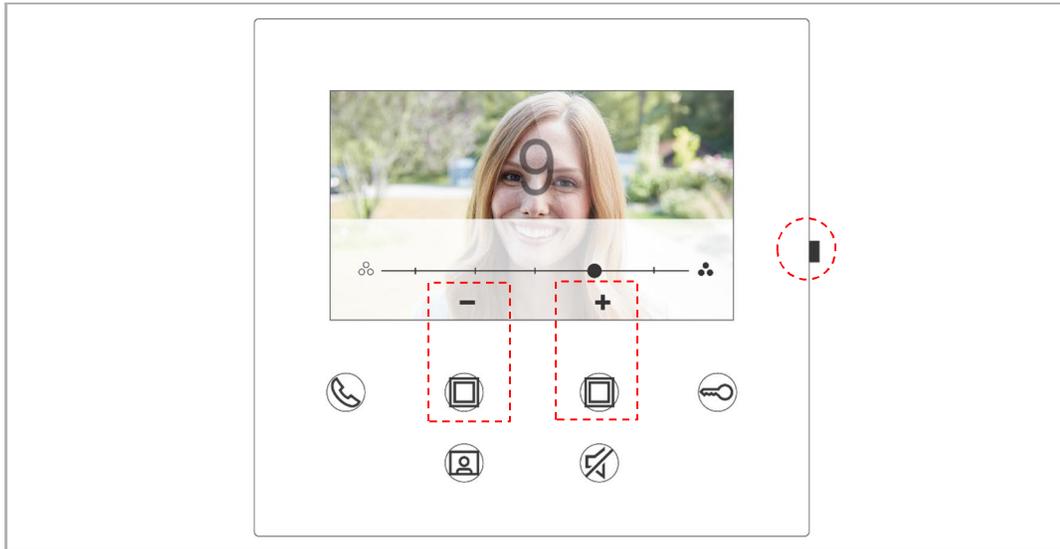


8.5.4 Color setting

In standby status, press the setting button to access the setting screen.

You can tap the program button to select a level (maximum of 5 levels).

The screen shows the countdown for the last 10 seconds.

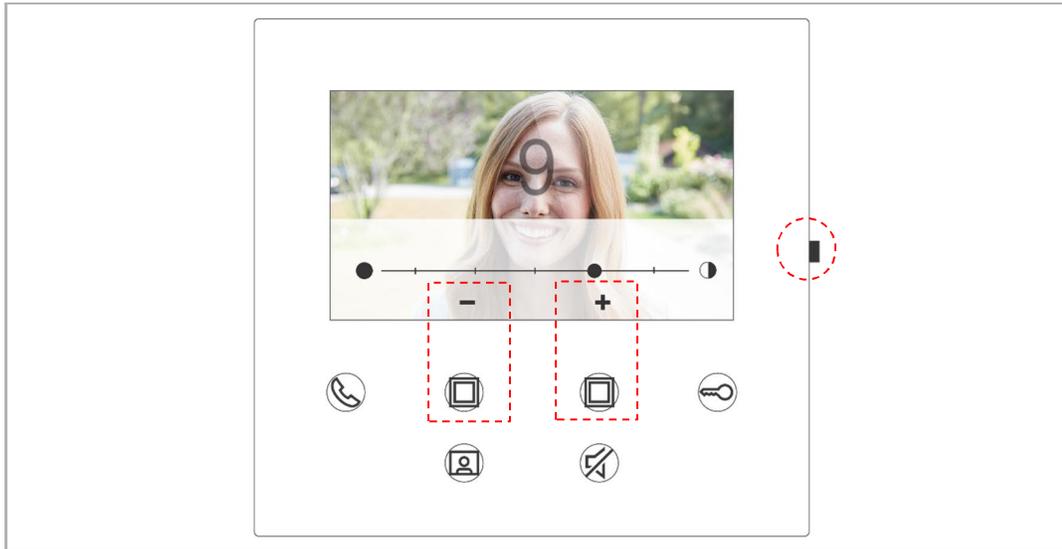


8.5.5 Contrast setting

In standby status, press the setting button to access the setting screen.

You can tap the program button to select a level (maximum of 5 levels).

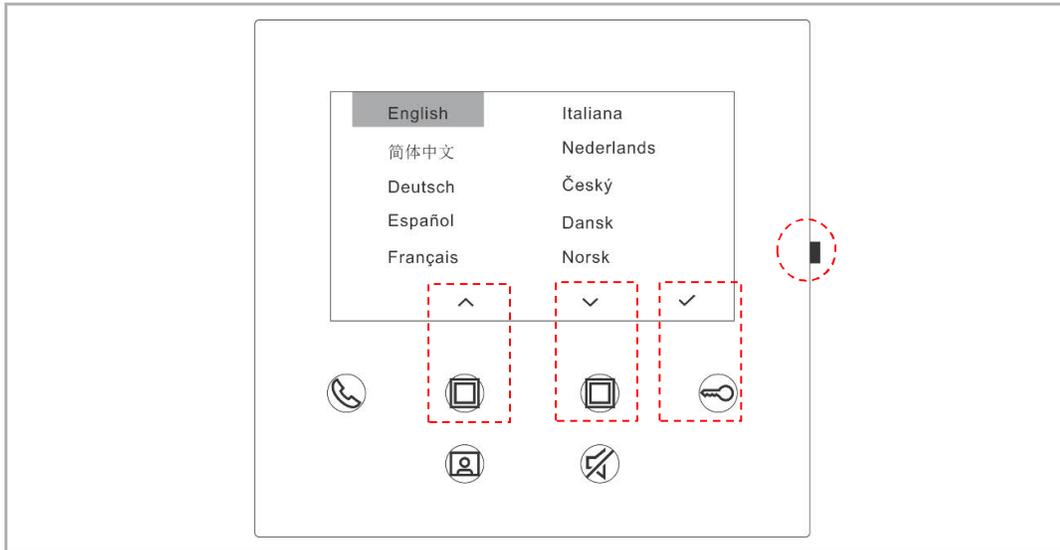
The screen shows the countdown for the last 10 seconds.



8.5.6 Language

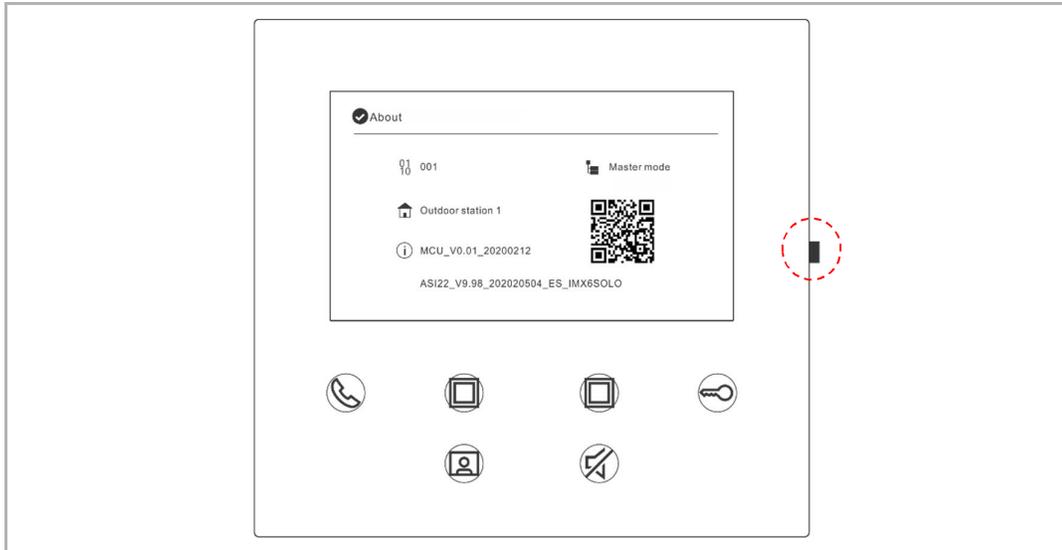
In standby status, press the setting button to access the setting screen.

You can tap the program button and key button to select a language (maximum of 16 languages).



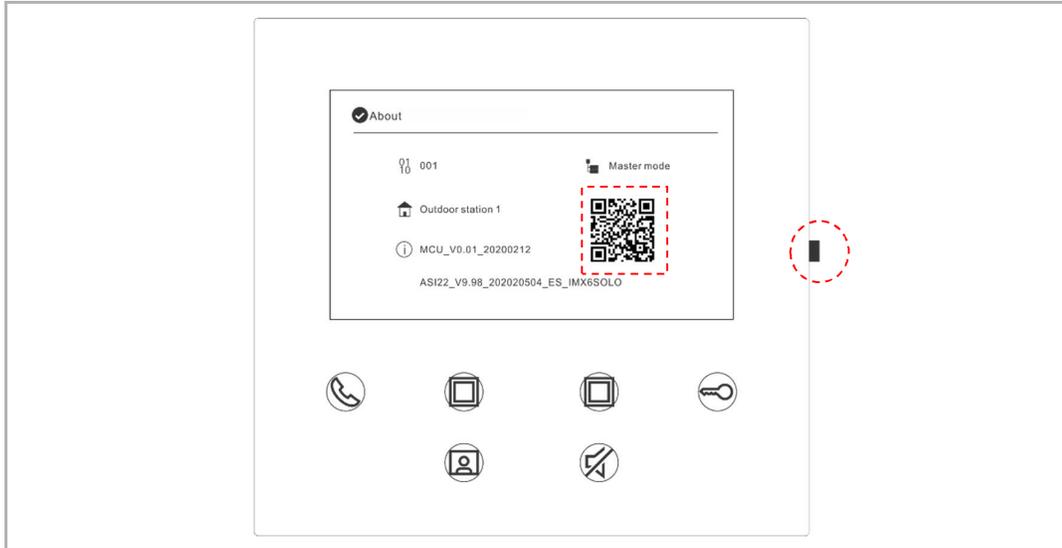
8.5.7 Information

In standby status, press the setting button to access the info screen.



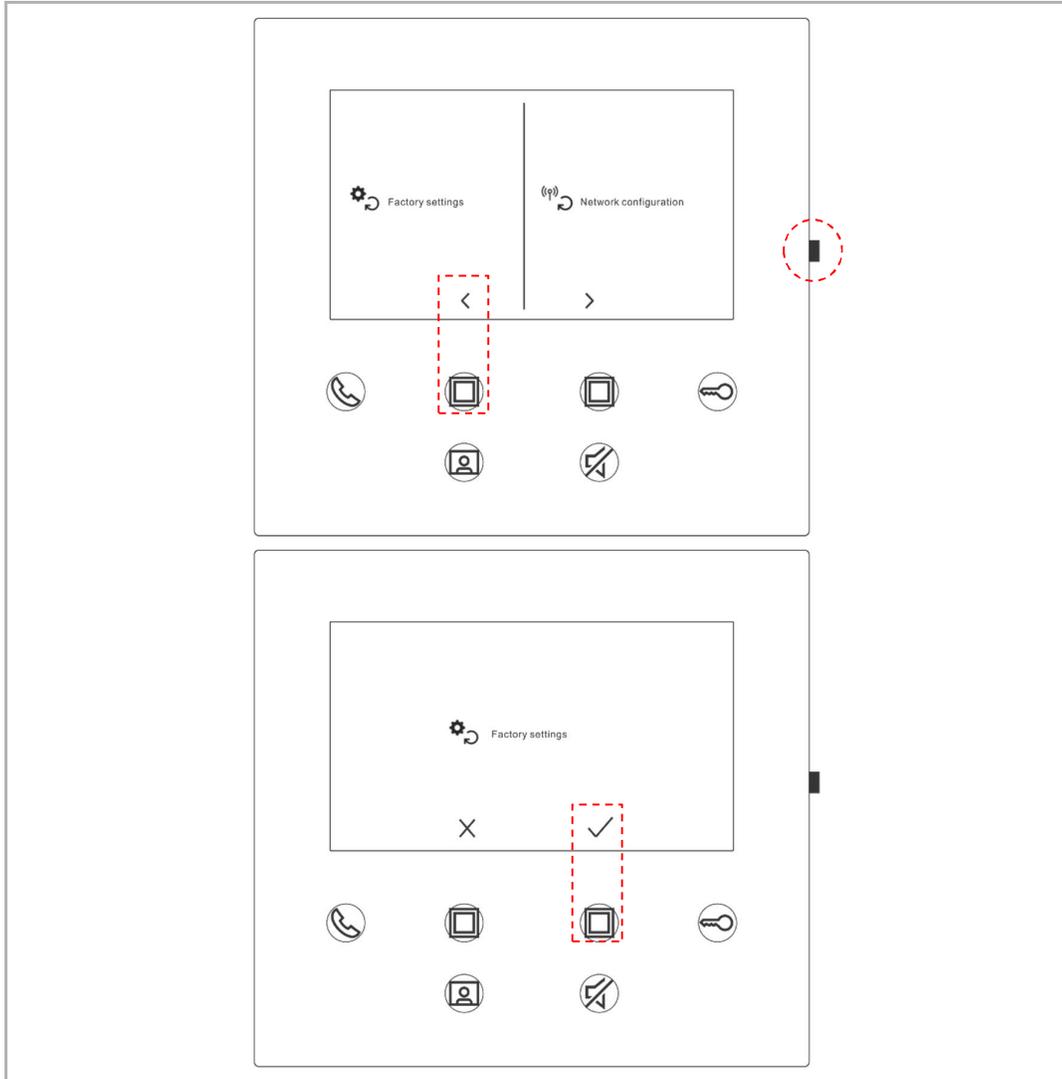
8.5.8 Obtaining product manual

In standby status, press the setting button to access the info screen. Use the APP to scan the QR code on the screen.



8.5.9 Restoring to default settings

In standby status, hold the setting button for 3 s to access the restore screen, and follow the steps below to restore the device to the factory defaults.



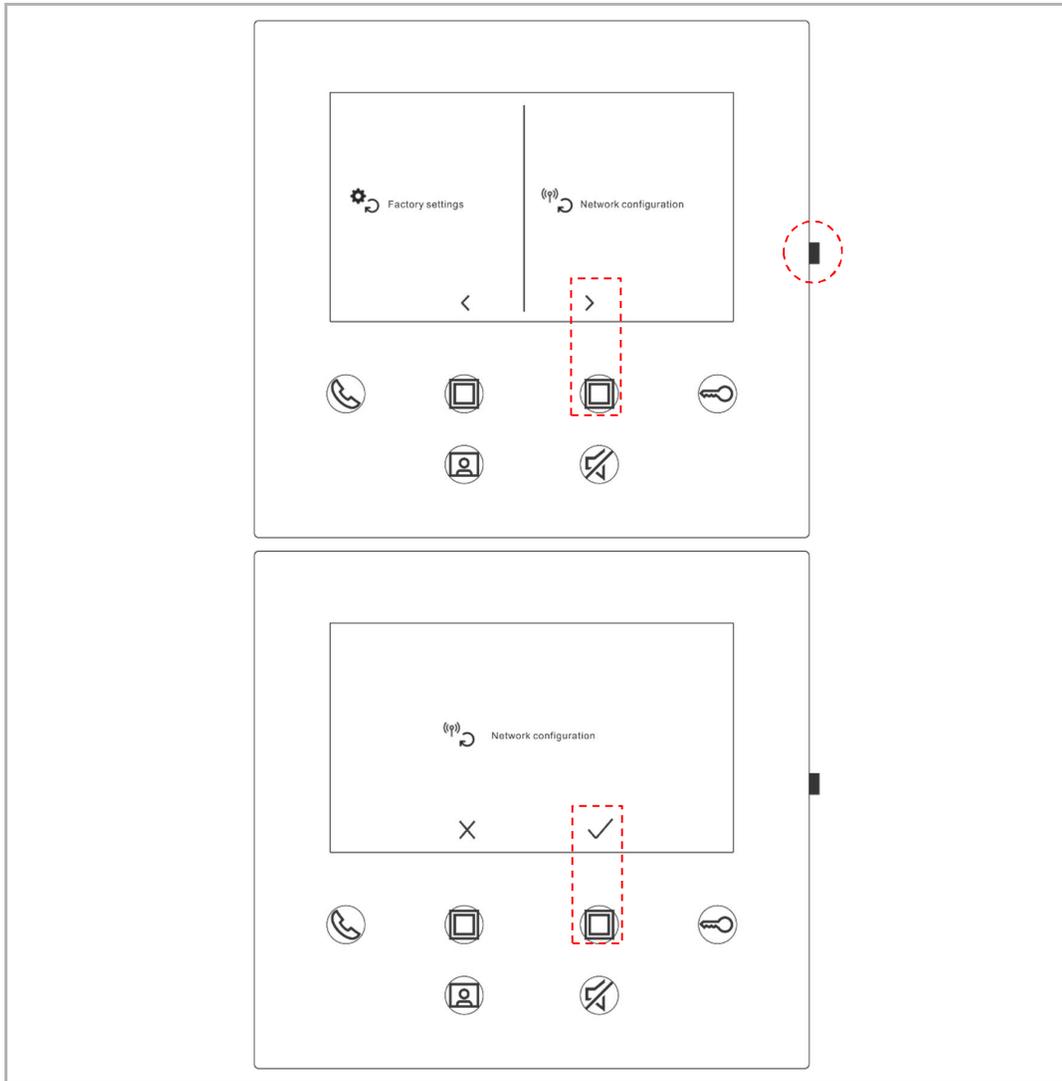
8.5.10 Resetting the network configuration

In standby status, hold the setting button for 3 s to access the restore screen, and follow the steps below to reset the network settings.



Note

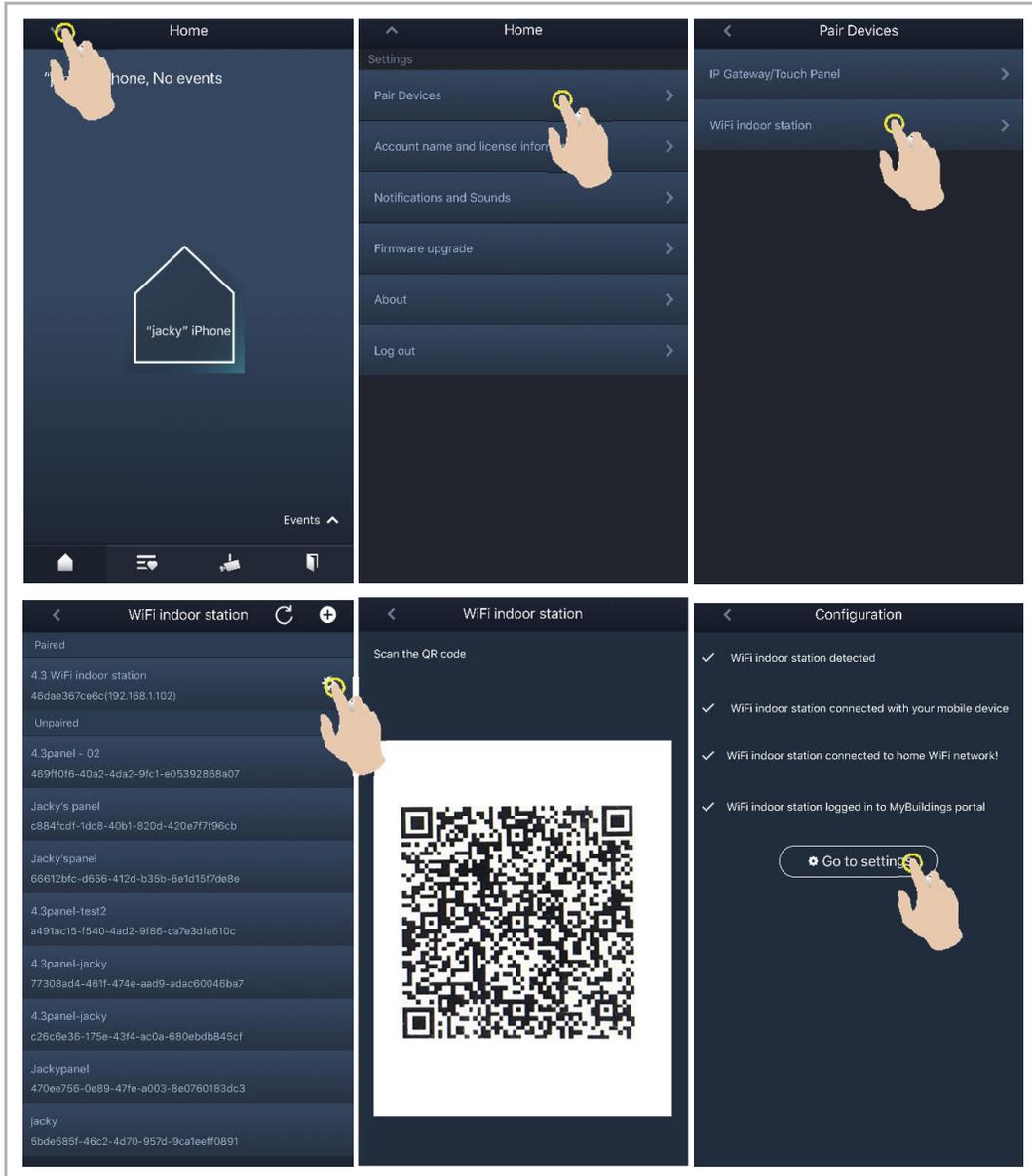
This operation does not change the MyBuildings settings.



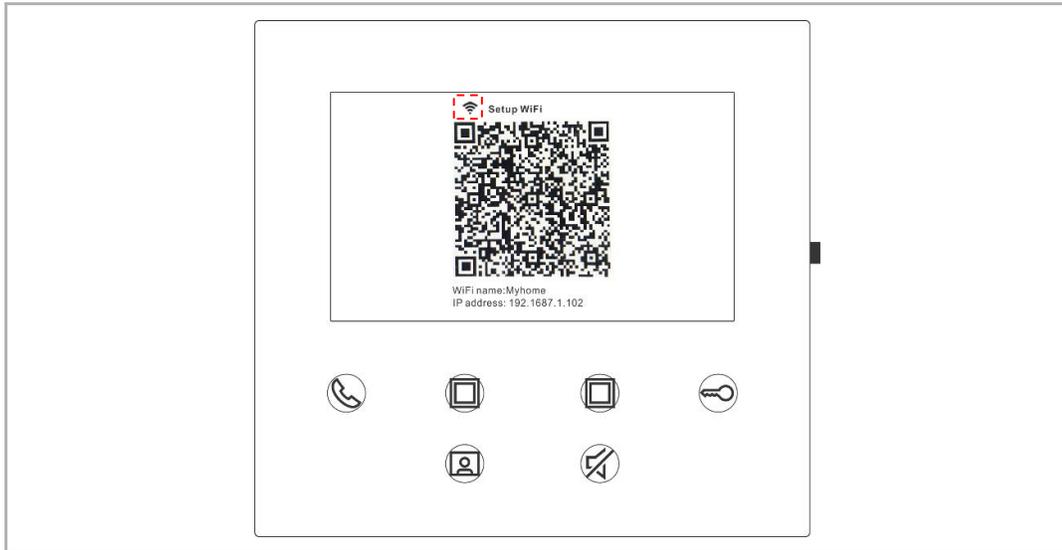
8.6 Settings via the APP

8.6.1 Entering the APP settings

On the APP "Home" screen, follow the steps below:



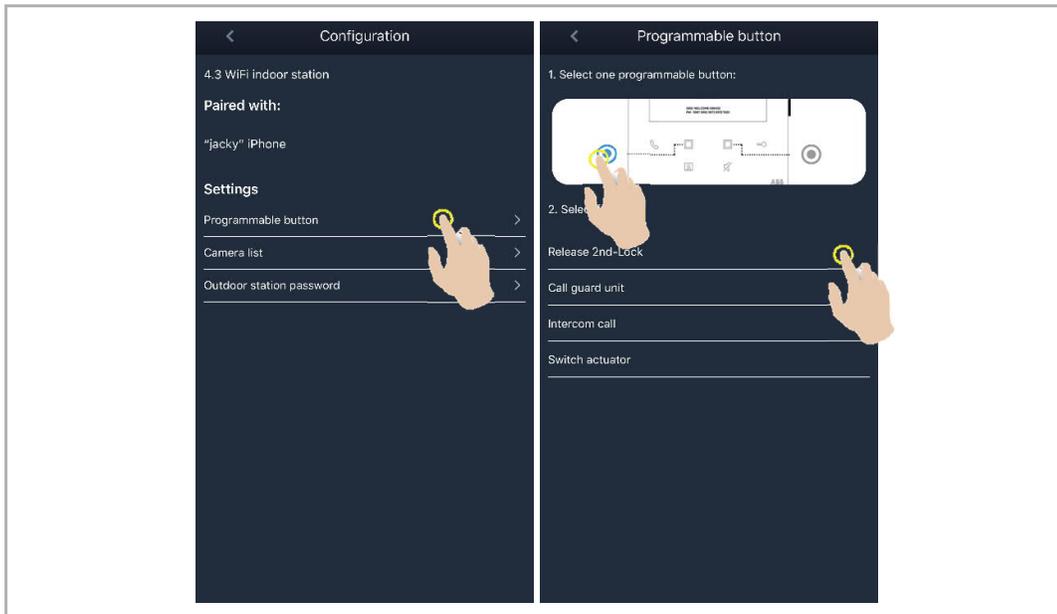
The WiFi strength can be viewed on the WiFi indoor station screen when scanning the QR code.



8.6.2 Configuring program buttons

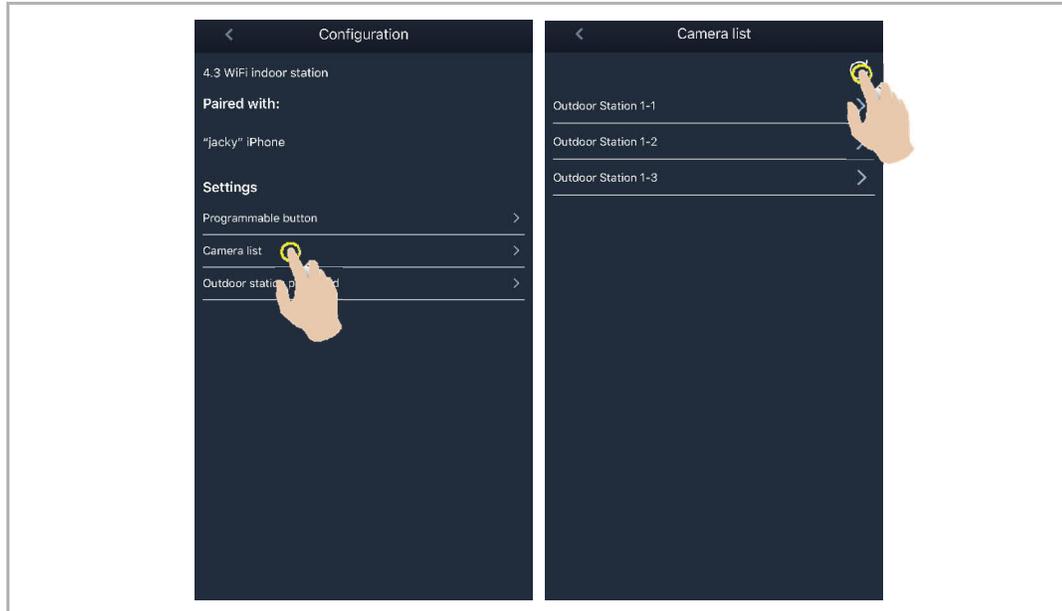
On the APP "Configuration" screen, tap "Programmable button" to set the function for the program button.

- [1] Select a program button;
- [2] Set the function, e.g. "Release the 2nd lock".



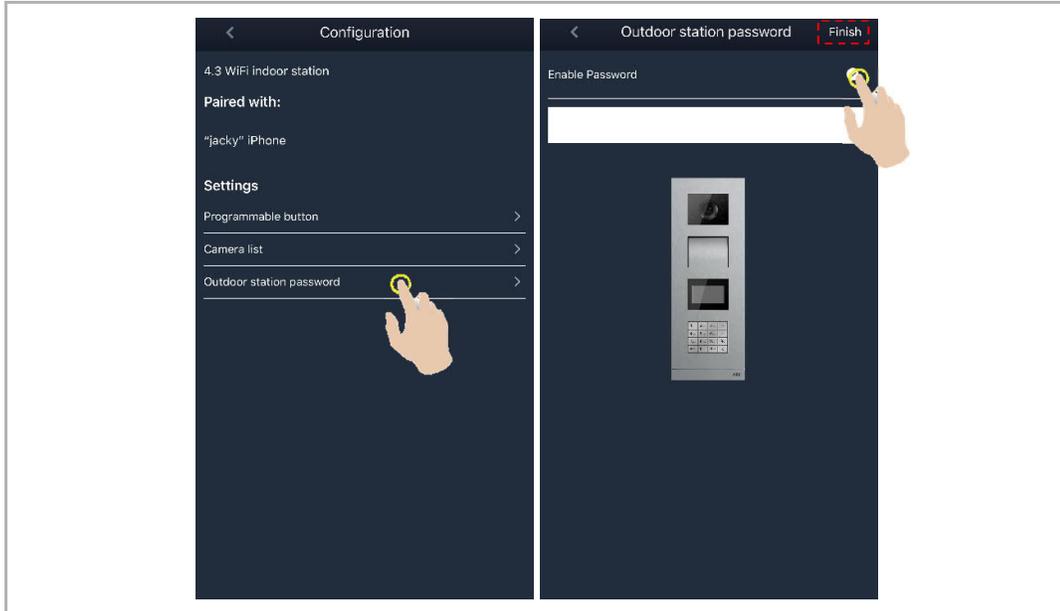
8.6.3 Searching cameras

On the APP "Configuration" screen, tap "Camera list", followed by "🔄" to obtain the camera list.



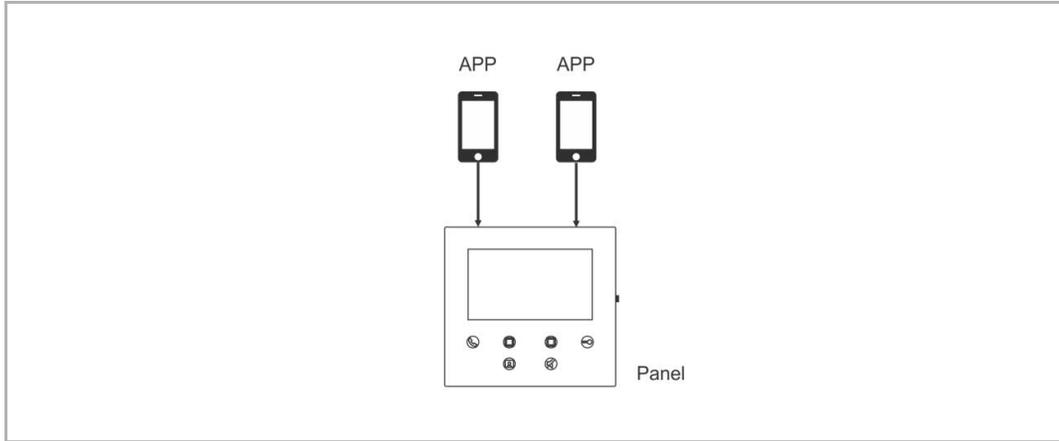
8.6.4 Changing the outdoor station password

On the APP "Configuration" screen, tap "Outdoor station password", enable the "Enable password" function and enter a password (3–8 digits). Tap "Finish" to save.



8.6.5 User management

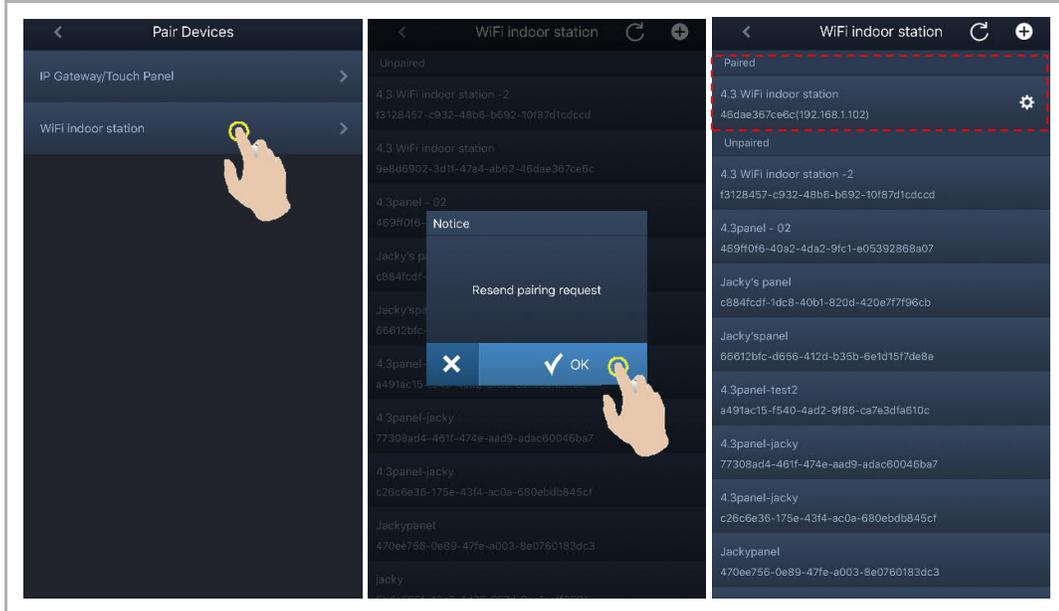
If you want to manage several APPs on the same WiFi indoor station, you need to log into the same MyBuildings account. A maximum of 8 APPs can be supported by one WiFi indoor station.



1. Pair the APPs

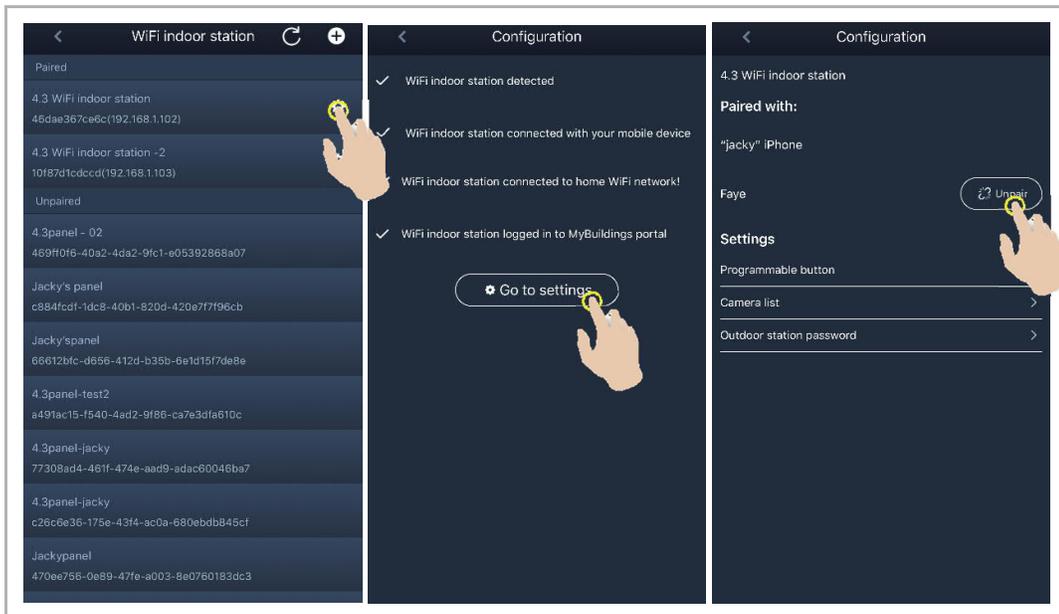
The first APP will pair the WiFi indoor station automatically after initial setup.

The other APPs will no longer require initial setup. On the APP "WiFi indoor station" screen, tap the designated WiFi indoor station on the "Unpaired" area, followed by "OK".



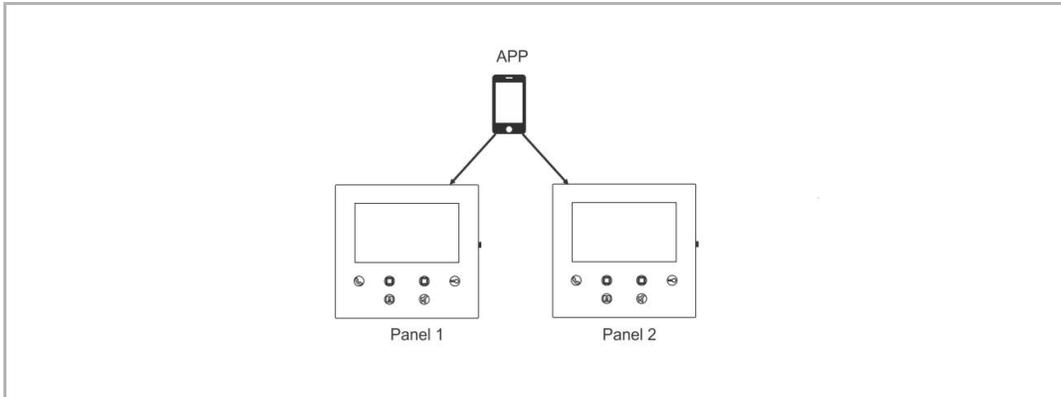
2. Unpair the APPs

On the APP "Configuration" screen, you can unpair other APPs by tapping "Unpair".



8.6.6 Device management

Several WiFi indoor stations can be managed by one APP.

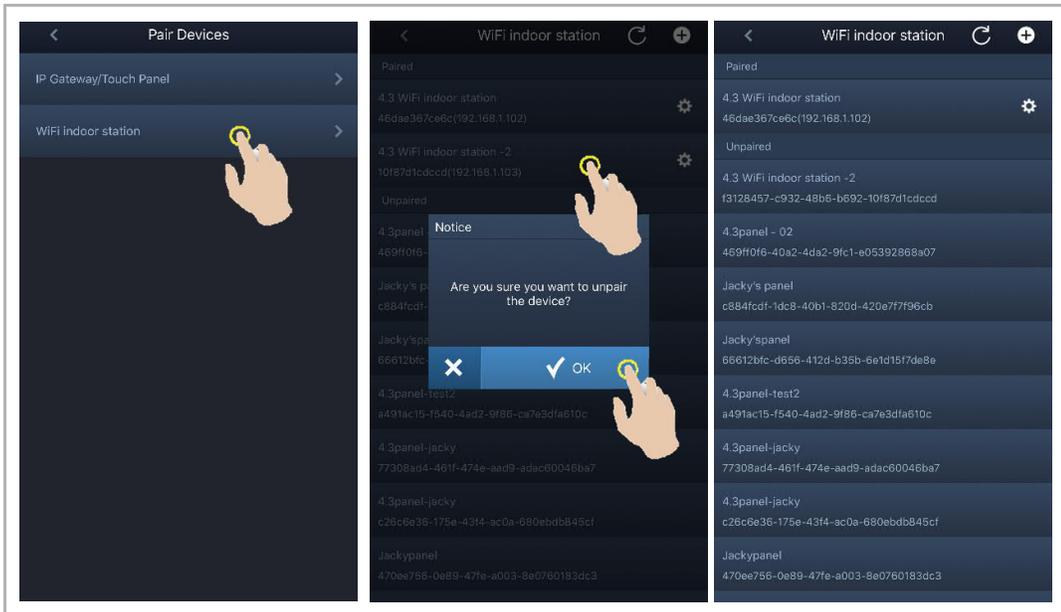


1. Pair the WiFi indoor stations

APP will pair the WiFi indoor station automatically after the initial setup. If you want to manage several WiFi indoor stations, you only need to repeat the initial setup.

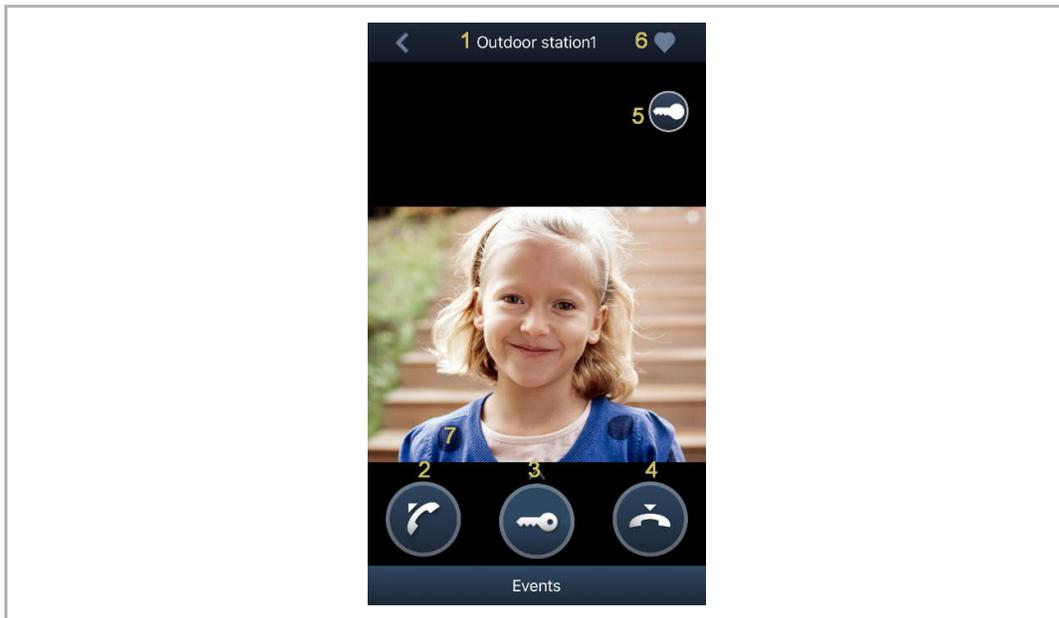
2. Unpair the WiFi indoor stations

On the APP "WiFi indoor station" screen, tap the designated WiFi indoor station in the "Paired" section, followed by "OK".



9 Operation

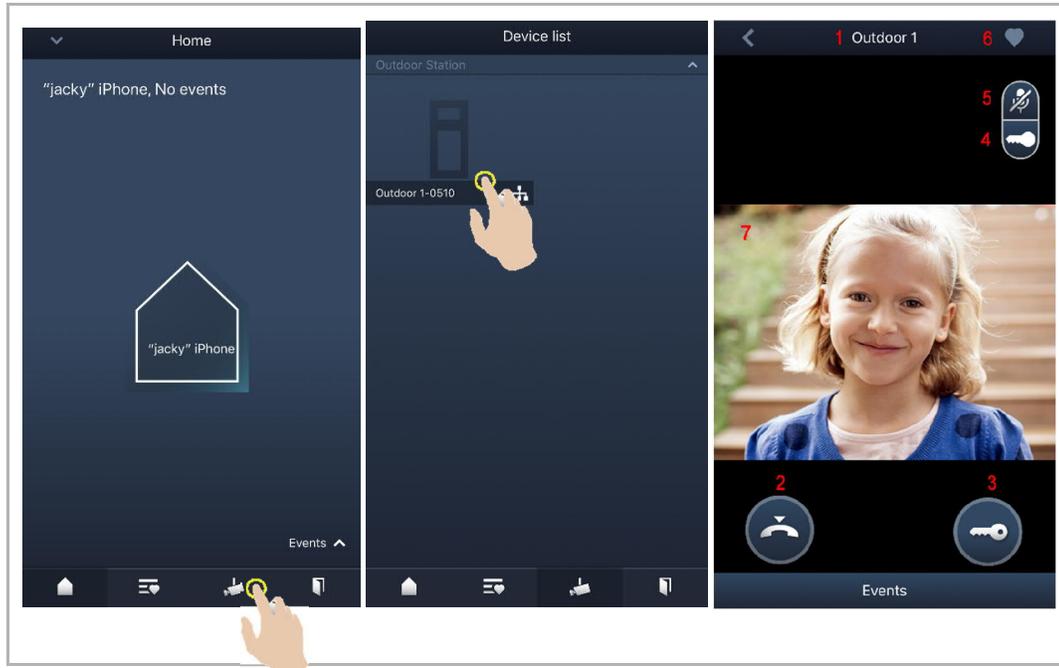
9.1 Call from outdoor stations



No.	Function
1	Caller ID
2	Click this icon to take the call.
3	Click this icon to release the default lock on the calling outdoor station.
4	Click this icon to end the call.
5	Click this icon to release the secondary lock on the calling outdoor station or turn on the light (depending on the setting of the paired indoor station's program button).
6	Click to add the device to favorites (please see the "Monitoring" chapter for more details).
7	Long press the image to take a snapshot

9.2 Surveillance from outdoor stations

On the APP "Home" screen, tap "📶" to access the device list screen, then tap a designated outdoor station to initiate surveillance.



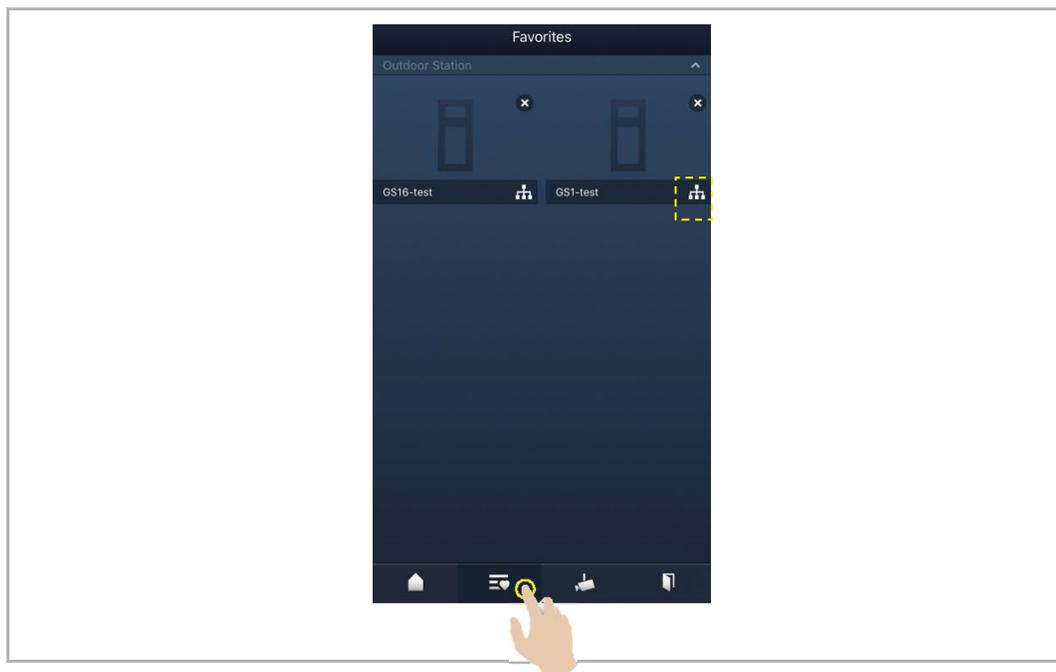
No.	Function
1	Caller ID
2	Click this icon to end the monitoring and communication.
3	Click this icon to release the default lock on the monitored outdoor station during monitoring.
4	Click this icon to release the secondary lock on the outdoor station or release the switch actuator during monitoring (depending on the setting of the paired panel's program button).
5	Click this icon to initiate a communication with the outdoor station (mute by default).
6	*Click to add the device to favorites.
7	Long press the image to take a snapshot

***Favorites screen**

On the APP "Home" screen, tap "  " to view the favorite devices.

 = Internal network

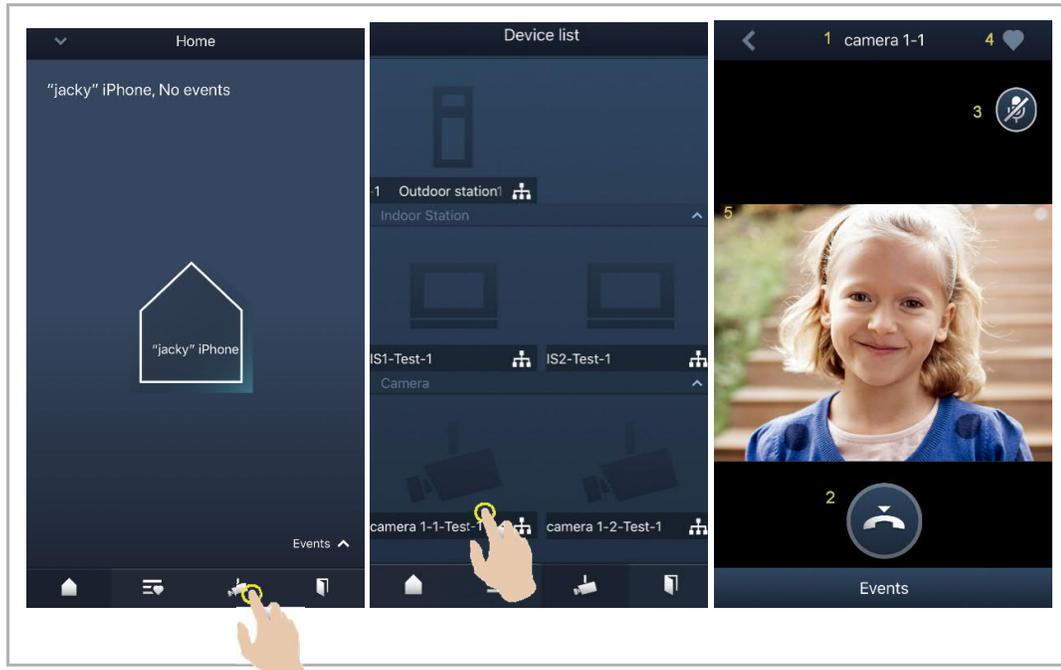
 = External network



9.3 Surveillance from cameras

You need to search cameras on the APP "Camera list" screen first before this function is used. Please see the "Searching cameras" chapter for more details.

On the APP "Home" screen, tap "📹" to access the device list screen, then tap a designated camera to initiate surveillance.

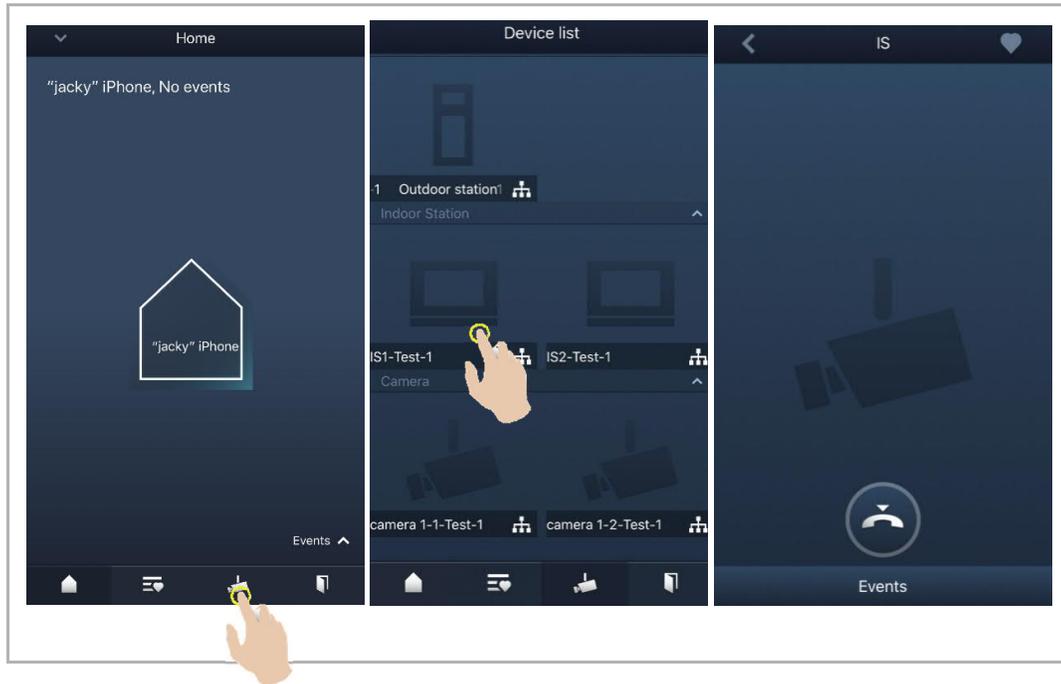


No.	Function
1	Caller ID
2	Click this icon to end the surveillance.
3	Not available
4	Click to add the device to favorites.
5	Long press the image to take a snapshot

9.4 Intercom

You need to set the function of program button to "Intercom call" before this function is used. Please see the "Configuring program buttons" chapter for more details.

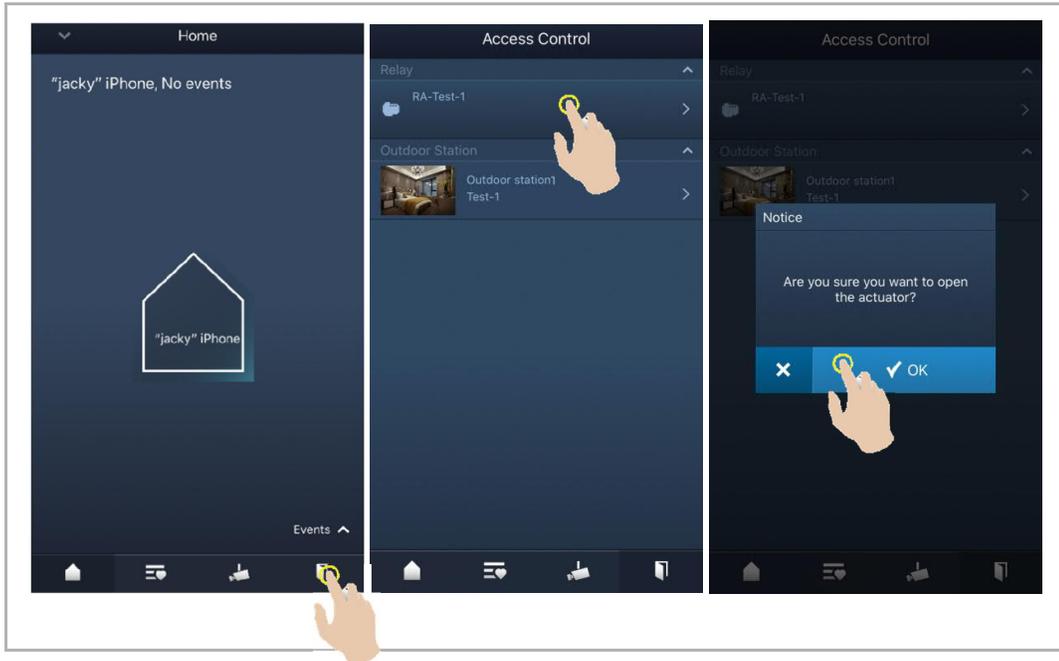
On the APP "Home" screen, tap "📺" to access the device list screen, then tap a designated indoor station to initiate a call.



9.5 Releasing switch actuators

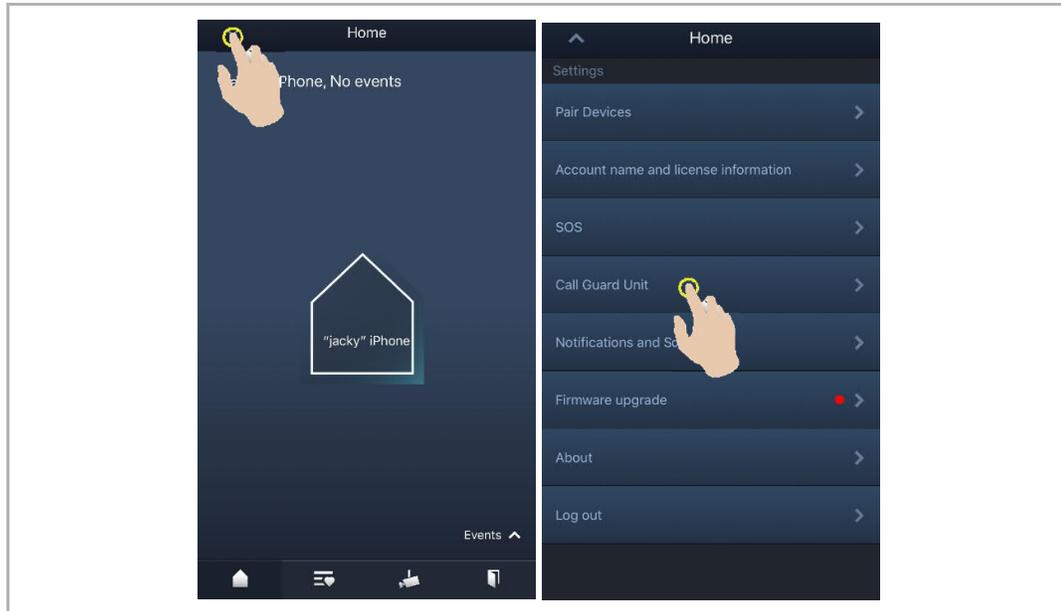
You need to set the function of program button to "Switch actuator" before this function is used. Please see the "Configuring program buttons" chapter for more details.

On the APP "Home" screen, tap "🔑" to access the "Access control" screen, then tap a designated switch actuator and click "OK" to open it.



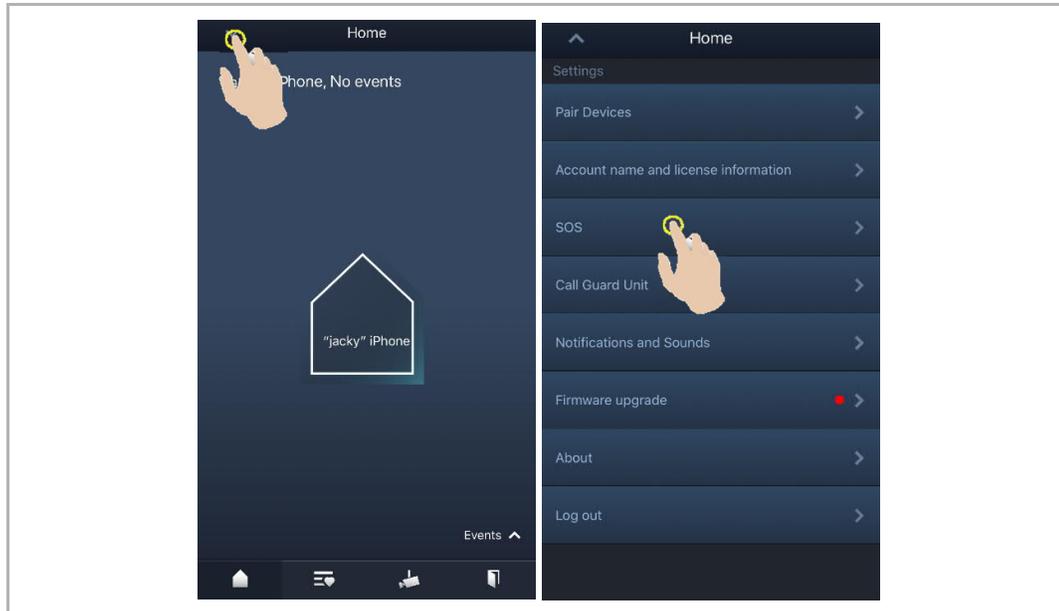
9.6 Call guard unit

On the APP "Home" screen, tap "☰", followed by "Call guard unit", select the indoor station associated with the guard unit to call the guard unit.



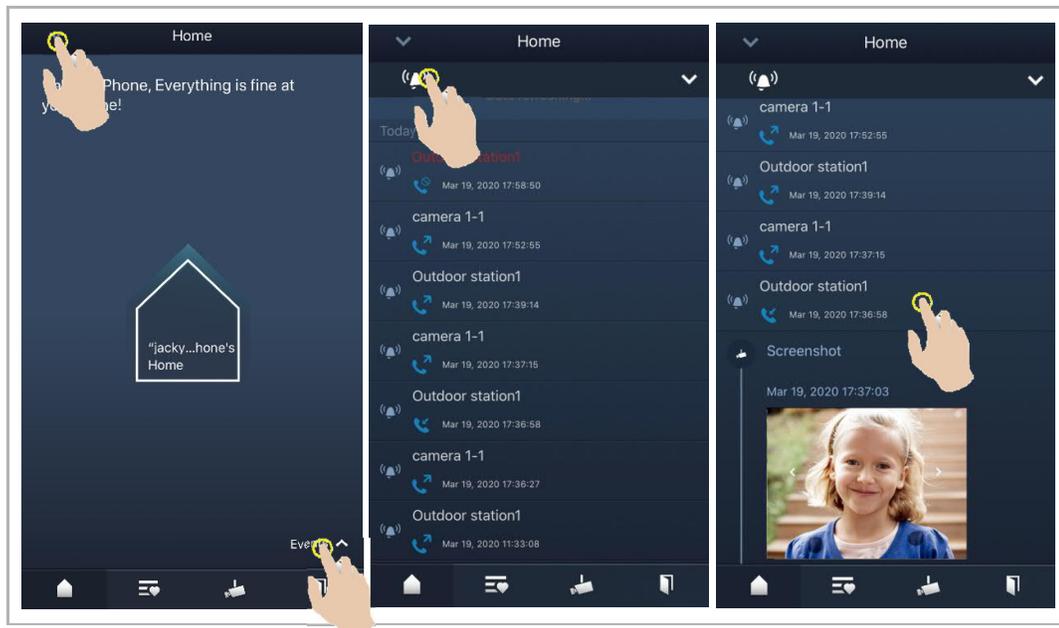
9.7 SOS

On the APP "Home" screen, tap "v", followed by "SOS", to send an SOS to the guard unit.



9.8 History

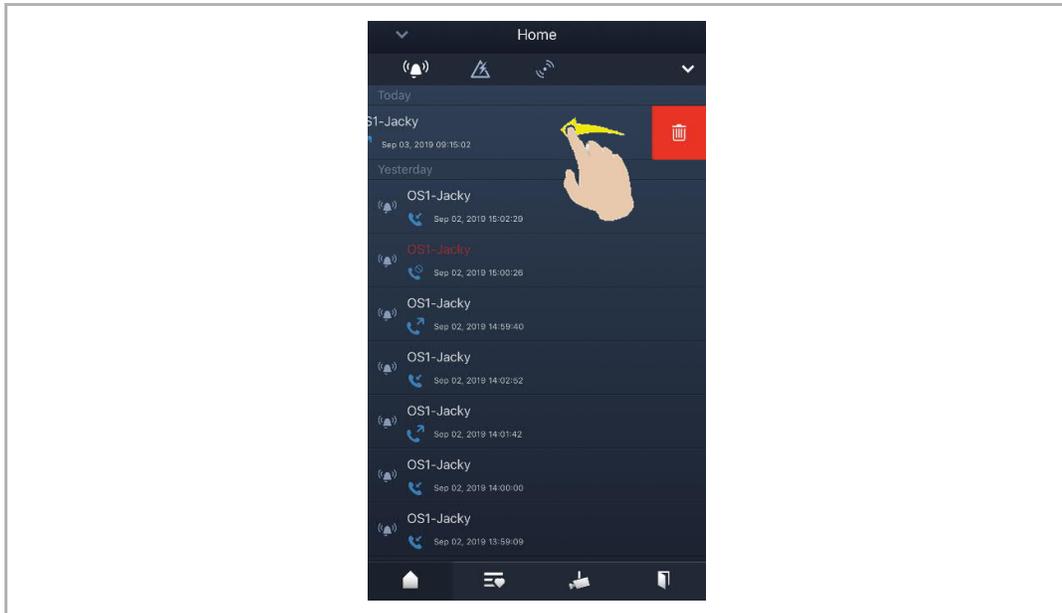
On the APP "Home" screen, tap "v", followed by "Events",  to access the history records. You can tap a designated record to view details.



Icon	Function
	Incoming call
	Initiate surveillance
	Missed call (red word in the meantime)
	Long press the image to save the image to the photo album.

On an IOS device, swipe the record to the left, then click "  " to delete the record.

On an Android device, long press the record then click "  " to delete the record.



10 Cyber security

10.1 Disclaimer

The products are designed to be connected and to communicate information and data via a network interface, which should be connected to a secure network. It is customer's sole responsibility to provide and continuously ensure a secure connection between the product and customer's network or any other network (as the case may be) and to establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs, etc.) to protect the product, the network, its system and interfaces against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB Ltd and its affiliates are not liable for damages and/or losses related to such security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

Although ABB provides functionality testing on the products and updates that we release, you should institute your own testing program for any product updates or other major system updates (to include but not limited to code changes, configuration file changes, third party software updates or patches, hardware change out, etc.) to ensure that the security measures that you have implemented have not been compromised and system functionality in your environment is as expected.

10.2 Performance and service

Network performance

Type	Value
Ethernet	100 Mbps (148,800 packets/s)
ARP	20 Mbps (29,760 packets/s)
ICMP	100 Mbps (148,800 packets/s)
IP	60 Mbps (89,280 packets/sec)

Port and service

Port	Service	Purpose
5222	TCP	Service for XMPP client
5269	TCP	Xmpp server
5060/tcp	SIP	Port 5060/tcp is used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0).SIP(Session Initiation Protocol) is a messaging protocol to initiate communication sessions between systems. It is a protocol used mostly in IP Telephony networks / systems to setup, control, and teardown sessions between two or more systems.
5060/udp	SIP	Port 5060/udp is used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0).
5061/tcp	SIP-TLS	Port 5061/tcp is used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0) with SSL ciphers that offer communication sessions encryption.
5062/udp	SIP	Local SIP service used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0)
50602/udp	SIP	Used by SIP STUN server
2222/tcp	Private	Used for b2bsip
2224/tcp	Private	Used for b2bsip
8277/tcp	Private	Used for inter-process communication for security storage component. This port is limited only for local access by iptables.
1900/udp	UPNP	UPNP broadcasting port
49152/tcp	UPNP	Portable SDK for UPnP devices
Random Port/udp	Private	Random udp port is used for b2bsip to communicate with cloud flexisip server.

10.3 Deployment guideline

Please do not install the device in the public place and to ensure that physical access to the devices is granted only to trusted personal. The customer must be aware that the unauthorized physical access to the device can cause cyber security risk. The deployment assumes that the person who can physical access the device is the device owner, who can answer a door call and open the lock for outdoor station.

When user decides to remove the device from system, user shall reset the device to factory setting in order to remove all the configuration data and sensitive data in the device. This will prevent sensitive data leak.

It is recommended that the device is deployed together with security controls (such as a firewall or an IPS) that can detect and possibly even prevent some of the DoS attacks. It is also necessary that switches and routers are properly configured and allow for rate limiting, as well as restrict the percentage of CPU power that is allowed to be spent on different interfaces by using rate limiters.

10.4 Upgrading

Device supports firmware updating by uploading firmware from Welcome App. In this mode, a signature file will be used to verify the authentication and integrity of firmware.

If Internet services available, device will connect to MyBuildings sever to download the new firmware, but needs to be confirmed by end user every time by Welcome App.

10.5 Backup/Restore

There is no backup and restore of the configuration data for the device.

10.6 Malware prevention solution

The product is not susceptible to malware, because custom code cannot be executed on the system. The only way to update the software is by firmware upgrading. Only firmware signed by ABB can be accepted.

10.7 Password rule

There is no preset administrator account/password in the device.

Notice

We reserve the right to at all times make technical changes as well as changes to the contents of this document without prior notice.

The detailed specifications agreed to at the time of ordering apply to all orders. ABB accepts no responsibility for possible errors or incompleteness in this document.

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