Colorlight

X12

USER MANUAL

Content

1 Safety Information

To prevent personal injury and to protect the device from damage, read and follow these safety precautions.

- **Do not remove the cover**

  To avoid personal injury, do not remove the top cover.

- **Only use the power supply and accessories specified by the manufacturer**

  The operating voltage of this product is 100V-240V AC. Only use the power cord provided with the product or the power cord that meets the appropriate local rating standards.

- **Prevent function interfaces from contact with charged objects**

  This is an electric product. The circuit elements may be damaged if the function interfaces contact charged objects.

- **Grounding**

  To avoid electrical shock, ensure that the product is grounded.

- **Electromagnetic Interference**

  This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures

- **Environmental Condition**

  Use only at altitudes not more than 5000m above sea level.

- **Avoid Moisture**

  This product is not waterproof, so avoid contact with liquid or operating the product in a humid environment.

- **Keep the product away from flammable and explosive hazardous substances**

Unpacking and Inspection

After unpacking, checking the items according to the packing list in the box. Please contact the salesman in time if you find the accessories are incomplete.
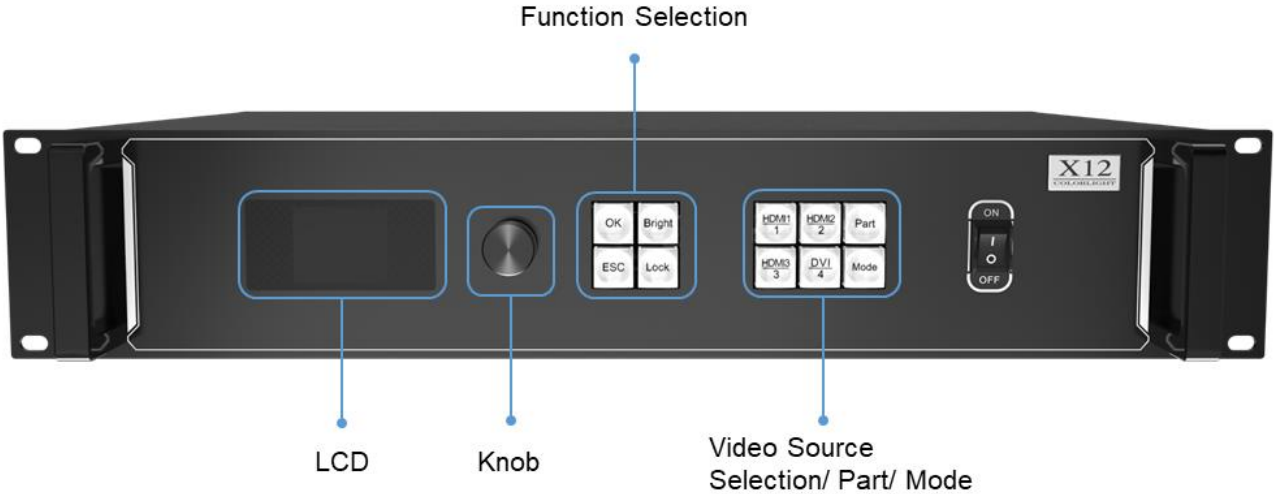
2 Overview

The X12 controller is a professional control system and video processing device designed for LED display engineering applications. It has DVI and HDMI connectors, and supports seamless switching between multiple signals, broadcast quality scaling and multi-window display. Meanwhile, the X12 is equipped with abundant practical functions that enable flexible screen control and high-quality image display, which gives it an edge in the LED display engineering application field.
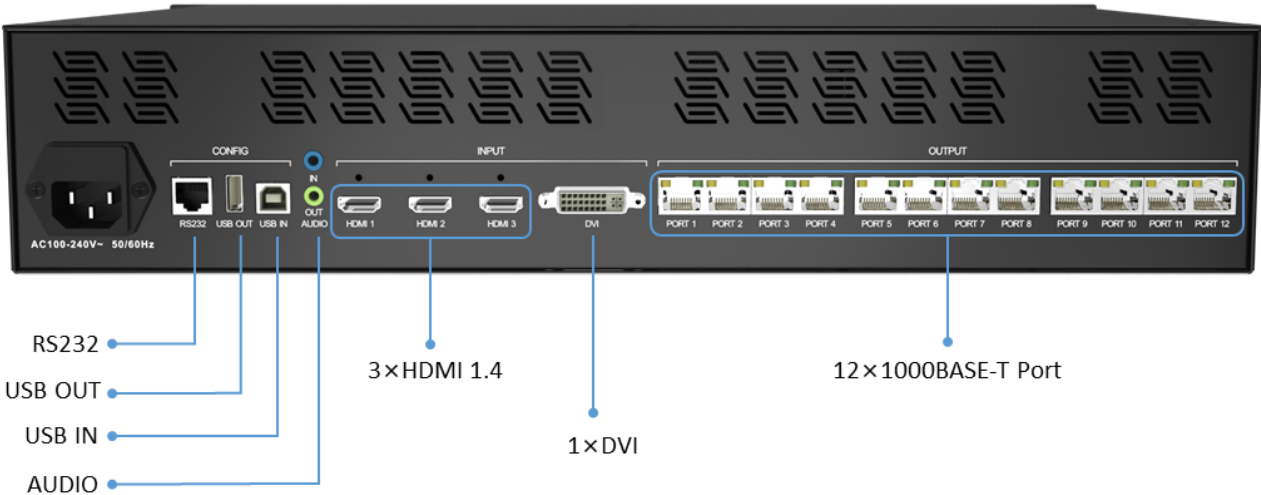
Features

- Input: 1×DVI, 3×HDMI1.4
- Input resolution: up to 1920×1200@60Hz, supporting customized setting
- Output: 12 Gigabit Ethernet ports, supporting Ethernet port backup or sender backup
- Support switching, cropping, splicing and scaling of video sources
- Support display of up to 3 windows, of which the location and size can be freely adjusted
- HDCP1.4 compliant
- Dual USB2.0 for high-speed configuration, used for debugging or cascading with the X12 controller
- Support RS232 protocol
- Brightness, color temperature, contrast, hue and saturation adjustment
- Better gray at low brightness

3 Appearance

Front Panel

Function Selection

LCD   Knob   Video Source
                           Selection/ Part/ Mode

Back Panel

RS232

USB OUT

USB IN

AUDIO

3×HDMI 1.4

1×DVI

12×1000BASE-T Port

3

Input		
1	HDMI1/2/3	3×HDMI inputs, supporting audio input HDMI1.4 specification (Support 1920×1200@60Hz, 1920×1080@60Hz)
2	DVI	1×DVI input DVI1.0 specification (Support 1920×1200@60Hz, 1920×1080@60Hz)
Output		
1	Port1-12	RJ45, 12×Gigabit Ethernet outputs
Control		
1	RS232	RJ11(6P6C)*, connect to the third party device
2	USB OUT	USB output, as cascading output
3	USB IN	USB input, connect to the PC for debugging
Audio		
1	AUDIO IN	Audio input, for inputting audio signals from the computer or other devices.
2	AUDIO OUT	Audio output, for outputting audio signals to the speaker (Support processing and outputting the audio signals of HDMI)
Power Supply		
1	AC 100~240V	AC power connector, containing a built-in fuse

*DB9 female to RJ11(6P6C) cable:

| A	B
2	3(TXD)
3	4(RXD)
5	5(GND)
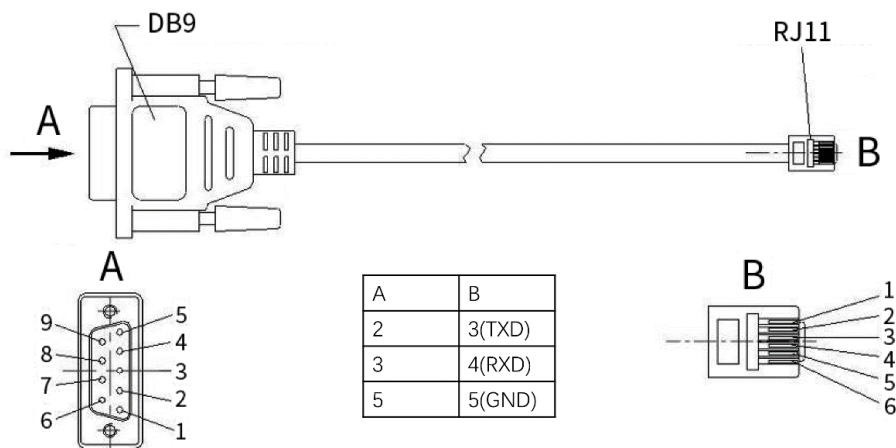
4 Software Operation Instruction

Please make sure the hardware is properly connected before setting parameters, and that all senders and receiver cards can be detected by the software. You can visit www.colorlightinside.com to download LEDVISION installer.

4.1Detect the Sender and Receiver Cards

Open LEDVISION, click **Control**, select **LED Screen Settings** from the drop-down list, and enter the password "168".

In the pop-up **LED Screen Settings** window, click **Detect Senders** in the upper-right corner of the window, and the number, model and version of the sender are displayed in the field next to **Detect Senders**.
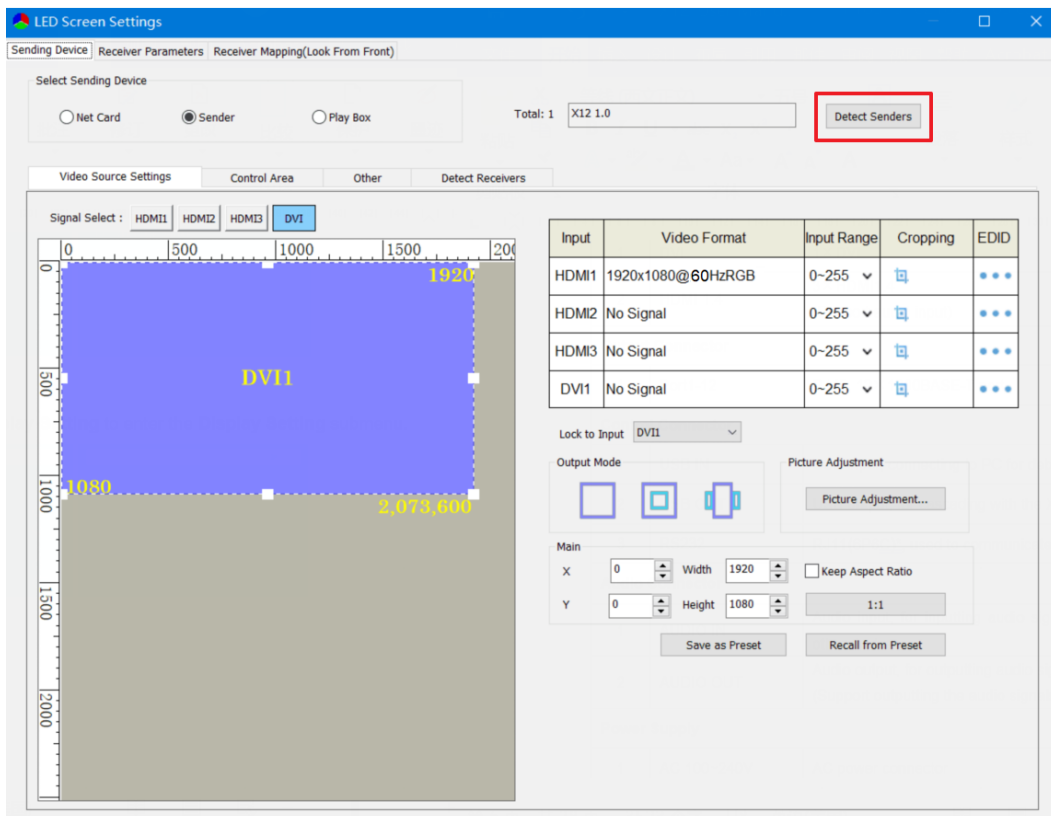
Click **Detect Receivers**. On the **Detect Receivers** sub-page, click **Detect All Receivers**, and the software will automatically acquire information such as the port, index, running time, and supported chips of the receiver card. Please check the corresponding cable if the number of receiver cards are inconsistent with actual status.
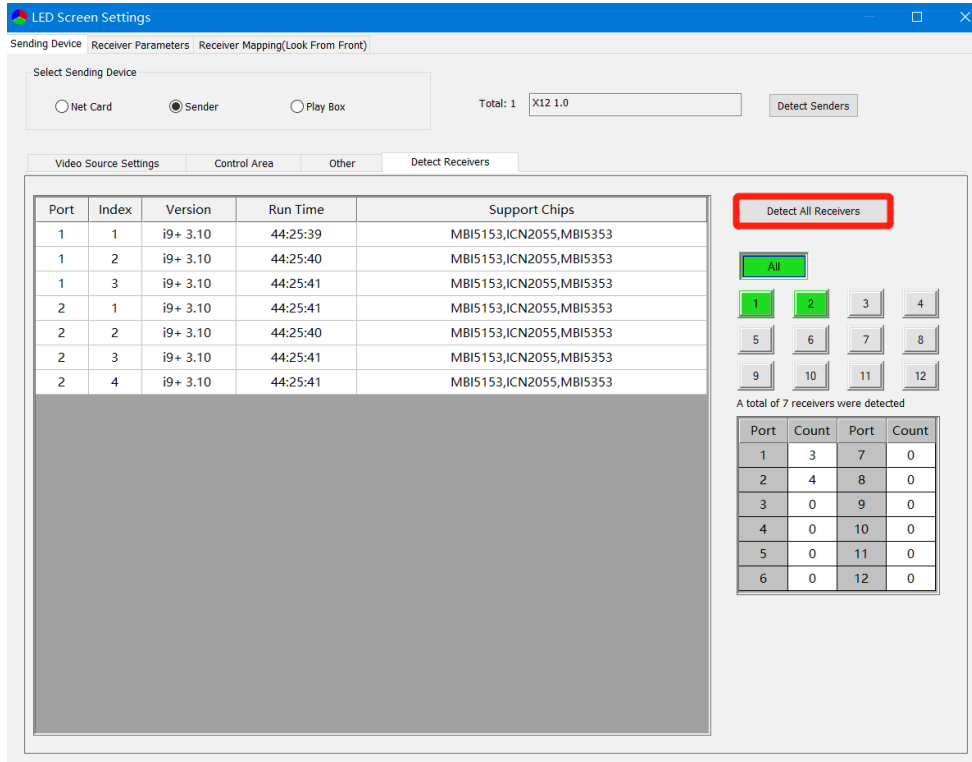
4.2 Receiver Mapping Settings

Click **Receiver Mapping** to enter the receiver mapping settings page.
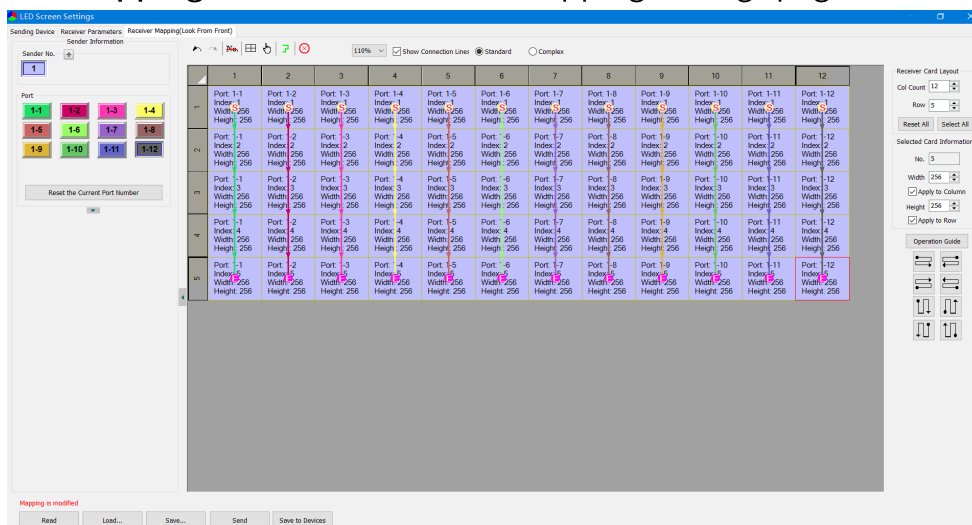
Detailed setting steps are as follows:

4.2.1 Mapping Settings

Select the target Ethernet port on the left side, and set the connection lines of the corresponding cabinets within the port control area in the simulated cabinet area.

In the simulated cabinet area, select the corresponding cabinet of the first receiver card based on the actual connection of the Ethernet port (look from the front), and left-click the cabinet one by one according to actual connection line, until the last one this Ethernet port controls.
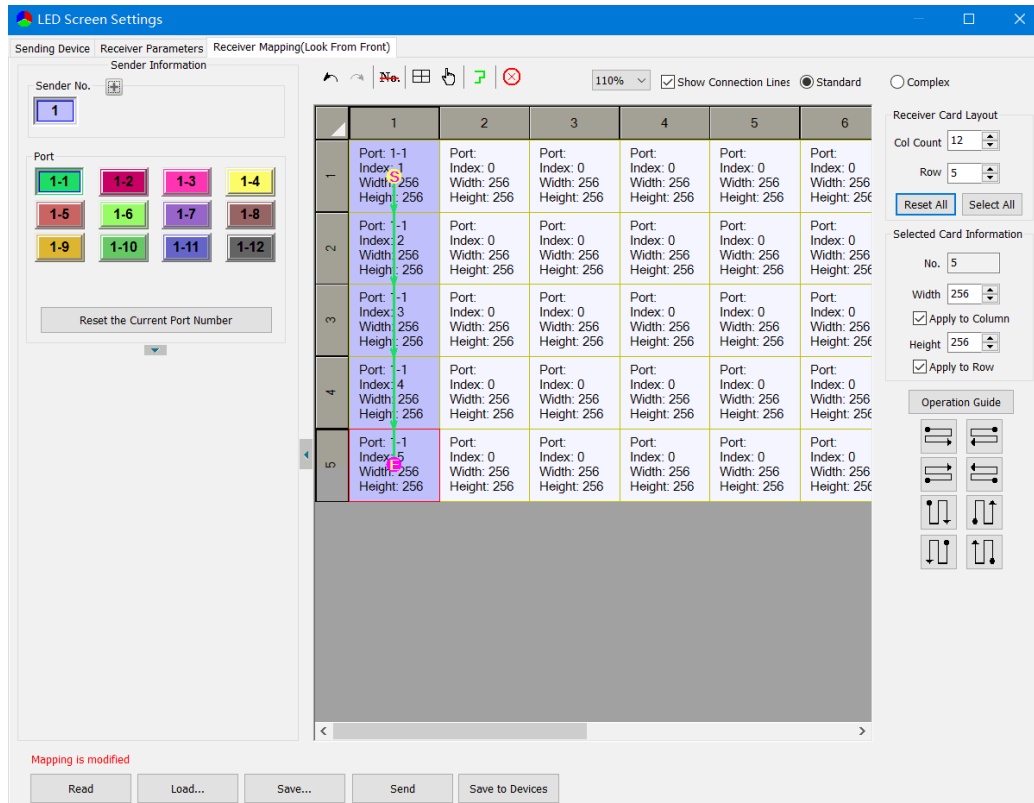

For the cabinets with different specifications (different in dimensions), you can select them and adjust the mapping separately after setting.

4.2.2 Saving Mapping

After successively setting the cabinets each port controls and their mapping, click **Send** at the bottom of the window to test whether the current mapping is correct. If the image on the LED screen is displayed normally, click **Save to Devices** to save the mapping to the current sender and receiver cards.
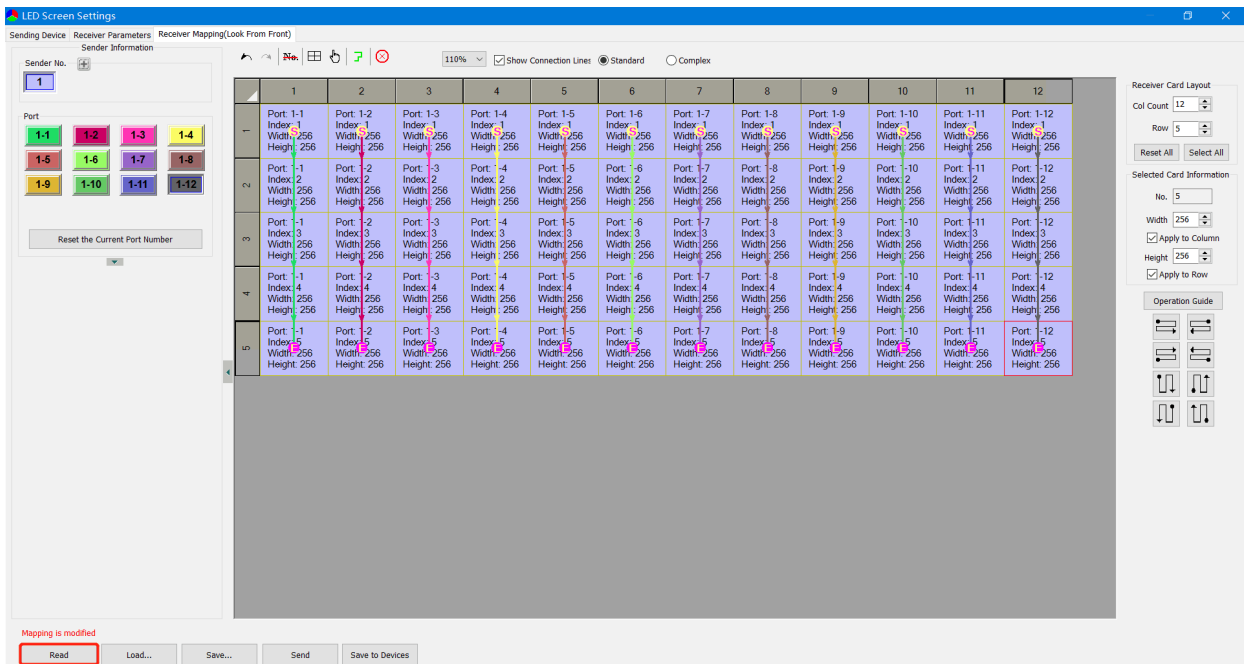
4.2.3 Port Backup Setting

Right-click the sequence number of the backup port, and select the target port that needs a backup. After setting, a backup sign will be displayed besides the sequence number of the backup port.
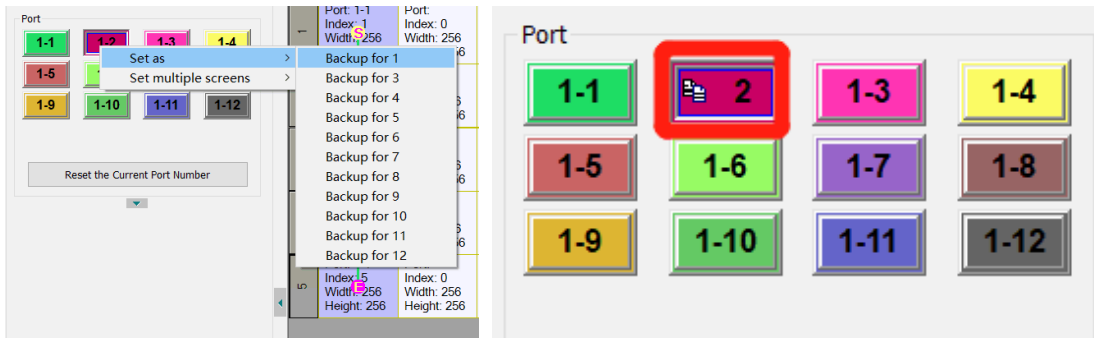
4.2.4 Read Mapping

Click **Read** in the lower-left corner of the page, and the mapping parameters of cabinets saved in the receiver cards can be read back.

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# 4.3 Video Source Settings

4.3.1 Multi-window Display

The device supports up to 3-window display. In the **Output Mode** area, you can select an output mode based on your own need, and select a signal for every window in the upper-left corner of the page.

4.3.2 Window Settings

In the lower-right corner of the **Video Source Settings** sub-page, you can set the position and size of the selected window. You can also scale up or scale down the window by dragging the frame of the selected window.
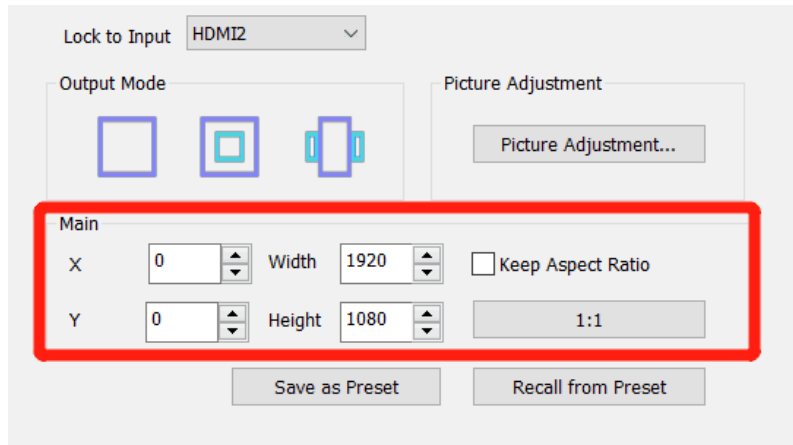

4.3.3 Picture Adjustment

Click **Picture Adjustment**. In the pop-up window, select the **Enable** check box, and you can adjust the value of hue, saturation, brightness compensation and contrast of the image in the selected window.
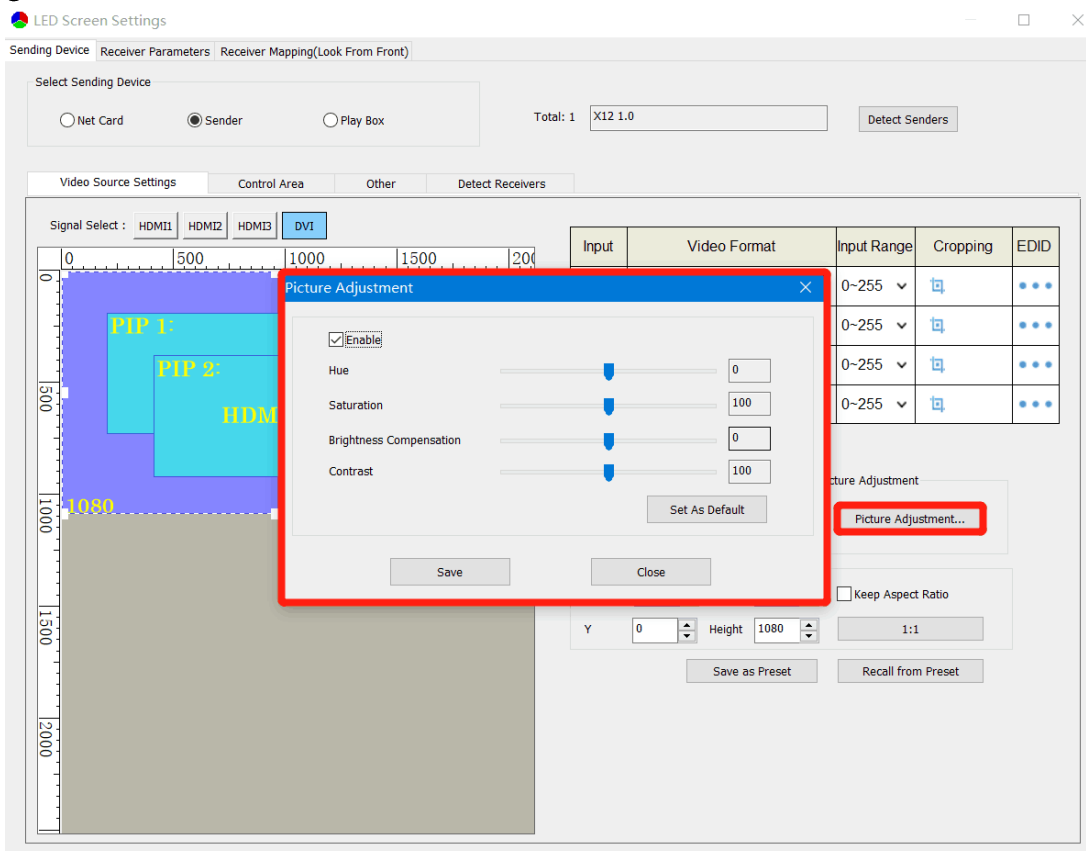
4.3.4 Preset

You can save 16 preset modes, and every preset mode includes the following parameter information of the video source setting: scaling, cropping, multi-window display and picture adjustment. You can also directly load the saved preset mode to display the image according to your need without needing to set up all the parameters again.

After setting the video source parameters, click **Save as Preset**, select an unnamed preset item and rename it, and then click **OK** to save the preset to the sender.
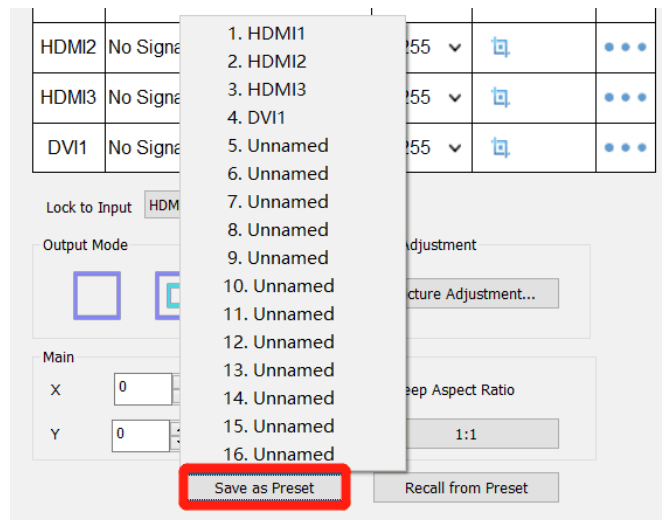
Click **Recall from Preset**, select a preset item, and the screen will display image on the basis of the preset parameter.
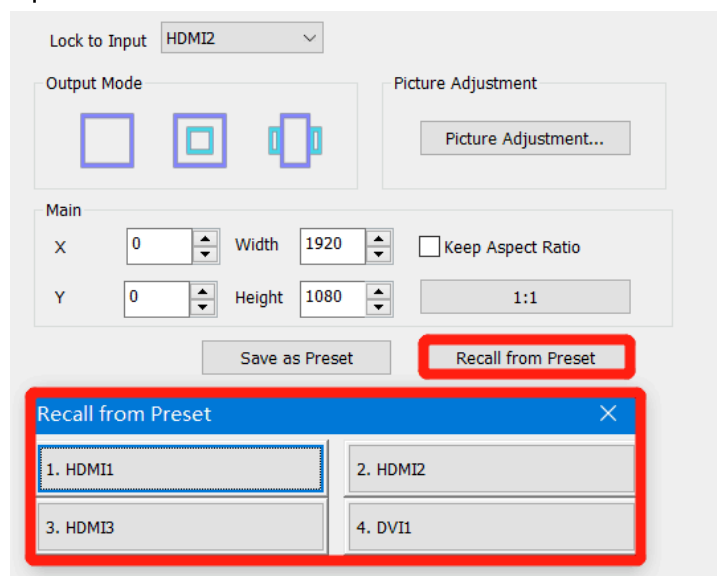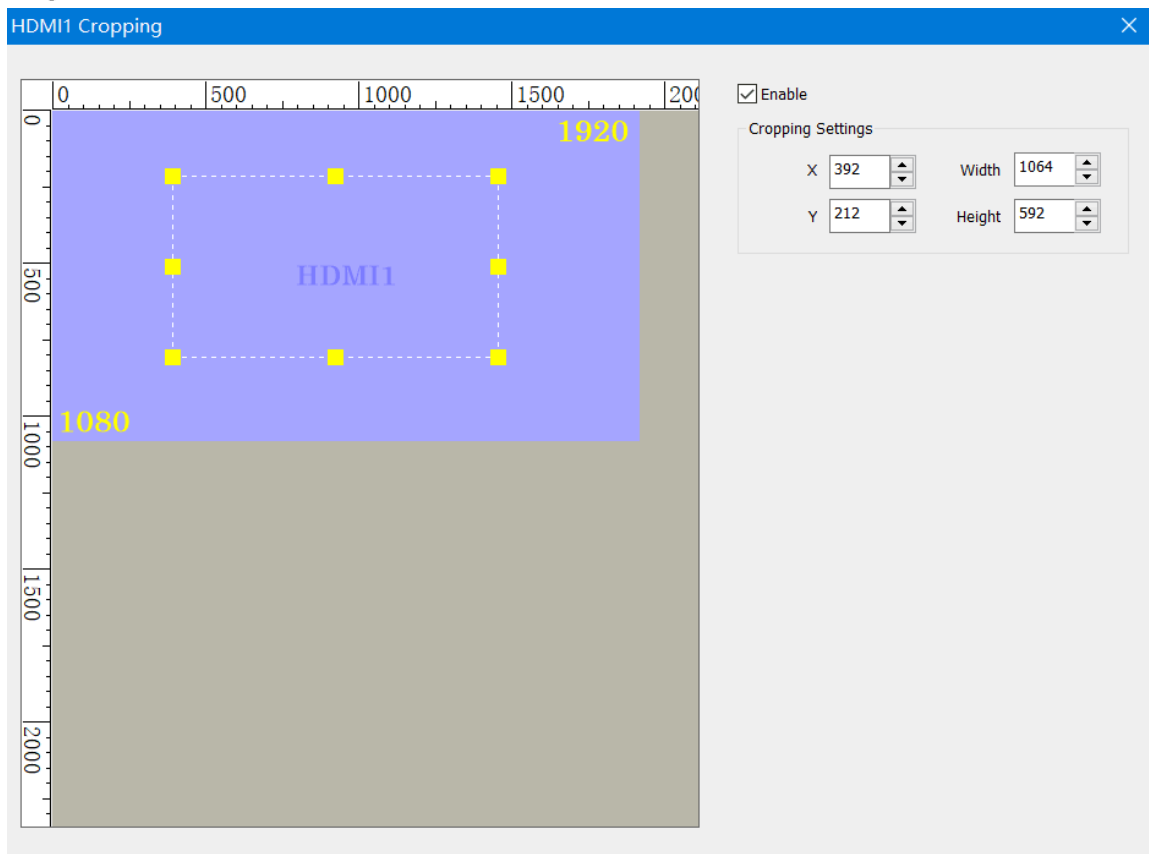
4.3.5 Cropping

In the upper-right corner of the **Video Source Settings** sub-page, click ⬚ to enter the cropping setting window.

In the cropping setting window, select the **Enable** check box, and set the row starting point (**X**), the column starting point (**Y**), and the width and height in the **Cropping Settings** area.

4.3.6 EDID (Resolution)

In the upper-right corner of the **Video Source Settings** sub-page, click •••.

In the **Resolution (EDID) Setting** dialog box, the resolution of the current sender is displayed by default.
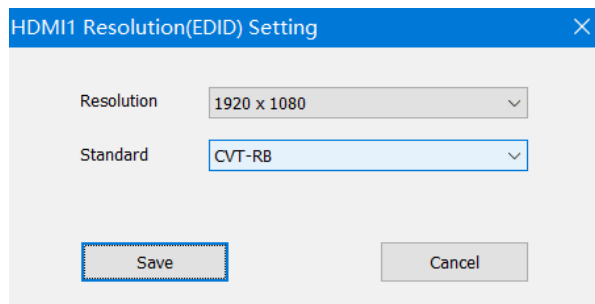
Click the dropdown button. From the resolution list, you can select a conventional resolution, or select **Custom** and set the width, height, frame rate and standard of the customized resolution.
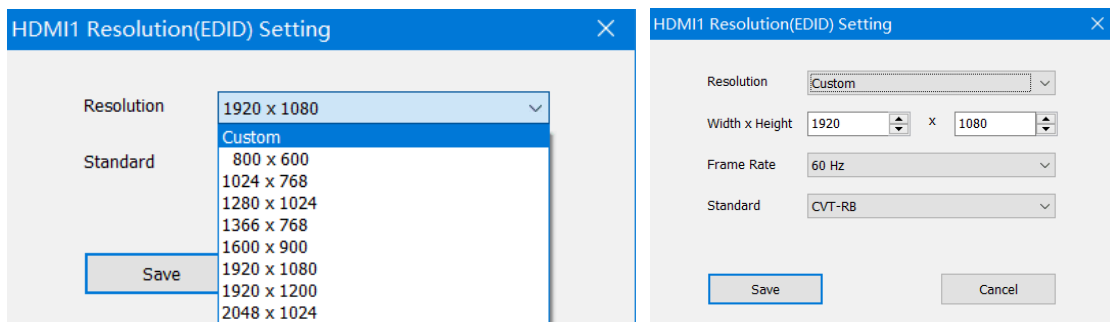
After setting, click **Save.**

4.4 Other

On the **Other** sub-page, you can select or clear the **Better Graylevel on Low Brightness** and **Mapping from Sender** check box, modify the device name, select an audio source, adjust the audio volume and switch the test mode based on your specific need.

In the **Audio Setting** area, you can click the dropdown icon to select an audio signal source. If you select **Auto Select**, the sender will automatically select an audio source as the output audio signal.
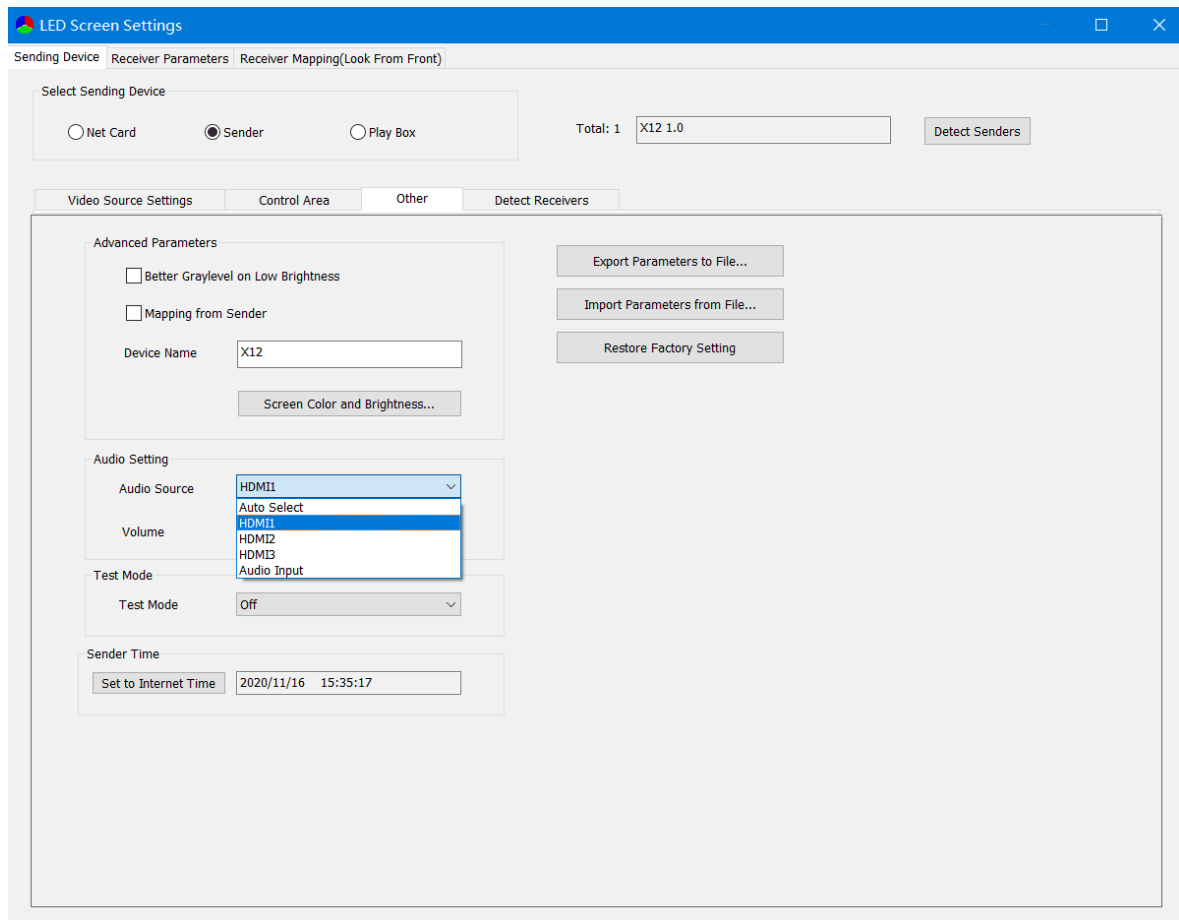
5 LCD Operation Instruction

5.1 Operation Instruction

Knob/OK：
- In the main interface, press the knob/**OK** to enter the operation menu.
- On the operation menu, rotate the knob to scroll to a menu item, press the knob/**OK** to select the current item or enter the submenu.
- Rotate the knob to adjust parameters after selecting the menu item with the parameter and press the knob/**OK** to save the value.

ESC： Exit the current menu or operation.

Bright： Press the key and rotate the knob to adjust screen brightness, and then press the knob/**OK** to confirm the current brightness.

Lock： Lock all the keys of the front panel. You can press it again and follow the directions to press **OK** to exit the **Lock** mode.

HDMI1/HDMI2/HDMI3/DVI: Video source selection keys, which function as number selection keys in mode selection.

Mode： Mode selection keys. You can press the number selection key to switch modes.

Part： Turn on the cropping function. Press the key and the image will be cropped according to the cropping setting in the software. You can cancel cropping by pressing the key for a second time.

5.2 Main Interface

After starting up the controller, the main interface of the LCD display is as follows:
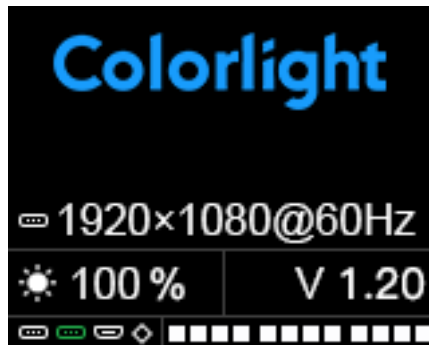
First row: Company name

Second row: Signal type and resolution

Third row: Brightness, firmware version

Fourth row: Connection status of signal connectors and Ethernet ports

5.3 Menu Operation

Press the knob/**OK** to enter the operation menu, which includes 11 operation items: **Display Setting, EDID Setting, Cropping Setting, Preset Setting, Output Setting, Output Shift, Lock to Input, Audio Input, Tile Mapping, Language** and **System Setting.**
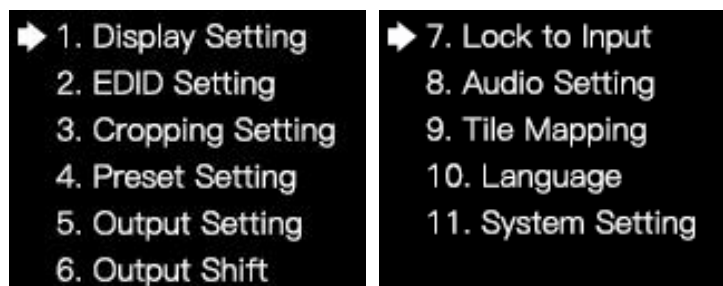
5.3.1 Display Setting

Rotate the knob and select **Display Setting** to enter the **Display Setting** submenu.
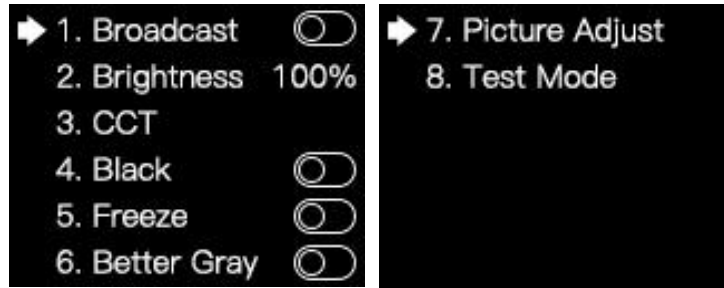
Broadcast

Press the knob/OK to turn on or off the **Broadcast** function. If the broadcast function of the cascading devices is turned on, you can synchronously control all cascading devices by setting the functions below the **Broadcast** menu item on one device.

Brightness

Select **Brightness**, rotate the knob to change the brightness, and then press the knob/**OK** again to save the brightness.

CCT

In the **CCT** menu, you can press the knob/**OK** to turn the color temperature adjustment function on or off. If **Enable** is turned on, you can select **CCT** and rotate the knob to change the value of color temperature, or select **Reset to Default** to reset the value of color temperature as 6500.
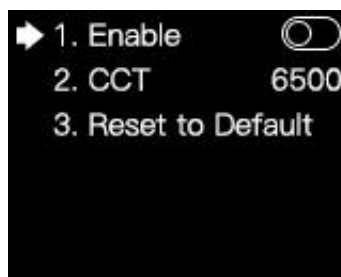
Black

Press the knob/**OK** to turn on or off the LED screen.

Freeze

Press the Knob/**OK** to freeze or unfreeze the LED screen.

Better Gray

Press the Knob/**OK** to turn on or off the **Better Gray** function.

Picture Adjust

In the **Picture Adjust** submenu, you can select **Hue**, **Saturation**, **Brightness**, or

Contrast and rotate the knob to modify their values, or select **Reset** to reset the value of all parameters in this menu. Finally select **Save** to save all these parameters.
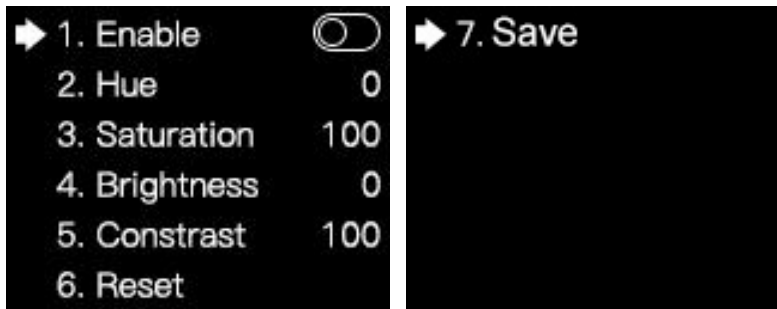
Test Mode

In the **Test Mode** menu, you can rotate the knob and select a test mode.
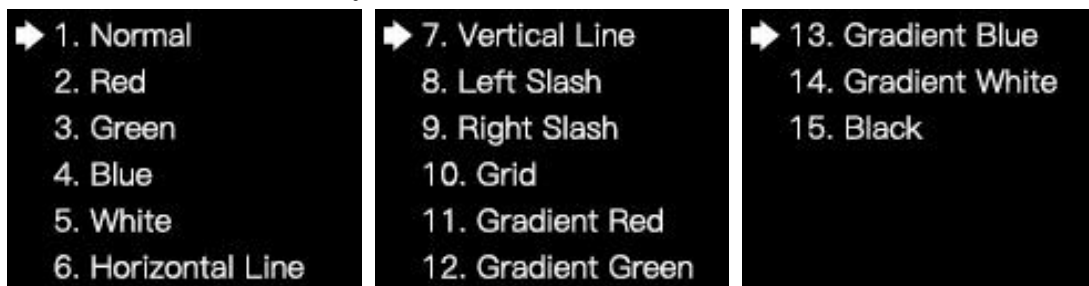
5.3.2 EDID Setting

Rotate the knob and select **EDID Setting** to enter the **EDID Setting** submenu.

In the EDID setting submenu of **HDMI1/2/3** or **DVI1**, you can rotate the knob and select a conventional resolution to save the selected resolution to the sender, or select **Custom** and set the width, height and frame rate, and then select **Save** to save the setting to the sender.
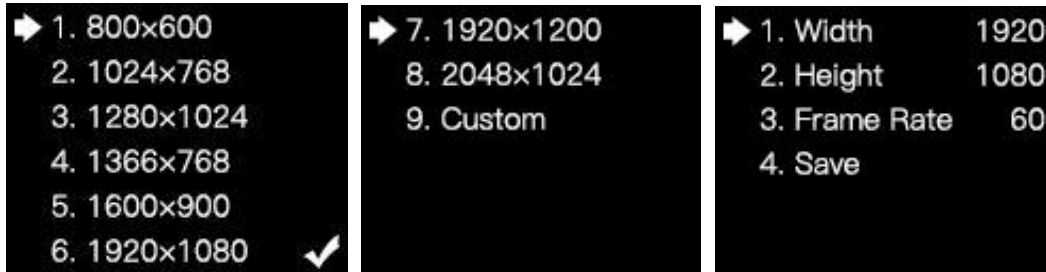
5.3.3 Cropping Setting

Rotate the knob and select **Cropping Setting** to enter the **Cropping Setting** submenu.

In the cropping setting submenu of **HDMI1/2/3** or **DVI1**, press the knob/**OK** to turn the cropping function on or off. If **Enable** is switched on, you can rotate the knob to set the row starting point (**X**), column starting point (**Y**), and the width and height of the signal image, and then select **Save**.

5.3.4 Preset Setting

Rotate the knob and select **Preset Setting** to enter the **Preset Setting** submenu.
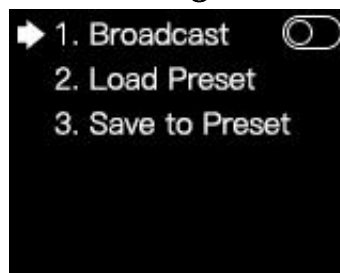
In the submenu, you can turn the **Broadcast** function on or off; or select **Load Preset**

and choose an item to load preset parameters; or select **Save to Preset** to save the parameters of the current image.

```
→ 1. HDMI 1          → 7. Unnamed          → 13. Unnamed
  2. HDMI 2            8. Unnamed            14. Unnamed
  3. HDMI 3            9. Unnamed            15. Unnamed
  4. DVI              10. Unnamed            16. Unnamed
  5. Unnamed          11. Unnamed
  6. Unnamed          12. Unnamed
```

5.3.5 Output Setting

Rotate the knob and select **Output Setting** to enter the **Output Setting** submenu.

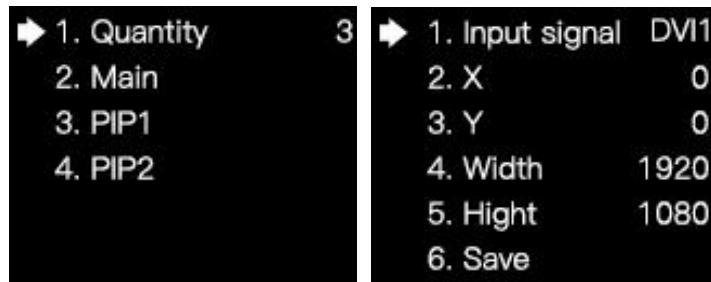In the submenu, select **Quantity** and rotate the knob to set the quantity of windows from 1 to 3. If the quantity is 3, you can select **Main**, **PIP1** or **PIP2**, and set the input signal, the row starting point (**X**), column starting point (**Y**), and the width and height of the output window.

```
→ 1. Quantity    3    → 1. Input signal  DVI1
  2. Main                2. X               0
  3. PIP1                3. Y               0
  4. PIP2                4. Width        1920
                        5. Hight        1080
                        6. Save
```

5.3.6 Output Shift

Rotate the knob and select **Output Shift** to enter the **Output Shift** submenu.

```
→ 1. Whole
  2. By Port
```

Output shift contains two selections: **Whole** and **By Port**. On the submenu of **Whole**, you can rotate the knob to set the row starting point (**X**) and the column starting point (**Y**) of the whole image and then save the setting; on the submenu of **By Port**, you can respectively set the row starting point (**X**) and the column starting point (**Y**) of the image of the 12 Ethernet ports, and then save the setting.

```
  1. X              0      1. Port 1X         0      7. Port 4X      384
  2. Y              0      2. Port 1Y         0      8. Port 4Y        0
  3. Save                  3. Port 2X       128      9. Port 5X      512
                          4. Port 2Y         0     10. Port 5Y        0
                          5. Port 3X       256     11. Port 6X      640
                          6. Port 3Y         0     12. Port 6Y        0
```

5.3.7 Lock to Input

When several controllers are cascaded with each other, **Lock to Input** is necessary to ensure the synchronization of the video displays. Rotate the knob and select **Lock to Input** to enter the submenu. In the submenu, you can select a sync signal source.

```
  1. No Lock
  2. HDMI 1          ✔
  3. HDMI 2
  4. HDMI 3
  5. DVI 1
```

5.3.8 Audio Input

Rotate the knob and select **Audio Setting** to enter the **Audio Setting** submenu.

In the submenu, select **Audio Change** to enter its submenu, in which you can select an audio source. If you select **Auto**, the sender will automatically select an audio source as the output audio signal; if you select **HDMI1/2/3**, the sender will output the audio signal of the selected signal source; if you select **Audio Input**, the sender will output the audio signal input from the audio input connector.

You can also select **Volume** and rotate the knob to adjust the volume of the audio signal.

```
  1. Auto
  2. HDMI 1
  3. HDMI 2
  4. HDMI 3
  5. Audio Input
```

5.3.9 Tile Mapping

Rotate the knob and select **Tile Mapping** to enter the **Tile Mapping** submenu.

In the submenu, press the knob/**OK** to set the sender as the connection source. Then select **Set by Port** to enter the submenu, in which you can choose the Ethernet port from 1 to 12 that needs setting mapping, and set the offset values of X and Y, and the width, height, row number, column number and link type of the corresponding cabinets. Finally select **Save** to save the mapping.
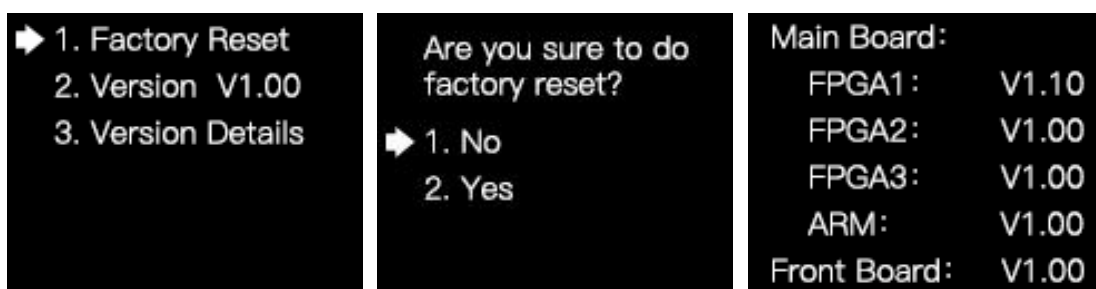
5.3.10 Language

In the **Language** menu, you can switch languages.

5.3.11 System Setting

In the **System Setting** menu, you can restore factory settings and view the detailed information of the current version.

Visual Future