

# **Network Keyboard (NKB5200)**

## **User's Manual**



# Foreword

## General






This document describes the appearance and functions of the network keyboard (hereinafter referred to as the "keyboard") in details. Read carefully before using the device, and keep the manual safe for future reference.

## Model

NKB5200

## Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

| Signal Words   | Meaning  |
|--|--|
|  <b>DANGER</b>    | Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.                                       |
|  <b>WARNING</b>   | Indicates a potential risk which, if not avoided, may result in property damage, data loss, lower performance, or unpredictable result.            |
|  <b>CAUTION</b> | Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results. |
|  <b>TIPS</b>    | Provides methods to help you solve a problem or save time.   |
|  <b>NOTE</b>    | Provides additional information as a supplement to the text.   |

## Revision History

| Version | Revision Content | Release Time |
|---------|------------------|--------------|
| V2.0.0  | Baseline update. | March 2024   |
| V1.0.0  | First release.   | April 2023   |

## Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, audio, fingerprints, and license plate number. You need to be in compliance with your local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures which include but are not limited: Providing clear and visible identification to inform people of the existence of the surveillance area and provide required contact information.

## Interface Declaration

This manual mainly introduces the relevant functions of the device. The interfaces used in its manufacture, the procedures for returning the device to the factory for inspection and for locating its faults are not described in this manual. Please contact technical support if you need information on these interfaces.

## About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

# Important Safeguards and Warnings

This section introduces content covering the proper handling of the device, hazard prevention, and prevention of property damage. Read carefully before using the device, comply with the guidelines when using it, and keep the manual safe for future reference.

## Transportation Requirements



Transport the device under allowed humidity and temperature conditions.


## Storage Requirements



Store the device under allowed humidity and temperature conditions.

## Installation Requirements



-  Electrical Hazard  
Preventive measures: Make sure the power is off when you put your hand into the device.
- Stability Hazard  
Possible result: The rack might fall down and cause serious personal injury.  
Preventive measures (including but not limited to):
  - ◇ Before extending the rack to the installation position, read the installation instructions.
  - ◇ When the Device is installed on the slide rail, do not place any load on it.
  - ◇ Do not retract the slide rail while the Device is installed on it.



- Do not connect the power adapter to the device while the adapter is powered on.
- Strictly comply with the local electric safety code and standards. Make sure the ambient voltage is stable and meets the power supply requirements of the device.
- Do not connect the device to two or more kinds of power supplies, to avoid damage to the device.
- Use the standard power adapter or cabinet power supply. We will assume no responsibility for any injuries or damages caused by the use of a nonstandard power adapter.




- The device must be installed in a location that only professionals can access. Non-professionals are not allowed to enter the installation area.
- When installing the device, make sure that the power plug can be easily reached to cut off the power.
- Personnel working at heights must take all necessary measures to ensure personal safety including wearing a helmet and safety belts.
- Do not place the device in a place exposed to sunlight or near heat sources.
- Keep the device away from dampness, dust, and soot.



- Put the device in a well-ventilated place, and do not block its ventilation.
- Install the device on a stable surface to prevent it from falling.
- Please follow the electrical requirements to power the device.
  - ◇ Following are the requirements for selecting a power adapter.
    - The power supply must conform to the requirements of IEC 60950-1 and IEC 62368-1 standards.
    - The voltage must meet the SELV (Safety Extra Low Voltage) requirements and not exceed ES-1 standards.
    - When the power of the device does not exceed 100 W, the power supply must meet LPS requirements and be no higher than PS2.
  - ◇ We recommend using the power adapter provided with the device.
  - ◇ When selecting the power adapter, the power supply requirements (such as rated voltage) are subject to the device label.
- The device is a class I electrical appliance. Make sure that the power supply of the device is connected to a power socket with protective earthing.
- Cut all network and cable connections before cutting off the power.
- Use the power cords that are recommended for the region and conform to the rated power specifications.
- When installing the device, make sure that the power plug and appliance coupler can be easily reached to cut off power.
- The appliance coupler is a disconnection device. Keep it at a convenient angle when using it.

## Operation Requirements



-  The Device or remote control contains button batteries. Do not swallow the batteries due to the risk of chemical burns.  
Possible result: The swallowed button battery can cause serious internal burns and death within 2 hours.  
Preventive measures (including but not limited to):
  - ◇ Keep new and used batteries out of reach of children.
  - ◇ If the battery compartment is not securely closed, stop using the product immediately and keep out of reach of children.
  - ◇ Seek immediate medical attention if a battery is believed to be swallowed or inserted inside any part of the body.
- Battery Pack Precautions  
Preventive measures (including but not limited to):
  - ◇ Do not transport, store or use the batteries in high altitudes with low pressure and environments with extremely high and low temperatures.
  - ◇ Do not dispose the batteries in fire or a hot oven, or mechanically crush or cut the batteries to avoid an explosion.
  - ◇ Do not leave the batteries in environments with extremely high temperatures to avoid explosions and leakage of flammable liquid or gas.
  - ◇ Do not subject the batteries to extremely low air pressure to avoid explosions and the leakage of flammable liquid or gas.

 **WARNING**

- Operating the device in a domestic environment may cause radio interference.
- Place the device in a location that children cannot easily access.
-  High Current  
Preventative measure: Ground the screw of the device to protective ground before you power it on.
-  Do not use multiple devices together to avoid generating high current.  
Preventative measure: Ground the device to protective ground before you power it on.



- Make sure that the power supply is correct before use.
- Do not unplug the power cord on the side of the device while the adapter is powered on.
- The rated current of the device is 4 A and the rated power is 48 W. Operate the device within the rated range of power input and output.
- Use the device under allowed humidity and temperature conditions.
- Do not drop or splash liquid onto the device, and make sure that there is no object filled with liquid on the device to prevent liquid from flowing into it.
- Do not disassemble the device without professional instruction.
- Put the device in a well-ventilated place, and do not block its ventilation.
- Do not place an open flame on the device, such as a lit candle.

## Maintenance Requirements

 **DANGER**

- Replacing unwanted batteries with the wrong type of new batteries might result in explosion.  
Preventive measures (including but not limited to):
  - ◇ Replace unwanted batteries with new batteries of the same type and model to avoid the risk of fire and explosion.
  - ◇ Dispose of the old batteries as instructed.
- Power off the device before maintenance.



Do not expose the battery to extremely hot environments, such as direct sunlight and fire. Improper use of the battery might result in a fire or explosion.

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# 1 Product Introduction

Network Keyboard 5200 is a touchscreen keyboard that uses the Android system. It displays live videos, decodes videos with codecs, such as H.265 and H.264, and controls devices. The keyboard is compatible with many devices, such as cameras and storage devices, and works with the Video Matrix platform and DSS Pro. It is suitable for use by enterprises and the government, and is ideal for industries such as the education, health, transportation, intelligent building and finance industry.

## 1.1 Product Appearance

### 1.1.1 Front Panel

Figure 1-1 Front panel

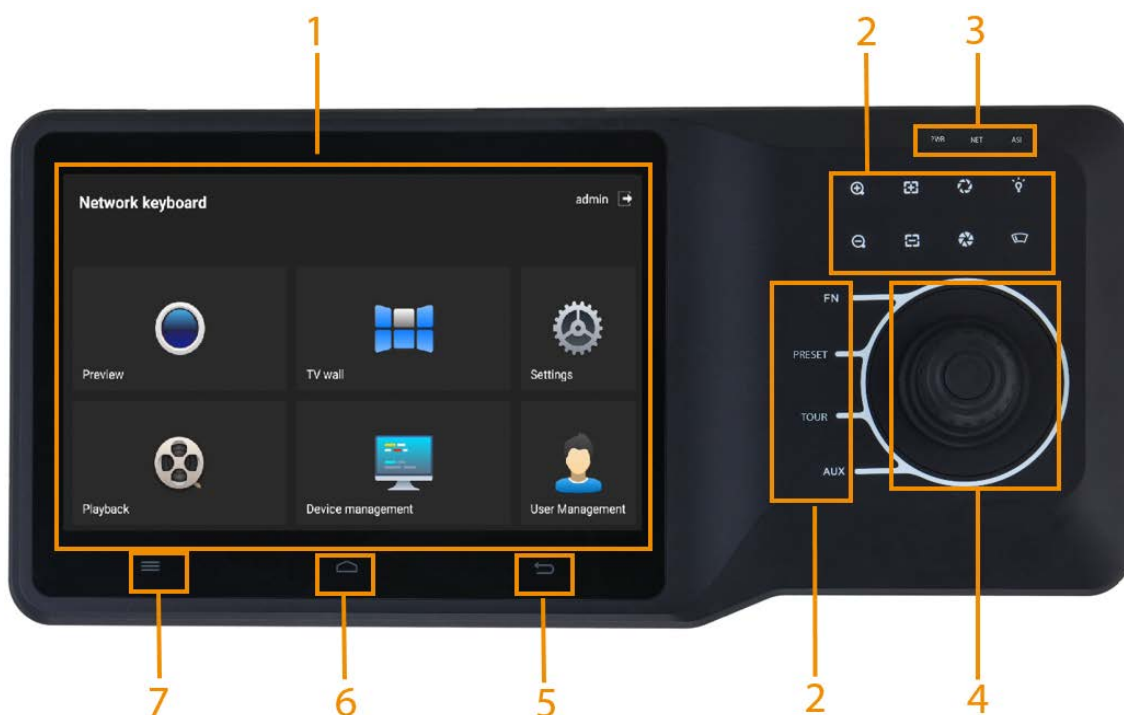


Table 1-1 Front panel description

| No. | Description   |
|-----|---|
| 1   | LCD screen. Displays the keyboard menu.   |
| 2   | PTZ control. Supports functions such as zoom, focus, aperture, FN, brush, line scan, preset, patrol, tour and more. |
| 3   | Indicator. Displays the status of power supply, network connection, and alarm.                                      |
| 4   | 3D joystick. Used for selecting and operating menus.  |
| 5   | Return.   |
| 6   | Function reserved.  |
| 7   | Reset.  |

## 1.1.2 Rear Panel

Figure 1-2 Rear panel



Table 1-2 Rear panel description

| No. | Description                 | No. | Description   | No. | Description                                |
|-----|-----------------------------|-----|---|-----|--|
| 1   | OTG port connects to ADB    | 6   | Microphone input port                                   | 11  | Network port. Supports PoE power supply    |
| 2   | COM port used for debugging | 7   | Microphone output port                                  | 12  | Power port                                 |
| 3   | 485 port                    | 8   | SD slot. Used for flashing the device                   | 13  | Power button. Powers on and off the device |
| 4   | 2 USB2.0 ports              | 9   | HDMI signal output port                                 | 14  | Ground                                     |
| 5   | USB3.0 port                 | 10  | VGA video output port that outputs analog video signals | —   |  |

## 1.1.3 Side Panel

Side panel has 3 volume buttons: volume up, volume down and mute.

## 1.2 Key Module

Key module is an external device that can connect to keyboard to do operations such as video on wall, controlling PTZ cameras.

Figure 1-3 Key module














- After key module is connected to network keyboard through USB successfully, green indicator light at the upper right corner will glow for seconds and then turn off.
- When key module is connected with network keyboard, turn on main switch at the side of key module.



- ◇ The key module supports USB and battery power supply.
- ◇ When using the preview function of the platform, the key module is unavailable.
- ◇ When using the TV wall function of the platform, F1 calling is unavailable.

Table 1-3 Button description

| Key  | Example   | Function   |
|--|---|--|
| F1   | Number 1 to 16 + F1   | Call No. 1 to 16 plans quickly. It applies to TV wall functions.<br><br>View the plan numbers on the <b>Preplan</b> page.                             |
| F2   | —   | Function reserved.   |
| F3   | —   | Function reserved.   |
| F4   | —   | Function reserved.   |
| Mode   | —   | Function reserved.   |
| 0-9  | Number 0-9  | —  |
| Screen   | 123 + Screen  | Select screen.<br><br>Number 123 is the TV wall control ID, which is acquired by video wall device. For details, see the corresponding user's manual. |
| Window   | 3 + Window  | Focus on the third window of present screen.   |
| Split  | 4 + Split   | Divide present screen into 4 splits.   |
|                 | Press   | Delete 1 digit from number buffer zone. The icon is similar to squares.  |
|  (Camera group) | 123 +  | Drag No. 123 camera group onto the current window for automatic tour of videos in the channel.   |

| Key  | Example   | Function  |
|--|---|---|
|  (Camera)                     | 567 +  | Drag No. 567 camera onto present window.<br><br>0 + camera means to turn off present video source. |
| Preset   | 2 + Preset  | Call No. 2 preset.  |
| Tour   | 5 + Tour  | Call No. 5 tour.  |
| PTZ  | —   | —   |
| Scan   | 3 + Scan  | Call No. 3 scan.  |
| Pattern  | 4 + Pattern   | Call No. 4 pattern.   |
| Rotate   | Press   | Press it once to start rotation, and then press it again to stop rotation.  |
| Exit   | —   | Exit the current operation.   |
| Confirm  | —   | Function reserved.  |
|  (Switch)<br>previous channel | KEY_ previous channel   | Present focus window channel reduces by 1. The icon is similar to squares.  |
|  (Next channel)              | KEY_ next channel   | Present focus window channel adds by 1. The icon is similar to squares.   |
|                             | —   | Function reserved.  |

# 2 Start and Shutdown

## 2.1 Start

### Procedure

Step 1 Connect the keyboard to the power supply, and then press the power button on the rear panel.

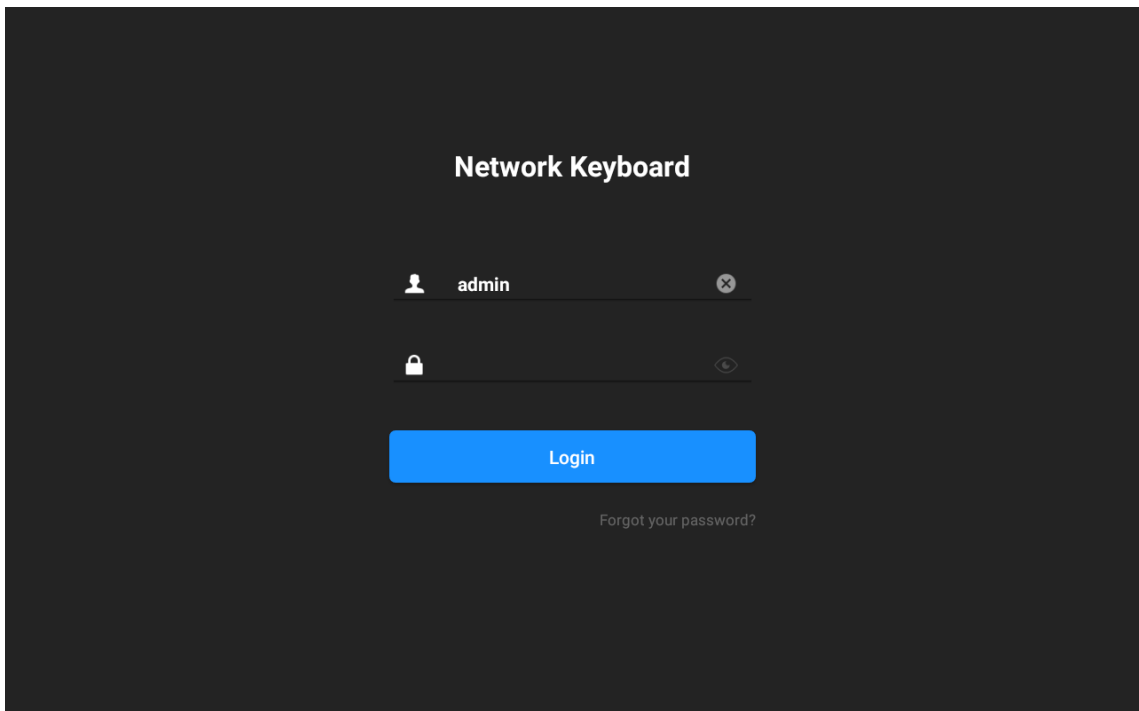
The device starts successfully and displays the login page.

Step 2 Enter the username and password, and then tap **Login**.



The page of the keyboard can be operated with a touchscreen or an external mouse.

Figure 2-1 Login



If you forgot your password, you can tap **Forgot your password?**, and then follow the instructions to reset your password.

## 2.2 Shutdown

You can power off the keyboard by one of the following ways:

- Press the power button on the rear panel.
- After exiting the system, unplug the power cord.

## 2.3 Screen Lock

Select **Setting** > **General** > **Screen Lock**, and then configure the screen lock time. After that tap **OK**.


# 3 Quick Settings

## 3.1 Initializing the Keyboard

You need to initialize the keyboard for first-time use.

### Procedure


Step 1 Connect the keyboard to the power, and then press the power button on the rear panel to start the keyboard.

Step 2 Press and hold  for 15 times to initialize the keyboard.



Initialization will clear all configuration, please be advised!



You can press and hold  on the main menu for 5 seconds to initialize the keyboard.

Step 3 Read and select **Consent Agreement License**, and then tap **Next**.

Step 4 Enter the new password, and then confirm your new password.



The password must consist of 8–32 non-blank characters and contain at least two types of the following characters: Uppercase and lowercase letters, numbers, and special characters (excluding ' " ; : &).

Step 5 Set security questions and answers.

Step 6 Tap **OK**.

## 3.2 Login

### Procedure

Step 1 After powering on the keyboard, the system goes to the login page.

Step 2 Enter the username and password, and then tap **Login**.

Figure 3-1 Main page

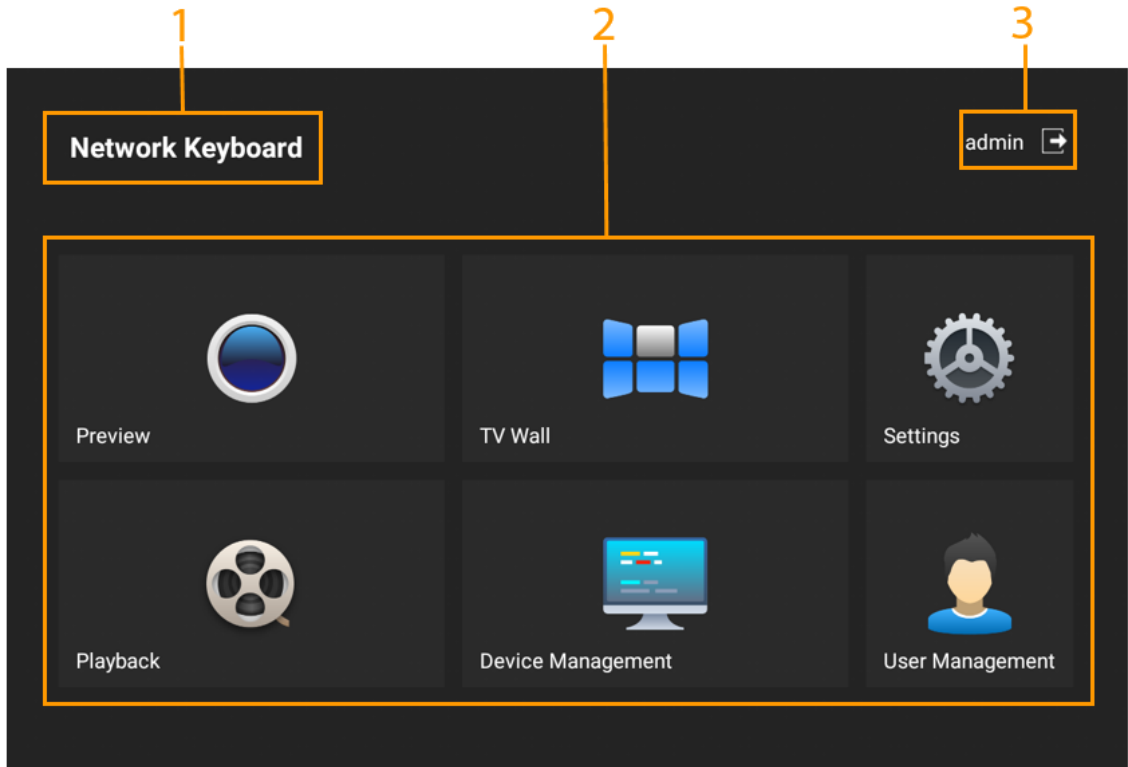



Table 3-1 Function module description

| No. | Description  |
|-----|--|
| 1   | The name that identifies the keyboard.   |
| 2   | <p>Functions.</p> <ul style="list-style-type: none"> <li>• <b>Preview:</b> Preview local devices and their operations.</li> <li>• <b>Playback:</b> Play back local videos.</li> <li>• <b>TV Wall:</b> Control locally added devices such as decoder, TV wall, matrix, screen, and more.</li> <li>• <b>Device Management:</b> Add directly connected device and platform.</li> <li>• <b>Settings:</b> Configure the network, Bluetooth, storage, serial port and more.</li> <li>• <b>User Management:</b> Add users and configure their permissions.</li> </ul> |
| 3   | Tap  to log out.  |

## 3.3 Network Settings

### 3.3.1 Connecting to Wired Network

Configure IP address and DNS server of network keyboard to connect other devices in the networking.

#### Procedure

Step 1 Log in to the keyboard, and then tap **Settings**.

Step 2 Select **Settings** > **Wired Network**.



**Step 3** Configure the parameters.

Figure 3-2 Wired network

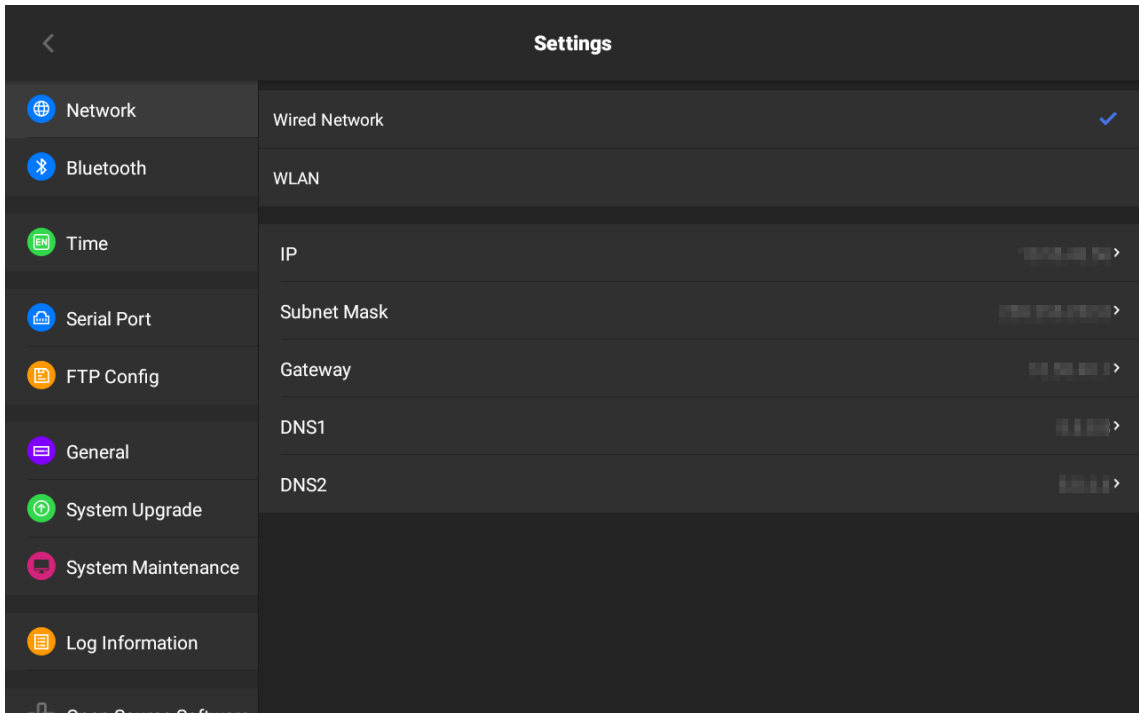


Table 3-2 Parameter description

| Parameter   | Description   |
|-------------|---|
| IP          | Configure the IP address of the keyboard. The IP address is 192.168.1.108 by default. |
| Subnet Mask | The subnet mask of the network.   |
| Gateway     | The gateway must be on the same network with the IP address.                          |
| DNS1        | IP address of the main DNS server.  |
| DNS2        | IP address of alternate DNS server.   |

### 3.3.2 Connecting to Wi-Fi

#### Prerequisites

Make sure that there are Wi-Fi available.

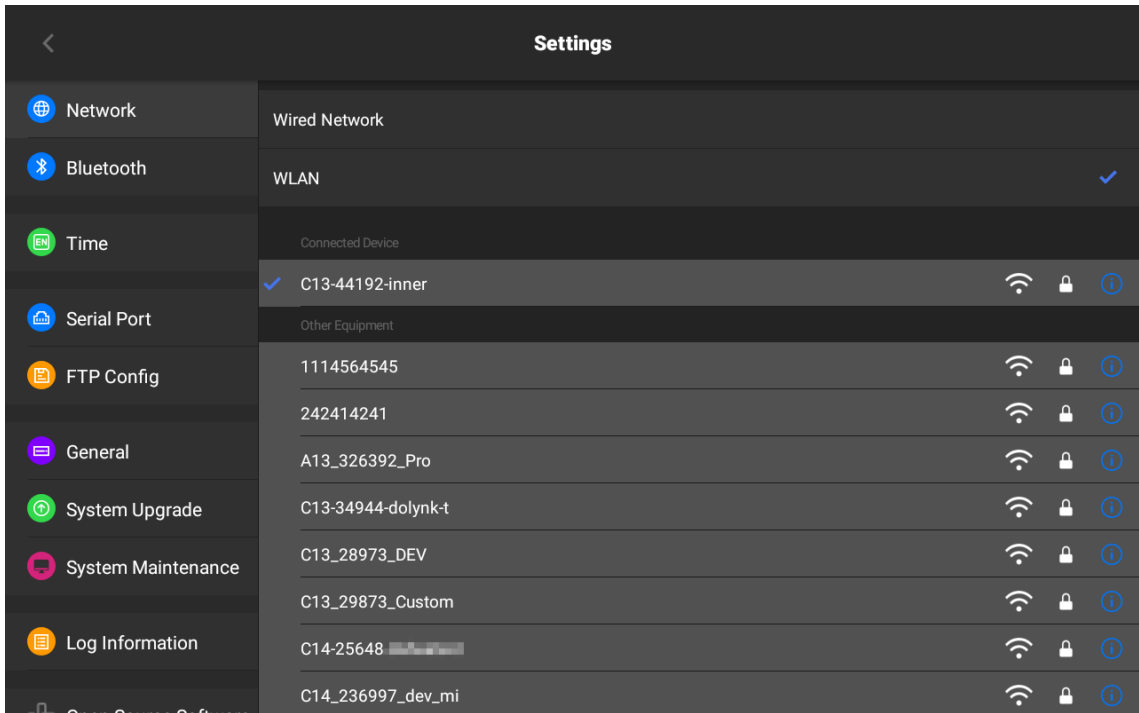
#### Procedure

**Step 1** Log in to the keyboard, and then tap **Settings**.

**Step 2** Select **Network > WLAN**.

**Step 3** Select the Wi-Fi according to your needs, and then enter the password and tap **OK**.

Figure 3-3 Wi-Fi



## Related Operations

Tap  to view the Wi-Fi information, and click Wi-Fi information to disconnect the Wi-Fi.

## 3.4 Adding Devices

You can add devices or platforms manually or automatically.

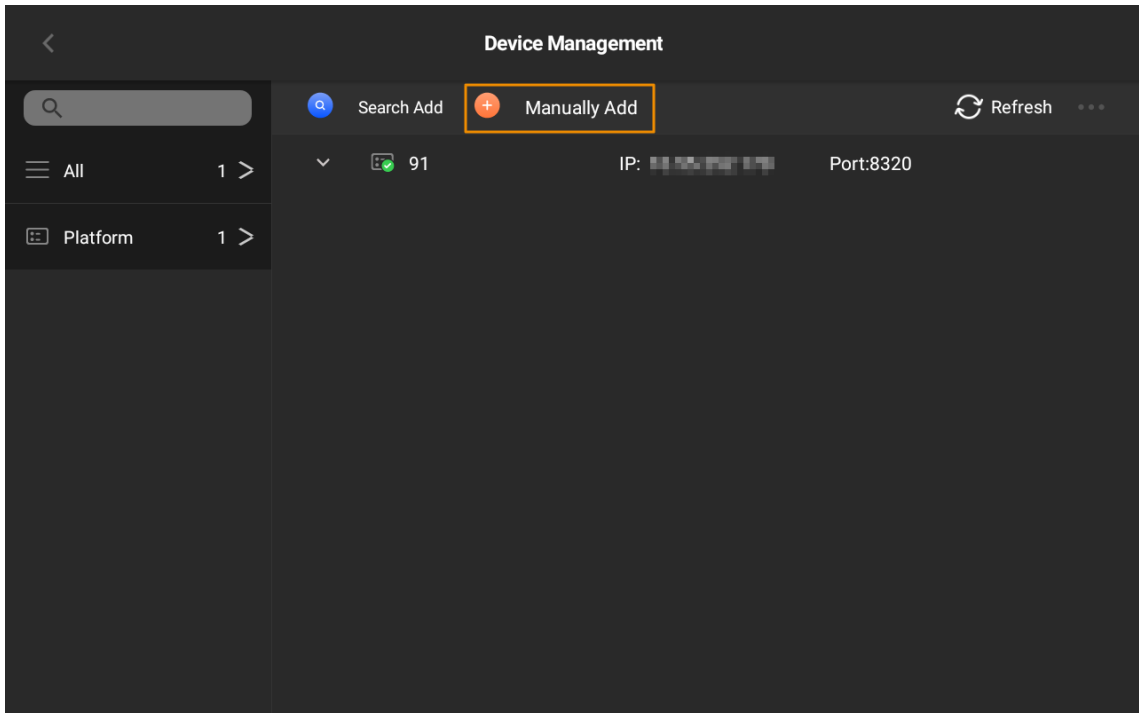
### 3.4.1 Manual Add

When you know the specific IP address, we recommend using this method.

#### Procedure

Step 1 Log in to the keyboard, and then tap **Device Management**.

Figure 3-4 Add devices manually




**Step 2** Tap , and then configure the parameters.

Figure 3-5 Configure the parameters

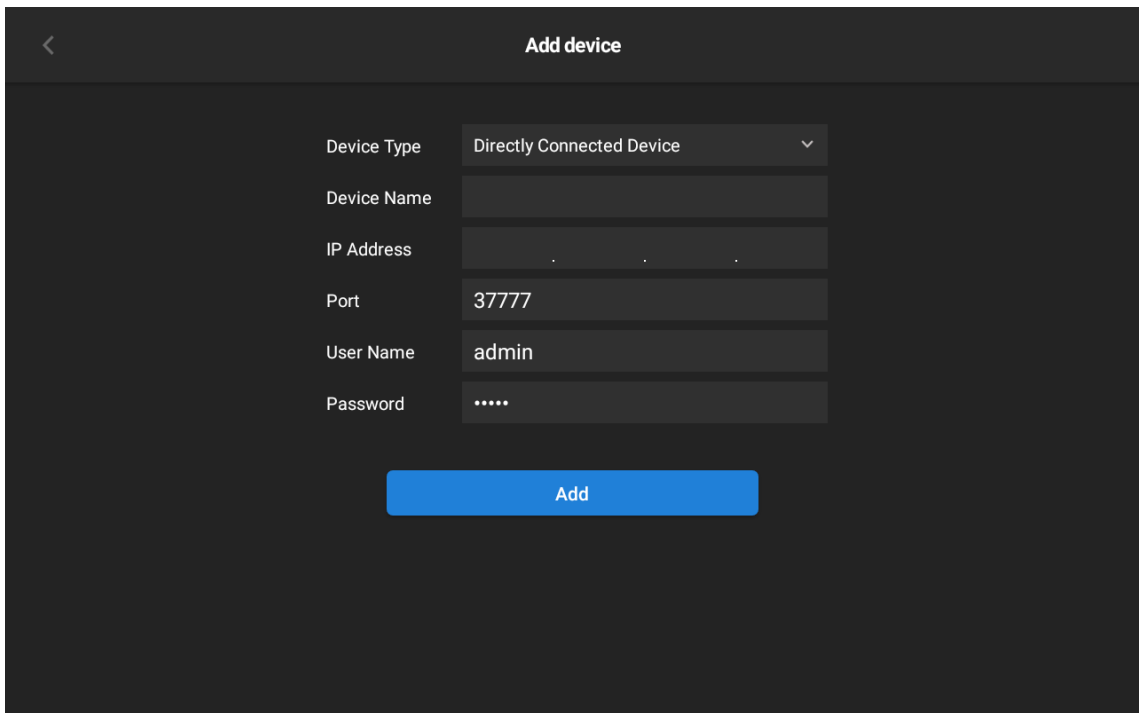


Table 3-3 Parameter description

| Parameter   | Description   |
|-------------|---|
| Device type | You can select <b>Directly Connected Device</b> or <b>Platform</b> or <b>Onvif</b> from the drop-down list. |
| Device name | The name that identifies the device or the platform.  |
| IP address  | IP address of the device or the platform.   |
| Port        | Port number of the device or the platform.  |

| Parameter | Description   |
|-----------|---|
| Username  | The username and password of the device or platform that you want to add to the keyboard. |
| Password  |   |

Step 3 Tap **Add**.

### 3.4.1.1 Adding Directly Connected Devices

#### Procedure

Step 1 Log in to the keyboard, and then tap **Device Management**.

Step 2 Tap .

Step 3 Select **Directly Connected Device**, and then configure the parameters.

Figure 3-6 Add directly connected device

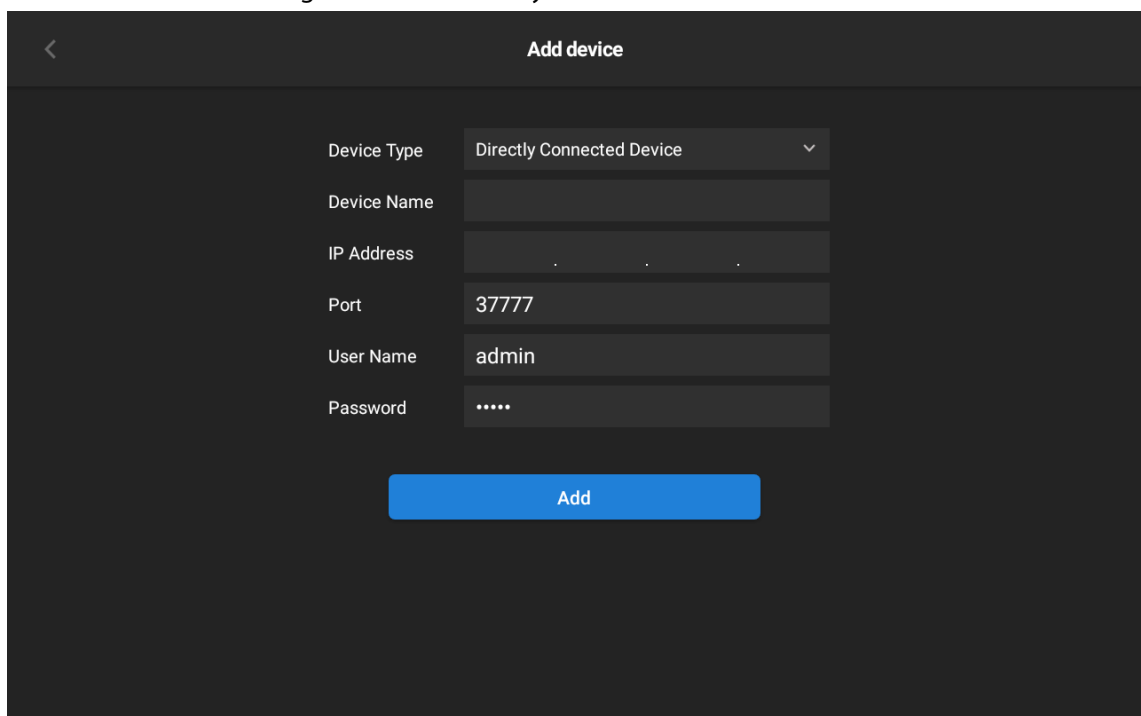


Table 3-4 Parameter description


| Parameter   | Description   |
|-------------|---|
| Device type | Select <b>Directly Connected Device</b> from the drop-down list.              |
| Device name | The name that identifies the device.  |
| IP address  | IP address of the device.   |
| Port        | Port number of the directly connected device. It is 37777 by default.         |
| Username    | The username and password of the device that you want to add to the keyboard. |
| Password    |   |

Step 4 Tap **Add**.

### 3.4.1.2 Adding Platforms

#### Procedure

**Step 1** Log in to the keyboard, and then tap **Device Management**.

**Step 2** Tap .

**Step 3** Select **Platform**, and then configure the parameters.

Table 3-5 Parameter description

| Parameter   | Description  |
|-------------|--|
| Device type | Select <b>Platform</b> from the drop-down list.  |
| Device name | The name that identifies the platform.   |
| IP address  | IP address of the platform. The default port number of DSS Pro is 443.                 |
| Port        | Port number of the platform. The default port number of DSS Pro and CyberCity are 443. |
| Username    | The username and password of the platform that you want to add to the keyboard.        |
| Password    |  |

**Step 4** Tap **Add**.



Different platforms support different functions on the keyboard. For details, see the table below:

Table 3-6 Function list of the platform on the keyboard

| Platform and Function                              | DSS Pro | CyberCity |
|--|---------|-----------|
| Keyboard code                                      | support | support   |
| Acquire real-time video wall splitting information | —       | —         |
| Acquire task list                                  | support | support   |
| Video on wall (pull-stream mode)                   | support | support   |
| Preview  | support | support   |
| Talk   | support | support   |
| Playback search                                    | —       | —         |
| PTZ move   | support | support   |
| Zoom   | support | support   |
| Preset   | support | support   |
| Brush  | support | support   |
| Pattern  | support | support   |
| Line scan  | support | support   |
| Tour   | support | support   |
| Focus  | support | support   |
| Iris   | support | support   |

| Platform and Function | DSS Pro | CyberCity |
|-----------------------|---------|-----------|
| Horizontal rotation   | support | support   |

### 3.4.1.3 Adding Onvif Devices

#### Procedure


- Step 1** Log in to the keyboard, and then tap **Device Management**.
- Step 2** Tap .
- Step 3** Select **Onvif**, and then configure the parameters.

Table 3-7 Parameter description

| Parameter   | Description   |
|-------------|---|
| Device type | Select <b>Onvif</b> from the drop-down list.  |
| Device name | The name that identifies the device.  |
| IP address  | IP address of the onvif devices.  |
| Port        | Port number of the onvif device. It is 80 by default.                               |
| Username    | The username and password of the onvif device that you want to add to the keyboard. |
| Password    |   |

- Step 4** Tap **Add**.

### 3.4.2 Search and Add

When you do not know the specific IP address of the device, we recommend using this method.

#### Background Information

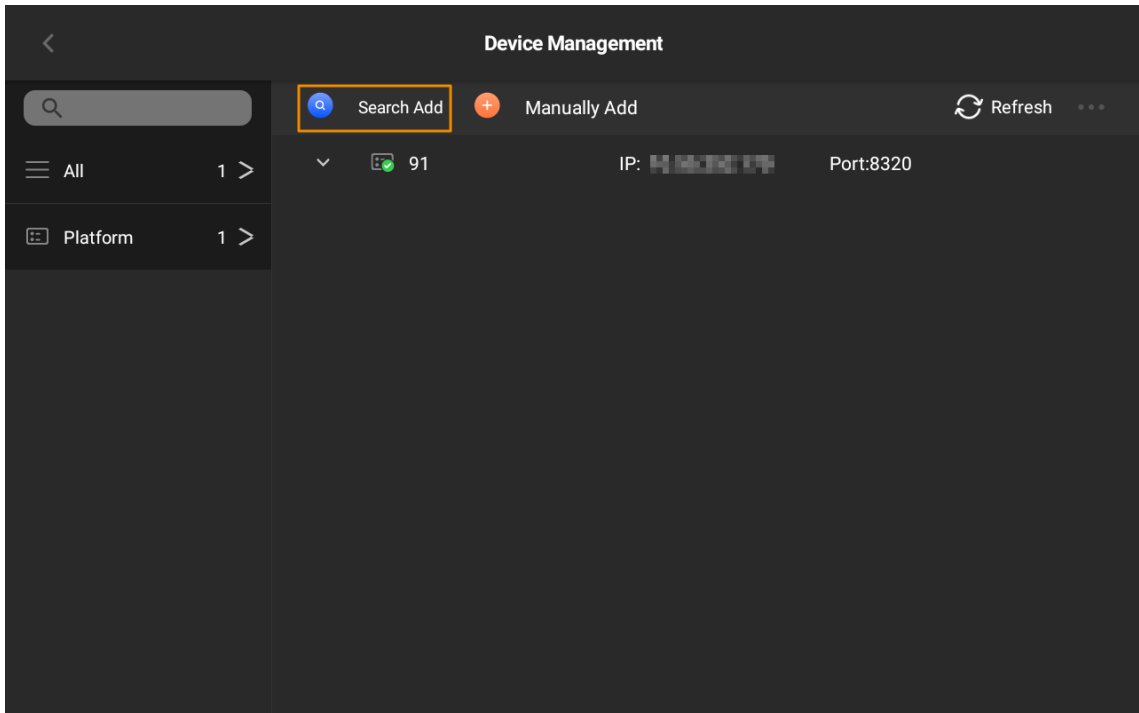


Only directly connected device supports automatic search.

#### Procedure

- Step 1** Log in to the keyboard, and then tap **Device Management**.

Figure 3-7 Add by search




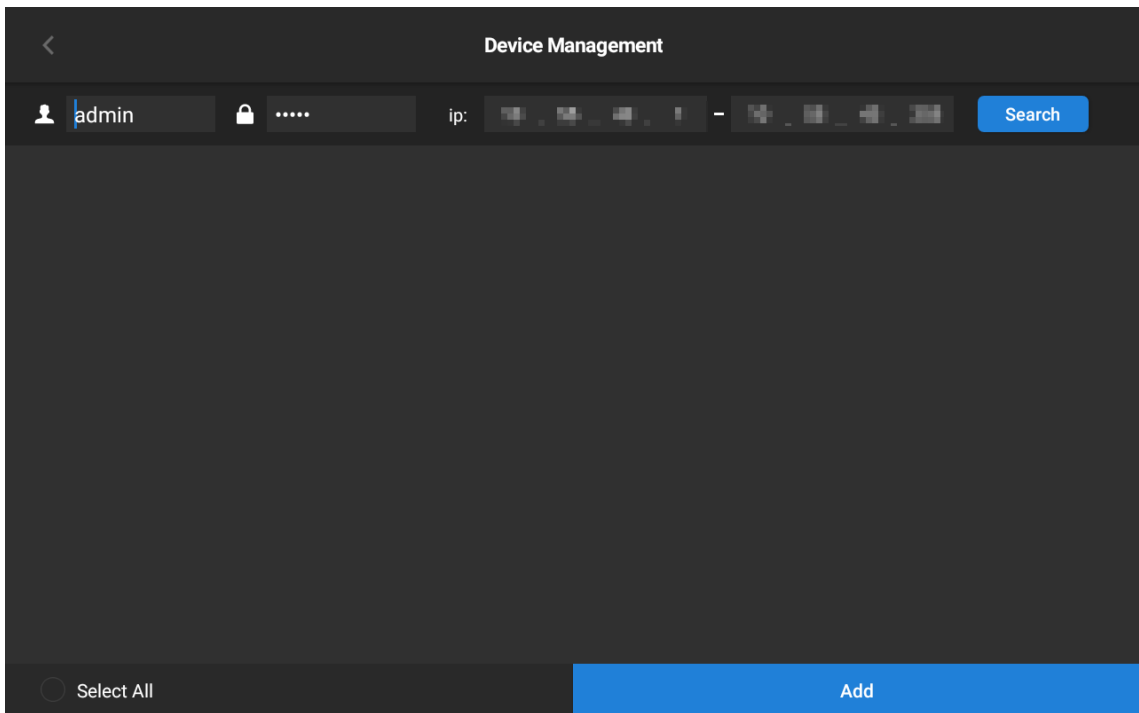
**Step 2** Tap , and then configure the IP address range of the device.


Figure 3-8 Configure the IP range



**Step 3** Tap **Search**.


The results will be displayed in the list. You can select the device you need and then tap **Add**.

## Related Operations

- Select **Select all** to select all devices.
- Press and hold the device, and then tap **Delete** to delete the added device.
- Insert a USB flash drive, and then tap  to import or export device files.



The file system format of USB flash drive supported by the devices includes FAT32 or NTFS.

- Tap  to refresh the page.

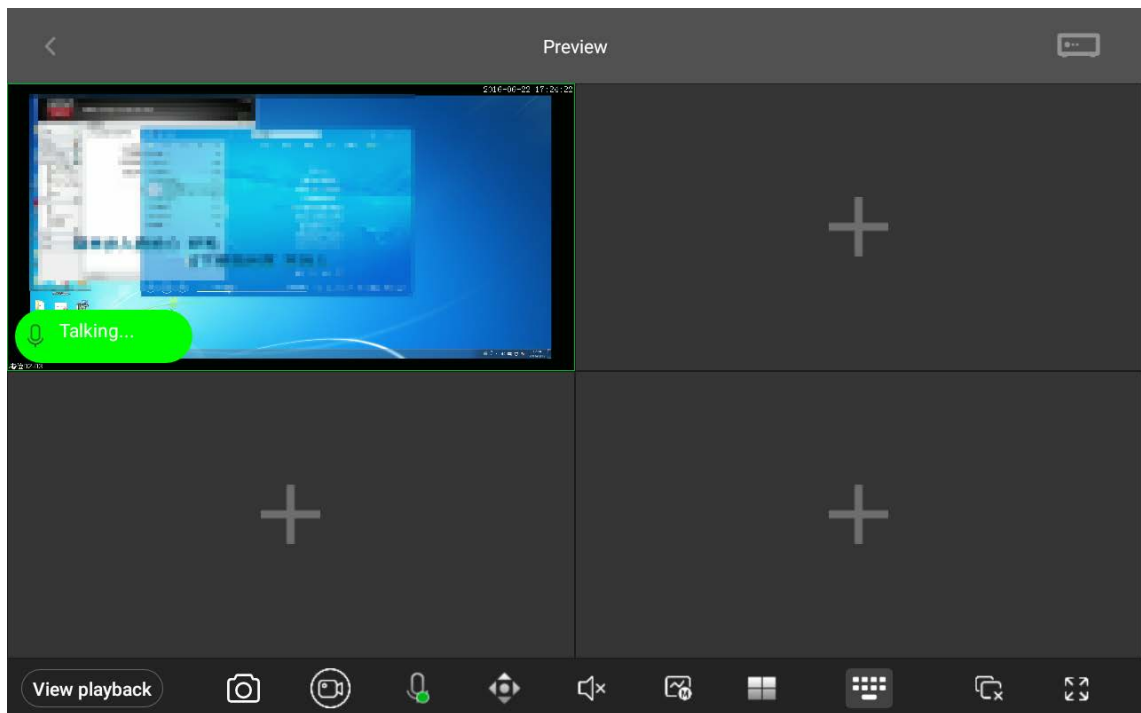
## 3.5 Preview

Preview the channels of the added devices or platforms.

### Procedure

- Step 1** Log in to the keyboard, and then tap **Preview**.

Figure 3-9 Preview

















- Step 2** Tap  to add signal or tap  and then select and drag the signal from the signal list on the right.

Table 3-8 Icon description

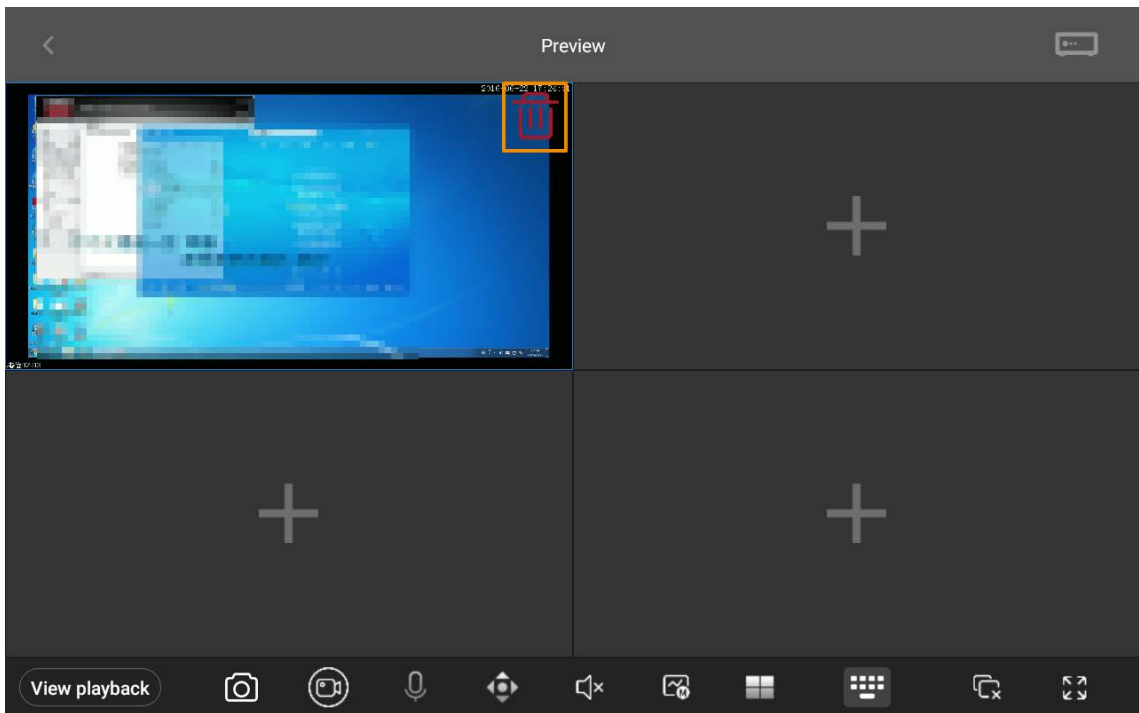
| Icon  | Description     | Icon  | Description   |
|---|-----------------|---|---|
|  | Video playback  |  | Stream switch   |
|  | Snapshot        |  | Window split, including single split, 4-splits and 9-splits |
|  | Manually record |  | Virtual keyboard to control signal on the window            |
|  | Voice talk      |  | Clear the signal of the current window                      |
|  | PTZ operation   |  | Full screen   |
|  | Sound           |  | Signal source   |

- Step 3** (Optional) Tap the window and then the icon of **Delete** appears.



You can tap the icon to delete the window.

Figure 3-10 Delete window



## 3.6 TV Wall

### 3.6.1 TV Wall Operations

#### Prerequisites

The added device or platform has configured the TV wall. For details, see the corresponding user's manual.

#### Procedure

- Step 1 Log in to the keyboard, and then tap **TV Wall**.
- Step 2 Press and hold the screen to bind the TV wall.

Figure 3-11 Bind TV wall

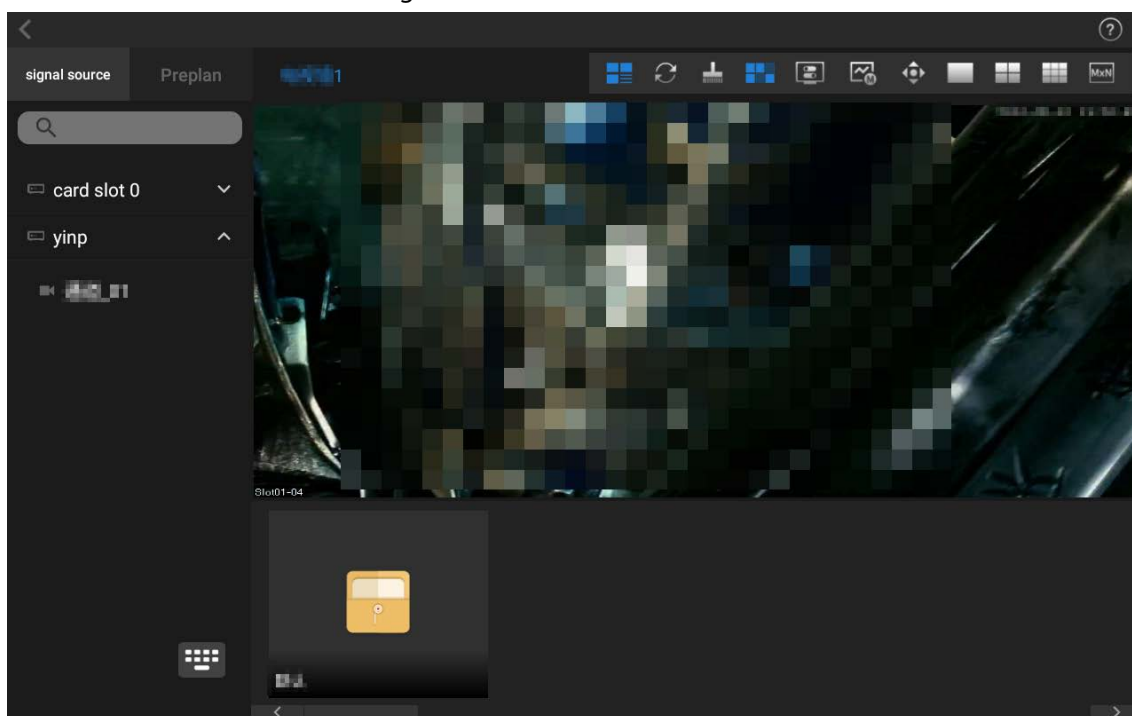


Table 3-9 Icon description

| Icon | Description       | Icon | Description            | Icon | Description          |
|------|-------------------|------|------------------------|------|----------------------|
|      | Scene preset mode |      | Main stream/sub stream |      | Custom split         |
|      | Refresh           |      | PTZ control            |      | TV wall instructions |
|      | Screen cleaning   |      | Single split           |      | Virtual keyboard     |
|      | Play local video  |      | 4-splits               |      | Favorites            |
|      | Screen control    |      | 9-splits               | —    | —                    |

**Step 3** Split screen according to your needs.

**Step 4** Drag a signal source to the screen from signal source list on the left, and then the screen displays the video of the channel.



- Tap to change stream.
- TV wall displays video of sub stream by default.
- After disabling the local display function, the screen displays channel information.



**Step 5** (Optional) Select **Favorites**, and then drag it to the screen to start signal tour.



This function is available on NVD (Network Video Decoder).

## Related Operations

- Press and hold the bond TV wall device or platform to unbind it.
- Tap to clear screen.
- Tap to enable or disable local display.

- Tap  and select the window, and then enter number (for example, 1) +  to display the video of channel 1 on the wall.



The number refers to the control ID or keyboard code. For functions description, see "4.7 Other Functions."

## 3.6.2 Scheme Management

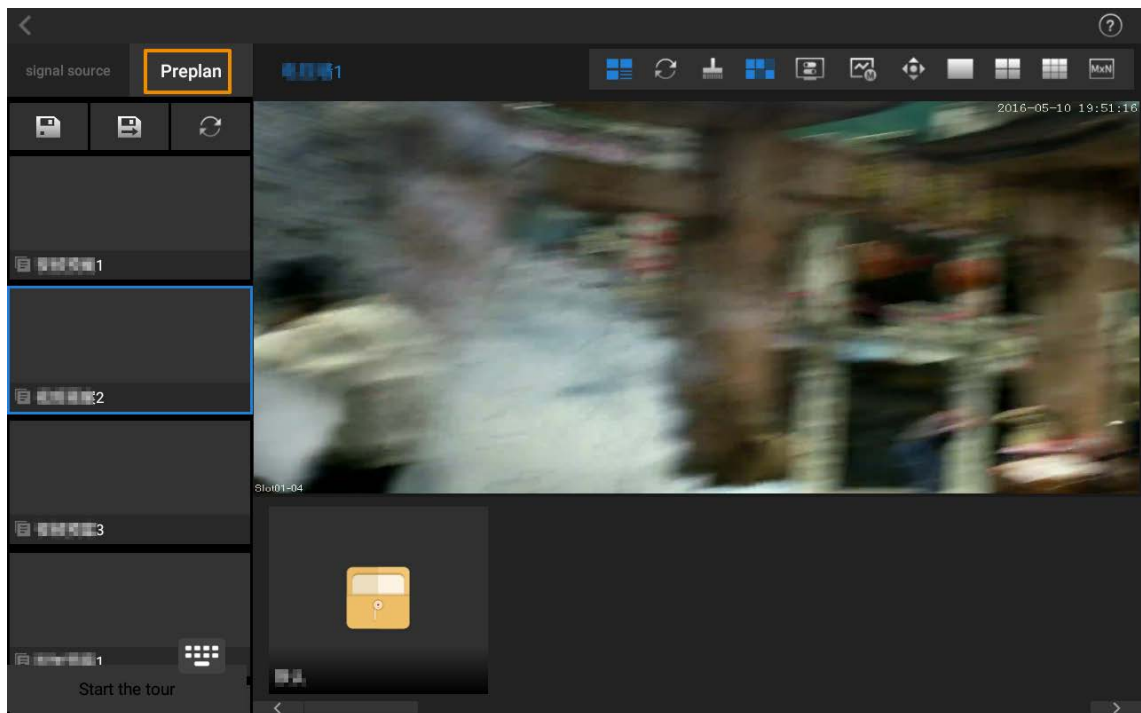
### Background Information



- The added device or platform has configured the scheme.
- Scheme refers to the function of **Task** of the platform.
- The function of **Plan** of the platform is not available at present.

### Procedure

- Step 1** On the TV wall page, tap **Preplan**, and then the keyboard can acquire the configured schemes.

Figure 3-12 Preplan



- Step 2** Select a scheme according to actual needs, and then tap  to save current TV wall layout to the selected scheme.
- Step 3** (Optional) Tap , enter the scheme name, and then tap **OK** to save the current TV wall layout as a new scheme.
- Step 4** (Optional) Tap **Start the tour** to start scheme tour.



Only TV wall device supports this function.

### Related Operations

- Tap  to refresh the scheme.

## 3.7 PTZ Operations

You can control the direction, speed, zoom, focus as well as call scan, rotation, pattern and brush of the PTZ cameras added to the keyboard.

### Prerequisites

The PTZ cameras have been added to the keyboard.

### Procedure


















- Step 1** Log in to the keyboard, tap **Preview** or **TV Wall**.
- Step 2** Tap , select a signal source of PTZ camera, and then drag it to the window.
- Step 3** Tap  to enter the PTZ control page.

Figure 3-13 PTZ control



Table 3-10 Icon description of PTZ operations

| Icon  | Description  |
|---|--|
|  | Controls device toward 8 directions, including up, down, left, right, upper-left, upper-right, lower-left and lower-right.<br><br>You can also use the joystick to control 8 directions of PTZ. |
|  | Adjust the zooming of images.  |
|  | Focus. Once there is any movement or change of an object on the video image and the image turns blurry, the camera will focus again automatically.   |
|  | Iris. Adjust the brightness of images.   |
|  | Preset. Enter the preset number, and then tap <b>OK</b> to position the device to the corresponding point.   |

| Icon  | Description   |
|---|---|
|    | Pattern. Enter the pattern number. Tap <b>OK</b> , and then the device automatically rotates back and forth according to the defined operating record.  |
|    | Includes fixed step length and variable step length. <ul style="list-style-type: none"> <li>• Select <b>Fixed Step Length</b> (ranges from 1 to 8), the device rotates, and the step length keeps at the fixed value.</li> <li>• Select <b>Variable Step Length</b>, the value changes with the tilt angle of 3D joystick. For example, the larger tilt angle represents quicker turning speed.</li> </ul>  <p>Variable step length is available when the keyboard comes with the 3D joystick.</p>   |
|    | Auxiliary functions include scan, pattern, tour and brush. <ul style="list-style-type: none"> <li>• : Enter the scan number, and then tap <b>OK</b>, the device scans back and forth at a certain speed according to the defined boundary.</li> <li>• : Enter the rotate number, and then tap <b>OK</b>, the device starts continuous 360° rotation horizontally at a certain speed.</li> <li>• : Enter the tour number, and then tap <b>OK</b>, the device automatically rotates back and forth in the order of the defined preset.</li> <li>• : Tap the icon, and then tap <b>OK</b> to enable brush. Tap the icon again, and then tap <b>OK</b> to stop brush.</li> </ul> |
|  | Exit.   |

### 3.7.1 Configuring Presets

After configuring presets, the camera saves parameters (such as current status of PTZ pan/tilt, focus) to the memory, so that you can quickly call these parameters and adjust the PTZ to the correct position.

#### Adding Presets



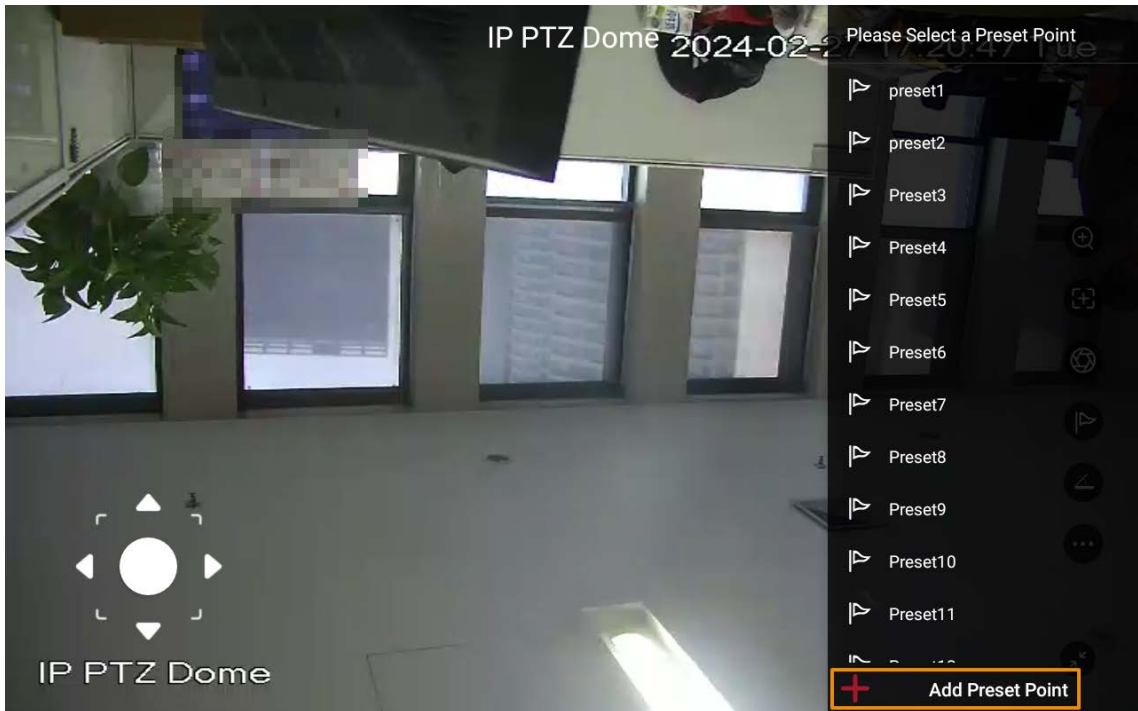

1. Configure the step length, and then turn the camera to the proper position with the joystick or tap the direction buttons.
2. Tap , and then tap  to save the current position to be a preset.

Figure 3-14 Add preset point





### Calling the preset point

1. Tap  to enter the list of the presets.
2. Tap the corresponding presets to call it.

### 3.7.2 Calling the Pattern

Pattern means a record of a series of operations that makes to the camera. The operations include horizontal and vertical movements, zoom and preset calling. Record and save the operations, and then you can call the pattern path directly.


#### Procedure

- Step 1 On the PTZ operation page, tap .
- Step 2 Enter the pattern number, and then tap **OK** to start pattern.
- Step 3 Tap  again, enter the **Pattern number**, and then tap **OK** to stop pattern.

### 3.7.3 Step Length

You can configure the rotation speed of the PTZ camera.

#### Procedure

- Step 1 Tap .
- Step 2 Select **Fixed Step** or **Variable Step** according to your needs.
- Step 3 Control the step length with 3D joystick or virtual joystick.

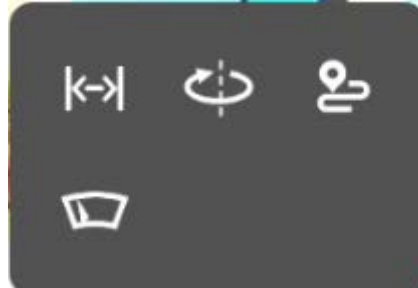
### 3.7.4 Calling the Scan

Scan means the camera moves horizontally at a certain speed between the defined left and right boundaries.

#### Procedure

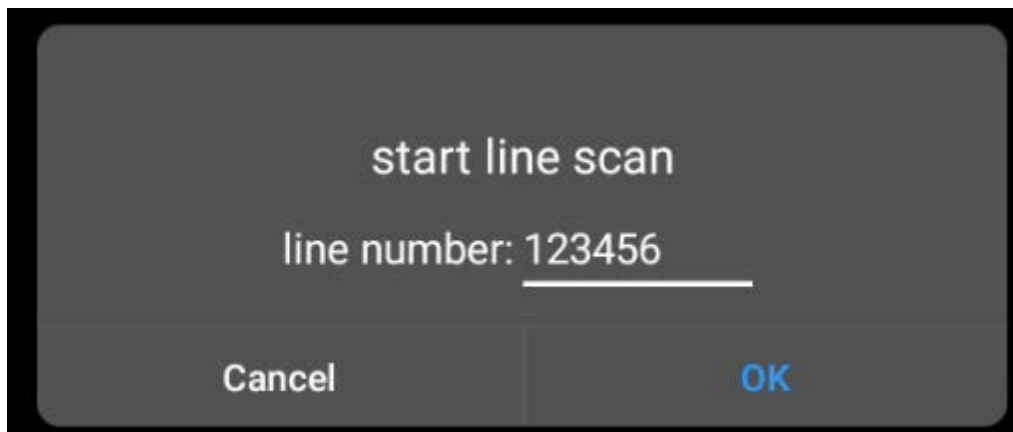
Step 1 Tap , and then select .


Figure 3-15 Auxiliary function



Step 2 Enter the **Scan number**, and then tap **OK** to start scanning.

Figure 3-16 Scan





Step 3 Tap  again, enter the scan number, then tap **OK** in the pop-up window to stop scanning.

### 3.7.5 Configuring Automatic Rotation

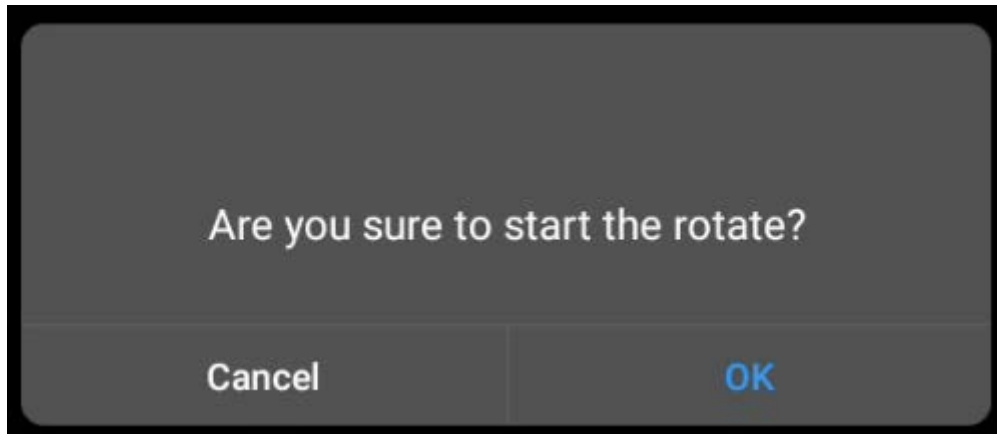
Configure PTZ rotation and enable the camera when calling functions such as tour.

#### Procedure

Step 1 Tap , and then select .

Step 2 Tap **OK** in the pop-up window to start automatic rotation.

Figure 3-17 Rotation




Step 3 Tap  again, and then Tap **OK** in the pop-up window to stop rotation.

### 3.7.6 Calling the Tour

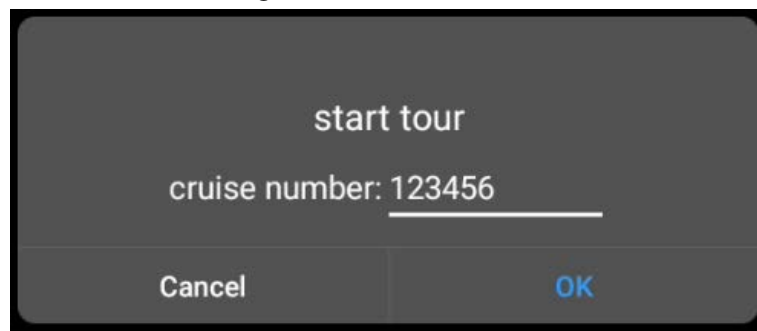
Configure tours, and then the PTZ camera repeats performing tours among the configured presets.


#### Procedure

Step 1 Tap , and then select .

Step 2 Enter the **cruise number**, tap **OK**, and then the PTZ camera starts tour.

Figure 3-18 Tour



Step 3 Tap  again, enter the number again, and then tap **OK** to stop tour.

### 3.7.7 Configuring Brush

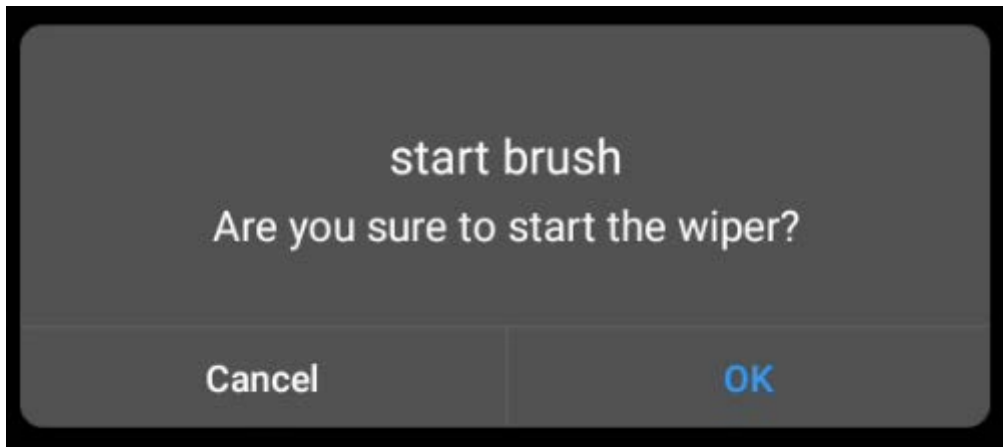
#### Procedure

Step 1 Tap , and then select .

Step 2 Tap **OK** in the pop-up window to start brushing.



Figure 3-19 Brush



Step 3 Tap  again, and then tap **OK** in the pop-up window to stop brushing.

# 4 System Configuration

## 4.1 Configuring Preview

Preview local devices, video on wall, PTZ control, snapshot and recording.

Figure 4-1 Preview

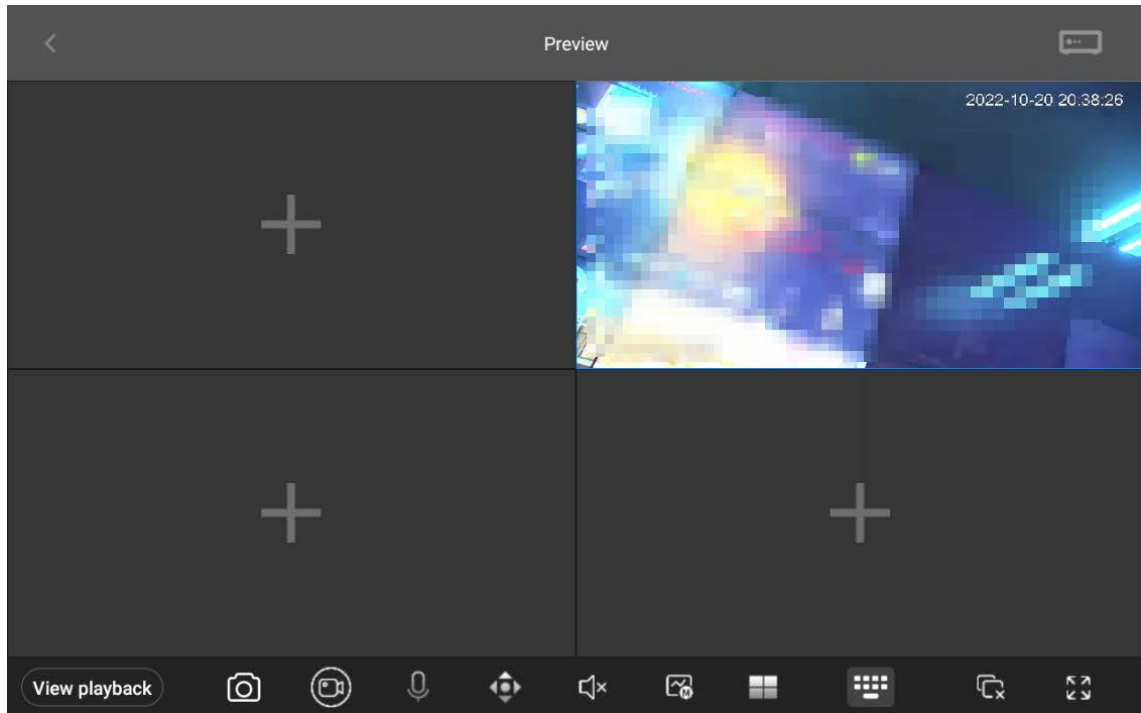


Table 4-1 Icon description


| Icon | Description     | Icon | Description   |
|------|-----------------|------|---|
|      | Video playback  |      | Stream switch   |
|      | Snapshot        |      | Window split, support single split, 4 split and 9 split |
|      | Manually record |      | Virtual keyboard to control video on wall               |
|      | Voice talk      |      | Exit the current window                                 |
|      | PTZ operation   |      | Full screen   |
|      | Sound           |      | Signal source   |

### 4.1.1 Signal on Wall



#### Procedure

Step 1 Log in to the keyboard.



**Step 2** Tap **Preview** to go to preview page.

**Step 3** Tap  on the left to select signal source and drag to the screen.





Tap  to enable virtual keyboard, and then select the window and enter the number (for example 1) +  to display the video on wall.

## Related Operations

- Double-click the video play window to enter full screen mode.
- Click  to display the last channel on wall. For example, the current channel number is 123, click the icon to display the video of channel 122 on wall.
- Click  to display the next channel on wall. For example, the current channel number is 123, click the icon to display the video of channel 124 on wall.

## 4.1.2 Taking Snapshots and Recording Videos

### Taking Snapshots

1. Log in to the keyboard, and then tap **Preview**
2. Insert a USB drive or configure the FTP storage.
3. Tap , and then drag the signal source to the window.
4. Select a window that need to take snapshots, and then tap .The snapshots will be saved to the USB drive.






You can also use the 3D joystick to take a snapshot.



- Snapshots taken by onvif cameras can only be saved to USB drive.
- Onvif cameras do not support video recording.
- Snapshots and recordings will be saved to the FTP first.

### Recording Videos

1. Log in to the keyboard, and then tap **Preview**.
2. Insert a USB drive or configure the FTP.
3. Tap , and then drag the signal source to the window.
4. Select the window that need to record, tap , and then the system starts to record.
5. Tap  again to stop recording and the video will be automatically saved to the FTP.

## 4.1.3 Playing Back Local Videos

### Procedure

**Step 1** Log in to the keyboard, tap **Preview** on the main page.

**Step 2** On the preview page, tap **View Playback**, select a channel, configure the time, and then tap **OK**.

## 4.2 Video Wall

You can add video walls to Video Matrix Platform (VMP) and decoders on the webpage. After that you can add the VMP and the decoder to the network keyboard. You can perform operations such as taking snapshots, enabling video wall, playing back video through the Keyboard.



- Only supports adding devices from webpage.
- VMP and NVD of base line version all support adding multiple video walls.

### 4.2.1 Configuring Schemes

For details, see "3.6.2 Scheme Management".

### 4.2.2 PTZ Control

For details on the PTZ control, see "3.7 PTZ Operations".

## 4.3 Playing Back Videos

Play back videos in storage devices such as Network Video Recorder (NVR).

### Prerequisites

You have added storage devices to the network keyboard.

### Procedure

- Step 1 On the main page, tap **Video Playback**.
- Step 2 Select the device and channel, and then configure the playback time.

Figure 4-2 Video playback

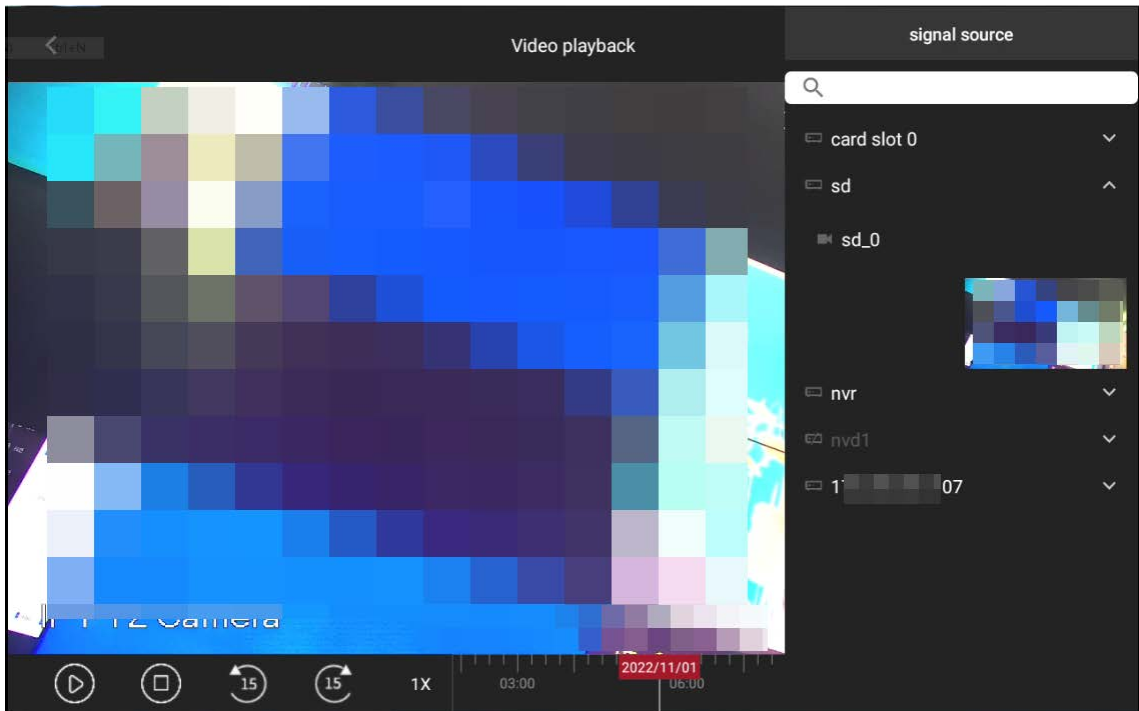


Table 4-2 Icon description

| Icon | Description                                    | Icon | Description                      |
|------|--|------|----------------------------------|
|      | Play   |      | Display and adjust play progress |
|      | Stop playing the video                         |      | Capture a video of custom period |
|      | Rollback 15 seconds or fast forward 15 seconds |      | audio                            |
|      | Speed up                                       |      | Full-screen display              |

**Step 3** Tap to start playback.

**Step 4** Tap **Return** to go back to the login page.

## 4.4 Device Management

For details on device management, see "3.4 Adding Devices".

## 4.5 User Management

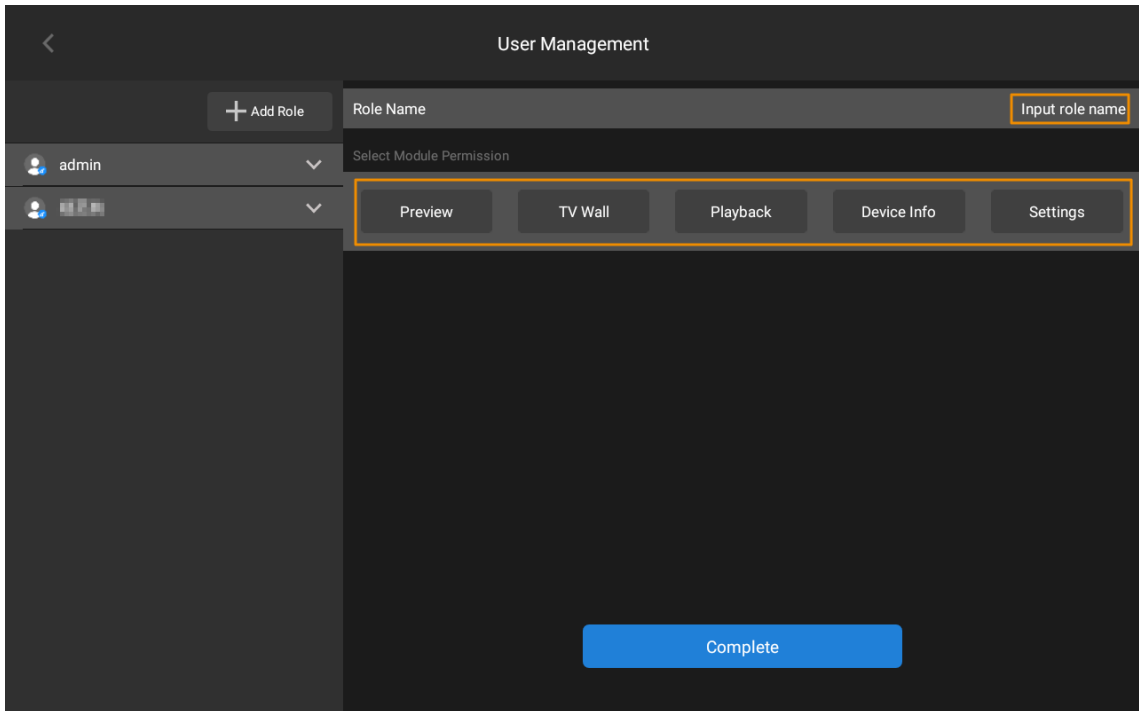
You can add roles, and then add users to the roles.

### Procedure

**Step 1** Log in to the keyboard, and then tap **User Management**.


**Step 2** Tap **Add Role**, enter the role name and assign permissions.

Figure 4-3 Add role



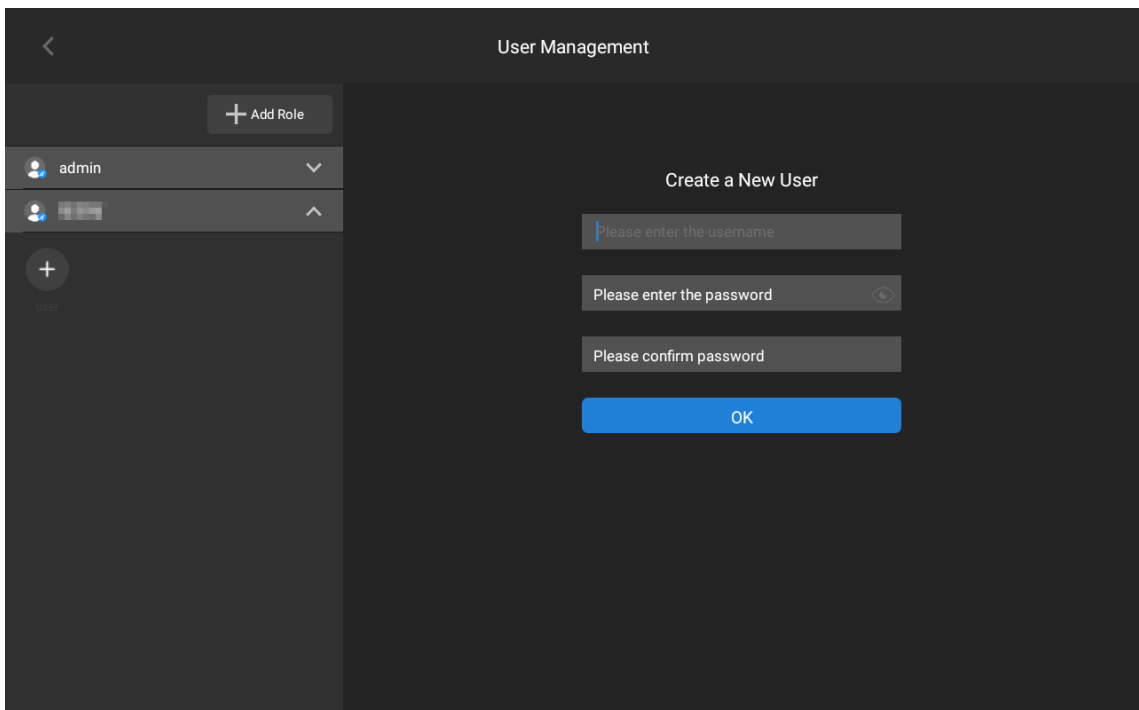
**Step 3** Tap **Complete**.

Repeat the steps to create more roles.



**Step 4** Select a role, tap , and then tap  to add users.

**Step 5** Enter the username, password and confirm the password, and then tap **OK**.

Figure 4-4 Add users



## Related Operations

- Press and hold the user name, tap  to delete user, and then tap **Complete**.
- Press and hold the role name, tap  to delete roles, and then tap **Complete**



When there is no users account under roles account, the role accounts can be deleted.

## 4.6 Settings

### 4.6.1 Configuring Wired Network

Configure the wired network. For details, see "3.3.1 Connecting to Wired Network".

### 4.6.2 Configuring Wi-Fi

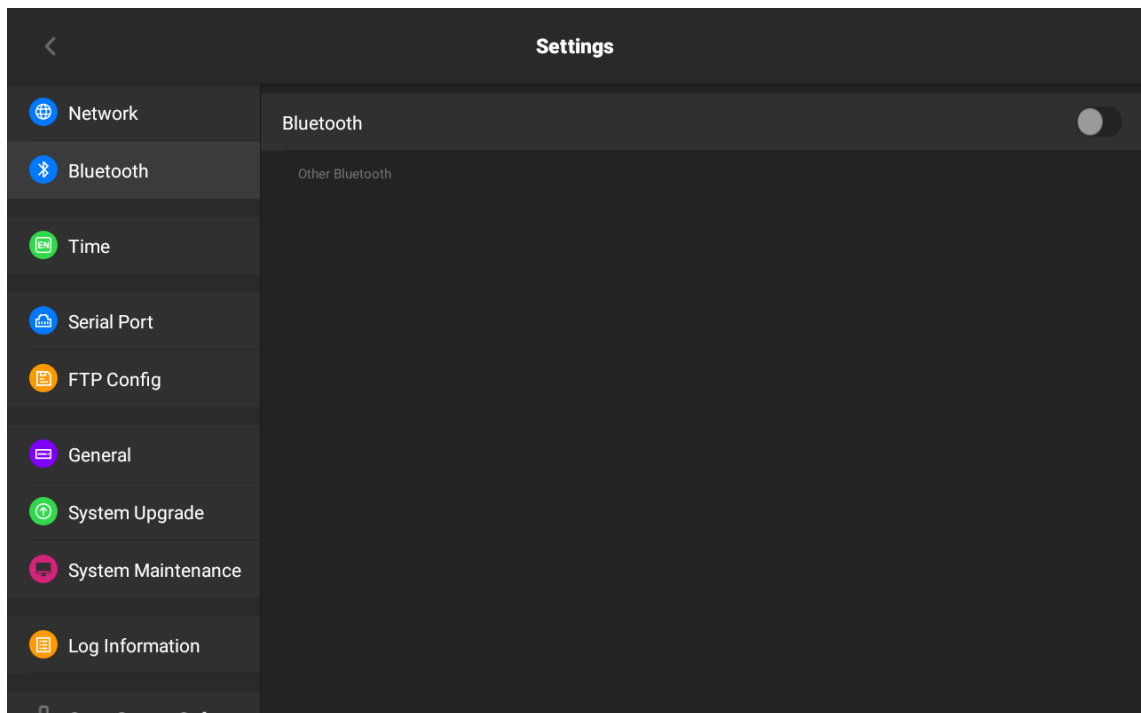
Configure Wi-Fi. For details, see "3.3.2 Connecting to Wi-Fi".

### 4.6.3 Bluetooth

#### Procedure

Step 1 On the Settings page, tap **Bluetooth**.

Figure 4-5 Bluetooth



Step 2 Tap  to enable Bluetooth and search for nearby key module.

Step 3 Tap the key module twice, and then the system displays **Connecting**.

Step 4 Wait for a few seconds, and then the system displays **Connected**.

## 4.6.4 Configuring Date and Time

### Configuring Time

1. Select **Setting** > **Time** > **time** to configure the time of the keyboard.
2. Click **OK**.

### Configuring Date

1. Select **Setting** > **Time** > **date** to configure the date of the keyboard.
2. Click **OK**.

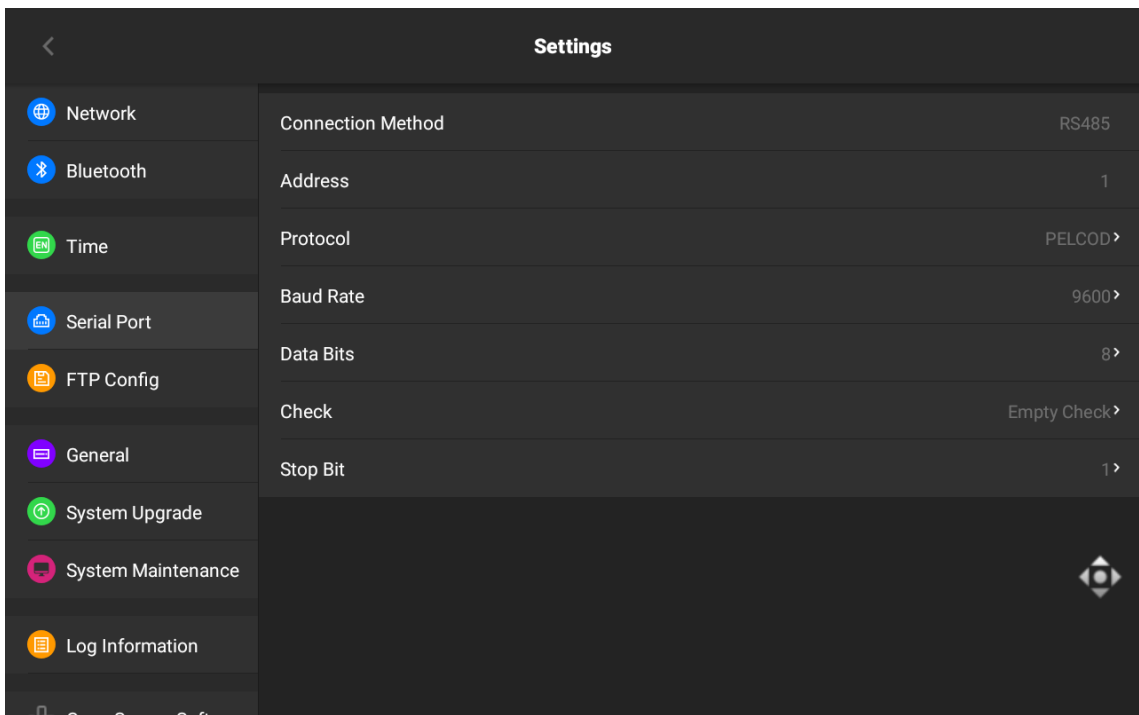
## 4.6.5 Configuring Serial Port

Configure the serial port in order to enable the communication between devices and the screen.

### Procedure


- Step 1 Select **Settings** > **Serial port**.

Figure 4-6 Serial port configuration



- Step 2 Configure serial port parameters.

Table 4-3 Description of serial port parameters

| Parameter   | Description   |
|---|---|
|  | PTZ control.  |
| Address   | If the device is controlled by serial port, the system identifies the device address. Value ranges from 0 to 255. |
| Protocol  | Select a protocol according to actual situation.  |
| Baud Rate   | Date transmitting speed. Baud rate ranges from 1,200 through 115,200. There are 8 levels available.               |



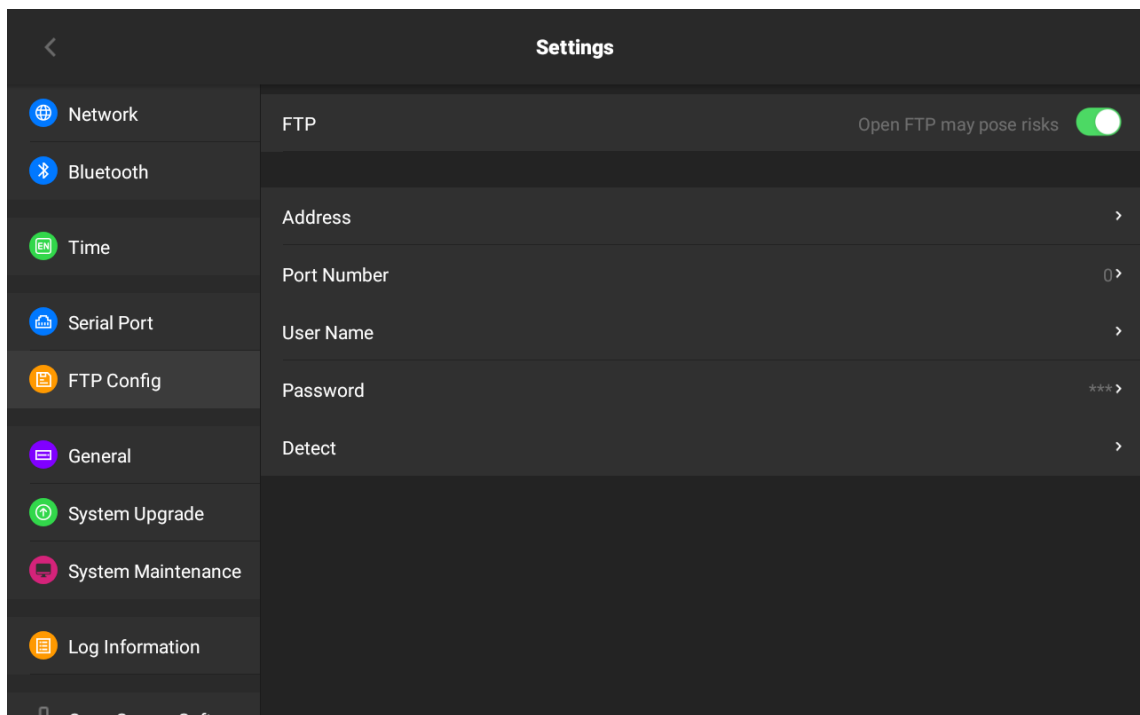
| Parameter | Description   |
|-----------|---|
| Data Bits | The length of the data content. Select data bit, including 5, 6, 7 and 8.   |
| Stop Bit  | Select stop bit, including 1 and 2.   |
| Check     | Detects whether the data is correct. You can select parity. None, odd, even, checkmark and null parity are available. |

## 4.6.6 Configuring FTP

### Procedure

**Step 1** Select **Settings > FTP Config**.

Figure 4-7 FTP



**Step 2** Tap  to enable FTP.

**Step 3** Configure the parameters of FTP.

Table 4-4 FTP parameters

| Parameter   | Description  |
|-------------|--|
| IP Address  | The address of FTP.  |
| Port number | The port number of FTP.  |
| User name   | Enter the username.  |
| password    | Enter the password of FTP.                                     |
| detect      | Detect whether the keyboard has connected to FTP successfully. |

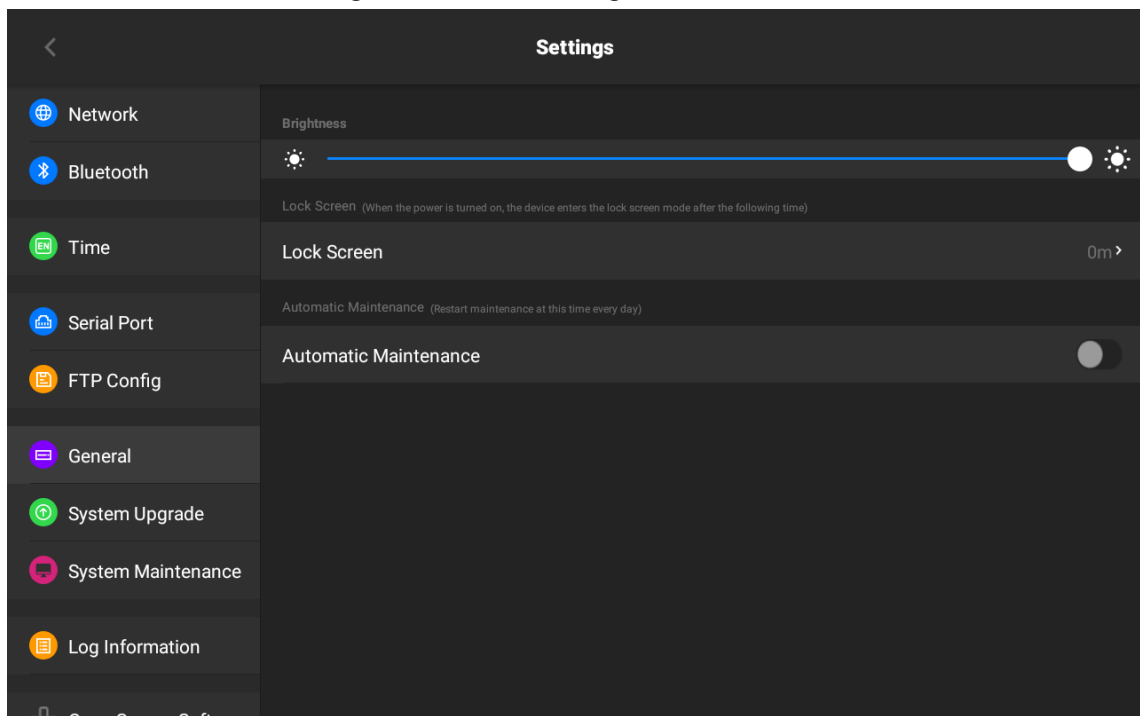
## 4.6.7 General Configuration

You can configure the brightness, screen lock time and automatic maintenance time.

### Procedure

- Step 1 Select **Settings** > **General**.
- Step 2 Adjust brightness, configure the screen lock time.
- Step 3 Tap , configure the automatic maintenance time, and then tap **OK**.

Figure 4-8 General configuration

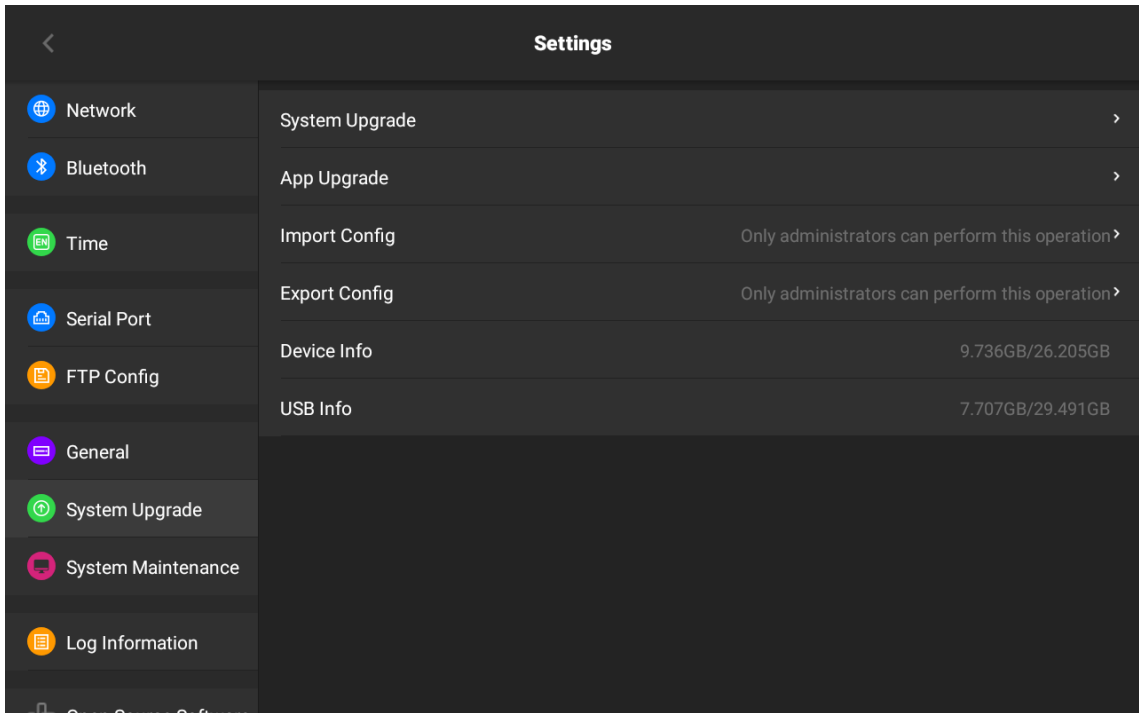


## 4.6.8 System Upgrade

Upgrade the system by system upgrade package

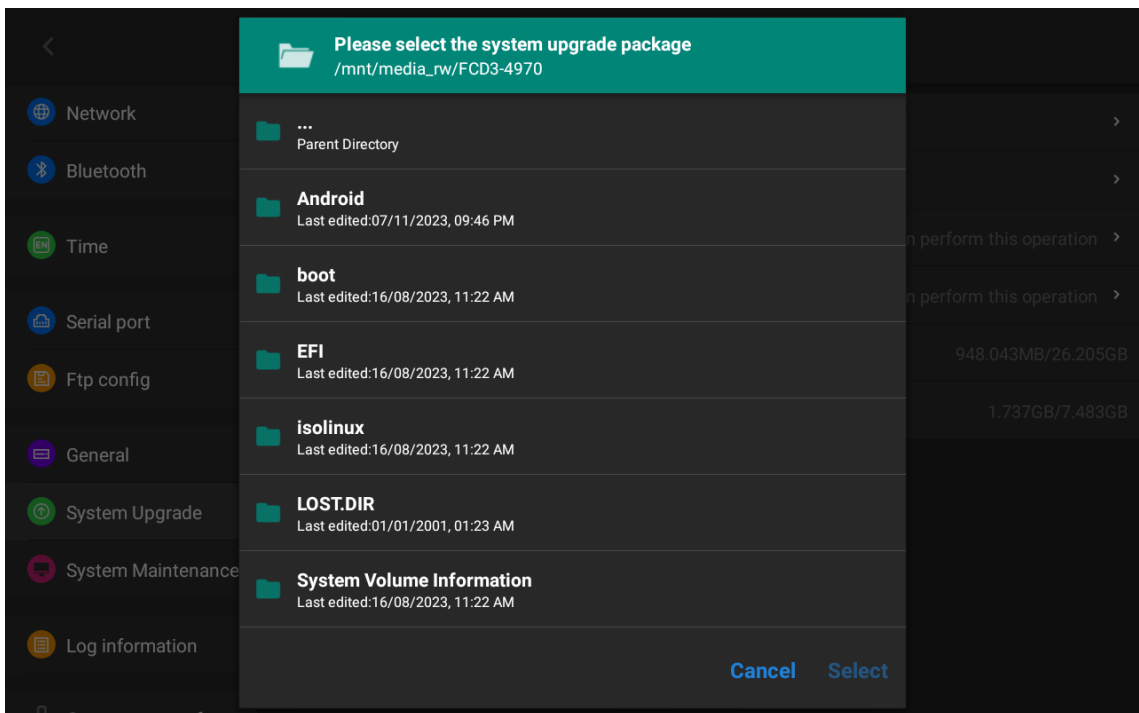
1. On the **Settings** page, tap **System Upgrade**.

Figure 4-9 System upgrade



2. Tap **System Upgrade**, and then select a system upgrade file.

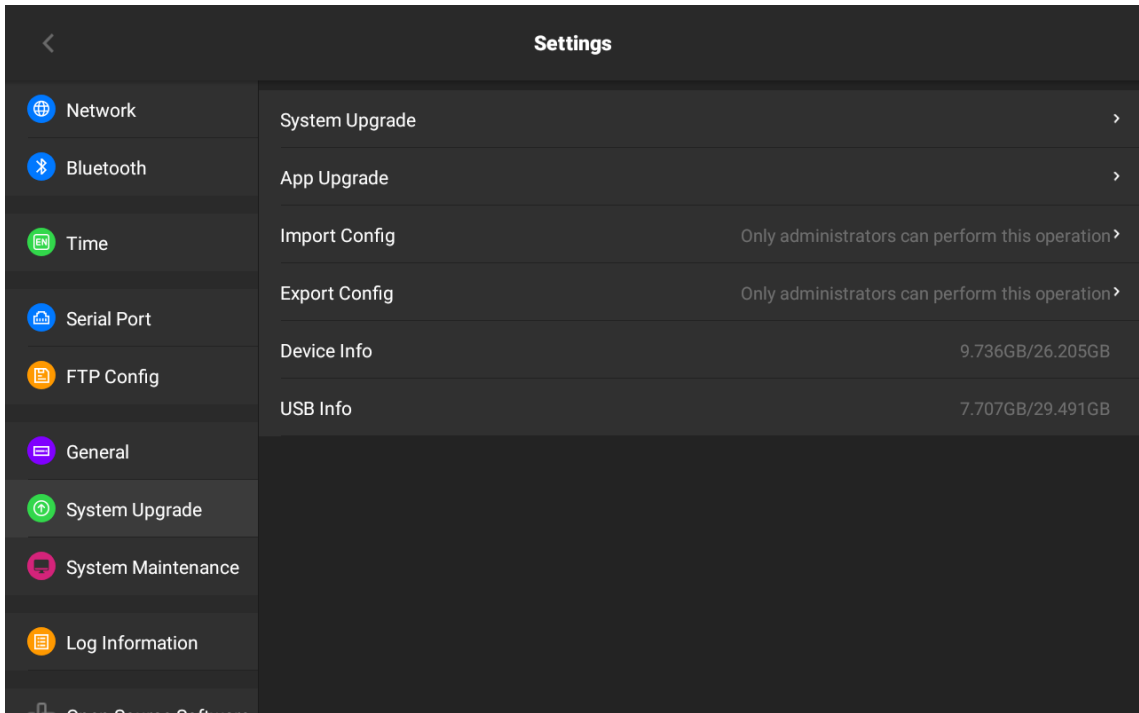
Figure 4-10 Upgrade by system files



## Upgrade by App Package

1. On the **Settings** page, tap **System Upgrade**.

Figure 4-11 System upgrade

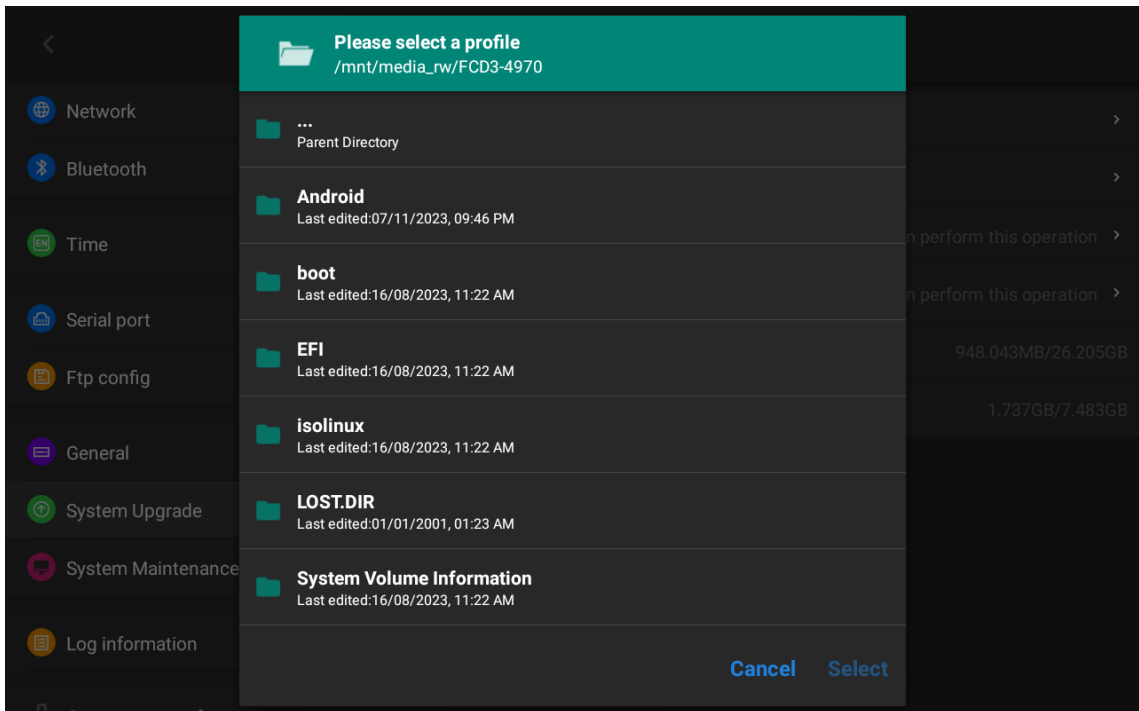


2. Tap **App Upgrade**, and then select the upgrade file.



The App package will not be provided separately.

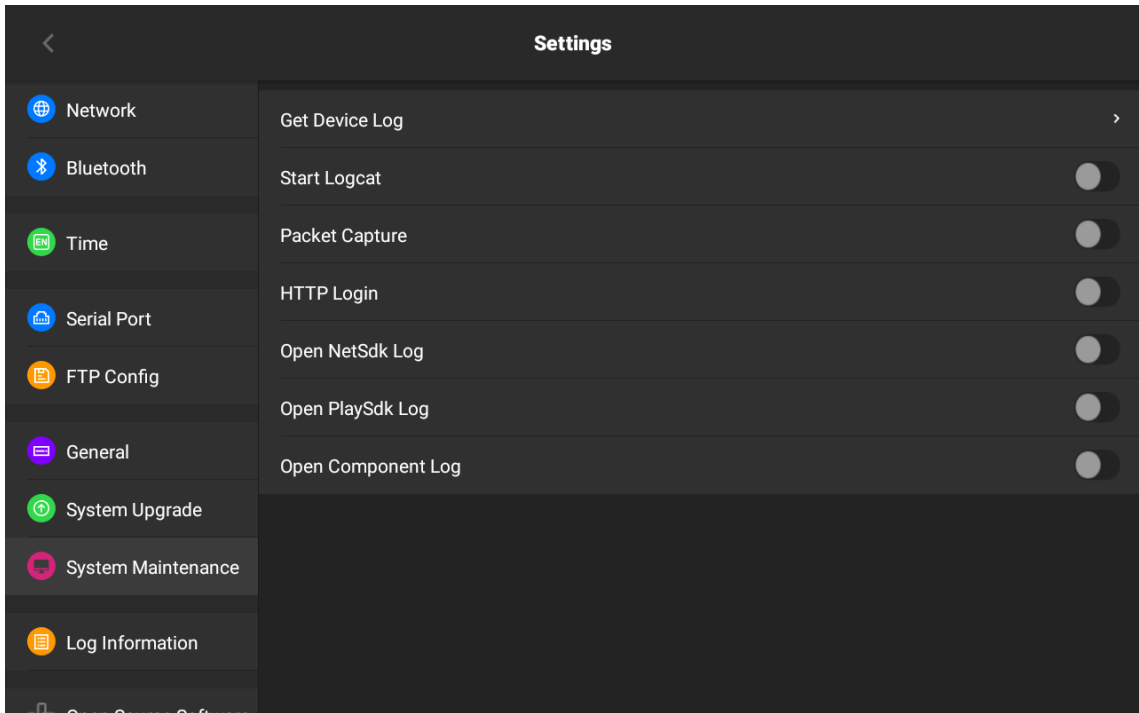
Figure 4-12 App upgrade



## 4.6.9 System Maintenance

1. On the **Settings** page, tap **System Maintenance**.

Figure 4-13 System maintenance



2. Tap  to acquire different types of log according to your needs.

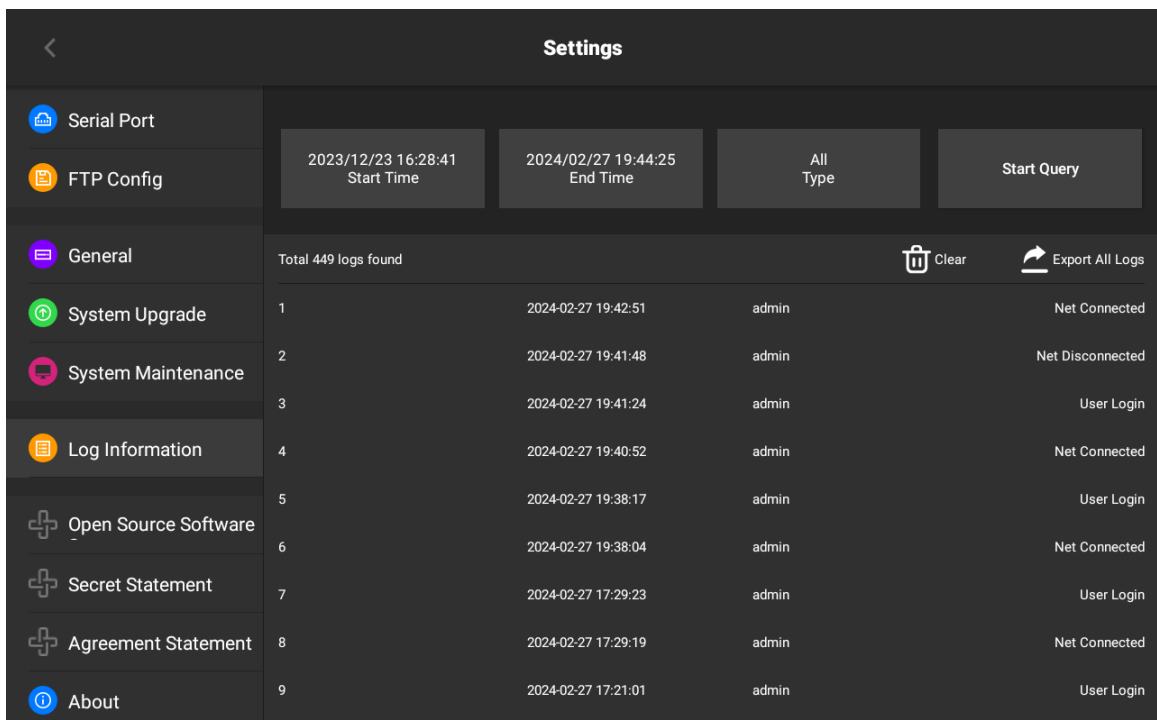
## 4.6.10 Log Information

View the device log information.

### Procedure

- Step 1 On the **Settings** page, tap **Log Information**.
- Step 2 Configure start time, end time, type, and then tap **Start Query**.

Figure 4-14 Log information



## Related Operations

- Tap **Clear** to clear log information.
- Tap **Export All Logs** to export all logs.

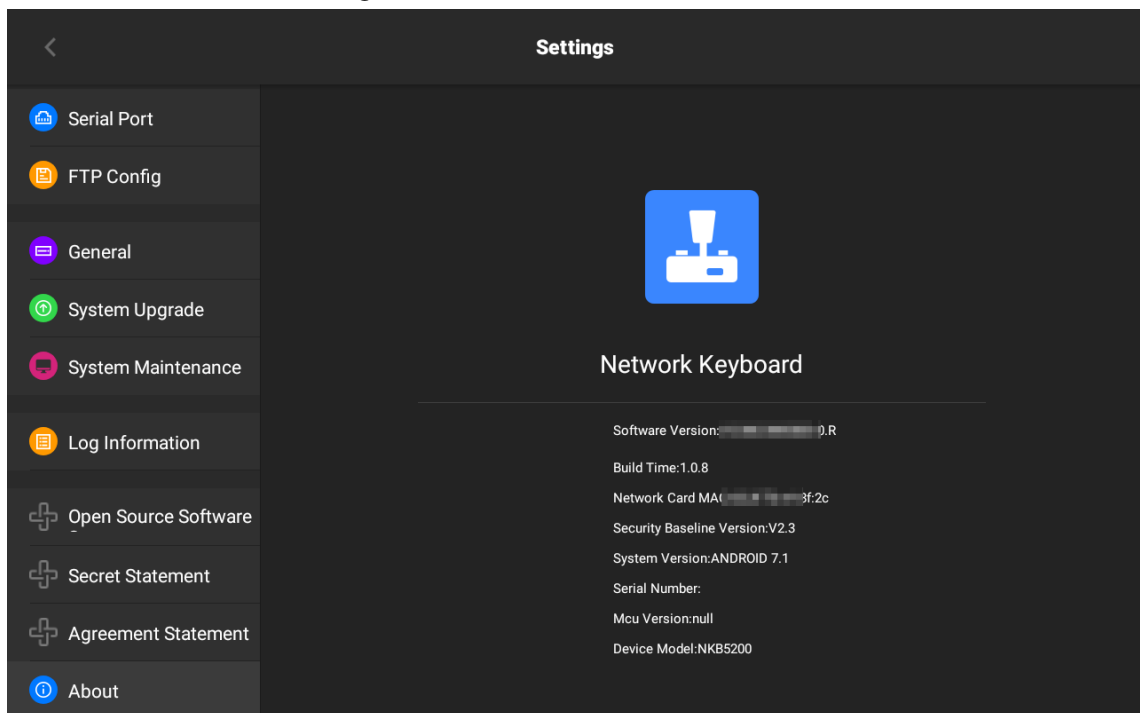
### 4.6.11 Open Source Agreement

Select **Setting** > **Open Source Agreement** to view the open source agreement.

### 4.6.12 Device Information

Select **Settings** > **About** to view the device information.

Figure 4-15 Device information



## 4.7 Other Functions

Introduces the function of control ID and keyboard code.

### 4.7.1 Keyboard Code

The keyboard code is generally used together with the video wall or preview function of the platform. If the virtual keyboard or key module is used to control the corresponding channel signal on the wall or preview the corresponding channel video, the keyboard code corresponding to the channel must be configured on the platform first. For details, see the corresponding platform user's manual.

## 4.7.2 Control ID

When using the video wall or preview function, use the virtual keyboard or key module to control the corresponding channel signal on wall or preview the corresponding channel video, you need to configure the corresponding channel control ID on the decoder first. For details, see the corresponding decoder instruction manual.

Preview the signal channel of the directly connected device with the virtual keyboard or key module. On the device management page, click the drop-down arrow on the left of the device name to obtain the signal.

# Appendix 1 Security Recommendation

## Account Management

### 1. Use complex passwords

Please refer to the following suggestions to set passwords:

- The length should not be less than 8 characters;
- Include at least two types of characters: upper and lower case letters, numbers and symbols;
- Do not contain the account name or the account name in reverse order;
- Do not use continuous characters, such as 123, abc, etc.;
- Do not use repeating characters, such as 111, aaa, etc.

### 2. Change passwords periodically

It is recommended to periodically change the device password to reduce the risk of being guessed or cracked.

### 3. Allocate accounts and permissions appropriately

Appropriately add users based on service and management requirements and assign minimum permission sets to users.

### 4. Enable account lockout function

The account lockout function is enabled by default. You are advised to keep it enabled to protect account security. After multiple failed password attempts, the corresponding account and source IP address will be locked.

### 5. Set and update password reset information in a timely manner

The device supports password reset function. To reduce the risk of this function being used by threat actors, if there is any change in the information, please modify it in time. When setting security questions, it is recommended not to use easily guessed answers.

## Service Configuration

### 1. Enable HTTPS

It is recommended that you enable HTTPS to access web services through secure channels.

### 2. Encrypted transmission of audio and video

If your audio and video data contents are very important or sensitive, it is recommended to use encrypted transmission function in order to reduce the risk of your audio and video data being eavesdropped during transmission.

### 3. Turn off non-essential services and use safe mode

If not needed, it is recommended to turn off some services such as SSH, SNMP, SMTP, UPnP, AP hotspot etc., to reduce the attack surfaces.

If necessary, it is highly recommended to choose safe modes, including but not limited to the following services:

- SNMP: Choose SNMP v3, and set up strong encryption and authentication passwords.
- SMTP: Choose TLS to access mailbox server.
- FTP: Choose SFTP, and set up complex passwords.
- AP hotspot: Choose WPA2-PSK encryption mode, and set up complex passwords.

### 4. Change HTTP and other default service ports



It is recommended that you change the default port of HTTP and other services to any port between 1024 and 65535 to reduce the risk of being guessed by threat actors.

## Network Configuration

### 1. **Enable Allow list**

It is recommended that you turn on the allow list function, and only allow IP in the allow list to access the device. Therefore, please be sure to add your computer IP address and supporting device IP address to the allow list.

### 2. **MAC address binding**

It is recommended that you bind the IP address of the gateway to the MAC address on the device to reduce the risk of ARP spoofing.

### 3. **Build a secure network environment**

In order to better ensure the security of devices and reduce potential cyber risks, the following are recommended:

- Disable the port mapping function of the router to avoid direct access to the intranet devices from external network;
- According to the actual network needs, partition the network: if there is no communication demand between the two subnets, it is recommended to use VLAN, gateway and other methods to partition the network to achieve network isolation;
- Establish 802.1x access authentication system to reduce the risk of illegal terminal access to the private network.

## Security Auditing

### 1. **Check online users**

It is recommended to check online users regularly to identify illegal users.

### 2. **Check device log**

By viewing logs, you can learn about the IP addresses that attempt to log in to the device and key operations of the logged users.

### 3. **Configure network log**

Due to the limited storage capacity of devices, the stored log is limited. If you need to save the log for a long time, it is recommended to enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

## Software Security

### 1. **Update firmware in time**

According to the industry standard operating specifications, the firmware of devices needs to be updated to the latest version in time in order to ensure that the device has the latest functions and security. If the device is connected to the public network, it is recommended to enable the online upgrade automatic detection function, so as to obtain the firmware update information released by the manufacturer in a timely manner.

### 2. **Update client software in time**

It is recommended to download and use the latest client software.

## Physical Protection

It is recommended that you carry out physical protection for devices (especially storage devices), such as placing the device in a dedicated machine room and cabinet, and having access control and

key management in place to prevent unauthorized personnel from damaging hardware and other peripheral equipment (e.g. USB flash disk, serial port).