灰度科技
HUIDU TECHNOLOGY

User Manual

Two in one Video Processor

HD-VP3060

V 1.1 20250419

1 Introduction

The HD-VP 3060 is a two-in-one video processor for LED displays, featuring 30 integrated Gigabit Ethernet outputs and support for six -screen displays. It features six simultaneous signal inputs, supporting up to 4K video input (select interfaces), and can switch between multiple simultaneous signals. It can be used in hotels, shopping malls, conference rooms, exhibitions, studios, and other environments requiring synchronized playback . The VP 3060 also comes standard with Wi-Fi, supporting wireless control via a mobile app.

Features :

enter

- Maximum 4096 × 2160@60Hz input resolution;
- 2-way 4K input: 1× DP1.2, 1×H DMI2.0;
- 4-way 2K input: 4× HDMI1.3 ;
- Supports 1- way TRS 3.5mm standard dual-channel audio input and HDMI /DP audio input.

Output

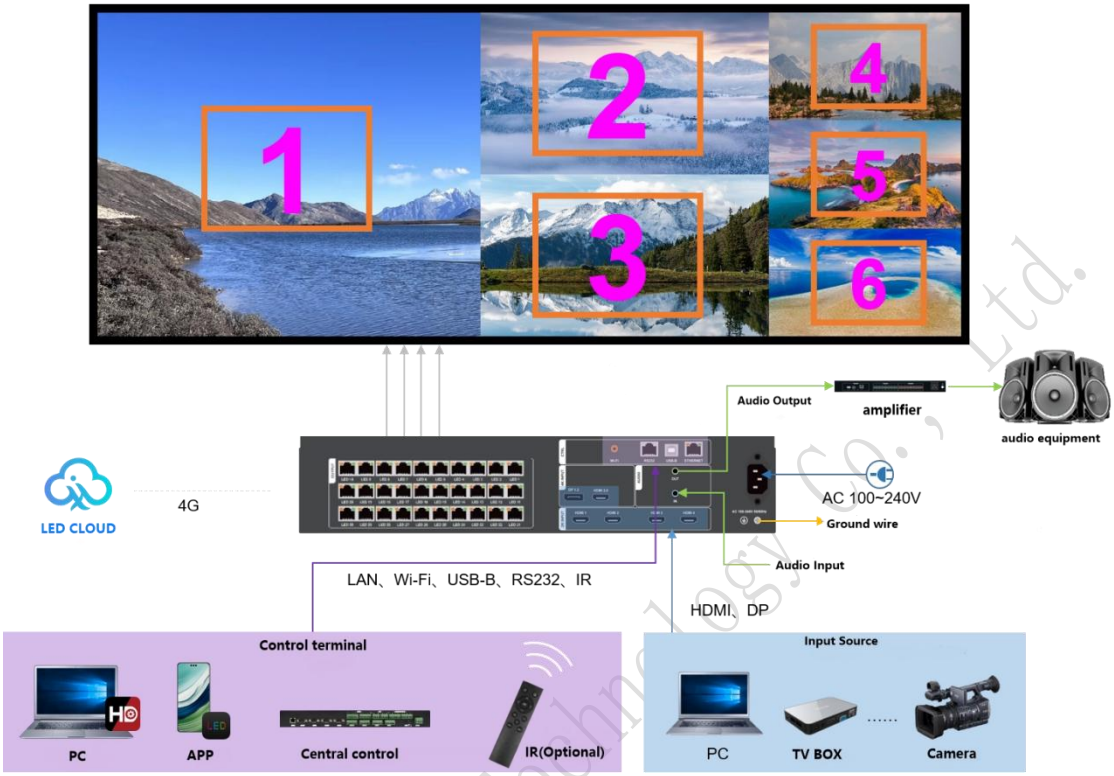
- Supports free layout of six screens, with a maximum support of 3×4K or 2×4K+4×2K windows;
- Standard 30 -way Gigabit network port, cascaded with receiving card;

- Maximum control of 19.5 million pixels, maximum horizontal support of 24576 pixels, maximum vertical support of 24576 pixels;
- 1-way TRS 3.5mm standard two-channel audio output.

Function

- Video signals can be switched, cropped, and scaled at will;
- Supports up to six screens display and supports any screen layout;
- Support 16 scene presets and calls;
- Support brightness and key lock functions ;
- Support point-to-point display and limited to full conversion;
- Support RS232 serial port protocol control and docking with central control equipment;
- Support LAN port debugging;
- Support EDID import;
- Support mobile phone APP wireless control;
- Supports Wi-Fi Station mode, AP mode, and Wi-Fi Station+AP mode;
- Support infrared remote control (optional) .

2 Application Scenarios



Connection Diagram

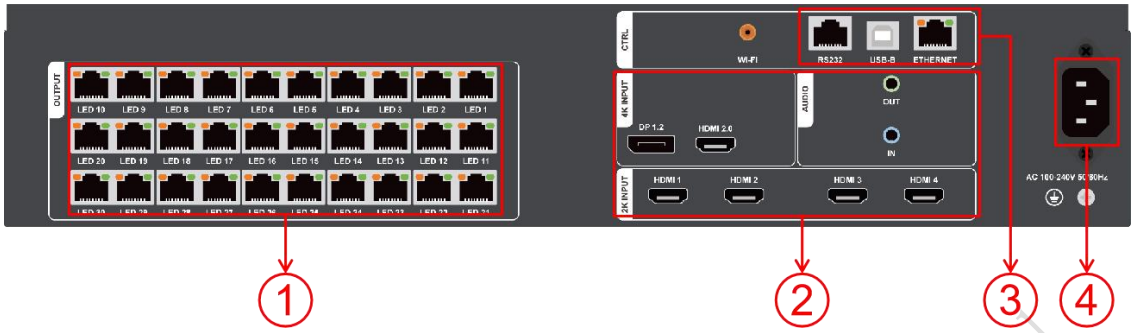
3 Appearance

Front panel

Button Description		
Serial number	**button**	**illustrate**
1	Power switch	Control AC power input
2	LCD display	Debug display menu, screen parameters and other information
3	IR&MIC	IR: infrared remote control receiver (optional) MIC: Microphone voice input (optional)
4	MENU knob	Press the knob to enter a submenu or confirm a selection Rotate the knob to select menu items or adjust parameters
5	WIN1 ~WIN6	Select an open window Function key: The key multiplexing function is digital

		selection, generally used when setting the resolution
	ESC	**Exit key/Back key**
	MODE	**Quickly call out the preset mode call menu**
	BLACK	**One-touch black screen button**
6	**SOURCE**	**Input signal selection area** **Function key: The key multiplexing function is digital selection, generally used when setting the resolution**

rear panel



Input Interface			
Serial number	**Interface Name**	**quantity**	**illustrate**
2	**DP1.2**	**1**	**1 x DP1.2 input** **Maximum input resolution: 4096×2160@60Hz,** **Minimum input resolution: 800 × 600@60Hz, maximum pixel clock 600MHz** **Custom resolution:** **Maximum width: 8192 (8192×1080@60Hz)** **Maximum resolution: 7680 (1080×7680@60Hz)** **Supports independent EDID setting management, adopting EDIDV1.3 standard** **Support audio input** **No HDR support**

			Does not support interlaced signal input
	HDMI2.0	**1**	**1 × HDMI2.0 input, backward compatible with HDMI1.4 and HDMI1.3** **Maximum input resolution: 4096 × 2160@60Hz, minimum input resolution: 800 × 600@60Hz, maximum pixel clock 600MHz** **Custom resolution:** **Maximum width: 8192 (8192×1080@60Hz)** **Maximum resolution: 7680 (1080×7680@60Hz)** **Supports independent EDID setting management and adopts EDIDV1.3 standard** **to support audio input**

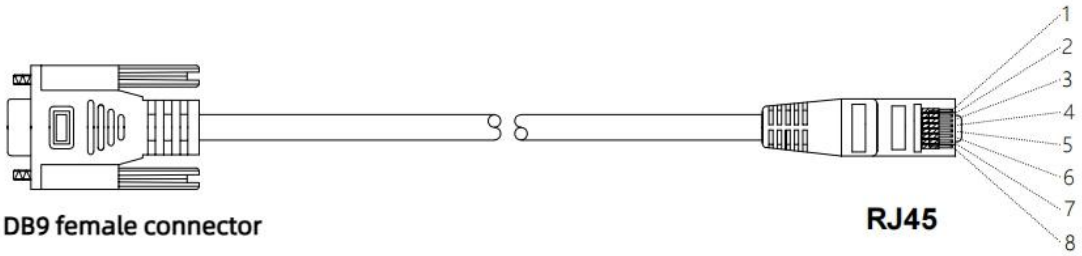
			HDCP support **No HDR support** **Does not support interlaced signal input**
	HDMI 1-4	**4**	**4 x HDMI 1.3 inputs** **Maximum resolution: 1920 × 1200@60Hz, minimum input resolution: 800× 600@60Hz, maximum pixel clock 165MHz** **Custom resolution:** **Maximum width 2048 (2048×1024@60Hz)** **Maximum resolution: 2048 (1024×2048@60Hz)** **Support independent EDID setting management, using EDIDV1.3 standard** **Support HDCP1.3, backward compatible** **Support audio input** **Does not support interlaced signal input**
	AUDIO IN	**1**	**TRS 3.5mm dual-channel audio input interface**
4	**power supply**	**1**	**AC 100~240V 50/60Hz**

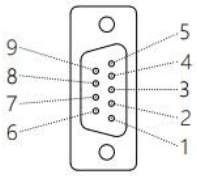
Output interface			
Serial number	Interface Name	quantity	illustrate
1	Gigabit Ethernet port	30	Used for cascading receiving cards to transmit RGB data streams; each network port controls 650,000 pixels Support docking multi-function card
2	AUDIO OUT	1	TRS 3.5mm dual-channel audio output interface Connect to audio amplifier for high-power external audio

Control interface			
Serial number	Interface Name	quantity	illustrate
3	Wi-Fi antenna interface	1	Connect a Wi-Fi antenna to enhance Wi-Fi signal
	RS232	1	RJ45 interface, for connecting to central control equipment
	USB-B	1	Connect to a computer for debugging the

			device
	ETHERNET	**1**	**Connect to LAN for debugging equipment**

The RJ45 to DB9 cable is shown below. It is optional. If you require it, please contact Grayscale sales or technical support in advance.

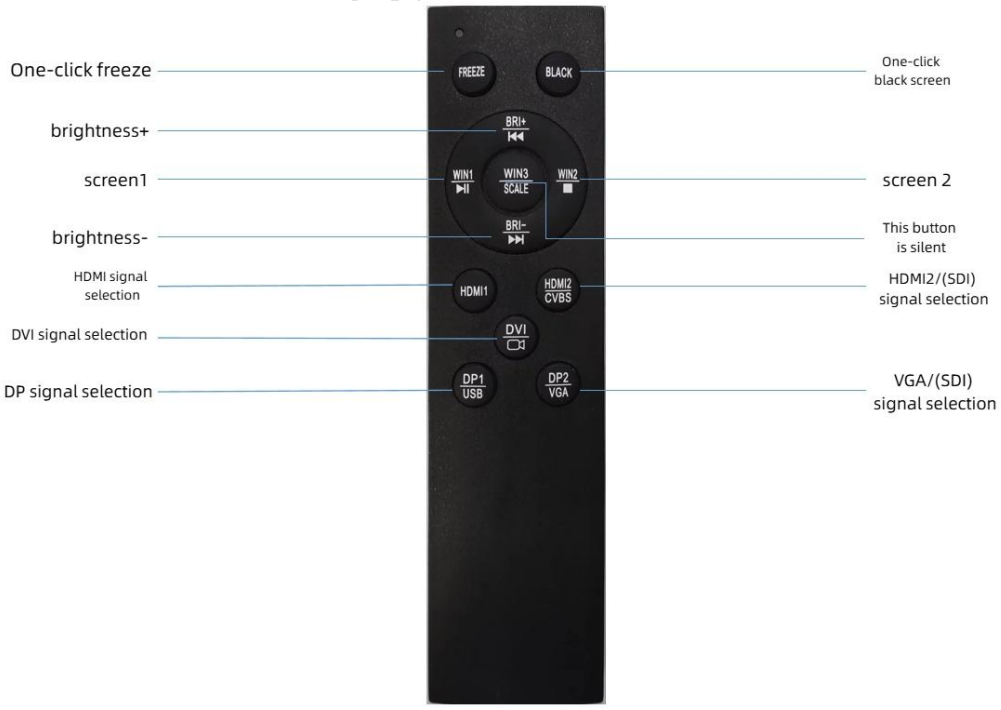




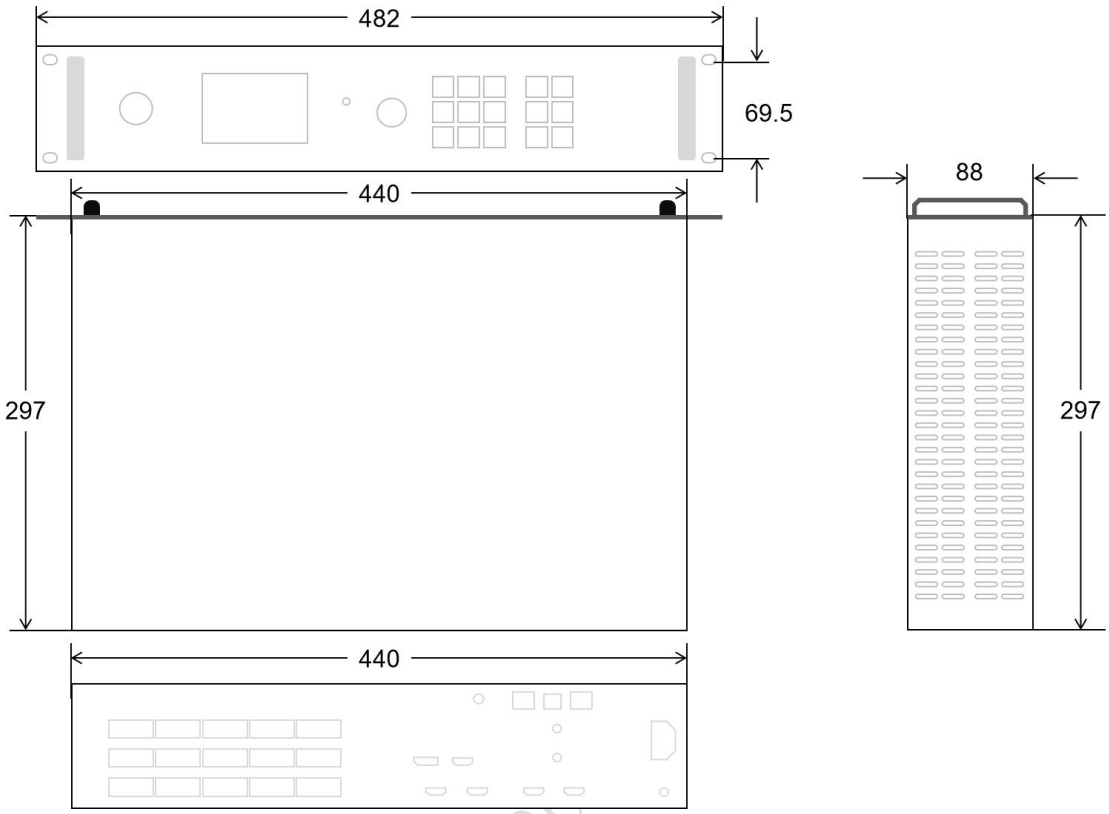
Line sequence diagram

DB9 female connector	crystal head
2-RX	TX-1 (red)
3-TX	RX-2 (blue)
5-GND	GND-3 (black)

* The remote control diagram is as follows. It is optional. If you need it, please contact Huidu sales or technical support in advance.



4 Dimensional drawings



5 Product Usage

5.1 Operation steps

Step 1 Connect the display power supply to power on the screen

Step 2 Connect a playable input source to the HD -VP 3060

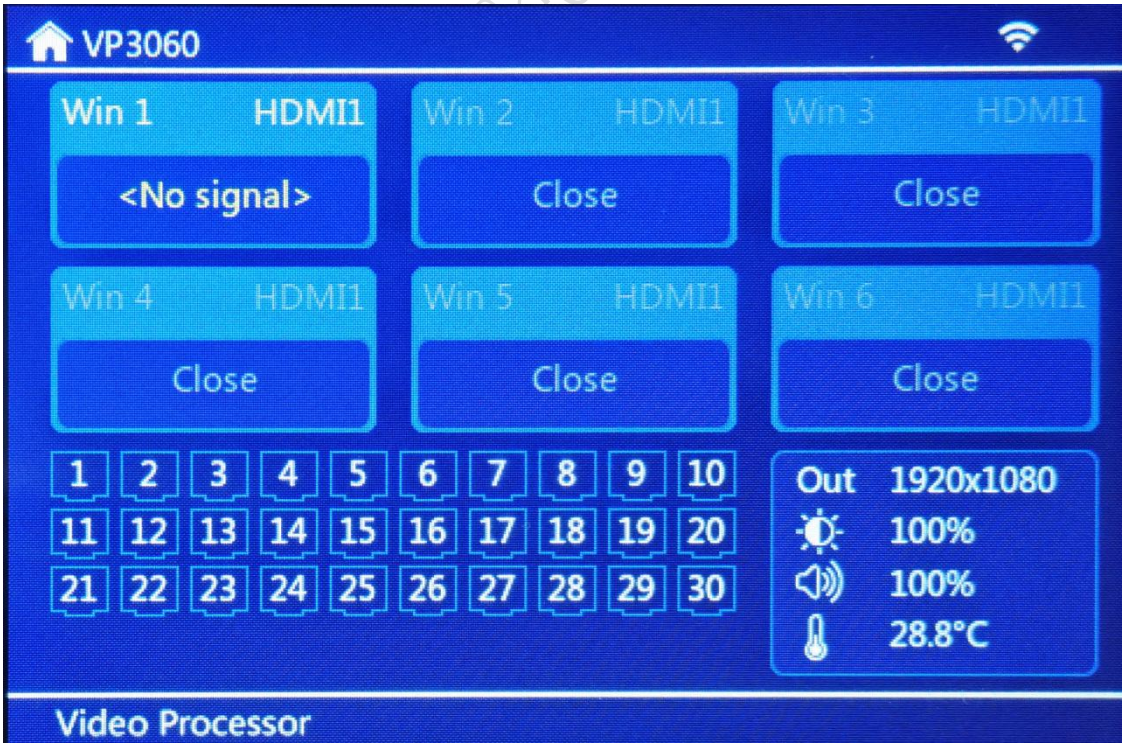
Step 3 Use the USB serial port or LAN port to connect to the computer to debug the screen parameters (refer to the HD **Set user manual for debugging screen parameters)**

5.2 Input Source Switching

HD -VP 3060 supports simultaneous access to 6 signal sources and can switch to the input source to be played at any time according to needs.

OURCE " area button on the front panel to switch quickly.

5.3 Interface Description

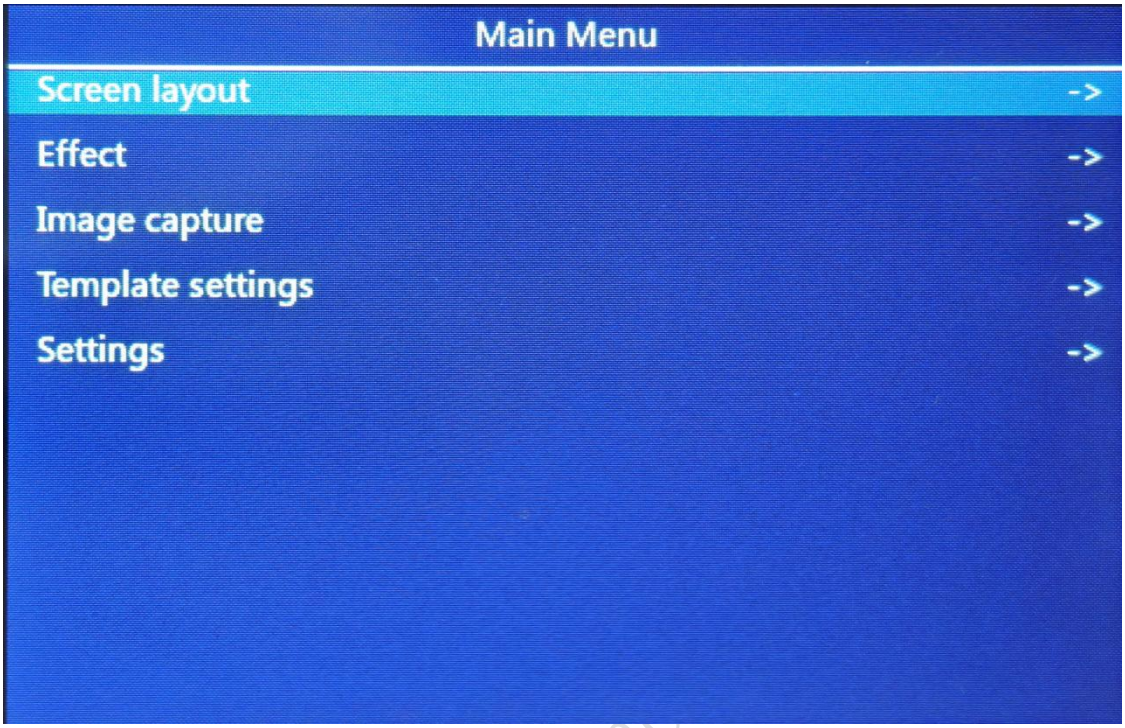


The upper part shows the signal source identification status, and the network port icon in the lower part

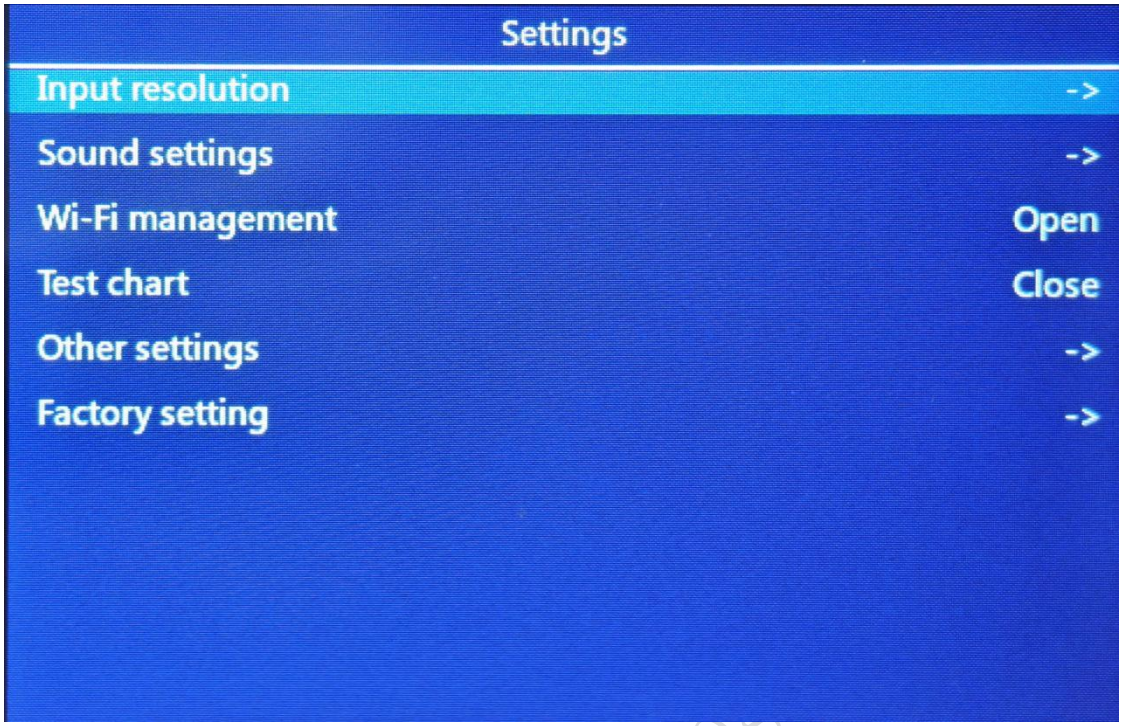
shows the communication status of the network port.

The icons in the lower right corner from top to bottom are: output size, brightness, sound, and internal temperature of the chassis .

5.4 Main menu function display interface



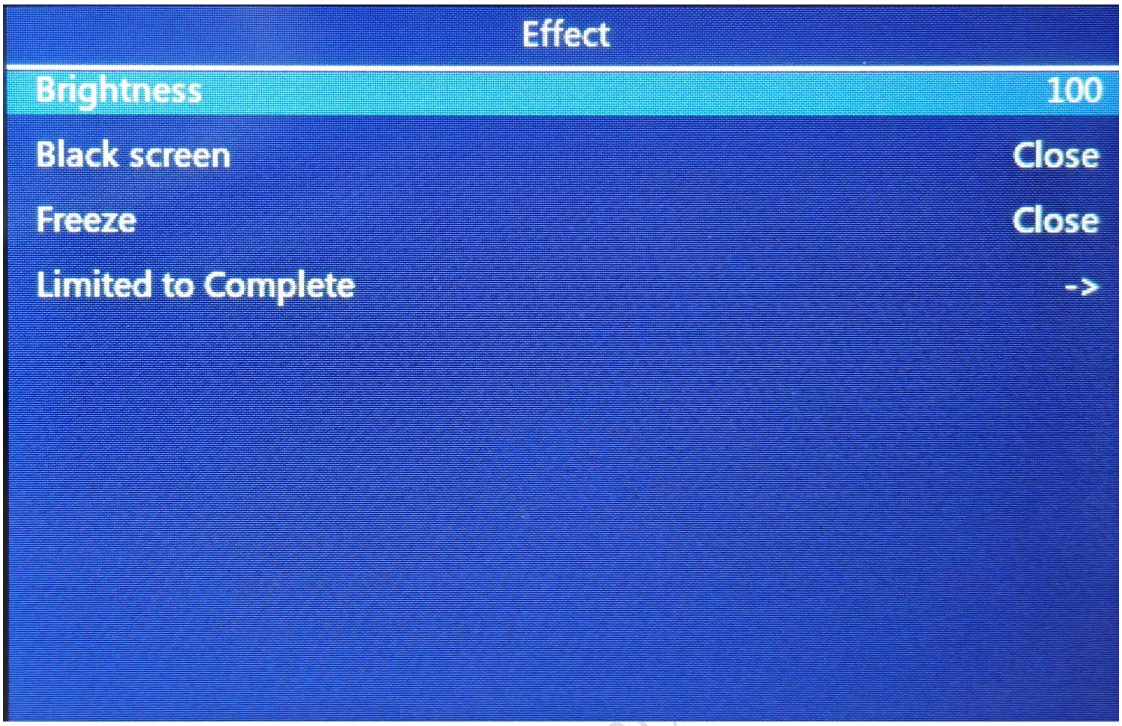
1. The screen layout is used to set the output screen, and supports up to 6 screens to be displayed simultaneously.
2. Image effects are used to set brightness , screen black and freeze settings , limited to full settings, etc.
3. Image capture is used to capture the screen input source. You can set the screen and coordinates of the captured input source.
4. Template settings are used to save the currently set parameters to form a template file for quick subsequent settings.
5. Advanced settings are used to set input source resolution , sound settings , Wi-Fi management , other settings, and factory settings.



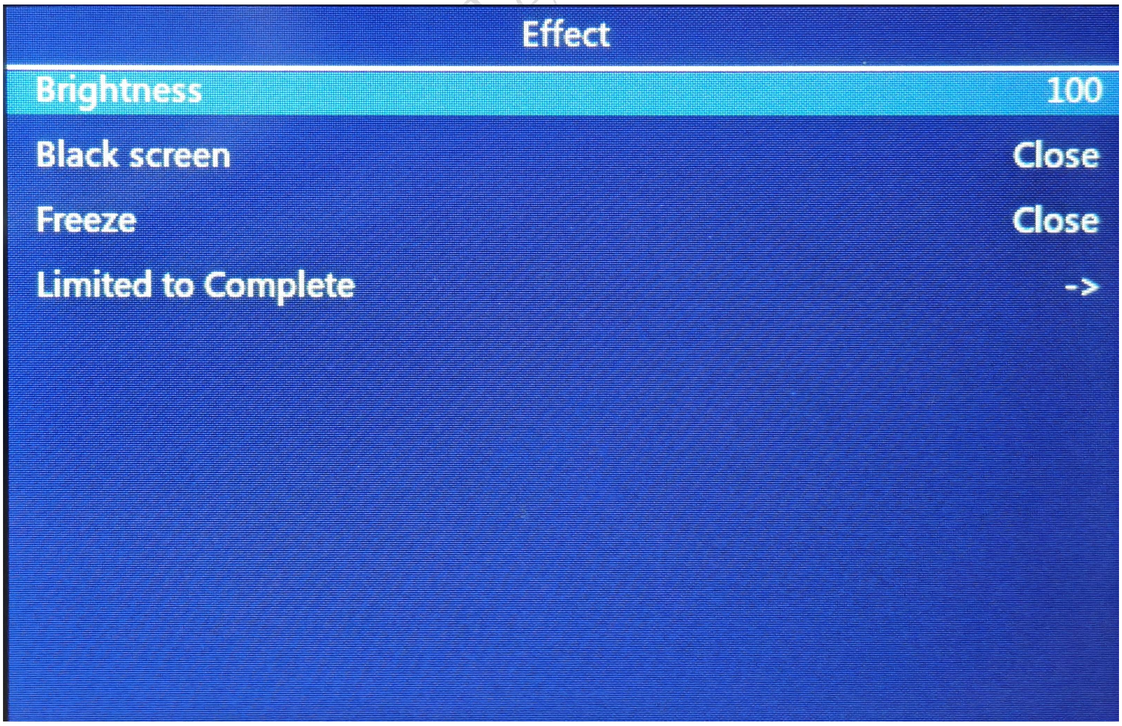
The screen switch setting of screen 1 cannot be set to off.

The horizontal starting value + horizontal width cannot exceed the output width of the LED screen

. The vertical starting value + vertical width cannot exceed the output height of the LED screen.

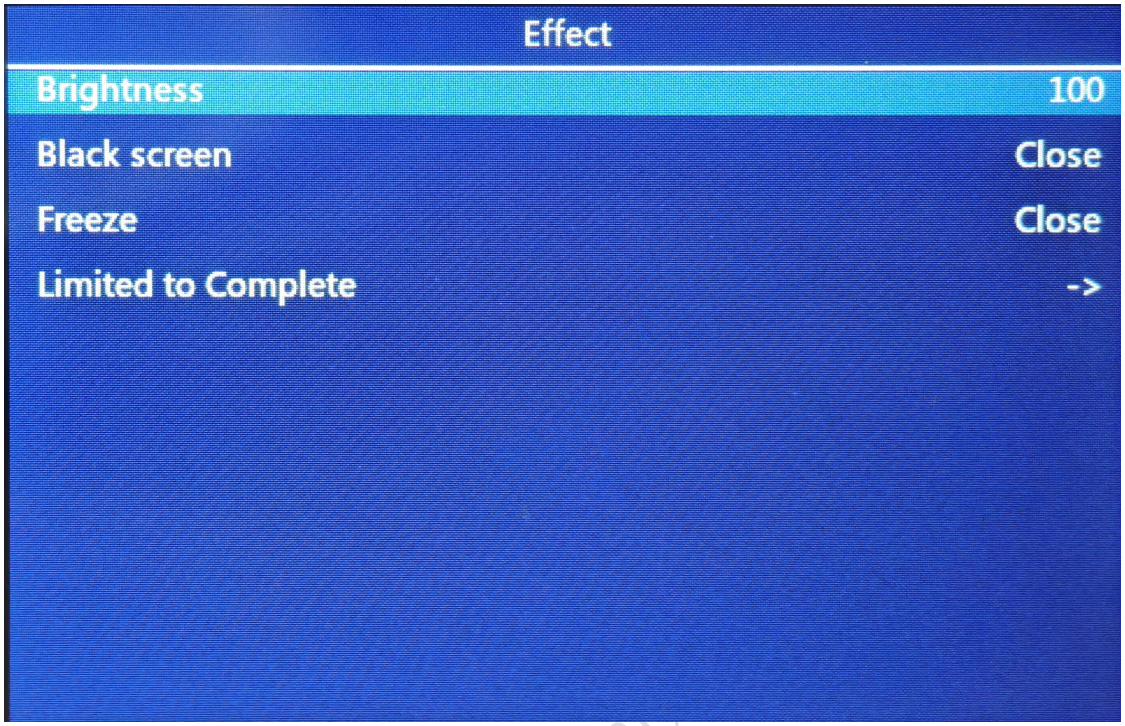


Brightness: 0 — 100 (default 100)



The device can set the color format to pass-through mode, limited to full, YCbCr, or

YCbCr full.



When the capture switch is off, the knob cannot be used to select the capture width, height, horizontal, or vertical start.

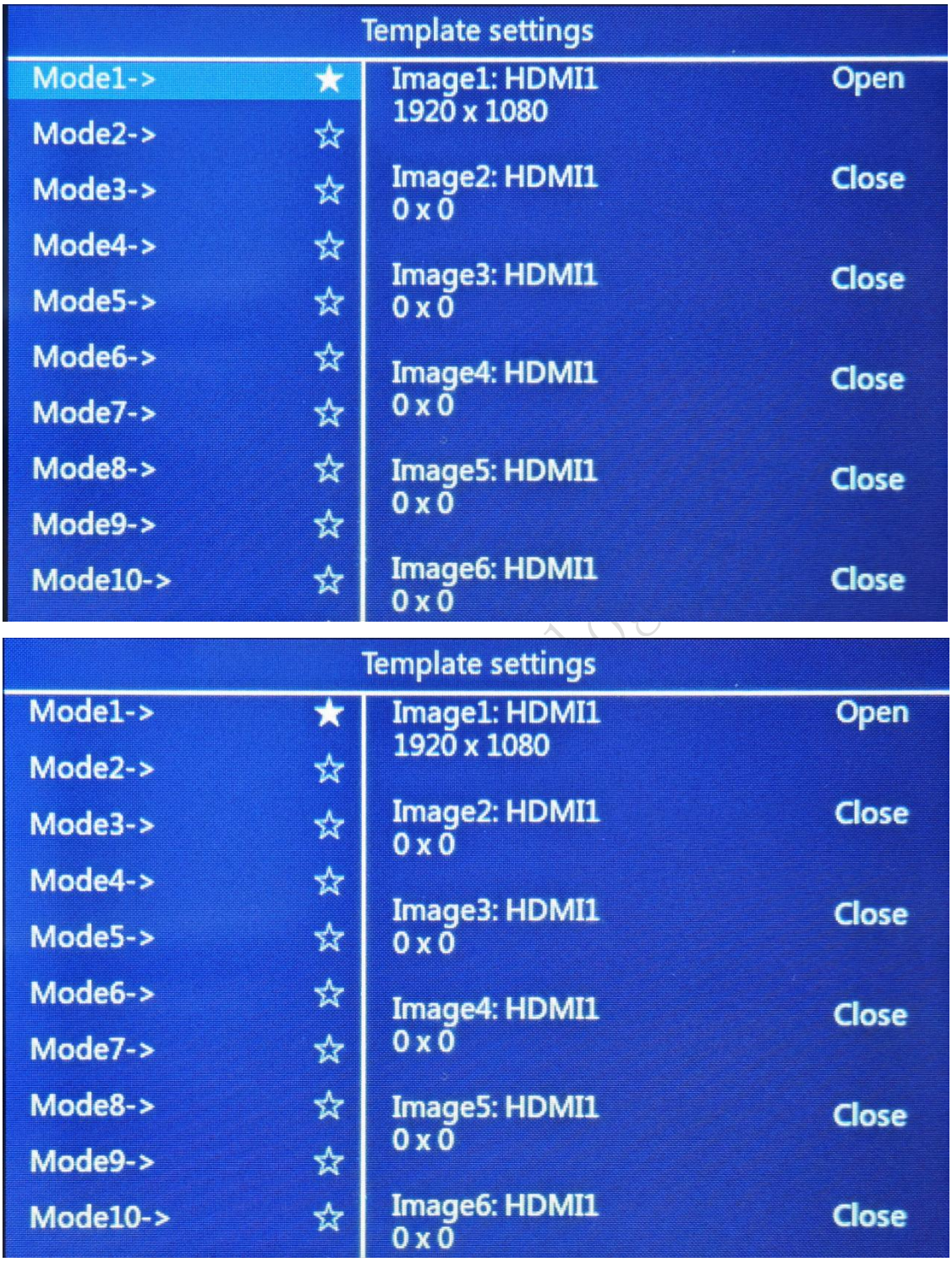
Capture width: 256 — Maximum width of the input source

Capture height: 256 — Maximum height of the input source

Horizontal start: Horizontal start value range = Input source width - capture width

Vertical start: Vertical start value range = Input source width - capture width

Note: If the captured image size is the same as the output image size, it is a point-to-point display. If the captured image size is different from the output image size, it is a zoom display.

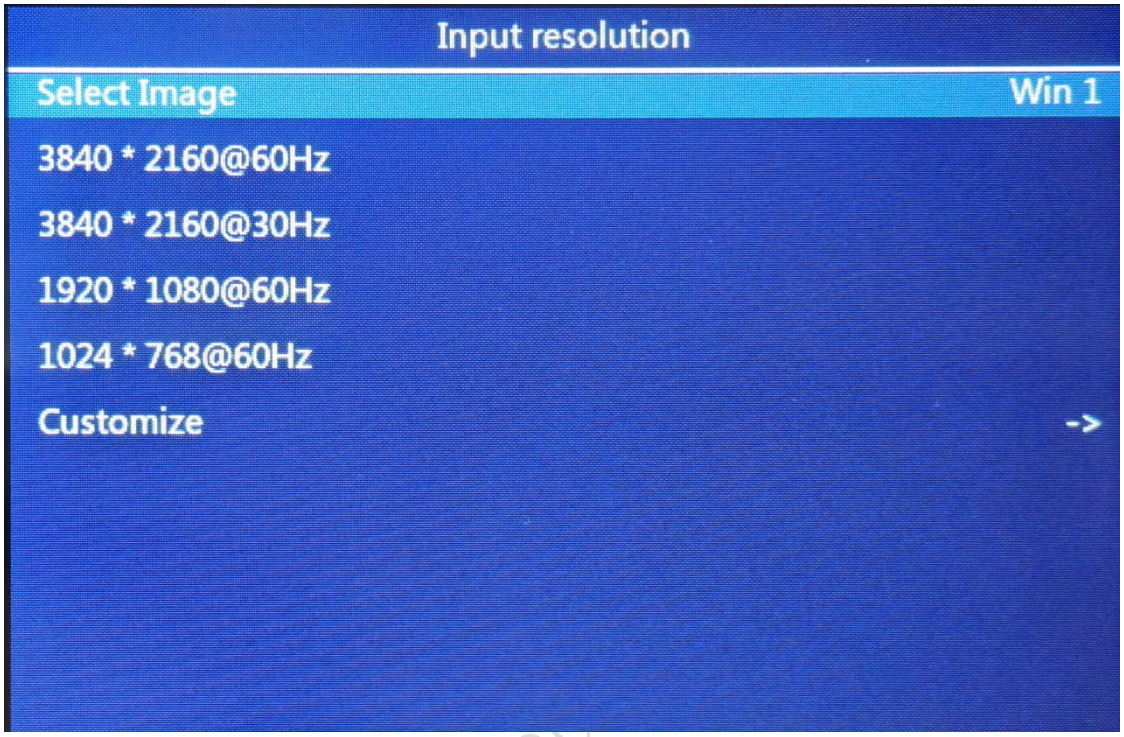


Existing templates support replacement, deletion, and loading

Template options that do not exist, support saving

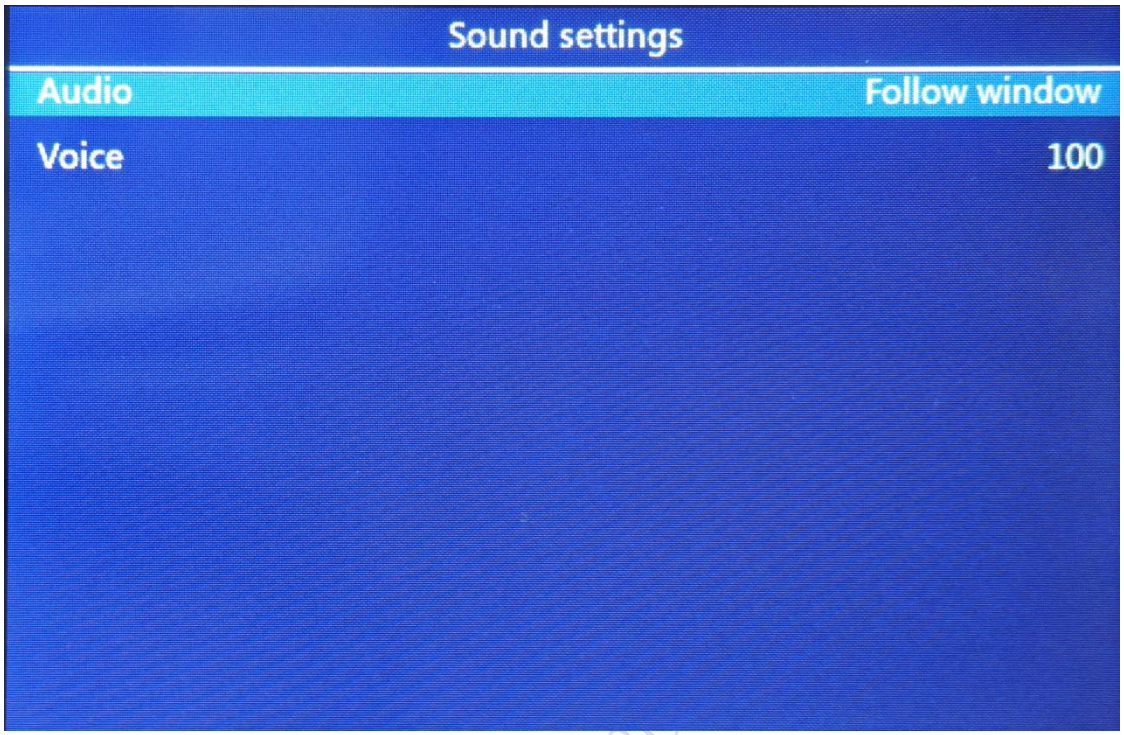
Supports up to 16 template files

Advanced Settings - Input Resolution

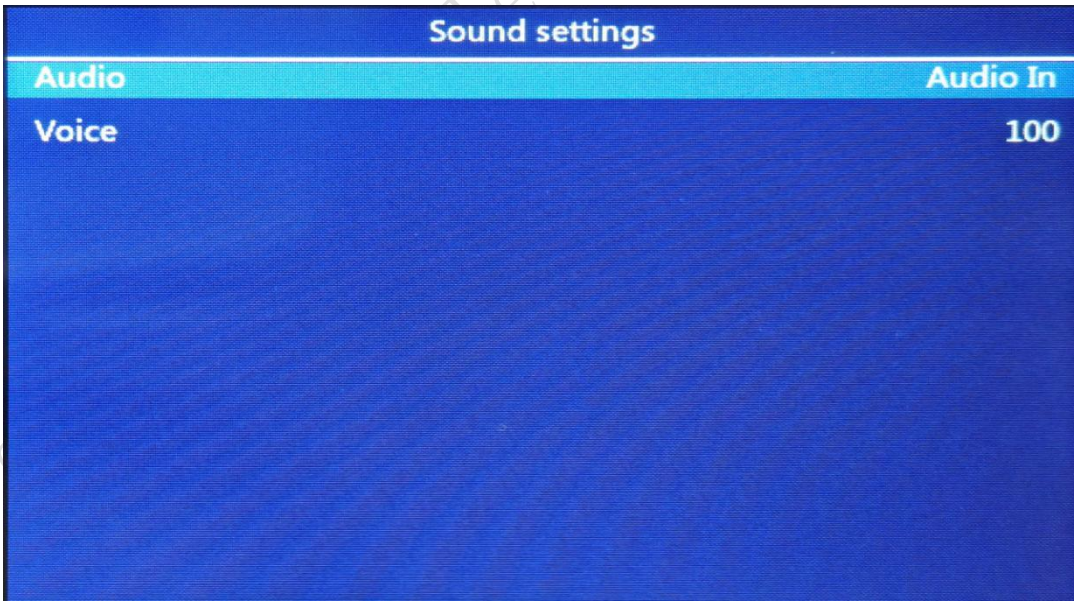


The input resolution supports 4 sets of common resolutions ; it also supports custom resolution settings, with the default being 60Hz ;

Advanced Settings - Sound Settings

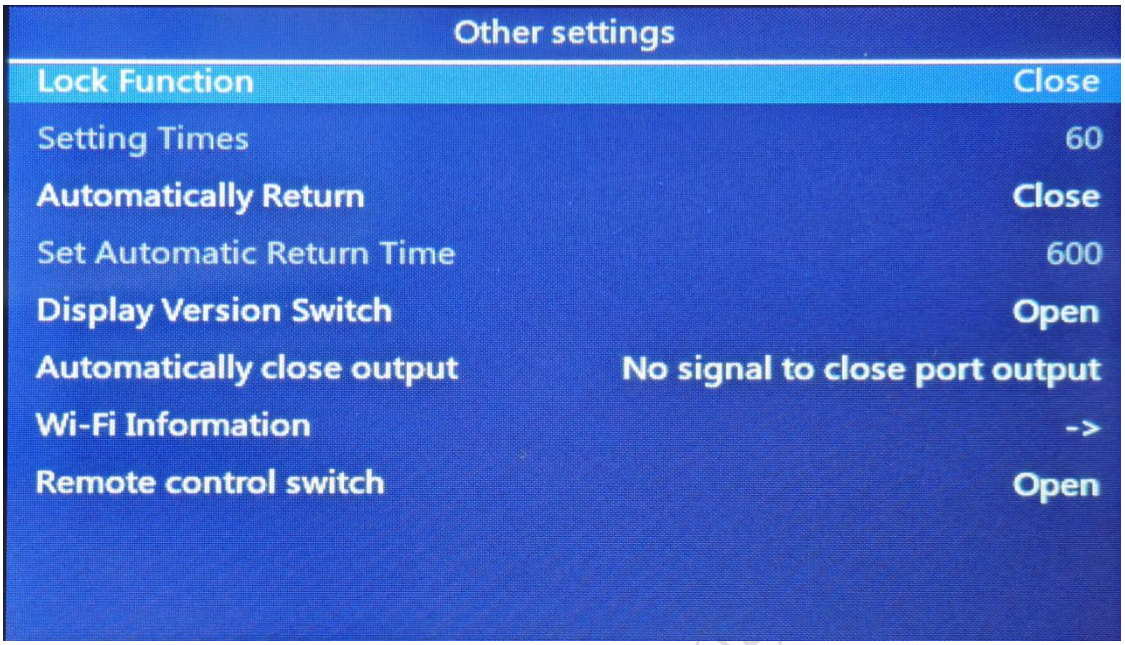


The audio signal selection accompaniment window, the audio signal is given by the video signal;



Select Audio In for the audio signal, and the audio signal will be provided by an independent Audio interface;

Advanced Settings - Other Settings



The key lock delay switch is enabled, supporting a maximum time of 3600 seconds. If the set time is exceeded, the key lock will be automatically locked.

To unlock the key lock, press and hold the E SC key and the BLACK key for 3 seconds, and the key lock will be automatically unlocked.

Automatically shut down the network port output switch function:

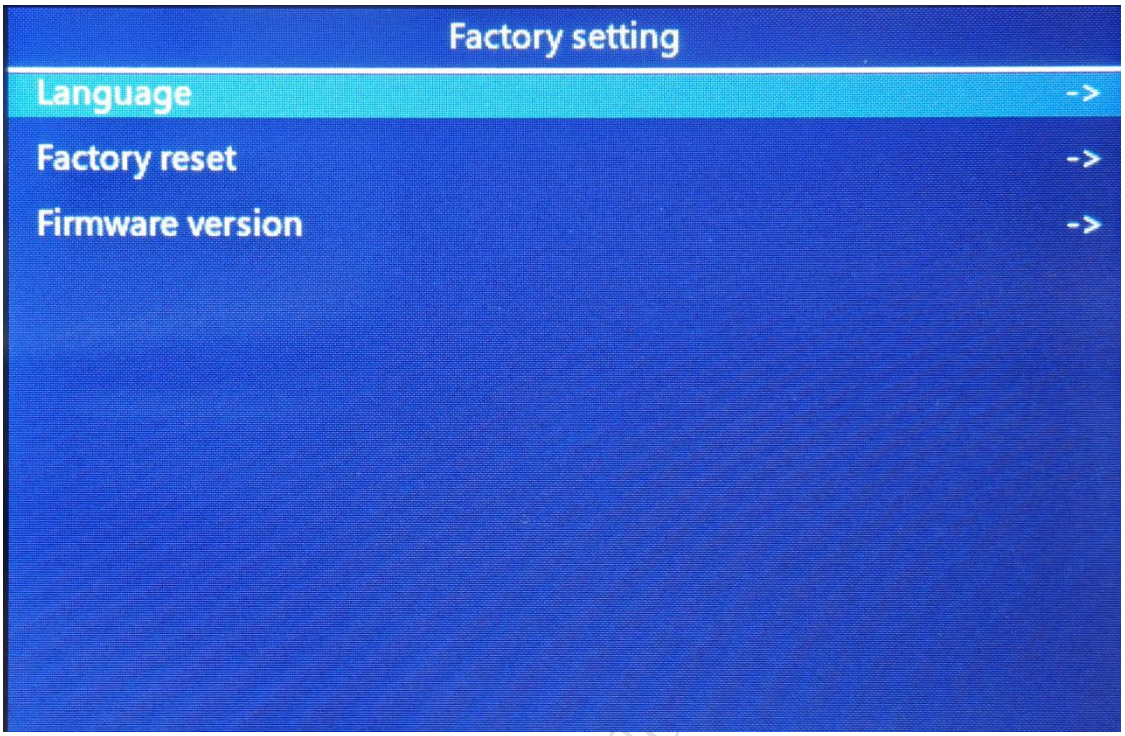
No signal, turn off the network port output switch: Off, the network port has output when there is no signal from the processor;

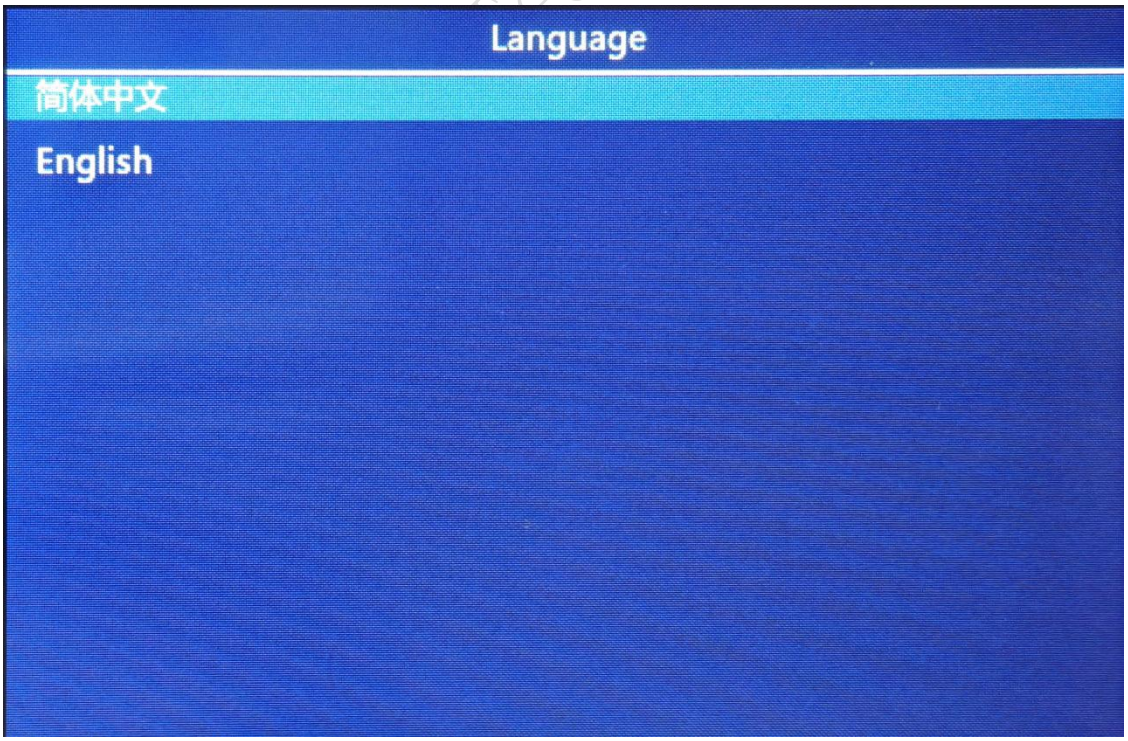
No signal to turn off the network port output switch: No signal to turn off the network port output, the network port has no output when there is no signal from the processor;

No signal, turn off the network port output switch: lock the last frame, the LED will retain the last frame when there is no signal from the processor;

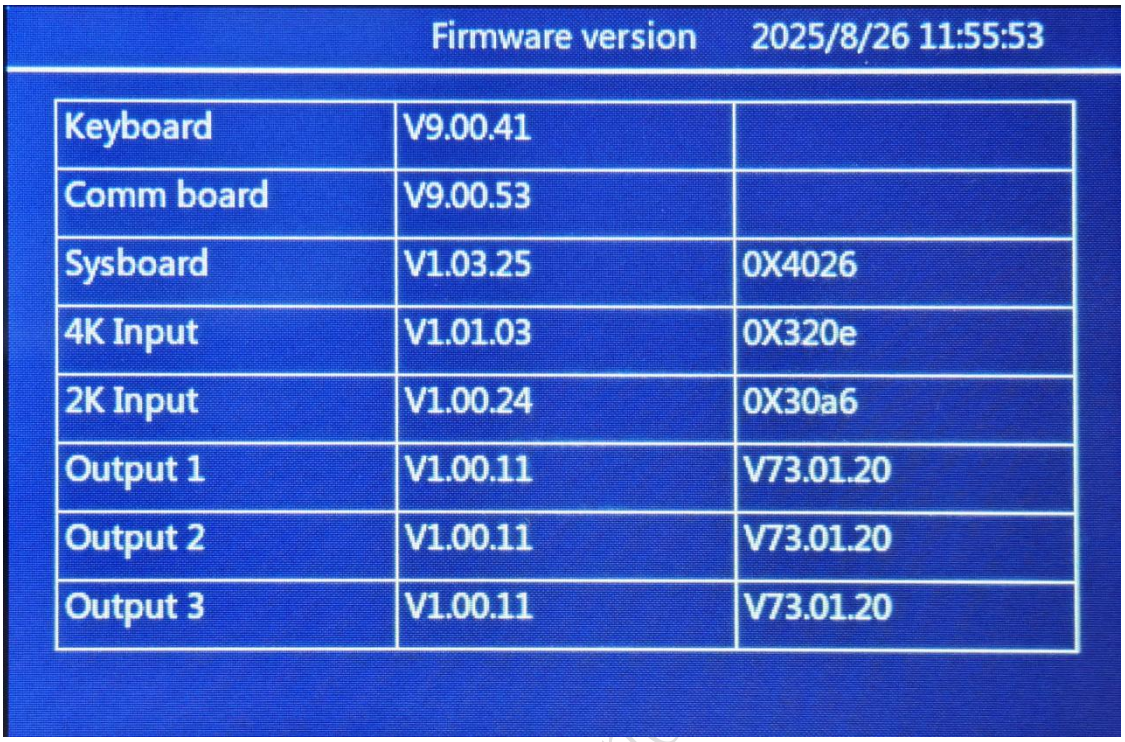
The remote control switches can be turned on or off individually.

Advanced Settings - Factory Settings





Language selection: support English, Chinese



Firmware version display

Digital function description:

When entering a number, such as setting the width and height of the screen, the keypad reuses the relevant buttons. During the input of numbers, except for the reused buttons, ESC, and the knob, the other buttons are disabled and can be used again after exiting. The key reuse is as follows:

Original button function	Function after reuse
WIN 1	1
WIN 2	2
WIN 3	3
DP	4
HDMI 2.0	5
WIN 4	6
WIN 5	7
Windows 6	8
HDMI 1	9
HDMI 2	0

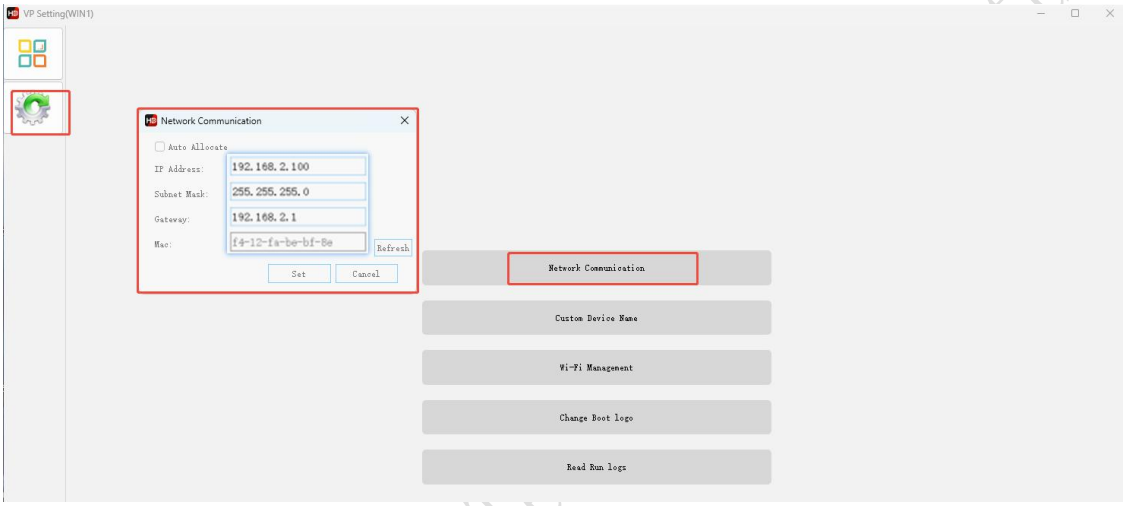
Button status light description

1. When the button is pressed, the light of the button will be on, and it will be off if it is released and there is no other need.
2. If the input source of the current window is HDMI 1/ HDMI 2// HDMI 3 /HDMI 4 / HDMI 2.0 / DP, if there is no input source signal, it will flash off at intervals of 125ms until an input source signal is detected and then turn on steadily. If the input source signal is lost midway, it will continue to flash off.
3. When the BLACK button, HDMI 1/ HDMI 2/ /HDMI 3 /HDMI 4 / HDMI 2.0 / DP lights are all off and the BLACK light is always on. Press the BLACK button again and the BLACK light will go off. Then proceed to step 2 to adjust the light status according to the input source light of the current window.
4. WIN1, WIN2, WIN3 , WIN4 , WIN5 , WIN6 The button light of the window currently selected by the TV will be lit. When switching between different windows, the button light of the input source needs to be synchronized with the input source type of the current window.
5. The following states need to be saved after power off and restart: input source type of the current window, status of BLACK light, status of MODE , selection status of win1, win2 , win3 , win4 , win5 , win6 .

LAN port debugging setting instructions:

1、First, use the serial port debugging connection to enter the processor settings, enter the settings interface and select the network port communication;

2、Set IP 192.168.2.100--Subnet mask 255.255.255.00--Gateway 192.168.2.1--Mac click Refresh--Click Set, and restart the device after completion!



3、Connect the computer's network port and the device's ETHERNET port with a network cable. Set computer 1's IPv4 to 192.168.2.10 and subnet mask to 255.255.255.0.

4、Use the 100M network port to open the HDSet debugging software, open the software main interface, find the card, and check the sending card model.