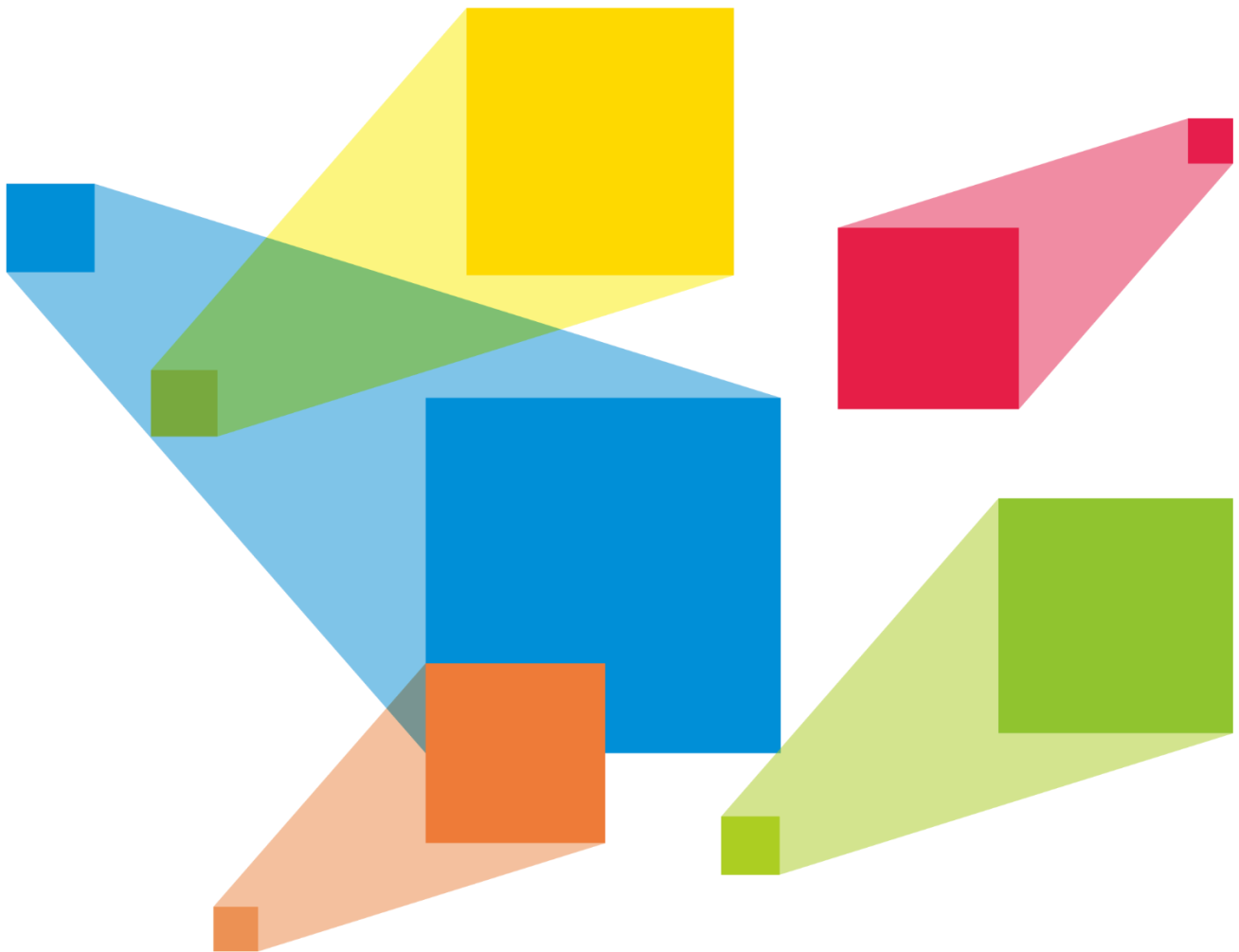


NovaPro UHD Jr

Embedded Software

V1.0.1



User Manual

Change History

Document Version	Release Date	Description
V1.0.1	2020-03-19	<ul style="list-style-type: none">• Added the descriptions for the DVI mosaic backup function.• Added the descriptions for the input source color range converting function.• Added the notices.
V1.0.0	2019-12-31	First release

Notices

- When you update the NovaPro UHD Jr to V1.2.0.0.STD or later version, you must reset the device to factory settings after the update to ensure the device functions normally.
- Web page does not support reading the screen configuration from NovaLCT and SmartLCT.

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1 Overview

The NovaPro UHD Jr allows for the controlling through a PC. You can set the device related parameters through a web browser. The settings are the same as that of the device front panel.

The supported web browsers are as follows.

- Chrome 76 and later version
- Safari 10 and later version

Note:

When you use a PC to control the device, the device front panel buttons are locked and a lock icon appears on the front panel LCD screen.

1.1 Device Connection

Hardware connections for device control on a PC are as follows.

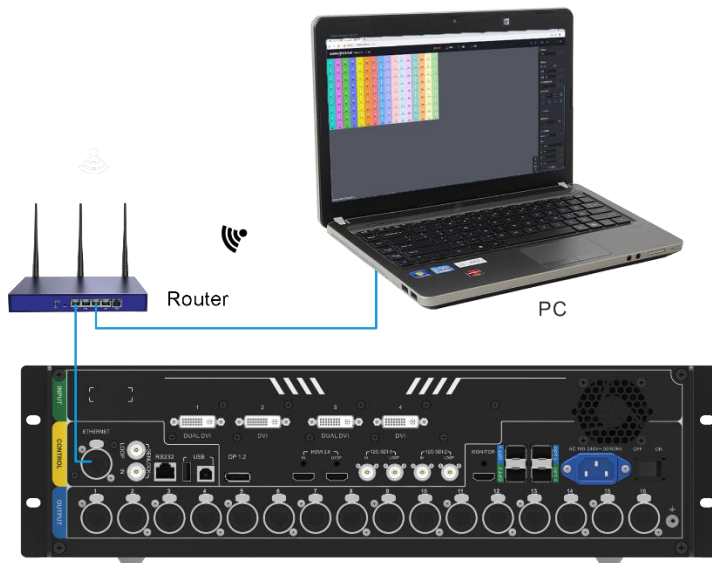
- Direct connection

Connect the Ethernet port of the PC to the Ethernet port of the device with an Ethernet cable.



- Using a router

Connect the Ethernet ports of the device and PC to the LAN ports of the router.



1.2 Web Page Login

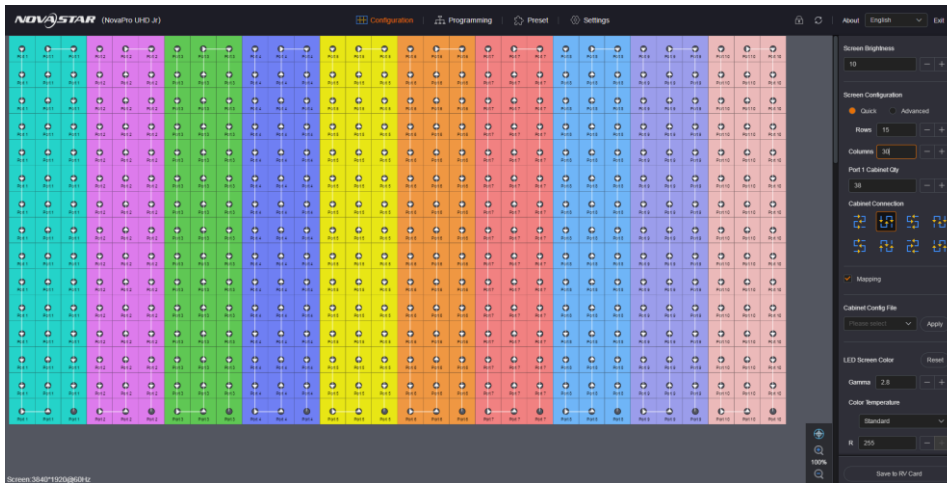
- Step 1 Open the suggested web browser on your computer, and enter “http://the device IP address” into the address bar.
- Step 2 Press **Enter** and the browser will jump to the login interface of the Web page.
- Step 3 Enter the login password.

Note:

The default password is “88888888”. You can go to **Settings > Change Password** to change the password after login.

- Step 4 Click **Login** to log in to the Web page.

1.3 Web UI Introduction



- **Configuration**

Set the LED screen loaded by the NovaPro UHD Jr. The settings include LED screen brightness, quick configuration, advanced configuration, mapping, cabinet configuration file application and LED screen color.

- **Programming**

Perform the layer and layer-related properties settings, BKG management, preset saving and loading, black out and freeze of the screen.

- **Preset**

Load, copy and paste, rename, import and export the presets.

- **Settings**

Set the output, test pattern, synchronization, system mode, network, HDR, low latency, 3D mode, image mosaic, firmware update, factory reset, password and device self-test.



Unlock or lock the LCD front panel buttons of the NovaPro UHD Jr.



Refresh and synchronize the device configuration information.

- **Language**

Change the UI language. Chinese and English are supported.

- **Exit**

Log out of the Web page.

2 Software Operations

2.1 Screen Configuration

2.1.1 Screen Brightness

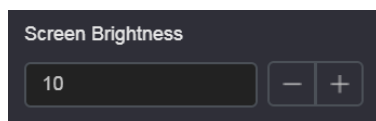
Step 1 Click **Configuration** to enter the screen configuration page.

Step 2 In the **Screen Brightness** area, enter a value.

The brightness value will be sent to the device in real time, and the LED brightness will be changed accordingly.

Click **+** or **-** to fine tune the value.

Figure 2-1 Screen brightness adjustment



0: The lowest brightness (the screen is black)

100: The highest brightness

2.1.2 Screen Configuration

2.1.2.1 Quick Configuration

Prerequisites

- LED screen must be a regular screen.
- Cabinets of the screen must be regular cabinets with the same resolution.
- The following data flow settings are supported. During data flow settings, you must ensure that the physical connection of each port is along the same direction and downward to next one.

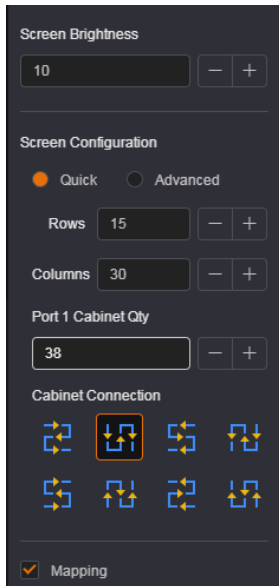


- During data flow settings, you must ensure that the Ethernet Port 1 is at the beginning position of the whole physical connection.
- The quantity of cabinets loaded by each Ethernet port must meet the following requirement: Ethernet port 1 \geq Ethernet port 2 \geq Ethernet port 3 \geq Ethernet port 4 \geq ... \geq Ethernet port 16
- The quantity of cabinets loaded by each Ethernet port must be an integer multiple of the screen cabinet row quantity or column quantity.

Operating Procedure

- Step 1 Click **Configuration** to enter the screen configuration page.
- Step 2 In the Screen Configuration area, select Quick.

Figure 2-2 Quick configuration



- Step 3 Fill the numbers in the **Rows** and **Columns** areas according to the actual row and column quantities of the cabinets of the LED screen.
- Step 4 Fill the number in the **Port 1 Cabinet Qty** area to set the quantity of the cabinets loaded by Ethernet port 1.
- Step 5 Select an appropriate physical connection mode of the cabinets in the **Cabinet Connection** area.

When a cabinet connection is selected, you can view the real-time effect on LED screen. If all the cabinets of the screen display normally, that is, no overlapping or repeated images, the cabinet connection is correct.

Note:

Select **Mapping** to show the relation between each cabinet of the LED screen and the sending device for easier cabinet connection.

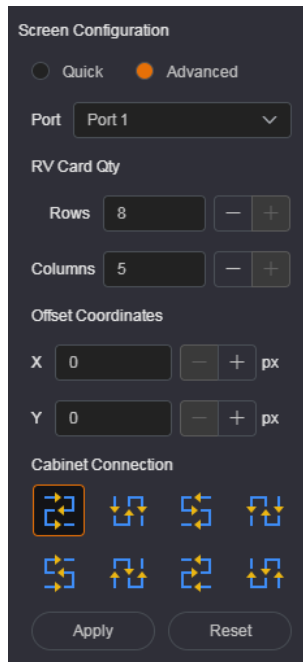
2.1.2.2 Advanced Configuration

You can set the quantities of the rows and columns of the cabinets loaded by each Ethernet port, the cabinet connection, as well as the offset of the area loaded by each Ethernet port, so as to complete the whole LED screen configuration.

Step 1 Click **Configuration** to enter the screen configuration page.

Step 2 In the Screen Configuration area, select Advanced.

Figure 2-3 Advanced configuration



Step 3 Select an Ethernet port from the drop-down list next to **Port**.

Step 4 Fill the numbers in the **Rows** and **Columns** areas to set the quantities of the rows and columns of the cabinets loaded by the selected Ethernet port.

Step 5 Fill the numbers in the **X** and **Y** areas to set the starting position of the cabinets loaded by the selected Ethernet port, that is, the offset of these cabinets. The offset adjustment reference is the top-left corner of these cabinets.

Step 6 Select an appropriate physical connection mode of the cabinets loaded by the selected Ethernet port in the **Cabinet Connection** area.

When a cabinet connection is selected, you can view the real-time effect on LED screen. If all the cabinets of the screen display normally, that is, no overlapping or repeated images, the cabinet connection is correct.

Note:

Select **Mapping** to show the relation between each cabinet of the LED screen and the sending device for easier cabinet connection.

Step 7 Repeat Step 3 to Step 6 to do the same for other Ethernet ports to complete the whole LED screen configuration.

Step 8 Click **Apply** to make the settings take effect.

Click **Reset** to clear all the settings.

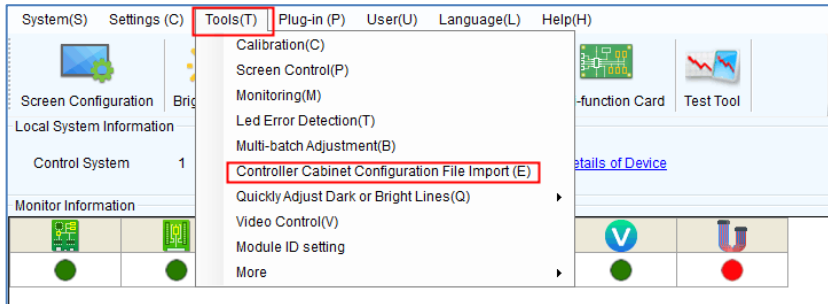
2.1.3 Load Cabinet Configuration Files

After the LED screen is powered on, if a certain cabinet or the entire LED screen is not lit, you can load the cabinet configuration files to light the cabinet or LED screen.

Step 1 Load the cabinet configuration file to the NovaPro UHD Jr.

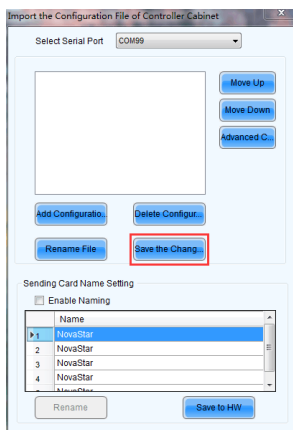
1. Go to **Tools > Controller Cabinet Configuration File Import** to enter the controller cabinet configuration file importing page.

Figure 2-4 Importing controller cabinet configuration file



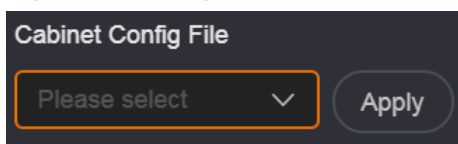
2. Click **Add Configuration File** to select the target file (*.rcfgx/*.rcfg) from your PC, and then click **Open**.
3. Click **Save the Change to HW** to save the configuration file to the NovaPro UHD Jr.

Figure 2-5 Saving to hardware



- Step 2 In the **Cabinet Config File** area, select the desired cabinet configuration file from the drop-down list.

Figure 2-6 Configuration file



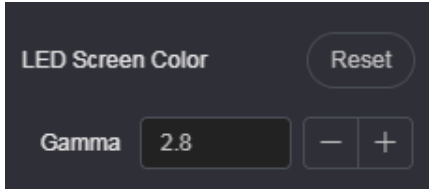
- Step 3 Click **Apply** to send the configuration file to the receiving cards.

2.1.4 LED Screen Color

Gamma

Set the Gamma value to adjust the output image quality.

Figure 2-7 LED screen color adjustment

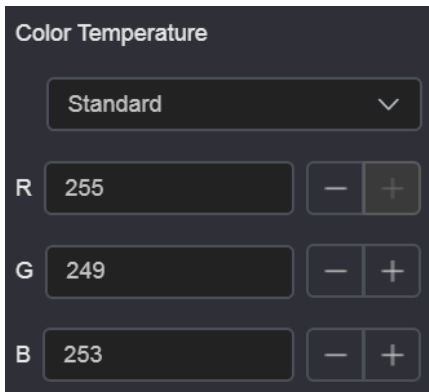


The Gamma value range is 1.0 to 4.0, and it defaults to 2.8.

Color Temperature

Set the image color to **Standard**, **Cool**, **Warm** and **Custom**. Custom allows you to adjust the individual R, G and B values.

Figure 2-8 Color temperature



2.1.5 Save to RV Card

After you completed all the preceding settings, click **Save to RV Card** to save the screen configuration data to the receiving card. You can use those data directly next time, rather than send it to the receiving card again.

2.2 Programming

Click **Programming** to enter the programming page where you can add, delete and edit layers and BKG images.

Figure 2-9 Programming

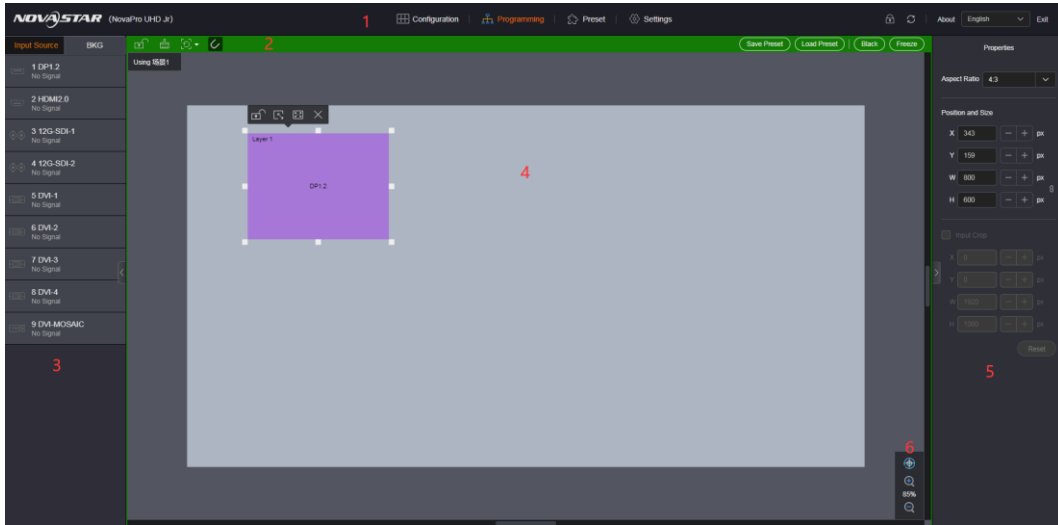











Table 2-1 Programming page descriptions

No.	Description
1	All the function tabs
2	<p>Shortcut menu keys</p> <ul style="list-style-type: none">  / : Lock or unlock all the layers and BKG in the editing area. : Clear all the added layers and BKG in the editing area. : Restore the selected layer or all the layers to default size, that is, 800x600. <ul style="list-style-type: none"> Restore all layers The layer with the lowest priority starts from the top left corner (starting point), and every subsequent layer gets a 50-pixel offset both horizontally and vertically from its previous layer. Restore the selected layer Restore the selected layer to the top left corner. : The snap function is enabled by default. This function makes the layer snap to another layer edge or screen edge when it moves close to another layer or the screen. Save Preset: Save the current layer layout and settings to the target preset for future use. Load Preset: Load a saved preset to the LED screen. Black: Make the output image go black. Freeze: Freeze the current frame of the output image.
3	<p>Input source list and BKG list</p> <p>Input source status descriptions:</p> <ul style="list-style-type: none"> Highlighted: The input source is accessed and normal. Not highlighted: The input source is not accessed or abnormal.
4	Layer and BKG editing area

No.	Description
	Add the layers and BKG, change the layer layout or perform other necessary operations.
5	Properties setting area Set the layer properties, input crop and other items if needed.
6	Zoom options in the editing area <ul style="list-style-type: none"> : Restore the editing area to original view after the area is zoomed out or in. : Zoom in the editing area. : Zoom out the editing area.

2.2.1 Input Settings

The DP, HDMI and DVI connectors support custom and standard resolution settings. Here, we use DVI connector as an example to illustrate the input settings.

Step 1 Hover the mouse over the desired input connector and an icon  appears on the right of the input source name.


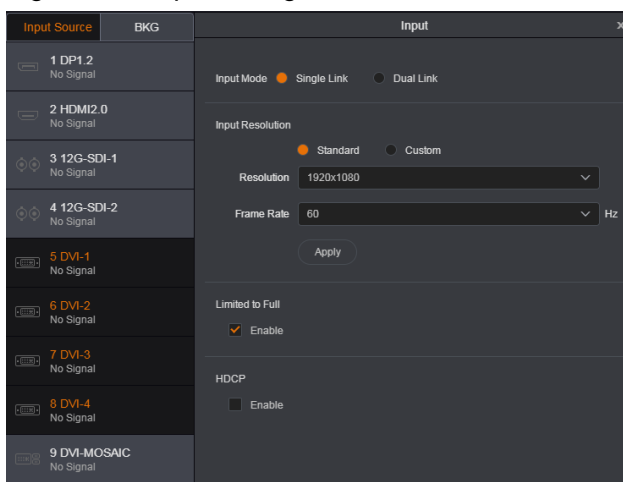
Step 2 Click  to enter the input settings page.

Figure 2-10 Input settings



Step 3 Select the DVI input mode.

DVI connector supports single link and dual link modes.

- Single link mode: DVI 1–4 connectors are all available, and four connectors have the same resolution.
- Dual link mode: DVI 1 and DVI 3 are available, but DVI 2 and DVI 4 are unavailable. DVI 1 and DVI 3 have the same resolution.

Step 4 Set the input resolution.

The DP, HDMI and DVI connectors support custom and standard resolution settings.

- Standard resolution
 - i. Select **Standard**.

Figure 2-11 Standard resolution

Input Resolution

Standard Custom

Resolution 1920x1080

Frame Rate 60 Hz

Apply

- ii. Select an input resolution from the drop-down list next to **Resolution**.
- iii. Select a frame rate from the drop-down list next to **Frame Rate**.
- iv. Click **Apply** to complete the standard resolution settings.

- Custom resolution
 - i. Select **Custom**.

Figure 2-12 Custom resolution

Input Resolution

Standard Custom

Width 1920 - +

Height 1080 - +

Frame Rate 60 Hz

Apply

- ii. Enter a value in the **Width** area.
- iii. Enter a value in the **Height** area.
- iv. Select a frame rate from the drop-down list next to **Frame Rate**.
- v. Click **Apply** to complete the custom resolution settings.

Step 5 Enable or disable the color range function for the input source.

The color range (RGB) of the input source is full by default. If the input source color range is RGB Limited, select **Enable** and the device will convert the color range to RGB Full.

Step 6 Enable or disable the HDCP function.

When the DVI input source is HDCP-encrypted, select **Enable**. If not, deselect **Enable**.

Note:

Only DVI connector supports the input mode and HDCP settings.

2.2.2 DVI Mosaic Settings

Prerequisites

The DVI input settings are done.

Operating Procedure

Step 1 In the **Input Source** area, select **DVI-MOSAIC**.


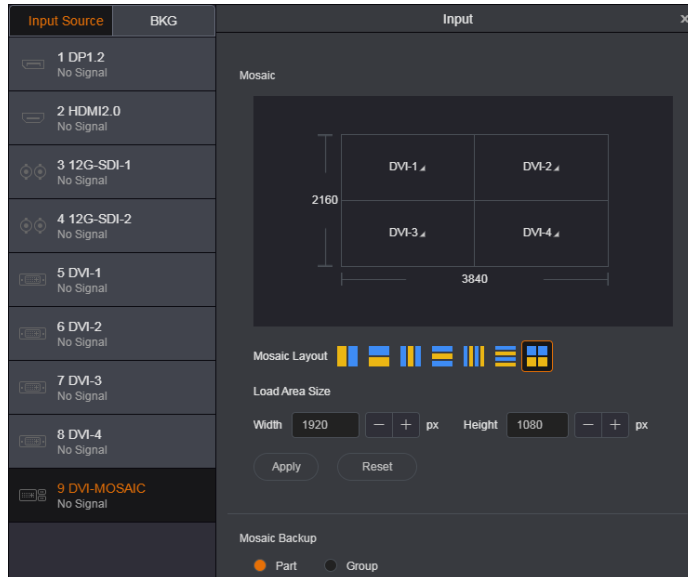
Step 2 Click  to enter the DVI mosaic settings page.

Figure 2-13 DVI mosaic settings



Step 3 Select the desired mosaic layout in the **Mosaic Layout** area.

- Single link mode: 
- Dual link mode: 

Step 4 Set the load area size.

- Single link mode: The default width is 1920 and the range is 64 to 3840. The default height is 1080 and the range is 64 to 3840.
- Dual link mode: The default width is 3840 and the range is 64 to 3840. The default height is 1080 and the range is 64 to 3840.

Note:

The maximum width and height for the DVI input mosaic are 8192 pixels, and the maximum width x the maximum height cannot be greater than 8192x1080.

Step 5 Click **Apply** to make the DVI mosaic settings take effect.

Step 6 Select the mosaic backup mode.

- Part: When one or multiple DVI sources in the DVI mosaic group are abnormal, these sources are not displayed and other DVI sources are displayed normally.
- Group: When one or multiple DVI sources in the DVI mosaic group are abnormal, the backup device replaces the primary device to output the image.

Note:

Part is selected by default. In device backup mode, set **Mosaic Backup** to **Group** for both the primary and backup devices to ensure the output image is displayed normally.

2.2.3 Adding Layers

Step 1 Click the desired input source in the **Input Source** area.

Step 2 Click the editing area and drag the mouse to create a custom-sized layer.

You can also select an input source and drag it to the editing area, and then release the mouse to create an 800x600 layer.

The layer input source is the selected source.

Figure 2-14 Adding layers

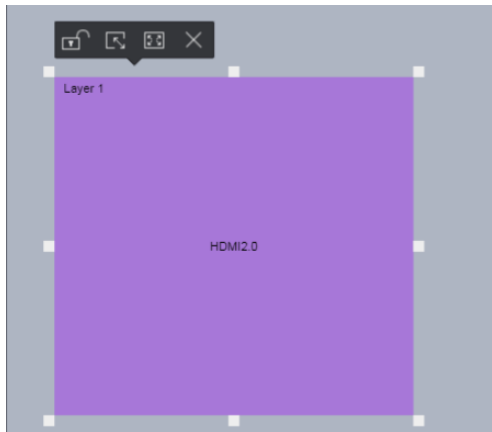


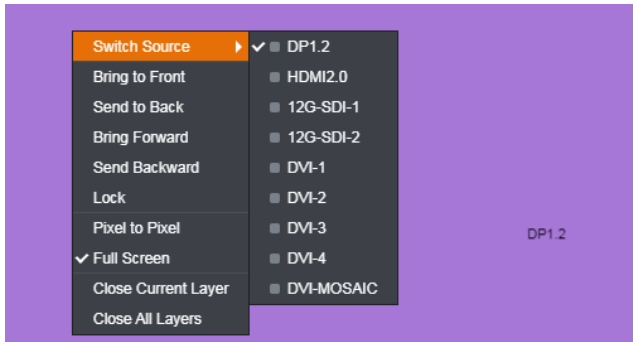
Table 2-2 Layer icon descriptions

Icon	Name	Description
	Unlock layer	When the layer is locked, click this icon to unlock the layer.
	Lock layer	Click this icon to lock the layer.
	Pixel to pixel	In pixel to pixel mode, the layer size is the same as the current input image resolution.
	Close pixel to pixel	Click this icon to exit the pixel to pixel mode.
	Full screen	Click this icon to make the current layer display in full screen.
	Close full screen	Click this icon to exit the full screen mode and restore the current layer to its original size.
	Close layer	Click this icon to close the current layer.

Click any of the small white squares on the layer edges and drag the square to adjust the layer size.

Right click the layer and you can perform the following operations as required.

Figure 2-15 Layer operations

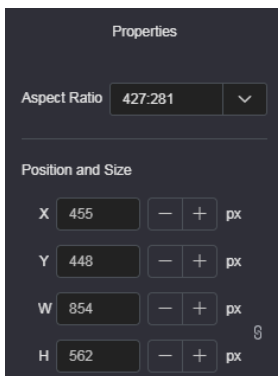


- **Switch Source:** Switch the input source for the current layer.
- **Bring to Front/Send to Back:** Bring the selected layer to front, or send the selected layer to back.
- **Bring Forward/Send Backward:** Move the layer up or down to adjust the layer priority.
- **Pixel to Pixel:** In pixel to pixel mode, the layer size is the same as the current input image resolution. Layer scaling is disabled in this mode.
- **Full Screen:** Make the layer display in full screen.
- **Close Current Layer:** Close the selected layer.
- **Close All Layers:** Close all the layers in the editing area.

2.2.3.1 Layer properties

After a layer is added, the **Properties** pane on the right is available when you click the layer.

Figure 2-16 Setting layer properties



- **Aspect Ratio:** Adjust and show the proportional relationship between the layer width and its height. Select the desired aspect ratio from the drop-down list next to **Aspect Ratio**.



If the layer the width remains the same during the adjusting process, the height will be changed based on the set aspect ratio.

When you manually adjust the layer size in the editing area, the **Aspect Ratio** area displays the actual layer aspect ratio.

- **Position and Size:** Adjust the layer position and size on the screen.
 - X: Set the horizontal coordinate of the layer top-left corner on the screen.
 - Y: Set the vertical coordinate of the layer top-left corner on the screen.
 - W: Set the layer width.

- H: Set the layer height.

Note:

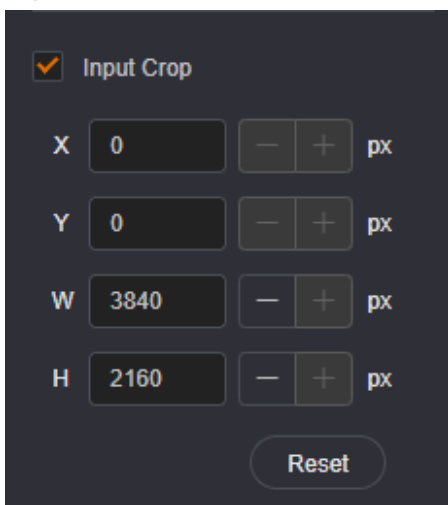
Click  next to the width and height to lock the layer aspect ratio. The icon changes to  when the ratio is locked. If you change the layer width or height at this time, the other parameter changes accordingly based on the locked aspect ratio.

2.2.3.2 Input Crop

If you want to view a certain area of the input source image, crop the input source image and make the desired area display in full screen.

Select **Input Crop** to turn on the function. If no signal is detected, the function is unavailable.

Figure 2-17 Input crop



Input Crop
 X - + px
 Y - + px
 W - + px
 H - + px

- X: Set the horizontal initial position for the input source cropping. The default value is 0 and the range is 0–the horizontal width of the input source.
- Y: Set the vertical initial position for the input source cropping. The default value is 0 and the range is 0–the vertical height of the input source.
- W: The horizontal width of the current input source. If no signal is detected, it defaults to 1920.
- H: The vertical height of the current input source. If no signal is detected, it defaults to 1080.

The effect is shown as follows after the cropping.

Figure 2-18 Input crop effect



Input Source: 1920x1080@60Hz

Layer Size: 1920x1080

2.2.4 BKG Operations

2.2.4.1 Adding BKGs

Add BKG images to the Web page and send those images to the NovaPro UHD Jr. The NovaPro UHD Jr supports BKG images and pure color BKGs.

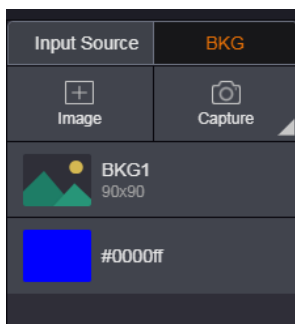
BKG Images

The BKG image must meet the following two requirements at the same time:

- Size ≤ 10 MB
- Pixel count ≤ 1024×1024×8 pixels

Step 1 On the **Programming** page, click **BKG** to show the BKG list.

Figure 2-19 BKG list



Step 2 Click **Image**.

Step 3 Select a local image you want use as a BKG from the window that appears, and then click **Open** to pop up the BKG settings window.


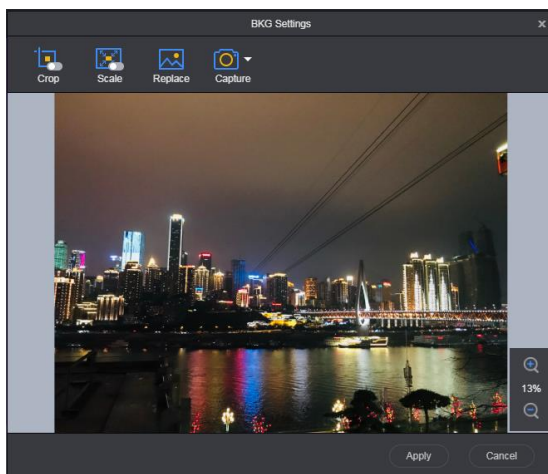


If you want to capture an input source image, click **Capture** and click  next to the input source name in the input source list that appears.

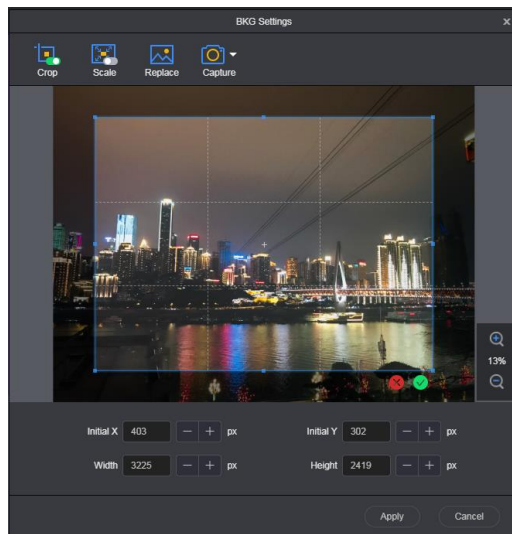
Figure 2-20 BKG settings



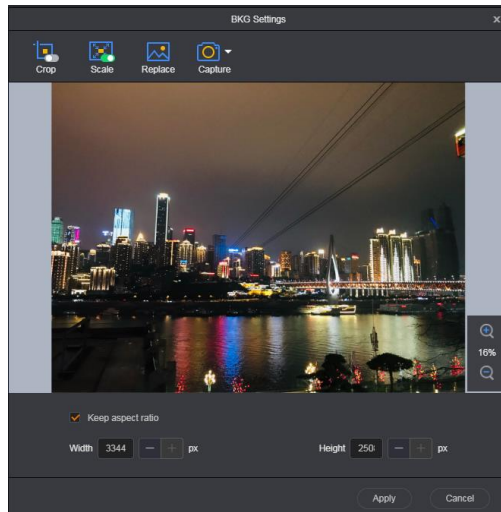
- **Crop:** Crop the imported BKG image and use the image after cropping as the BKG.

The highlighted area is the area to be kept. Click and drag the area to change its position, and drag its edge to change its size.

After settings are done, click  at the bottom-right corner of the area to cancel the selection, and click  to confirm the settings.



- Initial X: Set the horizontal initial coordinate of the top-left corner of the cropping area on the original image.
- Initial Y: Set the vertical initial coordinate of the top-left corner of the cropping area on the original image.
- Width: Set the width of the image after cropping.
- Height: Set the height of the image after cropping.
- Scale: Scale the imported image.



- Keep aspect ratio: After this item is selected, when you adjust the width or height, the system will automatically calculate the height or width based on the set aspect ratio.
- Width: The BKG image width after scaling
- Height: The BKG image height after scaling
- Replace: Select a new BKG image and replace the current one.
- Capture: Capture the current frame of the selected input source and use the captured image as the BKG image.

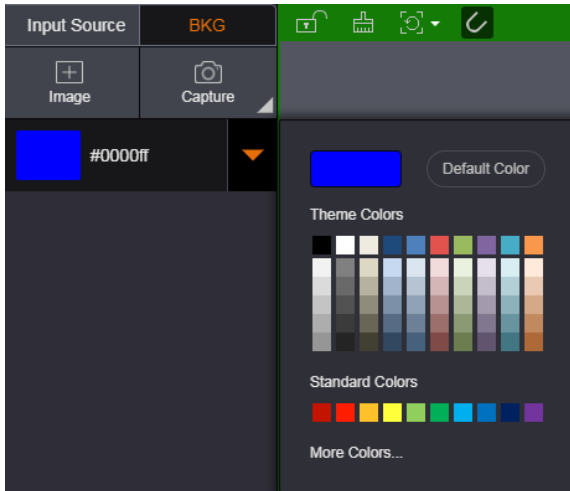
Step 4 Click **Apply** to save the edited BKG image to BKG list and send the BKG image to the NovaPro UHD Jr.

Pure Color BKGs

Move the cursor to the pure color area and click the arrow icon that appears, and then select a color from the displayed dialog box to be used as the pure color BKG.

Click **More Colors** to customize a color.

Figure 2-21 Pure Color BKGs



2.2.4.2 BKG Operations

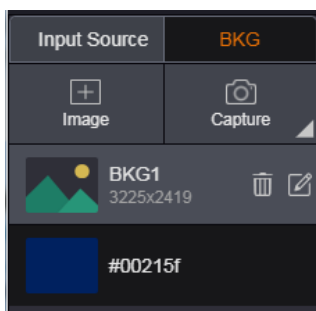
Loading BKGs



Click a BKG in the BKG list to load the BKG image to the editing area. The BKG is always located at the bottom and displayed in full screen. The BKG priority and size cannot be adjusted.

Click  at the top-right corner of the BKG to delete it.

BKG Operations

Hover the mouse over the BKG list to show the BKG operation menu.



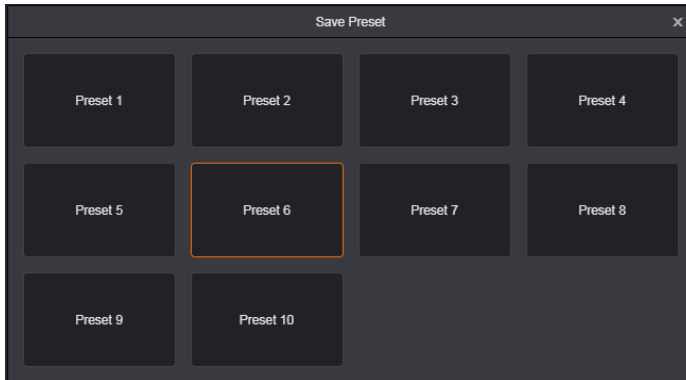
- Click  and then click **OK** in the displayed dialog box to delete the selected BKG.
- Click  to enter the BKG settings page where you can edit the imported BKG image or import the new image.

2.3 Preset

2.3.1 Saving Presets

- Step 1 After the layer is edited on the **Programming** page, click **Save Preset** on the upper-right of the page to pop up the preset saving window.

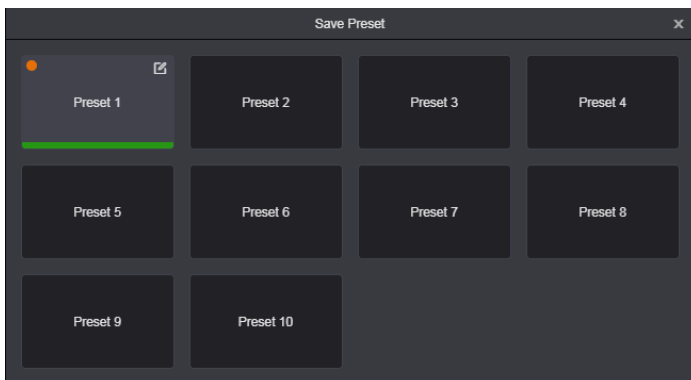
Figure 2-22 Saving presets




- Step 2 Select a preset.

The system will save the current screen information to the selected preset. The selected preset is highlighted.

Figure 2-23 Saving presets completed



Click  at the top-right corner of the saved preset, and rename the preset in the text box.

2.3.2 Loading Presets

You can load the preset by clicking the **Load Preset** button on the **Programming** page, or directly clicking a preset on the **Preset** page.

- Loading presets by clicking the **Load Preset** button

On the **Programming** page, click **Load Preset**. On the displayed preset loading dialog box, click a saved preset to load it to the screen.

- Loading presets by clicking a preset on the **Preset** page

On the **Preset** page, click a saved preset in the preset list on the left to load the selected preset to the screen.

Empty presets cannot be loaded.

2.3.3 Preset Operations

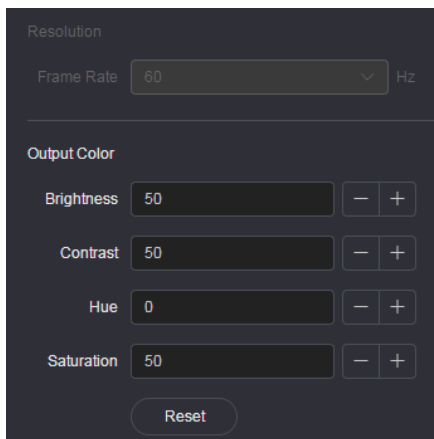
- Click **Clear All** below the preset list to clear all the saved preset data and names.
- Click **Import** to import the preset files. After the importing, all the current saved presets will be cleared.
- Clear **Export** to export the saved presets as preset files which can be imported easily in future use.
- Right click menu

Right click a saved preset to access the right click menu. Select **Copy** to copy the preset and select **Clear** to clear the preset.

After the copying, right click another preset and select **Paste** to paste the preset you selected previously.

2.4 Settings

2.4.1 Output Settings

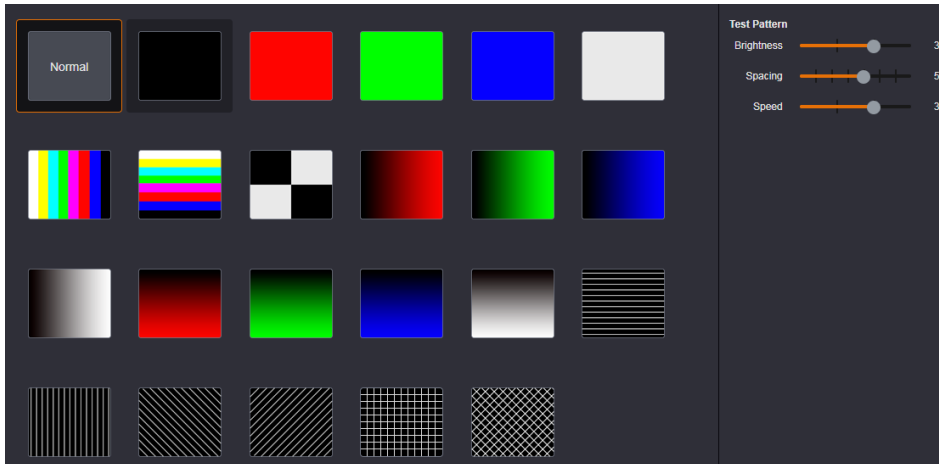


- Resolution: Click the arrow next to **Frame Rate** to select an output frame rate from the drop-down list.
- Output Color: Set the output image quality by adjusting the values of brightness, contrast, hue and saturation.

Menu	Description
Brightness	Adjust the brightness of the layer image. The default value is 50 and the range is 0 to 100.
Contrast	Adjust the contrast of the layer image. The default value is 50 and the range is 0 to 100.
Hue	Adjust the hue of the layer image. The default value is 0 and the range is -180 to +180.
Saturation	Adjust the saturation of the layer image. The default value is 50 and the range is 0 to 100.

2.4.2 Test Pattern

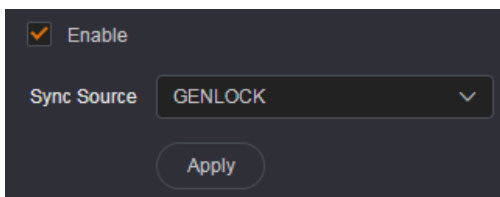
Test pattern is used to test the display effect and working status of the LED screen. Test patterns include **Pure Color**, **Gradient**, **Grid**, **Brightness**, **Spacing** and **Speed**.



- Normal: Close the test pattern and display the current playback image normally.
- All the test patterns
- Brightness: Set the brightness of the test pattern. The value range is 1 to 4, and it defaults to 3.
- Spacing: When the test pattern is gradient or grid, the item is available. When the test pattern is pure color, the item is unavailable. The value range is 1 to 8, and it defaults to 5.
- Speed: When the test pattern is grid, the item is available and is used to set the moving speed of the grid. When the test pattern is pure color or gradient, the item is unavailable. The value range is 1 to 4, and it defaults to 3.

2.4.3 Synchronization Mode

Select a synchronization signal to synchronize all the cascaded devices and make the output images of all the devices in synchronous display.



- Step 1 Select **Enable** to turn on the synchronization function.
- Step 2 Select a synchronization source from the drop-down list next to **Sync Source**.

The NovaPro UHD Jr allows an external Genlock source or the connected input source to be used as the sync source. If the resolution of the sync source changes or the sync source cable is re-plugged, please re-configure the sync mode.

2.4.4 System Mode

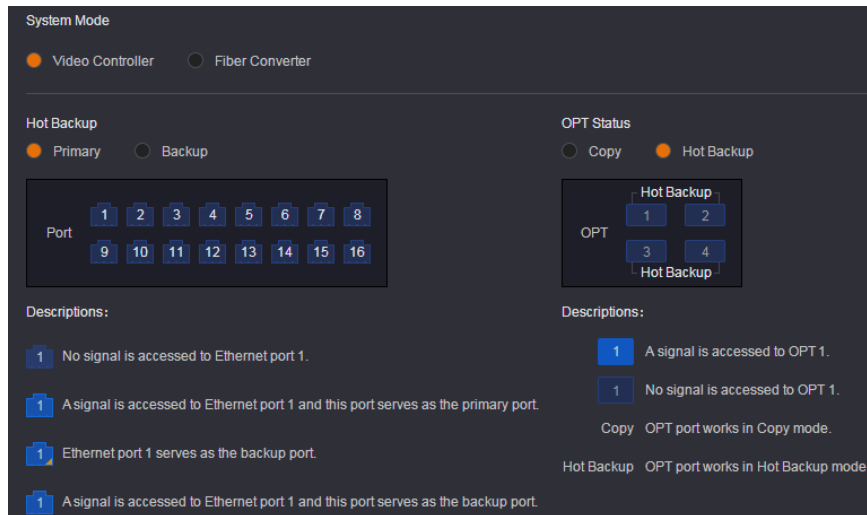
The NovaPro UHD Jr can work as a video controller (default) or fiber converter.

- Video Controller: Ethernet ports and OPT ports are all used for output.
- Fiber Converter: OPT ports are used for input, but Ethernet ports are used for output.

2.4.4.1 Video Controller Mode

On the **System Mode** page, select **Video Controller** to show the video controller mode settings.

Figure 2-24 Video controller mode settings



Hot Backup

Set the device as the primary or backup device. When the primary device fails or any input source of the primary device is abnormal, the backup device takes over the job automatically to load the LED screen.

Note:

For detailed Ethernet port status descriptions, please see **Descriptions** on the **System Mode** page.

OPT Status

The NovaPro UHD Jr supports both **Copy** and **Hot Backup** (default) modes for OPT ports. OPT 1 copies the data on Ethernet ports 1 to 8, and OPT 2 copies the data on Ethernet ports 9 to 16.

- Hot Backup: OPT 3 serves as the hot backup for OPT 1, and OPT 4 serves as the hot backup for OPT 2.
- Copy: OPT 3 serves as the copy for OPT 1, and OPT 4 serves as the copy for OPT 2.

Figure 2-25 Connections for hot backup mode

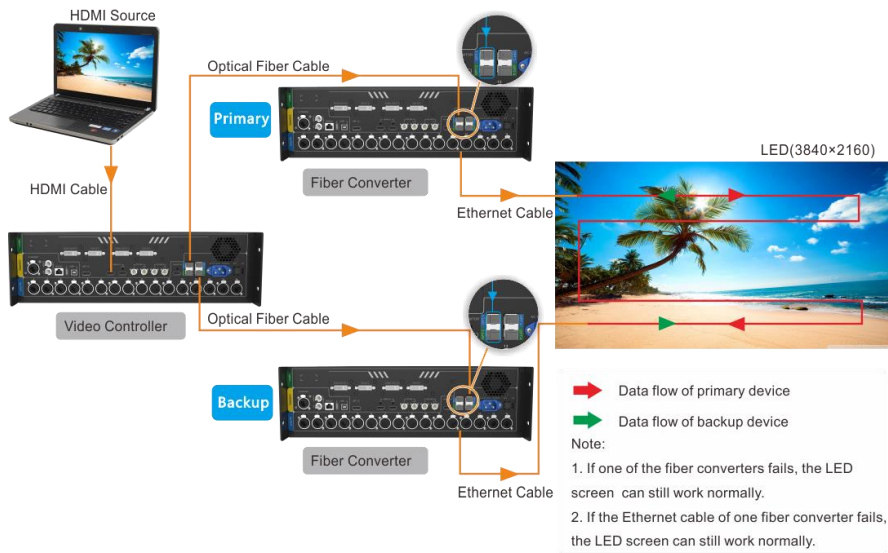
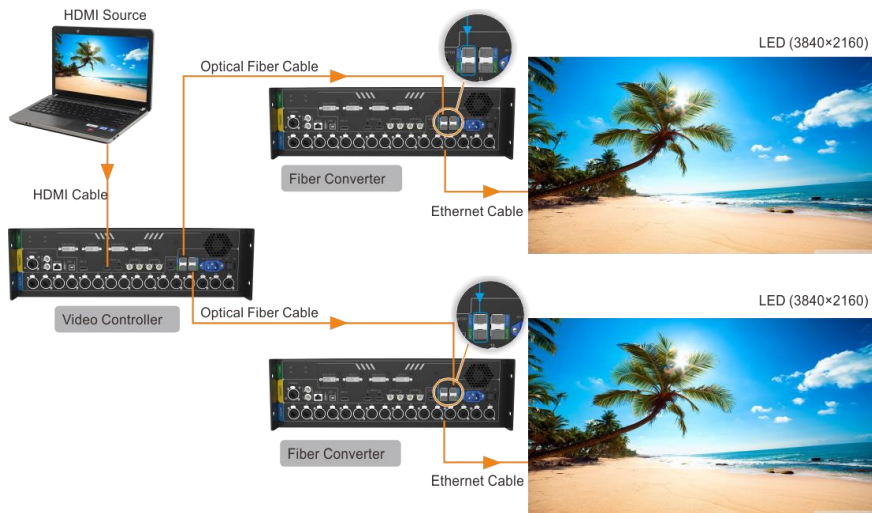


Figure 2-26 Connections for copy mode



2.4.4.2 Fiber Converter Mode

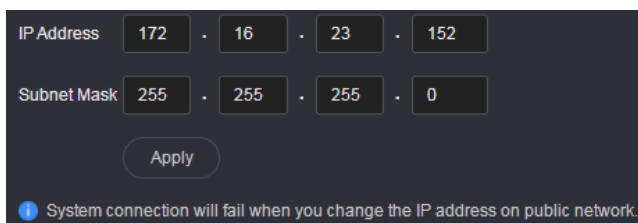
On the **System Mode** page, select **Fiber Converter** to show the fiber converter mode settings.

In fiber converter mode, the OPT ports are used for input and the Ethernet ports are used for output. Video processing, screen adjustment, preset adding and loading operations are not supported in this mode.

Figure 2-27 Fiber converter mode settings



2.4.5 Network Settings



Set the device IP address and subnet mask. When the IP is changed, enter the new IP address into the address bar to log in to the Web page again.

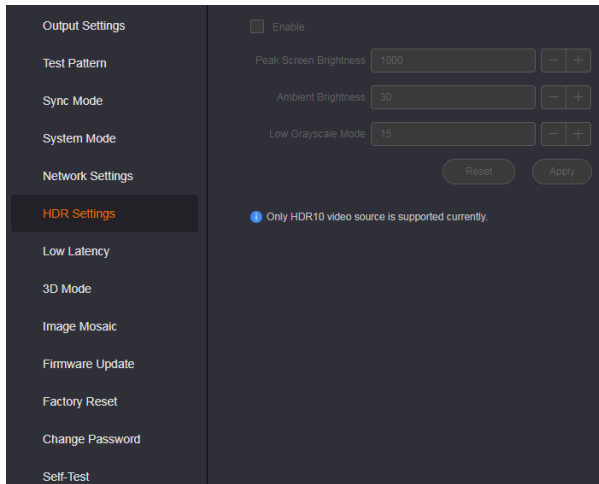
Note:

If the device is in the public network, do not change the IP address randomly.

2.4.6 HDR Settings

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 NovaStar A8s receiving cards.

Figure 2-28 HDR settings

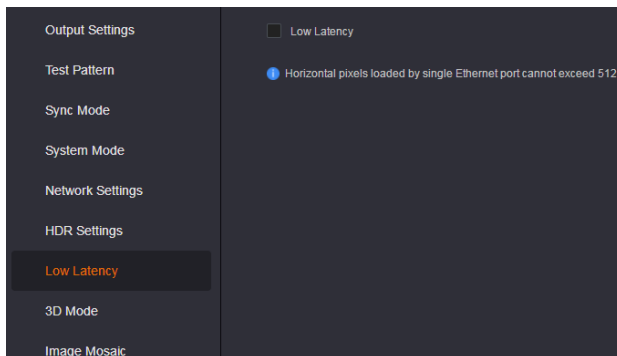


Menu	Description
Peak Screen Brightness	Adjust the screen brightness under normal operation. The value range is 100 to 10000, and it defaults to 1000. Unit: Nit
Ambient Brightness	Display the ambient brightness. The value range is 0 to 200, and it defaults to 30. Unit: Nit
Low Grayscale Mode	Adjust the grayscale value of the screen image. The value range is 0 to 50, and it defaults to 15.

2.4.7 Low Latency

Low latency reduces the input source signal latency from input to output image of the NovaPro UHD Jr. This function can realize 2-frame delay from sending card to receiving card when the device is used together with NovaStar Armor series receiving cards.

Select **Low Latency** to turn on this function.



Note:

- The loading width of a single Ethernet port should be no greater than 512 pixels when low latency function is enabled.
- The supported Armor series receiving cards include the A8, A8s, A9s and A10s Plus.

2.4.8 3D Mode

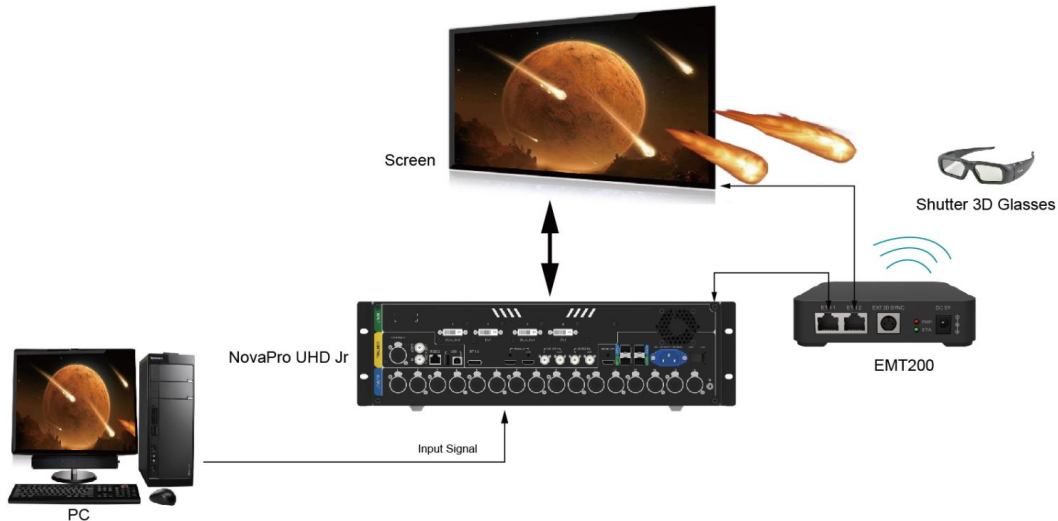
The NovaPro UHD Jr can work with the EMT200 3D emitter and 3D glasses to provide you with 3D visual experience.

Note:

Turning on 3D mode will halve the device output capacity.

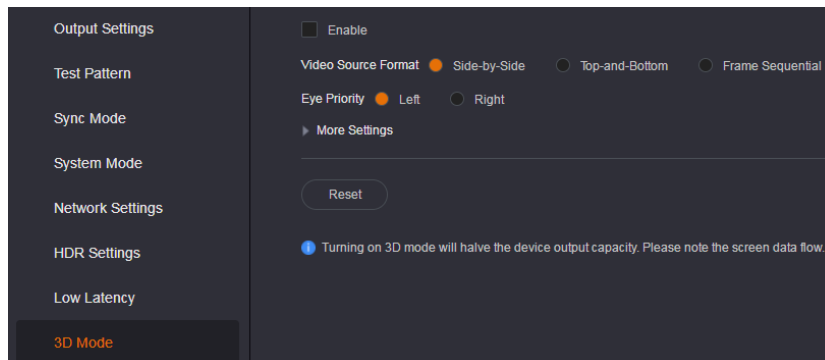
For a side-by-side 3D video source, the layer width should be half of the video source width. For a top-and-bottom 3D video source, the layer height should be half of the video source height.

Figure 2-29 Hardware connections



Step 1 Go to **Settings > 3D Mode** to enter the 3D mode page.

Figure 2-30 3D mode



Step 2 Select **Enable** to turn on the 3D function.

Step 3 Select the 3D format of the video source.

The options are **Side-by-Side**, **Top-and-Bottom** and **Frame Sequential**.

Step 4 Set the eye priority according to the 3D glasses mode.

The options are **Left** and **Right**.

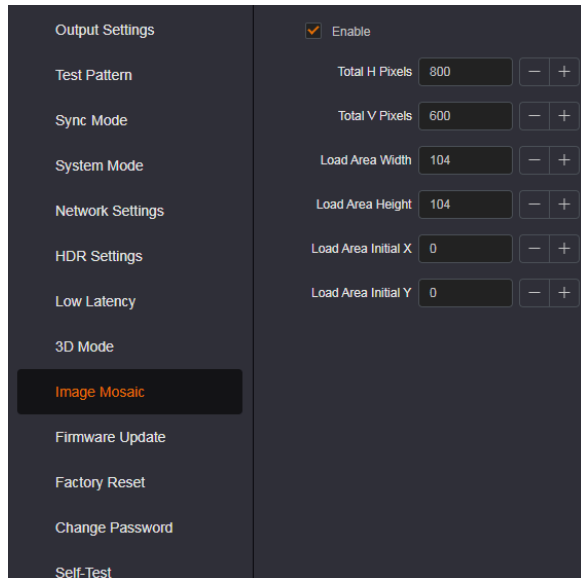
Step 5 Click **More Settings** to set the following items if necessary.

- Right Eye Start
- Signal Delay Time
- Enable third-party emitter

2.4.9 Image Mosaic

When the pixel count of the LED screen is larger than the loading capacity of a single NovaPro UHD Jr unit, the image mosaic function is required.

Figure 2-31 Image mosaic parameters



Output Settings	<input checked="" type="checkbox"/> Enable
Test Pattern	Total H Pixels: 800
Sync Mode	Total V Pixels: 600
System Mode	Load Area Width: 104
Network Settings	Load Area Height: 104
HDR Settings	Load Area Initial X: 0
Low Latency	Load Area Initial Y: 0
3D Mode	
Image Mosaic	
Firmware Update	
Factory Reset	
Change Password	
Self-Test	

Select **Enable** to turn on the image mosaic function.

The total loading capacity of all cascaded NovaPro UHD Jr units equals to the total pixel count of the LED screen.

- Total H Pixels: The number of pixels in the horizontal direction of the LED screen
- Total V Pixels: The number of pixels in the vertical direction of the LED screen
- Load Area Width: The number of pixels in the horizontal direction of the area loaded by the current device
- Load Area Height: The number of pixels in the vertical direction of the area loaded by the current device
- Load Area Initial X: The initial horizontal coordinate of the top-left corner of the area loaded by the current device. The unit is pixel.
- Load Area Initial Y: The initial vertical coordinate of the top-left corner of the area loaded by the current device. The unit is pixel.

Example:

If the pixel count of the LED screen is 7680×4320 which exceeds the loading capacity of a single NovaPro UHD Jr unit, the image mosaic function is required and four NovaPro UHD Jr units are used together for image mosaic. The connections are shown as follows.

Figure 2-32 Connections

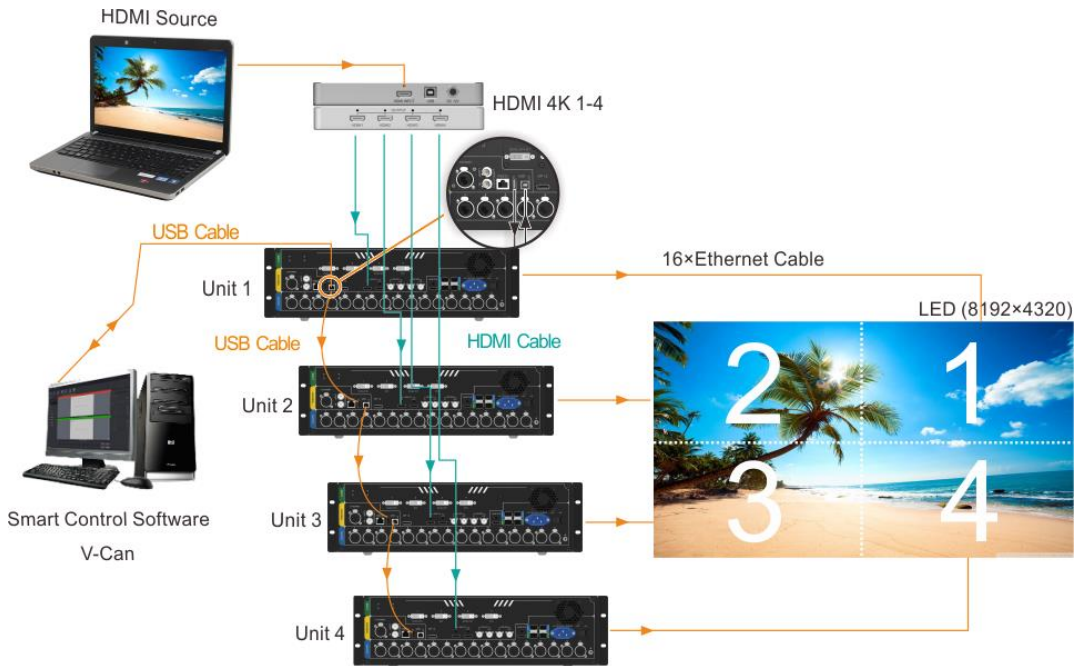


Table 2-3 Parameter settings

Device No.	Load Area Width	Load Area Height	Load Area Initial X	Load Area Initial Y
1	3840	2160	3840	0
2	3840	2160	0	0
3	3840	2160	0	2160
4	3840	2160	3840	2160

2.4.10 Firmware Update


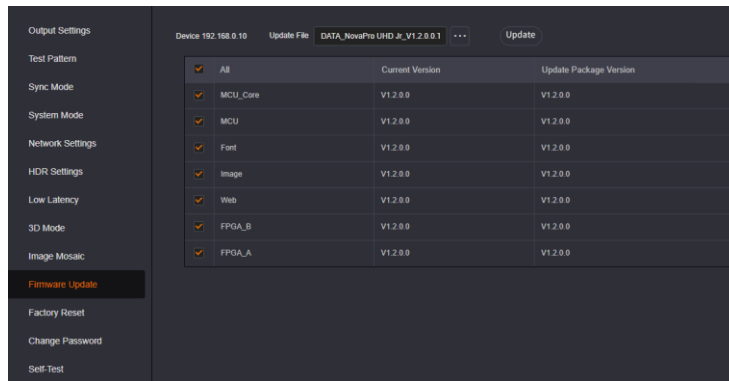
- Step 1 Go to **Settings > Firmware Update** to enter the update page.
- Step 2 Click  next to **Update File** to select the update file.
- Step 3 The system will parse the update file package automatically, and display the device current versions and update package versions.

Figure 2-33 Firmware update



- Step 4 Select the desired items.
- Step 5 Click **Update**.

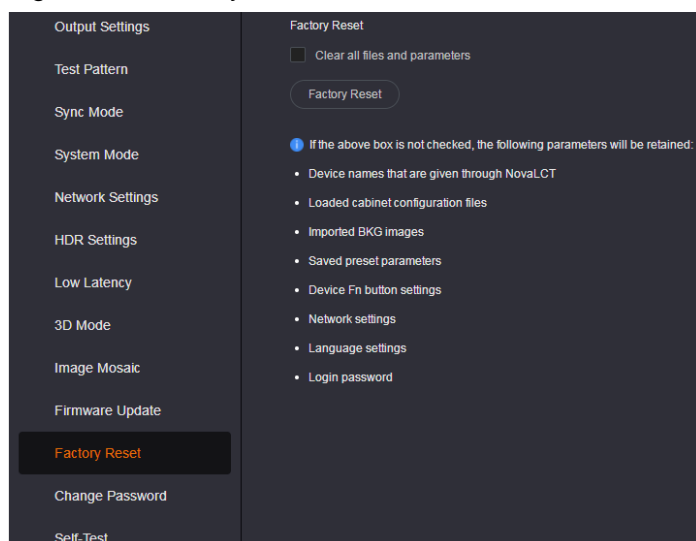
Note:

- Only ZIP format update packages are supported.
- After the update, please reset the device to factory settings.

2.4.11 Factory Reset

When you have updated the device or you want to delete some device information, reset the device to factory settings to quickly clear the unwanted files and reset the parameters to default settings.

Figure 2-34 Factory reset



Select **Clear all files and parameters** to clear all the data saved in the device during the reset.

2.4.12 Change Password

Change the login password. The default password is “88888888”.

Figure 2-35 Change password

The screenshot shows a web interface for changing a password. On the left is a sidebar with menu items: Output Settings, Test Pattern, Sync Mode, System Mode, Network Settings, HDR Settings, Low Latency, 3D Mode, Image Mosaic, Firmware Update, Factory Reset, Change Password (highlighted), and Self-Test. The main content area contains three input fields: 'Old Password' (placeholder: 'Please enter your old password'), 'New Password' (placeholder: 'Please enter your new password.' with a note '+ 8 characters, including numbers and letters'), and 'Confirm Password' (placeholder: 'Please enter your new password again'). An 'Apply' button is located below the 'Confirm Password' field.

- Step 1 Enter your current password in the **Old Password** area.
- Step 2 Enter your new password both in the **New Password** and **Confirm Password** areas. The two passwords you entered must be the same.
- Step 3 Click **Apply** to confirm and apply the change.

Note:

The password must contain 8 characters, including letters and numbers.

If you forget your password, use the super password “NovaStar” to log in to the Web page, and then set a new password for login. The super password cannot be deleted or changed.

2.4.13 Self-Test

When the device fails, test the device for quick troubleshooting, and feedback the result to NovaStar for more help.

Figure 2-36 Self-test

The screenshot shows the self-test results page. The left sidebar has 'Self-Test' selected. The main content area shows a table with the following data:

Item	FPGA-A	FPGA-B	MCU	Test Result
TEMPERATURE	0	0	—	
VCC_INT	0	0	—	
VCC_AUX	0	0	—	
VCC_BRAM	0	0	—	
DDR_INIT	0	0	—	
PDM_CLK_VALID	0	0	—	
PDM_CLK	0	0	—	
PDM_CLK_LOCK	0	0	—	
PWM_CLK_VALID	0	0	—	
PWM_CLK	0	0	—	
PWM_CLK_LOCK	0	0	—	
GTX_CLK_VALID	0	0	—	
GTX_CLK	0	0	—	
GTX_CLK_LOCK	0	0	—	
VS_CNT	0	0	—	
HS_CNT	0	0	—	
SDRAM	—	—	0	
MMC1	—	—	0	
MMC2	—	—	0	

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