

# 「LC1102」 LED Controller

Datasheet

## Table of contents

<b>Foreword .....</b>	<b>1</b>
<b>1. Introduction .....</b>	<b>3</b>
<b>2. Features .....</b>	<b>3</b>
<b>3. Appearance .....</b>	<b>4</b>
3.1. Front panel .....	4
3.2. Rear panel .....	5
<b>4. Size .....</b>	<b>6</b>
<b>5. Specifications .....</b>	<b>6</b>
<b>6. Application .....</b>	<b>7</b>
<b>7. Operation Menu .....</b>	<b>7</b>
7.1. Main Page .....	8
7.2. Brightness adjustment .....	8
7.3. Input settings .....	9
7.4. Output settings .....	10
7.5. Display control .....	12
7.6. USB playback settings .....	15
7.7. Advance Settings .....	16




## Foreword

Thank you very much for purchasing our product. Please read this specification sheet carefully before operation.

All pictures in this specification are for reference only, the actual product may vary.

This specification may not correspond exactly to the product or its accessories you purchased. Our company reserves the right to modify any information in this specification at any time, and will regularly update this specification in accordance with product upgrade. Updated content will be added to the new version of this specification without prior notice, please understand.

### Icon conventions

	illustrate	Necessary tips, supplements and explanations to help you understand the content described in the specification more clearly.
	Notice	Matters that must be paid attention to and followed during operation will remind you to use the equipment in a more convenient and efficient way.
	Warning	There may be potentially dangerous situations and you are warned to use the equipment safely.

### Safety instructions

To ensure personal and equipment safety, when installing, operating, and maintaining equipment, please follow the safety instructions on the equipment and in the manual to ensure optimal equipment performance and avoid dangerous or illegal situations.



- It is strictly prohibited to place the device in an environment with flammable or explosive gases or smoke, and no operations may be performed in such an environment.
- The equipment installation environment is strictly prohibited from water seepage, dripping, and condensation, otherwise dehumidification equipment must be installed.
- When laying lines, strong current lines and weak current lines must be laid separately to avoid mutual interference.
- Keep the equipment away from sources of fire, and do not place containers containing liquids on or near the equipment.
- Please unplug the power plug when there is lightning or when it is not used for a long time.
- It is prohibited to use parts not approved by the manufacturer to avoid damage to the equipment.
- It is prohibited to use control software not issued by the manufacturer to control the equipment.
- It is prohibited to alter, cover, or tear the equipment information labels attached to the equipment.
- If the plug and power cord are damaged or frayed, liquid is spilled into the device, or the device is dropped and damaged, you should unplug the power source immediately and leave it to professionals.
- All maintenance work should be completed by professionals. Unauthorized maintenance is strictly prohibited to avoid equipment damage and risk of electric shock.

**Notice**

- The equipment should work in an environment with good air circulation and suitable temperature and humidity.
  - Please install the device on a stable and stable work surface or in a standard rack, cabinet, or chassis.
  - Do not use any objects to block the ventilation holes of the device, and leave more than 20 cm of heat dissipation space around the device.
  - Please use a single-phase three-wire 100-240V AC power supply with a protective ground, and ensure that the entire engineering system uses the same ground. Do not use a power supply without ground protection, and the ground pin of the power cord cannot be damaged.
  - turning on the device, please make sure that signal cables, communication cables and other wires are well connected and not loose.
  - Before moving the device, please turn off the power of the device and add anti-collision protection to the device to avoid damage to the device due to electric shock, extrusion, bump, scratch, impact, etc.
-

## 1. Introduction

The LC series 1102 type is a LED controller that integrates video processing and video transmission. Its ultra-high video signal processing capabilities, powerful LED load, and convenient operation and maintenance make this controller for various size of LED screens, and can be widely used in control room, exhibitions, entertainment event, and conferences.



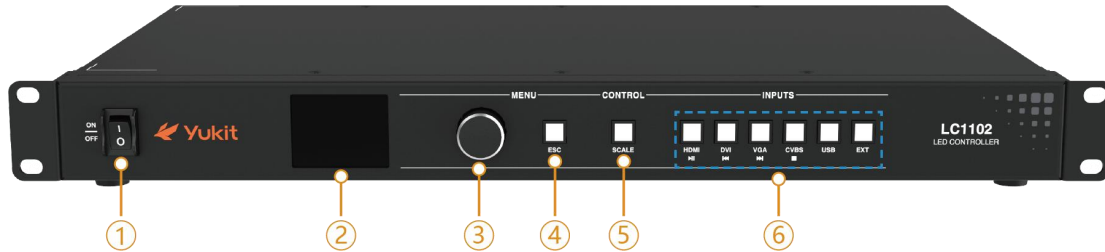
## 2. Features





- Support HDMI, DVI, VGA, CVBS, USB signal input;
- Configured with 2x Gigabit Ethernet outputs, single device supports maximum load of 1.3 million pixels, with a maximum 3,840 pixels in the horizontal and 2,160 pixels in the vertical;
- Equipped with 1 HDMI monitoring port to monitor the LED display in real time;
- Built-in multiple common input resolutions, supporting source resolution adaptation;
- Input signals can be switched with one click through the front panel buttons;
- Support signal cropping, which can enlarge certain areas or crop the black edges of the signal source;
- Brightness/color temperature/color gamut/ Gamma are precisely adjusted to ensure the LED display more natural and realistic;
- Supports one-click switching of output scaling mode, and can customize the output window size and position;
- Supports embedded audio and 3.5mm independent audio input and output;
- Support EDID configuration;
- Support backup to ensure stable operation of the system.

### 3. Appearance

The following is a schematic diagram of the front panel and rear panel of the device. The appearance of the product shall be subject to the actual product.

#### 3.1. Front panel



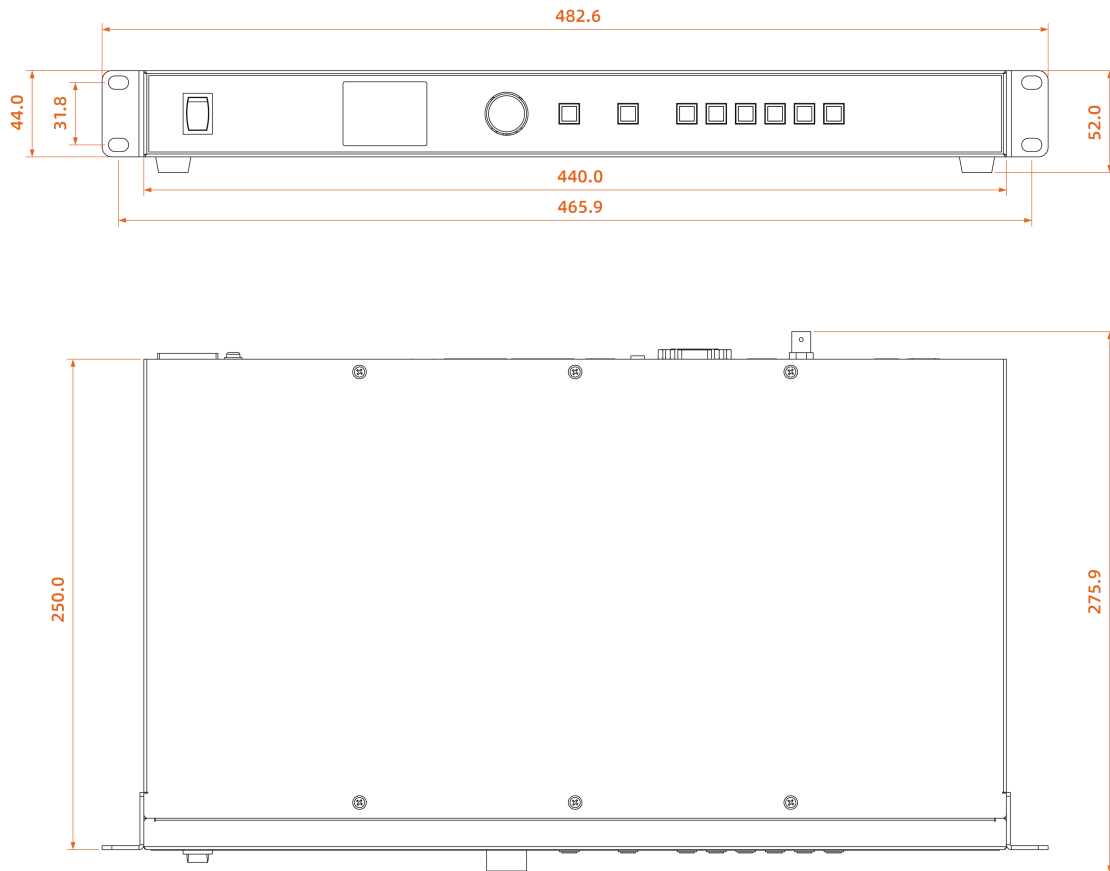
No.	Type	Description
①	Power switch	Device power switch
②	LCD screen	Display the current status and menu of the device.
③	Confirm	Press to confirm the operation, rotate to select menus and adjust parameters.
④	ESC	Exit the current menu or cancel the current operation.
⑤	SCALE	Press to switch scale mode, including "Full screen ", "Pixel to Pixel" and "Custom".
⑥	Input	<p><b>Input button description:</b></p> <ul style="list-style-type: none"> <li>HDMI: HDMI input source button, worked as , to pause or play the file when playing USB disk file.</li> <li>DVI: DVI input source button, worked as , to play the previous file of the current file when playing USB disk file.</li> <li>VGA: VGA input source button, worked as , select to play the next file after the current file when playing USB disk file.</li> <li>CVBS: CVBS input source button, worked as , stop play when playing USB disk file.</li> <li>USB: external media play, USB disk input source;</li> <li>EXT: reserved.</li> </ul> <p><b>Input button status:</b></p> <ul style="list-style-type: none"> <li>Steady on: A signal source is connected and in use;</li> <li>Flashing: The interface is in use but there is no signal source;</li> <li>Off: The signal source is not in use.</li> </ul>

## 3.2. Rear panel



Type	Interface	Description
Input	HDMI	<ul style="list-style-type: none"> <li>1 x HDMI1.3</li> <li>Support HDCP 1.4</li> <li>The maximum supported resolution is: 1920× 1200 @60Hz</li> <li>Support custom resolution</li> <li>Maximum width: 2560 (2560 x 548@60Hz)</li> <li>Maximum height: 2160 (548 x 2160@60Hz)</li> </ul>
	DVI	<ul style="list-style-type: none"> <li>1 x DVI , VESA standard</li> <li>Support HDCP 1.4</li> <li>The maximum supported resolution is: 1920 × 1200 @60Hz</li> <li>Support custom resolution</li> <li>Maximum width: 2560 (2560x 548@60Hz)</li> <li>Maximum height: 2160 (548x 2160 @60Hz)</li> </ul>
	VGA	1 x 15-pin D-sub , supports up to 1920 x 1200 @60Hz.
	CVBS	1 x BNC interface , PAL/NTSC video input, supports up to 1920 x 1200 @60Hz.
	USB	1 x USB2.0 , connect USB disk, support 1080P @30Hz video files. <ul style="list-style-type: none"> <li>USB file supports: NTFS, FAT16, FAT32 ; exFAT (FAT64) is not supported.</li> <li>Image formats: JPG, JPEG, PNG and BMP.</li> <li>Video encoding: MPEG1/2, MPEG4, H.263, H.264(AVC1), H.265(HEVC), Divx, Xvid.</li> <li>Audio encoding: MPEG1/2 Layer I, MPEG1/2 Layer II, MPEG1/2 Layer III, AC3, PCM and FLAC.</li> </ul> <p>Note: This interface can only be connected to a USB disk and cannot be used as a power supply for external USB devices, otherwise it may cause the device to restart.</p>
Audio	IN	3.5 mm audio interface x1, independent audio input.
	OUT	3.5 mm audio interface x1, independent audio output.
Output	1 ~ 2	2 x RJ45, 2 gigabit network interface outputs, connect to the receiving card.
	HDMI	1 x HDMI , monitor LED display with a resolution of 1920 x 1080 @60Hz.
Control	USB-B	Connect to the control PC.
	RS232	1 x RS232 serial interface, using RJ45 network interface form, supports connection to centralized control equipment.
Power	AC 100-240V	50/60Hz

## 4. Size

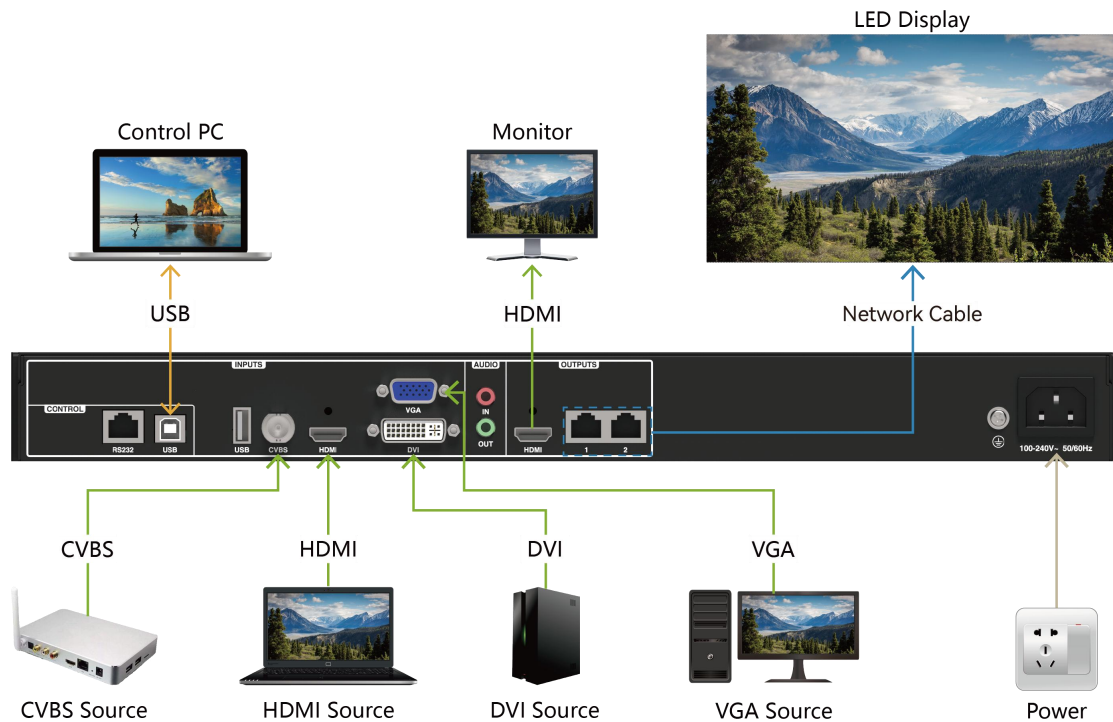


## 5. Specifications

Specification	Description		
Electrical	Power supply	AC100-240V	50/60Hz
	Power	7W	
Physical	Size (L x W x H)	482.6mm x 250mm x 44mm ( Excluding foot pads and interfaces)	
	Net weight	3kg	
Packaging	Suitcase	540mm x 390mm x 140mm	
	Large outer box	750mm x 560mm x 415mm Note: When fully loaded, each large outer box can hold 5 devices.	



## 6. Application



## 7. Operation Menu

Through the front button and menu, source switching, brightness adjustment, input settings, output settings, screen control, template control, USB playback settings and advance settings can be realized.

Button instructions:

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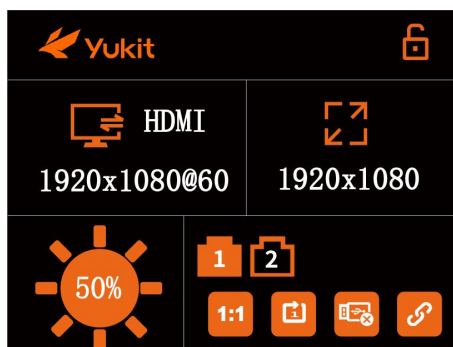
### Confirm button:
















- In the main page, press the confirm button to enter the menu page;
- In the menu page, rotate the confirm button to select a menu item, and press the confirm button to enter the next level menu or enter the current menu setting state;
- After entering the parameter menu (such as brightness) setting state, rotate the confirm button to adjust the parameters. Press the confirm button to save the parameters and exit the setting state.

### ESC button:

- Press to exit the current operation or return to the previous menu.
-

## 7.1. Main Page



Icon	Description
 HDMI 1920x1080@60	Signal source type and resolution
 1920x1080	Output screen resolution
 50%	Display brightness value
 1 2	Network interface connection status 1: Connected; 2: Unconnected.
 1:1	Output screen scale mode:  : Full Screen;  : Pixel to Pixel;  : Custom.
	USB disk files cycle mode:  : List;  : Single.
	USB disk connection status:  : Connected;  : Unconnected.
	Control interface is connected

## 7.2. Brightness adjustment

1. Press the confirm button to enter the first-level menu and select "Brightness";
2. Press the confirm button to enter the setting state, rotate the confirm button to adjust the brightness;
3. Press the confirm button to save the settings.

Example: Adjust brightness from 100% to 23 %.

A menu	Adjust brightness	Setup completed
Brightness 100%	Brightness 23%	Brightness 23%
Inputs >	Inputs >	Inputs >
Output >	Output >	Output >
Display >	Display >	Display >
USB Play >	USB Play >	USB Play >
Advance Settings >	Advance Settings >	Advance Settings >

## 7.3. Input settings

In the “Inputs” menu, you can switch the input source and set the input source resolution.

### 7.3.1. Switch input source

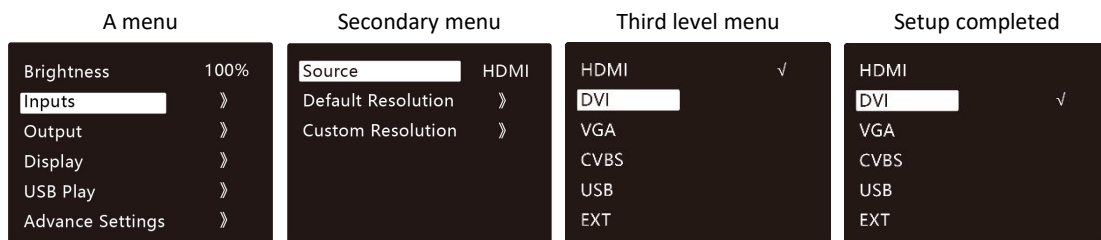
The device provides two input source switching methods:

The first one: Through the input source button in the INPUTS area of the front panel. For details , please refer to——[3.1 Front panel](#) .

Second type: Complete it through the “Inputs” menu.

1. Press the confirm button to enter the first-level menu and select "Inputs";
2. Press the confirm button to enter the secondary menu and select "Source";
3. Press the confirm button to enter the third-level menu and select the target input source;
4. Press the confirm button to switch the signal.

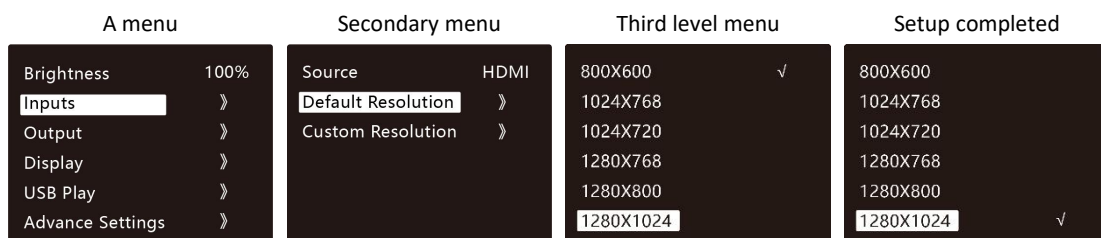
Example: Switch input source from HDMI to DVI.



### 7.3.2. Default resolution

1. Press the confirm button to enter the first-level menu and select "Inputs";
2. Press the confirm button to enter the secondary menu and select "Default Resolution";
3. Press the confirm button to enter the third-level menu, rotate the confirm button to select the resolution;
4. Press the confirm button to change the resolution.

Example: Switch from 800 x 600 to 1280 x 1024.



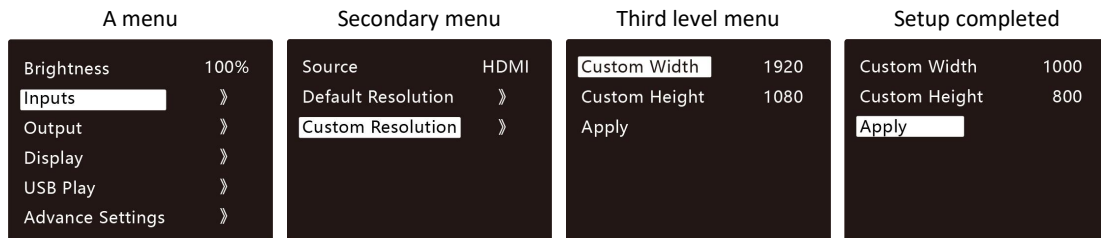
### 7.3.3. Custom resolution

If the required resolution is not in the built-in resolution library, you can customize the resolution.

1. Press the confirm button to enter the first-level menu and select "Inputs";
2. Press the confirm button to enter the secondary menu and select "Custom Resolution";

3. Press the confirm button to enter the third-level menu and set "Custom Width" and "Custom Height";
4. Rotate the confirm button to select "Apply" and press the confirm button to complete the setting.

Example: Custom resolution is 1000 x 800.



## 7.4. Output settings

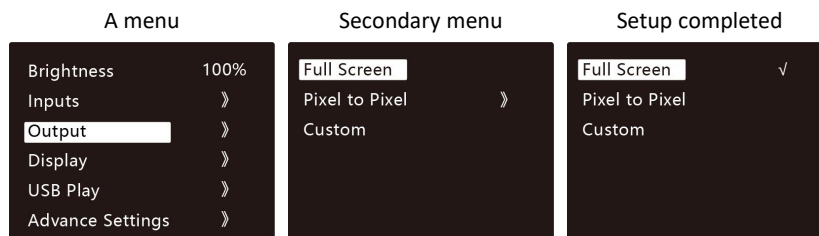
In the "Output" menu, you can switch the output screen mode.

### 7.4.1. Full Screen

"Full Screen" mode will zoom the current video source to full screen display.

1. Press the confirm button to enter the first-level menu and select "Output";
2. Press the confirm button to enter the secondary menu and select "Full Screen";
3. Press the confirm button to change from "Pixel to Pixel" to "Full Screen".

Example: The signal source is 1920 x 1080, and the scale mode is changed from "Pixel to Pixel" to "Full Screen".

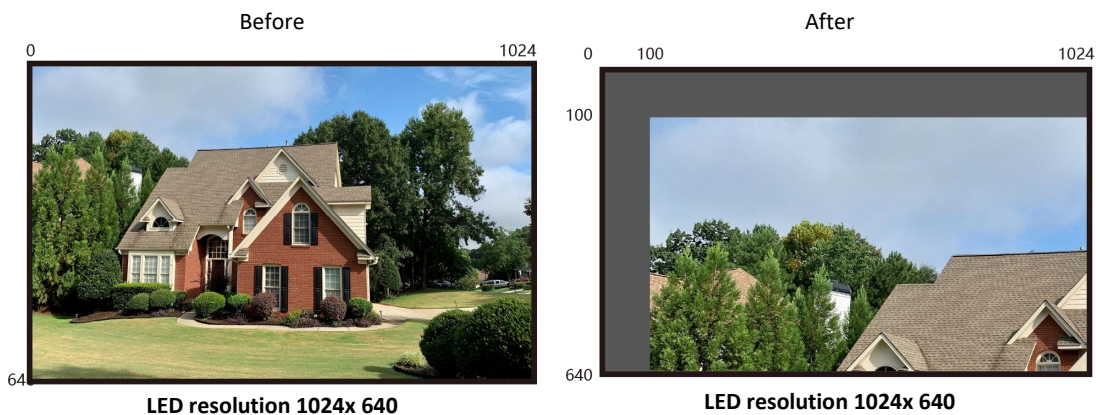
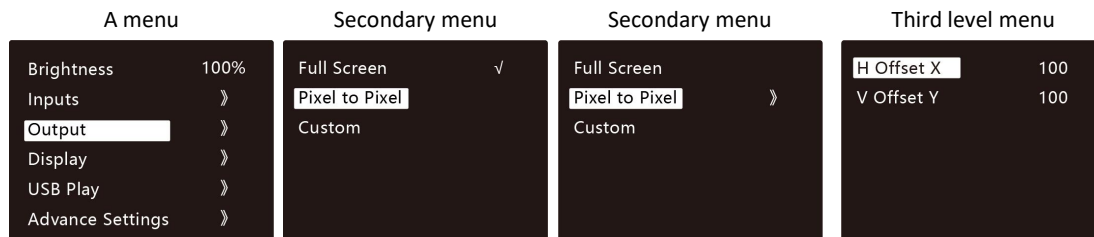


## 7.4.2. Pixel to Pixel

"Pixel to Pixel " mode means turning off scaling and realizing pixel to pixel display between the LED display and the video source.

1. Press the confirm button to enter the first-level menu and select "Output";
2. Press the confirm button to enter the secondary menu and select " Pixel to Pixel ";
3. Press the confirm button to change from "Full Screen" to " Pixel to Pixel ";
4. Press the confirm button to enter the third-level menu and set "H Offset X" and "V Offset Y".  
Offset refers to the offset of the output image relative to the origin of the display screen.

Example: The signal source is 1920 x 1080, change the scaling mode from "Full Screen" to " Pixel to Pixel " and adjust the offset.

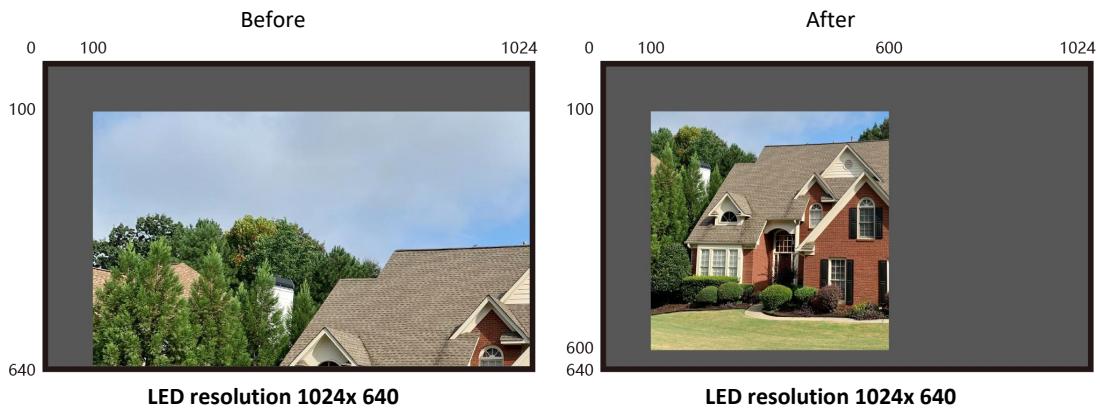
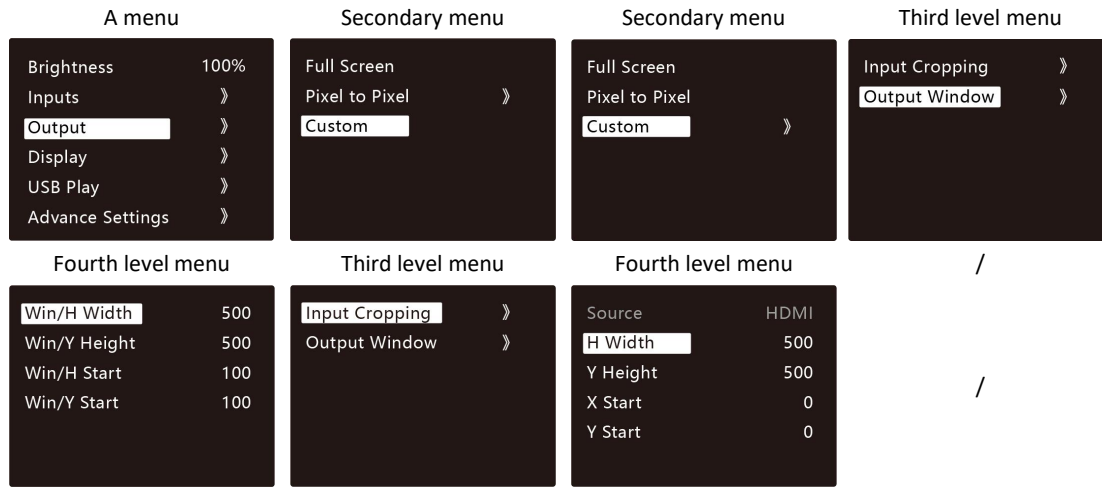


## 7.4.3. Custom

In the "Custom" mode, the LED display content can be customized through "Input Cropping" and "Output Window".

1. Press the confirm button to enter the first-level menu and select "Output";
2. Press the confirm button to enter the secondary menu and select "Custom";
3. Press the confirm button to change from "Pixel to Pixel" to "Custom ";
4. Press the confirm button to enter the third-level menu and select "Output Window";
5. Press the confirm button to enter the fourth-level menu and set the size and position of the output window;
6. Press the ESC button to return to the third-level menu, rotate the confirm button to select "Input Cropping", which can cropping part of the input source for display;
7. Press the confirm button to enter the fourth-level menu and set the size and position of the cropping part.

Example: The signal source is 1920 x 1080, the scaling mode is changed from " Pixel to Pixel " to "Custom" and the input cropping and output window are set.



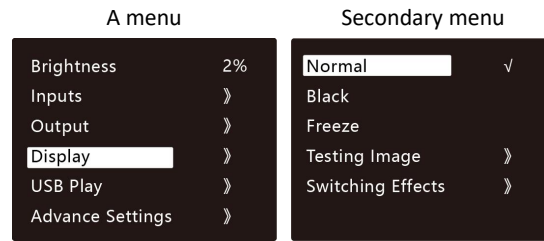
## 7.5. Display control

In the "Display" menu, you can control the LED display.

1. Press the confirm button to enter the first-level menu and select "Display";
2. Press the confirm button to enter the secondary menu, rotate the confirm button to select the required function item for setting;

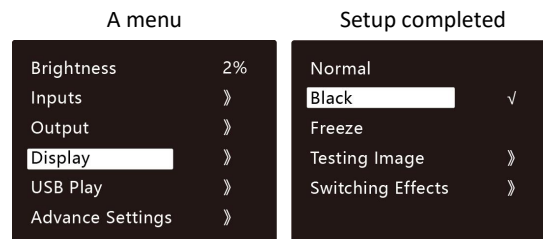
Items	Description
Normal	Display the video source screen normally.
Black	The LED screen changes to a black screen display.
Freeze	The LED screen displays the last frame of the video source.
Testing Image	The testing image can be displayed on the LED screen to test the display effect. There are 14 built-in testing images for users to choose from.
Switching Effects	Set signal source switching effects, including Straight and Fade In/Out.

3. Press the confirm button to save the settings.



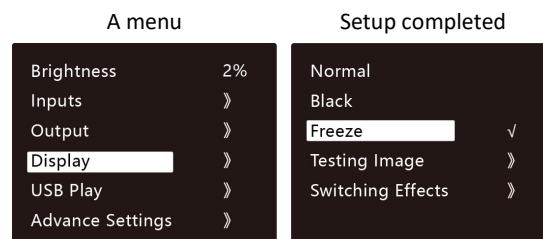
### 7.5.1. Black

Set to "Black", the LED screen displays a black screen.



### 7.5.2. Freeze

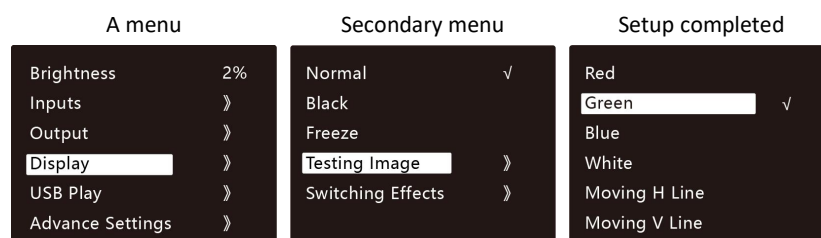
Set to "Freeze", the LED screen displays the last frame of the video source.



### 7.5.3. Testing Image

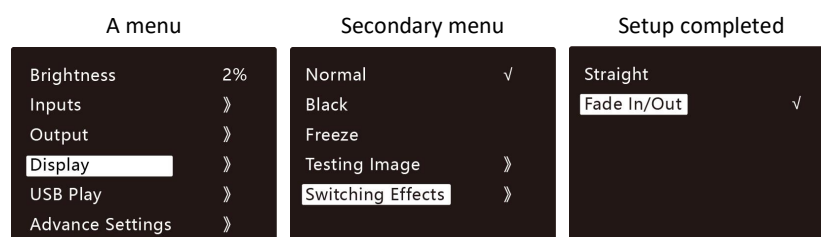
You can use the test image to test the LED screen display effect.

Example: Set the testing image to " Green ".



### 7.5.4. Switching Effects

Example: Set the switching effect to "Fade In/Out".



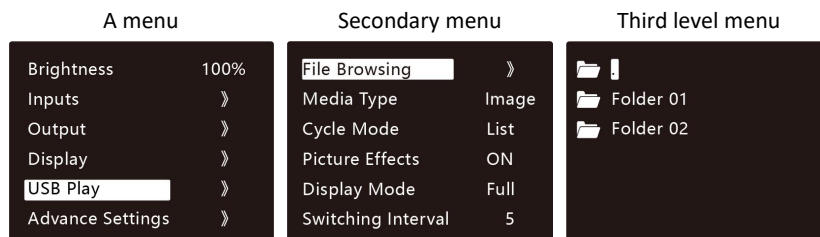


## 7.6. USB playback settings

Plug in the USB disk into the USB interface, the pictures and videos can be displayed through the LED display. Users can set USB playback settings through the front panel buttons, including media type, cycle mode, picture effects, display mode and switching interval.

### 7.6.1. File browsing

1. Press the confirm button to enter the first-level menu and select "USB Play";
2. Press the confirm button to enter the secondary menu and select "File Browsing";
3. Press the confirm button to enter the third-level menu and view the files in the USB disk.



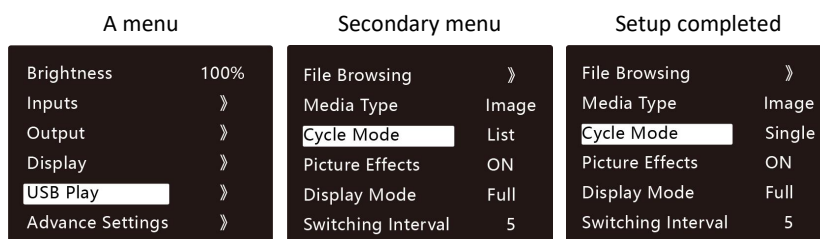
### 7.6.2. Playback settings

1. Press the confirm button to enter the first-level menu and select "USB Play";
2. Press the confirm button to enter the secondary menu, rotate the confirm button to select the required function item for setting;

Items	Description
Media Type	You can select Image or Video. After selection, the LED display will play the corresponding type of file.
Cycle Mode	You can choose Single or List, "Single" means a single file will be played in a loop, and "List" means a list will be played in sequence.
Picture Effects	You can choose ON or OFF. If OFF, the picture effects will be enabled.
Display Mode	Set the display mode of the picture on the LED screen, including Full and Adapt.
Switching Interval	When "Media Type" is "Image", set the interval for picture switching.

3. Press the confirm button to enter the setting state, and rotate the confirm button to select the required option;
4. Press the confirm button to complete the setting.

Example: Set "Cycle Mode" to "Single".



## 7.7. Advance Settings

Advance Settings include audio settings, loading cabinet configuration files, fix to receiving card, advanced property settings, restoring factory settings and viewing version information.

### 7.7.1. Audio Settings

You can set audio on, off and volume. The device supports independent audio input, and the audio input source can be selected as needed: embedded/external.

1. Press the confirm button to enter the first-level menu and select "Advance Settings";
2. Press the confirm button to enter the secondary menu and select "Audio Settings";
3. Press the confirm button to enter the third-level menu, rotate the confirm button to select "Audio" to enable/disable the audio; select "Volume" to adjust the volume; select "Audio Source" to select embedded/external audio input source;
4. Press the confirm button to save the settings.

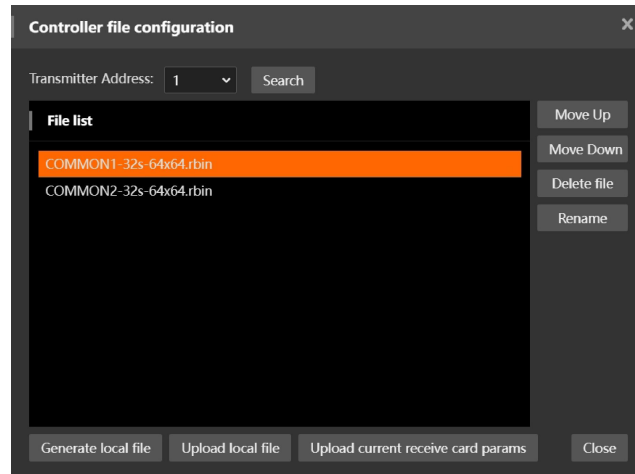
Example: Turn on audio.

A menu	Secondary menu	Third level menu	Setup completed
Brightness 100% Inputs > Output > Display > USB Play > Advance Settings >	Audio Settings > Cabinet Info > Fix to ReceiverCard > Properties > Factory Reset > Version >	Audio OFF Volume 100 Audio Source HDMI	Audio ON Volume 90 Audio Source EXT

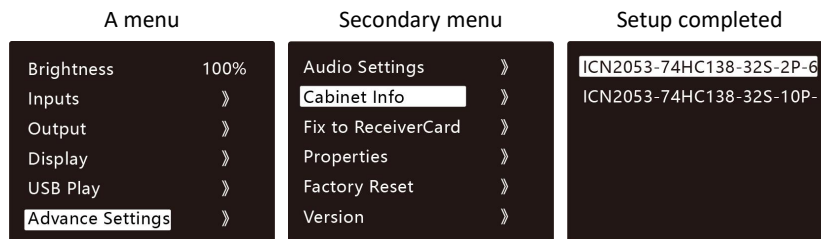
### 7.7.2. Cabinet Info

LED cabinet can be configured by loading the cabinet configuration file so that the cabinet can light up normally.

1. Use the control cable to connect the control PC and the device, open the configuration software, click "Screen Configuration" → Select the corresponding control device → "Receiving Card" → "Controller File Config", open the configuration window, and then click "Upload local file" button to upload the controller file in the control PC to the device, or click the "Upload current receive card params" button to save the current software configuration parameters as a controller file and upload it to the device;



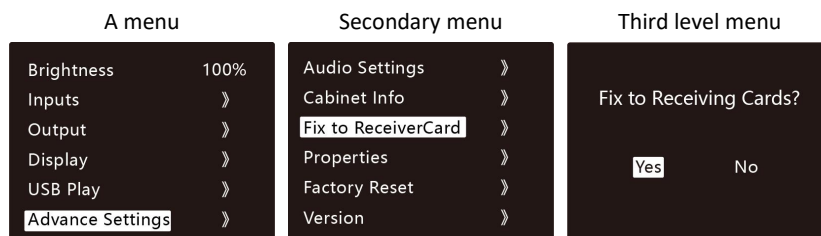
2. Press the confirm button to enter the first-level menu and select "Advance Settings";
3. Press the confirm button to enter the secondary menu and select "Cabinet Info";
4. Press the confirm button to enter the third-level menu , select the controller file to be imported, and press the confirm button again to load the file.



### 7.7.3. Fix to ReceiverCard

LED screen displays normally after loading the cabinet configuration file , you can fix this parameter to the receiving card.

1. Press the confirm button to enter the first-level menu and select "Advance Settings";
2. Press the confirm button to enter the secondary menu and select " Fix to ReceiverCard";
3. Press the confirm button to enter the third-level menu and select "Yes", press the confirm button again to fix the parameters to the receiving card.



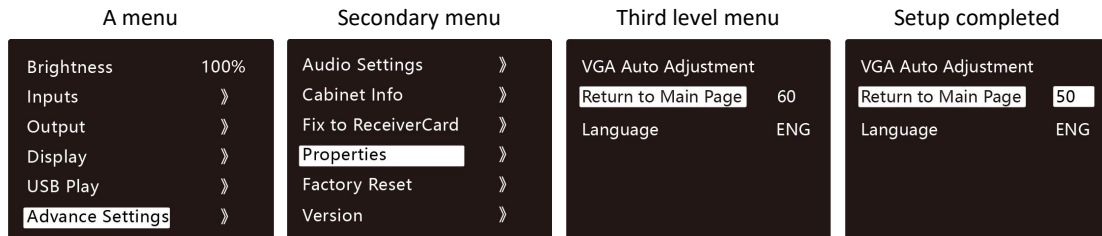
### 7.7.4. Properties

You can set the duration for returning to the main page if there is no operation on the front panel. When the input source is VGA, VGA auto-adjustment can also be turned on. The device supports two languages : English and Chinese . Users can switch language as needed .

1. Press the confirm button to enter the first-level menu and select "Advance Settings";

2. Press the confirm button to enter the secondary menu and select " Properties";
3. Press the confirm button to enter the third-level menu, rotate the confirm button to select the corresponding function item and adjust it;
4. Press the confirm button to save the settings.

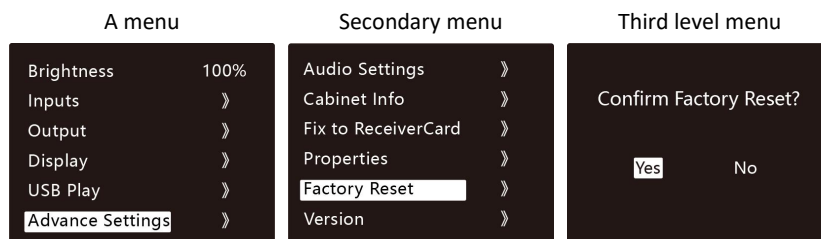
Example: Adjust the "Return to Main Page" value to 50s.



### 7.7.5. Factory Reset

The device supports restoring factory settings.

1. Press the confirm button to enter the first-level menu and select "Advance Settings";
2. Press the confirm button to enter the secondary menu and select "Factory Reset";
3. Press the confirm button to enter the third-level menu and select "Yes" , press the confirm button again to restore the device to factory settings.



### 7.7.6. Version Information

Device version information can be viewed through the front panel.

1. Press the confirm button to enter the first-level menu and select "Advance Settings";
2. Press the confirm button to enter the secondary menu and select "Version ";
3. Press the confirm button to enter the third-level menu to view device version information.

