D8



User Manual

RGBlink®

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Thank you for choosing our product!

This User Manual is designed to show you how to use this product quickly and make use of all the features. Please read all directions and instructions carefully before using this product.

Declarations

FCC/Warranty

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

Guarantee and Compensation

RGBlink provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. RGBlink must be informed immediately in writing of any complains.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at latest 30 days after the transfer of risks. In the event of justified notice of compliant, RGBlink can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract. All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other service provided by RGBlink, being a component of the system or independent service, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence or part of RGBlink.

If the purchaser or a third party carries out modifications or repairs on goods delivered by RGBlink, or if the goods are handled incorrectly, in particular if the systems are commissioned operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e.g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by RGBlink either.

The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels

There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source

This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord

Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse

To avoid fire hazard, use only the fuse having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere.

Installation Safety Summary

Safety Precautions

For all device installation procedures, please observe the following important safety and handling rules to avoid damage to yourself and the equipment.

To protect users from electric shock, ensure that the chassis connects to earth via the ground wire provided in the AC power Cord.

The AC Socket-outlet should be installed near the equipment and be easily accessible.

Unpacking and Inspection

Before opening device shipping box, inspect it for damage. If you find any damage, notify the shipping carrier immediately for all claims adjustments. As you open the box, compare its contents against the packing slip. If you find any shortages, contact your sales representative.

Once you have removed all the components from their packaging and checked that all the listed components are present, visually inspect the system to ensure there was no damage during shipping. If there is damage, notify the shipping carrier immediately for all claims adjustments.

Site Preparation

The environment in which you install your device should be clean, properly lit, free from static, and have adequate power, ventilation, and space for all components.

Chapter 1 Your Product

1.1 Packing Configuration

D8

1 x AC Power Cable



1 x Network Cable



1 x DB9 to USB Cable



1 x DB9 to RJ11 Cable



1 x HDMI 2.1 Cable



D8 PLUS

1 x AC Power Cable



1 x Network Cable



1 x DB9 to USB Cable



1 x DB9 to RJ11 Cable



1 x HDMI 2.1 Cable



Note: AC Power Cable supplied as standard according to destination market.

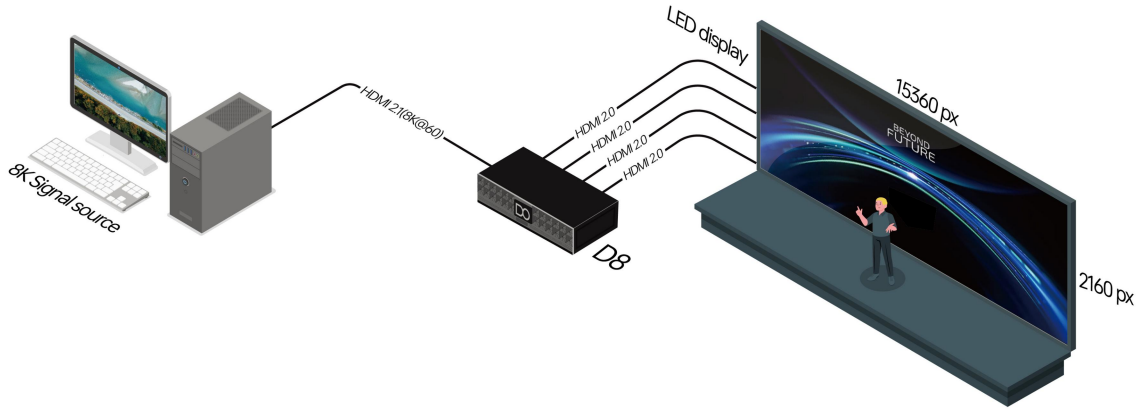
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1.2 Product Overview

The D series has always been regarded as the leader in presentation-level image quality processing at different display stages in the industry. D8 continues to lead the display technology to become an 8K@60-level video processor in the industry. Create a visual experience.

The D8 is standard with one HDMI 2.1 input interface and D8 PLUS is standard with one HDMI 2.1 input interface and one DP 1.4 input interface, which can meet the requirements of 8K input signal transmission.

The D series is equipped with a 4-inch LCD touch screen, which optimizes the overall front panel aesthetic design.



D8 Application Diagram

1.2.1 Front Panel

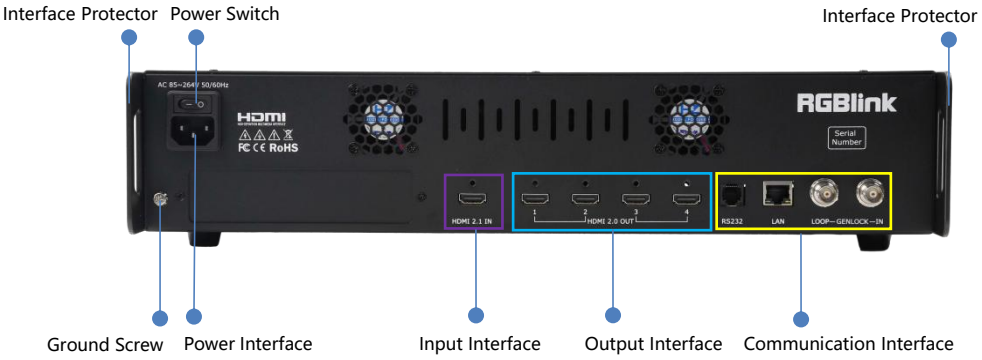


Name	Description
Touch Screen	4-inch LCD touch screen allows you to directly control D8, which optimizes the user experience.
Rack Mount Ears	Use with the load-bearing screws to fix device on the rack.
Handles	For carrying device.

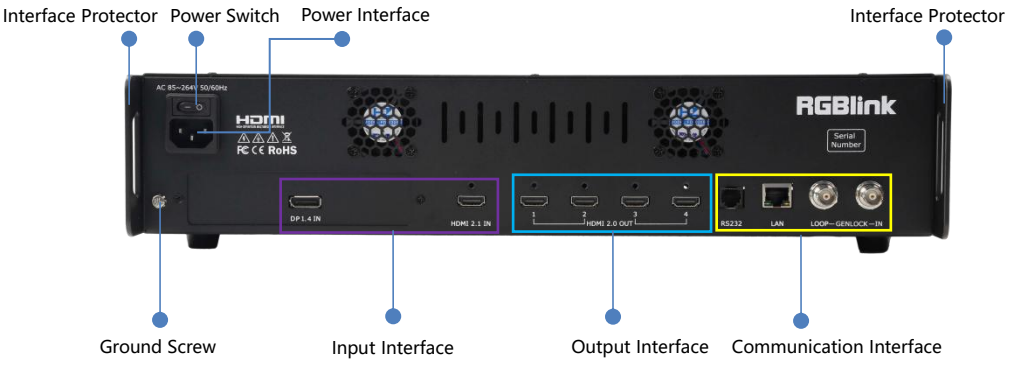
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1.2.2 Rear Panel

D8



D8 (DP 1.4)



Name	Description
Input Interface	• D8 is standard with Single HDMI 2.1 Input Interface • D8 PLUS is standard with Single HDMI 2.1 Input Interface and Single DP 1.4 Input Interface
Output Interface	Standard with Quad HDMI 2.0 Output Ports
Communication Interface	Standard with 1xRS 232 Serial Port，1xLAN Network Port，1xIN-GENLOCK-LOOP Port
Power Interface	Connect standard power cable to device and plug into wall socket
Power Switch	Power on or off the device
Interface Protector	Used to pull out device, fix cables and protect interfaces from collision
Ground Screw	Increase the safety and reliability, and avoid accidents such as fire and explosion caused by static electricity

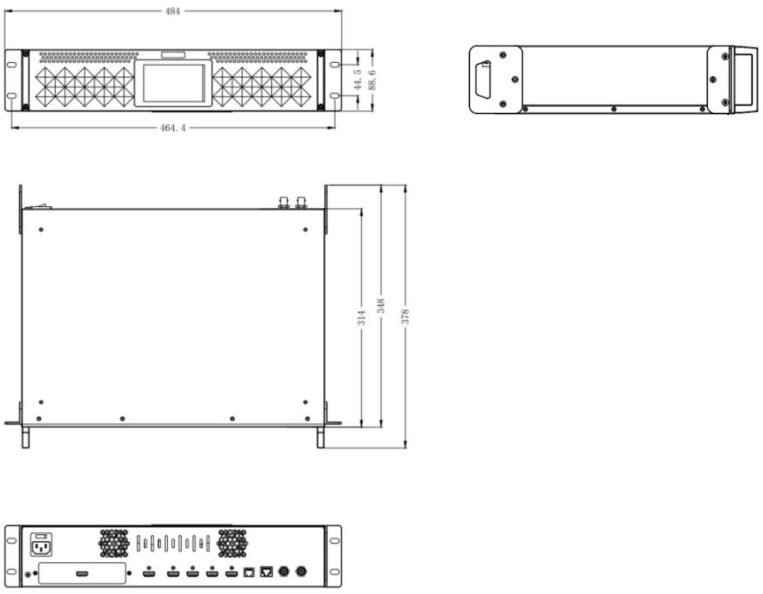
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1.2.3 Dimension

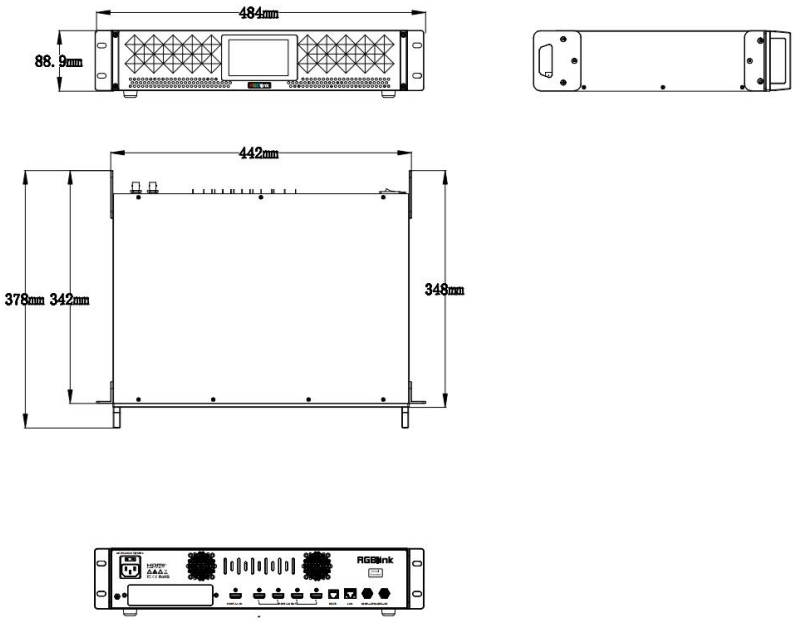
Following is the dimension for your reference:

Dimension: 484mm×378mm×88.9mm

D8



D8 PLUS



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1.3 Key Features

- 8K@60 input
- Support signal switch between two 8K@60 inputs
- Built-in 4'' LCD touch screen control
- 8K EDID management
- Genlock synchronization unequal splicing, multiple splicing layouts available
- Layer cropping and scaling
- Genlock input and loop throuch
- XPOSE 2.0 control
- Support standard output resolution and customize output resolution
- Hot swap
- open API

Chapter 2 Install Your Product

Note: D8 and D8 PLUS are same in installation. This chapter takes D8 as example.

2.1 Plug in Power

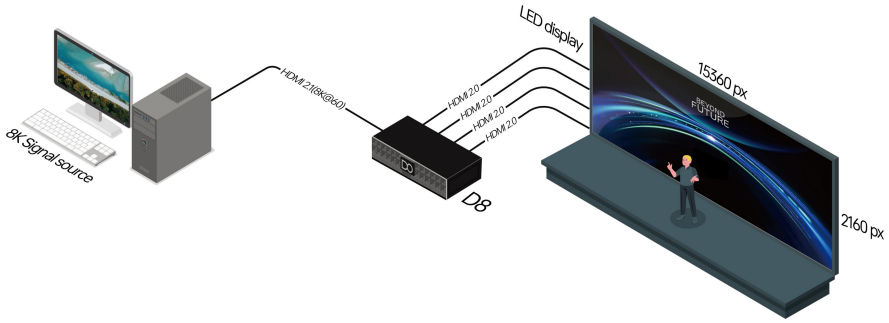


Connect power and D8 with standard Power Cord. Plug one end of the power cable to the D8's power interface. The other end is connected to the power socket.

2.2 Connect Signal Source and Control Computer

D8 supports HDMI 2.1、DP 1.4 input and HDMI 2.0 output. Connect D8 with Camera ,PC, laptop as input signal, connect D8 with monitors, as shown in the figure below.

Before connecting signals to D8, ensure all the devices are all power off first, and then tighten connector screws/locks where provided.



D8 supports **XPOSE 2.0 contro**l, so it is necessary to connect device with control computer.

Do direct connection via **Serial Connection**. Connect RS232 port of device and computer with serial cable.



2.3 Turn on Your Product



Push the power switch on the rear panel and the system begins to work.

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Chapter 3 Use Your Product

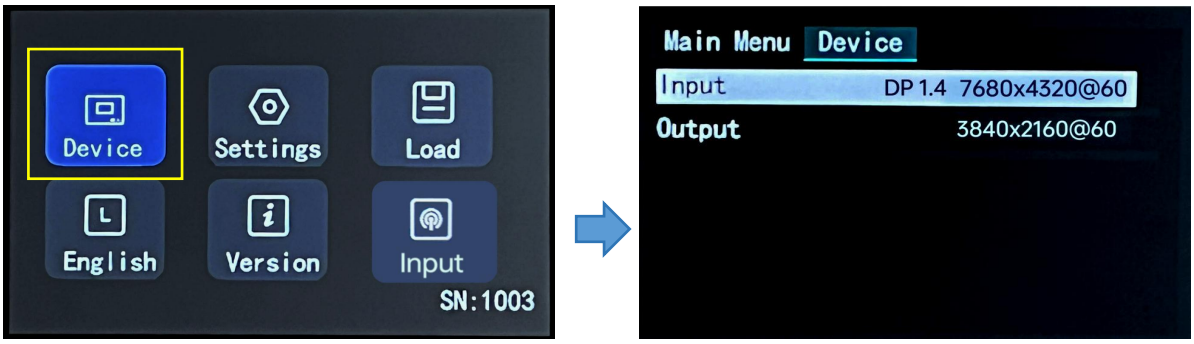
3.1 Main Menu

Turn on the power switch on the rear panel and the touch screen will display Menu and SN serial number. As shown in the figure below, MENU includes **Device**, **Settings**, **Load**, **Language** (English/Simplified Chinese) ,**Version** and **Input**.



3.1.1 Device

Click **<Device>** to enter the following interface. In the interface, users can check Input and Output Status and Resolution.

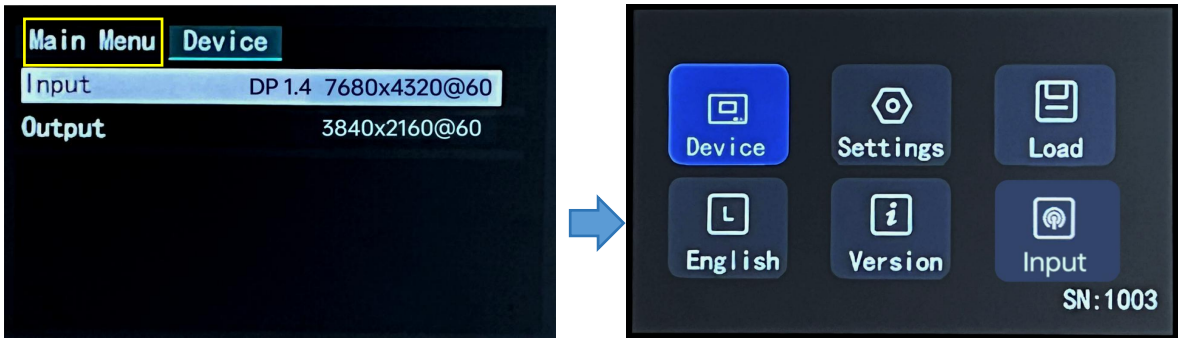


As shown in the figures above, the resolution of DP 1.4 input port is 7680x4320@60, and the output resolution is 3840x2160@60.

3.1.2 Settings

If the current interface is <Device>, click <Main Menu>, that is, the previous menu option to return to the previous interface, as shown in the figure below.

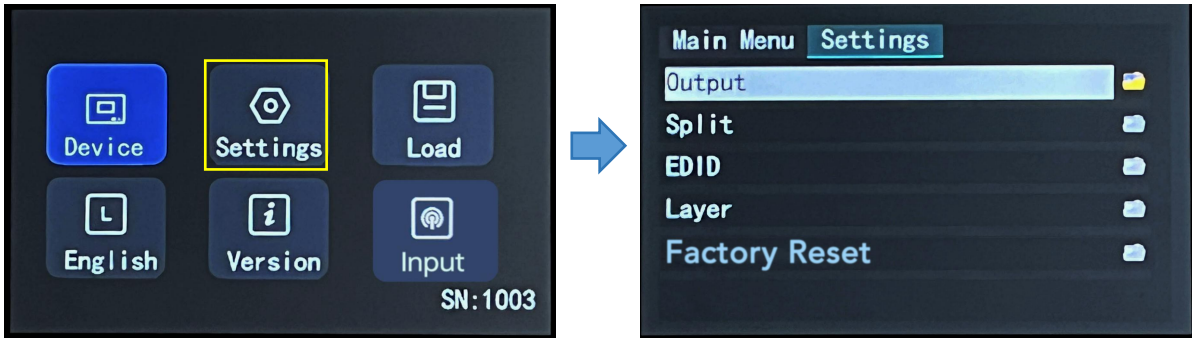
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Note:

Similar to operations above, if the current interface is < Settings >, < Load >, <English > , < Version > or < Input >, just click the previous option to return to the previous interface step-by-step until back to Main Menu.

Click **<Settings>** to enter the following interface. In the interface, users can set **Output Resolution**, choose **Split Layout**, perform **EDID Management**, set **Layer Cropping and Scaling parameter** and **perform Factory Reset**.



3.1.2.1 Output Resolution

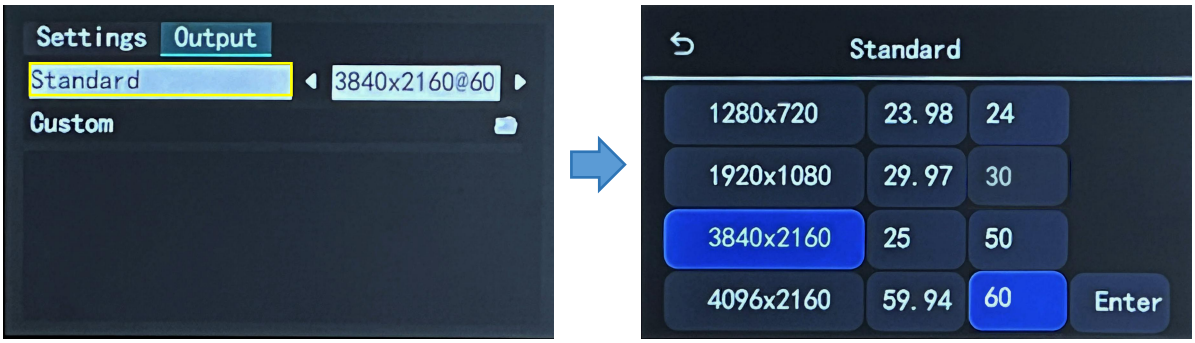
Click **<Output>** in <Settings> to set output resolution. You can choose **Standard Resolution** or **Custom Resolution**.



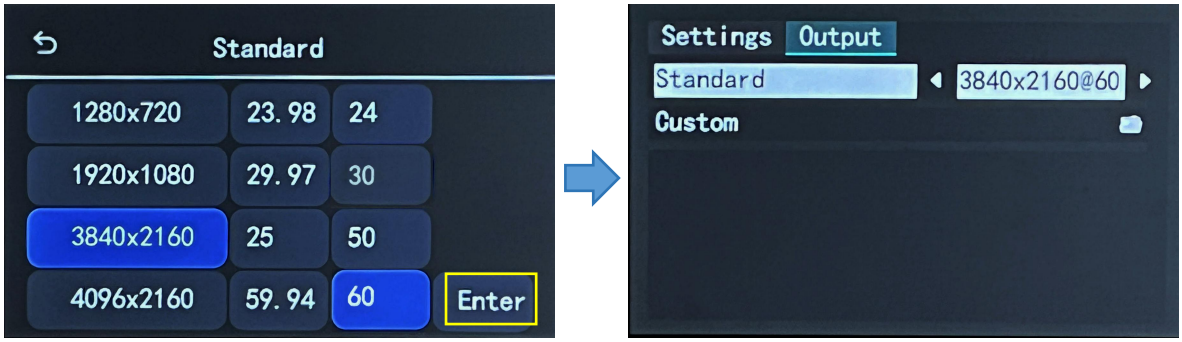
Standard Resolution:

Click <Standard> to select standard resolution from the box.

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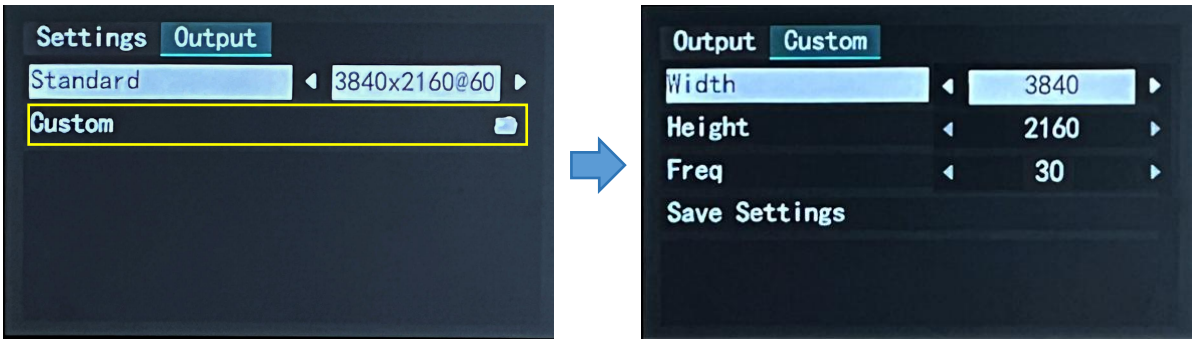


Click **"Enter"** to save and the touch screen returns back to previous interface for you to double check.



Customize Resolution:

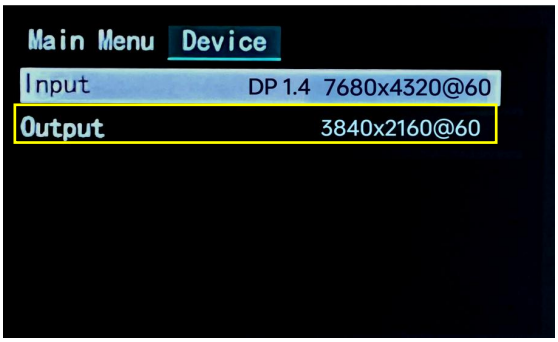
Click <Custom> to enter the following interface.



D8 supports to customize output resolution. If you set the resolution to 3840x2160@50, type in Width, Height and Frequency one by one and click "Enter" to save. Then check the set resolution in <Device> interface.

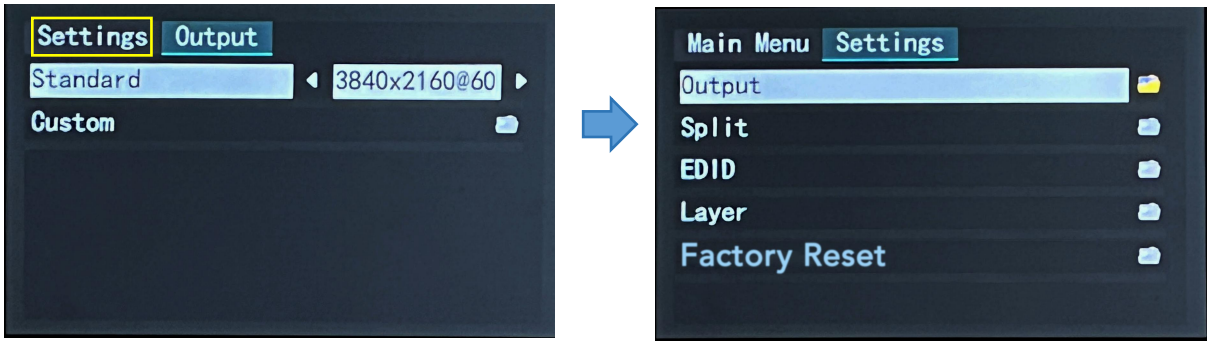


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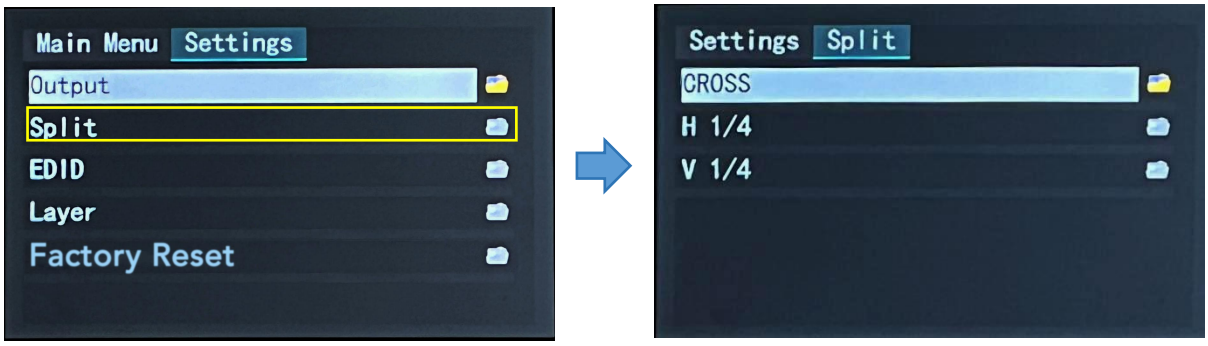


3.1.2.2 Split

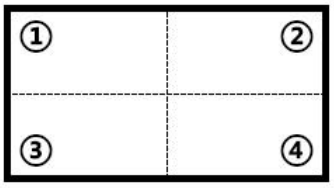
If the current interface is <Output>, click <Settings>, that is, the previous menu option to return to the previous interface, as shown in the figure below.



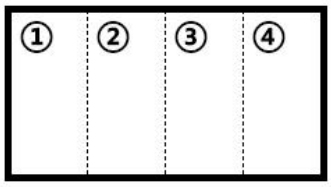
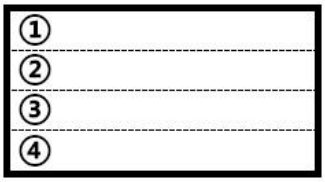
Click **<Split>** to choose splicing layout and configure parameters.



There are 3 split modes available, including **Cross**, **H 1/4** and **V 1/4**.

Split Mode	Description
Cross	

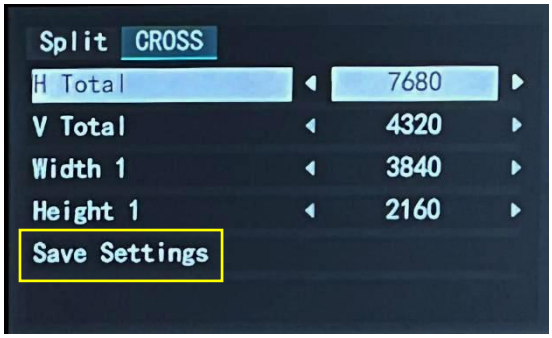
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H 1/4	
V 1/4	

Note: D8 is set to Cross by default.

Cross:

Click **<Cross>** and the touch screen displays as follows:



Set H Total, V Total, Width 1 and Height 1 of screen according to actual need.

For example: Set H Total to 7680, V Total to 4320, Width 1 to 3840, Height 1 to 2160, then Width 2 is 3840, same as Width 1, Height 2 is 2169, same as Height 1.

- H Total: 7680
- V Total: 4320
- Width 1: 3840
- Height 1: 2160

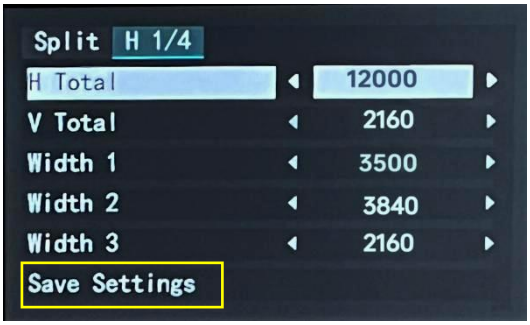
Use the numeric keyboard to enter parameters, then click **"Save Settings" > "Confirm"** to save above settings.

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H 1/4:

Click **<H 1/4>** and the touch screen displays as follows:



Set H Total, V Total, Width 1, Width 2 and Width 3 of screen according to actual need.

For example: Set H Total to 12000, V Total to 2160, Height 1 is 2160, same as V total. Set Width 1 to 3500, Width 2 to 3840, Width 3 to 2160, and Width 4 will be 2500 (H total <12000> - Width 1 <3500> - Width 2 <3840> - Width 3 <2160> = Width 4 <2500>).

- H Total: 12000
- V Total: 2160
- Width 1: 3500
- Width 2: 3840
- Width 3: 2160

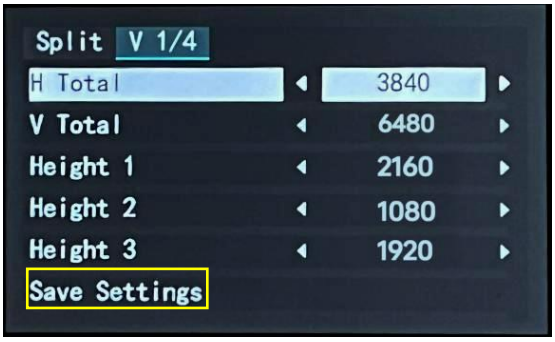
Use the numeric keyboard to enter parameters, then click **"Save Settings" > "Confirm"** to save above settings.

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V 1/4:

Click **<V 1/4>** and the touch screen displays as follows:



Set H Total, V Total, Height 1, Height 2 and Height 3 of screen according to actual need.

For example: Set H Total to 3840, V Total to 6480, Width 1 is 3840, same as H total. Set Height 1 to 2160, Height 2 to 1080, Height 3 to 1920, and Height 4 will be 1320 (V total <6480> - Height 1 <2160> - Height 2 <1080> - Height 3 <1920> = Height 4 <1320>).

- H Total： 3840
- V Total： 6480
- Height 1： 2160
- Height 2： 1080
- Height 3： 1920

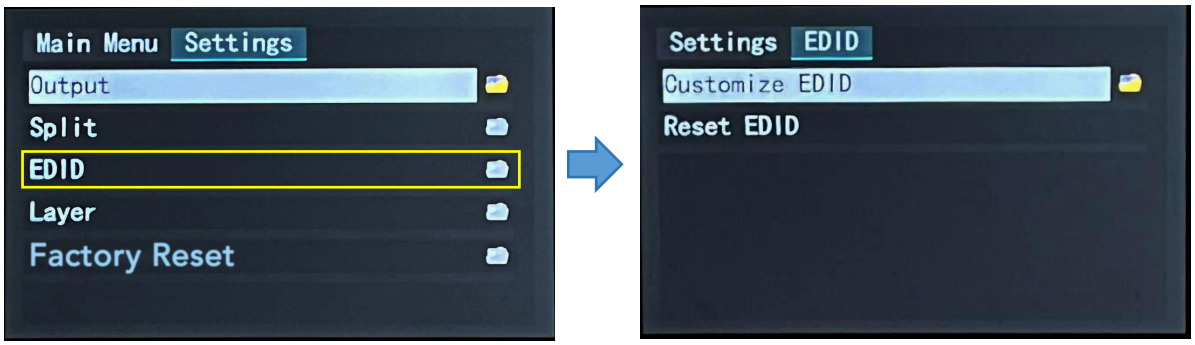
Use the numeric keyboard to enter parameters, then click **"Save Settings" > "Confirm"** to save above settings.

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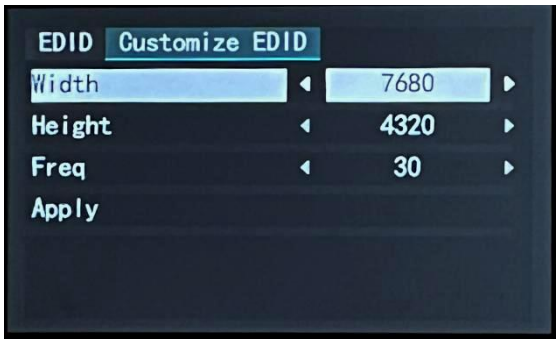
3.1.2.3 EDID

Back to <Settings>, then click **<EDID>** for EDID management.



Customize EDID:

Choose **<Customize EDID>** and the touch screen displays as follows:

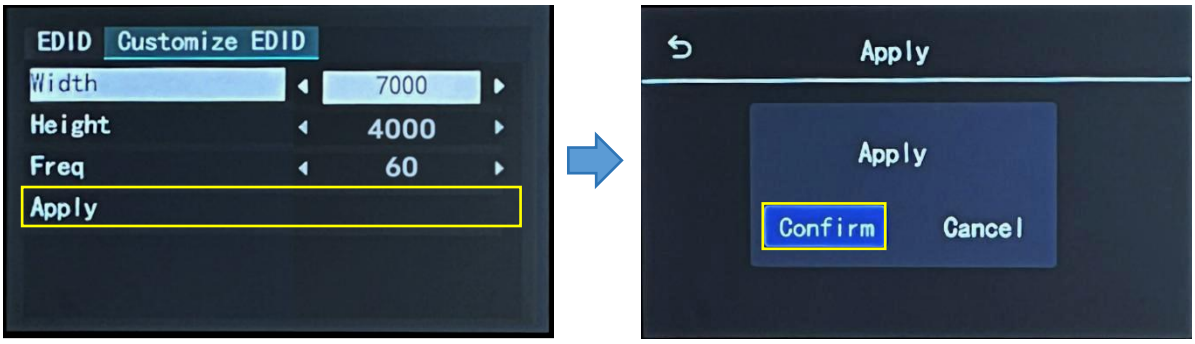


If you set Resolution to 7000x4000@60, use the numeric keyboard to enter the Width, Height and Frequency one by one and then click **"Enter"** to confirm.



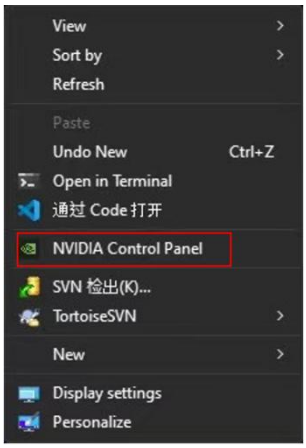
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Check values set, then click " **Apply" > "Confirm"**.



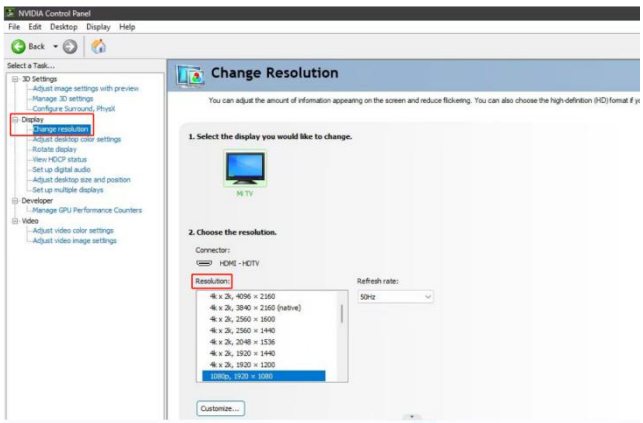
Complete EDID settings on D8, then set resolution on the signal source (such as a computer) to be same as the D8. If you set EDID on D8 to 7000x4000@60, the steps to set the resolution on a computer are as follows:

- Step 1: Set the resolution on graphics card. Taking NVIDIA as an example: Right-click on the desktop, then select **"NVIDIA Control Panel"**.



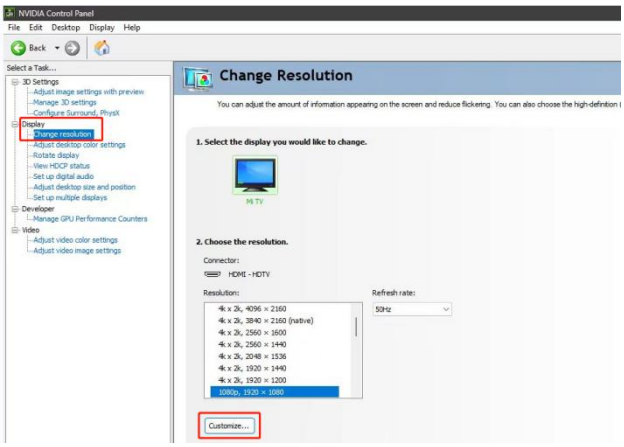
- Step 2: Click **"Display" > "Change Resolution"**.

- Firstly, check if 7000x4000@60 can be found in the drop-down list. Select this resolution directly if there is 7000x4000@60 without needs to follow Step 3 to Step 5 to customize resolution.

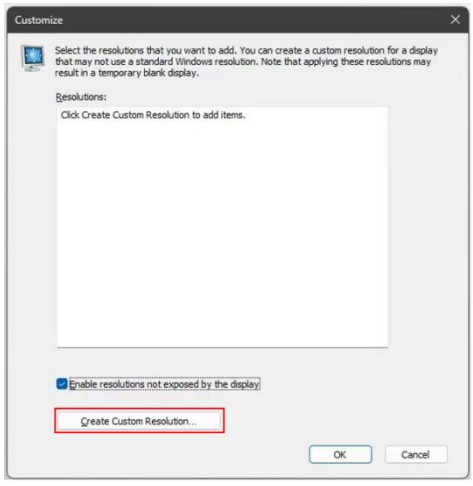


- If 7000x4000@60 cannot be found, please click **"Customize"** and then follow Step 3 to Step 5 for

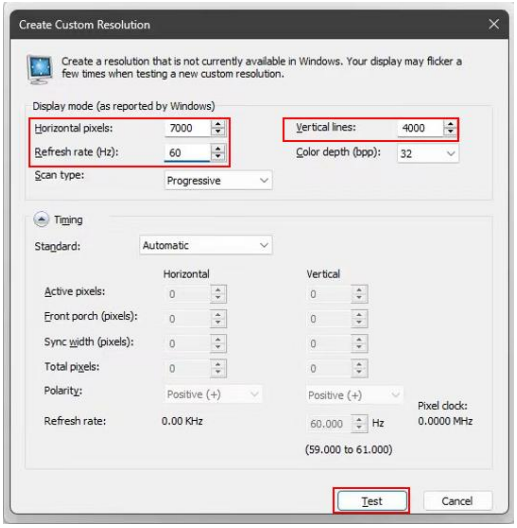
resolution setting.

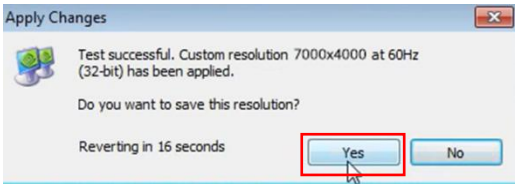


- Step 3: Click **“Create Custom Resolution”**.

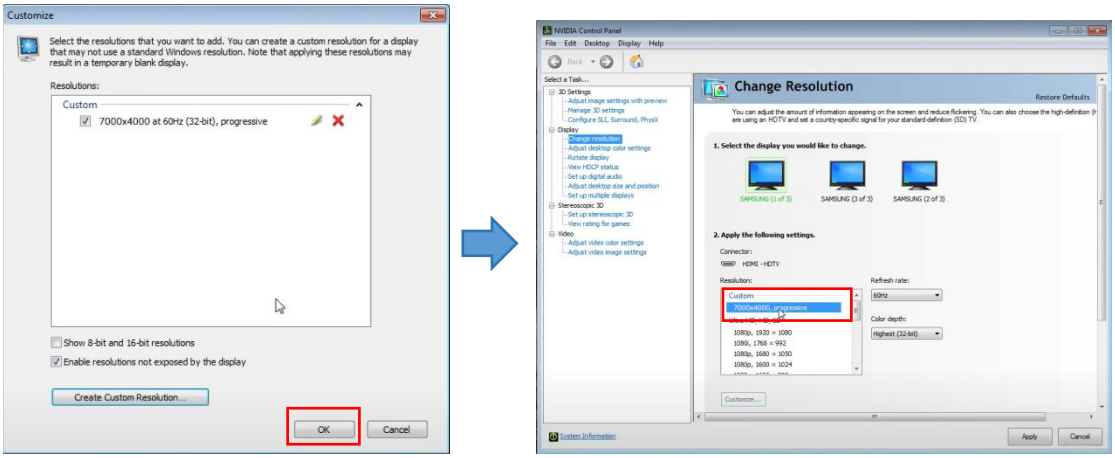


- Step 4: Customize resolution： Enter 7000 in the "Horizontal pixels", 4000 in the "Vertical lines" and 60 in the “Refresh rate”. Enter the custom resolution values, then click **“Test”**. Select **“Yes”** in the pop-up to apply the custom resolution.





- Step 5: Then the set resolution will be displayed in **"Custom"**. Click **"OK"** and check the resolution in "Change Resolution" interface.



Reset EDID:

Click **" Reset EDID"> " Confirm"** to clear previous settings.



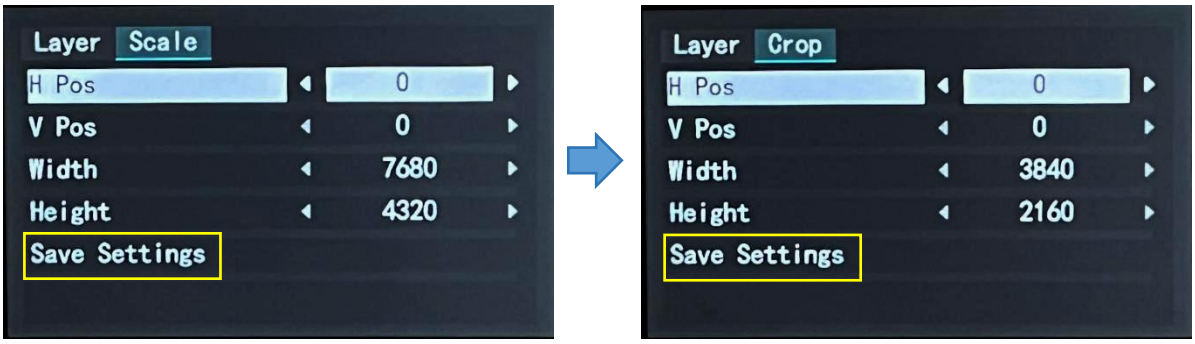
3.1.2.4 Layer

Back to <Settings>, then click **<Layer>** to enter following interface.



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Users can do Layer Scaling and Cropping.

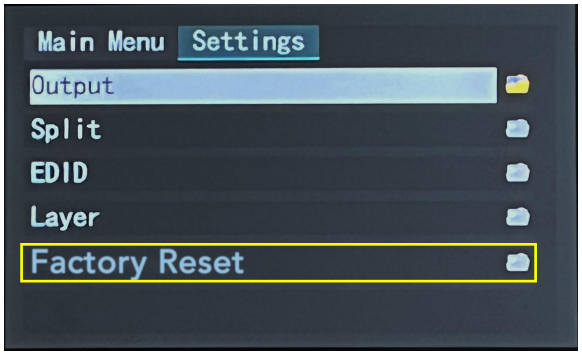


Type horizontal position,Vertical position, Width and Height as needed. Then click **"Save Settings" > "Confirm"** to save above parameters.



3.1.2.5 Factory Reset

Back to <Settings>, then click <Factory Reset> to enter following interface.



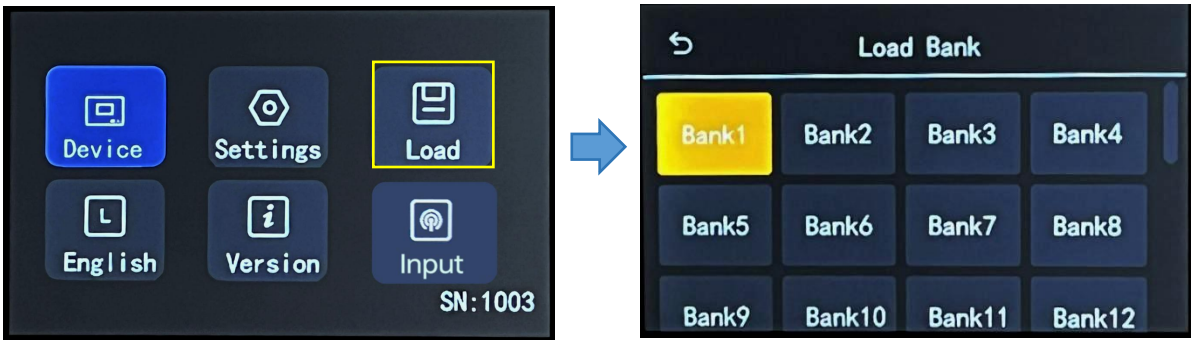
Performing a factory reset will delete all user data and personalized settings on the device and return it to its initial state.

Notice: All parameters will be restored to default parameters, which include but not limited to device IP, EDID, preset scenes, etc.

3.1.3 Load Presets

Back to main interface, then click **<Load>** to load presets.

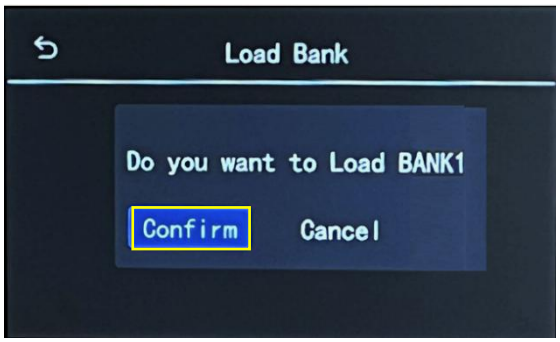
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D8 provides 16 positions for saving banks, which are allowed to be loaded.

Note:
Yellow background: current bank; **Green** background: with parameter saved; **Grey** background: empty bank.

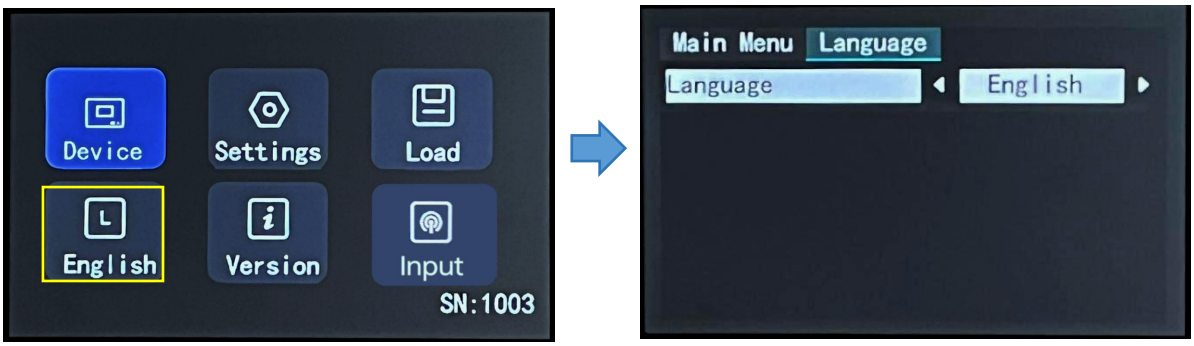
Click the desired bank, and the interface will pop up "Do you want to Load Bank X", shown as below. Click **<Confirm>** to do the selection.



Note:
Please do Scene Setting in XPOSE 2.0 firstly and then you can load bank.

3.1.4 Language

Back to main interface, then click **<English>** for language switching.



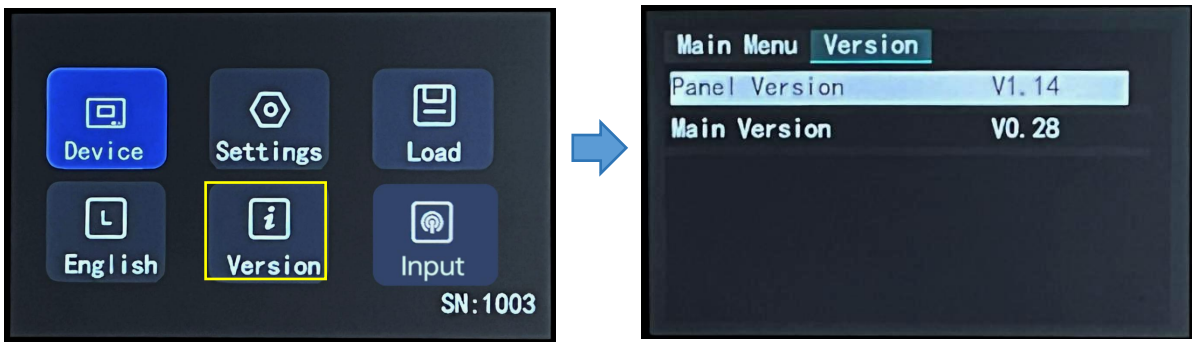
Choose English or Simplified Chinese, and the user interface will switch according.

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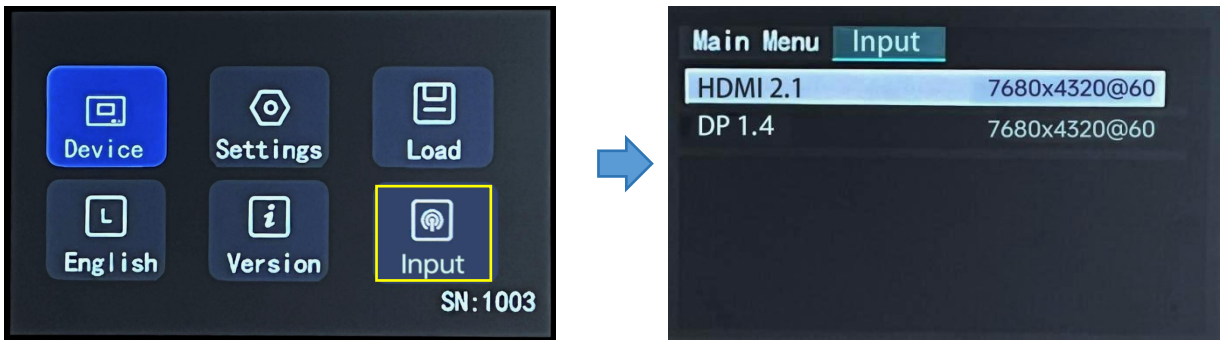
3.1.5 Version

Back to main interface, then click **<Version>** for an overview of Panel Version and Main Board Version.



3.1.6 Input

Back to main interface, then click **<Input>** for input signal switch.



The user can check input resolution here.

To switch the input signal, you can simply click the desired input source, and the display will synchronize its switching according to the selected input signal.

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3.2 XPOSE 2.0 Installation

Environment Requirements:

Window

Processor: 1 GHz or above 32 bit or 64 bit processor

Memory: 4 GB or more

Graphics: Support DirectX 9 128M or above (open AERO effect)

Hard disk space: Above 16G (primary partitions, NTFS format)

Monitor: Resolution must be 1920x1080 pixel or above (it can not display normally if the resolution is lower than 1920x1080)

Operating system: Windows 7 or above (full version, not Ghost version or compact version)

CPU:i5 and above

Mac

Monitor: Resolution must be 1680x1050 pixel or above (it can not display normally if the resolution is lower than 1680x1050)

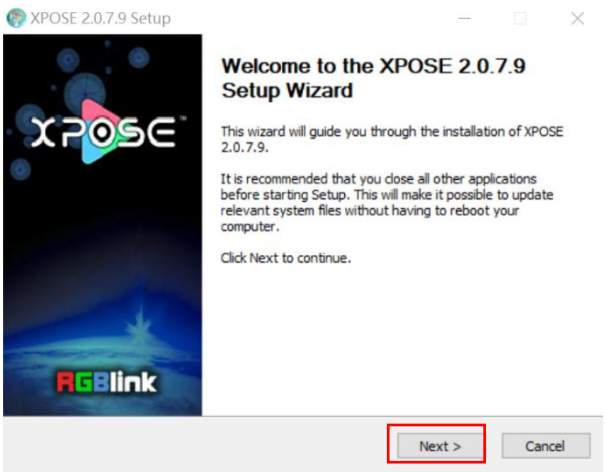
CPU:i5 and above

1. Double click 

,it will pop-up the installer language box, select the language, for example, select "English", and click "OK" to confirm.



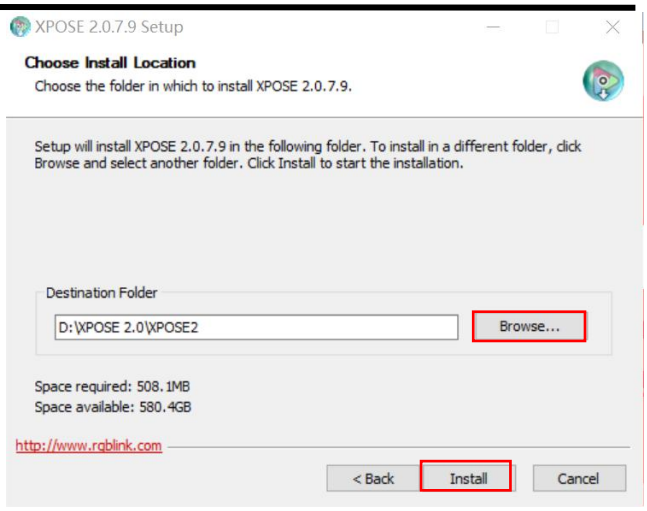
2. Click "Next" to install.



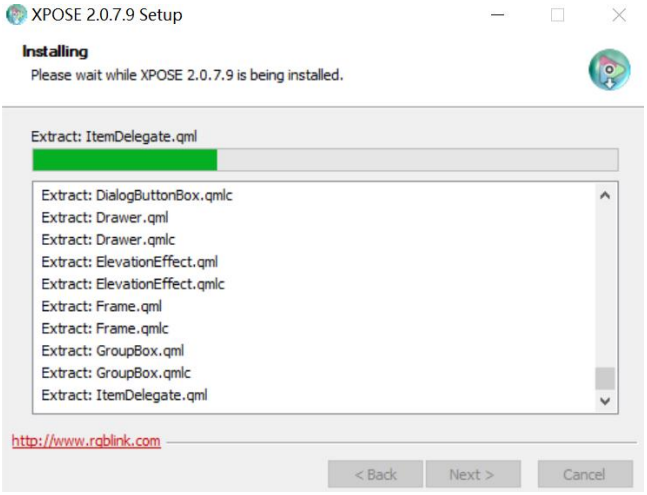
© Xiamen RGBlink Science & Technology Co., Ltd.

3. Click "Browse..." to select the XPOSE software install location.

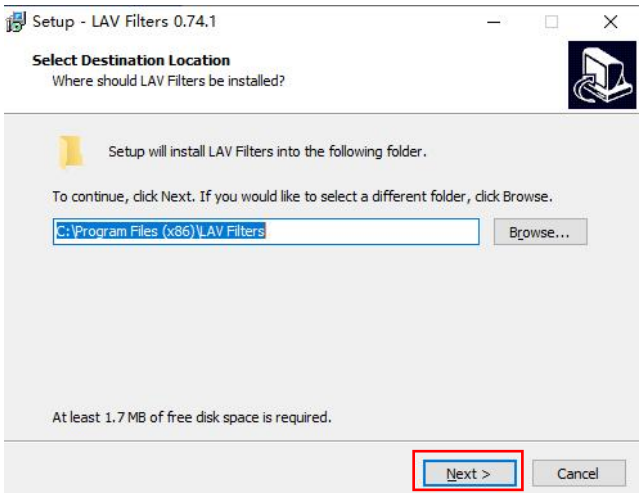
Click "Install".



4. During installation, it will pop up the window of Install Shield Wizard for Virtual Com port.

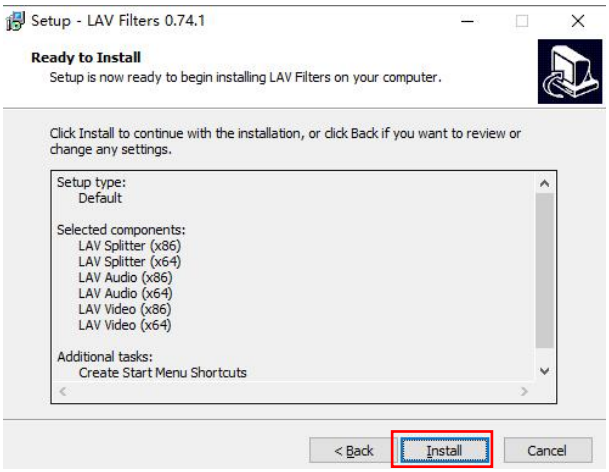


5. Click "Next".

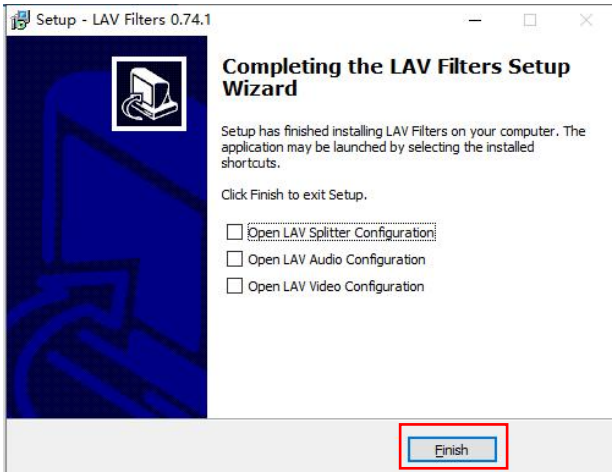


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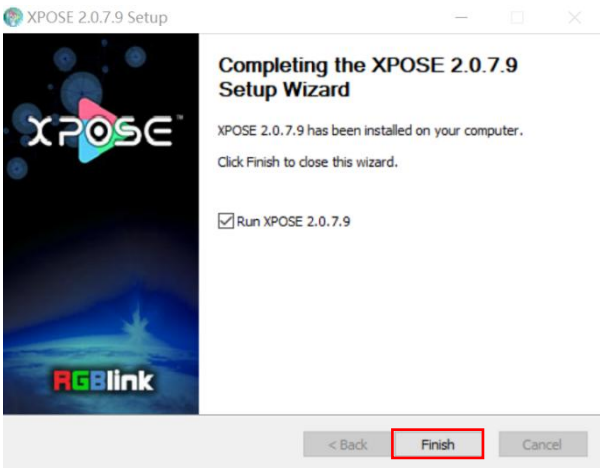
6. Then click "Install", as shown in the figure.



7. Click "Finish" and complete the installation, as shown in the figure below.



8. Click "Finish" and is ready to run the XPOSE software.



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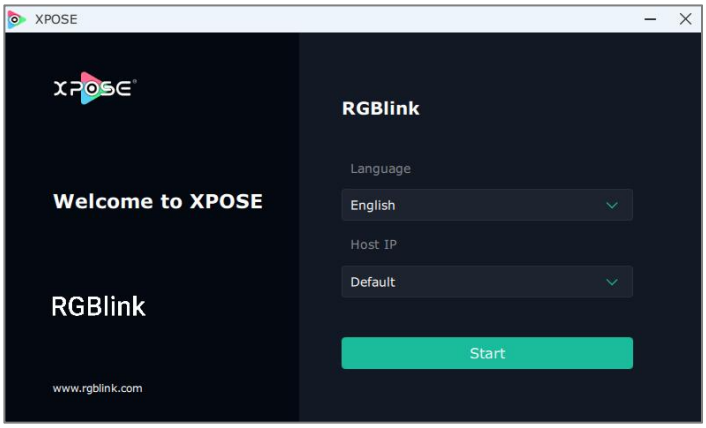
3.3 XPOSE 2.0 Operation

Note: The following XPOSE 2.0 operation takes D8 PLUS as an example, D8 and D8 PLUS operate the same except for the difference of input interface.

3.3.1 Login in XPOSE

Double click this icon 

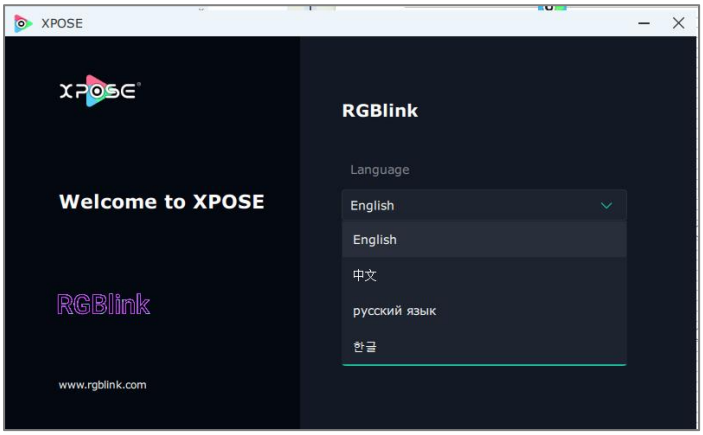
, and enter the log on interface shown in the right:



The initial language of XPOSE 2.0 is self adjusted based on the operation system language of the computer.

If you want to change language, just click **Language** and choose one you need.

Then click **Start** to run XPOSE.



After login,the interface is shown in the right.

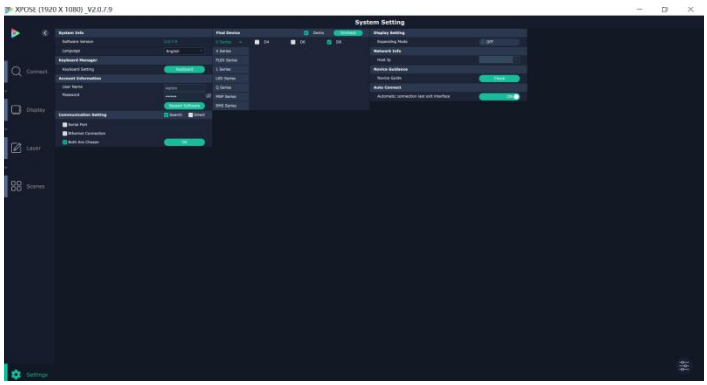


Users can find 5 major parts : **System Setting**, **Connect**, **Display**, **Layer**, **Scenes**.

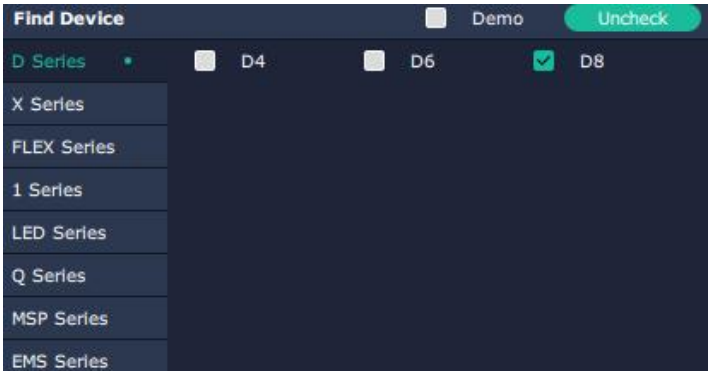
© Xiamen RGBlink Science & Technology Co., Ltd.

3.3.2 System Setting

Click  to enter <System Setting>interface.

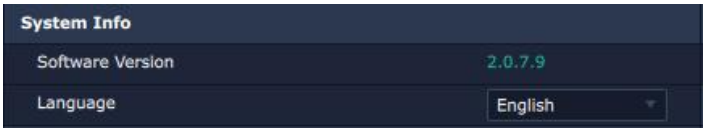


Find Device: New version of XPOSE 2.0 is blank default in Find Device. Users are supposed to choose the device needed in Find Device.



Software Version： Check current version.

Language： Choose language needed.



Keyboard Management: Click <**Keyboard**> it will redirected to keyboard setting window.

Keyboard setting is designed to fit for different operation system such as Windows and Mac. Users can set short cut keys.



Drag Input, Output, Layer and Preset from the list to the keys you desired as shown in the figure:



Please note the keyboard area where allows to set short cut keys.

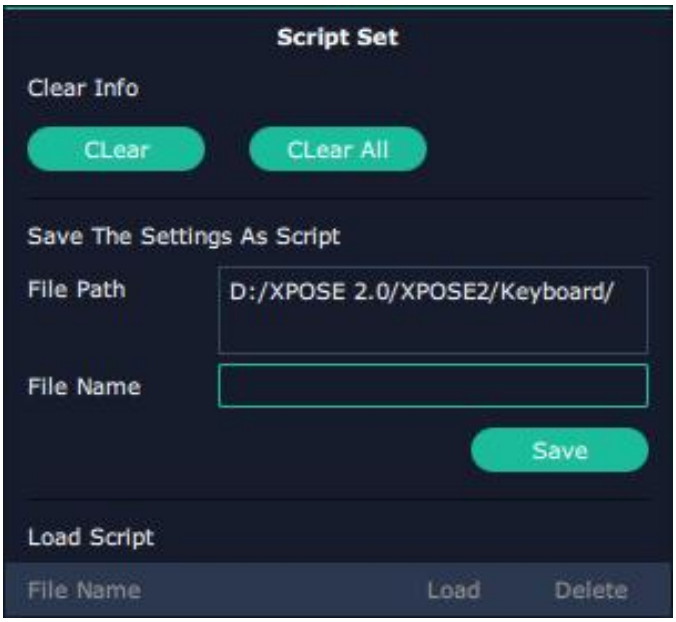


If the setting goes wrong or no need for short cut keys any more, click  to clear some keys or clear all.

Clear: is to clear some keys, the keys need to selected before hand.

Clear all: is to remove all already set short cut keys.

Users can also save the keyboard setting as script.



Scrip Set

File Path: Save the current keyboard Settings in the script to the local path.
File Name: script file name.
Load Script: Load/Delete.

Click Return to back to <System Setting>.



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Communication Setting

Serial Port: Search only those connect via serial port.

Ethernet Connection: Search only those connect via Ethernet.

Both Are Chosen: Click both, both connections change synchronously.

Note: D8 Only supports Serial Port Connection.



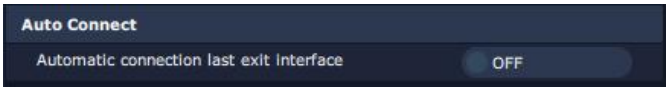
Display Setting: Users can turn on **Expanding Mode** if there is an extension screen.



Novice Guide: Check novice guide for quicker operation of XPOSE software.



Auto Connect： Turn on auto connection switch and the interface will pop up a prompt to remind the user whether to restore the previous interface.

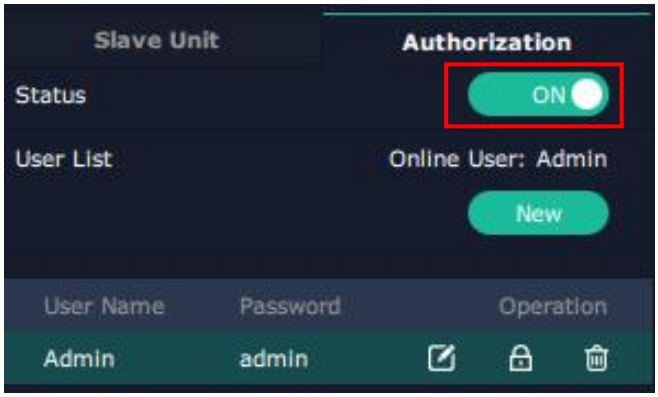


Authorization Setting

Click  to open up the authorization entry.

Authorization Setting is used to add and edit the user name and password for authorized users, as well as the permissions that users can operate.

Authorization Status **defaults to OFF**, please **Turn On Status** for operation.

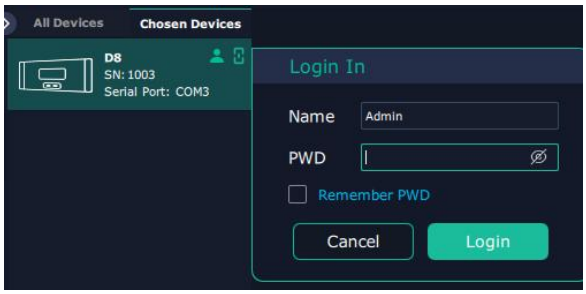


For operating device for the first time, or device upgrade, or factory reset, XPOSE defaults to log in as Administrator with **name defaults to Admin, and PWD defaults to admin**.  is displayed in Chosen Devices.



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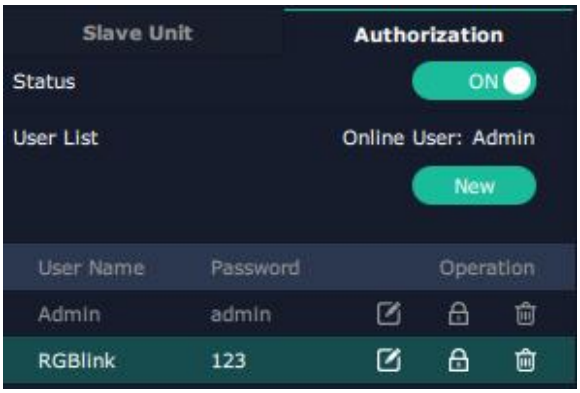
If users have logged in XPOSE before,  is displayed in Chosen Devices. Enter Name and PWD, then click Login.  icon indicates successful operation.



Click **New** in Authorization interface to add new USER NAME and set PWD.

Then click **Save** to confirm.



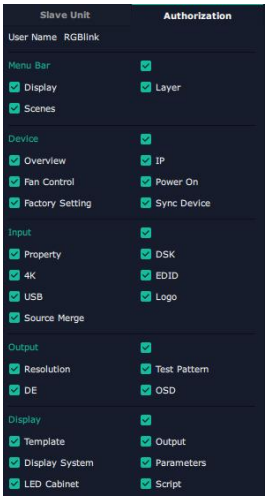


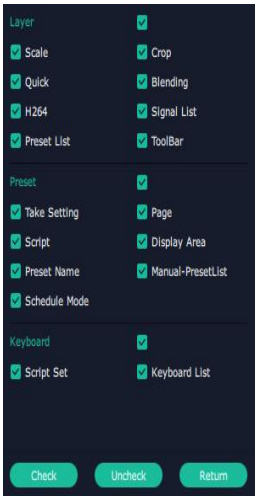
 **Edit:** Edit user name and password already built.

 **Delete:** Delete user name and password already built.

 **Authorization Set:** Functions on XPOSE 2.0 on this computer that the users are allowed to operate.
Click the green block to remove the function not to be permitted.







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3.3.3 Output|Input|Overview

Click  to check rear panel interface as shown in the right figure.



Note:

1.  purple tip indicates input,  blue tip indicates output,  yellow tip indicates communication.
2. Interface Color Description: 1) Green: normal signal; 2) Yellow: abnormal signal; White: no signal.

Device Connection

1. Click the device you need in the <All Devices> list.
2. Click  in the <Chosen Device>.





Output Setting

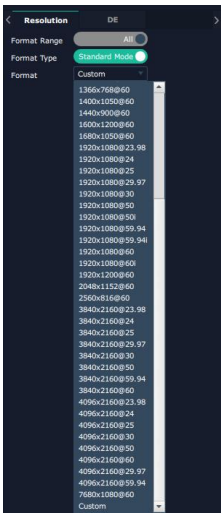
Click any output port, the board where the port locates is selected. Users can do settings to the port now.
A red rectangle flashes around the chosen port when it is clicked.



Note: Please check first to make sure that the model chosen in Find Device, and communication type in Communication Setting are both correct.

Resolution:
Users can choose **Standard Resolution** or **Custom Resolution**.

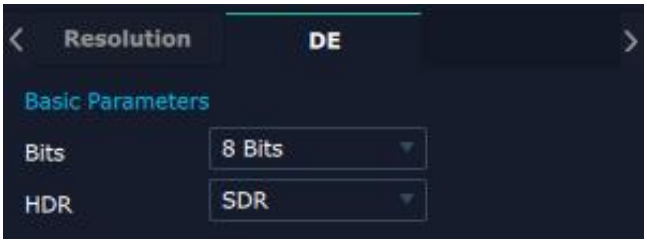
1. Standard Resolutions can be chosen from 1024×768@75 to 7680×1080@60 as shown in the right figure.
2. D8 supports to customize output resolution. Click output port and type in Width, Height and Refresh Rate.





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DE:



Bits: 8 bits, 10bits or 12 bits optional
HDR: SDR, HDR10, HLG optional

Input Setting

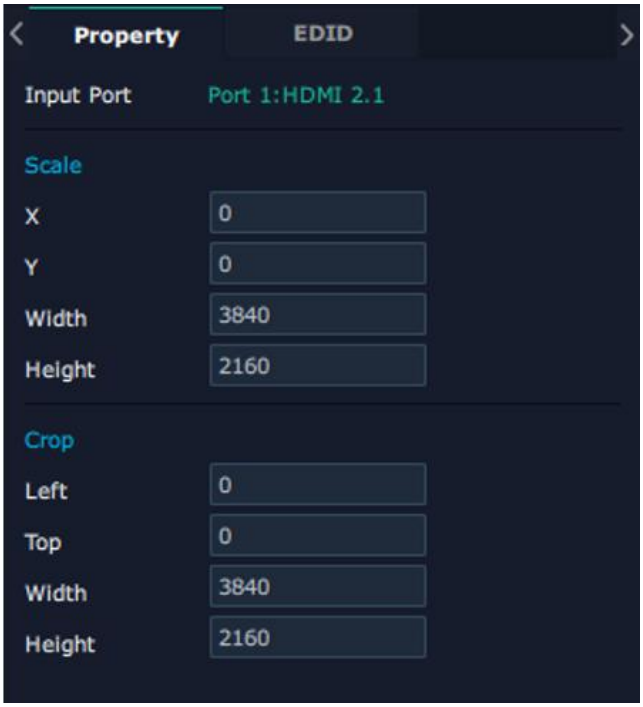
Click input port, such as HDMI 2.1 IN, and users can do settings to the port now.



A red rectangle flashes around the chosen port when it is clicked.

User can set **<Property>** and **<EDID>**.

Property Setting



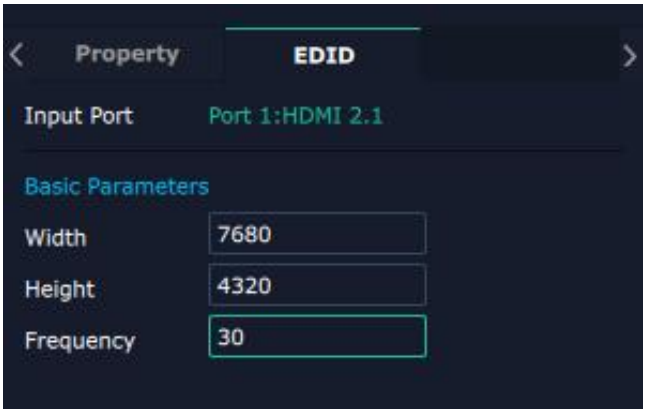
Input Port: chosen port
Scale:
X/Y: the starting horizontal and vertical position
Width/Height : the horizontal and vertical size of scale.
Crop:
Support cropping for position, height and width.

EDID

Input Port: chosen port

Basic Parameters:

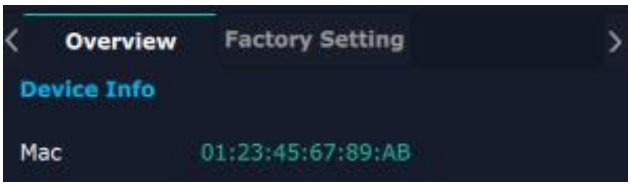
Width/Height/Frequency: type in custom parameters to meet your needs.



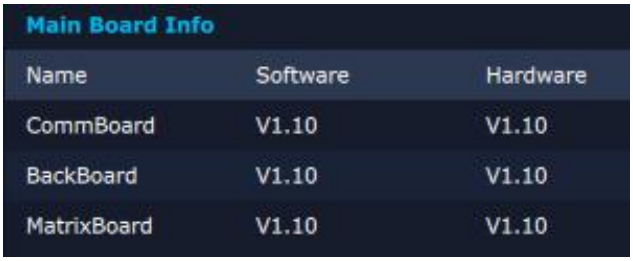
Overview

Click **Return** Return, there are Overview and Factory Setting.

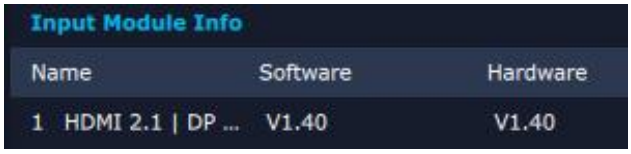
Device Info: users can check current Mac information.



Main Board Info: users can check software and hardware version of CommBoard, BackBoard, MatrixBoard.



Input Module Info: users can check current input module name, software version and hardware version.



Output Module Info: users can check current output module name, software version and hardware version.



Factory Setting

Remove EDID: clear the previous EDID parameter

Tick Remove EDID and then click **Reset**.



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3.3.4 Display Management

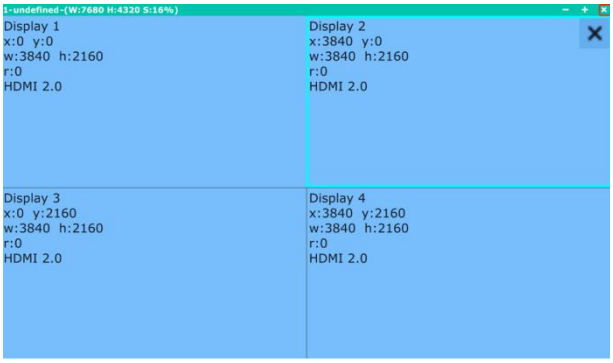
Display System is for users to set layout of outputs.

Click  to enter layout management interface.

D8 is set to Cross by default, shown as figure in right.

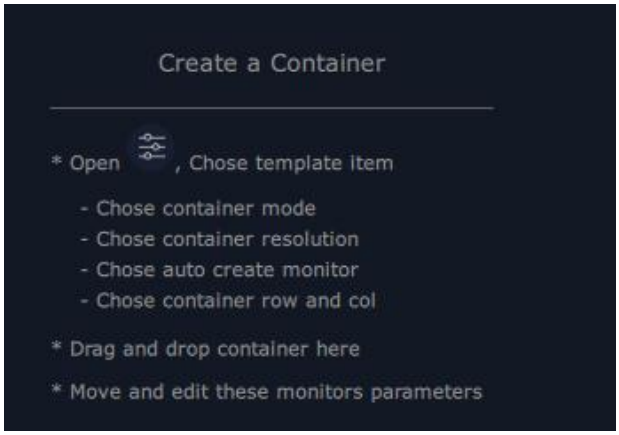


If you need layouts such as H 1/4, V 1/4 or others, press and hold  to cancel current screen group and then create a new container.



Container:

Container here means the Display Area, for example it could be a formed LED screen or an array of LCDs.

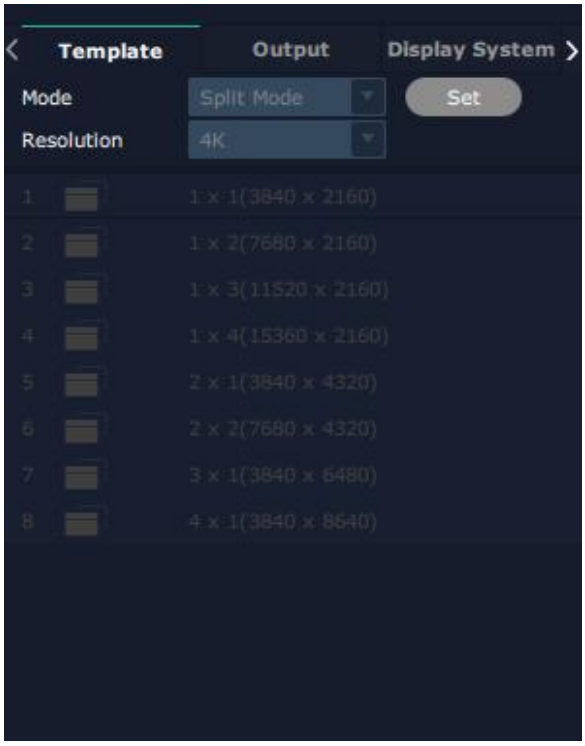


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Template

There are **8** types of basic "Display Area", which is used to contain output interface, and could be regarded as layout of output.

Drag a template to create a container in other word a display area.



Resolution

Users can choose output resolution as shown in the figure.

Mode

Each mode is marked in different color and provided with fitted templates. Users can do operations under different modes.

D8 supports Split Mode.

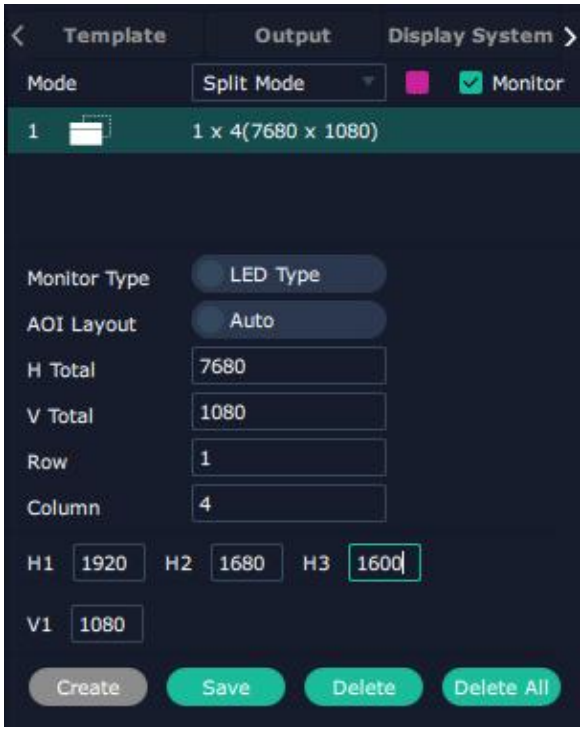
No container is reserved after change of resolution under Split Mode, that is, you need to recreate a container.

Customize Container

Click 

at the bottom of template list.

Monitor Layout: Auto or Manual



Steps of create container are as follows:

1. Fill in H Total/V Total and Row/Column ,it will calculate H item and V item automatically.

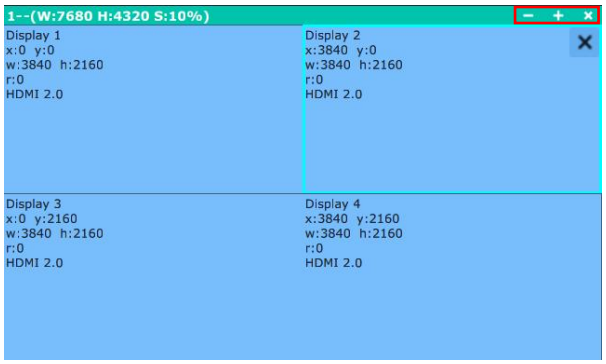
For example, if you would like to create a container with 1 row and 4 columns and each display has a height of 1080, width of the first container is 1920, the second container is 1680, the third container is 1600 and the fourth container is 2480. The total width will be 7680 and the total height will be 1080.

2. Click <**Create**>, the container will display in the interface, and shows the width and height of each Display.

3. Click<**Save**> to save the container.

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Container Adjustment



1. **Move:** Drag the boarder of the display area to move its place in the interface.

2. **Scale:** Click icon  to shrink, Click  to enlarge the proportion of display area on interface.

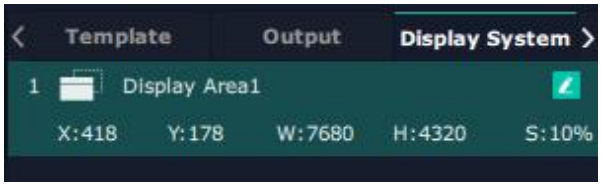
3. **Cancel:** Press and hold  to cancel the screen group.

Display



Output List:
White one：available
Gray one：unavailable
Operation Steps:
Left-mouse click the output and drag it to the display of the set container.
Replacement:
Drag and drop the output into the corresponding display. The output being replaced will turn from gray to white in the list.

Display System



D8 allows users to edit the name of the Display Area that has been created by clicking .

3.3.5 Layer Management



Layer Management is designed to manage the layer of each monitor. Click this icon  to enter the interface:

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Display Area

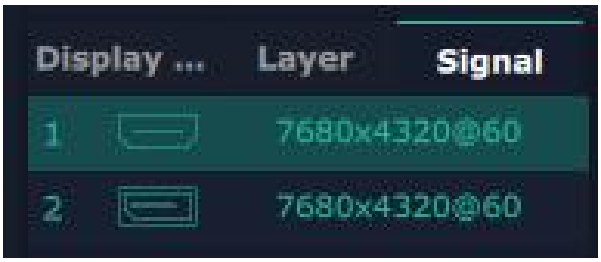
When enter Layer Management interface, the window is blank. The screen group created in Display System shall be dragged from the **Display Area.**



Signal

Signal list, showing all input signals and resolutions currently. Drag the signal to the display.

Click, users can rename the input signal and then click to confirm.

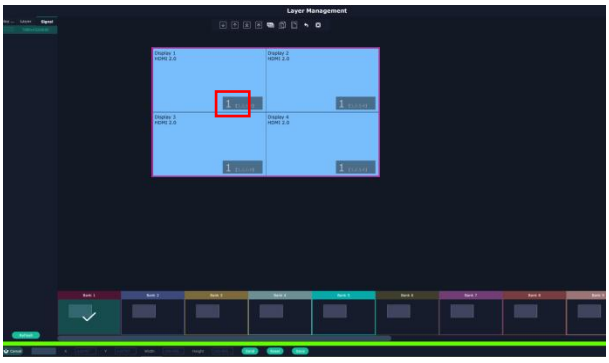


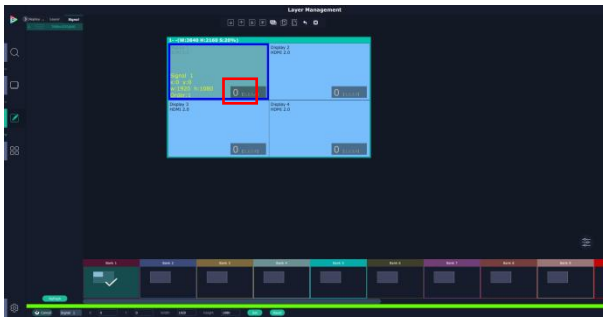
Layer

Layer number: The number in the red rectangle on the right figure represents the number of layers that can be placed at the output.

As the signal is dragged in, the layer number decreases. If the layer number has been used up, the signal cannot be dragged in.

Note: D8 only supports 1*8K layer.





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Layer Adjustment:

there are two ways to adjust layer.

1. Use the bar under the interface

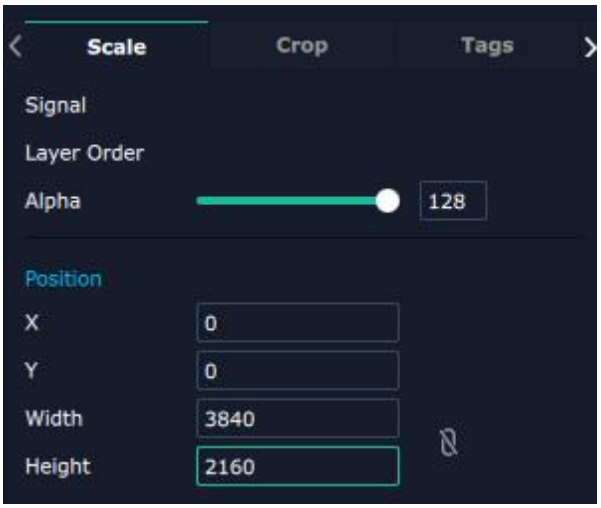
Choose one layer and the bar shows its signal source,



type in position and size. Click **Save** to confirm.

2. Layer Scale and Crop

Choose one layer needed to be adjusted, and type in its position and size.



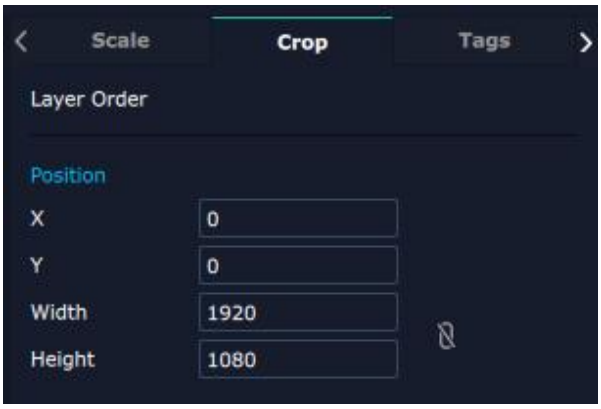
Alpha: 0~128

X/Y: the horizontal and vertical position of crop/scale

Width/Height: the horizontal and vertical size of crop /scale

this icon means data related, when width is changed, height will be changed as same proportion.

 this icon means data not related, width and height need to be filled respectively.



Layer Movement

Moving the mouse to drag the layer.



Layer Remove

Click the cross on the top right of the layer to remove the layer if needed.

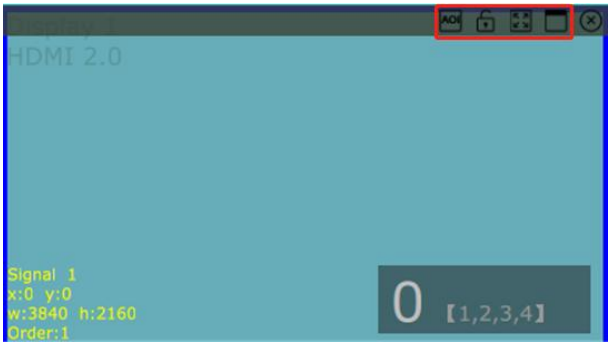
Layer Set

: to crop the layer

: lock the layer to prevent wrong operations

: max to cover up the monitor.

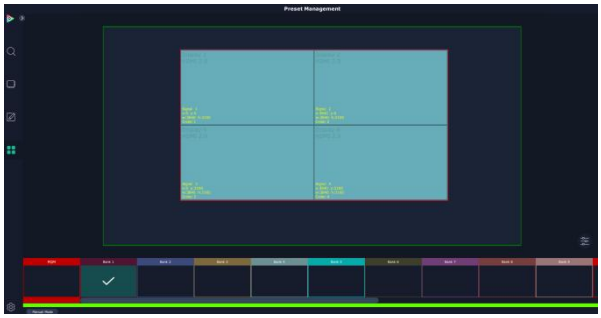
: cover up all monitors in the same screen group with the one signal.



3.3.6 Preset Management

Preset Management is designed to switch bank (scene setting done in last step).
Preset Management Mode:

1. Manual Mode 2. Schedule Mode

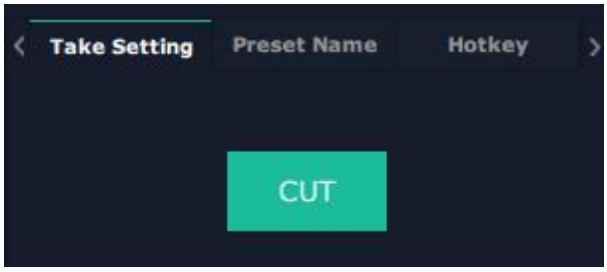


1. Manual Mode

The chosen scene will be displayed in the main interface, and the PGM screen is in the first in the Bank Column.

Cut

Cut, switch from PVW to PGM immediately .



Preset Name

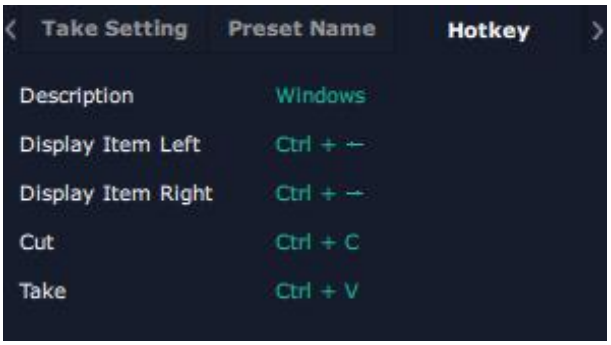
Select a bank and click Preset Name, fill in the blank after New Preset Name to rename a Preset (Bank).
Click the color block after Color Selection and choose a new color for the boarder of chosen bank.



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Hotkey

Use hotkey to let the operation in Preset Management more convenient.

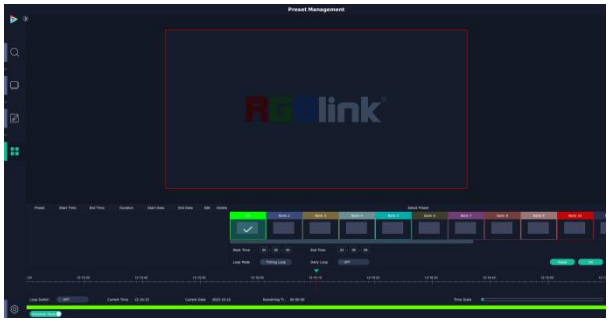


2. Schedule Mode

This mode is designed to set auto bank (scene/preset) switch.

Steps are as follows:

1. Turn on **"Schedule Mode"**
2. Choose **"Times Loop"** in Loop Mode
3. Choose the BANK
4. Fill in the **"Duration"**
5. Click "**OK**"



Users can click to edit and to delete. After settings done, turn on **"Loop Switch"** .



Chapter 4 Order Codes

4.1 Product Code

130-0008-05-0	D8
130-0008-03-0	D8 PLUS

Chapter 5 Support

5.1 Contact Us



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Chapter 6 Appendix

6.1 Specification

Model		**D8**		**D8 PLUS**	
Connectors	Input	HDMI 2.1	2×HDMI-A	HDMI 2.1	1×HDMI-A
				DP 1.4	1×DP
	Output	HDMI 2.0	4×HDMI-A	HDMI 2.0	4×HDMI-A
	Communication	Genlock	2×BNC (1×IN | 1×LOOP)	Genlock	2×BNC (1×IN | 1×LOOP)
		LAN	1×RJ45	LAN	1×RJ45
		RS232	1×RJ11	RS232	1×RJ11
	Power	1×IEC		1×IEC	
Performance	Input Resolutions	*Automatic recognition*			
		HDMI 2.1			
		SMPTE	1280x720@50/60 | 1920x1080@30/50/60 | 3840x2160@25/30 | 7680x4320@30/60		
		VESA	1024×768@60 | 1280×800@60 | 1280×1024@60 | 1360×768@60 | 1366×768@60 | 1440×900@60 | 1920×1200@60 2560×1440@60 | 2560×1600@60/120 | 3840×2160@30/60/120 | 4096×2160@50/59/60 | 7680×4320@30/60 | custom resolution		
		DP 1.4			
		SMPTE	1280x720@50/60 | 1920x108030/50/60 | 3840x2160@25/30 | 7680x4320@30/60		
		VESA	1024×768@60 | 1280×800@60 | 1280×1024@60 | 1360×768@60 | 1366×768@60 | 1440×900@60 | 1920×1200@60 2560×1440@60 | 2560×1600@60/120 | 3840×2160@30/60/120 | 4096×2160@50/59/60 | 7680×4320@30/60 | custom resolution		
	Output Resolution	*Select standard resolution or custom resolution*			
		HDMI 2.0			
		SMPTE	1280x720@50/60 | 1920x1080@30/50/60 | 3840x2160@30/60		
		VESA	1280x720@23.98/24/25/29.97/30/50/59.94/60 | 1920x1080@23.98/24/25/29.97/30/50/59.94/60/120 | 1920x2160@120 3840x2160@23.98/24/25/29.97/30/50/59.94/60 | 4096x2160@23.98/24/25/29.97/30/50/59.94/60 | custom resolution		
	Supported Standard	HDMI	2.1		
		DP	1.4		
	Colorspace	HDMI 2.1 Input	YUV	RGB	
		8K60	4:2:0 8/10/12 bit	—	
		8K30	4:2:0 8/10/12 bit | 4:2:2 8/10/12 bit |	8/10 bit	

			4:4:4 8/10 bit	
		4K60	4:2:0 | 4:2:2 | 4:4:4 8/10/12 bit	8/10/12 bit
		4K30	4:2:0 | 4:2:2 | 4:4:4 8/10/12 bit	8/10/12 bit
		HDMI 2.0 Output	YUV	RGB
		4K60	—	8 bit
		4K30	—	8/10/12 bit
		DP 1.4 Input	YUV	RGB
		8K60	4:2:0 8 bit | 4:2:2 8/10 bit | 4:4:4 8/10/12 bit	8/10/12 bit
		8K30	4:2:0 | 4:2:2 | 4:4:4 8/10/12 bit	8/10/12 bit
		4K60	4:2:0 | 4:2:2 | 4:4:4 8/10/12 bit	8/10/12 bit
		4K30	4:2:0 | 4:2:2 | 4:4:4 8/10/12 bit	8/10/12 bit
Hardware Information	Device Model	macOS	Mac Studio, M2 Max, Sonoma 15.5, HDMI2.1 / Thunderbolt 5	
		Windows	AMD RADEON RX7900 XT,HDMI2.1 / DP 1.4	
		Windows	Nvidia RTX4060,HDMI2.1 / DP 1.4	
Power	Input Voltage	AC 100V-240V， 50/60Hz		
	Maximum Power	40W		
	Heat Dissipation	2.59 MJ/day		
Working Environment	Temperature	0℃ ~ 45℃		
	Humidity	15% ~ 85%		
Physical	Device Weight	7.2kg		
	Packaged Weight	8.5kg		
	Device Dimension	484mm×378mm×88.6mm		
	Packaged Dimension	630mm×585mm×250mm		

**** 8K60 input resolutions and 4K60 output resolutions supported; downward compatible with other custom input/output resolutions.***

6.2 Terms & Definitions

●**RCA:** Connector used primarily in consumer AV equipment for both audio and video. The RCA connector was developed by the Radio Corporation of America.

●**BNC:** Stands for Bayonet Neill-Concelman. A cable connector used extensively in television (named for its inventors). A cylindrical bayonet connector that operates with a twist-locking motion.

●**CVBS:** CVBS or Composite video, is an analog video signal without audio. Most commonly CVBS is used for transmission of standard definition signals. In consumer applications the connector is typically RCA type, while in professional applications the connector is BNC type.

●**YPbPr:** Used to describe the colour space for progressive-scan. Otherwise known as component video.

●**VGA:** Video Graphics Array. VGA is an analog signal typically used on earlier computers. The signal is non-interlaced in modes 1, 2, and 3 and interlaced when using in mode

●**DVI:** Digital Visual Interface. The digital video connectivity standard that was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handles digital video signals only, and one with 29 pins that handles both digital and analog video.

●**SDI:** Serial Digital Interface. Standard definition video is carried on this 270 Mbps data transfer rate. Video pixels are characterized with a 10-bit depth and 4:2:2 color quantization. Ancillary data is included on this interface and typically includes audio or other metadata. Up to sixteen audio channels can be transmitted. Audio is organised into blocks of 4 stereo pairs. Connector is BNC.

●**HD-SDI:** high-definition serial digital interface (HD-SDI), is standardized in SMPTE 292M this provides a nominal data rate of 1.485 Gbit/s.

●**3G-SDI:** standardized in SMPTE 424M, consists of a single 2.970 Gbit/s serial link that allows replacing dual link HD-SDI.

●**6G-SDI:** Standardized in SMPTE ST-2081 released in 2015, 6Gbit/s bitrate and able to support 2160p@30.

●**12G-SDI:** Standardized in SMPTE ST-2082 released in 2015, 12Gbit/s bitrate and able to support 2160p@60.

●**U-SDI:** Technology for transmitting large-volume 8K signals over a single cable. a signal interface called the ultra high definition signal/data interface (U-SDI) for transmitting 4K and 8K signals using a single optical cable. The interface was standardized as the SMPTE ST 2036-4.

●**HDMI:** High Definition Multimedia Interface: An interface used for the transmission of uncompressed high definition video, up to 8 channels of audio, and control signals, over a single cable.

●**HDMI 1.3:** Released on June 22 2006, and increased the maximum TMDS clock to 340 MHz (10.2 Gbit/s). Support resolution 1920 × 1080 at 120 Hz or 2560 × 1440 at 60 Hz). It added support for 10 bpc, 12 bpc, and 16 bpc color depth (30, 36, and 48 bit/px), called deep color.

● **HDMI 1.4:** Released on June 5, 2009, added support for 4096 × 2160 at 24 Hz, 3840 × 2160 at 24, 25, and 30 Hz, and 1920 × 1080 at 120 Hz. Compared to HDMI 1.3, 3 more features added which are HDMI Ethernet Channel (HEC) , audio

return channel (ARC),3D Over HDMI, a new Micro HDMI Connector, an expanded set of color spaces.

● **HDMI 2.0:** Released on September 4, 2013 increases the maximum bandwidth to 18.0 Gbit/s. Other features of HDMI 2.0 include up to 32 audio channels, up to 1536 kHz audio sample frequency, the HE-AAC and DRA audio standards, improved 3D capability, and additional CEC functions.

●**HDMI 2.0a:** Was released on April 8, 2015, and added support for High Dynamic Range (HDR) video with static metadata.

● **HDMI 2.0b:** Was released March, 2016, support for HDR Video transport and extends the static metadata signaling to include Hybrid Log-Gamma (HLG).

● **HDMI 2.1 :** Released on November 28, 2017. It adds support for higher resolutions and higher refresh rates, Dynamic HDR including 4K 120 Hz and 8K 120 Hz.

●**DisplayPort:** A VESA standard interface primarily for video, but also for audio, USB and other data. DisplayPort (orDP) is backwards compatible with HDMI, DVI and VGA.

●**DP 1.1:** was ratified on 2 April 2007, and version 1.1a was ratified on 11 January 2008. DisplayPort 1.1 allow a maximum bandwidth of 10.8 Gbit/s (8.64 Gbit/s data rate) over a standard 4-lane main link, enough to support 1920x1080@60Hz.

●**DP 1.2:** introduced on 7 January 2010, effective bandwidth to 17.28 Gbit/s support increased resolutions, higher refresh rates, and greater color depth, maximum resolution 3840 × 2160@60Hz

●**DP 1.4:** publish on 1 Mar, 2016.overall transmission bandwidth 32.4 Gbit/s ,DisplayPort 1.4 adds support for Display Stream Compression 1.2 (DSC), DSC is a "visually lossless" encoding technique with up to a 3:1 compression ratio. Using DSC with HBR3 transmission rates, DisplayPort 1.4 can support 8K UHD (7680 × 4320) at 60 Hz or 4K UHD (3840 × 2160) at 120 Hz with 30 bit/px RGB color and HDR. 4K at 60 Hz 30 bit/px RGB/HDR can be achieved without the need for DSC.

●**Multi-mode Fiber:** Fibers that support many propagation paths or transverse modes are called multi-mode fibers, generally have a wider core diameter and are used for short-distance communication links and for applications where high power must be transmitted.

●**Single-mode Fiber:** Fiber that support a single mode are called single-mode fibers. Single-mode fibers are used for most communication links longer than 1,000 meters (3,300 ft).

●**SFP:** small form-factor pluggable, is a compact, hot-pluggable network interface module used for both telecommunication and data communications applications.

●**Optical Fiber Connector:** terminates the end of an optical fiber, and enables quicker connection and disconnection than splicing. The connectors mechanically couple and align the cores of fibers so light can pass. 4 most common types of optical fiber connectors are SC, FC, LC,ST.

●**SC:** (Subscriber Connector), also known as the square connector was also created by the Japanese company – Nippon Telegraph and Telephone. SC is a push-pull coupling type of connector and has a 2.5mm diameter. Nowadays, it is used mostly in single mode fiber optic patch cords, analog, GBIC, and CATV. SC is one of the most popular options, as its simplicity in design comes along with great durability and affordable prices.

● **LC：** (Lucent Connector) is a small factor connector (uses only a 1.25mm ferrule diameter) that has a snap coupling

mechanism. Because of its small dimensions, it is the perfect fit for high-density connections, XFP, SFP, and SFP+ transceivers.

● **FC** :(Ferrule Connector) is a screw type connector with a 2.5mm ferrule. FC is a round shaped threaded fiber optic connector,mostly used on Datacom, telecom, measurement equipment, single-mode laser.

● **ST:** (Straight Tip) was invented by AT&T and uses a bayonet mount along with a long spring-loaded ferrule to support the fiber.

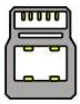
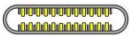
● **USB:** Universal Serial Bus is a standard that was developed in the mid-1990s that defines cables, connectors and communication protocols. This technology is designed to allow a connection, communication and power supply for peripheral devices and computers.

● **USB 1.1:** Full–Bandwidth USB, specification was the first release to be widely adopted by the consumer market. This specification allowed for a maximum bandwidth of 12Mbps.

●**USB 2.0:**or Hi–Speed USB, specification made many improvements over USB 1.1. The main improvement was an increase in bandwidth to a maximum of 480Mbps.

● **USB 3.2:** Super Speed USB with 3 varieties of 3.2 Gen 1(original name USB 3.0), 3.2Gen 2(original name USB 3.1), 3.2 Gen 2x2 (original name USB 3.2) with speed up to 5Gbps,10Gbps,20Gbps respectively.

USB version and connectors figure:

	Type A	Type B	Mini A	Mini B	Micro-A	Micro-B	Type C
USB 2.0							
USB 3.0							
USB 3.1&3.2							

●**NTSC :** The colour video standard used in North America and some other parts of the world created by the National Television Standards Committee in the 1950s. NTSC utilizes an interlaced video signals.

●**PAL:** Phase Alternate Line. A television standard in which the phase of the colour carrier is alternated from line to line. It takes four full images (8 fields) for the colour-to-horizontalimages (8 fields) for the colour-to-horizontal phase relationship to return to the reference point. This alternation helps cancel out phase errors. For this reason, the hue control is not needed on a PAL TV set. PAL, is widely used in needed on a PAL TV set. PAL, is widely used in Western Europe, Australia, Africa, the Middle East, and Micronesia. PAL uses 625-line, 50-field (25 fps) composite colour transmission system.

● **SMPTE：** Society of Motion image and Television Engineers. A global organization, based in the United States, that sets standards for baseband visual communications. This includes film as well as video and television standards.

●**VESA:** Video Electronics Standards Association. An organization facilitating computer graphics through standards.

●**HDCP:** High-bandwidth Digital Content Protection (HDCP) was developed by Intel Corporation an is in wide use for protection of video during transmission between devices.

●**HDBaseT:** A video standard for the transmission of uncompressed video (HDMI signals) and related features using Cat 5e/Cat6 cabling infrastructure.

●**ST2110:** A SMPTE developed standard, ST2110 describes how to send digital video over and IP networks. Video is transmitted uncompressed with audio and other data in a separate streams.

SMPTE2110 is intended principally for broadcast production and distribution facilities where quality and flexibility are more important.

●**SDVoE:** Software Defined Video over Ethernet (SDVoE) is a method for transmission, distribution and management AV signals using a TCP/IP Ethernet infrastructure for transport with low latency. SDVoE is commonly used in integration applications.

●**Dante AV:** The Dante protocol was developed for and widely adopted in audio systems for the transmission of uncompressed digital audio on IP based networks. The more recent Dante AV specification includes support for digital video.

●**NDI:** Network Device interface (NDI) is a software standard developed by NewTek to enable video-compatible products to communicate, deliver, and receive broadcast quality video in a high quality, low latency manner that is frame-accurate and suitable for switching in a live production environment over TCP (UDP) Ethernet based networks. NDI is commonly found in broadcast applications.

●**RTMP:** Real-Time Messaging Protocol (RTMP) was initially a proprietary protocol developed by Macromedia (now Adobe) for streaming audio, video and data over the Internet, between a Flash player and a server.

●**RTSP :** The Real Time Streaming Protocol (RTSP) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers. The protocol is used for establishing and controlling media sessions between end points.

●**MPEG:** Moving Picture Experts Group is a working group formed from ISO and IEC developing standards that allow audio/video digital compression and Transmission.

●**H.264:** Also known as AVC (Advanced Video Coding) or MPEG-4i is a common video compression standard. H.264 was standardized by the ITU-T Video Coding Experts Group (VCEG) together with the ISO/IEC JTC1 Moving Picture Experts Group (MPEG).

●**H.265:** Also known as **HEVC** (High Efficiency Video Coding)H.265 is the successor to the widely used H.264/AVC digital video coding standard. Developed under the auspices of ITU, resolutions up to 8192x4320 may be compressed.

●**API:** An Application Programming Interface (API) provides a predefined function which allows access capabilities and features or routines via a software or hardware, without accessing source code or understanding the details of inner working mechanism. An API call may execute a function and/or provide data feedback/report.

●**DMX512:** The communication standard developed by USITT for entertainment and digital lighting systems.The wide adoption of the Digital Multiplex (DMX) protocol has seen the protocol used for a wide range of other devices including video controllers. DMX512 is delivered over cable of 2 twisted pairs with 5pin XLR cables for connection.

●**ArtNet:** An ethernet protocol based on TCP/IP protocol stack, mainly used in entertainment/events applications. Built on the DMX512 data format, ArtNet enables multiple “universes” of DMX512 to be transmitted using ethernet networks for transport.

●**MIDI:** MIDI is the abbreviation of Musical Instrument Digital Interface. As the name indicates the protocol was developed for communication between electronical musical instruments and latterly computers. MIDI instructions are triggers or commands sent over twisted pair cables, typically using 5pin DIN connectors.

●**OSC:** The principle of Open Sound Control (OSC) protocol is for networking sound synthesizers, computers, and multimedia devices for musical performance or show control. As with XML and JSON, the OSC protocol allows sharing data. OSC is transported via UDP packets between devices connected on an Ethernet.

●**Brightness：** Usually refers to the amount or intensity of video light produced on a screen without regard to colour. Sometimes called black level.

●**Contrast Ratio：** The ratio of the high light output level divided by the low light output level. In theory, the contrast ratio of the television system should be at least 100:1, if not 300:1. In reality, there are several limitations. Well-controlled viewing conditions should yield a practical contrast ratio of 30:1 to 50:1.

●**Colour Temperature:** The colour quality, expressed in degrees Kelvin (K), of a light source. The higher the colour temperature, the bluer the light. The lower the temperature, the redder the light. Benchmark colour temperature for the A/V industry include 5000°K, 6500°K, and 9000°K.

●**Saturation:** Chroma, Chroma gain. The intensity of the colour, or the extent to which a given colour in any image is free from white. The less white in a colour, the truer the colour or the greater its saturation. Saturation is the amount of pigment in a colour, and not the intensity.

●**Gamma:**The light output of a CRT is not linear with respect to the voltage input. The difference between what you should have and what is actually output is known as gamma.

●**Frame:** In interlaced video, a frame is one complete image.A video frame is made up of two fields, or two sets of interlaced lines. In a film, a frame is one still image of a series that makes up a motion image.

●**Genlock:** Allows synchronisation of otherwise video devices. A signal generator provides a signal pulses which connected devices can reference. Also see Black Burst and Color Burst.

●**Blackburst:** The video waveform without the video elements.It includes the vertical sync, horizontal sync, and the Chroma burst information. Blackburst is used to synchronize video equipment to align the video output.

●**Colour Burst:** In colour TV systems, a burst of subcarrier frequency located on the back part of the composite video signal. This serves as a colour synchronizing signal to establish a frequency and phase reference for the Chroma signal. Colour burst is 3.58 MHz for NTSC and 4.43 MHz for PAL.

●**Colour Bars：** A standard test pattern of several basic colours (white, yellow, cyan, green, magenta, red, blue, and black) as a reference for system alignment and testing. In NTSC video, the most commonly used colour bars are the SMPTE standard colour bars. In PAL video, the most commonly used colour bars are eight full field bars. On computer monitors the most commonly used colour bars are two rows of reversed colour bars.

●**Seamless Switching:** A feature found on many video switchers. This feature causes the switcher to wait until the vertical interval to switch. This avoids a glitch (temporary scrambling) which often is seen when switching between sources.

●**Scaling:** A conversion of a video or computer graphic signal from a starting resolution to a new resolution. Scaling from one resolution to another is typically done to optimize the signal for input to an image processor, transmission path or to improve its quality when presented on a particular display.

●**PIP:** Picture-In-Picture. A small image within a larger image created by scaling down one of image to make it smaller. Other forms of PIP displays include Picture-By-Picture (PBP) and Picture- With-Picture (PWP), which are commonly used

with 16:9 aspect display devices. PBP and PWP image formats require a separate scaler for each video window.

●**HDR:** is a high dynamic range (HDR) technique used in imaging and photography to reproduce a greater dynamic range of luminosity than what is possible with standard digital imaging or photographic techniques. The aim is to present a similar range of luminance to that experienced through the human visual system.

●**UHD:** Standing for Ultra High Definition and comprising 4K and 8K television standards with a 16:9 ratio, UHD follows the 2K HDTV standard. A UHD 4K display has a physical resolution of 3840x2160 which is four times the area and twice both the width and height of a HDTV/FullHD (1920x1080) video signal.

●**EDID:** Extended Display Identification Data. EDID is a data structure used to communicate video display information, including native resolution and vertical interval refresh rate requirements, to a source device. The source device will then output the provided EDID data, ensuring proper video image quality.

6.3 Revision History

The table below lists the changes to the Video Processor User Manual.

Format	Time	ECO#	Description	Principal
V1.0	2022-05-19	0000#	First Release	Aster
V1.1	2023-10-10	0001#	Update touch screen operation	Aster
V1.2	2024-01-22	0002#	1. Add D8 PLUS model 2. Add INPUT option in Main Menu	Aster
V1.3	2024-08-13	0003#	The Ethernet port and Genlock port are now fully developed.	Aster
V1.4	2025-06-24	0004#	Add Section 6.1 Specification	Alyssa
V1.5	2025-09-12	0005#	Update the included accessories	Alyssa

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