

TU4K Pro

LED Playback Control Processor



User Manual

Change History

Document Version	Release Date	Description
V1.0.1	2025-02-20	Updated the sensor description.
V1.0.0	2025-02-07	First release

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1 Introduction

This document introduces the operating method of the TU4K Pro LED playback control processor to help users quickly get started.

The TU4K Pro is an LED playback control processor specially designed by Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar) for LED screen applications. It integrates the Android system, sending card and video processing functions into one unit, and allows third-party apps to run on it, featuring powerful interaction, display and playback control capabilities.

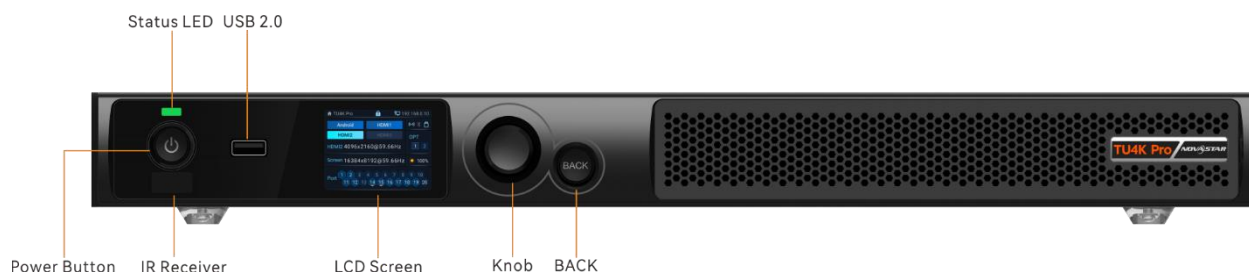
The TU4K Pro supports a maximum load capacity of 13 million pixels and offers convenient LED screen control via the front panel LCD or a remote control. It also supports wireless screen mirroring across multiple platforms including Windows, macOS, iOS, and Android. To cater to different application scenarios, the TU4K Pro features advanced image processing capabilities and provides 4 modes to let the document presentation, video playback and remote meetings have the optimal display effect.

In addition, The TU4K Pro can be controlled from ViPlex Handy and VNNOX Care apps.

- With ViPlex Handy, you can effortlessly perform wireless screen mirroring, program editing and publishing, and screen control. For related operations, see *ViPlex Handy User Manual*.
- With VNNOX Care app, you can easily perform screen configuration, screen topology and automatic screen configuration backup. You can also complete screen topology mapping by taking photos and gain access to features like cloud module and seam correction. For related operations, see *VNNOX Care App User Manual*.

2 Appearance

2.1 Front Panel

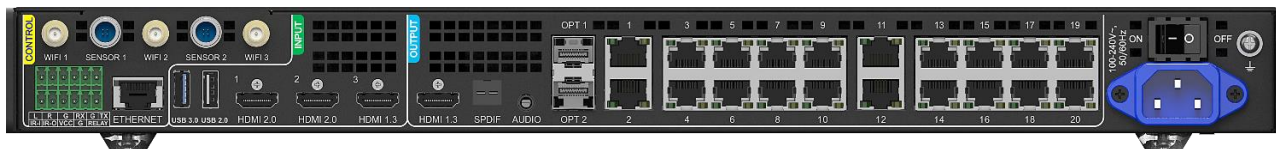


Name	Description
USB 2.0	• Support a mouse, keyboard, camera, speaker and other common USB devices. • Can be used for USB playback, firmware update and exporting logs.
Status LED	• Solid red: Powered off • Solid green: Functioning normally/Standby • Off: No power supply
Power Button	• Press the button to start up/shut down the device or put it on standby. • Hold down the button to restart the device.
IR Receiver	Receive the infrared signal from the remote.
LCD screen	A 2.0-inch screen with a resolution of 320×240 pixels that displays the device status, menus, submenus and messages for parameter settings
Knob	• On the home screen, press the knob to enter the main menu screen. • On the main menu screen, rotate the knob to select a menu item or adjust the parameter value. Press the knob to confirm the operation. • Hold down the knob and BACK button simultaneously for 5s or longer to lock or unlock the buttons.
BACK	Press the button to go back to the previous menu or cancel the current operation.

Note

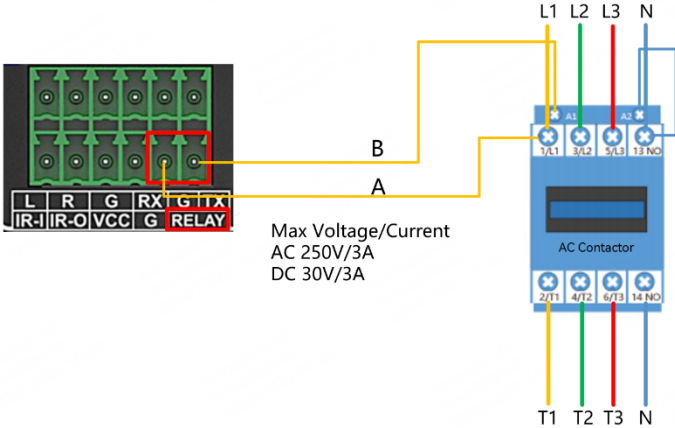
To cancel the shutdown, press the power button or the **BACK** button.

2.2 Rear Panel



Input		
Connector	Qty	Description
HDMI 1.3	1	• Max resolution: 1920×1080@60Hz • Min resolution: 800×600@60Hz • Custom resolutions supported - Max width: 3840 pixels (3840×600@60Hz). - Max height: 2560 pixels (800×2560@60Hz) • Accepts 8-bit and 10-bit input sources. • YCbCr and RGB color space settings supported • Interlaced signal not supported • HDCP 1.4 compliant • Embedded audio supported
HDMI 2.0	2	• Max resolution: 4096×2160@60Hz/8192×1080@60Hz (forced) • Min resolution: 800×600@60Hz • Custom resolutions supported - Max width (forced): 8192 (8192×1080@60Hz) - Max height (forced): 8192 (1080×8192@60Hz) • Accepts 8-bit and 10-bit input sources. • YCbCr and RGB color space settings supported • Interlaced signal not supported • HDCP 1.4 and HDCP 2.2 compliant • Embedded audio supported • eARC audio supported by HDMI 2.0-1
USB 3.0	1	• Support a mouse, keyboard, camera, speaker and other common USB devices.
USB 2.0	1	

		• Can be used for USB playback, firmware update and exporting logs. • Supported image formats: *.jpg, *.jpeg, *.bmp, *.png, *.gif • Supported video formats: *.mp4, *.mkv, *.ts, *.mov, *.avi, *.m4v, *.flv, *.vob, *.webm, *.mpg • Supported file systems: FAT32, NTFS, exFAT, FAT16
Output		
Type	Qty	Description
1~20	20	RJ45 (1Gps)
OPT 1~2	2	10G OPT outputs • Both OPT ports work as primary outputs and cannot be used for loop backup of the Ethernet ports. • OPT 1 outputs the data of Ethernet ports 1 to 10 and OPT 2 outputs the data of Ethernet ports 11 to 20. • Supports both single-mode and multi-mode fiber cables and can work with fiber converters.
AUDIO	1	3.5-mm audio output Note: 3-conductor audio connectors are supported.
SPDIF	1	For digital fiber optic audio output
HDMI 1.3	1	Output monitoring for device debugging
Controls (CONTROL area)		
Type	Qty	Description
ETHERNET	1	Max bandwidth: 1 Gbps Connect to an external network or control software.
WIFI 1~2	2	Connect to Wi-Fi AP and Bluetooth antennas.
WIFI 3	1	Connect to a Wi-Fi Sta antenna.
SENSOR 1~2	2	Connect to light sensors or temperature and humidity sensors.
Phoenix connector (12 pins)	1	• 1x L: Left channel of output audio • 1x R: Right channel of output audio • 1x GND: Grounding • 1x RS232 for connecting to the central control device - Baud rate: 115200bps - Data bits: 8, stop bits: 1, no parity, no flow control

		• 1x IR-I: Infrared input • 1x IR-O: Infrared output • 1x VCC: 3.3 V power supply • 1x GND: Grounding • 1x RELAY - Connect to a relay to control external power supply. - Voltage: DC 30V, 3A / AC 250V, 3A  A, B: Relay switch signals The above wiring diagram is only for illustration purpose. For actual applications, please refer to the relevant AC contactor manual.
Power		
Connector	Qty	Description
100-240V~, 50/60Hz, 2.5A Max	1	An AC power input connector and switch

3 LCD Menu Operations

3.1 Menu Introduction

3.1.1 Instructions

Step 1 Upon startup, instructions are displayed on the LCD panel. Rotate the knob to select a language and press the knob to confirm your selection.

Simplified Chinese, Traditional Chinese, English, Japanese, Russian, Korean, Portuguese, Spanish, and Italian are available.

Figure 3-1 Select a language



Step 2 Select **Next** and connect to the hotspot of the device. Upon successful connection, select **OK** and press the knob to confirm your selection.

Figure 3-2 Hotspot connection



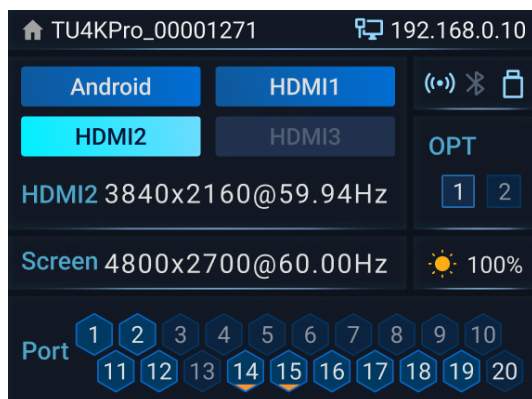
Note

You can connect to the hotspot by entering the name and password of the hotspot, or use your phone to scan the QR code on the right to quickly connect to the hotspot.

3.1.2 Home Screen

Upon successful hotspot connection, the home screen appears on the LCD panel and the device information is displayed.

Figure 3-3 Home screen



The home screen shown in [Figure 3-3](#) is illustrated in [Table 3-1](#).

Table 3-1 Home screen description

Section	Content	Description
First row	TU4KPro	Device name
		Device button lock status • The icon is displayed: Buttons are locked.  • The icon is not displayed: Buttons are unlocked. Press and hold the knob and the BACK button for 5s or longer to lock or unlock the buttons.
		Display status • : Frozen • : Black screen • No icon displayed: The above functions are not enabled.
		Network status • : A wired network is connected.

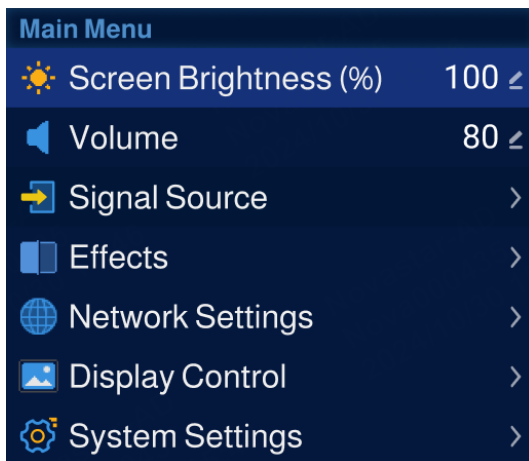
Section	Content	Description
		: A Wi-Fi network is connected. : No network is connected. Note: When both a wired network and a Wi-Fi network are connected, the wired network connection is displayed.
	198.168.0.10	IP address of the device
Signal source	Android, HDMI1, HDMI2, HDMI3	Input source type and status : Accessed but not in use : Accessed and in use : Not accessed
HDMI2	3840×2160@59.94Hz	Resolution and frame rate of the signal source in use
Screen	4800×2700@60.00Hz	Resolution and frame rate of the screen
Port	1~20	Connection status of each Ethernet output port : Connected : Not connected and backup port in use : Not connected
Right side		Hotspot status - Blue: On - Gray: Off
		Bluetooth status - Blue: On - Gray: Off
		USB port status - Blue: A USB drive is inserted. - Gray: No USB drive is inserted
	OPT 1~2	OPT port connection status - Blue: Connected - Gray: Not connected

Section	Content	Description
		Screen brightness For related operations, see 3.2.1 Adjust Brightness .

3.1.3 Main Menu

On the home screen, press the knob to access the main menu shown in [Figure 3-4](#).

Figure 3-4 Main menu



3.2 Set Output Parameters

3.2.1 Adjust Brightness

- Step 1 From the main menu, select **Screen Brightness (%)** and press the knob to make the brightness editable.
- Step 2 Rotate the knob to adjust the brightness to the desired level and then press the knob to complete the adjustment.

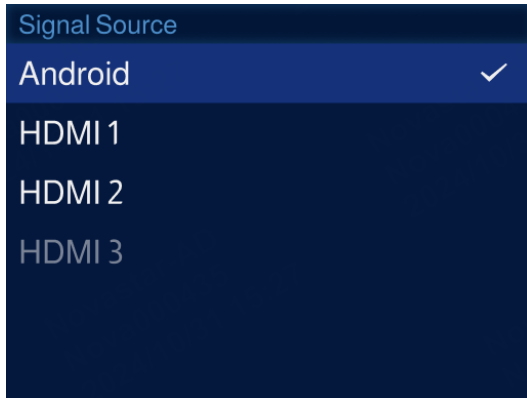
3.2.2 Adjust Volume

- Step 1 From the main menu, select **Volume** and press the knob to make volume editable.
- Step 2 Rotate the knob to adjust the volume to the desired value and then press the knob to complete the adjustment.

3.3 Signal Source

- Step 1 From the main menu, select **Signal Source** and press the knob.
- Step 2 Select a signal source (Android, HDMI 1, HDMI 2 or HDMI 3). Press the knob after a signal source is selected.

Figure 3-5 Signal source selection



Notes:

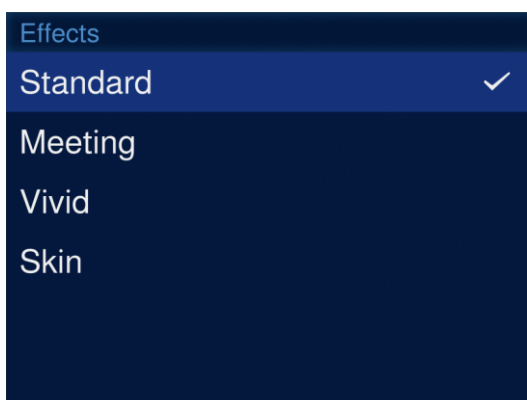
- If a signal source is highlighted and ✓ is displayed next to it, it indicates that this signal source is in use.
 - If a signal source is highlighted but ✓ is not displayed next to it, it indicates that this signal source is connected but not in use.
 - If a signal source is grayed out, it indicates that this signal source is not connected.
 - When HDMI 1 and Android are in use simultaneously, ✓ is displayed only next to Android.
-

3.4 Effects

Step 1 From the main menu, select **Effects** and press the knob.

Step 2 The effects include standard, meeting, vivid and skin. Select an effect as required and press the knob to confirm your selection.

Figure 3-6 Effect selection



3.5 Network Settings

3.5.1 Wired Network

Configure a static IP address for the device, or set the device to automatically obtain an IP address.

Step 1 From the main menu, select **Network Settings > Wired** and press the knob.

Step 2 Select **Configuration** and select a value from the drop-down options.

- Manual: Configure a static IP address for the device.
- Auto: Set the device to automatically obtain an IP address.

Figure 3-7 Manual network configuration

The screenshot shows a dark-themed interface for 'Wired' network settings. At the top, 'Wired' is written in light blue. Below it, a header bar contains 'Configuration' and 'Manual' with a downward arrow. The main area lists four fields: 'IP Address' with value '192 . 168 . 0 . 10', 'Subnet Mask' with '255 . 255 . 255 . 0', 'Default Gateway' with '192 . 168 . 0 . 1', and 'DNS' with '192 . 168 . 0 . 1'. Each value has a small edit icon to its right. At the bottom center is a blue 'Apply' button.

Configuration	Manual
IP Address	192 . 168 . 0 . 10
Subnet Mask	255 . 255 . 255 . 0
Default Gateway	192 . 168 . 0 . 1
DNS	192 . 168 . 0 . 1

Apply

Figure 3-8 Automatic network configuration

The screenshot shows a dark-themed interface for 'Wired' network settings. At the top, 'Wired' is written in light blue. Below it, a header bar contains 'Configuration' and 'Auto' with a downward arrow. The main area lists three fields: 'IP Address' with value '192.168.0.10', 'Subnet Mask' with '255.255.255.0', and 'Default Gateway' with '192.168.0.1'. At the bottom center is a blue 'Apply' button.

Configuration	Auto
IP Address	192.168.0.10
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1

Apply

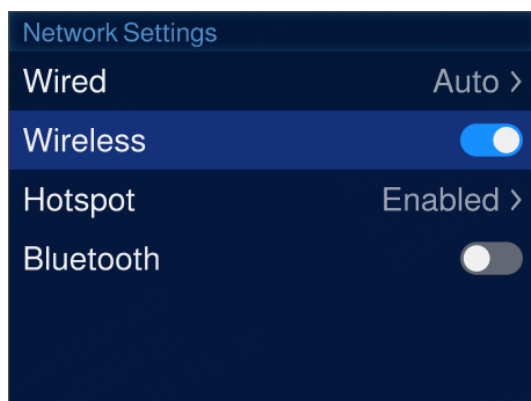
Step 3 If **Manual** is selected, specify a correct **IP Address**, **Subnet Mask**, **Default Gateway** and **DNS**, then select **Apply**. If **Auto** is selected, this step is not required.

3.5.2 Wireless Network

Step 1 From the main menu, select **Network Settings > Wireless** and press the knob.

Step 2 Turn on **Wireless** (.

Figure 3-9 Wireless network

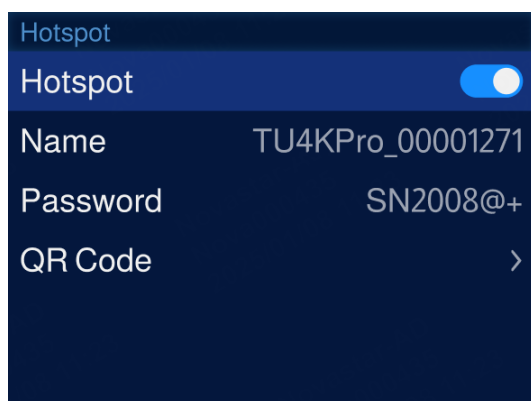


3.5.3 Hotspot

Step 1 From the main menu, select **Network Settings** > **Hotspot** and press the knob.

Step 2 Turn on **Hotspot** ().

Figure 3-10 Hotspot



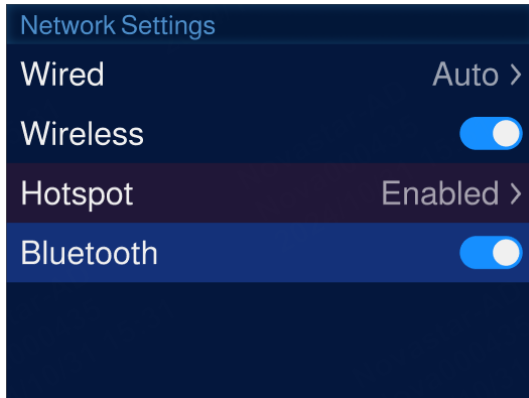
Step 3 Select **QR Code** and press the knob to display the QR code.

3.5.4 Bluetooth

Step 1 From the main menu, select **Network Settings** > **Bluetooth** and press the knob.

Step 2 Turn on **Bluetooth** ().

Figure 3-11 Bluetooth



3.6 Display Control

Step 1 From the main menu, select **Display Control** and press the knob.

Step 2 Select a display status as required and press the knob.

Figure 3-12 Display status selection



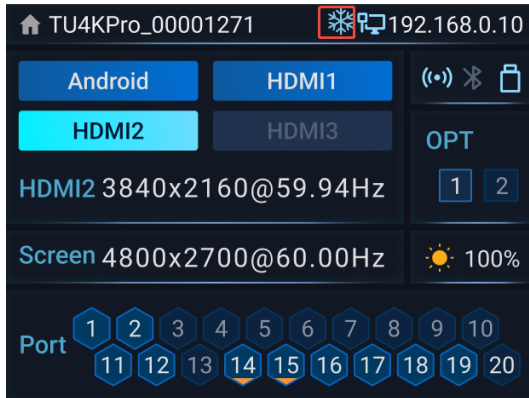
- Normal: A normal screen is displayed.
- Blackout. A black screen is displayed.

Figure 3-13 Black screen



- Freeze: The screen is frozen at the current frame.

Figure 3-14 Freeze



- **Test Pattern:** Select a test pattern to check whether the display is correct and identify issues. The **Grayscale** of the screen can be adjusted. The adjustable parameters vary depending on the test pattern type.

Figure 3-15 Test pattern

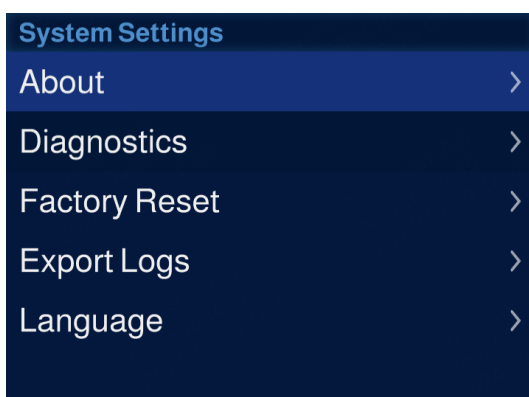


3.7 System Settings

3.7.1 About

Step 1 From the main menu, select **System Settings** > **About** and press the knob.

Figure 3-16 About



Step 2 View the version information, storage details and status of the device.

Figure 3-17 Device information

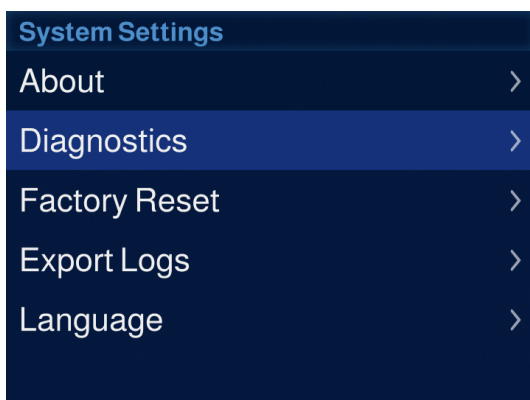


3.7.2 Diagnostics

Perform device diagnostics, and view and export the diagnostic results.

Step 1 From the main menu, select **System Settings** > **Diagnostics** and press the knob.

Figure 3-18 Diagnostics



Step 2 From the displayed dialog box, select **OK**.

After the diagnostics are completed, the results are displayed.

- Normal: The diagnostic result is normal.
- Abnormal: The diagnostic result is abnormal.

Step 3 Do any of the following as required.

- View the diagnostic results

Select **Diagnostic Result** to view the diagnostic report.

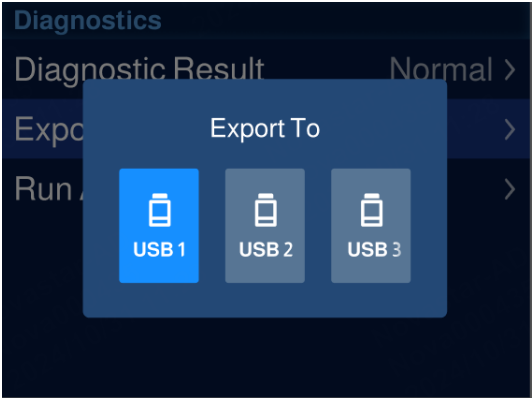
Figure 3-19 View diagnostic results

Diagnostic Result	
2024.09.12 12:39	
Diagnostic Result	Normal
Hardware Detection	Normal
Status Detection	Normal
Display Detection	Normal
Network Detection	Not detected

- Export diagnostic results.
 1. Insert a USB drive into the USB port of the device.
 2. Select Export Result.

Upon successful operation, a prompt is displayed.

Figure 3-20 Export diagnostic results



- Run diagnostics again

Select **Run Again** and then select **OK** from the displayed dialog box to run diagnostics again.

Figure 3-21 Run diagnostics again

Diagnostics	
Diagnostic Result	Abnormal >
Export Result	>
Run Again	>

Note:

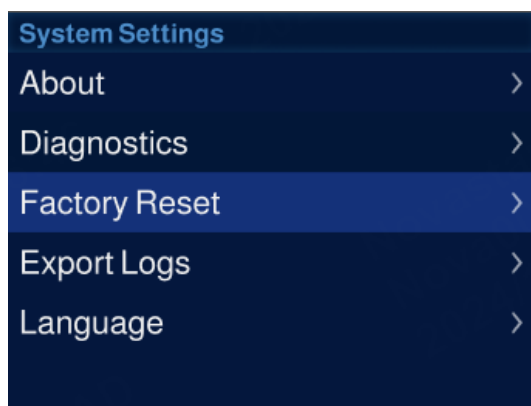
If there is not enough storage space on the USB drive or it is removed during the export process, the export will fail.

3.7.3 Factory Reset

Reset the Android operating system to its factory settings, including the removal of all installed APKs and media files.

Step 1 From the main menu, select **System Settings** > **Factory Reset** and press the knob.

Figure 3-22 Factory reset

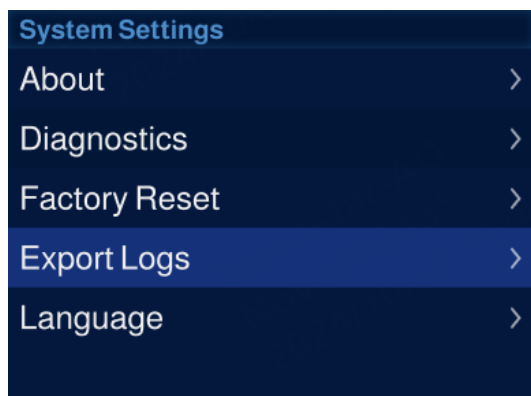


Step 2 Select **OK** from the displayed dialog box.

3.7.4 Export Logs

Step 1 Insert a USB drive, select **System Settings** > **Export Logs** from the main menu, and press the knob.

Figure 3-23 Export logs



Step 2 Select a location to save the logs and press the knob.

Step 3 After the logs are exported, **Export successful** is displayed.

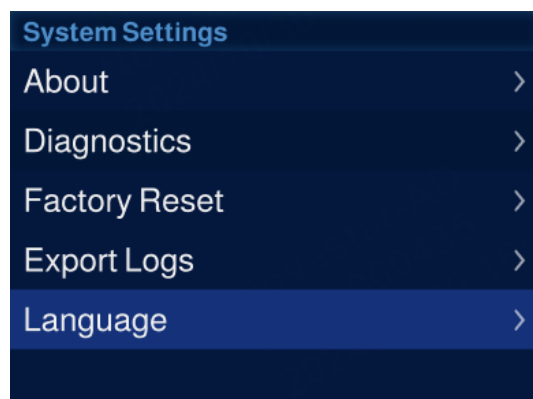
 Note:

Insufficient storage space on the USB drive will cause log export failure.

3.7.5 Language

Step 1 From the main menu, select **System Settings** > **Language** and press the knob.

Figure 3-24 Language



Step 2 Select a language. Simplified Chinese, Traditional Chinese, English, Japanese, Russian, Korean, Portuguese, Spanish, and Italian are available.

Figure 3-25 Language selection



4 Built-in System Operations

4.1 Getting Started

Do the following steps to quickly get started with the LED playback control processor.

Step 1: Set up the Hardware

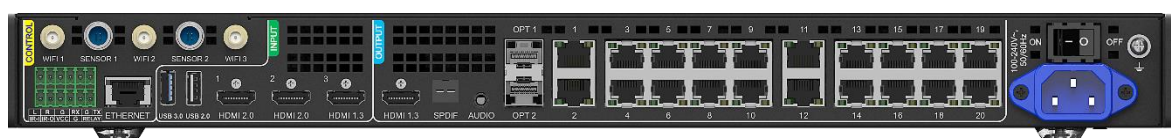
- Step 1 Open the package.
- Step 2 Prepare the accessories, such as Ethernet cable, remote, and mirroring dongle.
- Step 3 Build the hardware environment according to the following diagram. You can also connect common peripherals as needed, such as mouse, keyboard, sound system, camera and infrared touch frame.

Figure 4-1 Hardware architecture



- Step 4 Connect the Ethernet cables from the LED screen to the Ethernet output ports of TU4K Pro in the order shown below.

Figure 4-2 Rear panel – TU4K Pro (20 Ethernet ports)



Connect the power cable to power on the device.

Step 2: Install Related Apps

Search for ViPlex Handy and VNNOX Care in the app store, download and install them.

- With ViPlex Handy, you can effortlessly perform program editing, program publishing, and screen control.
- With VNNOX Care, you can easily perform screen configuration, screen topology, seam correction, and automatic screen configuration backup.

Step 3 Configure the LED Screen

Step 1 Open VNNOX Care app.

Step 2 On the **Local Config** page, tap **Quick Start** and follow the instructions to complete screen configuration.

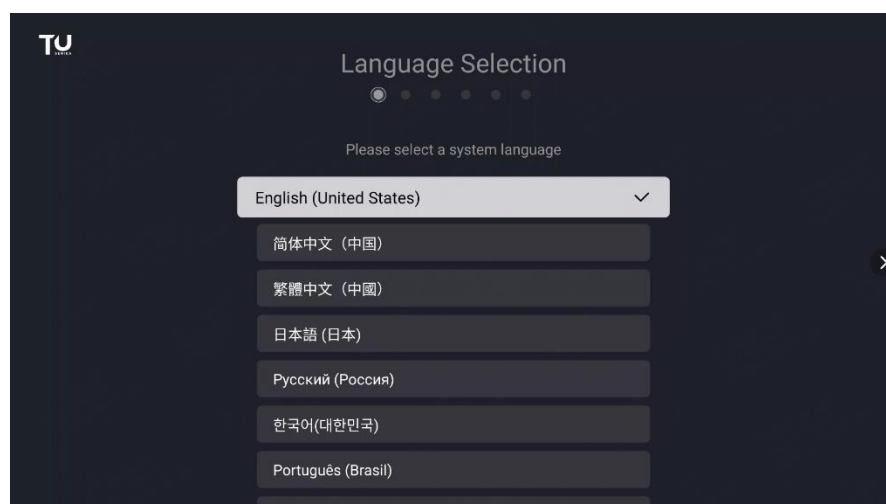
For detailed steps, tap **Profile > Help Center** to see the user manual.

Step 4 Initialize the System

For the first-time use of the LED playback control processor, do the following steps to complete the initialization settings, otherwise it will affect the publishing of programs with both internal and external sources.

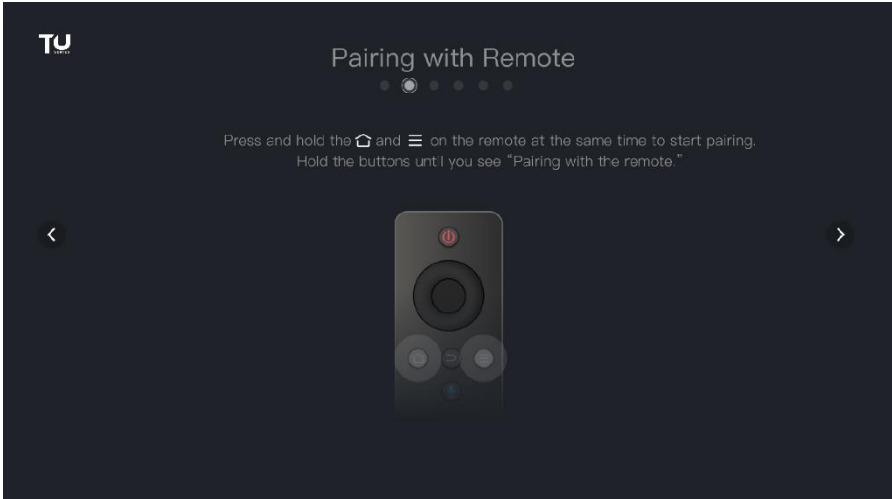
Step 1 Select a system language. English, Simplified Chinese, Traditional Chinese, Japanese, Russian, Korean, Portuguese, Spanish, and Italian are available.

Figure 4-3 Select a language



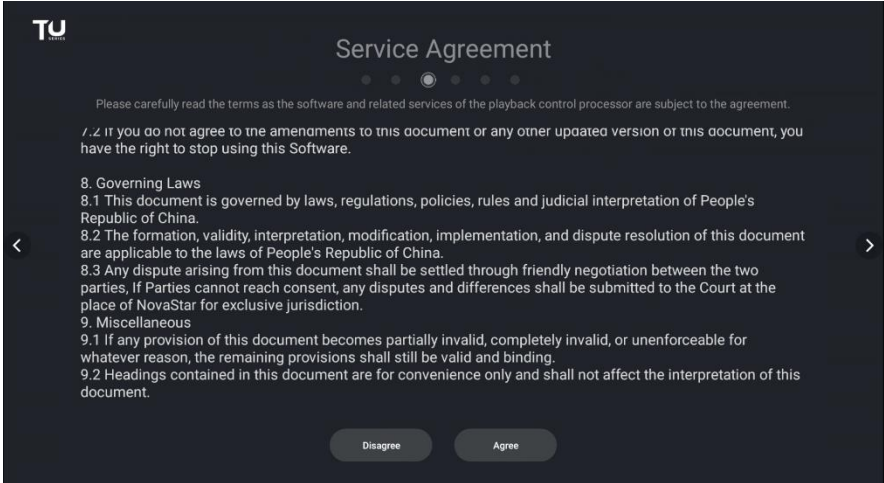
Step 2 To pair the remote using Bluetooth, point it at the device's infrared sensor. Then, simultaneously press and hold the **Home** and **Menu** buttons on the remote until the **Pairing with the remote** window appears.

Figure 4-4 Pair with the remote



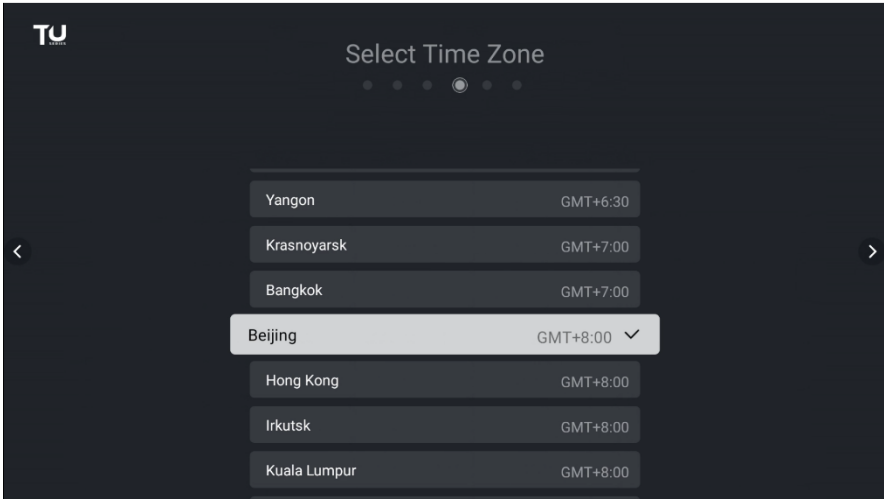
Step 3 Read and agree to the **Service Agreement**.

Figure 4-5 Service agreement



Step 4 Select a time zone.

Figure 4-6 Select a time zone

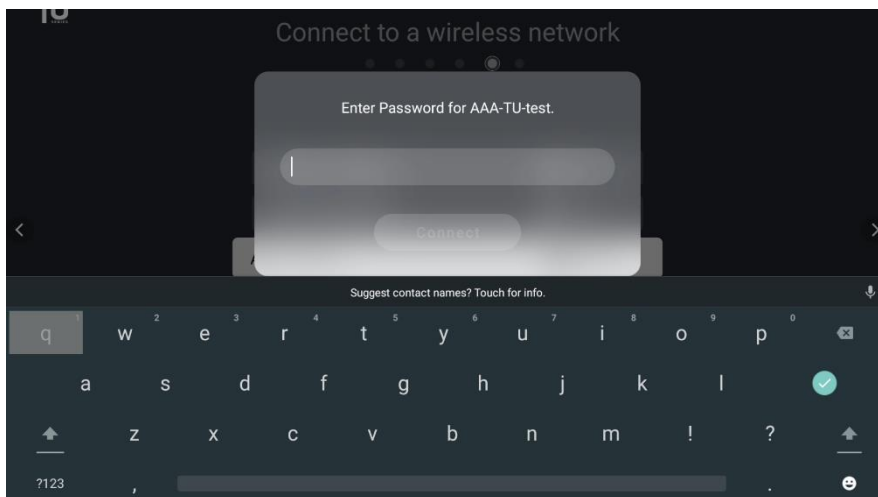


Step 5 Select the Wi-Fi network you want to connect to and enter the password. Then, select **Connect**.

Figure 4-7 Connect to a Wi-Fi network



Figure 4-8 Enter the password

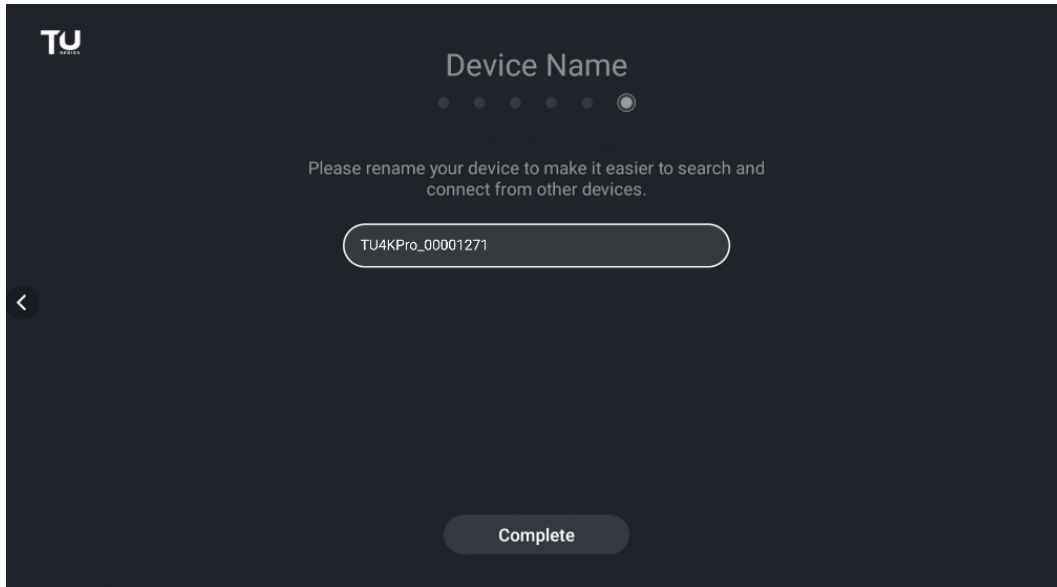


Note

The password must be at least 8 characters long.

Step 6 Rename your device to make it easier to search and connect from other devices.

Figure 4-9 Rename your device

**Note**

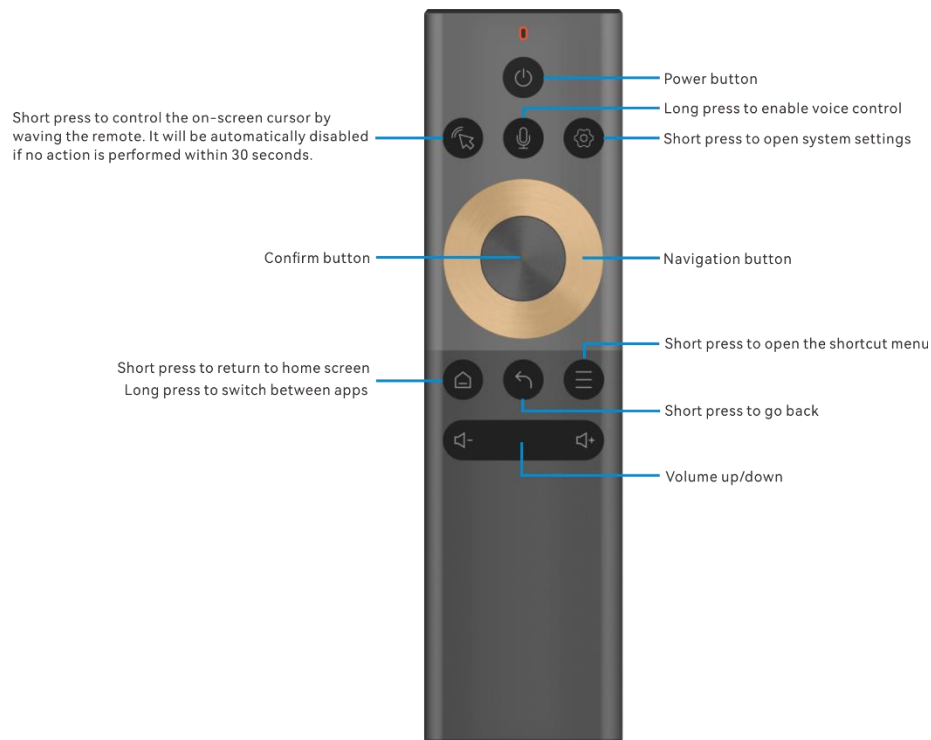
The hotspot name will be updated automatically if you rename the device.

Step 7 The initialization settings are done. You can start using the LED playback control processor.

4.2 Usage of the Remote

4.2.1 Buttons on the Remote

Figure 4-10 Description of buttons on the remote



4.2.2 Bluetooth Pairing Method

Point the remote at the device's infrared sensor and hold down the **Menu** and **Home** buttons simultaneously until the **Pairing with the remote** window appears at the bottom of the screen.

4.3 Screen Mirroring

4.3.1 Wireless Mirroring

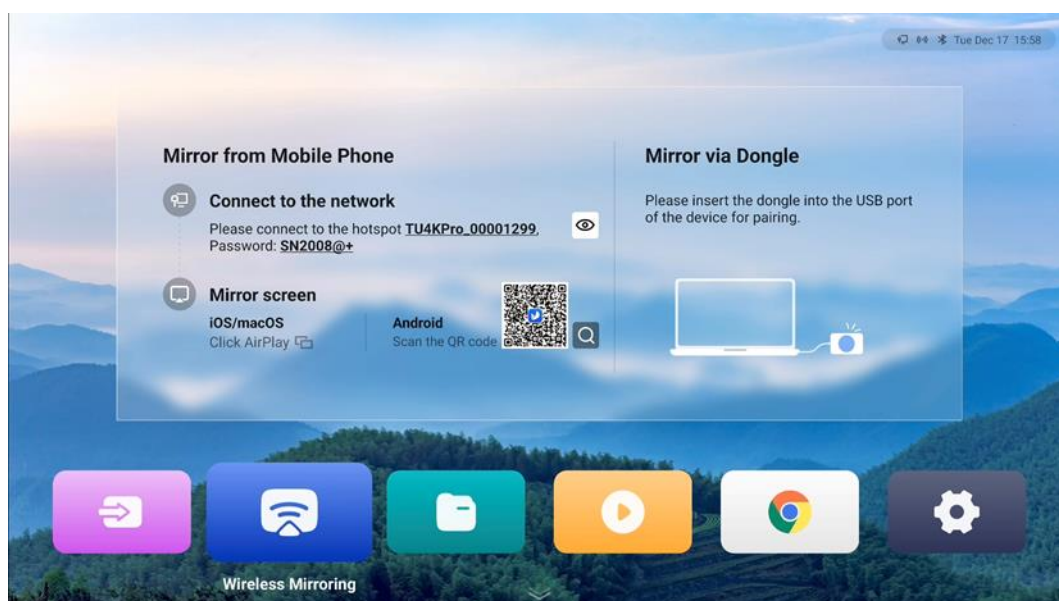
1. Due to the susceptibility of 2.4G Wi-Fi networks to interference from surrounding electronic devices, network instability may arise, thereby affecting screen mirroring quality. To ensure an optimal user experience in complex network environments such as trade shows or commercial offices, 5G Wi-Fi networks are highly recommended.
2. When mirroring a screen using 5G frequency band, it is recommended that the distance not exceed 15 meters. Furthermore, due to the relatively weak wall penetration capability of the 5G network, screen mirroring in situations where there are walls obstructing the signal is not recommended.
3. For Android devices, ensure that the operating system version is not earlier than Android 10.0 when mirror a screen.
4. When a device is connected to a phone via Wi-Fi AP and the device is connected to the Internet via Ethernet cable, the phone can normally play third-party video applications.
5. Ensure that the network is connected before using wireless screen mirroring. For details, see [Step 5](#) in [4.1 Getting Started](#).

4.3.1.1 Mirror from Mobile Phone

Screen Mirroring on ViPlex Handy

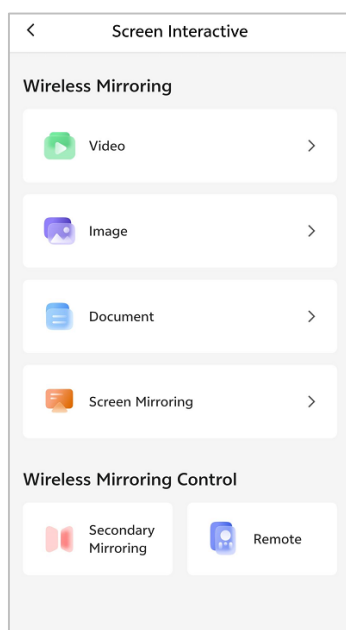
Step 1 On the home screen, select  to navigate to the screen mirroring settings.

Figure 4-11 Wireless mirroring



- Step 2 Scan the QR code on the screen to download and install ViPlex Handy on your phone.
- Step 3 Connect your phone to the hotspot of the LED playback control processor (default name: TU4KPro_xxxx; default password: SN2008@+).
- Step 4 Open ViPlex Handy and tap **Add Device** on the home page.
- Step 5 Tap **Connect** next to the device you want to connect and enter the password to connect to it.
- Step 6 Return to the home page and tap **Screen Interactive**.

Figure 4-12 Screen interactive



- Step 7 Do the following as required.
- Display image: Select an image from the album and display it on the screen. Swipe left or right to switch between images.

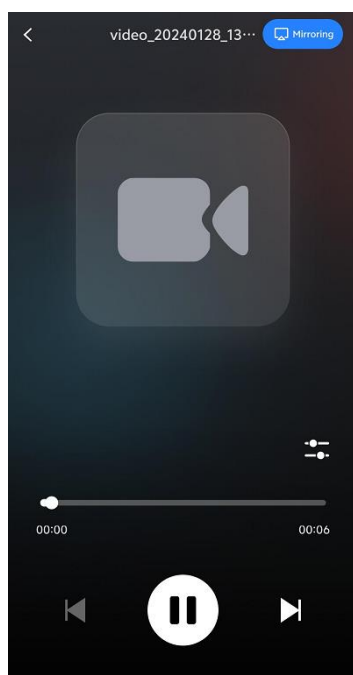
Figure 4-13 Display image



- Display video: Select a video from the album and display it on the screen. The video selection page will be displayed once the playback is finished.

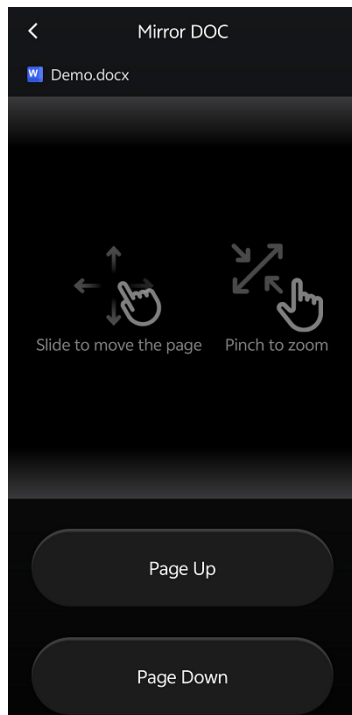
You can pause/resume the playback, drag the playback progress, adjust the volume, and switch videos with the remote.

Figure 4-14 Display video



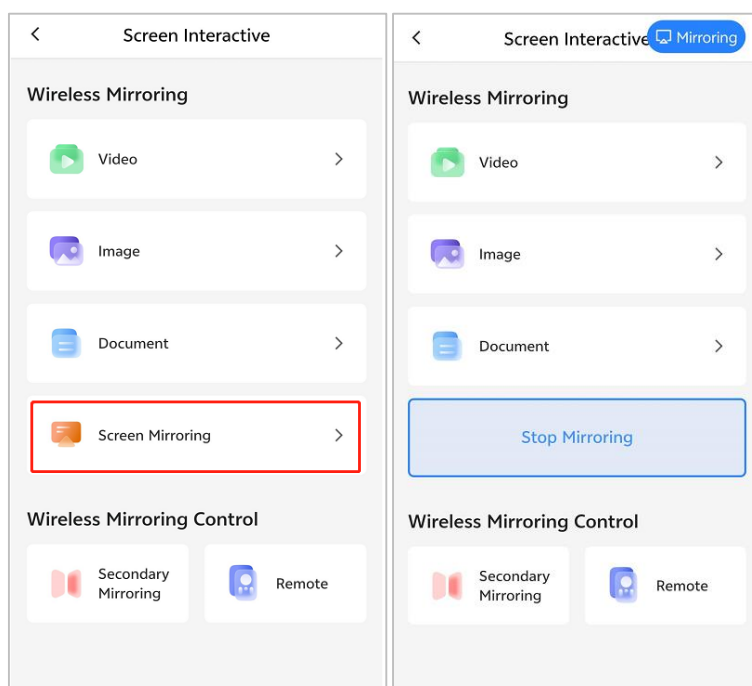
- Display document: Select a document from the file explorer and display it on the screen. Use the remote to scroll through pages and move the cursor (Supported file formats include PPT, WORD, PDF, and EXCEL. This feature is not supported by iOS).

Figure 4-15 Display document



- Mirror screen: You can mirror the display of the phone/tablet onto the screen. Tap **Screen Mirroring** to starting mirroring and tap **Stop Mirroring** to stop. You can also open the floating window  and tap **Stop** to stop mirroring.

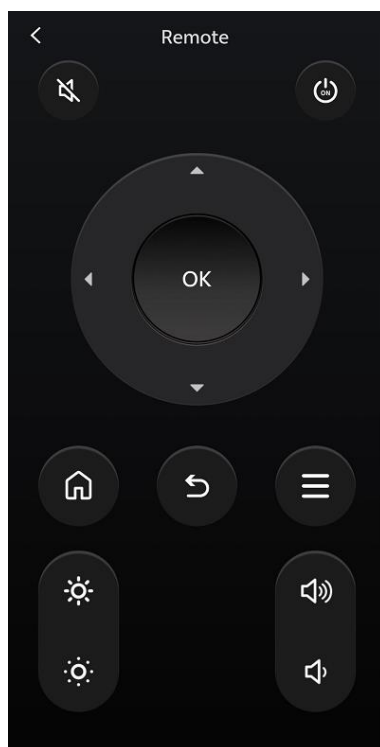
Figure 4-16 Screen mirroring & Stop mirroring



Notes:

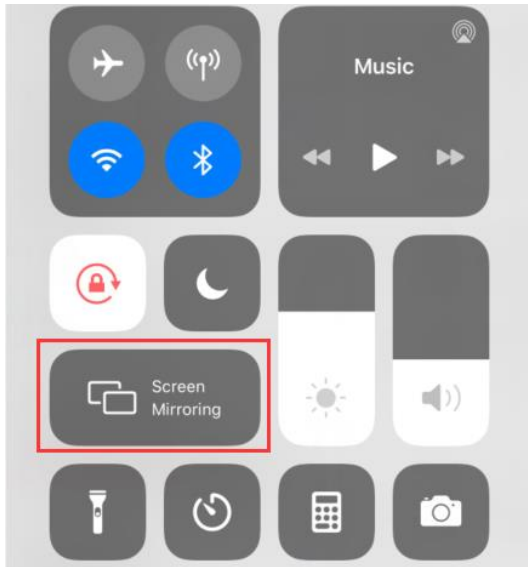
- Tap **Mirroring** on top of the interface and then tap **Stop** to stop.
 - Enable the floating window permission for ViPlex Handy before mirroring screen.
 - For iOS devices, you can only start mirroring after enabling **Screen Mirroring** in the control center. To stop the mirroring, tap **Stop Mirroring**.
 - Other screen casting functions will be unavailable when using the screen mirroring function.
-
- Secondary mirroring: Control the screen in real-time from your phone/tablet.
 - Remote: On the **Device Management** or screen mirroring page, tap **Remote** to perform operations such as tapping, swiping, returning to the main menu, going back to the previous menu, adjusting volume, and zooming in or out of the screen with two fingers (for images and documents).

Figure 4-17 Remote

**Mirroring from iOS**

- Step 1 Connect your phone to the hotspot of the LED playback control processor (default name: TU4KPro_xxxx; default password: SN2008@+).
- Step 2 Open the control center.
- Step 3 Tap Screen **Mirroring** and select the device to start mirroring.

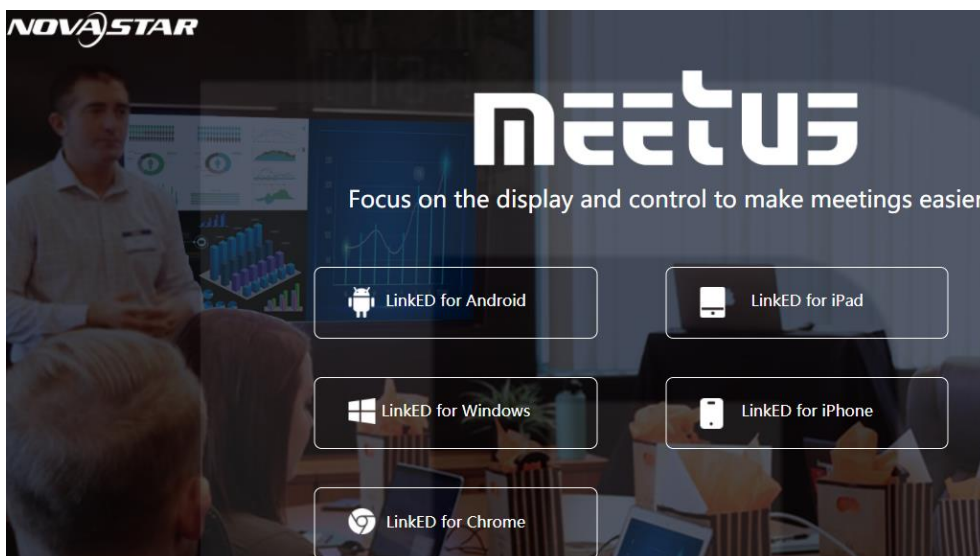
Figure 4-18 Screen mirroring - iOS



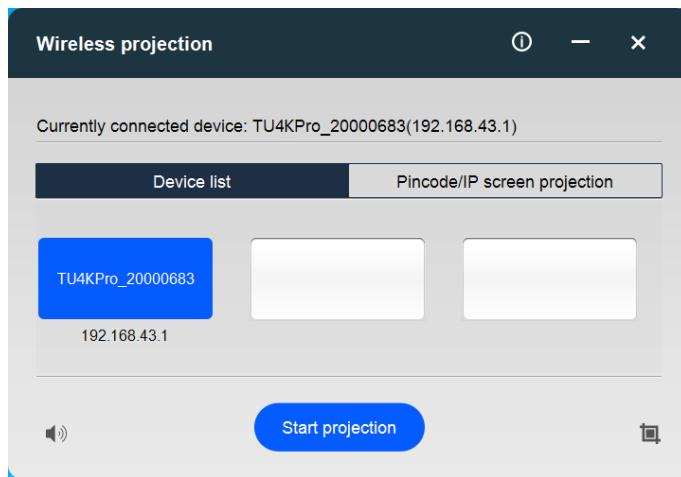
4.3.1.2 Mirroring from PC

Mirroring from Windows

- Step 1 On the PC, open a browser, enter the website address “meexus.cn/English.html” and download **LinkED for Windows**.



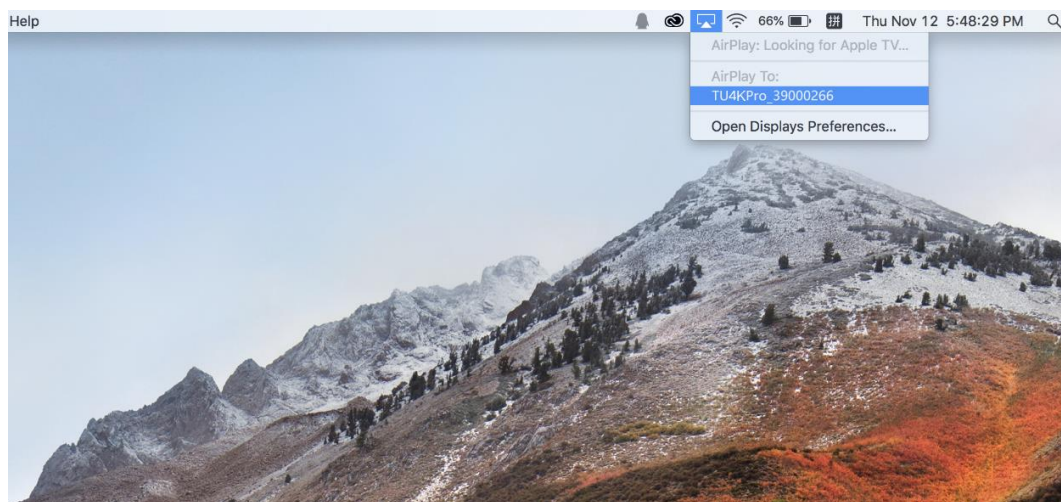
- Step 2 Connect the PC to the hotspot of the LED playback control processor (default name: TU4KPro_xxxx; default password: SN2008@+).
- Step 3 Run the client on the PC. The connected device will be detected by the client automatically. Then, select **Start projection**.



Mirroring from macOS

- Step 1 Connect the PC to hotspot of the LED playback control processor (default name: TUxx Pro_xxxx; default password: SN2008@+).
- Step 2 Select the AirPlay icon in the menu bar at the top of your screen, and select the device you want to mirror the screen to.

Figure 4-19 Screen mirroring – Mac



4.3.1.3 Mirroring via Dongle

- Step 1 For the first-time use, or after you change the device name, hotspot name or hotspot password, you must insert the mirroring dongle into the USB port of the LED Playback control processor for pairing.
- Step 2 Insert the paired dongle into the USB port of the PC.

Figure 4-20 Connection successful

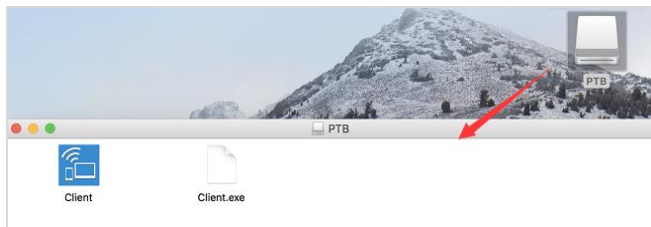


- Step 3 When a pop-up window with the “Connection successful” message appears, press the round button on the dongle to start mirroring.

Note

When using the mirroring dongle to mirror from macOS for the first time, authorization is required. (The following operations use the 10.13.6 version as an example.)

1. On the desktop, open the **PTB** USB drive.

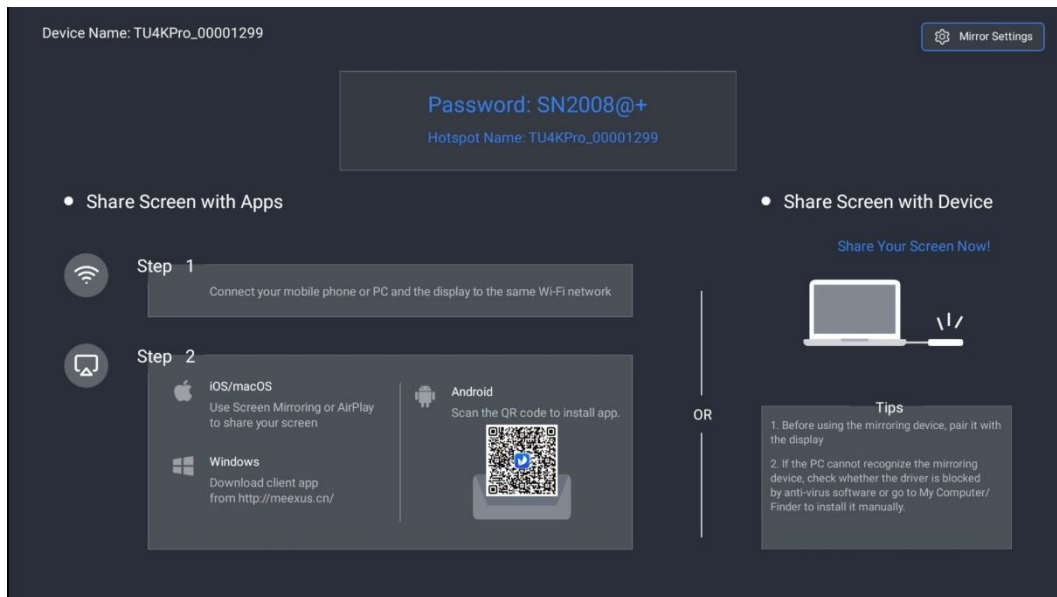


2. Double select the **Client** program to run it.
3. Follow the instructions to complete the authorization.

4.3.1.4 Screen Mirroring Settings

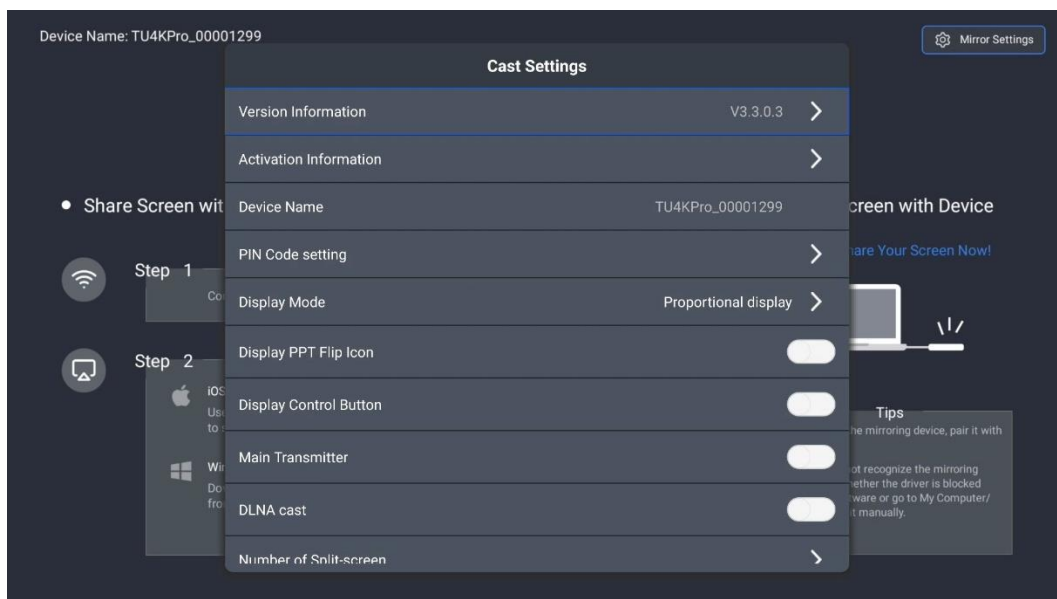
- Step 1 On the home screen, select  to navigate to the screen mirroring settings.

Figure 4-21 Wireless mirroring



Step 2 Press the **Confirm** button on the remote to navigate to screen mirroring setup.

Figure 4-22 Screen mirroring settings



Step 3 Do the following as required.

- Version Information: View the mirroring dongle version.
- Activation Information: View the activation status, activation code, MAC address, and split-screen quantity.
- Device Name: View the device name.
- PIN Code setting: Set a PIN code.
- Display Mode: Set the display mode. Available options include **Proportional**, **Full Screen**, and **Adaptive**.

- Display PPT Flip Icon: Show/Hide navigation icons for slides.
- Display the Third Split-screen at Bottom Center: Show/Hide the third split-screen at bottom center
- Display Control Button: Show/Hide the wireless control button.
- Main Transmitter: Enable/Disable the primary mirroring dongle.
- DLNA cast: Enable/Disable DLNA mirroring.
- Number of Split-screen: Set the split-screen mode. Available options include **Full Screen**, **Two-Split Screen**, and **Four-Split Screen**.
- Purchase More Functions: Select and enter the activation code in the pop-up window and select **OK** to activate.
- Screen Mirroring Timeout: Select mirroring timeout in the popup window. Available options include **15s/30s/45s/60s**.

4.3.2 Wired Mirroring

4.3.2.1 Connect Signal Source

Connect the LED playback control processor to the device you want to mirror the screen from via HDMI cable.

Figure 4-23 Wired mirroring

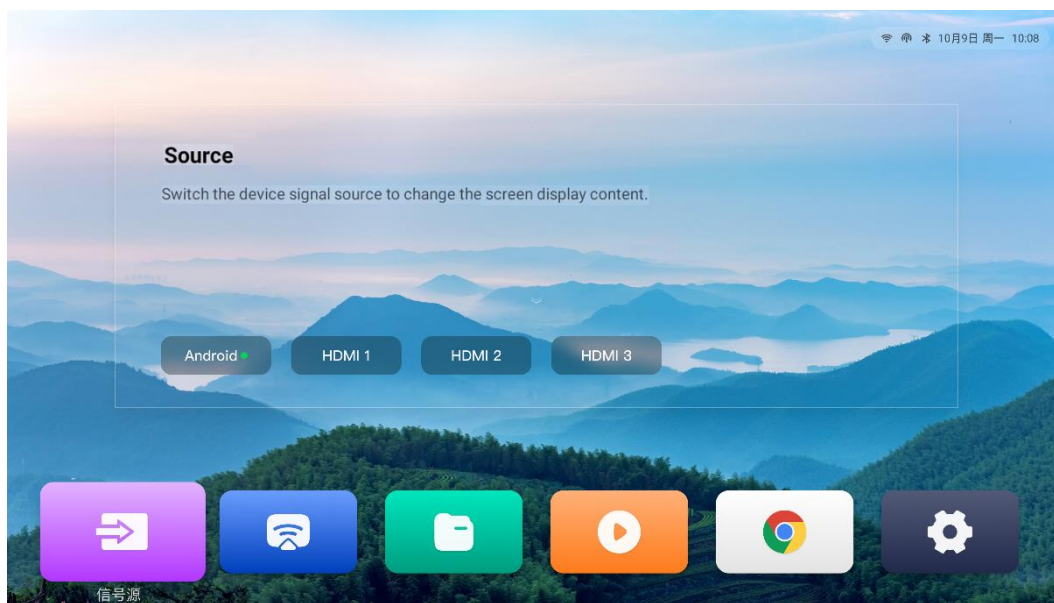


4.3.2.2 Switch Signal Source

You can switch the signal source via the following method.

- Step 1 On the home screen, select  or press the **Menu** button on the remote to open the signal source selection window.

Figure 4-24 Signal source



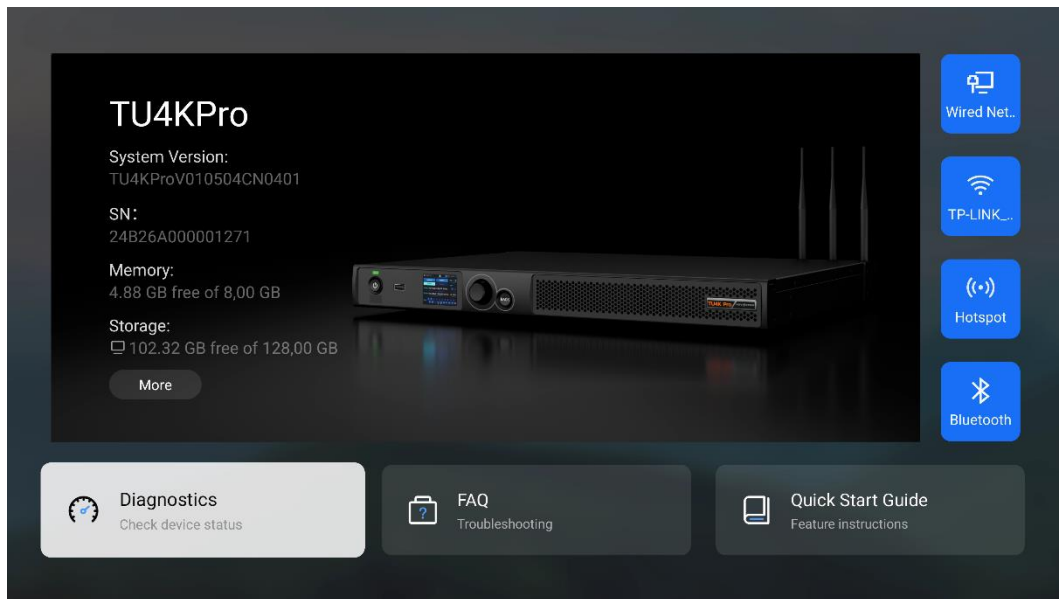
- Step 2 Select the signal source that you want to display, and press the **Confirm** button on the remote.

4.4 Secondary Screen

4.4.1 Access the Secondary Screen

- Step 1 To access the secondary screen interface, first navigate the cursor to the left of the home screen, then press the **Left** button on the remote again. On this page, you can find details such as the device name, system version, product serial number (SN), memory status, and storage information.

Figure 4-25 Secondary screen homepage



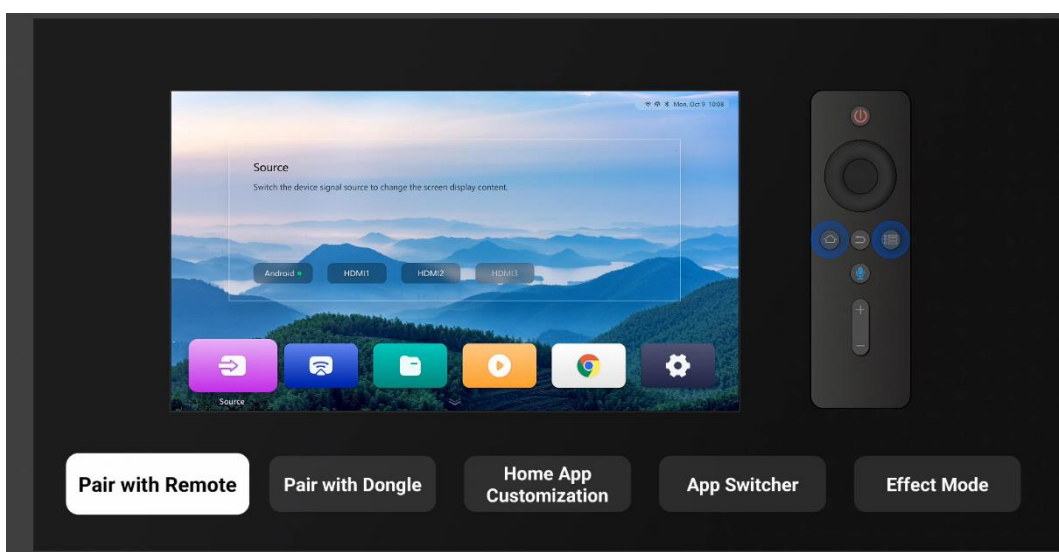
Step 2 To view more information, select **More** and you will be redirected **Settings > System > About > Device Information**. For more details, please refer to [4.7.7.1 About](#).

Step 3 On the right side of the secondary screen's homepage, you can select **Wired Network**, **Wi-Fi**, **Hotspot**, and **Bluetooth** to redirect to **Settings > Network > Wired Network\Wireless Network\Hotspot\Bluetooth**. For more details, please refer to section [4.7.1.1 Wired Network](#) to section [4.7.1.4 Hotspot](#).

4.4.2 Quick Start Guide

Step 1 To access the Quick Start Guide, select **Quick Start Guide** at the bottom of the secondary screen's homepage.

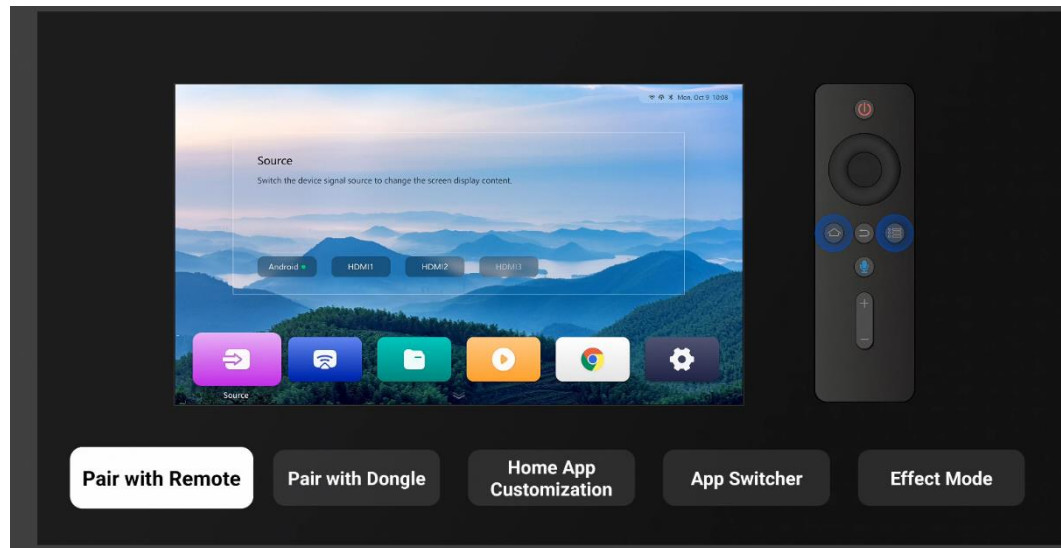
Figure 4-26 Quick start guide



Step 2 Press the Left/Right button on the remote to navigate through Pair with Remote, Pair with Dongle, Home App Customization, App Switcher, and Effect Mode.

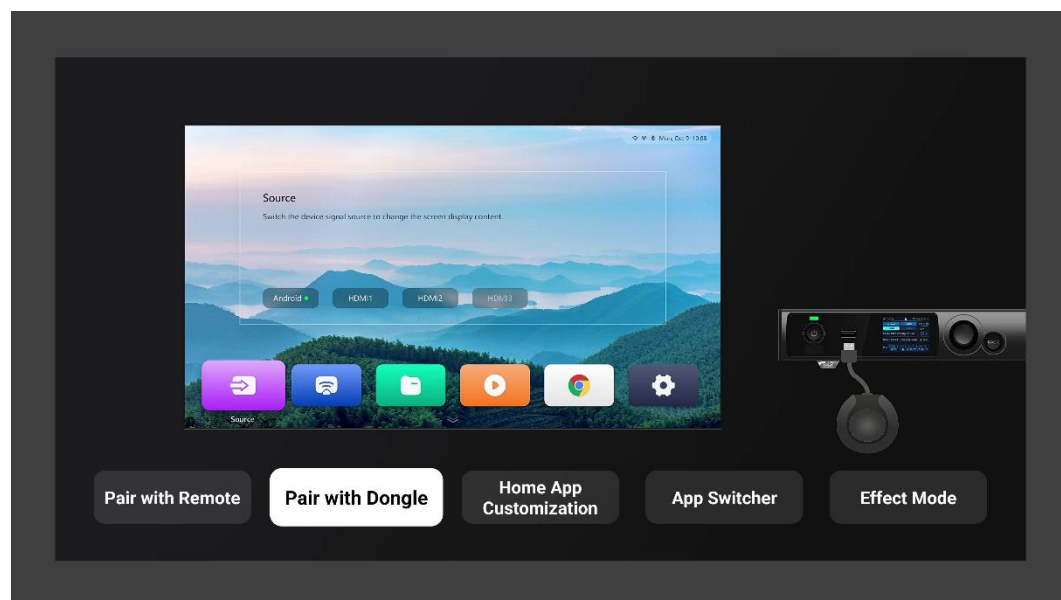
- Select **Pair with Remote** to open the remote pairing instruction screen.

Figure 4-27 Pair with remote



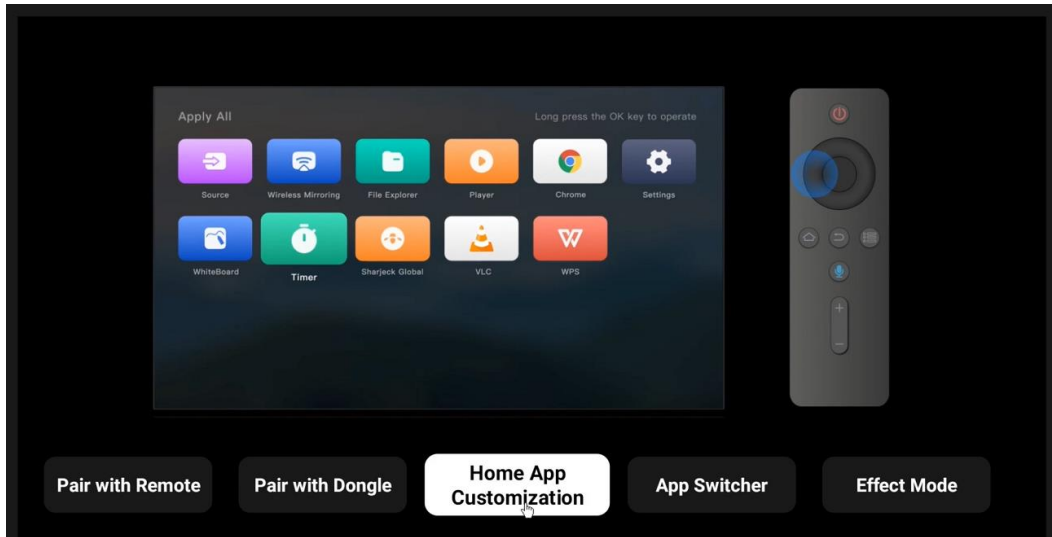
- Select **Pair with Dongle** to open the dongle pairing instruction screen.

Figure 4-28 Pair with dongle



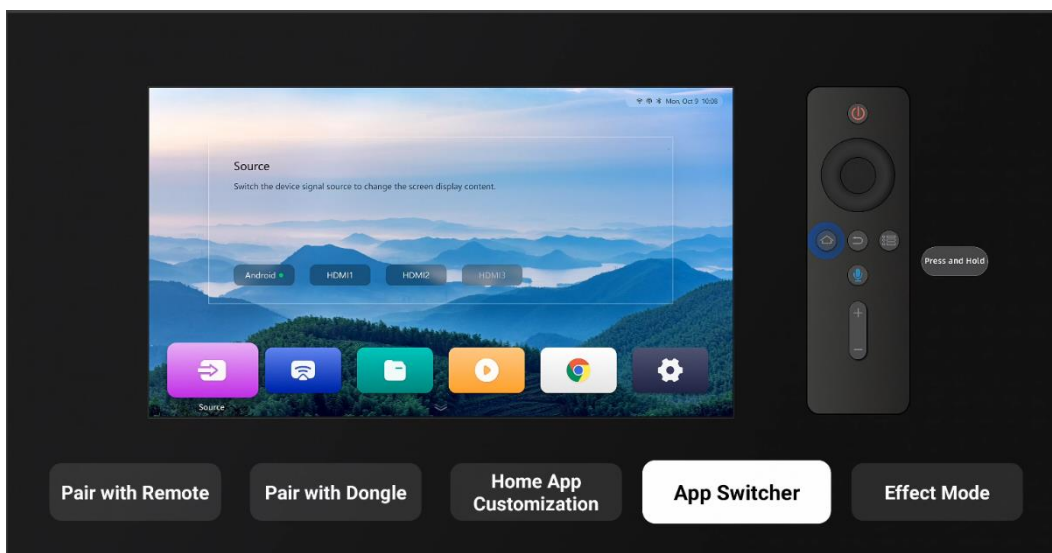
- Select **Home App Customization** to open the home app instruction screen.

Figure 4-29 Home app customization



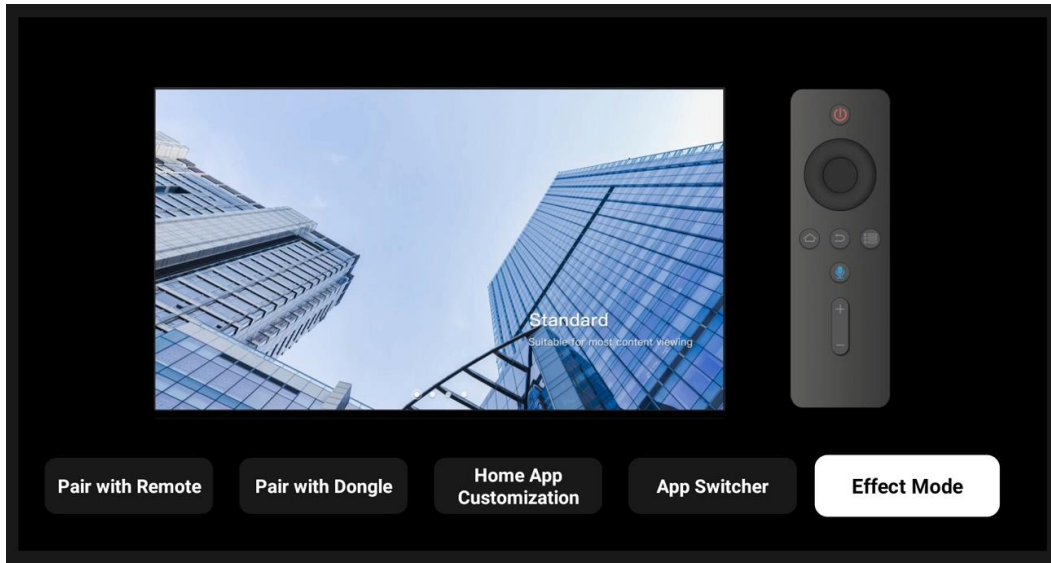
- Select **App Switcher** to open the app switcher instruction screen.

Figure 4-30 App switcher



- Select **Effect Mode** to open the effect mode instruction screen.

Figure 4-31 Effect mode

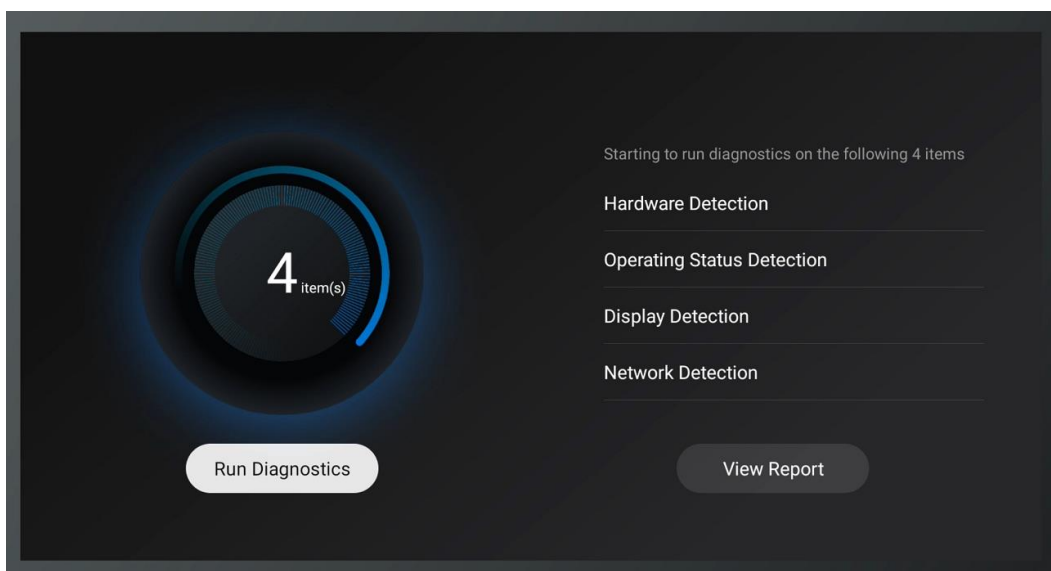


4.4.3 Diagnostics

The diagnostic feature is used when various issues arise during device usage, such as flickering screens, disconnections during mirroring, audio output failure, unrecognized USB drives, and more. With device diagnostics, users can promptly identify and pinpoint the issues, thus improving the overall experience.

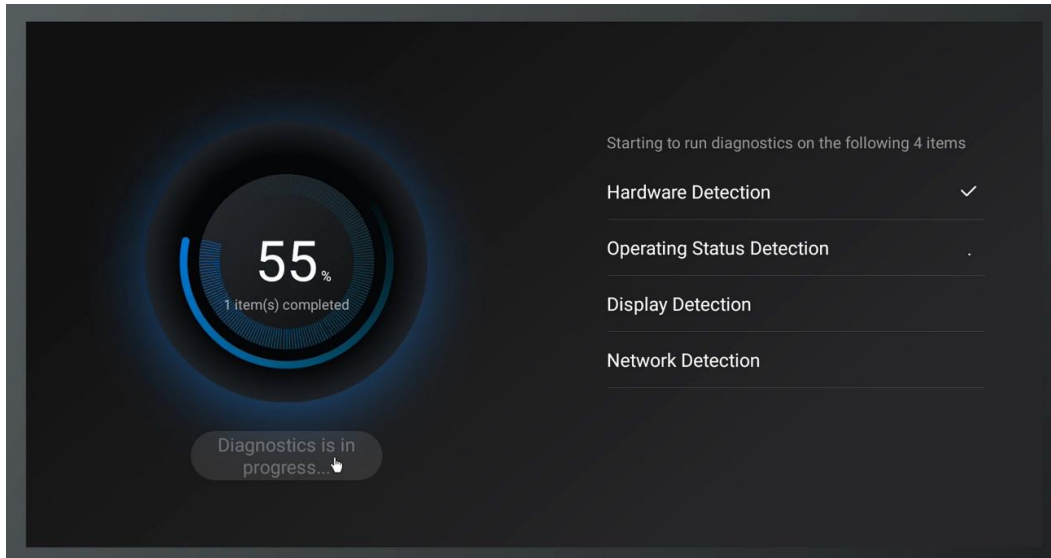
- Step 1 To access diagnostics, select **Diagnostics** at the bottom of the secondary screen's homepage.

Figure 4-32 Diagnostics



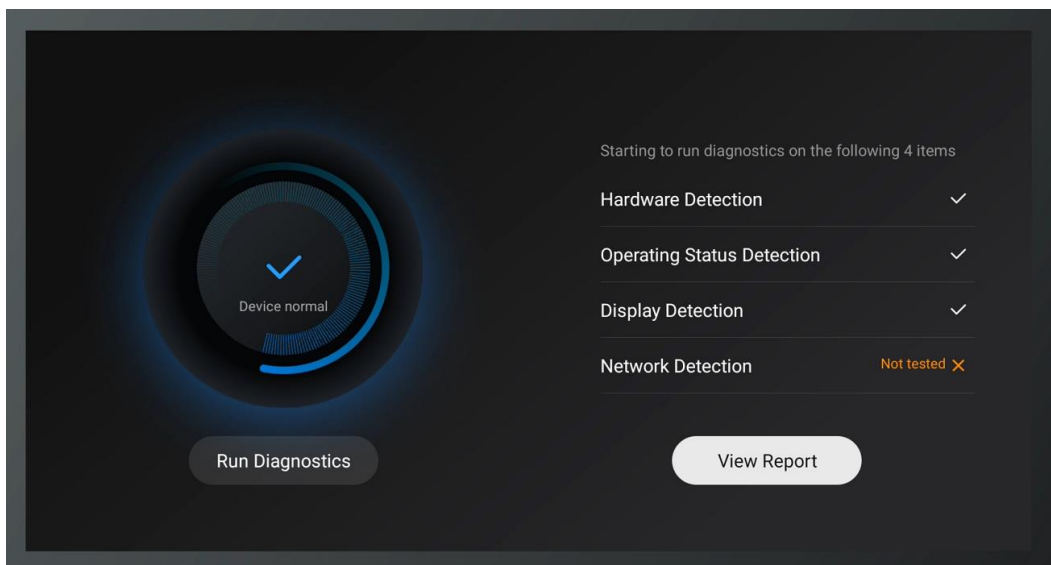
- Step 2 Select **Run Diagnostics** to run tests on **Hardware Detection**, **Operating Status Detection**, **Display Detection**, and **Network Detection**.

Figure 4-33 Running diagnostics



Step 3 Once the diagnostic process is complete, you will see either **Device normal** or **Device abnormal** displayed on the left. On the right, you can view the test items categorized as **Normal**, **Abnormal**, or **Not tested**. To see detailed information about all detected items, select **View Report**.

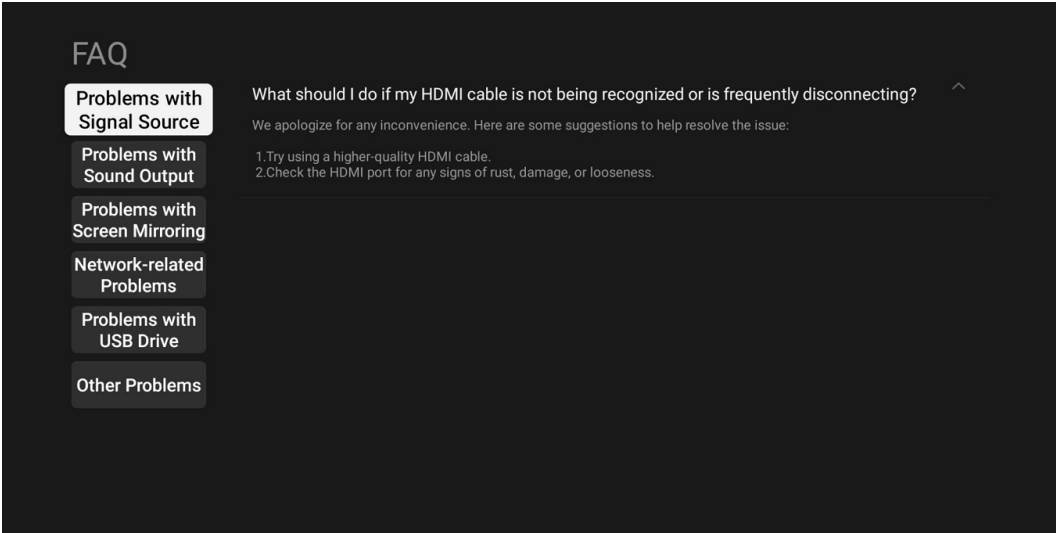
Figure 4-34 Diagnostic result



4.4.4 FAQ

Step 1 To access FAQ, select **FAQ** at the bottom of the secondary screen's homepage.

Figure 4-35 FAQ



Step 2 Use the remote's **Up** and **Down** buttons to toggle between the categories of issues on the left, then press the **Confirm** button to view the specific questions.

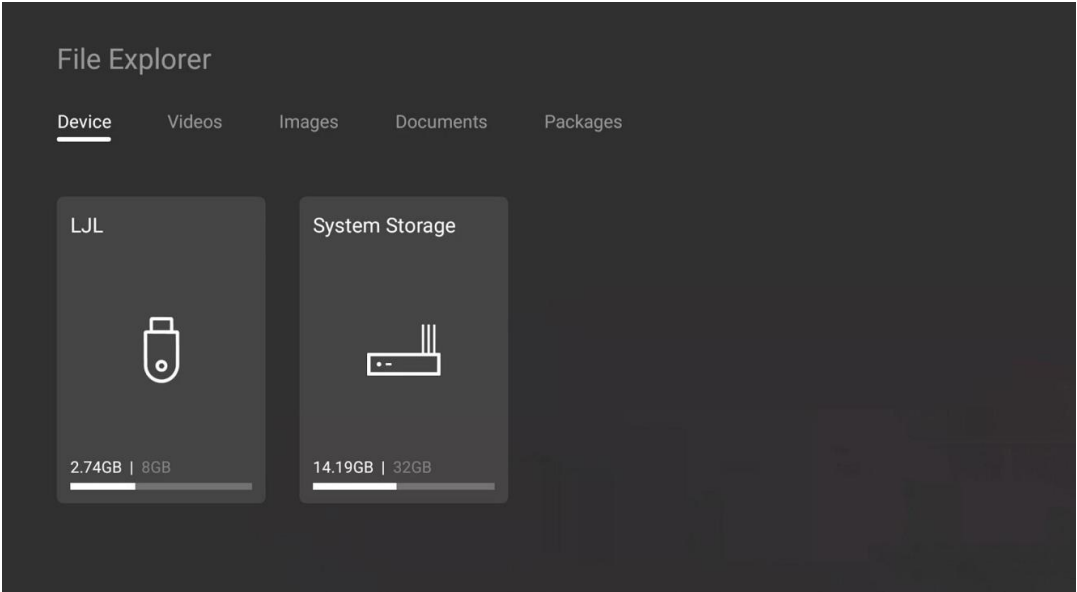
4.5 File Explorer

4.5.1 Manage Device Files

You can manage files or folders within the device. This section will illustrate the process using folder management as an example.

Step 1 On the home screen of the system, select  to open File Explorer.

Figure 4-36 File explorer

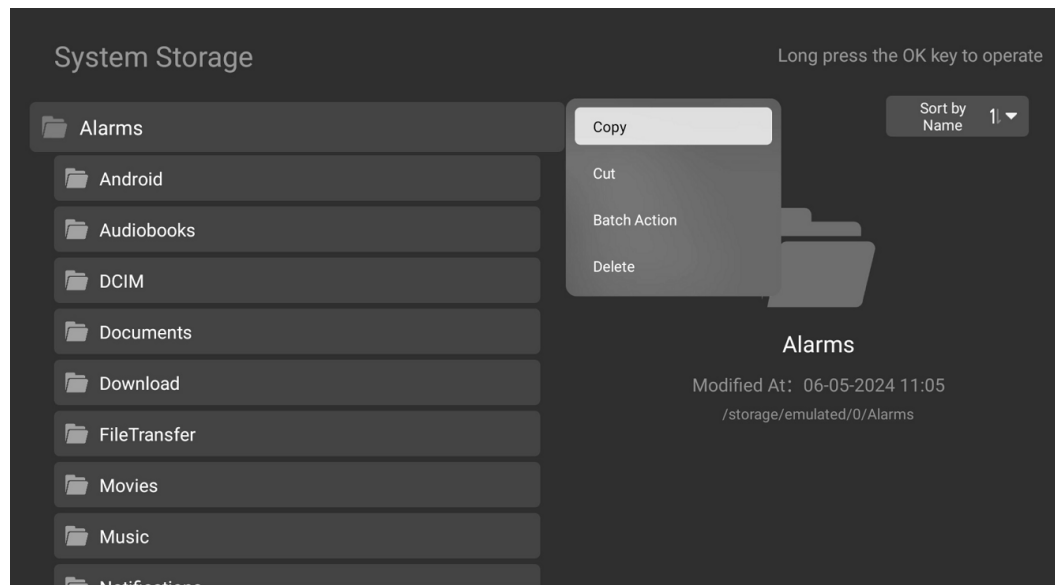


Step 2 View and manage files by file path.

In the **Devices** tab, you can choose to access the inserted USB drive or local storage of the device to perform actions such as viewing, copying, cutting, pasting, and executing batch actions.

- Manage a single folder: Select a file and then press and hold the **Confirm** button on the remote until a pop-up menu appears.

Figure 4-37 Manage a single folder



- Copy: Example: To copy the "Alarms" folder, first bring up the pop-up menu and select **Copy**. Next, navigate to the target location where you want to paste the folder. Finally, select the **Paste** icon on the right side of the screen and wait until the process is completed. If you change your mind and want to cancel the paste, simply select **Cancel**.

Figure 4-38 Paste

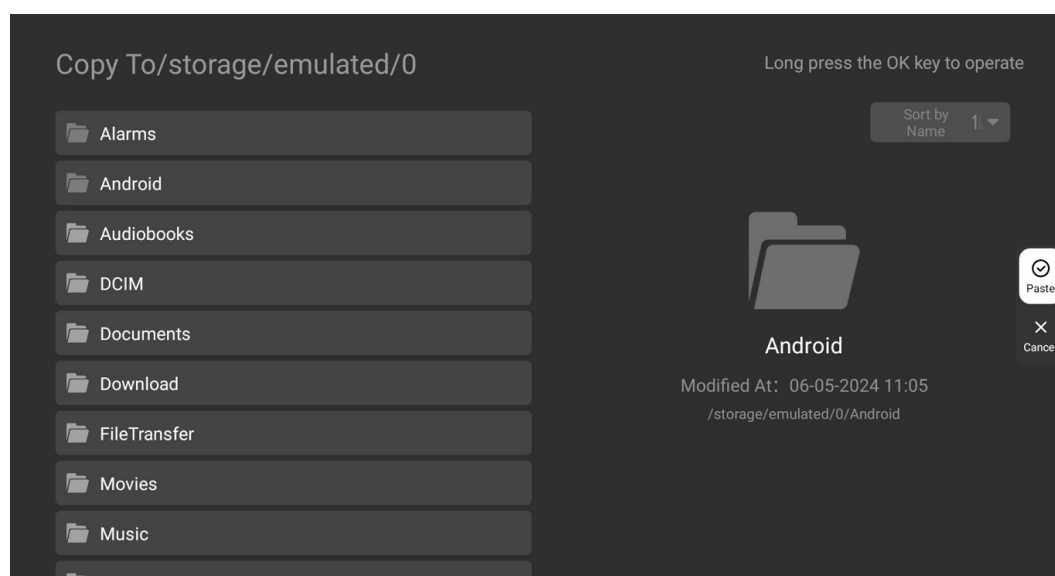
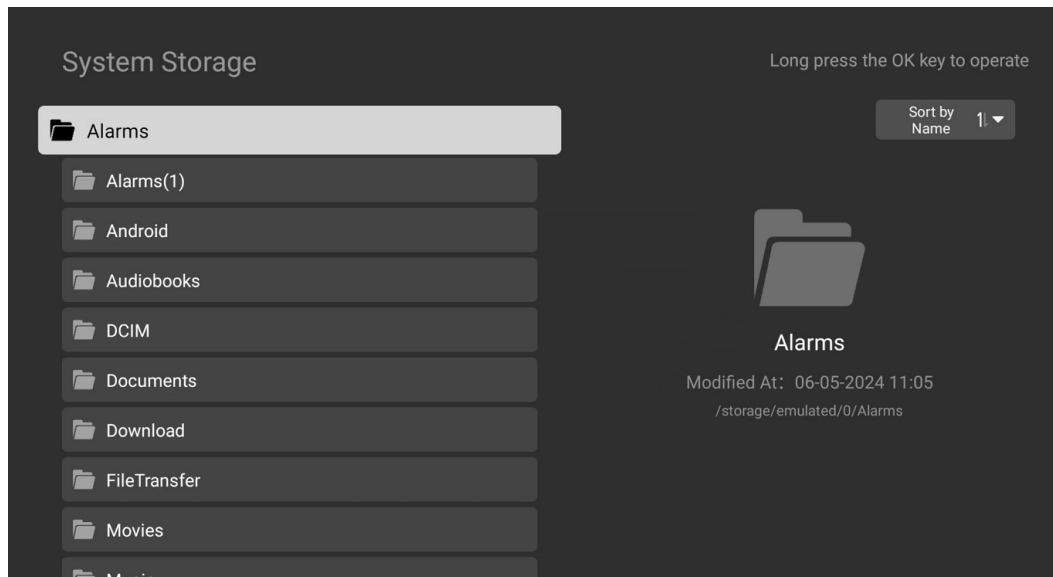


Figure 4-39 Pasting completed



- Cut: The Cut operation is similar to the Copy operation. You can refer to the instructions above.
- Delete: Bring up the pop-up menu and select **Delete**.
- Batch action (batch copying and batch cutting share the similar process): First, bring up the pop-up menu and select **Batch Action**. Then, select the folders you want to copy or cut. Next, select the **Copy** or **Cut** icon on the right side of the screen and then navigate to the target location. Finally, select the **Paste** icon on the right side of the screen and wait until the process is completed. If you change your mind and want to cancel the paste, select **Cancel**.

Figure 4-40 Manage multiple folders

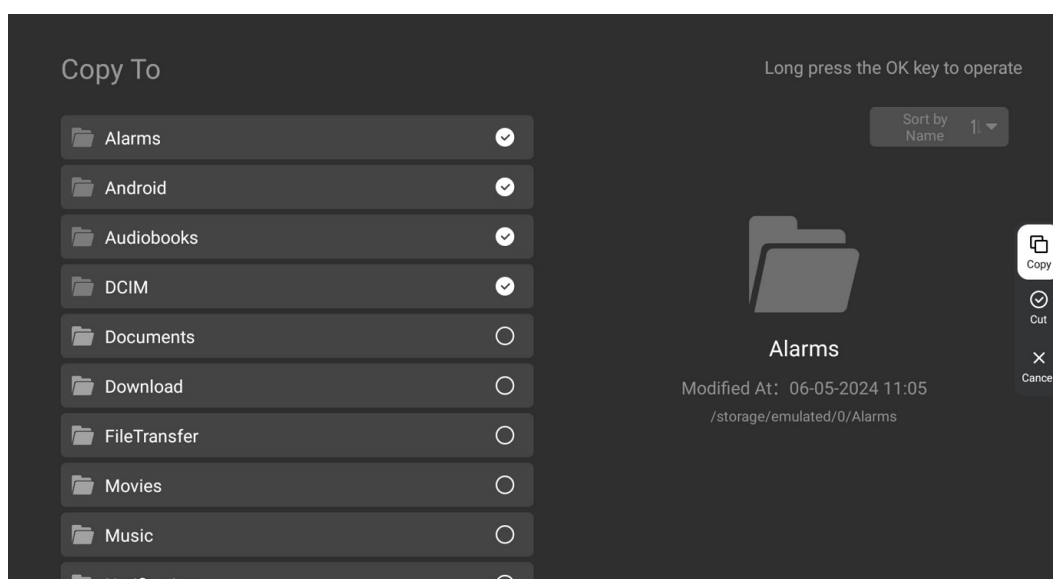
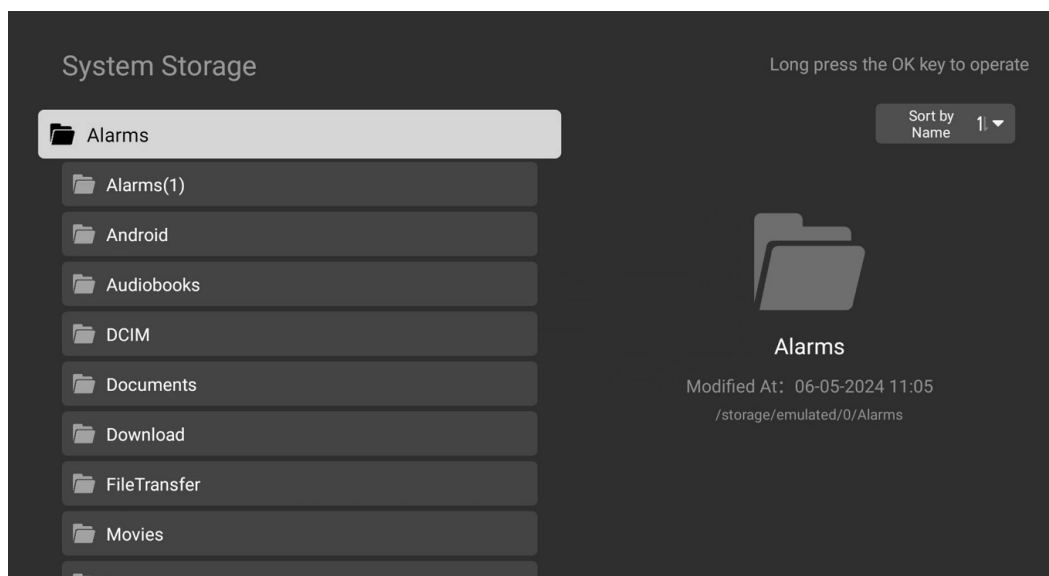


Figure 4-41 Batch pasting completed



Notes

- Only files located in the **Device** tab can be pasted; copying, cutting, and pasting are not available in the video, image, document, and package tabs.
- Pasting will fail if there is insufficient storage space, and you cannot past a folder to its current location.
- If the file being pasted has the same name as a file or folder in the current location, the pasted file will be renamed.

- File sorting: You can sort files by file name (default), file size, or modification time.

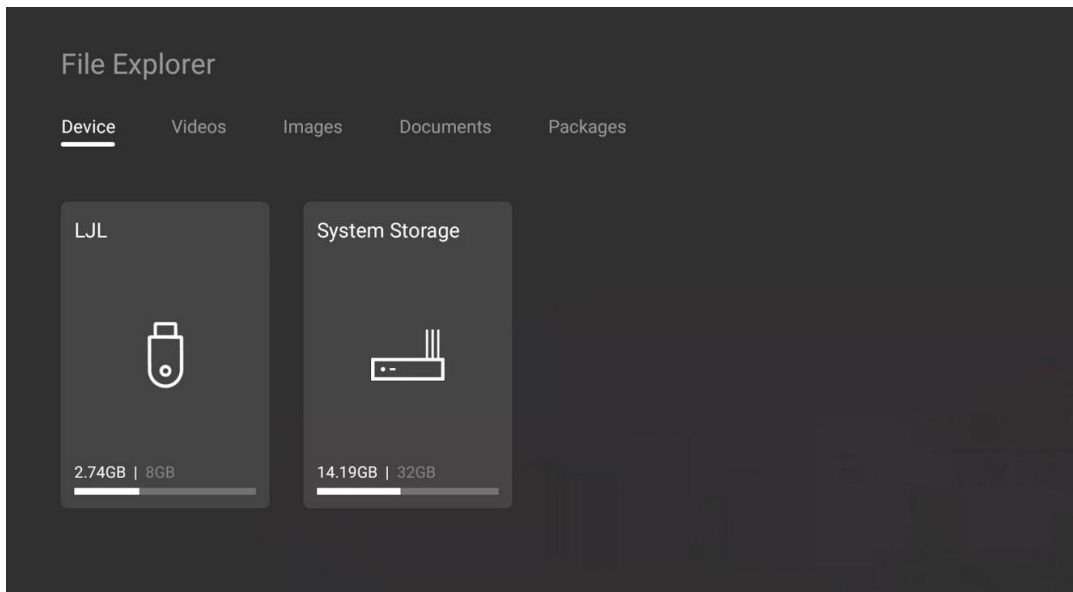
Notes:

- Files can be sorted by file name from A to Z or Z to A, with A to Z as the default.
- Files can be sorted by file size from small to large or large to small, with small to large as the default.
- Files can be sorted in ascending or descending order based on the time of modification, with descending order as the default.
- To switch the sorting order, simply press the **Confirm** button on the remote to toggle between ascending and descending.

4.5.2 Manage Files by Type

Step 1 On the home screen of the system, select  to open File Explorer.

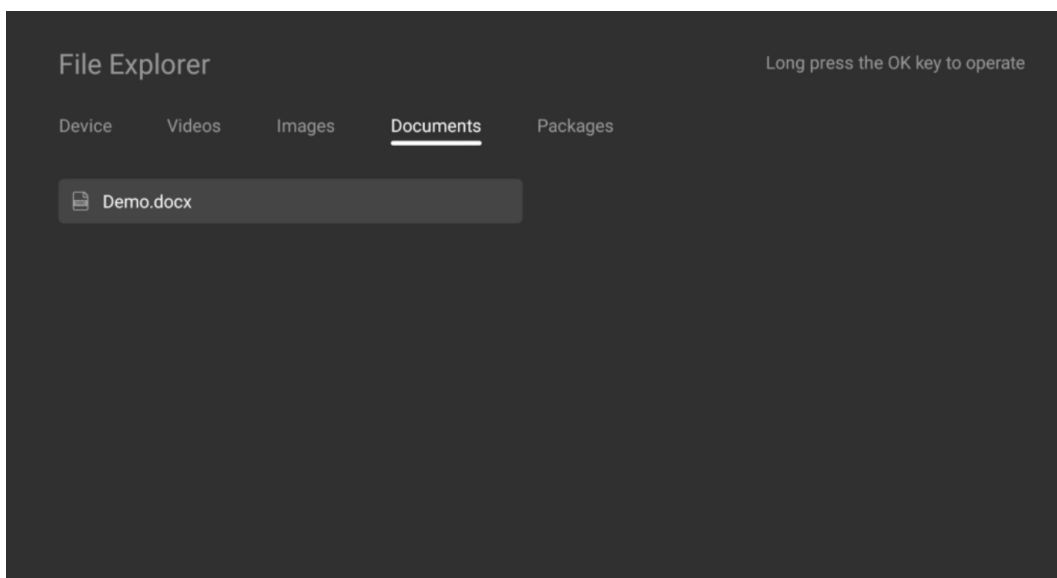
Figure 4-42 File explorer



Step 2 You can view and manage files by file types.

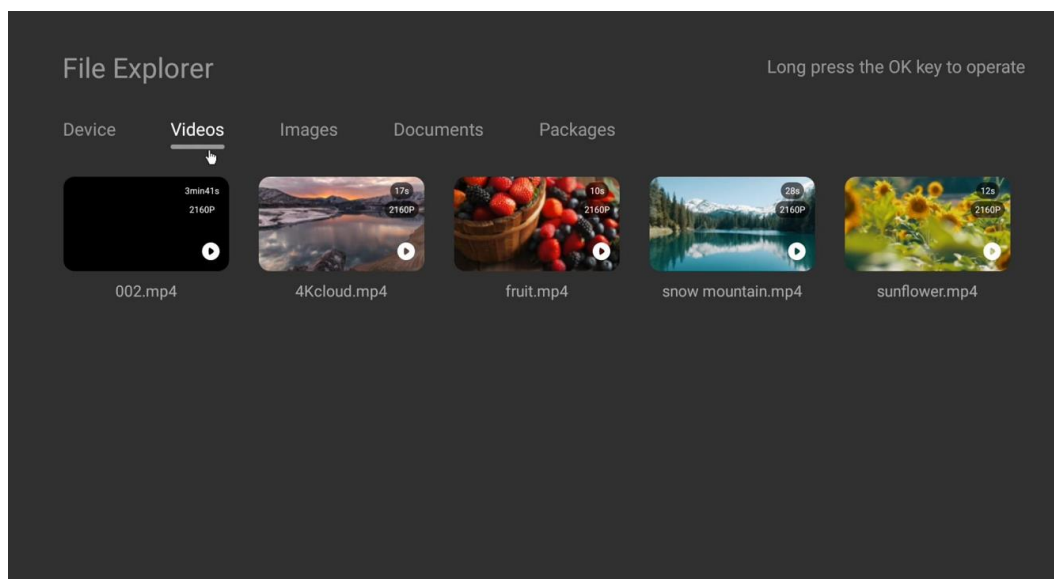
- In the **Documents** tab, you can short press the **Confirm** button on the remote to open the selected document, or long press the **Confirm** button on the remote to delete it.

Figure 4-43 Documents



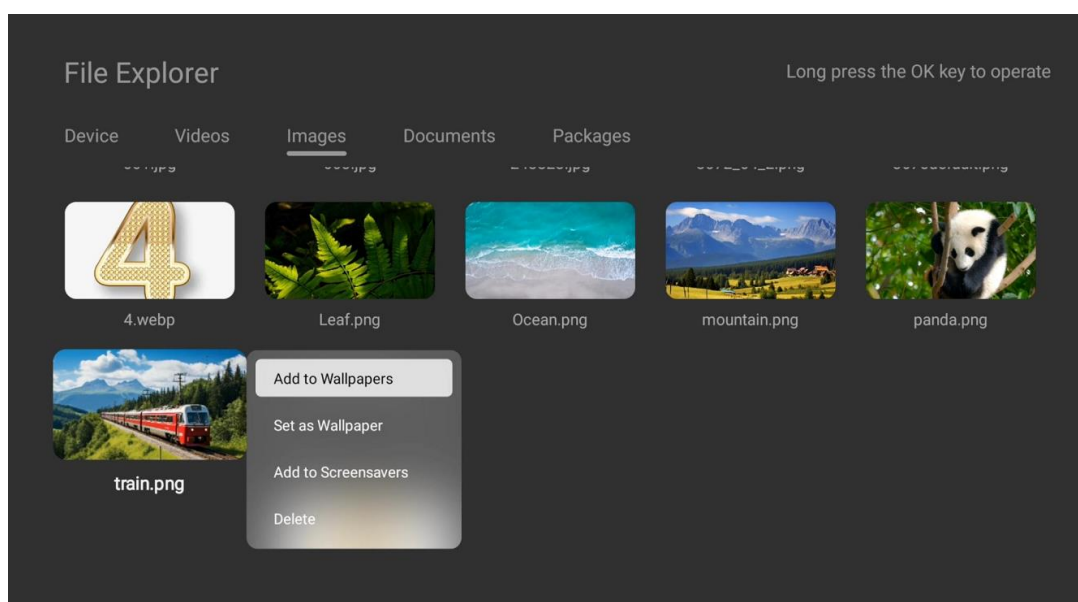
- In the **Videos** tab, you can short press the **Confirm** button on the remote to preview the selected video, short press the **Left** or **Right** button to switch between videos, and double-press **Back** button to exit preview mode. Long press the **Confirm** button on the remote to delete the video.

Figure 4-44 Videos



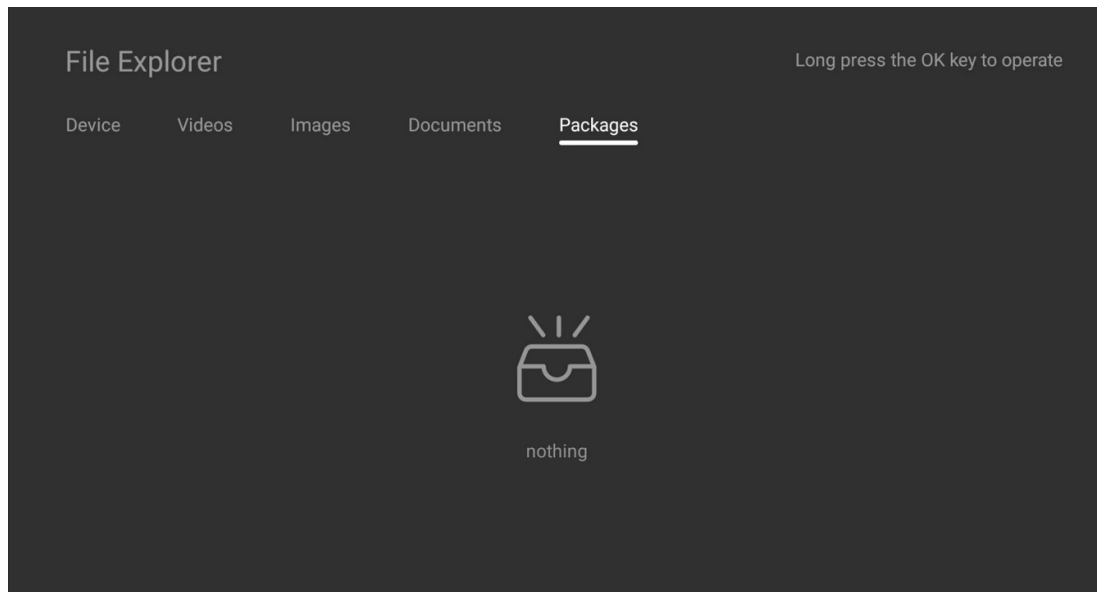
- In **Images** tab, you can short press the **Confirm** button on the remote to preview the selected image, short press the **Left** or **Right** button to switch between images, and double-press **Back** button to exit preview mode. Long press the **Confirm** button on the remote to delete the image.

Figure 4-45 Images



- In the **Packages** tab, you can short press the **Confirm** button on the remote to open the selected package, or long press the **Confirm** button on the remote to delete it.

Figure 4-46 Packages



4.6 Media Player

4.6.1 Manage Media Library

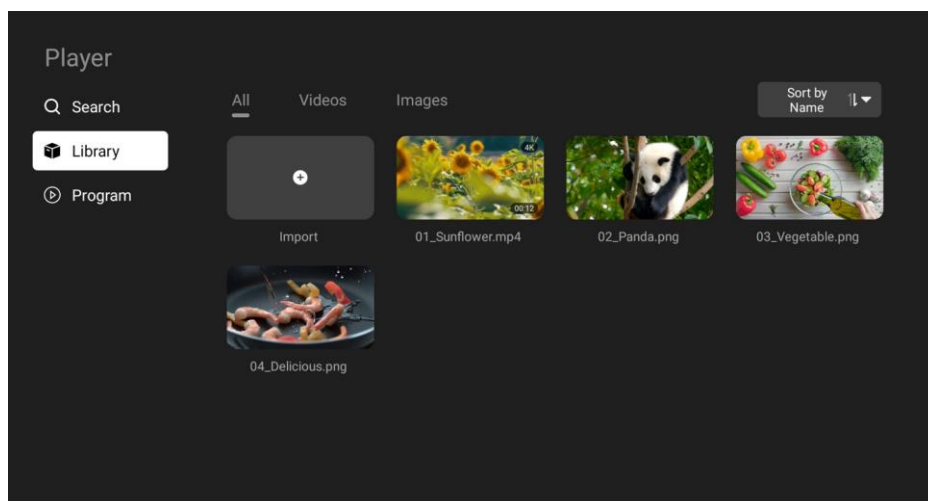
Step 1 On the home screen of the system, select  to open the **Player** screen.

Step 2 Select **Library** from the navigation bar on the left.

There are one video and three images pre-installed in the library by default.

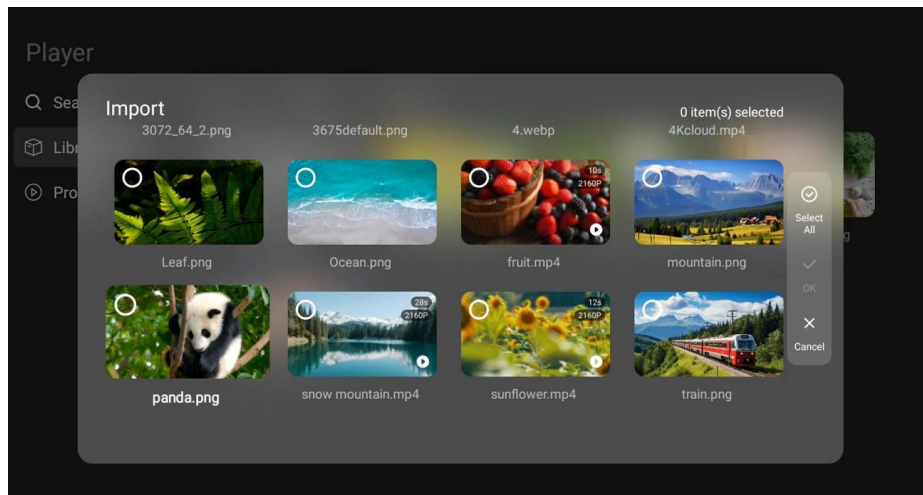
You can sort the images and videos by name, size, or time on the top right corner of the screen.

Figure 4-47 Media Library



Step 3 To import new media files, select **Import**, select a file, and then press the **Confirm** button on the remote.

Figure 4-48 Import

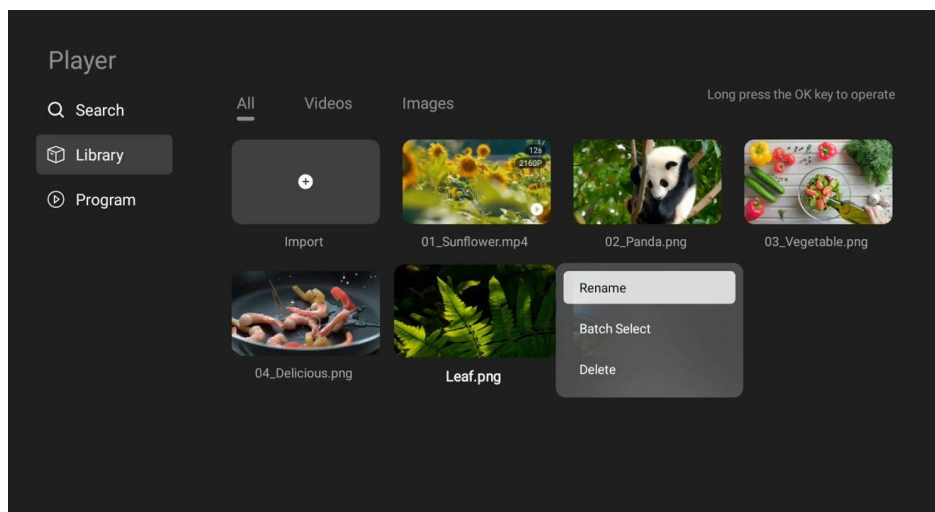


Note

You need to insert a USB drive first before you can import images and videos.

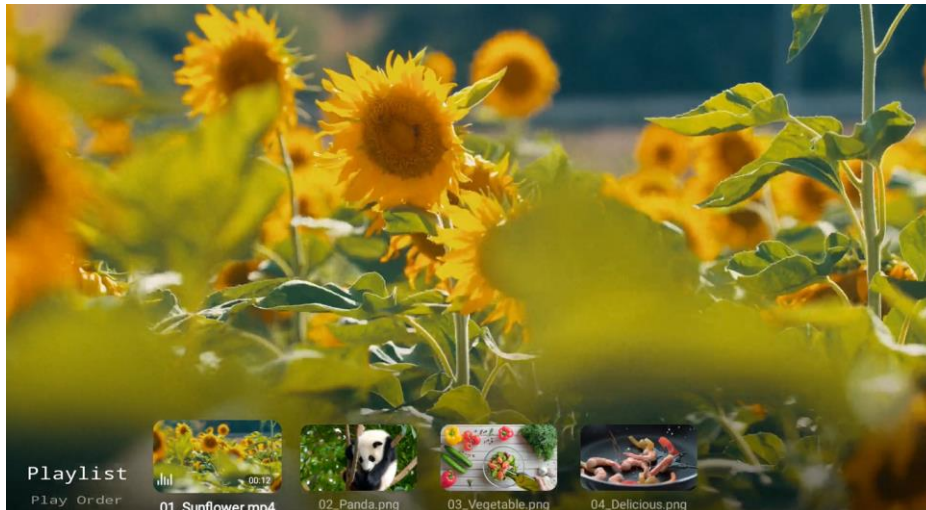
- Step 4 After selecting a media file, long press the **Confirm** button on the remote to access options such as renaming, bulk selection, and deletion. (System preset media is not editable by long press.)

Figure 4-49 Media library



- Step 5 After selecting a media file, short press the **Confirm** button on the remote to start or pause the playback. Short press the **Down** button to bring up a menu for **Playlist** and **Play Order**
- **Playlist:** Short press the **Left** or **Right** button to switch between media files and long press the buttons to fast forward or rewind.
 - **Play Order:** Press the **Left** or **Right** button to switch between **Repeat List**, **Play Once**, and **Repeat One**.

Figure 4-50 Media playback



Note

If using touch input: The menu area can be scrolled up and down or selected by a single tap; the list area can be swiped left or right or selected by a single tap; the function items are to be selected by a single tap for execution.

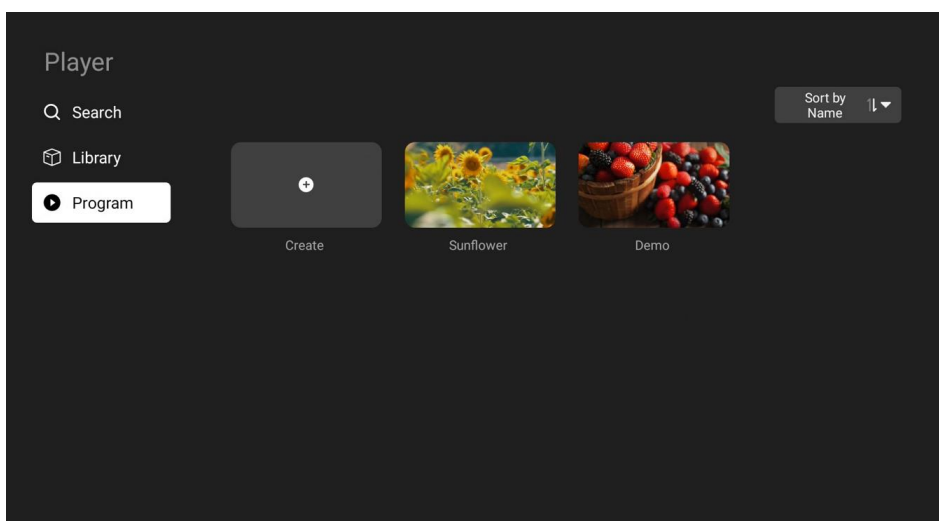
4.6.2 Manage Programs

Step 1 On the home screen of the system, select  to open the Media Player.

Step 2 Select **Program** from the navigation bar on the left.

You can sort the programs by name, size, or time on the top right corner of the screen.

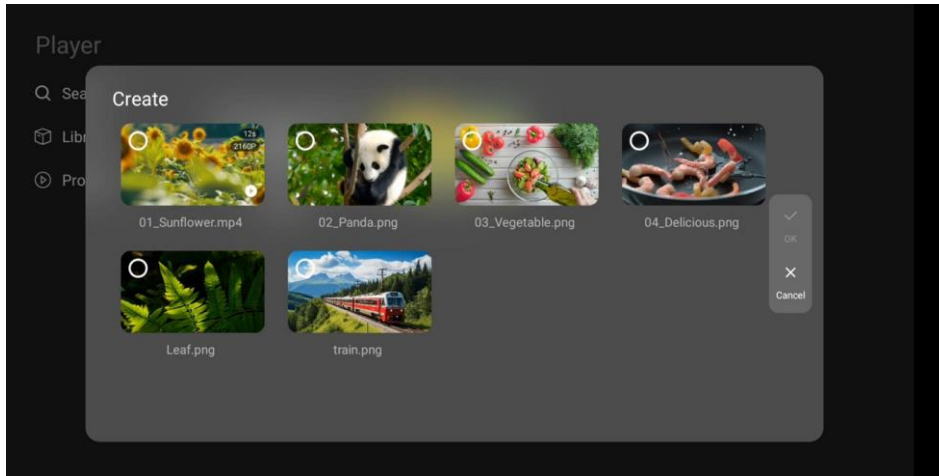
Figure 4-51 Program



Step 3 To create a new program, select **Create**, select the desired media files from the library and then press the **Confirm** button on the remote.

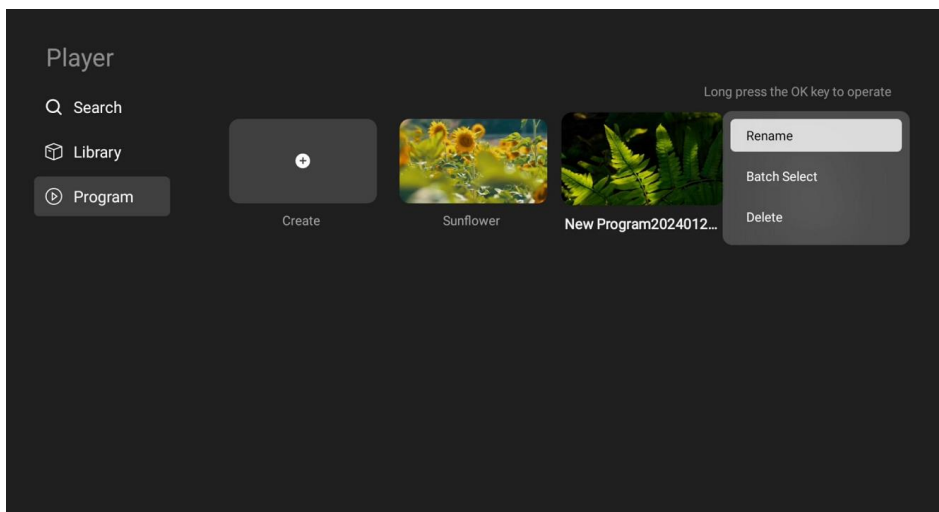
What's more, programs can also be edited and published to the playback control processor from ViPlex Handy. For detailed operations, please select **Me > Help > User Manual** in the ViPlex Handy and refer to the user manual.

Figure 4-52 Create a program



Step 4 After selecting a program, long press the **Confirm** button on the remote to access options such as renaming, batch selection, and deletion (The default program cannot be edited).

Figure 4-53 Program operations



Step 5 After selecting a program, short press the **Confirm** button on the remote to start or pause the playback. Short press the **Down** button to bring up a menu for **Playlist**.

- Playlist: Short press the **Left** or **Right** button to switch between media files and long press the buttons to fast forward or rewind.

Figure 4-54 Program playback



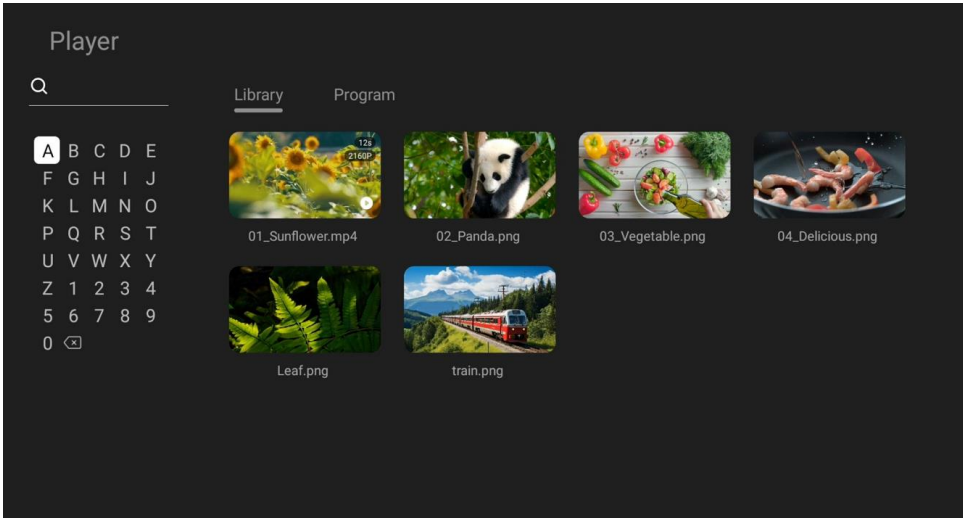
 Note

If using touch input: The menu area can be scrolled up and down or selected by a single tap; the list area can be swiped left or right or selected by a single tap; the function items are to be selected by a single tap for execution.

4.6.3 Search

- Step 1 On the home screen of the system, select  to open the Media Player.
- Step 2 Select **Search** from the navigation bar on the left.
- Step 3 You can search in the **Library** and **Program**.

Figure 4-55 Search



- Step 4 Input letters and numbers, and the media/programs with corresponding names will be filtered in real time.

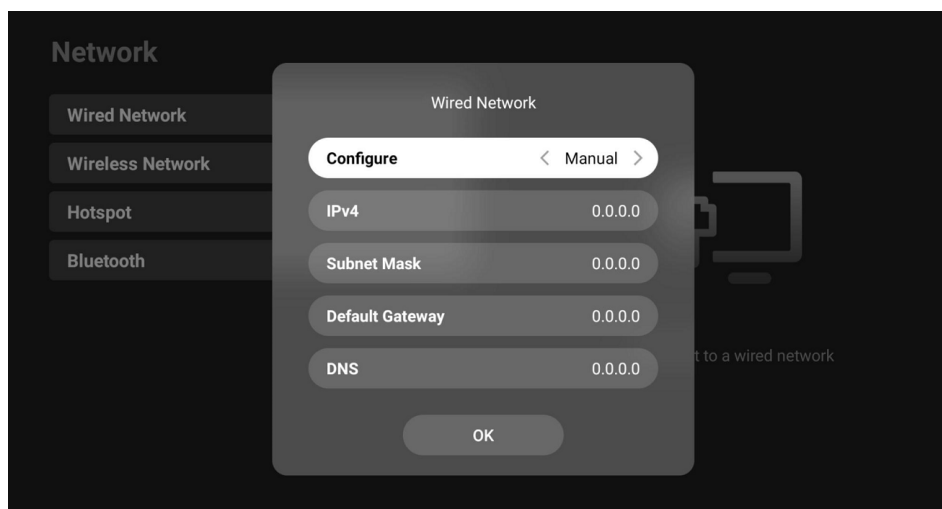
4.7 Settings

4.7.1 Network Settings

4.7.1.1 Wired Network

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Network** > **Wired Network** to access wired network settings.

Figure 4-56 Wired network

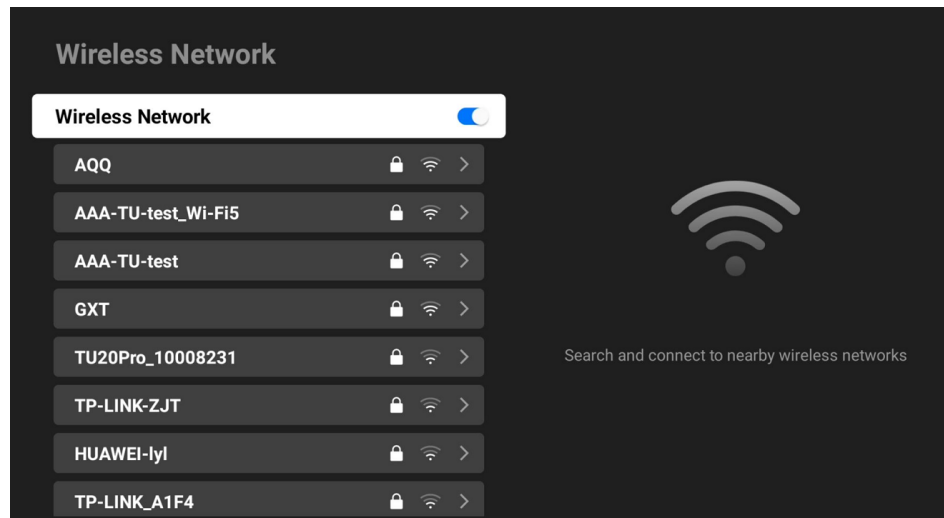


- Step 3 Select **Auto** or **Manual** for the configuration mode.
- Auto: The device automatically obtains an IP address.
 - Manual: Manually set a static IP address for the device.

4.7.1.2 Wireless Network

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Network** > **Wireless Network** to access wireless network settings.

Figure 4-57 Wireless network



Step 3 Select an available Wi-Fi network near you and enter the password in the displayed window.

Step 4 Press the **Confirm** button on the remote to connect to the Wi-Fi network.

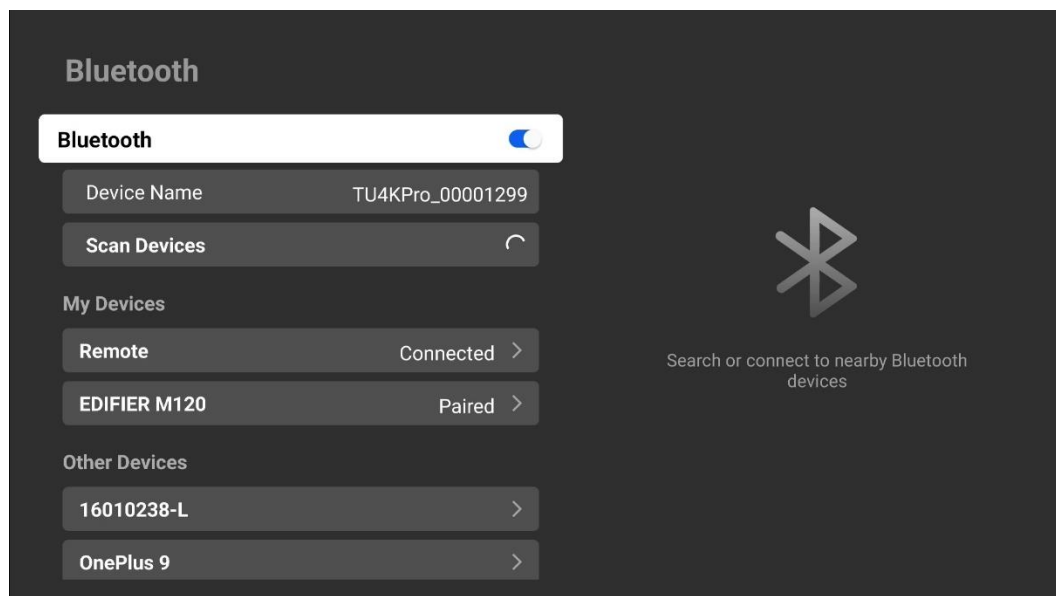
4.7.1.3 Bluetooth

Step 1 On the home screen of the system, select  to open the settings menu.

Step 2 Select **Network** > **Bluetooth** to access Bluetooth settings.

Step 3 Toggle on **Bluetooth**.

Figure 4-58 Bluetooth

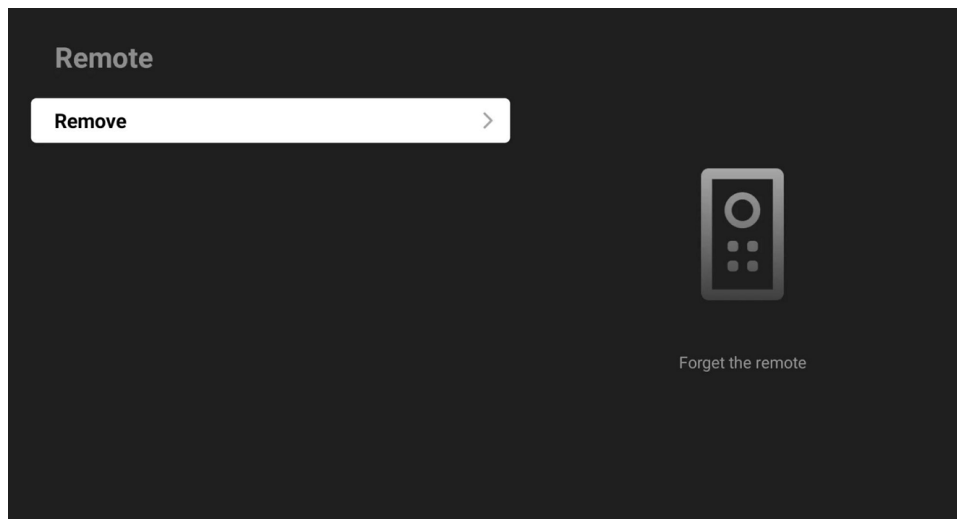


Step 4 Select a target device from **Other Devices** to start pairing.

Remove the Remote

- Step 1 Select **Remote** from **My Devices** to open the remote settings screen.
- Step 2 Select **Remove** to forget the current remote.
- Step 3 If you want to forget the connected remote and pair with another one, simply select **Remove** and then follow the instructions to pair with a new remote.

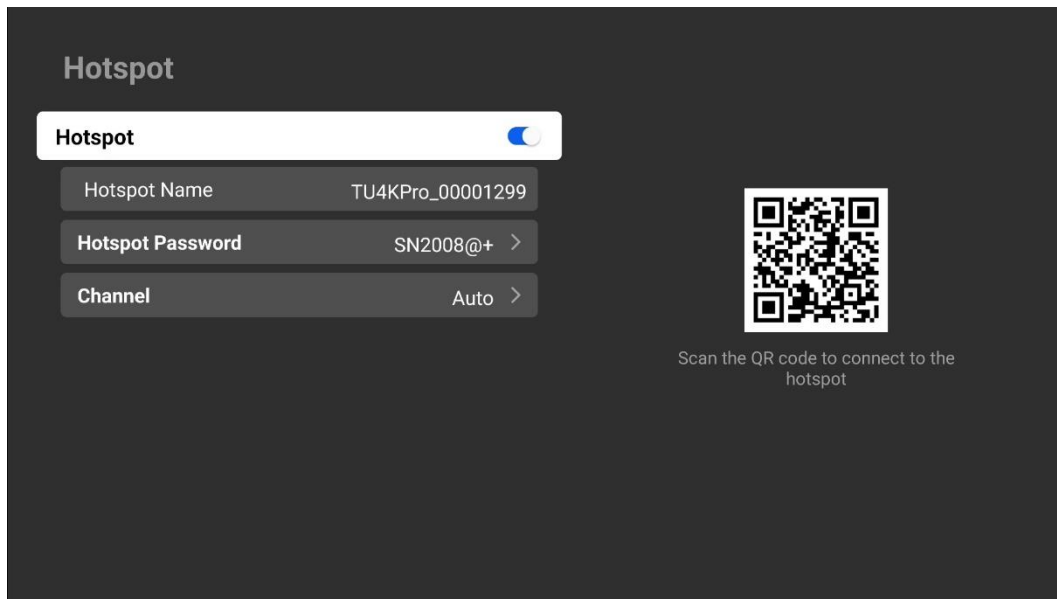
Figure 4-59 Remove the remote



4.7.1.4 Hotspot

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Network > Hotspot** to open the **Hotspot** screen.
- Step 3 Toggle the hotspot option on () and set the device name, hotspot password, and channel information. You can also quickly connect to the device's hotspot by scanning the QR code on the right with your mobile phone.

Figure 4-60 Hotspot



- The device name must follow the below rules:
 - Emojis are not allowed.
 - The name must be between 1 and 24 characters in length.
 - Only the supported characters are allowed, including: `~!@#\$\$%^&\*-\_+=`
 - The device name and hotspot name are the same, and the hotspot name will automatically change to match any updates to the device name.
- The password must follow the below rules:
 - The password must be between 8 and 24 characters in length.
 - Only the supported characters are allowed, including: `~!@#\$\$%^&\*-\_+=`
 - The password must contain at least three of the followings: uppercase letters, lowercase letters, numbers, and symbols.

Notes

- After you change the hotspot name or password, please insert the mirroring dongle into the USB port of the playback control processor for pairing again.
- Please consider changing to a stronger password if your current one is weak.

4.7.2 Display and Effects

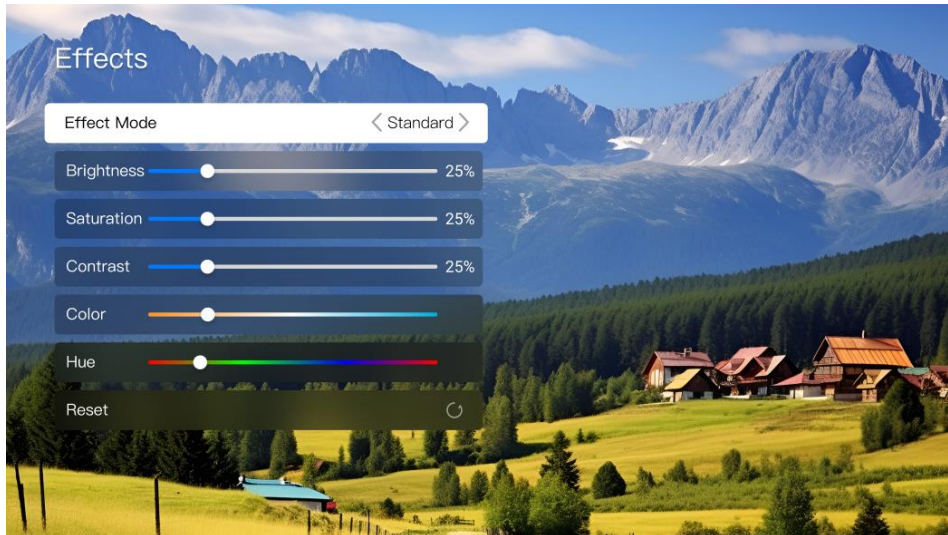
4.7.2.1 Effects

To have a more comfortable viewing experience, you can adjust the display effects via the following methods.

Step 1 On the home screen of the system, select  to open the settings menu.

Step 2 Select **Display and Effects** > **Effects** to open effect adjustment.

Figure 4-61 Effect adjustment



Step 3 Select a mode according to your need.

- **Standard:** Suitable for most content viewing.
- **Meeting:** Suitable for document display and providing a more comfortable viewing experience.
- **Vivid:** Suitable for movie, video and image playback and delivers vibrant and pleasing effects.
- **Skin:** Suitable for video meeting scenarios and guarantees accurate and natural skin tones.

Step 4 You can fine-tune the effect parameters after selecting a mode to satisfy personalized requirements.

6. On the remote, press the **Menu** button to enter the menu.
7. Select **Effect** and press the **Confirm** button on the remote to open the effect adjustment interface.
8. Adjust the values for **Brightness**, **Saturation**, **Contrast**, **Color Temperature** and **Hue** to customize the display effect.
9. (Optional) If you are not satisfied with the effect after adjustment, press the **Reset** button to reset the parameter values to the defaults.

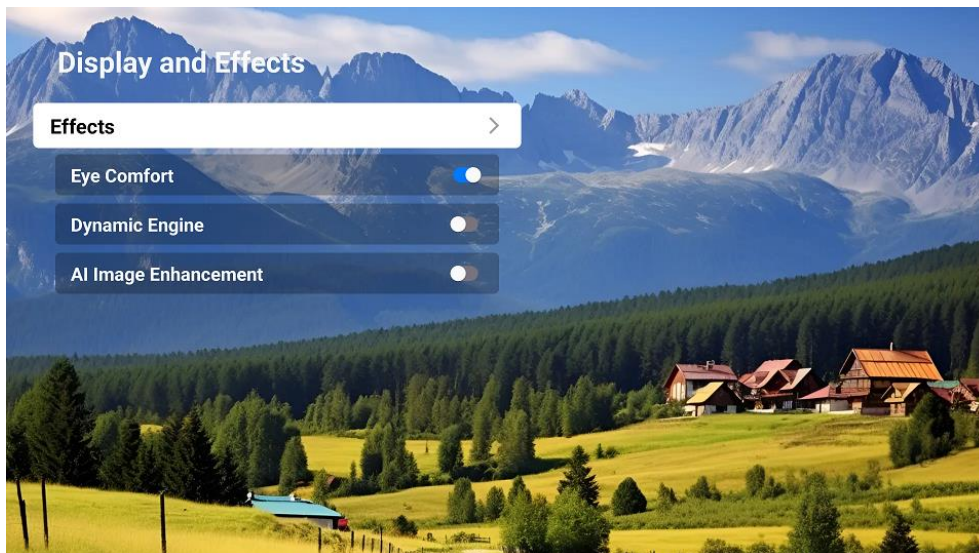
4.7.2.2 Eye Comfort

Step 1 On the home screen of the system, select  to open the settings menu.

Step 2 Select **Display and Effects** > **Eye Comfort** to enable or disable Eye Comfort.

The **Eye Comfort** enables a little yellowish display on the screen to relieve eye fatigue.

Figure 4-62 Eye comfort



4.7.2.3 Dynamic Engine

Note

This feature is available when the A10s Pro receiving card is used and Gamma is manually adjusted to 2.8 in NovaLCT in advance.

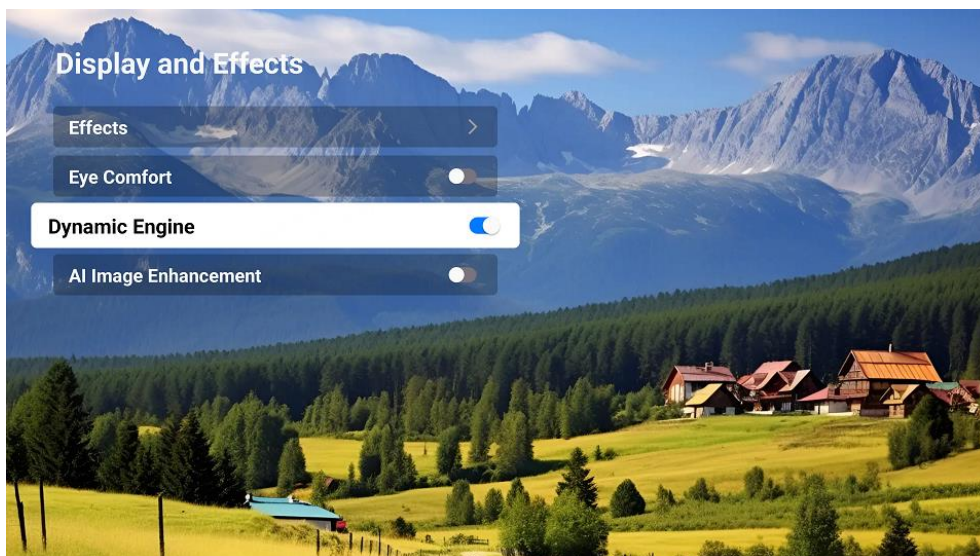
Step 1 On the main screen of the system, select  to open the settings menu.

Step 2 Select **Display and Effects** > **Dynamic Engine** to enable or disable Dynamic Engine.

Step 3 Select an image quality mode **Natural**, **Standard**, **Ultimate**, or **Off**.

After Dynamic Engine is enabled, real-time analysis and dynamic adjustment are made to each frame to significantly improve the display contrast and image details for better visual experience, and effectively control and lower the display power consumption, extending the service life of the LED screen.

Figure 4-63 Dynamic Engine

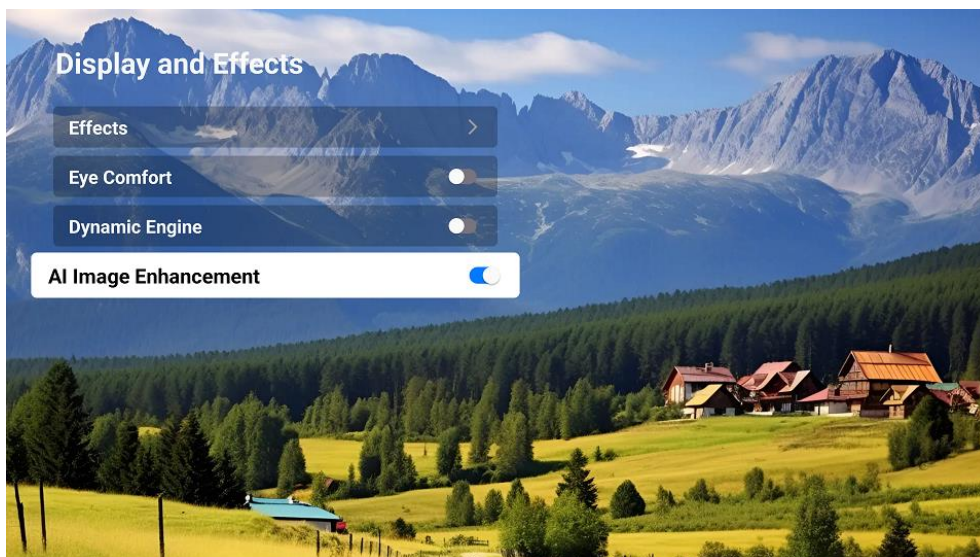


4.7.2.4 AI Image Enhancement

- Step 1 On the main screen of the system, select  to open the settings menu.
- Step 2 Select **Display and Effects** > **AI Image Enhancement** to enable or disable AI Image Enhancement.
- Step 3 Select an image quality mode **Natural**, **Standard**, **Ultimate**, or **Off**.

AI image enhancement enables intelligent recognition of playing content, fine tuning of colors in each frame, and comprehensive optimization of color saturation, brightness, sharpness and dynamic motion compensation.

Figure 4-64 AI image enhancement

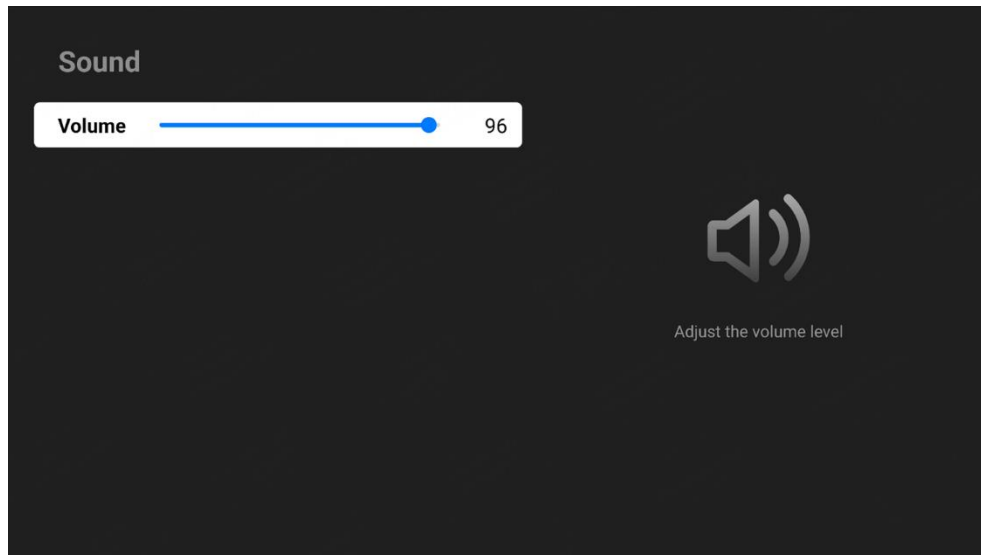


4.7.3 Sound Settings

Step 1 On the home screen of the system, select  to open the settings menu.

Step 2 Select **Sound** to open sound settings.

Figure 4-65 Sound settings



Step 3 You can adjust the system volume.

4.7.4 General Settings

4.7.4.1 Date and Time

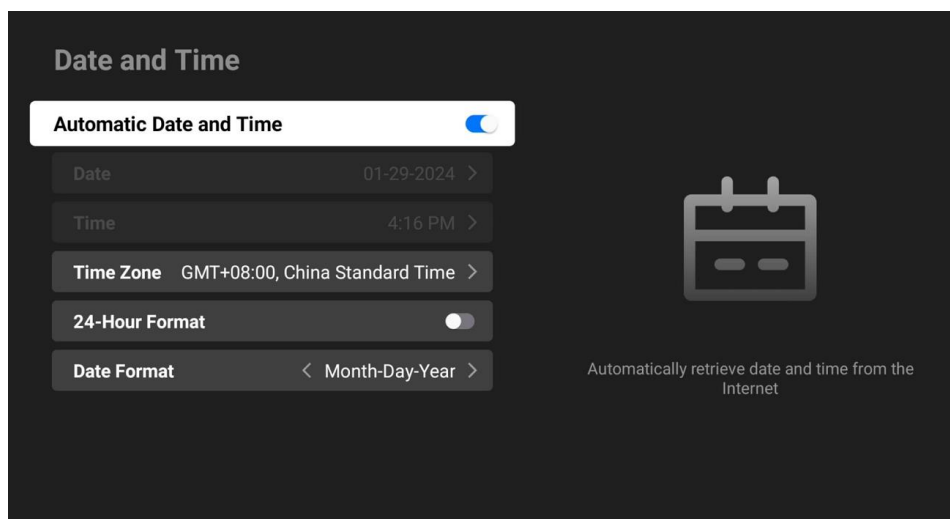
Step 1 On the home screen of the system, select  to open the settings menu.

Step 2 Select **General > Date and Time** to access date and time settings.

Step 3 The date and time settings that are available include the following options.

- Automatic date and time: Automatically retrieve date and time from the Internet. You can also disable this function and then manually set the date and time of the system.
- 24-hour format: Show the time in the 24-hour format. The system time is displayed in the 12-hour time format by default.
- Date format: Set the date format to **Year-Month-Day** (default), **Month-Day-Year** or **Day-Month-Year**.

Figure 4-66 Date and time

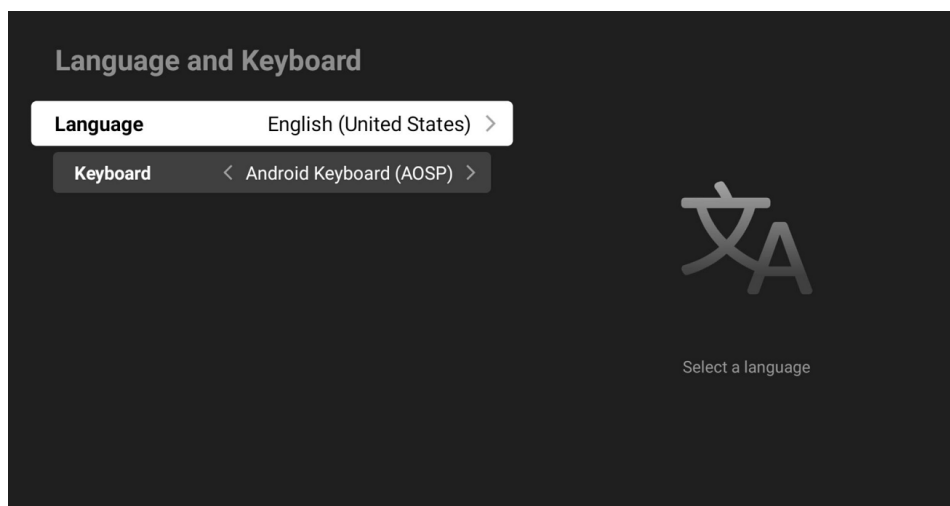
 **Note**

If NTP time synchronization is enabled in ViPlex Express/ViPlex Handy/VNNOX, the system will automatically synchronize time with the NTP server, and **Automatic Date and Time** will be disabled. To enable this option again, please disable NTP time synchronization in ViPlex Express/ViPlex Handy/VNNOX first.

4.7.4.2 Language and Keyboard

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **General > Language and Keyboard** to open language and keyboard settings.
- Step 3 You can set the language and input method for the system.
- Language: Available options include English, Simplified Chinese, Traditional Chinese, Japanese, Russian, Korean, Portuguese, Spanish, and Italian.
 - Keyboard: Available options include Android keyboard (AOSP).

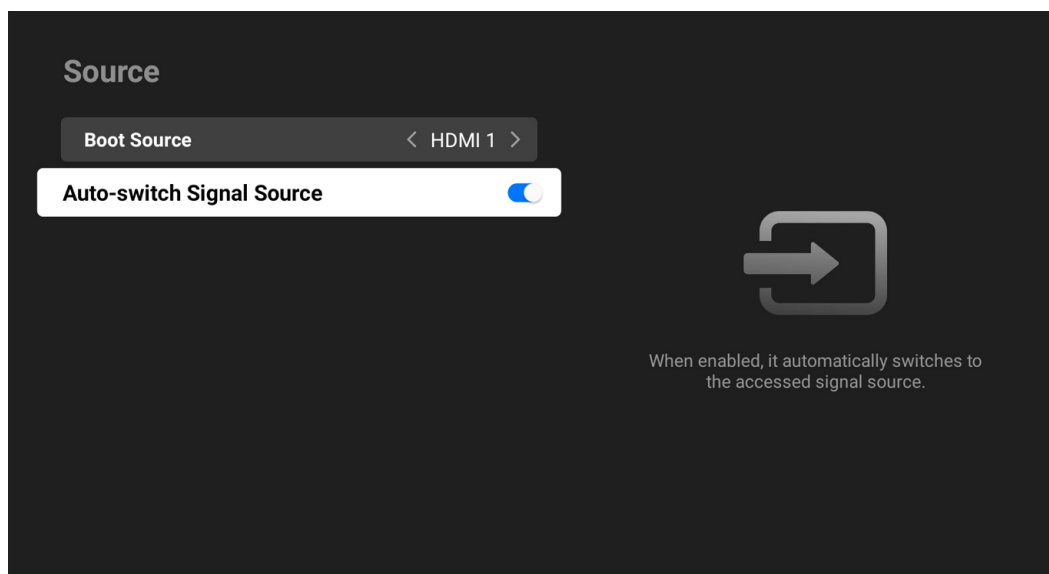
Figure 4-67 Language and keyboard



4.7.4.3 Signal Source

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **General** > **Source** to open the **Source** screen.

Figure 4-68 Signal source



- Step 3 Select a **Boot Source** option from the following: **Android**, **HDMI 1**, **HDMI 2** and **HDMI 3**. Press the left and right buttons to switch between the signal sources.

Note

- The resolution of the HDMI1 defaults to 4K. HDMI2 and HDMI3 are pixel-to-pixel display.
- The frame rate of the HDMI 1 cannot be set to 50Hz.

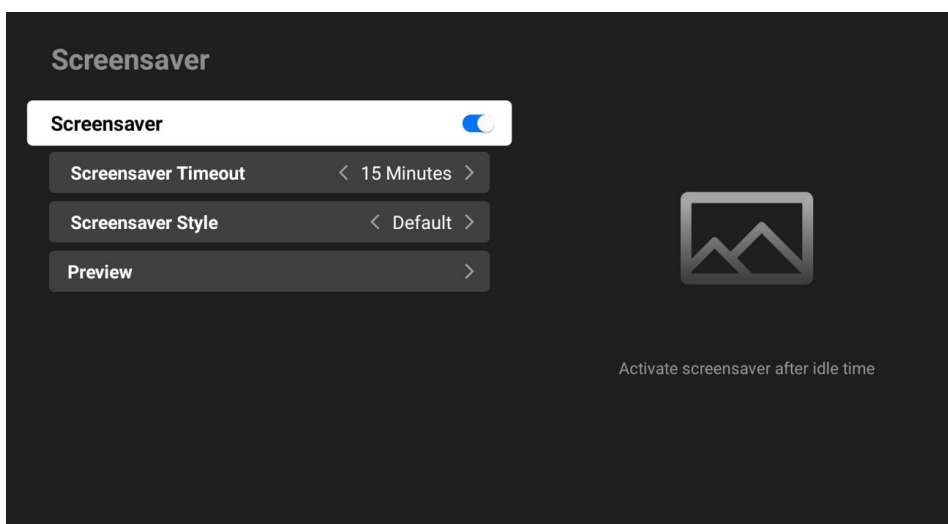
- Step 4 Enable or disable **Auto-switch Signal Source** as needed (this option is enabled by default).

- If this option is, the device will automatically redirect to the home screen upon detecting a signal source connection.
- If this option is disabled, a popup window will appear when the home screen receives a signal source input.

4.7.4.4 Screensaver

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **General** > **Screensaver** to access screensaver settings.
- Step 3 Toggle on **Screensaver**.
- Step 4 Set a screensaver idle time. Available options are **15 minutes**, **30 minutes**, **1 hour**.
- Step 5 Choose between **Default** and **Custom** for **Screensaver Style**.
- Default screensaver displays the current date and time.
 - Custom screensaver displays any image you choose. Press the **Confirm** button to select an image and you can select up to 10 images.
- Step 6 Select **Preview** to preview the current screensaver in full screen.

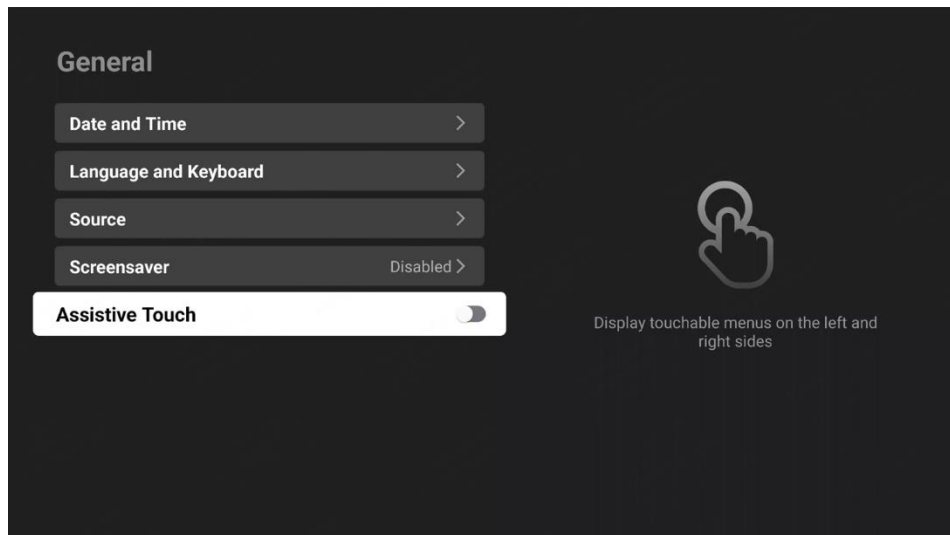
Figure 4-69 Screensaver



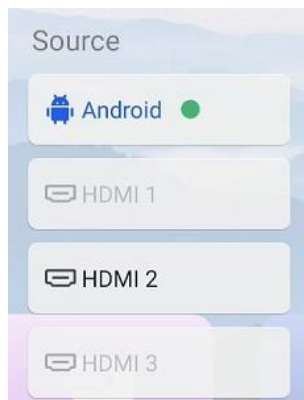
4.7.4.5 Assistive Touch

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Toggle on **General** > **Assistive Touch** to show the **Assistive Touch** menu on both sides of the screen.
- Press the  icon on the left and right sides of the screen to open the sidebar.

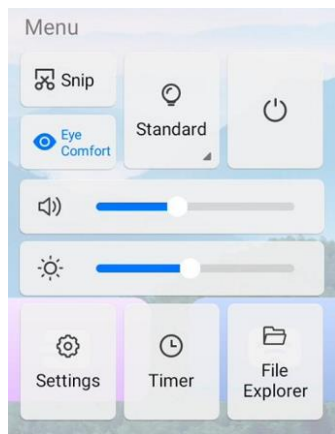
Figure 4-70 Assistive touch



-  : Back button. Select to go back to the previous interface.
-  : Home button. Select to go back to the home screen.
-  : Pencil button. Select to activate the commenting tool.
-  : Signal source button. Select to display all signal sources, and you can easily switch between them. Options that are grayed out indicate that there is no signal available and cannot be selected. The green dot signifies the currently active source.



-  : Menu button. Select to access the menu bar, which enables convenient access to various functions, as illustrated below.



- : Whiteboard button. Select to access the whiteboard tool.
- : Recents button. Select to show all active or open apps, allowing you to easily find or close them.

Note

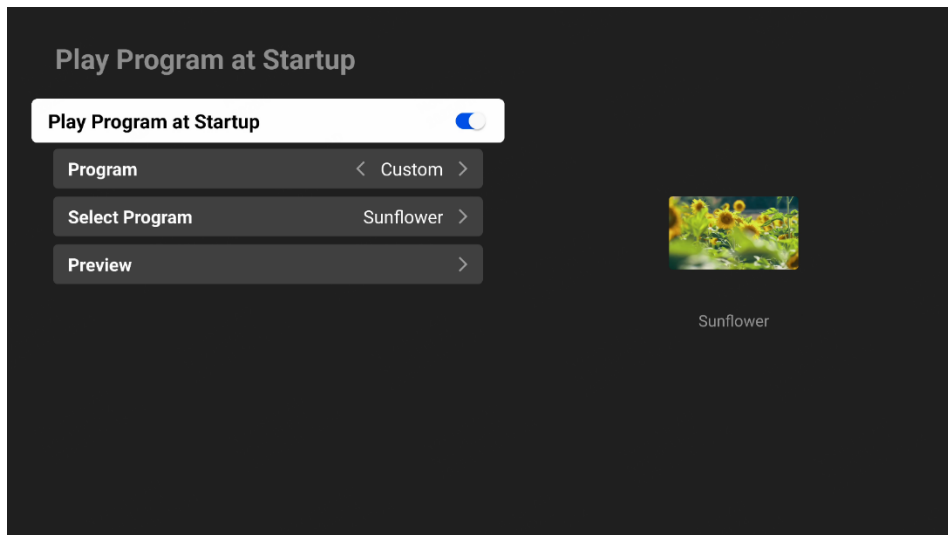
The remote cannot control the assistive touch menu. You need to connect a mouse or use a touchscreen for control.

4.7.5 Playback Settings

4.7.5.1 Play Program at Startup

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Playback > Play Program at Startup**.
- Step 3 When **Play Program at Startup** is enabled, the program will automatically start playing when the device is powered on or wakes up from sleep mode.
- Step 4 Choose a program to be played. Available options include **Last Played** and **Custom**.
- Last played: The video that was played before power-off will automatically start playing upon power-on.
 - Custom: Select **Select Program** to choose a program to be played. You can only select 1 program.

Figure 4-71 Play program at startup

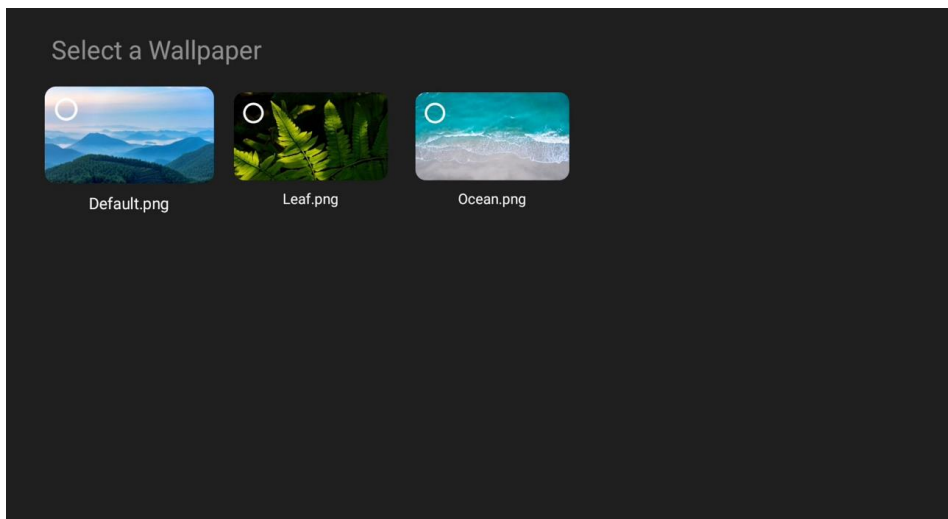


4.7.6 Personalize

4.7.6.1 Wallpaper

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Settings > Personalize > Wallpaper** to open the Wallpaper screen.
- Step 3 Select a wallpaper and then press the **Confirm** button on the remote.

Figure 4-72 Wallpaper



4.7.7 System Settings

4.7.7.1 About

- Step 1 On the home screen of the system, select  to open the settings menu.

Step 2 Select **Settings** > **System**> **About**.

Step 3 Select **Device Name** to set a name for your device.

Step 4 Select **Device Information** to check the below information.

- Version
 - Android version
 - System version
 - System version release time
 - Sending card FPGA version
 - FPGA_DDR initialization status
 - Receiving card model
 - Receiving card MCU version
 - Receiving card FPGA version
- Storage
 - Memory
 - Storage

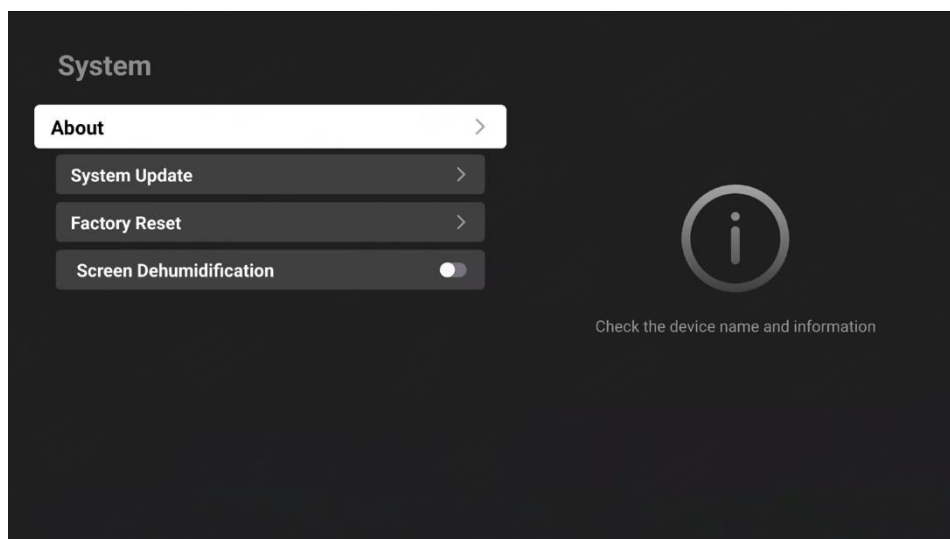
Note

If a USB drive is used for storage expansion, the expansion information will also be displayed.

- Status
 - Device MAC address

Step 5 Select the **Service Agreement** to view the terms and conditions of this device.

Figure 4-73 About

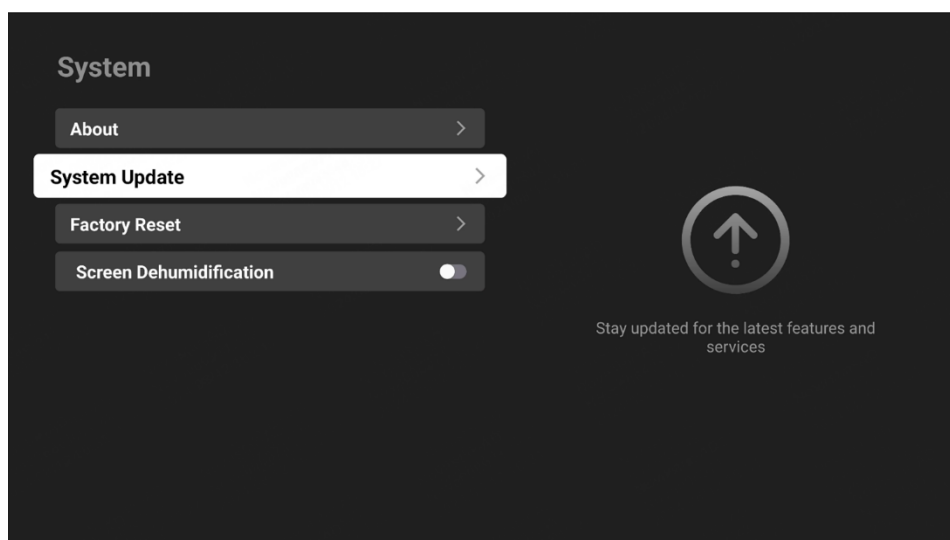


4.7.7.2 System Update

Step 1 On the home screen of the system, Select  to open the settings menu.

Step 2 Select **Settings** > **System** > **System Update**.

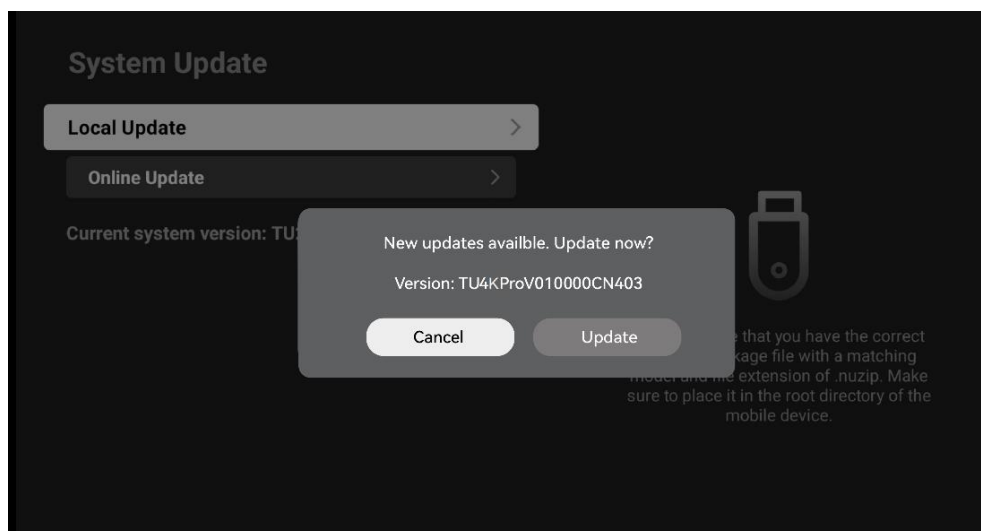
Figure 4-74 System update



Step 3 Select **Local Update** or **Online Update**.

- Local update: Insert the USB drive that contains the update package into the USB port of the device. The update package has a file extension of *.nuzip and the package must be placed in the root directory of the USB drive. When an update is available, select **Update**.

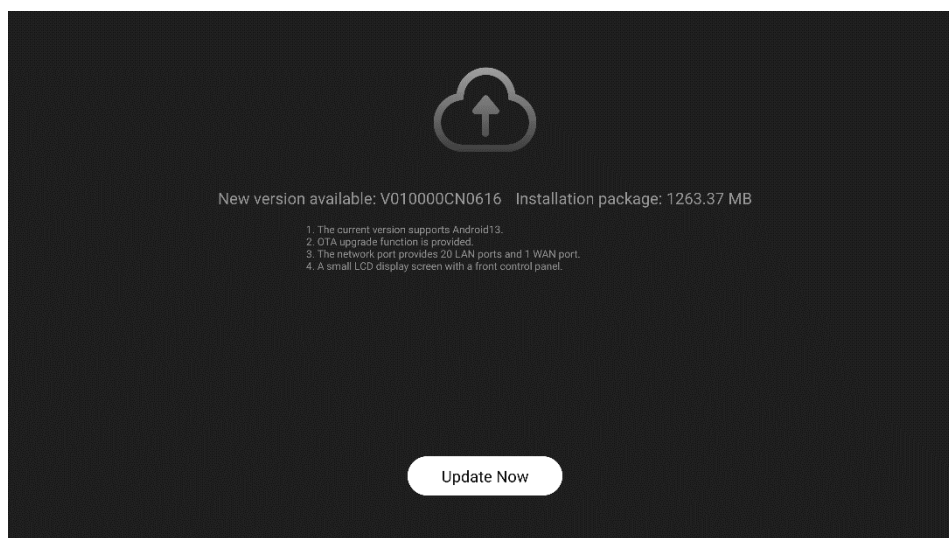
Figure 4-75 Local Update

**Note**

The update process takes approximately 5-8 minutes. During this time, do not turn off the device, remove the USB drive, or use the remote control. (Turning off the power or removing the USB drive can be dangerous and may damage the device.)

- Online update: The system will automatically start checking for the latest update. If a new version is available, select **Update Now** and wait for the process to finish.

Figure 4-76 Online update

**Notes:**

- Before starting the online update, make sure you are connected to the Internet.
- The online update consists of two stages: After detecting the latest version, select **Update Now**. If the installation package for the current version is already available locally, the system will proceed directly to install it.

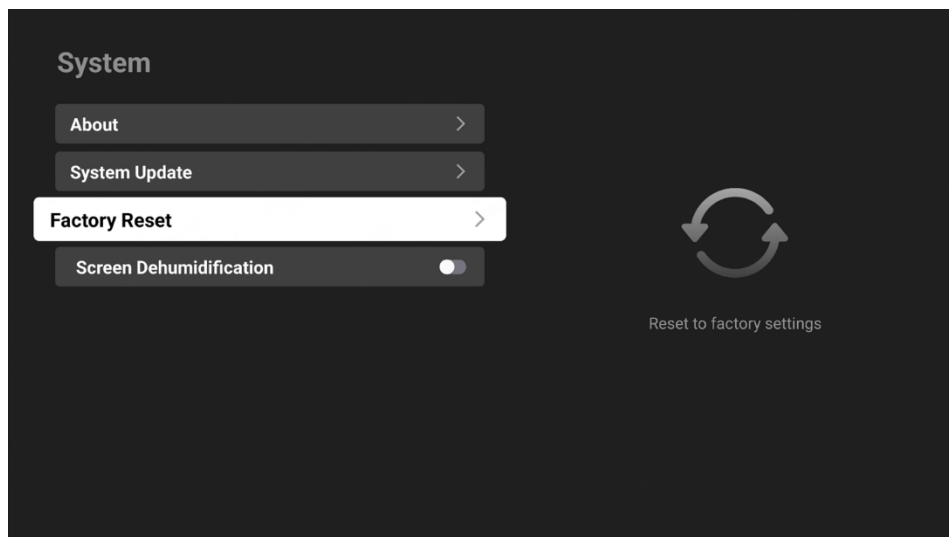
- Please do not exit the update process intentionally. If the update is interrupted due to a shutdown or power outage, the installation package will be saved locally.

4.7.7.3 Factory Reset

- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Settings > System > Factory Reset**.
- Step 3 Select **Factory Reset** to reset the device to its factory default settings.

Factory reset will erase all the data including local documents, images, videos, applications, etc., and the data cannot be recovered.

Figure 4-77 Factory reset



4.7.7.4 Screen Dehumidification

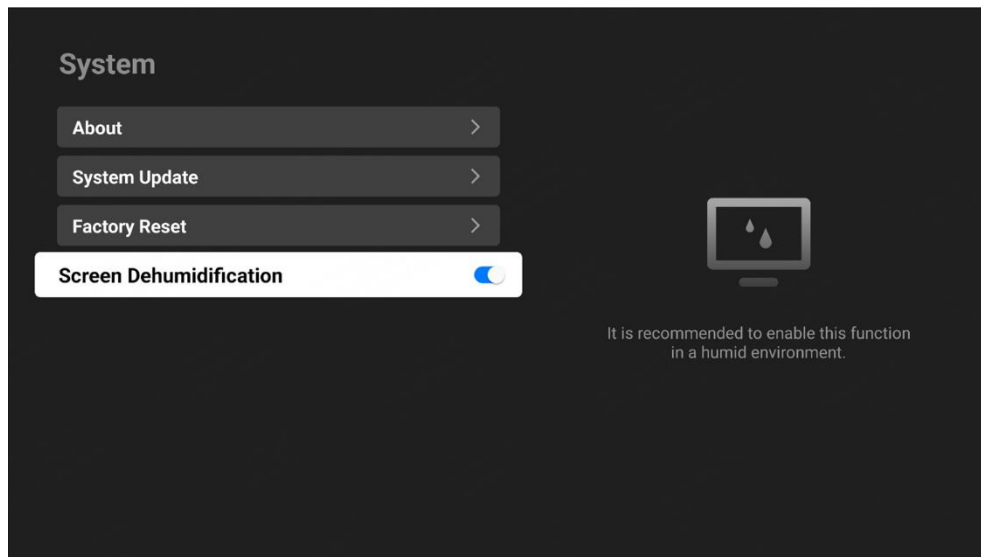
- Step 1 On the home screen of the system, select  to open the settings menu.
- Step 2 Select **Settings > System** to open system settings.
- Step 3 Enable **Screen Dehumidification**. By default, this feature is disabled, but it will take effect in real-time once you enable it.

LED products are moisture-sensitive. In order to extend the service life of the screen in a relatively humid environment, when the device is not turned on for a period of time, it needs to be dehumidified before it is turned on again.

After activating the dehumidification function, the system will begin the dehumidification process according to the length of time the device has been powered off. This process includes automatically adjusting the screen brightness and implementing aging procedures

for different periods of time. The power-off duration of the device is calculated by subtracting the last power-down time from the subsequent power-up time of the device.

Figure 4-78 Screen dehumidification



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