OVP-H4X USER MANUAL

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Statement

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Directory

INSTRUCTION

Safety Notice

There are high voltages in this product, so non-maintenance personnel must not open the case or repair the equipment by yourself to avoid danger.

The input voltage range of this product's AC power supply is 100 ~ 240V, 50 / 60Hz, please use the correct power supply.

This product is grounded through the power cord. In order to avoid current impact, please plug the power cord before connecting the product input or output port

Connect to a grounded socket.

Protective grounding of ground conductors in power cords is essential in safe operation. Before proceeding with any hardware operation, please turn off the power of the LED video processor and release your body by touching the grounded surface On the static electricity.

you want to disconnect or unplug any signal line or control line, please make sure that all power cords have been unplugged in advance. Please use it in a clean, dry and ventilated environment. Do not put this product in a high temperature and humidity environment.

This product is an electronic product. Please keep away from fire, water and flammable and explosive dangerous goods. If you receive unusual noises such as strange noises, smoke or odors, you should unplug the power plug immediately without contacting the dealer.

About software

Do not alter, decompile, disassemble, decrypt, or reverse engineer the software installed on this product, all of which are far away.

FUNCTION

Description

OVP-H4X video controller is developed by our company for LED large screen display, rented screen, conference room,High-end video processing equipment in the studio and other markets. This product adopts the 4K image processing technology designed for small-pitch LED display, which can effectively eliminate the edge jagged phenomenon caused by the enlargement of the image and reduce the out-of-focus blur feeling after the image is enlarged. OVP-H8X can receive ultra high-definition 4096x2160 @ 60Hz image input and display four windows at the same time. The output of ultra-large resolution can reach up to 3840x2160@60Hz., which can meet the application requirements of ultra-large LED display, hybrid LED display, and special-shaped screen. At the same time, OVP-H8X also integrates 16 Gigabit Ethernet port outputs, which combines the conventional video processor and the receiving card, which not only improves the reliability, but also greatly facilitates the maintenance of the LED display.
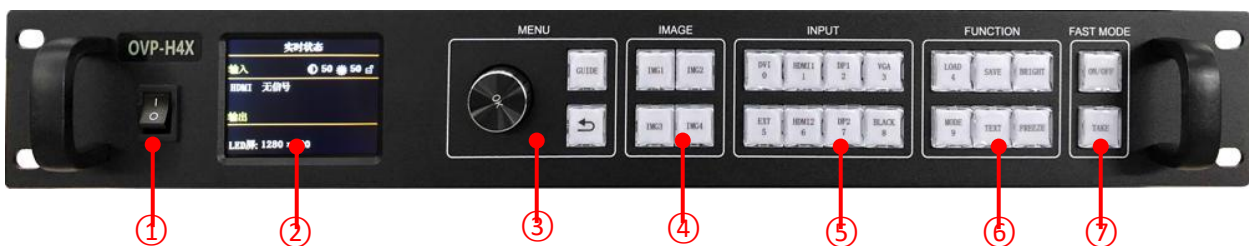
Features

◆　Maximum resolution is 5.2 million pixels, the horizontal maximum 8000 pixels, vertical maximum 3840 pixels;
◆　Cluster with 8 channels of Gigabit network output
◆　Fast seamless switch between all input signage and output mode
◆　With 7 channels HD digital and analog input interface;
◆　 Support random layout and 2/3/4 windows display,

◆ Support 6 channel digital input port DVI\HDMI\DP custom input resolution settings;
◆ Support hot backup of input signal source;
◆ 8 user modes can be stored for users to quickly call;
◆ With "intelligent navigation" setting function, convenient for users to quickly set;
◆ Support local USB2.0 media playback;
◆ The device can be controlled through LCD panel button，LAN,, USB interface or WIF(optional).

Panel instruction

Front panel

Interface instruction	
1	Power switch
2	320×240）2.8" full color LCD panel （320×240)
3	Operation via LCD panel system
	MENU area Short press the [OK] button：enter into the main menu or input confirmation [GUIDE] button：fast turn to the "smart guide" mode [⬑] means turn out of the current operation
4	**IMAGE area** [IMG1]- [IMG4]：select the window1-4 ,led light indicate the selected window

5	**INPUT AREA** [DVII] ~ [USB] 8 buttons，8 nos of input port button,mark:press "BLACK"then the LED indicate light is on ,then output the black screen status
6	**FUNCTION area** [BRIGHT]：fast switch the brightness menu [FREEZE]：image freeze [LOAD]：fast turn on the user mode [SAVE]：fast switch the user mode save menu [MODE] ：fast switch to the fix mode menu [TEXT]： keep the function button
7	**FAST-MODE area** [ON/OFF] fast mode to open/close fast button [TAKE] switch the current signal and the alternative signal

Back panel

Video output interface	
LED1~LED8	8 pcs Gigabit network output,Send via network cable to LED screen
MONITOR	Synchronous multi-windows monitor DIV output port, connect with LCD display

Video input source	
EXT	extend to DVI or SDI or screen cast，（DVI standard match)
DVI	DVI port
HDMI1	HDMI port 1
HDMI2	HDMI port 2
DP1	DP port 1
DP2	DP port 2
VGA	VGA port

Audio input/output port	
HDMI audio	HDMI video input port built-in

DP audio	DP video input port built-in
AUDIO_IN	Analog audio input port
AUDIO_OUT	Analog audio output port

Control interface	
LAN	LAN port
COM	USB input port
WIFI	WIFI wireless control
RS232	RS232C serial control DB9 port

Power	
Input voltage	100-240V~50/60Hz

Basic steps

Click [OK] to enter the main menu interface, and then follow the steps below :

Step 1: import or set the LED screen parameters;

Step 2: select the corresponding signal source according to the user's needs;

Step 3: Enter the "LED screen parameter \ display window adjustment" menu, adjust the picture appropriately (change the aspect ratio or start bit);

Step 4: Turn to the panel "SAVE" button to enter the "user   save mode " to save the current display mode for the next call.

Note: For detailed instructions on the above four steps, please refer to the next chapter "Introduction to Main Menu".

Menu

1.1 *Menu key operation*

The key operation area which includes a knob, a confirmation key [OK], a return key [↩] and a [GUIDE] key.

In the initial state of the system, short press [OK] to enter the main menu setting interface. When pressing the return key, the menu system will return to the previous menu   until it returns to the initial state.

In the browsing state, turn [Knob] counterclockwise to move the cursor upward or left; turn [Knob]

clockwise to move the cursor downward or right. When moving the cursor to the item to be adjusted, press the [OK] key to enter the corresponding setting submenu. At this time, turn the [knob] counterclockwise to decrease the current parameter value; turn the [knob] clockwise The current parameter value can be increased. AdjustWhen finished, short press【OK】key to write data to save. To return to the previous menu, use the return key; until you return to the initial state. press[GUIDE] key can quickly switch out the "intelligent navigation" setting interface.

Note: The [knob] cannot be turned too fast, otherwise the value adjustment will change very little and should be rotated at a constant speed.

1.2 *Initial menu status*

During the system startup, the LCD screen will display the startup interface. After the startup is complete, the current machine status will be displayed on the screen. The initial menu of the system startup is shown in the following figure:

Initial menu status

During the system startup, the LCD screen will display the startup interface. After the startup is complete, the current machine status will be displayed on the screen. The initial menu of the system startup is shown in the following figure:
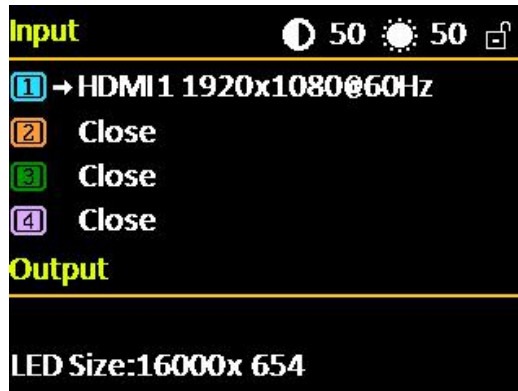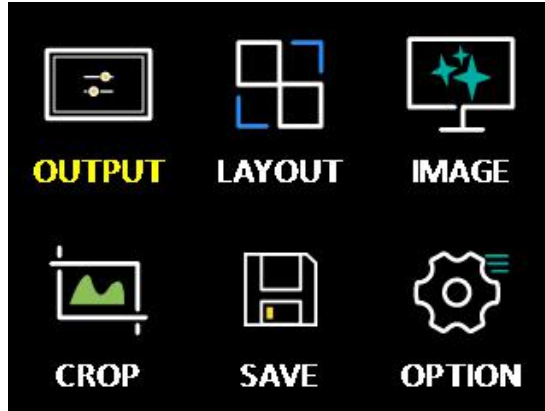

Above three area display content instruction：

- **Input：**

    It displays the input source selection information, including the input source signal format detected by the system.

- **output：**

    The first line: display the actual LED screen size set by the user

    The second line: display the prompt information

- **Upper right corner：**

    The current contrast, brightness value and key lock status are displayed.

Main menu

The device uses a 2.8-inch LCD display software menu, the LCD display pixel is 320 * 240, and the font 24 * 24 can display 10 lines. The user operation menu is divided into six categories. Click [OK] in the non-menu state to pop up the main menu:

Main menu	Level 2 and Level 3 submenus
Output setup	LED screen size (horizontal width, vertical height) Network port output settings (network port LED1-LED8 horizontal width, vertical height, horizontal start, vertical start)
Window layout	Window 1 (horizontal width, vertical height, horizontal start, vertical start) is always on. Window 2 (picture switch, horizontal width, vertical height, horizontal start, vertical start) Window 3 (picture switch, horizontal width, vertical height, horizontal start, vertical start) Window 4 (picture switch, horizontal width, vertical start) Height, horizontal start, vertical start)
Image effect	Brightness, contrast, saturation, sharpness, color temperature, dynamic contrast
Image capture	Intercept switch, intercept width, intercept height, horizontal start, vertical start
Mode save	Mode1- mode16
Advance	Input resolution (horizontal width, vertical height, refresh rate) Input hot backup VGA settings (automatic adjustment, horizontal start, vertical start) Timed switching (task 1, task 2, …) Other settings (image rotation, sound settings, screen projection equipment) Test chart (closed, Figure 1 to Figure 8) Key lock (open, closed) Factory setting (VGA ADC calibration, VGA DDC programming, comment, factory reset, firmware version)

Output configuration

In the non-menu state, click the [OK] button to enter the main menu, and then select "Output Settings", the following menu will pop up:

1. LED screen size

In the non-menu state, click [OK] to enter the main menu, then select "Output Settings", and then select "LED Screen Size" to enter the LED screen size menu:

Note：

After the PC screen control software is used to complete the settings of the "connect receiving card" of each network port of the LED screen, the size of the LED screen is automatically calculated and updated to the controller synchronously, so it is generally not necessary to set the LED screen parameters (including LED The screen size and the network port parameters);

If you have previously set up an archive, you can complete the "LED screen parameter" data synchronization through the PC control software "import \ export configuration";

The width and height of each network port must be the same as the local size of the LED screen covered by the interface card actually carried by each network port. By changing the starting position of each network port, the LED screen can be arbitrarily spliced (each Gigabit of the network port can display any part of the screen or repeat it);

Pay attention to the size range of the LED screen and the total load points of the LED screen:

LED screen horizontal width <= 8000

Vertical height of LED screen <= 3840

LED screen horizontal width x LED screen vertical height <= 5240000 (when width> height)

LED screen horizontal width x LED screen vertical height <= 5222400 (when width <height)

2. LAN output setup

In the non-menu state, click [OK] to enter the main menu, then select "Output Settings", and then select "Network Port Output Settings" to enter the network port output settings menu:

```
          LAN SETTING
LAN LED1  ➡
LAN LED2    Width      1280
LAN LED3
LAN LED4    Height      512
LAN LED5    X            0
LAN LED6
LAN LED7    Y            0
LAN LED8
        OK:Enter    <-Back
```

```
          LAN SETTING
LAN LED9  ➡
LAN LED10   Width      1280
LAN LED11
LAN LED12   Height      512
LAN LED13   X            0
LAN LED14
LAN LED15   Y            0
LAN LED16
        OK:Enter    <-Back
```

Note:

(1)As mentioned above, when the PC screen control software completes the settings of the "connect card access" of each network port of the LED screen, it will automatically calculate the LED screen size and update it to the controller synchronously. Parameters (including LED screen size and network port parameters);

(2)When you need to "arbitrarily splice" or set for each network port, please pay attention to the range and load points of a single network port:

Horizontal width: 256 ~ 4000 Vertical height: 128 ~ 3840Horizontal width x vertical height <= 655360 (when width> height)

Horizontal width x vertical height <= 652738 (when width <height)

Image effect menu

In the non-menu state, click the [OK] button to enter the main menu, and then select "Image Effect" to enter the image effect menu.

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```
        IMAGE QUALITY
Brightness              50
Sharpness               5
Contrast                50
Saturation              50
Dynamic contrast        0
Color temperature       -->
       OK:Enter    <-Back
```

- Brightness: The adjustment range is 0-100, and the default value is 50.
- Contrast: the adjusting range is 0-100, and the default value is 50.
- Saturation: the adjustment range is 0-100, and the default value is 50.
- Sharpness: the adjustment range is 0-10, and the default value is 5.
- Dynamic contrast: the adjustment range is 0-4, and the default value is 1. 0 is off, which is not applicable to the input VGA signal source.
- Color temperature type: "Warm", "Natural", "Poor" and "Custom" are divided into four options.
- Customized color temperature: red adjustment range 0-100.
- The blue adjustment range is 0-100.
- The green adjustment range is 0-100.

Note: The "BRIGHT" shortcut key on the panel can also immediately switch out the above menu to perform "Brightness" adjustment.

Image crop menu

In the non-menu state, click the [OK] button to enter the main menu, then select "Image Crop" to enter the image capture menu:

- Capture switch: The input image intercept function is on or off, and the default is off.
- Capture width: the minimum value is 128, and the maximum value is "the width of the input signal".
- Capture height: The minimum value is 128, and the maximum value is "the height of the input signal".
- Horizontal start: The minimum value is 0, and the maximum value is the difference between "input signal width" minus "capture width".
- Vertical start: The minimum value is 0, and the maximum value is the difference between "the height of the input signal" minus the " capture height".
  Note:

(1) The image interception is for the input source, so the width and height of the interception can not exceed the resolution of the currently intercepted source, and the interception will not work if it exceeds it.

(2) Through the panel input source selection shortcut keys, different input sources can be selected to perform image interception.

Advance

In the non-menu state, click the [OK] button to enter the main menu, and then select "Advanced " to enter the advanced options menu:


1. **Input resolution**

The input resolution setting provides users with DVI / HDMI input signal source EDID editing function, and sets the recommended resolution of the input signal source. The WIN7 computer graphics card can automatically read the recommended EDID resolution of the input DVI / HDMI port of the device. Output recommended resolution; after WIN10 input resolution setting is completed, you must manually select "Recommended Resolution" on the computer.

By setting the input resolution, users can realize the input and output point-to-point display of the ultra-high-resolution LED large screen within the range of 3840x2160. The point-to-point display does not scale the input image, so the display image on the LED large screen can reach the highest definition degree.

Select the input resolution in the "Advanced Options" to enter the input resolution menu:
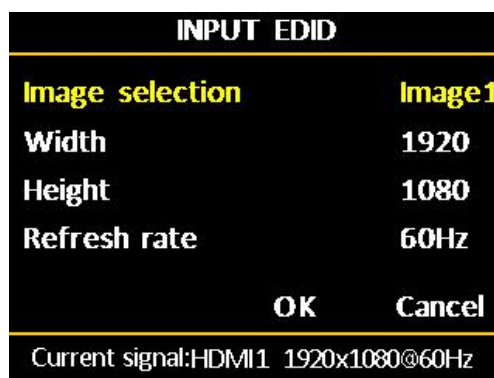
- Horizontal width: adjustment range 640-3840
- Vertical height: adjustment range 480-2160
- Refresh rate: adjustment range 30 or 60

Note:

The actual adjustment range is not related to the interface type and the input bandwidth limitation. For this device, because the standard used by the system's input source DP is DP1.2, it can reach the highest 4K level input resolution: 3840x2160 @ 60Hz; HDMI uses the standard It is HDMI1.4, so it can reach the highest 4K input resolution: 3840x2160 @ 30Hz.

2. Input hot backup

Different hot backup sources can be selected for the four display screens. Once the current playback source of a certain screen is lost, the system will automatically switch to the backup source.

3. VGA setup

Select VGA setting in "Advanced Options", then enter the VGA setting menu:

- Horizontal start: adjustment range 0-300.
- Vertical start: the adjustment range is 0-300.

Note:

(1)The actual adjustable range of horizontal start and vertical start is determined by the internal calculation of the system.

(2) Under normal circumstances, when the VGA input image screen is shifted, the screen position can be corrected by several automatic adjustments. If the automatic adjustment is invalid, then use the manual adjustment of the "horizontal start" and "vertical start" positions on the screen.

(3) The VGA screen is dark, just execute the "ADC correction". Generally, it will be corrected before leaving the factory.

4. Timing switch

In the "Advanced Options", select the timer switch, then enter the timer switch setting menu:

Notice:

(1) The user must first calibrate the internal clock of the system before using the timing switch function. Calibration is done by the PC software.

(2)When the timing switch is turned on, several tasks can be set, and different user modes can be called in different time periods (this user mode must be saved in advance), and the

task settings are also completed by the PC software;(

(3) When the timing switch is turned on and the task is valid, the timing switch can be turned off or on at any time through the LCD menu.

5. **Other setup**

There are three adjustment items in "Other Settings":

- Image rotation: contains three special effects of "HV mirror", "horizontal mirror" and "vertical mirror", the default is "off".
- Sound setting: including audio switch and volume setting.
- Screen projection device: Use electronic devices that support Android system or Apple system to perform screen projection display.

6. **Test picture**

It can provide 8 kinds of test images in the system: Figure 1 ~ Figure 8, the default is "off".

7. **Key lock**

The default is "off". When the "key lock" is in the on state, except the [OK] key, pressing other keys will not work.

8. **Factory setup**

Select the factory settings in the "Advanced Options" to enter the factory settings menu:

- **VGA ADC calibration: It is used to calibrate the VGA input source. It is usually performed before leaving the factory.**
- **VGA DDC programming: When the input source is VGA, if the output resolution of the computer cannot be changed, you need to do the programming action here.**
- **Language: Provide two choices of "Chinese" and "ENG", the default is Chinese.**

- **Factory reset: Reset to factory default.**
- **Firmware version: Used to query the current software and hardware version number, and the factory date.**

User mode save and recall

User mode save

Press the front panel shortcut "SAVE" to quickly switch out the user mode save menu:

After selecting the save mode, press [OK] to save.

Note:

(1)The solid circle before the mode indicates that the currently selected mode data already exists, and the open circle indicates that the currently selected mode data does not exist.

(2)Up to 16 user modes can be saved. In addition to the size, position and status of the screen, the parameters saved in the user mode include brightness and contrast.

(3) When the splicing method is changed, the saved user mode will be cleared.

User mode recall

Press the front panel shortcut "LOAD" to quickly switch out the user mode to call the menu:

Note：

Only user modes that have been previously saved can be called;

(2) For the saved user mode, you can also press "MODE" first, then directly press numeric

Intelligent navigation

Intelligent navigation provides users with a means to quickly debug the splicer when using the splicer for the first time. The LED screen is set up through three simple steps. The software is simple, convenient, and practical. In the MENU area of the front panel, press the [GUIDE] key to enter the smart navigation menu. The user only needs to select "Start" to confirm and follow the panel prompts step by step to complete the initial commissioning of the system.
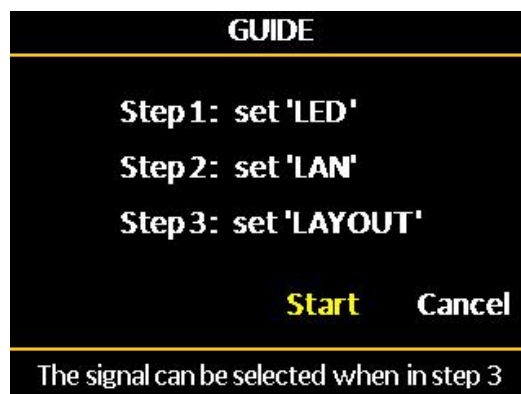
FAQ

This system is a professional device, and the use of certain functions requires the user to have considerable professional knowledge. When users encounter problems, they can try to adjust the machine by themselves. If you still can't solve the problem according to the steps listed below, please do not contact your local distributor or directly contact our after-sales service department. For your safety, do not attempt to repair the product yourself.

Question	Solution
No display on LCD screen, no image output.	- Check if the power cord is in good connection. - Check whether the power switch is turned on.

Information is displayed on the LCD screen, but no image is output.	● Check whether the input signal is correctly violated, and it has been switched to the corresponding signal source. ● Check whether the display terminal supports the output resolution and refresh rate of the device. ● Check whether the brightness and contrast are set too low. ● Try to restore the machine to the factory value through "Factory Reset" in the "Advanced Options" sub-menu.
The image on the LED screen cannot be full screen display.	Check if the "LED screen width, LED screen height" value is not the physical resolution of the LED screen Consistent. Enter the "Image Output" menu to set the parameters.
VGA input image is offset .	press front panel button , the current input image position and phase are automatically checked.Line correction (for automatic adjustment, please use the full screen without black border signal).
The image of the LED screen is displayed in the center, with black borders on the four sides.	Only when the computer graphics card is selected and output to the video processor interface VGA, DVI, HDMISuch problems are prone to occur. The processor settings are correct, check the computer graphics card property settings, and select "Keep display zoom ratio".
There is no response to panel key function operation.	● Check whether the key lock is turned on on the LCD screen (start 🔒), Press the knob to enter the main menu, set the key lock in the "Advanced" menu to close (close 🔓)

Parameters

Image input/output port	
VGA×1	VESA：compatible with UXGA@75Hz to down
HDMI×2	VESA standard，HDMI 1.4
DVI×1	VESA standard，compatible with HDMI 1.4
EXT×1	Extend input port（DVI/SDI/screen cast is optional）
DP×2	VESA standard，DP1.2：4K@60Hz to down

Image output port	
DVI Monitor	1920×1080@60Hz
LED1~LED8	Total pixels≤520 万，max width：8000，max height：3840 (1) total pixels can't be more than 5.2 million pixels (2) Support point-point splicing within 4Kx2K

Audio input/output port	
Audio input ×1	3.5mm audio port
Audio output×1	3.5mm audio port

Complete parameters	
Input voltage	100-240V~50/60Hz
Power	≤70W
Working temp	-10℃~45℃
Environmental humidity	15%~85%
Operation	LCD panel button、LAN、USB、wifi、PC software,APP
Dimension	482.6mm×300mm×66.6mm
Case	1.5U case
Weight	≤5Kg

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