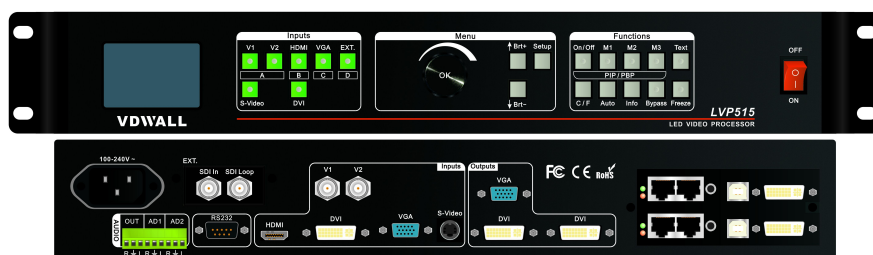


# LVP515

## LED HD VIDEO PROCESSOR

### USER'S MANUAL



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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!**

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

### **Caution!**









- a) Please thoroughly read this manual before using this device, and keep it well for future reference.
- b) 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.
- c) Nobody other than professional technicians can operate the device, unless they have been appropriately trained or under guidance of technicians.
- d) To prevent equipment damage or electric shock, please don't fill in anything in the vent of the device.
- e) Do not place the device near any water source or anywhere damp.
- f) Do not place the device near any radiator or anywhere under high temperature.
- g) To prevent rupture or damage of power cords, please handle and keep them properly.
- h) Please immediately unplug power cord and have the device repaired, when
  - i. Liquid splashes to the device.
  - ii. The device is dropped down or cabinet is damaged.
  - iii. 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.

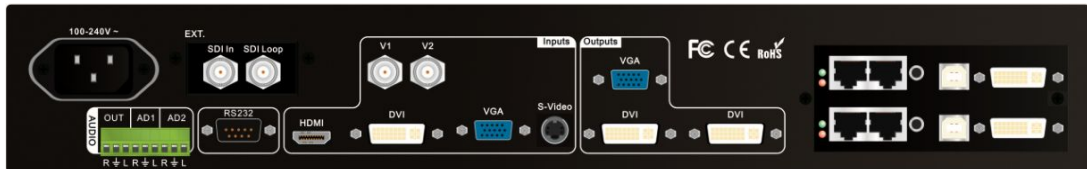
### Standard accessories

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. (Sending card is optional)

		
1.5m AC power, 1pc	1.5m DVI cable, 1pc	0.5m DVI cable, 1pc
		
1.5m Rs232 cable 1pc	BNC-RCA adapter: 2 pcs	PCB audio connector 1pc
		
User manual 1pc	Operation CD 1PC	

## III. Connections of hardware

### 1. Rear view



### 2. Port description

#### 1) Video Input

LVP515 supports 7 video signal inputs. As below:

Port name	description
<b>V1~V2</b>	2channels PAL/NTSC composite video input
<b>S-Video</b>	1channel PAL/NTSC S-video input
<b>VGA</b>	1channel computer analog signal input
<b>DVI</b>	1channel computer DVI digital signal input
<b>HDMI</b>	1channel HDMI digital HD signal input
<b>EXT.</b>	1channel extended optional signal input (SD-SDI/HD-SDI/3G-SDI)

#### 2) Audio Input

LVP515 supports 4-channel stereo audio switch. Of which, 2 channels are HDMI and SDI audios, the other 2 channels are AD1, AD2 external input audio. AD1 and AD2 can be mapped to the any one of all video inputs, and will be switched synchronous to the selection of 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 LVP515).

<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
<b>SDI Loop</b>	1-channel digital video signal loop output

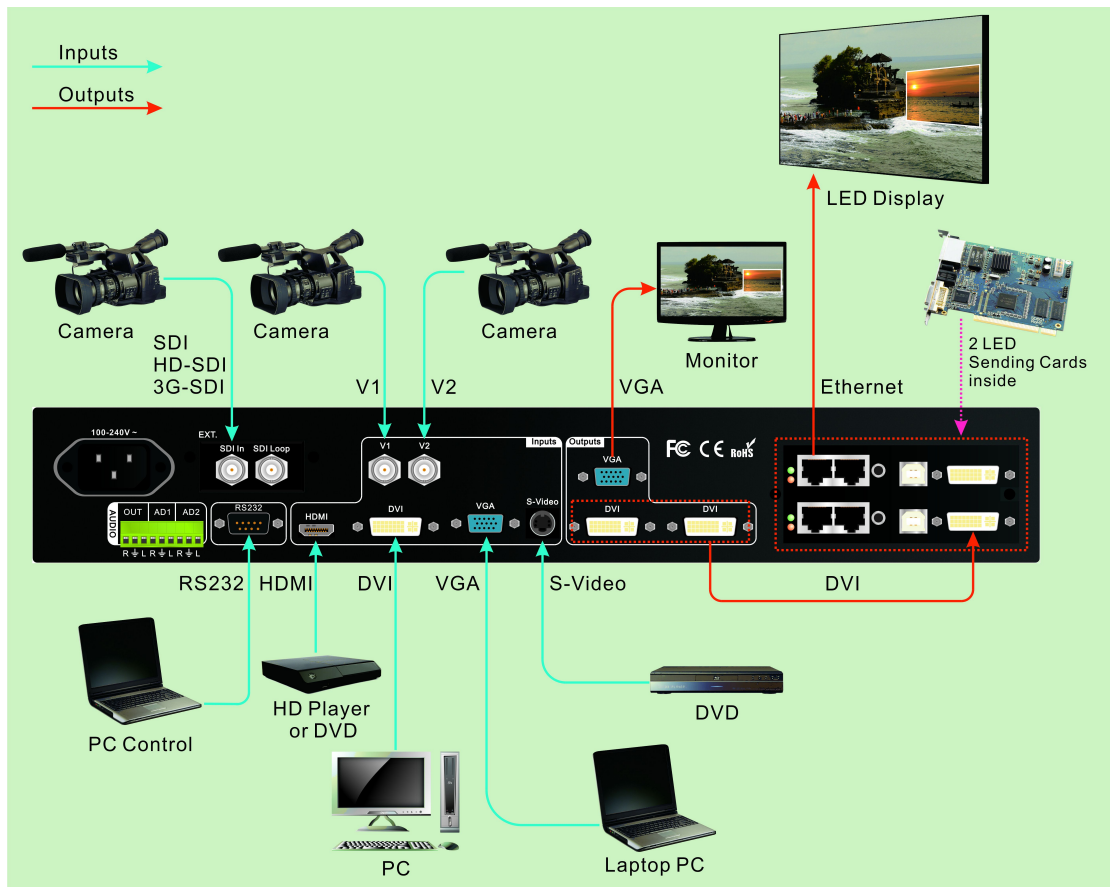
#### 4) Audio Output (AUDIO OUT)

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

#### 5) Signals of other ports

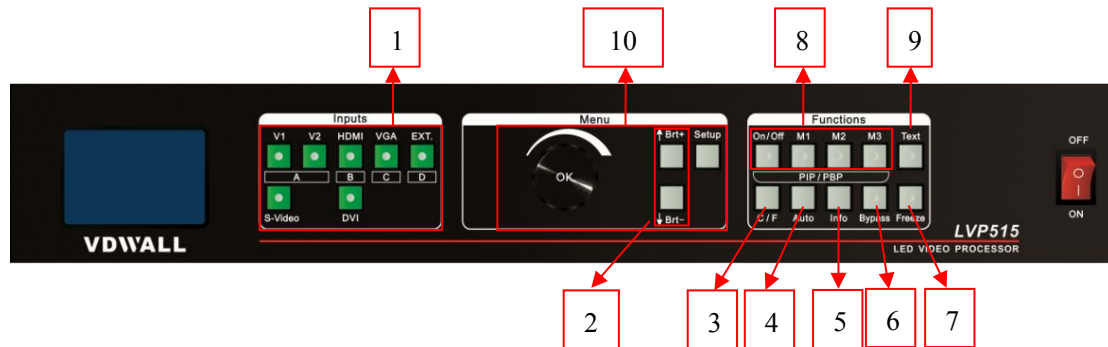
RS232 command port is used to connect PC RS232. Then the processor can be controlled by PC software.

### 3.Connection diagram



## IV. Frontal panel operations

### 1. Diagram of frontal panel



- 1) **Input selecting buttons (V1, V2, S-Video, HDMI, DVI, VGA, EXT.):**  
They are used to select input signals
- 2) **Brightness adjustment (Brt+, Brt-)**  
To adjust the output image brightness of the processor.
- 3) **Cut / Fade switching mode (C/F):**  
It is used to select signal switching effects, including seamlessly switching (CUT), 0.5s, 1.0s and 1.5s Fade in / Fade out and blend.
- 4) **VGA auto adjustment (Auto)**  
To automatically adjust VGA input signals
- 5) **Info:**  
It is used to display current settings and information of processor
- 6) **PC signal bypass output (Bypass):**  
It is used to switch full screen/partial screen display of PC signals, and the indicator will indicate the status of current input signal.
- 7) **Freeze**  
It is used to turn ON/OFF screen freezing function.
- 8) **PIP/PBP buttons (ON/OFF, M1, M2, M3):**  
**ON/OFF:** to turn on/off **PIP/PBP** functions, when the indicator is on, you can select any signal coming from different groups or current signal as PIP/PBP by using input selecting buttons.  
M1, M2, M3: used to set or switch PIP/PBP modes.
- 9) **Text**  
It is used to add Text, company logo or animation.
- 10) **Setup buttons (Setup, ↑, ↓, knob)**  
They are used to set the image output parameters of the processor.

## 2. Button instructions (operation mode):

There are 20 buttons on the frontal panel of LVP515, 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>S-Video</b>	1-channel PAL/NTSC S-video input
<b>VGA</b>	1-channel computer analog signal input
<b>DVI</b>	1-channel computer DVI digital signal input
<b>HDMI</b>	1-channel HDMI digital HD signal input
<b>EXT.</b>	1-channel extended signal input (SD-SDI/HD-SDI/3G-SDI)

Switch audio input while operating above buttons; select the audio signal input from corresponding video input to output it through **Audio OUT**.

After selecting input signals, the input signal source you currently selected such as “Input=HDMI” will appear in the first line of LCD, while the status of current input signals will appear in the second line of LCD. If there are no valid signals entered, the message “no signal” will appear in LCD, and the corresponding indicator will blink and dark screen appear; if the signal is valid, the format of input signals such as “ 1080p\_60Hz ” will appear in LCD.

Input= HDMI  
1080p\_60Hz  
Cut

### 2) Brightness adjustment (**Brt+**, **Brt-**)

Button names	Description
<b>Brt-</b>	Decrease output image brightness of <b>LVP515</b> , the lowest brightness is 0.
<b>Brt+</b>	Increase output image brightness of <b>LVP515</b> , the highest brightness is 64 or 100.



**LVP515** supports 32 levels Brightness. Range from 0-64 or 0-100. 0-64 is default setting. “0” represents the lowest brightness, and 64 represents the highest brightness. To ensure full gray level of output image, normally the output brightness is set as 64!

### 3) Select Cut / Fade / Blend mode(C/F)

LVP515 can realize seamless switching effect (Cut) , fading in/out switching effect (Fade) or blend effect between any two signals from different groups as listed below.. But if the signals come from the same group, dark screen will appear.

A	B	C	D
V1, V2, S-Video	DVI, HDMI	VGA	EXT

**Cut** (seamlessly switching): while in this mode, “Cut” will appear in the third line of LCD, the system can seamlessly switch between different signals. It is also the default mode of LVP515 after start-up.

**Fade** (fading in fading out): while in this mode, “Fade=1.0s” will appear in the third line of LCD, the system can realize fading in fading out switching effect between the signals coming from different groups. Users can set the switching time of fading in and fading out as 0.5 seconds, 1.0 second or 1.5 seconds.

**Blend:** The current input signal will be the background. The other signal from different group will be took as blend signal. Then the background signal and blend signal will be overlap showed. Then press the button of background or blend signal, the output will be the choosing signal. The whole procedure will be fade in fade out switching effect.

**Notes:** Under blend switching mode, users can only carry out signal switching. For other operations, press **C/F** button to exit the blend switching state first.

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

When the current VGA input source of **LVP515** is a valid signal, press this button, **LVP515** 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.

### 5) Information display (Info)

Press this button to view current settings and information of **LVP515**, it consists of 24 items. If you press “**Info**” again before **LVP515** exit information display, **LVP515** will continue to display the next item of information.

### 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 the LED screen. At this moment the indicator is OFF.
<b>Part</b>	Part screen display. The picture will not be compressed, but partly exported to entire LED screen. At this moment the indicator 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) Freeze

Press this button, the indicator of this button will illuminate normally, and the current picture will be frozen; press this button again or perform other signal switching operations, the indicator of this button will turn out, the picture will get in motion again.

### 8) PIP / PBP (PIP/PBP: On/Off, M1, M2, M3)

PIP/PBP mode of LVP515 allows user to insert a PIP window in current picture, and the size and location of the PIP window can be

set freely. The signals to be displayed in PIP window can be either current signal itself or any signals which are not in the same group as that of current picture. Here we call current picture “background”, and call the picture to be overlaid “PIP”. The following paragraphs will illustrate the operating procedures of this function:

**Enter PIP display mode:** Press On/Off button, its indicator will illuminate, LVP515 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 on the LCD (see Figure below):

Background: V1 PAL PIP: VGA 1280X1024 60Hz
-----------------------------------------------------

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

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

**Switch PIP/PBP display mode:** **LVP515** allows for presetting 3 **PIP/PBP** display modes, each mode allows for setting its own background and PIP sizes and locations. While **PIP/PBP** mode is switched on, user can press the mode switching buttons (M1, M2, M3) to select appropriate display modes quickly.

## 9) Text

LVP515 can add Text, company logo or animation onto current picture. While current picture is normally displayed, press Text button to go to caption adding mode, then select the signal source of caption. The captions can be made by office software such as Powerpoint.

## 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 2 categories available for you to set in **LVP515**. Technicians can set these items as necessary, for details see the table below:

Category	Items
User parameter setup	Output image setup text overlay setup <b>Brightness /Saturation /Sharpness /NTSC</b> <b>Image Mode setup</b> Audio configuration factory default setup
PIP/PBP setup	Background and PIP output image setup

### I)User parameter setup

Category	Items
1 Language	1 <b>Language 语言</b>
2 Output image setup	2 <b>Out Format</b>
	3 <b>DVI Edid</b>
	4 <b>Out_Hori_Width</b>
	5 <b>Out_Hori_Start</b>
	6 <b>Out_Vert_Height</b>
	7 <b>Out_Vert_Start</b>
	3 text overlay setup
9 <b>Threshold Red</b>	
10 <b>Threshold Green</b>	
11 <b>Threshold Blue</b>	
4 Brightness/Saturation /Sharpness/NTSC Image Mode	12 <b>Brightness</b>
	13 <b>Saturation</b>
	14 <b>Sharpness</b>
	15 <b>NTSC Image Mode</b>
5 Audio configuration	16 <b>Audio1 Config</b>
	17 <b>Audio2 Config</b>

6	Test pattern	18	<b>Test item</b>
		19	<b>Device ID</b>
'7	Factory district Setup	20	<b>ADC Calibration</b>
		21	<b>Bias</b>
		22	<b>Brightness level</b>
		23	<b>De interlace</b>
		24	<b>EXT. model</b>
		25	<b>Device init</b>

## Enter Setup of LVP515

**Enter setup:** While in operation mode (make sure that PIP mode is off), press “Setup” button, then press the knob( “OK” key) , **LVP515** will enter No.1 setup item.

**Exit setup:** press “Setup” button while in setup mode, **LVP515** will directly exit setup.

After **LVP515** enters setup mode, the knobs and 3 buttons in setup area will respectively have the functions as described in table below:

Name		Functions
<b>Knob</b>	Speed of knob	The step value in proportion to the speed of knob
	Turn it clockwise	Decrease value or select previous value
	Turn it anticlockwise	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 **LVP515** enters setup mode, the relevant setting information will be displayed in LCD as per the layout shown in the figure below:

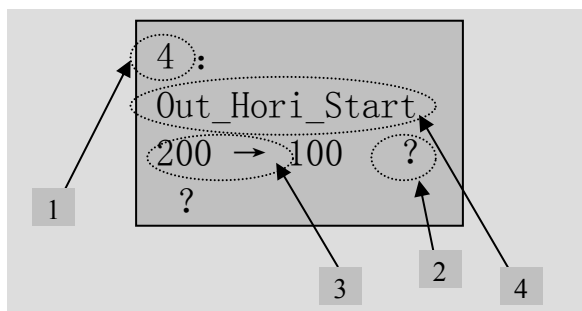


Figure 3

As shown in above figure, LCD consists of **four** 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

## 1. Select language

Item 1: “**Language** 语言”

After entering setting mode, **LVP515** will enter the first setting item “**Language** 语言”. **LVP515** supports Chinese and English display, turn the knob to select either of them, then press the knob to save it and make it valid.

## 2. Output image setup

**LVP515** outputs images from VGA and two DVI output ports. There are 17 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	1080×1920_60
4	1200×1600_60
5	1280×1024_60
6	1280×1024_75
7	1366×768_60
8	1440×900_60
9	1536×1536_60
10	1600×1200_60
11	1920×1080_50
12	1920×1080_60

13	1920×1200_60
14	2048×1152_60
15	2304×1152_60
16	2560×816_60
17	Custom output format

**Item 2: “Out 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 LVP515 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.

**Items 3“DVI EDID”**

To set the same output format as the input format, LVP515 offers to custom input DVI EDID. EDID has two formats: fixed EDID and custom EDID.

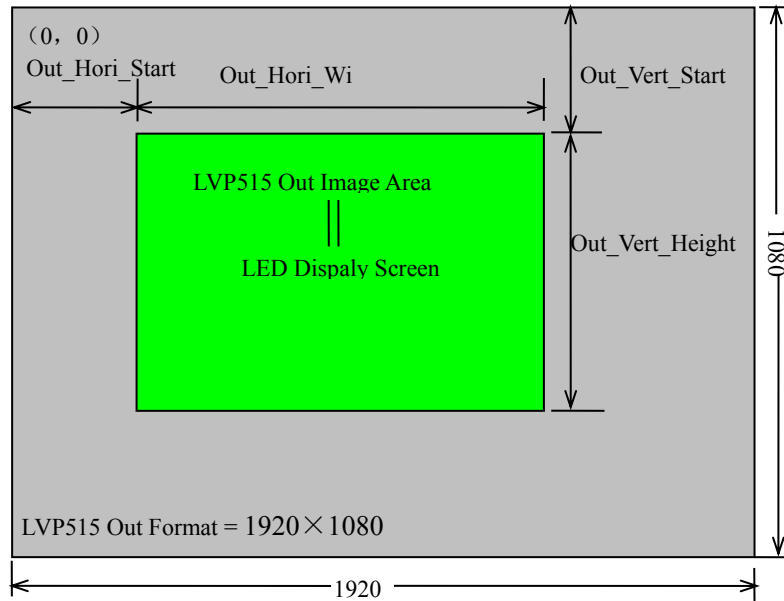
Fixed EDID	1024x768_60	1024×768_75	1080×1920_60
	1200×1600_60	1280×1024_60	1280×1024_75
	1366×768_60	1440×900_60	1536×1536_60
	1600×1200_60	1920×1080_50	1920×1080_60
	1920×1200_60	2048×1152_60	2304×1152_60
	2560×816_60		
Custom EDID	EDID width: user define output format hori width		
	EDID height: user define output format vertical height		
	EDID frequency: user define output format frequency		

Enter Setup menu, choose item3 “ DVI EDID ” .Customers can define output format horizontal width, vertical height, frequency by rotating knob according to needs. Then press OK to save data and Setup to save the EDID setting.

**Item 4~7: “output image setup”**

The actual definition of LED can be any value, so we should set LVP515 to make it output an image with the same definitions as that of

the LED, so that the LED could display a full image. See figure below:



As above figure shows: the size and location of the images in **LVP515** output window for the LED display are defined by the following 4 groups of parameters:

Item No.	Parameters
4	<b><i>Out_Hori_Width</i></b>
5	<b><i>Out_Hori_Start</i></b>
6	<b><i>Out_Vert_Height</i></b>
7	<b><i>Out_Vert_Start</i></b>

**Notes:** user can change current parameter settings by rotating the knob. The speed at which you rotate the knob decides the step value of the adjustment. The location and size of the output image will be previewed in the white box while you are making the adjustment, then you can press the knob to save and validate the settings you made.

### 3. Text Overlay Setup

Item No.	Setup Item Name
8	<b><i>Text Mode</i></b>
9	<b><i>Threshold Red</i></b>
10	<b><i>Threshold Green</i></b>
11	<b><i>Threshold Blue</i></b>



Item 8: Text overlay

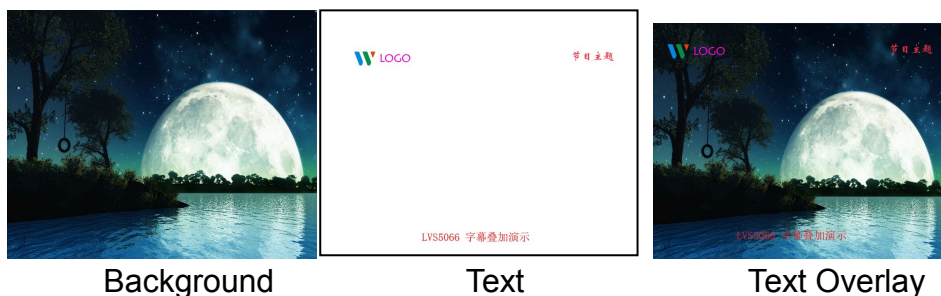
**LVP515** allows user to set caption knock-out “< threshold” or “>threshold”. If it is less than threshold value, it means that the image of caption signal less than current color threshold value will be added to background, while the part greater than threshold will be automatically filtered. If it is greater than threshold value, it means that the image of caption signal greater than current color threshold value will be added to background.

Item 9~11: ” **Threshold Red/Green/Blue**”

The three options are used to set R, G, B values respectively as a certain value within 0~248.

The following figure shows an example of caption adding function. The caption document in this sample is made using Powerpoint. Its parameters are set as below:

No. of setup item	Setup Item Name	parameters
8	<b>Text Mode</b>	<b>&lt;Threshold</b>
9	<b>Threshold Red</b>	<b>248</b>
10	<b>Threshold Green</b>	<b>248</b>
11	<b>Threshold Blue</b>	<b>248</b>



**4. Brightness / Saturation/ Sharpness/ NTSC Image Mode**

**LVP515** supports customized **Brightness,Saturation,Sharpness and NTSC Image Mode settings**. For details see table below:

Item No.	Description	Definition
12	<b>Brightness</b>	Range: 0~64 and 0~100 default value: 0~64. Default value is 64.
13	<b>Saturation</b>	Range: 0~100, default value: 50
14	<b>Sharpness</b>	Option is “Sharp” or “Normal”, default value: Normal
15	<b>NTSC Image Mode</b>	Set NTSC image mode

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、S-Video、SDI and HDMI signals.

## 5. Audio configurations

LVP515 supports 4-channel stereo audio switch. Of which, 2 channels are HDMI and SDI audios, the other 2 channels are **AD1**, **AD2** external input audio. **AD1** and **AD2** can be mapped to the any one of all video inputs, and will be switched synchronous to the selection of video input signals.

If **SDI or HDMI** is configured as external input audio, when audio signal is switched to **SDI or HDMI**. External audio will be chosen as input signals, otherwise the audio signals contained in **SDI or HDMI** signal will be chosen as input signals.

Item No.	Description	Definition
16	<b>Audio1 Config</b>	<b>Audio configuration option for AD1 port</b>
17	<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. Test pattern

**LVP515 has 36 kinds test patterns inside for LED screen test.**

Test pattern value is 0. It is off. Value from “1~36”, means 36 different test pattern.

The current signal will be available when input outside signal. Test pattern can output image. Otherwise, there is no output.

## 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 19: “**Device ID**”

This item is used to number LVP515 while controlling several processors by RS232. The number scale is from 1 to 255.

### Item 20: “**ADC Calibration**”

After inputting a 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. **LVP515** can solve the above problems by automatically calibrating white balance based on the input analog signals ( **CVBS**、 **S-Video**、 **VGA** ) .  
Operating procedures:

Switch to the corresponding analog input signal, enter Item No. 19“**Device ID.**” after the processor detects input signals and exports the signals to the display, press “V1” for 5 times, then press “↑” to shift to Item 20 “**ADC Calibration**”, press 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 21: “**Bias**”

In order to decrease the noise on gray scale display, the LED display system usually removes the lower gray scale one of all input

signals, which will cause the loss of the video information, especially in dark scene, such as night view.

**LVP515** can improve problems as follow mentioned by adjusting the “**Bias**”, whose limit ranging from 0 to 100. When losing the signal of dark scene, you can restore the drop-out information to the LED display by increasing the value.

Normally in order to keep the completeness of output signals, the standard value is set as **50!**

#### Item 22: “Brightness level”

“Brightness level” has 0-64 and 0-100; Default value is 0-64. 0 is the darkest for two levels. And the brightest is different. The high range of 0-100 is brighter than 0-64. Even the same value, it will be different value because of the different level. Customers can choose “Brightness level” according to environment. “Device Int.” will not reset this value.

#### Item 23: “**De interlace**”

When **CVBS/S-Video/HDMI/SDI** signals are interlace input formats (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:

enter Item No. 19 “**Device ID**”, press “V1” for 5 times, then press “↑” to shift to Item 23 “**De interlace**”, turn knob to select “ON”, and press knob to make it valid.

#### Item 24: “**EXT. model**”

This item is used to setup after changing the extended model. So that the model can work normally.

After entering item No. 19 “**Device ID**”, press “V1” for 5 times, then press “↑” to shift to Item 24: “**EXT. model**”, turn the knob to choose related option, then press the knob to save the setup. the moment the system will remind you “**Please restart.**”, just follow the instruction.

#### Item 25: “**Device Init**”

After entering item No. 19 “**Device ID**”, press “V1” for 5 times, then press “↑” to shift to Item 25: “**Device Init**”, turn knob to select “Yes”, then press knob to reset the factory settings, the moment the system

will remind you **“Please restart.”**, just follow the instruction.

**(II) PIP/PBP setup**

Category		Items	
1	background Output setup	1	<b>Main_Hori_Width</b>
		2	<b>Main_Hori_Start</b>
		3	<b>Main_Vert_Height</b>
		4	<b>Main_Vert_Start</b>
2	PIP Output setup	5	<b>PIP_Hori_Width</b>
		6	<b>PIP_Hori_Start</b>
		7	<b>PIP_Vert_Height</b>
		8	<b>PIP_Vert_Start</b>
3	<b>PIP switch mode</b>	9	<b>PIP switch mode</b>

LVP515 allows for presetting 3 PIP/PBP display modes, each mode allows for setting any background and PIP/PBP size and location you need.

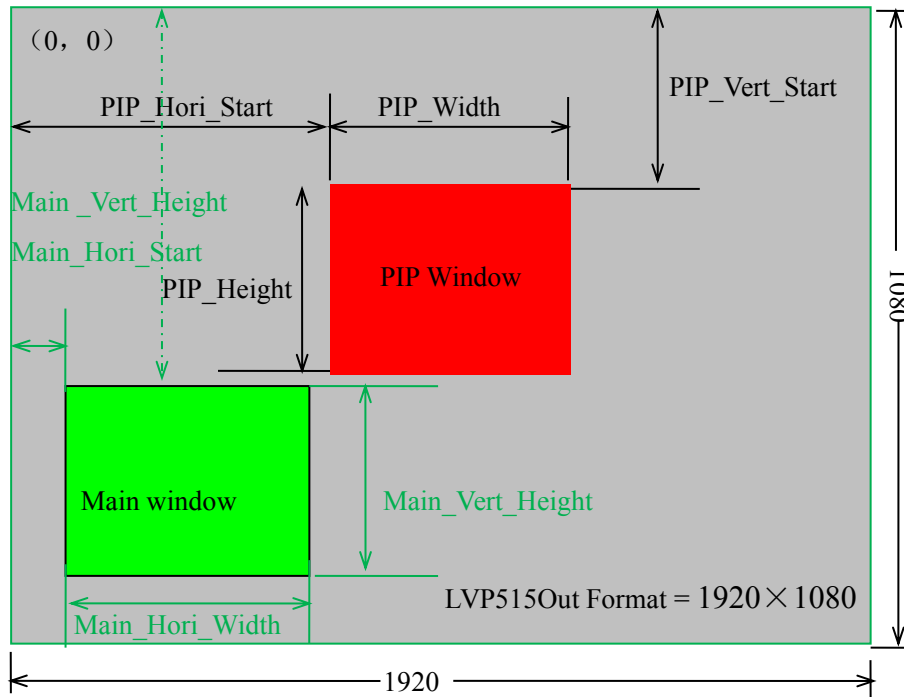


Figure 5

As above figure shows: the size and location of the images in **LVP515 background and PIP** output window for the LED display are

defined by the following 8 groups of parameters:

Item	Description
1	<b>Main_Hori_Width</b>
2	<b>Main_Hori_Start</b>
3	<b>Main_Vert_Height</b>
4	<b>Main_Vert_Start</b>
5	<b>PIP_Hori_Width</b>
6	<b>PIP_Hori_Start</b>
7	<b>PIP_Vert_Height</b>
8	<b>PIP_Vert_Start</b>

**PIP switch mode:** PIP switch mode: users can set seamless switching or 0.5 seconds, 1 second, 1.5 seconds fade in fade out effect when choosing PIP signal..

Operating procedures:

**Enter PIP/PBP setup mode:** while PIP/PBP mode is turned on, press “**Setup**” button, then press the knob, **LVP515** will enter the first setup item of **PIP/PBP** setup mode. The information as follows will appear in LCD:

1. Main_Hori_width 1216           ? PIP/PBP Mode=M1
--------------------------------------------------------------

**Switch current PIP modes:** press mode buttons (i.e.: M1, M2, M3), the processor will directly switch current PIP modes.

**Switch adjustment items:** press “ ↑ ” and “ ↓ ” to switch current adjustment items.

**Change output parameters:** user can change current parameter settings by rotating the knob. The speed at which you rotate the knob decides the step value of the adjustment. The locations of the background and PIP will be previewed respectively in the white rectangle and blue rectangle while you are making the adjustment, then you can press the knob to save and validate the settings you made.

**Exit PIP/PBP setup mode:** directly press “**Setup**” button while in **PIP/PBP** setup mode, **LVP515** will exit directly.

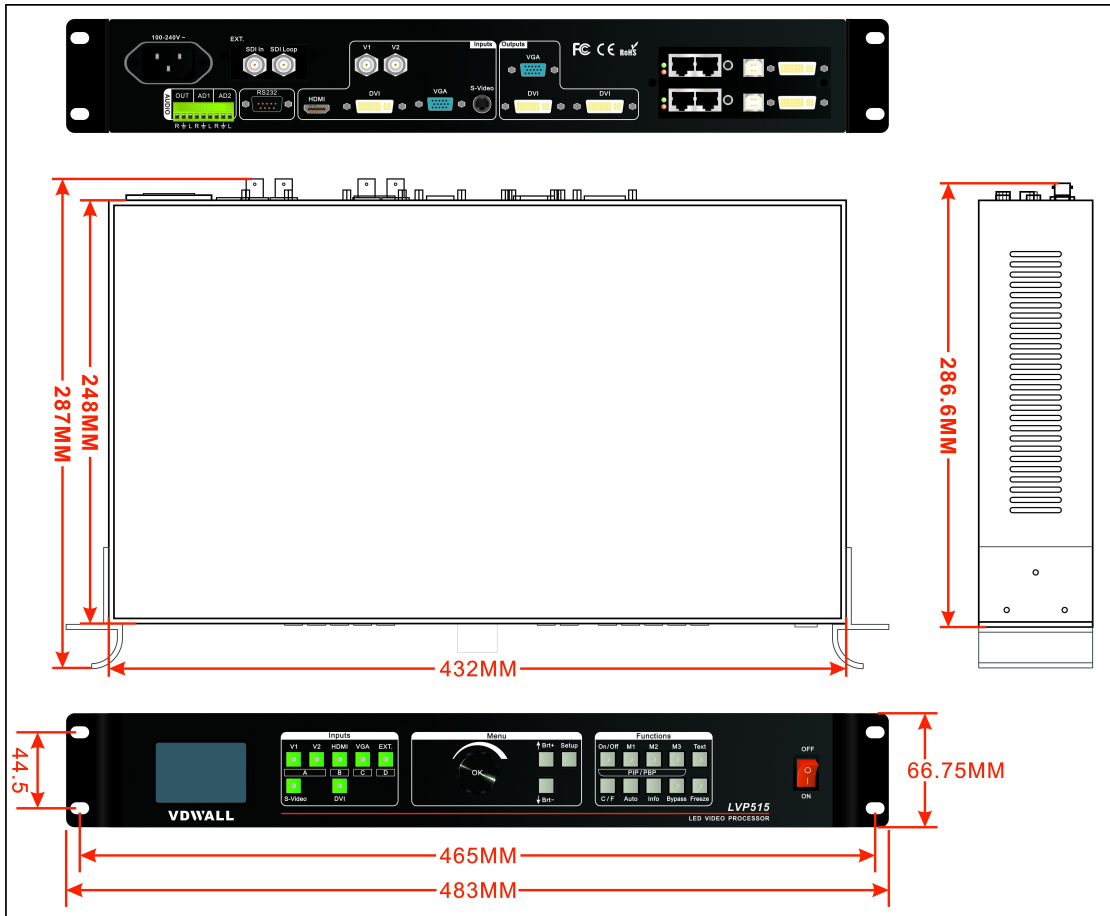
## VI. Specifications

inputs		
nums/type	2×Video 1×S-Video 1×VGA (RGBHV) 1×HDMI (VESA/CEA-861) 1×DVI (VESA) 1×EXT. (SD-SDI/HD-SDI/3G-SDI)	
Video system	PAL/NTSC	
composite video scope/ Impedance	1V (p_p) / 75Ω	
S-Video scope/ Impedance	Y: 1.0V (p_p) / 75Ω, C: 0.35V (p_p) / 75Ω	
VGA format	PC (VESA)	≤2048x1152_60Hz
VGA scope/ Impedance	R、G、B = 0.7 V (p_p) / 75Ω	
DVI format	PC (VESA)	≤2304x1152_60Hz
HDMI format (HDCP)	PC (VESA)	≤2304x1152_60Hz
	HDMI1.3 (CEA-861)	≤1920x1080p_60Hz
SDI format	SMPTE259M-C	480i_60Hz
	SMPTE 292M	576i_50Hz
	SMPTE 274M/296M	720p、1080i、1080p
	SMPTE 424M/425M	
audio	2.0Vp-p/10KΩ	
Input ports	VGA: 15pin D_Sub(female) DVI: 24+1 DVI_D Video: BNC S-Video: 4pin mini DIN(female) SDI : BNC	
outputs		
Nums/type	1×VGA (RGBHV) 2×DVI	
DVI format	1024×768_60/75Hz 1080×1920_60 Hz 1200×1600_60 Hz 1280×1024_60/75Hz 1366×768_60Hz	

	1440×900_60Hz 1536×1536_60 Hz 1600×1200_60Hz 1920×1080_50/60Hz 1920×1200_60 Hz 2048×1152_60Hz 2304×1152_60Hz 2560×816_60Hz Custom output format( horizontal pixel maximal 3840 or vertical 1920)
VGA scope/impedance	R、G、B = 0.7 V (p_p) / 75Ω
Output ports	VGA OUT: 15pin D_Sub(female) DVI OUT1: 24+5 DVI_D DVI OUT2: 24+5 DVI_D
others	
control	Panel button or pc software
Input voltage	100-240~ 50/60Hz
power	≤20W
temperature	5-40 °C
humidity	15-85%
Size(packing)	145mm(height)×370mm(width)×535mm(length)
Weight(kg)	Gross weight: 5.0Kg, Net weight: 3.2Kg

**Dimensions:**





## VII. VDWALL LVP515 Control Software User's Manual

VDWALL LVP515 Control Software is used to control LED HD Video Processor. With this software, we can:

- Select input signal source in Cut or Fade mode.
- Realize 3 custom double-picture display and Text Overlay functions
- Enable and disable Bypass, Freeze
- **Configure parameters of LVP515**
- Realize Timer Control function, switch input signal source under timer plan

### (I). Control modes

LVP515 LED HD Video Processor can receive operating commands from VDWALL LVP515 Control Software to switch input signal source or change the brightness of output images. The LVP515 Control Software controls LVP515 LED HD Video Processor via RS232 COM serial port of

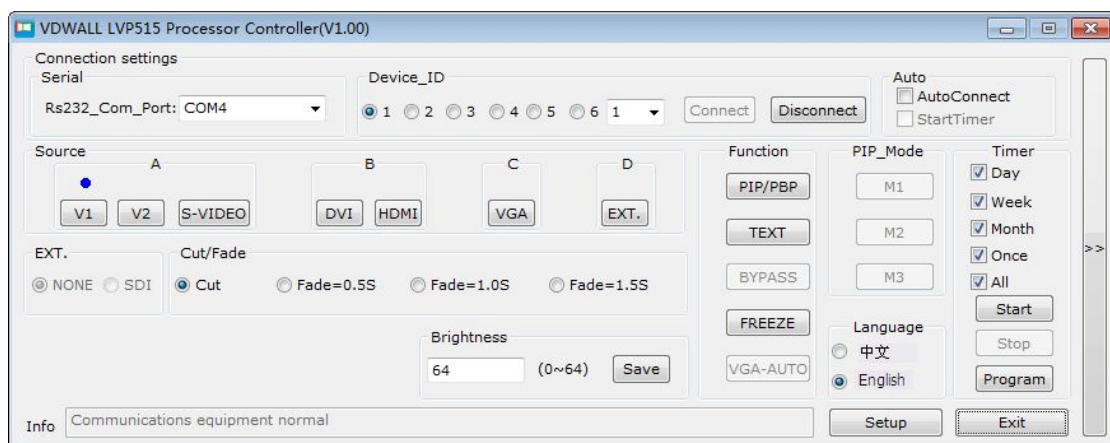
PC.

User can operate LVP515 manually using the RS232 serial port software supplied by the manufacturer, or create timer control plans, then the serial port software will automatically control LVP515 under these plans.

To do so, first connect COM port of PC to RS232 port of LVP515, then run the control program VDWALL LVP515 Control Software.exe.

## 1. Main menu

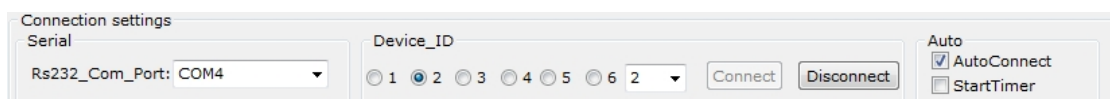
Double click the software “LVP515 Control Software.exe”, the main menu of the software as below will appear:



As shown in above figure, the main menu consists of the following parts:

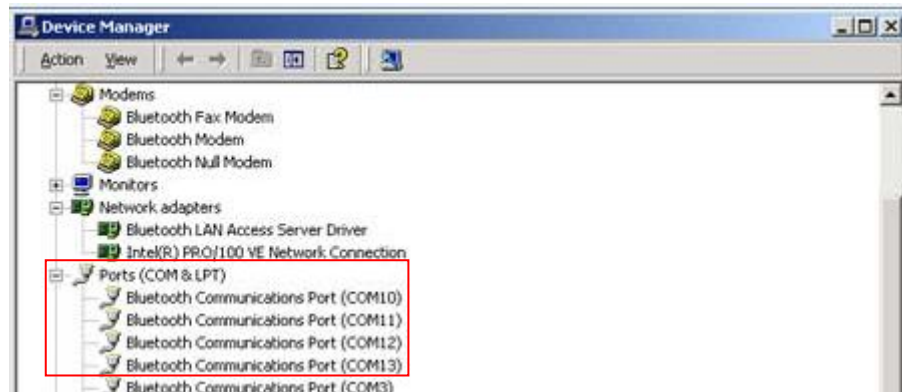
- RS232 COM port setup
- Select signal source
- Information field
- Timer control setup
- Select function modes
- Cut/fade in fade out setup
- Select language (Chinese/English)
- Configure output parameters (screen setup)

### 1) RS232 com port setup



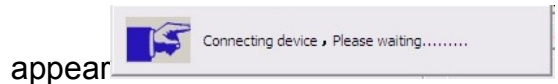
Select a proper COM port in the field RS232\_Com\_Port, and select a proper device ID. You can view the No. of the COM in the “Device

Manager” of control PC as shown below:

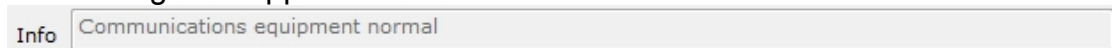


The device ID you selected (from user setup item 19 “Device ID”) must be identical to the device ID of LVP515 to be controlled.

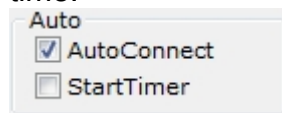
Click the button “Connect”, the following message will



After the device is successfully connected, the function keys in the main menu of the software will be activated, and the following message will appear in the information field of main menu

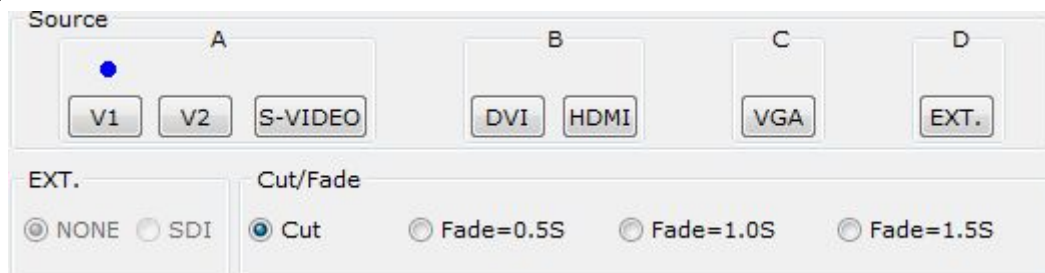


**Timer Start Setup:** to set whether the machine automatically connects serial port or starts timer control or not when it is started next time.



### Signal status and signal switching

2)



The buttons of this area respectively represent the corresponding keys and status indicators in the panel of the processor.

After the device is successfully connected, the software will read the input signal source you currently selected and the blue indicator above it will turn on. If the blue indicator illuminates normally, it means the input signal source you currently selected is valid; however, if the blue indicator blinks, it means there are no valid signal input.

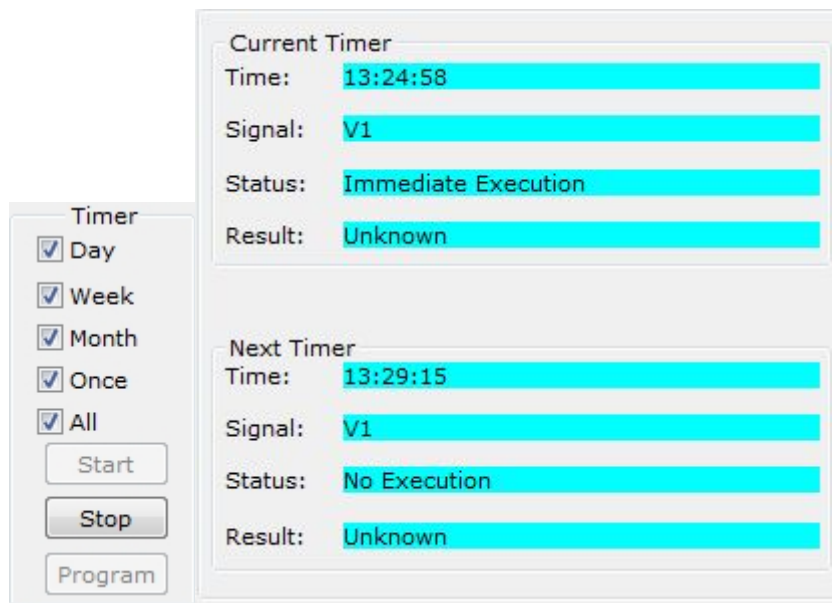
Click the signal button to change the input source of LVP515. The software can display the information of current extended modules.

### 3) Information

Info Communications equipment normal

If an operation fails, the reason for which current operation fails will appear in the information field.

### 4) Timer control setup



The Timer of the Control Software can switch the input signal source of LVP515 as per the preset timer plan. The system provides four cycle timer modes, i.e.: Day, Week, Month, Once.

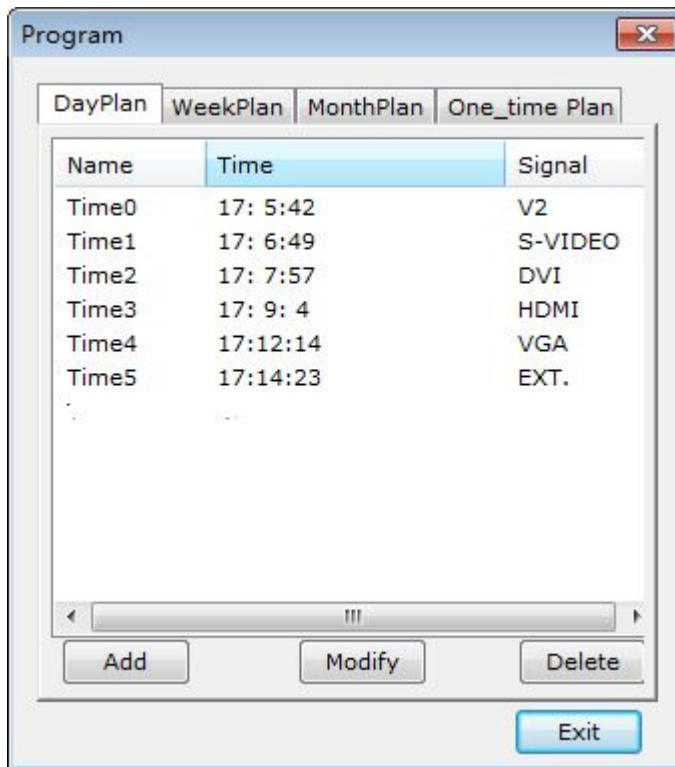
Select a preset timer plan, then click “Start”, the Timer you selected will start to work immediately. To stop Timer control, click “Stop”.

Click “Program” to enter timer setup menu, where you can view the timer plan you already set, or add, modify, delete timer plans. For details, please refer to the Chapter “Instructions of Timer Setup Menu”

Once the timer is started, LVP515 Control Software shouldn't be closed, otherwise the timer will not work.

### 4) Timer setup menu

click **Program**, in main menu, the system will enter Timer setup menu as shown below:



As shown in above figure, there are two types of plans:

- ◆ **Cycle Plan**
- ◆ **Once Plan**

Cycle Plan is sub-divided into three types:

- ◆ **Day Plan**
- ◆ **Week Plan**
- ◆ **Month Plan**

User can select one type he desires

The plan items of Day Plan define hours, minutes, seconds;

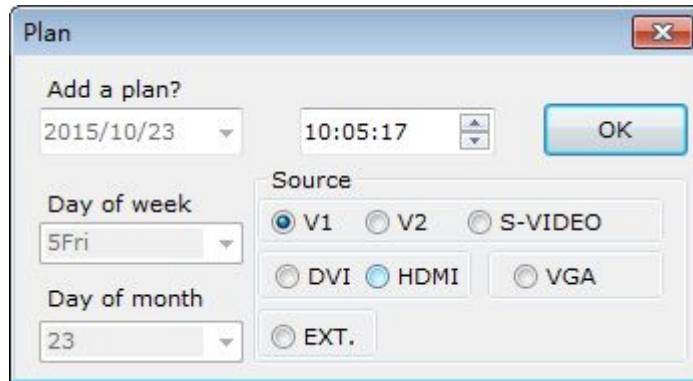
Each week has 7 days, so the plan items of Week Plan define week day, hour, minute, second;

Each month has maximum 31 days, so the plan items of Month Plan define date, hours, minutes, seconds;

The plan items of Once Plan define year, date, hours, minutes, seconds;

Cycle plan and once plan can work together.

For each type of plan, the plan items can be added, modified, deleted. For example, the figure below shows how to add plan items to a day plan.



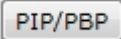
Select the plan already added, then you can modify or delete it.


5) Select functions mode

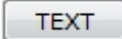


This menu provides the following options: PIP, TEXT (Text Overlay), BYPASS, FREEZE, VGA-AUTO (VGA automatic adjustment).

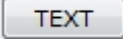
Display modes include single signal cut, single signal fade in, fade out, PIP, PBP, TEXT OVERLAY.

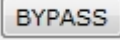
**PIP/PBP modes:** while in one picture display mode, click  , the blue indicators before the button and corresponding mode buttons will blink, select PIP as input signal source in the field "Select signal source". If the blue indicator before the button illuminates normally, the picture will be displayed in PIP mode. User can select the preset PIP/PBP display effects in the field "PIP\_Mode".

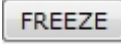
While in PIP/PBP mode, click  , the system will exit PIP/PBP mode.

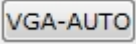
**TEXT (Text Overlay):** while in one picture display mode, click  , the blue indicators before the button and corresponding mode buttons will blink, select TEXT as input signal source in the field

“Select signal source”. If the blue indicator before the button illuminates normally, the information will be displayed in TEXT overlay mode.

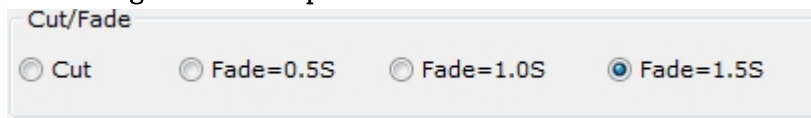
While in TEXT mode, click  again, the system will exit TEXT mode.

**Bypass:** when current input sources are PC signals like VGA/DVI/HDMI, click , the blue indicators before the button will illuminate normally, and the PC signals will be displayed in part screen, otherwise they will be displayed in full screen.

**Freeze:** while in operation mode, click , the current output picture in the processor will be frozen. Click the button again or perform any other signal switching operation, the processor will exit Freeze mode.

**VGA-AUTO:** when current input source is VGA signal and the input signal is valid, click , the processor will sample the current input signals to make the output pictures full and clear.

#### 6) Switching mode setup




This function is used to setup signal switching modes. The system provides 4 switching modes, i.e.: Cut, Fade in fade out 0.5s, Fade in fade out 1.0s, Fade in fade out 1.5s.

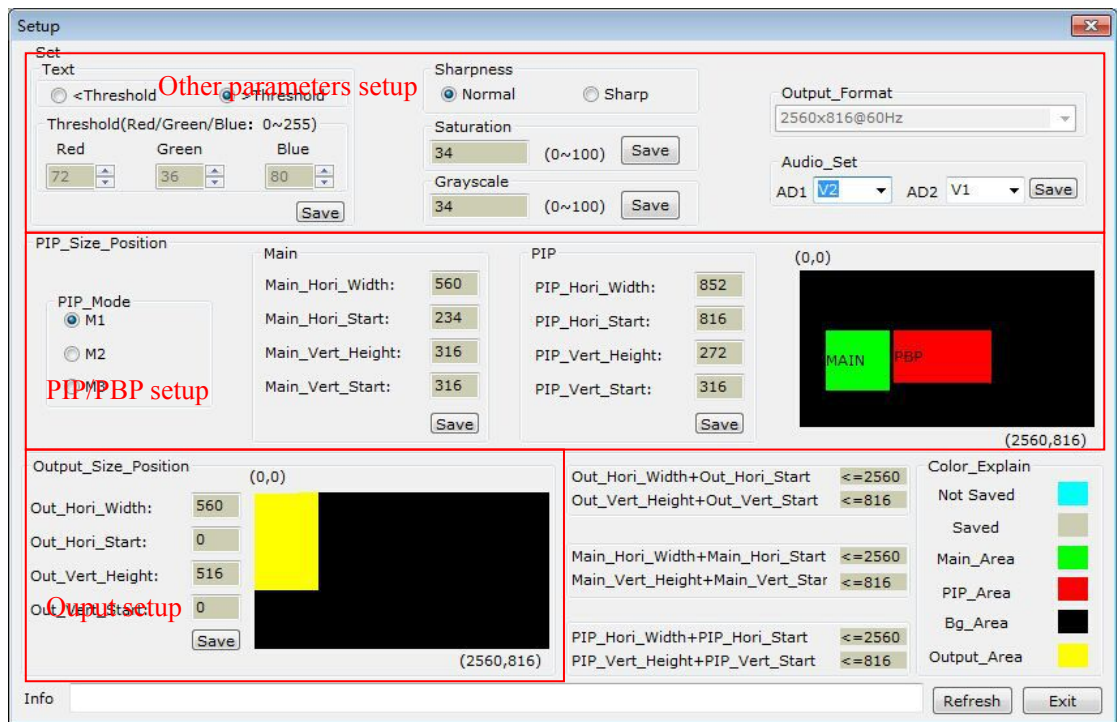
#### 7) Select language (Chinese and English)



The software supports two languages, i.e.: Chinese and English. Here user can select a desired language.

#### 8) Output parameters configuration (screen setup) menu

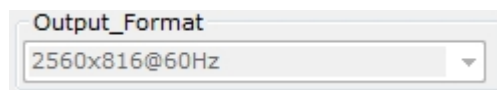
Click  in main menu, the system will enter output parameters configuration menu as shown below:



As shown in above figure, the button “Refresh” is used to update the information of currently processing parameters after parameters configuration is finished. Any abnormal of parameter will be reminded in info field.



The current output resolution of the processor is displayed in software interface, but it can't be set by the software.



In addition, among all parameters appearing in the menu, those in white background color are the parameters not yet entered or saved; while those in gray background color are the parameters already saved. See the

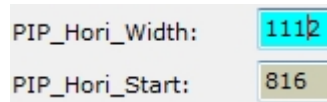


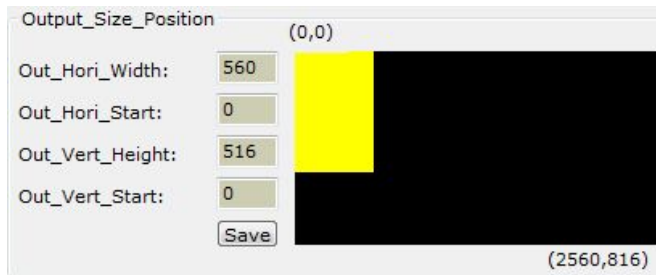
figure on the right hand:

Screen output parameters configuration include the following items:

- (1) Output image parameters setup



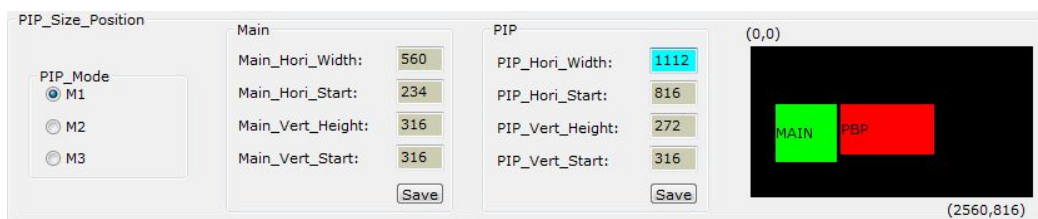
The parameters of output windows should be configured to the actual pixels of the screen to be driven.



## 2) PIP/PBP display setup (location and size of PIP windows)

This menu is used to set the three PIP/PBP display modes of LVP515.

First, select a PIP mode to be adjusted, then enter the parameters of background, location and size of PIP windows, then click “Save” button to save the parameters in the processor.



## 3) TEXT setup

It is used to set the red, green and blue threshold values of valid information of the text signals to be captured by the processor, also to set whether the text is greater or less than threshold values, select appropriate threshold values, click “Save” button to save them in the processor.



## 4) Brightness, color, contrast, sharpness setup

This option is used to set brightness, color, contrast, sharpness of output images, enter the desired parameters, then click “Save” button. To set sharpness, directly click “Normal” or “Sharp”, the parameters will be saved.

**Notes:** the default values of brightness, color, contrast are all 50.

The screenshot shows four stacked control panels for image adjustments. The first panel is titled 'Brightness' and contains a text input field with the value '64', a range indicator '(0~64)', and a 'Save' button. The second panel is titled 'Sharpness' and contains two radio buttons: 'Normal' (which is selected) and 'Sharp'. The third panel is titled 'Saturation' and contains a text input field with the value '34', a range indicator '(0~100)', and a 'Save' button. The fourth panel is titled 'Grayscale' and contains a text input field with the value '34', a range indicator '(0~100)', and a 'Save' button.

### 5) Audio setup

This option is used to set AD1, AD2 audio port as the corresponding video input port, so as to realize synchronous switching of audio/video signals.

The screenshot shows a window titled 'Audio\_Set'. It contains two dropdown menus: 'AD1' is set to 'V2' and 'AD2' is set to 'V1'. To the right of these dropdowns is a 'Save' button.

## IX. Copyright info

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