

# USER MANUAL

## ----OVP-M2X



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## **Instruction**

### **Safety notification**

There are high voltages in this product. Non-professional maintenance personnel are not allowed to open the case or repair the device by themselves 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 insert the power cord into the grounded socket before connecting the product input or output port. Protective grounding of the grounding conductor in the power cord is essential for safe operation. Before performing any hardware operations, please turn off the power of the LED video processor and discharge static electricity on your body by touching a grounded surface. When you want to connect or disconnect any signal cable or control cable, please make sure that all power cables have been unplugged in advance.

Please use it in a clean, dry and ventilated environment. Do not put this product in high temperature and humidity environments. This product is an electronic product, please keep away from fire, water and flammable and explosive dangerous goods. If you find unusual conditions such as strange noises, smoke or odors, you should immediately unplug the power cord and contact your dealer.

## **Functions**

## Description

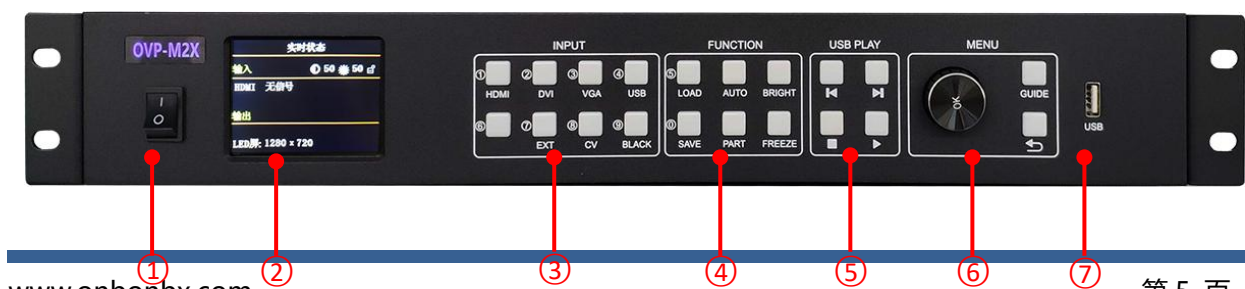
OVP-M2X is a video processing equipment developed for LED large screen, showing and rental, conference room, studio and other markets. This product adopts HD image processing technology which specially designed for small spacing LED display screen. It can realize point-to-point input and output for large HD resolution LED screen, so it can effectively eliminate the phenomenon of edge saw tooth caused by image amplification, and reduce the out-of-focus blur feeling of image after amplification.

## Features

- ◆ Maximum resolution is 2.6 million pixels, the horizontal maximum 3840 pixels, vertical maximum 2500 pixels;
- ◆ Cluster with 4 channels of Gigabit network output
- ◆ Fast seamless switch between all input signage and output mode
- ◆ With 5 channels HD digital and analog input interface;
- ◆ Support 2 channel digital input port DVI\HDMI 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, PC software, USB interface or WIFI(optional).

## Panel

### Front panel



Interface instruction	
1	Power switch
2	2.8" full color LCD panel (320×240)
3	Operation via LCD panel system
	<b>INPUT AREA</b> [DVII] ~ [USB] 8 buttons , 6 nos of input port button,mark:press "BLACK"then the LED indicate light is on ,then output the black screen status.
4	<b>FUNCTION AREA</b> There is 6 buttons here : [LOAD]: fast turn on the user mode [AUTO] : auto correct the VGA input image [BRIGHT]: fast switch the brightness menu [SAVE]: fast switch the user mode save menu [FREEZE]: image freeze [PART]: Switch between local display and full screen display。
5	<b>USB PLAY AREA</b> USB operation area: up,next ,stop ,play
6	<b>MENU AREA</b> 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
7	<b>USB PORT</b> USB insert port

### Back panel



Video input source	
EXT	Extend input port ,none is DVI, (HDMI/SDI/Screen cast is optional)

DVI	DVI port
HDMI	HDMI port
VGA	VGA port
CV	PAL\NTSC complex video signage input port

<b>Video output port</b>	
MONITOR	Synchronous multi-windows monitor DIV output port, connect with LCD display
LED1~LED4	Send via network cable to LED screen

<b>Audio input/output port</b>	
HDMI audio	HDMI video input port built-in
AUDIO_IN	Analog audio input port
AUDIO_OUT	Analog audio output port

<b>Control port</b>	
COM	USB input port
LAN	LAN port
WIFI	WIFI (optional)

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

## **Basic steps**

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

The first step: Set LED screen parameters (width, height, network port width and height and start) according to the size of the LED screen;

Step 2: Select the corresponding signal source according to the signal source required by the user;

Step 3: If necessary, make appropriate adjustments to the "display window";

Step 4: Select "Mode Save" or press the [SAVE] key to enter the "Mode Save" menu to save the current display mode for next recall

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

## **Menu**

### **Menu button operation**

The key operation area related to the menu is the MENU area, including 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 the return key is pressed, the menu system will return to the previous menu in order 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 the cursor is moved to the item to be adjusted, press the [OK] key to enter the corresponding setting sub-menu. At this time, turn the [knob] counterclockwise to decrease the current parameter value; turn the [knob] clockwise to increase the current parameter value. If



the adjustment is completed, short press [OK] to write the data and save it. To return to the previous menu, use the return key; until you return to the initial state. Press 【GUIDE】 key to quickly switch out the "smart 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.

### The initial state of the main interface

During the system start up, 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:



There are 3 areas:

**Input:** It shows selection info of input source, including input signal source format which is detected by system;

**Output:** Shows real LED screen size which is set by users;

**Top right corner:** Shows present contrast, brightness values and button lock status

### Main menu

This equipment adopts 2.8"LCD screen (320\*240), and adopts font 24\*24 which can display 10 rows. There are 6 parts on menu. If you are not in menu status, please click

【OK】 ,it will show:



**Main menu and branch menu:**

Main menu	The second and third menu
<b>Output setup</b>	Size of LED screen (total width and total height) LAN port output setting (LAN port LED1-LED2): horizontal width, vertical height, horizontal start, vertical start. Adjust display window(horizontal width, vertical height, horizontal start, vertical start)
<b>Image</b>	Brightness,contrast,saturation,sharpness,color temperature and dynamic contrast.
<b>Crop</b>	Switch, crop width, crop height, crop horizontal start, crop vertical start
<b>Save mode</b>	Mode 1-Mode 8
<b>Load mode</b>	Mode 1-Mode 8
<b>Option</b>	Input EDID (horizontal width,vertical width,refresh rate) Input hot spare (close, backup for input source) VGA setting (adjust automatically,horizontal start,vertical start) Planned tax(tax 1, tax 2...) Other setting(switch stunt, voice setting) Testing photo(close, photo 1 to photo 8) Button lock(open, close) Factory reset(ADC calibration,languages,factory reset,firmware version)

**Output setup**

OUTPUT SETTING		
LED SIZE	← Width	1280
IMAGE SIZE	Height	720
PIXEL to pixel	Refresh rate	60Hz
Max pixels: 3840(H), 2000(V) Image overlay display within the size of LED		

### 1. LED size

Click **【OK】** as to enter into main menu, then choose “LED setting”, as below:



After finish settings of LED size, system will be in reset status, users need to wait for a while here.

**Note:**

(1) After setting the "Accept Card Connection" of each network port of the LED screen through the PC control software, it will automatically calculate the size of the LED screen and update it to the controller synchronously. And the parameters of each network port);

(2) 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";

(3) The width and height of each network port must be consistent with 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, any splicing of the LED screen can be achieved (that is, each gigabit The network port can display any part of the screen or repeat it);

(4) Pay attention to the value range of the LED screen size and the total load points of the LED screen:

LED screen horizontal width  $\leq$  3840 LED screen vertical height  $\leq$  2500

LED screen horizontal width x LED screen vertical height  $\leq$  2621440 (when width > height)

LED screen horizontal width x LED screen vertical height  $\leq$  2610952 (when width < height)

## 2. LAN OUTPUT SETING

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



note:

(1) As mentioned above, when the "accept card connection" setting of each LED screen's network port is completed through the PC control software, the LED screen size and so on will be automatically calculated and updated to the controller synchronously, so generally no need to set the LED screen parameters Including the size of the LED screen and the parameters of each network port)

(2) When you need to "arbitrarily splice" or set for each network port, please pay attention to the value range and the number of loaded points of a single network port width and height

:Horizontal width: 256~3840

Vertical height: 128~2500

Horizontal width x vertical height  $\leq$  655360 (when width > height)

Horizontal width x vertical height  $\leq$  652738 (when width < height)

In addition, the horizontal width and vertical height of each network port must be consistent with the actual coverage of the receiving card carried by the network port

.(3) When the width and height of an output port in LED1-LED4 are 0, it means that the output port has no output.

### 3. Image size

Click ok then go to output setup ,then select the image size adjust:

OUTPUT SETTING		
LED SIZE ←	Width	1280
IMAGE SIZE	Height	720
PIXEL to pixel	Refresh rate	60Hz
Max pixels: 3840(H), 2000(V) Image overlay display within the size of LED		

Horizontal width: adjustment range 256 ~ the maximum number of points can be set in the horizontal direction.

Vertical height: Adjustable range 128 ~ The maximum number of points can be set in the vertical direction. Horizontal start: The minimum value is 0, and the maximum value is the maximum number of horizontal points minus the horizontal width.

Vertical start: The minimum value is 0, and the maximum value is the maximum number of vertical points minus the vertical height.

**Note:**

- (1) The start bit and size of the picture in the display window can be fine-tuned to better match the LED screen display;
- (2) The default screen size is the size of the LED screen. After the LED screen parameters are set, the general screen size will be determined accordingly
- (3) Regardless of whether the input image ratio is 4:3 or 16:9, the output image defaults to "full screen" display, so in some cases it will cause equal proportion distortion of characters, at this time you can change the image through "display window adjustment" Aspect ratio.

### 4. Pixel to pixel

In the non-menu state, click the [OK] button to enter the main menu, then select "Output Settings", and then select "Point-to-point output" to enter the point-to-point output menu. The default state of point-to-point output is off. When the point-to-point output is in the "on" state, the input signal is directly output to the output without any processing by the processor, that is, the output image and the input image are completely point-to-point.

note:

- (1) When the point-to-point output is in the "on" state, the controller outputs the input image to the large LED screen without any scaling at this time. Therefore, it is very convenient to debug the LED screen module (plot point display, etc.);
- (2) The point-to-point output is only valid in the range of 1920x1080;
- (3) When the input resolution is set to the same size as the LED through the "Advanced Options-Input Resolution" menu, the image can be displayed without any scaling, so

the best display effect can be achieved.

(4) When the point-to-point output is turned on, the image capture will be automatically turned off.

### Image quality

Click **【OK】** as to enter into main menu--"IMAGE QUALITY", as below:



- Brightness: adjust range 0-100, default is 50.
- Contrast: adjust range 0-100, default is 50.
- Saturation: adjust range 0-100, default is 50.
- Sharpness: adjust range 0-10, default is 5.
- Dynamic contrast: adjust range 0-4, default is 1. 0 means closed, it's invalid for inputting VGA signal source.
- Color temperature: "warm", "natural", "cold", "custom".
- Customized color temperature: adjusting range in RED 0-100 adjusting range in BLUE 0-100 adjusting range in GREEN 0-100

**Note:**You can also adjust brightness by "BRIGHT"button on board

### Crop menu

Click **【OK】** as to enter into main menu--"CROP", as below:



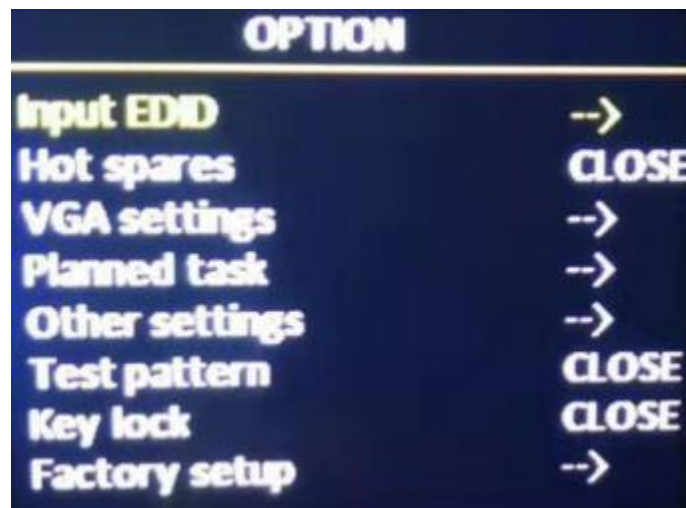
- Minimum is 128, maximum is "width of input signal".
- Minimum is 128, maximum is "height of input signal".
- Minimum is 0, maximum is "width of input signal"- "height of input signal".
- Minimum is 0, maximum is "height of input signal"- "width of input signal".

Note: (1) Crop is for input source, so crop width and height cannot bigger than the resolution of present cropped signal source.

(2) Users can select different input source by input source button on board

### Option

Click **【OK】** as to enter into main menu--"OPTION", as below:



#### 1. Input EDID

It offers EDID editing function of DVI/HDMI input signal source, means, the recommended resolution of input signal source. In WIN7 system, when the "input EDID (recommended)" is modified which is read by PC, the output resolution of PC will be modified too; But for WIN10 system, output resolution of PC won't be changed, users need to operate manually.

By “INPUT EDID”, users can get good resolution effect in the range of 4K\*2K. As below:



Width: adjust range 640-1920

Height: adjust range 480-2500

Refresh rate: adjust range 60 or 30

Note:

(1) The real adjust range is limited by port type and input bandwidth, for this equipment, it can reach to the highest input EDID, cause input source HDMI adopts HDMI 1.4. So, it can reach:1920\*1080@60Hz.

(2) In 1920\*1080@60Hz, input refresh rate should be 30Hz.

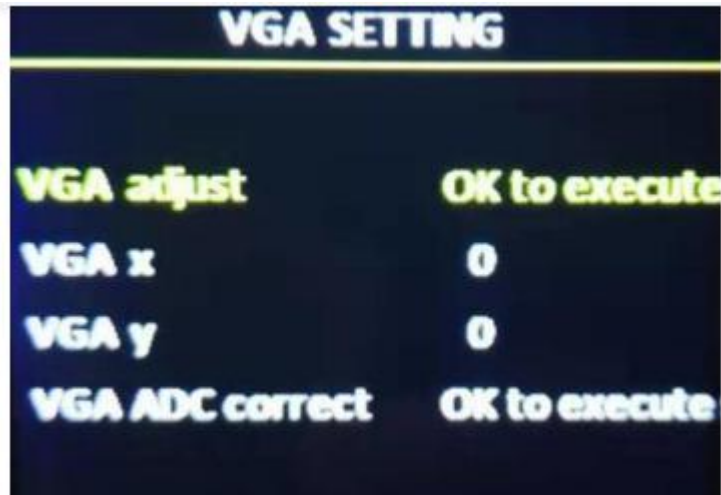
### 1. USB setup

- Play file type: video or picture
- Playing format: sequence or single
- Playing time (seconds): 1 ~ 99For details, please refer to the following U disk playback instructions.

### 2. VGA setup

Select “VGA SETTING”,as below:





- VGA X: adjust range 0-300.
- VGA Y: adjust range 0-300.

**Note:**

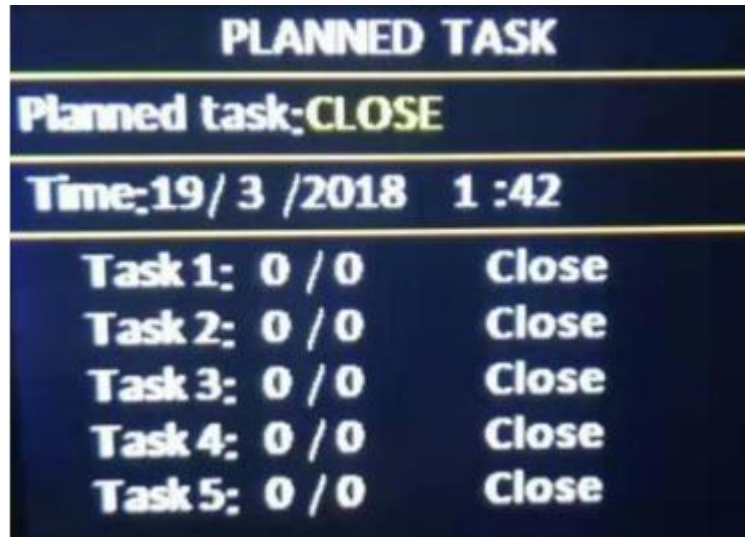
(1) Adjust range of VGA X and VGA Y is decided by system.

(2) When there's excursion of VGA input signal in display, users can click "Auto adjust" as to display correctly. And if "Auto adjust" is invalid, users can adjust "VGA horizontal start" and "VGA vertical start" manually.

(3) If the screen of GA input signal source is a little darker, users can adjust by "VGA ADC" or "DV ADC"

**3. Planned task**

PLANNED TASK Choose "PLANNED TASK" in "OPTION"



**Note:**

(1) The user must first calibrate the internal clock of the system before using the timing switch function. The 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 at 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.

**4. Other setting**

There are four adjustment items in "Other Settings":

**Switching special effects:** including "seamless fast cut" and "fade in and fade out" two special effects. **Sound settings:** including audio switch and volume settings.

**Input hot backup:** You can choose different backup signal sources, so as to ensure that when a certain screen input signal is accidentally lost, the system can automatically switch to the backup signal source quickly.

**Projection device:** Use electronic devices that support Android system or Apple system for projection display.

**5. Test diagram**

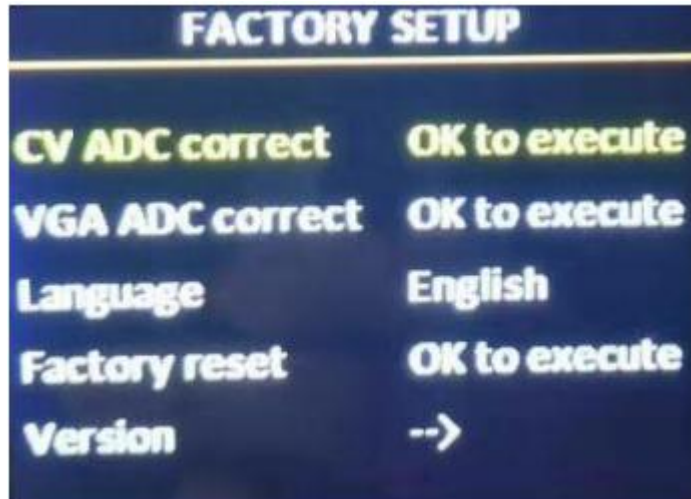
It can provide 8 kinds of test images in the system: Figure 1~Figure 8, the default is "off"

**6. Lock key**

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

**7. Factory setup**

Choose "FACTORY SETUP" in "OPTION" , as below:

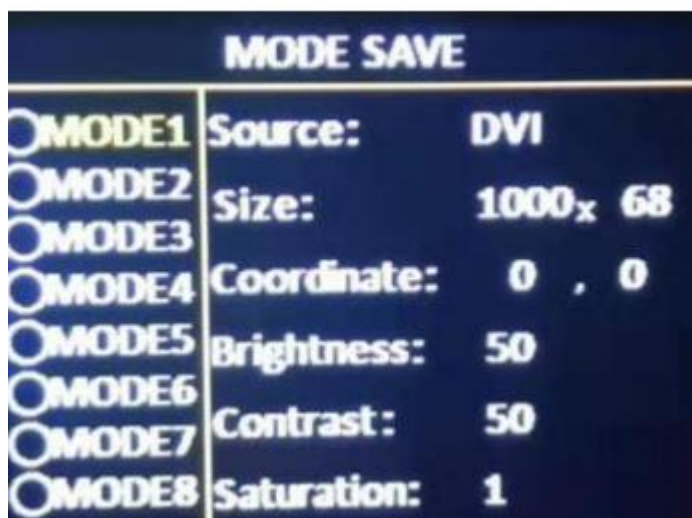


- ADC correct: Usually, "VGA\CV correct" was done before selling in our factory.
- Language: " Chinese" and "English" , default is Chinese.
- Factory reset: Reset to default value.
- Firmware version: Check present hardware version, factory date.

### USER SAVE AND LOAD MODE

#### User save mode

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

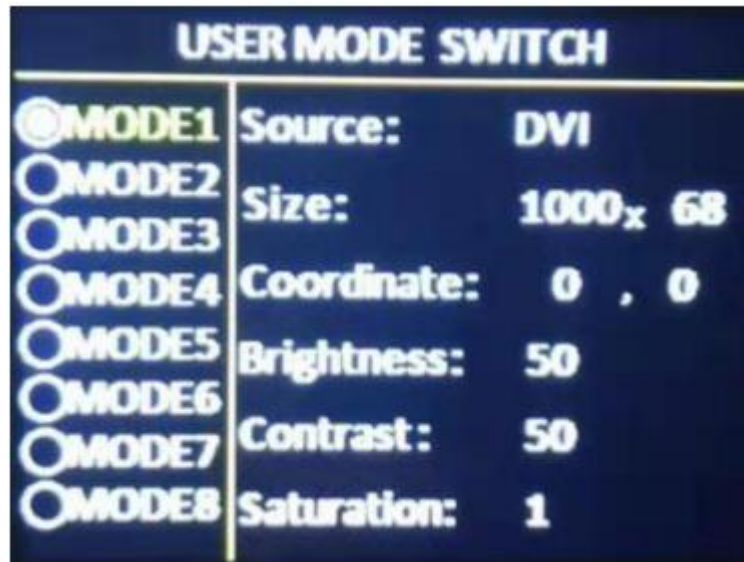
data already exists, and the open circle indicates that the currently selected mode data does not exist.

(3) Up to 8 user modes can be saved. In addition to the size, position and status of the screen, the parameters saved in the user mode also include brightness and contrast

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

### User mode switch

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



**note:**

**(1) Only user modes that have been previously saved can be called;**

**2) For the saved user mode, you can also directly press the numeric keys 1~8 to call it directly.**

### USB display

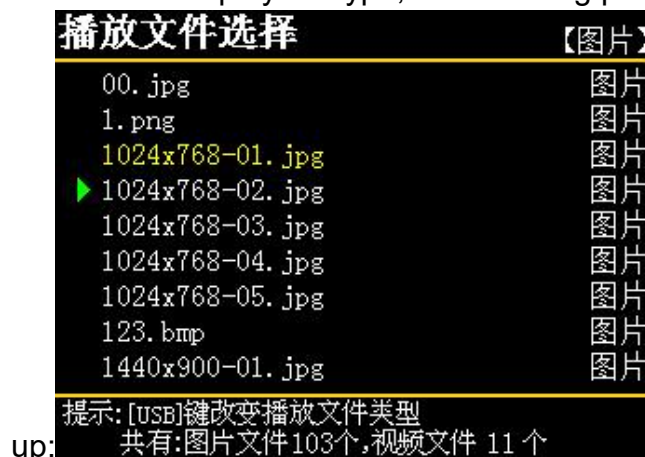
First, insert the U disk with the playback content (video or picture) into the front panel USB interface, then press the front panel input key "USB" to switch to the U disk playback interface. At this time, the system will use the previous memory (or default settings Fixed) for automatic playback, and the following U disk playback interface pops up



During playback, when the USB key is pressed again, a menu for selecting the file type for playback will pop up:



According to the selected play file type, the following play file list will pop



When the cursor is selected by the panel knob to move to the playback file (or playback start file), then press [OK] to re-enter the U-disk playback interface.

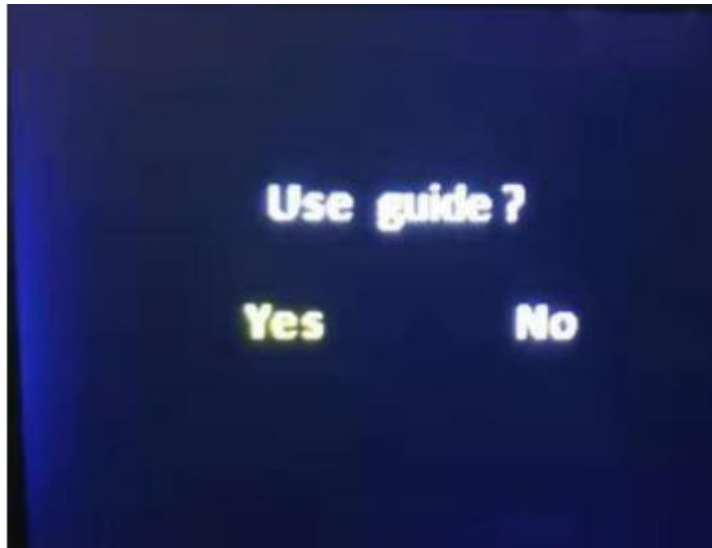
**note:**

- (1) The content of the U disk must be stored in the root directory of the U disk. If you want to sort the playback files, you can rename the file, add the Arabic numerals 1, 2, 3, ... in front of the original file name;
- (2) The video file format supported by this system: HEVC(H.265), MPEG2, GAAC, Miracast, MPEG2, MPEG4\_HD, MPEG4, RM, MVC, VP9, DD, MPEG4\_SD, H.264, VC1, VP8, FLV Supported image file formats: JPG, BMP, PNG
- (3) All the supported files copied in the U disk will be displayed when viewing the file list. If it cannot be displayed, it indicates that the file is not supported for playback.

**Intelligent guiding**

It's for the users who use it at the first time. And set for LED screen by 3 steps. It's

very simple, convenient and useful. Press “【GUIDE】”, as below: :





Users only need to choose “Yes”, and follow the steps.

As long as the user selects "Yes" to confirm and follow the prompts on the panel step by step, the initial commissioning of the system can be completed.

## **FAQ**

This is a professional equipment, users should be professional on it. When you meet some problems, please try to check with below info. And if you still cannot solve, please contact with local agent or contact with us directly.

<b>Problem</b>	<b>solutions</b>
There's no display or image output in LCD screen.	<ul style="list-style-type: none"><li>● Please check power supply cable.</li><li>● Please check ON/OFF button of power supply.</li></ul>

<p>There's display on LCD screen, but do not have image output.</p>	<ul style="list-style-type: none"> <li>● Please check that it is connecting input signal and already switch to the relative signal source.</li> <li>● Please check that the display terminal supports output resolution and refresh rate of this equipment.</li> <li>● Please check the settings of brightness and contrast.</li> <li>● Please try to reset this equipment, factory reset.</li> </ul>
<p>Image cannot show on full LED display.</p>	<ul style="list-style-type: none"> <li>● Please check LED screen width and height value is the same with LED screen resolution or not. Users can set LED screen parameters on "IMAGE OUTPUT" in menu.</li> </ul>
<p>VGA input image is not in middle.</p>	<ul style="list-style-type: none"> <li>● Continuously press "AUTO" button on board until it shows correctly. (When you do auto adjust, please use full screen without black frame signal)</li> </ul>
<p>Image is in middle, but there's black frame.</p>	<ul style="list-style-type: none"> <li>● This problem occurs because you use VGA, DVI, HDMI port which are outputted from PC video card.</li> </ul>
<p>No response for buttons on board.</p>	<ul style="list-style-type: none"> <li>● Please check the button lock is open or not (  ). Press rotate button as to enter into main menu, close  in "OPTION".</li> </ul>

**Technical parameters**

Image input port	
VGA×1	VESA standard: UXGA@60Hz or lower can compatible
HDMI×1	VESA standard, HDMI 1.4
DVI×1	VESA standard, compatible with HDMI 1.4

EXT×1	Extend input port (DVI or SDI/ wireless screen cast is optional)
CV×1	Support PAL \ NTSC complex video
USB×1	USB2.0, support 1080p@30fps or 720p@60fps USB display USB support format: Video format: HEVC(H.265)、MPEG2_HD、GAAC、Miracast、MPEG2、MPEG4_HD、MPEG4、RM、MVC、VP9、DD、MPEG4_SD、H.264、VC1、VP8、FLV Picture format: JPG、BMP、PNG

<b>Image output port</b>	
NET×4	Send program via Network cable to LED screen Each port control max 650000 pixels @60Hz Horizontal: W≤3840, H≤2500, Total pixel≤2.6million pixels Support 2K or smaller point to point splicing

<b>Audio input/output port</b>	
Audio input ×1	3.5mm audio port
audio output×1	3.5mm audio port

<b>Complete parameters</b>	
<b>Input voltage</b>	100-240V~50/60Hz
<b>Power</b>	≤50W
<b>Working temp</b>	-10℃~45℃
<b>Environmental humidity</b>	15%~85%
<b>Operation</b>	LCD panel button、LAN、USB、wifi、PC software,APP
<b>Dimension</b>	482.6mm×230mm×66.6mm
<b>Case</b>	1.5U case
<b>Weight</b>	≤3Kg



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ONBON APP