

MVB12ES MVB20E

2IN1 Video Processor

User Manual

Applicable to MVB20E MVB12ES

Document version:: V2.0

Hardware Version: MVB12ES (V1.0.0) MVB20E (V1.0.0)



Safety Instruction



This symbol reminds the user that there are important operation and maintenance instructions in the user manual of the equipment.



This symbol warns the user that there is dangerous voltage exposed in the casing of the equipment, and there is danger of electric shock.

Precautions

Reading Instructions Users must read and understand all safety and use instructions before using the equipment.

Save Instructions Users should save safety instructions for future use.

Obedience warning Users should observe all safety and operating instructions in the product and user's guide.

Avoid appending Do not use tools or appending equipment not recommended by the manufacturer of this product to avoid danger.

Warning

Power supply

This equipment can only use the power supply indicated on the product. The equipment must be powered by a power supply system with a ground wire. The third line (ground wire) is a safety facility, which cannot be used or skipped.

Unplug the power supply

In order to safely unplug the power supply from the equipment, please unplug the power cord of all equipment rear or desktop power supply, or any power cord connected to the mains system.

The power cord shall be properly wired to avoid being trampled or squeezed by heavy objects.

Maintenance

All repairs must be carried out by certified maintenance personnel. There are no parts in the equipment that can be replaced by users. To avoid the danger of electric shock, don't try to open the cover of the equipment to repair the equipment yourself.

Vent holes

Some equipment housings have vent slots or holes, which are used to prevent the sensitive components in the machine from overheating. Don't block the vent with anything.

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1 Update Records

Document version	Hardware version	Release time	Update record
V2.0	V1.0.0	July 5(nd), 2025	First release of document

2 Applicable Model

The product models applicable to this article are as follows:
MVB12ES、MVB20E

In this paper, MVB20E Sending Controller is used to explain:

3 Product Overview

3.1 Product Introduction

MVB20E is an easy-to-operate and feature-rich device that specially developed for LED displays. The maximum load of a single device 13 million pixels, supports a maximum width of 15360 pixels, and a maximum height of 15360 pixels; Up to 5 windows can be opened simultaneously. (The 4K channel occupies two windows; HDMI3 and DP are designated as 4K channels.) It supports 4K high-definition multi-type interface input, integrates professional display control technology and powerful video processing capabilities, and it simplifies the scene environment to build a video processor. Using high-performance image processing chip; with advanced interlaced image adaptive processing technology and ultra-clear noise reduction engine, eliminating video image motion smearing and jagged phenomenon, the video image enhancement technology makes the image clearer and more detailed, rich in details, and full of colors , Image quality is stable..

3.2 Product Features

3.2.1 Improve the display effect

- Multiple input interfaces
1×HDMI2.0、2×HDMI1.4、2×DVI,
1×DP1.2 (Either HDMI2 or this port can be used at a time; only one signal can be input simultaneously.)
- EDID, Support custom EDID management
- Output interface
 - 20 gigabit network ports
- Maximum load 13 million pixels, custom output resolution, regular version maximum width 15360, maximum height 15360.
- Audio interface: Support audio input and output

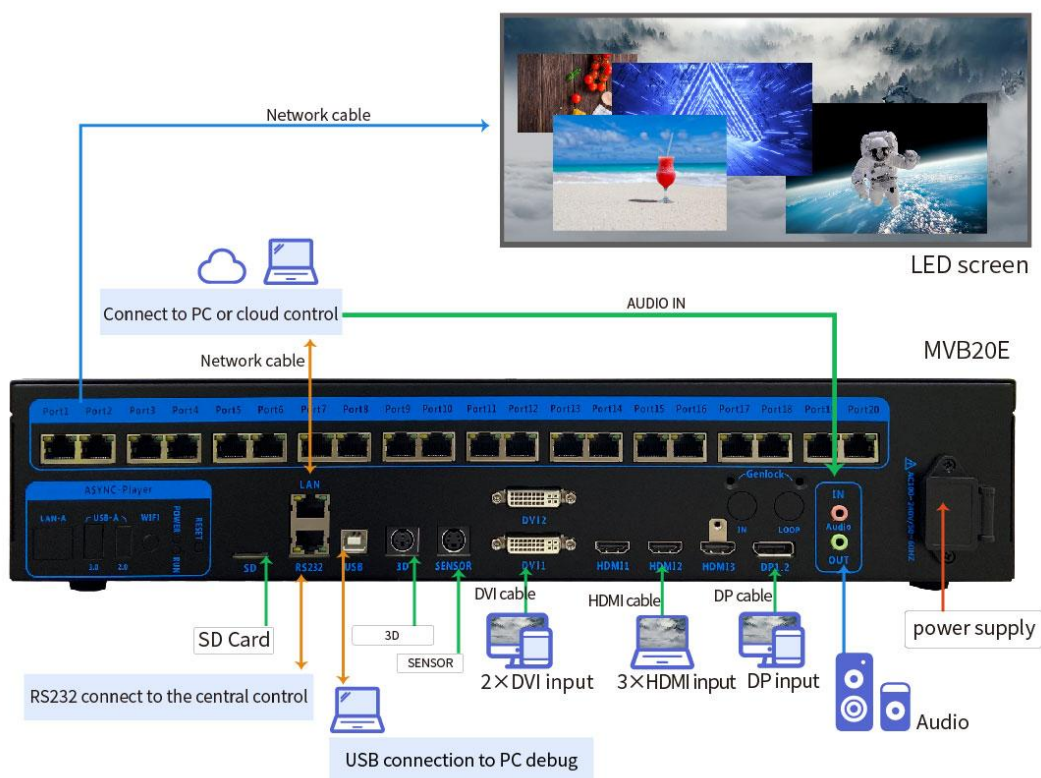
3.2.2 Diversified Display Function

- Supports Picture-in-Picture functionality: Embed additional video streams within the primary 4K input display
- Supports multi-layer functionality: 1×4K window + 1×2K window; or 5×2K windows, enabling window overlay, roaming, and seamless switching
- Supports creation of 10 user preset scenes as templates for direct recall and convenient operation
- Features built-in clock with scheduled scene template switching
- Supports external brightness sensors to automatically adjust LED display brightness based on ambient light
- Supports 3D display with active 3D technology
- Supports HDR display
- Supports key lock function
- Supports patrol mode and SD card backup/restore
- Supports PC software control for window opening, resizing, and drag-and-drop positioning
- Supports image freeze and one-touch blackout for output screens

4 Hardware Introduction

4.1 Wiring Topology Diagram

Wiring topology diagram using MVB20E devices as an example.



4.2 Hardware Interface Specifications

Taking the MVB20E device as an example.

4.2.1 Front Panel



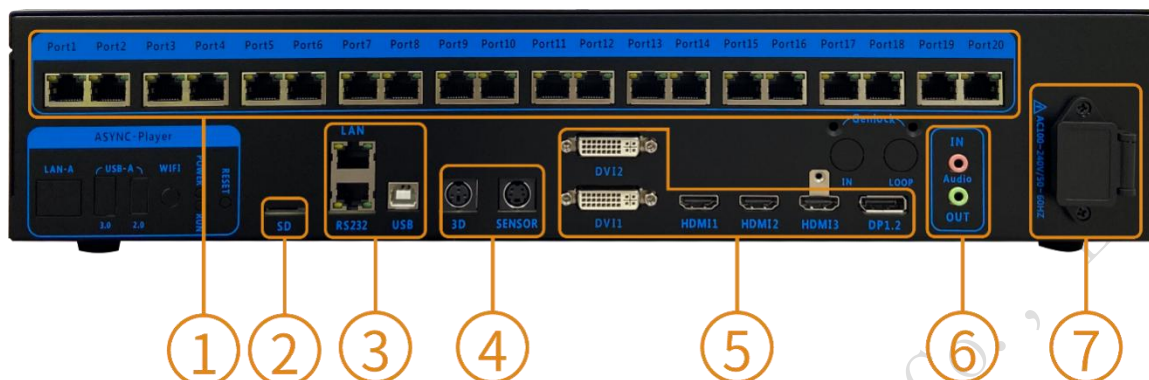
* Product photos are for reference only, please refer to the products actually purchased.

Description of data interface:

#	Keys	Illustrations
1	ON/OFF	Power ON/OFF
2	LCD Display	To display the current status of the device and to have the menu settings.
3	Knob	1 、 In the main interface,press the knob to enter the menu operation interface; 2、 In the menu operation interface,rotate the knob to choose the menu, press the knob to select the current menu or enter its sub-menu. 3 、 Once the menu that is with parameters selected, you could rotate the knob to adjust the parameters. 4. Long press to unlock the menu.
3	Esc	Return(ESC)/Cancel the current menu or operation.
4	DVI1	DVI Source/Digital Key 1: Off: This signal source is not selected Flashing: This signal source is selected but no signal is present On: This signal source is selected and a signal is present

	Input Signal	DVI2	DVI Source/Digital Key 2: Off: This signal source is not selected Flashing: This signal source is selected but no signal is present On: This signal source is selected and a signal is present
		HDMI1	HDMI1 Source/Digital Key 3: Off: This source is not selected Flashing: This source is selected but no signal is present Solid: This source is selected and a signal is present
		HDMI2	HDMI2 Source Digital Indicator 6: Off: This source is not selected Flashing: This source is selected but no signal is present On: This source is selected and a signal is present
		DP	DP Source/Num 8: Off: This source is not selected Flashing: This source is selected but no signal is present On: This source is selected and a signal is present
		HDMI3	HDMI3 Source/Digital Key 7: Off: This source is not selected Flashing: This source is selected but no signal is present On: This source is selected and a signal is present
5	Function Button	WIN	WIN/Num 4: Layer Selection
		PART	PART/Num 5: Partial/Fullscreen Shortcut Button
		TEMPLATE	Open multiple windows; use this key to switch between them
		HDMI4	HDMI4/Number 9: Quick key for adjusting screen size Built-in playback board signal source
		FREEZE	FREEZE/Num 0: Custom Black Screen or Freeze
		MODE	Load scene shortcut key

4.2.2 Rear Panel



* Product photos are for reference only, please refer to the products actually purchased.

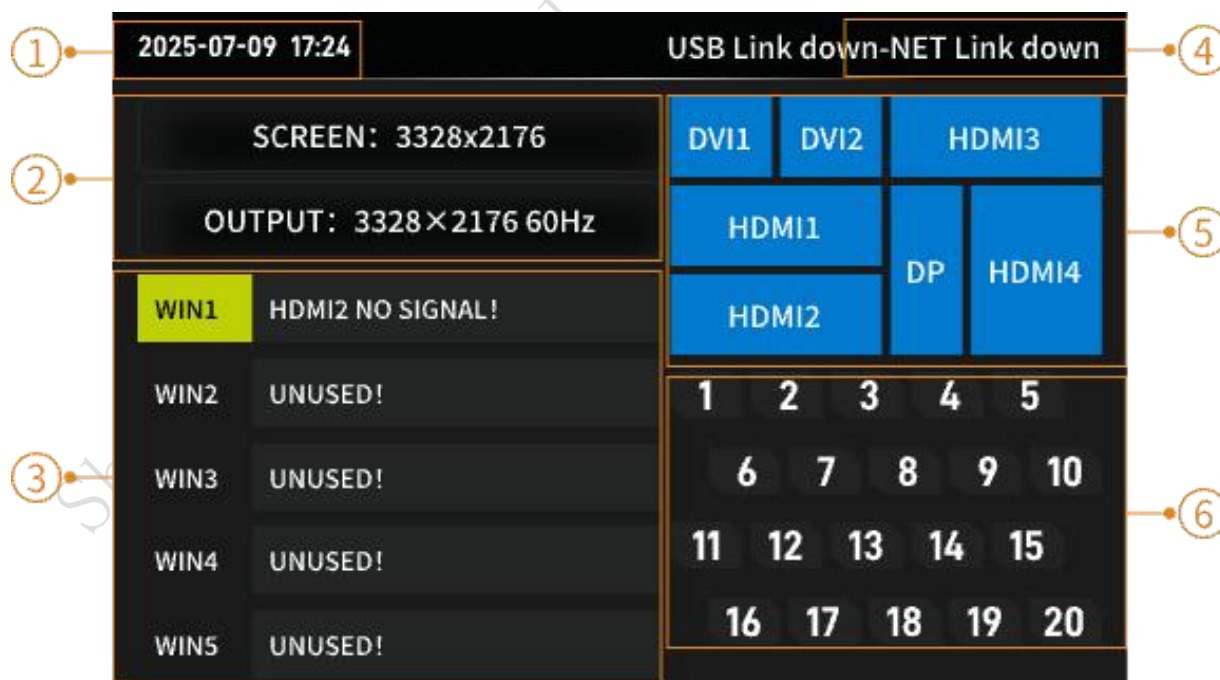
Output Interface			
#	Interface	QTY	Illustration
5	HDMI3	1	1×HDMI 2.0, 1×DP1.2 : (Select one of two signals; only one signal can be input at a time). Supports video source inputs up to 3840×2160@60Hz and 7680×1080@60Hz
	DP1.2	1	Supports custom resolutions Maximum width: 7680 (7680×1080@60Hz) Maximum height: 7680 (1080×7680@60Hz)
	HDMI1/HDMI2	2	1×HDMI 1.4 Supports video source input up to 2304×1152@60Hz resolution Supports custom resolutions Maximum width: 3840 (3840×604@60Hz) Maximum height: 3840 (640×3840@60Hz) Does not support interlaced signal input
	DVI1/DVI2	2	2×DVI Supports video source input up to 1920×1200@60Hz resolution Supports custom resolutions

			Maximum width: 3840 (3840×604@60Hz) Maximum height: 3840 (640×3840@60Hz) Does not support interlaced signal input
Output Interface			
#	Interface Type	QTY	Illustration
1	Network Port	20	20 Gigabit Ethernet port output connectors to the receiving card. Network port indicator light description: - Dual lights are always on: the power is turned on, but the receiving card is not detected. - Dual lights are not on: the power supply is not connected. - The yellow light is always on, the green light is flashing: the signal is normal and communication is in progress.
AUDIO Interface			
#	Interface	QTY	Illustration
6	Audio in	1	3.5mmAudio Interface Input
	Audio Out	1	3.5mmAudio Interface Output
Control Interface			
#	Interface Type	QTY	Illustration
3	LAN	1	100M Ethernet Port, Reserved Port
	RS232	1	Serial Port
	USB-B	1	Configure Port to connect to the PC
	Update	1	1×USB2.0, USB Drive Upgrade

Backup and restore			
#	Interface Type	QTY	Illustration
2	SD	1	SD Card: Stores large-screen configuration parameters for data patrol.
Extended Function Interface			
#	Interface Type	QTY	Illustration
4	3D	1	Connect the 3D transmitter
	SENSOR	1	Connect the light sensor probe to enable automatic brightness adjustment
Output Interface			
#	Interface Type	QTY	Illustration
7	Power Supply	1	AC-100-240V-50/60HZ AC power interface

5 Main Interface

After the processor is turned on, the LCD screen displays the use status interface.



#	Status Interface Description
1	Processor Internal Clock
2	Screen: Current output screen resolution (connected display file size) Output: Current selected signal source input resolution / selected color depth
3	Display the input source for the window and input resolution information: WIN1 HDMI3 3840x1080 60.0Hz 8BIT : Window enabled, displaying window signal source and input resolution WIN2 UNUSED! : : Window disabled WIN3 NO SIGNAL! : : Window enabled, no signal source or input resolution detected
4	Connection Method (Choose one for debugging) 169.254.219.009.8226-调试中(1) : 100 Mbps connection USB连接 : connection USB Link down-NET Link down : Both USB and 100Mbps Ethernet are disconnected.
5	Input signal source: Displays yellow when an input signal is detected, blue when no signal is present.
6	Network port connection status: Displays blue when connected, gray when disconnected.

6 Menu Operation

Knob:

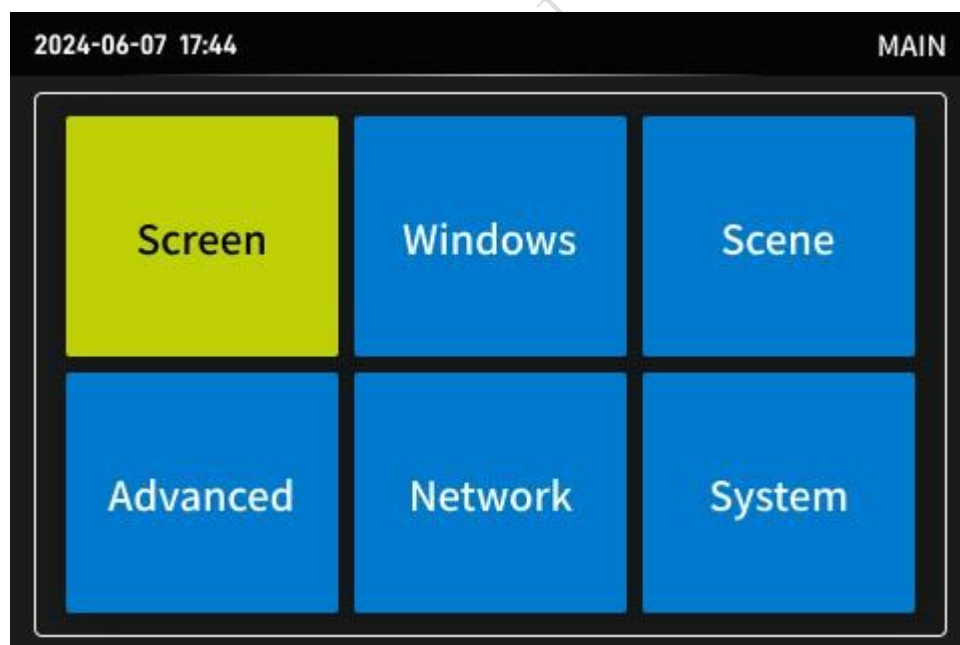
- In the main interface, press the knob to enter the menu operation interface.
- In the menu operation interface, turn the knob to select the menu function, and the selection status is blue.

Press the knob to select the current menu or enter the submenu function.

- After selecting a menu with parameters, you can adjust the parameters by turning the knob. Please note that you need to press the knob again to confirm after the adjustment is completed.
- ESC: return key.
- Long press the knob to unlock the front panel keys.

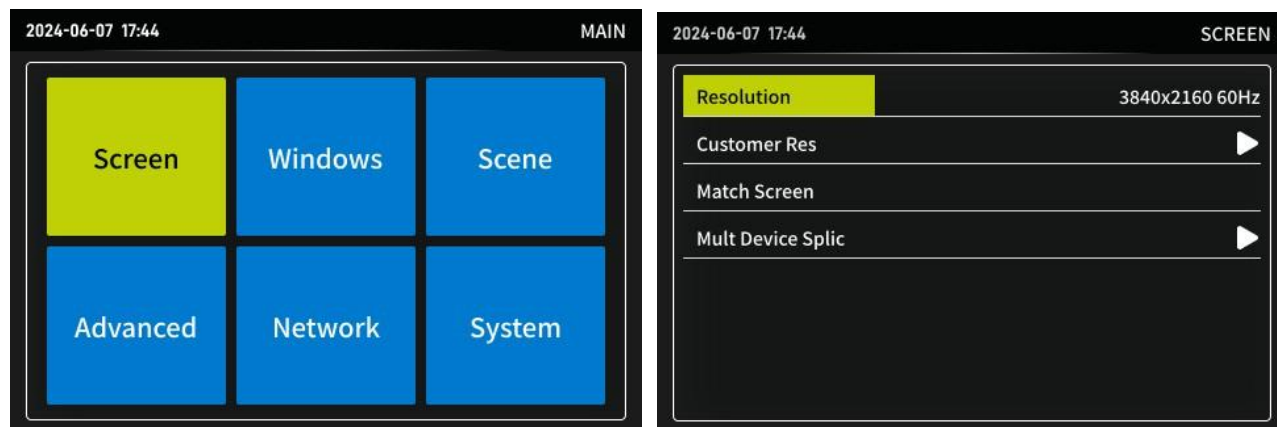
Main Menu Function Settings: The main menu contains six major settings categories: **【Screen Parameters】**, **【Window Display】**, **【Scene Presets】**, **【Advanced Functions】**, **【Network Settings】**, and **【System Settings】**. Each corresponds to distinct functional configurations.

As shown in the main menu below:



6.1 Screen Parameters

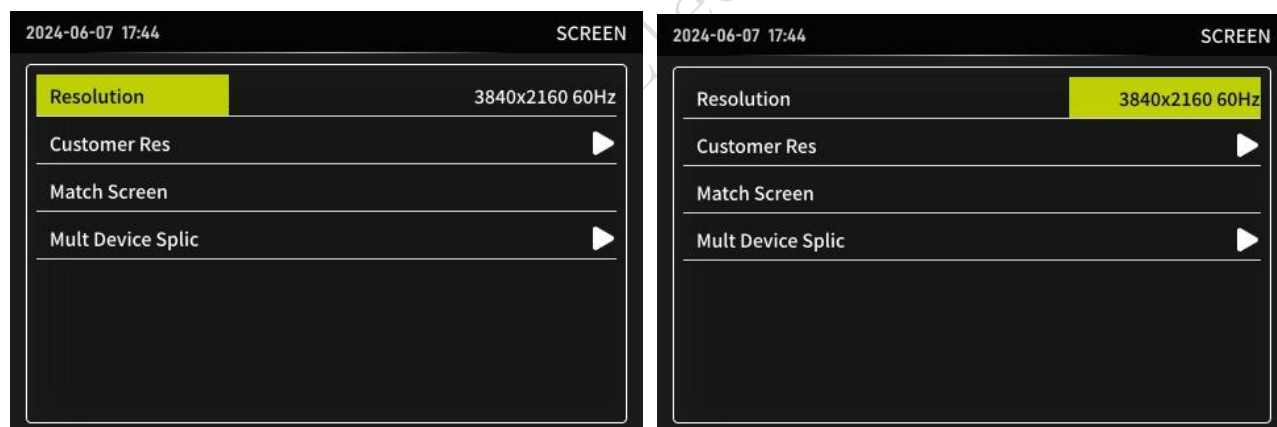
Screen parameters include: [Resolution], [Customer Resolution], [Match Screen], [Multi-Device Splicing]



6.1.1 Resolutions

Step 1: Rotate the knob to the **【Resolution】** function, then press the knob to select.

Step 2: Select the preset resolution as needed and set the processor output resolution.



Supported preset resolutions:

- 3840x2160_60Hz, 4096x2160_60Hz, 4320x1920_60Hz,
- 4800x1920_60Hz, 2560x3840_60Hz, 6144x1536_60Hz,
- 7680x1080_60Hz, 7680x1200_60Hz, 8192x1152_60Hz,
- 9216x1080_60Hz, 10240x900_60Hz, 15360x640_60Hz, 15360x1080_60Hz

6.1.2 Customer Resolution

Step 1: Rotate the knob to the **【Customer Resolution】** function and press the knob to select it.

Step 2: Set the “height,” “width,” and “frame rate” parameters as needed.

Step 3: After configuration, press “Apply” to take effect.



Note:

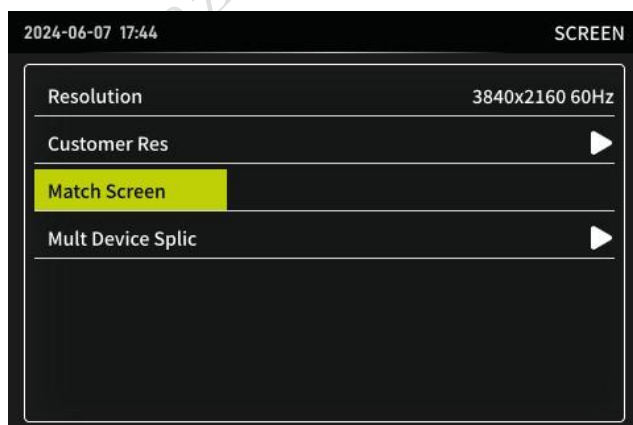
- Customer resolution, maximum width 16384, maximum height 16384, frame rate 0-120Hz, maximum total pixels not exceeding 13 million pixels.
- Screen horizontal total width: Actual total width in pixels of the screen.
- Screen horizontal total height: Actual total height in pixels of the screen

6.1.3 Match Screen

Attention:

Step 1: Rotate the knob to the **【Screen Parameters】** - **【Match Screen】** function, then press the knob to confirm.

The image display size will automatically be set to the output resolution of the multi-screen file.



6.1.4 Multi-Device Splicing

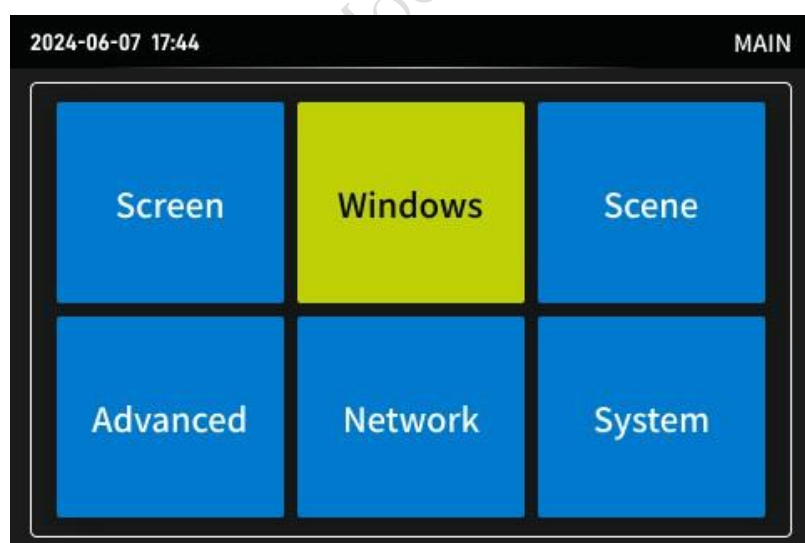
Step 1: Rotate the knob to the **【Multi-Device Stitching】** function and press the knob to enter.

Step 2: Default setting is “Off.” This feature applies to multiple devices sharing the same signal source for image stitching. Configure screen width and height, horizontal and vertical starting points, and display dimensions as needed. Enable frame synchronization on the signal source to ensure image synchronization.



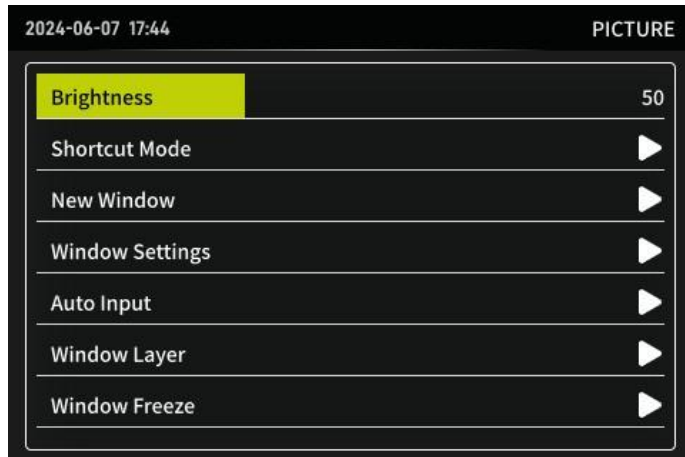
6.2 Window Display

Configure window settings, including parameters such as window size, position, layer stacking order, transparency, and window freeze. Window creation can be done via quick presets or custom-defined openings.



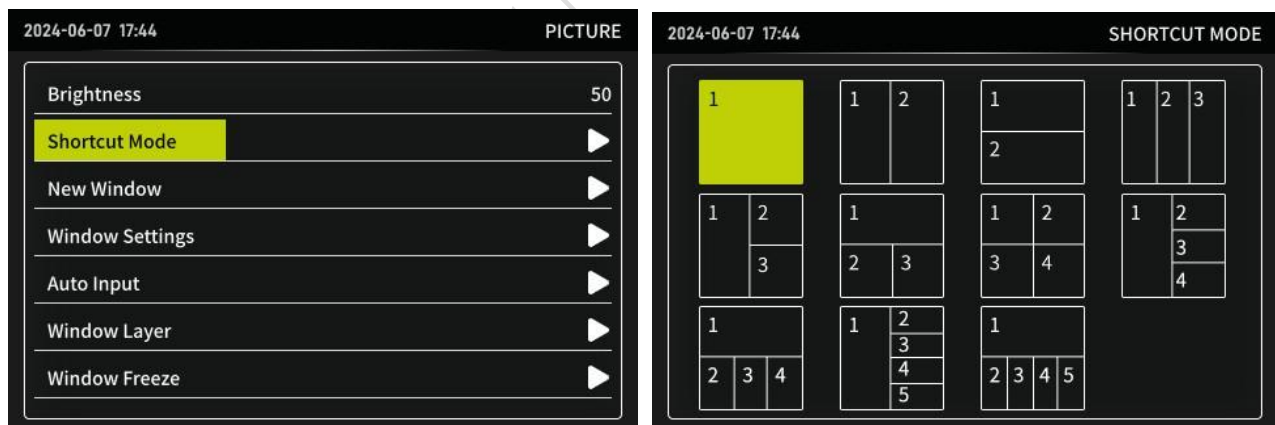
6.2.1 Brightness Settings

Step 1: Rotate the knob to select [Window Display] - [Brightness] function, then press the knob to confirm. Step 2: Default brightness value is 100. Rotate the knob to adjust the brightness of the receiving card within the range of 0-100.



6.2.2 Shortcut Mode

Step 1: Rotate the knob to the [Window Display] - [Shortcut Mode] function and press the knob to confirm entry.
Step 2: Select a preset template for quick window creation, then adjust the window position and size as needed.



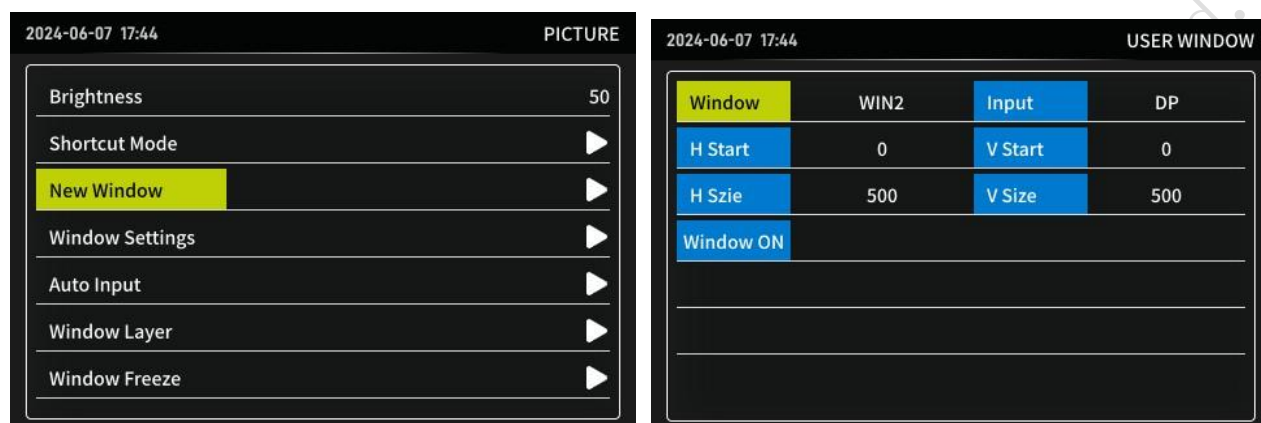
When Window 1 input signal is set to a 4K signal source, you can choose to open one or two windows. When Window 1 input signal is set to a 2K signal source, you can choose to open 1 to 5 windows.

As shown in the figure above, directly select using the knob. After window configuration is completed, the selected quick window template will be displayed in yellow. Press the "Return" button to go back to the operational interface, Press the "WIN" button to select a window, Press the input signal button to switch window signals.

6.2.3 New Window

Step 1: Rotate the knob to the [Window Display] - [New Window] function, then press the knob to confirm and enter.

Step 2: Add windows sequentially, set the input signal source for the selected window, adjust the window size and position, then click "Create Window" to confirm.

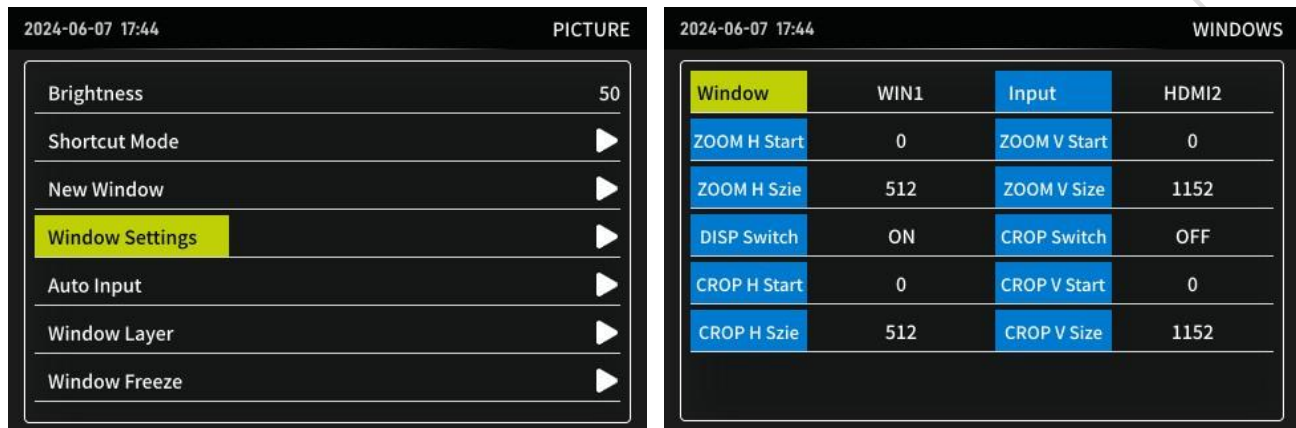


- Window Number: Incremented sequentially based on the order of window creation; cannot be modified.
- Signal Source: Rotate the knob to select the input signal source for the current window. All 2K input signal sources are available for selection, but only "Window 1" can select a 4K input signal source.
- Window Width, Height, and Position: After selection, rotate the knob to adjust values, or press the numeric keypad to input values directly. After completing the window configuration:
 - Press the "Return" button to return to the operational interface.
 - Press the "WIN" button to select a window.
 - Press the input signal button to switch the window signal.
- Note: Horizontal Start + Horizontal Width ≤ Total Screen Width Vertical Start + Vertical Height ≤ Total Screen Height

6.2.4 Window Settings

Step 1: Rotate the knob to the [Window Display] → [Window Settings] function, then press the knob to confirm and enter.

Step 2: In the window parameters, you can configure the input signal source, size, position, display on/off status, and input image cropping for each window. The default parameters are those set during window creation.

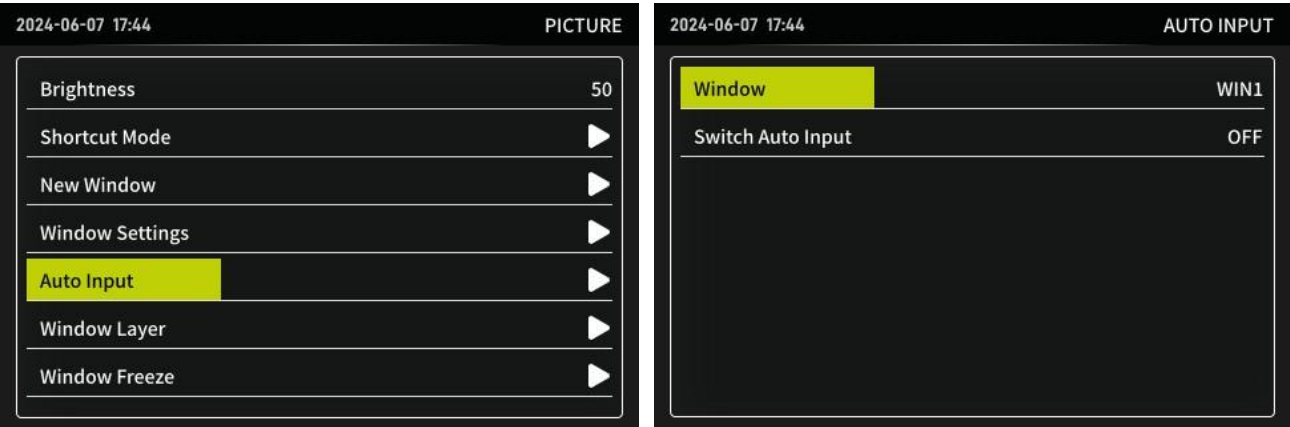


- Window Number: Rotate the knob to select the window to be configured.
- Signal Source: Rotate the knob to select the input signal source for the current window. All 2K input signal sources are available for selection, while only "Window 1" can select a 4K input signal source.
- Window Width, Height, and Position: After selection, rotate the knob to adjust values or use the numeric keypad to input values directly. The width, height, and position of each window can be freely set within the screen dimensions, allowing for overlapping or tiled display.
- Note: Scaling Horizontal Start + Scaling Horizontal Width $\leq$ Total Screen Width
Scaling Vertical Start + Scaling Vertical Height $\leq$ Total Screen Height
- Display Switch: Turn the window image display on or off.
- Crop Switch: Enable or disable input image cropping for the window. When disabled, the window displays the full-screen image of the input signal source; when enabled, the window shows a partial image of the input signal source based on the crop parameter settings.
- Crop Width, Height, and Position: After selection, rotate the knob to adjust values or use the numeric keypad to input values directly.
- Note: Crop Horizontal Start + Crop Horizontal Width $\leq$ Input Signal Source Resolution Width
Crop Vertical Start + Crop Vertical Height $\leq$ Input Signal Source Resolution Height

6.2.5 Switch Auto Input

Step 1: Rotate the knob to [Window Display] → [Auto Input] function, then press the knob to confirm and enter.

Step 2: Default setting is "Off". When enabled, the window will automatically switch to a signal source with active input.



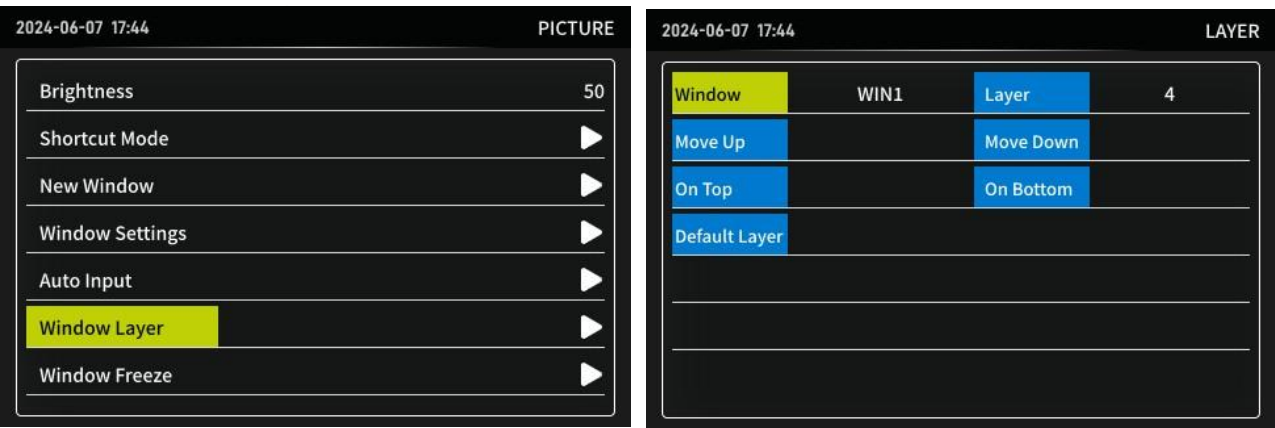
Window Number: Displays the current window

Switch Auto Input: Turn the auto-switch function on or off

6.2.6 Window Layer

Step 1: Rotate the knob to [Window Display] → [Window Layer] function, then press the knob to confirm and enter.

Step 2: Set the layer position (overlay order) of each window according to requirements.



- Window Selection: Rotate the knob to select the window to be configured.
- Current Layer: The layer position of the selected window. Layers are divided into 4, 3, 2, 1, and 0, with Layer 4 being the bottommost and Layer 0 the topmost.

Rotate the knob to select options in the execution interface—"Move Up," "Move Down," "on Top," "on Bottom," or "Default layer"—to change the position of the selected layer. Other layers will adjust sequentially accordingly.

6.2.7 Freeze

Step 1: Rotate the knob to [Window Display] → [Freeze] function, then press the knob to confirm and enter. Step 2: Configure the image freeze settings for the window display.

Configuration Options:

- Window Number: Rotate the knob to select the window to be configured.
- Freeze Status: Toggle to freeze or unfreeze the displayed image of the selected window.
- Freeze All Windows: Freeze multiple windows with one key. The FREEZE shortcut key can also freeze all windows.
- Release All Windows: Release the freeze status of all windows.



6.2.8 Scene Presets

Step 1: Rotate the knob to the [Window Display] function and press the knob to confirm entry.

Step 2: Save multiple usage scenarios, storing parameter settings for "Screen Splicing," "Window Display," and input signal sources, enabling quick loading and application of saved configurations. Functions:

➤ Save: Store the current display effect as a scene preset.

Rotate the knob to select "Execute Save" to open the save interface.

Select the desired scene number to complete saving. If the selected scene number already contains parameters, it will be overwritten by the new scene parameters.

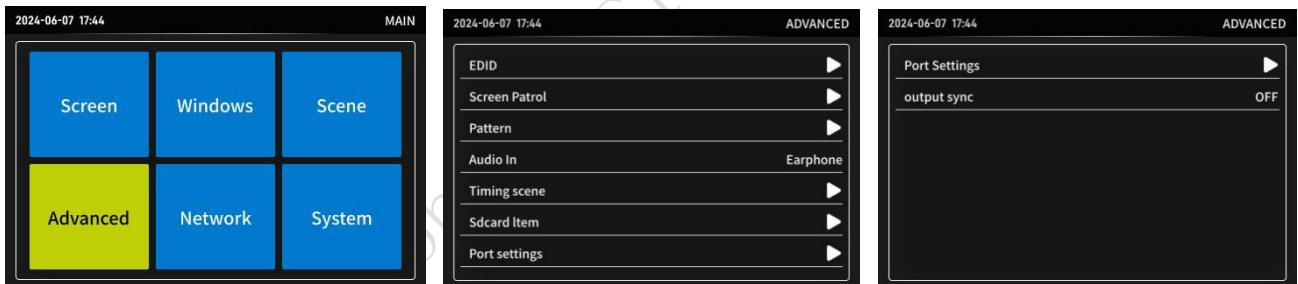
➤ Load: Recall a previously saved scene preset.

➤ Clear Saved Data: Delete all saved scene presets.



6.3 Advanced Settings

The advanced function menu includes the following eight options: [EDID], [Screen patrol], [Pattern], [Audio in], [Timed Scenes], [SD Card item], [Port Settings], and [Output Synchronization].



6.3.1 EDID

Step 1: Rotate the knob to [EDID] and press to enter resolution parameter adjustment.

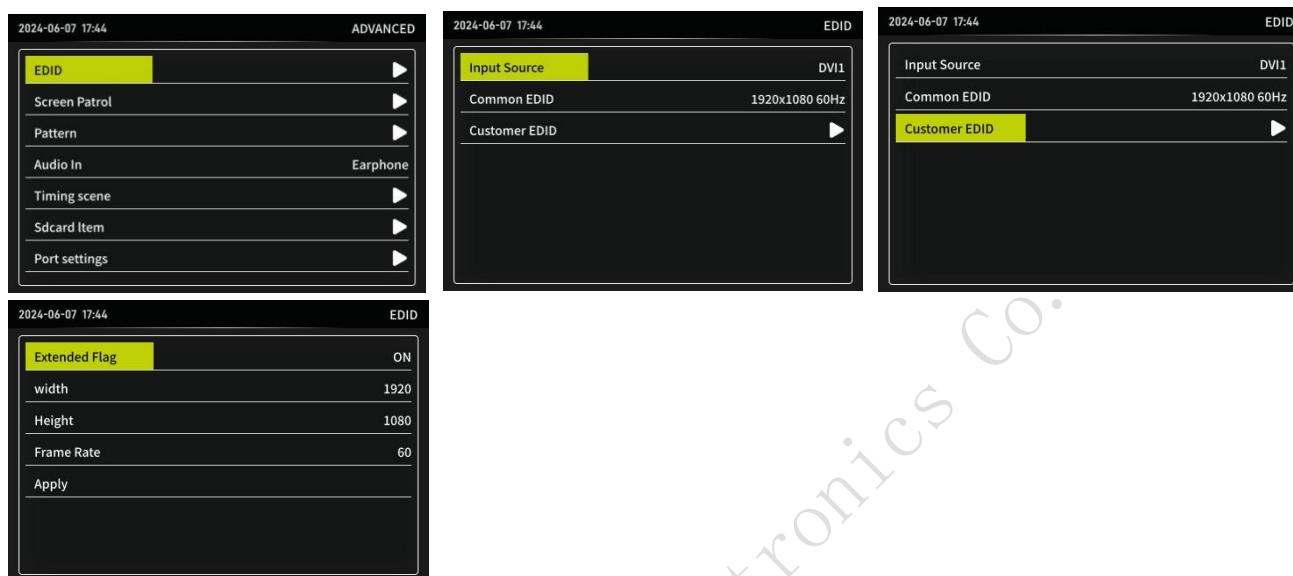
Step 2: With the resolution parameter selected, rotate the knob to choose common EDID settings.

➤ Input Signal: Select the input interface for which to modify the EDID.

➤ Common EDID: 2K input supports: 1366x768_60Hz, 1400x900_60Hz, 1920x1080_60Hz, 2304x1152_60Hz, 2560x900_60Hz. 4K input supports: 1366x768_60Hz, 1400x900_60Hz, 1920x1080_60Hz, 2304x1152_60Hz, 2560x900_60Hz, 3072x3072_60Hz, 3840x1080_60Hz, 3840x2160_60Hz.

➤ Customer EDID: Supports HDMI and DVI types. Enabling extended data sets the type to HDMI. Customize width, height, and refresh rate, with a maximum horizontal width of 4092, maximum vertical height of 4092, and refresh rate range of 0–180Hz.

Step 3: Press the knob to confirm and complete the common EDID settings.

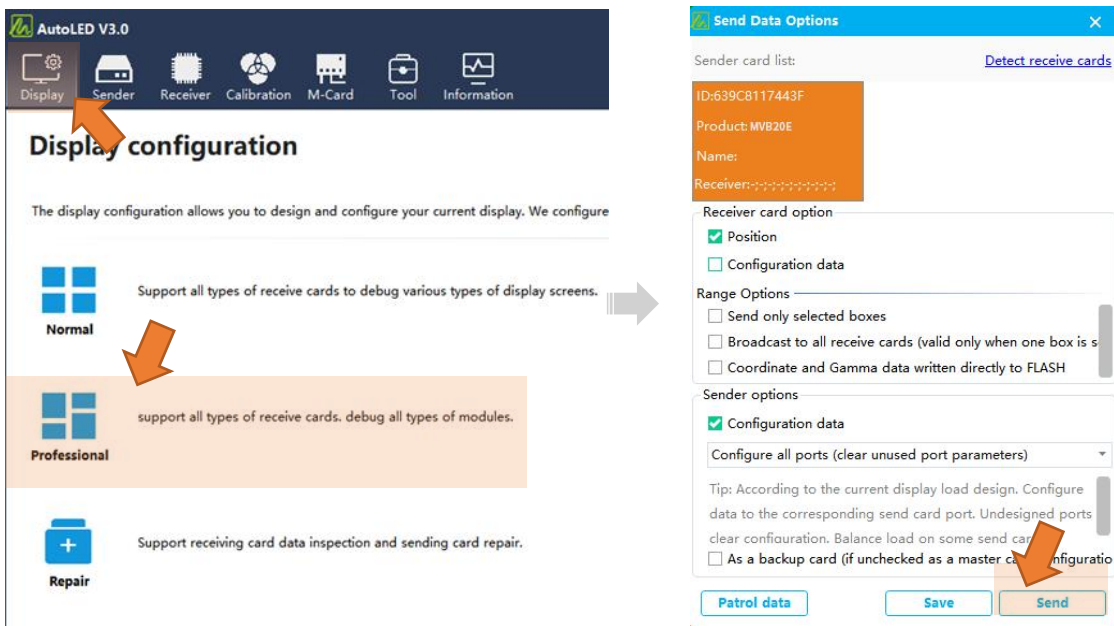


6.3.2 Screen patrol

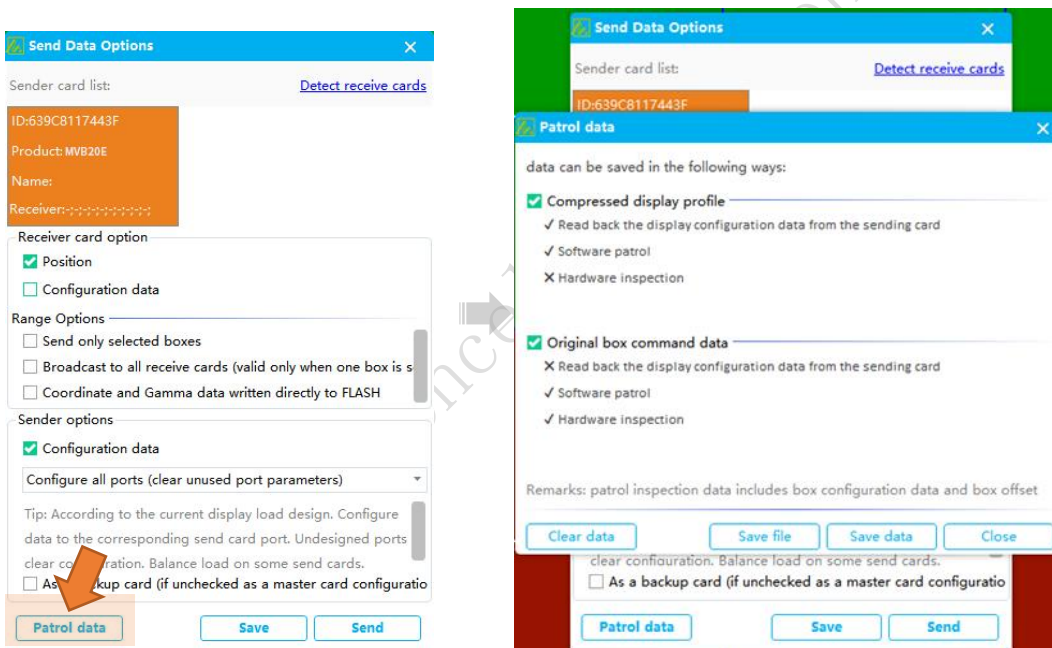
- Before executing screen patrol, it is necessary to use the host computer software to set and save the patrol data.
- Method for setting and saving patrol data using host computer software:

Step 1: In the [Screen Configuration] interface of the host computer software, send the display connection file in the [professional] section.

Send a screen mapping file



Step 2: Click [Patrol Data] to save the data.



The patrol documents can be backed up and saved to the sending card for the screen patrol function, and the parameter content of the patrol document backup is the patrol content of the "All" patrol type shown in the table below.

✧ Select the patrol type, all, sending card and receiving card;

Type	Application Scenario	patrol Content
All	When replacing the receiving card: the parameters shown on the right will be sent to the sending card and the receiving card again to restore the backup patrol data.	Location parameters of sending card: image interception parameters, network port offset parameters, (excluding scaling parameters) Receiving card: location parameters, configuration data parameters (excluding gamma value)
Sending card	Enabled only when the sending card parameters are abnormal: the sending card parameters shown on the right will be re-distributed to the sending card to restore the backup patrol data.	Location parameters: image capture parameters, portal offset parameters, (excluding scaling parameters)
Receiving card	Enabled only when the location parameters of the receiving card are abnormal: the parameters of the sending card shown on the right will be re-distributed to the sending card to restore the backup patrol data. After the unlimited patrol is started: the automatic updating parameters can be directly changed on the screen with faults, without manual distribution.	One patrol: location parameters of sending card and receiving card. Unlimited patrol: repair the location parameters of the sending card and the receiving card for the first time, and then only repair the location parameters of the receiving card.

✧ Number of patrols: You can select "Once" or "Unlimited" when selecting the patrol of receiving card, and only "Once" is available for other types.

Note: USB must be unplugged after the receiving card is turned on. After unplugging USB, the menu cannot be operated. To temporarily turn off the wireless patrol, you can press and hold the button for 10 seconds or plug in USB again to temporarily turn it off. To permanently turn it off, you need to click Turn off the patrol on the menu.

✧ Start patrol , and perform patrol according to the selected patrol type and patrol times.

✧ Patrol solidification, patrol back to the gamma parameter, and write and save the parameter sent by patrol to the corresponding memory, so that the parameter can be directly loaded when the equipment restarts.

Tips:

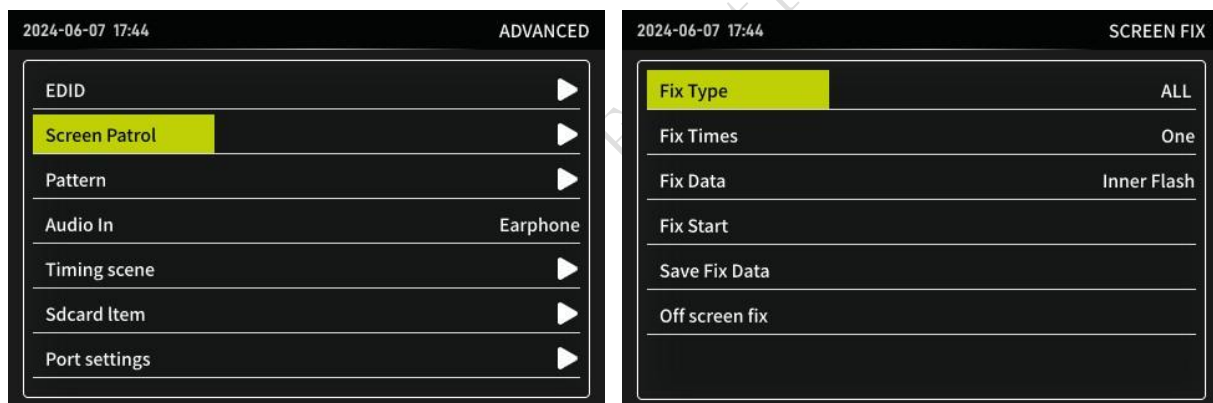
- It is necessary to start the patrol before the patrol and curing operation.
 - The solidified patrol parameters correspond to the patrol type selected during patrol.
 - During curing, the parameters of the sending card are stored in the flash of the sending card and the parameters of the receiving card are stored in the flash of the receiving card.
- ✧ Turn off the patrol. When the receiving card turns on the unlimited patrol, click to exit the patrol operation.

Screen patrol:

Step 1: Turn the knob to [Screen patrol], and press the knob to enter.

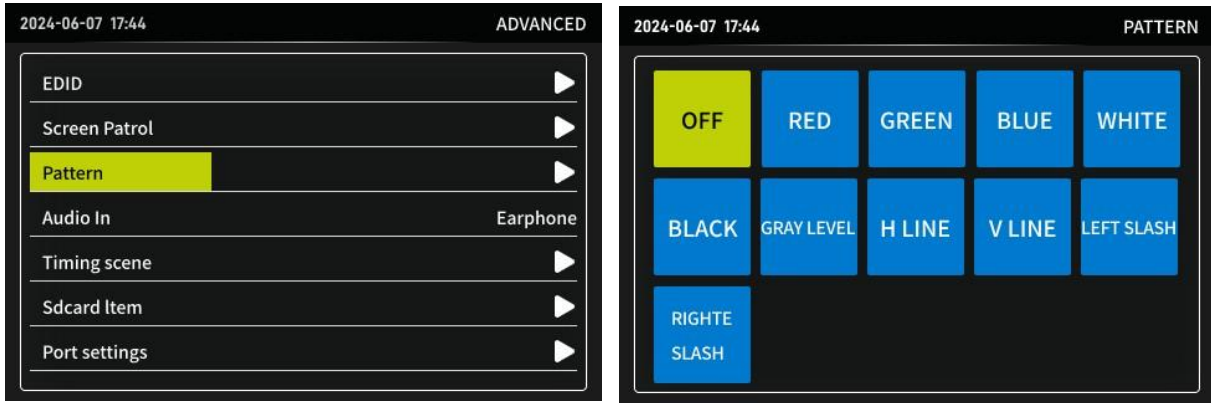
Step 2: Set type, times and fix data; Press the knob to confirm the selection of "Turn on patrol", "save fixed data" and "off screen fix".

Step 3: Wait for the patrol to be completed, or press and hold the knob to exit during the unlimited patrol of the receiving card.



6.3.3 Pattern

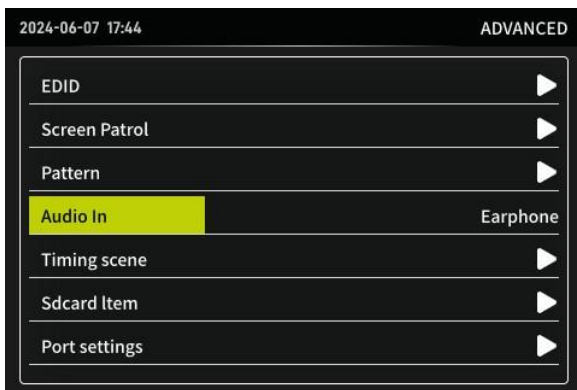
Step: Rotate the knob to the [Pattern] function and press to enter. Turn on the test image output and select the corresponding test image. Test images include solid colors (red, green, blue, white, black), as well as gradients, grid lines, and other test patterns.



6.4.6 Audio In

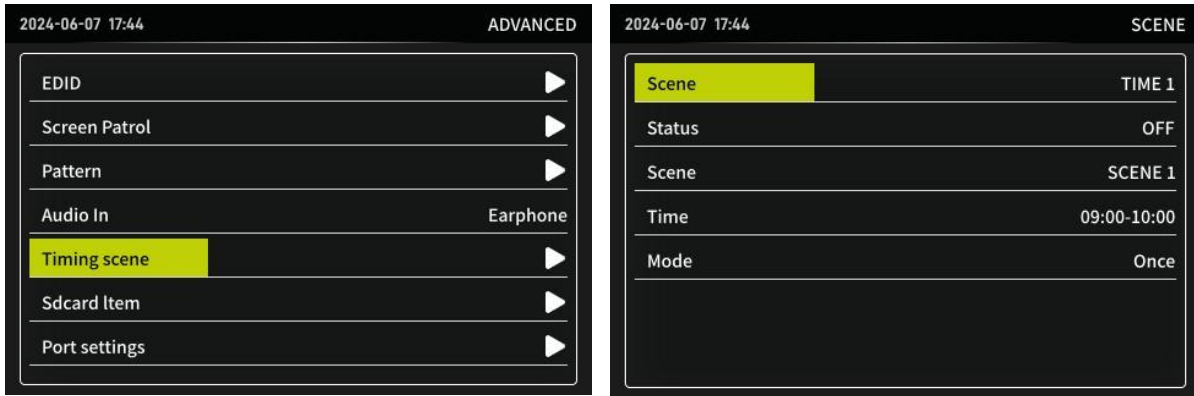
Step 1: Rotate the knob to the [Audio in] function and press to confirm selection.

Step 2: Select the input signal source for audio output. Options include external headphone jack input and Window 1, 2, 3, 4, 5. Press to confirm.



Select the input signal source for audio output. Options include the signal from any window or the external headphone jack input.

6.3.5 Timing Scene



Time Scene: Up to 5 timed scene periods can be set.

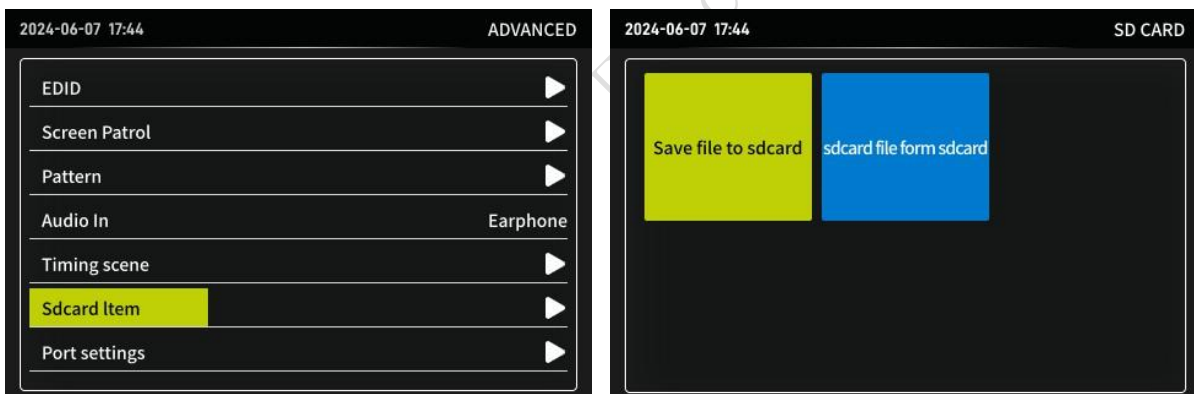
Status: Enable or disable the selected timed switching period.

Scene: Select the preset scene to be triggered at the scheduled time.

Time: Set the time range for the timed switch.

Mode: Choose whether the selected timed switching period executes once or repeats daily.

6.3.6 SD Card Item



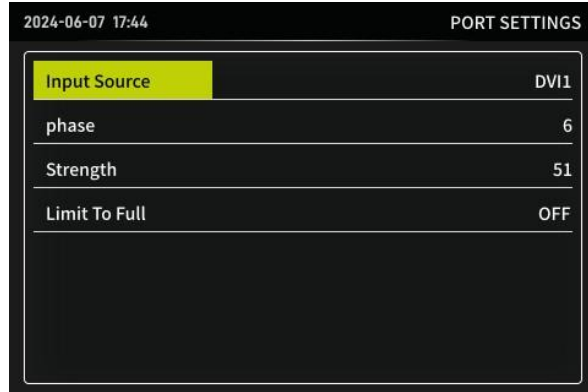
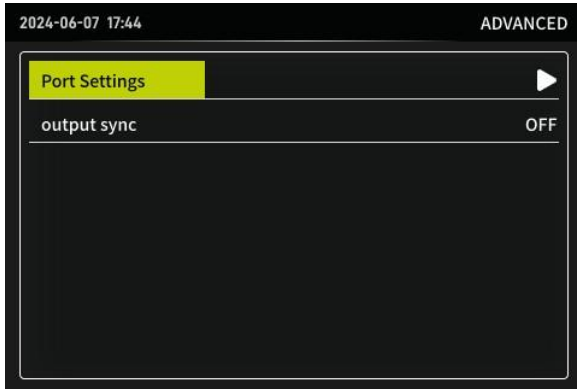
Save file to SD card: Back up video processor settings to the SD card to generate a file.

Restore SD File from SD card: Load the generated file from the SD card to restore settings to the video processor.

6.3.7 Port Setting

Step 1: Rotate the knob to the [Port Settings] function and press to confirm entry.

Step 2: Phase & Drive: If vertical lines or flickering dots appear in the image, adjust the signal source's phase and drive settings. Phase range: 0-15, Drive range: 0-255.



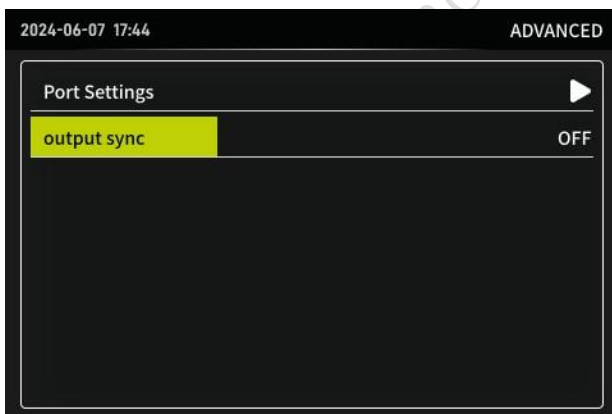
OFF:

- (1) Input RGB Limited, Output RGB Limited: Grayscale starts from level 16.
- (2) (2) Input RGB Full, Output RGB Full: Grayscale starts from level 1.
- (3) (3) Input YUV422/YUV444, Output RGB Limited: Grayscale starts from level

ON:

- (1) Input RGB Limited, Output RGB Full: Grayscale starts from level 1.
- (2) (2) Input RGB Full, Output RGB Limited: Grayscale starts from level 16.
- (3) (3) Input YUV422/YUV444, Output RGB Full: Grayscale starts from level 1.

6.3.8 Output Synchronization



Step 1: Rotate the knob to the [Output Synchronization] function and press to confirm selection.

Step 2: When applied to screen splicing, select the corresponding signal source to ensure synchronized image splicing.

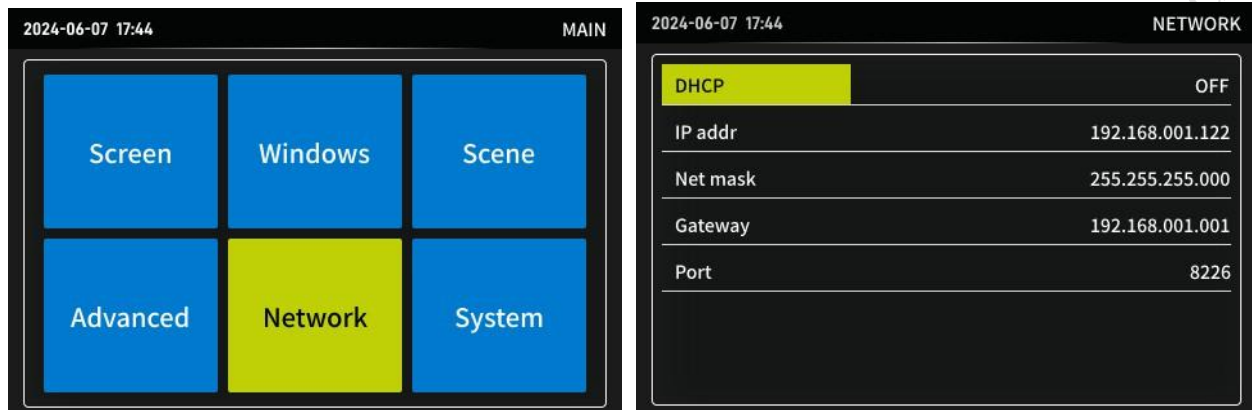
6.4 Network Settings

Step 1: On the Advanced Features interface, rotate the knob to Network Settings and press to enter.

Step 2: DHCP On: Automatically requests IP allocation from the router. The DHCP server can automatically assign IP addresses to devices on the network, reducing manual configuration effort.

DHCP Off: Fixed IP remains unchanged.

Step 3: Configure the “Default Gateway,” “Subnet Mask,” “IP Address,” and “Port Number.”



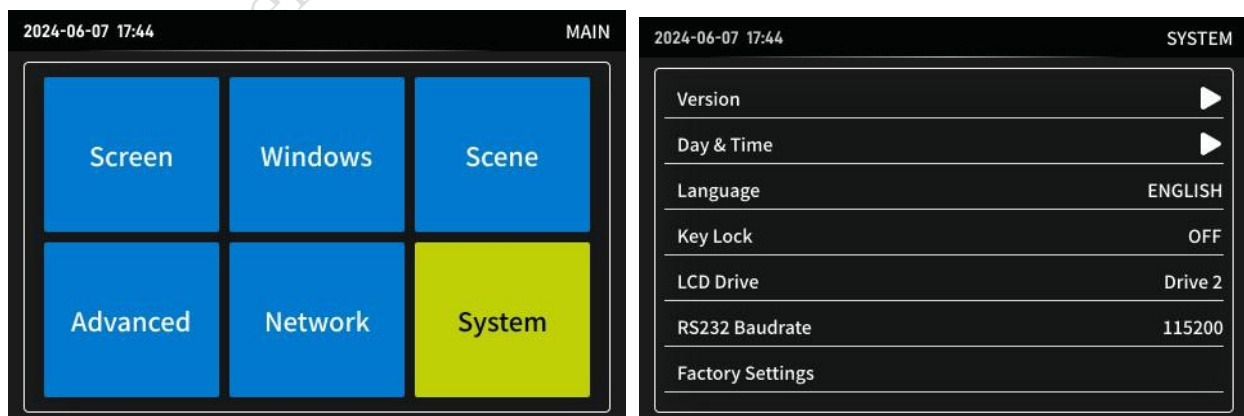
Enabled: Automatically requests IP assignment from the router device.

Automatic IP address allocation: The DHCP server can automatically assign IP addresses to devices on the network, reducing manual configuration efforts.

Disabled: The fixed IP remains unchanged.

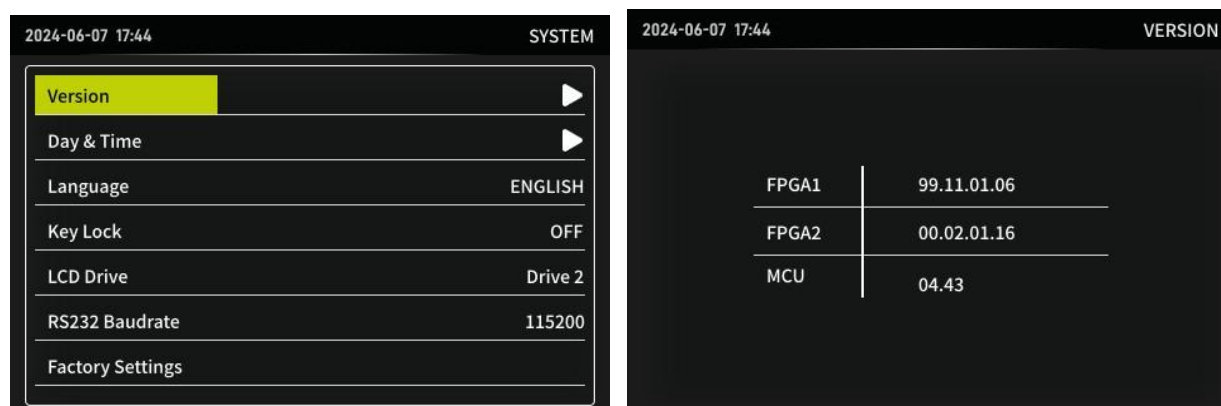
6.5 System Settings

The system settings function menu includes the following seven options: [Version Information], [Time Settings], [Language], [Key Lock], [LCD Screen Driver], [RS232 Baud Rate], and [Factory Settings].



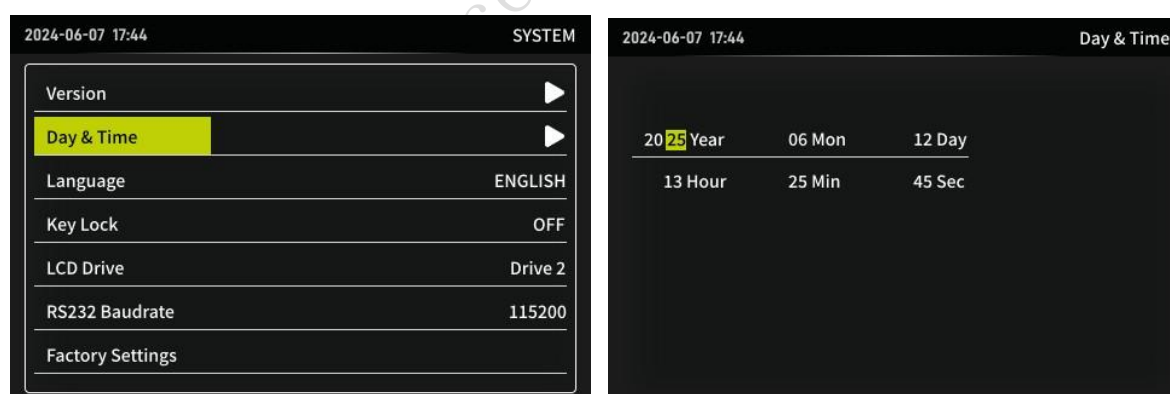
6.5.1 Version Information

This function allows viewing the FPGA and MCU versions of the device.



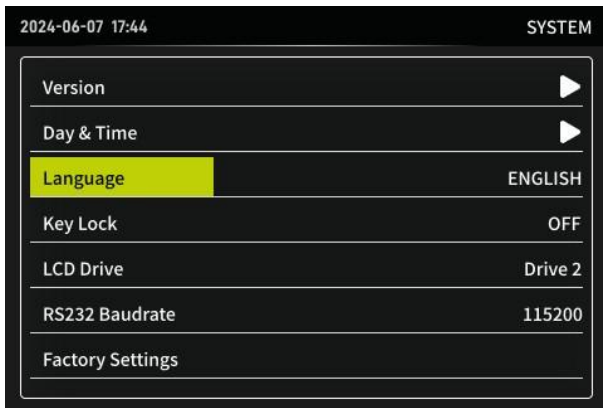
6.5.2 Time Setting

Set the local clock and date of the video processor. The video processor motherboard has a built-in button battery or super capacitor, allowing the clock to continue running after power loss. If the device remains unpowered for an extended period, the time and date will need to be reset upon reuse. The scheduled switching function relies on this time setting. Restoring factory settings will not alter the time configuration parameters. Rotate the knob to select the value to be adjusted, press "OK" to confirm (the selected value will turn green), then rotate the knob to adjust the value and press "OK" again to save.



6.5.3 Language

The default system language is "Simplified Chinese", which can be switched to "English" and "Traditional Chinese". Press the knob to confirm.

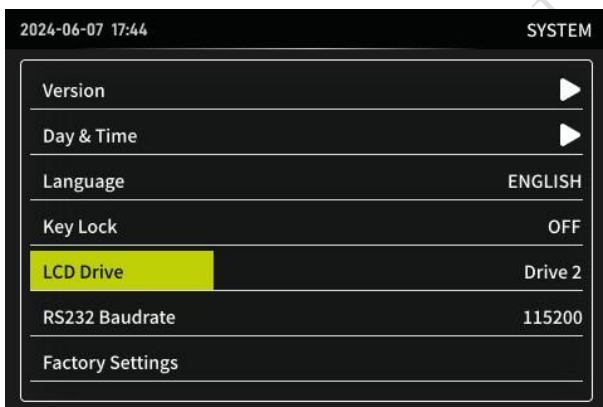


6.5.4 Key Lock

The key lock function is turned on to prevent misoperation and lock the key function of the front panel. Default "on" state, automatic locking after 3 minutes of no operation; Unlocking method: After pressing the knob, there is a prompt, and long press the knob to unlock.

6.5.5 LCD Drive

Used to adapt to two different types of LCD screens used in the product.



6.5.6 Baud rate of RS232

The data transmission rate from one device to another, that is, bits per second (bit/s), has typical baud rates of 300, 1200, 2400, 9600, 19200, 38400, 115200, 230400 and so on. It needs to be used with serial communication software.

6.5.7 Factory Settings

Press the knob to pop up the prompt message "Are you sure you want to restore the factory settings? (Confirm/Return) "; Press the knob to confirm, and press the Esc key to return.

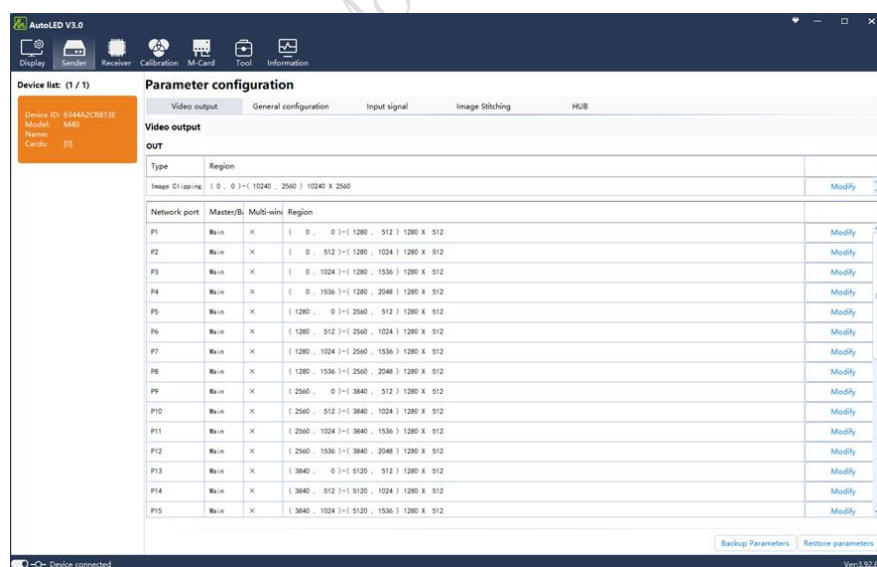
Set Parameters:

- Output Resolution: 1920X1080 60Hz
- Signal Source: HDMI
- Scaling Parameters: 0, 0, 1920, 1080
- Crop: Off
- Freeze: off
- Black Screen: Off
- Test Screen: Off

7 AutoLED Software Application

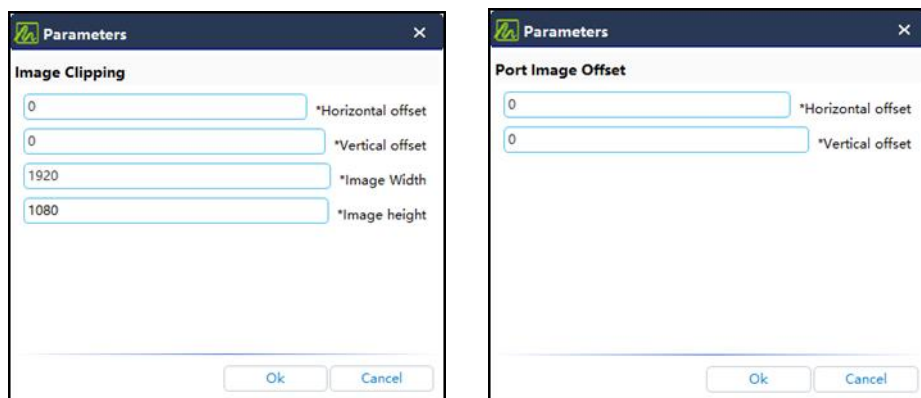
7.1 Accessing the Software Settings Interface

Open the AutoLED software, click "Sending Card" to enter the sending settings interface. The device list displays the recognized sending card model: MVB20E.



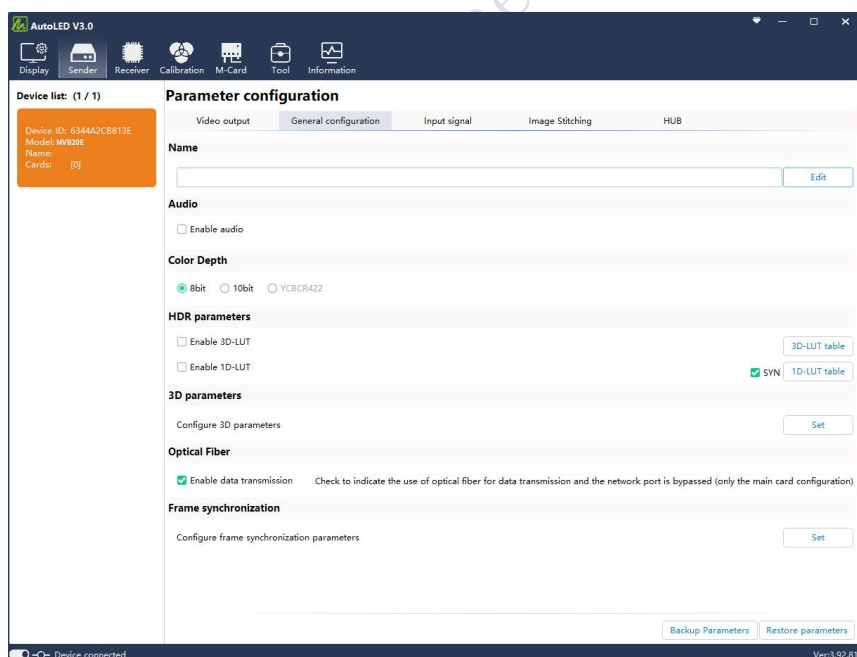
7.2 Image Output

Click "Graphic Output" in the parameter configuration section. The software interface will display the position and size of the image capture area, as well as the load position and size for each network port. Click to modify the settings parameters. For image capture, you can set the horizontal and vertical offsets, as well as the width and height of the captured image. For each network port, you can set the horizontal and vertical offset positions of the image.



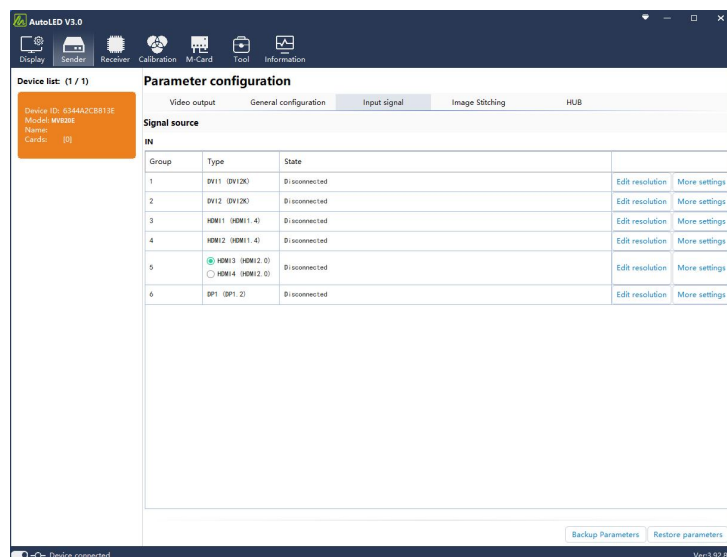
7.3 General Configuration

Click "General Configuration" in the parameter settings to edit the processor name, enable/disable audio, and set the color depth.



7.4 Input Signal

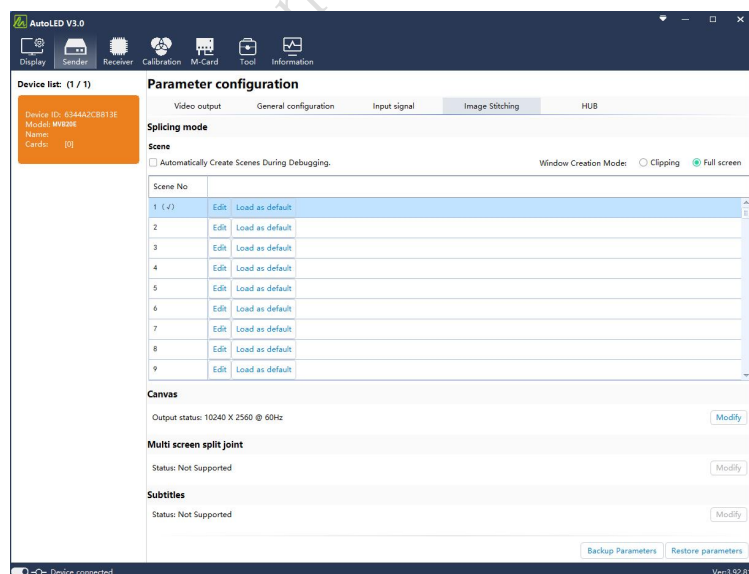
Click "Input Signal" in the parameter configuration to open the input signal source settings interface. Click "Modify Resolution" to set the EDID information for the corresponding input interface. When selecting a 4K input signal source, choose either HDMI 2.0 or DP 1.2.



7.5 Screen Splicing

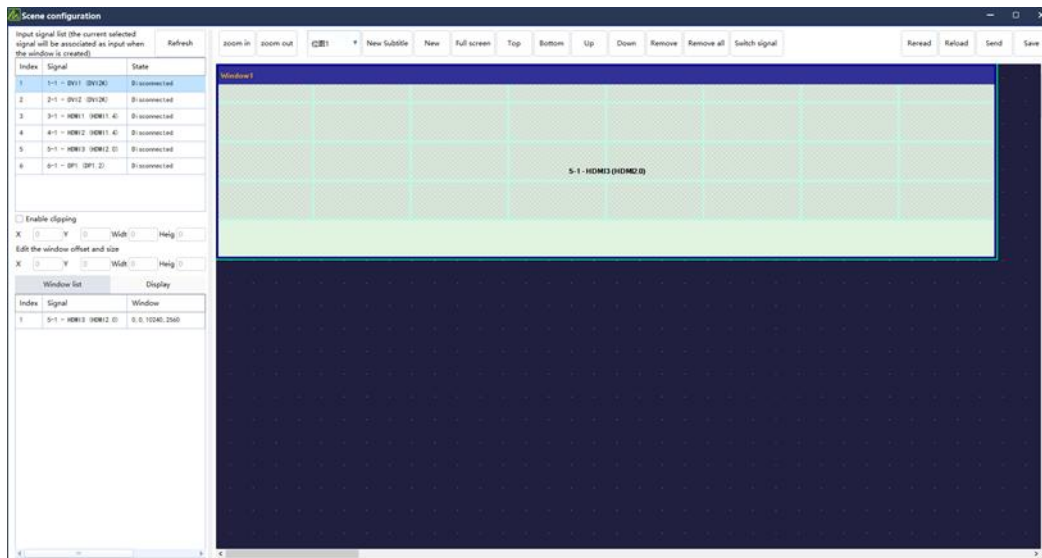
7.5.1 Scene Recall

Click "Screen Splicing" in the parameter configuration to save up to 10 different scene modes in the scene library. Click "Recall and Set as Default" to output and display the selected scene mode, indicated by a checkmark (✓) next to the scene number. Click "Edit" to enter the scene settings interface.



7.5.2 Scene Editing

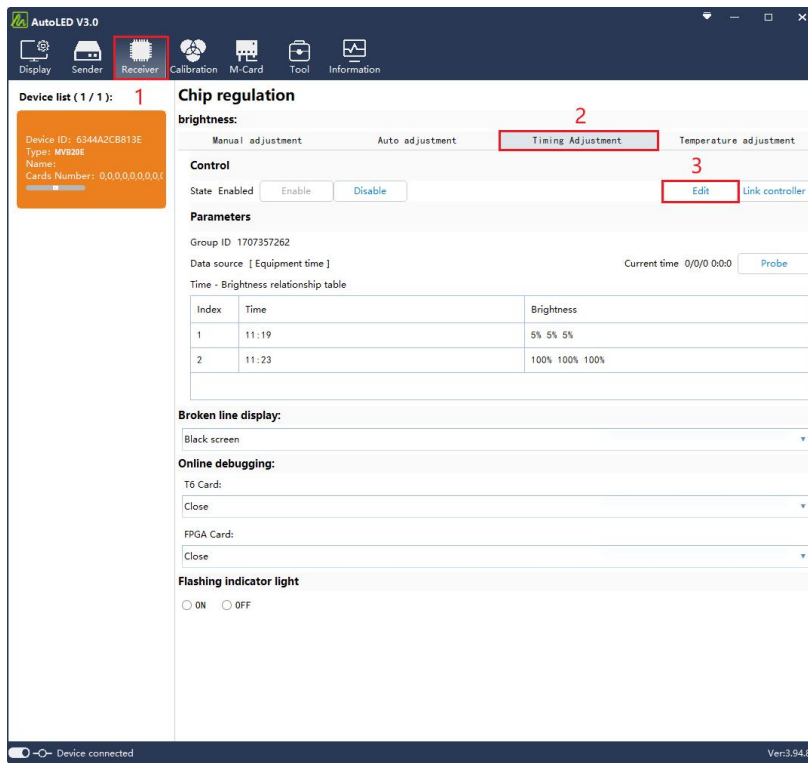
In the scene editing interface, you can perform the following operations: create windows, delete windows, set the size and position of each window, adjust the window stacking order, switch the input signal source for windows, and crop the input signal image for windows.



- Zoom In/Out: Enlarge or reduce the display size of the window and screen connection interface in the software, adjustable to a suitable viewing scale.
- New: Create a new window. The input signal source for the new window defaults to the currently selected source, and the position defaults to the top-left corner.
- Full Screen: After selecting a window, click "Full Screen" to expand the window to fill the entire display.
- Bring to Front/Send to Back: Set the window stacking order to the topmost or bottommost layer.
- Move Up/Down: Adjust the window stacking order. Each click changes the selected window's layer by one level.
- Delete/Delete All: Remove the selected window or all windows.
- Switch Signal Source: Select a window and an input signal source, then click "Switch Signal Source" to apply the change.
- Read Back Window: Retrieve unsaved window data parameters that have been sent to the hardware for display.
- Reload Window: Load saved window data from a scene preset.
- Send: Transmit window data configured in the PC software to the hardware for display.
- Save: Store the window data sent to the hardware into a hardware scene preset.

7.5.3 Timing Brightness

Step 1: In the software, navigate to [Screen Control] - [Timing Adjustment], and click Edit to enter.



Step 2: After entering the interface shown below, click "Add" to set the time and brightness value according to customer requirements, then confirm.

Timing brightness

Parameters

Data source: ☒ Equipment time ☐ Probe

Notify type: ☒ LAN ☐ COM

Time - Brightness relationship table

Index	Time	Brightness	Operate
1			
2			

Timed brightness entry

Time: ☐ Year 2025 ☐ Month 7 ☐ Day 9 ☒ Hour 8 ☒ Min.

Brightness: 100 % ☒ SYN Red 100 % Green 100 % Blue 100

Group ID: 1707357262

Update Ok Cancel

Note: The scheduled brightness function cannot be used while connected via a USB debugging cable; otherwise, it will not execute. Use a 100 Mbps Ethernet connection for debugging instead.