Colorlight

X1 Controller

USER MANUAL

Content

Chapter 1 Overview

1.1 Overview

X1 is a professional LED display controller. It possesses powerful video signal receiving and processing capacities, and supports HD digital signals, in which the maximum input resolution is 1920×1200 pixels. It supports HD digital ports including HDMI and DVI, and seamless switching between signals. It supports arbitrary scaling and cropping of video sources.

X1 adopts 2 Gigabit Ethernet outputs, and it supports LED displays of 4096 pixels in maximum width or 2560 pixels in maximum height. Meanwhile, X1 is equipped with a series of versatile functions which can provide flexible screen control and high-quality image displays. It can be perfectly applied to small LED displays.

1.2 Features

● **Performance**

Supports arbitrary switching, scaling and cropping of video sources

Supports screen offset

Supports improved gray-scale performance at low brightness

Supports brightness and chromaticity adjustments

● **Input**

Supports 2 kinds of video input ports, including 1×HDMI and 2×DVI

Supports input resolutions up to 1920×1200@60Hz

Supports HDCP 1.4

● **Output**

Loading capacity: 1.31 million pixels, maximum width: 4096 pixels, maximum height: 2560 pixels
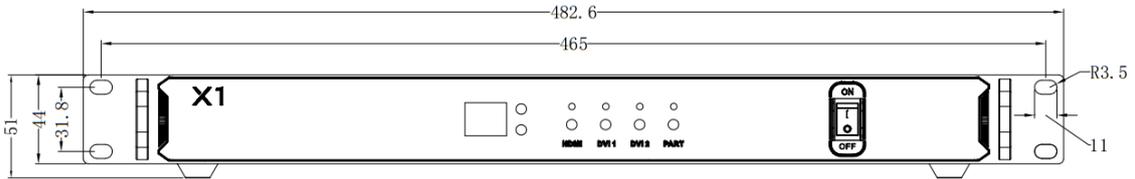
● **Control**

Dual USB 2.0 for high speed configuration and easy cascading among controllers
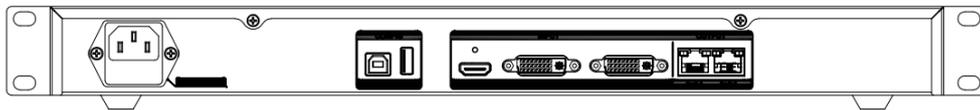
1.3 Structure

● **Dimensions: 1U standard box**

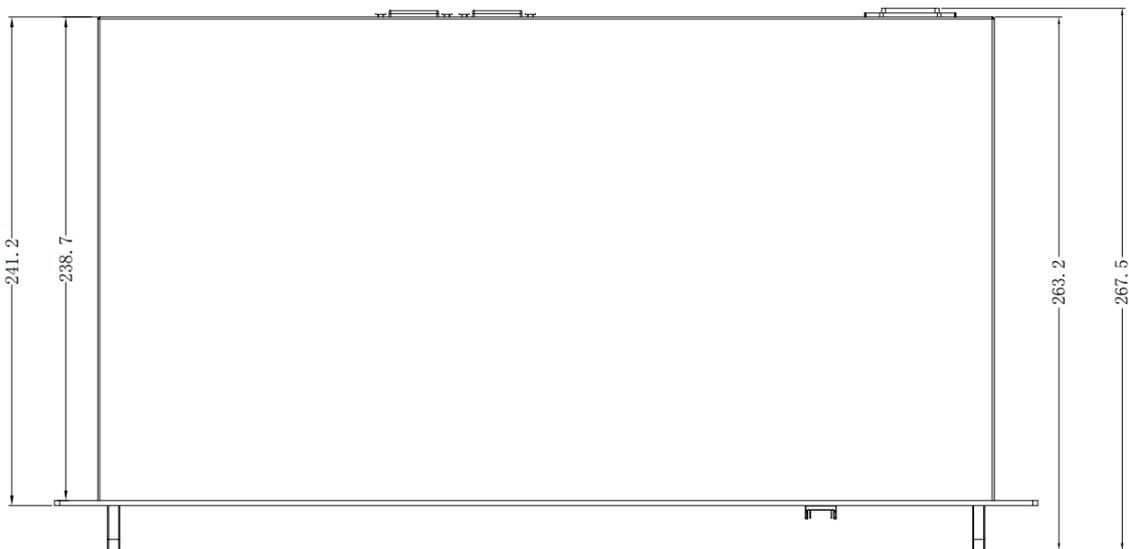The following figure shows the dimensions of the X1 for reference:
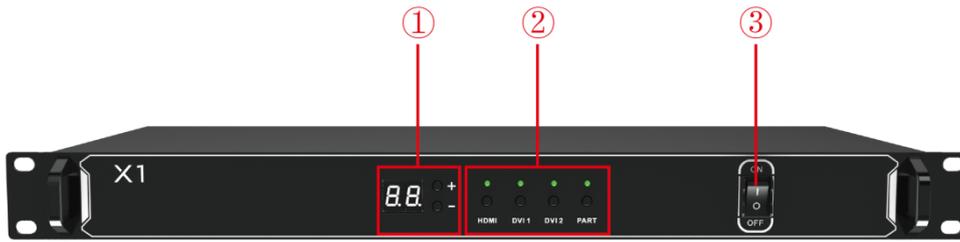
Main view (unit: mm)

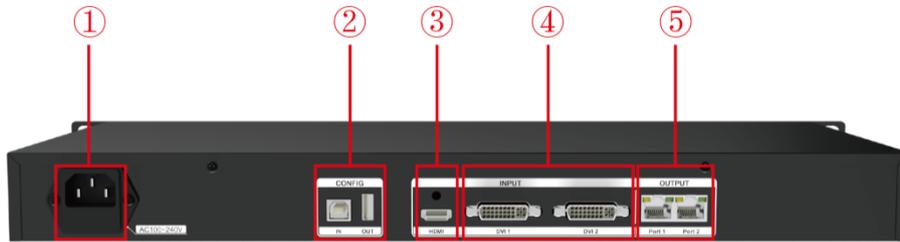Rear view (unit: mm)

Top view (unit: mm)

● **The Front Panel**

1	**Digital tube** Displays current brightness value The up and down buttons are used to adjust the brightness value, the adjustment range is 0-16.
2	**Button**
HDMI	**HDMI button** Switch the picture signal to HDMI signal, the button light is always on after selecting the signal.
DVI1	**DVI1 button** Switch the picture signal to DVI1 signal, the button light is always on after selecting the signal.
DVI2	**DVI2 button** Switch the picture signal to DVI2 signal, the button light is always on after selecting the signal.
PART	**PART button** Turn on/off the cropping function.
3	**Power button** Switch the X1 on/off

● **The Back Panel: Interface type and specifications**

Input Interface	
3	**HDMI** HDMI 1.4 standard, receives HDMI signal format image from devices such as computer or HD player, maximum supports 1920×1200@60Hz
4	**DVI1/2** Receives DVI signal format image from devices such as computer or HD player, maximum supports 1920×1200@60Hz
Output Interface	
5	**Gigabit Ethernet** 2 RJ45 Gigabit Ethernet outputs, which connect with the LED display.
Controlling Interface	
2	**IN** USB input, which connects with PC to configure parameters.
	OUT USB output, cascading with the next controller.
Power	
1	**Power interface** AC 100~240V, 50/60 Hz, maximum power: 8W, IEC-3 power interface.
Other Specifications	
	Working temperature: -40℃~70℃ **Anti-static design, low EMI radiation**

Chapter 2 Functions

2.1 Video Processing

● **Scaling, cropping**

Supports scaling and cropping; maximum width is 4096 pixels, maximum height is 2560 pixels.

● **Better gray**

2.2 Sending

● 2 Gigabit Ethernet outputs, single network port loads up to 655360 pixels.

● 16 sets of preset parameters, supports renaming, saving and loading.

● Supports brightness and chromaticity adjustments.

● Supports auto brightness adjustment in conjunction with multifunction cards.

● Supports loop backup of the primary and secondary network ports to ensure that the LED screen is displayed by the backup network cable after the main network cable is disconnected.

● Connection relationship between receiving cards is supported to save in the sender, and it is sent by the sender in real time; each network port supports the connection diagram storage of 100 receiving cards.

● Supports brightness calibration, chromaticity calibration, and soft edge.

● Supports self-generated test images: Vertical Moving Line, Horizontal Moving Line, Right Slash Move Down, Left Slash Move Down, Grid Move Down, Red, Green, Blue, White, Black, Gradient Red, Gradient Green, Gradient Blue, Gradient White.

Chapter 3 Operations

## 3.1 Signal Connection

3.2 Power On

Press the power button on the front panel of the X1, it will be turned on and enter the self-test status, all the button lights will light up in sequence until booting successfully. The device will display the last saved settings, the new device will display the factory default settings.

3.3 Software Control

Official website: http://www.colorlightinside.com.

Download the iSet software at "Support-Download-Software Download". Run the iSet software, the main interface is showed as follows.
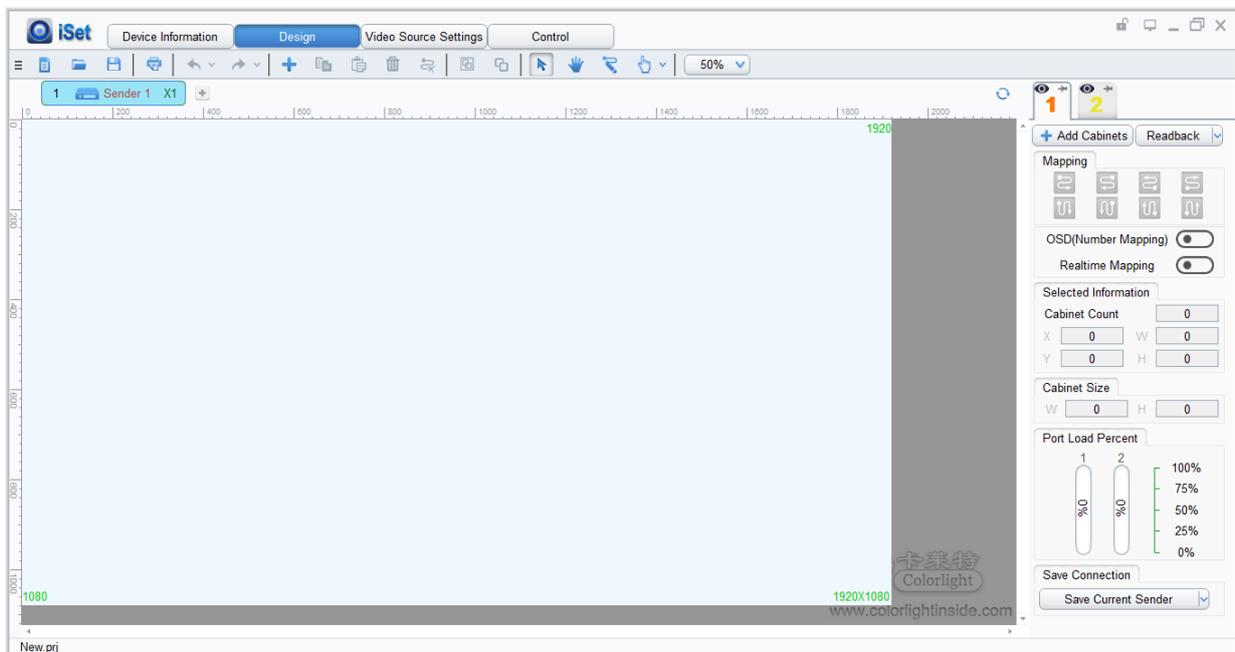
3.3.1 Device Information

● **Detect senders**

Connect the PC to device with USB cable or network cable, turn on the device.

Click "Detect Senders", acquire the device information.
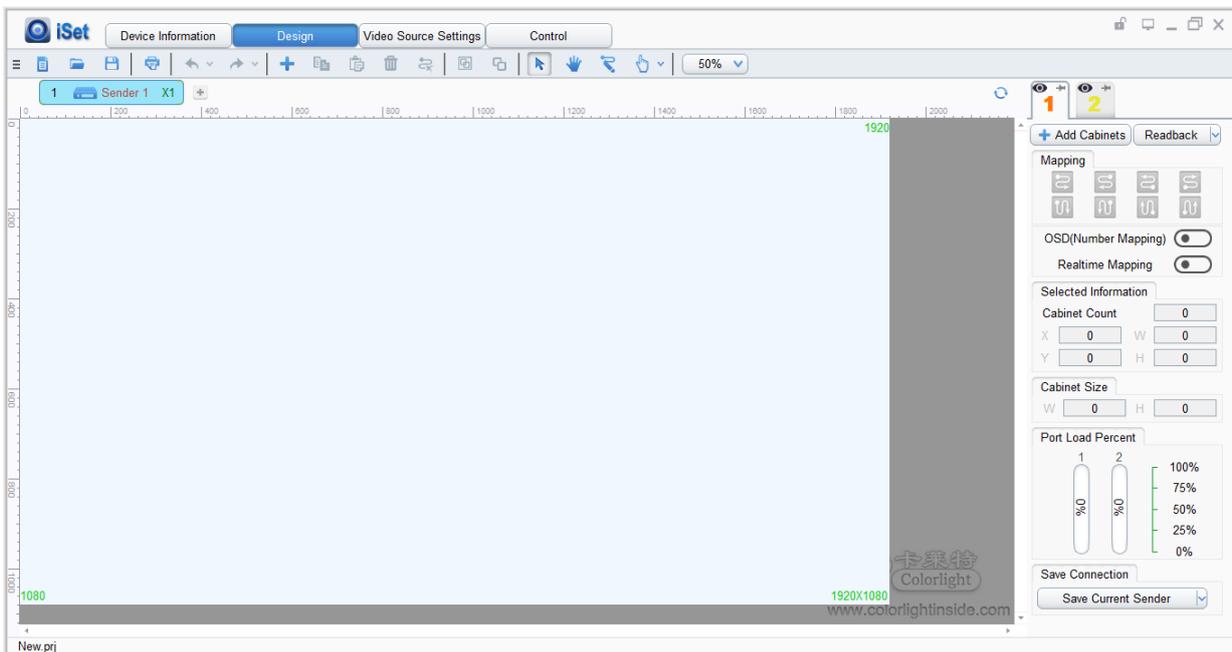

USB control and detect device information

● **Detect receiver cards**

Click "Detect Receiver Cards", acquire the receiver cards information.
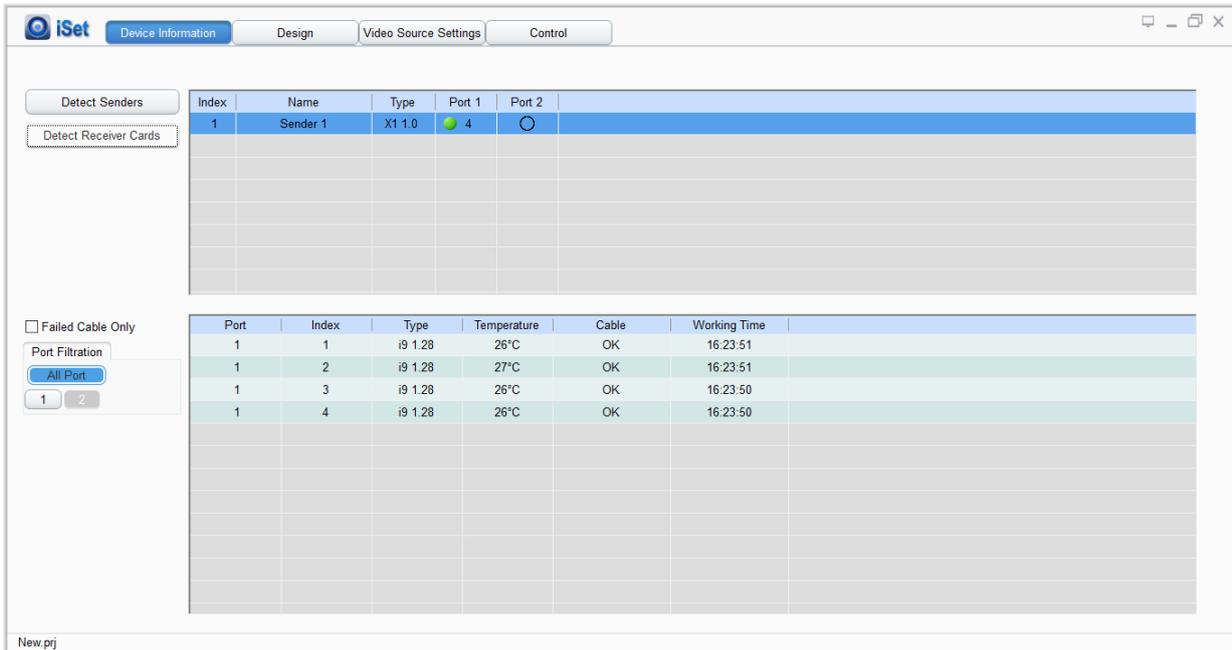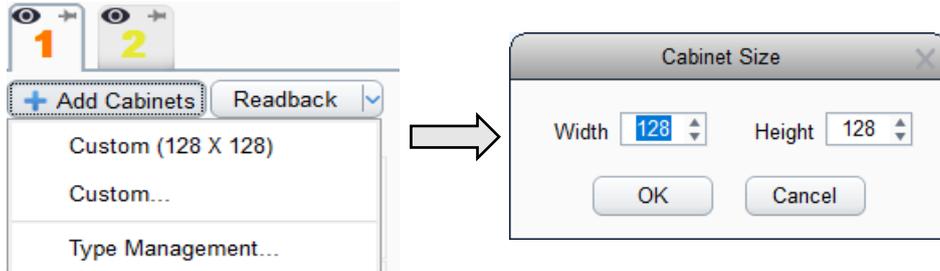

3.3.2 Design

On this page, the function of sender can be set as followed:

● **Send/Read back the mapping of receiver**

Choose the sender net ports that need cabinets to be added. Click "Add Cabinets" - "Custom", add cabinets according to the actual size of the cabinets. After adding certain amount of cabinets, set up the mapping according to the connection of real situation.
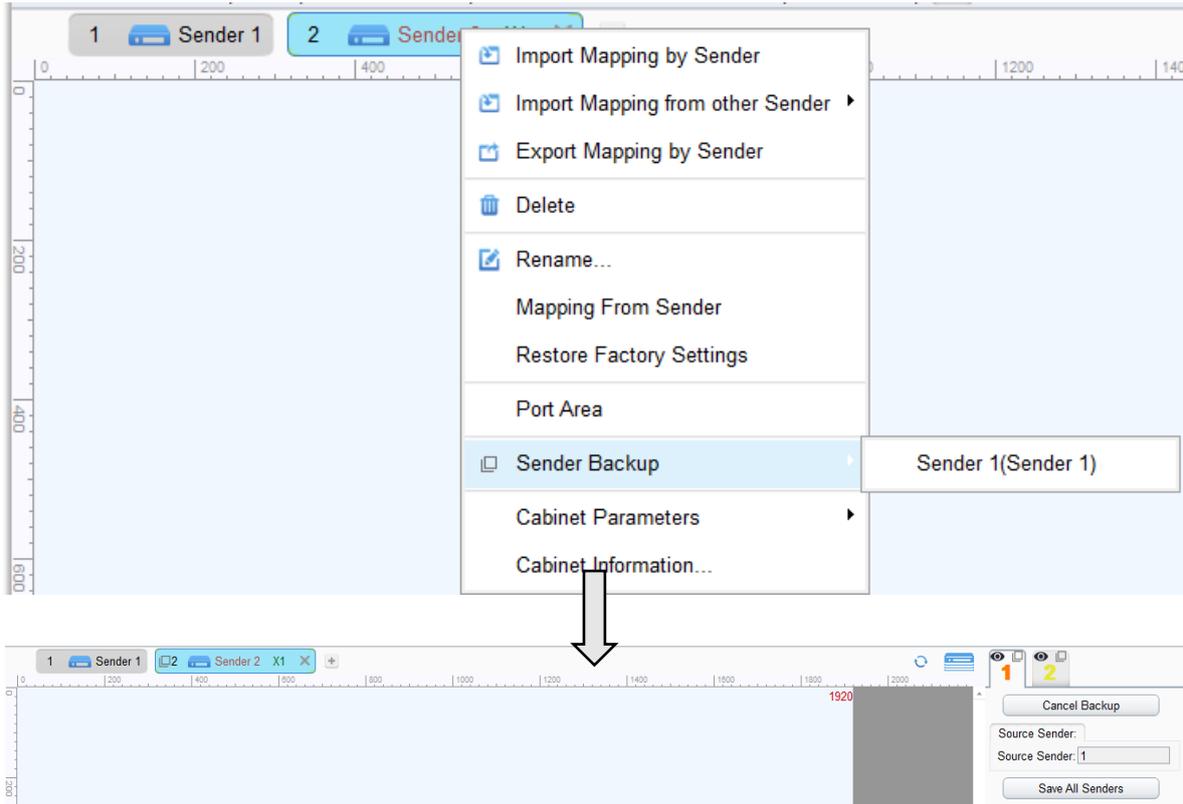
Click the button " " to save the mapping.

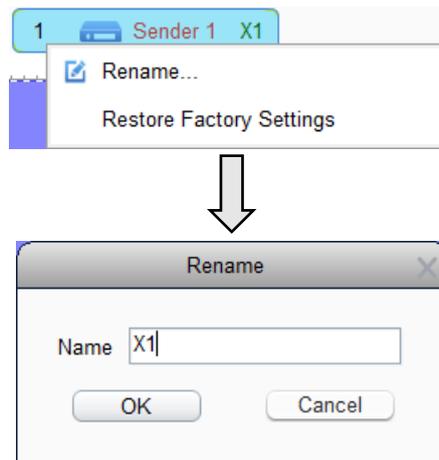Click the button " " to read back the mapping.

● **Port backup and sender backup**
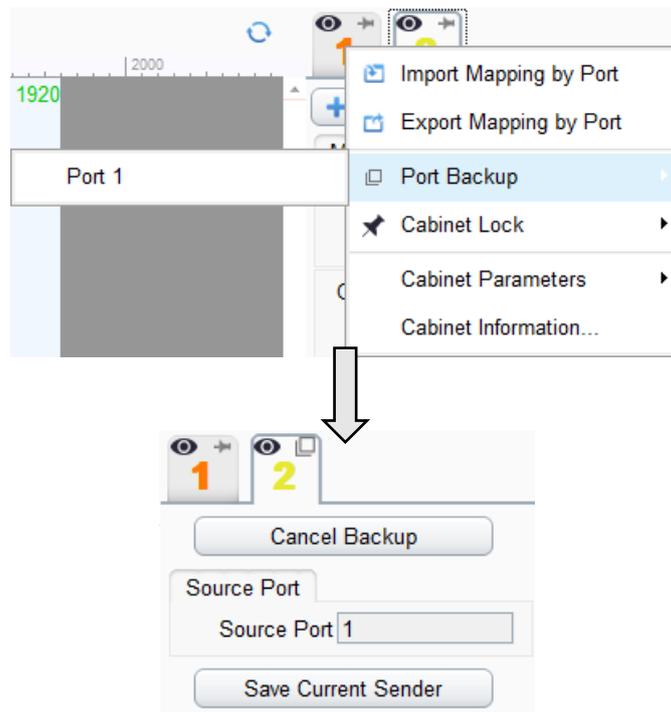
Right click the output port which you want to set as backup: Port Backup of the main port.

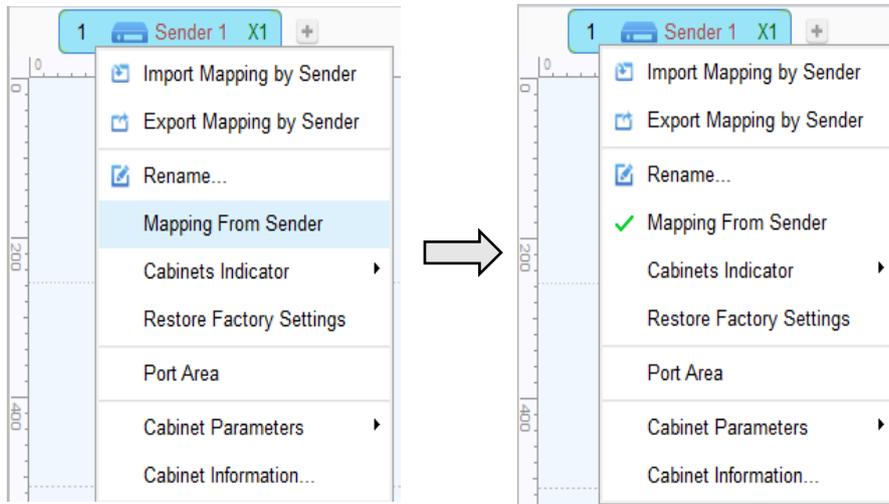For example, set the port 2 as the backup of port 1.

Right click the sender which you want to set as backup. For example, set the sender 2 as the backup of sender 1.
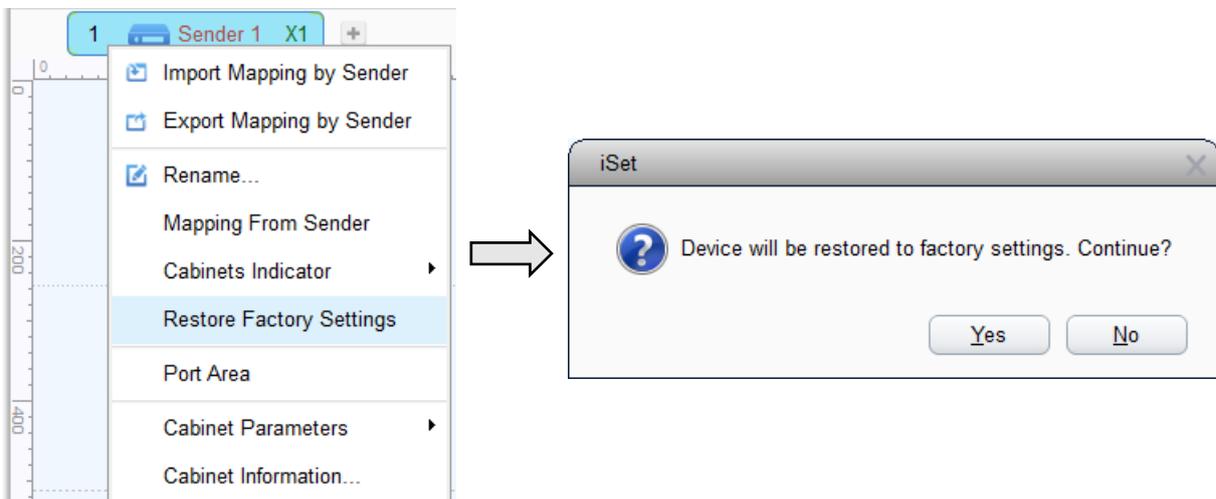
● **Rename**

Right-click the sender that needs to be renamed, choose "Rename" on the menu, and directly input the name of the sender into the popped-up window (limited to 50 English characters).
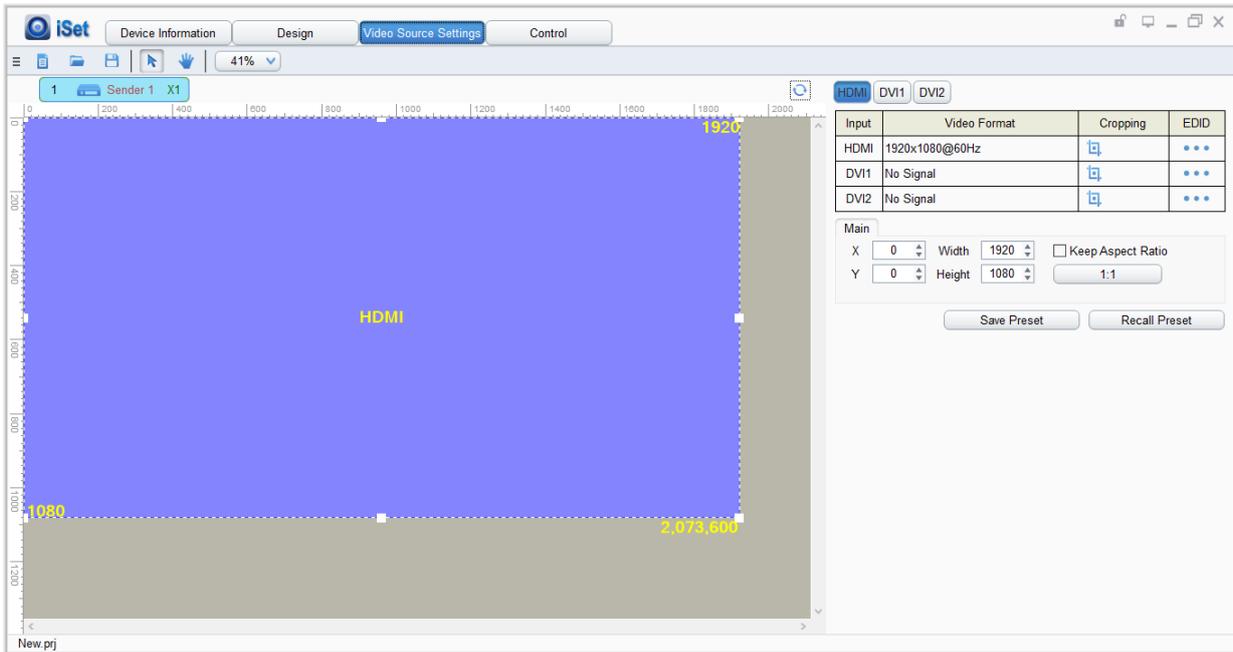
● **Mapping from sender**

Choose "Mapping From Sender", the mapping of cabinets will apply the mapping stored in the sender.
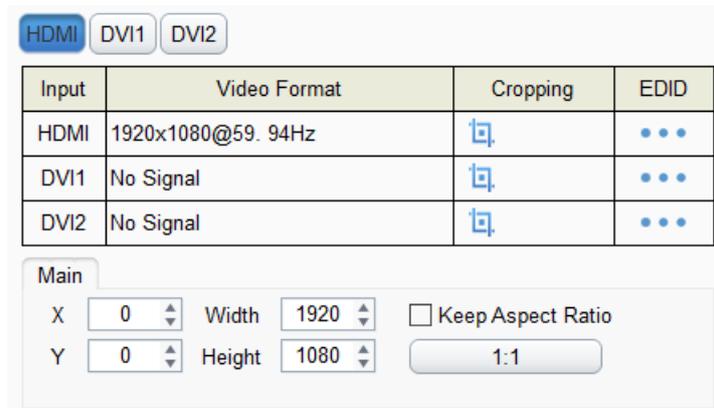
● **Restore factory settings**

Choose the sender which needs to restore factory settings, select "Yes" on the popped-up window.

3.3.3 Video Source Setting

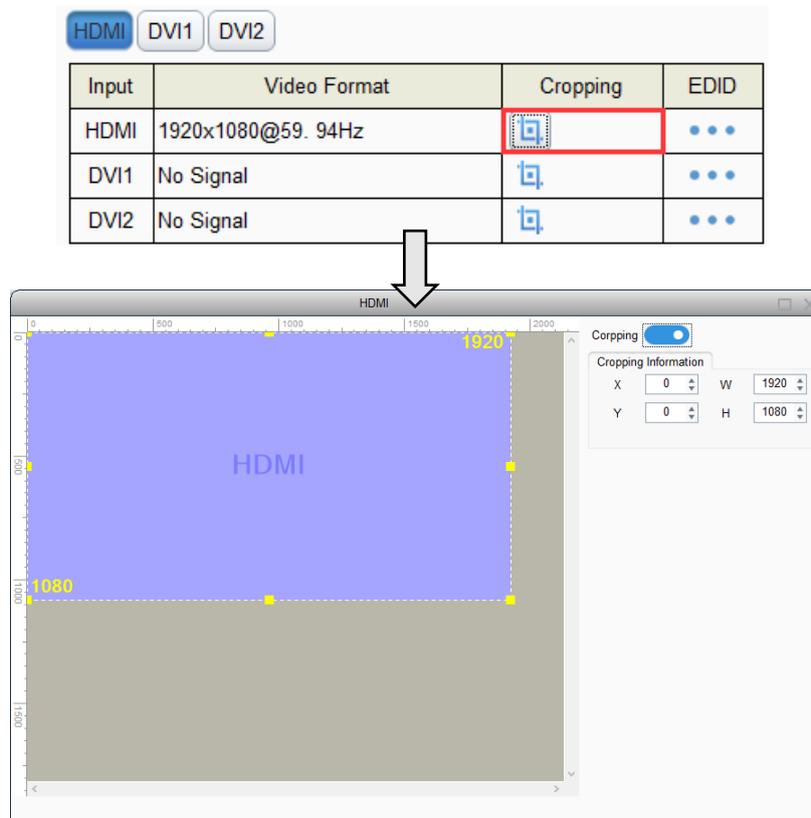**On this page you can setup the followed function:**

● **Main input display setting**

Choose video source - modify the start position of X, Y, width, height.

Two operations: input values on the interface; drag the position and the size of the signal window in the view area.

● **Cropping and EDID setting**

Select signal source of the image that needs to be cropped, click the cropping icon to enter the cropping interface. In the cropping interface, check "Crop", and set X, Y, width and height in "Cropping Information", then the cropping setting is auto saved.
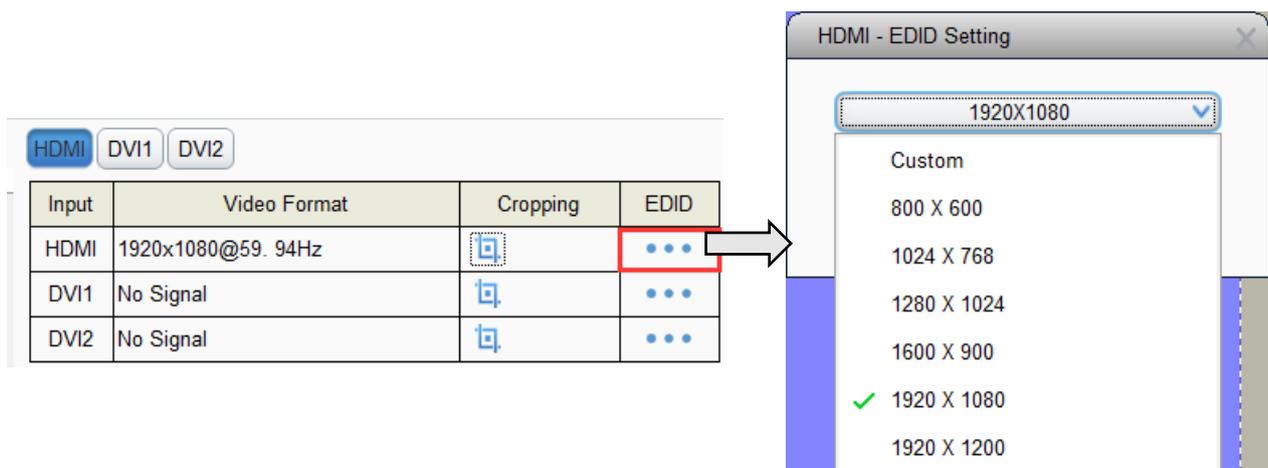
As shown in the figure, click the EDID setting icon after the corresponding signal, the EDID setting window will pop up. Click the drop-down list to select the mainstream resolution, or customize the resolution.
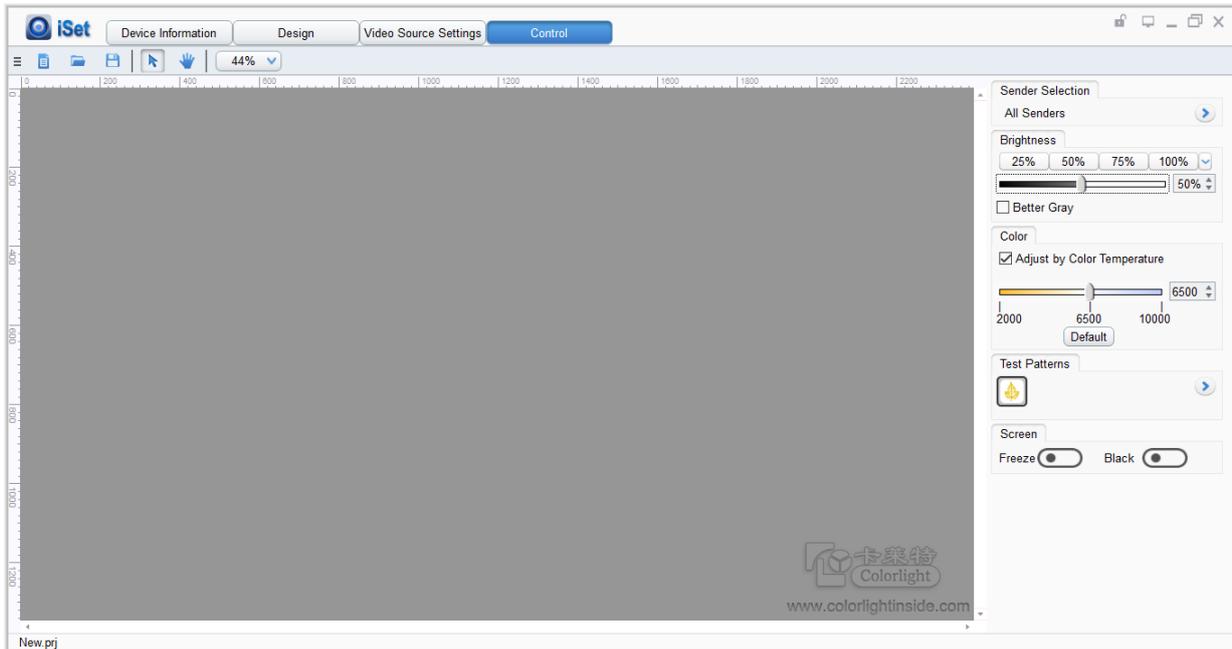
● **Save and recall preset**
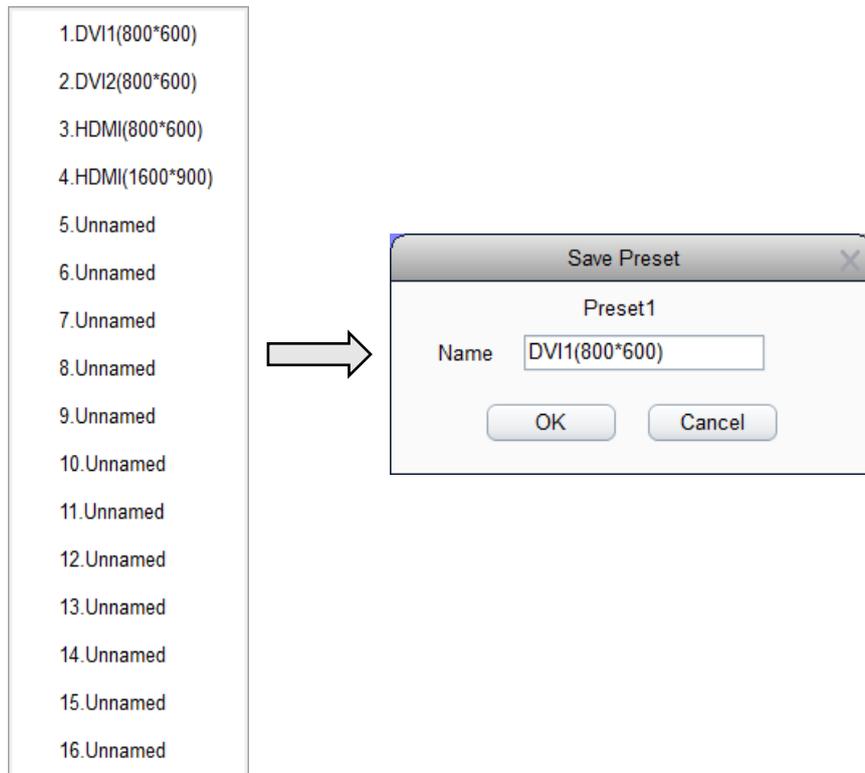
Click "Save Preset", select one of preset serial number, modify the saved name of preset, finally click "OK" and finish the setting.
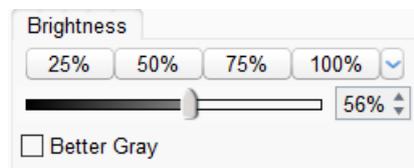

Click "Recall Preset", and select the corresponding preset.
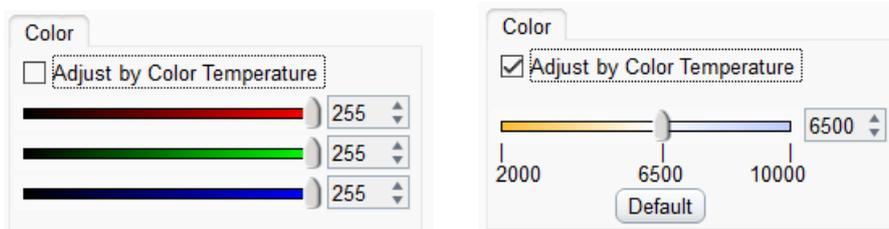
3.3.4 Control

This interface can set the function as followed:

- **Brightness adjustment of senders**

It supports setting the sender's brightness value and setting "Better Gray" of the sender. We can turn "Better Gray" on to optimize the displaying results of the screen under low brightness.

- **Color temperature adjustment**

When unchecking the "Adjust by Color Temperature" option, adjust R, G, and B values separately; when checking "Adjust by Color Temperature", drag the slider to adjust the color temperature value.

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● **Test Patterns, Black, Freeze**
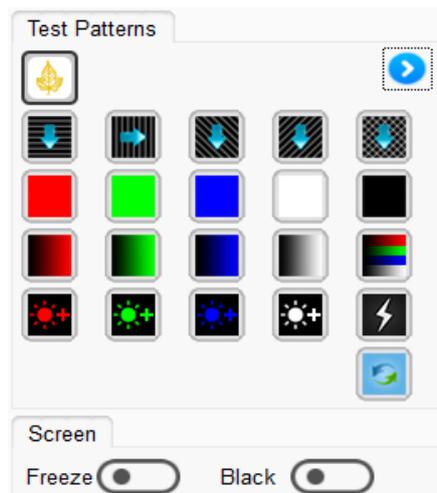
The users can set different test patterns based on their needs. Click on a certain test pattern icon, the sender will show the corresponding test result. We can view the display of the screen through "Test Patterns", and to detect and diagnose the screen.

The X1 supports "Freeze" and "Black". Click on "Freeze", the picture on the screen will freeze; Click on "Black", the screen will become black and display nothing.

Visual Future