灰度科技
HUIDU TECHNOLOGY

Instruction Manual

Two in one video processor

HD-VP2430

V1.3 20250710

1 Introduction

HD-VP2430 is a two-in-one video processor that integrates a traditional video processor, 24-channel Gigabit Ethernet output, and 3-channel optical output. It not only simplifies the on-site environment construction, but also improves the reliability of the product. It supports 5-channel synchronous signal input and can be used in various occasions that require synchronous playback, such as hotels, shopping malls, conference rooms, exhibitions, studios, etc. In addition, the device also supports point-to-point input/output, allowing the LED display to display clearer images.

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Features :

enter

- Supports up to 4096*2160@60Hz synchronous signal input;
- Supports 4-channel HDMI and 1-channel DP signal input, and can switch multiple video signals at will;
- Supports 1-way TRS 3.5mm standard two-channel audio input and HDMI/DP audio input.

Output

- Supports any layout of three screens, and supports up to 3 x 4K windows;
- Standard 24-channel Gigabit Ethernet ports and 3-channel optical fiber ports, directly cascaded to receiving cards;
- The maximum control is 15.72 million pixels, the maximum horizontal support is 16384 pixels, and the maximum vertical support is 8192 pixels;
- 1 TRS 3.5mm standard two-channel audio output.

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Function

- Supports visualization of video signal quality, with the lower computer displaying High, Medium and Low;
- Video signals can be switched, cropped, and scaled at will;
- Support 16 scene presets and calls;
- Support brightness adjustment and key lock functions;
- Support arbitrary overlap of network ports;
- Support point-to-point display and limited to full conversion;
- Supports displaying signal color format on the lower computer;
- Support RS232 serial port protocol control and docking with central control equipment;
- Support Wi-Fi AP mode;
- Support mobile phone APP wireless control;
- Support infrared remote control (optional).

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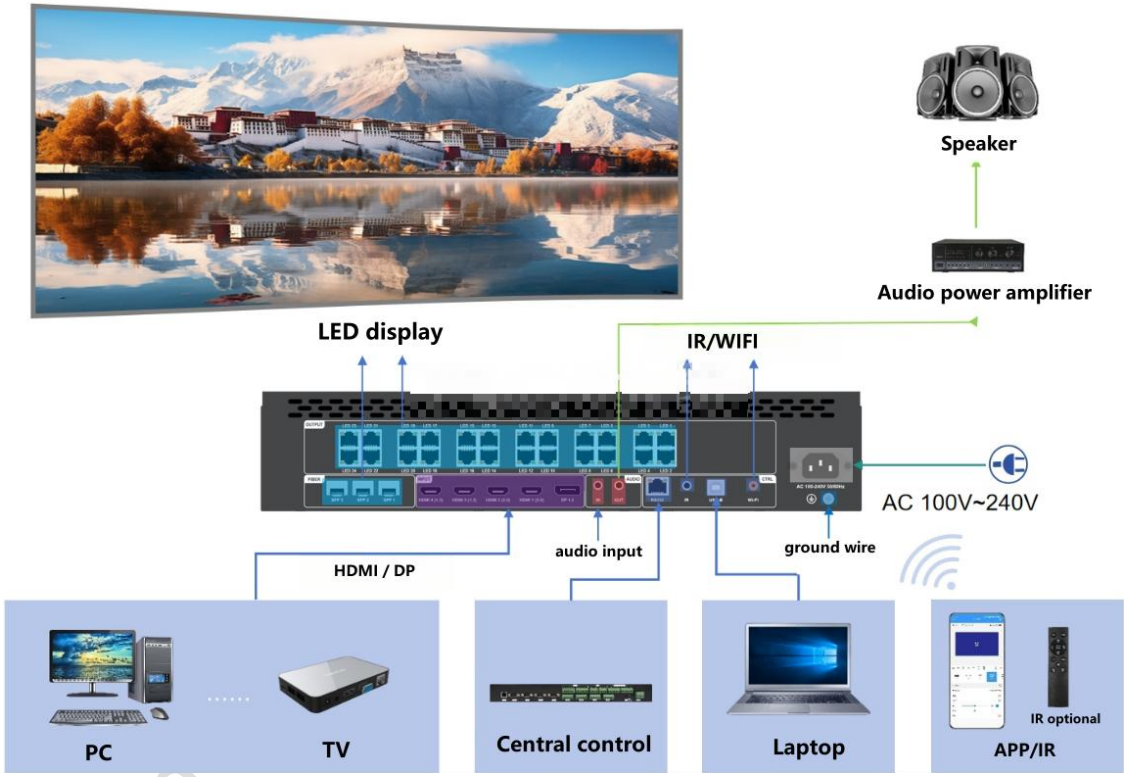
2 Application Scenarios



Connection diagram

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3 Appearance

Front Panel

Key Description	
button	illustrate
Power switch	Control AC power input
LCD display screen	Debug display menu, screen parameters and other information
IR	Receive infrared remote control (optional)
MENU knob	Press the knob to enter a submenu or confirm a selection Rotate the knob to select menu items or adjust parameters
WIN1~WIN 3	Select an open window Function key: The key multiplexing function is digital selection, corresponding to numbers 1~3
REV	Reserved buttons Function key: The key multiplexing function is digital selection, corresponding to the number 6
MODE	Quickly call up the preset mode call menu Function key: The key multiplexing function is digital

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	selection, corresponding to the number 7
BRIGHT	Quickly call out the brightness setting button Function key: The key multiplexing function is digital selection, corresponding to the number 8
ESC	Exit key/Back key
FREEZE	One-click freeze button
BLACK	One-touch black screen button
DP	Select DP signal to play Function key: The key multiplexing function is digital selection, corresponding to the number 4
HDMI 1	Select HDMI 1 signal playback Function key: The key multiplexing function is digital selection, corresponding to the number 5
HDMI2	Select HDMI 2 signal playback Function key: The key multiplexing function is digital selection, corresponding to the number 9
HDMI3	Select HDMI 3 signal playback Function key: The key multiplexing function is digital selection, corresponding to the number 0
HDMI4	Select HDMI 4 signal playback
REV	Reserved buttons

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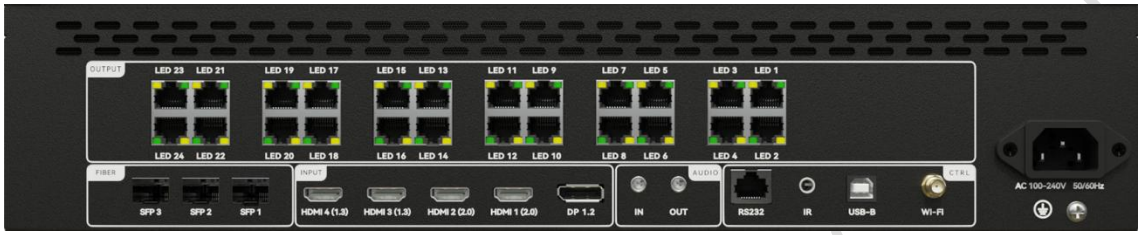
Rear Panel



Input Interface		
Interface Name	quantity	illustrate
DP1.2	1	DP input interface Interface type: DP Signal standard: DP1.2 backward compatible Resolution: VESA standard, ≥720×480@60Hz, ≤4096×2160@60Hz Support color space: RGB4:4:4/YCbCr4:4:4/YCbCr4:2:2 Support color depth: 8bit Support maximum width: 8192 Maximum height: 8192 Supports accompanying audio
HDMI1~2	2	HDMI2.0 input interface × 2 Interface type: HDMI-A Signal standard: HDMI 2.0 backward compatible Resolution: VESA standard, ≥800×600@60Hz, ≤4096×2160@60Hz Supported color space: RGB4:4:4/YCbCr4:4:4 /YCbCr4:2:2

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		Support color depth: 8bit Support maximum width: 8192 Maximum height: 8192 Supports accompanying audio
HDMI 3 ~ 4	2	HDMI 1.3 input interface × 2 Interface type: HDMI-A Signal standard: HDMI 1.3 backward compatible Resolution: VESA standard, ≥800×600@60Hz, ≤1920 *1200 @60Hz Supported color space: RGB4:4:4/YCbCr4:4:4 /YCbCr4:2:2 Support color depth: 8bit Supported maximum width: 2048 Maximum height: 2048 Supports accompanying audio
AUDIO IN	1	TRS 3.5mm dual channel audio input interface
power supply	1	AC 100 ~ 240V 50/60Hz

Output Interface		
Interface Name	quantity	illustrate
Gigabit Ethernet	twenty four	Used for cascading receiving cards, transmitting RGB data stream, each network port controls 650,000 pixels , supports docking multi-function cards

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Fiber Optic Port	3	10G optical fiber interface: Each optical port controls 5.24 million pixels SFP1 sends data from network ports 1 to 8, SFP2 sends data from network ports 9 to 16, and SFP3 sends data from network ports 17 to 24 Supports use with single-mode optical modules: single-mode dual-core transmission distance ≤ 10km **(actually tested 2km)**
AUDIO OUT	1	TRS 3.5mm dual-channel audio output interface Connect to an audio amplifier for high-power external speakers
Grounding interface	1	Anti-static/leakage protection, personal safety and equipment normal operation

Control interface		
Interface Name	quantity	illustrate
RS232	1	RJ45 interface, connected to the central control device
IR antenna interface	1	Used to connect external infrared remote control extension cable
USB-B	1	Connect to a computer for debugging the device
Wi-Fi antenna interface	1	Connect a Wi-Fi antenna to enhance Wi-Fi signal

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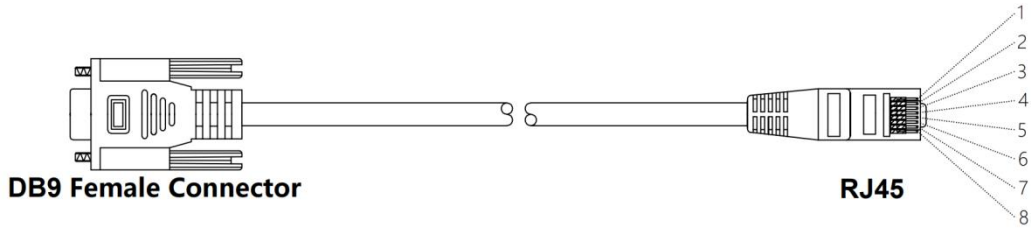
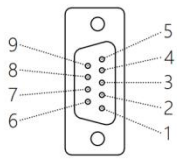
The schematic diagram of the RJ45 to DB9 cable is as follows. It is optional. If you have any needs, please contact Grayscale sales or technical support in advance.



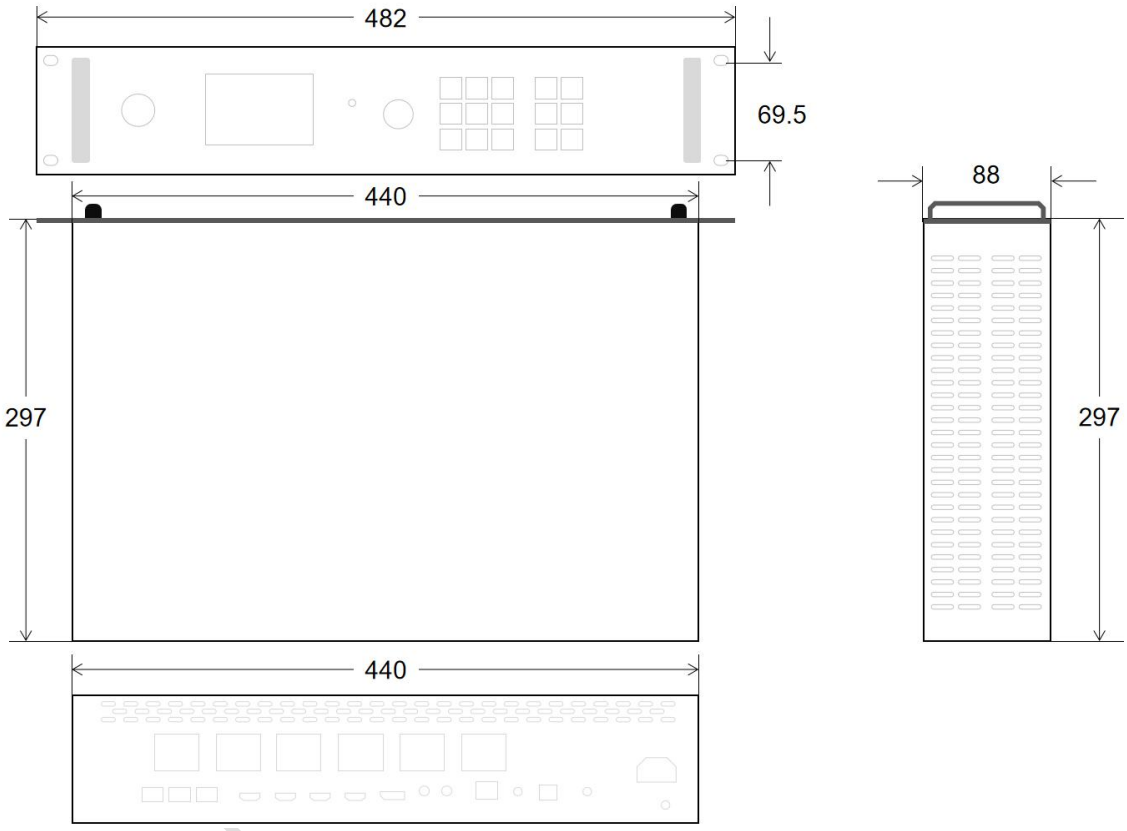


Line Ordering:

DB9 female connector	RJ45 connector
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 have any needs, please contact Grayscale sales or technical support in advance.

4 Dimensions



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5 Product Use

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 2430

Step 3 Use the USB serial 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 -VP2430 supports simultaneous access to 5 signal sources and can switch to the input source you want to play at any time according to your needs.

There are two ways to switch input sources. One is to directly press the signal source button on the front panel to switch quickly .

One is to select the input source through the menu interface , the operation is as follows:

1. Press the knob to select "Advanced Settings → Input Resolution" to enter the input resolution interface;
2. Rotate the knob to select the desired resolution or choose a custom resolution setting;
3. After setting the resolution, press the knob to confirm the resolution.

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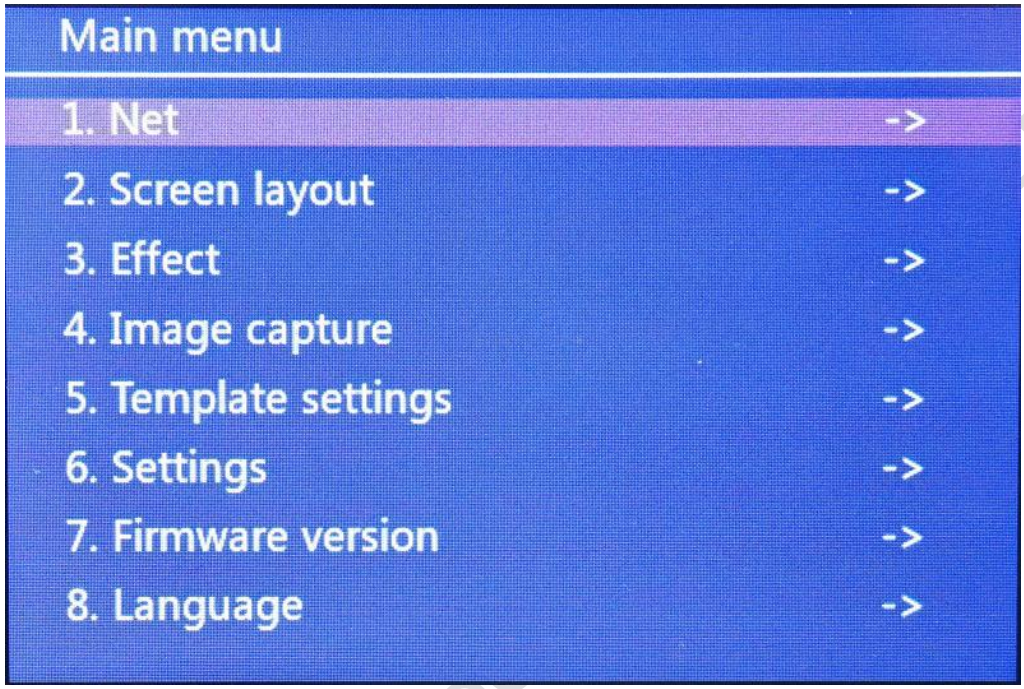
5.3 Interface Description

The upper part shows the signal source identification, output size , brightness, and sound conditions;

The small icons in the signal identification status indicate the signal quality in order: H (high), M (medium), L (low);

The network port icon in the lower part indicates the communication status of the network port and the operating temperature of the device.

5.4 Main menu function display interface



1. Network port settings: used to quickly set the output size.
2. Screen layout : used to set the output screen, supporting up to 3 screens to be displayed simultaneously.
3. Image Effect : used to set brightness , black screen and freeze settings , limited to full settings, etc.
4. Image capture : used to capture the screen input source. You can set the screen and coordinates of the captured input source.
5. Template settings: used to save the currently set parameters to form a template file for quick subsequent settings.
6. Advanced settings : used to set input source resolution , sound settings , Wi-Fi management , test pattern , other settings, factory settings , and black edge settings .

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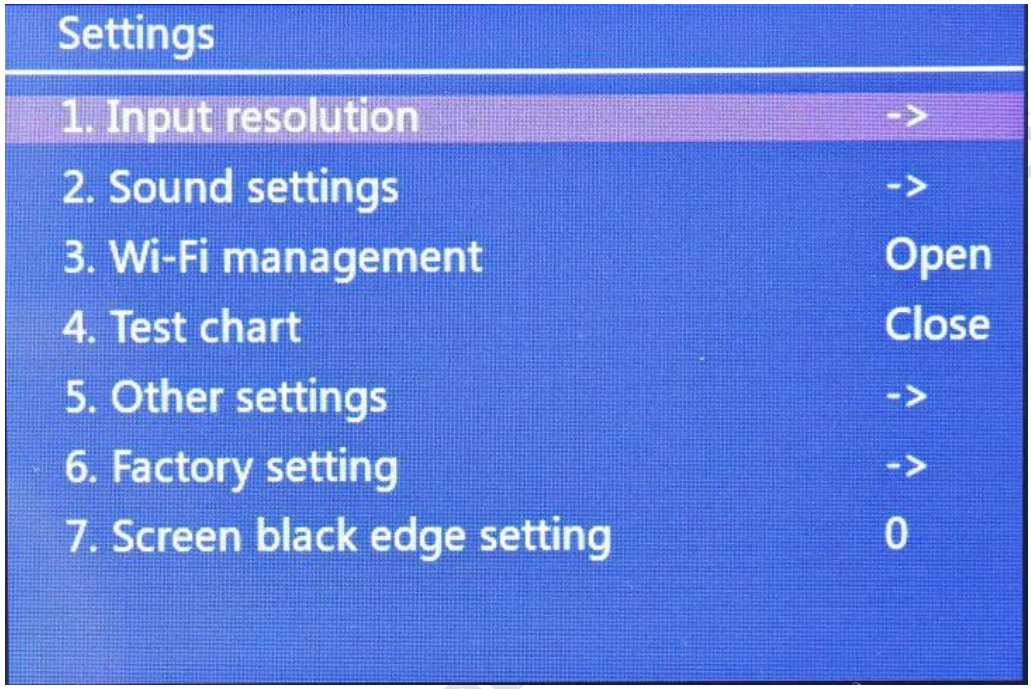

7. Firmware version: used to view the current device version number;

8. Language: used to switch the current display language (Chinese and English);

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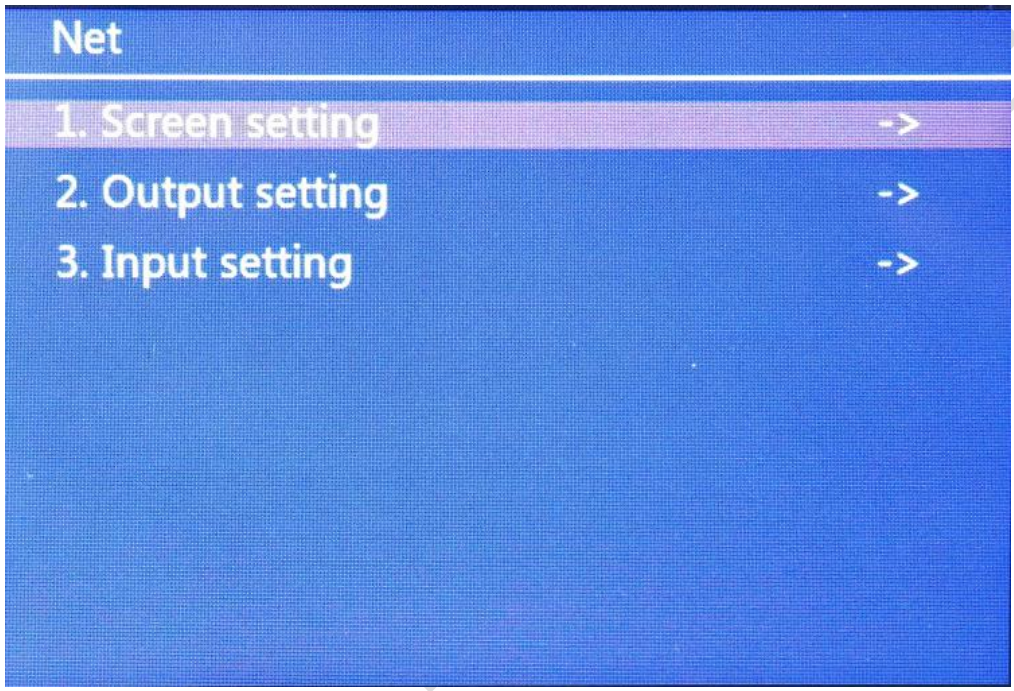
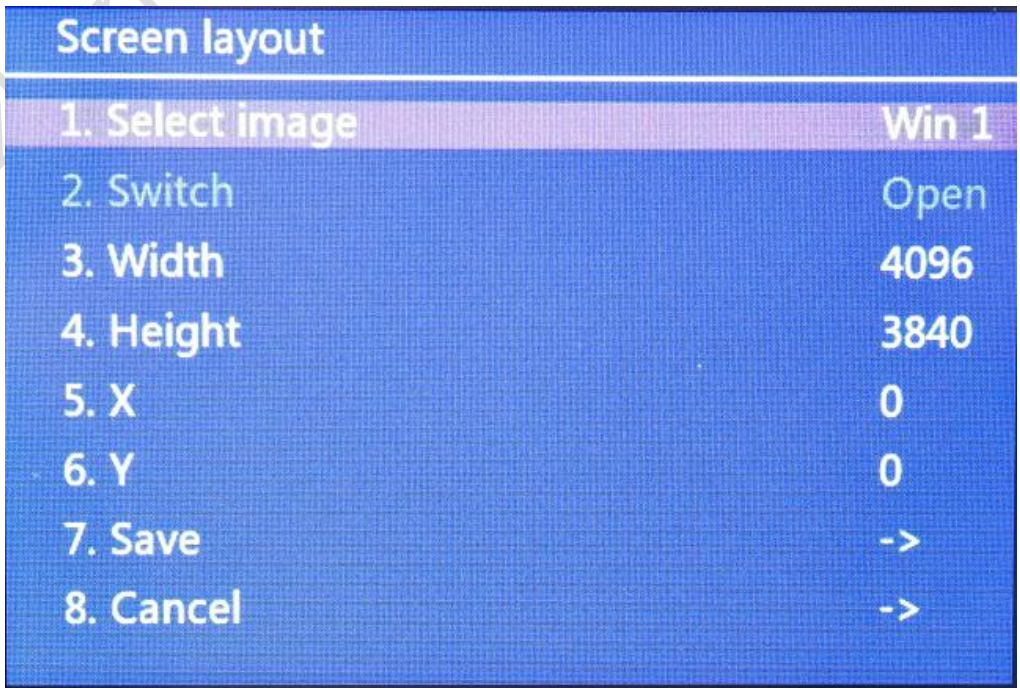
Network port settings



Open to quickly set the screen width and height, output size and connection card connection relationship.

Screen layout



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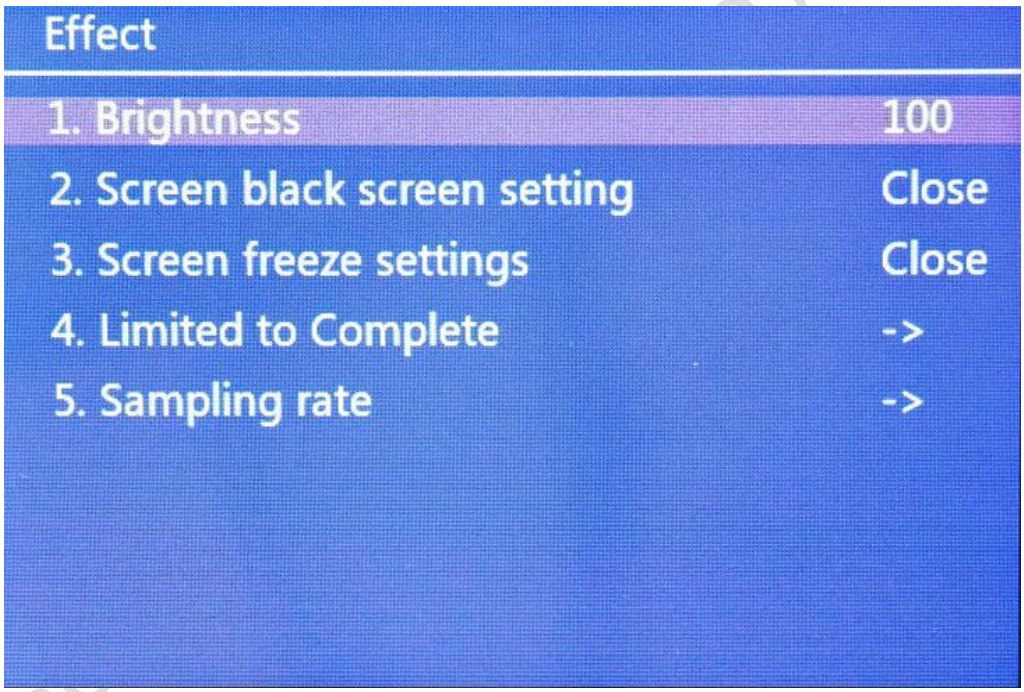
The screen switch setting of screen 1 cannot be set to off.

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.

Image effects



Brightness: Default is 100 ; can be manually turned on or off to prevent the screen from being black or frozen;

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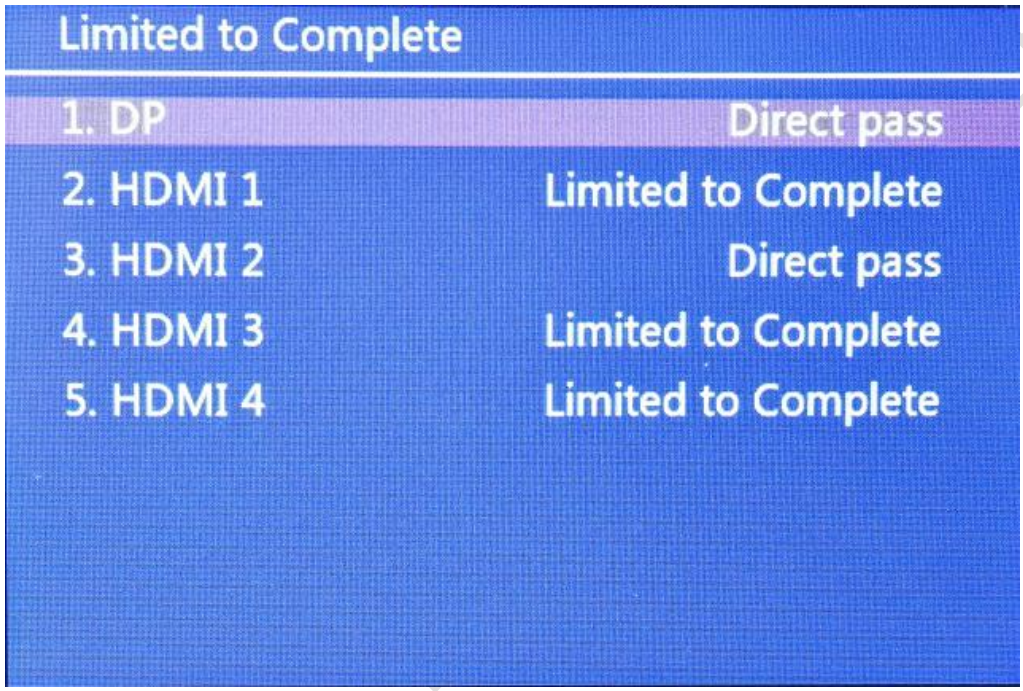
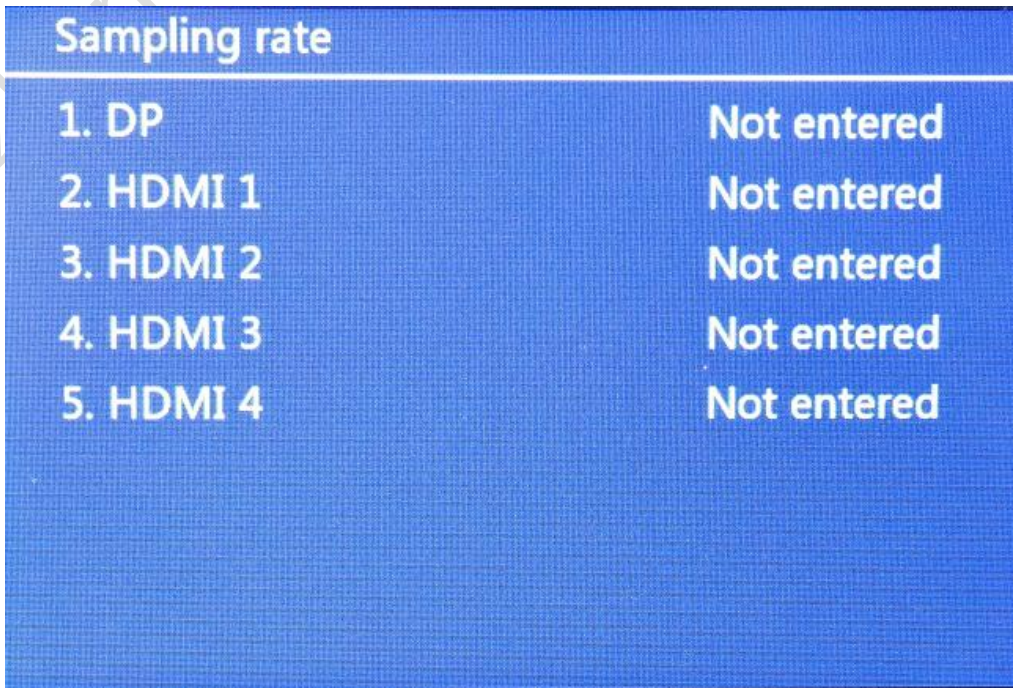
Limited to full



The device can enable limited-to-full mode or pass-through mode for the color format of the corresponding signal source.

Sampling rate



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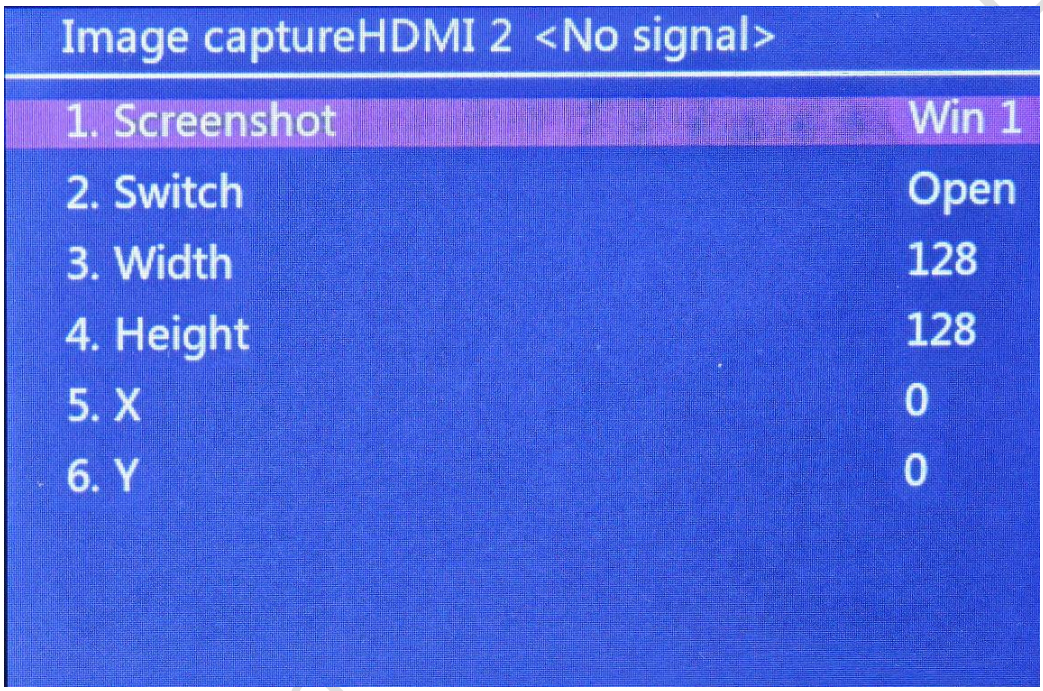
Can display the color format of the current corresponding signal source

Image capture



When the capture switch is off, the knob cannot select the capture width, height, horizontal, and vertical start.

Capture width: 128 — Maximum width of the input source

Capture height: 128 — 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.

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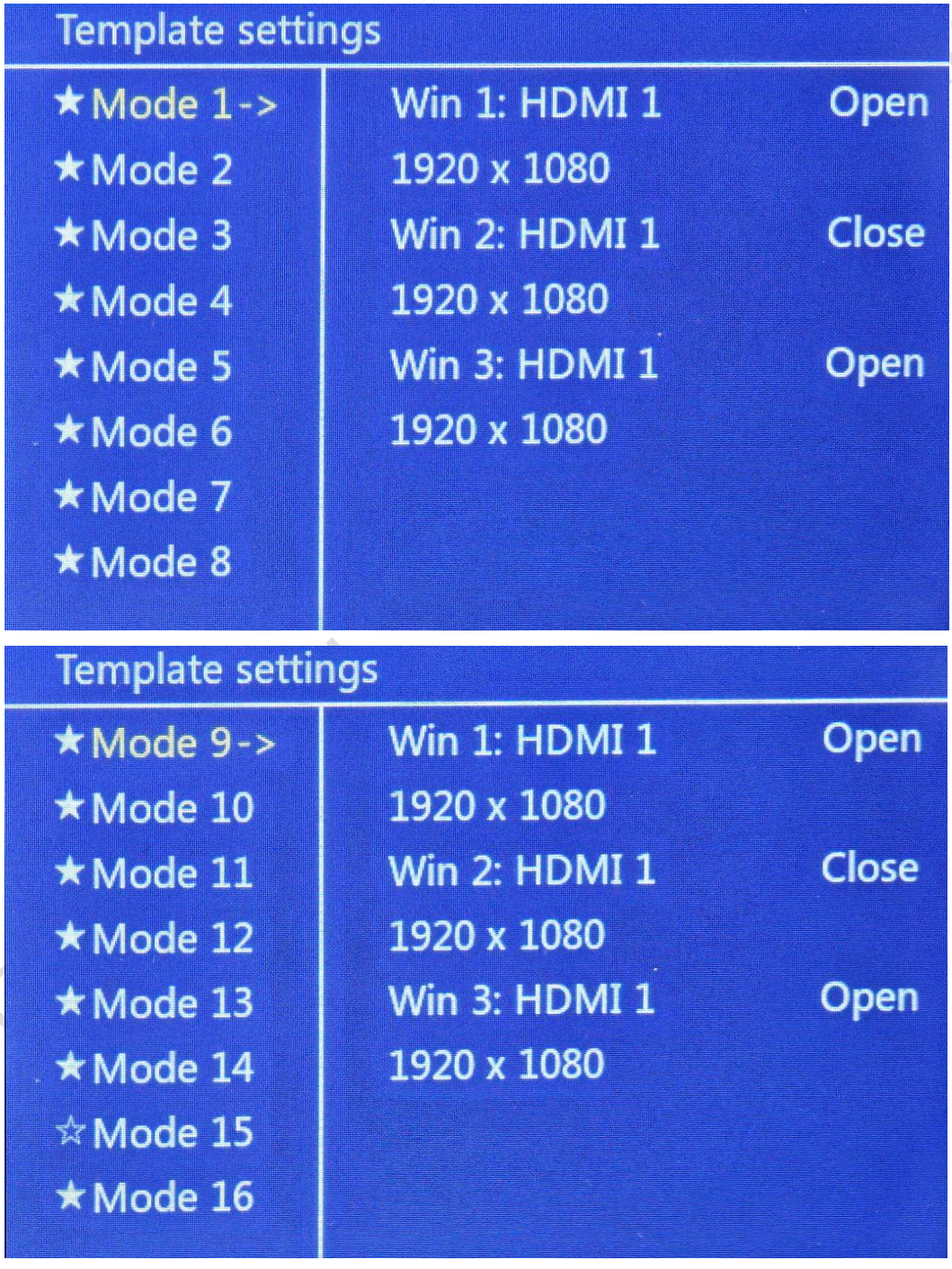
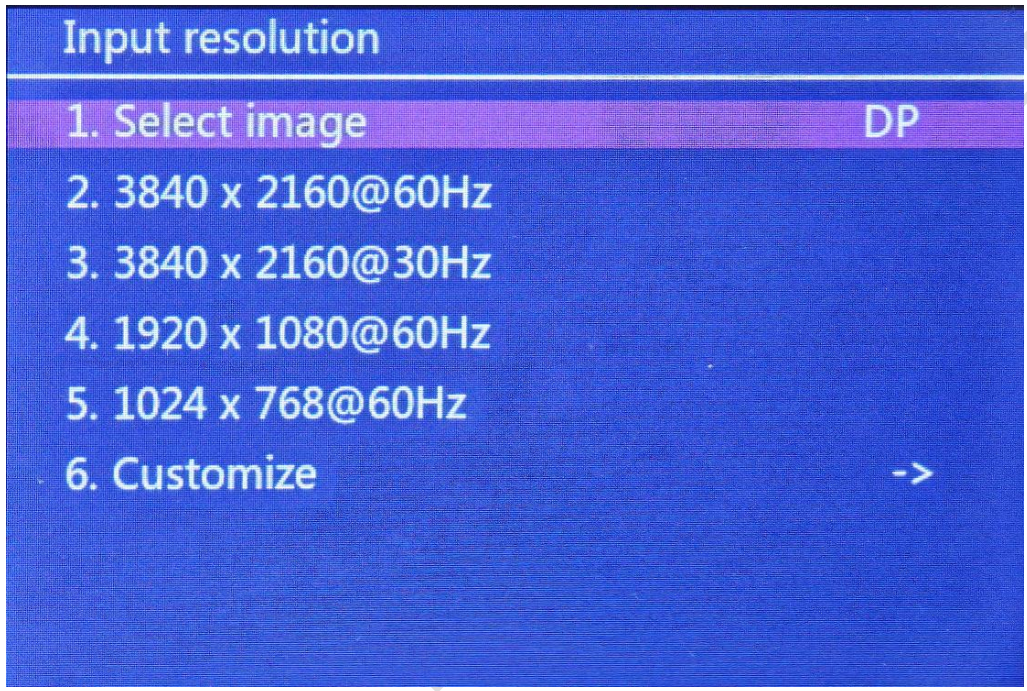
Template Settings



Existing templates can be replaced, deleted, and loaded ;

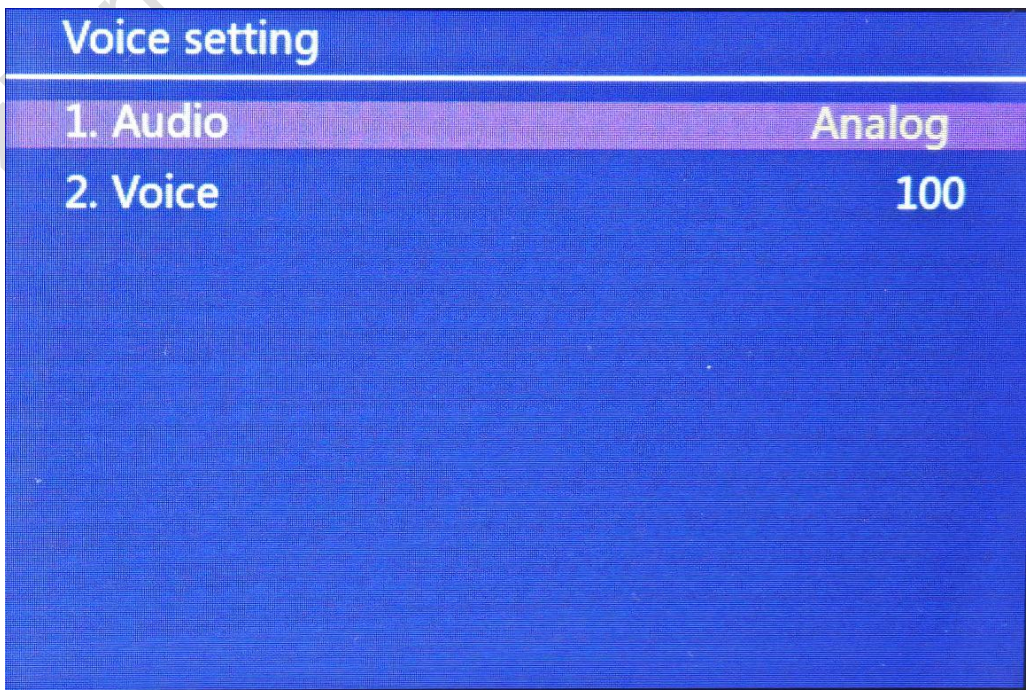
The template option that does not exist can be saved ; up to 16 template files are supported

Advanced Settings - Input Resolution



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

Advanced Settings - Sound Settings



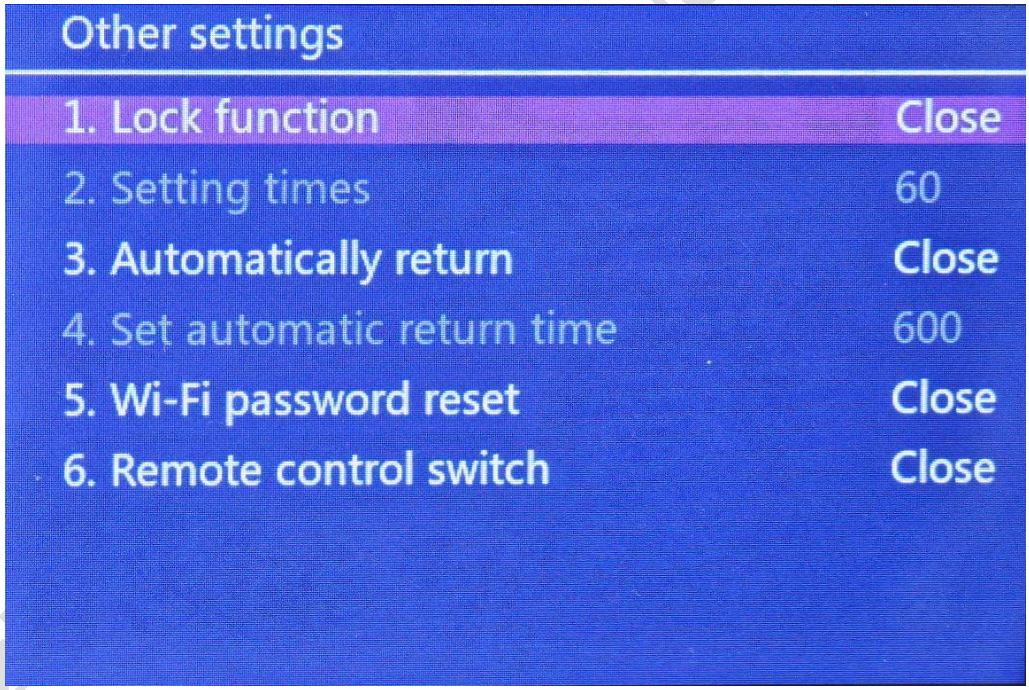
Audio: You can set the modes to accompany (signal source), simulate (independent audio signal), mute, etc.

Volume: The volume can be adjusted freely.

Advanced Settings-Wi-Fi Management

Wi-Fi settings can be turned on or off.

Advanced Settings - Other Settings



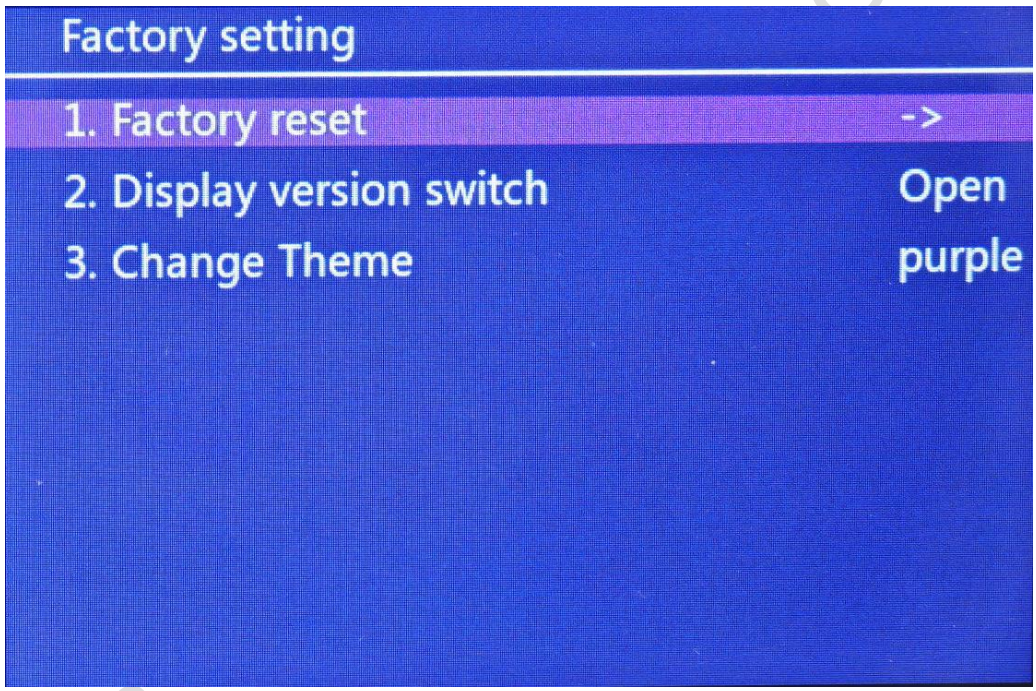
The key lock delay switch is enabled, supporting a maximum of 3600 seconds. If the set time is exceeded, the key lock will be automatically locked.

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

Wi-Fi password reset: Wi-Fi password can be reset separately;

The remote control switch can turn on or off the infrared switch independently.

Advanced Settings - Factory Settings



Factory settings: perform factory reset operation;

Display version switch: You can turn on or off the device model display in the upper left corner of the main interface;

Main color: The overall UI interface theme color can be purple or blue;

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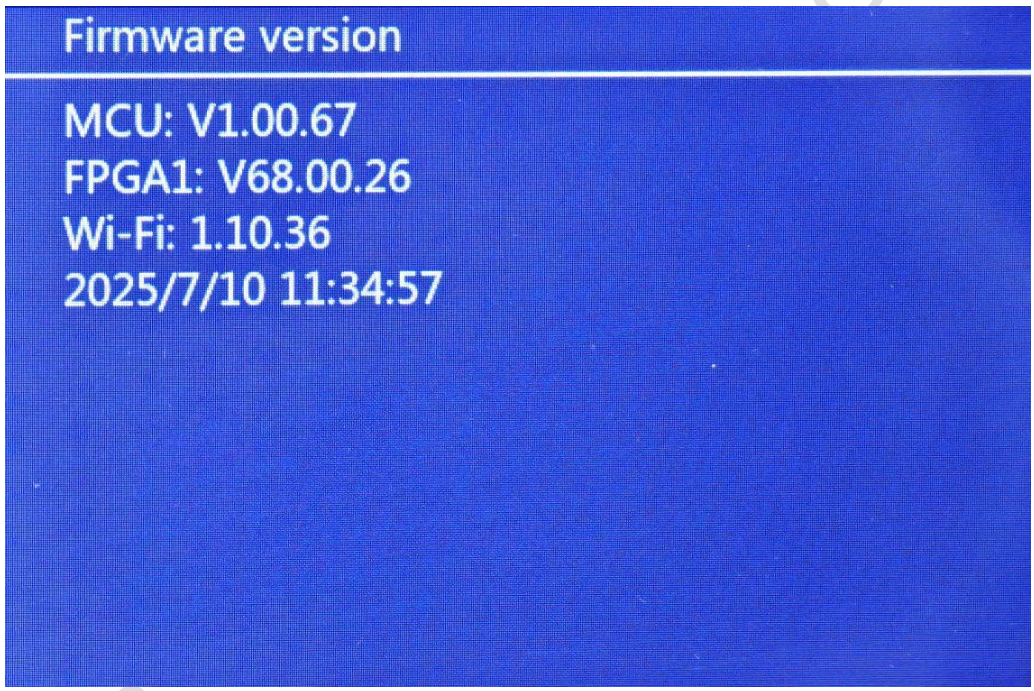
Solidified version



Check the current firmware version ;

language

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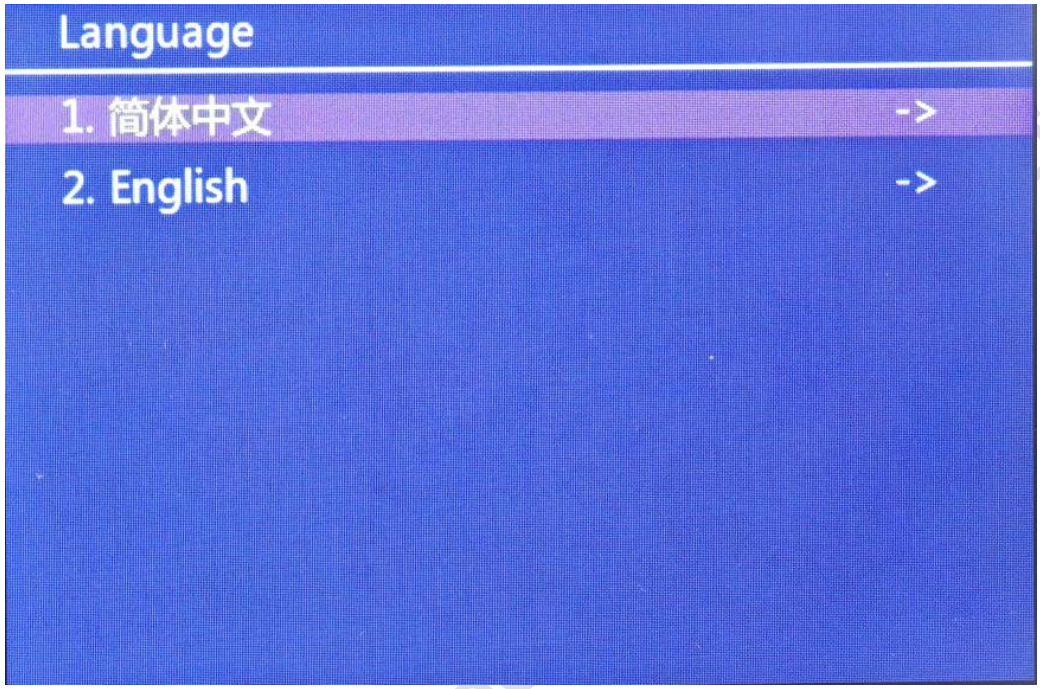

Language selection: Support English, Chinese

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Button status light description

1. When the button is pressed, the light of the button will be lit, and it will go out if it is released without other needs.
2. If the input source of the current window is DP/HDMI1/HDMI2/HDMI3/HDMI4 , if there is no input source signal, it will flash off at an interval of 125ms until an input source signal is detected and then it will be always on. If the input source signal is lost in the middle, it will continue to flash off.
3. When the BLACK button, DP/HDMI1/HDMI2/HDMI3/HDMI4 lights are all off, and the BLACK light is always on. After pressing the BLACK button again, the BLACK light goes out, and then the light status of step 2 is performed according to the input source light of the current window.
4. WIN1 , WIN2 , WIN 3 , whichever window is currently selected by the TV will be lit up. To switch between different windows, the key light of the input source needs to be synchronized with the current window input source type.
5. when power is off and restarted : the input source type of the current window, the state of the BLACK light, the state of FREEZE , and the selection states of WIN1 , WIN2 , and WIN 3 .
6. Key lock: When the ESC+FREEZE buttons are pressed simultaneously for 5 seconds, the key lock is turned on and all key lights are on; then press ESC+FREEZE simultaneously for 3 seconds, the key lock is turned off and the key lights return to the current state.

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