



## Video Processor HDP901

V1.2 20171218

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## Safety Instructions



This symbol prompts the user, the device user manual has important operating and maintenance instructions.



This symbol warns the user of the equipment inside the enclosure exposed to hazardous voltages, there is the risk of electric shock.

## Note

Read the manual • Read and understand all safety and operating instructions before using the equipment.

Save the manual • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

## Warning

**Power sources** • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

**Power disconnection** • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

**Power cord protection** • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

**Servicing** • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

**Slots and openings** • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

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## Copyright

Copyright © 2016Rgbsky The splicing processor and the video processor manufacturers all rights reserved.

## Trademarks

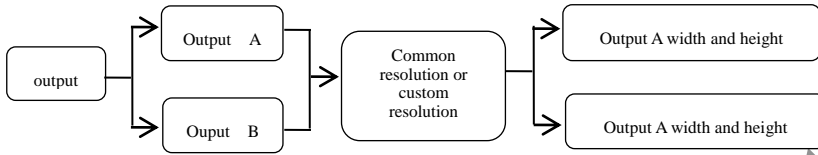
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## -----Splice Wizard-----

### 1、 set the channel A, B resolution



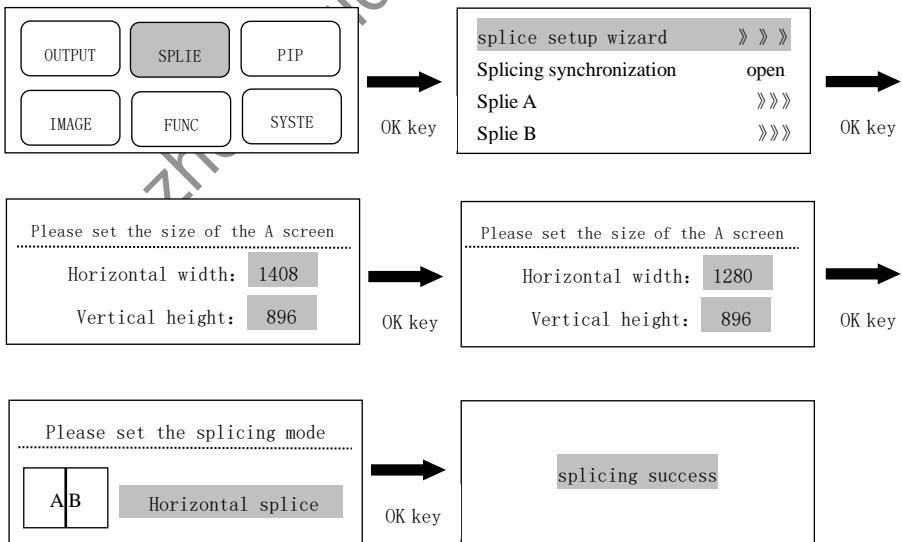
Output A channel: Default menu→Output→Output A→Custom resolution→Horizontal width (Knob adjustment size) →Vertical height (Knob adjust size) →Change resolution

Output B channel: Default menu→Output→Output A→Custom resolution→Horizontal width (Knob adjustment size) →Vertical height (Knob adjust size) →Change resolution

### 2、 Set up splicing

Default menu →splice→ splice setup wizard→Set A screen size (Horizontal width、 Vertical height, OK key selection determination) →Set B screen size (Horizontal width、 Vertical height, OK key selection determination) →Set splicing mode (Horizontal / vertical splicing, OK key selection determination)

Schematic diagram is as follows: (such as one screen is 1408 x896, Another screen is 1280x896, The resolution of the entire large screen is 2688 x 896)



# introduction

This manual contains information about how to use, install and configure the LED video processor, in addition, also relates to knowledge LED video processor and LED video systems. Users are LED video processor, please read this manual in detail.

## About LED Video Processor

The LED splicing processor has three powerful video processing core, multi input multi graphics intelligent splicing processor, can be widely used in performing arts activities, command and control center, video conference, hotel, meeting room and court.

LED splicing processor can accommodate a wide range of input sources, Two channels for splicing, A channel for monitoring. 2 \* 1 or 1 \* 2 channel hybrid splicing. Single maximum splicing can achieve 5 million 300 thousand pixel custom output. More simple splicing settings, 1 minutes can be set to complete

LED splicing processor can accommodate a wide range of input sources. Can access up to eleven channels of video input, Contains two DVI, Contains two HDMI, Contains four VIDEO, One 3G-SDI(Optional). Each channel can receive standard resolution or high resolution video signal. DVI, and VGA can receive up to 1920 x 1200@60Hz of resolution input, Meet all kinds of HD output.

splicing processor design more humane. It is easier to use under the powerful function, Simple use of the button panel and menu system, As long as the touch of your finger to complete the complex set. Use the front panel and RS-232 can achieve the complete set and operation. Provides rich physical interface, Can meet the needs of common output devices. Provides up to 4 LED send card installation location, Simplify the installation of a large number of settings. Rotate quickly adjust the screen or related parameters. User settings handy.

# Panel

## Rear Panel

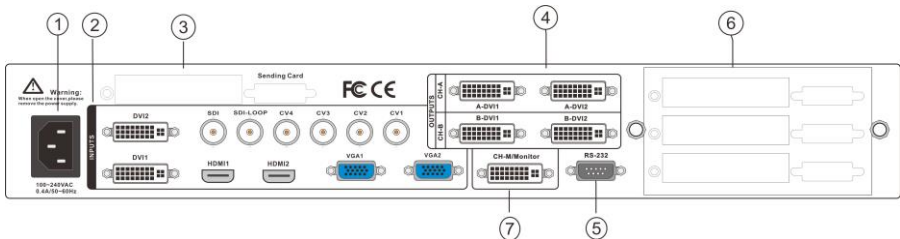


Figure 1-Video processor rear panel

① **AC power input** - using IEC standard power cable video processor, the input power is 100-240 VAC, 50-60Hz.

② **ideo input** — Input criteria for each interface.

- CV1, CV2, CV3 , CV4 CVBS video input, BNC connector, input video support PAL, PAL-M / N, NTSC, SECAM formats. You can connect DVD players and camcorders.

- DVI1, DVI2 input, DVI-I standard interface, use the DVI-I or DVI-D cable, the video input format supports VESA standard.

- HDMI HD video input, HDMI-A standard interface, support HDMI1.3 standard video inputs and VESA standards. Used to connect desktop computers and HDMI high-definition player.

- VGA1, VGA2 video input, using the standard DB-25 connector, supports the VESA standard video input for connecting a desktop computer, laptop or other VGA video output device.

- SDI digital video input, SDI-LOOP, SDI Signal ring out. Using BNC interface, Enter the video support HD video camera, etc..

④ **video output** - video output interface processor programming

- DVI output, using the DVI-I connector, the output video format is set by the processor, two DVI outputs the same signal at the same time. Used to send the card or connected to the LED monitor.

⑦ **CH-M/Monitor output**, using the DVI-I connector, Output video to display, As a display of the user's real-time operating image location and switching effects.

⑤ **RS-232** - Serial communication connector for engineering testing, the device is programmed, PC software control, communication baud rate is 115200bps.

③⑥ **LED sending card** - LED sending card installation location aside, you can install one or two to send cards. When installed, the user can first open the back cover and the small bracket, mounting, internal set aside four 5V power connector, four 2.0x4PIN connectors. After installing the plug 5V power supply.

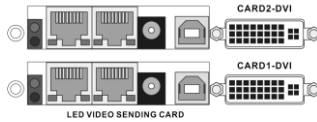


Figure 2-LED sending card

## FrontPanel

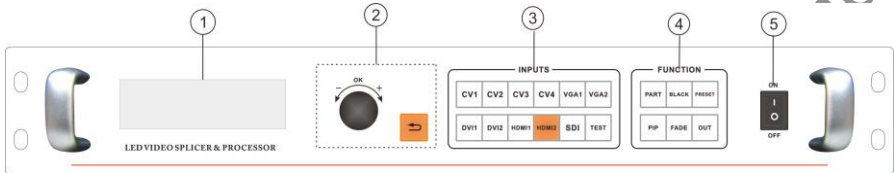


Figure 3-Front Panel

① **LCD display** - Display menu and current information.

② **Menu operation buttons** - Menu operation keypad with "Return key" ,Knob "confirm and adjust."

The following are included on each key.

- button, Exit key, or return to the previous menu.
- Knob , press the OK button to enter the menu or submenu key to confirm the function. Rotate around + "plus" - "minus" operation, you can adjust the menu position or adjust the parameter value becomes small.

③ **Input Selection** - INPUT button in the region, including all of the input 8-channel switch button, the test pattern, screen freeze, black screen, VGA automatic correction function: buttons. button indicators of the button state in the region there are three kinds, namely:

**The button lamp flashes slowly:** Flashing interval of about one second, and has been in flashing, indicating that the channel table when no signal switching.

**Button light flashes quickly:** When you press the button, the button indicating rapid flashing time is about 0.3 seconds, indicates that the device is currently being tested and decodes the input video.

**button indicator light:** Indicates the current channel signals are connected properly or the current function is active. Here is the Enter button on regional detailed description of the function buttons

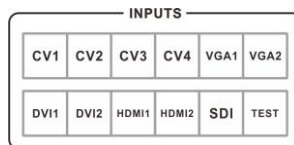


Figure 4- Inputs

- CV1、 CV2、 CV3、 CV4 Video switch key.
- **VGA1, VGA2** button, VGA input switching buttons and automatic correction button (AUTO

function). When the input channel for VGA1 or VGA2, repeatedly pressing VGA1 or VGA2 button VGA video processor corrects the current channel, so that the screen output is normal. VGA channel AUTO function: When the input channel for VGA1, and VGA1 have screen output, press VGA1 (AUTO) button, you can recalibrate the current VGA1 signal. VGA2 button also has the same functionality and operation.

- **DVI1, DVI2**, HDMI1, HDMI2,SDI bond, respectively, after the corresponding panel DVI1, DVI2, HDMI1,HDMI2,SDI video inputs.

④ **Function button area** - function button area contains a wide mode, preset call, PIP and transition effects operating buttons can quickly achieve operating each function.

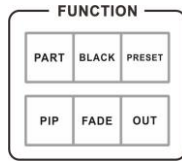


Figure 5—Function

- **PART** button: Part of the screen display mode, the user settings menu, good splicing interception parameters section of the screen, press this button part of the screen to display the results. In the following sections a detailed description of the operation.

- **Black key**, Press this key can output a black screen or freeze to "switch" menu can be set

- **PRESET** button:To load preset scenes shortcuts. In the default state, press the **Menu** button to bring up a list of preset scenes, together with the function button menu to bring up the preset scene. Save and recall presets on the scene, in the following sections will be described in detail.

- **button** : to turn on or off the PIP function buttons. User pre-set parameters PIP menu, use the PIP shortcuts to quickly turn on or turn off the PIP function. About PIP's use, in the following sections in detail.

Tip: When PIP (Picture in Picture) feature to work, you can not use PAT button output test pattern; unusable FREEZE / BLACK button (or black screen freeze function); function and can not be used CUT and FADE function (rapid transition effects and Fade switching effect).

**CUT** button, **FADE** button : Switching effect, **CUT** for fast cutting effect, **FADE** to fade transition effect. Users when switching input channels can pre-select the transition effect is good press the Enter button.

⑤ AC switch - front AC power switch.



# Menu System

## Menu Structure

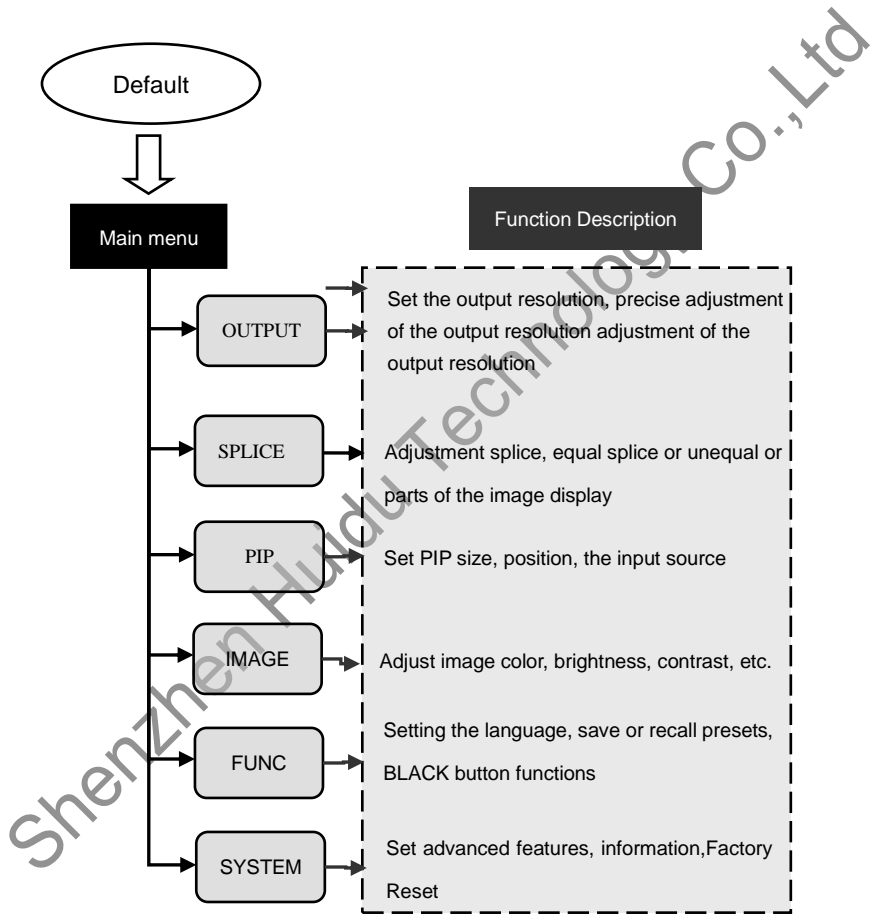


Figure 6 - Main Menu structure diagram

## Operation menu

The main menu operation buttons  "exist", knob ,OK the man-machine interface for a 240x64 dot matrix LCD screen.

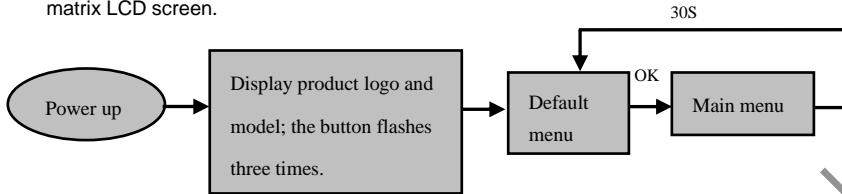


Figure 7- processor boot process and enter the main menu

## Default menu

The default menu after the device starts, LCD screen interface, shown above, the input source, the input source connected state, the input source is connected, the output resolution, mosaic mode, brightness and output audio channels and other information, shows the processing the main parameters menu system.

IN: HDMI 1080p	Mode: Full
Monitor: 1024x768/60	Bright: 50
Output A: 1024x768/60	PIP : CV1
Output B :1024x768/60	

Figure 8 - Default menu

## Main menu

The Main Menu is an important parameter adjustment user interface, almost all of the settings can be done in the main menu. In the following sections there will be a detailed description of the operation and settings for each function.

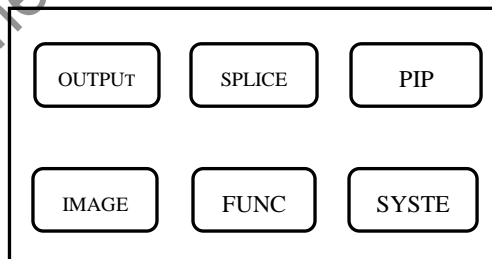


Figure9-Main menu

# Setting and Operation

## Language

Before using LED video processor, make sure the language you wish to use, if not, please follow the operation to complete.

**Default Menu → Main Menu → FUNC → Language**

Above is the menu operation path, use the button to enter the language settings menu you can select the language.

### Reset

When using LED video processor may not be confirmed because of errors or problems arise when setting these parameters, you can enter the menu, make overall reset. Here is the process of resetting the machine.

**Default Menu → Main Menu → SYSTEM → Reset All → OK**

After the reset, all user parameters back to factory state, users with caution.

### Output Resolution

Using different resolution display or LED screen, to achieve point-to-point output, it is necessary to set the output resolution and the resolution of precise adjustment.

1. select a larger than screen resolution

**Default Menu → Main Menu → OUTPUT → Output resolution → confirmed**

2. to fine-tune the output resolution



Tip: You reset the output resolution, the system will reset all parameters menu splicing to ensure data consistency. Accurate adjustment of the user is smaller than the resolution of only the currently selected resolution when the resolution is equal to the exact adjustment of the currently selected resolution, the horizontal and vertical start value start value can not be adjusted.

## Switching Effect

Processor with two Switching Effect, Fast switching, fade in fade out and corresponding **CUT or FADE** button.

**FADE (when the button is not light):** when the input video switch, switch-free stay.

FADE (when the key light is on): when the input video switcher, both before and after the video image fusion, the switching process smoother over.

1. press **CUT** or **FADE** button, press the button, the button indicator lights to alert the user of the current state of transition effects.

2. to enter the menu settings

**Default Menu → Main Menu → FUNC → Seamless**

## Fade time settings

Fade time can be controlled fade switching state of the time, the processor provides 0.5 seconds to 1.5 seconds fade time setting switch. Enter the menu settings as follows

**Default Menu → Main Menu → FUNC → Fade Time**

## Black and Freeze settings

Black and screen freezes shared the FREEZE / BLACK button, in the menu system is displayed as "BLACK button." It is set as follows

**Default Menu → Main Menu → FUNC → BLACK FUNC**

Once set up, simply press FREEZE / BLACK button to achieving a black screen or screen freeze

# Splicing applications

LED Video Processor has a powerful splicing, Maximum output resolution 5120 x 816 @60Hz, 3840 x 1200@60Hz, achieve frame synchronization. There introduce it's equal splicing and unequal

Tip: set the splicing parameters before the first to confirm whether the output B output A/ channel resolution is set.

## Equal Splicing (Left and right splicing)

Output A channel splicing settings

Default Menu→Main Menu→SPLICE→SPLICE A→SPLICE→On

Default Menu→Main Menu→SPLICE→SPLICE A→Pattern→Equal

Default Menu→Main Menu→SPLICE→SPLICE A→Parameters→H Units→1

Default Menu→Main Menu→SPLICE→SPLICE A→Parameters→V Units→2

Default Menu→Main Menu→SPLICE→SPLICE A→Parameters→Position→1

Output A channel splicing settings

Default Menu→Main Menu→SPLICE→SPLICE B→SPLICE→On

Default Menu→Main Menu→SPLICE→SPLICE B→Pattern→Equal

Default Menu→Main Menu→SPLICE→SPLICE B→Parameters→H Units→1

Default Menu→Main Menu→SPLICE→SPLICE B→Parameters→V Units→2

Default Menu→Main Menu→SPLICE→SPLICE B→Parameters→Position→2

Tip: two equal parts splicing (up and down), just change the parameter settings in the level of splicing, the vertical splicing parameters can be.

## Unequal Splicing

(For example, a screen is 1408 x896, Another screen is 1280x896

Default Menu→Main Menu→SPLICE→SPLICEA→SPLICE→on

Default Menu→Main Menu→SPLICE→SPLICEA→Pattern→Unequal

Default Menu→Main Menu→SPLICE→SPLICEA→Parameters→H Total→2688

Default Menu→Main Menu→SPLICE→SPLICEA→Parameters→V Total→896

Default Menu→Main Menu→SPLICE→SPLICEA→Parameters→H Start→0

**Default Menu→Main Menu→SPLICE→SPLICEA→Parameters→V Start→0**  
**Default Menu→Main Menu→SPLICE→SPLICEB→SPLICE→on**  
**Default Menu→Main Menu→SPLICE→SPLICEB→Pattern→Unequal**  
**Default Menu→Main Menu→SPLICE→SPLICEB→Parameters→H Total→2688**  
**Default Menu→Main Menu→SPLICE→SPLICEB→Parameters→V Total→896**  
**Default Menu→Main Menu→SPLICE→SPLICEB→Parameters→H Start→1408**  
**Default Menu→Main Menu→SPLICE→SPLICEB→Parameters→V Start→0**

## Capture

Interception of part of the screen function is unequal extension splicing function. In actual use, may be used to intercept the partial screen display, displays only a partial area of input channels. Such as the Windows user interface, users simply DV11 channel video playback window, the other input channel to full screen. Processor provides users with two control keys, as shown below.



FULL

PART

Figure10-Capture

## Setting:

1. Select the channel you want to capture part of the screen, such as DV11;
2. To enter the menu settings unequal splicing parameters (equivalent to capture part of the screen parameters), the total pixel values and the start value is adjusted by visual inspection is completed.

**Default Menu→Main Menu→FUNC→Partial function→no**

**Default Menu→Main Menu→FUNC→Partial function→Partial mode→user**

**Default Menu→Main Menu→FUNC→Partial function→H Total (User defined)**

**Default Menu→Main Menu→FUNC→Partial function→V Total (User defined)**

**Default Menu→Main Menu→FUNC→Partial function→H Start (User defined)**

**Default Menu→Main Menu→FUNC→Partial function→V Start (User defined)**

## PIP

PIP is the use of digital technology to display two programs on the same screen. That is the normal viewing of the main screen, while the insertion of one or more sub-picture compressed in order to appreciate the main screen while monitoring other channels. When operating in PIP mode mode, the user must provide at least two of the input signal, and the PIP menu settings accordingly. PIP function can be realized outside-picture effects, namely POP, PBP is a special application of the PIP.

Steps:

(1) Turn on PIP, there are two ways to open, one by **PIP** button, the second is in the menu system

**Default Menu → Main Menu → PIP → PIP mode → PIP**

**NOTE:** When the PIP is enabled, cut and fade function can not be used.

(2). Set the input source, the processor of the main channel and PIP channel, the same type of input source can not be achieved PIP function, so users can refer to the following table PIP source conflict table.

**Default Menu → Main Menu → PIP → PIP setup → Input**

Table 3 - PIP Source conflict table

		Main Channel										
		CV1	CV2	CV3	CV4	VGA1	VGA2	DVI1	DVI2	HDMI1	HDMI2	SDI
P I P	CV1	✓	×	×	×	✓	✓	✓	✓	✓	✓	✓
	CV2	×	✓	×	×	✓	✓	✓	✓	✓	✓	✓
	CV3	×	×	✓	×	✓	✓	✓	✓	✓	✓	✓
	CV4	×	×	×	✓	✓	✓	✓	✓	✓	✓	✓
	VGA1	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	✓
	VGA2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DVI1	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓
	DVI2	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓
P I P	HDMI1	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓
	HDMI2	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓
	SDI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

(3) Size and position parameters, specific parameters set by the user, the user can also adjust the PIP border transparency.

**Default Menu → Main Menu → PIP → PIP setup → H Start**

**Default Menu → Main Menu → PIP → PIP setup → V Start**

**Default Menu → Main Menu → PIP → PIP setup → Width**

**Default Menu → Main Menu → PIP → PIP setup → Height**

## Keying

Keying is an extension of the PIP function, which is accomplished by the PIP channel input color image minus the red, green, blue, black, and white colors to get results. Keying function can be used for some simple effects processing and overlay subtitles. Easy setting operation, please refer to the setup.

For example, Figure 16A is a picture-channel playback of video for PPT, 16B is the main input channels, 16C is a matting effect.



Figure 11A-PIP Channel



16B-Main Channel



16C-Output

Setting step:

**Default Menu → Main Menu → PIP → PIP mode → Keying**

**Default Menu → Main Menu → PIP → Keying Setup → Input → DVI**

**Default Menu → Main Menu → PIP → Keying Setup → Chroma Key → Black**

## Preset

Preset is to facilitate users to use quickly recall commonly used in a variety of scenarios, reducing the user when the operation is repeated complicated settings, improve work efficiency. Each contains a preset mode signal channel mode, the display mode of various parameters, image quality settings. Processor provides 4 preset save space, here to save and recall preset mode operation.

### Save Preset

When the user adjust all the parameters, to enter to save the current preset

**Default Menu → Main Menu → FUNC → Preset → Save Mode → Preset [1] → confirm**

In saving mode submenu have Preset [1] to Preset [4], four storage space, the user can choose.

Storage space is empty, the right of the status display for ☆, when the state has been saved had the right argument appears as ★. Users can also cover save.

### Recall Preset

Recall preset parameters have two operating modes, keyboard shortcuts and menu calls

1. Use **LOAD** button

In the default menu state, press the **LOAD** button to call up the menu to enter the preset scene. Use the ← and ↓ buttons to select the saved preset scene, press **MENU** button to confirm.

2. Setting in menu

**Default Menu → Main Menu → FUNC → Preset → Read Mode → Preset [1] → confirm**

## Key Lock

Key lock function for the user in a complex environment to avoid misuse or others inadvertently

### Lock

Enter the system menu, enable key lock function



**Default Menu → Main Menu→SYSTEM→Keypad Lock→on**

### **Unlock**

Press the **FADE** button last 2 second, processor automatically unlocked.

### **VGA Adjust**

Under normal circumstances, switch to the VGA input source, the processor will automatically correct input source color, image size and position. If the processor does not automatically corrected successfully, the user can manually correct implementation.

1. Use AUTO to adjust

When the input source is switched to the VGA input, VGA button is pressed again, the system will self-correct input source.

2. Enter menu to adjust

Switching to the VGA input state, enter the menu

**Default Menu → Main Menu→SYSTEM→VGA Setting→Auto Adjust→confirm**

If automatic calibration is unsuccessful, you can try manually correct

**Default Menu → Main Menu→SYSTEM→VGA Setting→H Position**

**Default Menu → Main Menu→SYSTEM→VGA Setting→V Position**

**Default Menu → Main Menu→SYSTEM→VGA Setting→H Clock**

**Default Menu → Main Menu→SYSTEM→VGA Setting→V Clock**

**NOTE:** When no VGA signal input, the system prompts not correct.

# Specifications

<b>Video input</b>	
Quantity / signal type	4 road composite video PAL、NTSC、PAL-M/N、SECAM 2 way VGA VESA standard, Highest 1920x1080@60Hz 2 way DVI VESA standard, Highest 1920x1080@60Hz 2 way HDMI 480i/p、576i/p、720p、1080i/p、 Color deep support 8、10、12 位 1 way SDI (Matching) 1080p 60/50/30/25/24/25(PsF)/24(PsF) 720p 60/50/25/24 1080i 1035i 625/525 line
Connector	5 way BNC Socket Composite video input SDI input 2 HD 15 pin way socket RGB input 2 DVI-I sockets DVI input 2 HDMI sockets HDMI input
Resolution range	640x480~1920x1080 480i/p、576i/p、720p、1080i/p、2048x1080 Point to point sampling To eliminate hidden
<b>video processing</b>	
Analog sampling	12 bits per color: 13.5 MHz standard 170 MHz standard (RGB)
Digital pixel data bit depth	Each channel 8、10 or 12 place; 2 channels for HDMI 3GHz standard (SDI)
<b>Video output</b>	
Quantity / signal type	1 way VGA Image resolution conversion RGBHV, RGBS, RGB 5 way DVI digital video ( VESA standard) 1 way SDI-LOOP SDISignal ring out
Connector	4 way DVI-I Socket DVI Programming output, 1 ↑ DVI-I Socket Monitor output interface 1 ↑ BNC Socket SDI-LOOP output
Resolution after	Output A or B or M Custom resolution:

image resolution			A&B
	1024x768@60Hz 1024x1280@60Hz 1280x1024@60Hz 1440x900@60Hz 1536x1536@60Hz 1600x1200@60Hz 1920x1080@60Hz 1920x1200@60Hz	2048x640@60Hz 1024x1920@60Hz 1920x1280@60Hz 1280x720@50Hz 1920x1080@50Hz 2048x1152@60Hz 2304x1152@60Hz 2560x960@60Hz 3840x640@60Hz	@60Hz: 265*2=530 ( Million pixels ) 3840x1380@60Hz 7680x640@60Hz 2560x1920@60Hz @30Hz: 5.3*2=10.6 ( Million pixels ) 3840*2160@30Hz 7680*1080@30Hz
<b>General specification</b>			
Power	Built in switching power: 45W 100~240VAC, 50~60Hz Maximum power consumption: 22W Maximum support for sending card load: 4 x 5W		
Temperature / humidity	Storage: -40 ~ +70 °C / 10% ~ 90%, Not condensed state 工作: 0 ~ +50 °C / 10% ~ 90%, Not condensed state		
shell dimensi	Without connectors and hanging ears 69mm H x 440 mm W x 280mm L With connectors and hanging ear 69mm H x 483 mm W x 280mm L		
Net weight	4kg		
Security EMI/EMC	FCC, CE CE		
MTBF	30,000 hour		
Guarantee	1 years free Note: all rated voltages are ±10%		