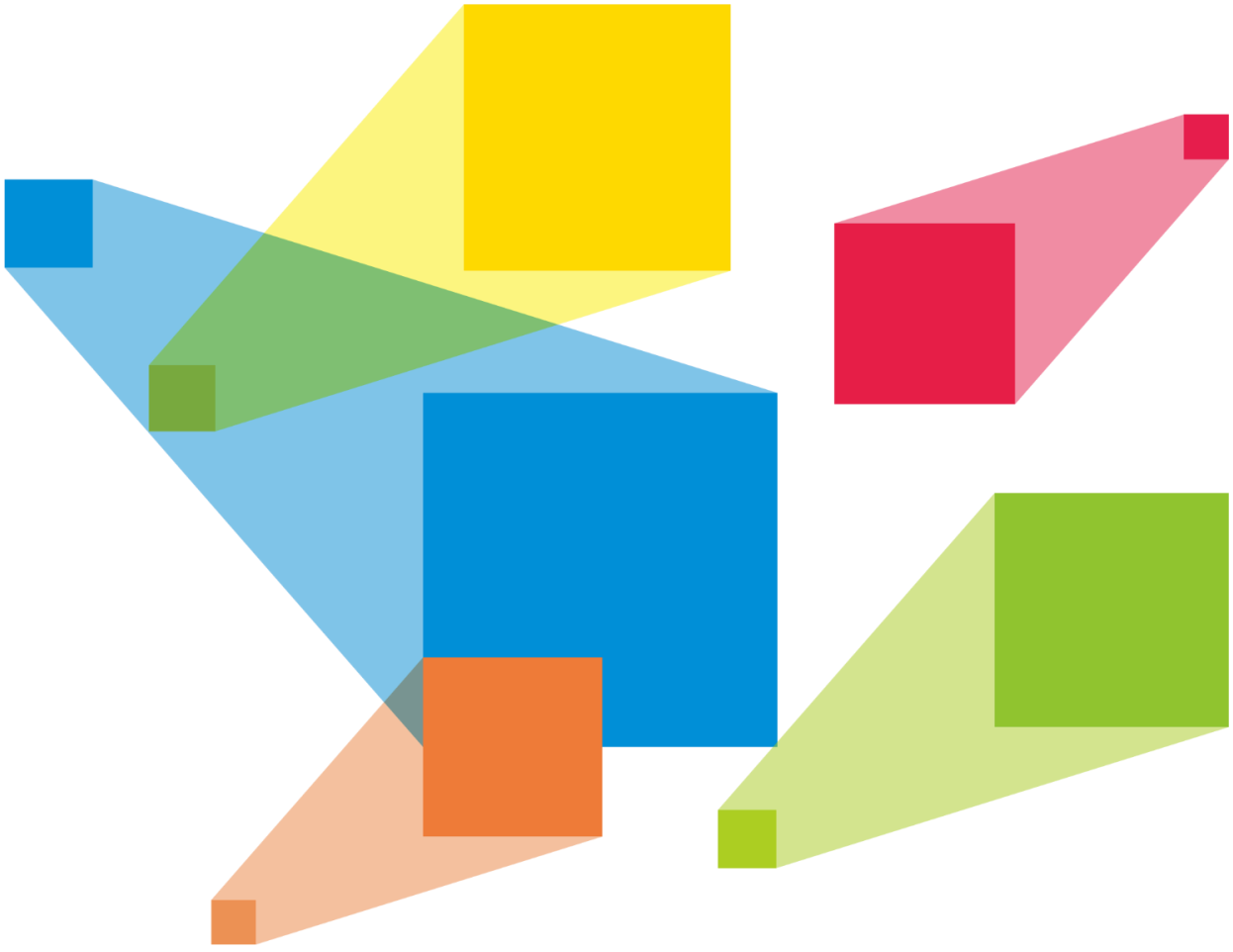
Unico Control Platform



User Manual

Contents

1 Software Introduction

Unico control platform is a device operation and control software with innovative interactive design. It supports a wide variety of device integrations, providing users with a unified control platform. This delivers an easy-to-use, intuitive, professional, efficient, and creatively limitless control experience.

- Unified operation and control

  Unico supports a wide range of devices for unified management, including LED display controllers, presentation switchers and all-in-one controllers. It meets the daily operation needs across various applications. With Unico, there's no need to install multiple software or learn different interfaces. You can handle all video processing and sending configurations with just one platform, significantly reducing the learning curve.

- Simplified man-machine interaction

  Oversee the entire workflow of on-site operations using screen-based management. Easily view detailed information on device status, input and output configurations, screen configuration, color adjustments, layers, presets, and MVRs. This approach transforms complex information into a clear, easily digestible format at a glance.

- Interactive screen configuration

  The visualized screen configuration allows you to effortlessly control LED screen and video screen configurations. It supports screen configuration without the need for devices or cabinets, making it easier to create offline configuration files. Furthermore, the connector rotation feature opens up more possibilities for creative displays.

- Image mosaic

  Cascading multiple devices allows for the display of larger images. Furthermore, using irregular mosaics enables more flexible and diverse visual effects tailored to specific design needs.

- End-to-end backup

  Supports backup between devices, Ethernet ports, OPT ports/Ethernet ports, input sources and project files, enhancing reliability of each link and avoiding business interruption caused by link failures.

2 Software Installation and Connection

2.1 Software Installation

Prerequisites

- The software package is obtained.
- A computer meeting the following requirements is prepared:

  Windows:

  - Operating system: Windows 10 (64-bit) or later
  - CPU: 9th Generation Intel i7 processor or above
  - Memory: 16 GB or above

  Mac OS: Mac OS 10.14 or above

Installation Method

Run the .exe file and follow the setup wizard to complete the installation. If a firewall prompt appears, choose to allow the installation.

Installation Result

After a successful installation, the Unico software icon  is displayed on the desktop. Double-click this icon to open the Unico software.

2.2 Software Connection

The Unico software is installed on the control computer. The control computer can connect to the device in the following two ways:

- Via Ethernet cable

  Connect the device and the control PC directly via Ethernet cable and set a static IP address for the device to let it and the control PC be on the same network segment.

- Via LAN

Connect the device and the control PC to the same LAN to ensure that both of them are on the same network segment.

3 All-in-One Controllers

3.1 Project Management

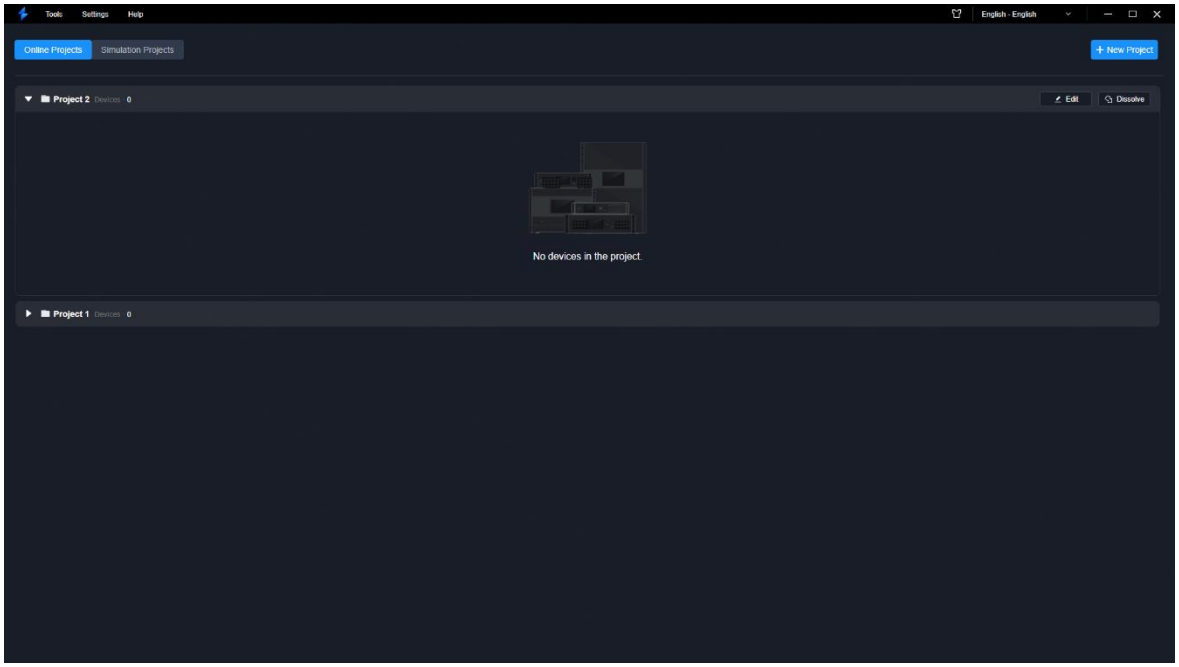
Create, edit and dissolve projects. Project files (.uprj) can be exported from the current device and imported into others, promptly applying device parameters and resource files.

3.1.1 Create New Projects

Devices of the same series on a local network are automatically added to a default project. Users can create additional projects and move online devices from the default project to new ones. Furthermore, simulation projects can be created to simulate real device configurations and understand the product better.

Step 1 Open the software and access the main interface.

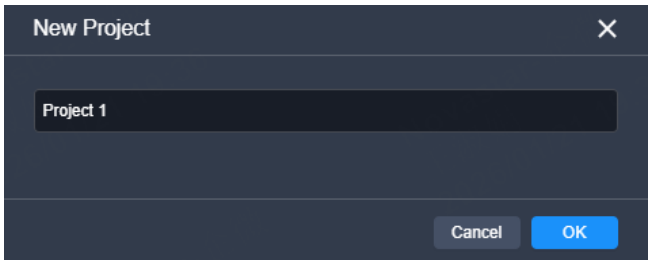
Figure 3-1 Project



Step 2 Create an online project or simulation project.

- Online Project: Create a project for online devices. Select the **Online Project** tab at the top left and click **New Project** at the top right. Enter the project name in the popup window and click **OK**.

Figure 3-2 New projects



- Simulation Project: Create a project for simulation devices. Select the **Simulation Project** tab at the top left and click **New Project** at the top right. Enter the project name in the popup window and click **OK**.

  After a simulation project is successfully created, please refer to Simulation Devices to add a simulation device.

For online projects, devices of the same series are automatically grouped under one project. When adding simulation devices, only devices of the same series can be included in a single project.

Note

In the project list area, you can perform the project-related operations.

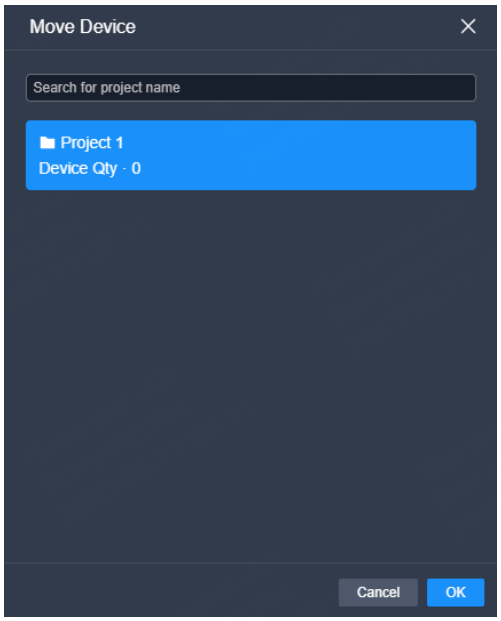
- Edit project: Click Edit to rename the project.
- Export project: Click Export to export the online project file. Simulation projects do not support exporting.
- Dissolve project: Click Dissolve to dissolve the current project. All online devices in the project will be moved to the default project.
- Enter project: Click Enter to enter the device configuration page.

Step 3 Move devices between projects.

Expand the project list, hover over the target device, and click **Move** or manually drag it to another project.

- Move: Choose the target project in the popup window, then click **OK**.

Figure 3-3 Move devices



- Manual drag: Manually drag to another project and click **Yes** in the popup window.

Note

Devices of the same series can only be added into one project.

3.1.2 Import Projects

Import the local project files (.uprj) to the device. Please note that the device models must match with the models in the project file.

Step 1 Select the **Online Projects** or **Simulation Projects** tab, and click **Enter** to access the device configuration interface.

Step 2 Navigate to **File** > **Import** from the menu bar.

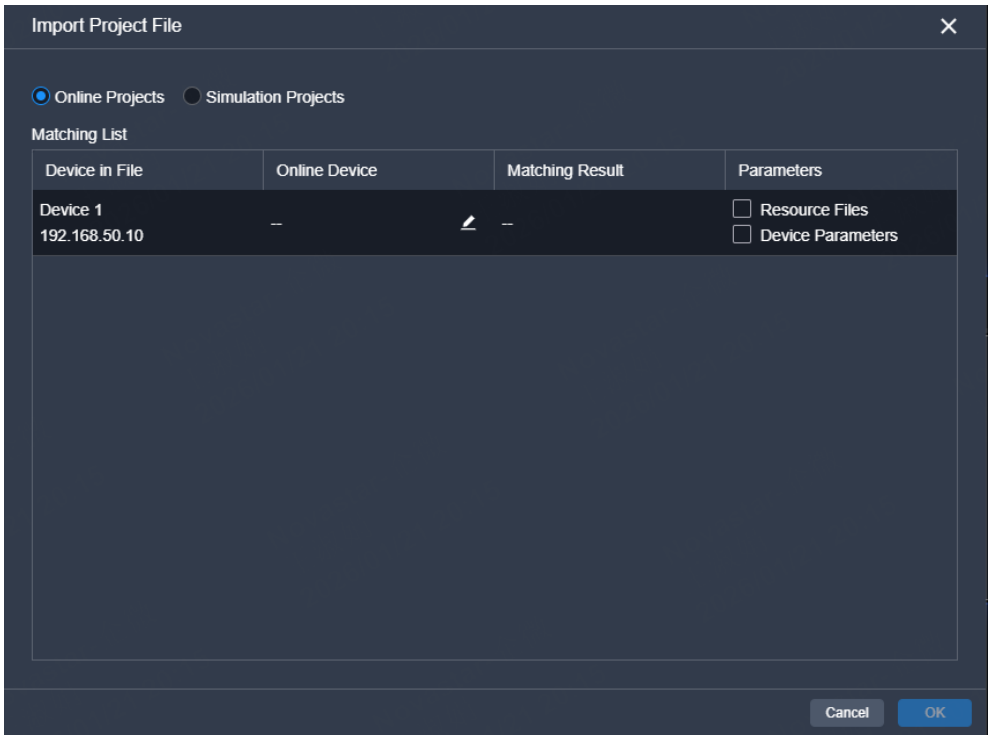
Step 3 In the dialog box that appears, select a project file (.uprj) and click **OK**.

Note

Simulation project files can be imported into online projects.

Step 4 In the displayed **Import Project File** window, select **Online Projects** or **Simulation Projects**.

Figure 3-4 Import project files



Step 5 After successful device matching, select the data to be imported and click **OK**.

The software matches the SN, name, IP address, model, and firmware version from the file with the online or simulation device. Click  to modify the match:

- For online devices, select other online devices from the drop-down menu.
- For simulation devices, choose to create a new simulation device. Ignore the current device, or select another simulation device from the drop down menu.

3.1.3 Export Projects

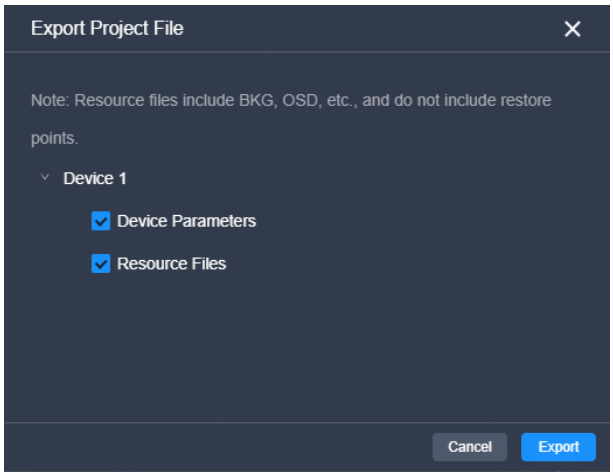
Export the device project files to your local computer.

Step 1 Select the **Online Projects** or **Simulation Projects** tab, and click **Enter** to access the device configuration interface.

Step 2 In the menu bar, navigate to **File** > **Export**

Step 3 In the displayed dialog box, select the desired data.

Figure 3-5 Export project files



Step 4 Click **Export**.

Step 5 In the displayed dialog box, select a file path and click **Save**.

Note

On the Online Projects interface, you can also click Export on the right side of the project list to export the project file.

3.2 Device Management

3.2.1 Enter Device Configuration Page

3.2.1.1 Online Devices

Step 1 Select the **Online Projects** tab.

Figure 3-6 Online project list (VX2000 Pro)

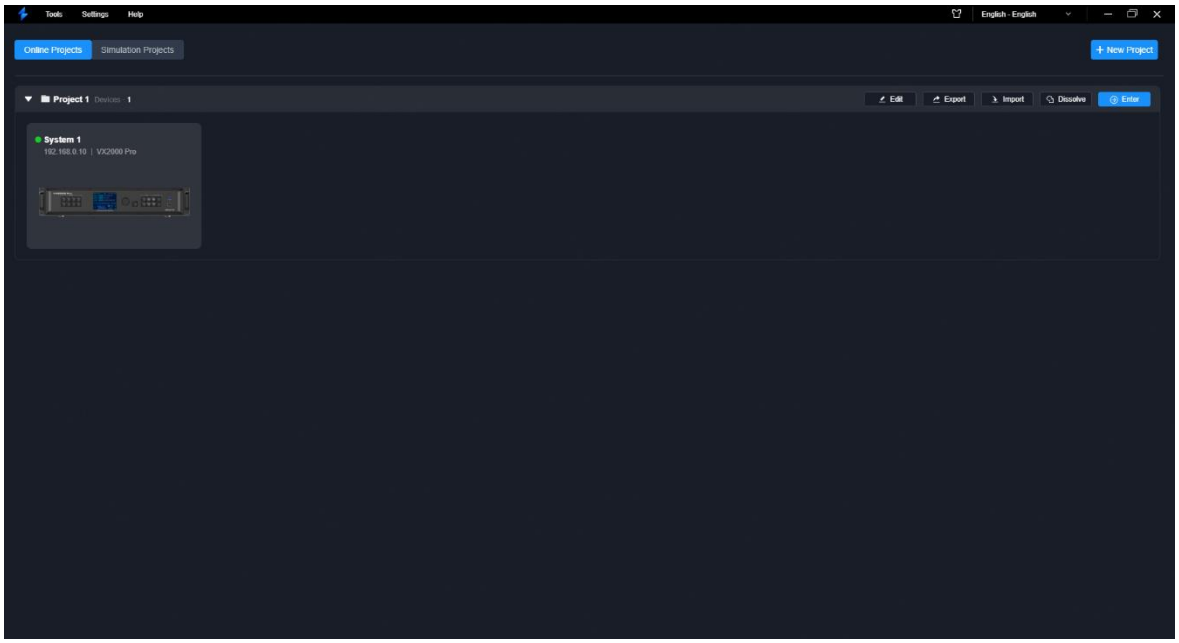
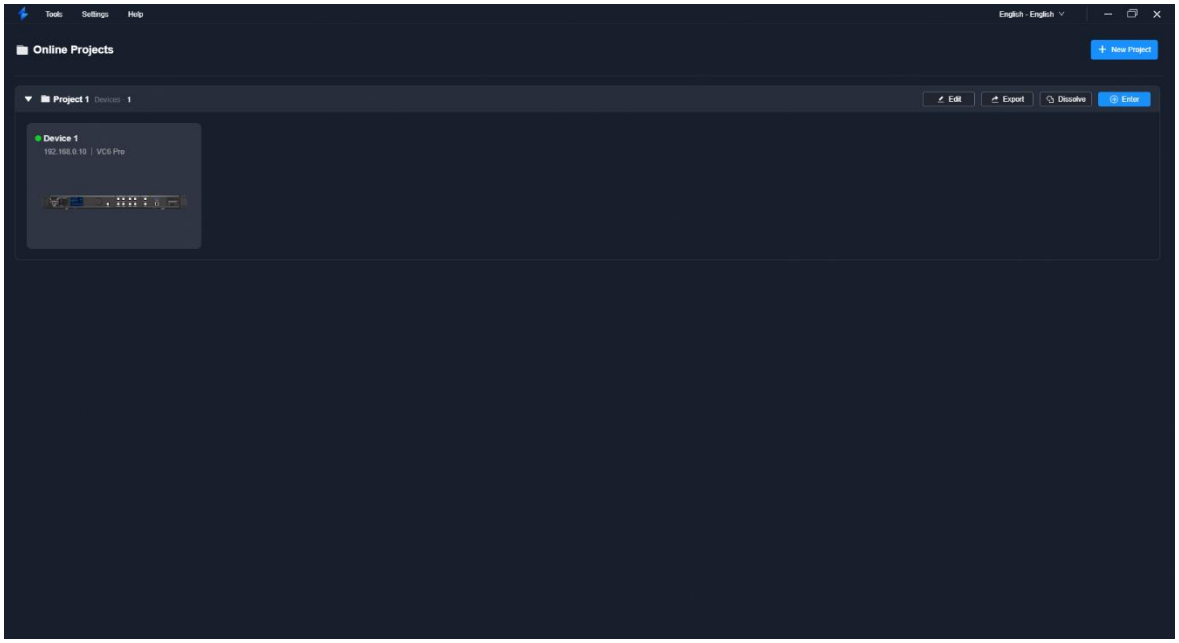


Figure 3-7 Online project list (VC6 Pro)



Step 2 Double click the device front panel image or click **Enter** on the right side of the project list to access the device configuration interface.

3.2.1.2 Simulation Devices

Simulation devices, without any physical connections, simulate real device configurations, enabling users to easily utilize and understand the software.

Step 1 Select the **Simulation Projects** tab.

Step 2 Click **Add simulation devices**.

Note

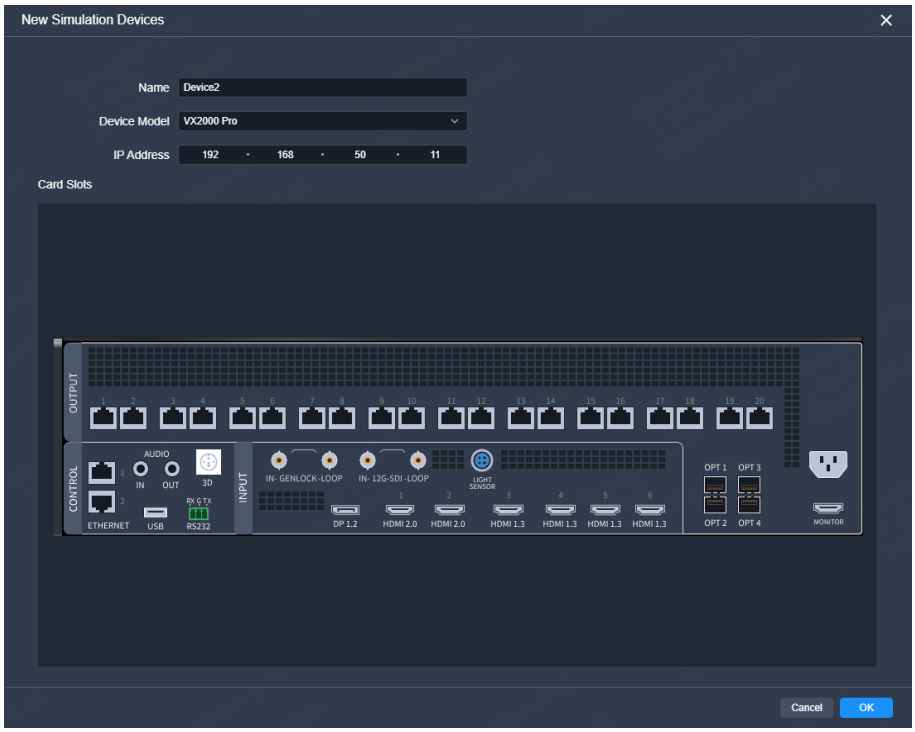
The device models supporting the simulation device function include the VX400 Pro and VX2000 Pro.

Step 3 In the pop-up dialog box, set the device name, model, and IP address, and click **OK**.

Once created, the device will be displayed in the list and will be in the default started state.

- : The device is started.
- : The device is off.

Figure 3-8 New simulation devices (VX2000 Pro)



Note

For devices in the project list, you can perform the following operations:

- Start all devices: Click Start All.
- Shut down all devices: Click Shut Down All.
- Shut down device: Click Shut Down.
- Start device: Click Start.
- Edit device: Click Edit.
- Move device: For an active device, click Move, choose the target project in the popup window, and click OK.

- Delete device: Click **Delete**.

Step 4 After creation, you can view the device status, name, IP address, and model.

- Double click the device front panel image or click **Enter** on the right side of the project list to access the device configuration interface.
- Hover over the device information to start, shut down, edit (modify device name, IP address), move, or delete the device.

3.2.2 Configure Device Properties

Select the device on the left side of the device configuration interface, and then configure the device-related properties on the right pane.

Figure 3-9 Device properties (VX2000 Pro)

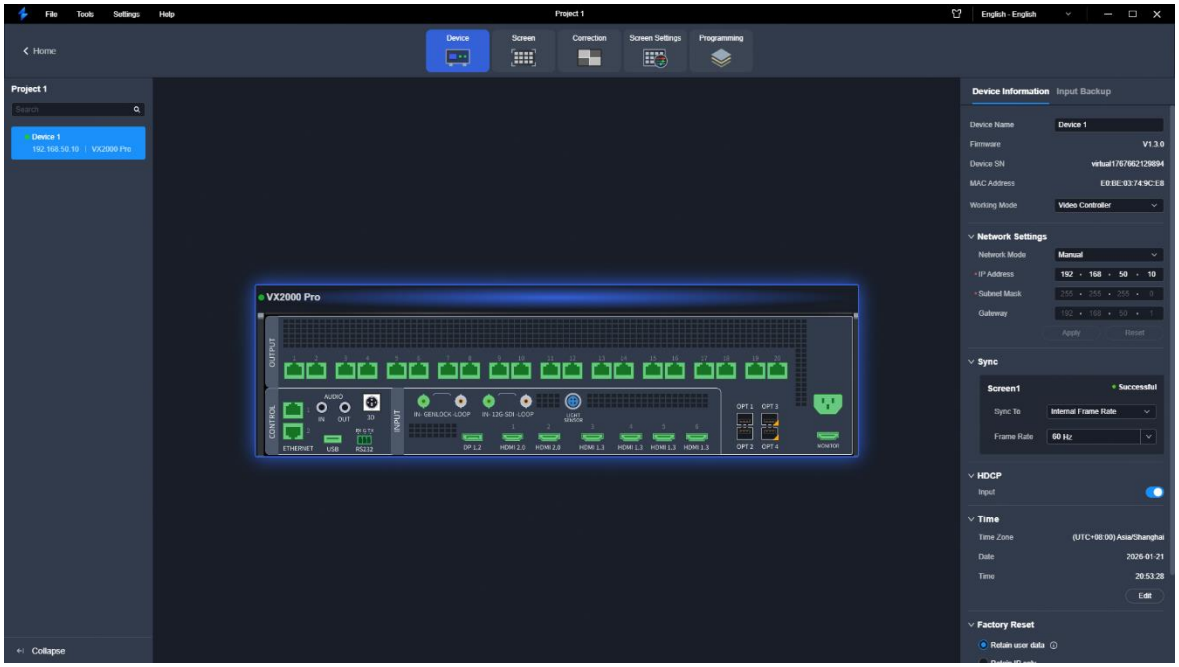


Figure 3-10 Device properties (VC6 Pro)

Note

Click **Collapse** to collapse the device list.

3.2.2.1 Rename Device

Change the device name.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

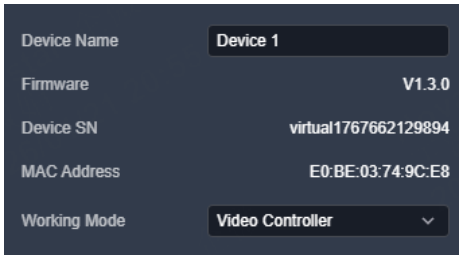
Prerequisites

None

Notes

None

Interface Example



Description

Enter a name for the device in the text box next to **Device Name**.

3.2.2.2 Configure IP Address

Manually set a static IP address for the device or let the device to automatically obtain an IP address.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

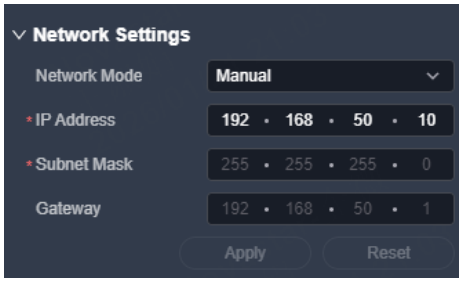
Prerequisites

None

Notes

Devices on different network segments are not automatically discovered. If you change the device IP to another network segment, the device could not be discovered.

Interface Example



Description

Configure the following parameters and click **Apply** to make the settings take effect.

Parameter	Description
Network Mode	Select the IP configuration method. • Manual: Manually set a static IP address for the device. • DHCP: The device automatically obtains an IP address.
IP Address	The device IP address
Subnet Mask	The subnet mask of the IP address
Gateway	The default gateway

3.2.2.3 Configure Sync Source

Select a sync signal to synchronize all the cascaded device units or synchronize the primary and backup devices to display the output images of all the units in sync.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

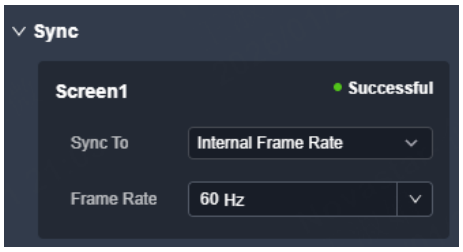
Prerequisites

None

Note

None

Interface Example



Description

Parameter	Description
Sync To	Select a sync source. • Internal Frame Rate: The frame rate of the output image • Input source connected to the device video connector: Sync with the frame rate of the selected input source. "X" represents the input source number and its format may vary depending on the actual setup. • Genlock: Sync with the frame rate of the Genlock signal. When the function is enabled, the frame rate of the sync source will be displayed.
Frame Rate	When you select **Internal Frame Rate**, you can manually set the output frame rate. The default value is 60Hz.

3.2.2.4 Configure HDCP

High-bandwidth Digital Content Protection (HDCP) is a form of digital copy protection to prevent copying of digital audio and video content as it travels across connections. When the accessed input source is an HDCP-encrypted one, you need to turn on this function to enable the device to transmit and process the source.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Interface Example

Description

Parameter	Description
HDCP	Turn on or turn off the function. • : On • : Off

3.2.2.5 Configure Date and Time

Configure the time zone, date and time of the device.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Interface Example

Description

Click **Edit** and the parameters become editable. Set the time zone, date and time respectively, and then click **Apply**.

3.2.2.6 Reset to Factory Settings

Reset the device data and settings to factory default values.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

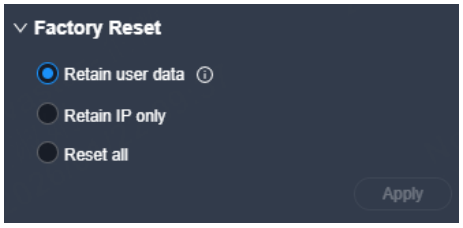
Prerequisites

None

Notes

- Please do this with great caution.
- The reset action does not affect the device firmware version.
- Power-off is not allowed during the reset process.
- The device will restart automatically after the reset is completed.

Interface Example



Description

Select **Retain user data**, **Retain IP only** or **Reset all**, and then click **Apply**.

- Retain user data

  Retain the input EDID, imported files, language, device name, device IP, belonged project and restore points.

- Retain IP only

  Only retain the device IP address and reset other parameters to factory defaults.

- Reset all

  Reset all parameters.

3.2.2.7 Standby Mode

Enabling standby mode can effectively reduce energy consumption caused by screen heat generation.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

Once the standby mode is enabled, the output image will go black and the output volume will be adjusted to 0. The device LCD screen will also be locked, while other parameters remain unchanged.

Interface Example

Description

Parameter	Description
Standby Mode	Turn on or turn off the function. • : On • : Off

3.2.2.8 Restart Device

Restart the device.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

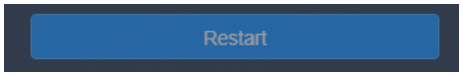
Prerequisites

None

Notes

None

Interface Example



Description

Click **Restart**, and then click **Yes** in the displayed dialog box.

3.2.2.9 Configure Input Source Backup

Establish a backup relation for two input sources.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

Input backup rules:

- In each backup group, two input sources serve as the backup for each other.
- The backup relation can only be established if the input connectors have identical capacities.
- The USB source supports the input backup settings.
- Each primary or backup source can have only one backup or primary source.
- Restrictions on input backup functions:

  Input sources A and B form a hot backup group. The current input source of the layer is input source A.

  - Input A: No signal. Input B: Signal

    The layer input source is switched to input B automatically. When input A resumes and input B still has a signal and **Primary Source Preferred** is not enabled, the layer input source will not be changed.

  - Input A: No signal. Input B: Signal

    The layer input source is switched to input B automatically. When input A resumes, but input B does not have a signal, the layer input source will be changed to input A.

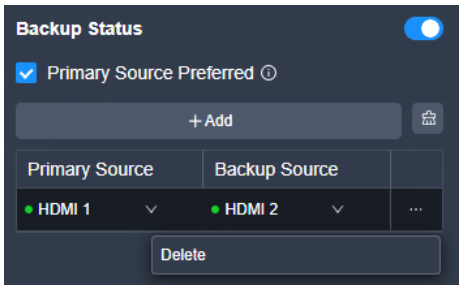
  - Input A: No signal. Input B: No signal

The layer input source will not be changed.

- Input A: Signal. Input B: No signal

  If you manually switch the layer input source to input B, the source will automatically switch to input A.

Interface Example



Description

Step 1 Select the **Input Source Backup** tab.

Step 2 Toggle the switch next to **Backup Status** to .

Step 3 Select or deselect **Primary Source Preferred**.

- If **Primary Source Preferred** is enabled, the system will automatically switch to the primary source once it is restored.
- If **Primary Source Preferred** is disabled, the system will not automatically switch when the primary source is restored and will continue using the backup source.

Step 4 Click **Add** to add a backup relationship.

Step 5 Select a primary source and a backup source respectively from two drop-down lists to establish a hot backup pair.

The green dot ● indicates the source is accessed normally and ready for use.

- To delete a hot backup pair, click ··· next to the pair and click **Delete**.
- To delete all hot backup pairs, click .

3.2.3 Configure Input Properties

Click the target input connector on the graphical device rear panel, and then set the input-related properties in the property area on the right pane.

Figure 3-11 Input properties (VX2000 Pro)

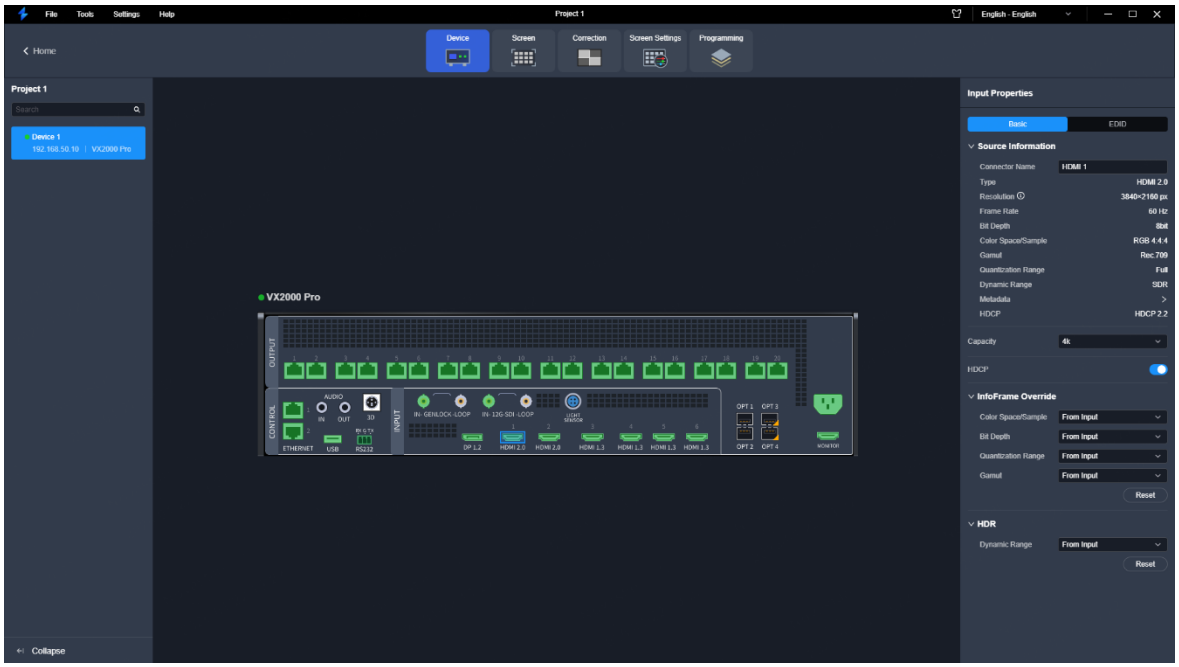
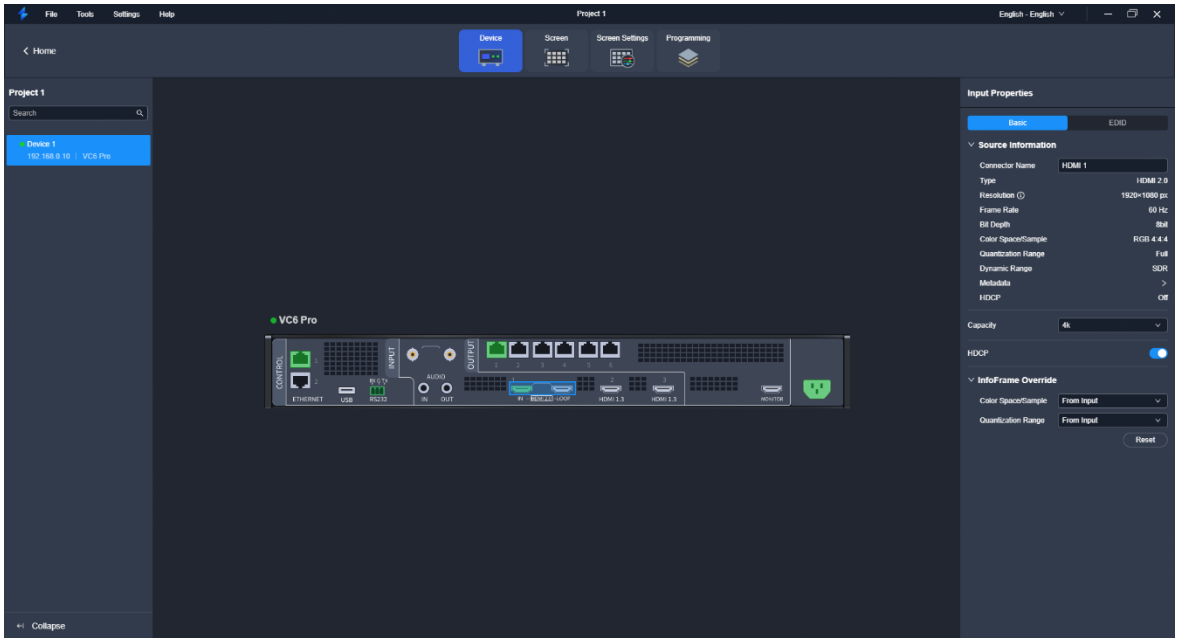


Figure 3-12 Input properties (VC6 Pro)



3.2.3.1 View Input Source Info

View the basic properties of the input connector and change the input connector name.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

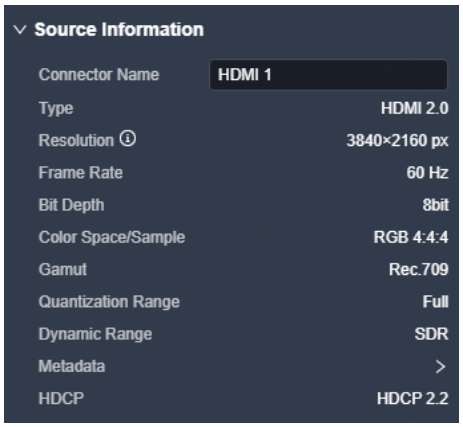
Prerequisites

A fine signal is connected to the input connector.

Notes

None

Interface Example



Description

On the **Basic** tab interface, change the connector name as required.

Note

Hover the mouse over the target input connector, you can view the input source resolution, frame rate, bit depth and color/sampling rate.

3.2.3.2 View OPT Source Info

View the basic properties of the OPT source and change the OPT port name.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro, VX2000 Pro

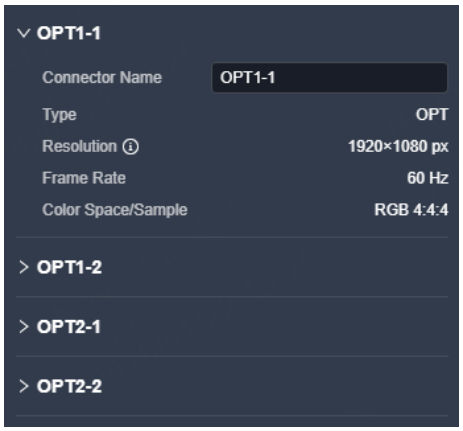
Prerequisites

- The device working mode is set to **Video Controller**.
- OPT 1 and OPT 2 is connected to the OPT ports on the front-end video processor via optical fiber cables. Additionally, a fine signal is connected to the front-end device.

Notes

Each OPT support the transmission of 1x DL or 2x SL sources.

Interface Example



Description

On the **Input Source** tab interface, change the connector name as required.

3.2.3.3 Set Input Connector Capacity

Switch the input connector capacity as desired.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

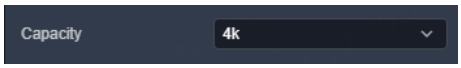
Prerequisites

None

Interface Example

When a connector is configured for hot backup, you can no longer switch its capacity.

Interface Example



Description

Capacity	Description
SL	• Standard resolution: 1920×1080@60Hz • Custom max width: 2048 (2048×1080@60Hz) • Custom max height: 2048 (1080×2048@60Hz)
DL	• Standard resolution: 3840×1080@60Hz/3840×2160@30Hz • Custom max width: 4096 (4096×1080@60Hz) • Custom max height: 3840 (1080×3840@60Hz)
4K	• Standard resolution: 4096×2160@60Hz/8192×2160@30Hz • Custom max width: 8192 (8192×1080@60Hz) • Custom max height: 8188 (1080×8188@60Hz)

3.2.3.4 Configure Input HDCP

Enable or disable the input HDCP encryption.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Interface Example

Description

For an HDCP source, it can only be properly recognized if the HDCP function on the input end is enabled; if the input HDCP is disabled, the HDCP source will by default display a black screen or snow.

For a non-HDCP source, whether the HDCP function on the input end is enabled or not does not affect the normal transmission of the source image into the device.

3.2.3.5 Configure InfoFrame Override Parameters

Configure the InfoFrame override parameters of the input source, so that the device can use it when doing some calculations. This action does not change the parameter values that come with the input source.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

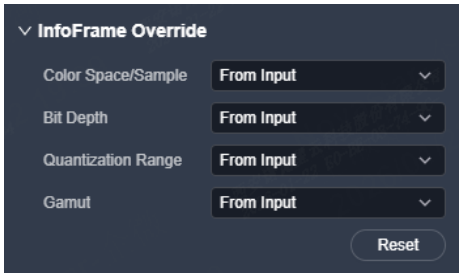
Prerequisites

None

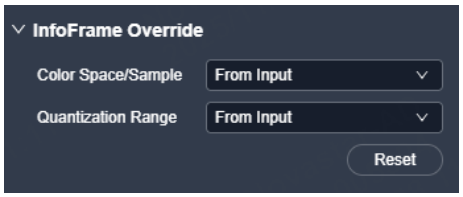
Notes

None

Interface Example (VX2000 Pro)



Interface Example (VC6 Pro)



Description

On the **Basic** tab interface, configure the following parameters.

Parameter	Description
Color Space/Sample	The sampling format of the input
Bit Depth	The bit depth of the input, i.e., the binary digits to represent a single color
Quantization Range	The quantization range of the input
Gamut	The color gamut standard

Select **From Input** and the device will read the attribute values that come with the input source.

3.2.3.6 Set HDR

HDR is the abbreviation for High-Dynamic Range. HDR function can greatly enhance the display image quality, allowing for a more clear and vivid image when the device is used together with the specified receiving cards.

Applicable Products

VX2000 Pro

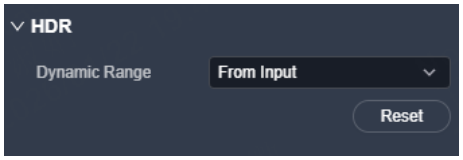
Prerequisites

- Use the layer 1 source as an HDR source.
- An HDR source (HDR10/HLG standard) must be used to realize optimal HDR effect.

Notes

- An HDR source can be connected to the HDMI 2.0 or 12G-SDI connector only.
- The HDR and 3D functions cannot be used together.
- Using the HDR function paired with receiving cards of different models will reduce the device loading capacity by half or quarter because the HDR input source is 10-bit. Please work out a connection solution in advance.

Interface Example



Description

Parameter	Description
Dynamic Range	The dynamic range of an HDR source The supported options include **HDR10**, **HLG**, **off** and **From Input**.

After the HDR source parameters are successfully set, you need to adjust EOTF. For detailed operations, please refer to Adjust EOTF.

Note

When you enable the HDR function, the receiving card supporting this function should be used together. For the specified receiving card model and related information, please refer to our official website (www.novastar.tech).

3.2.3.7 Configure EDID

Configure the resolution and frame rate of the input. You can select the standard resolution provided by the device, customize a resolution, or set the advanced parameters.

Applicable Products

VC6 Pro, VC10 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

- SDI does not support this function.
- The front-end device outputs the video source from the graphics card.

Notes

It is recommended the advanced settings be carried out by the trained personnel only.

Interface Example

Figure 3-13 Standard

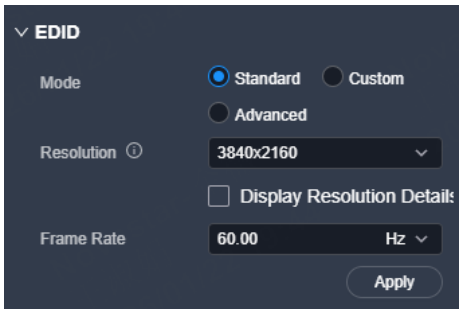


Figure 3-14 Custom

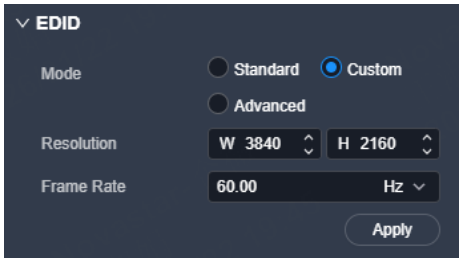


Figure 3-15 Advanced

Description

On the **EDID** tab interface, select the **Standard**, **Custom** or **Advanced** mode, configure the following parameters, and then click **Apply** after the settings.

Mode	Parameter	Description
Mode	-	Three modes are supported, including **Standard**, **Custom** or **Advanced**.
Standard	Resolution	The number of horizontal pixels and vertical pixels of the image Check the box next to **Display Resolution Details** to display the resolution detailed information. Config method: Select the desired resolution from the drop-down list.
	Frame Rate	The image frames every second (unit: Hz) Config method: Select the standard common frame rates from the drop-down options. The available frame rates may vary according to the chosen resolution.
Custom	Resolution	The number of horizontal pixels and vertical pixels of the image Config method: Stet the width and height values respectively.
	Frame Rate	The image frames every second (unit: Hz) Config method: Select the standard common frame rates from the

Mode	Parameter	Description
		drop-down options. The available frame rates may vary according to the chosen resolution.
Advanced	H Total	Total pixel count per line
	H Active	The horizontal size in pixels of the active area
	H Front Porch	The offset between the end of the active area and the beginning of the H sync
	H Sync	The horizontal sync width in pixels (or between pixels)
	H Polarity	The polarity of the horizontal sync pulse
	V Total	Total pixel count per column
	V Active	The vertical size in pixels of the active area
	V Front Porch	The offset in lines between the end of the active output area and the beginning of V sync
	V Sync	The vertical sync width in rows (or between rows)
	V Polarity	The polarity of the vertical sync pulse
	Frame Rate	The image frames every second (unit: Hz) Config method: Select the standard common frame rates from the drop-down options or set the frame rate value.

3.2.3.8 Configure Compatibility with Mac

When the device is incompatible with the EDID of a Mac system, you may activate this feature to resolve the issue.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Interface Example

Description

Parameter	Description
Mac EDID Compatibility	Turn on or turn off the function. • : On • : Off

3.2.3.9 Import and Export EDID

When compatibility problem occurs on an input connector, import an intact EDID file into the device; or export an EDID file from a device and provide the EDID file to other devices or input connectors to solve the compatibility issues.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

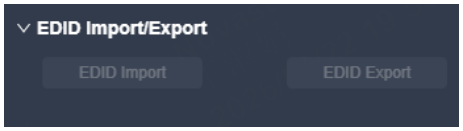
Prerequisites

SDI does not support this function.

Notes

- Each input connector supports importing one EDID file only.
- Once the EDID file is imported, the input connector will recognize and apply the parameters from the file.

Interface Example



Description

- EDID Import

  On the **EDID** tab interface, click **EDID Import**. In the dialog box that appears, select an EDID file and click **Open**.

- EDID Export

  On the **EDID** tab interface, click **EDID Export**. In the dialog box that appears, select a path and click **Save**.

Note

If you need to modify the content of an imported EDID file, just modify it and then re-import it to overwrite the original one.

3.2.4 Configure Output Properties

3.2.4.1 Set OPT Ports

Set the OPT working mode and loop mode.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

The device working mode is set to **Video Controller**.

Notes

None

Interface Example

Description

Click the OPT port on the device rear panel, and then set the following parameters.

Table 3-1 OPT working mode

Device Model	Parameter	Description
VX400 Pro	OPT 2 Working Mode	OPT 2 working mode Config method: Select **Copy** or **Backup** from the drop-down list. • **Copy**: OPT 2 copies the output on Ethernet port 1~4. • **Backup**: OPT 2 backs up the output on Ethernet port 1~4.
VX600 Pro		OPT 2 working mode Config method: Select **Copy** or **Backup** from the drop-down list. • **Copy**: OPT 2 copies the output on Ethernet port 1~6. • **Backup**: OPT 2 backs up the output on Ethernet port 1~6.
VX1000 Pro		OPT 2 working mode Config method: Select **Copy** or **Backup** from the drop-down list. • **Copy**: OPT 2 copies the output on Ethernet port 1~10. • **Backup**: OPT 2 backs up the output on Ethernet port 1~10.
VX2000 Pro	OPT 3/4 Working Mode	OPT 3 and OPT 4 working modes Config method: Select **Copy** or **Backup** from the drop-down list. • **Copy**: OPT 3 and OPT 4 copy the output on Ethernet port 1~10 and 11~20 respectively. • **Backup**: OPT 3 and OPT 4 back up the output on Ethernet port 1~10 and 11~20 respectively.

Note

- After the OPT working mode is set to **Copy**, the OPT ports on the graphical device panel will be highlighted.
- After the OPT working mode is set to **Backup**, the backup icons will be displayed at the bottom right corner of the OPT ports on the graphical device panel.

Table 3-2 OPT loop mode

Device Model	Parameter	Description
VX400 Pro/VX600 Pro/VX1000 Pro/VX2000 Pro	OPT Loop Mode	Turn on or turn off the function. • On: After this function is enabled, the video signal accessed by OPT 1 will be looped out via OPT 2. • Off:

3.2.4.2 Set Monitoring

Real-time display of the output image via the monitor connected is supported. You can monitor whether the output is normal and adjust the display ratio of the monitoring image on the monitor to avoid image distortion.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

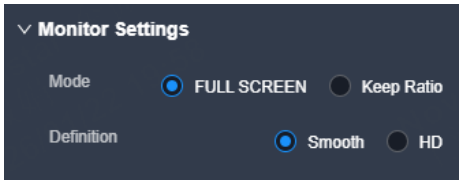
Prerequisites

None

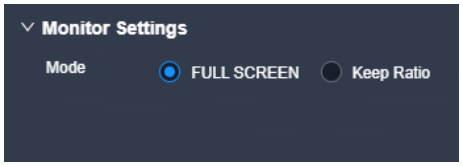
Notes

- Only the VX2000 Pro supports the setting of the monitoring image definition.

Interface Example (VX2000 Pro)



Interface Example (VC6 Pro)



Description

Click the **Monitor** connector on the device rear panel, and then set the following parameters.

Parameter	Description
Scaling Mode	The options include **Keep Ratio** and **Full Screen** (default). • Keep Ratio: Keep the ratio of the original output image to display. • Full Screen: Display the output image in full screen. Note When **Keep Ratio** is selected, the blank area that the output image cannot cover the entire monitor screen will be automatically filled with solid black.
Definition	The supported options include **Smooth** and **High-Definition**. • Smooth: The monitoring image definition is 1920×1080@60Hz. • High-Definition: The monitoring image definition is 3840×2160@60Hz.

3.3 Screen Configuration

3.3.1 Configure Sub-Screens

When a single device is used to load to multiple physical screens (for example, to display the same or different content simultaneously on multiple welcome screens or information screens), the sub-screen function can be enabled. By configuring an independent sub-screen for each physical screen, their display effects can be controlled separately.

3.3.1.1 Add Sub-Screens

Configure an independent sub-screen for each physical screen, allowing for independent control of the images and effects on each screen.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

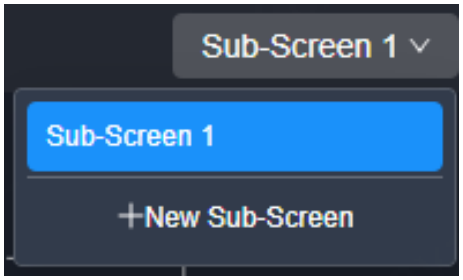
Prerequisites

None

Notes

Up to 5 sub-screens can be created.

Interface Example



Description

Click **Sub-Screen** at the top right corner, and then click **New Sub-Screen** in the popup menu to add a sub-screen. The default name is **Sub-Screen 1**.

Note

If you have configured the screen topology before adding a sub-screen, the configured cabinets will be automatically assigned to the first created sub-screen by default.

In the sub-screen list, you can perform the following operations.

- Change name: Hover the mouse over the target sub-screen, and then click  that appears. Enter a new name, and then click elsewhere in the interface to complete the sub-screen name change.
- Delete sub-screen: Hover the mouse over the target sub-screen, and then click  that appears. In the popup dialog box, click **OK** to delete the sub-screen.

Note

- When deleting a sub-screen, its configured cabinets will also be deleted. Please proceed with caution.
- When deleting the last sub-screen, its screen topology will be saved to the initial screen.

3.3.1.2 Set Sub-Screens

For a sub-screen, you can perform related operations, including screen topology configuration, cabinet correction and screen adjustment, realizing independent control of each physical screen.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

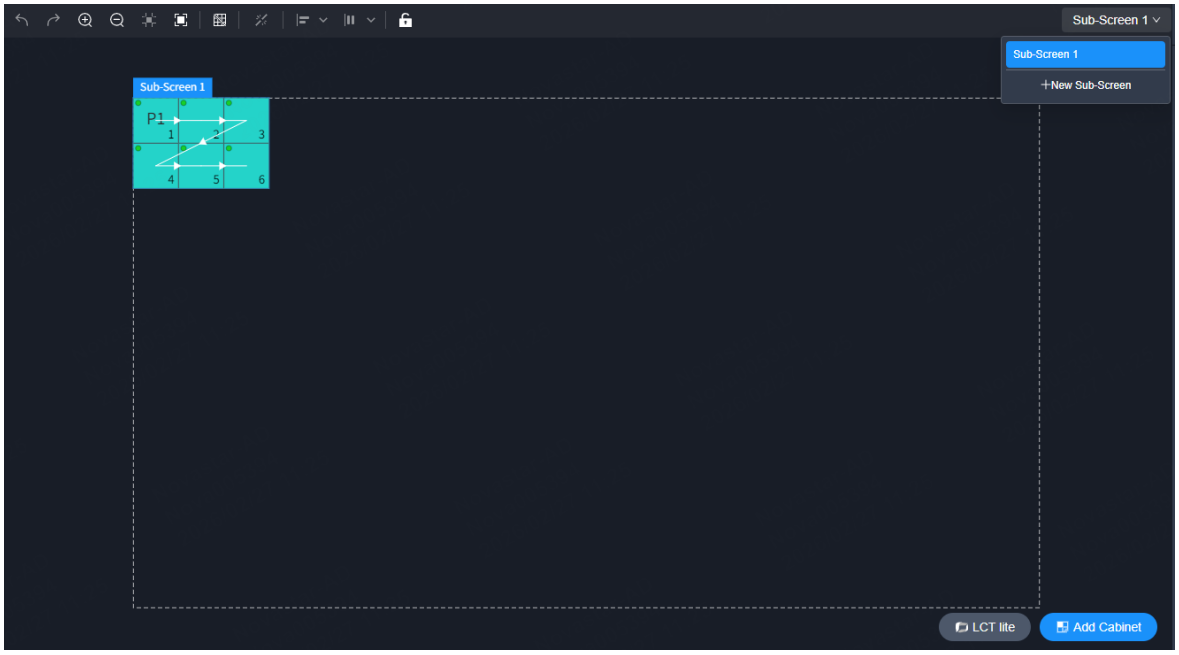
Prerequisites

None

Notes

- If you use the quick configuration function to configure the LED screen on the device LCD panel, all sub-screens created in Unico will be cleared.
- You can add, delete or rename a sub-screen on the **Screen** interface only. For switching or configuring the sub-screen, please perform the related operations on the **Correction** or **Screen Settings** interface.

Interface Example



Description

Click **Sub-Screen** at the top right corner , and then select the target sub-screen to switch to it.

After switching to the target sub-screen, you can configure the screen topology, correct the cabinet and adjust the screen on the **Screen**, **Correction** or **Screen Settings** interface respectively. For detailed operations, please refer to the related sections in this manual.

Note

- On the **Screen** interface, cabinets configured for all sub-screens will be displayed, and the cabinets of the current screen will be displayed at the top and can be selected; while, cabinets of other sub-screens will be displayed in gray at the bottom and cannot be selected.
- On the **Correction** and **Screen Settings** interfaces, only cabinets of the current sub-screen will be displayed.
- On the **Screen Settings** interfaces, click **Sub-Screen** at the top right corner, and then select **All** in the popup menu to adjust the related parameters, such as brightness and Gamma, for all sub-screens.

3.3.2 Configure Screen Topology

Configure the cabinet topology to complete the wiring connections of the physical or empty cabinets.

3.3.2.1 Configure Online Cabinets

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

The device is connected and cabinets are connected to the device.

Notes

None

Description

Step 1 Click **Screen** at the top to enter the screen configuration interface.

Figure 3-16 Screen configuration (VX2000 Pro)

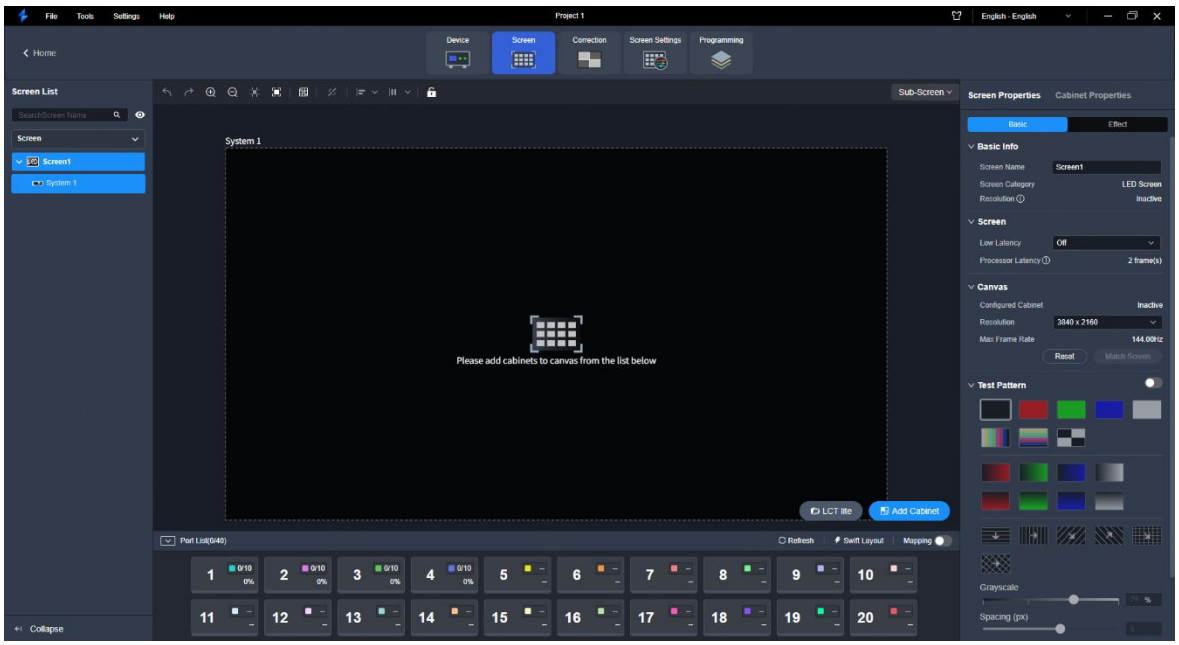
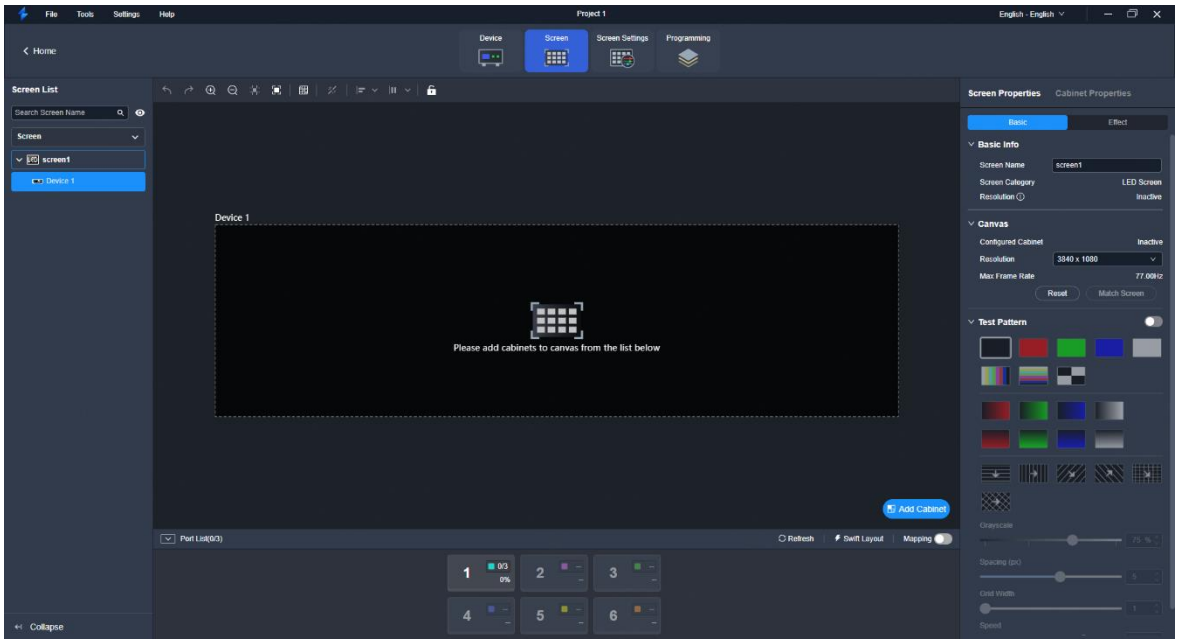


Figure 3-17 Screen configuration (VC6 Pro)



Step 2 Select the desired screen from the screen list on the left.

Step 3 In the **Ethernet Port List** area, select an Ethernet port and then drag and click the mouse in the topology area to add cabinets.

The cabinets will be automatically connected when you are adding them, as shown in Figure 3-18. The Ethernet port's loading capacity information will be displayed, as shown in Figure 3-19.

Figure 3-18 Cabinets connected automatically

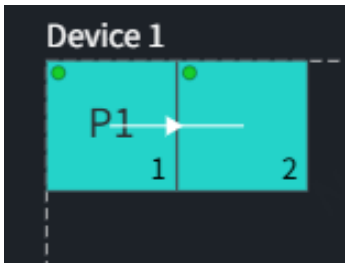
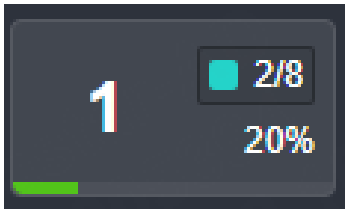


Figure 3-19 Ethernet port capacity



- 1: The Ethernet port number
- 2/8: Configured cabinets loaded by this Ethernet port/Total cabinets loaded by this Ethernet port

- 20% and progress bar: Loading capacity used by the configured cabinets/Total loading capacity of this Ethernet port

Note

Descriptions for shortcut keys:

- Batch select cabinets: Hold the **Shift** key and drag with the left mouse button to select, or simply drag the mouse to select multiple cabinets at a time.
- When no Ethernet ports are selected, use the arrow keys to finely adjust the position of the selected cabinet. Each press moves the cabinet by 1 pixel.

Description for **Swift Layout**:

- Requirements: If all the cabinets loaded by the Ethernet ports have the same model, resolution, and connection topology, you can use the **Swift Layout** function to quickly add and connect the cabinets for all the Ethernet ports.
- Operating procedure: Click Swift Layout and then drag the mouse in the topology area to add cabinets that match the actual requirements. In the properties area, select a layout and click **Done**.

Step 4 Select other Ethernet ports and continue to add cabinets until all cabinets are connected.

Note

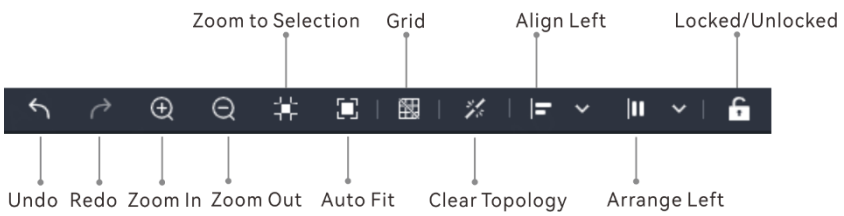
The configured cabinets can be rewired by selecting other Ethernet ports to load them.

Step 5 For cabinets that have the same size and consecutive serial numbers, if you want to change the cabinet connection topology, select the cabinets and then select a quick topology under **Quick topo** in the properties area, as shown in Figure 3-20. For other cabinets, skip this step.

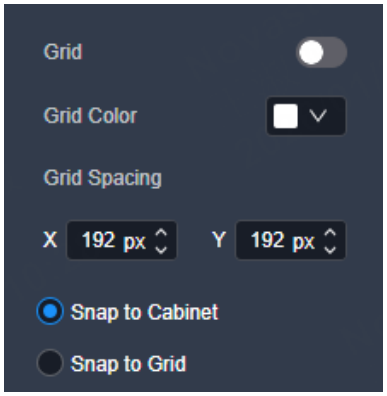
Figure 3-20 Quick topology

Step 6 Do any of the following to arrange and align the cabinets and cabinet groups to let the cabinet positions meet the display requirements.

- Use the function buttons.



- Zoom to Selection: The selected element is zoomed and displayed in the center of the canvas.
- Auto Fit: The canvas size is automatically adjusted to fit the topology area size.
- Click  to show its drop-down menu shown below. The menu can be used to set the canvas grid.



Grid: When toggled on (), a grid is displayed on the canvas. If you do not need to display the grid, set the switch to  .

Grid Color: Set the grid color.

Grid Spacing: Set the spacing of horizontal and vertical lines of the grid. The spacing is set to the resolution of the first cabinet by default.

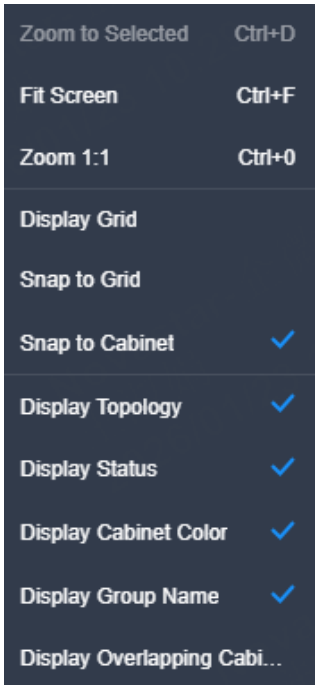
Snap to Cabinet: When positioning a cabinet near another one, the cabinet being moved will automatically align and snap to the edge of the adjacent cabinet, effectively eliminating gaps.

Snap to Grid: The cabinet will be snapped to the grid.

- Use the right-click function menu
  - Select String: Select all the cabinets on the connection line of the current cabinet.
  - Select Same Cabinets: Select the cabinets of the same model of the current cabinet.
  - Blackout: Blackout the output image displayed on the current cabinet.
  - Freeze: Freeze the output image displayed on the current cabinet.
  - Swap: Swap the positions of the two selected cabinets.
  - Group: Select the desired cabinets and right click on them. Click **Group** in the context menu, and then the selected cabinets will be grouped for batch control. To set the group name and color, please select the group and set them in the properties area. You can also use the keyboard shortcuts **Ctrl+G** to perform the grouping operation.
  - Ungroup: Ungroup the cabinets. You can also use the keyboard shortcuts **Ctrl+Shift+G** to perform this action.

- Add to: Add the selected cabinets to a group.
- Clear Topology: Clear the current cabinet topology.
- Delete: Delete the selected cabinet. You can also use the keyboard shortcuts **Del** to perform this action.

- Right click on the canvas edge and use the function menu



- Zoom to Selected: The selected element is zoomed and displayed in the center of the canvas.
- Fit Screen: The canvas size is automatically adjusted to fit the topology area size.
- Zoom 1:1: The canvas size equals the input source resolution.
- Display Grid: Display a grid on the canvas.
- Snap to Grid: The cabinet will be snapped to the grid.
- Snap to Cabinet: When positioning a cabinet near another one, the cabinet being moved will automatically align and snap to the edge of the adjacent cabinet, effectively eliminating gaps.
- Display Topology: Display the cabinet connections.
- Display Status: Display the cabinet status.

  Green: The cabinet is in the topology area.

  Gray: The cabinet is offline.

  Orange: Some part of the cabinet is in the topology area.

  Red: The entire cabinet is out of the topology area.

- Display Cabinet Color: Display a color icon at the top right corner of an Ethernet port. Once an Ethernet port is loading cabinets, a color icon will be displayed which is of the same color as the cabinet color.
- Display Group Name: Display the cabinet group name.
- Display Overlapping Cabinets: Display the overlapping cabinets.

Figure 3-21 Online cabinet topology (VX2000 Pro)

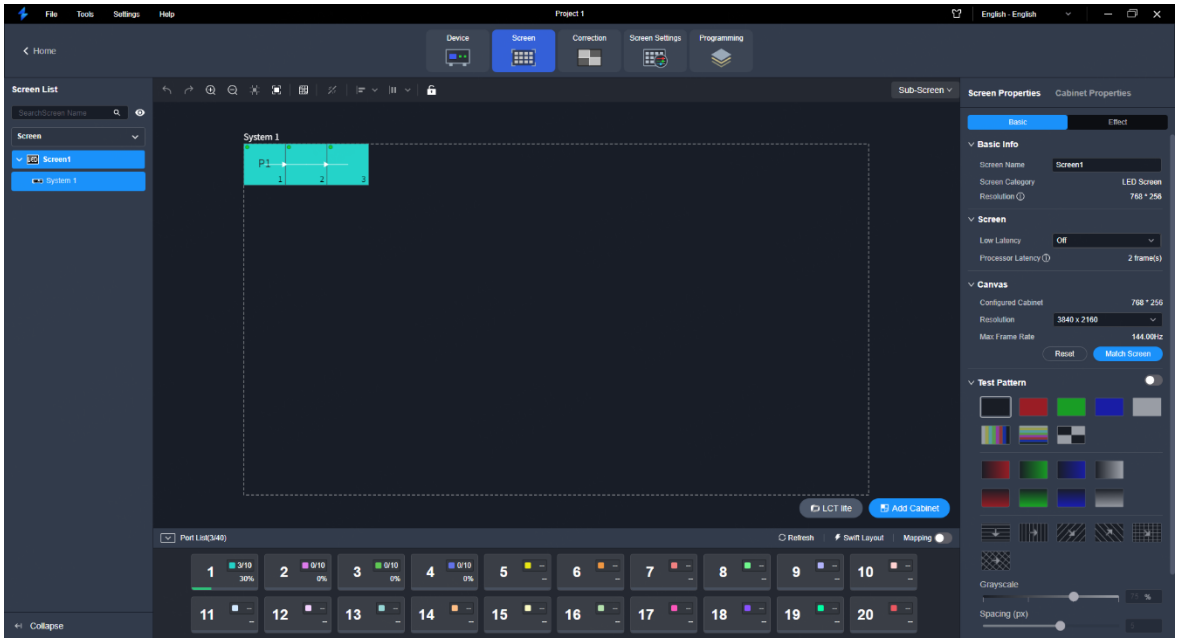
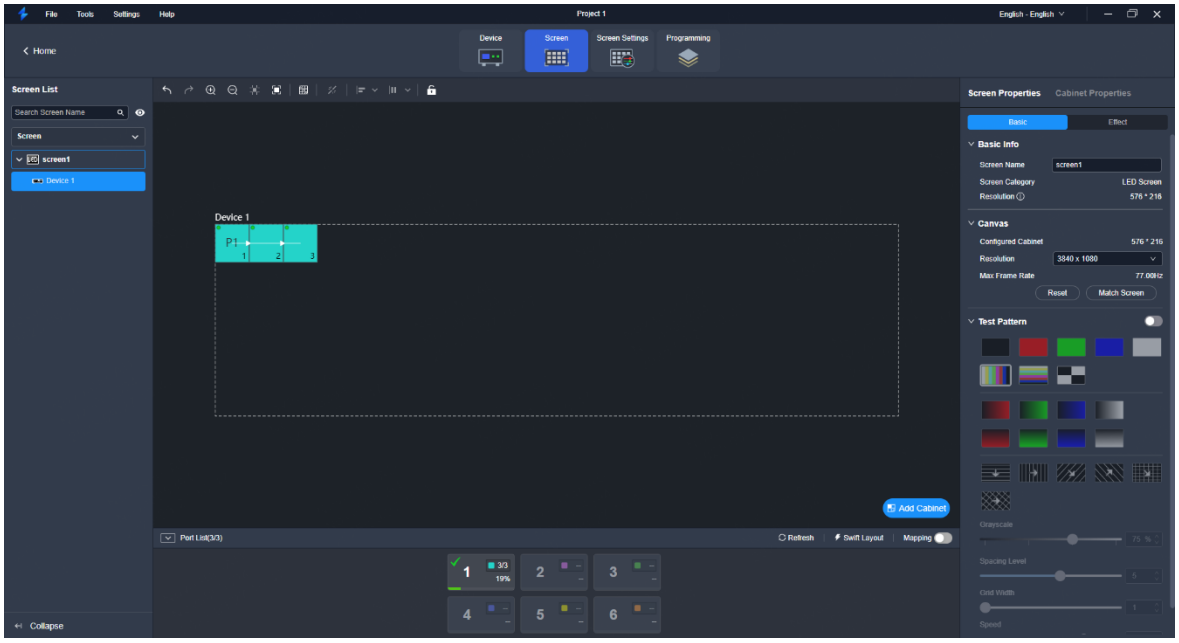


Figure 3-22 Online cabinet topology (VC6 Pro)



Note

- Use either Unico or NovaLCT to configure the screen.

- Mapping is used to show the relations between the cabinets of the LED screen and the sending devices so that you can view or check the connections between the cabinets.
- Click LCT Lite to run the software in which you can configure the receiving card parameters.
- In the menu bar, go to File > Export Screen Config File to export the configured cabinet topology as a file (.scr).
- In the menu bar, go to File > Import Screen Config File to import a saved screen configuration file for quick topology.

3.3.2.2 Configure Empty Cabinets

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Description

Step 1 Click **Screen** at the top of the page to enter the screen configuration page.

Figure 3-23 Screen configuration (VX2000 Pro)

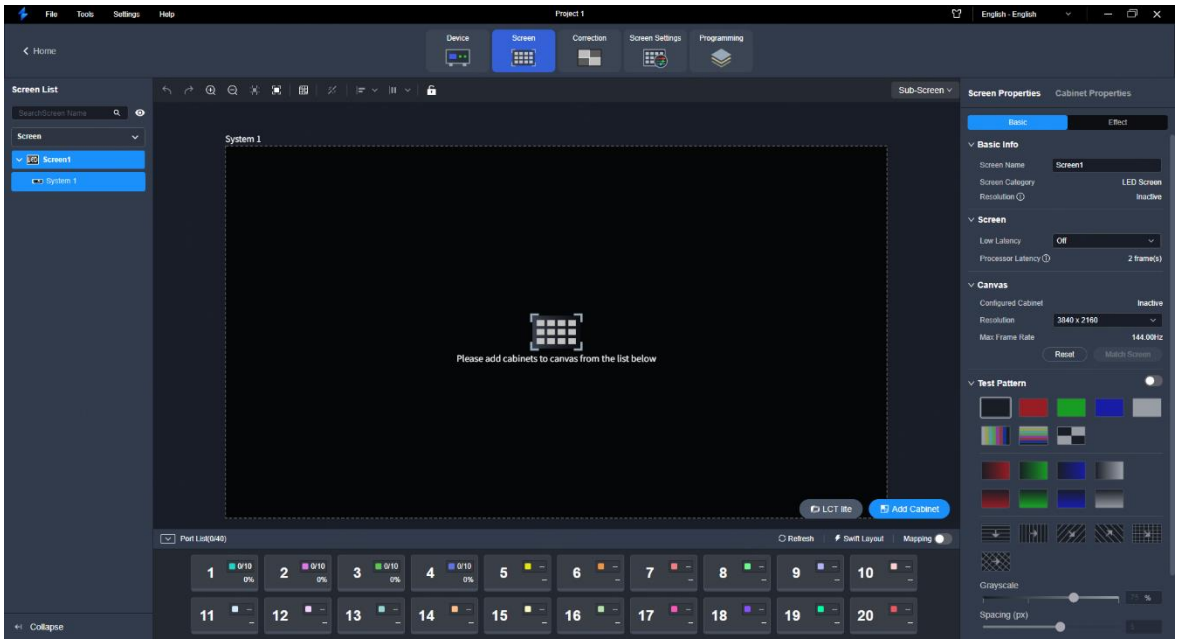
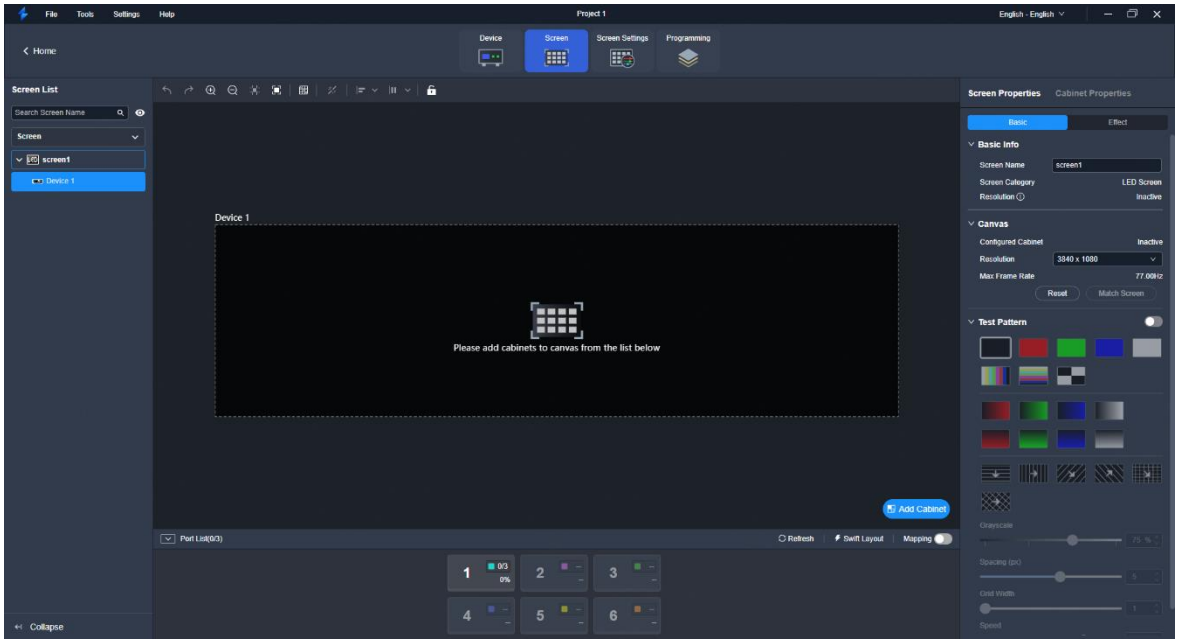


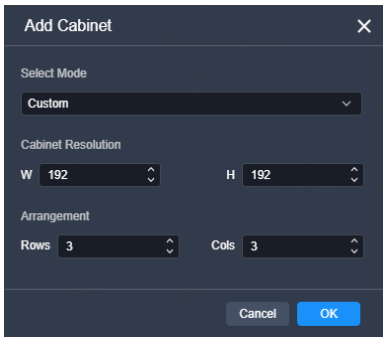
Figure 3-24 Screen configuration (VC6 Pro)



Step 2 Select the desired screen from the screen list on the left.

Step 3 Click **Add Cabinet**.

Figure 3-25 Add cabinets



Step 4 Select the desired cabinet existing in the cabinet library from the drop-down list below **Select Mode**.

Step 5 (Optional) If no cabinet configuration files (.rcfgx) are imported to the cabinet library, you can set the width and height for the empty cabinet.

Step 6 Set the rows and columns of cabinets. After settings are done, click **OK** to confirm.

Step 7 In the topology area, click the left mouse button to add cabinets with the set rows and columns.

Figure 3-26 Add empty cabinets (VX2000 Pro)

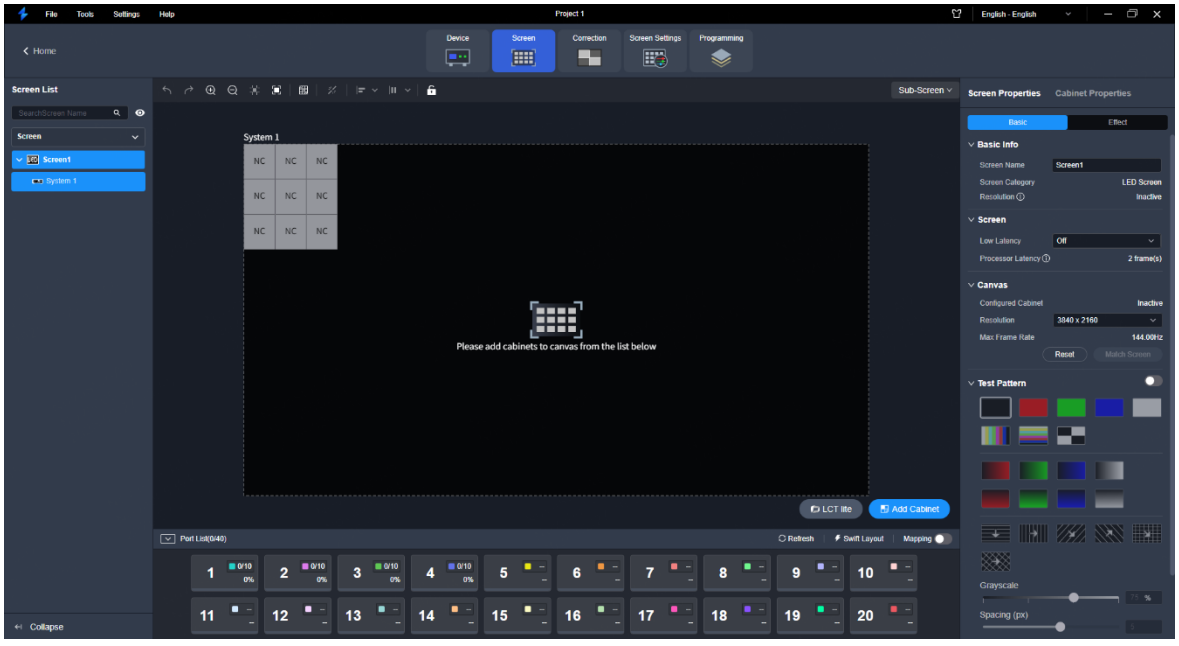
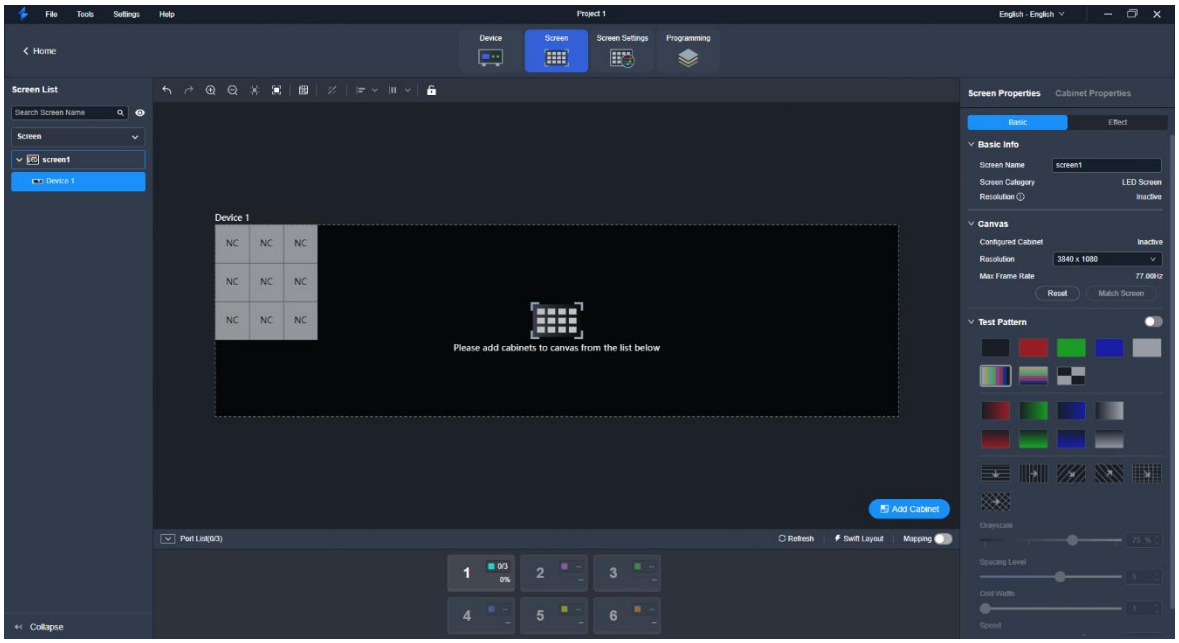


Figure 3-27 Add empty cabinets (VC6 Pro)



Step 8 Select the desired Ethernet port and drag or click the mouse in the empty cabinets to complete the wiring.

Note

Descriptions for screen topology:

- Use format painter.

  Method I: Select an Ethernet port first, and then select the desired data flow. The cursor will change to a format painter icon. Drag the mouse in the empty cabinets to automatically complete the wiring according to the selected data flow.

  Method II: Select the desired data flow first, and the cursor will change to a format painter icon. Then, select an Ethernet port and drag the mouse in the empty cabinets to complete the wiring according to the selected data flow.

- Drag the mouse to complete the wiring.

  After selecting an Ethernet port, there is no need to choose the data flow. Simply drag the mouse in the empty cabinets, and the system will automatically complete the wiring according to the mouse movement.

- Quick topology

  Select one or multiple empty cabinets, select the desired data flow, and then select the target Ethernet port to complete the wiring.

- Use arrow keys.
  Select an Ethernet port and confirm the wiring starting position, and then use arrow keys to control the wiring path.

Step 9 Select other Ethernet ports and continue wiring until all cabinets are connected.

Figure 3-28 Empty cabinet topology (VX2000 Pro)

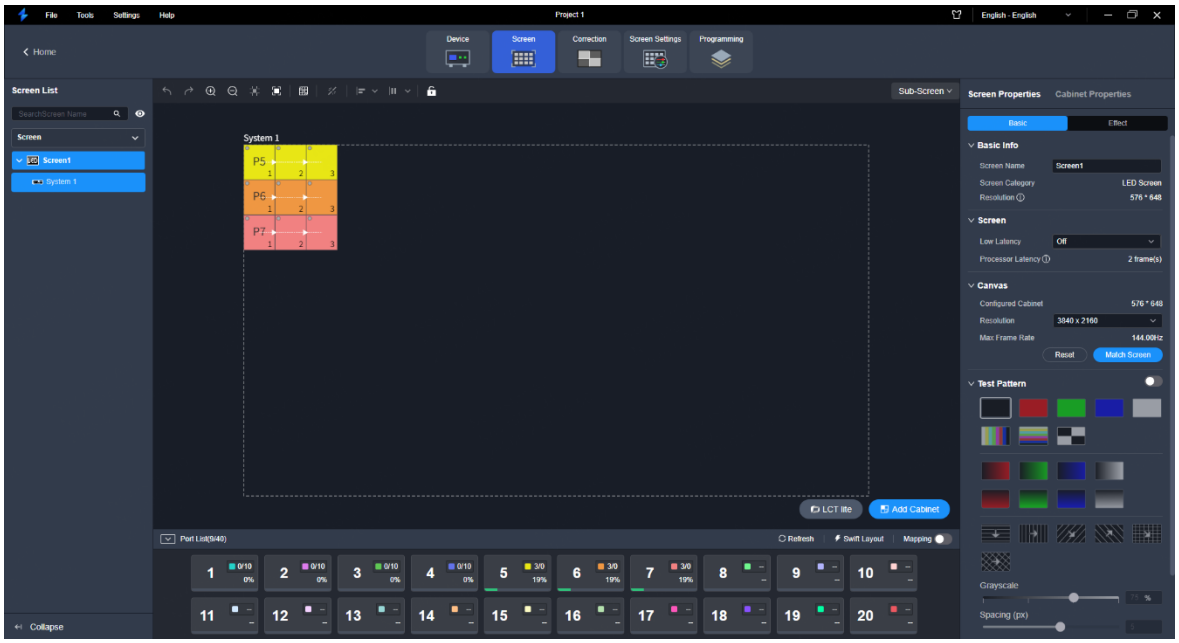
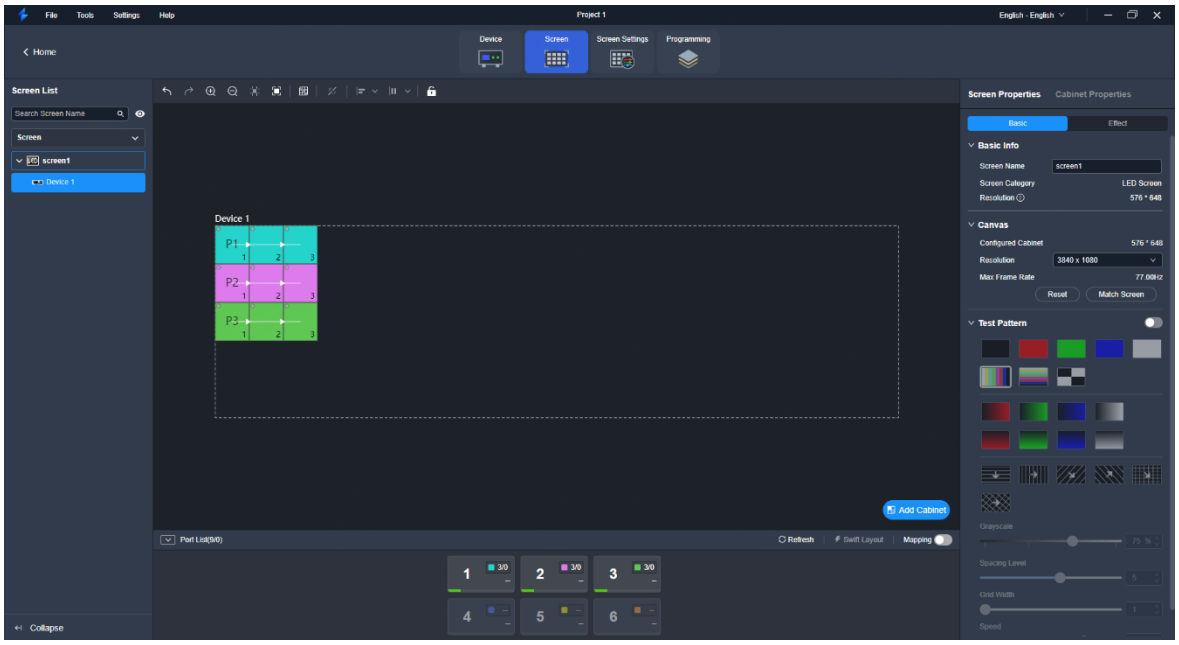


Figure 3-29 Empty cabinet topology (VC6 Pro)



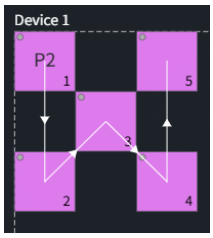
Cabinet connection status:

- **P1**: The cabinet is loaded by Ethernet port 1.
- **NC**: An empty cabinet

Step 10 Connect the on-site cabinets based on the configured topology.

Note

When configuring the empty cabinet, you can leave the desired cabinet without wiring as shown below based on the on-site screen loading requirements.



3.3.3 Configure Screen Properties

Set the screen-related properties in the property area on the right pane.

3.3.3.1 Rename Screens

Change the screen name.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

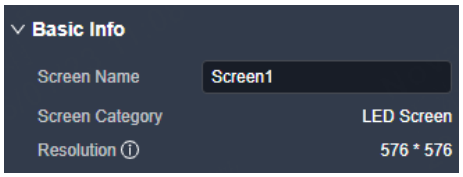
Prerequisites

None

Notes

None

Interface Example



Description

On the **Basic** tab interface, change the screen name as required.

3.3.3.2 Configure Low Latency

When the input source travels from where it comes to the processing device, sending device and then the receiving card, latency exists inevitably. Turning on this function can effectively help to reduce the latency from the input to output.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

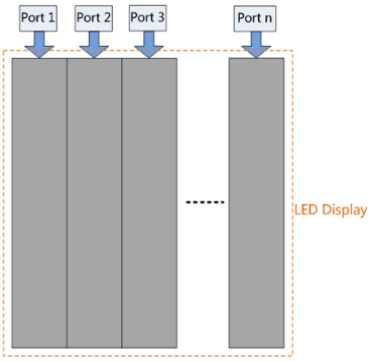
Prerequisites

None

Notes

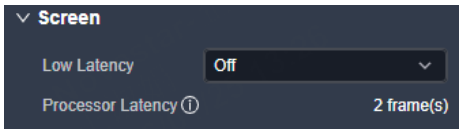
If you set the low latency mode to **Auto**, the system will determine whether to enable the low latency based on the screen topology. The specific rules are as follows.

- For a single Ethernet port with vertical cabling and no overlap in the Y direction, the low latency will be automatically enabled if all the following requirements are met; otherwise, it will be disabled.
  - The cabinets loaded by one Ethernet port cannot be overlapped, while blank configurations are allowed.
  - The circumscribed rectangles of all cabinets loaded by Ethernet ports must be aligned at the top of the canvas.
  - No need to keep the same cabinet size.



- For free topology, the low latency will be automatically enabled if all the following requirements are met; otherwise, it will be disabled.
  - The cabinets loaded by one Ethernet port cannot be overlapped, while blank configurations are not allowed.
  - The circumscribed rectangles of all cabinets loaded by Ethernet ports must be aligned at the top of the canvas. The size of the circumscribed rectangle cannot exceed 650,000 pixels.
  - The size of all cabinets must be the same.

Interface Example



Description

Parameter	Description
Low Latency	Turn on of turn off the function. • Off: Turn off the function. (Default option) • On: Turn on the function. The device latency can be reduced by 1 frame. Note After you manually enable the low latency function, it is advisable to align the circumscribed rectangle loaded by each Ethernet port at the top of the canvas. If not aligned, the loading capacity will be reduced. For calculating the actual loading capacity, please refer to Loading Capacity Calculation Method in Low Latency Mode. • Auto: If you set the low latency mode to **Auto**, the system will determine whether to enable the low latency based on the screen topology. If the wiring

Parameter	Description
	meets the rules, low latency will be enabled automatically; otherwise, it will be disabled automatically. For specific rules, please refer to the notes in this section.

3.3.3.3 Set Canvas Size

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

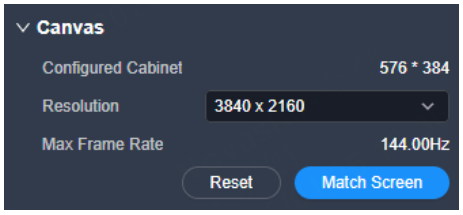
Prerequisites

None

Notes

None

Interface Example



Description

On the **Basic** tab interface, configure the following parameters.

Parameter	Description
Resolution	The size of the canvas, that is the size of the device effective loading area Config method: • Select the desired resolution from the drop-down list. • Select **Custom** from the drop-down list, and then set the width and height values. Generally, the size of the effective loading area should match with that of the

Parameter	Description
	physical screen. After you complete the settings, the system will automatically calculate the max output frame rate at the current resolution.
Match Screen	After the screen configuration is completed, click **Match Screen** and the system will automatically change the canvas size to the size of the circumscribed rectangles.

3.3.3.4 Configure Test Patterns

Test patterns are used to check the connection relation between the output connectors and the screen, and check whether the screen display is good.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

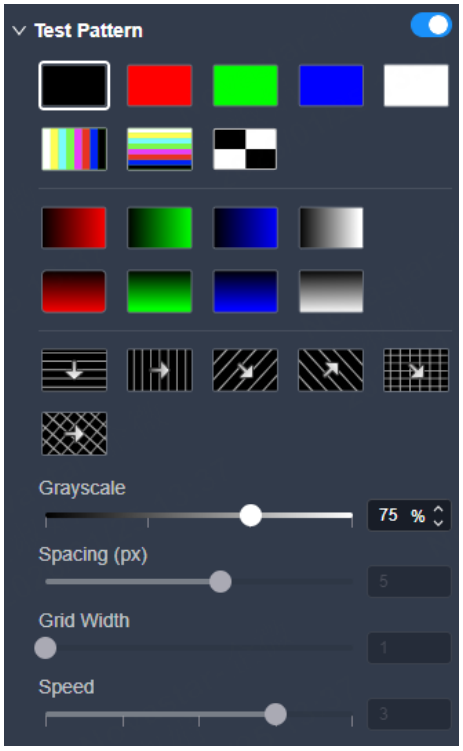
Prerequisites

None

Notes

None

Interface Example



Description

On the **Basic** tab interface, configure the following parameters.

Parameter	Description
Test Pattern	Turn on or turn off the function. • : On • : Off After the function is enabled, select the desired test pattern.
Grayscale	Set the grayscale of the test pattern.
Spacing Level	Set the spacing between different color areas. If a multi-color test pattern is selected, this parameter is available.
Spacing (px)	Set the spacing between the lines. If a grid test pattern is selected, this parameter is available.
Grid Width	Set the width of the grid lines.
Speed	Set the moving speed of the lines.

3.3.3.5 Configure Output Color

Configure the output color parameters.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

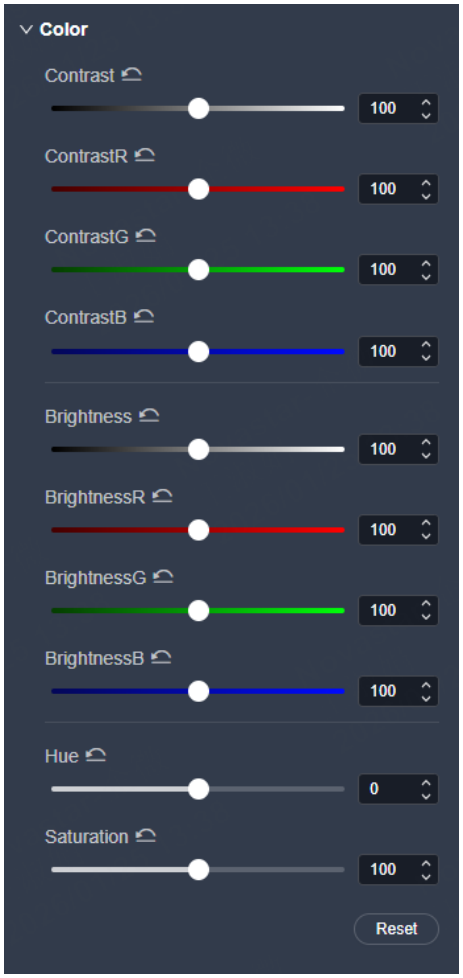
Prerequisites

None

Notes

None

Interface Example



Description

On the **Effect** tab interface, configure the following parameters.

Parameter	Description
Contrast	The ratio of the luminance of the brightest color to that of the darkest color Adjust the contrast value either as a whole or individually adjust the RGB components.
Brightness	The shading of lights in the image Adjust the brightness value either as a whole or individually adjust the RGB components.
Hue	The relative degree of how bright or dark the image is
Saturation	The color purity of the image The higher the value, the more vivid the color.

3.3.4 Configure Cabinet Properties

3.3.4.1 View Cabinet Library

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

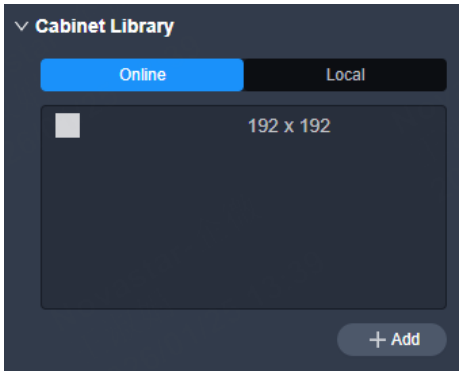
Prerequisites

None

Notes

None

Interface Example



Description

View the online cabinets or cabinet configuration files in the cabinet library.

Click **Add** to upload the cabinet file to the local pack or device pack, or add the virtual cabinet to the local pack. For detailed operations, please refer to Manage Cabinet Library.

3.3.4.2 Change Cabinet Resolutions

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

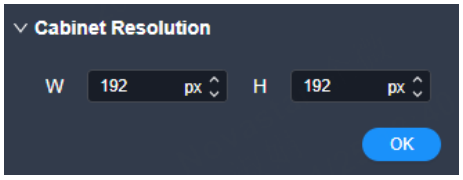
Prerequisites

None

Notes

The changed resolution of the configured cabinet should be a multiple of the module resolution to ensure normal display.

Interface Example



Configuration

Select the desired cabinet in the canvas area, and then set the cabinet width and height on the **Cabinet Properties** tab interface. After settings are done, click **OK** to complete the editing.

3.3.4.3 View Cabinet Info

View cabinet-related info.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Interface Example

Description

None

3.3.4.4 Configure Cabinet Groups

Change the cabinet group name and background color.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

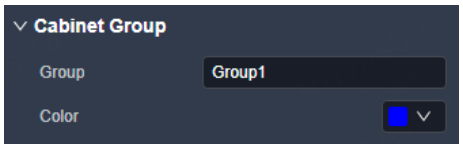
Prerequisites

A cabinet group has been created.

Notes

None

Interface Example



Description

On the **Cabinet Properties** tab interface, configure the following parameters.

Parameter	Description
Group	The name of the cabinet group Config method: Enter a new group name, and then click elsewhere in the interface to complete the group name change.
Color	The background color of the group name Config method: Click the color block next to **Color**, and then select a standard color or enter RGB values to set the background color of the cabinet group name.

3.3.4.5 Configure Cabinet Positions

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

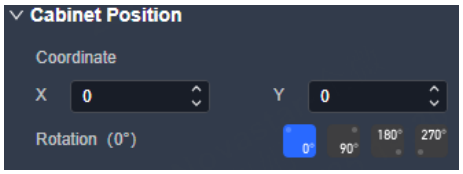
None

Notes

The cabinet rotation in 90° increments feature is only supported by certain models of receiving cards, as detailed below:

Model	Description
CA50E, XA50Pro, A10s Pro	Supported by all versions.
A8s-N, A7s Plus, A5s Plus	Supported by V4.9.0.0 or later.

Interface Example



Description

On the **Cabinet Properties** tab interface, configure the following parameters.

Parameter	Description
Coordinate	The position of the cabinet on the canvas • X: X coordinate of the cabinet on the canvas • Y: Y coordinate of the cabinet on the canvas
Rotation (0°)	Rotate the cabinet. Once the cabinet is rotated, the input source will display at the adjusted angle. Supported rotation angles: 0°, 90°, 180° and 270°

3.3.4.6 Set Cabinets

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

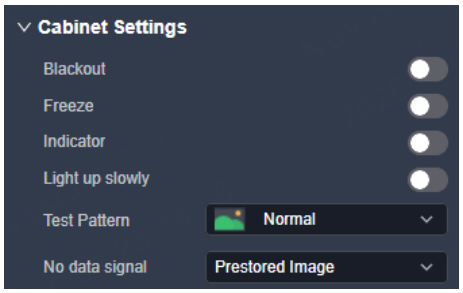
Prerequisites

None

Notes

None

Interface Example



Description

On the **Cabinet Properties** tab interface, configure the following parameters.

Parameter	Description
Blackout	Turn on or turn off the function. • : On • : Off
Freeze	Turn on or turn off the function. • : On • : Off
Indicator	Turn on or turn off the function. • : On • : Off
Light up slowly	Turn on or turn off the function. • : On • : Off Once enabled, the display brightness will slowly change from 0 to the target value after the screen is powered on.
Test Pattern	Select a test pattern to perform screen aging test and troubleshoot problems.
No data signal	Set the display image after the Ethernet cable is disconnected. • Blackout: The screen displays a black image. • Previous Frame: The screen always displays the last frame.

3.3.4.7 Configure Ethernet Port Backup

Test whether the pre-stored images, backup Ethernet ports and devices take effect without plugging and unplugging the Ethernet cables.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

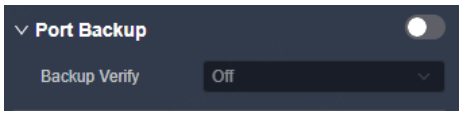
Prerequisites

The pre-stored images, primary and backup Ethernet ports or primary and backup devices have been configured.

Notes

None

Interface Example



Description

On the **Cabinet Properties** tab interface, configure the following parameters.

Parameter	Description
Port Backup	Turn on or turn off the function. • : On • : Off
Backup Verify	Select the desired backup test. • Off: Enable the output of all the Ethernet ports on the current device to complete the test. • Backup: Disable the output of the primary Ethernet port on the current device to test whether the backup port or device takes effect. • Primary: Disable the output of the backup Ethernet port on the current device

Parameter	Description
	to test whether the output of the primary port is normal. • Disconnect All: Disable the output of all the Ethernet ports on the current device to test whether the pre-stored image takes effect.

Note

After enabling Ethernet port backup, a  icon is displayed between the primary and backup ports in the Ethernet port list. By default, the first half of the ports serve as backups for the second half.

3.3.4.8 Set Dual RV Cards Backup

Receiving card backup allows you to set the backup relationship between two receiving cards. If the primary receiving card link fails, the backup one will take over the responsibilities of the primary receiving card and continue to work well to ensure the LED screen will not go black.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

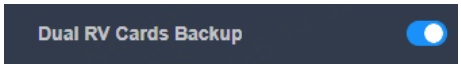
Prerequisites

Two receiving cards are connected to the cabinet.

Notes

When you enable both the device backup and dual receiving cards backup, the former takes precedence over the latter. When the layer sources of two devices are disconnected, the device will switch to the backup receiving card link.

Interface Example



Description

Parameter	Description
Dual RV Cards Backup	Turn on or turn off the function. • : On • : Off

3.4 Screen Correction

3.4.1 Correct Seams

Adjust the seams between cabinets or modules to improve the display effect.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

You have configured the cabinets.

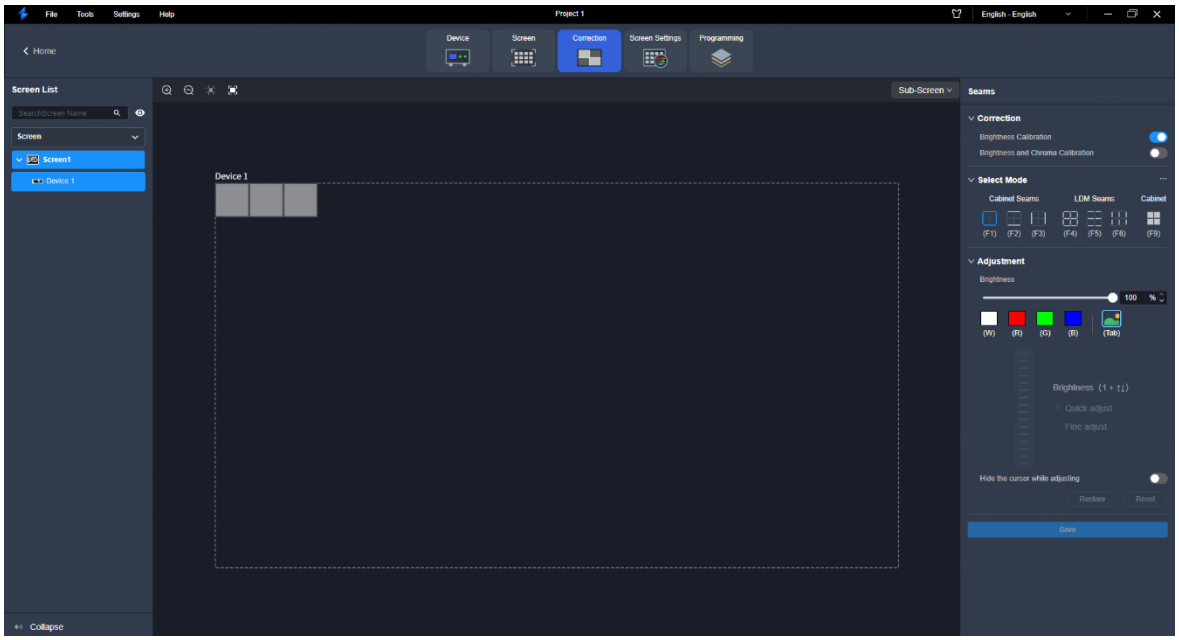
Notes

None

Description

Step 1 Select **Correction** at the top of the page.

Figure 3-30 Screen correction



Step 2 On the **Seams** tab in the properties area, toggle the **Brightness Calibration** switch to .

Note

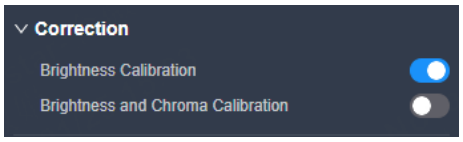
- Only the specific receiving cards support the **Seam Correction** switch, including the A8s Pro, NV7508, NV7512, NV7516, DH7508-S, DH7512-S, DH7516-S and MRV208-NB7s. The adjustment of bright and dark lines can be controlled independently of the coefficients. When turned off, the bright and dark lines cannot be adjusted, and any previously made adjustments will not be displayed.
- Apart from the above-mentioned receiving cards, the **Seam Correction** switch will not be displayed on this interface. In this case, simply toggling on the **Brightness Calibration** or **Brightness and Chroma Calibration** will ensure that the seam correction takes effect.

Step 3 Toggle on **Brightness Calibration** or **Brightness and Chroma Calibration** to view the correction effect.

- Brightness Calibration: Set the **Brightness Calibration** switch to to make the screen apply the calibration effect made by the calibration platform.
- Brightness and Chroma Calibration: Set the **Brightness and Chroma Calibration** switch to to make the screen apply the calibration effect made by the calibration platform.

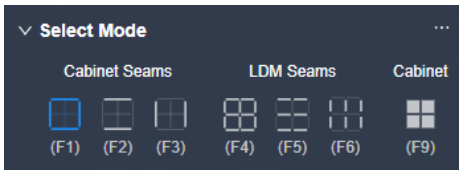
The **Brightness Calibration** and **Brightness and Chroma Calibration** are mutually exclusive.

Figure 3-31 Correction (seams)



Step 4 Select a correction mode.

Figure 3-32 Select mode (seams)



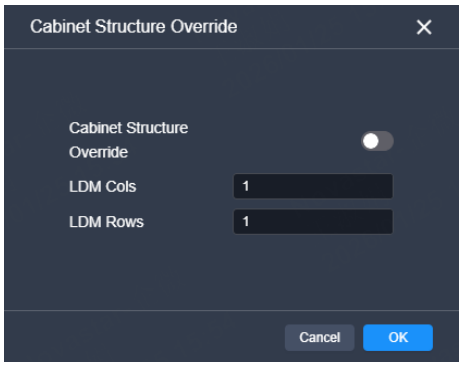
- Cabinet Seams: Correct the seams of cabinets.
- LDM Seams: Correct the seams of modules.

Note

You can use the corresponding shortcut keys to quickly select the target one. For example, press F1 to select all outer border lines of the cabinet.

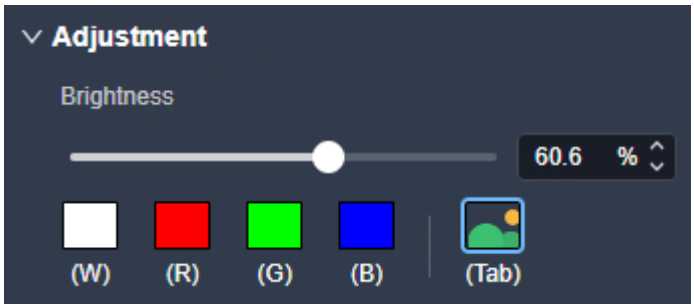
Step 5 When correcting the module seams, if you need to override the numbers of module columns and rows, click the ··· icon next to **Select Mode** and then perform the settings on the **Cabinet Structure Override** window. Otherwise, skip this step.

Figure 3-33 Cabinet structure override



Step 6 Set the screen display parameters and check the seam correction effect.

Figure 3-34 Adjustment (4-color)



- Brightness: Adjust the display brightness.
- Display image: Set the image displayed on the screen. By default, the current input source is being displayed ( ). You can switch to a monochrome display.

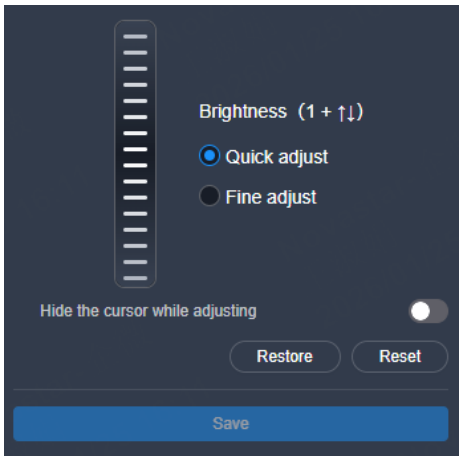
Note

You can use the corresponding shortcut keys to switch between various images. For example, press **W** to switch to white image display.

Step 7 In the topology area, click or click and drag the mouse to select the seams to be corrected.

Step 8 Set the adjustment parameters.

Figure 3-35 Set the parameters



- Quick adjust: Has a large range of adjustment.
- Fine Adjust: Has a fine range of adjustment.
- Hide the cursor while adjusting: When this is enabled ( ), the cursor will not be displayed on the screen while adjusting brightness and chroma.

Step 9 Place the mouse on the scroll wheel icon and adjust the brightness by dragging the wheel icon up or down, scrolling the mouse wheel, or using the keyboard shortcuts **1**+**↑**/**↓**.

- Restore: Restore the configuration to the last saved.

- Reset: Reset the configuration to factory defaults.

Step 10 After the settings, click **Save**.

3.4.2 Erase Seam Correction

If there are any changes made to the cabinets, such as moving a receiving card from one cabinet to another or replacing the cabinet module, it may cause bright or dark lines that had been previously corrected to appear in the middle of the cabinet or module. In such cases, you have the option to remove the seam correction that was applied.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

You have configured the cabinets.

Notes

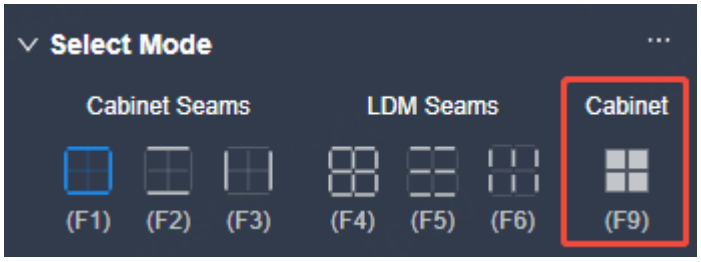
None

Description

Step 1 Select **Correction** at the top of the page.

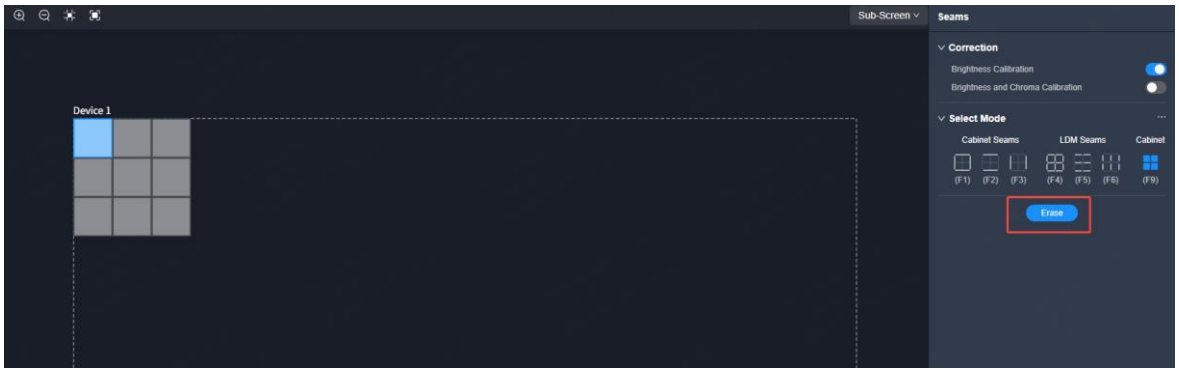
Step 2 Select the **Cabinet** mode.

Figure 3-36 Select mode (cabinet)



Step 3 Select the target cabinets and then click **Erase** to remove the seam correction that was applied to them. The erasion will be automatically saved to the hardware once you are done.

Figure 3-37 Erase seam correction



3.5 Screen Settings

3.5.1 Adjust Image Quality

3.5.1.1 Adjust Brightness and Gamma

Adjust the Gamma value and brightness of the output to enhance the overall image quality of the LED screen.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

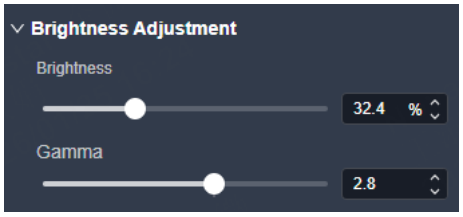
Prerequisites

None

Notes

None

Interface Example



Description

Select **Screen Settings** at the top of the page, and then on the **Image Quality** tab interface, configure the following parameters.

Parameter	Description
Brightness	The brightness of the LED screen
Gamma	Adjust the ratio of the screen brightness to the input level. The parameters are read from the receiving card, which default to optimal values at the factory. It is recommended the parameter adjustment be carried out by the trained personnel when necessary.

3.5.1.2 Set LED Image Booster

Set the LED Image Booster function to improve the delicacy and accuracy of the image color and gradation and realize free switching of the display color gamut.

Applicable Products

VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

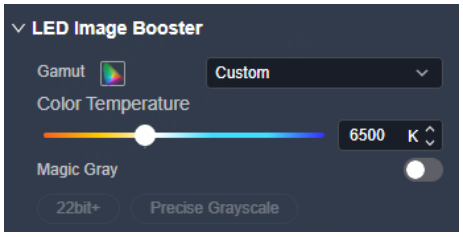
Prerequisites

Before the operation, color gamut and brightness correction by using the CA410-VP427, CA410-P427 or CA410-P427H colorimeter must be done.

Notes

None

Interface Example



Description

Parameter	Description
Gamut	The color gamut standard The output gamut options include standard gamuts, custom gamuts, the original screen gamut and the input gamut (**From input**). To set the custom gamut, click  , select a gamut in the properties area on the color gamut diagram, and adjust the red, green, blue and white parameters based on the selected gamut.
Color Temperature	Drag the slider to adjust color temperature.
Magic Gray	Turn on or turn off the function. •  : On •  : Off

3.5.1.3 Adjust EOTF

Applicable Products

VX2000 Pro

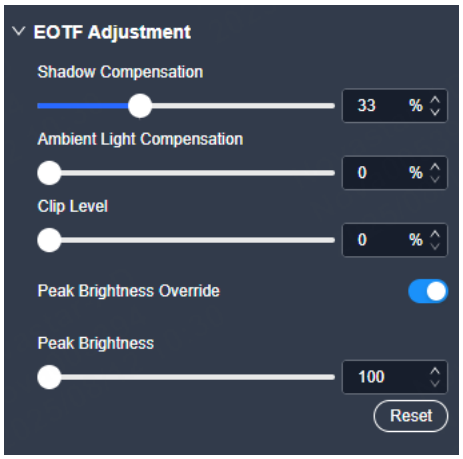
Prerequisites

None

Notes

The supported adjustment parameters depend on the HDR source settings.

Interface Example



Description

On the **Image Quality** tab interface, drag the sliders to adjust the related parameters.

Parameter	Description
Shadow Compensation	Adjust this parameter to enhance the image display effect. The greater the value, the clearer the details in the shadow area. Range: 0 to 100 (default: 33), Step: 1
Ambient Light Compensation	Adjust this parameter to reduce the loss of image details caused by ambient light diffusion. Range: 0 (default) to 80 , Step: 1
Clip Level	Adjust the parameter to reduce the screen overexposure and enhance details of the highlight areas. Range: 0 (default) to 100 , Step: 1
Override Peak Screen Brightness	Turn on or turn off the function. • On: • Off:
Peak Screen Brightness	Adjust the brightness of the screen when it is functioning normally. When **Override Peak Screen Brightness** is enabled, this parameter can be adjusted. Range: 100 to 10000 nits (default: 1000 nits), Step: 1

3.5.2 Adjust Output

3.5.2.1 Set Output Bit Depth

Applicable Products

VX2000 Pro

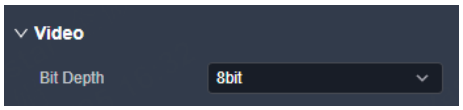
Prerequisites

None

Notes

When you use the HDR function, setting output bit depth to 10bit is required to achieve optimal display effect.

Interface Example



Description

On the **Output** tab interface, configure the following parameters.

Parameter	Description
Bit Depth	Set the output bit depth. The supported options include **8bit** and **10bit**.

3.5.2.2 Configure 3D

Directly connect a third-party 3D emitter using the device's built-in 3D connector, or connect to the EMT200 Pro emitter via the device's Ethernet port. Then, use the compatible 3D glasses to achieve a 3D display effect.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

- Video source format: Side-by side, top-and-bottom or frame sequential
- When paired with the EMT200 Pro, it is recommended to use a 3D source of 60Hz to enjoy an optimal experience.

Notes

- When the 3D function is enabled and the video source format is **Side-by-Side** or **Top-and-Bottom**, the device output capacity will be halved.
- When the 3D function is enabled and the video source format is **Frame Sequential**, you need to manually set the output frame rate which must be the same as the input frame rate.
- The 3D function and input cropping cannot be enabled at the same time.
- After enabling the 3D function on the **Screen Settings** page, 3D switches of all the layers will be toggled on. If you want to use a 2D layer, please toggle off the 3D switch of the desired layer in the property area of the **Programming** page.
- The 3D effect follows the layer. The output area where a 3D layer is located always displays the 3D effect.

Interface Example

Description

On the **Output** tab interface, configure the following parameters.

Parameter	Description
3D	Turn on or turn off the 3D function.

Parameter	Description
	• : On • : Off
Source Format	The format of the 3D video source Set the format to **Side-by-Side**, **Top-and-Bottom** or **Frame Sequential** according to the format of the accessed video source.
Eye Priority	Set which image is sent first, the right eye image or the left eye image. Put on the 3D glasses to view the screen. If the display appears abnormal, adjust the parameter value to the other one. If the display is normal, no further adjustments are needed.
3rd Emitter	Turn on or turn off the function. • : On • : Off
Signal Delay	Set the delay time of sending the synchronization signal from the 3D signal emitter to the 3D glasses. This setting ensures that the switching between left and right eye images of the 3D glasses is in sync with the switching between the left and right eye images on the screen. This parameter is applicable to both the NovaStar and third-party emitters.

3.5.2.3 Check Load

Check the capacity usage of each Ethernet port of the device.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

None

Notes

None

Interface Example

Description

On the **Output** tab interface, click > next to the device information to check the usage of the device loading capacity.

3.6 Layer Operations

3.6.1 Add Layers

Add layers to screen

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

Make sure the device is in **Video Controller** mode before adding layers.

Notes

The maximum number of layers that can be added depends on the connected device.

Device Model	Number of Supported Layers (2K×1K)
VX400 Pro	6
VX600 Pro	
VX1000 Pro	
VX2000 Pro	12

Device Model	Number of Supported Layers (2K×1K)
VC6 Pro	6
VC10 Pro	6
VC16 Pro	12

Description

Step 1 Click **Programming** at the top of the page to enter the layer editing page. Select the desired screen from the left screen list, and then click the **Input** tab.

Figure 3-38 Programming (VX2000 Pro)

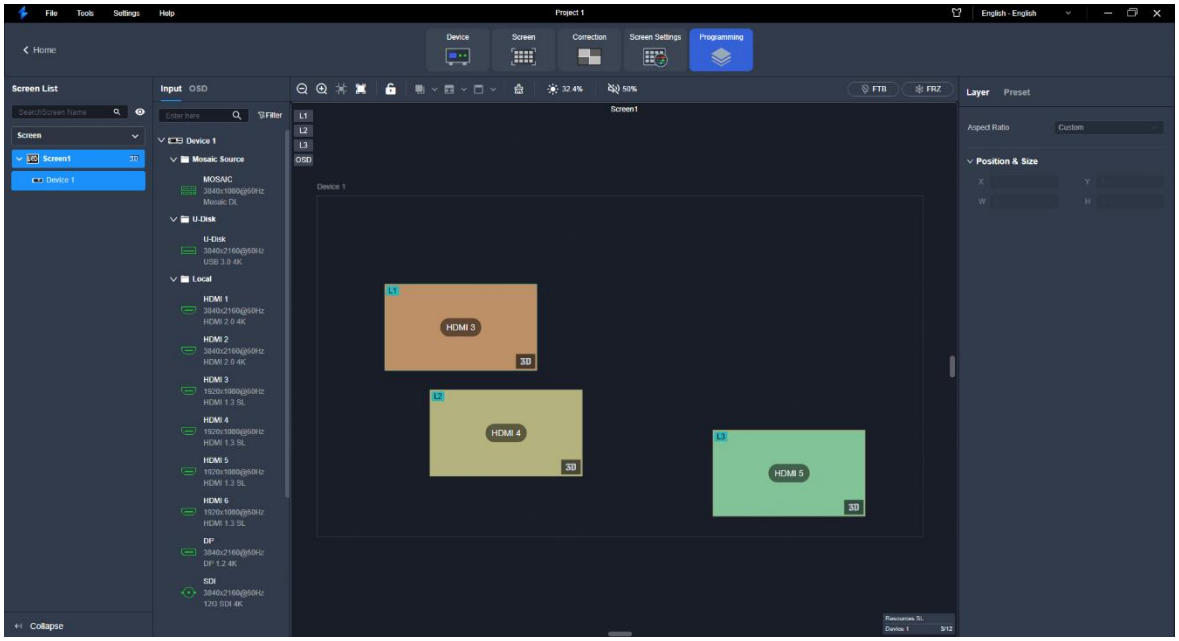
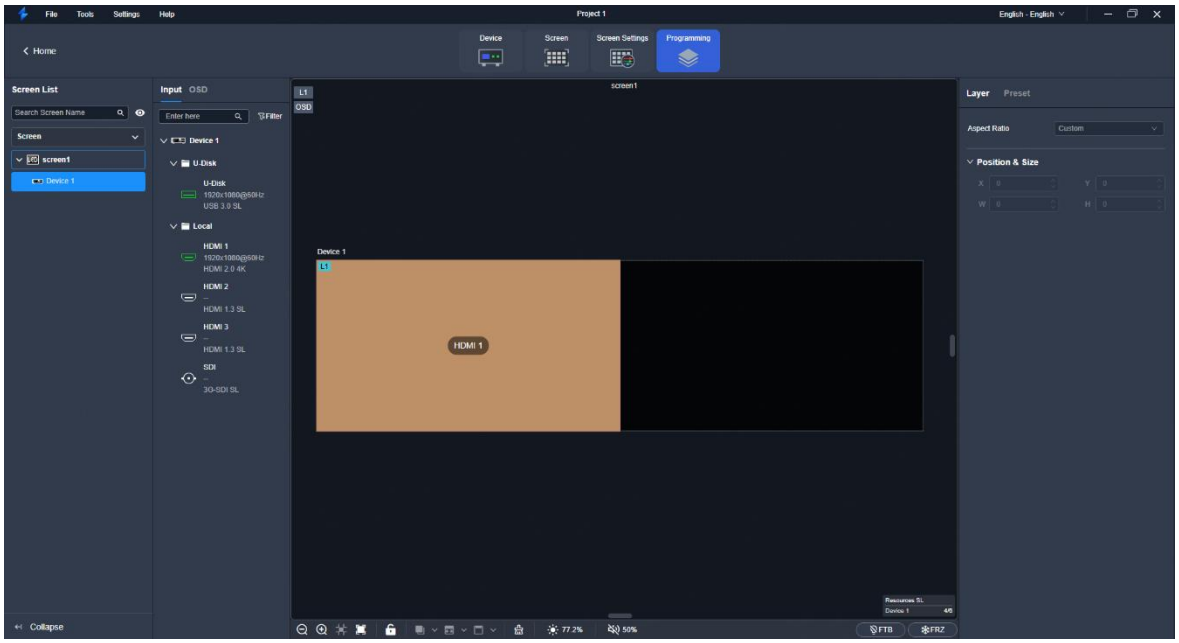


Figure 3-39 Programming (VC6 Pro)



Step 2 Add the layers to the screen.

Drag an input source in the input list to the screen.

Step 3 Perform the desired layer operations as required.

Figure 3-40 Layer operations

1 Lock/Unlock layer
2 Pixel-to-pixel display
3 Fill entire screen
4 Fill canvas
5 Follow canvas
6 Delete layer
7 Zoom Out
8 Zoom In
9 Zoom to Selection
10 Auto fit
11 Lock/Unlock canvas
12 Adjust layer priority
13 Set layer filling mode
14 Set layer alignment method
15 Clear
16 Output image brightness
17 Set audio
18 FTB
19 Freez/unfreeze

3.6.2 Configure Video Source Properties

In the input list, select an input source and set the relevant properties on the right pane. For detailed configurations and parameter descriptions, please refer to Configure Input Properties.

3.6.3 Mosaic Source Settings

Both HDMI and OPT sources support mosaicing.

3.6.3.1 View Mosaic Source Info

View the basic properties of the mosaic source and change the source name.

Applicable Products

VX2000 Pro

Prerequisites

A mosaic source has been configured and its signal is fine.

Notes

None

Interface Example

Description

On the **Mosaic Source** tab interface, type in a new source name and click anywhere else on the interface to save the change.

3.6.3.2 Configure Mosaic Sources

Set the mosaic source name, sub-source type, mosaic layout as well as sub-source size.

Applicable Products

VX2000 Pro

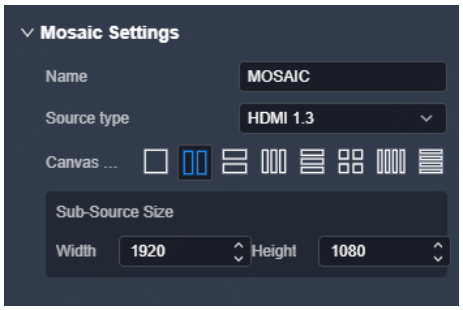
Prerequisites

None

Notes

Only the input sources of the same connector type support mosaicing, and the frame rates of sub-source must be the same.

Interface Example



Description

On the **Edit Mosaic** tab interface, configure the following parameters.

Parameter Name	Description
Name	The name of the mosaic source

Parameter Name	Description
Source Type	The type of the sub-sources Config method: Select **HDMI 1.3**, **HDMI 2.0** or **OPT** from the drop-down list.
Layout	The layout of the mosaic source Config method: Select the desired layout from the standard layout template, and then drag the inputs in the input list to the sub-cells respectively.
Sub-Source Size	The size of the sub-sources • Default width: 1920 pixels, max width: 8192 pixels • Default height: 1080 pixels, max height: 8192 pixels • Max width and height: 4096×2160

3.6.4 Configure USB Source Properties

Select a USB source in the input list and configure relevant properties on the **USB Playback Settings** tab interface.

The models of devices that support USB playback and the corresponding output resolutions for USB sources are listed below.

Device Model	USB Source Resolution
VX400 Pro	1920×1080@60Hz
VX600 Pro	
VX1000 Pro	
VX2000 Pro	3840×2160@60Hz
VC6 Pro	1920×1080@60Hz
VC10 Pro	
VC16 Pro	3840×2160@60Hz

3.6.4.1 Play USB Files

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

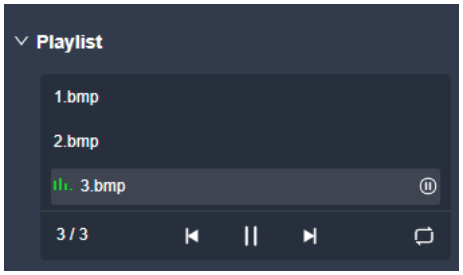
Prerequisites

The U-DISK connector on the front panel is inserted with a USB drive which is successfully identified.

Notes

None

Interface Example



Description

In the playlist, select a file to play it and you can also stop the playback, play the previous or next file as well as set the playback mode.

3.6.4.2 Configure Playback Parameters

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

The U-DISK connector on the front panel is inserted with a USB drive which is successfully identified.

Notes

- Single-partition USB drive supported

- File system: NTFS, FAT32 and exFAT
- Max. width and height of media files

  Width: 3840 pixels, height: 2160 pixels
- Picture format: jpg, jpeg, png and bmp
- Decoded image resolution: 3840×2160 or lower
- Video format: mp4, mkv, mov, avi, flv, m4v, mpg, mpeg, ts
- Video coding: H.264, H.265, MPEG-2, MPEG-4
- Max. video frame rate:

  H.264: 3840×2160@30fps, H.265: 3840×2160@60fps

  MPEG-2/MPEG-4: 1920×1080@60fps
- Max bitrate:

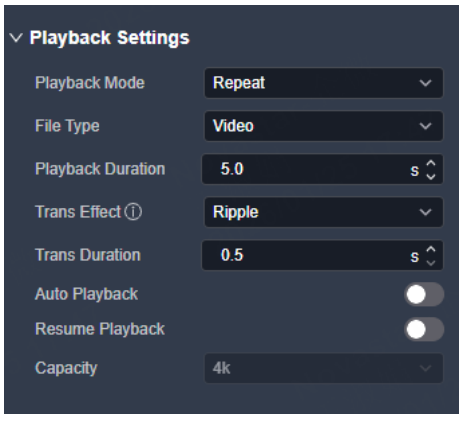
  H.264/H.265: 100Mbps

  MPEG-2/MPEG-4: 50Mbps
- Audio coding: AAC, AC3, DTS, MP3, DVD, DVD_LPCM, MP2, OPUS
- Audio sampling rate:

  opus: 24kHz, 48kHz

  Other formats: 22.05kHz to 94kHz

Interface Example



Description

On the **USB Playback Settings** tab interface, configure the following parameters.

Parameter	Description
Playback Mode	The playback mode of the file • Repeat: Play the files in the playlist in order. Once the playback of the last file is completed, replay the first file. • Repeat in Order: Play the files in the playlist in order. Once the playback of the last file is completed, the screen will display a black image and the playback will stop. • Repeat One: Loop playback of the current file.
File Type	The type of the playback file • Video • Image • All: Videos and images Note After the file type is selected, only the file of the selected type will be displayed in the playlist.
Playback Duration	The duration of the image playback The value ranges from 1 to 60 and it defaults to 5. (Unit: s)
Trans Effect	The trans effect of the image Supported trans effect: Ripple, zoom in, cut out, flip, blinds, H wipe, V wipe, cube, dissolve, grid, swapping, scroll, fade in/out, twirl, heart trans, doorway, perspective triangle, disappear, bounce, pinwheel and random.
Trans Duration	The trans duration of the image The value ranges from 0.5 to 2 and it defaults to 0.5. (Unit: s)
Auto Playback	The auto playback switch Set whether to automatically play the USB files after the device is powered off and then power on with a USB drive inserted. • : On If **Resume Playback** not enabled, replay the files in the playlist in order; If enabled, replay the file being played before power failure from the beginning. • : Off
Resume Playback	Turn on or turn off the function. • : On If a file is playing before the device power failure, enabling this function allows to replay the file from beginning after the device is

Parameter	Description
	powered on with a USB drive inserted. • Off: Replay the files in the playlist in order. Note • Enabling **Resume Playback** will also activate the **Auto Playback** feature at the same time. • After **Resume Playback** is enabled, if the file being played before power failure cannot be found, the files will be played from the beginning of the playlist in order.

3.6.5 Set Audio

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

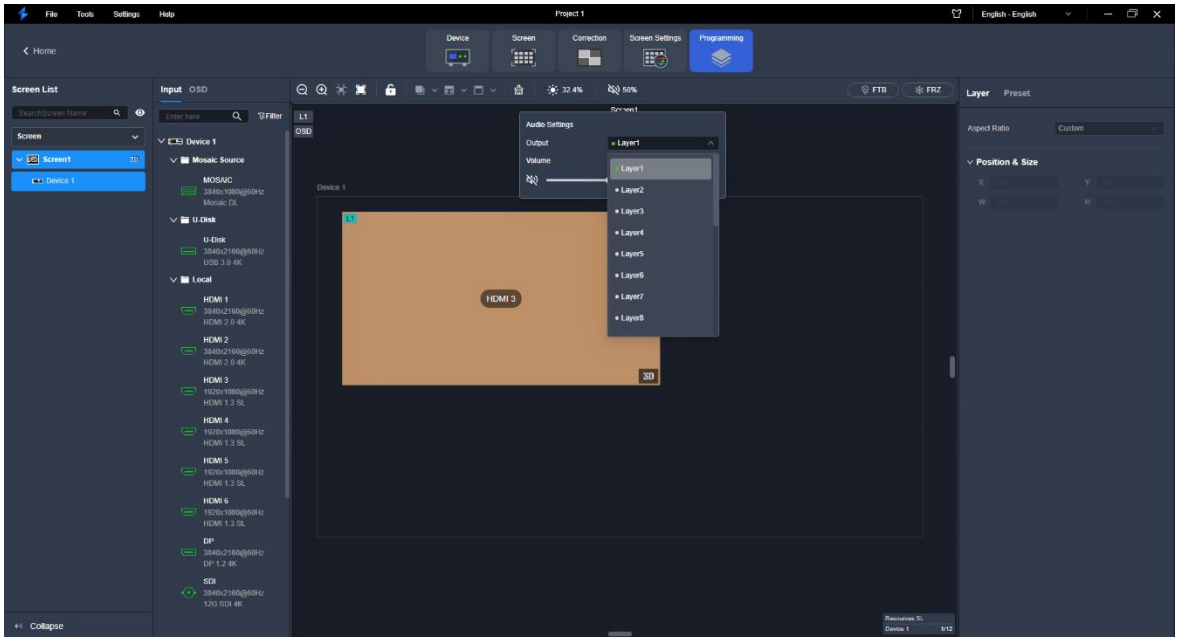
Prerequisites

None

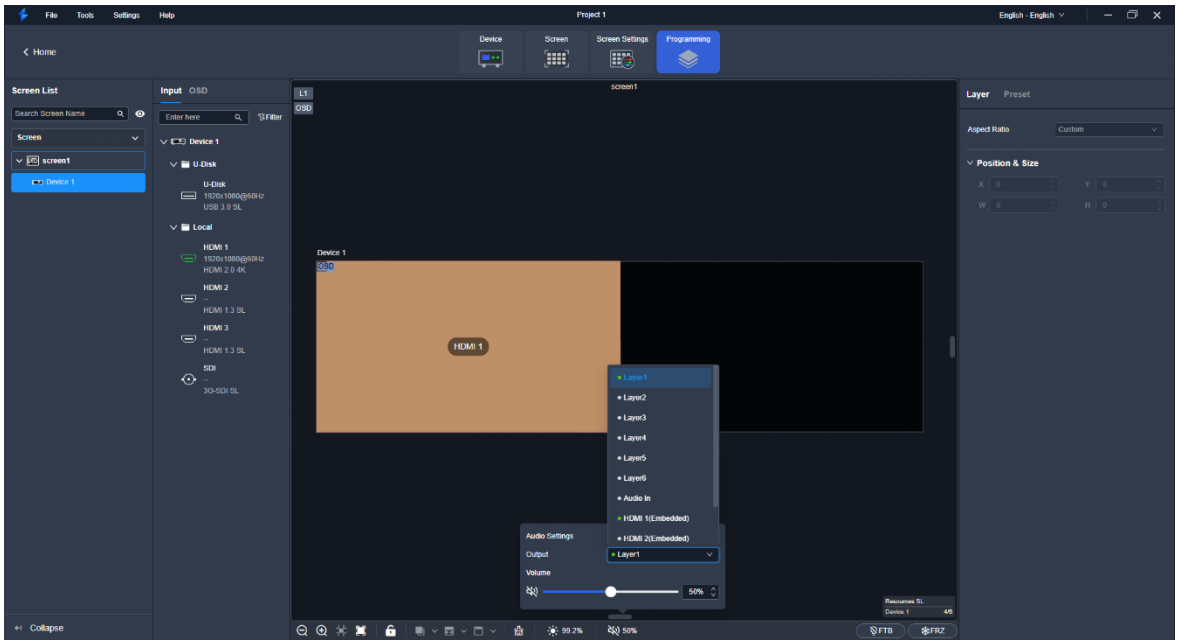
Notes

None

Interface Example (VX2000 Pro)



Interface Example (VC6 Pro)



Description

On the **Programming** interface, hover the mouse over  and set the following parameters in the popup menu.

Parameter	Description
Output	Set the output audio. • Layer n: Output the audio of the current layer input source. When you switch the current layer input source, the audio will also be changed. • Audio In: Output the analog audio coming from an external audio device. When you switch the current layer input source, the audio will not be changed. • Embedded audio of an input source: Output the fixed embedded audio. When you switch the current layer input source, the audio will not be changed. The supported input source types include HDMI sources, DP sources, and USB sources. Note The input source audio of the layer 1 is output by default.
Volume	The output volume The value ranges from 0 to 100 and it defaults to 50%. • **0%**: Mute • **100%**: Output at maximum volume. Note Click  below **Volume** to enable or disable the audio.

3.6.6 Set Input Source Audio

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

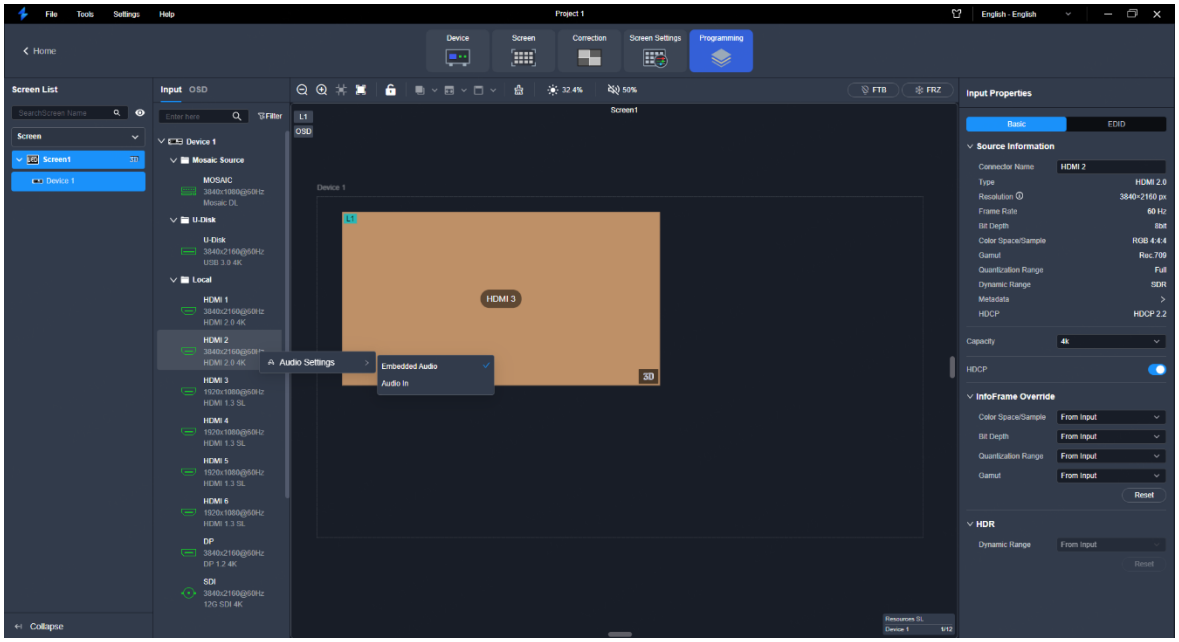
Prerequisites

None

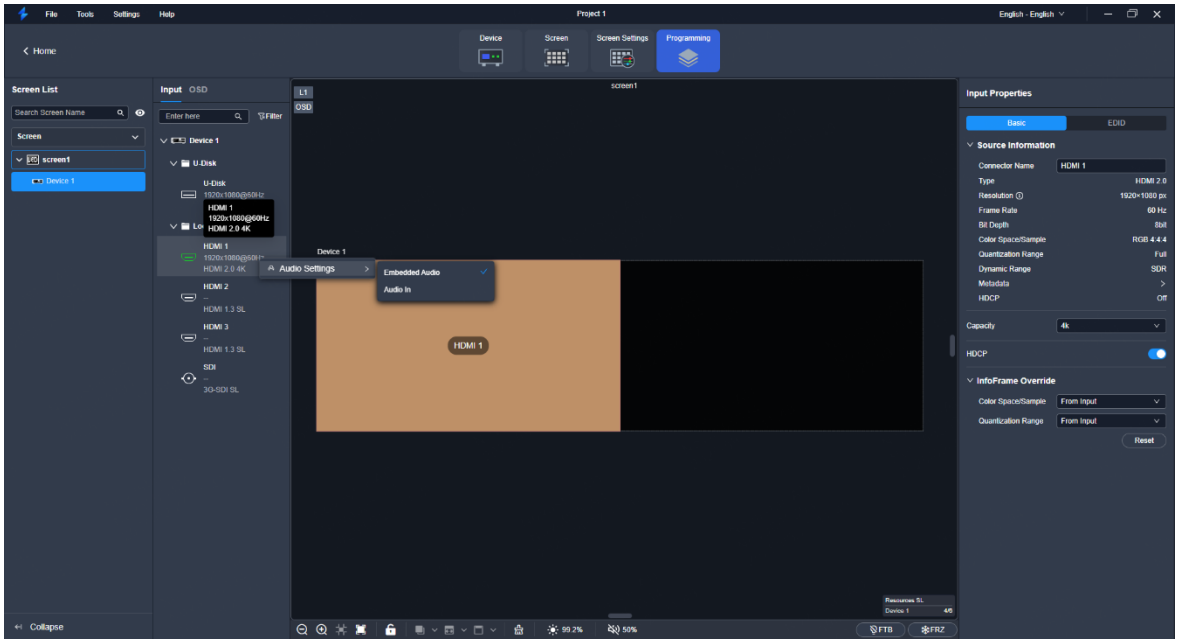
Notes

None

Interface Example (VX2000 Pro)



Interface Example (VC6 Pro)



Description

On the **Programming** interface, click the **Input** tab to display the input source list. Hover the mouse over the desired input source and click ••• . In the popup menu, set the input source audio to **Embedded Audio** or **Audio In**.

3.6.7 Configure Layer Properties

Select the desired layer, and then set the layer-related properties in the property area on the right pane.

3.6.7.1 Configure Basic Properties

Configure the layer name, aspect ratio, position, size, as well as enabling the 3D effect.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

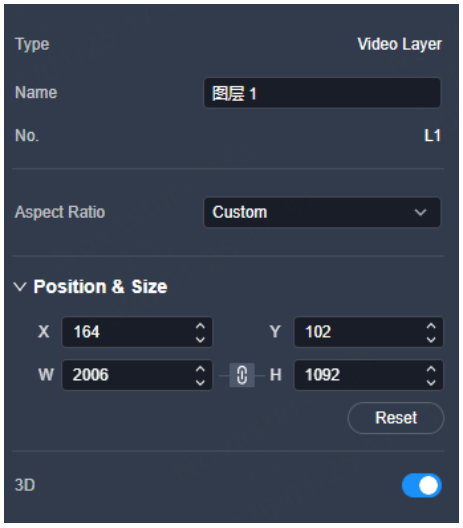
Prerequisites

None

Notes

After enabling the 3D function on the **Screen Settings** page, 3D switches of all the layers will be toggled on. If you want to use a 2D layer, please toggle off the 3D switch of the desired layer in the property area of the **Programming** page.

Interface Example



Description

On the **Basic** tab interface, configure the following parameters.

Parameter	Description
Name	The layer name
Aspect Ratio	The ratio of the layer's width to its height After the aspect ratio is changed, the height of the layer remains unchanged, and the device automatically calculates its width.
X	The horizontal starting position of the layer on the screen The coordinates of the first pixel in the upper left corner of the screen are (0,0).
Y	The vertical starting position of the layer on the screen The coordinates of the first pixel in the upper left corner of the screen are (0,0).
W	The horizontal size of the layer The minimum width of a layer: 64 pixels
H	The vertical size of the layer The minimum height of a layer: 64 pixels
3D	Turn on or turn off the function • : On • : Off

3.6.7.2 Crop Layer Sources

When there are black borders or other redundant info in the input source image, the required picture can be retained through the cropping the input source, so as to improve the screen utilization.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

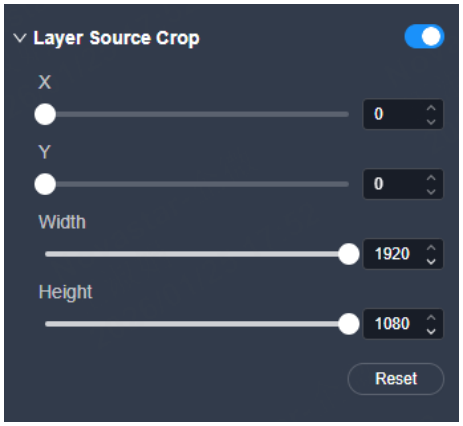
Prerequisites

A fine signal is connected to the input connector.

Notes

- The status and capacity of the cropped source remain consistent with the original one.
- The input cropping and 3D functions cannot be enabled at the same time.

Interface Example



Description

On the **Advanced** tab interface, configure the following parameters.

Parameter	Description
Layer Source Crop	Turn on or turn off the function. • : On • : Off
X	The horizontal start position of the cropped area relative to the original source
Y	The vertical start position of the cropped area relative to the original source
Width	The number of horizontal pixels (width) of the cropped area
Height	The number of vertical pixels (height) of the cropped area

3.6.8 Configure OSD

Both the text OSD and image OSD are supported.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

Prerequisites

Before setting a time OSD or weather OSD, please ensure that the device is connected to the network to obtain the precise time and weather information.

Notes

- The OSD locates at the top and its priority cannot be adjusted.
- The text OSD and image OSD cannot be enabled together.
- The OSD function and remote control function cannot be enabled together.

OSD Type Descriptions

OSD Type	Description
Text OSD	• Up to four text OSD presets are supported, and the preset 1 is selected by default. The quantity of the text components are as follows. – Static text OSD: 10 – Weather OSD: 2 – Time OSD: 2 – Dynamic text OSD: 1 Note The dynamic text OSD and other text components cannot be used together.
Image OSD	• Image gallery capacity: 75 MB • Supported image OSD formats: PNG/JPG/JPEG/BMP • Width and height limitations of a single image: – VC6 Pro/VC 10 ProVX400 Pro/VX600 Pro/VX1000 Pro: Max width × Max height ≤ 4096×1080, max width: 10240 pixels, max height: 8192 pixels – VC16 Pro/VX2000 Pro: Max width × Max height ≤ 4096×2160, max width: 16384 pixels, max height: 8192 Note: If the max width and height limitations are exceeded, you need to scale or crop the image in Unico, and the width and height of the cropped

OSD Type	Description
	should be greater than 64 pixels. • Supports setting of the image OSD position. • Does not support setting of the image OSD size. • Does not support setting of the image OSD opacity.

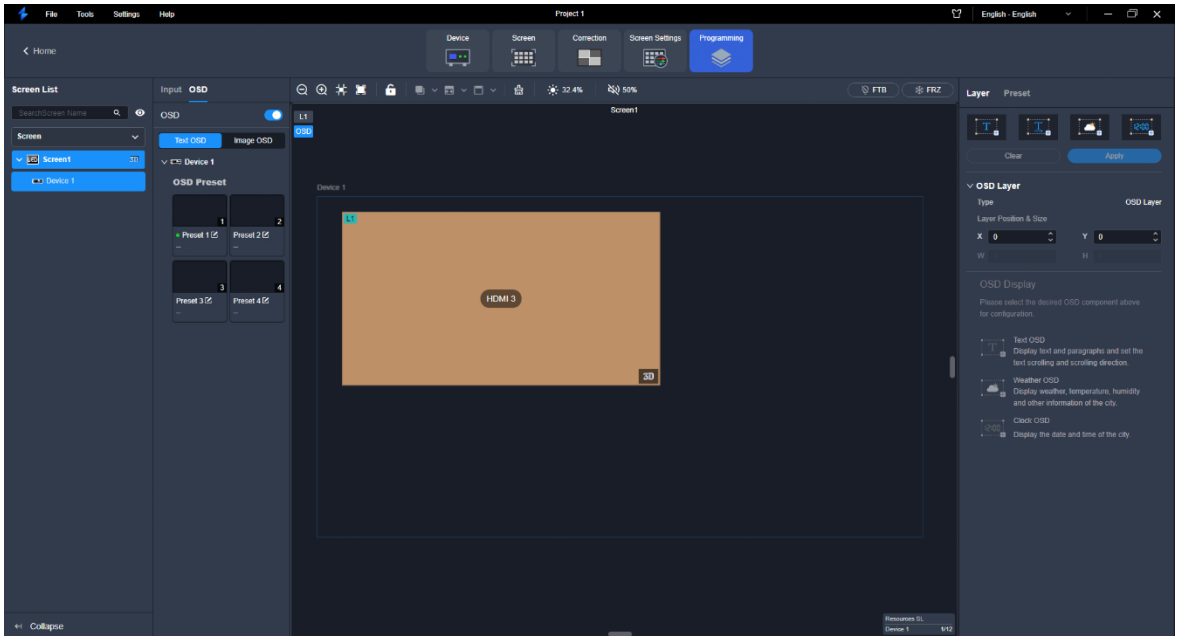
3.6.8.1 Configure Text OSD

Step 1 In the screen list on the left, select the desired screen.

Step 2 Click the **OSD** tab.

Step 3 Toggle the **OSD** switch to  to enable the OSD function.

Figure 3-41 Enable OSD



Step 4 Click the **Text OSD** tab, and drag the desired OSD preset to the editing area. The OSD preset 1 is selected by default.

OSD preset-related operations:

- Change the OSD preset name: Hover the mouse over the desired OSD preset, and then click  that appears. Enter a new preset name, and then click elsewhere in the interface to complete the preset name change.
- Clear the OSD preset: Click  at the top right corner of the desired preset, and then click **Yes** in the popup dialog box to clear OSD components saved in the selected preset.

- Lock/Unlock the OSD preset: Click  at the top right corner of the desired preset to lock or unlock the preset.
- Save the OSD preset: Click  at the top right corner of the desired preset, and then select another preset to save the OSD components from the original preset to the selected one.

Step 5 On the right **Layer** pane, drag the  ,  ,  or  icon to add a static text OSD, dynamic text OSD, weather OSD or time OSD.

Step 6 Set the position and size of the OSD layer.

- X: Set the horizontal distance from the top left corner of the OSD layer to that of the screen.
- Y: Set the vertical distance from the top left corner of the OSD layer to that of the screen.
- W: Set the OSD layer width.
- H: Set the OSD layer height.

Step 7 Click the created OSD layer to display the OSD configuration area on the right.

Step 8 Set the related parameters of the added OSD component. For the parameters of each OSD component, please refer to the following descriptions.

Step 9 Click **Apply** at the top right corner to complete the settings and display the set OSD on the screen.

Note

Select the desired OSD components, and then click  shown at the top right corner. In the popup dialog box, click **Yes** to delete the selected OSD component.

Static Text OSD

Figure 3-42 Interface example

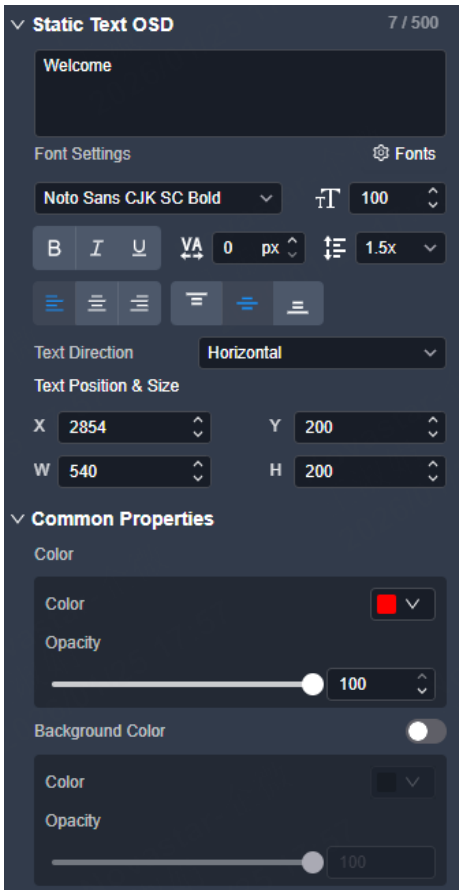


Table 3-3 Parameter descriptions

Area	Parameter	Description
Text area	-	Enter the text OSD content. The static text OSD supports multi-line display. You can press **Enter** on the keyboard to have line breaks.
Character	Font Settings	Select the desired text font from the drop-down list.
	Library	• Delete single/multiple fonts: Click **Library**. In the popup window, check the boxes next to the desired fonts, and then click **Delete** to delete the selected fonts. • Delete all fonts: Click **Library**. In the popup window, check the box next to **Library**, and then click **Delete** to delete all fonts. • Add fonts: Click **Library**. In the popup window, click **New** to add the fonts saved in the local computer to the font library.
	Font size	: Set the font size. The value ranges from 8 to 512 px and it defaults to 100 px.

Area	Parameter	Description
	Font style	• : Make the text bold or not. • : Italicize the text or not. • : Underline the text or not.
	Character spacing	: Set the spacing between characters. The value ranges from 0 to 1000 px and it defaults to 0 px.
	Row spacing	: Set the spacing between rows. This parameter is available when there are multiple rows. The value ranges from 0 to 1000 px and it defaults to 0 px.
	Alignment method	Set the text alignment method. • : Align the text content with the left margin of the display area. • : Center the text content in the display area. • : Align the text content with the right margin of the display area. • : Align the text to the top of the display area. • : Center the text vertically to the display area. • : Align the text to the bottom of the display area.
	Layout	Select the text layout direction from the drop-down list. The supported options include **Horizontal**, **From Right (Vertical)** and **From Left (Vertical)**.
	Text position and size	Set the position and size of the OSD component. • X: Set the horizontal distance from the top left corner of the OSD component to that of the screen. • Y: Set the vertical distance from the top left corner of the OSD component to that of the screen. • W: Set the OSD component width. • H: Set the OSD component height.
Common properties	Text color	Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).
	Background color	Toggle on/off **Background Color** to enable or disable the background color settings.

Area	Parameter	Description
		Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).

Dynamic Text OSD

Figure 3-43 Interface example

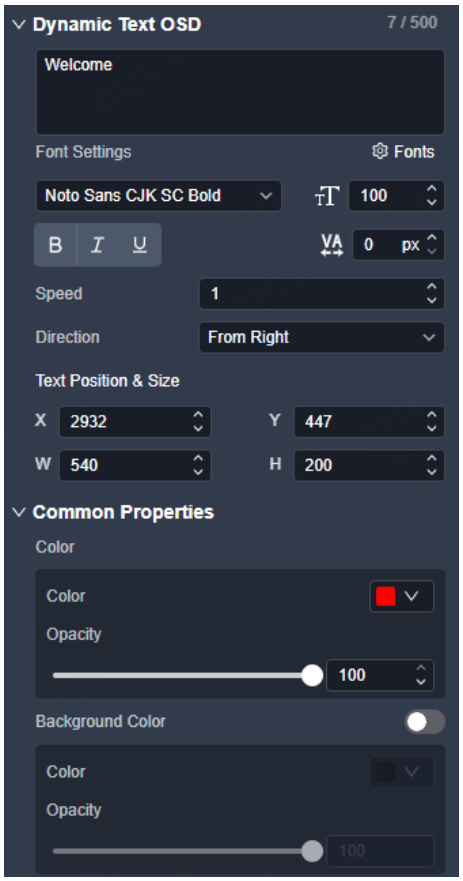


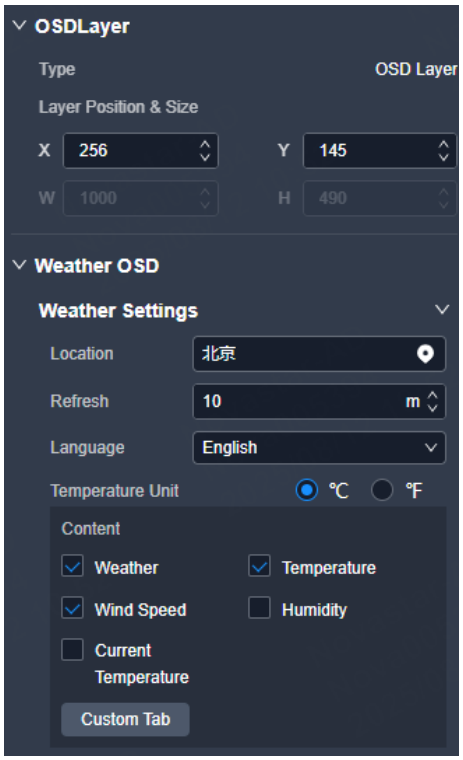
Table 3-4 Parameter description

Area	Parameter	Description
Text area	-	Enter the text OSD content.
Character	Font Settings	Select the desired text font from the drop-down list.
	Library	• Delete single/multiple fonts: Click **Library**. In the popup window, check the boxes next to the desired fonts, and then click **Delete** to delete the selected fonts. • Delete all fonts: Click **Library**. In the popup window, check the

Area	Parameter	Description
		box next to **Library**, and then click **Delete** to delete all fonts. • Add fonts: Click **Library**. In the popup window, click **New** to add the fonts saved in the local computer to the font library.
	Font size	: Set the font size. The value ranges from 8 to 512 px and it defaults to 100 px.
	Font style	• : Make the text bold or not. • : Italicize the text or not. • : Underline the text or not.
	Character spacing	: Set the spacing between characters. The value ranges from 0 to 1000 px and it defaults to 0 px.
	Speed	Set the text scrolling speed. The value ranges from 0 (static) to 10 (fastest).
	Direction	Set the text scrolling direction. • From Left: The text scrolls from right to left in the display area. • From Right: The text scrolls from left to right in the display area.
	Text position and size	Set the position and size of the OSD component. • X: Set the horizontal distance from the top left corner of the OSD component to that of the screen. • Y: Set the vertical distance from the top left corner of the OSD component to that of the screen. • W: Set the OSD component width. • H: Set the OSD component height.
Common properties	Text color	Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).
	Background color	Toggle on/off **Background Color** to enable or disable the background color settings. Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).

Weather OSD

Figure 3-44 Interface example



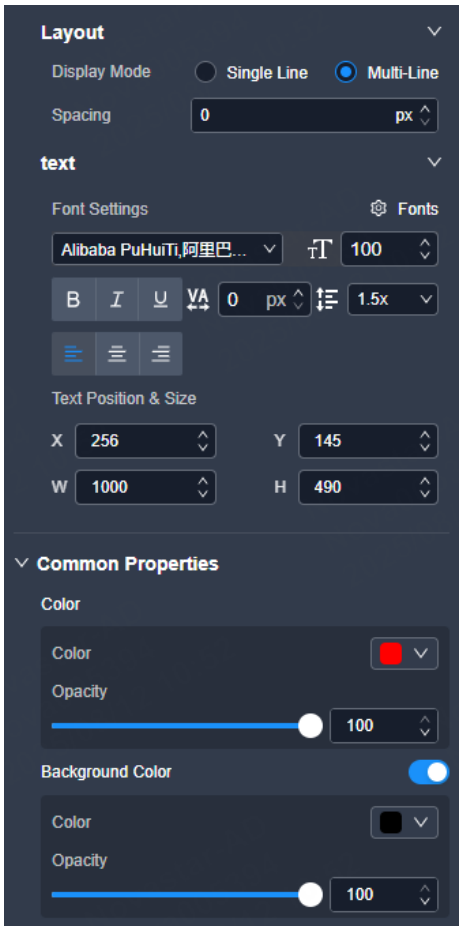


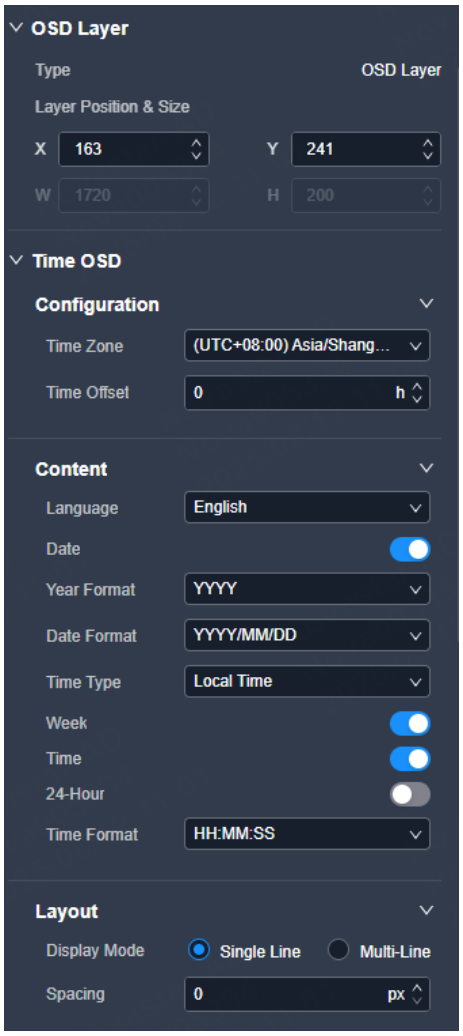
Table 3-5 Parameter description

Area	Parameter	Description
Weather settings	Location	Click  to open the map window, where you can select the desired location or enter the address. Click **OK** to complete the settings.
	Refresh	Set the automatic refresh interval for the weather information. The value ranges from 1 to 1440 minutes and it defaults to 10 minutes.
	Language	Set the text language. The supported options include English and Chinese.
	Temperature Unit	Set the temperature unit. The supported options include **℃** and **℉**.
	Content	Set the content to be displayed in the weather OSD. Check the box next to the desired content to display it in the weather OSD. You can also click **Custom Tab** to edit the default display content.
Layout	Display mode	Set the display mode of the weather OSD. • Single Line: Display all items in single line. • Multi-Line: Display each item in single-line.
	Spacing	Set the spacing between each selected content in **Single Line** display mode or set the spacing between rows in **Multi-Line** display mode.
Text	Font Settings	Select the desired text font from the drop-down list.
	Library	• Delete single/multiple fonts: Click **Library**. In the popup window, check the boxes next to the desired fonts, and then click **Delete** to delete the selected fonts. • Delete all fonts: Click **Library**. In the popup window, check the box next to **Library**, and then click **Delete** to delete all fonts. • Add fonts: Click **Library**. In the popup window, click **New** to add the fonts saved in the local computer to the font library.
	Font size	 : Set the font size. The value ranges from 8 to 512 px and it defaults to 100 px.
	Font style	•  : Make the text bold or not. •  : Italicize the text or not. •  : Underline the text or not.
	Character spacing	 : Set the spacing between characters. The value ranges from 0 to 1000 px and it defaults to 0 px.

Area	Parameter	Description
	Row spacing	 : Set the spacing between rows. This parameter is available when there are multiple rows. The value ranges from 0 to 1000 px and it defaults to 0 px.
	Alignment method	•  : Align the text content with the left margin of the display area. •  : Center the text content in the display area. • 
	Text position and size	Set the position and size of the OSD component. • X: Set the horizontal distance from the top left corner of the OSD component to that of the screen. • Y: Set the vertical distance from the top left corner of the OSD component to that of the screen. • W: Set the OSD component width. • H: Set the OSD component height.
Common properties	Text color	Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).
	Background color	Toggle on/off **Background Color** to enable or disable the background color settings. Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).

Time OSD

Figure 3-45 Interface example



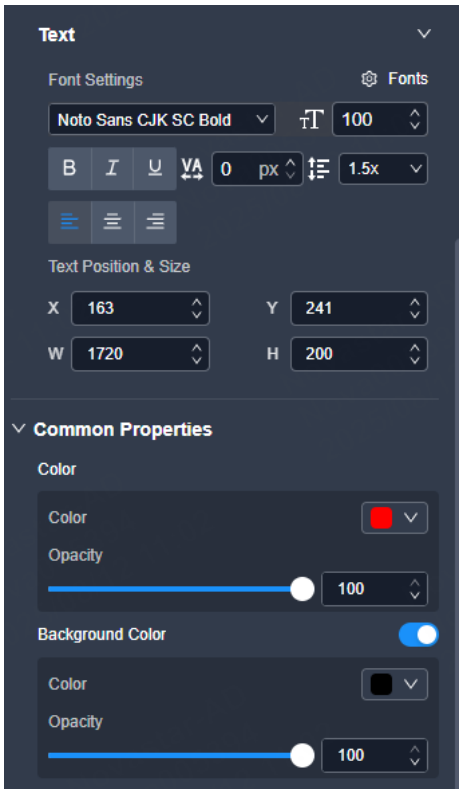


Table 3-6 Parameter descriptions

Area	Parameter	Configuration
Configuration	Time zone	Select the time zone from the drop-down list.
	Time offset	Set the time offset value. The value ranges from -2 to +2 (unit: hour).
Content	Language	Set the text language. The supported options include English and Chinese.
	Date	Display or hide the date. • : Display the date. • : Hide the date.
	Year format	Set the year format. The supported options include YYYY (four-digit year) and YY (two-digit year).
	Date format	Set the date format.
	Time type	The supported options include **Local Time** and **Network Time**.
	Week	Display or hide the week. • : Display the week. • : Hide the week.
	Time	Display or hide the time.

Area	Parameter	Configuration
		• : Display the time. • : Hide the time.
	24-hour	Display the time with 24-hour format or not. • : Display the time with 24-hour forma • : Display the time with 12-hour forma
	Time Format	Set the time format.
Layout	Display mode	Set the display mode of the time OSD. • Single-Line: Display the date, day of the week and time in single-line. • Multi-Line: Display each item in single-line.
	Spacing	Spacing: Set the spacing between the date, day of the week and time in **Single Line** display mode or set the spacing between rows in **Multi-Line** display mode.
Text	Font Settings	Select the desired text font from the drop-down list.
	Library	• Delete single/multiple fonts: Click **Library**. In the popup window, check the boxes next to the desired fonts, and then click **Delete** to delete the selected fonts. • Delete all fonts: Click **Library**. In the popup window, check the box next to **Library**, and then click **Delete** to delete all fonts. • Add fonts: Click **Library**. In the popup window, click **New** to add the fonts saved in the local computer to the font library.
	Font size	: Set the font size. The value ranges from 8 to 512 px and it defaults to 100 px.
	Font style	• : Make the text bold or not. • : Italicize the text or not. • : Underline the text or not.
	Character spacing	: Set the spacing between characters. The value ranges from 0 to 1000 px and it defaults to 0 px.
	Row spacing	: Set the spacing between rows. This parameter is available when there are multiple rows. The value ranges from 0 to 1000 px and it defaults to 0 px.
	Alignment method	• : Align the text content with the left margin of the display area. • : Center the text content in the display area.

Area	Parameter	Configuration
		• 
	Text position and size	Set the position and size of the OSD component. • X: Set the horizontal distance from the top left corner of the OSD component to that of the screen. • Y: Set the vertical distance from the top left corner of the OSD component to that of the screen. • W: Set the OSD component width. • H: Set the OSD component height.
Common properties	Text color	Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).
	Background color	Toggle on/off **Background Color** to enable or disable the background color settings. Click the color block icon next to **Select Color** to open a window where you can select the desired color or customize your own color. Drag the slider or enter a value in the text box to adjust the opacity. The opacity ranges from 0% (totally transparent) to 100% (nontransparent).

3.6.8.2 Configure Image OSD

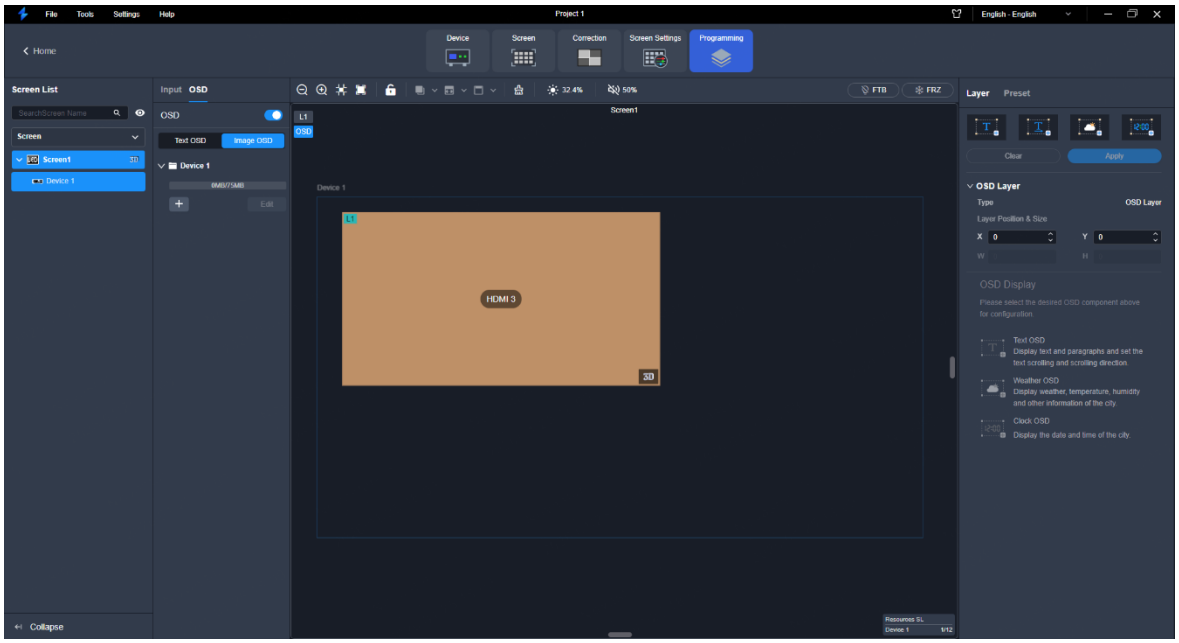
Add Image OSDs

Step 1 In the screen list on the left, select the desired screen.

Step 2 Click the **OSD** tab.

Step 3 Toggle the **OSD** switch to  to enable the OSD function.

Figure 3-46 Enable OSD



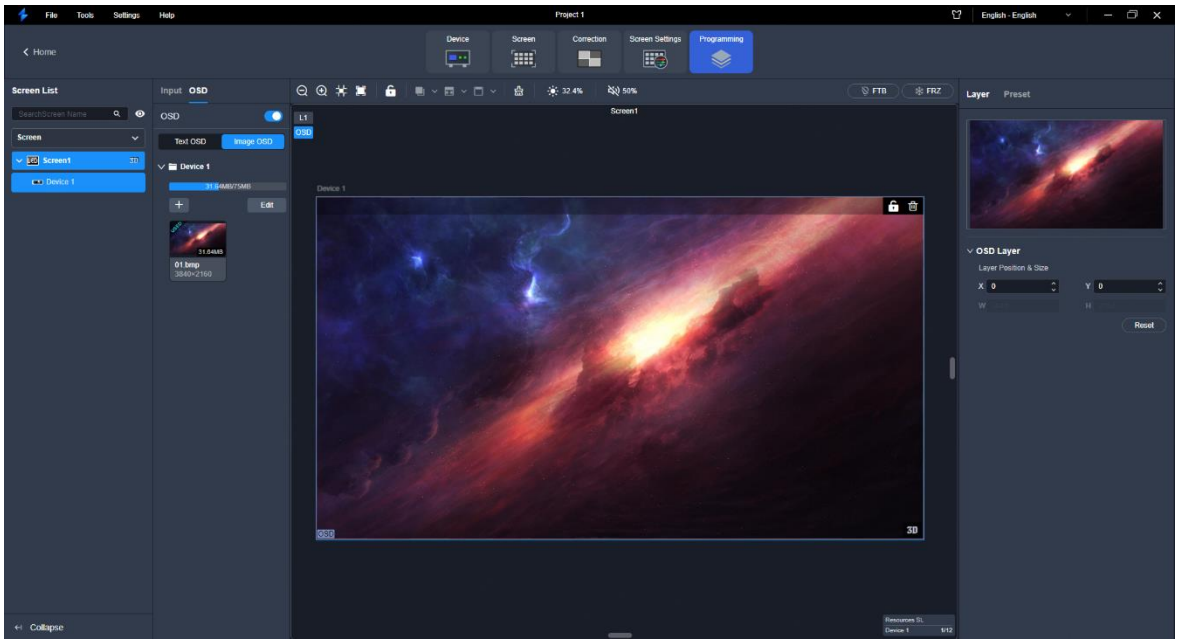
Step 4 Click the **Image OSD** tab to enter the image OSD configuration page.

Step 5 Click  to open a window where you can select the desired OSD images.

Step 6 Click **Open** to upload the selected images.

Step 7 Click and drag the uploaded image to the editing area to add an image OSD.

Figure 3-47 Add image OSDs



Step 8 Set the position and size of the OSD layer.

- X: Set the horizontal distance from the top left corner of the OSD layer to that of the screen.

- Y: Set the vertical distance from the top left corner of the OSD layer to that of the screen.

Delete Gallery Images

- Delete a single image: Hover the mouse over the desired image, and then click  . In the popup dialog box, select **Yes** to delete the selected image.
- Delete multiple images: Click **Edit**, and then check the boxes next to the desired image or check the box next to **All**. After selection, click  and select **Yes** in the popup dialog box.

Export Gallery Images

Click **Edit**, and then click  . In the popup window, select the saving path to export all images in the gallery to your local computer.

3.6.9 Manage Presets

To manage the presets, click **Preset** on the right side of the **Programming** interface and perform the corresponding actions as needed.

Save Presets

Step 1 In the screen list on the left, select the desired screen.

Step 2 On the **Preset** tab interface, click **Add** at the bottom, and the system will automatically display the preset number binding window.

Figure 3-48 Bind presets (VX2000 Pro)

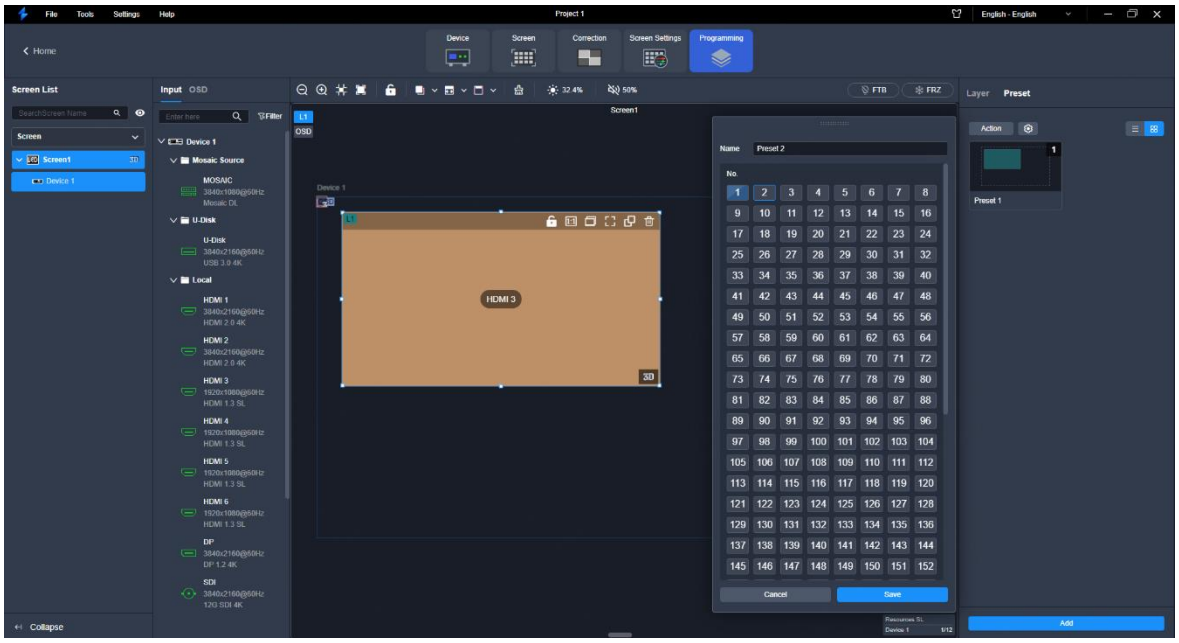
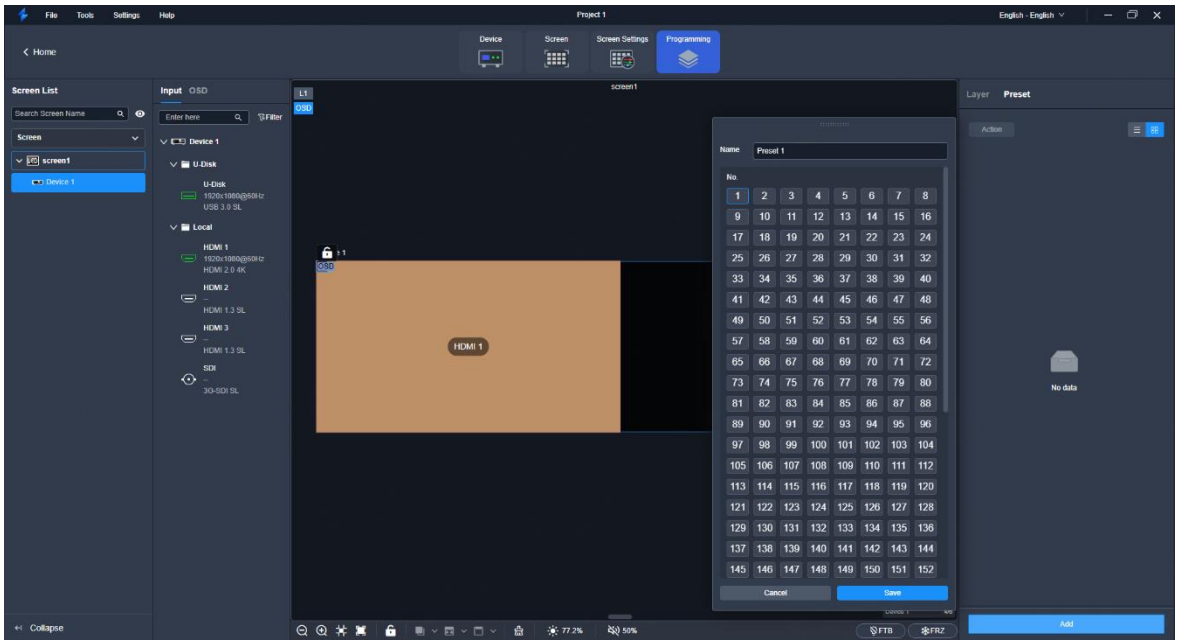


Figure 3-49 Bind presets (VC6 Pro)

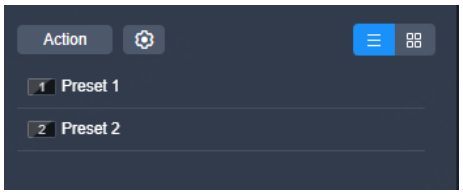


Step 3 In the preset number binding window, select the desired key number to save the current layer information to the preset.

One key number corresponds to one preset. The name of the save preset: Preset X ("X" refers to the bound key number.)

Switch Display Style of Preset List

- : List view



- : Graphical view

Load Presets

In the preset list, select the desired preset to load it.

After the preset is successfully loaded, the icon will be displayed at the top left of the preview area.

Rename Presets

- In the list view mode ( ), hover the mouse over the preset, and then click . Enter a new name and then click elsewhere to make the change take effect.
- In the graphical view mode ( ), hover the mouse over the preview area, and then click that appears. In the popup menu, select **Rename** and enter a new name, and then click elsewhere to make the change take effect.

View Preset Details

- In the list view mode ( ), hover the mouse over the preset, and then click that appears. In the popup window, you can view the name and screen of the preset.
- In the graphical view mode ( ), hover the mouse over the preview area, and then click that appears. In the popup menu, select **Details** to show the popup window where you can view the name and screen of the preset.

Set Preset Switching Effect

Click  , and then select the desired transition effect in the popup menu. The supported options are as follows.

- Cut: Switch one preset to another with no transition effect.
- Fade: Switch one preset to another with a fade effect.

  After selecting **Fade** effect, click **OK** in the popup dialog box. Additionally, you can set the transition duration. The value ranges from 1s to 3s and it defaults to 2s.

Note

- The fade effect takes effect on presets with less than 7x SL layers only.
- Only the VX2000 Pro supports setting of the preset switching effect.

Delete Single Presets

- In the list view mode (), hover the mouse over the preset, and then click  that appears. In the popup window, select **Yes** to delete the preset.
- In the graphical view mode (), hover the mouse over the preview area, and then click  that appears. In the popup menu, select **Delete**, and then select **Yes** in the popup dialog box.

Delete Multiple Presets

Click **Operation**, check the boxes next to the desired presets or check **Select All**, and click  . In the pop-up dialog box, select **Yes**.

3.7 Tools

3.7.1 Maintenance

3.7.1.1 Maintain Devices

In the menu bar, navigate to **Tools** > **Maintain**. Select the **Device** tab and the target devices, and then do the following as required.

Figure 3-50 Device maintenance (VX2000 Pro)

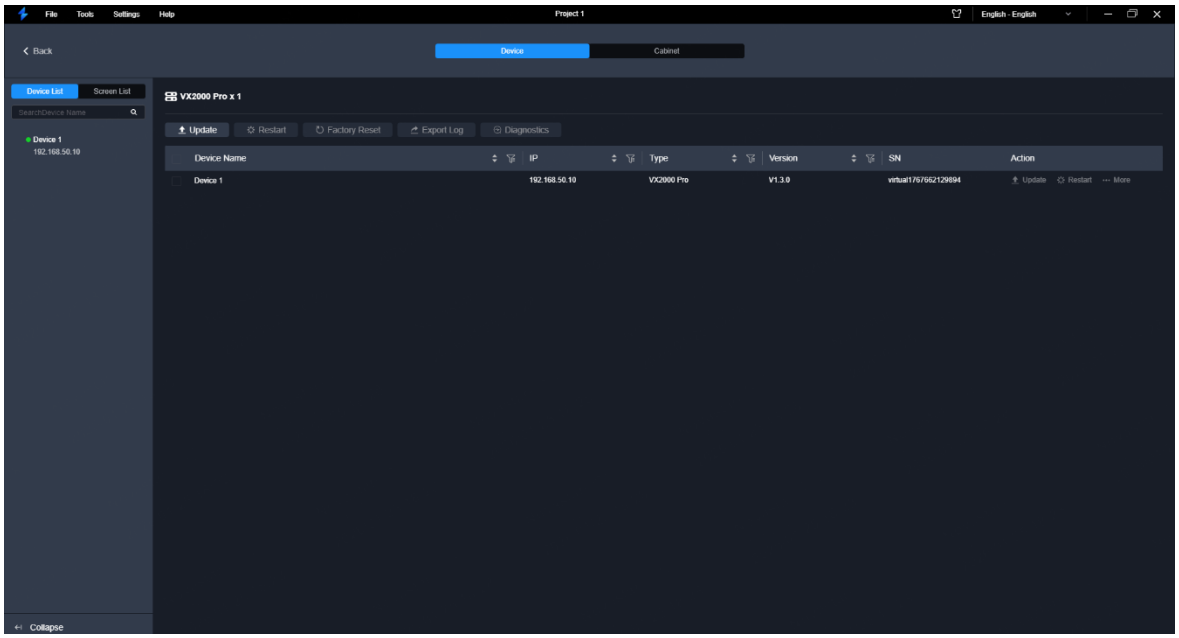
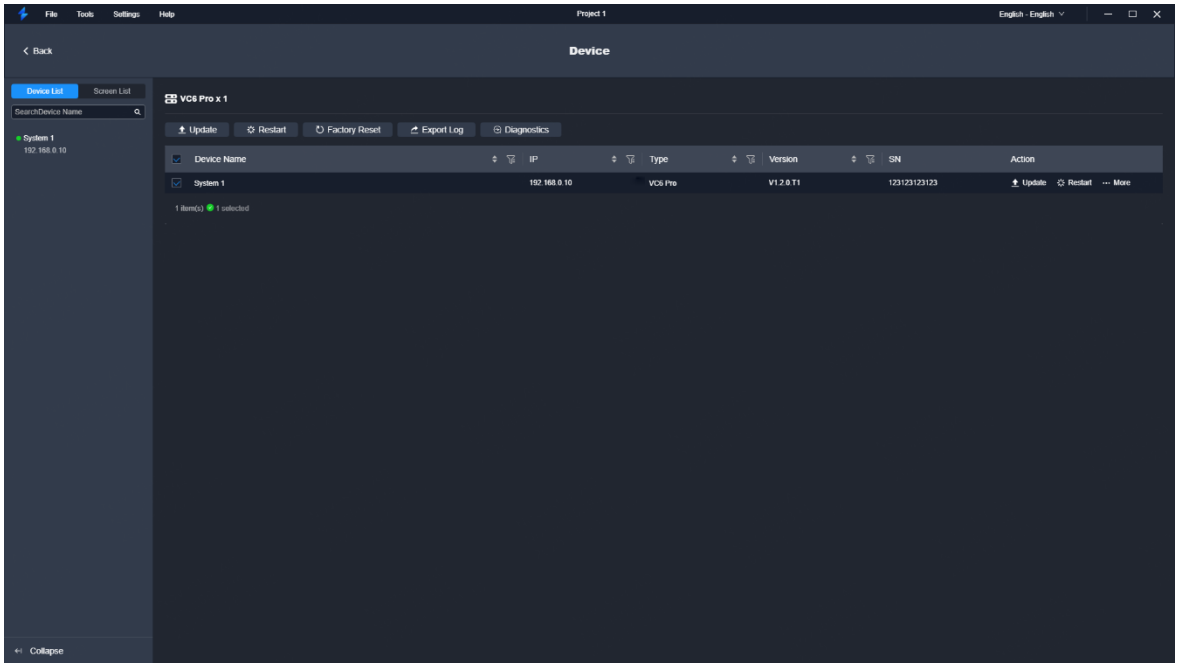


Figure 3-51 Device maintenance (VC6 Pro)



Update

Caution

- During the update process, power-off and all operations are NOT allowed.
- Before updating the device, please connect the control PC and device using an Ethernet cable. USB connection is not allowed for update.

Step 1 Click **Update**.

Step 2 In the pop-up dialog box, select the update file (.img) and click **OK**.

Step 3 Confirm the devices to be updated, and click the **Update** button.

Step 4 In the pop-up dialog box, click **Yes** and wait until the update completes.

Step 5 After the update completes, click **OK**.

Restart

Click **Restart**. In the displayed dialog box, click **Yes** to restart the device.

Factory Reset

Caution

- Please do this with great caution.
- The reset action does not affect the device firmware version.
- Power-off is NOT allowed during the reset process.
- The device will restart automatically after the reset is completed.

Click **Factory Reset**. In the pop-up dialog box, select **Keep user data**, **Retain IP only** or **Reset all**, and then click **OK**.

- Retain user data

  Retain the input EDID, imported files, language, device name, device IP, belonged project and restore points.

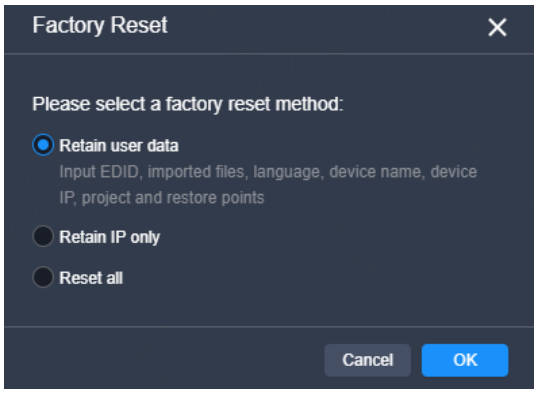
- Retain IP only

  Only retain the device IP address and reset other parameters to factory defaults.

- Reset all

  Reset all parameters.

Figure 3-52 Factory reset



Export Logs

Click **Export Log**. In the dialog box that appears, select a path and click **Save** to save the device logs to local computer.

Device Diagnostics

Click **Diagnostics**. After the diagnostics completes, you can view the test result and take necessary measures as required.

Figure 3-53 Device diagnostics (VX2000 Pro)

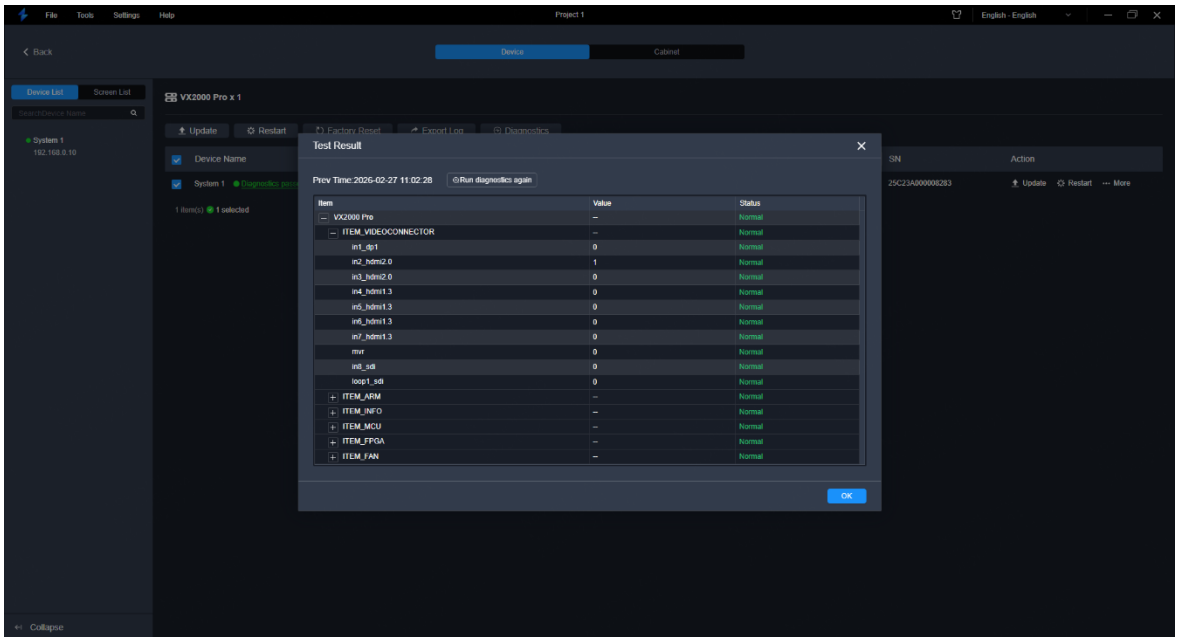
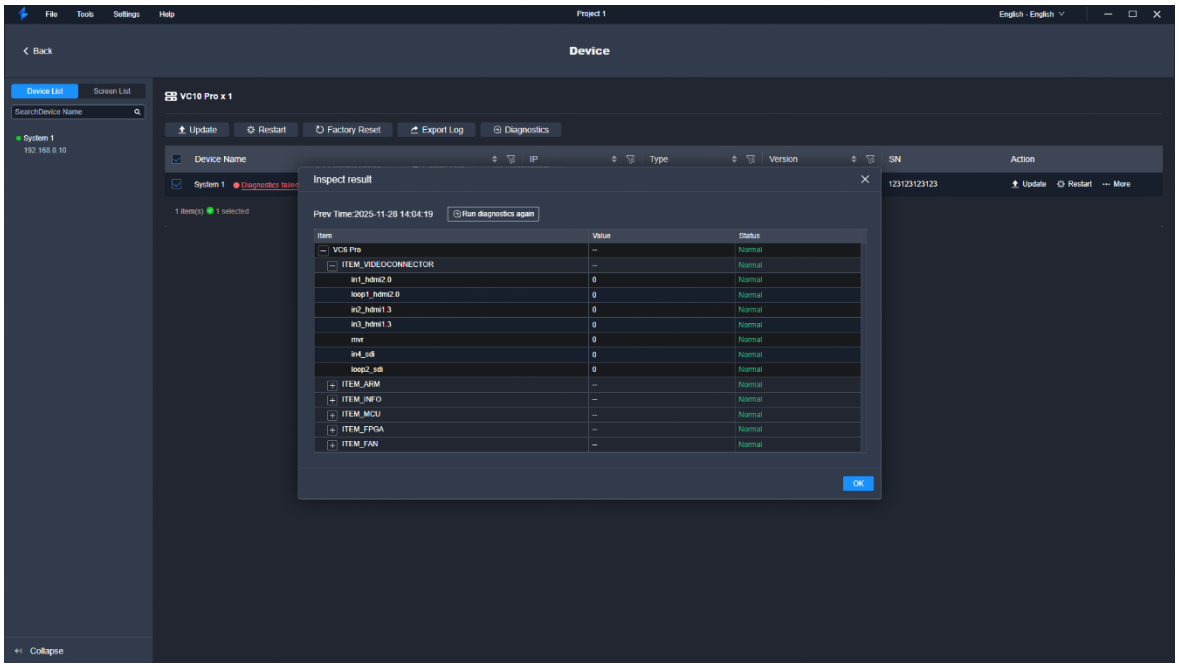


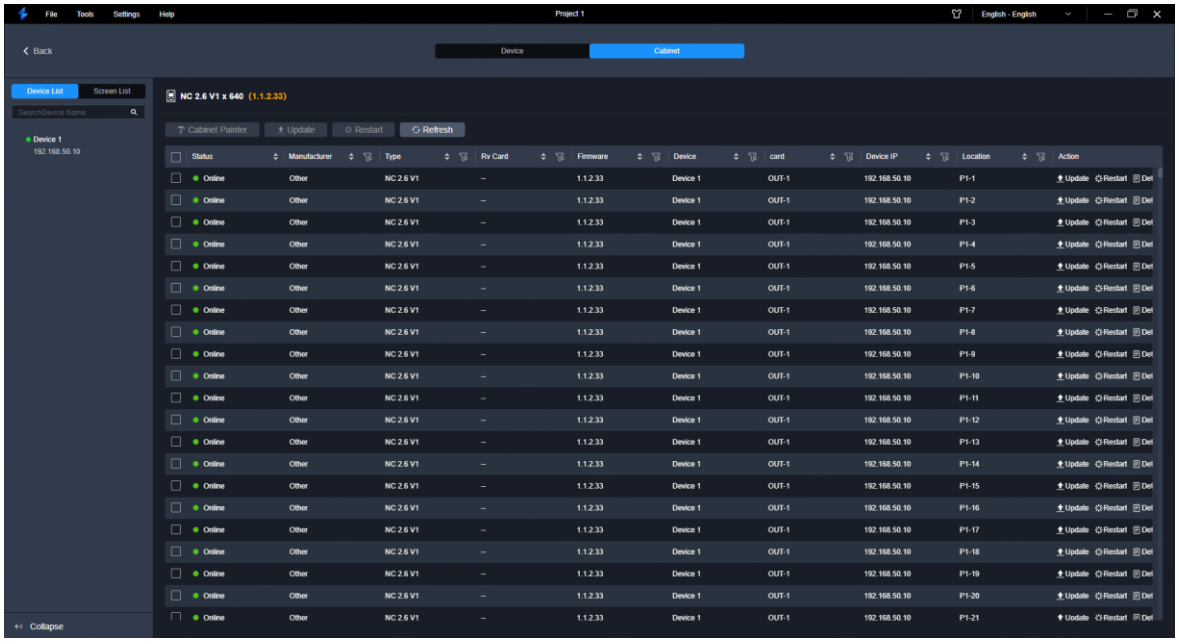
Figure 3-54 Device diagnostics (VC6 Pro)



3.7.1.2 Maintain Cabinets

In the menu bar, navigate to **Tools** > **Maintain**. Select the **Cabinet** tab and the target cabinets, and then do the following as required.

Figure 3-55 Maintain cabinets



View Cabinet Information

View the cabinet online status, cabinet manufacture, cabinet model, receiving card model, receiving card firmware, associated device, card (only applicable for card-based device), device IP and cabinet position.

View Receiving Card Firmware

Click **Details** to view the FPGA and MCU versions of the receiving card.

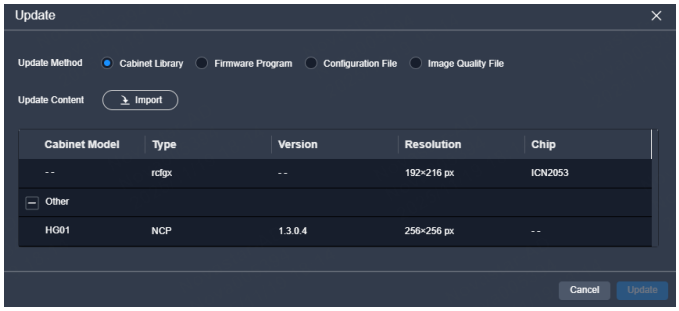
Cabinet Painter

Click **Painter** and select one or more cabinets so that other cabinets can have the same firmware program and configuration file as the selected cabinet.

Update Cabinet Configuration Files

Select one or multiple cabinets, and then click **Update**.

Figure 3-56 Update cabinets



Select the desired update method in the popup window.

- Select an existing file: Choose an NCP/rcfgx file from the popup window and click **Update**.
- Import a new file: Click **Import** to upload an NCP/ file. You can select the import objects (multiple selections are possible) from **Local pack** or **Device pack**. Once the upload is complete, return to the **Update** interface, select the imported NCP/rcfgx file, and click **Update**.
- Firmware Program: Update the firmware version of the receiving card. Upload a file in image format, and then click **Update**.
- Configuration File: Update the cabinet configuration file. Upload an NCP/ rcfgx file, and then click **Update**.

- Image Quality File: Import the adjustment parameters of the image quality. Upload a file in vglcx format, and then click **Update**.

Note

The supported cabinet update method depends on the receiving card model.

Restart Cabinet

Click **Restart**. In the popup dialog box, click **OK** to restart the cabinet.

Refresh Cabinet Info

Click **Refresh** to refresh the cabinet information.

3.7.2 Configure Device Backup

Device backup allows you to set the backup relationship between two devices. You can set one of the devices as the primary device or the backup device. When the primary device has a problem or the primary device's Ethernet cable fails, the backup device will take over the responsibilities of the primary device seamlessly and continue to work well to ensure the LED screen will not go black.

Prerequisites

- Before creating a backup relation, make sure that both the primary and backup devices are on the same LAN.
- In a backup relation, the models and device versions of the primary and backup devices must be the same.

Notes

- You have three options to create a backup relation: NovaLCT, Unico, or the device LCD menu. However, be aware that these methods do not synchronize with each other. Using more than one can lead to data problems. To prevent issues, choose only one method for setting up your backup. If you do mix them, you'll need to reset the device to factory settings and start over with just one method.

- In the device backup mode, the quantity of the cabinets loaded by each Ethernet port on both the primary and backup devices must be the same, but their data flow must be in a reversed way.

Operation Procedure

Step 1 In the menu bar, go to **Settings** > **Device Backup**.

Step 2 In the pop-up window, click **Add** to add a backup relation.

Figure 3-57 Add backup relations (VX2000 Pro)

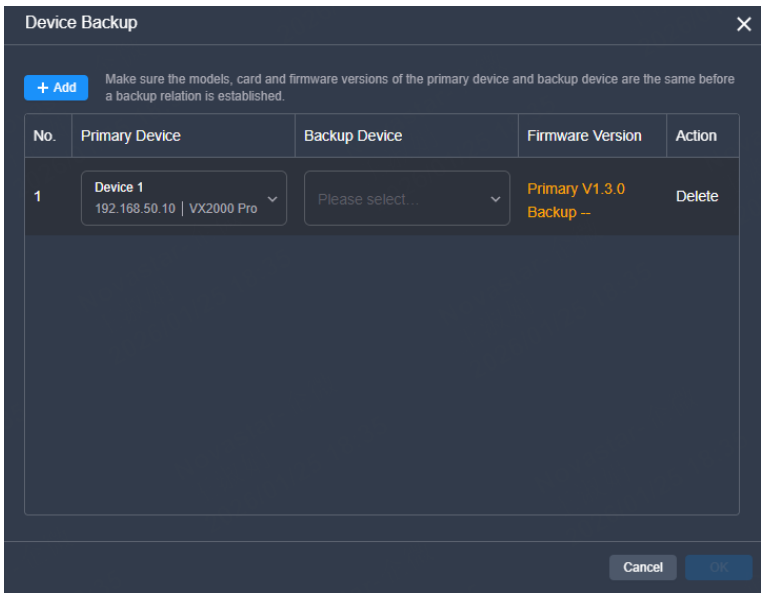
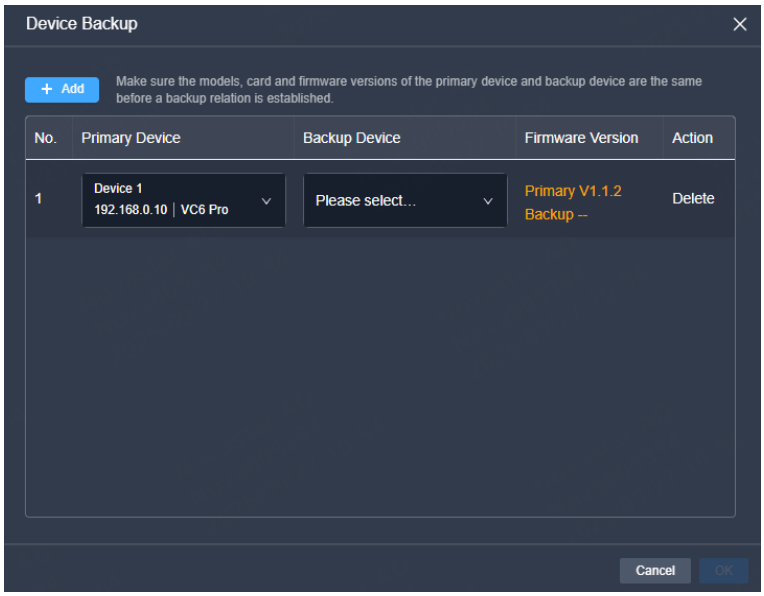


Figure 3-58 Add backup relations (VC6 Pro)



Step 3 Select the primary and backup devices from the drop-down lists respectively.

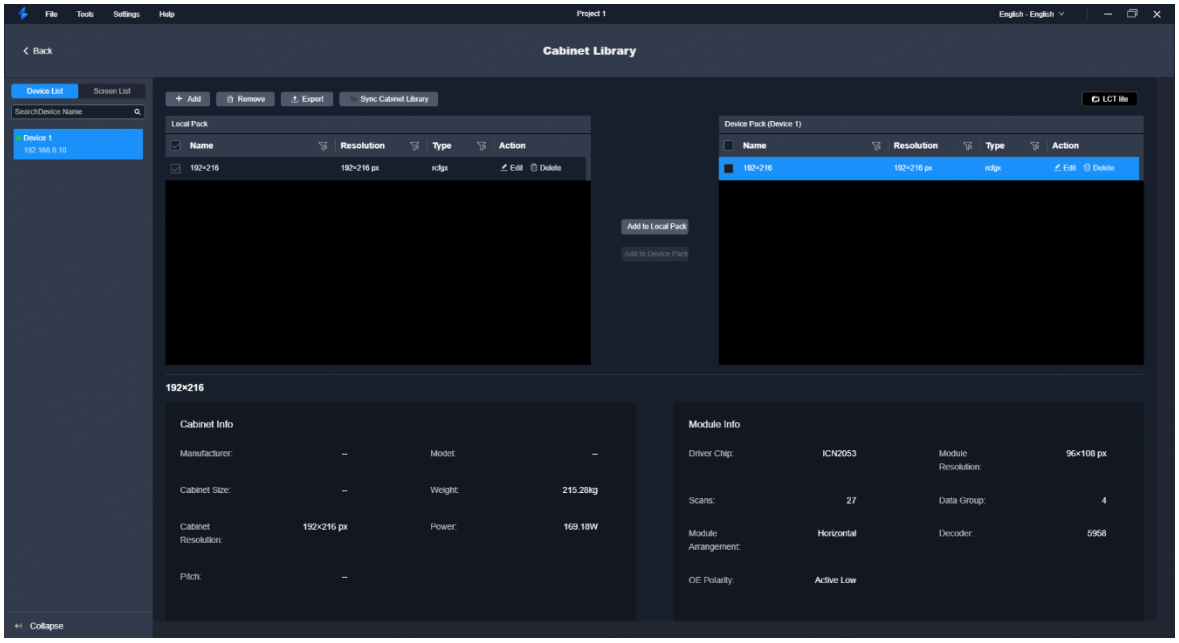
After the action completes, the firmware versions of the primary and backup devices will be displayed.

Step 4 Click **OK** to complete the backup relation settings.

Step 5 (Optional) Click **Delete** to delete the desired backup relation.

3.7.3 Manage Cabinet Library

In the menu bar, go to **Tools** > **Cabinet Library**. Do the followings as needed to manage the cabinet library files.



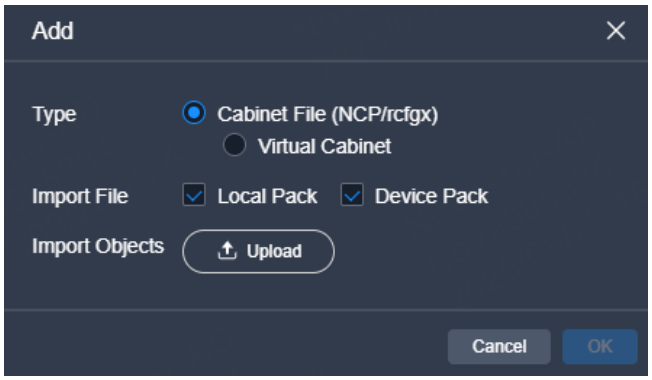
Upload Cabinet Files

Step 1 Click **Add** and select the cabinet type in the displayed window.

The cabinet types are as follows.

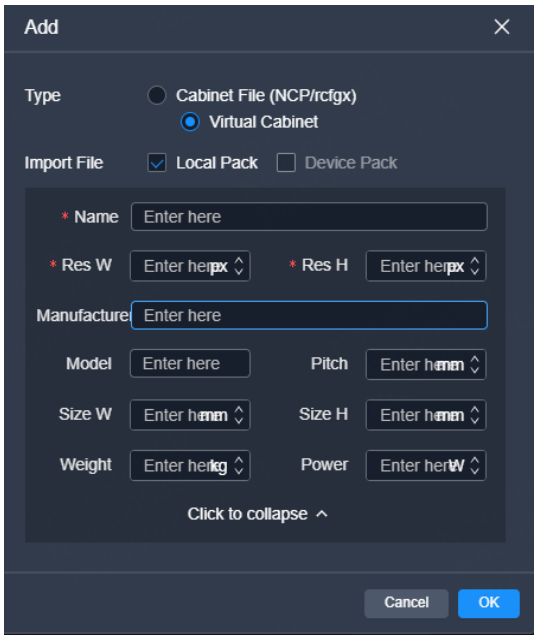
- Cabinet File

Figure 3-59 Cabinet files



- Virtual Cabinet: If **Virtual Cabinet** is selected, you need to configure the parameters such as cabinet name, resolution width and height.

Figure 3-60 Virtual cabinets



Step 2 Select the NCP/.rcfgx file to be imported from the local computer and click **Upload**.

After the file is selected, you can click **Delete** to delete the uploaded file.

Export Cabinet Files

Step 1 Select one or more files on the **Cabinet Library** interface and then click **Export**.

For batch export, multiple files will be compressed as a .zip file and exported.

Step 2 Select a local directory and click **Save**.

Sync Cabinet Files

- Sync cabinet files between devices

  1) Select the files to be synced (multiple files can be selected), and click **Sync Cabinet Library**.

  2) On the displayed window, select the devices to which the files are synced (multiple devices can be selected).

Figure 3-61 Sync cabinet files (VX2000 Pro)

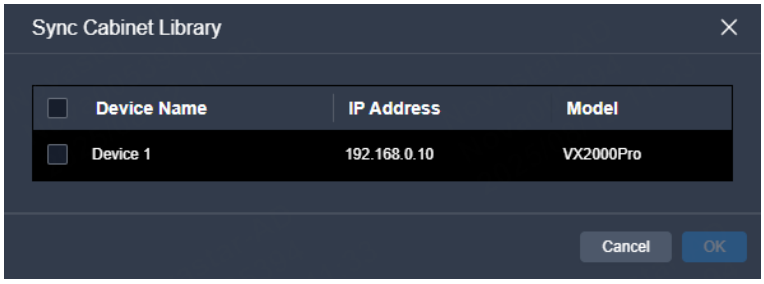
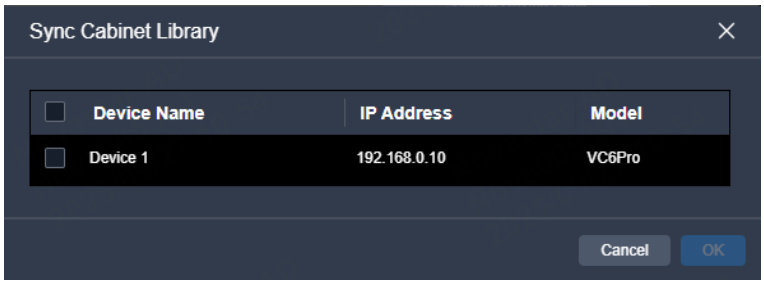


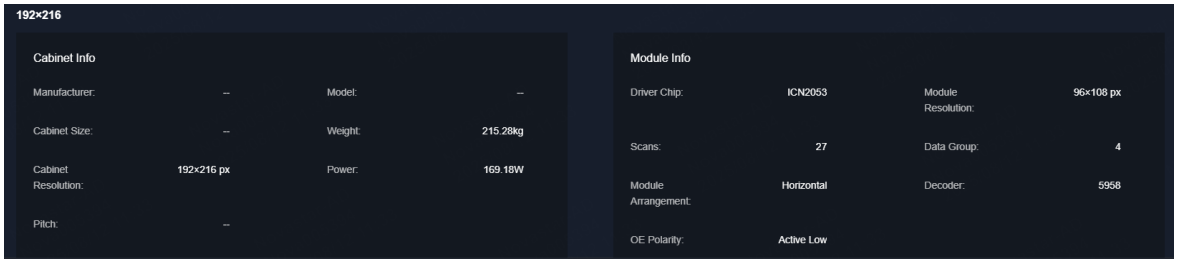
Figure 3-62 Sync cabinet files (VC6 Pro)



3) Click **OK**.

View Cabinet and Flash Info

Select a cabinet file, and the information about all the cabinets that use this cabinet file will be displayed.



3.7.4 Device Discovery

Add devices across different network segments or non-discoverable devices via IP addresses.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

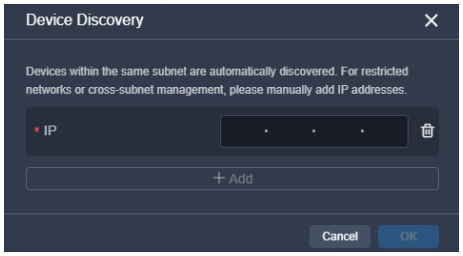
Prerequisites

None

Notes

None

Interface Example



Configuration

Navigate to **Tools** > **Device Discovery** from the menu bar. In the popup window, click **Add** to manually input the device IP. Once added, click **OK**.

3.7.5 Test Tool

Utilize test patterns to assess display performance and pinpoint issues.

Applicable Products

VC6 Pro, VC10 Pro, VC16 Pro, VX400 Pro, VX600 Pro, VX1000 Pro, VX2000 Pro

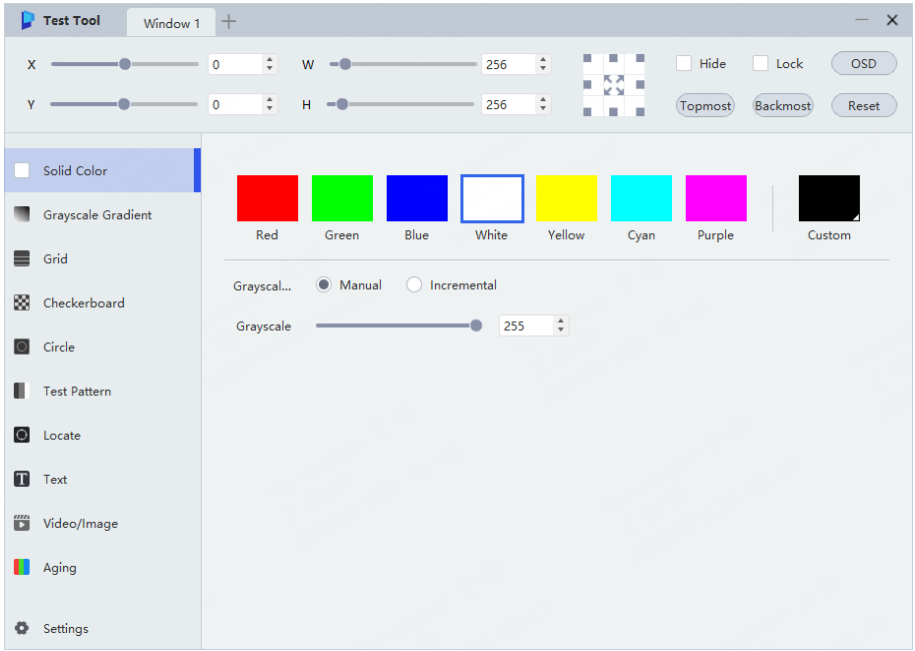
Prerequisites

For better software operation when the display window is large, it is recommended to prepare an extended display for viewing test patterns.

Notes

The test tool only supports Windows operating systems.

Interface Example



Description

Navigate to **Tools** > **Test Tool** from the menu bar to open the test tool configuration interface. Please refer to the *Test Tools User Manual* for specific operations.

3.8 Software Settings

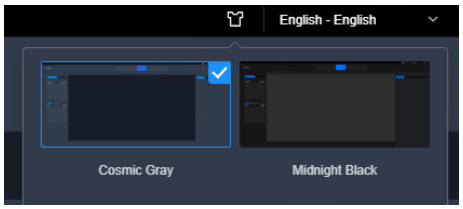
3.8.1 Switch UI Language

Select the desired language from the drop-down list at the top right corner to switch the UI language.

3.8.2 Change Skin

In the upper right corner of the interface, click  to select the desired skin.

Figure 3-63 Change skin



3.8.3 Export Logs

In the menu bar, navigate to **Settings** > **Export Log** to export the logs of the Unico software.

3.8.4 Configure Preferences

In the menu bar, navigate to **Settings** > **Preferences**. Turn on the desired features (checked "√") or off (unchecked).

- Screen Resources: Show the layer resources on the **Programming** interface if enabled.
- Lock Aspect Ratio: Lock the aspect ratio when adjusting the width and height of new layers if enabled.

3.8.5 View Software Info

In the menu bar, go to **Help** > **About Us** to view the software-related info.

3.8.6 Check User Manual

In the menu bar, navigate to **Help** > **User Manual** to scan the QR code or click the link provided to access the latest product documentation.

4 Appendix

4.1 Loading Capacity Calculation Method in Low Latency Mode

In low latency mode, the effective loading capacity of a single Ethernet port will change according to the coordinates of the connected cabinets. This chapter introduces how to calculate the effective loading capacity of an Ethernet port in low latency mode.

Calculation Formula

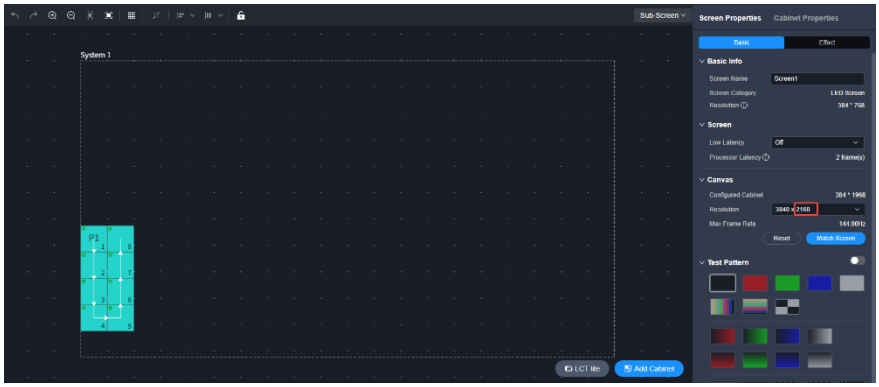
Max loading capacity of a single Ethernet port = (1 - (Y / H)) × TOTAL

- Y: The minimum Y coordinate of all cabinets loaded by a single Ethernet port
- H: The total height of the current canvas
- TOTAL: The maximum loading capacity of a single Ethernet port in common mode, fixed to 650,000.

Calculation Example

As shown in the figure below, the minimum Y coordinate of the cabinets connected to an Ethernet port is 1200 (Y = 1200), the total height of the canvas is 2160 (H = 2160), and the max loading capacity is 650,000 (TOTAL = 650,000). Based on the calculation formula, the maximum loading capacity of this Ethernet port in low latency mode is:

(1 - (1200 / 2160)) × 650,000 ≈ 0.556 × 650,000 ≈ 361,400



Note

The loading capacity of the Ethernet port is only related to the minimum Y coordinate of the connected cabinets and has nothing to do with the X coordinate.

5 Copyright

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