



Full-Color LED Display Controller

User Manual

Full-Color LED Display Controller User Manual

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Regulatory Information

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
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Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

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Preface

Applicable Models

This guide is applicable to full-color LED display controller.

Symbol Conventions

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

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

Safety Instruction

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause overheating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

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Chapter 1 Product Introduction

1.1 Overview

LED Full-Color Display Controller can be used with the full-color display units to achieve the seamless jointing of the video wall in any dimensions. It is applicable to the meeting rooms, studio, gym, airport, bank, advertisement, family cinema, etc.

1.2 Main Features

Basic Features

- 16 Gigabit Ethernet output ports, each with 4096 × 2160@60 Hz signal source input at most
- Super long subtitle display, and left-justifying and right-justifying, centering and scroll display
- Automatic dehumidification to protect damp led, and three humidity modes suit the areas of different humidity
- Quick and convenient operation by remote client software
- Remote control with remote UI menu on the display unit
- Obtains IP address on random network segment to make sure no conflicts among IPs and network security
- Scene saving, and free switching with custom pictures and subtitles displayed on the windows of both sides
- Quick and convenient adjustment of display brightness
- Multicast unified control of multi devices
- 3D signal available with 3D signal transmitter and glasses equipped, single device with 3840 × 1080 load capability at most
- Ezviz upgrade
- Audio in and audio out

Specific Features

- Multi-controller cascade display, multicast control to realize synchronization

Superior Image Processing

- 16 bit depth of processing, low light and high grey to restore the colors of original images
- 3840 Hz high refresh rate, nanosecond response time, and smooth video pictures
- Automatic brightness and self-adaption to environmental lightness (with multi-functional card)
- Image color temperature adjustment with standard, cold, warm, custom colors selectable
- Highly reliable pixel-by-pixel screen correction to ensure the consistency between brightness and chromaticity
- Manual visual piece revision to dilute and smooth the gap
- Image enhancement adjustment to improve the visual display

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Powerful System Functions

- DVI, DP, and 2 HDMI signal source input, and HDMI loop output available
- HD signal input at up to 4096 × 2160@60 Hz (4K) and 4K point-to-point output
- Image scaling available

1.3 Physical Interface

Front Panel

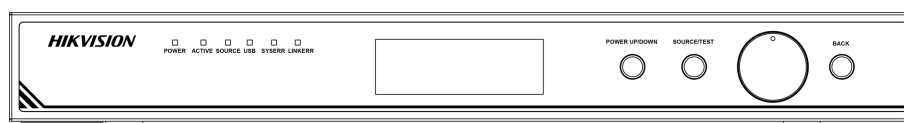


Figure 1-1 Front Panel Interface

Table 1-1 Interface Description of Front Panel

Indicator	Description	Indicator	Description
POWER	Power indicator • Red: be in the sleep mode • Green: work normally	ACTIVE	Active status indicator Flickers green when the device is powered on
SOURCE	Signal source status indicator • Steady on: with signal source input • Unlit: no signal source input	USB	USB indicator • Steady on: with USB inserted • Unlit: no USB inserted
SYSERR	System error indicator Steady on green when system error occurs	LINKERR	Link error indicator Steady on green when the receiving card is offline
LCD Panel	Display informations such as brightness, device IP, input/output resolution, signal source type, menu lock status	Knob	• Normal Mode (not the Menu Mode): rotate right/left to adjust brightness • Menu Mode: rotate right/left to select menu item; press to select or enter next menu

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Indicator	Description	Indicator	Description
BACK	- Long press: unlock the menu lock and press the knob to enter menu mode - Short press: back to the previous menu or the main menu	SOURCE/TEST	- Long press: enter the image test mode - Short press: switch the signal source
POWER UP/DOWN	- Long press: device in sleep - Short press: awake the device	— —	— —

Rear Panel

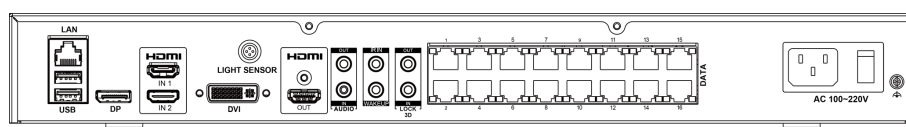


Figure 1-2 Rear Panel Interface

Table 1-2 Interface Description of Rear Panel

Interface	Description	Interface	Description
LAN	Network signal input	USB	USB interface
DP	DP interface	HDMI IN 1/IN 2	HDMI signal input 1/ input 2
HDMI OUT	HDMI signal output	LIGHT SENSOR	Light sensor interface
DVI	DVI interface	AUDIO IN/OUT	Audio input/output
IR IN	Infrared input	WAKEUP	Wakeup interface
3D OUT	3D signal output	3D IN	3D signal input
DATA	16 network port output	Power	110 to 220 VAC

Chapter 2 Device Activation and Login

2.1 Activate the Device

In order to protect personal account privacy and reinforce system/data security, you need to set login password and activate the device for your first login.

Before You Start

- The client software has been installed correctly.
- PC and the device are in the same network segment.

Steps

1. Run the client .

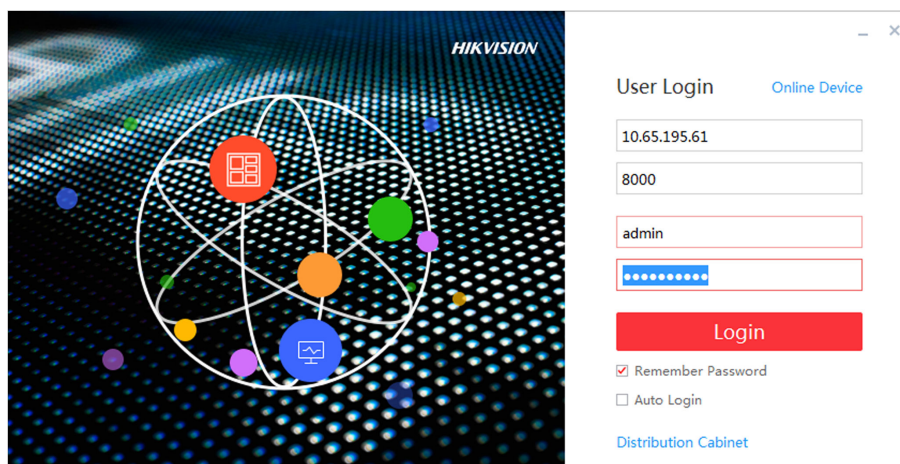


Figure 2-1 Register

2. Click **Online Device** to show all online devices in the current network segment.

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The 'Online Device' window displays a table of 8 devices. Device 7 is highlighted. To the right, configuration fields for the selected device are shown, including MAC Address, Software Version, Serial No, Network Parameters (IP, Port, Subnet Mask, Gateway), Password, Network Security, and Device Upgrade options.

No.	IP	Device Type	Activate
1	10.12.112.49	DS-D40C08-D	Activation
2	10.12.112.32	DS-D40C04	Activation
3	10.12.112.35	DS-D40C04-D	Activation
4	10.12.112.31	DS-D40C04-D	Activation
5	10.12.112.23	DS-D40CXX_DEC	Activation
6	10.12.112.38	DS-D40C08-D	Activation
7	192.0.0.64	DS-D40C04	Non-activated
8	10.12.112.134	DS-D40C08-D	Activation

Device Information
 MAC Address: 00-40-5c-10-c5-a9
 Software Version: V1.4.5 build180620
 Serial No: DS-D40C040020170321CCRR735644C

Network Parameter
 IP Address: 192.0.0.64
 Port No: 8000
 Subnet Mask: 255.255.255.0
 Gateway Address: 192.0.0.1
 Password:
 [Modify]

Network Security
 [Activate] [Reset Pass...]

Device Upgrade
 [Upgrade]

[Login] [Cancel]

Figure 2-2 Activate Online Device

3. Select the device to be activated and click **Activate**.
4. Enter **Password** and **Confirm Password** in the popup window.

The 'Activation' window prompts for User Name (admin) and Password. It includes a password strength indicator (Weak) and a detailed password policy: 'Valid password range [8-16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.' There is a 'Confirm Passw...' field and 'Apply' and 'Cancel' buttons.

Figure 2-3 Activation



Caution

We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

5. Click **Apply** to activate the device.
6. Select the activated device in Online Device interface.
7. Modify network parameters and enter **Password**.
8. Click **Modify** to save the modifications.

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Note

If the network segment which device connected has DHCP function, it will allocate IP by default, please skip step 6, 7 and 8.

2.2 Add Power Distribution Cabinet

You can add a power distribution cabinet as needed. The client can turn on/off the screen remotely after adding the power distribution cabinet.

Steps

1. Double click **LED Display Controller** to run the client.
2. Click **Power Distribution Cabinet Config**.

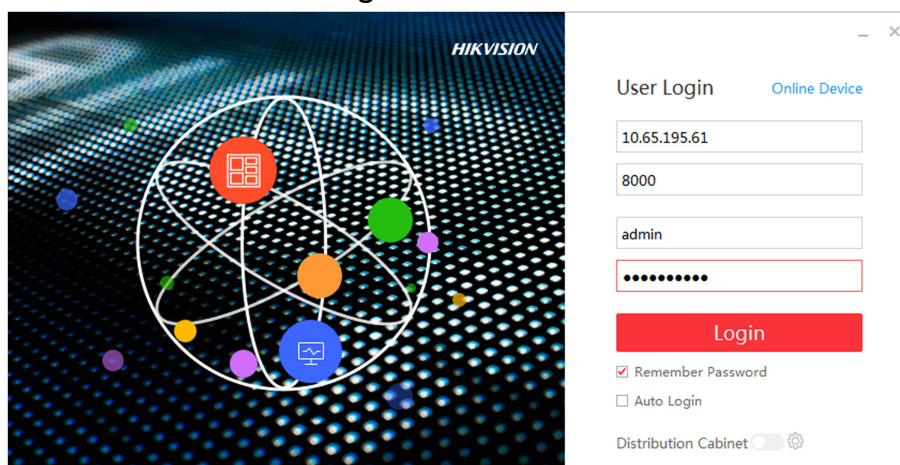


Figure 2-4 Login

3. Enter IP and port No. of power distribution cabinet.
4. Click **OK**.
5. Enable **Power Distribution Cabinet Config**.

2.3 Login

Before any operation, you need to log into the LED client server.

Steps

1. Run the client to enter the login interface.
2. Enter **IP Address**, **Port No**, **User Name**, and **Password**.
3. **Optional:** Check **remember password** to remember the login password, so there is no need to enter password for the next login.
4. **Optional:** Check **Auto Login** to Log into the client automatically.
5. Click **Login**.

Chapter 3 Client Configuration and Operation

3.1 Wizard

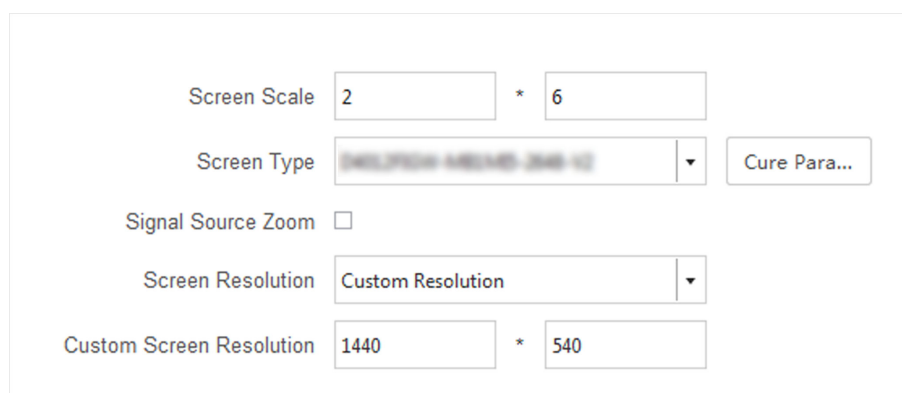
For the first login, the client will pop up a wizard, including display attribute configuration and signal cable configuration. Set the parameters as needed, and the client can recognize the screen parameters automatically when you log in the next time.

3.1.1 Display Attribute Configuration

You can configure some basic parameters in the display attribute window, such as screen type, screen scale, screen resolution and other parameters.

Screen Configuration

Configure screen scale and type, select signal source type as needed.



The screenshot shows a configuration window with the following elements:

- Screen Scale:** Two input boxes containing '2' and '6' separated by a '*' symbol.
- Screen Type:** A dropdown menu with a blurred selection and a downward arrow.
- Signal Source Zoom:** A checkbox that is currently unchecked.
- Screen Resolution:** A dropdown menu with 'Custom Resolution' selected and a downward arrow.
- Custom Screen Resolution:** Two input boxes containing '1440' and '540' separated by a '*' symbol.
- Cure Para...:** A button located to the right of the Screen Type dropdown.

Figure 3-1 Display Attributes

Screen Scale

Set rows and columns of the screen according to the actual situation.



Note

Each screen contains 2 receiving cards. If the actual screen size is 2 × 2, you need to set the scale as 2 × 4.

Screen Type

Select it according to the screen type and material number. Or click **Load from Screen** to select the screen type and material number.

Cure Parameters

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Save parameters in the receiving card to ensure your screen displays properly after next reboot.

Configure Screen Resolution

After configuring the screen resolution, the display image can match the actual screen resolution. It can reduce the image loss and partial black screen caused by resolution.

Steps

1. Enter Display Attribute interface.
2. Check **Signal Resource Zoom**.
3. Select **Screen Resolution**.
 - Select resolution in **Screen Resolution**.
 - If there is no appropriate resolution in the **Screen Resolution**, you can select **Custom Resolution** in **Screen Resolution**, and enter resolution in **Custom Screen Resolution**.



Note

- The width of the custom resolution should be a multiple of 4.
 - Uncheck **Signal Resource Zoom** in splcing and controlling scene.
-

What to do next

Click **Next** and configure signal cable.

3.1.2 Configure Signal Cable

Configure signal cable according to the actual receiving card connection between LED cabinets.

Steps



Note

After configuring the screen scale, LED screen will show the signal cable connection. The connection of client signal cables must match the screen connection.

1. Go to the Signal Cable Configuration interface.
 - Click **Next** in the Display Attribute interface.
 - Click **Basic Configuration → Signal Cable Configuration**.
 2. Check **Display Actual Lines on Screen**. You need to connect the cable according to the position prompt on the screen.
 3. Select sending port below **Please select sending port to connect**.
-



Note

The location prompt of each screen will indicates you to connect the signal cable. If the position prompt is **2-1**, the screen is the first screen to connect to No.2 sending port.

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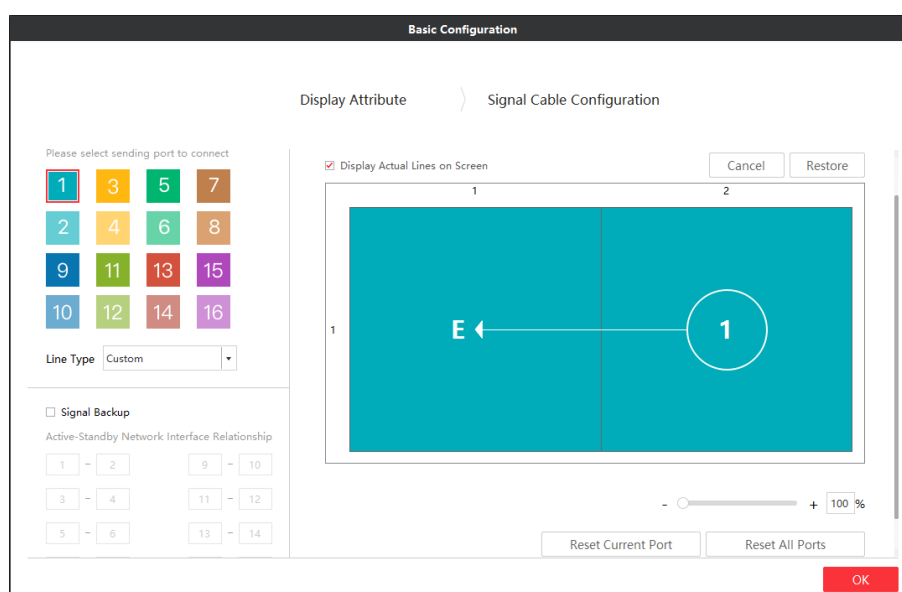


Figure 3-2 Signal Cable Configuration

4. Connect signal line.
 - Click the screen on the right side of the interface to connect signal line.
 - Select **Line Type**, and select starting port and end port on the right side of the interface.
 5. Right-click on the right side of the interface after connection.
 6. Select **Complete Signal Cable Connection**.
 7. Click **Save**.
- Port configuration information set.** will pop up after the signal cable is connected.

Other Operation

Supports some auxiliary operations to complete the signal cable connection.

Copy Image

Enable **Copy Image** as needed, and fill the number of images (the number of screens). According to the actual lines displayed on screen, configure signal cables in every image/screen on the client. For more information about how to configure signal cables, refer to **Configure Signal Cable**.

Table 3-1 Maximum Number of Images for Different Sending Card Type

Sending Card Type	Maximum Number of Images
DS-D42C16	8
DS-D42C08	4
DS-D42C04	2

Sending Port

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Port of sending card is applied to communicate between sending card and receiving card. The receiving card connected by signal sending port is Card1, the receiving card connected to the first sending card is Card2, and so on.

Cancel

Cancel last operation.

Restore

Resume last operation.

Reset Current Port

Cancel all settings of current signal sending port.

Reset All Ports

Cancel settings of all signal sending ports.

Signal Backup

Input signals by two channels to ensure signal stability.



Note

If Signal Backup checked, the relation between the main and sub ports should be the same as that of the client.

3.2 Signal Input Type Configuration

Select the signal source type in the upper right corner of **Display Status**. You should select the signal source according to the sending card resolution.



Note

Different signal source may result in different resolution.

3.3 Display Adjustment

Screen can get best display effects by configuring image parameters, brightness and enhancement, screen display parameters, etc.

3.3.1 Correct Screen/Seam

You can correct screen and seam manually or in a batch to deliver better LED display effects.

Correct Screen Manually

Correct display parameters of LED screens to achieve the same display effects.

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Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Correction** → **Manual Correction** .

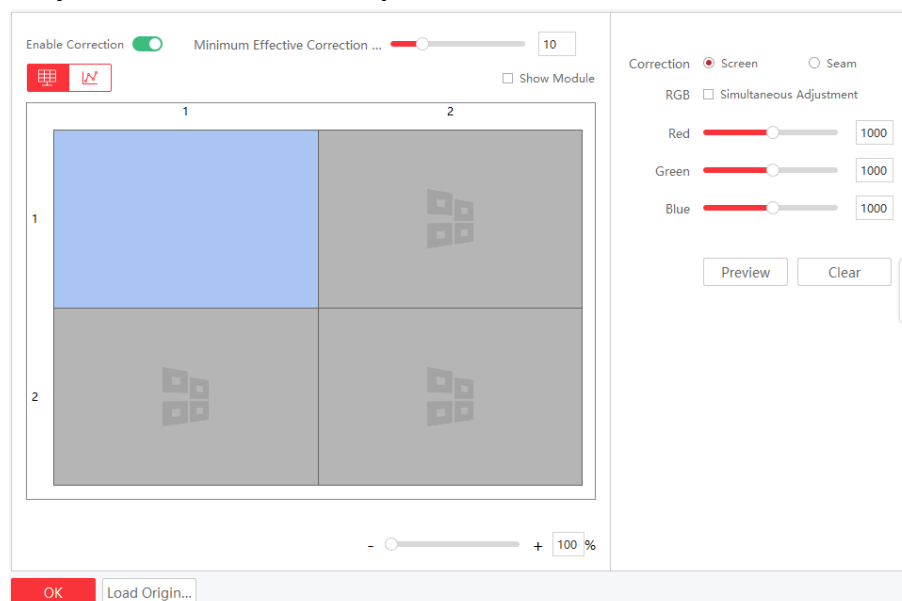


Figure 3-3 Correct Screen Manually

2. Select **Enable Correction**.
3. Select **Screen** in **Correction**. Drag the bar of **Minimum Effective Correction Value** and the data bigger than the set value can be corrected.
4. Select area to correct.
 - Check **Show Module** and select the module to correct.
 - Uncheck **Show Module** and select the screen to correct.
5. Correct the whole screen or correct the selected area of the screen.
 - Correct the whole screen: click  , and select the desired screen.

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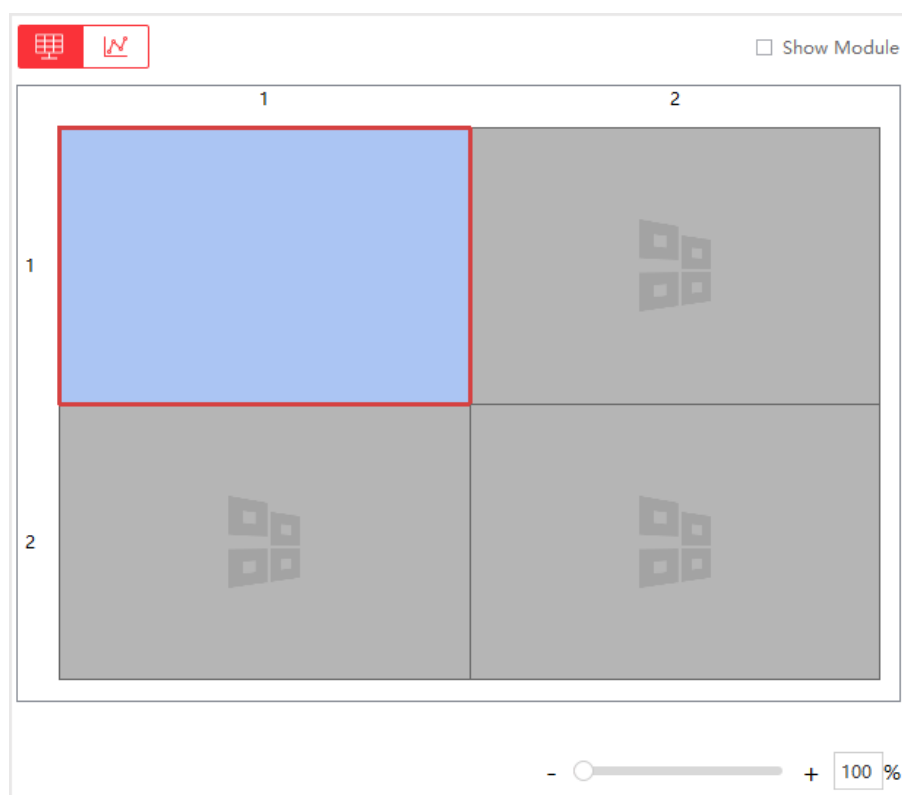


Figure 3-4 Correct the Whole Screen

- Correct the selected area of the screen: click , and input the start coordinate and end coordinate of the desired area.

☒	No.	Start Coordinate	End Coordinate
☒	1	1,1	384,216
☒	2	385,1	768,216
☒	3	1,217	384,432
☒	4	385,217	768,432

Figure 3-5 Correct the Area of the Screen

6. Adjust RGB value.

- Drag the bars.
- Enter numbers in the text boxes.

Note

- You can check **Simultaneous Adjustment** to adjust RGB simultaneously.
- The number ranges from 800 to 1200, and the default value is 1000.

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7. Click **Preview** or press **Enter** to check the effects.

8. Click **Apply**.

Operation	Description
Clear	Reset all parameters if needed.
Load Original Data	Load original correction data.



Note

The function may vary with models. The parameters will not be displayed when the function not supported.

Correct Seam Manually

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Correction** → **Manual Correction** .

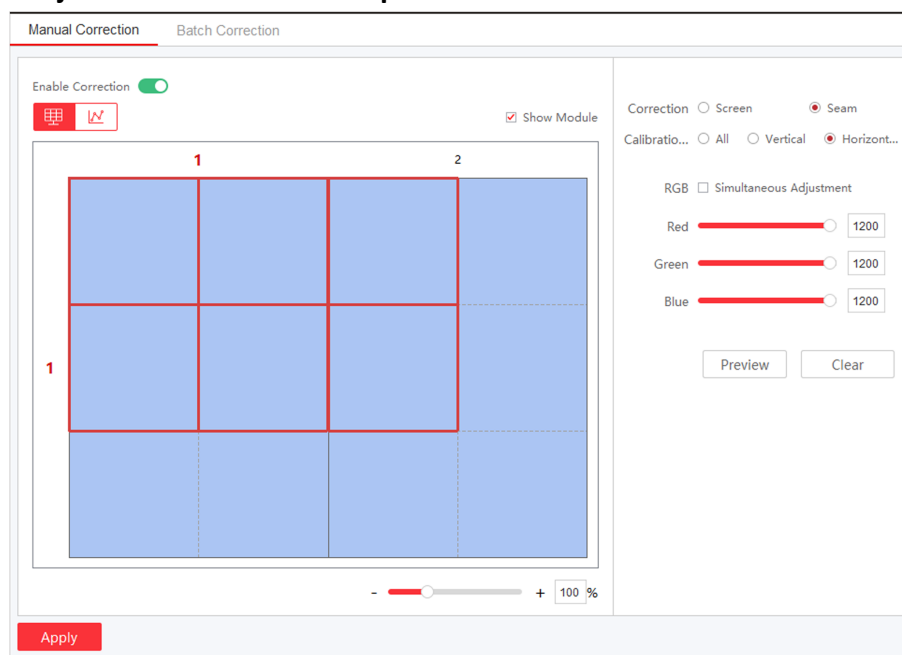


Figure 3-6 Correct Seam Manually

2. Select **Enable Correction**.

3. Select **Seam** in **Correction**.

4. Select **Calibration Range**.

All

Correct all seams.

Vertical Line

Correct all vertical seams.

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Horizontal Line

Correct all horizontal seams.

5. Select area to correct.
 - Check **Show Module** and select the module to correct.
 - Uncheck **Show Module** and select the screen to correct.
6. Drag the bar to adjust **Seam Width**.



Note

The seam width ranges from 1 to 10.

7. Adjust RGB value.
 - Drag the bars.
 - Enter numbers in the text boxes.



Note

- You can check **Simultaneous Adjustment** to adjust RGB simultaneously.
- The number ranges from 800 to 1200, and the default value is 1000.

8. Click **Preview** to check the effects.
9. Click **Apply**.

Batch Correct Screen

You can correct screen display in a batch by importing correction file.

Before You Start

- The correction file has been obtained from the supplier.
- Select a screen as the start of the batch correction in the **Manual Correction**.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Correction** → **Batch Correction**.

Figure 3-7 Batch Correction

2. Click ... to select correction file.
3. Click **Upload**. The screens/seams will be corrected based on the uploaded file.

Operation	Description
-----------	-------------

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Download Download the correction file as the backup files. You can also upload this correction file to correct other devices.

3.3.2 Configure Screen Color

You can adjust color temperature and color standard as needed.

Before You Start

Connect the signal source to the device before configuring the image contrast and saturation.

Steps

1. Go to **Screen Adjustment** → **Basic Control** → **Image Adjustment** .

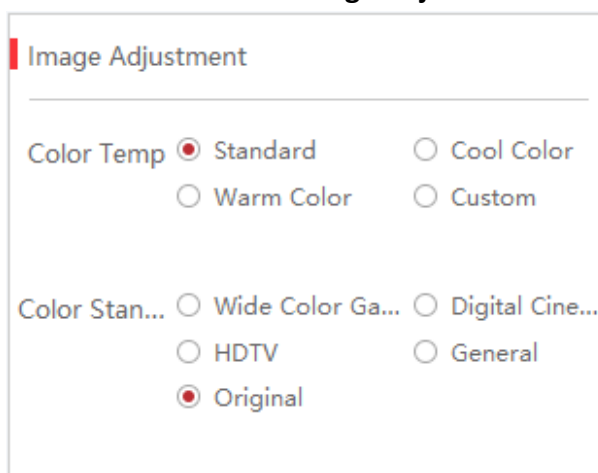


Figure 3-8 Image Adjustment

2. Select **Color Temperature** .

3. Select **Color Standard**.

Wide Color Gamut

Applicable to UHD (Ultra High Definition) devices.

Digital Cinema

Applicable to digital cinemas and high-end displays.

HDTV

Applicable to HDTV(High Definition Television) and other common video devices.

General

Applicable to general displays.

Original

Restore to the original color.

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3.3.3 Configure Brightness

Configure LED screen brightness.

Steps

1. Click **Screen Adjustment** → **Basic Control** → **Basic Configuration** .

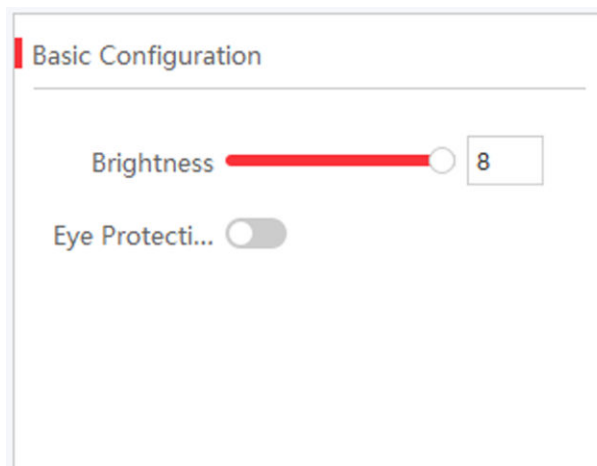


Figure 3-9 Brightness Adjustment

2. Adjust the brightness. Brightness ranges from 1 to 8. Brightness of energy saving mode ranges from 1 to 2. Brightness of balanced mode ranges from 3 to 4. Brightness of high light mode ranges from 5 to 6. Brightness of sport mode is from 7 to 8.
 - Slide the slider.
 - Enter numbers in the text box.

Brightness

Brightness is a photometric measure of the luminous intensity per unit area of light traveling in a given direction. It describes the amount of light that passes through, is emitted or reflected from a particular area, and falls within a given solid angle. The SI unit for luminance is candela per square metre (cd/m²).



Note

If the device has configured multi-functional card, you can check **Auto** to enable auto brightness adjustment.

3. Enable **Eye Protection Mode** as needed.

3.3.4 Configure Image Enhancement

You can enhance image display effects by client.

Before You Start

Connect the signal resource to the device correctly.

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Steps

1. Go to **Screen Adjustment** → **Basic Control** → **Image Enhancement** .

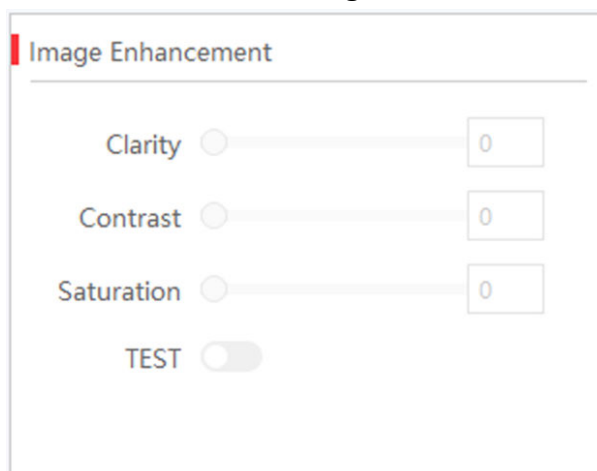


Figure 3-10 Image Enhancement

2. Select **Scene Enhancement** or slide the slider to adjust **Clarity**, **Contrast** and **Saturation**.

Sunlight Scene

When the device is in well-lit environment, you can select it and the corresponding strength.

Darkness Scene

When the device is not in well-lit environment, you can select it and the corresponding strength.

3. **Optional:** Check **Test** to view the image effect on the screen. Screen on the left side shows the image before enhancement, while the screen on the right side shows the image after enhancement.

3.3.5 Input Capability

You can enable 4K signal input, 3D video processing, input signal auto detection, and resolution self-adaption, and select input format as needed.

Steps

1. Click **Screen Management** → **Advanced Operation** → **Input Capability** .
2. Set parameters as needed.

4K Signal Input

If you disable 4K signal input, we recommend you using 1080p signal input.

3D Video Processing

Check **Enable** when there is need for 3D video processing.

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Note

- Before enabling **3D Video Processing**, you need to install mulch-functional card first.
 - Only when 3D parameters are configured into screens, **3D Video Processing** can be enabled.
 - After enable **3D Video Processing**, **3D Processing Mode** and **Left-Right Image Switch** can be supported.
-

3D Processing Mode

3D Processing Mode is divided into **Left-Right Alternating**, **Left-Right Image Integration** and **Upper-Lower Image Integration**.

- When you select **Left-Right Image Integration** or **Upper-Lower Image Integration**, the frame rate for signal source input is 120 Hz, the video needs to be set to Left-Right Image Integration or Upper-Lower Image Integration and the signal source output method needs to be set to shutter active switching mode.
- When you select **Left-Right Alternating**, the frame rate for signal source input is 60 Hz, the video is played in the full screen and there is no need for other operations.

Left-Right Image Switching

When the left image is opposite to the right image, you can enable **Left-Right Image Switching**.

Input Signal Auto Detection

Check **Enable** to detect input signal automatically.

Best Resolution Self-Adaption

Check **Enable**, and the input and output resolution will be the same automatically.

Input Format Support

The input standard is RGB by default. Select **Auto Recognition** when the signal standard is not RGB.

Note

Before enabling 3D function, you need to install mulch-functional card first.

3. Click **OK**.

3.4 Volume Adjustment

You can adjust the audio input volume of LED display on the client.

Before You Start

The **Input Capability** is enabled in **Screen Management → Advanced Operation → Input Capability**.

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Steps

1. Go to **Screen Adjustment** → **Basic Control** → **Basic Configuration** .
2. Slide the slider or enter numbers in the text box to adjust the volume.

3.5 Configure a Scene

You can save the configurations of, for example, signal input type, 3D video processing, or video opening window, as a scene to call for convenience.

Steps

1. Click **Scene** on the right of the interface.

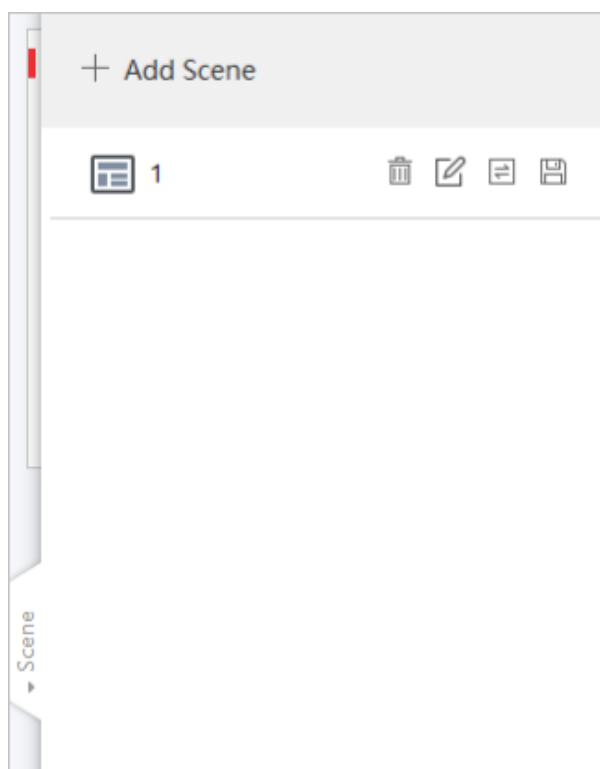


Figure 3-12 Scene Configuration

2. Click **+** .
3. Enter a scene name.
4. Click **Finish** to save the scene into the scene list.
5. **Optional:** You can also do the following operations.

Operation	Description
	Delete the scene.
	Edit the scene name.

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Operation	Description
	Call the scene.
	Apply the scene.

3.6 Add Device Alias

Device alias is used to distinguish devices from each other.

Steps

1. Click  on the **Display Status**.
2. Edit device alias.
3. Click **OK** to save the device alias.

3.7 Configure Message

Release rolling/static message to terminal by the client.

Before You Start

No-signal screensaver is in custom mode. Refer to **Configure No-Signal Screensaver**.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Message Configuration**.

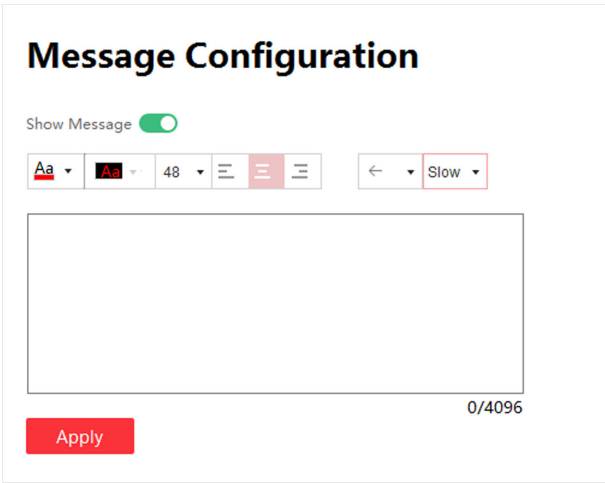


Figure 3-13 Message Configuration

2. Enable **Show Message**.
3. Enter message in the text box.
4. Configure text style, including font color, font size, position and rolling speed.

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Note

Background color is black by default and is not adjustable.

5. Click **Apply**.

3.8 Configure OSD

Screen will display prompts after configuring OSD (On-screen Display).

Steps

1. Click **Screen Adjustment → Advanced Operation → OSD Configuration**.

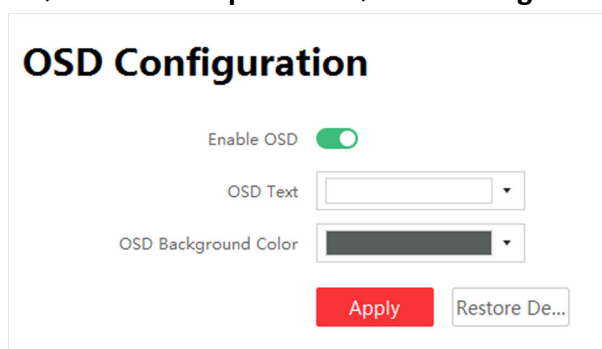


Figure 3-14 OSD Configuration

2. Click **Enable OSD**.
3. Configure **OSD Text** and **OSD Background Color**.
4. Click **Apply**.

Operation	Configuration
Restore Default Settings	Restore to default OSD settings.

3.9 Configure Network

The device will obtain IP automatically when the network segment of the device has changed.

Before You Start

The network segment connected by the device has DHCP (Dynamic Host Configuration Protocol) function.

Steps

1. Click **Screen Adjustment → Advanced Operation → Network Configuration**.
2. Click **Obtain IP Address Automatically**.

Note

This function is enabled by default.

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3.10 Configure No-Signal Screensaver

The screen will display default no-signal screensaver when there is week input signal or no input signal.

Steps



Note

You can choose default mode, custom mode, and black screen mode. Here we take custom mode as an example.

1. Click **Screen Adjustment** → **Basic Control** → **No-Signal Screensaver** .

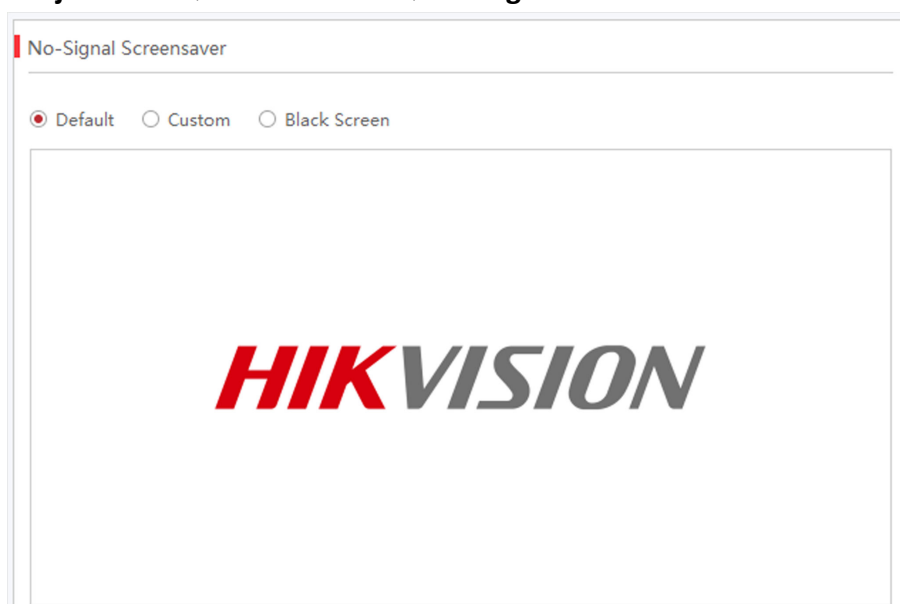


Figure 3-15 No-Signal Screensaver Configuration

2. Click **Custom**.
3. Click **Select Picture** to select the pictures.
4. Click **Upload**.



Note

- The picture format only can be JPG and resolution should be between 320 * 240 and 3840 * 3840.
 - If you upload more than one picture, the pictures will be auto switches automatically when the screensaver displays.
-

5. **Optional:** Check **Random Play**.
6. **Optional:** select **Picture Auto-Switch Interval**.

System will auto-switch pictures randomly according to the interval when there is no input signal.

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3.11 Configure On/off Image

You can use the screen saver as the on/off image or customize the image. Take customizing the on/off image as an example.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **On/Off Image** .

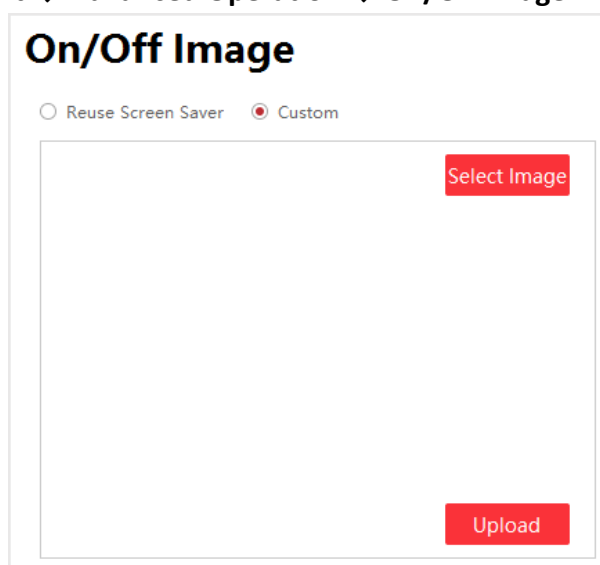


Figure 3-16 On/Off Image Configuration

2. Click **Custom**, and click **Select Image** to select an image in your computer.
3. Click **Upload**.

Note

Only images in JPG format with resolution from 320 × 240 to 3840 × 3840 are available.

3.12 Configure Multicast Control

Through multicast function, you can control and configure several devices simultaneously.

Steps

Multicast

In computer networking, multicast is group communication where information is addressed to a group of destination computers simultaneously. Multicast can be one-to-many distribution.

1. Click **Screen Adjustment** → **Advanced Operation** → **Multicast Control** .
2. Check **Enable Multicast**.

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Note

Items available for multicast control include brightness/white balance, signal input switch, dehumidification configuration, attribute configuration, system configuration, basic configuration, and advanced configuration. Check the items based on your needs.

3. Check the device you want to synchronize.

4. Click **OK**.

Note

You can login to any checked IP to achieve multicast control.

3.13 Configure Video Window Opening

Video opening window is a virtual split screen on the LED display to meet the combined display of multiple contents. Currently, the entire screen can be divided into three areas: left, center, and right. The left and right areas are picture areas, and the center area is the input area of external signal sources.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Video Window Opening**.

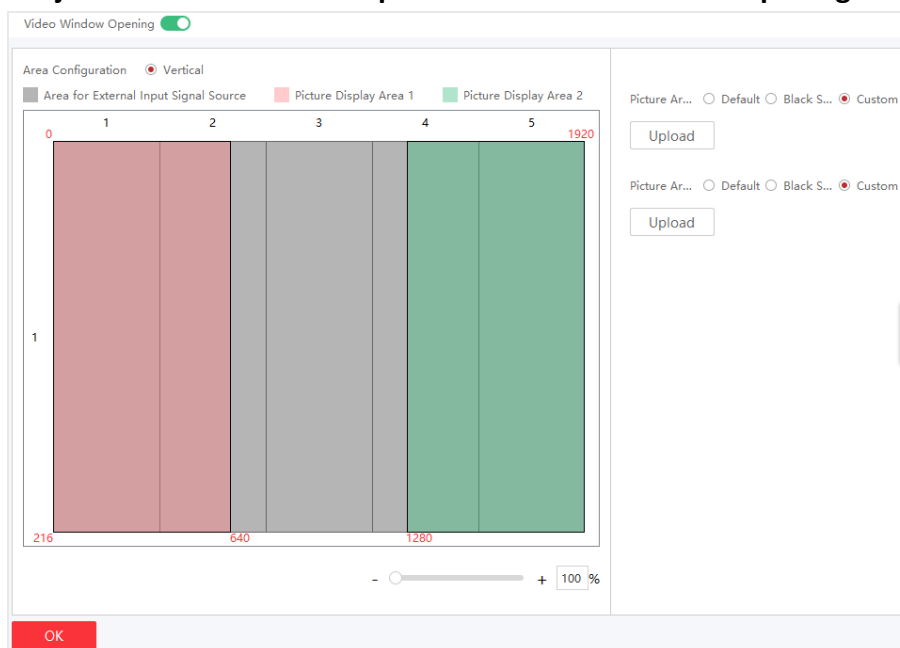


Figure 3-17 Video Window Opening Configuration

2. Enable **Video Window Opening**. The screen is divided into left, center, and right areas vertically by default.
3. **Optional:** Adjust the split screen layout by dragging the vertical line of the center area.
4. Configure the pictures to be displayed in the left and right areas in the upper-right corner.

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Default

The area displays the default picture in the system.

Black Screen

The area displays black screen.

Custom

Click **Upload** to upload pictures to be displayed. You can also replace or delete the uploaded pictures.

Please upload pictures in JPEG or JPG format with size smaller than 6 MB.

5. Click **OK**.

3.14 Configure Screen Splicing

You can splice multiple LED screens into one to display a complete picture, without the need for processing by professional video wall controllers. 3D screen splicing is available.

Steps

1. Click **Screen Splicing Configuration**.

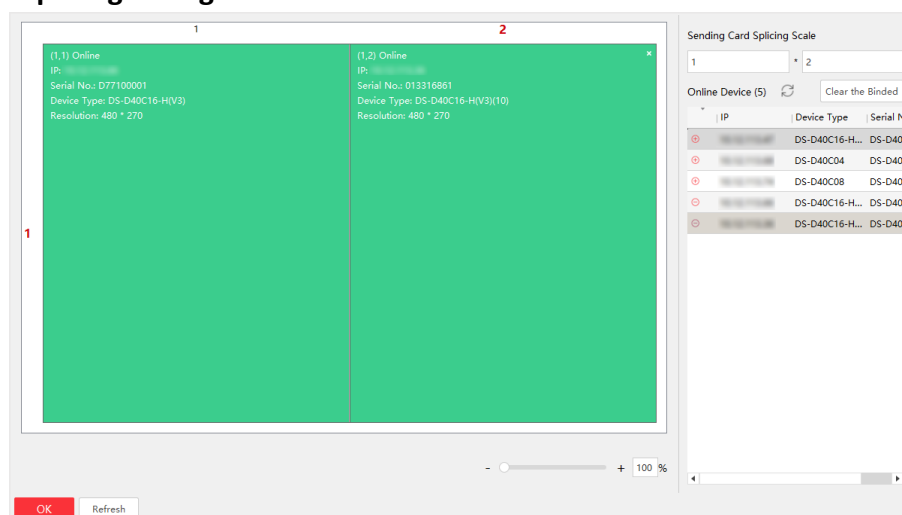


Figure 3-18 Screen Splicing Configuration

2. Configure the sending card splicing scale.



Note

Up to 4 × 4 are available for the splicing scale.

3. Bind devices to the specific display areas. You can use one of the following ways.

- Click to choose the area, and then click ⊕ before the desired device to bind.
- Drag the desired device to the area to bind.

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Note

- Only horizontally screen splicing is supported.
 - Please enter the user name and password for the first time login of the device.
 - If you want to splice a new device, click  before the binded device first, and then click  before the desired device.
 - If the binded device is offline, the splicing area will turns grey.
-

4. Click **OK**.

5. **Optional:** You can click **Clear the Binded** to clear all the binded devices.

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Chapter 4 Device Maintenance

4.1 Screen Defective Pixel Detection

You can check the defective pixels of the screen.

You can hover over the virtual screen on **Display Status** to check the number of defective pixels on the screen.

Table 4-1 Defective Pixel Detection

Icon	Description
	Show the position of defective pixels on the display.
	Show the coordinates of the defective pixels on the client.

4.2 Test Screen Color

You can select different images to test if the LED screen can display normally.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Screen Detection** .

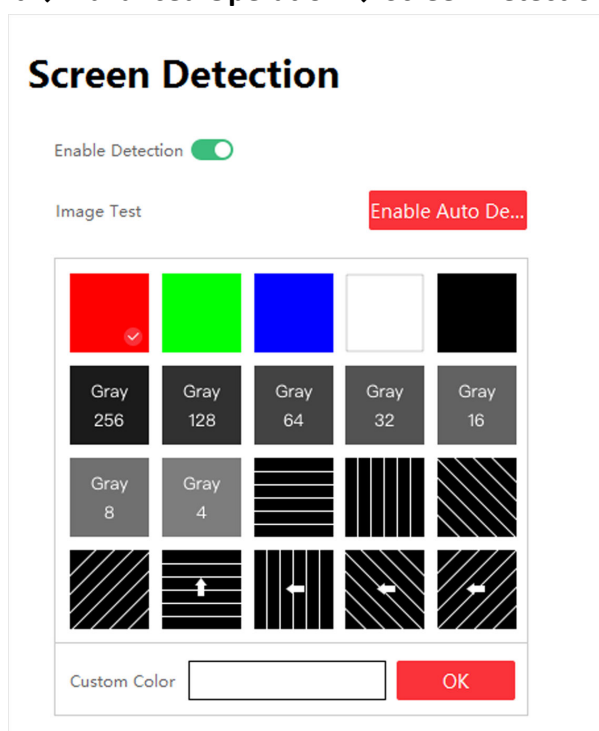


Figure 4-1 Screen Detection

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2. Select **Enable Detection**.

3. Select the image you want to test.

- Click the image you want to test.
- Click the white box beside **Custom Color** to customize colors, and click **OK**.
- Click **Enable Auto Detection**, and the system will display default images to test.

4.3 Configure Advanced Image

You can configure the level and brightness level of the original grayscale to improve the image quality.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Advanced Image Configuration** .

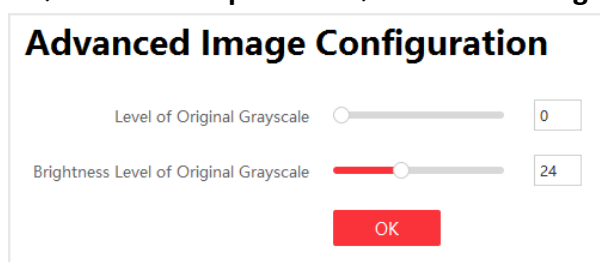


Figure 4-2 Advanced Image Configuration

2. Drag the bar to configure the level.

Level of Original Grayscale

The higher the level is, the more colorful the LED screen displays and the higher the image quality is.

Brightness Level of Original Grayscale

The higher the level is, the brighter the LED screen displays.

3. Click **OK**.

4.4 Configure Dehumidification

Dehumidification function is to avoid potential LED screen damage caused by humid environment.

Steps

1. Click **Screen Adjustment** → **Advanced Operation** → **Dehumidification Configuration** .

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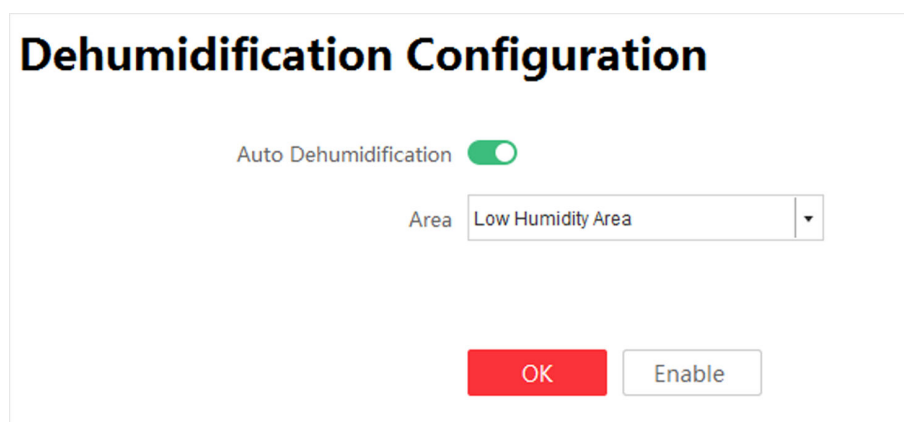


Figure 4-3 Dehumidification Configuration

2. Select **Auto Dehumidification**.
3. Select **Area**. *High Humidity Area, Medium Humidity Area, Low Humidity Area* are selectable.
4. Click **OK**.

Operation	Description
Enable Dehumidification	Enable dehumidification manually.
Disable Dehumidification	Disable dehumidification manually.



Note

Disable dehumidification manually is valid for single time. Dehumidification function will be auto enabled after next startup.

4.5 Configure Work Mode

You can configure the **Work Mode** in the upper-right corner on the **Display Status** interface. Configure the work mode according to different scenes to get high system performance.

Four kinds of work modes are available: **Normal Mode**, **High-Performance Mode**, **Energy-Saving Mode** and **HDR Mode**.

Normal Mode

The brightness is level 3 by default and level 6 at most. Normal contrast. Original grayscale is level 0. Low refresh rate.

High-Performance Mode

The brightness is level 7 by default and level 10 at most. High contrast. Original grayscale is level 1. High refresh rate.

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Energy-Saving Mode

The brightness is level 3 by default and level 3 at most. Normal contrast. Original grayscale is level 0. Low refresh rate.

HDR Mode

The brightness is level 10 by default and level 10 at most. High contrast. Original grayscale is level 1. High refresh rate.



Note

- The **Normal Mode** is recommended to prevent overheat caused by high consumption.
 - When the system is restored to default or factory settings, the work mode is **Normal Mode** by default.
-

4.6 Detect Screen Status

After enabling screen status detection, alarm information will be shown on the screen if the temperature, voltage, number of defective pixels of the screen and temperature of the sending card exceeded the limit.

Steps

1. Select **System Settings** → **System Detection** .
2. Set the limitation of the screen voltage, screen temperature, sending card temperature and number of defective pixels on the screen.
3. Click **Apply**.
4. Enable **Screen Display**.

4.7 View Device Information

Check client version information and official website.

Select **System Settings** → **About** to check client version information and official website.

Select **Display Status** to check device version information, including **Controller Version**, **FPGA Version**, **Card Type**, and so on.

4.8 View Receiving Card Information

View receiving card information, including network interface, number of connected devices, whether the version is matched, and version number.

Steps

1. Select **Display Status** → **Card Version** .

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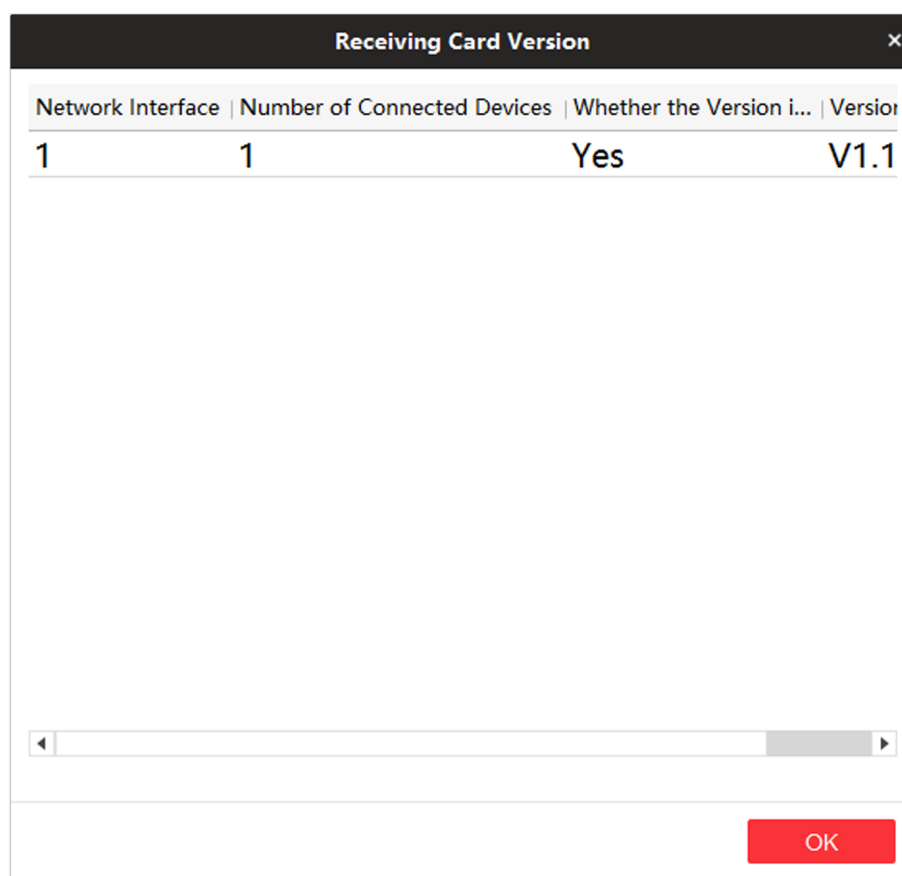


Figure 4-4 Receiving Card Version

2. Check receiving card details in the receiving card version interface for device maintenance.
3. Click **OK**.

4.9 Upgrade

Please use the latest firmware to obtain all possible security updates.



Note

Do not disconnect the power supply during updating.

4.9.1 Local Upgrade

Upgrade Receiving Card/Multi-functional Card

You can upload upgrade patch to upgrade receiving card or multi-functional card.

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Steps

1. Click **System Settings** → **System Maintenance** → **Upgrade**
2. Click ... to select upgrade patch.
3. Click **Upgrade**.

Operation	Description
Auto Update Receiving Card Version When Rebooting	When sending card reboots, it will detect receiving card version. System will update receiving card version by default if there is a new version.



Note

If upgrading failed and the device cannot function correctly, please contact suppliers in time.

Result

The device will reboot automatically when upgrade finished.

Upgrade Sending Card

You can upload upgrade file to upgrade receiving card or multi-functional card.

Steps

1. Click **System Settings** → **System Maintenance** → **Upgrade**
2. Click ... to select upgrade patch.
3. Click **Upgrade**.



Note

If upgrading failed and the device cannot function, please contact suppliers in time.

Result

The device will reboot automatically when upgrade finished.

4.9.2 Online Upgrade

Upgrade Receiving Card Online

Get the newest version of the upgrade package from the cloud to upgrade the receiving card.

Before You Start

The PC has been connected to the Internet.

Steps

1. Click **Display Status**.

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2. Click  on the right side of **Receiving Card Version**, the device will automatically get the newest version of the upgrade package from the cloud.



Note

- If the receiving card is the newest version already, there is no need to upgrade.
 - The receiving card will automatically restart when upgraded.
-

Upgrade Sending Card Online

Get the newest version of the upgrade package from the cloud to upgrade the sending card.

Before You Start

The PC has been connected to the Internet.

Steps

1. Click **Display Status**.
2. Click  on the right side of **Controller Version**, the device will automatically get the newest version of the upgrade package from the cloud.



Note

- If the sending card is the newest version already, there is no need to upgrade.
 - The sending card will automatically restart when upgraded.
-

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Chapter 5 System Maintenance

This chapter mainly introduces importing/exporting configuration file, searching logs, restoring parameters, restoring default settings, and time synchronization.

5.1 Import/Export Configuration File

Configuration file can be imported to configure the system easily.

Steps

1. Click **System Settings** → **System Maintenance** → **Import and Export** .
2. Click ... to select file path.
3. Click **Import**.

5.2 Export Configuration File

Configuration file can be exported for local backup.

Steps

1. Click **System Settings** → **System Maintenance** → **Import and Export** .
2. Click ... to select file path.
3. Click **Export**.



Note

Exported configuration file is encryption mode to prevent information disclosure. For more details, please contact us.

5.3 Search and Export Logs

System operation logs can be searched and exported for backup.

Steps

1. Click **System Settings** → **Search Log** .
2. Set search conditions, including **Start Time** and **End Time**.
3. Click **Search**.



Note

Up to 2000 search results can display. Please narrow down the search scope if there too many search results.

The results will be displayed in list.

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4. **Optional:** Click **Export** to export all the search results.



Note

Logs can be exported in CSV or XML file format. A prompt window will pop up when the logs are exported successfully.

5.4 Sync Time

Steps

1. Click **System Settings** → **System Maintenance** → **Sync Time** .
2. Set time synchronization mode.
 - Select **Local Time** to synchronize the device time with the client.
 - Click  , setting display time manually, and click **OK**.
3. Click **Time Sync**.

5.5 Remote Reboot

Both sending card and receiving card can be rebooted remotely.

Steps

1. Click **System Settings** → **System Maintenance** → **Others** .
2. Select **Sending Card** or **Receiving Card** in the **Remote Reboot**.
3. Click **Reboot**.

5.6 Restore Factory Settings

All settings can be restored to factory by default.

Steps

1. Click **System Settings** → **System Maintenance** → **Others** .
2. Click **Restore Factory Settings**.
3. Click **OK** in the pop-up window.

5.7 Restore User Default Settings

All settings can be restored to user default settings by default.

Steps

1. Click **System Settings** → **System Maintenance** → **Others** .
2. Click **Restore Default Settings**.
3. Click **OK** in the pop-up window.

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Chapter 6 Local Configuration and Operation

Use a combination of multi-functional card and remote control to operate the LED screen OSD menu.

Ensure the device is connected and activated before using the remote control.

Press **Menu** button to go to **Local Operation**. You can configure the parameters of input, output, image, system, sending card and receiving card in **Local Operation**.

6.1 Multi-functional Card (Optional)

The multi-functional card has an infrared receiver and a light sensor. With a multi-functional card connected with a receiving card, you can control the device remotely.



Note

- Multi-functional card 2.0 also supports 3D function.
- You need to upgrade the sending card first to enable the function. Refer to ***Upgrade Sending Card Online*** for more details.

6.2 Remote Control Functions

There are two kinds of remote controls. If the sending card is used together with a multi-functional card, you can use the affiliated infrared remote control. If not, You can use the standard infrared remote control. The Max. distance of remote control is 10 m. The Max. angle of remote control is 45°.

Table 6-1 Remote Control Functions

Key	Description
Power	Turn on/off the screen.
Source	Switch the signal source.
Volume	Adjust the volume.
Scene	Select the scene.
Brightness	Adjust the brightness.
Up/Down/Left/Right	Select the menu.
Back	Back to the previous menu.
OK	OK
Menu	Enter the menu.

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Key	Description
Shortcut	Press the shortcut key and press the number key to enable function quickly. Press the back key to disable the function. • 0: Enable 3D function. • 1: Enable dehumidification. • 2: Enable image enhancement. • 3: Enable image correction. • 4: Enable auto-adaptive resolution. • 5: Enable auto-switch screensaver. • 6: Enable screen self-checking.
Help	Help
ID	Select the desired screen(s).

**Note**

ID key of the remote control would take effect only if the corresponding sending card model is DS-D42C16.

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Chapter 7 FAQ

7.1 Full Screen is Unlit

Reason

- No power supply for screen or control device.
- No input signal.
- The controlling computer is sleeping or the graphics card settings are incorrect.
- Incorrect receiving card configuration.

Solution

- Check if the computer is in sleep or screensaver mode. If yes, start the computer, go to **Control Panel → Power Options → Change Plan Settings**, and set the sleep time to Never; If not, check the connection of the DVI cable between computer and control card.
- Check the graphics card settings.
- Check the connection between receiving card and sending card, and the connection between receiving cards.
- Restore to default settings.

7.2 Image is Incomplete or in Wrong Position

Reason

- Incorrect screen configuration file.
- Incorrect signal cable connection.
- Incorrect screen size configuration.

Solution

- For incomplete image, check if the configured screen scale and the actual screen scale are the same.
- For image in wrong position, check if the configured display position and screen scale are the same as the actual. If not, adjust the parameters based on the difference until they are the same.
- Check if the signal cable connection and the receiving card connection among screen cabinets are the same.
- Check if the configured sending card output resolution and the actual receiving card input resolution are the same.

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7.3 Full-screen Image Flashes or Vibrates

Reason

- DVI output of graphics card or other device fails.
- Receiving card number loaded by single network interface is larger than its load capacity.
- Signal cable is too long.

Solution

- Check system connection to see if the DVI cable or the network cable is loose, if the signal cable length exceeds the allowable transmission distance, etc.
- Reduce receiving card loading number of each network interface. Configure signal cable again on the client after changing connection mode.
- Check the resolution configurations of the graphics card, sending card, and video processor.

7.4 Spots/Strips Exist in Full-screen Image

Reason

Incorrect screen type configuration.

Solution

Check screen type configuration.

7.5 Certain Unit Image Flashes or Has Spots

Reason

- Loose connection of receiving card or HUB card.
- Incorrect receiving card program.
- Check the receiving card, HUB card, and data cable connection in the unit.
- Check if the receiving card program of the unit is correct, or if the receiving card functions well.

7.6 Certain Unit Screen is Unlit

Reason

- The power supply or the receiving card of the unit fails.
- The signal output of the pervious unit fails.

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Solution

- Check if the power supply output of the unit is 5 VDC.
- Check if power supply indicator of the receiving card in the unit is solid red, or if the receiving card is operating normally.
- Check the receiving card, HUB card, and data cable connection in the unit.
- Check if the receiving card signal output of the previous unit is normal.

7.7 Certain Module or Row of Modules are Unlit in Unit

Reason

- The switching power output controlling the modules fails.
- The signal output controlling the modules fails.

Solution

- Check if the power supply output of the modules is 5 VDC.
- Check the connection of the data cable and the HUB card controlling the modules.

7.8 Screen Display Error When Smart Settings

Reason

Screen parameter is wrong.

Solution

- Check if the resolution of receiving card and output resolution of graphics card is the same.
- Check if the smart setting wizard parameter is correct.

7.9 Searching Online Device Fail

Reason

- The network cable of the sending card is not connected.
- Incorrect software installation (the winp plugin is not installed or its version is incorrect).

Solution

- Check network cable connection.
- Reinstall the winp plugin, or update the winp plugin directly.

