Video processor

User Manual

⚠ Before you use the LED controller, please read this file first and save it for future

We will struggle and serve for the booming development of LED industry!

OVP-H1 user manual

Statement

Any companies or privates cannot copy, transcribe or translate part or whole content of this file without our written permission. And cannot use it on any business or benefit filed with any forms.

The specifications and information which are mentioned on the file is for reference only, if there's update, we will not inform you. This file is only for guidance, and all information will not be for any promises.

CATALOG

Brief Introduction

Safety note

◆ Input voltage is 220V, voltage range is from 100V-240V, please make sure the quality of the power supply of OVP series.

◆ Please make sure that all the power supply cables are plugged off when you want to connect or plug off any signal or controlling cables.

◆ Please make sure that all the power supply cables and signal cables are plugged off when you need to put in or take off the hardware equipment.

◆ Please take off the power supply of LED video processor before you do any hardware operations, and ESD by touching the ground.

◆ Please make sure the environment is clean, dry and ventilated when you use this product, also, do not put this product to a high temperature and wet environment.

◆ This product is electronic products, please keep away from fire, water source and flammable&combustible products.

◆ There's high pressure components in this products, please do not open the box and repair it by yourself.

◆ Turn off the power supply immediately when you find smoking, peculiar smell or something unusual. And contact with us soon.

About Software

Cannot do any modification, decompilation, disassembling, decoding or reverse engineering on our software, it's illegal.
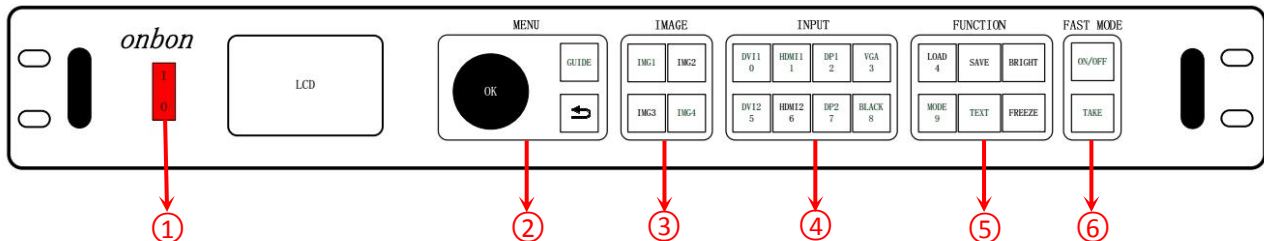
Function Introduction

OVERVIEW

OVP-H1 4 images ultra HD split processor is a type of high performance video processor .it is specially developed for controlling large full color led display screen.It is widely used in hotels,stage rental screens market. This product adopts 4K image processing technology and special splicing processing technology specially designed for narrow pixel pitch LED display screen, which guarantees the uniformity and synchronization of splicing.

Characteristics

◆ Support 8,850,000 pixels，maximum width 16000 pixels， maximum height 3840 pixels；

◆ Support input&output 4K*2K,8K*2K point to point display;

◆ Support 2 images/ 3 images /4 images display and random design ；

◆ Support input&output monitor DVI port,support multi-images output monitor；

◆ Support 6 channels input DVI\HDMI\DP custom input resolution ；

◆ Support multi-images input signal source hot back-up；

◆ Support three kinds of splicing mode：Horizontal /Vertical /Cross split；

◆ Support text overlay function.

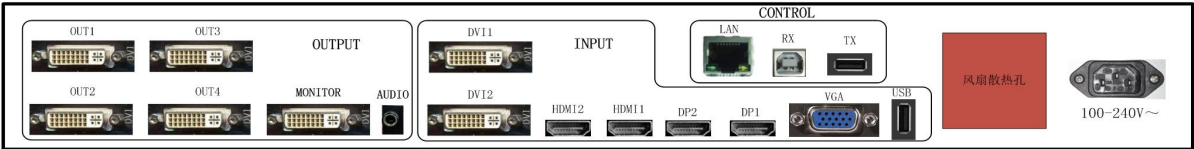◆ Support menu ,button,LAN,USB,WIFI（optional）mode to control equipment.

Hardware instruction

Front panel

Button instruction		
1	Power	Power switch
2	**MENU area** This main menu area includes a Rotating button,and a OK button, ⤺ a return button, in the system initial states use the [OK] button enter into the sub menu.press [ ] to return or exit the main menu.	
3	**IMAGE area** This area includes [IMG1]- [IMG4] 4 buttons，users can choice image 1 to image 4 if the image is open.	
4	INPUT area There are 8 buttons ,from [DVI1] ~ [DP2]，8 signal source buttons,short press the button to change the relevant signal source If press BLACK,and the light of black button is on,then the screen will be black.	
5	**FUNCTION area** This area contains some functions and shortcut settings，Including the following 6 buttons： [BRIGHT]：Export the brightness button, and adjust it by the number buttons, save it by pressing [OK]. [FREEZE]:image freeze shortcut key [LOAD]：.quickly load user mode [SAVE]：quickly save user mode. [MODE] :.quickly load fixed mode [TEXT]：.Overlay text button, Led light on means text overlay can work,led light off text overlay can't work.	
6	**FAST-MODE area** This area is fast switch mode area，including two buttons ： [ON/OFF] turn on /off fast mode [TAKE] Execute current signal source and fast exchange alternative signal source .	

Back panel

Power supply	
Input voltage	100-240V

Video input port	
DVI1	DVI input signal source 1
DVI2	DVI input signal source 2
HDMI1	HDMI input signal source 1
HDMI2	HDMI input signal source 2
DP1	DP input signal source 1
DP2	DP input signal source 2
VGA	VGA input signal source 1

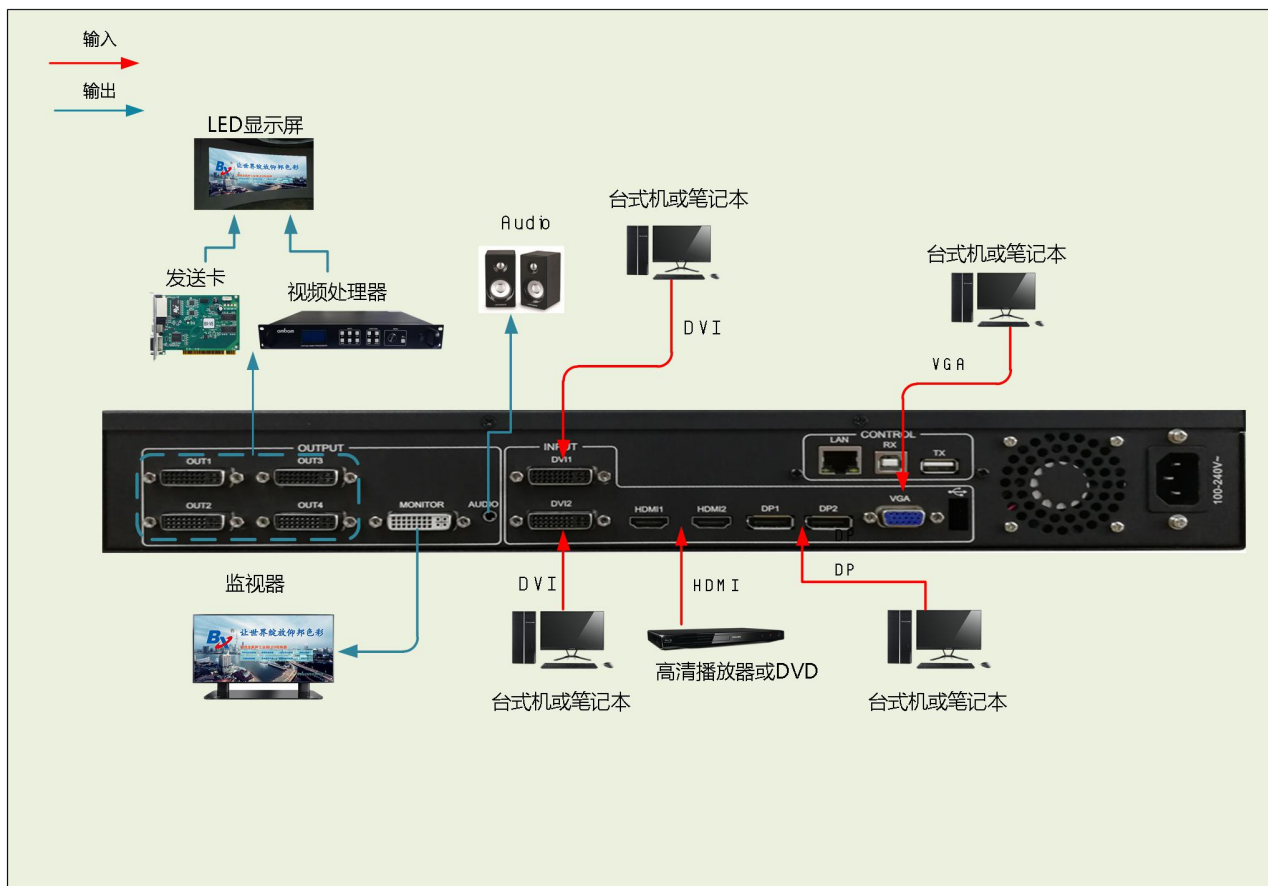| Video output interface	
OUT1~OUT4	4 nos DVI signal outputs, can connect with 4 sending cards
MONITOR	Synchronous image monitor DVI output interface，connect with monitor

HDMI Audio	Build-in HDMI audio signal input
DP Audio	Build-in DP audio signal input
🎧 AUDIO	Audio output port，one 3.5mm stereo

Control interface	
LAN	Ethernet port, connect with computer
RX	USB control interface
TX	USB control interface ,cascade multiple splicers.

USB Interface	
USB	Function 1 ：use to update DSP firmware; Function 2：used to store overlay text files（use together with "TEXT" button）

Device connection

输入

输出

LED显示屏

Audio

台式机或笔记本

台式机或笔记本

发送卡

视频处理器

DVI

VGA

OUTPUT

OUT1   OUT3

OUT2   OUT4

MONITOR   AUDIO

INPUT

DVI1

DVI2   HDMI1   HDMI2   DP1   DP2

LAN   CONTROL

RX   TX

VGA

100-240V~

监视器

DVI

HDMI

DP

台式机或笔记本

高清播放器或DVD

台式机或笔记本

台式机或笔记本

Machine user quick guiding

Press 【OK】 button to enter into main menu interface,then follow the following steps to set the splitter.

Step1：Choice the splicing methods   and led screen parameter according the screen width and height and the user need

Step2：choice the fixed   mode according   to the image numbers

Step3：enter "image layout" menu ， set the image display effects   and   also the signal source

Step4：Press"SAVE" button to save "user mode" for future using.

Menu instruction

Button instruction

OVP-H1 front panel ,contain five area：MENU、IMAGE、INPUT、FUNCION、FAST-MODE

MENU area

This main menu area includes a Rotating button,and a OK button,and a return button, in the system initial states use the [OK] button enter into the sub menu.press [ ] to return or exit the main menu. In browse mode, counterclockwise the rotating button, the cursor will move up or left , clockwise the rotating button, the cursor will move down or right . When the cursor is moved to a project that needs to be adjusted, press the [OK] button, it will move into the setting mode, counterclockwise the rotating button to reduce the current parameter value;clockwise the rotating button to increase the current parameter value. If the adjustment is completed, press [OK] button to save data. If users need to return to the last menu, use the return button until it return to the initial state.

IMAGE area

This area contain【IMG1】-【IMG4】4 buttons ,can be used to select image 1 -image 4,the light will on once the image has been selected.

INPUT area

There are 8 buttons ,from [DVI1] ~ [DP2] , 8 signal source buttons,short press the button to change the relevant signal source

If press BLACK,and the light of black button is on,then the screen will be black.

FUNCTION area

This area contains some functions and shortcut settings ，Including the following 6 buttons：

[**BRIGHT**]：Export the brightness button, and adjust it by the number buttons, save it by

pressing [OK].

[**FREEZE**]:image freeze shortcut key

[**LOAD**]：.quickly load user mode

[**SAVE**]：quickly save user mode.

[**MODE**] :.quickly load fixed mode

[**TEXT**]：.Overlay text button, Led light on means text overlay can work,led light off text overlay can't work.

FAST-MODE area

This area is fast switch mode area，including two buttons ：

[ON/OFF] turn on /off fast mode

[TAKE] Execute current signal source and fast exchange alternative signal source .

System initial status

When starting the system, the LCD screen will display the Boot interface. After the start of the system,the status of the current machine will be displayed on the screen. The starting menu of the system starts as shown in the following figure:

There are three area in the above interface ,details as bellow
● **Input image ：**
The four image will show the current image signal source and size ,if the image not open ,it will show close.   Notes :image 1 always open
● **Output ：**
The first line：show the splicing methods；
The second line：display the led screen size ；

- **Upper right corner :**

Show the current contract value ,brightness and button lock button status

Main menu

OVP-H1 use 2.8-inch LCD display , LCD resolution 320*240, font size 24*24 which can display 10 lines. User operation menu is divided into six categories, in the non-menu state, click the [OK] key, enter into main menu:

Main menu and sub menu：

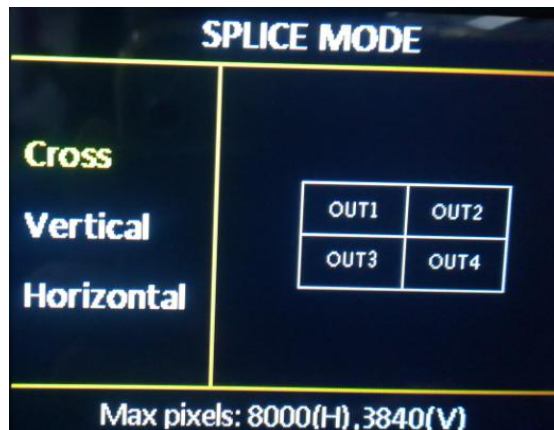| Main menu	Sub menu
Splicing method	Cross splicing（Control size：horizontal　maximum 8000，Vertical maximum 3840） Vertical splicing（Control size：horizontal　maximum 4000，Vertical maximum 3840） Horizontal splicing（Control size：horizontal　maximum 16000，Vertical maximum 2000）
LED screen parameter	Total width in pixels、total height in pixels OUT1~OUT4：Horizontal width 、Vertical width .horizontal　start and Vertical start depend on the splicing methods.
Image layout	**Image 1**（Horizontal width ,Vertical width ,horizontal start,Vertical start）,image 1 always on the status of open. **Image 2**（close/open,Horizontal width,Vertical width ,horizontal start、Vertical start） **Image 3**（close/open、Horizontal width,Vertical width,horizontal start,Vertical start） **Image 4**（close/open、Horizontal width ,Vertical width ,horizontal start,Vertical start）
Display effects	Brightness ,contrast ,sharpness,saturation ,dynamic contrast ,color temperature
Crop setting	Crop open\close、crop width、crop height、horizontal start、vertical start

Advanced options	**Input resolution**（Horizontal width 、Vertical width 、Refresh rate） **Input hot backup**（Close，image 1 backup input source、image 2 backup input source、image 3 backup input source、 image 4 backup input source） **VGA setting**（Automatic adjusting、horizontal start、Vertical start） **Timing switch**（task1、task2、...） **Other setting**（Image rotation、Switch effect、USB firmware maintenance） **Test Pattern**（Close、image 1 to image 8） **Button lock**（open 、close） **Factory setting**（ADC correction、Language 、monitor output、communication settings, factory reset, firmware version)

Splicing method

The system provides three splicing modes for users , users can choice "splicing mode" according to LED screen width and height and also the use scenario. Normally, when the width-height ratio of the LED screen is 16:9, it is more appropriate to choose "Cross splicing" mode; when the of the LED screen is vertical, it is more appropriate to choose "Vertical splicing mode". When the LED screen is very long in width, "horizontal splicing mode "is more appropriate; when using a single splicing device to control the large screen in the middle of the stage and the small screen on both sides at the same time, horizontal splicing mode is more appropriate. When choosing the splicing mode,be attention that the "LED screen" displayed in the prompt information bar at the same time. Be sure maximum pixels can meet the actual LED screen width and height requirements.

◆ **Cross splicing mode**

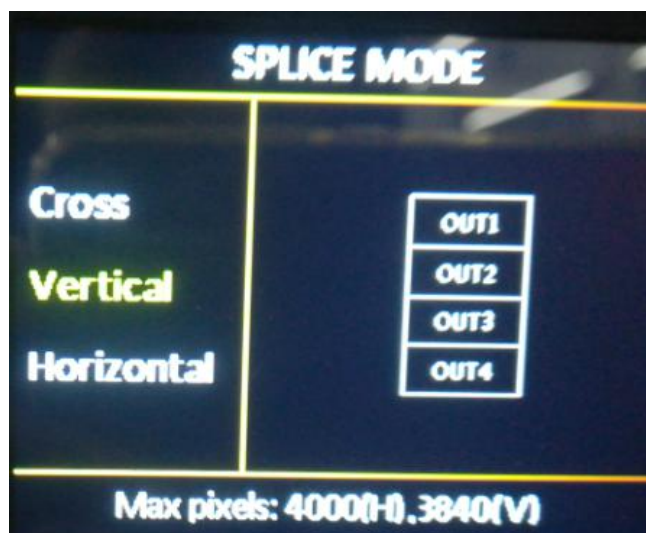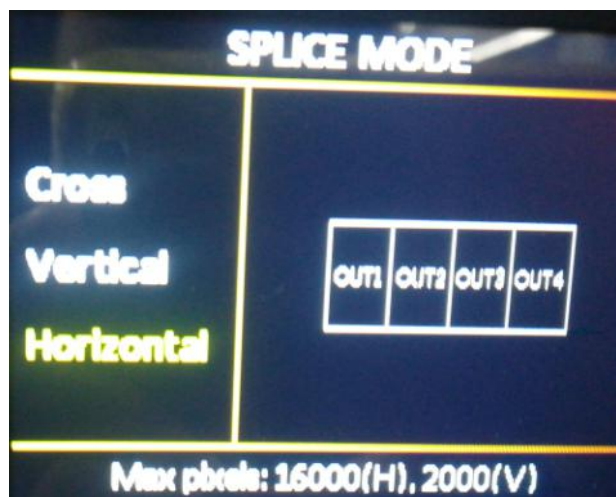Press【OK】to enter main menu interface , Then choice "splicing mode"，click "Cross splicing mode"：

Press OK】 button,then the equipment will automatically jump to the "LED screen parameters" setting menu, users need to set the relevant parameter settings. In Cross splicing mode, the four DVI output ports OUT1~OUT4 are arranged in 2 x 2 mode.in this mode, the maximum pixels in width: 8000 ,maximum pixels in width: 3840 ,The total pixels of led screen can not exceed 8.85 million points.

This splicing mode   is suitable for 16:9   4K super HD LED screen

.

◆ **Vertical splicing mode**

Press【OK】to enter main menu interface ,Then choice "splicing mode" , click "vertical

splicing mode" :

Press【OK】 button,then the equipment will automatically jump to the "LED screen

parameters" setting menu, users need to set the relevant parameter settings. In vertical splicing mode, the four DVI output ports OUT1~OUT4 are arranged in 1 x 4 mode.in this mode, the maximum pixels in width: 4000 ,maximum pixels in width: 3840 ,The total pixels of led screen can not exceed 8.85 million points.

This splicing mode is suitable   for super high HD LED screen.

◆   **Horizontal splicing mode**

Press【OK】to enter main menu interface ,Then choice "splicing mode" , click "vertical

splicing mode" :

Press【OK】button,then the equipment will automatically jump to the "LED screen parameters" setting menu, users need to set the relevant parameter settings. In Horizontal splicing mode, the four DVI output ports OUT1~OUT4 are arranged in 4 x 1 mode.in this mode, the maximum pixels in width: 16000,maximum pixels in width:2000 ,The total pixels of led screen can not exceed 8.85 million points.

This splicing mode is suitable   for super long HD LED screen. Or used for single equipment control   the main screen at the middle of the stage and the small screens on both sides of the stage.(DVI out 2& out 3 for main screen,DVI out 1 and out 4 for side screens)

LED screen parameter

Press【OK】to enter main menu interface，Then choice"led parameter setting"：

After setting the parameters of the LED screen, the cursor is moved to [ok], and parameter is saved by pressing [OK] button. If the splicing mode is changed before setting the parameters of the LED screen, or if the width parameters of the LED screen cross the boundary under horizontal splicing, the system will be reset, and users need to wait patiently for the system to reset.

Pay attention to the control size of this equipment:

◆ **Cross splicing mode**

When LED screen total pixels in width <= 4096

LED screen total pixels in height <= 2000;

OUT1~OUT4 output value range：Width 0~4000，Height: 0~2000

Note： if the OUT1~OUT4 output width=0,height=0, means no signal output from that port

When 4096 < LED screen total width <= 16000

LED screen total pixels in height ：depend on the maximum LED screen pixels（8 850 K pixels）.the system will limit it when setting this .

OUT1~OUT4output value range：Width 0~4000.Height :equals to the led screen height .

Note： if the OUT1~OUT4 output width=0,height=0, means no signal output from that port

◆ **Vertical splicing**

LED screen total pixels in width <= 4000 ,LED screen total pixels in height <= 3840 ,the total control size

should not over（8 850 K pixels）.

OUT1~OUT4 output range：

Width 0~4000，Height 0~2000

Note： if the OUT1~OUT4 output width=0,height=0, means no signal output from that port

◆ **Horizontal splicing**

LED screen total pixels in width <= 40800，LED screen total pixels in height <= 3840，the

total control size should not over（8 850 K pixels）.

OUT1~OUT4 output range：

Width 0~4000，Height 0~2000

Note： if the OUT1~OUT4 output width=0,height=0, means no signal output from that port

Image layout

Press【OK】to enter main menu interface，Then choice "image layout"：

- Horizontal width ： Range 120 ~ Maximum width in horizontal

- Vertical width ： Range 68 ~ Maximum height in vertical

- Horizontal start：Minimum value 0，Maximum value: Maximum width subtract horizontal width .

- Vertical start：Minimum value 0，Maximum value Maximum height subtract vertical width .

.

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 setting interface.

- Brightness：Range0-100，default value 50.
- Contrast：Range0-100，default value 50.
- Saturation：Range0-100，default value 50.
- Sharpness：Range0-10，default value 5.
- Dynamic contrast：Range0-4，default value 1.0 means close，It is not applicable to VGA signal source.
- Color temperature type ："Warm"、 "Natural", "cool" and "Customize"
- Customized color temperature:

  Red:0-128.

Blue:0-128.

Green:0-128.

Note:Users can use the "BRIGHT" button to adjust "Brightness"

Crop menu

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

crop" to enter the image crop menu:

- Crop ：open/close image crop function.Crop width ：Minimum value 128 ,Maximum value "input signal width".
- Close ，default value is close.
- Crop height ： Minimum value 128 ， Maximum value "input signal height".
- Crop horizontal start ： Minimum value 0 ， Maximum value "input signal width"subtract"crop width".
- Crop vertical start ：Minimum value 0 ，Maximum value "input signal height"subtract"crop height"

Note：

（1）Image crop should pay attention to the input signal source, so the crop range can not exceed the resolution of the currently signal source

（2）Use the shortcut buttons to select different input signal sources for image crop.

Advanced option

In the non-menu state, click the OK key to enter the main menu, and then select "Advanced
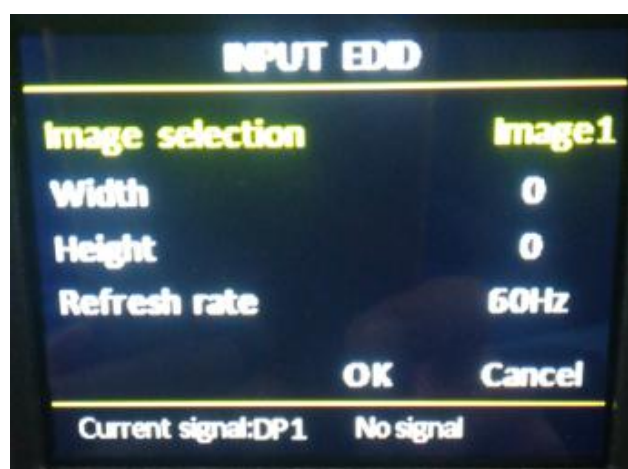
Options" to enter the Advanced Options menu:

◆ **input resolution**

The input resolution setting provides the user EDID editing function of DVI/HDMI/DP input signal source, that is, setting the recommended resolution of input signal source, and the EDID recommendation resolution of input DVI/HDMI/DP port of the device can be read automatically by WIN7 computer graphics card, that is, computer output recommendation resolution; WIN10 needs to select the "recommended resolution" manually on the computer side. "."

The input and output point-to-point display of Ultra-high resolution LED large screen can be realized by setting the input resolution within the range of 4Kx2K. Because the input image is not zoomed by point-to-point display, the display image on the LED large screen can achieve the highest definition.

Select the input resolution in advanced options and enter the input resolution menu:

● Horizontal width : Range 640-4096

- Vertical width ：Range 480-2160
- Refresh rate：Range 30 or 60

Note：

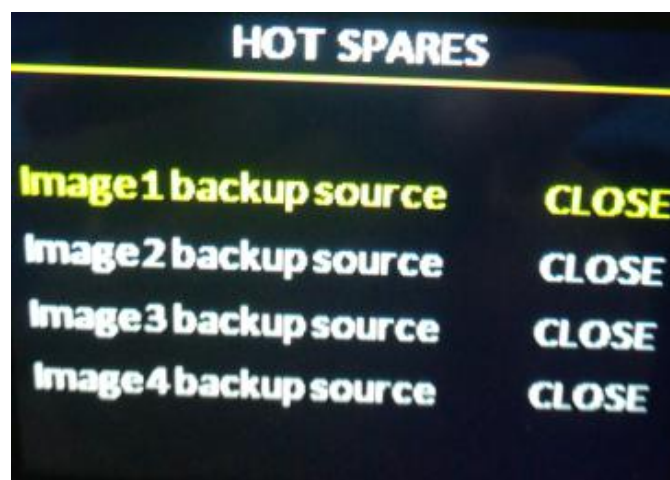（1）The range varies because of splicing mode 、 interface type and input bandwidth limitation. The DP1& DP2 are using DP1.2 standard ，so the resolution can reach ：4Kx2K@60Hz；but HDMI1&HDMI2 are using HDMI1.4，so the resolution is limited .

（2）When the horizontal width range from 3984 to 4096 ，individual resolution will be abnormal, so we should avoid it at to use this width .
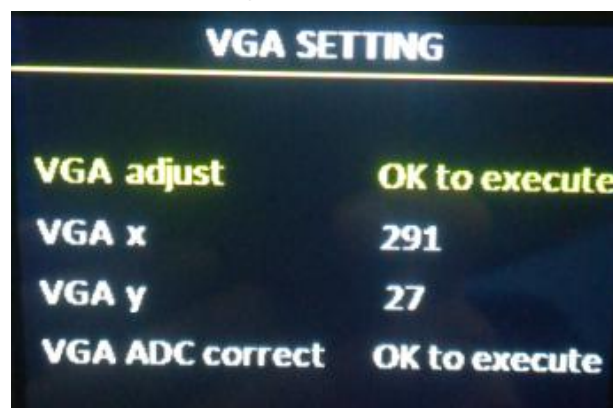
◆ **Input hot backup**

Choice Input hot backup in advance setting，then enter into Input hot backup interface：

When all the four images are open, different backup signal sources can be selected for each of the image. This ensures that when the input signal of a picture is unexpectedly lost, the system can automatically and quickly switch to the backup signal source.

◆ **VGA Setting**

Enter "advanced option"select VGA setting：

- X :Range0-300.
- Y ： Range0-300.

Note：

（1）Horizontal start and Vertical start actual adjustable range is determined by internal operation of the system.

2) Normally, when the VGA input image is offset, the position of the picture can be corrected by several times of automatic adjustment. If the automatic adjustment is invalid, manual adjustment of the "horizontal start" and "Vertical start" positions of the picture can be used.

(3) If use screen is dim while using VGA   input, and users can use ADC correction .Normally   It will be corrected before leaving the factory.

◆ **Timing switch**

Select timing switch in "Advanced option"：

Note：

(1) users must calibrate the system's internal clock before using the timing switching function.

(2) When the timing switch is on, users can set   five different timing and different user modes can be different(the user mode must be saved beforehand).

(3) If the time is 0, the timing switch is not valid.

◆ **Other setting**

There are three options in"other setting interface"：

- **Image rotation :**Rotate special image(mirror image) ,horizontal   mirror image、Vertical mirror

image and HV mirror image（horizontal Vertical mirror image at the same time）The horizontal image, Vertical image and HV image (i.e. horizontal and Vertical direction simultaneous image) can be processed by rotating the image of the specified screen..

- **Switch effect :** .It contains two special effects: "seamless cut" and "fade in fade out".

- **USB disk updating firmware :** Use usb disk with upgrade program into the USB interface of the back panel of the chassis, and upgrade the program according to the menu prompt of the upgrade of the U disk. At present, this function can only upgrade the DSP program rapidly. If you want to upgrade other parts (such as MCU, FPGA, etc.) at the same time, you must use PC upgrade software..

◆ Testing pattern
There are 8 test pattern : image1~image 8，Default value "Close".

◆ Button lock
Default value"Close"，When" button lock "is open ,all the buttons can't work expect【OK】button.

◆ Factory setting
Choice factory setting in advanced menu, then enter into this interface：

- **Language :** Provide two choices of "Chinese" and "English", the default language is Chinese.

- **Monitoring output :** 1024 x 768 @60Hz （default） or 1920 x 1080 @60Hz.

- **Factory reset :** Reset to factory default value.

- **ADC calibration:**Analog signal white balance correction,click [OK]button to correct the white

balance to

- input analog signal automatically(CV1,CV2 input signal source need to be calibrated individually fo

- **Firmware version：** used to query the current hardware and software version number, date of

production.

User mode

Save user mode

Press "SAVE" button load user mode menu：

.Select user mode and press the [OK] key to save it.

Note：

（1）(1) The solid circle indicates that the data of the current user mode already exists, and the hollow

circle indicates that the data of the current selected mode does not exist.

（2）The maximum user mode can be save is eight . Besides the size, position and state of each image,

the parameters includes brightness, contrast and so on.

Load user mode

Press "LOAD" button to load the user mode：

用户模式调用	
● 模式 1	画面 1：开启 HDMI1
○ 模式 2	1920 x 1080（0 , 0 ）
○ 模式 3	画面 2：开启 DVI1
○ 模式 4	1920 x 1080（0 , 1080）
○ 模式 5	画面 3：开启 DVI2
○ 模式 6	1600 x 1080（1920，0 ）
○ 模式 7	画面 4：开启 HDMI2
○ 模式 8	1600 x 1080（1920，1080）

Note：

（1）only the save user mode can be load；

（2）Users can use 1 to 8 number buttons to choice the user mode and also the LCD screen.

Fixed mode

Press "MODE" button to load the fixed mode stored in the equipment:

固定模式调用	
模式 1 模式 2 模式 3 模式 4	单画面
OK 确定 <— 返回	

固定模式调用	
模式 1 **模式 2** 模式 3 模式 4	双画面
OK 确定 <— 返回	

| 固定模式调用	
模式 1 模式 2 **模式 3** 模式 4	三画面
OK 确定 <— 返回	

固定模式调用	
模式 1 模式 2 模式 3 **模式 4**	四画面
OK 确定 <— 返回	

When the cursor is moved to the corresponding mode, press the OK key to change the fixed mode
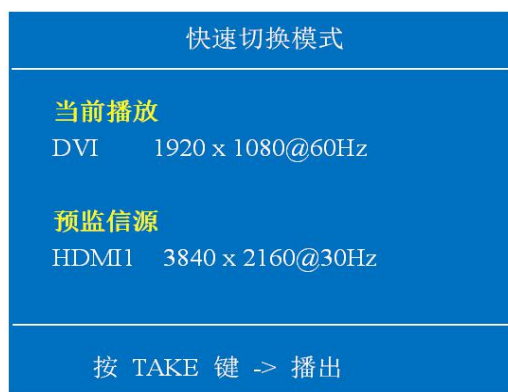
of the system.

Fast mode

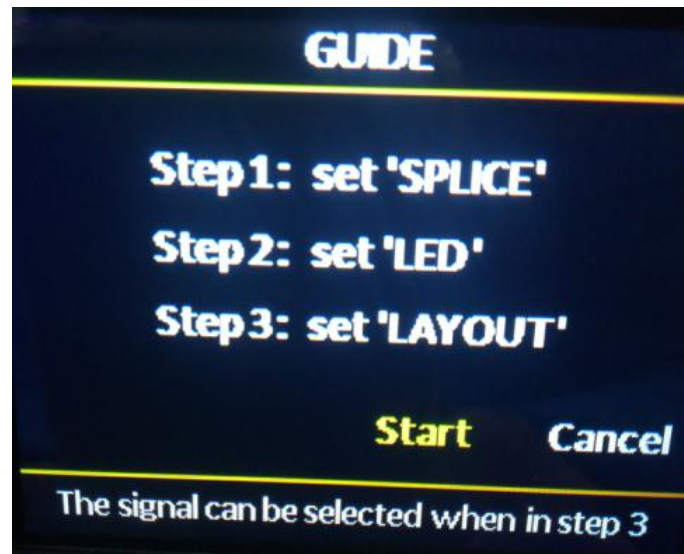Press "FAST MODE" button to open and close "ON/OFF" fast mode：

The "current play" corresponds to the display screen of the LED screen (screen 1). The "pre-monitor source" corresponds to the monitoring window in the lower right corner of the LCD monitor. The user can select the required signal source in the monitoring window. When the pre-monitor source is stable and confirmed to be correct, the pre-monitor source can be switched to the current instantly by pressing the "TAKE" key. Play window.

This function is especially suitable for small and medium stage performance occasions.

Guiding

Guiding the users to quickly use the machine,the following will show you the common functions of the video processor:Partly display ,mode save, mode cover,clear mode,switch mode,check saved mode parameter etc.

FAQ

The Video processor is a professional equipment, users should have professional knowledge when use some of functions. When users encounters problems, please try to adjust the machine yourself. If the steps listed below can't help, please contact local dealer or contact our after-sales service team directly. For your own safety, Please do not attempt to repair it by yourself.

Phenomenon	Check, adjust item details
No image on LCD and LED screen	● Check if the power line loose contact ● Check if the power switch is on
LCD show No image on the LED screen	● Check if connect and choice the right signal input ● Check if the screen support the machine output resolution and refresh rate. ● Check if the brightness and contract setting is too low ● Use the factory set in advance menu, to return the machine to factory setting
Image can't show fully	● Check if the led screen width and height setting the same as the screen physical pixels, enter into image output interface to set the parameter
VGA Input image Offset, not in the middle	● Press [VGA]button for three times，Automatically adjust the position and phase position of the input image（Please use full screen and no black edge signal source while doing this）
The image on the LED screen showing in the middle ,with black edge on the corner	● This Phenomenon usually happens when using computer's VGA、DVI、HDMI signal source, please check the graphics card setting of the computer, choice "keep the display zoom ratio " function
The buttons on the panel unresponsive	● Check if the button lock on the LCD screen is open（(Button lock open icon) ，if so enter advance setting menu to close it（ Button lock close icon ）.

Contact Us

Shanghai ONBON Technology Co.,ltd (Headquarters)
Address: 7 Floor, Tower 88, 1199#, North Qinzhou Road, Xuhui District, Shanghai City,
China
Tel Phone: 086-21-64955136
Fax: 086-21-64955136
Website: www.onbonbx.com

ONBON (Jiangsu) Optoelectronic Industrial Co.,LTD
Address: 1299#, Fuchun Jiang Road, Kunshan City, Jiangsu Province, China

Sales Contacts
Tel: 0086-15921814956 0086-15800379719
Email: onbon@onbonbx.com

Second Development
Tel: 0512-66589212
Email: dev@onbonbx.com

iLEDCloud
Website: http://www.iledcloud.com/

Public Wechat

ONBON APP