Video Wall Controller

User Manual

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Preface

Applicable Models

This manual is applicable to the DS-C30S series video wall controller.

Default Parameters

Type	Default Parameter
Device	• Login user name: admin • IP address: 192.0.0.64
SSH connection	

Caution

To improve system security, it is highly recommended to change password regularly. In order to protect your privacy and corporate data and avoid network security issues, it is recommended to set strong password that meets security requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Note	Provides additional information to emphasize or supplement important points of the main text.
Caution	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions

Caution

In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.

Note

- Provide a surge suppressor at the inlet opening of the device under special conditions such as the mountain top, iron tower, and forest.
- + identifies the positive terminals of the device which is used with, or generates direct current, and - identifies the negative terminals of the device which is used with, or generates direct current.
- The serial port of the device is used for debugging only.
- The interface varies with the models. Please refer to the product datasheet for details.

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Chapter 1 Introduction

1.1 Overview

The video wall controller (hereinafter referred as the device) is the core control device of the screen splicing control system. As a new-generation FPGA-based pure hardware image processing device, it adopts the structure of main control board and service boards to provide the following advantages:

- Supports the video input and video output via various ports.
- Supports the network encoding and real-time preview of signal sources.
- Supports the decoding and output of various network signal sources.
- Supports the high-definition (HD) video splicing and fusion.
- Supports the window splicing, roaming window, and other operations.
- Supports the management on users, network, operation, alarm and logs.

1.2 First-Time Configuration Process

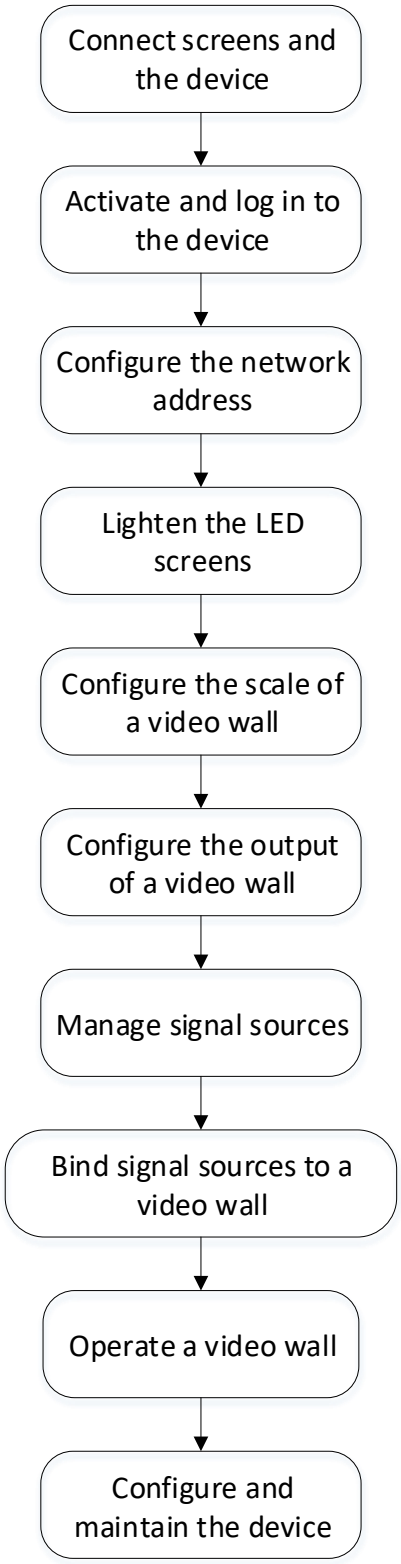

Figure 1-1 First-Time Configuration Process

Chapter 2 Device Basic Settings

2.1 Connect Screen and Device

The following figure is for illustration only, showing the connection method between the screen and the device:

- Connect an LCD screen and the device: Use a video cable to connect an output port of the device output board to an LCD screen.
- One LED screen consists of multiple LED cabinets. Take either of the following methods to connect an LED screen and the device:
  - Use multiple network cables to connect an external LED controller to multiple LED cabinets, and then use a video cable to connect an output port of the device output board to the external LED controller.
  - Use multiple mini-DP to RJ-45 adapter cables to connect an LED controller board to multiple LED cabinets.

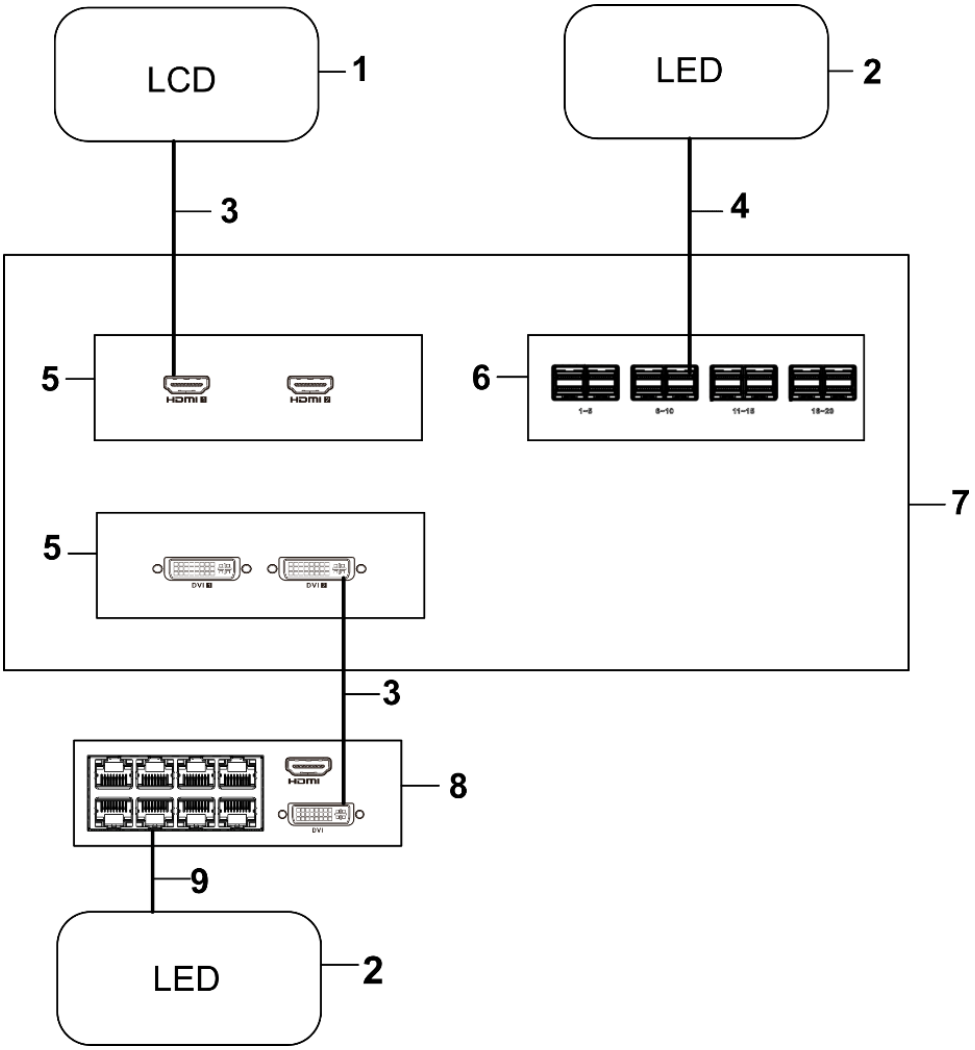

Figure 2-1 Connect Screen and Device

1. LCD screen	2. LED screen	3. HDMI or DVI video cable
4. Mini-DP to RJ-45 adapter cable	5. Output board	6. LED controller board
7. Device	8. External LED controller	9. Network cable

2.2 Activate and Log In to Device

You should activate the device before using the device for the first time. You can use the SADP client or the device web page to activate the device. When activating the device, obey the following requirements to set the password:

- To improve system security, it is highly recommended to change password regularly. In order to protect your privacy and corporate data, and avoid network security issues, it is recommended to set strong password that meets security requirements.

- Password should contain 8 to 16 characters and at least 2 of the following types: digits, lowercase letters, uppercase letters, and special characters.
- Password cannot contain user name, 123, admin (case insensitive), hik (case insensitive), hkws (case insensitive), hikvision (case insensitive), 4 or more continuously ascending or descending digits, or 4 or more consecutive repeated characters.

Use SADP Client and Web Page

Step 1 Edit the computer's IP address to ensure it is in the same subnet as the device's IP address.

Step 2 Download and install the SADP client on the computer.

Step 3 Open the SADP client.

Step 4 Select the device that is not activated, enter the activation password and confirm it, and click **Activate**.

If the device cannot be found, you can restart the SADP client.

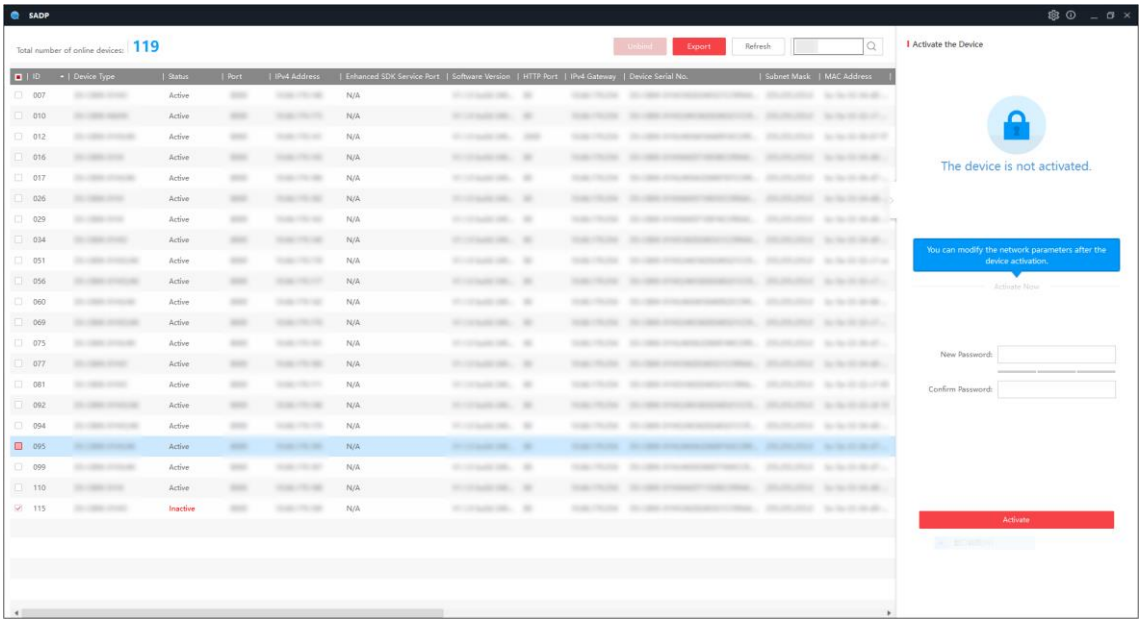

Figure 2-2 Activate the Device via SADP Client

Step 5 View the device IP address in the SADP client and enter the device IP address in the computer browser.

Step 6 Enter the user name and the set activation password, and then click **Log In**.

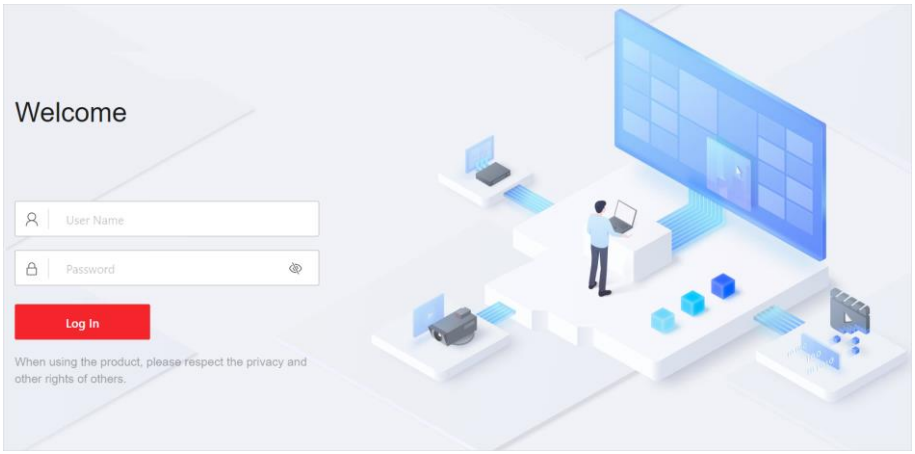

Figure 2-3 Login Page

Step 7 (Optional) To edit the password, you can click the username in the upper right corner of the web page and then click **Change Password**.

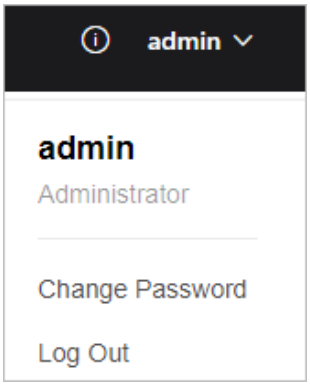

Figure 2-4 Change Password

Use Web Page

Step 1 Use a network cable to connect a computer to the device.

Step 2 Set the computer IP address to any IP address in the range of 192.0.0.2 to 192.0.0.253 (excluding 192.0.0.64) and set the computer gateway address to 192.0.0.1.

By default, the device IP address is 192.0.0.64 and the gateway address is 192.0.0.1.

Step 3 Enter 192.0.0.64 in the computer browser to enter the device activation page.

Step 4 Set the activation password, and then click **Activate**.

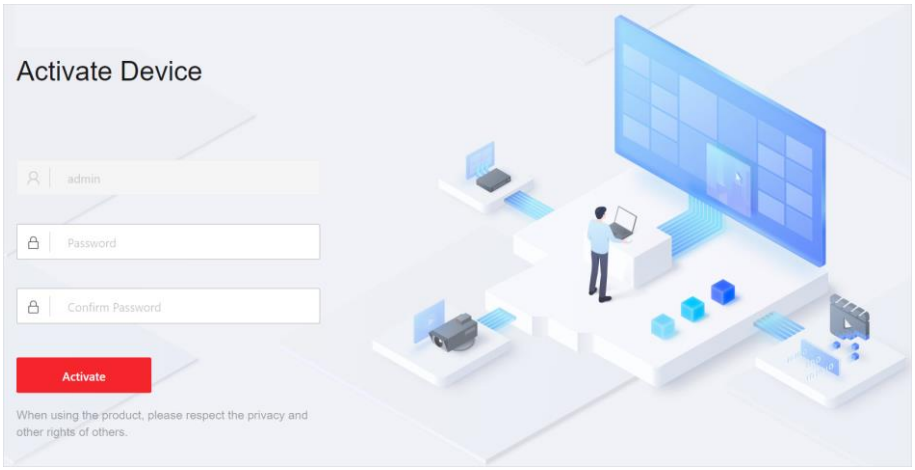

Figure 2-5 Activate the Device via Browser

Step 5 Enter the user name and the set activation password on the login page, and then click **Log In**.

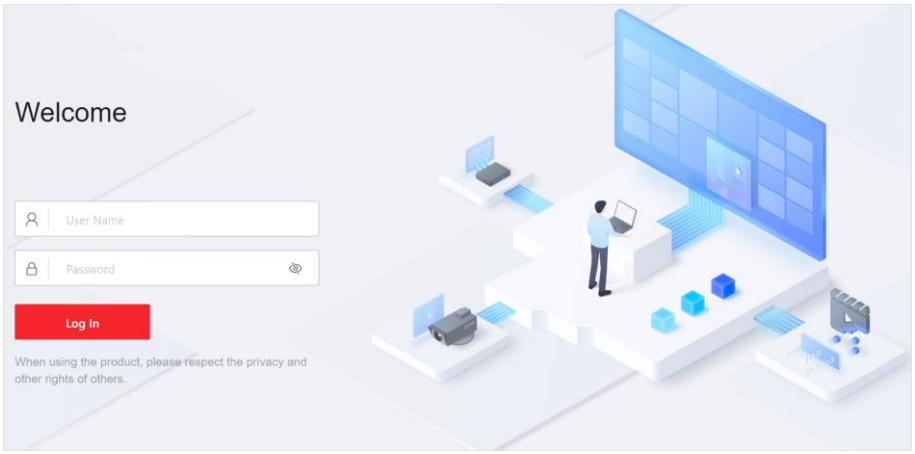

Figure 2-6 Login Page

Step 6 (Optional) To edit the password, you can click the username in the upper right corner of the web page and then click **Change Password**.

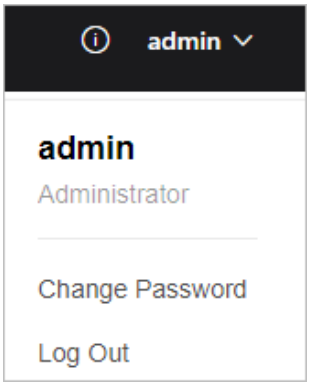

Figure 2-7 Change Password

2.3 Configure the Network Address

Step 1 Go to **Configuration** → **Network** → **Network Configuration** → **TCP/IP**.

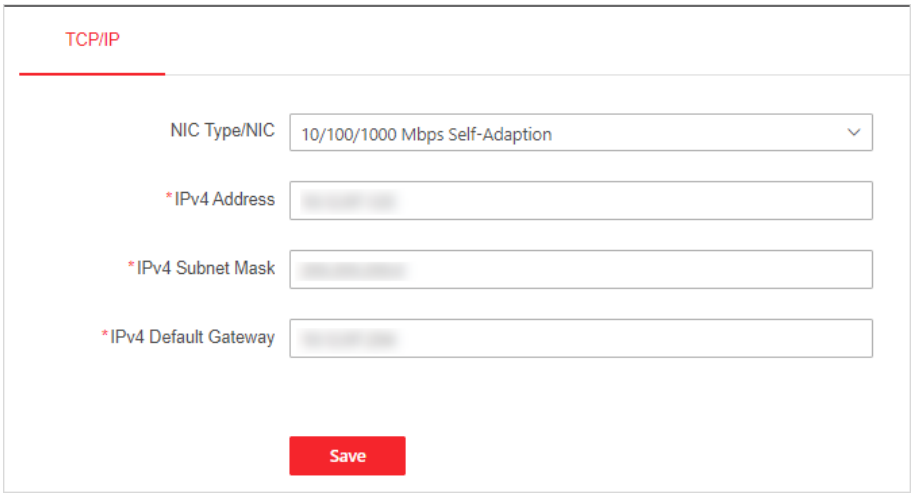

Figure 2-8 Configure the Device IPv4 Address

Step 2 Set the IPv4 address, IPv4 subnet mask, and IPv4 gateway for the device according to the on-site network environment.

Step 3 Click **Save**.

Step 4 In the computer's browser, enter the configured device IP address to access the device's web page:

- If the device and computer are directly connected, first disconnect the direct connection cable between the device and the computer, then use an Ethernet cable to connect the device to the on-site network. Modify the computer's IP address to ensure it is in the same subnet as the device's IP address.
- If the device and computer are connected through the same subnet, after changing the device's IP address, modify the computer's IP address to ensure it is in the same subnet as the device's IP address.

Chapter 3 Video Wall Management

3.1 Configure Directly Connected LED Screens

Before configuring the LED video wall, configure the LED screens first.

Note

If the LED screens are connected to the device through an external LED controller, configure the LED screens through the web page of the LED controller, LED batch controller client, or LED Tool client.

3.1.1 Lighten the LED Screens

If the LED screens are directly connected to the LED controller board, you must lighten the screens. One LED controller board provides 1 output port.

Lighten General Screens

If the loading resolutions of multiple receiving cards controlled by a single LED controller board are consistent, lighten the general screens.

Step 1 On the **Video Wall Configuration** page, click ⚙ of the output port of an LED controller board.

Step 2 Select **General Settings** as the configuration mode.

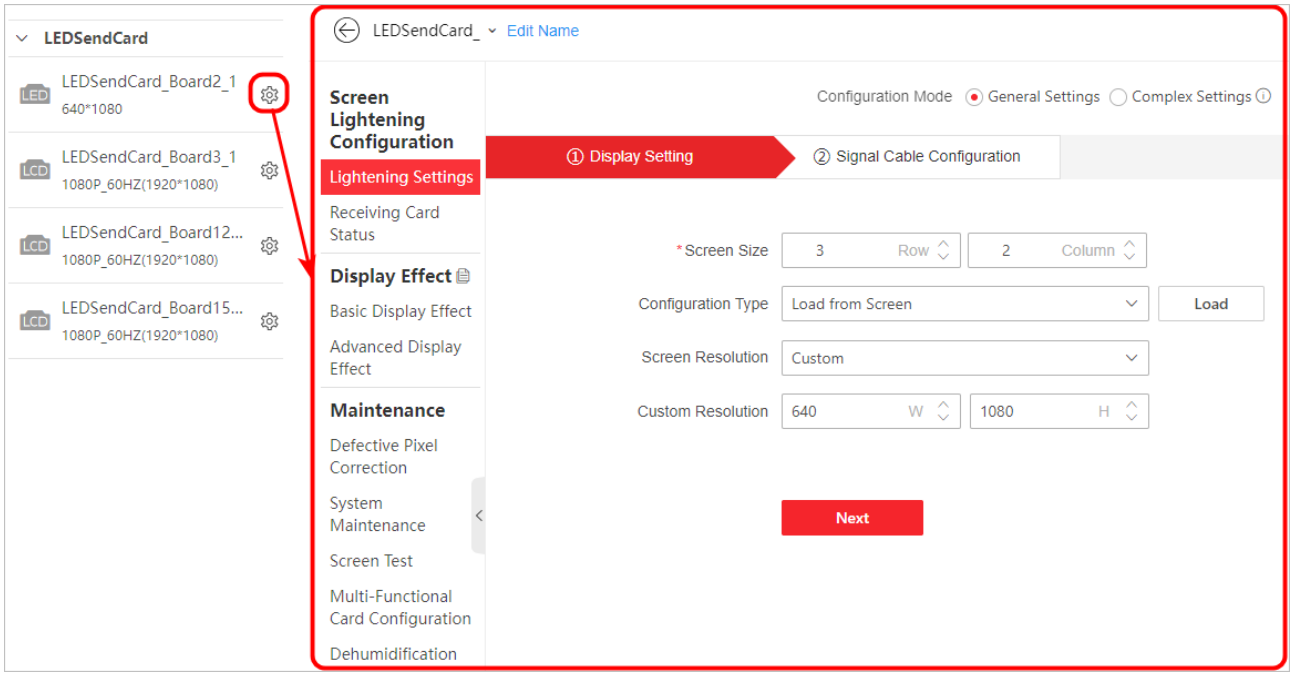

Figure 3-1 Select General Configuration

Step 3 Configure the LED screens and click **Next**.

1) Set the screen size according to the receiving card quantity. Make sure the product of the screen column and screen row is equal to the actual receiving card quantity.
2) Select one of the following methods to import the receiving card configuration file:
   - Select **Load from Screen** and then click **Load**.
   - Select **Import File** and then click to import a file.
   - Select **Load from Cloud**, enter the serial No., and click **Search**. Select a searched configuration file and then click **Load**.
3) Set the resolution.

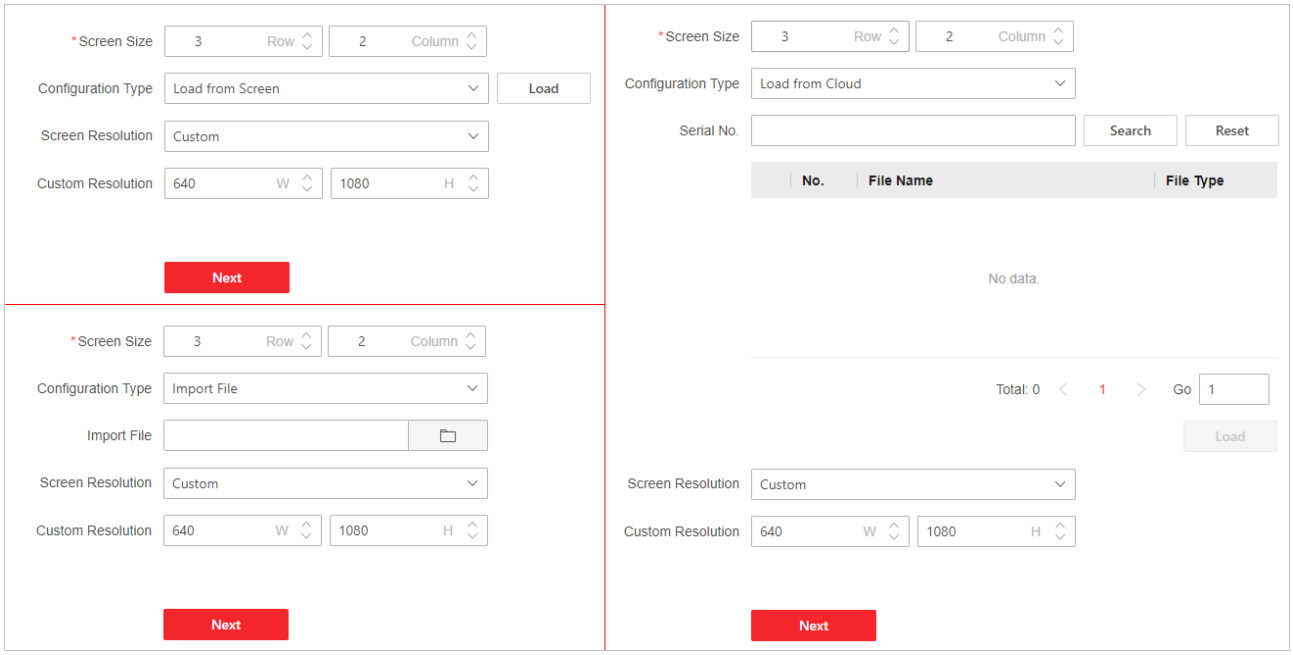

Figure 3-2 Configure General Screens

Step 4 Configure the signal cable connection.

1) Click **Show Connection** to display the network port number on the actual screens.
2) According to the network port number on the actual screens, select a network port of the LED controller board and then take either of the following methods to connect the selected network port to the screens:
   - Click to select screens and connect them in the order of operation. The connection can cross different network ports.
   - Click a screen to set as the start point of the connection and hold a screen to select the connection range. Batch connect screens in the order of operation. The connection can cross different network ports. If the start point and end point are not on the same row or column, the connection will be S-shaped in the order of operation.
3) Use the same method to connect other network ports to the screens.
4) (Optional) You can perform the following operations as required:
   - Click **Undo** to undo the previous operation.
   - Click **Restore** to restore the previous operation.
   - Click **Clear Current Sending Port Connection** to clear the signal connection of the selected network port.
   - Click **Clear All Sending Port Connection** to clear the signal connection of all network ports.
   - Click **Hide Connection** to hide the network port on the actual screen.

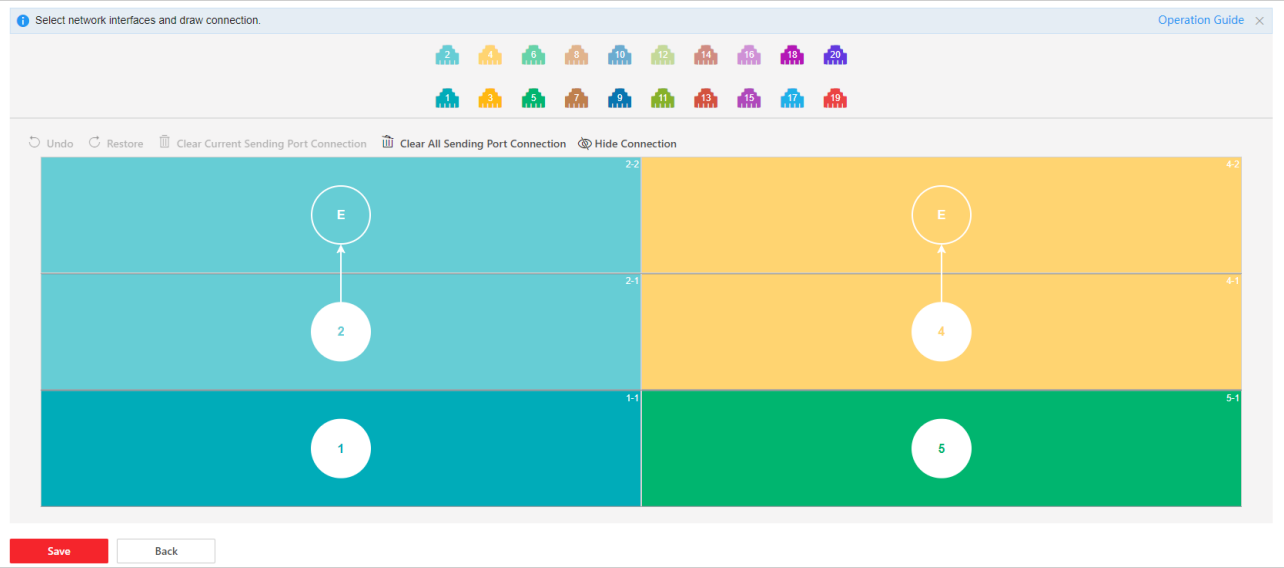

Figure 3-3 Configure Signal Cable Connection for General Screens

Step 5 Click **Save**.

Lighten Complex Screens

If the loading resolutions of multiple receiving cards controlled by a single LED controller board are inconsistent, lighten the complex screens.

Step 1 On the **Video Wall Configuration** page, click ⚙ of the output port of an LED controller board.

Step 2 Select **Complex Settings** as the configuration mode.

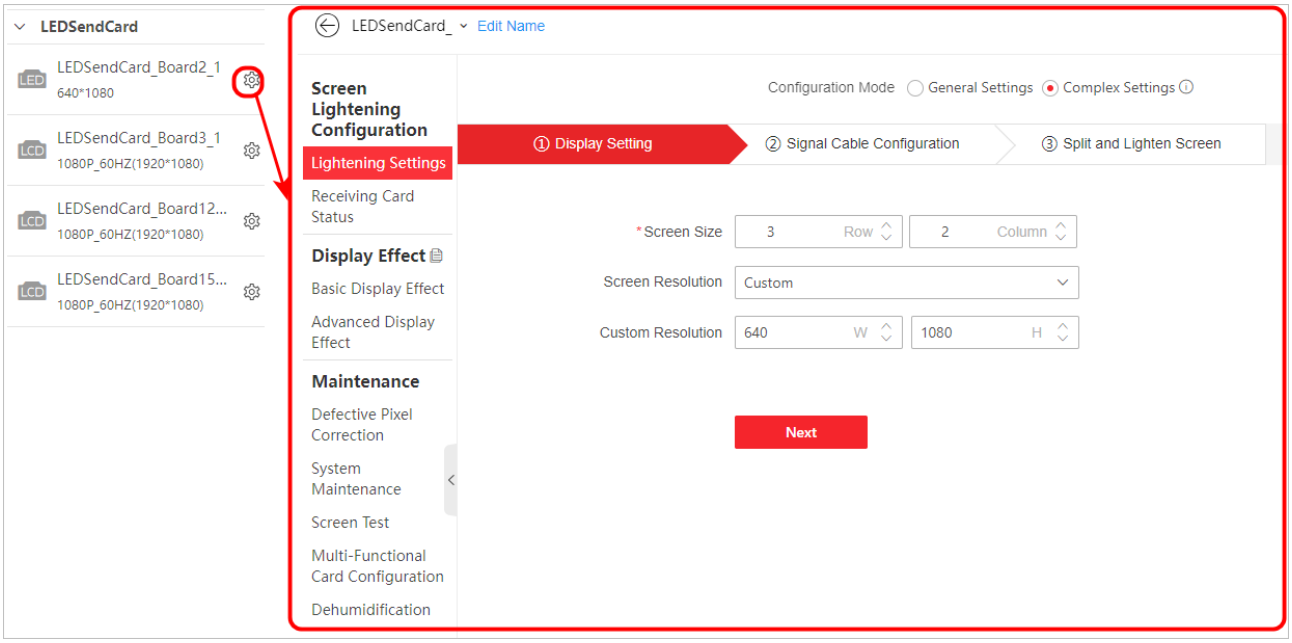

Figure 3-4 Select Complex Settings

Step 3 Configure the LED screens and click **Next**.

1) Set the screen size according to the receiving card quantity. Make sure the product of the screen column and screen row is equal to the actual receiving card quantity.
2) Set the resolution.

Step 4 Configure the signal cable connection and click **Next**.

1) According to the actual cable connection of the LED screens and LED controller board, select a network port of the LED controller board, and then take either of the following methods to connect the selected network port to the screens:
   - Click to select screens and connect them in the order of operation. The connection can cross different network ports.
   - Click a screen to set as the start point of the connection and hold a screen to select the connection range. Batch connect screens in the order of operation. The connection can cross different network ports of the device. If the start point and end point are not on the same row or column, the connection will be S-shaped in the order of operation.
2) Use the same method to connect other network ports to the screens.
3) (Optional) You can perform the following operations as required:
   - Click **Undo** to undo the previous operation.
   - Click **Restore** to restore the previous operation.
   - Click **Clear Current Sending Port Connection** to clear the signal connection of the selected network port.
   - Click **Clear All Sending Port Connection** to clear the signal connection of all network ports.

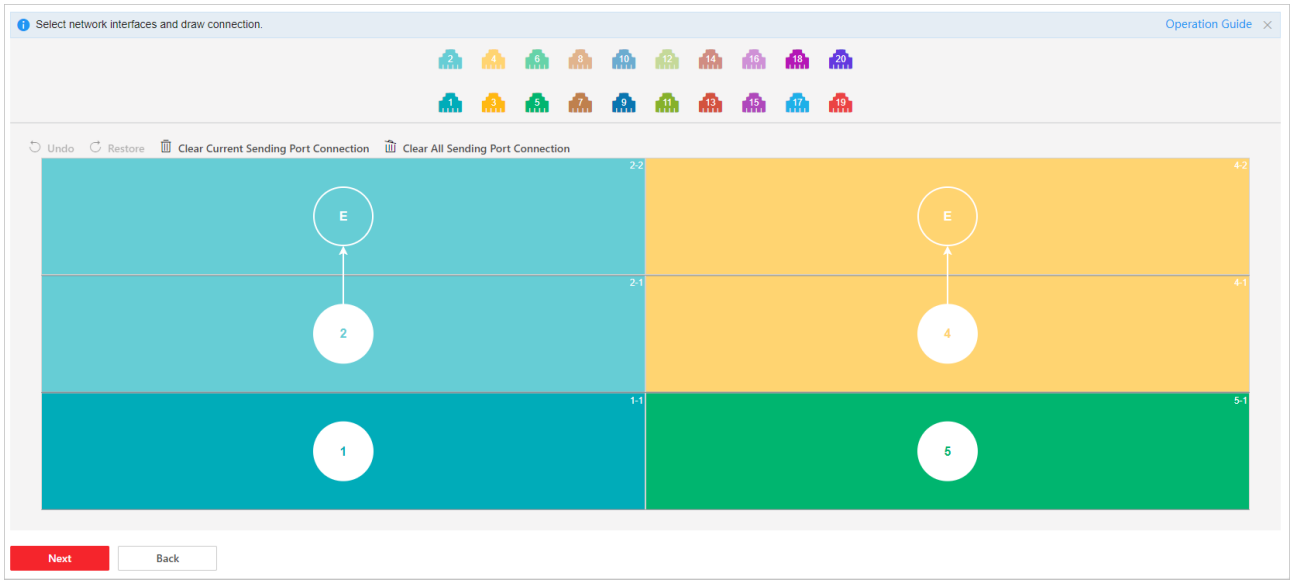

Figure 3-5 Configure Signal Connection for Complex Screens

Step 5 Split and lighten the screens.

1) Press and hold the left mouse button to draw a selection box around multiple screens.
2) Select one of the following methods to import the receiving card configuration file.
   - Select **Load from Screen** and then click **Load**.
   - Select **Import File**, click  to import a file, and then click **OK**.
   - Select **Load from Cloud**, enter the serial No., and click  . Select a searched configuration file and then click **Load**.

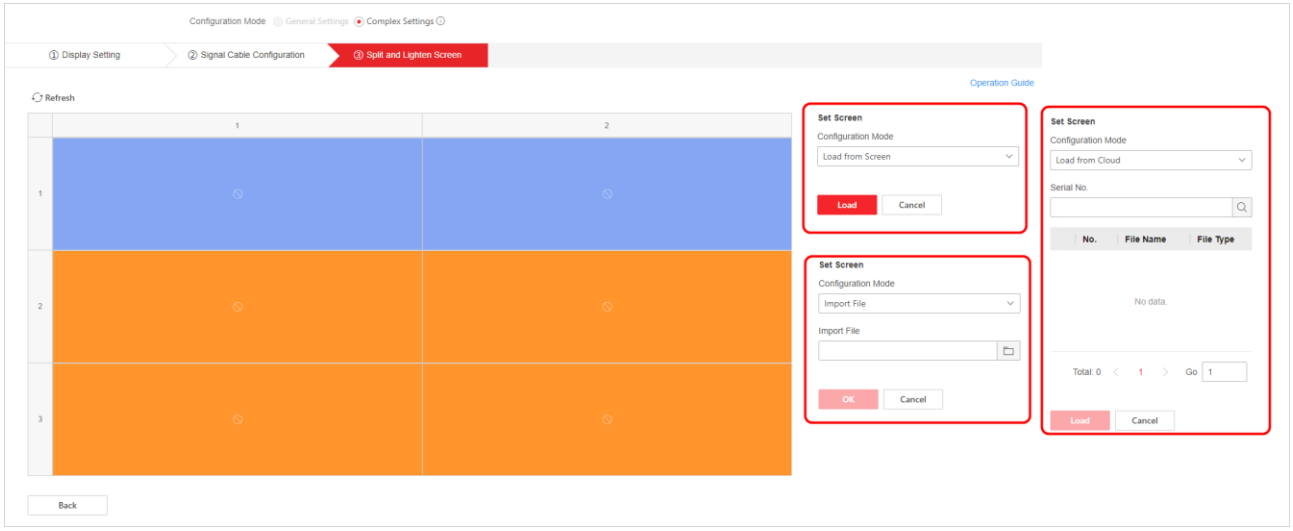

Figure 3-6 Split and Lighten a Complex Screen

3.1.2 Configure LED Controller Board

Go to **Video Wall Configuration**, click  of an output port of the LED control board to configure the following parameters as required.

Correct Receiving Cards

Step 1 Go to **Maintenance** → **Defective Pixel Correction**.

Step 2 Switch on **Enable Correction** at the top of the page to start configuring the correction parameters of the receiving cards.

If the screen supports bright hue correction, the bright hue correction will be enabled simultaneously after you enabling correction. It is recommended to enable the bright hue correction.

Step 3 Click  and select the area to be corrected.

If you need to correct modules, check **Show Module**.

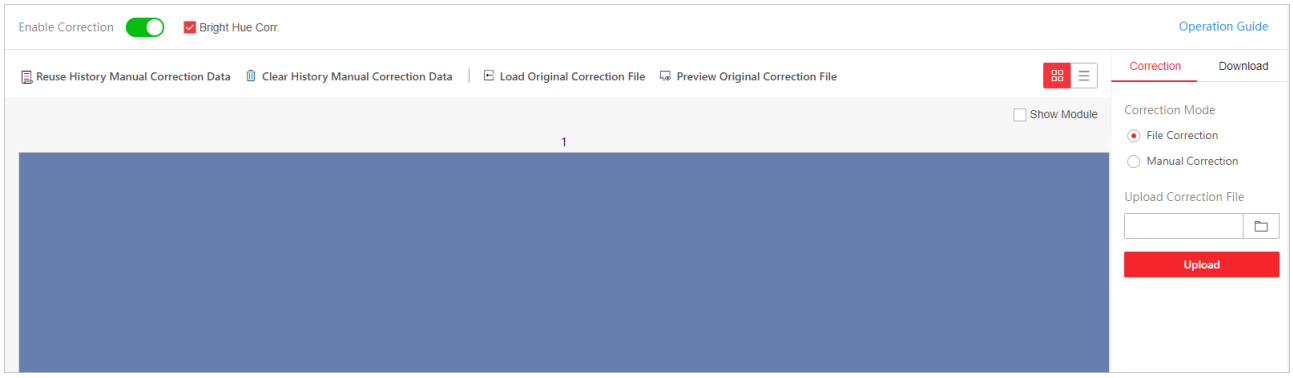

Figure 3-7 Select Correction Area

Step 4 Correct the receiving cards:

1) (Optional) Load the original correction file:
   - For the HUB receiving cards, loading the factory correction data is not required.
   - For the AXS receiving cards, click **Load Original Correction File** to load the factory correction data of the lamp board to the receiving cards. Before loading the original correction file, you can click **Preview Original Correction File** to check the display effect of original correction file.
2) If the display effect still does not meet the requirements, select **File Correction** to load a locally saved correction file.
3) If the display effect still does not meet the requirements, manually correct the receiving cards:
   - When the color difference occurs, select **Manual Correction** and **Screen Correction**, and adjust the RGB (Red Green Blue) value. You can enable **Sync Adjustment** to adjust the RGB values simultaneously.
   - When seam lines occur, select **Manual Correction** and **Seam Correction**, set the seam direction and seam width, and adjust the RGB value. You can enable **Sync Adjustment** to adjust the RGB values simultaneously.

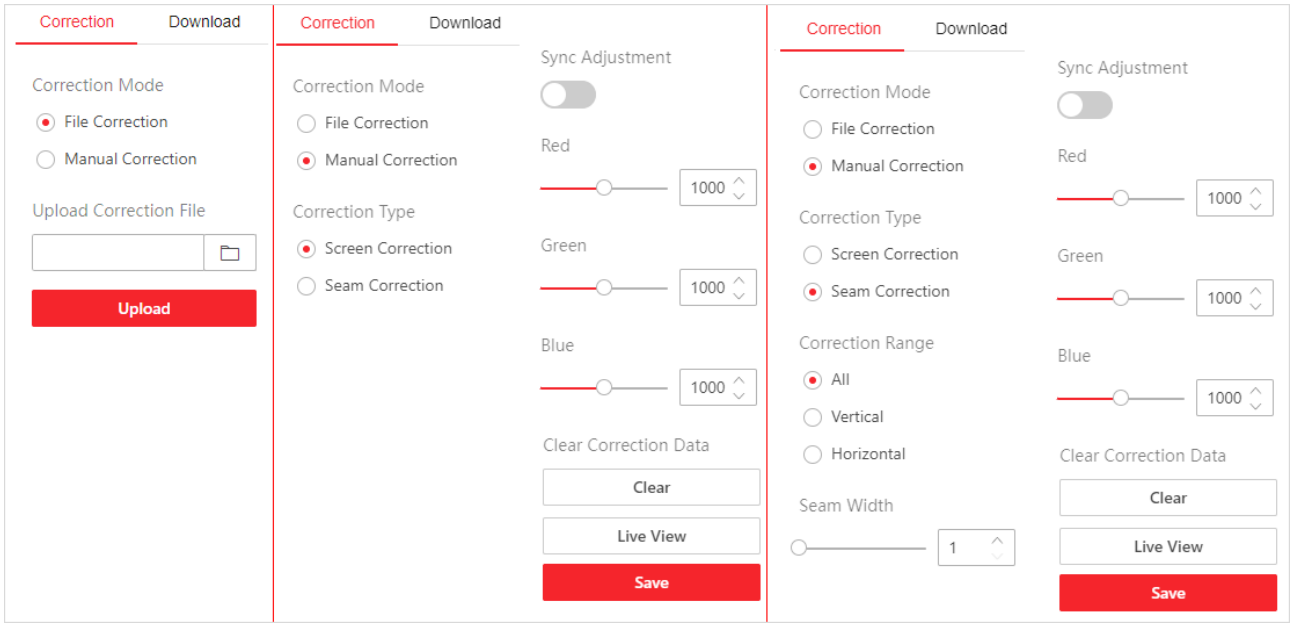

Figure 3-8 Correct Receiving Cards

Step 5 Click **Live View** to preview the display effect.

Step 6 When the desired display effect is reached, click **Save**.

Step 7 (Optional) You can perform the following operations as required:

- If the historical manual correction data do not meet the requirements, select the screen areas and click **Clear History Manual Correction Data**.
- If the display effect does not meet the requirements, select the screen areas and click **Clear**.
- To use the historical manual correction data to other screen areas, select the screen areas and click **Reuse History Manual Correction Data**.
- To export the correction data, select the screen areas, and click **Download** to download the correction data.

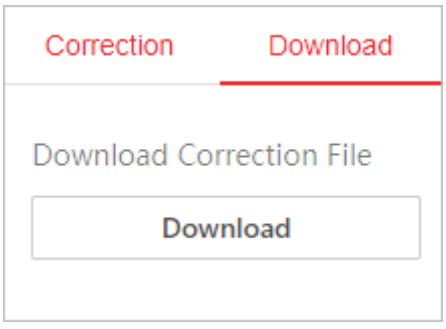

Figure 3-9 Download a Correction File

Configure Display Effect

Step 1 Go to **Display Effect** → **Basic Display Effect**.

Step 2 Select a display mode.

Step 3 If the current display mode parameters do not meet the requirements, edit the corresponding parameters, and then click **Save**.

- Select a color standard:
  - The wide color gamut color standard is applicable to UHD devices.
  - The HDTV color standard is applicable to high definition televisions and other common video devices.
  - The digital cinema color standard is applicable to digital cinemas and high-end displays.
  - If you select the original color standard, the display will be restored to the original color.
  - The general color standard is applicable to the common displays.
- (Optional) Enable eye protection mode to reduce brightness and power consumption.
- Adjust the brightness. The manual adjustment is supported by default. To use the automatic adjustment, perform the following steps:
  1) Connect the light sensor to the multi-function card and connect the multi-function card to the LED controller board.
  2) Go to **Multi-Function Card Configuration**, select **Light Sensor** for the corresponding channel, and set the sensor quantity.
  3) Click  to refresh the sensor settings.

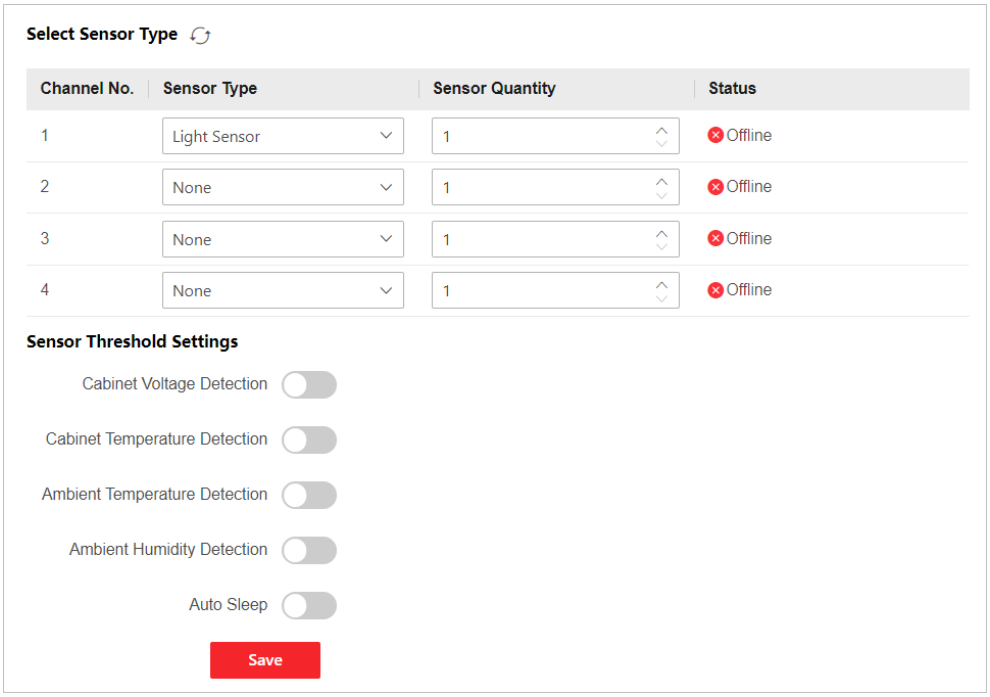

Figure 3-10 Configure Light Sensor

- Adjust the color temperature.

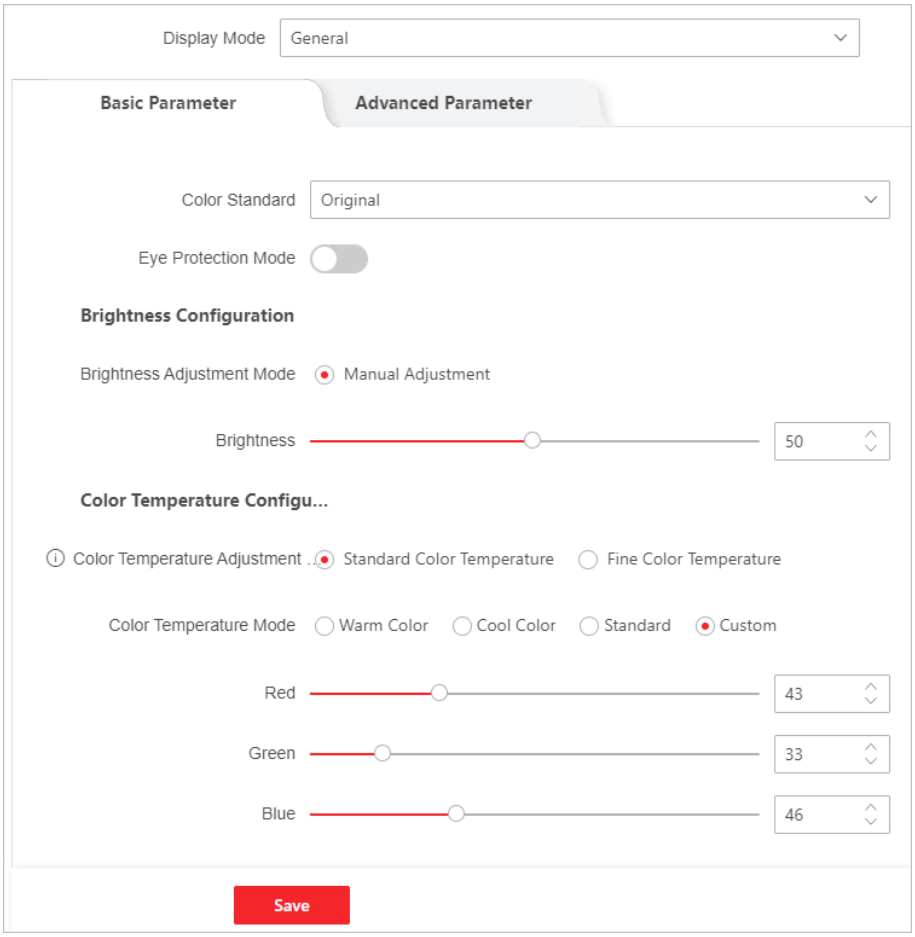

Figure 3-11 Set Basic Display Effect

- Click **Advanced Parameter** to set the contrast mode, Gamma coefficient, environment brightness, and initial brightness.
  - A smaller Gamma coefficient makes the low gray areas brighter, while a larger Gamma coefficient makes the low gray areas darker.
  - When the ambient light is brighter, set a higher ambient brightness value.

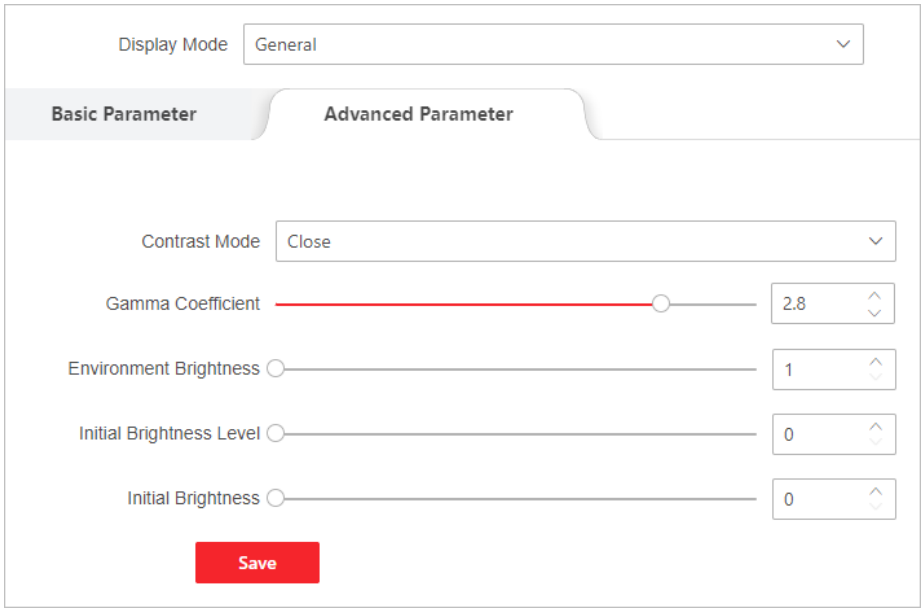

Figure 3-12 Set Advanced Display Effect

- Go to **Display Effect** → **Advanced Display Effect** → **Image Parameters**, enable **Ultra-Low Gray Control** to avoid low gray halos.
- Go to **Display Effect** → **Advanced Display Effect** → **Image Parameters**, enable **Gray Scale Optimization** to make the transition between grayscale levels become natural.

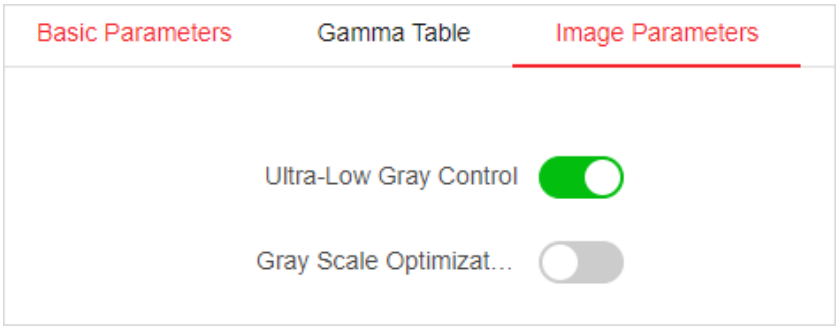

Figure 3-13 Set Image Parameters

View Display Effect

- Go to **Display Effect** → **Advanced Display Effect** → **Basic Parameters** to view the receiving card basic parameters.

  You can enable **Open Circuit Detection** to eliminate the worm phenomenon of the LED screen.

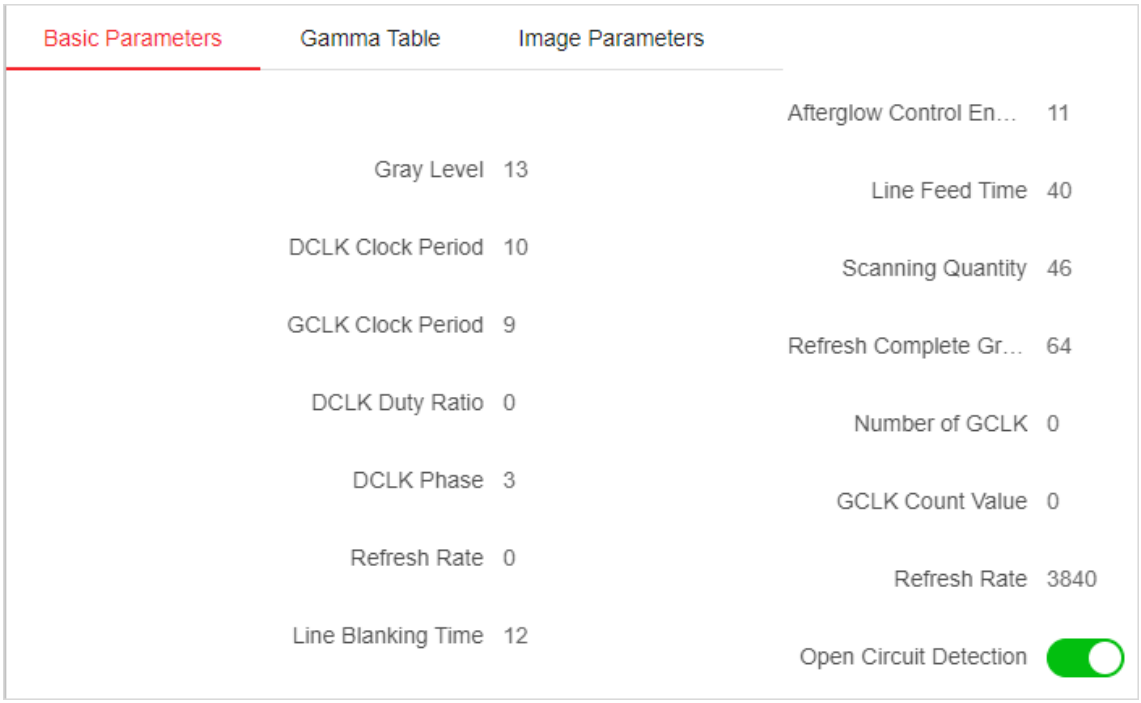

Figure 3-14 View Receiving Card Basic Parameters

- Go to **Display Effect** → **Advanced Display Effect** → **Gamma Table** to check whether the display effect parameters are correct. You can import or export the Gamma table.

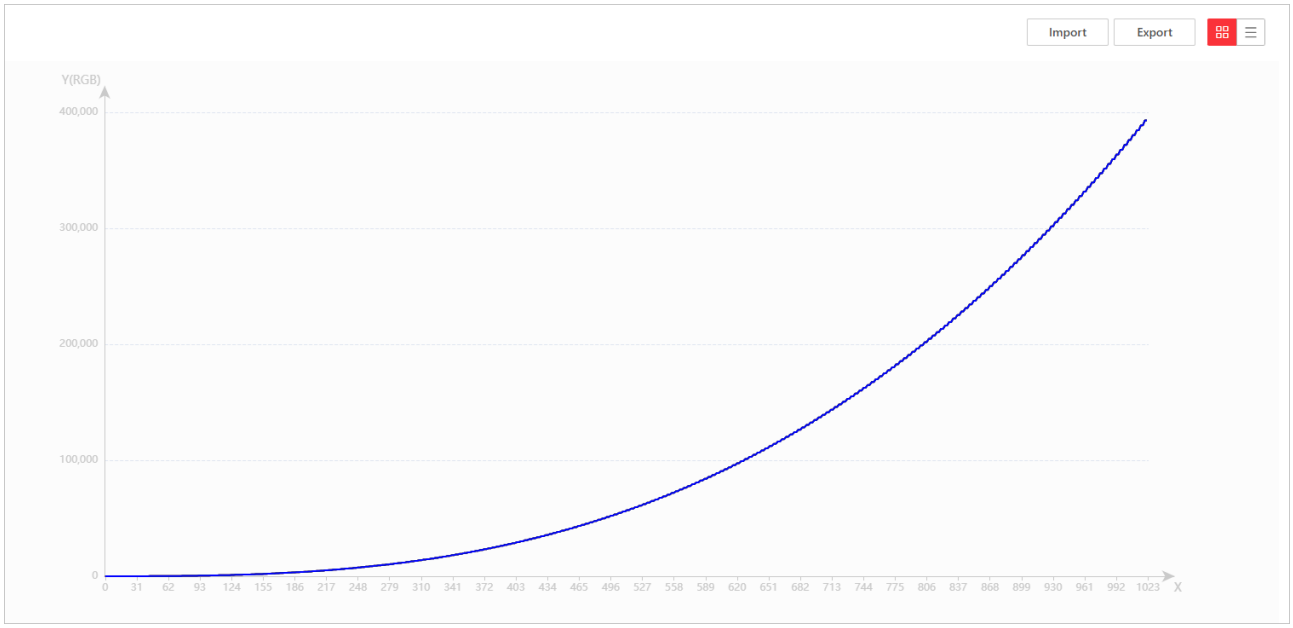

Figure 3-15 View Gamma Table

View Receiving Card Status

Go to **Screen Lightening Configuration** → **Receiving Card Status** to view the screen status and the network interface usage. You can hover over the receiving card to view its temperature, voltage, height and width.

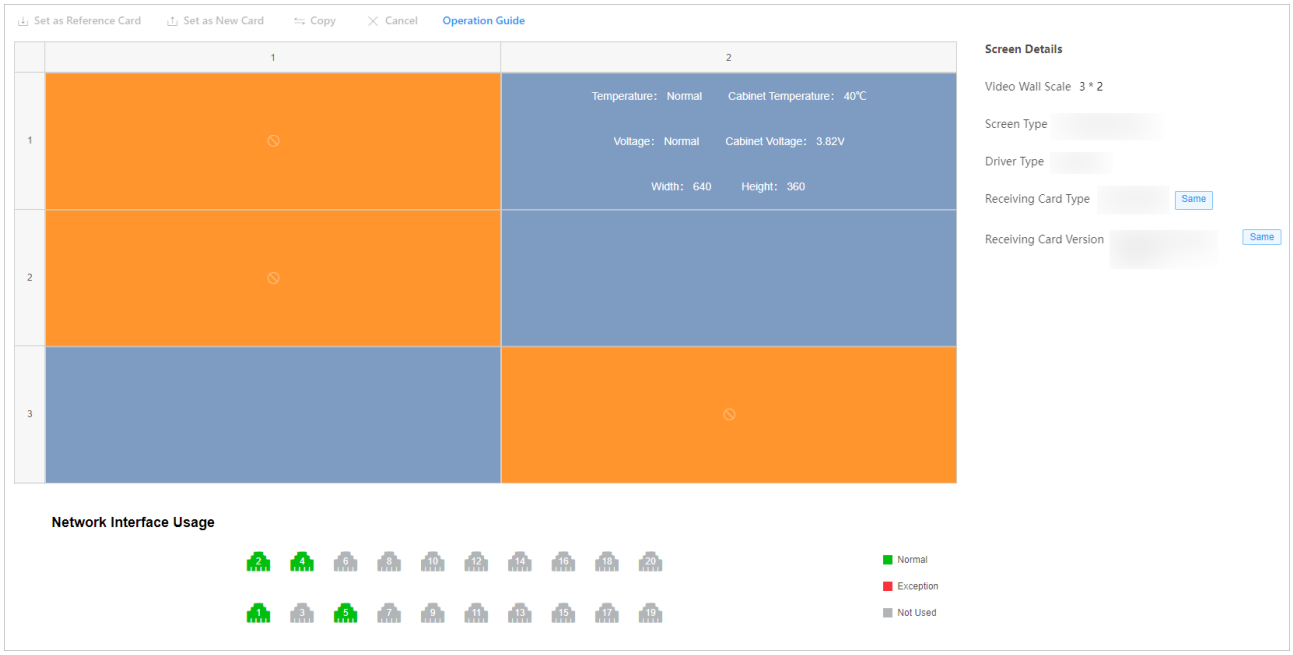

Figure 3-16 View Receiving Card Status

Quickly Maintain a Receiving Card

If the display is installed with a new receiving card, you can use this function to copy the configuration of the reference receiving card to the new receiving card. Make sure the newly installed receiving card is connected with the LED controller.

Step 1 Go to **Screen Lightening Configuration** → **Receiving Card Status**.

Step 2 Select a receiving card and click **Set as Reference Card**. The configuration of the reference receiving card can be copied to the new receiving card.

Step 3 Select a receiving card and click **Set as New Card**.

Step 4 Click **Copy** to copy the configuration file of the reference card to the new card.

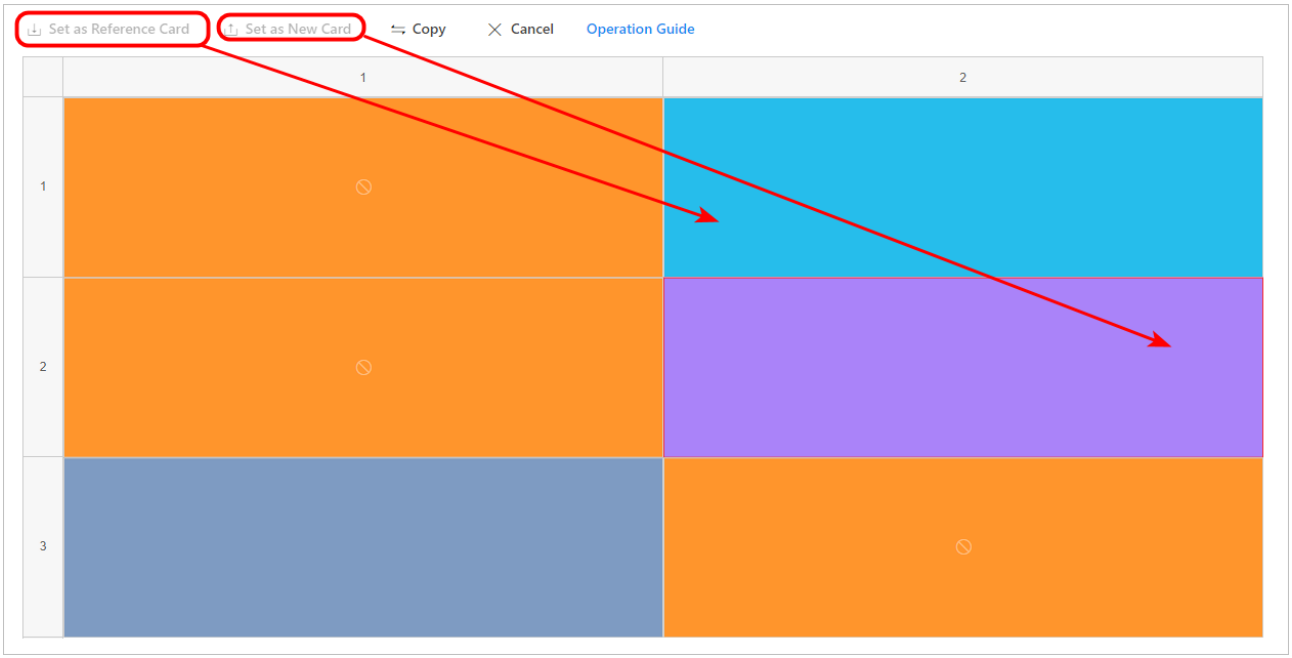

Figure 3-17 Quickly Maintain Receiving Cards

Test Screen Condition

Step 1 Go to **Maintenance** → **Screen Test**.

Step 2 Enable the screen test.

Step 3 Select a pure color, gray scale, or line to check whether the screen color is normal or whether the dead pixels exist.

If the existing color does not meet the requirements, add a new color. You can edit or delete the newly added color.

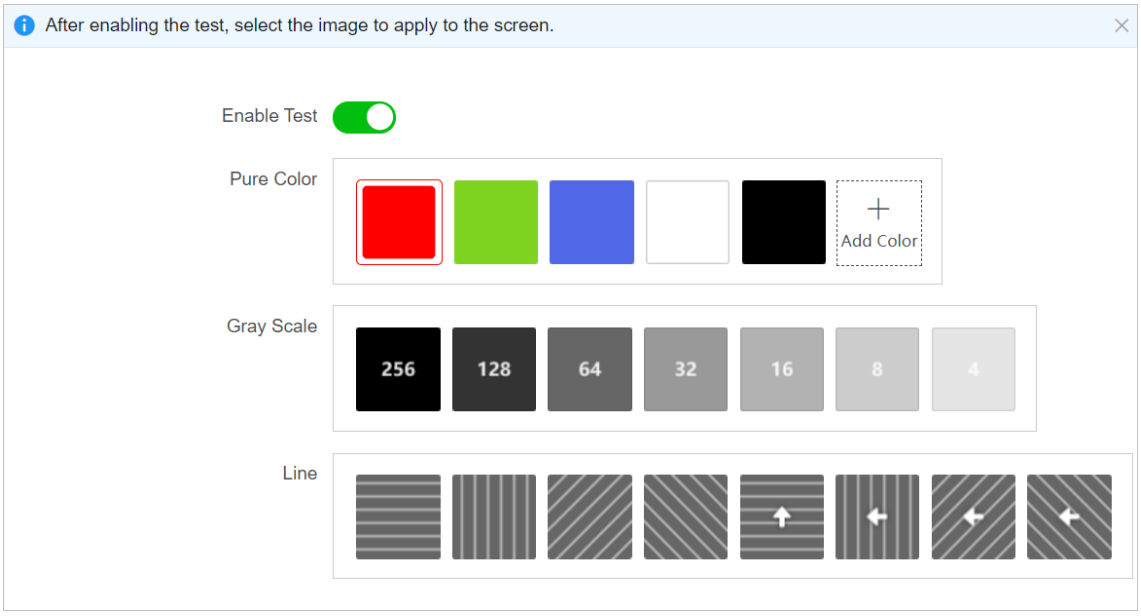

Figure 3-18 Test Screen Condition

Configure Dehumidification

Step 1 Go to **Maintenance** → **Dehumidification**.

Step 2 Enable **Auto Dehumidification**.

Step 3 Select the area according to the actual humidity condition of the device location. If you select **Custom**, set the time step, brightness step and duration.

- Time step: The time interval during which the brightness gradually increases within the total duration of a single dehumidification cycle.
- Brightness step: The brightness interval during which the brightness gradually increases within the total duration of a single dehumidification cycle.
- Delayed duration: The total duration of a single dehumidification cycle.

Step 4 Click **Save** or **Save and Start**.

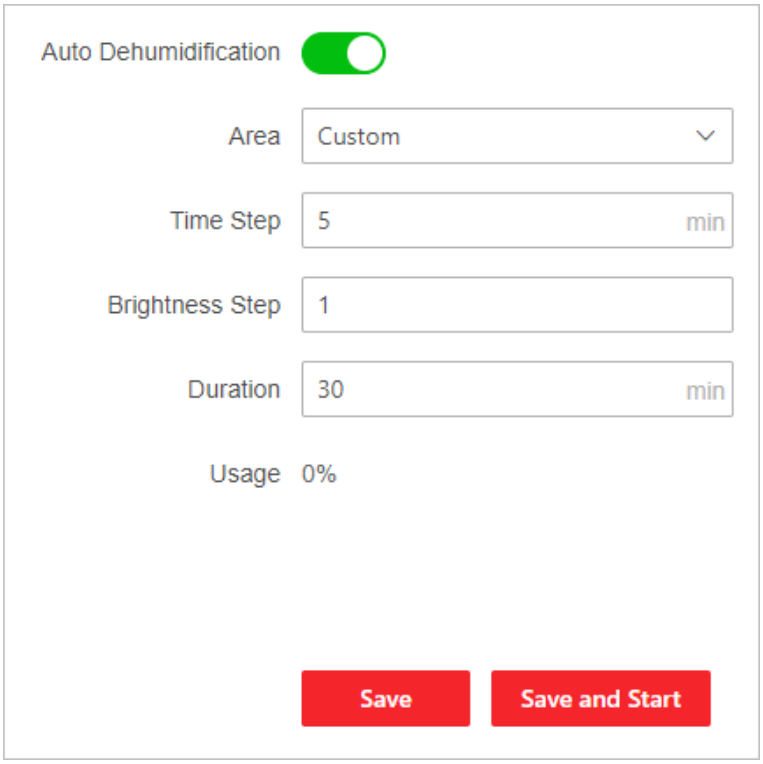

Figure 3-19 Configure Dehumidification

Maintain LED Controller Board

- Click **Edit Name** to change the output port name.
- Go to **Maintenance** → **System Maintenance** → **Restart**, click **Restart** to restart the receiving card(s).
- Go to **Maintenance** → **System Maintenance** → **Upgrade**, click to select an upgrade file, and click **Upgrade** to upgrade the receiving card(s).

- Go to **Maintenance** → **System Maintenance** → **Backup and Reset**, export the receiving card debug file, export the receiving card configuration file, export the LED controller configuration file, or import the LED controller configuration file.

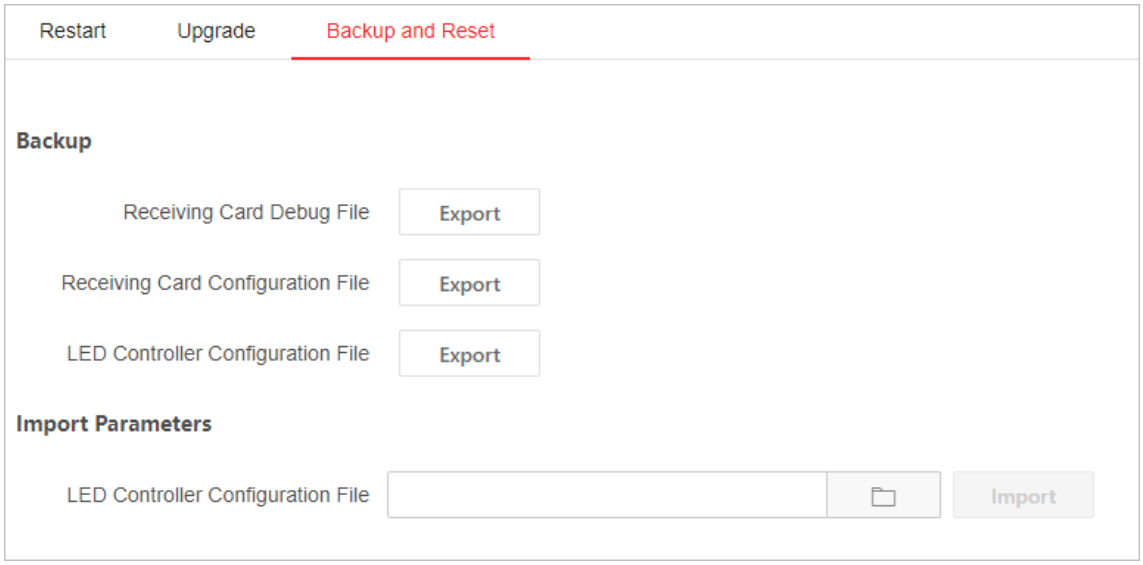

Figure 3-20 Backup and Reset Page

3.1.3 Configure Multi-Function Card

Configure Sensors

Step 1 Go to **Video Wall Configuration**, and click of an output port of the LED control board.

Step 2 Go to **Multi-Function Card Configuration** → **Sensor Settings** to monitor the following items, and click **Save**. When an item reaches the threshold, the screen will display the alarm information and the current value of the monitored item.

- Some receiving cards support detecting the cabinet voltage and cabinet temperature. Enable **Cabinet Voltage Detection** and **Cabinet Temperature Detection**, and set the thresholds.
- When the LED controller board is connected to the multi-function card, and the multi-function card is connected to the temperature and humidity sensor, you can monitor the environmental temperature and humidity.
  1) Select **Temperature and Humidity Sensor** for the corresponding channel and set the sensor quantity.
  2) Click to refresh the sensor settings.
  3) Enable **Ambient Temperature Detection** and **Ambient Humidity Detection**, and set the thresholds.
- When the LED controller board is connected to the multi-function card, and the multi-function card is connected to the human body sensor, you can set the auto sleep function.

1) Select **Human Body Sensor** for the corresponding channel and set the sensor quantity.
2) Click  to refresh the sensor settings.
3) Enable **Auto Sleep**.
4) Set the brightness reduction time, OSD prompt time, and sleep time.

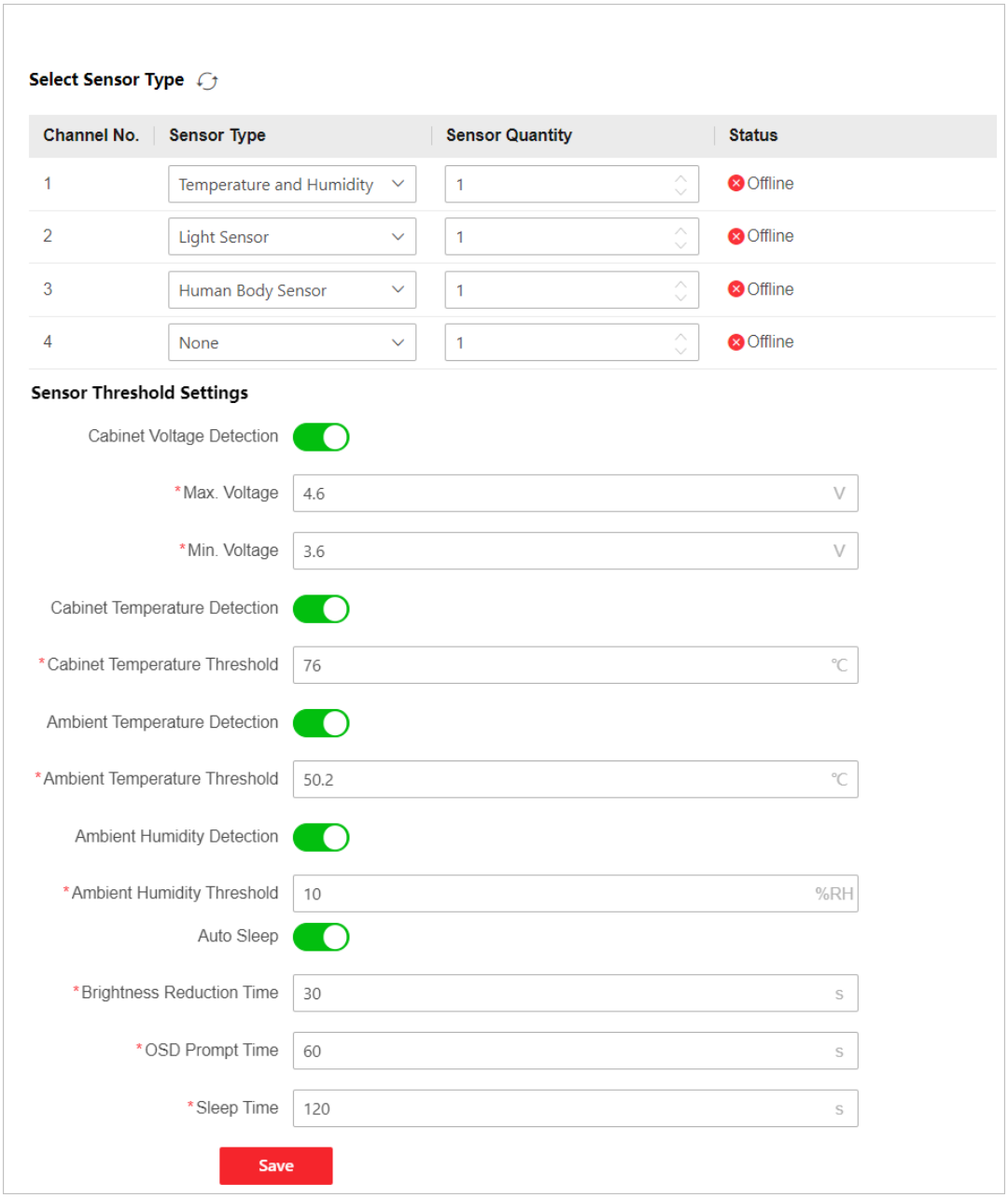

Figure 3-21 Configure Sensors

Configure Power Distribution Cabinet

When the LED controller board is connected to the multi-function card, and the multi-function card is connected to the distribution cabinet, you can control the status of the power distribution cabinet remotely.

Step 1 Go to **Video Wall Configuration**, and click ⚙ of an output port of the LED control board.

Step 2 Go to **Multi-Function Card Configuration** → **Power Distribution Cabinet Settings**, use either of the following methods to control the power distribution cabinet and click **Save**.

- Set immediate power on or off:
  - Enable the circuit that is connected to the power distribution cabinet to power on the power distribution cabinet. Disable the circuit to power off the power distribution cabinet.
  - (Optional) When one multi-function card is connected to multiple power distribution cabinets, it is recommended to enter the device name.

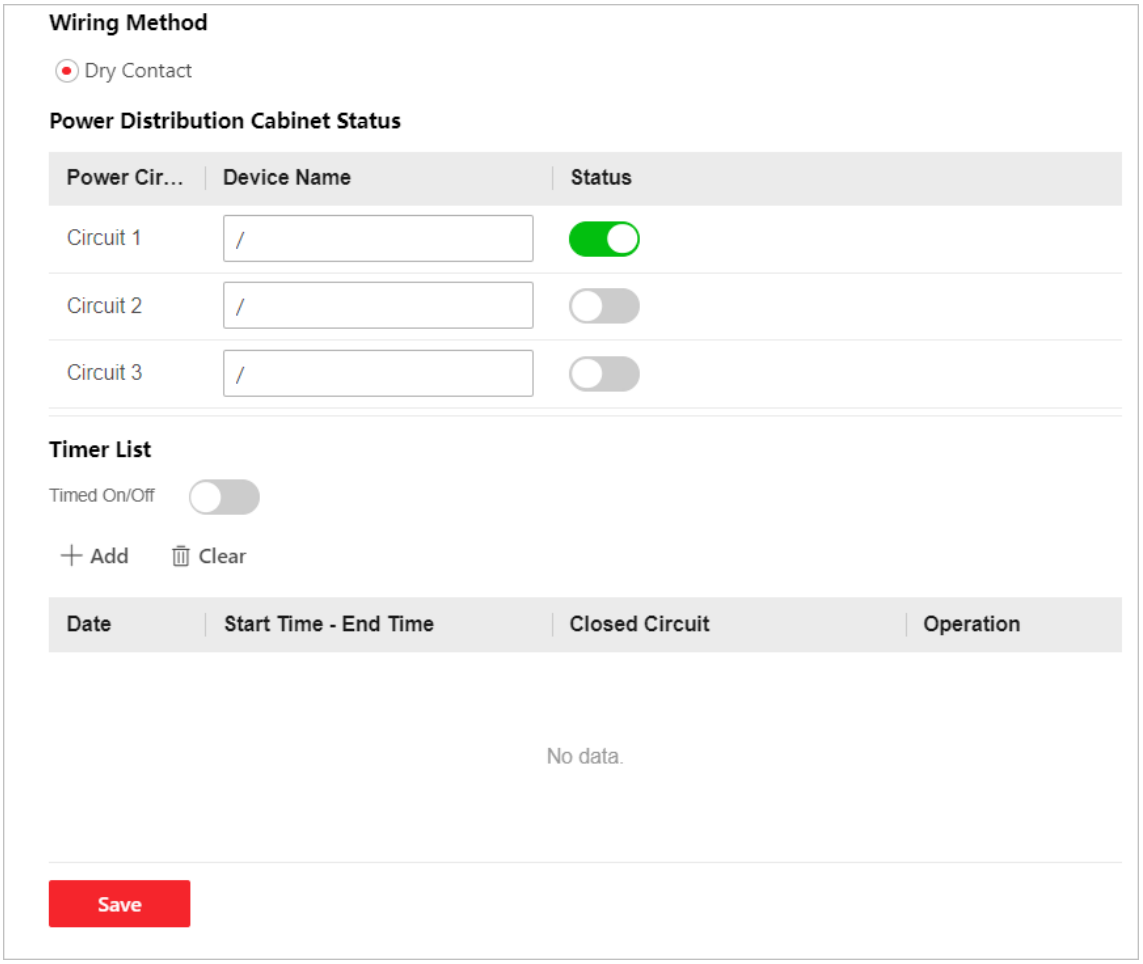

Figure 3-22 Immediate Power On/Off

- Set timed power on or off:
  1) Click **Add** to add the timer and click **Save**.
  2) Enable **Timed On/Off**.

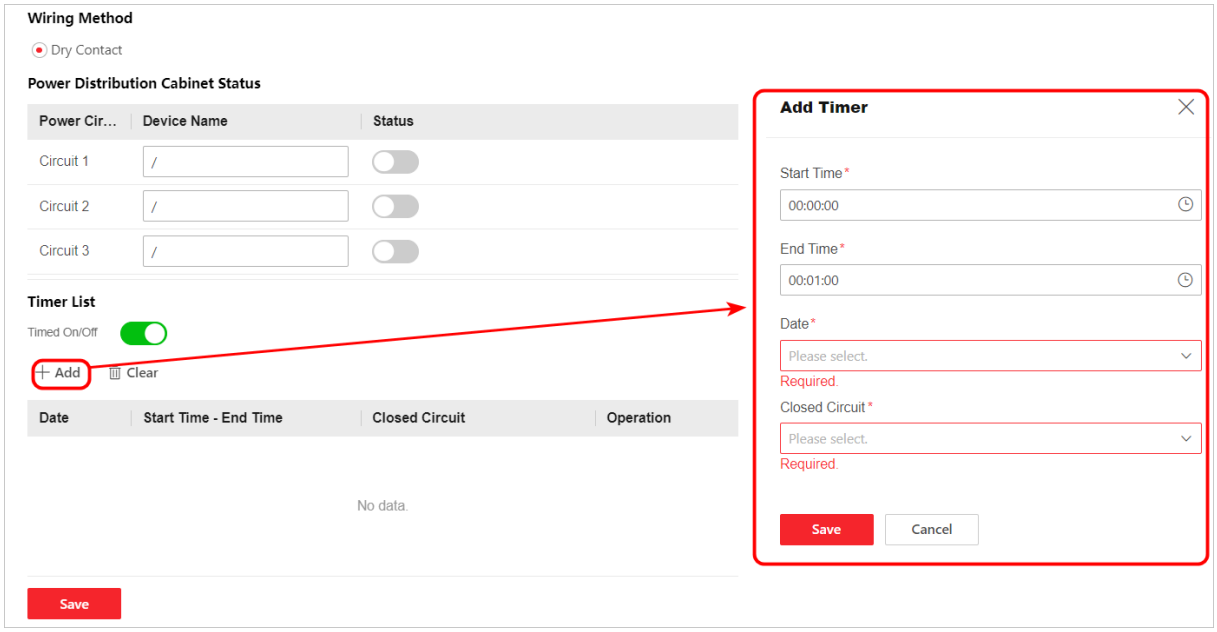

Figure 3-23 Set Timed Power On/Off

3.2 Configure a Video Wall

3.2.1 Configure the Video Wall Scale

Step 1 Go to **Video Wall Configuration**, select a video wall in the upper left corner and click **Edit Video Wall Specification**.

You can click **Edit Name** to change the video wall name.

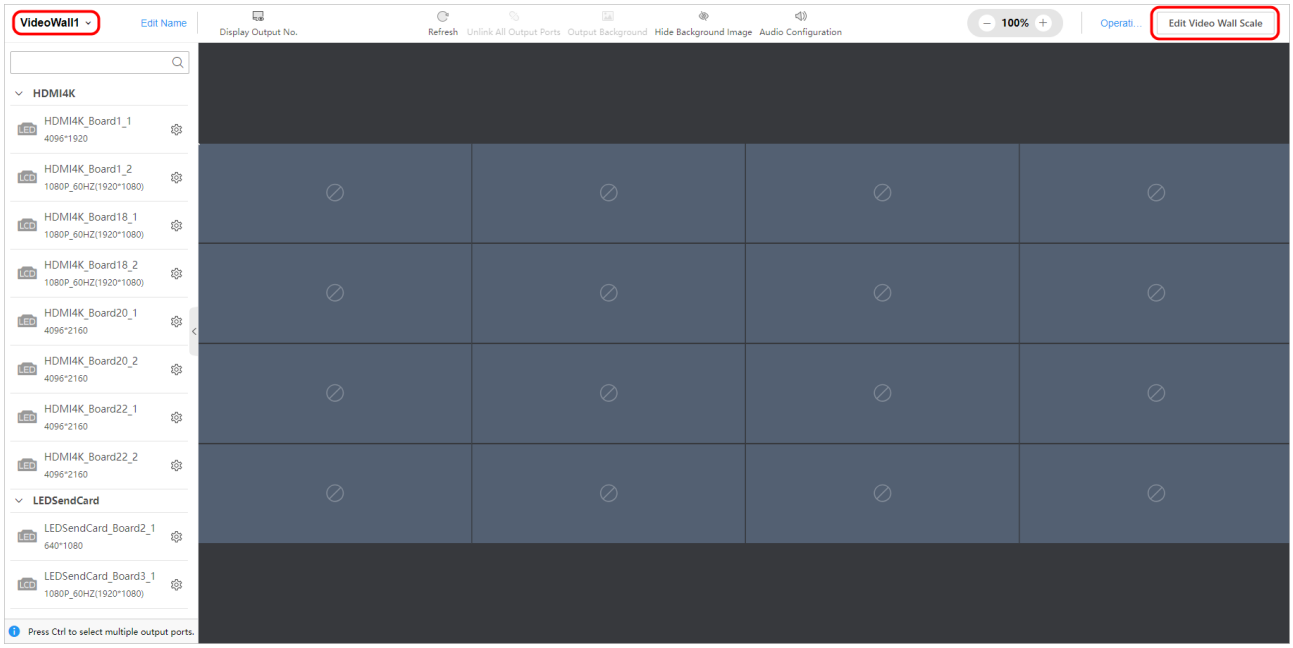

Figure 3-24 Video Wall Configuration Page

Step 2 According to the actual screen quantity, set the video wall scale and click **Save**.

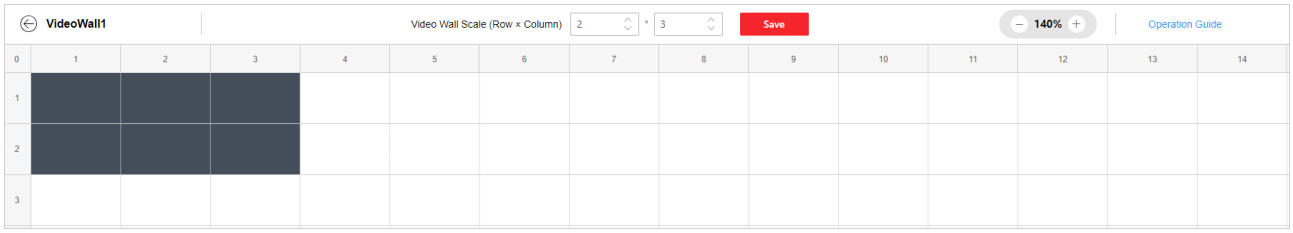

Figure 3-25 Set the Video Wall Scale

Note

You can also drag the mouse with the left button held to scale the video wall.

3.2.2 Configure the Output of a Video Wall

Edit the Output Port Parameters

On the **Video Wall Configuration** page, click of an output port of an output board to configure the following items:

- Customize the name.
- Edit the output mode of an HDMI output port: By default, the HDMI mode is used. For better compatibility, you can change it to DVI mode.
- Select the output method according to the type of the connected screen. You can select LCD or LED.
- Set resolution according to the type of the connected screen.
  - Select LCD resolution if you select LCD output method.
  - If you select LED output method, you need to select clipping mode or loading mode and then set the resolution.
    - Select clipping mode when the sending card resolution is less than 1080p.
    - It is recommended to select loading mode when the sending card resolution is greater than 1080p (e.g., width is greater than 1920, height is greater than 1080).
- Copy the current output port configuration to other output ports: Click **Copy To** and then select the output ports.

Note

- For an output board with four HDMI ports or four DVI ports, the loading capacity of each port cannot exceed 2.6 MP.
- For an output board with two HDMI ports, the loading capacity of each port cannot exceed 8.8 MP.
- When an HDMI output port is configured with DVI mode, its loading capacity cannot exceed 2.3 MP.

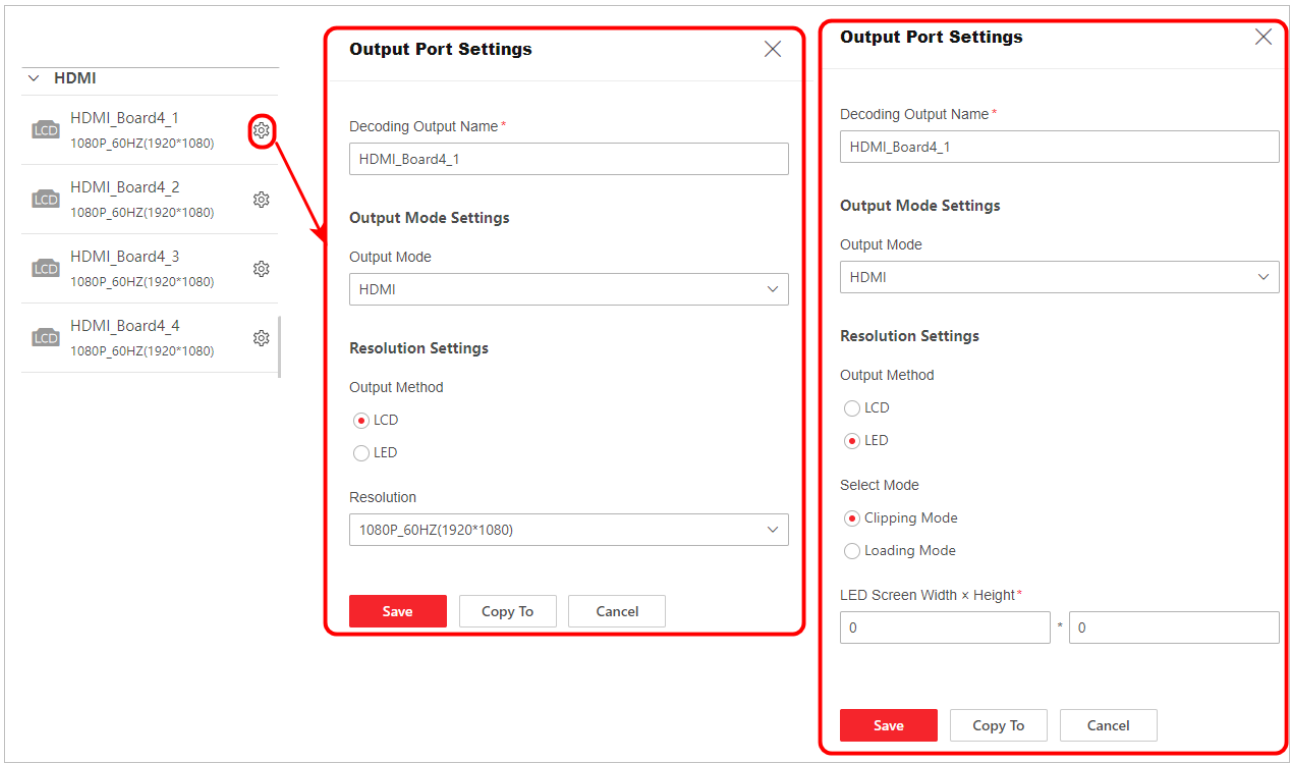

Figure 3-26 Edit HDMI Output Port

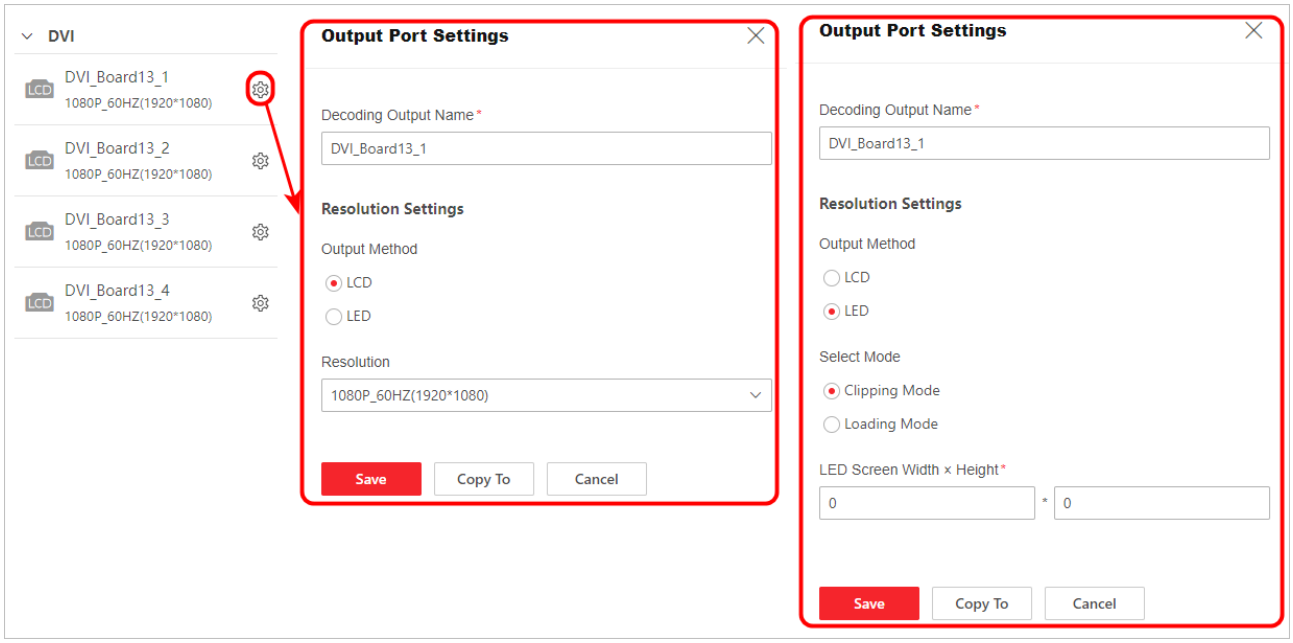

Figure 3-27 Edit DVI Output Port

Bind Output Ports with Video Wall

A video wall can contain one screen or multiple screens. At a time, one screen can join only one video wall, and one output port can be bound with only one screen.

Step 1 On the **Video Wall Configuration** page, click **Display Output No.** to display the output port number on the actual screen.

This function is not available for the LED controller board.

Step 2 According to the output number shown on the actual screen, drag the corresponding output ports to the screens of the video wall.

- To batch bind output ports with the video wall, press **Ctrl** to select multiple output ports and drag the output ports to the screens of the video wall.
- To cancel the linkage between a screen and an output port, click  in the upper right corner of the screen.
- To cancel the linkage between all screens and output ports, click **Unlink All Output Ports**.

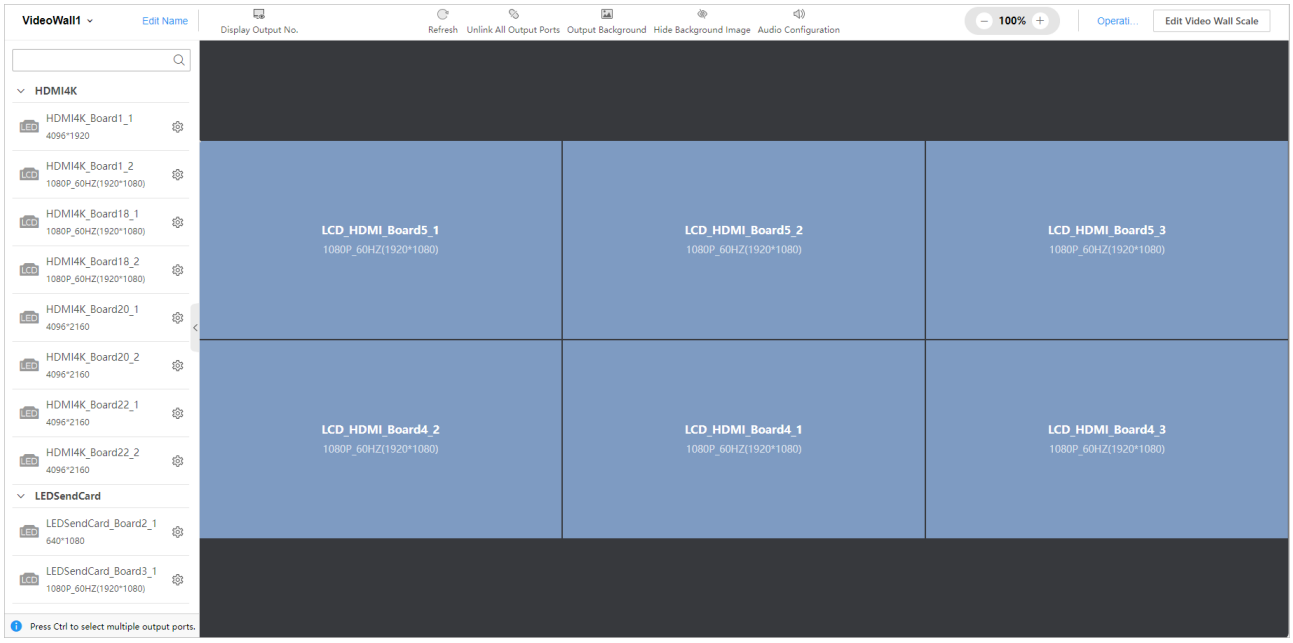

Figure 3-28 Bind Output Ports with Video Wall

Configure an Audio Output

On the **Video Wall Configuration** page, click **Audio Configuration** and select **Link to Audio**. Click  at the upper right corner of an audio output to set it as the audio output of the video wall.

- After setting the audio output of a video wall, you need to go to the **Video Wall Operation** page to enable audio to allow the audio output.
- One video wall can be linked with only one audio output.

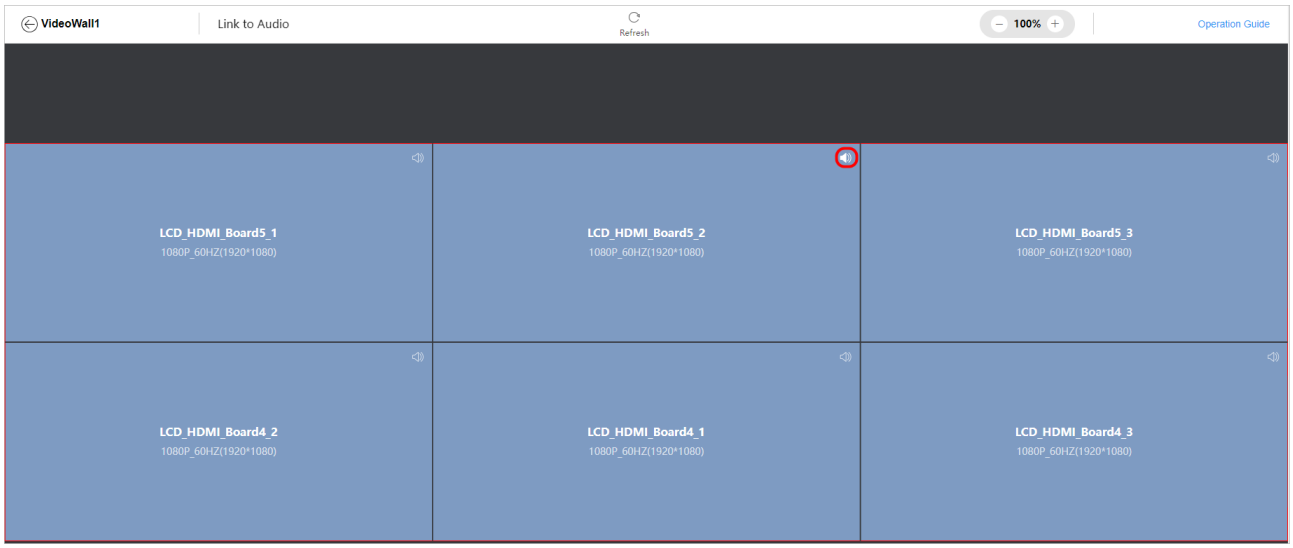

Figure 3-29 Set Output Audio

Configure Other Output Parameters

At the top of the **Video Wall Configuration** page, you can perform the following operations as required:

- Click **Output Background** to edit the background color or import images.

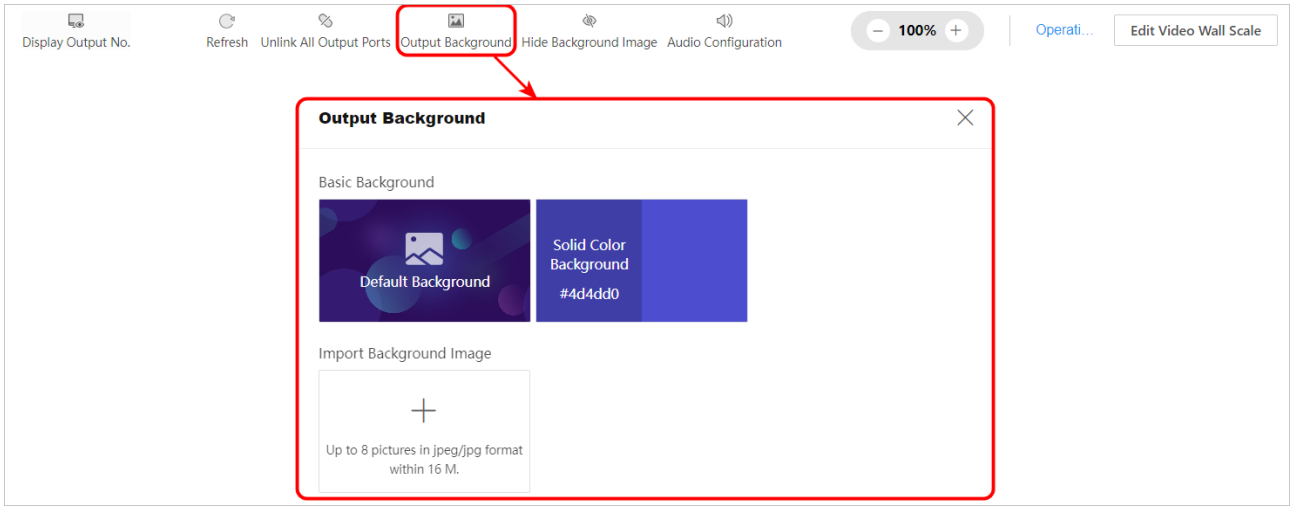

Figure 3-30 Edit Output Background

- After importing an image as the background, you can click **Hide Background Image** or **Show Background Image**.

3.2.3 Manage Signal Sources

Add a Network Signal Source via IP Address

Step 1 Go to **Video Wall Operation** → **Source**, click , and select **IP Address**.

Step 2 Enter the signal source information and stream media information.

- Select an added group or click **Add Group** to create a new group.
- Select the channel type. You can select **Conventional Network Source** or **Zero-Channel Network Source**. If you select **Conventional Network Source**, enter **Number of Channels** according to the channel quantity of the network signal source, and select the channel to add.
- Click **More** to select the transmission protocol, stream type, device manufacturer, and streaming media information.

  After enabling **Get Stream via Streaming Server**, you can perform live view data forwarding through the streaming server to reduce network stress.

Step 3 Click **Save**.

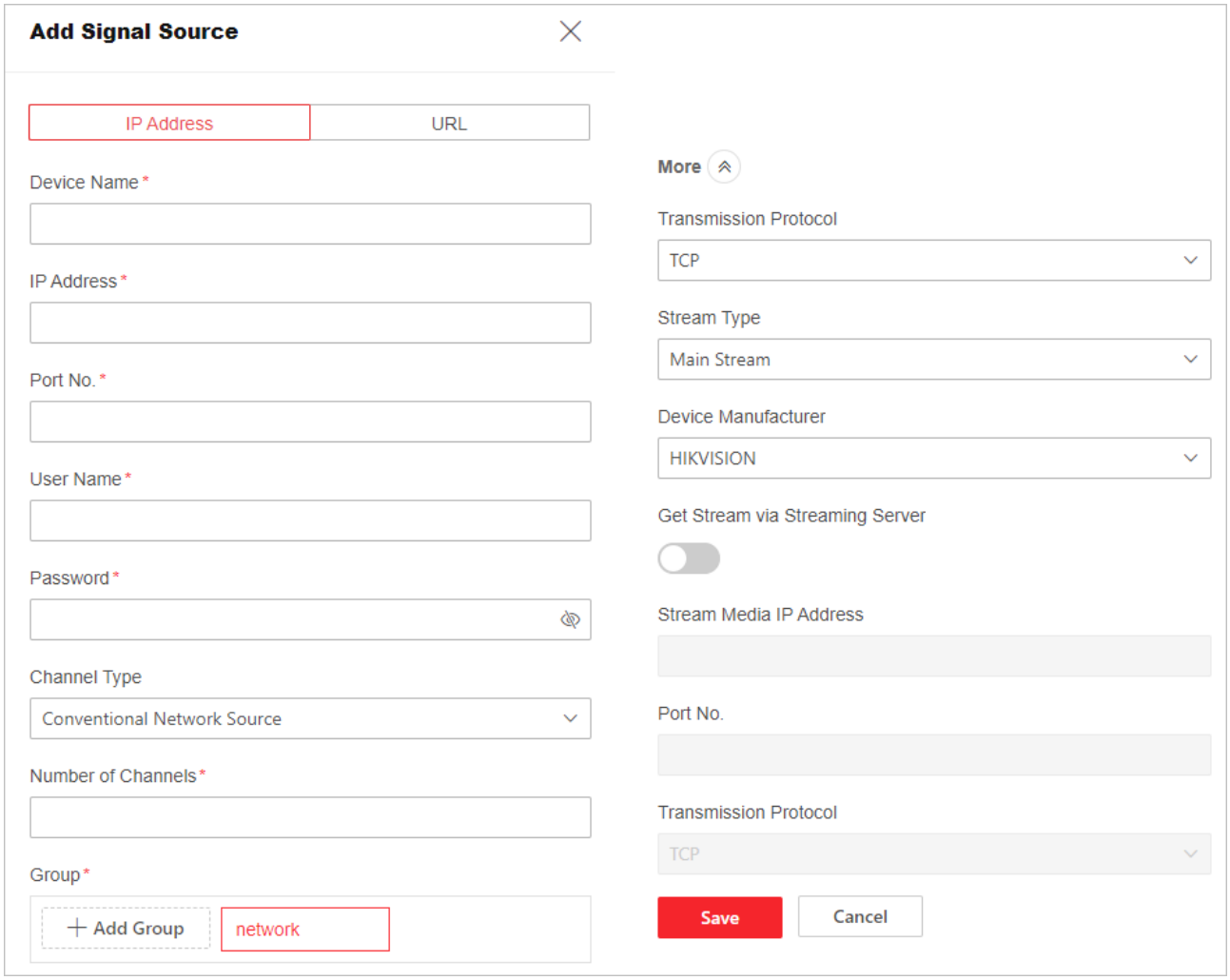

Figure 3-31 Add a Network Signal Source via IP Address

Add a Network Signal Source via URL Address

Step 1 Go to **Video Wall Operation** → **Source**, click , and select **URL**.

Step 2 Enter the device name and the URL address.

Step 3 Select an added group or click **Add Group** to create a new group.

Step 4 Click **Save**.

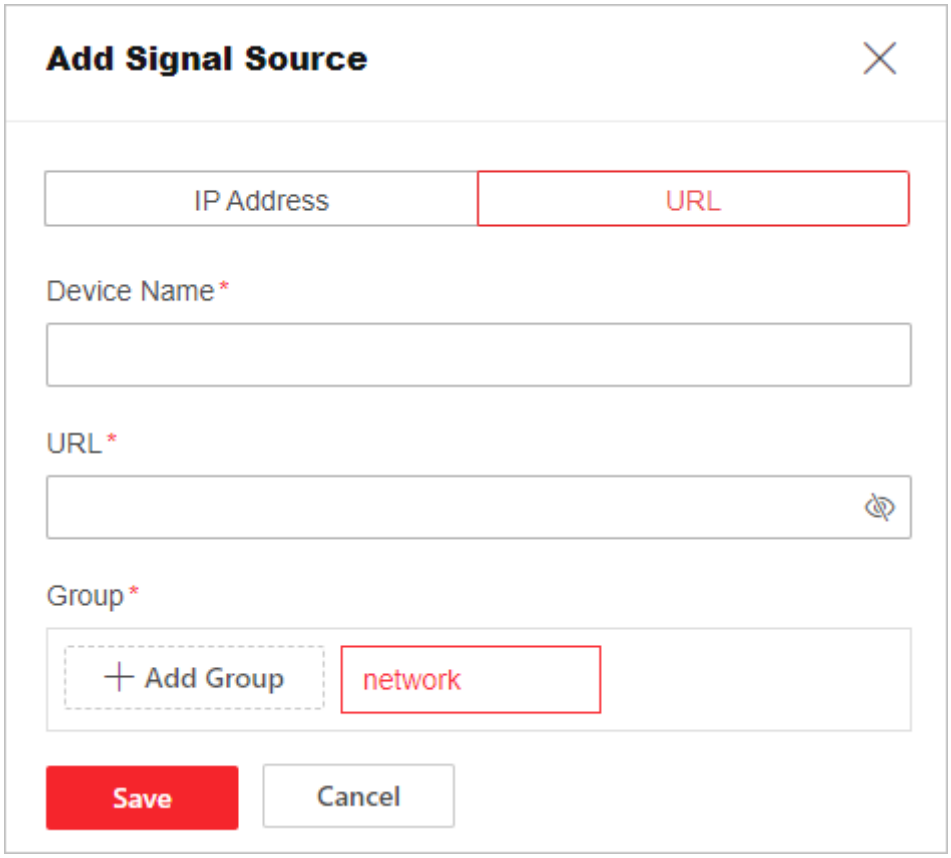

Figure 3-32 Add a Network Signal Source via URL Address

Batch Delete Network Signal Sources

To batch delete invalid network signal sources, you can select multiple network signal sources with **Ctrl** or **Shift** pressed and then click .

3.2.4 Bind Signal Sources with a Video Wall

Go to **Video Wall Operation** and then select a video wall. Take either of the following methods to bind signal sources with the video wall:

- Select a signal source and then drag it rightward to the video wall.
  - If you bind a signal source to an LCD video wall, the signal source window fully covers a single screen by default.
  - If you bind a signal source to an LED video wall, the signal source window fully covers the LED video wall by default.

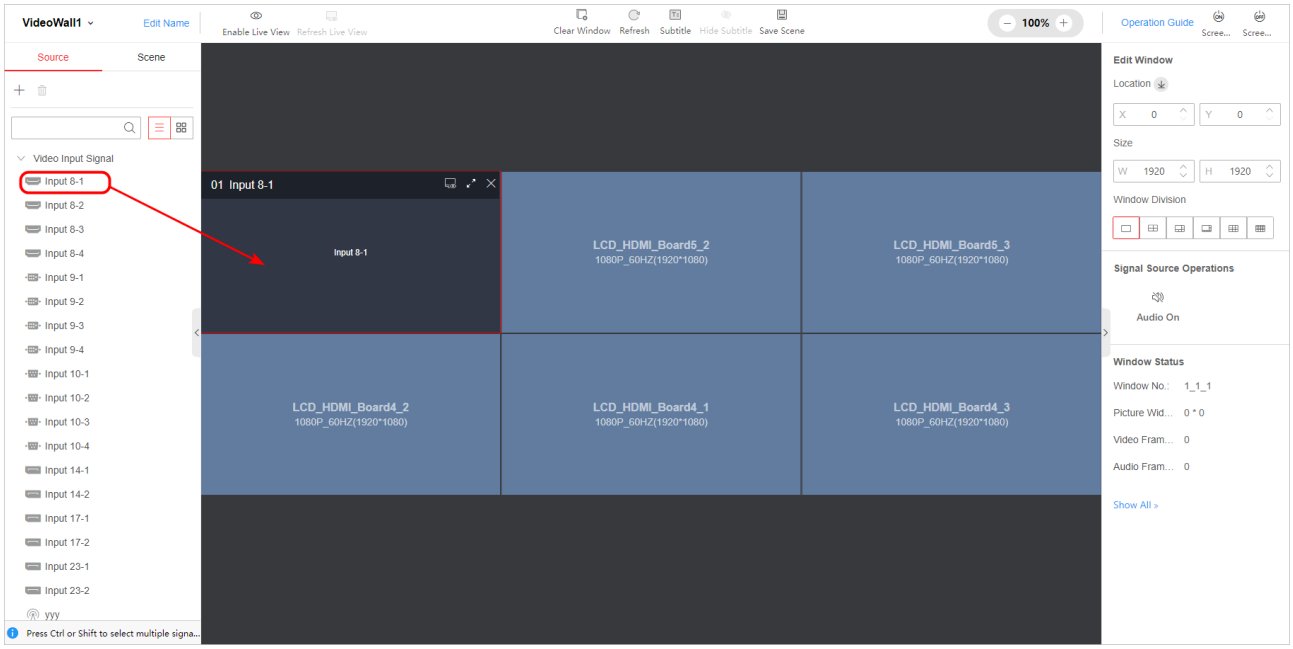

Figure 3-33 Bind a Signal Source to LCD Video Wall

- Drag a default signal source group or a newly created signal source group rightwards to the video wall.
  - By default, the local signal sources join the video input signal group.
  - Before dragging a network signal source to the video wall, make sure that the decoding board is in the device.
- Batch bind multiple signal sources:
  - Press **Ctrl** or **Shift** to select multiple network signal sources of the same signal source group, and drag signal sources rightward to the video wall.
  - Press **Ctrl** to select multiple local signal sources of the same signal source group, and drag signal sources rightward to the video wall.

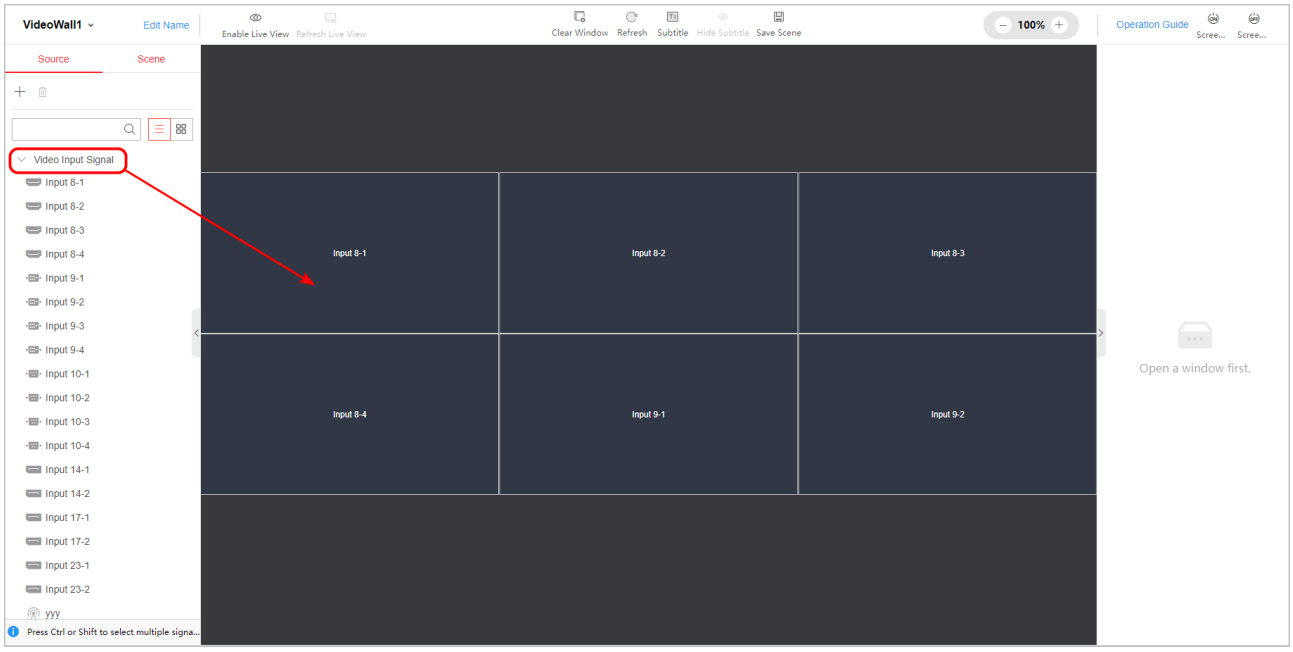

Figure 3-34 Batch Bind Signal Sources to Video Wall

3.3 Operate a Video Wall

3.3.1 Edit Signal Source Window Parameters

Edit a Signal Source Window

On the **Video Wall Operation** page, select a video wall. Select a signal source window and perform the following operations as required:

- Adjust the window position: Move the window directly or enter the specific X and Y values.
- Divide the window: Click a window division icon.
- Adjust the window size:
  - Drag the window edge to adjust its size.
  - Enter W and H values.
  - Click in the upper right corner of the window to make it fully cover the occupied output ports and click to restore the original size.
- Set the window to the bottom: Click .

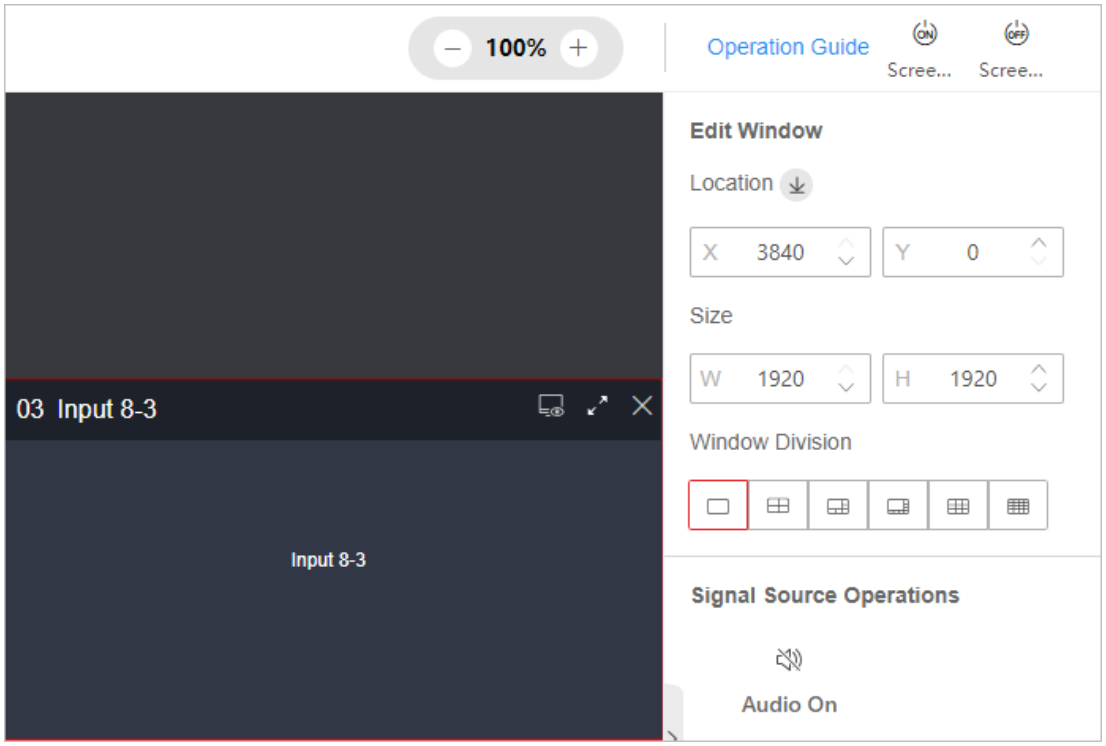

Figure 3-35 Adjust a Signal Source Window

- Enable audio: Make sure that you have configured the audio output for the video wall on the **Video Wall Configuration** page. Click **Audio On**.
- Control a network signal source: Set the decoding delay level or stop decoding.

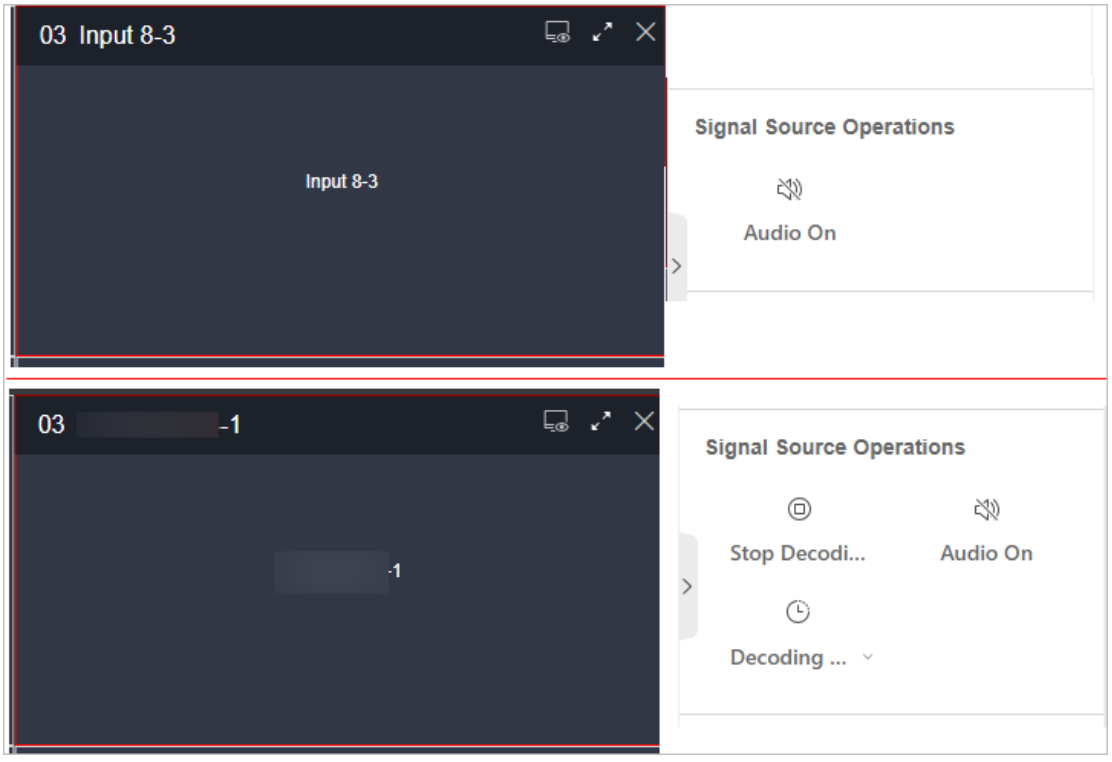

Figure 3-36 Enable Audio

- View the window status: You can click **Show All** to enter decoding status list to view details.

Edit Multiple Signal Source Windows

On the **Video Wall Operation** page, select a video wall and perform the following operations as required:

- Preview the signal sources:
  - Click  in the upper right corner of a signal source window to preview the signal source. Click  to cancel the live view.
  - Click **Enable Live View** at the top of the **Video Wall Operation** page to preview all signal sources on the video wall. Click **Close Live View** to stop previewing all signal sources on the video wall.
  - Click **Refresh Live View** at the top of the **Video Wall Operation** page to refresh the live view of all signal sources.

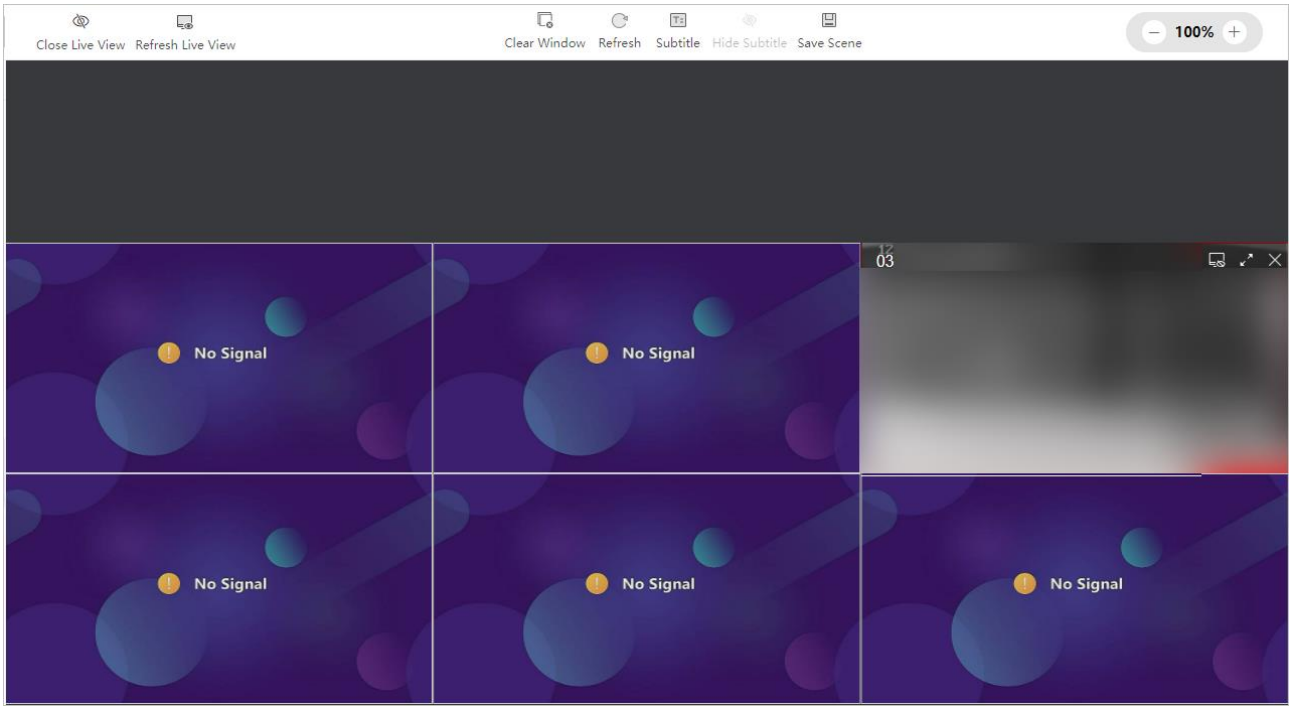

Figure 3-37 Preview Signal Source

- Clear all bound signal source windows: Click **Clear Window**.
- Power on all screens of the current video wall:
  - The LCD screens are powered on after you click **Screen On**.
  - The LED screens exit the sleep mode after you click **Screen On**.
- Power off all screens of the current video wall:
  - The LCD screens are powered off after you click **Screen Off**.
  - The LED screens enter the sleep mode after you click **Screen Off**.

3.3.2 Configure Subtitles

Go to **Video Wall Operation**, click **Subtitle**, press and hold the left mouse button to drag subtitles to the video wall. To add multiple subtitles, you can drag the remaining subtitles.

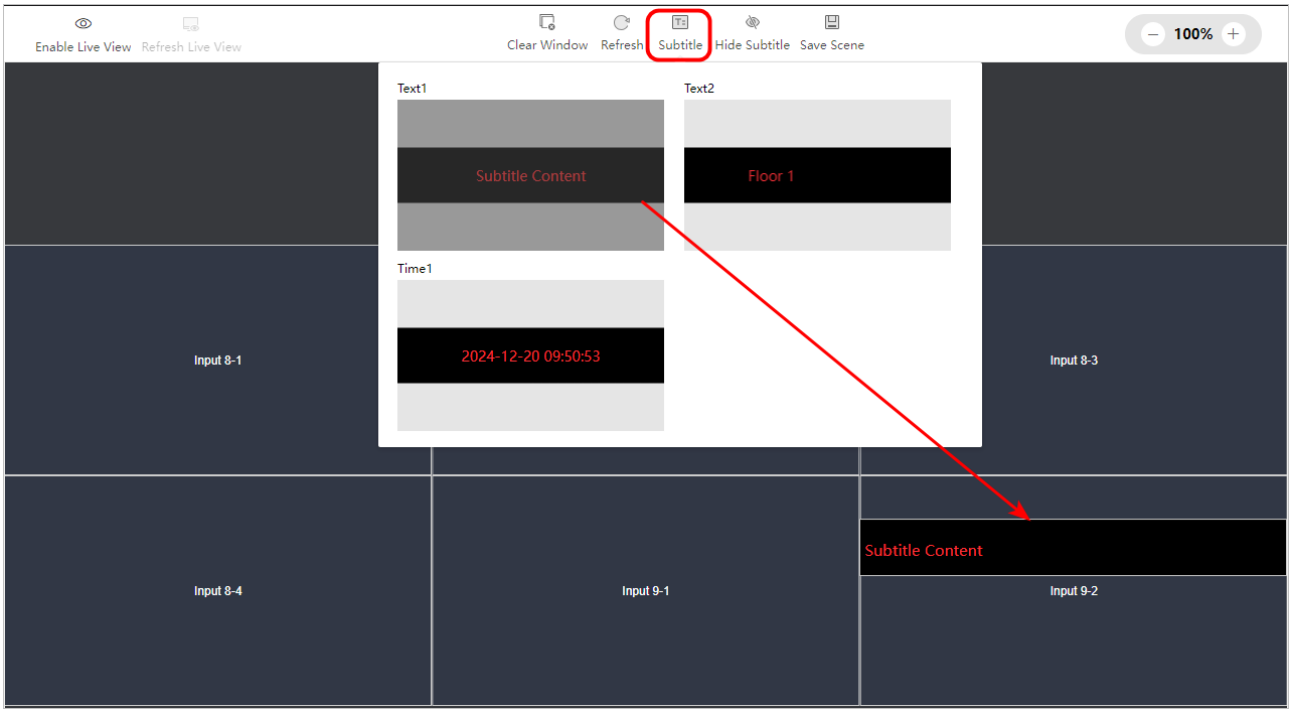

Figure 3-38 Add a Subtitle

- Add a text subtitle:
  1) Select **Text** for the subtitle type.
  2) Enter the subtitle content, adjust the subtitle position and size, and set the text and background.
  3) (Optional) Enable **Move** to set the movement speed.

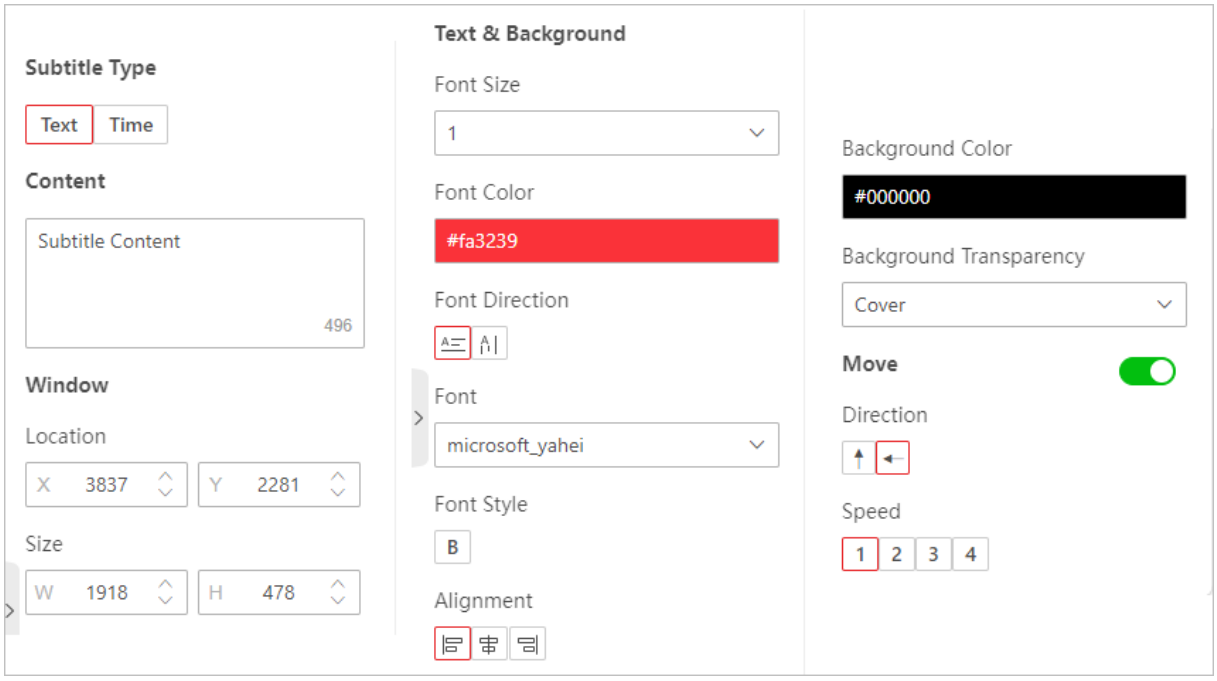

Figure 3-39 Add a Text Subtitle

- Add a time subtitle:
  1) Select **Time** as the subtitle type.
  2) Adjust the subtitle position and size, adjust the time format, and set the text and background.

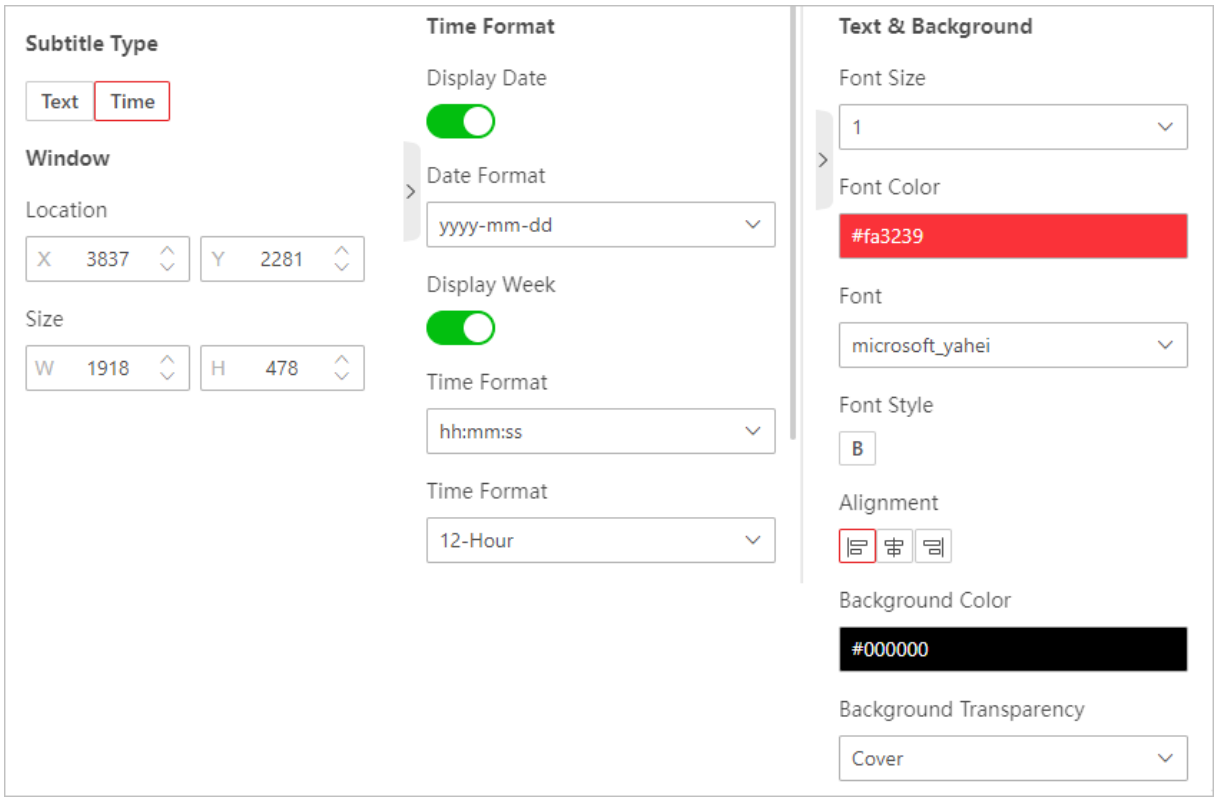

Figure 3-40 Add a Time Subtitle

3.3.3 Manage Scenes

Up to 128 scenes are supported. Go to **Video Wall Operation** to manage scenes.

- Click **Save Scene** to save the current video wall configuration as a new scene or overwrite the existing scene.

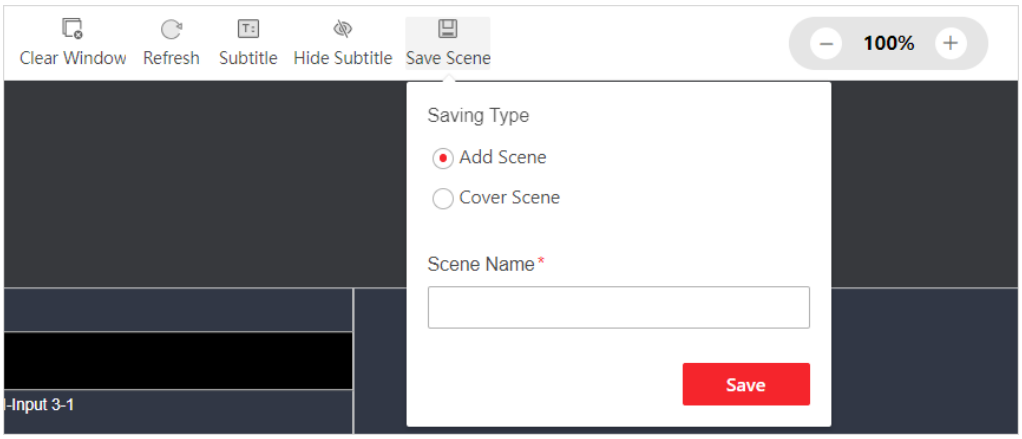

Figure 3-41 Save Scene

- Click **Scene** and hover over a scene name. Click to call the scene.
- Click **Scene** and hover over a scene name. Click to edit the scene name.
- Click **Scene** and hover over a scene name. Click to delete the scene.

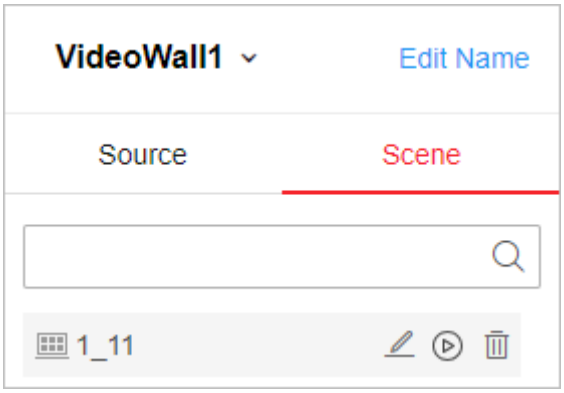

Figure 3-42 Manage Scene

3.3.4 Maintain Screens

Step 1 Go to **Configuration** → **System** → **Serial Port Settings** → **Main Node Serial Port**, select **Screen Control** as the working mode, set the baud rate of the device same as the baud rate of the screen, and set other serial port parameters.

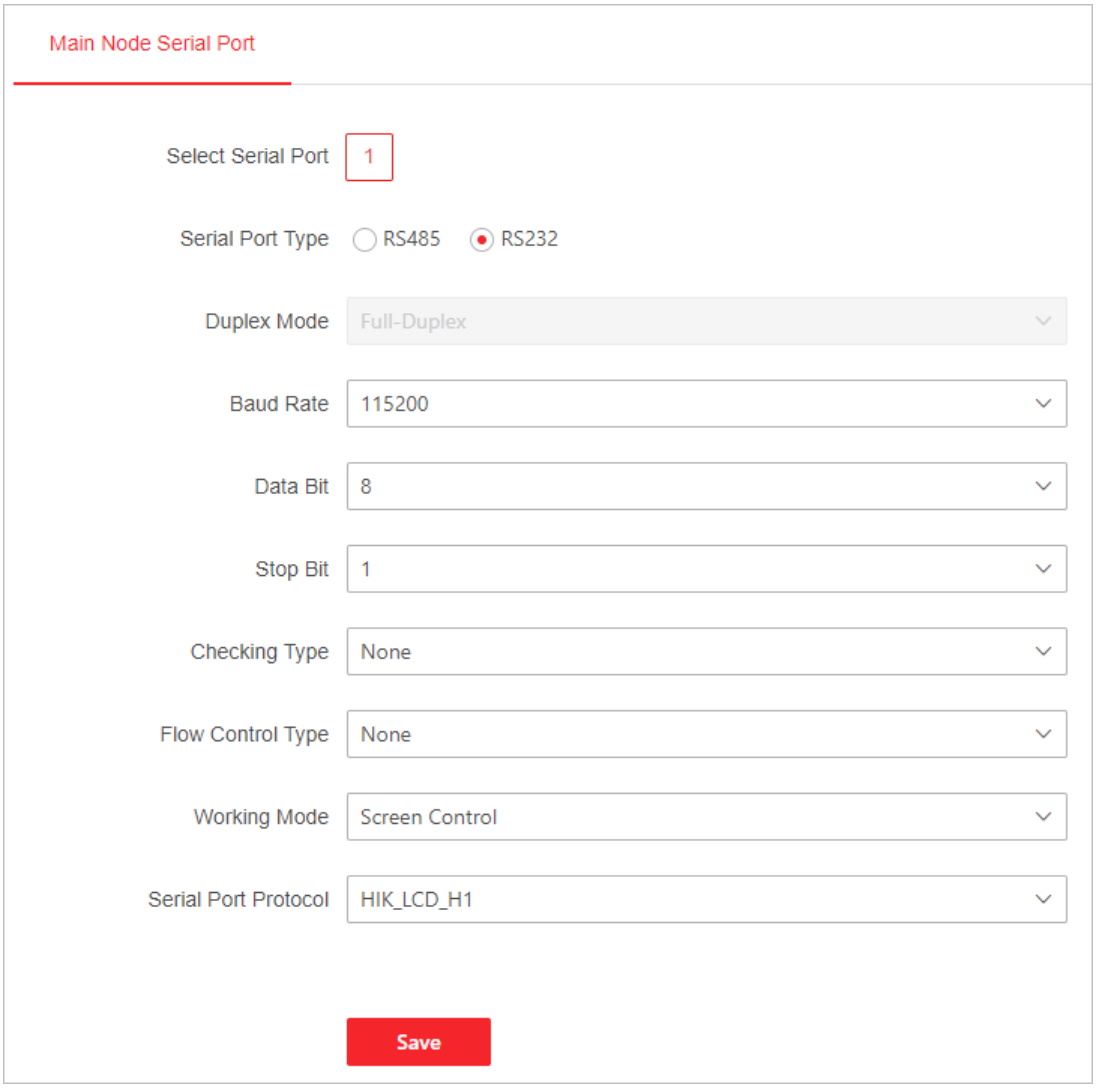

Figure 3-43 Configure Serial Port

Note

- If you select **Keyboard Control** working mode, connect the keyboard to the device and set the baud rate of the device same as the baud rate of the keyboard.
- If you use a serial keyboard, click **Get/Refresh Signal Source** to obtain the local signal sources, and click **Add Signal Source** to add network signal sources. After you change the input board of the device, you need to click **Get/Refresh Signal Source** to refresh the local signal sources.

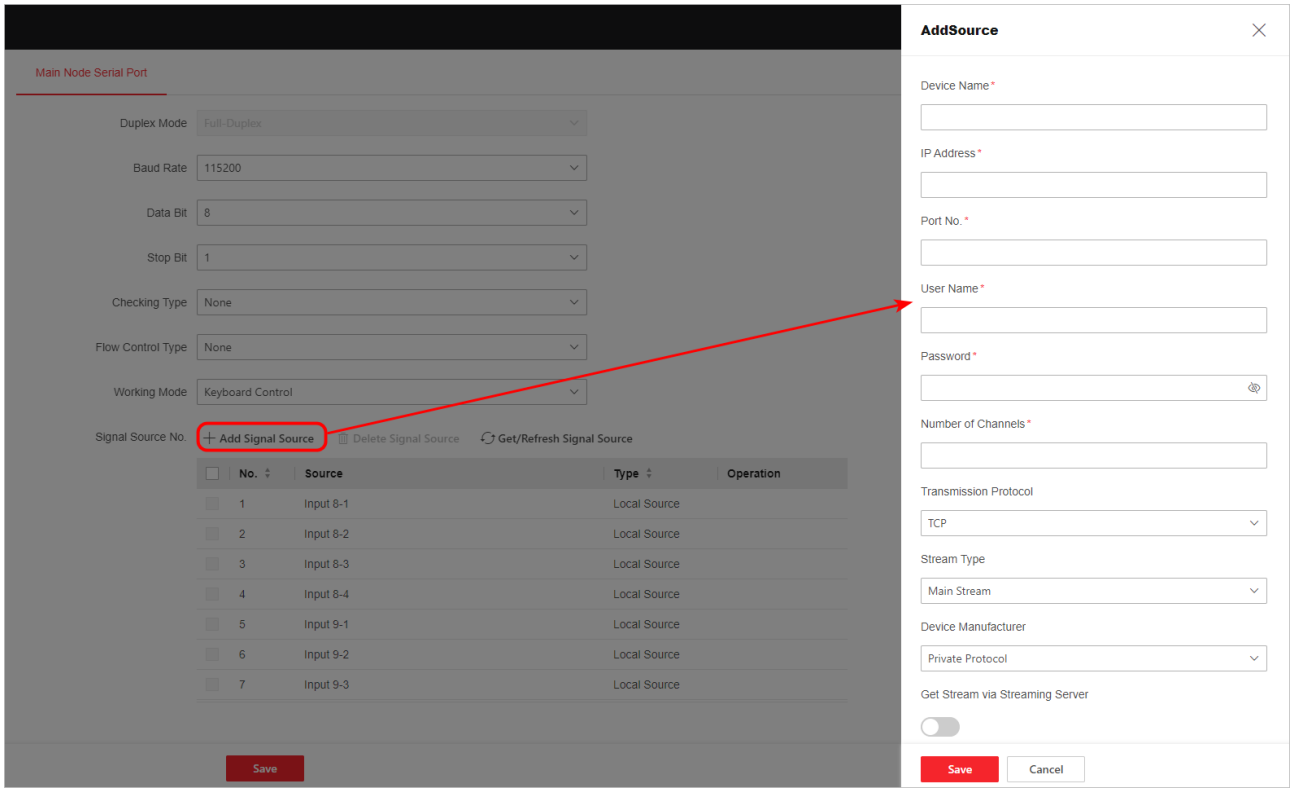

Figure 3-44 Control Serial Keyboard

Step 2 Use a serial port cable to connect a screen and the device RS-485/RS-232 port.

Step 3 Go to **Screen Maintenance.**

Step 4 Select the video wall and select the screen that is connected with the serial port cable.

Step 5 Select an input source type.

Step 6 Set the brightness, contrast, color, and sharpness.

Step 7 Adjust the image position.

Step 8 (Optional) You can perform the following operations as required:

- Power on the connected screen through the serial port cable:
  - The LCD screen is powered on after you click **Screen On**.
  - The LED screen exits the sleep mode after you click **Screen On**.
- Power off the connected screen through the serial port cable:
  - The LCD screen is powered off after you click **Screen Off**.
  - The LED screen enters the sleep mode after you click **Screen Off**.

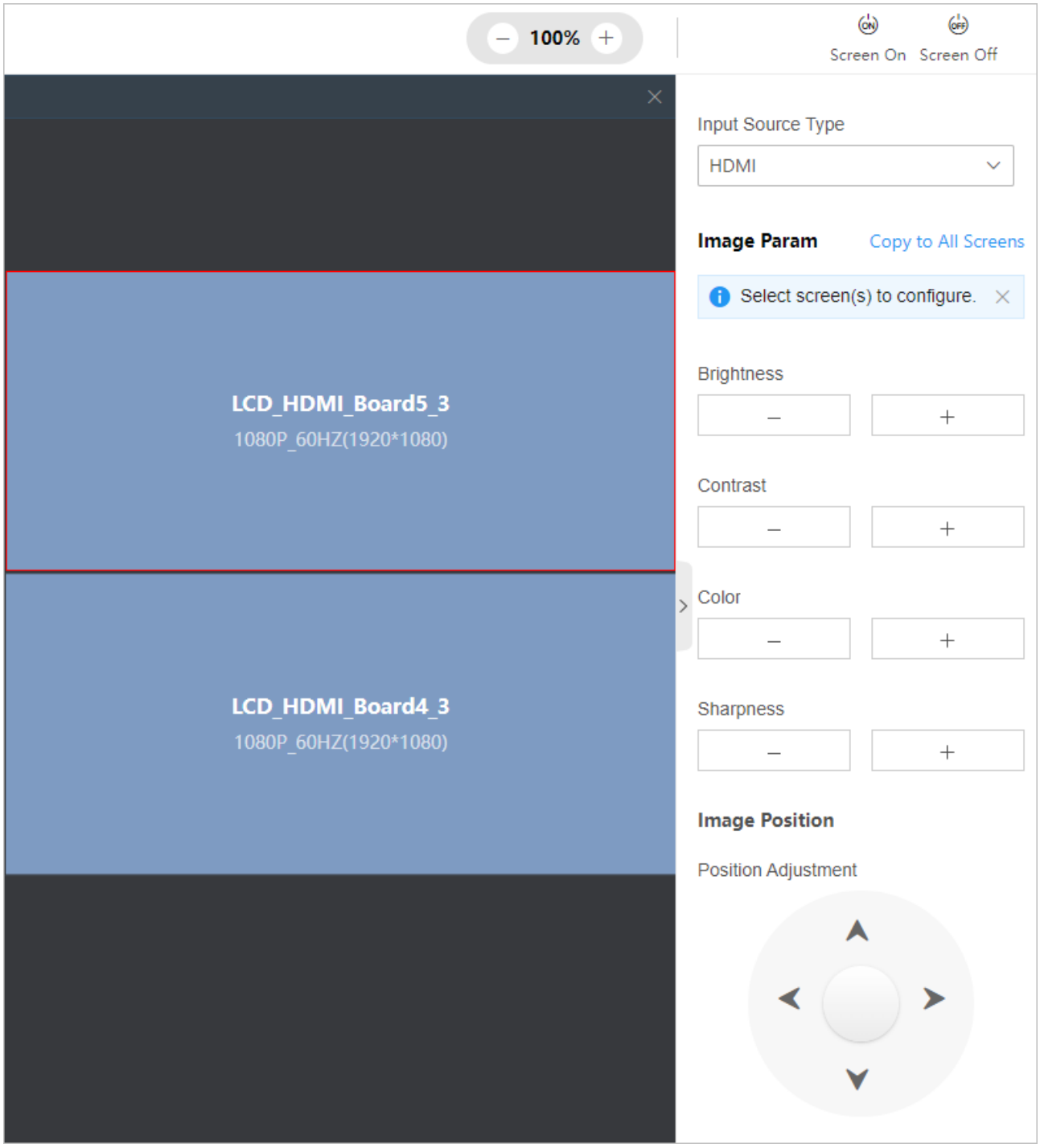

Figure 3-45 Control Screen via Serial Port

3.4 Configure Image Effect on Screen

3.4.1 Edit a Signal Source

Edit a Local Signal Source

Go to **Video Wall Operation**, hover over a local signal source and then click to edit its parameters:

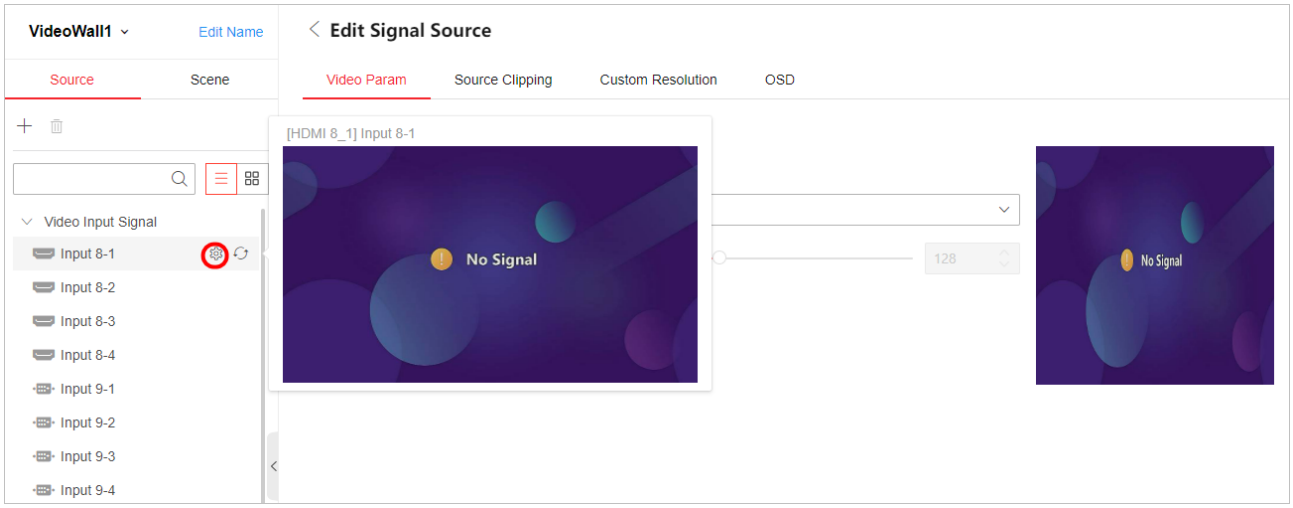

Figure 3-46 Edit a Local Signal Source

- Click **Video Param**, select a color mode, and adjust the brightness.

  If you select custom color mode, the video parameters will restore to the default settings after you click **Restore Default** on the **Backup and Reset** page.

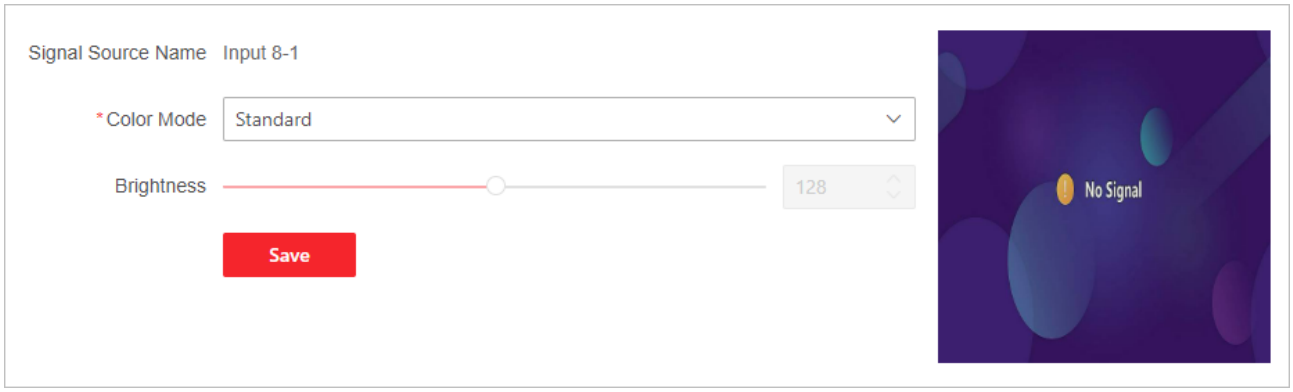

Figure 3-47 Set Video Parameters

- Click **Source Clipping**, and set the clipping value at top, bottom, left, and right edges.

  The clipping value ranges from 0 to 200. The clipping value at the top and bottom edges should be a multiple of 2, and the clipping value at the left and right edges should be a multiple of 4.

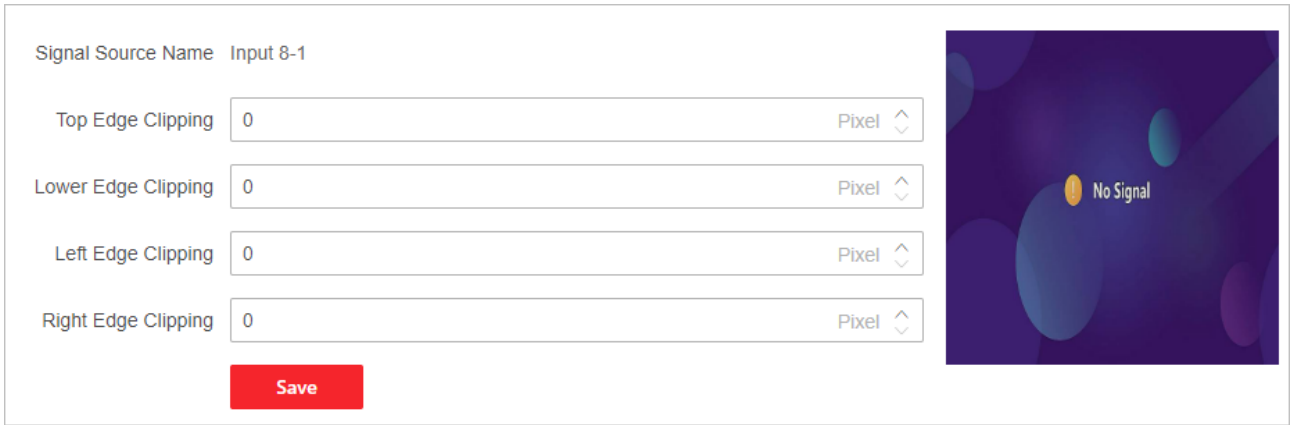

Figure 3-48 Clip a Signal Source

- If the resolution of a signal source does not match the resolution of the screen, you can customize the signal source resolution.
  1) Click **Custom Resolution**.
  2) Enable custom resolution and set the refresh rate and resolution. The width should be a multiple of 4 and the height should be a multiple of 2.
  3) (Optional) Click **Copy To** to copy the resolution configuration of the current signal source to other signal sources.
  4) Click **Save**.

Figure 3-49 Customize Resolution

- Click **OSD**, and then you can add multiple OSDs (On-Screen Displays) to the input signal image.
  - Overlay the character 1, 2, 3, or 4 to the input signal image. Set the content, font size, and font color, and adjust the character position. You can enter the position values or directly drag the character to adjust the position.
  - Click **Copy To** to copy the OSD configuration of the current signal source to other signal sources.

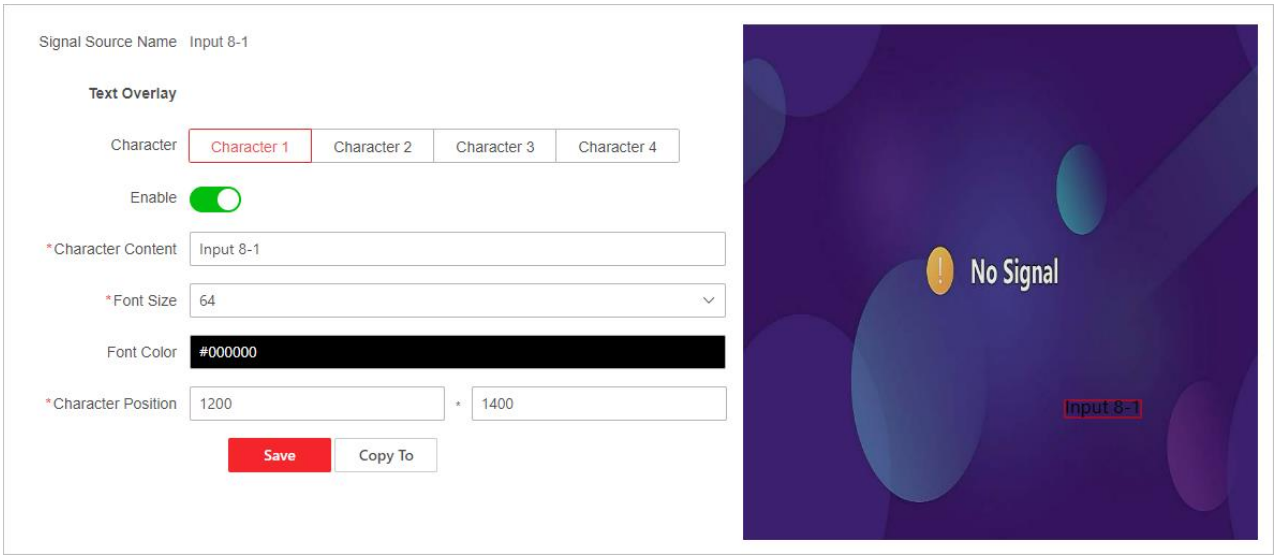

Figure 3-50 Add OSDs

Edit a Network Signal Source

Go to **Video Wall Operation**, hover over a network signal source and then click to edit its parameters.

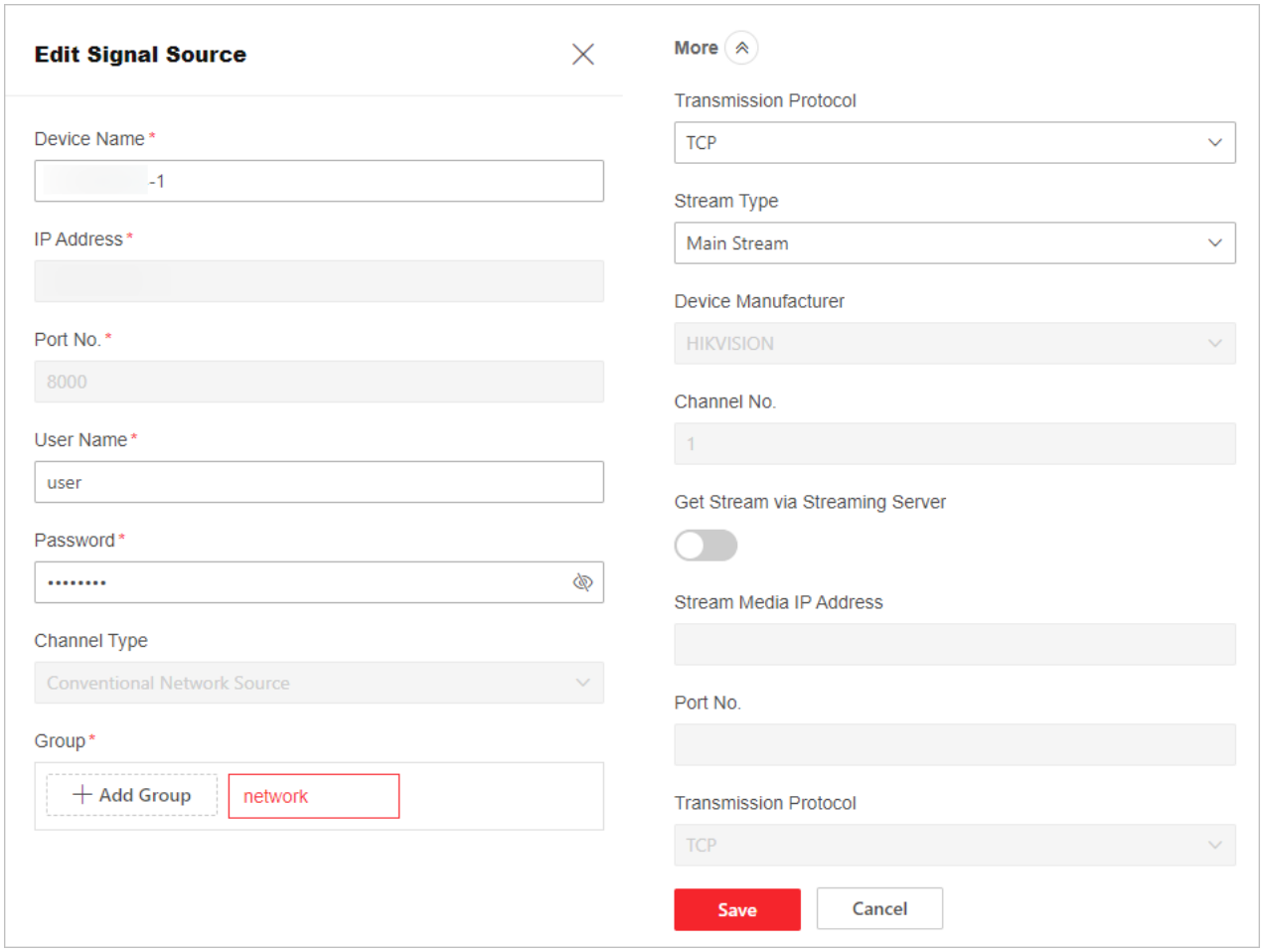

Figure 3-51 Edit a Network Signal Source

3.4.2 Splice Signal Source

This function allows you to splice multiple signal source images into one signal source image. After the signal source splicing, the spliced signal sources will disappear from the signal source list.

Note

- Only local signal sources support splicing.
- Only UHD signal sources (such as 4K HDMI input channels or 4K DP input channels) support splicing.
- All spliced signal sources should use the same resolution and frame rate to avoid affecting the display effect.
- The joint signal source will be displayed in one signal source window on the video wall.
- When the joint signal source window is floating or zooming on the video wall, the spliced signal source windows also float and zoom on the video wall.

Step 1 Go to **Configuration** → **Signal Source Splicing**, click +.

Step 2 Customize the joint signal source name and splicing scale.

Step 3 Drag the signal source in the signal source list to the splicing window.

The signal sources that are dragged to the splicing window will be spliced to one-way signal source.

Step 4 (Optional) Click **Cancel All Linkage** to cancel the previous signal source splicing and splice the signal sources again.

Step 5 Click **Save**.

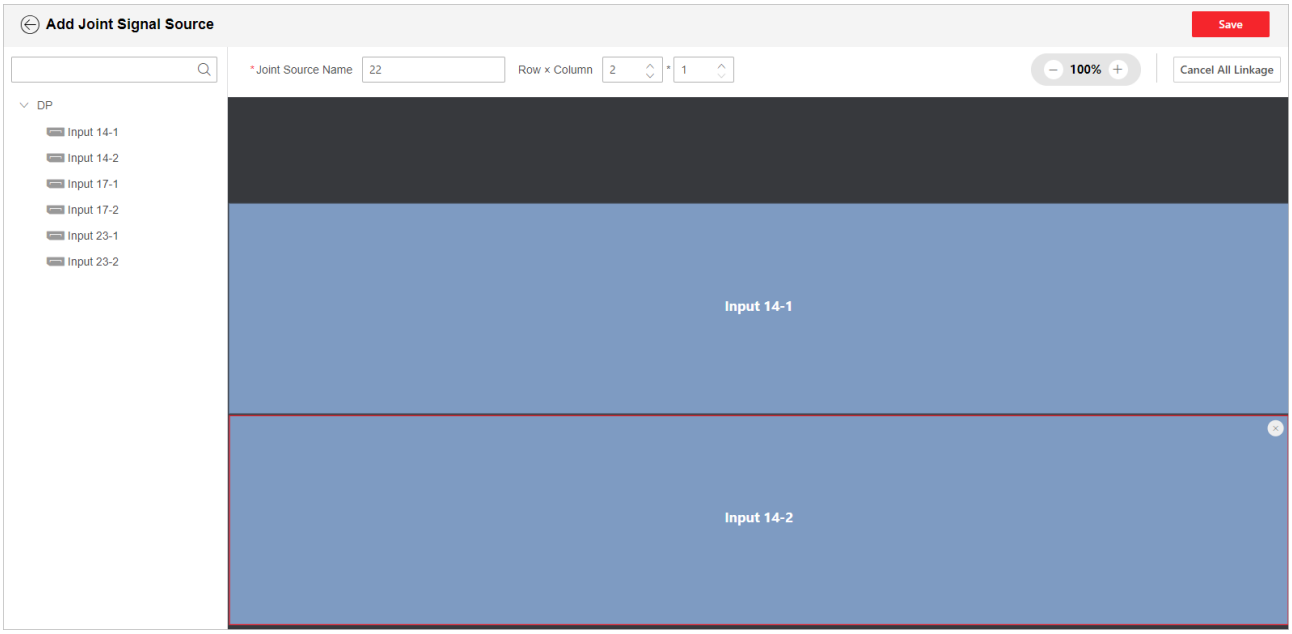

Figure 3-52 Add a Joint Signal Source

3.4.3 Set Other Parameters of Device

- Go to **Configuration** → **Performance Configuration** to select a performance mode of the UHD input board and the UHD output board, and click **Save**.
  - If you select **Standard Mode**, a UHD input board supports 2 channels of 4K 60 fps signal source input, and a UHD output board supports 2 channels of 4K 60 fps signal source output.
  - If you select **One Drag Multiple Outputs Mode** for a UHD input board, only the input port 1 of the UHD input board supports 1 channel of 4K 60 fps signal source input, and the device supports dragging the signal source of the input port 1 to multiple video walls.
  - If you select **One Drag Multiple Outputs Mode** for a UHD output board, only the output port 1 of the UHD output board supports 1 channel of 4K 60 fps signal source output, and the device supports forwarding 1 signal source to multiple video walls.

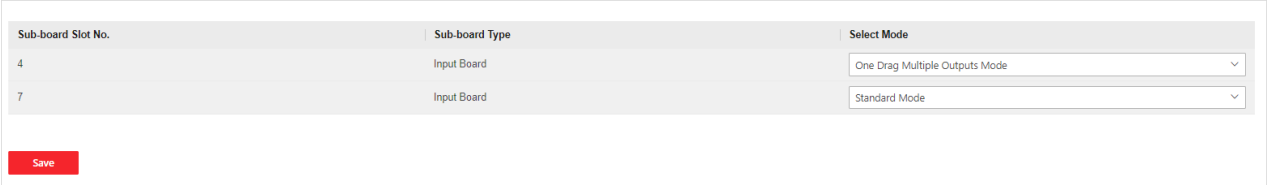

Figure 3-53 Configure Performance Mode

- Go to **Configuration** → **Other Settings** → **Sub-Stream Auto Switch**, switch on **Enable**, and set the window division threshold. If the window division reaches the upper limit, the device will automatically use sub-stream to get the images. In low bandwidth networks, you can use sub-stream to get relatively smooth images with a small bandwidth footprint.

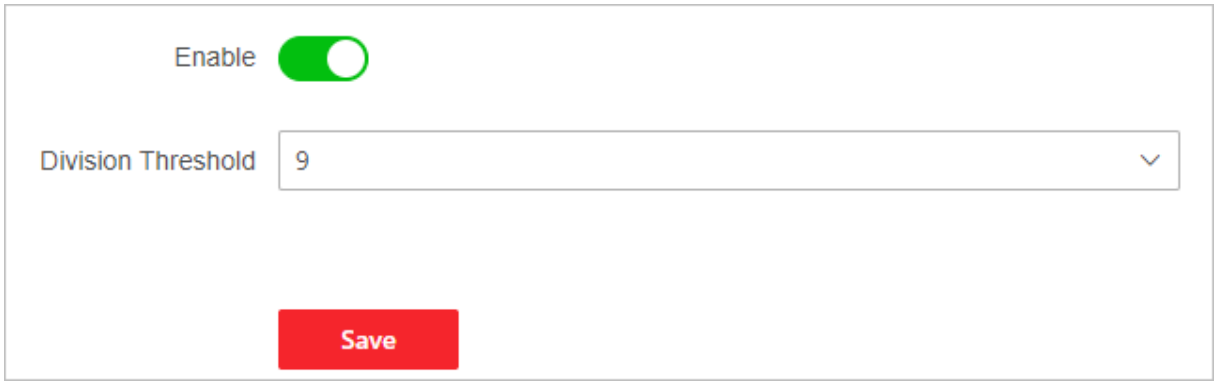

Figure 3-54 Set Sub-Stream

- Go to **Configuration** → **Other Settings** → **Scene Change**, enable **Change Subtitle As Scene Changes**.
- Go to **Configuration** → **Other Settings** → **No Signal Image**, use the default image or upload a new image as the no signal image.

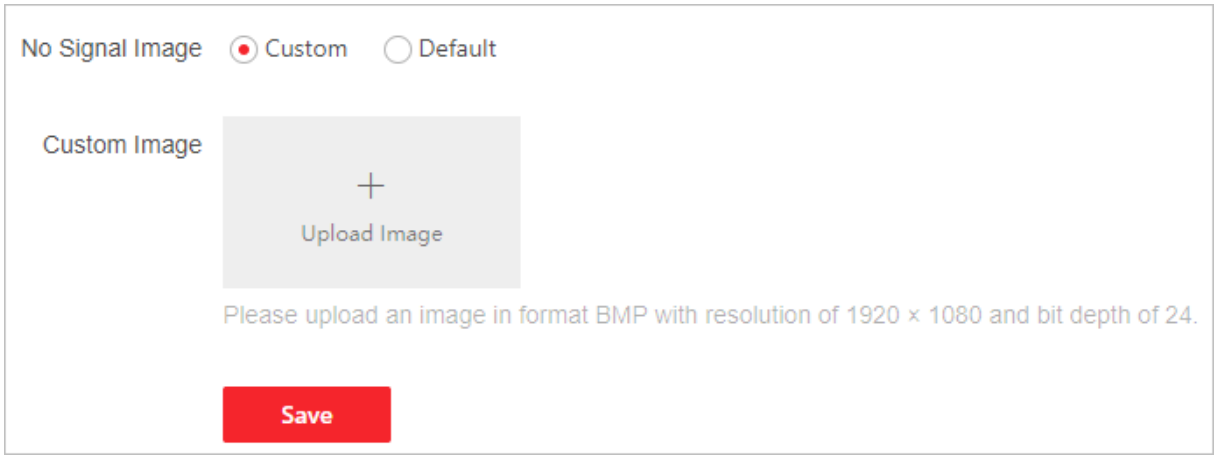

Figure 3-55 Configure No Signal Image

Configure Displayed Video Wall on Client

To display the image of a whole video wall on a video wall management client (such as HikCentral Professional Control Client) in real time, configure this function.

Step 1 Go to **Configuration** → **Other Settings** → **Display a Video Wall Image on Client**, and select a video wall to be displayed on the Client.

Step 2 Select a resolution according to the actual video definition requirements.

The higher the resolution, the higher the bandwidth requirement.

Step 3 Set the frame rate according to actual bandwidth.

The higher the frame rate, the smoother and more realistic the picture, but more requirements on bandwidth and storage space.

Step 4 Set the I-frame interval.

The larger the I-frame interval, the smaller the bit stream, the poorer the image quality. The larger the I-frame interval, the larger the bit stream, the better the image quality.

Step 5 Select a bit rate type and set the bit rate.

- If you select CBR (Constant Bit Rate), the bit rate is maintained at the average bit rate for transmission, and the compression speed is fast, but video mosaic may occur. Set the bit rate according to needs.
- If you select VBR (Variable Bit Rate), the bit rate will adjust on the basis of the upper limit of the bit rate, the compression speed is relatively slow, but it can ensure the image definition in complex scenes. Set the max. bit rate value according to needs.

Step 6 Click **Save**.

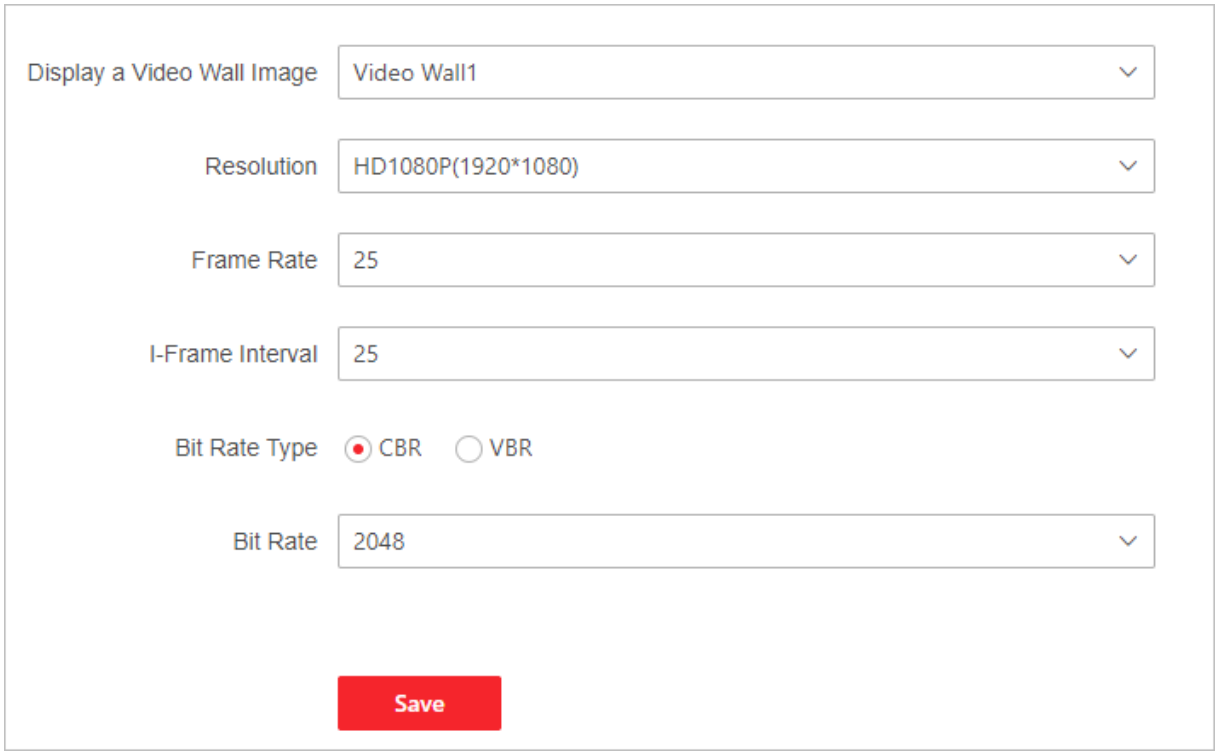

Figure 3-56 Display A Video Wall Image on Client

Chapter 4 Device Maintenance

4.1 Configure System Parameters

Go to **Configuration** → **System** to configure the following parameters:

- Go to **System Settings** → **Basic Information** to view the device information and edit the device name as required. You can click **Upgrade** to go to the **Upgrade** page.

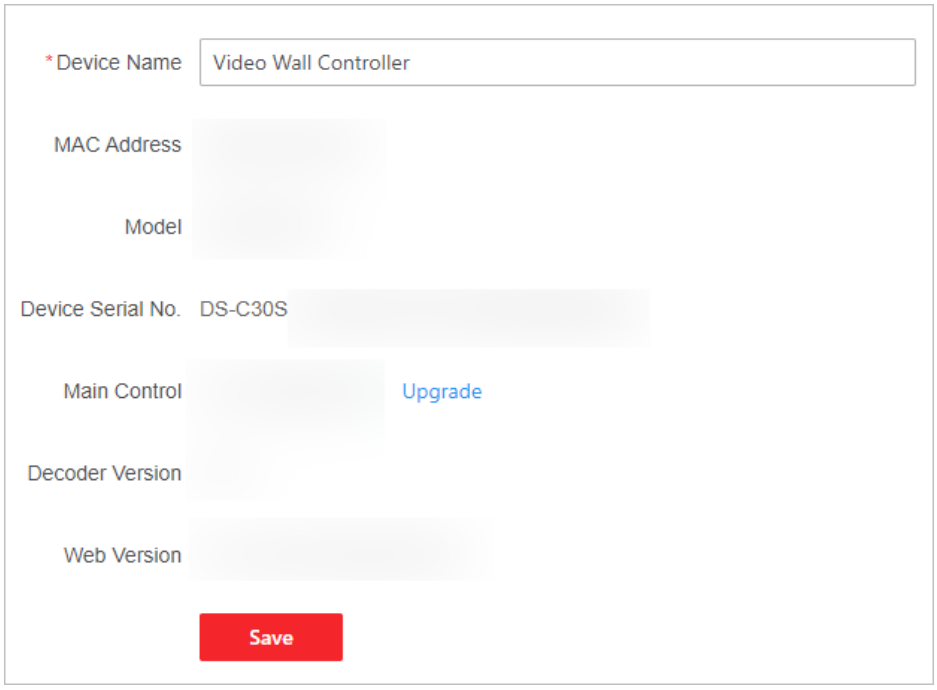

Figure 4-1 View Basic Information

- Go to **System Settings** → **Time Settings**, if you select **NTP Sync**, the device time synchronizes with the time of the NTP server at the specified interval.
  - Set the address and port number of the NTP server.
  - Set the synchronization interval.

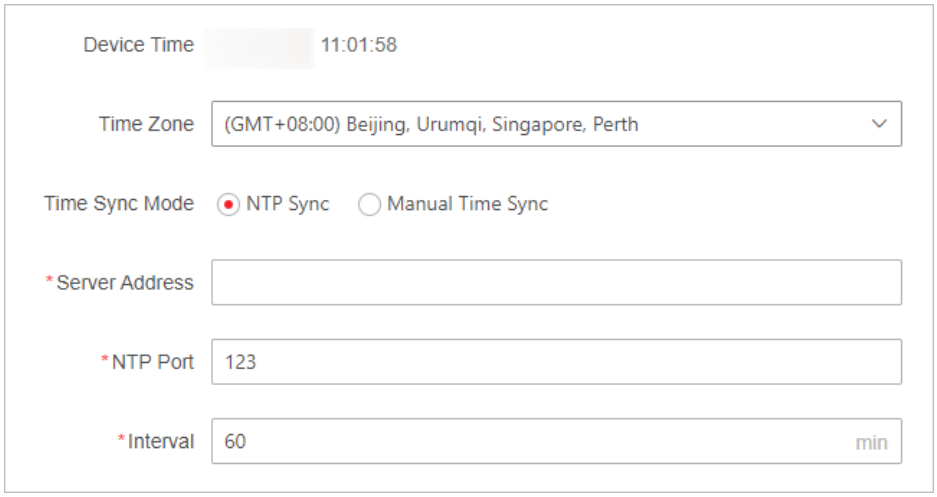

Figure 4-2 Select NTP Sync

- On the **Time Settings** page, if you select **Manual Time Sync**, you can click **Sync with Computer** to make the device time same as the computer time.

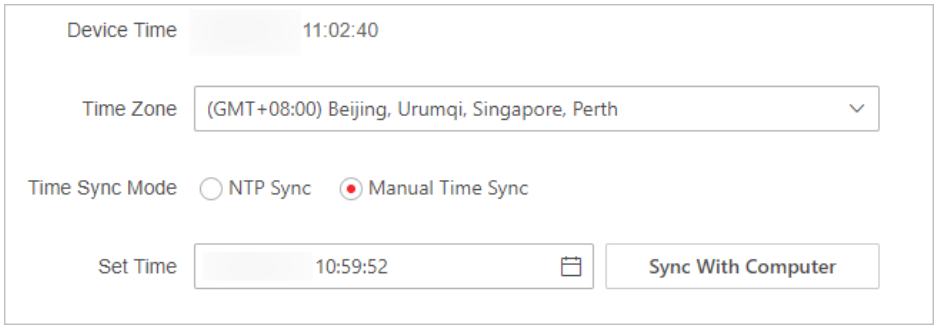

Figure 4-3 Select Manual Time Sync

- On the **Time Settings** page, if you enable DST (Daylight Saving Time), the device time is set forward a specified time during the summer months.

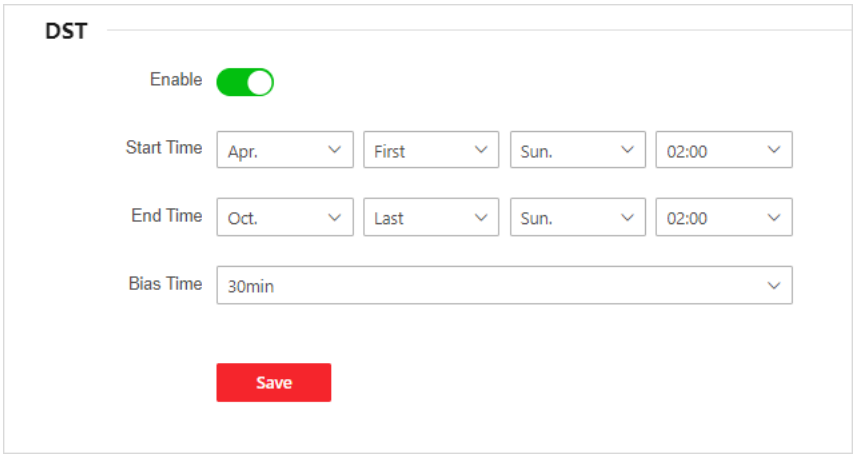

Figure 4-4 Enable DST

- Go to **System Settings** → **Font Settings** to set the font of OSDs and subtitles.
  - Use the default font.

- Click **Add** to import a new font and enable the new font.

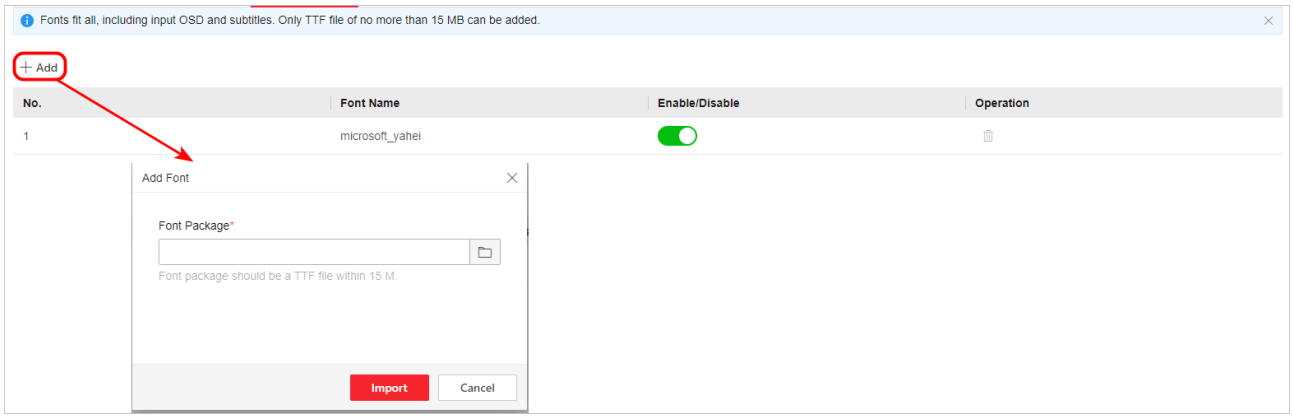

Figure 4-5 Set Font

- Go to **User Management** → **User Managemen**t to add users, edit the user name or password, or delete the users.

  You cannot edit the user name or password of the admin user or delete the admin user.

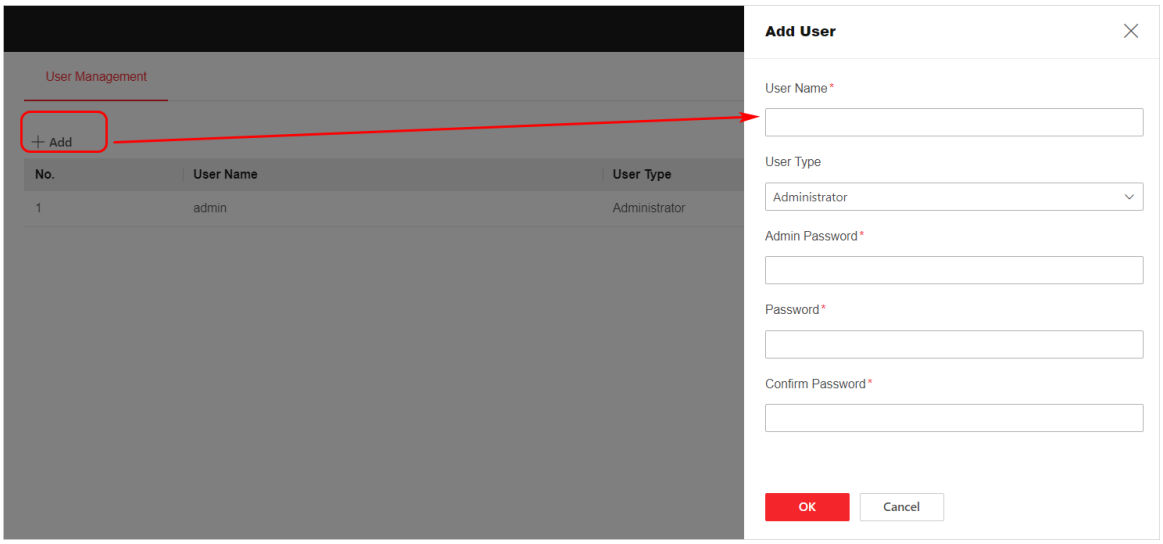

Figure 4-6 Manage Users

4.2 Configure HTTP(S) Parameters

Step 1 Go to **Configuration** → **Network** → **Network Service** → **HTTP(S)**.

Step 2 Set the HTTP port number.

The port number can be either 80 or any value from 2000 to 65535. After editing the HTTP port, you need to enter HTTP://Device IP Address: Port in the browser to access the device.

Step 3 Enable HTTPS and then set the HTTPS port.

The default port number is 443. After editing the HTTPS port, you need to enter HTTPS://Device IP Address: Port in the browser to access the device.

Step 4 Select an authentication mode.

Step 5 Click **Save**.

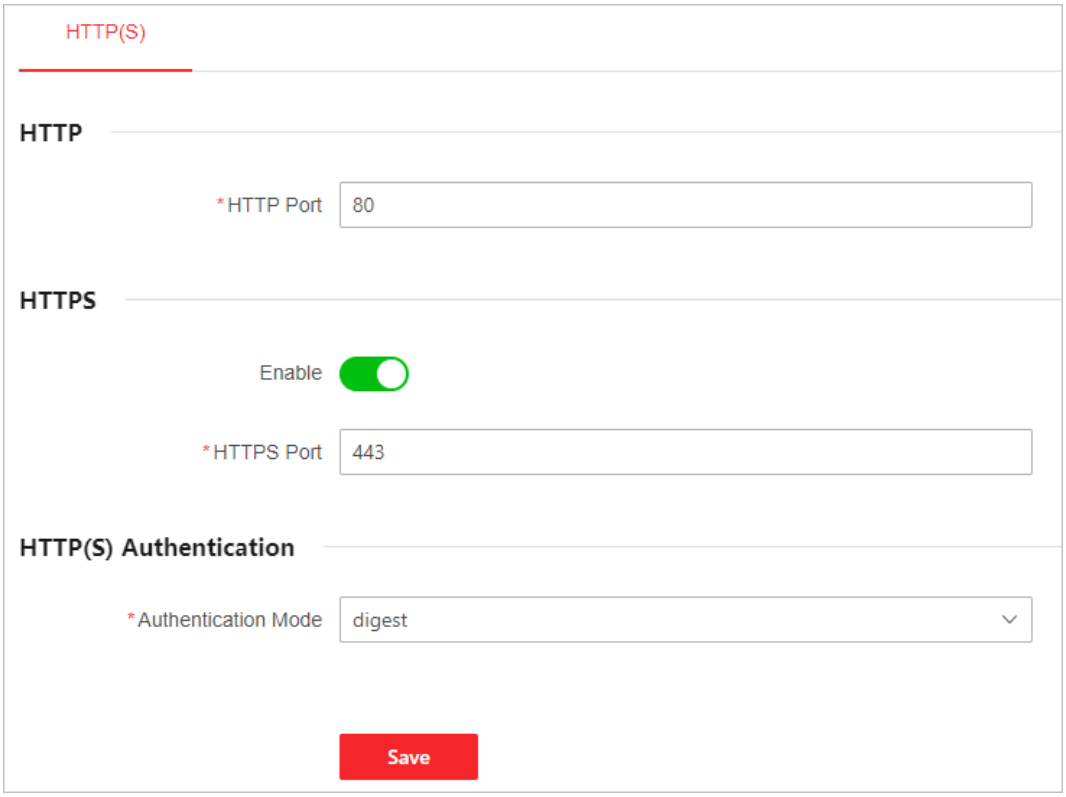

Figure 4-7 Configure HTTP (S) Parameters

4.3 Configure Events

Go to **Configuration** → **Event** to configure the audible warning and alarm reporting to the platform when the following exceptional events occur:

- The IP address of the device is the same as that of other devices in the network.
- Incorrect user name or password.
- Network is disconnected.
- The device temperature is too high or too low.
- The fan status is abnormal.

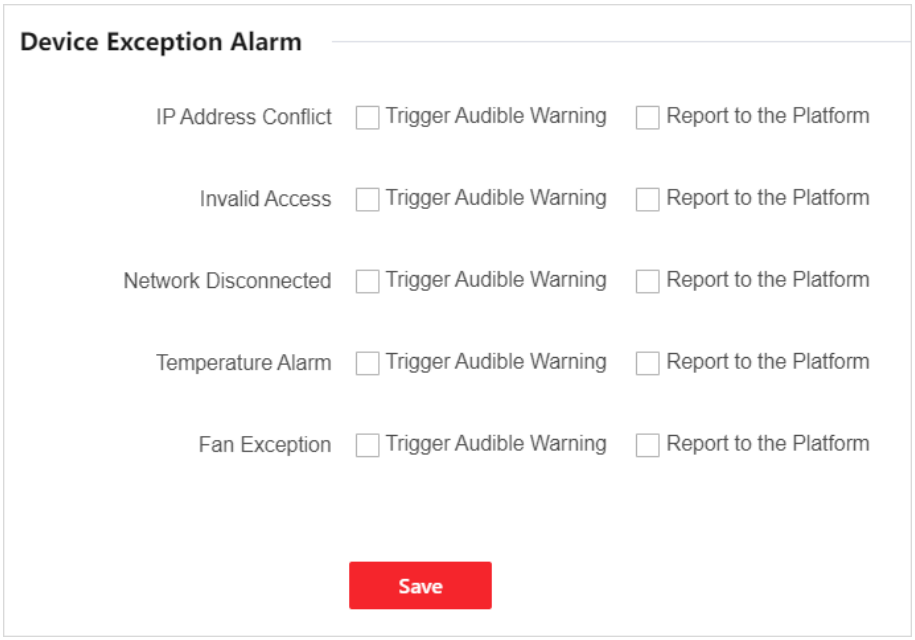

Figure 4-8 Set Device Exception Alarm

4.4 Maintain the System

Go to **Maintenance and Security** → **System Maintenance** to configure the following parameters:

- On the **Restart** page, click **Restart**.
- On the **Upgrade** page, Click to select an upgrade file, and click **Upgrade**. You need to get the upgrade file in advance and save it locally.

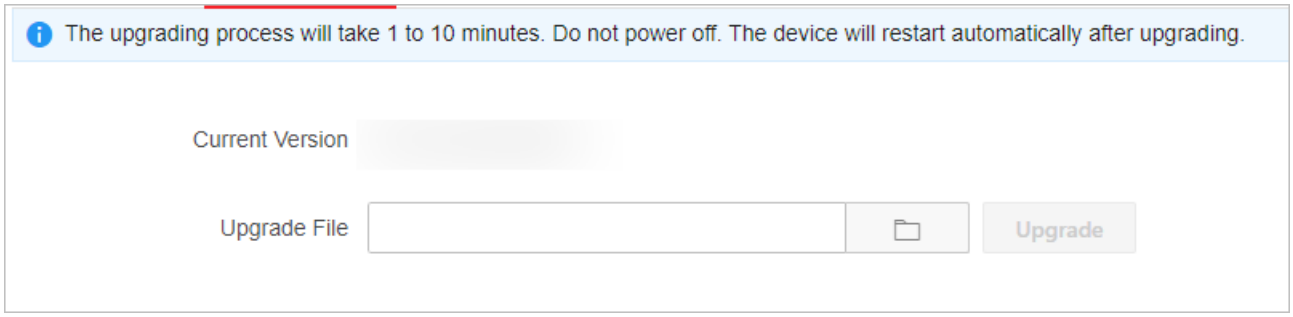

Figure 4-9 Upgrade the System

- On the **Backup and Reset** page, back up the device parameters.
- On the **Backup and Reset** page, reset the device:
  - Click **Restore Default** to restore the parameters except for user information and network parameters to the default settings. Please use this function with caution.
  - Click **Restore Factory** to restore all functions and parameters of the device to the factory settings. Please use this function with caution.
  - Click to select a parameter file saved locally, and click **Import** to import device parameters.

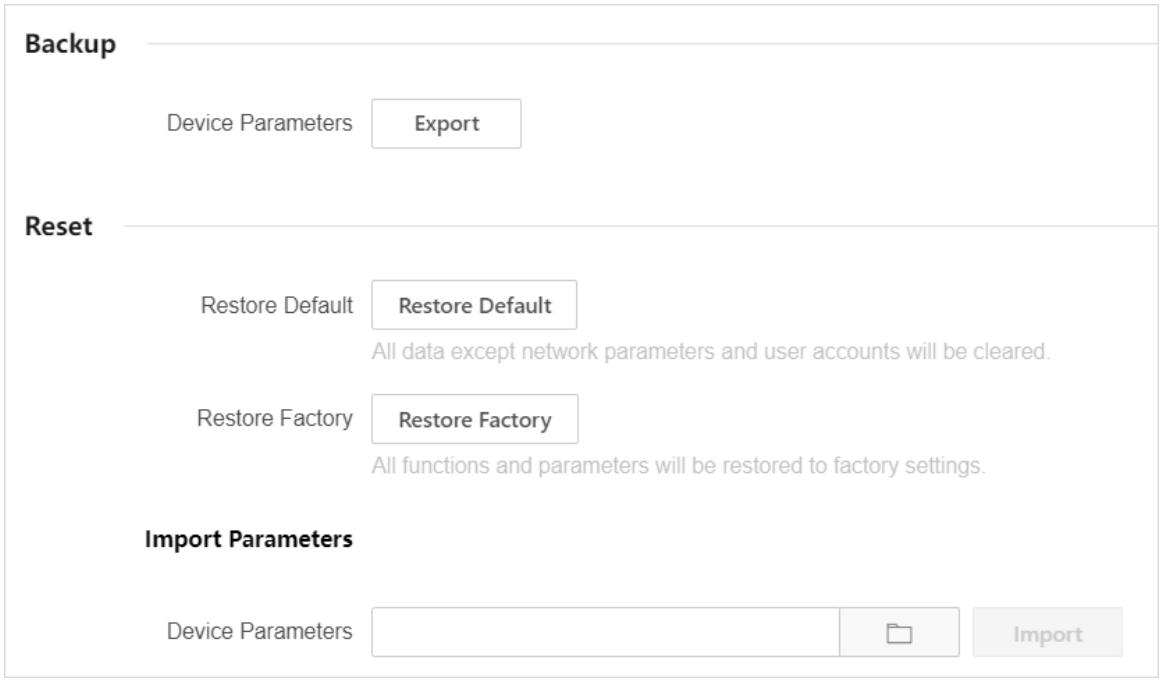

Figure 4-10 Backup and Reset Device Parameters

- On the **Log** page, set the search condition and click **Search**. You can view the searched logs in the list below.

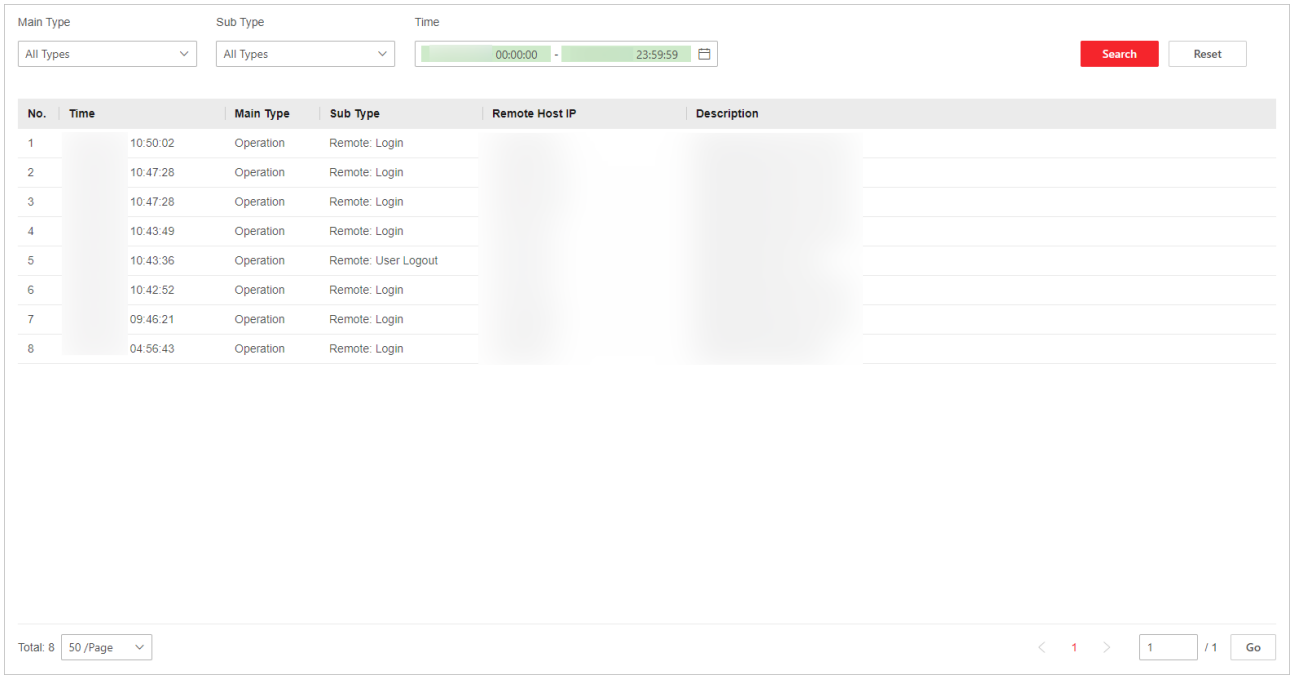

Figure 4-11 Search Logs

- On the **Device Debugging** page, configure the following parameters:
  - Enable SSH (Secure Shell) as required. With SSH enabled, you can use a computer installed with the SSH client to access the device.

- Insert a USB flash drive into the device, and click **Export** to export the logs to the USB flash drive. Format the USB flash drive before inserting into the device. Only the USB flash drives in FAT32 format are supported.

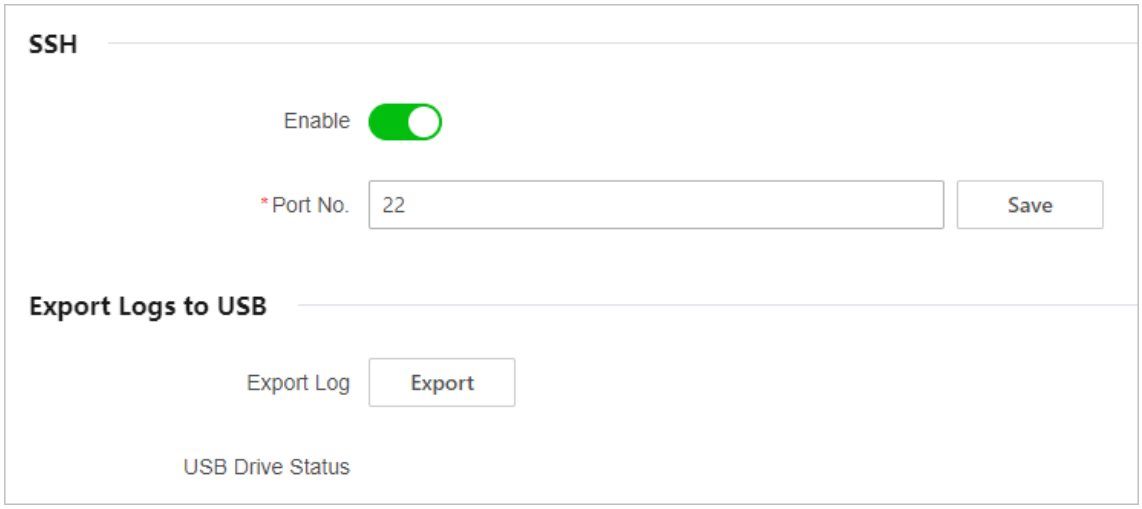

Figure 4-12 Debug the Device

4.5 Maintain the Device Security

Go to **Maintenance and Security** → **Security Management** to configure the following parameters:

- On the **IP Address Filter** page, configure the IP addresses that are allowed to or forbidden to access the device.

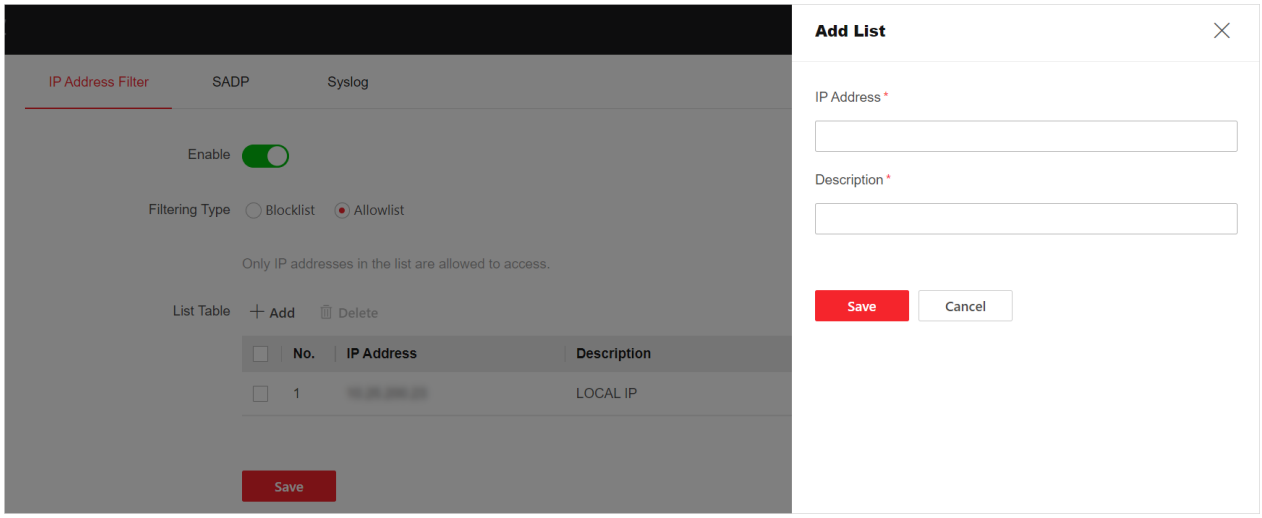

Figure 4-13 Configure IP Address Filter

- On the **SADP** page, enable SADP as required. With SADP enabled, you can use the SADP software to search the online device that is in the same network segment with the computer.
- On the **Syslog** page, enable Syslog as required. With Syslog enabled, the device logs can be uploaded to the Syslog server.

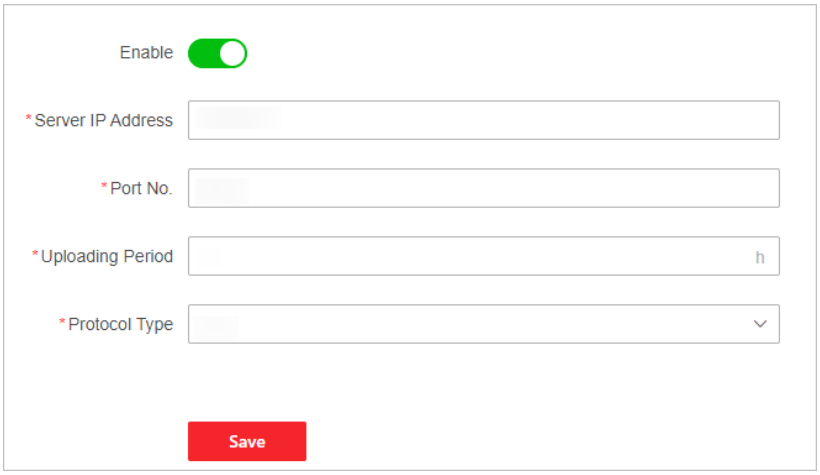

Figure 4-14 Enable Syslog


See Far, Go Further