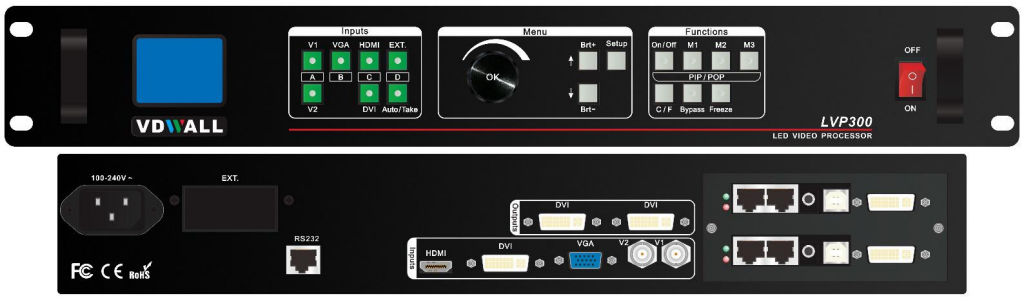
LVP300 LED HD Video Processor

User Manual V1.1



Contents

Chapter 1 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 liquid 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. **Signal cables are not hot swappable.**

! 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.

Chapter 2 Item List

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

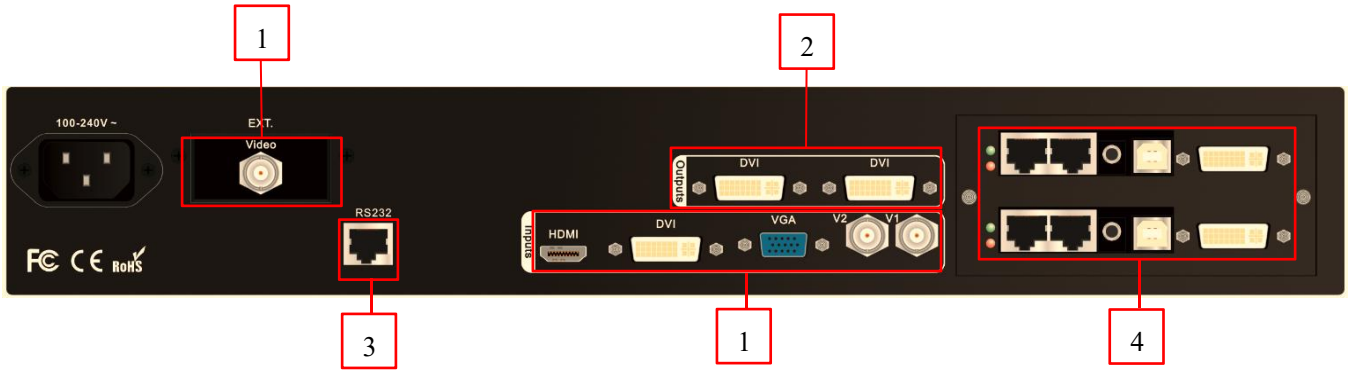
Standard accessories

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

1.5m power cord*1 	1.5m **DVI** cable *1 	0.5m **DVI** cable *1 
1.5m RS232 to RJ45 adapter cable *1 	User manual *1	CD*1 
DVI-I to VGA adapter *1 (only used for LVP300D) 	**BNC-RCA** adapter *2 	

Chapter 3 Hardware connection

1 Rear view



①Video input ports ②Video output ports ③Communication ports ④Sending card installation location

2 Ports description

1) Video signal inputs (INPUT)

LVP300 supports 6 video signals input as follows:

Port	Description
V1、V2	2*Composite Video (PAL/ NTSC)
VGA	1* PC analog signal
DVI	1* DVI (PC digital signal)
HDMI	1*HDMI (HD digital signal)
EXT.	1* Extended input

Note： EXT. Port comes standard with 1*VIDEO, and can change to 1*SDI/HD-SDI/3G-SDI, 1*VGA/DVI port or 1*USB Extended module.

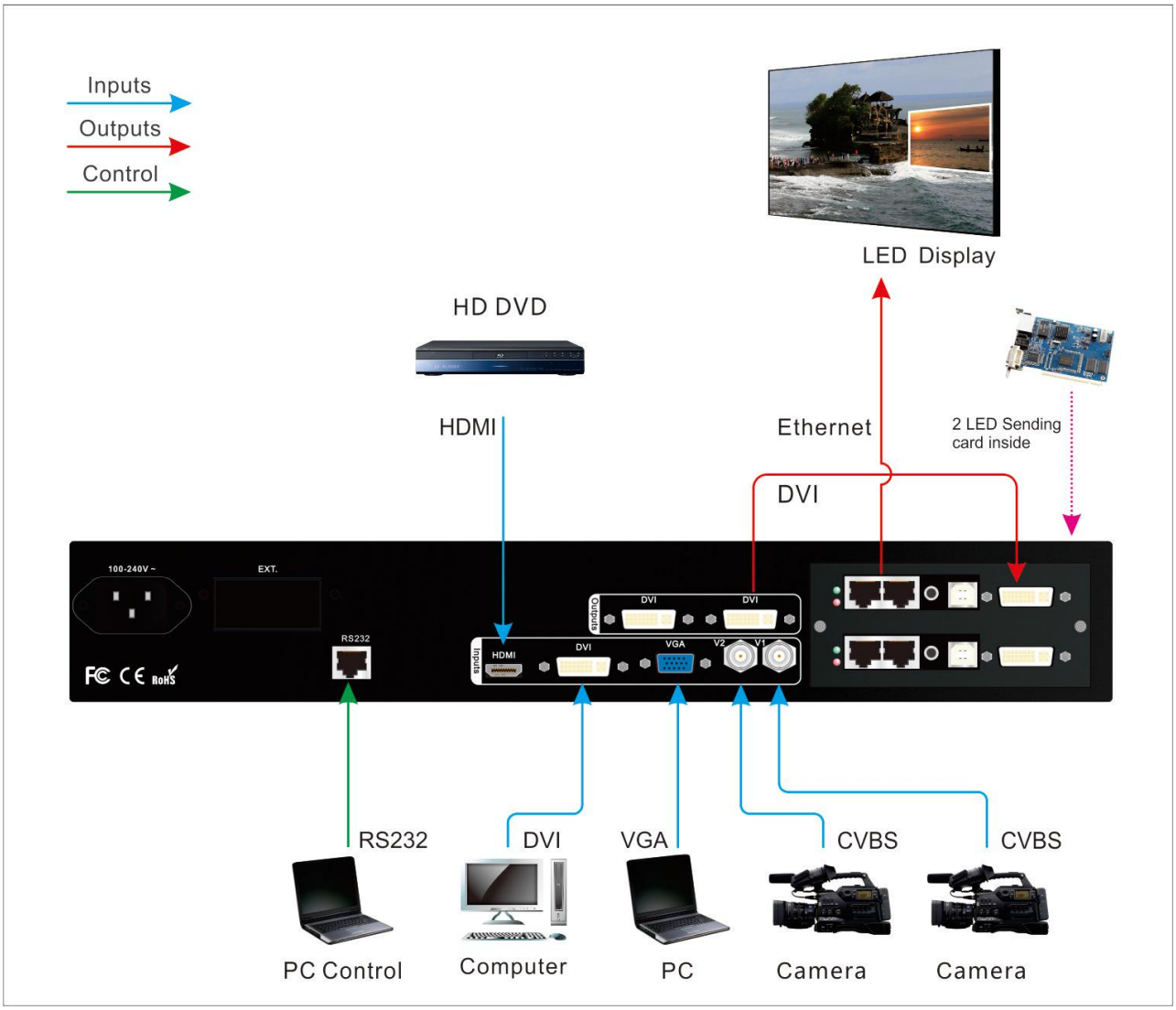
2) Video signal output

Port	Description
DVI OUT1 / DVI OUT2	2 same DVI digital graphic signal outputs, can be connected to external 2 LED transmission cards or LED transmission boxes.
SDI OUT	1 SDI Loop output(Only exist when Extended module is SDI)

3) Other ports

Port	Description
RS232	Serial communication interface, used to connect the RS232 port of PC to realize PC software control.
RF	WiFi antenna interface of USB module(Only LVP300U has this port)

3. Connection diagram



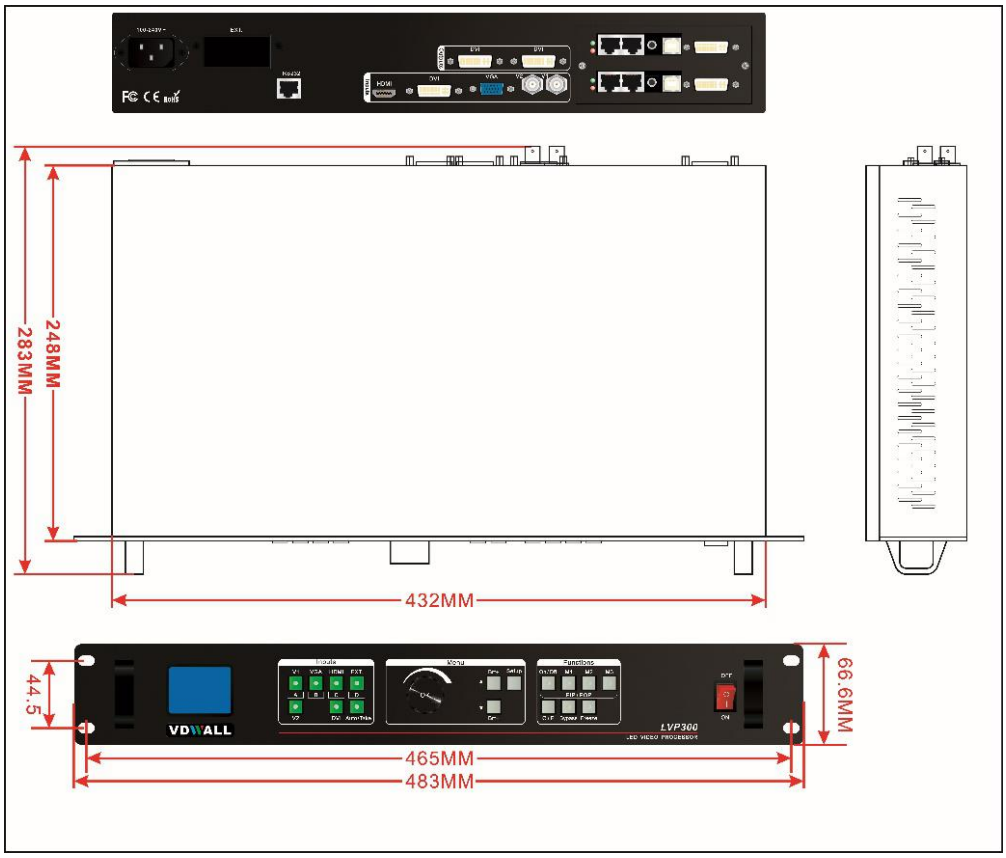
4. Specifications

Inputs	
Nums / Type	2×CVBS 1×VGA（RGBHV） 1×DVI（VESA） 1×HDMI（VESA/CEA-861） 1×EXT.（Extension）
Video system	PAL / NTSC
Composite Video Amplitude Impedance	1V（p_p）/ 75Ω

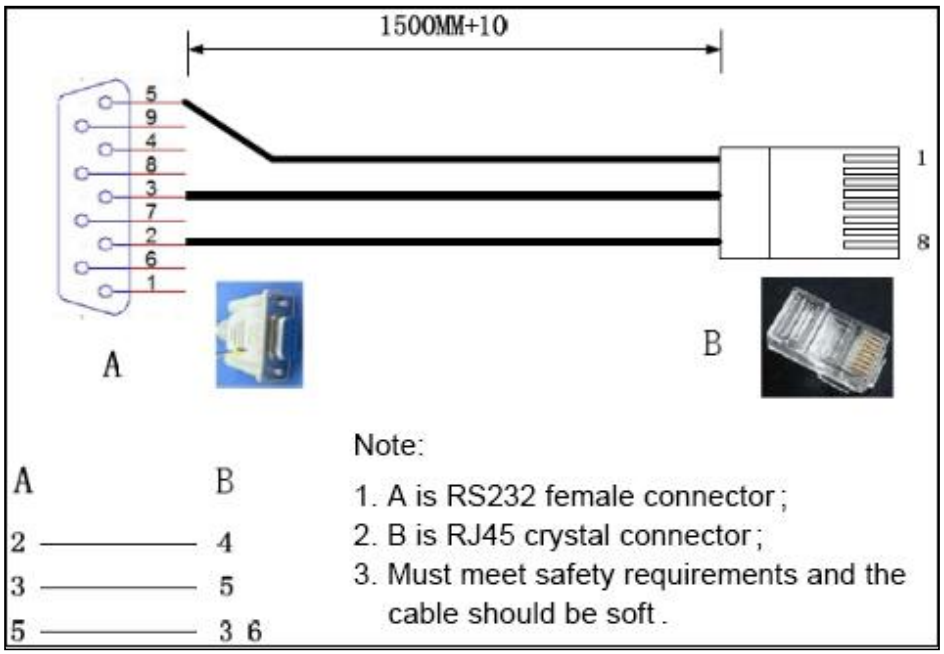
VGA Format	PC（VESA standard）	≤1920×1080_60Hz
VGA Amplitude Impedance	R、G、B = 0.7 V（p_p）/ 75Ω	
DVI format	PC（VESA standard）	≤1920×1080_60Hz
HDMI format	PC（VESA standard）	≤1920×1080_60Hz
	HDMI1.3（CEA-861）	
USB format	Multimedia video file format	MKV/TS/M2TS/TP/TRP/AVI/WMV/RM/RMVB /MPEG/MPG/MP4/VOB/MOV/ISO/DAT/ASF
	Multimedia video coding format	H.265 AVC HD、VC-1(WMV HD)、 MPEG-2 HD、MPEG-1、MPEG-4、Xvid
	picture format	JPG、PNG、BMP，Maximum Pixels 15 Million
SDI format	SMPTE259M-C SMPTE 292M SMPTE 274M/296M SMPTE 424M/425M	480i_60Hz 576i_50Hz 720p、1080i、1080p
Input connectors	Video：BNC VGA：15pin D_Sub (female) DVI：24+1 DVI_D HDMI：HDMI port A type SDI：BNC/75	
Outputs		
Nums/ type	2×DVI	
VGA/DVI format	1024×768_60Hz/75Hz 1280×1024_60Hz/75Hz 1600×1200_60Hz 1920×1080p_50Hz/60Hz 1366×768_60Hz 1440×900_60Hz 1536×1536_60Hz	
Output connectors	DVI OUT：24+1 DVI_D	

others	
Control	RS232
Input voltage	100-240VAC 50/60Hz
Power consumption	≤25W
Environment Temperature	0-45℃
Environment Humidity	15-85%
Product Size	482.6（L）x283（W）x49（H）mm
weight	Gross weight：4.6Kg, Net weight： 3Kg

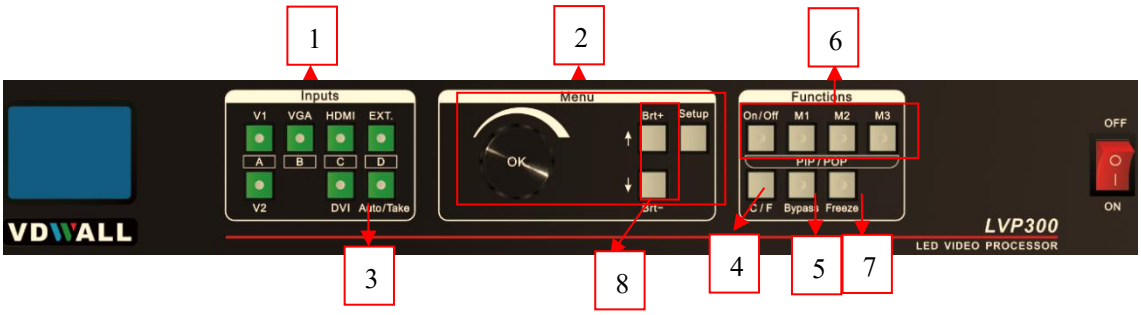
5. Product Size



RS232 cable order：


1500MM+10
5
9
4
8
3
7
2
6
1
1
8
A
B
A B
2 4
3 5
5 3 6
Note:
1. A is RS232 female connector;
2. B is RJ45 crystal connector;
3. Must meet safety requirements and the cable should be soft.

Chapter 4 Front panel buttons



1 Input signal selection buttons (**V1**, **V2**, **VGA**, **HDMI**, **DVI**, **EXT.**, **Take**):

select the input signal.

2 Setup buttons(**Setup**, ↑, ↓, **旋钮**) Knob

Set the output image parameters.

3 **VGA** auto adjustment button (**Auo**)

automatically adjust the VGA input signal.

4 Switching time setup button (**C/F**):

select seamless switching time including 0 second (cut), 0.5 second,1.0 second and 1.5 second (fade in fade out) and blend switching function.

5 **PC** signal bypass output (**Bypass**):

Switch between part and full display of PC signal. The indicator shows the current state of the input signal.

6 **PIP/PBP** keys (**On/Off**, **M1**, **M2**, **M3**):

On/Off : **PIP/PBP** turn on/ off button. When the indicator is on, press input signal selection to choose different group input or current input itself as the PIP signal.

M1, **M2**, **M3**: Switch PIP/PBP model.

7 Freeze button (**Freeze**)

turn on / off freeze function.

8) Brightness adjustment button (**Brt+**, **Brt-**)

adjust output brightness level under user operation station.

Chapter 5 Basic user instructions

After **LVP300** boot, it enters the operation status of last shut-down including signal switching status, PIP/POP (or Text overlay) status and mosaic status. Among them, PIP/PBP(or text overlay) status and mosaic status can only realize relative functions and cannot do other operation. Other relative operations are available under signal switching status. We illustrate the common operations as below.

1. Input signals selection

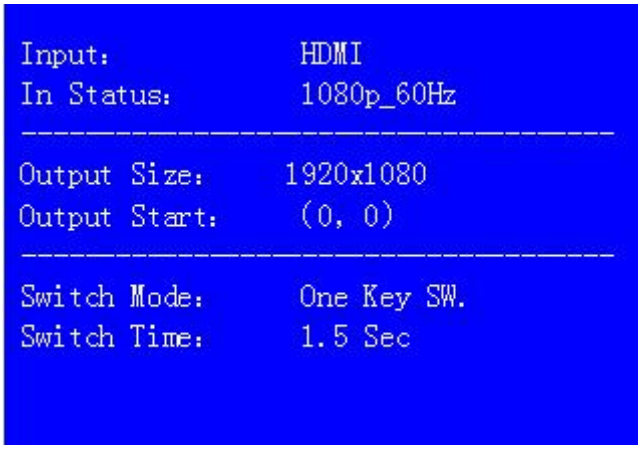
LVP300 supports two signal switching methods including"***One key switching***"and"***Pre.+Take switching***". The switching method can be set in user setup menu "2.2 switch mode". "***One key switch***" is default method. One key switch to new input signal through input signal selection buttons.； "***Pre.+Take switch***" only available for seamless switching. Press input buttons to preselect first. Then press **Take** button to switch from current input signal to preselected signal.

Input signal selection as follows：

Buttons	Description
V1，V2	2 * composite video signal input (PAL/ NTSC)
VGA	1 * PC analog signal input 1 路计算机模拟信号输入
DVI	1*DVI digital signal input
HDMI	1 * HDMI digital signal input
EXT.	1* extended signal input

1) One key switch

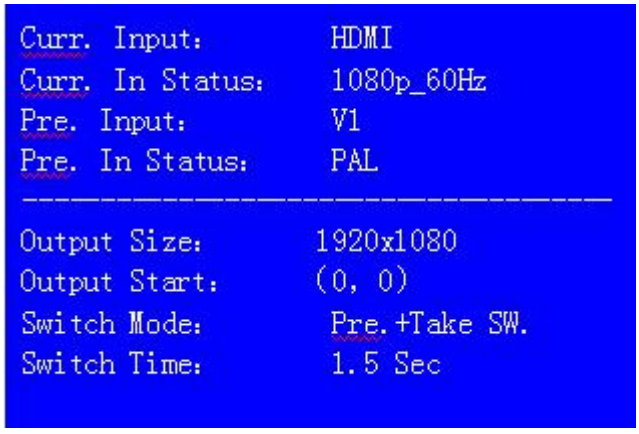
LCD screen display as below:



After select input signal, The first line on the LCD display the current input signal. Like：“ Input：**HDMI** ” 。The second line on the LCD display the signal status.If no active input, display” No input’. Meanwhile,the corresponding indicator flicker. Led screen is black. If active input, display input signal format Like：“ 1080p_60Hz ”

2) *Pre.+Take switch*

LCD screen display as below:



Switching signal method: press input button to preselect first, LCD screen displays the current input status and preselect input status. Then press **Take** button to switch current input to preselect input. After the completion of switching, preselect signal become the current input signal. The status of the preselect signal indicator: when the signal is valid, the indicator flicker rapidly. when the signal is invalid, the indicator flicker slowly.

Note：***Pre.+Take switch*** only available for seamless switching. **LVP300** supports seamless switching between any two different input groups as follow. Same group does not support seamless switching. For example, current input is V1(V1 in group A). Then, preselect signal is only from B,C,D group. Signal group as follow：

A	B	C	D
V1、V2	VGA	DVI、HDMI	EXT

3) Switching time setting （C / F）

In the signal switching status, press **C/F** button continually can change the current seamless switching transition time. LVP300 can achieve seamless switching between any two different input groups of four input groups. Switching effect includes seamless switching (0s), Fade in/ Fade out (o.5s 1s 1.5s) and blend switching.

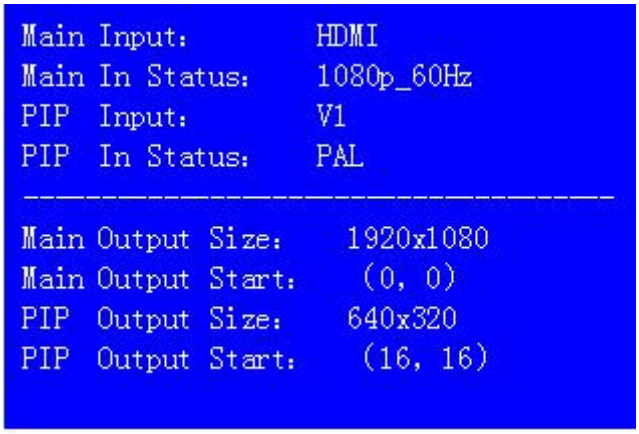
Seamless switching（**Cut**）：On the LCD“Switch time” is 0s. **LVP300** default switching is CUT.

Fade in fade out（**Fade**）：On the LCD“Switch time”is **0.5s**、**1.0s or 1.5s.** In this mode, different group signals support fade in fade out switching.

2. PIP/PBP operation

LVP300 allows to insert PIP window on the current display signal. That is dual image display function(PIP/PBP)。PIP signal can be any input signal from other input groups or current input signal itself. （signal group refer to page **19** signal group list）Dual image size can be preset 3 modes.The detailed operation method is as follow：

Enter PIP/PBP mode： press **On/Off** button，the indicator will be on. LVP300 enters PIP/PBP mode. Then press input signal button to select PIP signal. At the same time, LCD will display main input and pip input status and size.（as shown below）



Select PIP input signal：In **PIP** mode，press button to select corresponding signal. Then this signal is configured as **PIP input**.

Select Main input signal：Press **On/Off** button to close PIP mode.，Press button to select corresponding signal as main input signal. Then press **On/Off** button to enter **PIP** mode to select pip signal again.

Switch PIP/PBP mode：When PIP/PBP is on，press buttons **M1**、**M2**、**M3** directly to select display mode fast.

3. Other basic user operation

1) Brightness selection（Brt+，Brt-)

LVP300 supports 64 level or 100 level brightness selection. According to“6.5 bright level” selection，adjustment range has two kinds：***0~64*** or ***0-100.*** Factory default is ***0-64.*** To make sure of full gray scale of output image, it always set as 64 (0-100 default value is 50) !

button	description
BRT-	Reduce **LVP300** output brightness，the lowest is 0.
BRT+	Increase **LVP300** output brightness, the highest is 64 or 100.

2) VGA input auto adjustment （Auto)

When LVP300 is in one key switch status and current valid input signal is VGA, press **Auto** button to adjust VGA input signal sampling parameters. Then the VGA output image can be clear and full.

This operation is normally performed when a new VGA source is connected. Auto adjustment time is depend on the signal status. Normally it’s less than 1 second. Sometimes it’s necessary to perform several times until the output image is clear, full and stable.

3) Full/ part display（Bypass）

In signal switching status, press **Bypass** button to switch full and part display.

This function only works when current signal is **PC** input signal（**VGA/ DVI /HDMI).** Fixed other signals to **Full** mode.

state	description
Full	Full display,the input image is compressed and fully displayed on the led screen and the indicator is off.
Part	Part display, the input image is not compressed.Only a part of it can be displayed on the screen and the indicator is on.

Note: When the width and height of input image are lower than the LED screen real width or height value. Part display is invalid.

4) Text overlay

LVP300 allows for overlapping text, logo or flash on the current image. The operation is as below.

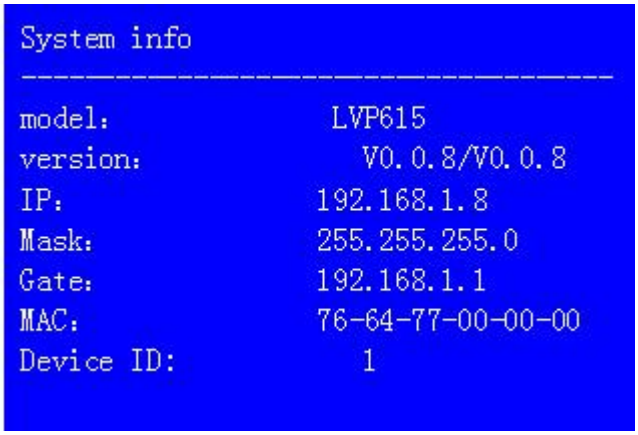
When the current input display properly, enter setup menu“3.Text overlay”， set ”3.1 text overlay” on， then select text source.Text can be produced by PowerPoint and other office software.

5) Image freeze (Freeze)

Press **Freeze** button and the indicator is on, the current image is frozen. Press **Freeze** button again or switch to another signal to exit Freeze status.

6) Device information view (OK)

In signal switching status, press **OK** to check the LVP300 current setting and information.



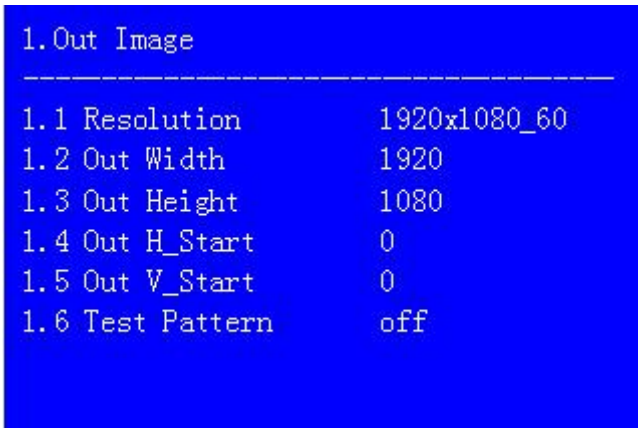
Chapter 6: Setup menu instructions

Setup menu is to set the entire processor. There are 7 section including **output image**、**input image**、**text overlay**、**image quality**、**language**、**advance**、**PIP/PBP.**

After the system starts，Press **Setup** to enter the setup menu.Then press↑,↓ button to select the corresponding menu item to be set. Press **OK** button to enter and **Setup** return back upper level menu. The following is a detailed description of each menu function：

1. Output image setting

Press **Setup** to enter setup menu. Press ↑,↓ button to select"1.Out image" item.Then press **OK** button to enter the following image"1.Out image" item.

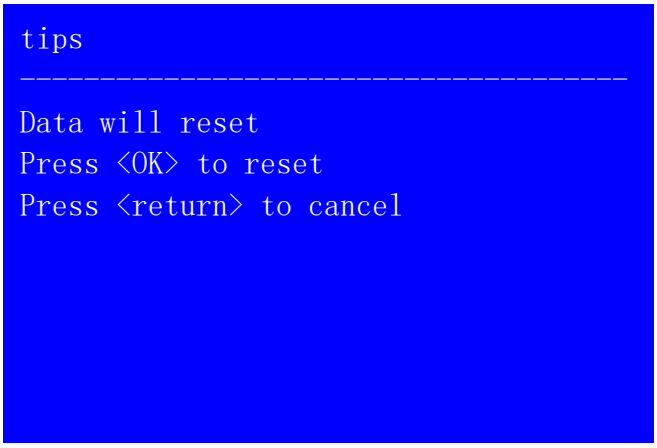


1) Set output format

LVP300 can output image from 2 DVI OUT. There are 10 fixed output format and custom output format.（refer to page 8 specifications）. Users can select fixed output format not less that the LED screen resolution.

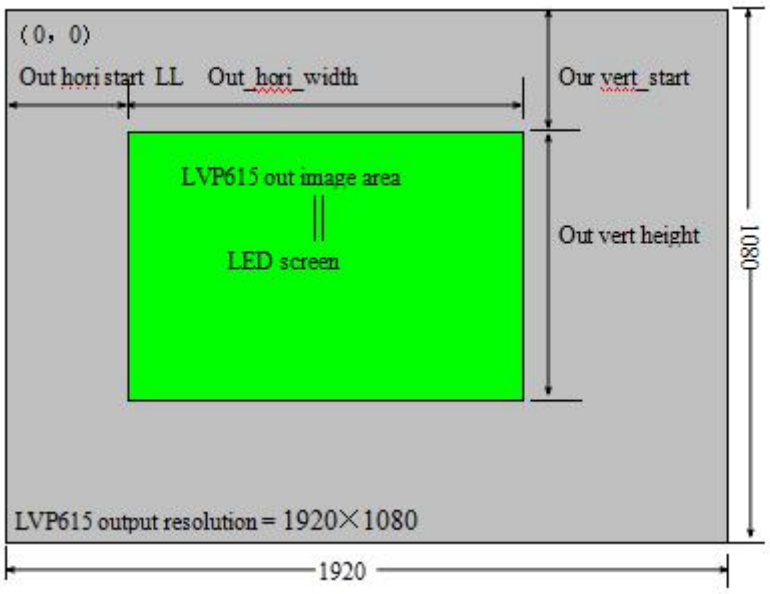
Operation steps：

Press ↓to select "1.1 Resolution" item. Rotate **knob** to select suitable output format，like"**1280×1024_60**"，Press **OK** button, the screen will display confirmation menu. Press **OK** button again to confirm the output format. The device will restart automatically.



2) Set output image parameters

LED screen real resolution can be arbitrary. So we need set **LVP300** to output the same image as the led screen. Then the LED screen can display whole image.



As shown in the above picture: the size and location of output image of **LVP300** can be defined in 4 parameters:

Item NO.	Item name
1.2	*Out_hori_width*
1.3	*Out_vert_height*
1.4	*Out_hori_start*
1.5	*Out_vert_start*

Note：current set parameters can be changed by rotating **knob**. **knob** rotating speed can decide the step value. Press“**OK**”button to save the set parameters.

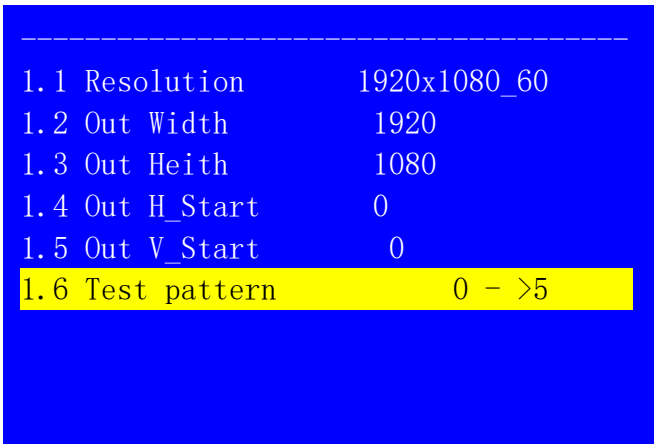
3) Test pattern

LVP300 can generate 36 test patterns for LED screen testing.

If this item value is “off”, turn off Test pattern. Select other number and confirm.Then one corresponding test pattern of 36 pcs will be selected.

Operation steps：

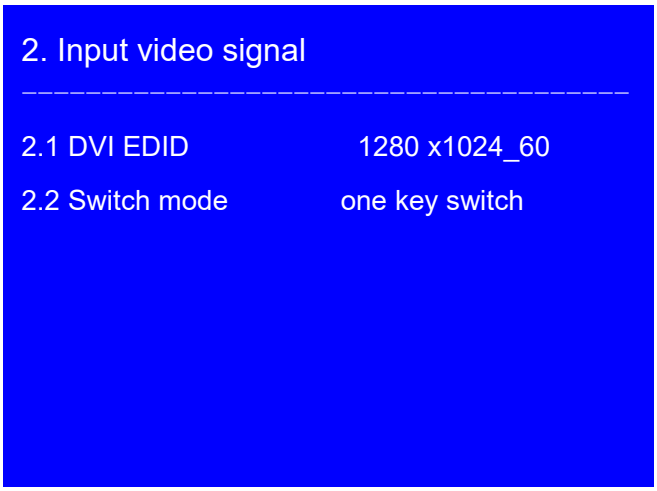
Press ↓ button to select“1.6 Test pattern” item，then rotate **knob** to select suitable test pattern number and press ”**OK**” to apply the test pattern.



Note： The current signal must connect valid input. Then the test pattern has output. Otherwise no output.

2. Input video signal setting

Press **Setup** button to enter setup menu. Press⇓ button to select 2. Input video signal and press **OK** to enter this item.



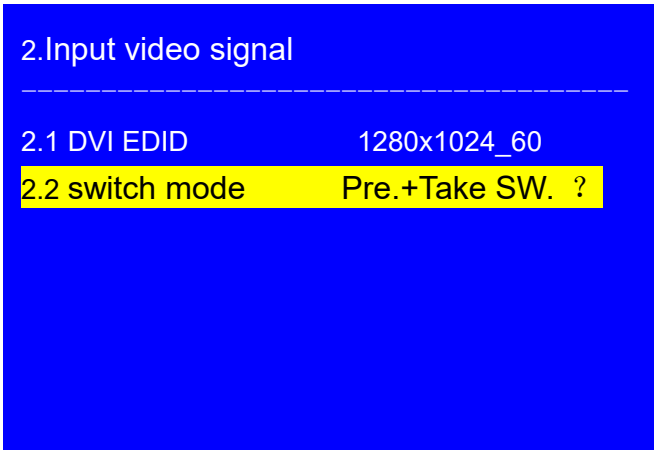
1) DVI EDID

VP300 supports 10 fixed DVI EDID. Normally the parameters setting should be consistent with“**custom output format**”.

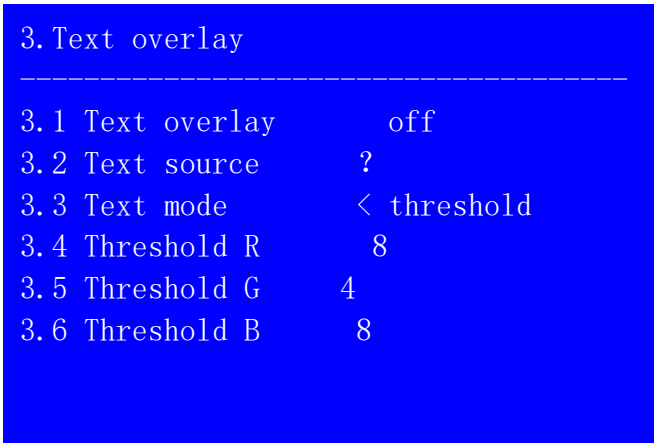
Operation steps：In the menu 2.1 DVI EDID，rotate **knob** to select suitable resolution and press **OK** to save data.

2) Signal switch mode

Press **Setup** to enter setup menu， press ↓ to select “2. Input video signal”，Then press **OK** to enter“2.input video signal ”， and press ↓ to select signal switch mode“***one key switch*** ”or ***Pre.+Take switch*** ”,Press **OK** to apply.



3. Text overlay setting



1) Text overlay operation

In the current input signal， press **Setup** and press↓ to select"3.text overlay"，Press **OK** to enter，in the menu"3.1text overlay " rotate **knob** to switch it on. Then press ↓ to enter"3.2text source " menu to rotate **Knob** to select text input signal. Text overlay is on. If need turn it off, enter 3.1 text overlay and switch it off.

2) Text overlay parameters setting

3.1Text mode： **LVP300** can custom text mode < threshold or > threshold. < threshold means text signal image which is less than the current threshold value will overlay on the current signal. The bigger part will be automatically filtered out. > threshold means text signal image which is bigger than the current signal will overlay on the current signal.

Threshold R /G/B：This is used to set three thresholds subtitles red, green and blue respectively for a particular value between 0 to 248.

The following is the text overlay example. Text file is made by Powerpoint. Parameters are as follow:

3.3	***Text mode***	***<threshold***
3.4	***Threshold R***	**248**
3.5	***Threshold G***	**248**
3.6	***Threshold B***	**248**

Main picture text text overlay

4. Color& Brightness,etc.

LVP300 supports custom color,sharpness and brightness setting. List as follow:

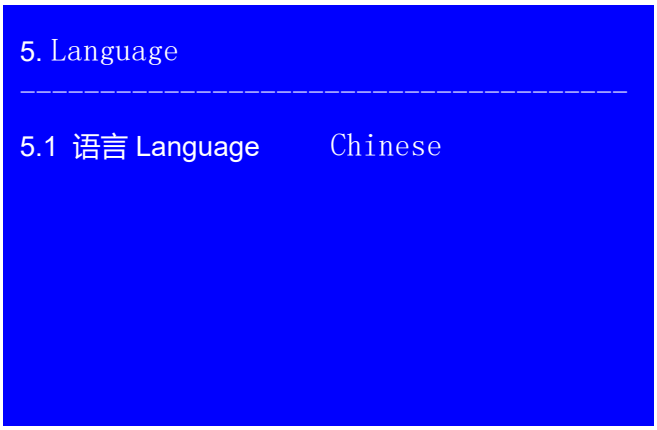
Item name	Definition
4.1 color	Adjustment range：0~100， default 50
4.2 sharpness	Normal or sharp，default : normal.
4.3 brightness	According to “7.5 brightness level” setting, adjustment range includes ***0-64 or 0-100.*** The factory default of adjustmet range is ***0-64*** and default is 64.“Brightness level” can be set in factory setting.。

Note：To make sure of full gray scale of output image, these output parameters are set as default!

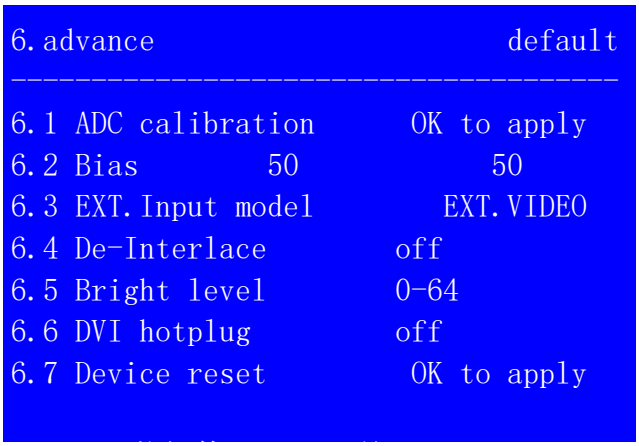
Color parameters are invalid for RGB format VGA, DVI and HDMI.

5. Language setting

LVP300 supports Chinese and English language.Rotate **knob** to select one and press **OK** to save.



6. **Advance setting**



1) ADC Calibration

"6.1 **ADC Calibration**" is used to calibrate the white balance of analog signals to avoid color cast or extreme darkness problem. This function is only available for non ext. Input VGA,CVBS. The operation way is as follow：

In the current available Analog signals, enter"6.1 **ADC calibration**" and press **OK** to start to calibrate.

Note：Processors finished white balance calibration before leaving factory. Please use this item carefully.

2) Bias

To reduce noise of low gray scale images, LED display system normally will remove the low gray scale part from input signals. But this will also bring information loss of images, especially dark images like night scenes.

LVP300 can adjust" 7.2 Bias " parameters to adjust. The value range is：0— 100. In the case dark image information lost, adding this value will bring back the lost information and fully display the image on LED display.

Note: to make sure of full gray scale of output image, the default value is 50.

3) EXT. Input Model

The option is used to configure extended module after replacing it, to make sure the module can work normally. Operation is as below:

Entering "6.3 EXT. Input Model" option, rotate knob to select relative option, press OK button to save. The setting will be active after restarting.

4) De-Interlace

This option is used to remove trembles, which might happen when inputs are CVBS/HDMI signals interlace signals (e.g.: 1080i) and used as PIP. Operation is as below:

Enter "6.4 De-Interlace", rotate knob to select "On", press "OK" button to make setting active.

5) Brightness level

bright level	description
0-64	0 is minimum brightness, 64 is default standard brightness.
0-100	Allow higher brightness value: 0 is minimum and 50 is default value.

According to different demands, user can select relative “Bright Level”. “6.7 Device Reset” will not change the parameter of “bright level”. When multiple units doing cascading splice, all units must be same “bright level”. Operation is as below:

Enter “6.5 Bright Level”, rotate knob to select “0-64” or “0-100”, and press “OK” button to confirm the setup.

6) DVI hotplug

“DVI hot plug signal” is sent by processor to graphic card or other signal source devices, as a proof for signal source device to identify whether outputs DVI signal source or not. A few PC when use some software play video on extended desktop, the “hot plug signal” to the device may cause the player out of order on extended desktop. If this happens, please enter setup menu “6.6 DVI Hotplug” to turn this function off.

7) Device Reset

The menu is used to initialize LVP300. Operation as below:

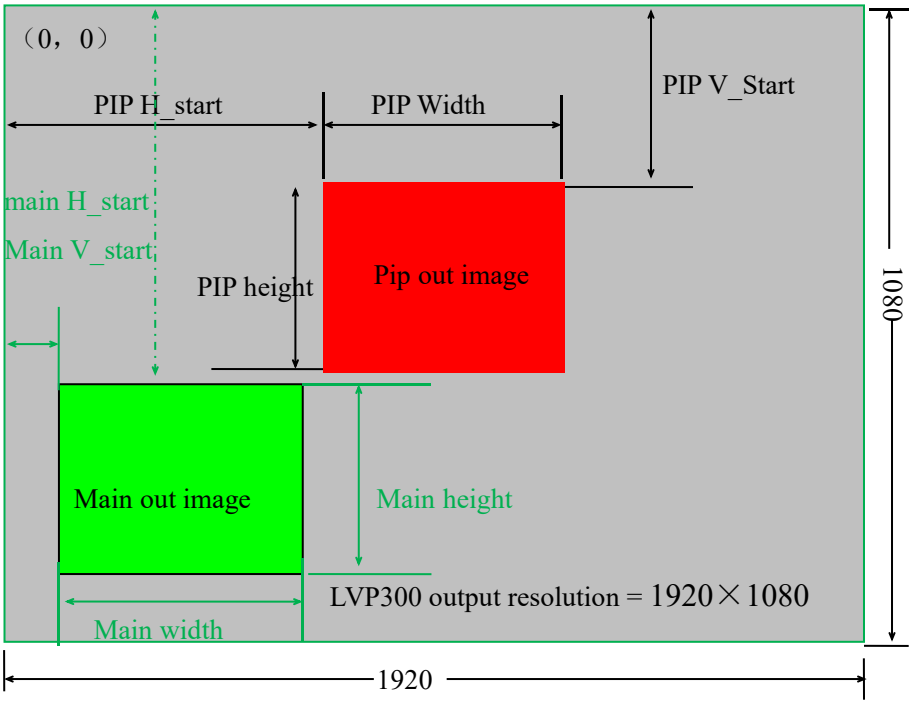
Enter “6.7Device Reset” and press OK button, there is one information on LCD screen to remind you data will reset. Press OK to apply. LVP300 will reset and restart.

7. PIP / PBP setting

D. PIP/PBP	Mode=M1
D. 1 PIP Width	640
D. 2 PIP Height	320
D. 3 PIP H_Start	16
D. 4 PIP V_Start	16
D. 5 MAIN Width	1920
D. 6 MAIN height	1080
D. 7 MAIN H_Start	0
D. 8 MAIN V_Start	0

The setup option is used to set LVP300's three user defined **PIP/PBP** mode. Operation as below:

When LVP300's PIP/PBP status is open (the indicator light on "On/Off" button is lit up), press Setup button, LVP300 enters "D. PIP/PBP" menu. Then press mode button (M1, M2 or M3) to select a mode to save parameters, press ↓ to select parameter option needed to adjust. For example "D.1 Main Width", rotate **knob** to change parameter, press OK button to save.



Chapter 7 PC control software instructions

LVP300 control software is applied to operate LED Video Processors. We can do such operations as below via this software:

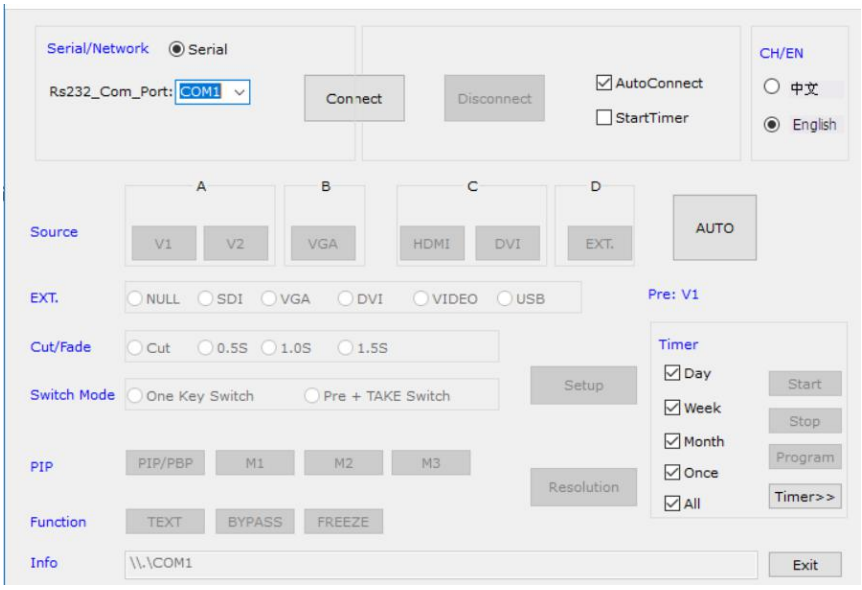
- Seamless Switching And Fade-In/Fade-Out
- 3 User-Definable Dual Windows Display Modes And Text Overlap
- Features Bypass And Freeze
- Set Parameters Of LVP300
- Automatic Timing Control To Switch Input Signals

1. Control Method

RS232 is the most Frequently Used port for device controlling to remote locations. You can do a remote operation by PC after it is connected to the processor through RS232 cable.

2. Introduction To Software Interface

Double click this icon and start this software, the main interface would show up. As For the details, please refer to the figure below.



As it shows in the picture upon, the main interface is divided into 9 parts:

① Communication Settings

② Language Settings

③ Signal Switching

④ Modes Selection

⑤ Info Bar

⑥ Timing Control Settings

⑦ Output Parameters Settings(Screen Settings)

⑧ Output Resolution Settings

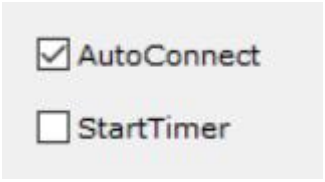
1) Communication Settings

The default connection method is via COM port among Communication Settings. You need to select the right COM port and you can check which is the right one on Device Manager view, it is shown in this picture below.

After those settings，press **Connect**，it shows this Prompt as below.

After connecting successfully, all the function buttons on the interface are activated, and it shows the Prompt of connecting successfully on the info bar of the main interface.

Timing autostart settings：to decide whether it will connect with this processor automatically and start-up timing control automatically the next time it is power on.



2) Language Settings

LVP300 software supports 2 optional languages used on the main interface.

3) Signal Switching

The buttons in “Source” area is corresponding to those buttons and status indicator on the front panel.

After connecting successfully, a blue dot nearby will light up to indicate that this signal source is effective. If it flickers, it means this signal source is invalid.

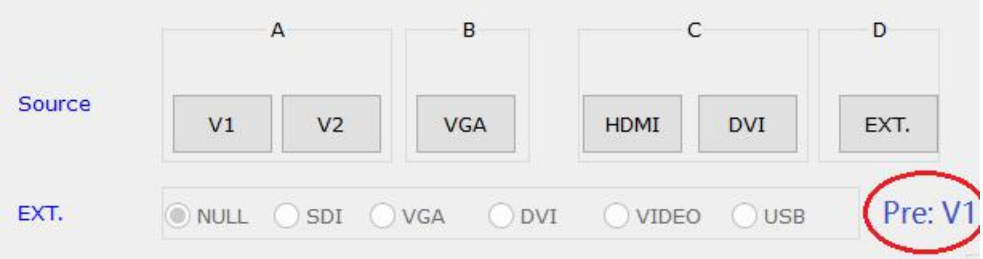
AUTO: **VGA auto adjustment button, this only works properly for VGA input.**

Switching effect is optional, you can choose seamless switching with a duration of 0.5s ,1s or 1.5s, or Fade in/fade out switching.

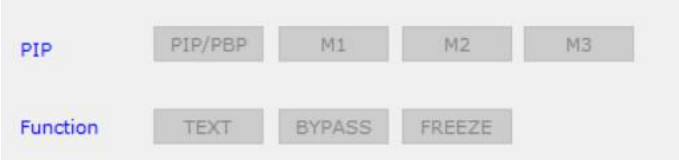
Modes selection:

It defaults to **One Key Switch**, tap on this button, then the input signal would be switched to another input signal.

If you select **Pre+TAKE Switch**, that area will be changed into the appearance showed below. the blue dot would mark and indicate the current signal and the pre-selected signal. After this operation and the signal is stable, we just press **TAKE** to switch signals.



4) Modes Selection



These buttons in this area are used to display under PIP status, text overlap, bypass, freeze stream which is playing and mosaic.

PIP/PBP: This button is used to turn on or turn off function PIP/PBP, the blue dot above will tell you whether it is on or off. After starting up, we can change signals for PIP.

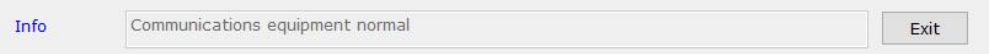
M1、**M2**、**M3**: This is a button calling dual images mode. A blue dot will show up above when one mode is applied.

TEXT: A blue dot above this button will tell you whether this function is turned on or off, the input signal for text is optional after it is open.

BYPASS: Fully to partially switching, this only works on VGA / DVI / HDMI / DP signal.

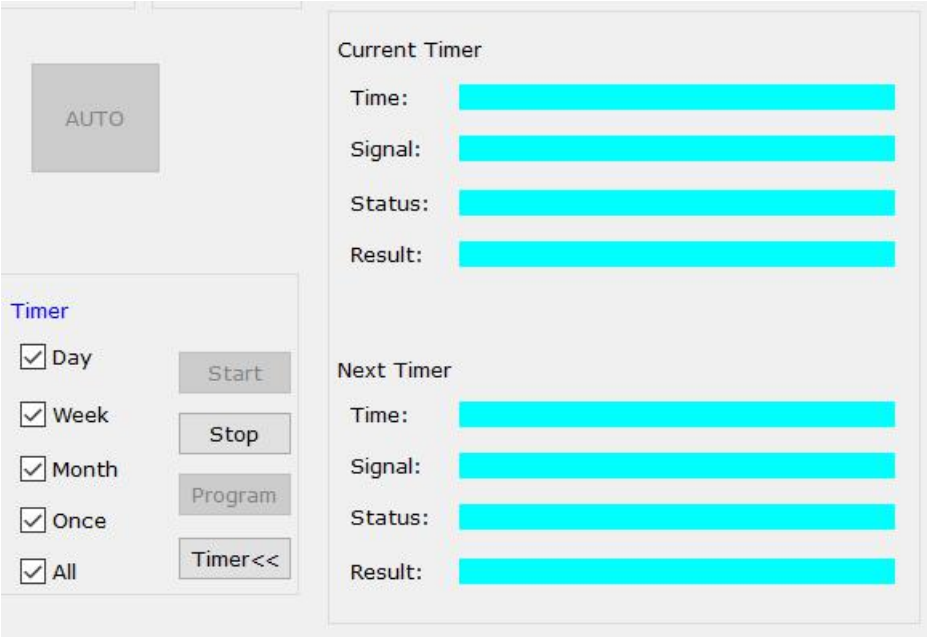
Freeze: Freeze the image displayed, operate it while switching input signals.

5) Info Bar



If there occurs a failure, the info bar will show you the reason why it is failed.

6) Timing Control Settings



The timer in the software can switch input signals on time set before. And there are 4 modes you can choose including daily timing, weekly timing, monthly timing and freely timing.

Start: to start the function of timer.

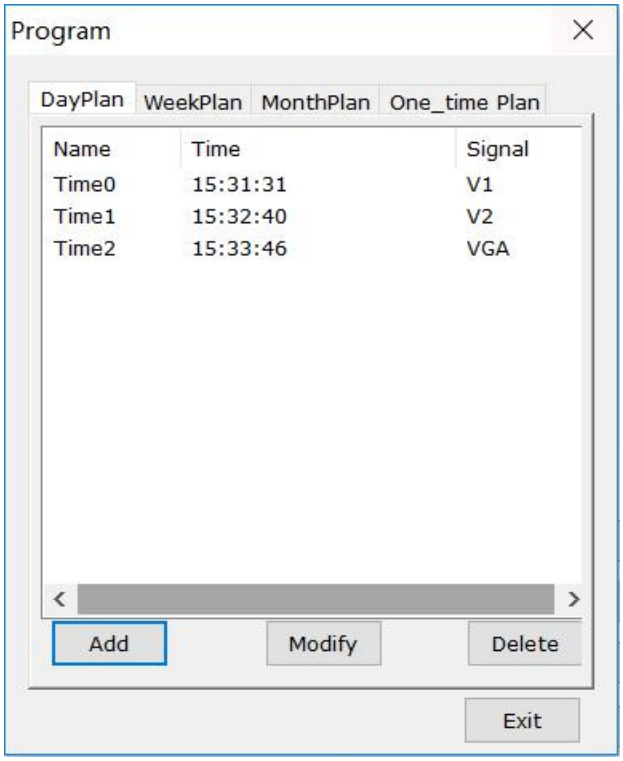
Stop: to start the function of timer.

Timer<<: to expand or collapse the execution list.

Click “program” to open the interface of schedule timer settings, then you can check, add, modify or delete timing schedule.

7) Timer parameter settings

Click this button **Program** on the main interface and this box below will appears.



Schedules are classified into two types:

① Cyclical schedule

② One-off schedule

Meanwhile, cyclical schedules are classified into 3 types:

① Daily timing

② Weekly timing

③ Monthly timing

Users can choose any one from them

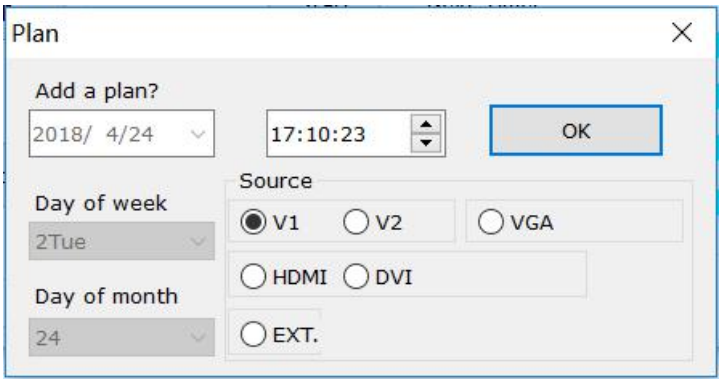
As for the daily timing, you can freely set detailed hour, minute and second.

There are 7 days in one week, the weekly timing allows you to set what day it is, hour, minute and second.

There are 31 days at most in one month， the monthly timing allows you to set date, hour, minute and second.

One-off schedule allows you to set year, date, hour, minute and second. Cyclical schedule and one-off schedule can work at the same time.

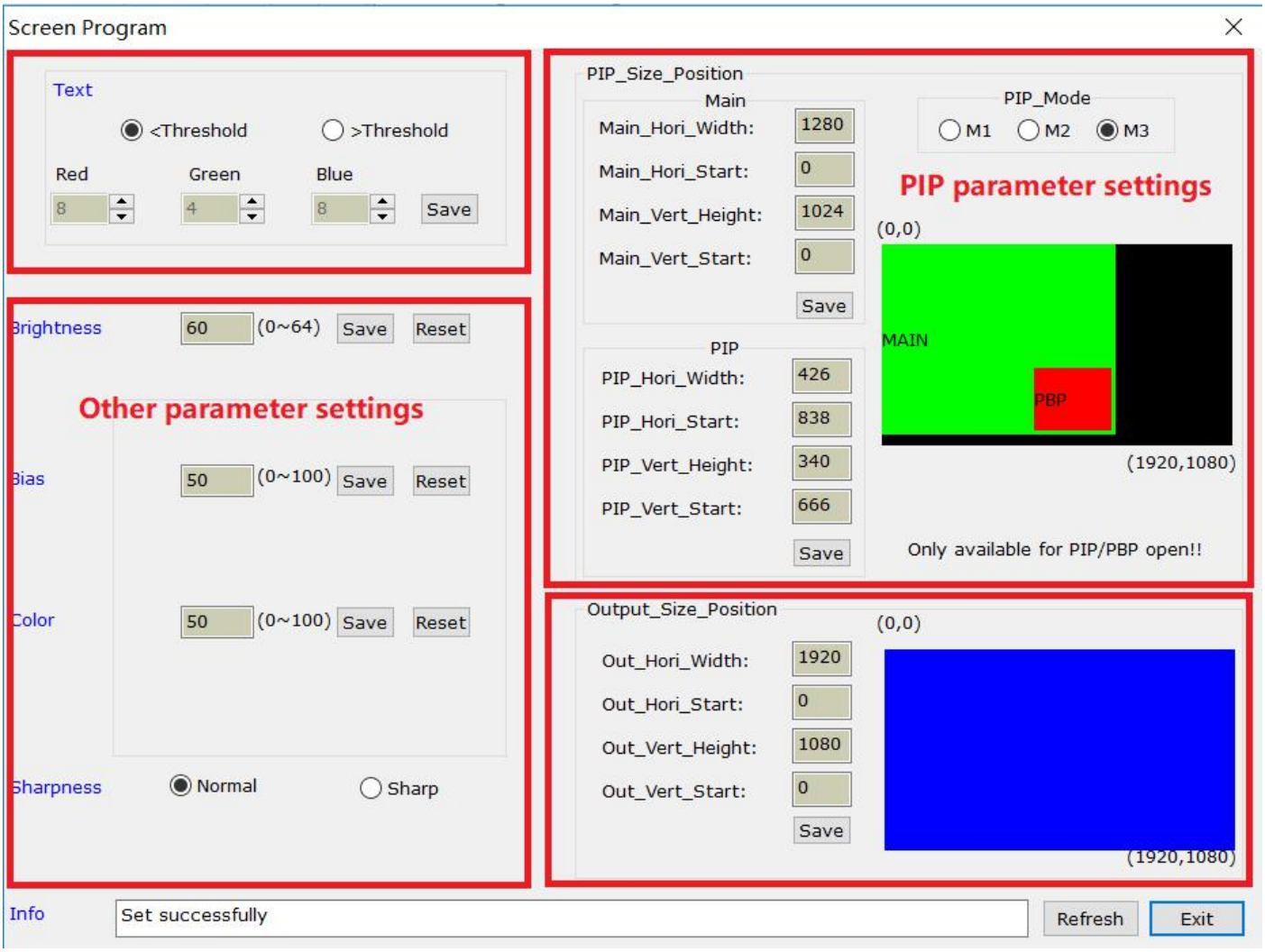
You can add, modify or delete every schedule， the example below shows you how to add one-off schedule.



Select an added schedule, then you can modify or delete it.

8) Output Parameters Settings

Click **Screen Program** on the main interface, an interface of output parameter settings will come out. Users can set output parameters for the processor on the main interface.



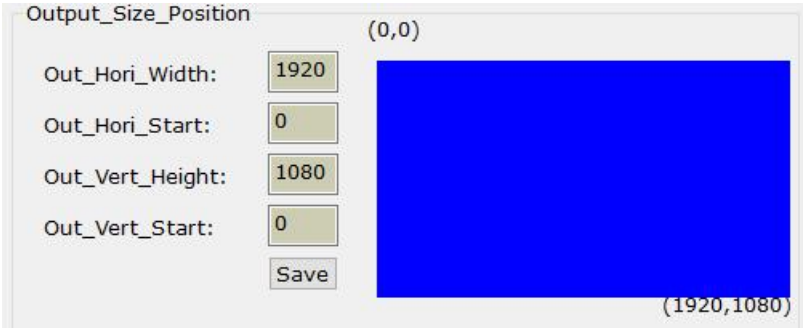
As the picture showed above, the button “refresh” is set there to reread parameters set before. The info bar is used to indicate Exception information currently.

A background in blue reminds you that you are typing and the value of parameters have not been saved, while a background in grey means all the parameters have already been saved successfully.

The interface of output parameters Settings is divided into 4 parts.

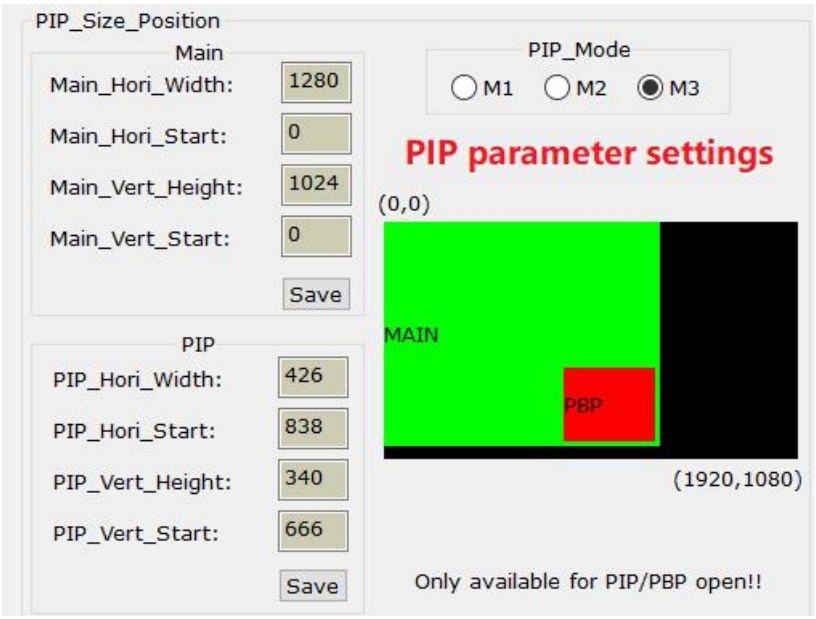
① Output window settings

The output window settings are all based on the LED’s resolution.



② Dual Images Settings

This interface below is used for settings for 3 PIP/PBP modes. We need to make sure that the PIP function has already been turned on before setting. Firstly, we need to enter the PIP mode you selected, then we input values of background's size and PIP window's size, save it after it is done.



③ Text Overlap

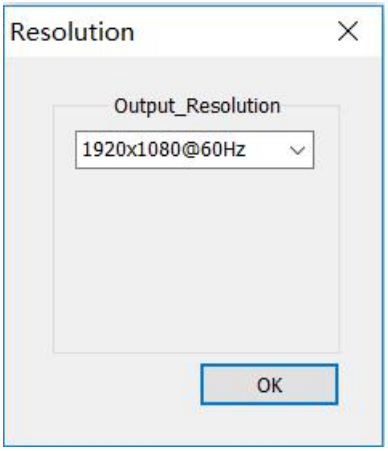
This is used for the processor to set proper threshold value for the input signal, save it to the processor and then it works.

④ Picture controls for brightness, color, Low ash bias, Clarity,

These options are used to set values of brightness, color, Low ash bias and Clarity. Input the parameters and tap on this button **save** to save it， or you can just tap on **Reset** to restore default values. As for the clarify, you just click “smooth” or “clear”.

Remark: the default values of color and low ash bias are all 50.

9) output Resolution settings



Click **Resolution** on the main interface of LVP300 software and this popup will appear above. Users can set this output resolution as you will.

Setting output resolutions： Tap on the drop-down box， select a proper output resolution and this resolution would be applied automatically.

Chapter 8 Copyright information

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.

Appendix：modify the record table

version	time	description	draft
V1.0	2017.9.27	LVP300 first release	Lts