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## I. Safety Precautions

### **Danger!**

There is high voltage in the processor, to prevent any unexpected hazard, unless you are maintenance, please do not open the cover of the device.

### **Warning!**

1. This device shall not encounter water sprinkle or splash, please do not place anything containing water on this device.
2. To prevent fire, keep this device far from any fire source.
3. If this device gives out any strange noise, smoke or smell, please immediately unplug the power cord from receptacle, and contact local dealer.
4. **Please do not plug or unplug DVI signal cable if the device is powered on.**

### **Caution!**

1. Please thoroughly read this manual before using this device, and keep it well for future reference.
2. In the event of lighting or when you are not going to use the device for a long time, please pull the power plug out of receptacle.
3. Nobody other than professional technicians can operate the device, unless they have been appropriately trained or under guidance of technicians.
4. To prevent equipment damage or electric shock, please don't fill in anything in the vent of the device.
5. Do not place the device near any water source or anywhere damp.
6. Do not place the device near any radiator or anywhere under high temperature.
7. To prevent rupture or damage of power cords, please handle and keep them properly.
8. Please immediately unplug power cord and have the device repaired, when
  - 1) Liquid splashes to the device.
  - 2) The device is dropped down or cabinet is damaged.
  - 3) Obvious malpractice is found or performance degrades.

## II. Packing list

Please unpack the product with care, then check whether all the following things are included in the package. If anything is found missing, please contact the dealer.

### Standard accessories

The accessories supplied with this LED Video Processor may differ from the figures contained in the User's Manual, but they are applicable for the regions where you live. (LED transmitting card is optional)

User's Manual



Power cord (1.5m)1pcs



DVI cable (1.5m), 1pcs



RS232 cable (1.5m),1 pcs



User manual CD



BNC-RCA adapter: 2 pcs



DVI-I to VGA adapter , 2pcs



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### III. Connections of hardware

#### 1. Rear view

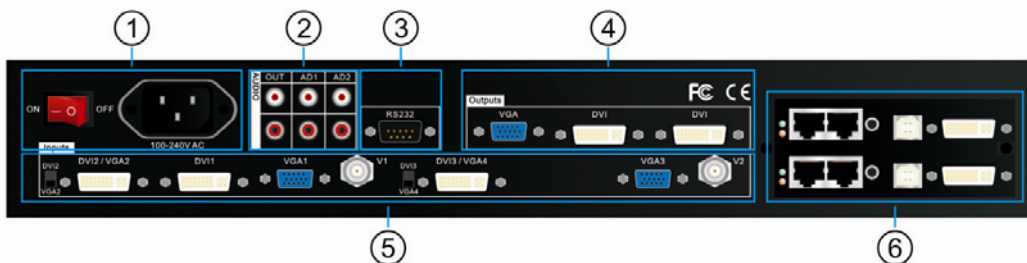


Figure 1

- ① AC power jack & on/off key
- ② Audio input and output ports
- ③ RS232 input ports
- ④ VGA/DVI output ports
- ⑤ Signal input ports
- ⑥ LED sending cards inside (optional)

#### 2. Port description

##### 1) Video Input

LVP606A supports 7-channel signal input, including:

Port name	Description
<b>V1~V2</b>	2-channel PAL/NTSC composite video input
<b>VGA1~VGA4</b>	4-channel computer analog signal input
<b>DVI1</b>	1-channel computer DVI or HDMI digital HD signal input
<b>DVI2/VGA3 , DVI3/VGA4</b>	2-channel VGA, DVI or HDMI digital HD signal input

##### 2) Audio Input

LVP606A supports 3-channel stereo audio switch. among which, 1 channel is DVI/HDMI audio, the other 2 channels are AD1, AD2 external input audio. AD1 and AD2 can be mapped to anyone of the video inputs, and will be switched synchronous to the audio of corresponding video input signals.

##### 3) Video Output

Port	Description
------	-------------

<b>VGA OUT</b>	1-channel analog RGBHV signal output, it can be connected to a local display device and used as monitor (it is strongly recommended to use this port when operating and setting <b>LVP606A</b> ).
<b>DVI OUT1 / DVI OUT2</b>	2 same DVI digital graphic signal output, it can be connected with external LED transmission card or LED transmission box

#### 4) Audio Output (AUDIO OUT)

Corresponds to the selected video input signal, output this channel audio input signals.

#### 5) Signals of other ports

RS232 serial communication port

### 3. Connection diagram

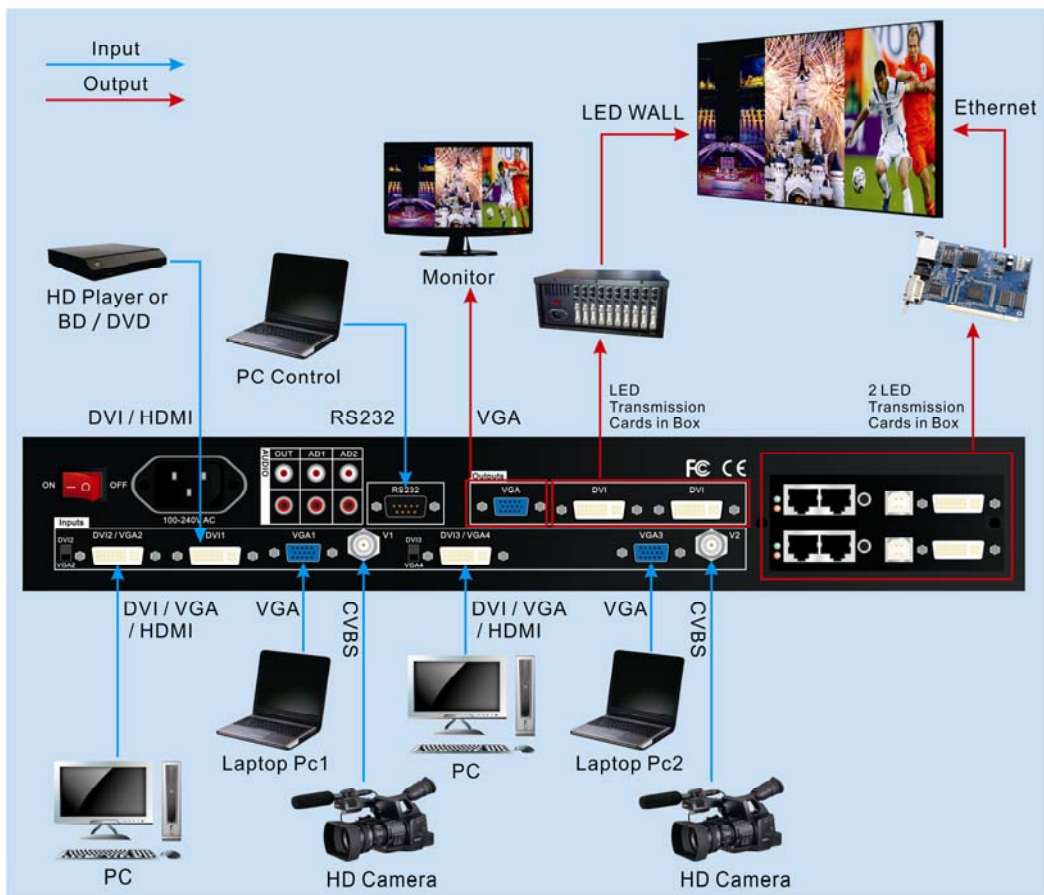


Figure 2

## IV. Frontal panel operations

### 1. Diagram of frontal panel

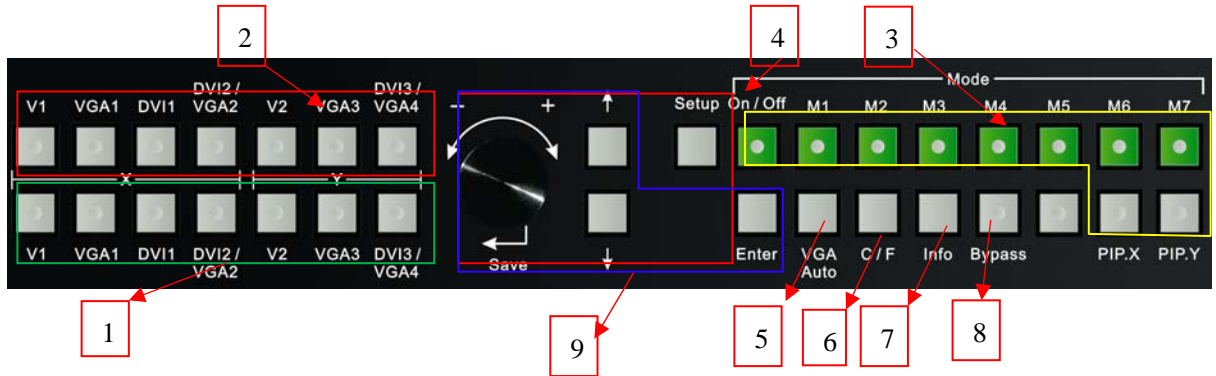


Figure 3

- 1) Input preselecting button (**Preselect**):  
While in non-**PIP** mode, the buttons are used to preselect the input signals, so as to display the status of current signal and preselected signal.  
While in **PIP** mode, the buttons are used for selecting PIP input signals.
- 2) Input switching button (**Take**):  
While in non-**PIP** mode, those buttons are used to select input signals.
- 3) PIP Setup buttons(**knob**,  $\uparrow$ ,  $\downarrow$ , **PIP.X**,**PIP.Y**):  
**Knob**,  $\uparrow$ ,  $\downarrow$  : to change the location of the output window of input signals  
**PIP.X**: to turn ON/OFF PIP function. When the indicator is ON, user can press PreSelect buttons to select group X signals as PIP.  
**PIP.Y**: to turn ON/OFF PIP function. When the indicator is ON, user can press PreSelect buttons to select group Y signals as PIP.
- 4) Setup buttons(**Setup**, **knob**,  $\uparrow$ ,  $\downarrow$ )  
To set the image output parameters of the processor.
- 5) VGA auto adjustment(**VGA Auto**)  
To autoadjust VGA input signals.
- 6) Cut / Fade switching buttons: (**C/F**)  
To select signal switching effects, and to display current status. The **Fade** button can be used to set the switching time of fading in and fading out
- 7) **Info**:  
It is used to display current settings and information of processor.
- 8) PC signal bypass output(**Bypass**)  
It is used to switch full screen/partial screen display of PC signals, and the current input signal status of indicators.
- 9) Shortcut buttons (**on/off**, **M1~M7**, **Enter**, **Save**):  
**on/off key** is applied to start/close user mode shortcut function.

Indicator lights display the condition of the mode. And other buttons are used for mode setting or switching.

## 2. Button instructions (operation mode):

There are 32 buttons on the frontal panel of LVP606A, all these buttons will be operable after start. they have the following functions as described below:

### 1) Select input video source

Port name	Description
<b>V1~V2</b>	2-channel PAL/NTSC composite video input
<b>VGA1,VGA3</b>	2-channel computer analog signal input
<b>DVI1</b>	1-channel computer DVI or HDMI digital HD signal input
<b>DVI2/VGA2 , DVI3/VGA4</b>	2-channel computer VGA,DVI or HDMI signal input

Input selecting buttons include **Preselect** buttons and **Take** buttons.

**Preselect** buttons can be used to Preselect input signals, besides, it can also be used to display the status of current input signals and preselected signal. If there is no valid signal input, the indicator will blink; if the input signal is valid, the indicator will illuminate.

When the preselected signal is confirmed valid, user can select the signal by pressing corresponding **Take** button.

Notes: For the DVI-I input ports, DVI3/VGA4&DVI2/VGA2, we need choose input signal by hand swithing to current signals. Switching to "VGA", the current input signal is VGA. Switching to "DVI", the current input signal is DVI or HDMI.

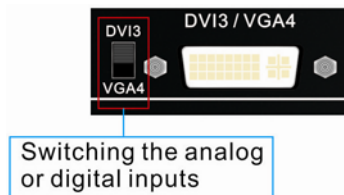


Figure 4

### 2) VGA input auto adjustment (VGA Auto)

When the current VGA input source of **LVP606A** is a valid signal, press this button, **LVP606A** will automatically adjust the sampling parameters of the VGA signals, so as to make VGA picture clean and complete.



In general, this operation is made only when new VGA signal source is to be connected in. Sometimes user need repetitively do such adjustment till VGA picture looks clean, complete and stable.

### **3) Information display (Info)**

Press this button to view current settings and information of **LVP606A**, it consists of 46 items. If you press “**Info**” again before **LVP606A** exit information display, **LVP606A** will continue to display the next item of information.

### **4) Select Cut / Fade mode(C/F)**

**LVP606A** provide two special signal switching effects between any two input signals, i.e.: **Cut** (seamlessly switching) and **Fade** (fading in fading out).

**Cut** (seamlessly switching): while in this mode, the system can seamlessly switch between different signals. It is also the default mode of **LVP606A** after startup.

**Fade** (fading in fading out): while in this mode, the system can realize fading in fading out switching effect between different signals. Users can set the switching time of fading in and fading out though this button. The time can be 0.5 seconds, 1.0 second or 1.5 seconds.

### **5) PIP / POP ( PIP.X, PIP.Y)**

PIP mode of **LVP606A** allows user to insert a PIP window in current picture, and the size and location of the PIP window can be changed freely. The signals to be displayed in PIP window can be any signals other than current input signals. Here we call current picture “background”, and call the picture to be overlaid “PIP”. Due to the limits of hardware architecture, PIP function is subject to the following restrictions.

1. Group X signals allows for overlaying any signals other than current input signals.
2. Group Y signals only allows for overlaying any signal of Group Y other than current input signals.

#### **Operating procedures:**

**Enter PIP display mode:** Press PIP.X button or PIP.Y button, their indicators will illuminate, **LVP606A** will enter PIP display mode, then use Preselect button to select PIP input signals, in the meantime, signals of background and PIP and their locations will

appear in LCD (see Figure below):

Source	Win
Main=DVI	2→3!
PIP. X=V1	3→6
PIP. Y=VGA3	3→7

Figure 5

**Change PIP:** While in PIP mode, use **Preselect** button to select proper input signals, the preselected signals will be set as PIP and displayed in preset location

**Change the Main picture:** you must first turn off PIP mode. Press buttons to select appropriate input signal as main picture, then enter PIP mode again, and select a new PIP picture.

**Change location of PIP:** LVP606A allows for presetting 9 PIP sizes and locations (namely 9 windows), including the locations of the output window for the LED display and 8 PIP windows. While in PIP mode, main picture signals, PIP.X and PIP.Y all can be changed to any location. Operating procedures: make the signals mapped to a certain area of windows by setting the windows, so as to switch the location of windows, then press knob to validate the settings.

**Caution:** While in PIP mode, the window layers from the bottom to the top will be main picture, PIP.X, PIP.Y in turn. When you change the size and location of PIP, please avoid the bottom picture being overlapped by top picture.

## 6) Part / Full( Bypass)

Press this button to switch between Part / Full display mode.

This function is only available when the current input signal is PC (**VGA / DVI / HDMI**) signal, while other signals can only be displayed in the Full display mode.

Mode	Description
<b>Full</b>	Full screen display. Entire picture is compressed to display on LED screen, this moment the indicator above the button is OFF.
<b>Part</b>	Part screen display. The picture will not be compressed, but partly exported to entire LED screen, this moment the indicator above the button is ON.

**Caution:** when the width and height of current input signals are less than the width or height of LED display (say the out\_Hori\_width or out\_Vert\_height), Part mode will not work.

## **7) Shortcut mode(Mode)**

LVP606A can set seven custom modes. Each mode can save one current settings, including PIP conditions, output signals and corresponding window place.

**On/off** button is applied to start/close user mode shortcut function. In Start condition (light on), press mode buttons(**M1~M7**) to adjust mode directly. Otherwise, mode can be adjusted pressing **Enter** button before the presentation (like"mode 1") on the panel disappearing.

**Mode Save:** when on/off indicator light was out, Press mode button (**M1~M7**). And then press **knob** button ("Save") before the presentation (like"mode 1") disappearing. The current PIP condition, output signals and corresponding window place are saved under this mode.

## **V. Setup**

**The following settings must be made by relevant qualified technicians. For ordinary users, unless they have received adequate technical training, they shouldn't attempt to make the following settings!**

There are 48 items in 5 categories available for you to set in **LVP606A**. Technicians can set these items as necessary, for details see the table below:

Category		Items		
1	Language	1	<b>Language</b> 语言	
2	Selection Output Image Setup	LED display setup	2	<b>Out Format</b>
			3	<b>Out_Hori_Width</b>
			4	<b>Out_Vert_Start</b>
			5	<b>Out_Vert_Height</b>
			6	<b>Out_Vert_Start</b>
			Window 2 setup	7
		8		<b>Win2_Hori_Start</b>
		9		<b>Win2_Vert_Height</b>
		10		<b>Win2_Vert_Start</b>
		Window 3 setup	11	<b>Win3_Hori_Width</b>
			12	<b>Win3_Hori_Start</b>
			13	<b>Win3_Vert_Height</b>
			14	<b>Win3_Vert_Start</b>
		⋮	⋮	⋮
Window 9 setup	35	<b>Win9_Hori_Width</b>		
	36	<b>Win9_Hori_Start</b>		
	37	<b>Win9_Vert_Height</b>		
	38	<b>Win9_Vert_Start</b>		
3	Brightness / Contrast / Saturation / Definition	39	<b>Brightness</b>	
		40	<b>Contrast</b>	
		41	<b>Saturation</b>	
		42	<b>Definition</b>	
4	Audio Configuration	43	<b>Audio1 Config</b>	
		44	<b>Audio2 Config</b>	
		45	<b>Exit</b>	
5	Factory district Setup	46	<b>De interlace</b>	
		47	<b>ADC Calibration</b>	
		48	<b>Device init</b>	

## 1. Enter Setup of LVP606A

While in operation mode, continuously press “Setup” for 8 times, “**Password: 8 Enter Setup ...**” will appear in LCD, **LVP606A** will enter No.1 setup item.

After **LVP606A** enters setup mode, the 3 buttons and the knob on

frontal panel will have the functions as listed in table below:

Name		Functions
<b>Knob</b>	Speed of knob	The step value in proportion to the speed of knob
	Turn it anticlockwise	Decrease value or select previous value
	Turn it clockwise	Increase value or select next value
	Press it	Save the adjustment or selected values
↑		Move to previous item
↓		Move to next item
<b>Setup</b>		Enter or exit setup mode

After **LVP606A** enters setting mode, the relevant setting information will be displayed in LCD as per the layout shown in the figure below:

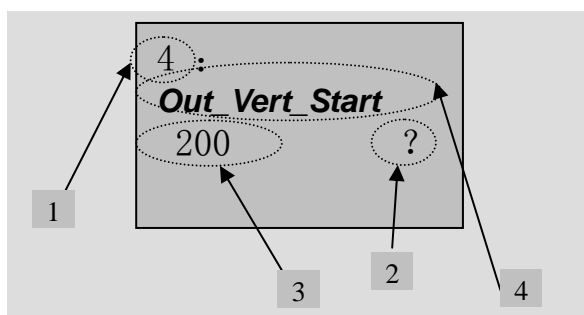


Figure 6

As shown in above figure, LCD consists of five sectors:

Sector	Description
1	The No. of current setting item
2	? : ask you whether to save the adjustment; ! : The adjustment already be saved and takes effect.
3	Newly adjusted value
4	Name of current setting item

## 2. Select language

Item 1: “**Language** 语言 ”

After entering setting mode, **LVP606A** will enter the first setting

item “**Language 语言**”. **LVP606A** supports Chinese and English display, turn the knob to select either of them, then press the knob to save it and make it valid.

### **3. Output image setup**

**LVP606A** outputs images from DVI and VGA output ports. There are 9 output formats as listed in the table below. User can enter the No.2 setting item “**Out Format**” to select one of them.

	Format
1	1024×768_60
2	1024×768_75
3	1280×1024_60
4	1280×1024_75
5	1600×1200_60
6	1920×1080_50
7	1920×1080_60
8	1366×768_60
9	1440×900_60

#### Item 2: “**Output Format**”

In this item, turn the knob to select either of them, then press the knob to save it and make it valid.

For example, if you select “**1280×1024\_60**”, it means that the output definition of **LVP606A** has been set as 1280×1024, and vertical refresh rate is 60Hz.

Please select the output definition equal to or greater than the actual definition of LED screen.

#### Items3~38: “**Output image setup**”

**LVP606A** allows for setting 9 output image windows:

- ◆ The output window for the LED display (Item 3~6)
- ◆ 3 PIP windows (Windows 2~4, the setup items are 7~38)

The output window for the LED display exactly maps to LED screen, so LED display can display a complete picture, for details see the diagram below (take 1920x1080 60Hz for instance):

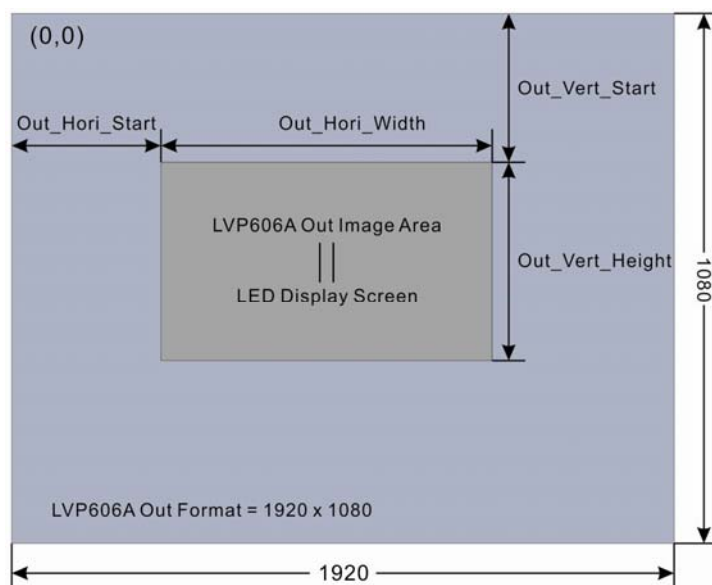


Figure 7

As above figure shows: the size and location of the images in **LVP606A** output window for the LED display are defined by the following 4 groups of parameters:

Item No.	Parameters	Description
2	<b><i>Out_Width</i></b>	Output width
3	<b><i>Out_Hori_Start</i></b>	Output horizontal start
4	<b><i>Out_Height</i></b>	Output height
5	<b><i>Out_Vert_Start</i></b>	Output vertical start

The window of PIP should be located within LED, see figure below:

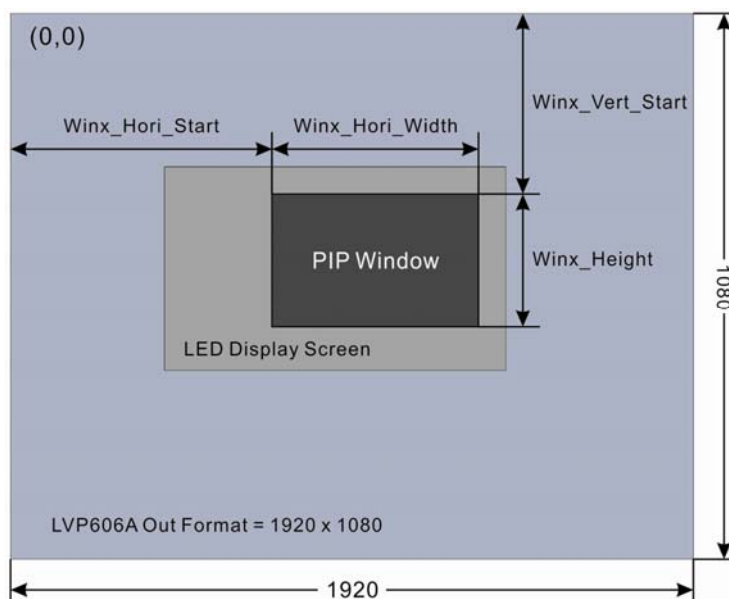


Figure 8

As above figure shows: the size and location of the images of **LVP606A PIP** window are defined by the following 4 groups of parameters:

Parameters	Definition
<b>Winx_Width</b>	Window x width
<b>Winx_Hori_Start</b>	Window x horizontal start
<b>Winx_Height</b>	Window x height
<b>Winx_Vert_Start</b>	Window x vertical start

x=2,3,4,5,6,7,8,9

In the adjustment, in order to distinguish windows 2~9, they are marked in different color respectively.

**Note:** The initial coordinates (0, 0) of output image are defined on the left top of the output scope of 1920×1080 pixels output area.

#### **4. Brightness / Contrast / Saturation/ Definition**

**LVP606A** supports customized brightness, contrast, color Saturation and definition settings. For details see table below:

Item No.	Description	Definition
39	<b>Brightness</b>	Range: 0~100, default value: 50
40	<b>Contrast</b>	Range: 0~100, default value: 50
41	<b>Saturation</b>	Range: 0~100, default value: 50
42	<b>Definition</b>	Option is "Sharp" or "Normal", default value: Normal

Caution: (1). In order to ensure output images in complete gray, the output parameters are usually set as default values !

(2). The color parameters only apply to V1, V2 and HDMI signals.

#### **5. Audio configurations**

**LVP606A** supports 3-channel dual-track audio switching. In the three channels, 1 channel is HDMI, the other 2 channels are AD1, AD2 external input audio. AD1 and AD2 can be respectively allocated to corresponding audio input of any input, and will be switched with the change of video input signals in synchrony.

If **DVI1** is configured as external input audio, when audio signal is switched to **DVI1**, external audio will be chosen as input signals,



otherwise the audio signals contained in **DVI1** signals (only for HDMI input) will be chosen as input signals.

Item No.	Description	Definition
43	<b>Audio1 Config</b>	<b>Audio configuration option for AD1 port</b>
44	<b>Audio2 Config</b>	<b>Audio configuration option for AD2 port</b>

**Notes: AD1, AD2 can't be allocated to the video input signals in the same channel!**

## 6. Exit setup

### Item 45: "**Exit**"

Press "↑" to move to the last item: "**Exit setup**", then turn the knob to select "**YES**", then press knob to exit setup mode.

If you press "**Setup**" key while in any setup mode, the system will skip to the No.45 item.

## 7. Factory district setup

The following are factory district setups, users are recommended to make these setups under the guidance of manufacturer's technicians, any improper setting or operation may result in abnormal happening to the processor.

### Item 46: "**De interlace**"

When HDMI signal is interlace input signal (e.g.: 1080i) and used as PIP, due to limits of the processor, tremble may take place, it can be dispelled by setting the option "**De interlace**". Operating procedures:

After entering item No.45, press "**Preselect V1**" for 5 times to move to Item No.46: "**De interlace**", turn the knob to select "Yes", then press the knob ("**Save**") to reset the factory settings, the moment the system will remind you "**please restart.**", just follow the instruction.

### Item 47: "**ADC Calibration**"

After inputting the analog signal to the video processor whose white balance has not been calibrated, the picture on the display may appear

some bad phenomena, such as color cast, extreme-darkness. **LVP606A** can solve the above problems by automatically calibrating white balance based on the input analog signals (**CVBS, VGA**).  
Operating procedures:

Switch to the corresponding analog input signal, enter Item No. 47 after the processor detects input signals and exports the signals to the display, press the knob to calibrate white balance.

**Caution: The white balance of all video processors has been calibrated using standard signals in the factory, please don't set this item unless necessary!**

Item 48: **“Device Init”**

After entering item No.45, press **“Preselect V1”** for 5 times, then press **“↑”** to move to Item No.48: **“Device Init”**, turn the knob to select **“Yes”**, then press the knob (**“Save”**) to reset the factory settings, the moment the system will remind you **“Please restart.”**, just follow the instruction.

## VI. Specifications

Inputs	
Nums/Type	2×Composite video 2×VGA (RGBHV) 1×DVI / HDMI <b>2×DVI-I(VGA/DVI/HDMI)</b>
Video System	PAL/NTSC
Composite Video Scope/Impedance	1V (p_p) / 75 Ω
VGA Format	PC (VESA)   ≤1600x1200 @60HZ
VGA Scope/Impedance	R, G, B = 0.7 V (p_p) / 75Ω
DVI / HDMI Format ( HDCP )	SD/HD(EIA-861B)   ≤1920x1080P @60HZ
	PC(VESA)   ≤1600x1200 @60HZ
Input Connectors	VGA: 15pin D_Sub(Female) DVI: 24+1 DVI_D <b>DVI-I: 24+5 DVI_I</b> Composite video: BNC
Outputs	
Nums/Type	2×DVI 1×VGA (RGBHV)

DVI Format	1024×768@60Hz/75Hz 1280×1024@60Hz/75Hz 1600×1200@60Hz 1920×1080p@50Hz/60Hz 1366×768@60Hz 1440×900@60Hz
Output Connectors	VGA OUT: 15pin D_Sub(Female) DVI OUT:24+1 DVI_D
<b>Others</b>	
Control	Panel Button,RS232
Power	100-240VAC 60W 50/60Hz
Operating Temp	5-40 °C
Humidity	15-85%
dimensions	158 mm (height) × 370mm (width) × 535mm (length)
Weight	4.2 Kg

**Dimensions:**

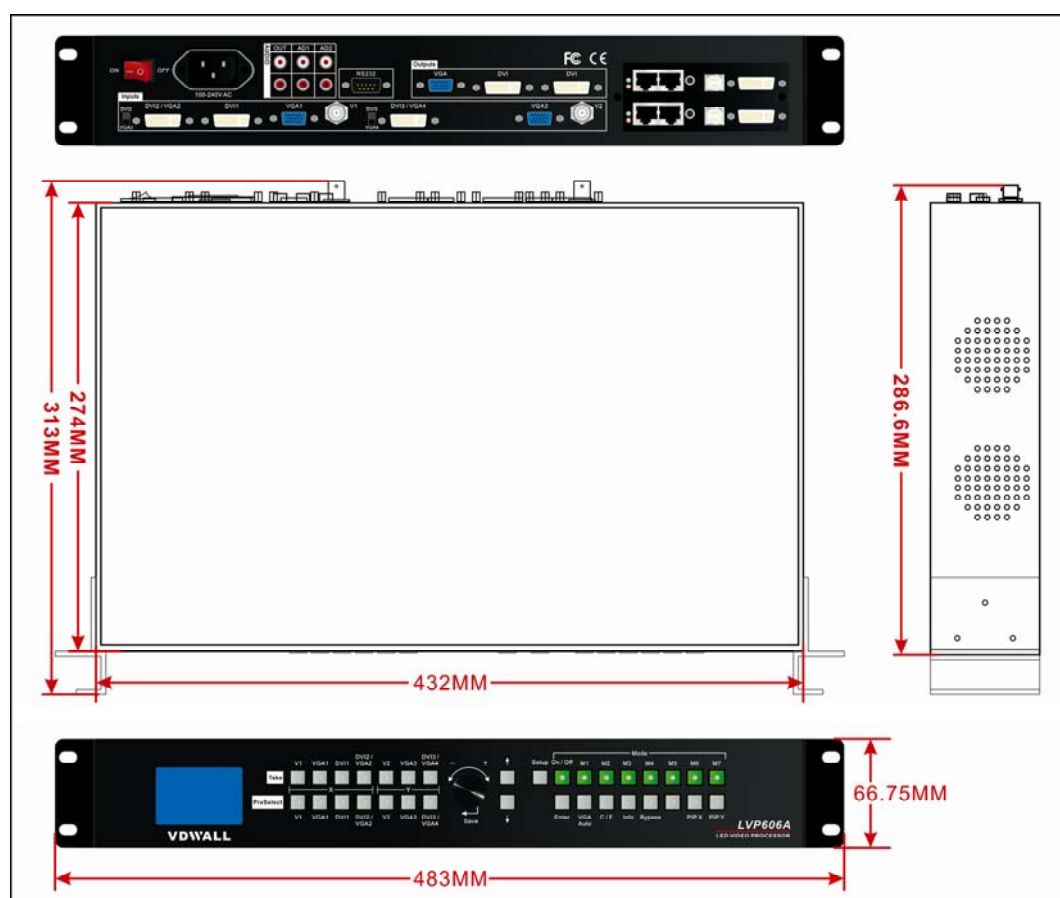


Figure 8

## **VII. Copyright info**

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This Manual is provided for reference only, VDWALL reserves right to change the product appearance, dimensions and specifications from time to time without notice to users.